TRANSIT STRATEGIC PLAN • FY 2023 – FY 2032

Appendices

HAMPTON ROADS
TRANSIT

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APPENDIX A

Agency Profile and System Overview

FY2023 – FY2032

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Appendix A: Agency Profile and System Overview

A.1 History

Hampton Roads Transit (HRT) serves a 438 square mile area within the Hampton Roads region. HRT consists of six member cities: Chesapeake, Hampton, Newport News, Norfolk, Portsmouth, and Virginia Beach. The combined population of the six jurisdictions is approximately 1.35 million;[1] the 2045 projected population for the six jurisdictions is 1.53 million, a 13 percent increase over a 30-year period. Out of the six cities, Chesapeake is projected to see the largest actual and percentage population increase over that period, with a projected growth of 78,383 people or 33 percent.[2] The average population density of the six cities is approximately 3,100 persons per square mile; however, there is a wide range of population densities in the service area, from over 22,000 persons per square mile in part of Downtown Norfolk to less than 20 persons per square mile in Chesapeake near the Great Dismal Swamp National Wildlife Refuge. The six cities served by HRT account for approximately 58.4 percent of economic activity in the region.[3]

The service area is divided by the James River. The service area on the *Southside* of the river consists of Chesapeake, Norfolk, Portsmouth, and Virginia Beach, and the service area on the *Peninsula* or *Northside* (between the James River, York River and Chesapeake Bay) is made up of Hampton and Newport News.

All six jurisdictions in the service area are home to United States military installations and various federal facilities, including: Naval Station Norfolk, Joint Expeditionary Base Little Creek – Fort Story, Naval Air Station Oceana, and Joint Base Langley-Eustis; there are approximately 150,000 active duty and civilian personnel in the region, and Norfolk is home to the world's largest naval base. The command headquarters of the North Atlantic Treaty Organization (NATO) is also located in Norfolk. Estimated Department of Defense (DOD) direct spending in Hampton Roads is estimated at $22.1 billion dollars in 2019.[4]

Originally, two transit systems developed independently on the Southside and Peninsula, Tidewater Regional Transit and Pentran, respectively. Electric trolleys operated in both areas before the turn of the 20th century and were gradually replaced by buses between the 1920s and 1940s. Paratransit service began in both areas of the region in 1979-1980, and ferry service between Norfolk and Portsmouth – operated by Tidewater Regional Transit – was established in 1983. Late night bus service began on the Peninsula in 1991.

Tidewater Regional Transit and Pentran merged in 1999 to create the Transportation District Commission of Hampton Roads (TDCHR), which operates as HRT. In 2008, HRT began an eight-route express bus service linking the seven jurisdictions that were part of the TDCHR at the time. In 2011, HRT completed and opened Virginia's first light rail line, The Tide, which provides service connecting Downtown Norfolk to the border of Norfolk and Virginia Beach. HRT currently operates 67 fixed-route bus services, including three seasonal routes serving oceanfront and recreational destinations in Virginia Beach.

A.2 Governance

HRT is a local government agency, a body corporate and politic, created pursuant to the Transportation District Act of 1964, Virginia Code §§ 33.2-1900, et seq. A thirteen-member board of commissioners (Commission) governs the affairs of HRT, including its statutorily mandated functions as a regional transportation authority. The Commission typically meets on the fourth Thursday of every month and alternates meeting locations between its facility in the City of Norfolk and its headquarters in the City of Hampton.[5] In addition to monthly meetings of the full board, governance and oversight activities of the Commission are carried out with the advisement of several committees. These include: Audit and Budget; Operations and Oversight; Planning and New Starts Development;

[1] HRTPO, "Hampton Roads 2045 Socioeconomic Forecast and Transportation Analysis Zone Allocation" Accessed at https://www.hrtpo.org/uploads/docs/Hampton%20Roads%202045%20Socioeconomic%20Forecast%20and%20TAZ%20Allocation%20Report.pdf
[2] Ibid.
[3] 2019 Hampton Roads State of the Region Report, Dragas Center for Economic Analysis and Policy, Old Dominion University, Accessed at https://www.ceapodu.com/wp-content/uploads/2019/10/SOR%202019.pdf
[4] Ibid.
[5] http://www.gohrt.com/about/governing-board/

External and Legislative Affairs; Smart Cities and Innovation, Paratransit Advisory Committee; and the Transit Riders Advisory Committee.

A.2.1 Membership

The Transportation District of Hampton Roads (TDCHR) has six member cities: Chesapeake, Hampton, Newport News, Norfolk, Portsmouth, and Virginia Beach and a 13-member board of commissioners. Terms of commissioners are typically four years. The board is comprised of two commissioners from each of its six member cities. This includes one commissioner appointed by the member city, usually a city council person, and one non-legislative citizen commissioner who resides in the member city and is appointed by the Governor of Virginia. The Chairman of the Commonwealth Transportation Board (CTB), or his/her designee, serves as a commissioner *ex officio*, with voting privileges. **Table A-1** lists current TDCHR Commissioners. Officers of the Commission, elected at the annual meeting of the Commission to a one-year term, are also noted in **Table A-1**.

Table A-1: TDCHR Officers

Location	Officer	Term Expires
Virginia Beach	Hon. Aaron Rouse *(Vice-Chair)*	City Council Appointed
	Hon. Amelia Ross-Hammond	June 30, 2022
Newport News	Hon. Patricia P. Woodbury	City Council Appointed
	Comm. August B. Bullock	June 30, 2022
Hampton	Hon. Jimmy Gray *(Past Chair)*	City Council Appointed
	Comm. Gaylene Kanoyton	June 30, 2022
Portsmouth	Hon Shannon E. Glover.	City Council Appointed
	Comm. Brad Hunter	June 30, 2022
Chesapeake	Hon. Matthew “Matt” Hamel	City Council Appointed
	Comm. Douglas W. Fuller	June 30, 2022
Norfolk	Hon. Andria McClellan *(Chair)*	City Council Appointed
	Comm. Kirk T. Houston	June 30, 2022
CTB	Comm. Jennifer Mitchell	Appointed
Virginia Senate	Hon. Lionel Spruill	Elected Office
Virginia House of Delegates	Hon. Shelly Simonds	Elected Office

A.2.2 Funding

The TDCHR is divided into two divisions for the allocation of operating revenue and costs: the Southside Division (Chesapeake, Norfolk, Portsmouth, and Virginia Beach) and the Peninsula Division (Hampton and Newport News). Funding for HRT services has traditionally been provided by federal, state, and local subsidies, as well as passenger revenues. Local funding is provided based on a Cost Allocation Agreement, where service allocation in each city is based on the subsidy it provides after all federal, state, and farebox revenues are applied.[6] HRT, as with its predecessor agencies, has had no dedicated revenue source since its founding in 1999. In 2020, the Virginia General Assembly passed historic legislation to create dedicated funding for a Program of regional public transportation that is planned and operated through HRT. Through Senate Bill 1038 and House Bill 1727, which require the establishment of the Hampton Roads Regional Transit Fund (HRRTF), the General Assembly emphasized the importance of having effective multimodal transportation, as it is essential for the region’s economic growth, vitality, and competitiveness.

[6] TDCHR Cost Allocation Agreement

To this end, the Hampton Roads Regional Transit Program is documented in Chapter 6 of this TSP. It is established to define and supply resources for the development, operating, and capital needs for both expansion and state of good repair of reliable regional transit operations. The adopted Program is also the foundation upon which any complementary regional transit planning is built and encompasses the operating and capital costs for transit infrastructure and operations that are eligible to be funded by the Hampton Roads Regional Transit Fund. The Hampton Roads Regional Transit Fund is a dedicated regional transit fund administered through the Hampton Roads Transportation Accountability Commission.

There is express parity in the legislative statutes between the purposes of the Hampton Roads Regional Transit Program and the Hampton Roads Regional Transit Fund. Specifically, pursuant to Virginia Code section 33.2-2600.1, et seq., the Hampton Roads Regional Transit Program is explicitly for a "core regional network of transit routes and related infrastructure, rolling stock, and support facilities". The express goal of the Program is "to provide a modern, safe, and efficient core network of transit services across the Hampton Roads region." Meanwhile, the Fund shall be used for "the development, maintenance, improvement, and operation of a core and connected regional network of transit routes and related infrastructure, rolling stock, and support facilities, to include the operation of a regional system of inter-jurisdictional high-frequency bus service, in a [the] transportation district in Hampton Roads".

The Hampton Roads Regional Transit Program is documented in **Chapter 6**, consistent with the purposes and requirements outlined in the Code of Virginia related to the Program and usage of the Hampton Roads Regional Transit Fund. The Program is also aligned to the service planning principles and framework detailed in **Section 1.2.2.** and **Section 1.2.3**. This includes top regional priorities of providing more reliable inter-jurisdictional bus service, with priority on more service frequency during hours of the day that most commuters are traveling between work and home.

A.2.3 Special Advisory Committees

Transit Riders Advisory Subcommittee

The Transit Riders Advisory Committee (TRAC) is a subcommittee to the TDCHR Executive Committee. The TRAC may have up to 14 members, including residents from each city in the service area; these residents are HRT customers. TRAC's function is to:

- Provide HRT administration with input and information on issues affecting HRT customers
- Suggest ideas for improving operations and services
- Provide input into HRT's customer outreach activities
- Share information with HRT customers and the community at large about HRT services and avenues for providing input concerning service improvements.

Paratransit Advisory Subcommittee

The Paratransit Advisory Committee (PAC) is a subcommittee to the TDCHR Executive Committee. The PAC may have up to 21 members; of those, up to 14 may be consumers, and up to seven may be service provider agency representatives. The TDCHR defines a consumer as "an individual, or parent, guardian, or caregiver of an individual with a disability, who is certified eligible for ADA paratransit services and has been using the Paratransit services of the Commission during the past six months."[7] The PAC's function is to:

- Advise TDCHR on implementation of HRT's Unified Service Plan & Policy for Complementary Paratransit Services Under the Americans with Disabilities Act
- Advise TDCHR on compliance issues relative to the Plan
- Share information with HRT customers and community-at-large about HRT's paratransit services
- Share information with HRT staff and the TDCHR regarding paratransit customer needs

[7] Paratransit Advisory Committee, Accessed at https://gohrt.com/agency/governing-board/pac/

- Provide input to the staff and the TDCHR on quality of service issues relative to paratransit services provided.[8]

Management and Financial Advisory Committee

The Management / Financial Advisory Committee (MFAC) includes a designee of the CTB Chair and staff of HRT and member cities. Members serve as liaisons between the agency and City Managers of the component governments. Some of the key functions of MFAC include:

- To serve as an advisory body to make general or specific recommendations to the Commission
- To review the monthly financial statements as they pertain to each component government
- Ensure all financial information is communicated to the City Managers of the component governments on a regular basis
- To assist HRT in the development of transit services and programs that will complement component government plans and projects
- To facilitate development of HRT annual budgets in coordination with the component government budget development process
- To provide input to the Chief Financial Officer on improving HRT's financial and accounting practices.

A.3 Organizational Structure

A.3.1 Organization

TDCHR staff provide management and administrative support and serve to achieve the agency's goals and objectives. TDCHR staff includes the President and Chief Executive Officer (CEO), the Commission Secretary, Internal Auditor and the Chief Financial Officer/Commission Treasurer.

The General Counsel and Internal Auditor serve at the pleasure of the Commission and have direct access to the Commission as required. On daily business matters, they report to the President and CEO. Additionally, the following HRT staff report to the President and CEO:

- Deputy Chief Executive Officer
- Chief Safety Officer
- Chief Financial Officer
- Chief Transit Operations Officer
- Chief Planning and Development Officer
- Chief Information and Technology Officer
- Director of Marketing & Communications
- Chief Engineering & Facilities Officer
- Chief Human Resources Officer
- Corporate Counsel

Table A-2 provides an overview of these staff and associated departmental responsibilities. **Figure A-1** illustrates the organizational structure.

[8] Bylaws of the Transportation District Commission of Hampton Roads, Accessed at http://www.gohrt.com/wp-content/uplaods/2016/01/revised-bylaws.pdf

Table A-2: HRT Executive Team and Departments

Department	Title	Staff	Department Responsibility
Executive Department	President & CEO	William Harrell	Responsible for oversight of all functional areas within HRT. This includes leadership and unity of effort to achieve the vision and mission of the agency, as well as: ■ **Internal Audit:** Provides assurances on HRT's governance, risk management and control processes to help the organization achieve its strategic operational, financial and compliance objectives. ■ **Government Relations**: Facilitates the development and implementation of the legislative and policy agenda of the TDCHR. ■ **Office of Program & Project Excellence**: The mission of the OPPE is to achieve agencywide excellence in planning and administration of programs and projects, including the ten-year Capital Improvement Program, DBE Program, Title VI Program, the Hampton Roads Regional Transit Program, HRT's annual Strategic Planning Process, and related projects and major annual tasks that influence HRT achieving its vision and mission. Under the OPPE Director, this includes the planning, programming, and administration aspects of the capital program and coordinating among departments involved in capital program/projects delivery, preparation, and administration of grant assistance programs at all levels, developing resources, researching funding sources, and developing grant proposals. ■ **Records Management:** Maintenance of all policies, agreements, transactions, and official correspondence of HRT.
	Internal Auditor	Shanti Mullen	
	Deputy CEO	Brian Smith	
	TDCHR Secretary	Luis Ramos	
Technology	Chief Information & Technology Officer	Michael Price	■ **Office of the CIO/CTO (Support Services):** Directs and coordinates agency-wide information resource planning to ensure that agency information technology (IT), information management (IM), and IT security resources are selected and managed to provide maximum value to the agency. The CIO/CTO has oversight responsibility over the entire Technology Department IT portfolio and has operational responsibilities consisting of local area networks, wide area networks, desktops and backend services for all HRT modes. The CIO/CTO also promotes entrepreneurship, innovation, investment and alliances to address transit issues by creating technology solutions. The CIO/CTO is also implementing a holistic cybersecurity plan to strengthen HRT's security framework. The CIO/CTO also directly maintains the Technology Project Management Office (TPMO), Fare Technology Operations Office (FTOO) and the Information Technology Security Office (ITSO). ■ **Technology Project Management Office (TPMO):** Serves as the primary point of contact for all technology-related project requests. The TPMO focuses on prioritizing projects and strategically utilizing resources to move projects to success. This includes identifying, prioritizing, authorizing, managing, and controlling information technology projects, programs, and other related work, to achieve specific strategic agency objectives. In addition, TPMO oversees Web Development that supports and maintains HRT's Website. ■ **Fare Technology Operations Office (FTOO):** Serves as the primary administrator and project management office for all fare and revenue technology systems. The FTOO works collaboratively with Revenue Services, Planning and Fleet Services to procure and manage all fare collection and revenue systems, equipment, hardware and software. ■ **IT Security Office (ITSO):** Responsible for ensuring network and information system security. Goals include establishing a standard, integrated approach to ensure HRT becomes secure and compliant as well as making sure that everyone who uses computer or network services understands how to keep their computer, data, and other electronic devices secure which is critical to keeping the agency and its assets protected. ■ **Technology Infrastructure & Operations Services (TIOS):** Provides wired and wireless connections between customer devices (such as workstations and laptops) and agency networks, providing internet access and HRT IT and OT systems, services and applications. Network Services assists with knowledgeable technical support to help manage relationships between HRT and external suppliers such as equipment supply houses and system maintenance vendors. Network Services also aims to provide reliable, high speed, secure, and accessible network services to sustain HRT business needs. The Technology Department runs the agency IT Helpdesk that includes support for all agency workstations, laptops, agency-

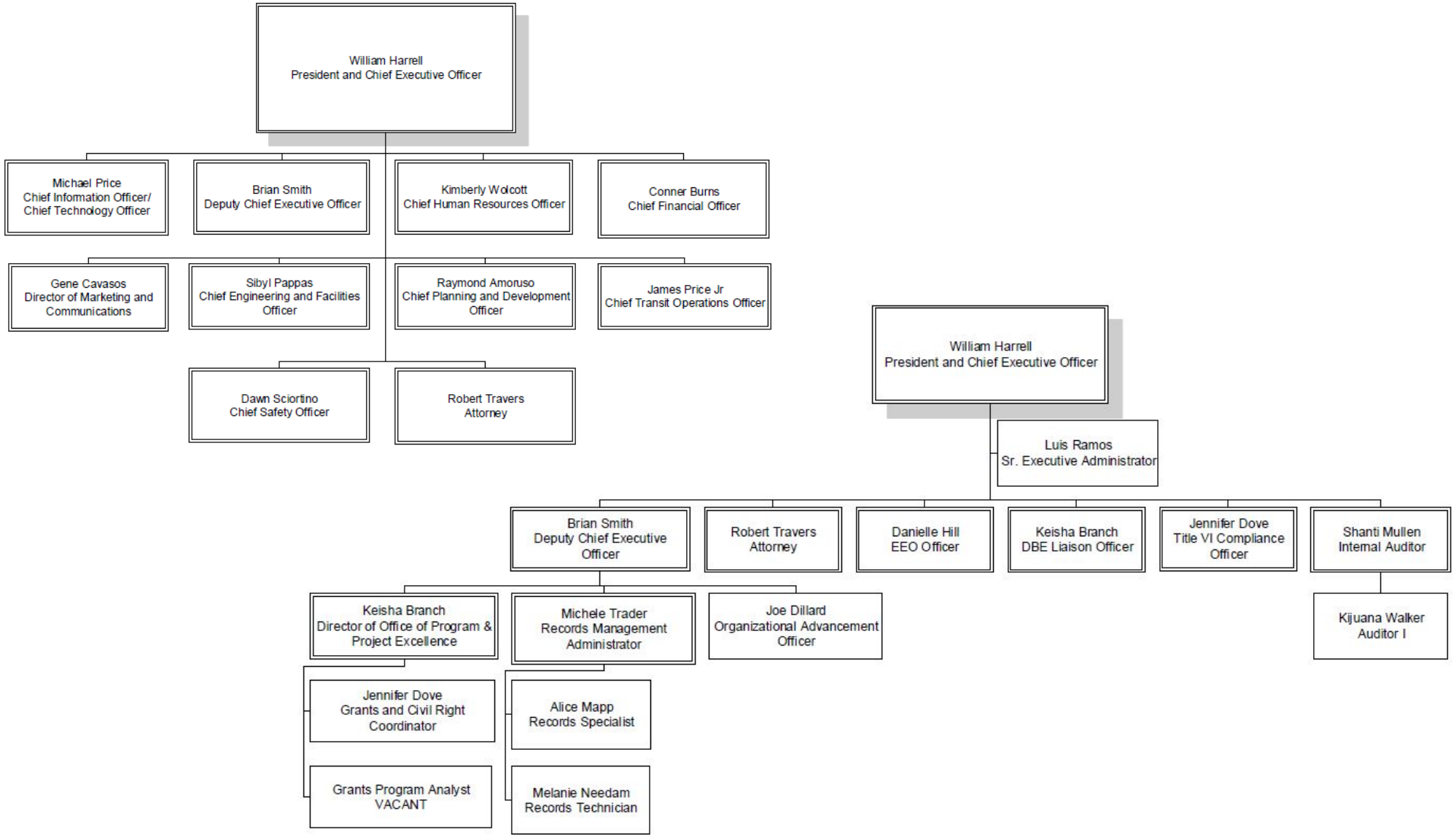
Department	Title	Staff	Department Responsibility
			procured cellular phones, multi-function devices for printing, faxing, scanning and copying. The Technology Department keeps key software and hardware up-to-date, available and secure. ■ **Intelligent Transportation Systems (ITS):** HRT's ITS division focuses on intelligent vehicles, intelligent infrastructure and the creation of an intelligent transportation system through integration with and between these two components. ITS staff manage and support a variety of on-vehicle transit technologies and applications. advanced sensors, computers, electronics, and communications technologies as well as management strategies – in an integrated manner – providing traveler information – to increase the safety and efficiency of the transit system. ■ **Enterprise Technology Solutions (ETS):** Responsible for managing the IT Services portfolio which consists of projects that have been approved by the CIO/CTO in collaboration with HRT Executive Management. Maintaining business relationships to ensure awareness of customer needs is the primary focus of ETS. Revenue Systems Support, Database Services, Web Services, Business Intelligence and Analytics are managed through this division. ■ **Enterprise Resource Planning (ERP) Services:** Responsible for providing implementation services and technical support, primarily for users of the agency's ERP systems including: PeopleSoft HCM and payroll, and the new Microsoft Dynamics 365 implementation and finally, the soon to be deployed Enterprise Asset Management System (EAM). ERP Services Staff specialize in application-level technical services and management of the support process with a focus on results oriented, quality support and responsiveness.
Marketing & Communications	Director of Marketing & Communications	Gene Cavasos	Works across a range of disciplines to share information about the agency's policies and practices using traditional and web-based platforms. Works to refine and improve the agency's brand while supporting HRT departments with initiatives and programming through public outreach, planning and communication development.
Engineering & Facilities	Chief Engineering & Facilities Officer	Sibyl Pappas	Responsible for managing and maintaining HRT's engineering, construction projects and facilities. This includes the development, implementation, and continual improvement of HRT's physical infrastructure. Emphasis is placed on reducing costs, minimizing liability and improving efficiency and quality of services. The Department is organized into six divisions: Construction; Engineering; Environmental Compliance & Sustainability; Facilities Maintenance; Asset Management and Project Management.
Finance Department	Chief Financial Officer	Conner Burns	Responsible for developing strategic goals and objectives, assessing and monitoring financial and administrative performance, safeguarding the agency's assets, and ensuring the effective use of financial resources. Other responsibilities include: ■ **Accounting:** Provides accurate and timely financial accounting and reporting services. Responsible for the post-award financial and fiscal reporting functions for all HRT grant awards. Analyzes and prepares monthly financial reports and Comprehensive Annual Financial Report. ■ **Budget & Financial Analysis:** Prepares and submits the annual operating budget that supports the agency's goals and objectives. Establishes budgetary guidelines, communicates policies, procedures and best business practices and monitors compliance with HRT, federal and state policies. Reports statistical data to FTA, DRPT, and the American Bus Benchmarking Group (ABBG). ■ **Procurement:** Acquires supplies and professional and construction services in accordance with Virginia law and FTA regulations. Provides support to DBE efforts, helps identify opportunities for cost-savings. ■ **Revenue Services:** Collects, deposits, and accounts for all farebox revenue, is responsible for fare media purchases, and maintains control over fare media inventory.
Planning & Development Department	Chief Planning & Development Officer	Ray Amoruso	Direct the development and implementation of short and long-range service and system plans and programs for public transportation services and facilities, including HRT's ten-year Transit Strategic Plan (TSP) as well as the development of the information for high-capacity transit corridors, bus routes, schedules, and the annual Transportation Service Plans for member cities in accordance with the Cost Allocation Agreement.

Department	Title	Staff	Department Responsibility
			■ **Service Planning & Scheduling:** Provides service planning and scheduling for all bus and trolley services, as well as strategic planning and quality assurance. Develops new routes and schedules, as well as modifies and redesigns existing routes and schedules to improve the efficiency and effectiveness of HRT's service structure. Manages the route planning process including bus stop locations, identification of locations for passenger shelters, and coordination with local governments and businesses. Maintains the agency database for bus stops and passenger shelters. Examines ridership counts, on-time performance data and conducts ride checks to ensure that services are being provided properly. Coordinates long range planning for future routes and services. Conducts data collection, not only for the National Transit Database, but also for the Planning and Scheduling staff when data is required for scheduling improvements and passenger loads. ■ **Fare Media and Advertising Sales:** Works to increase the sale of fare media through partnerships with area businesses. Responsible for all internal and external bus and rail advertising, direct oversight over sales advertising, the GoPass 365 program and fare media sales. ■ **Transportation Demand Management (TDM) program (TRAFFIX):** Oversees the administration of the regional TDM program, TRAFFIX. TRAFFIX provides commuter programs for vanpools, carpools, biking, walking, riding transit and telework options. TRAFFIX staff work closely with DRPT, VDOT, the military, and various employers and local governments to administer programs associated with transportation alternatives. ■ **Customer Relations:** Provides customer service via the contact center and the transit centers. The contact center is the central point in which all customer contacts are managed via the telephone, email and web. Information is entered into a formal database called the Customer Assistance System (CAS). The database is used to measure customer perceptions related to Key Performance Indicators. ■ **NTD Reporting:** Responsible for all non-safety monthly and annual reporting to the National Transit Database. Coordinates with other departments to obtain, analyze, and submit all relevant data. Also responsible for monthly service data reporting through the State's Online Grants Administration (OLGA) platform. ■ **Long Range Planning & Transit Development:** Facilitates the planning and management of fixed guideway and High Capacity studies, major capital investment planning as well as transit-oriented development projects. Supports the preparation of requests for federal, state and local funding and manages the planning and environmental assessment for new rail, bus, ferry, and intermodal transportation. Responsible for conducting the agency-wide origin-destination survey every 3-5 years.
Safety	Chief Safety Officer	Dawn Sciortino	■ **Safety:** Achieve the highest practical level of safety for all HRT modes of transit to protect passengers, employees, revenues, and property. HRT has implemented a proactive, agency-wide safety program plan supported by the Federal Transit Administration (FTA). Responsible for the development and implementation of the Safety Management System for HRT. Supports HRT Departments in meeting the requirements set forth in the Public Transit Agency Safety Plan. ■ **Safety Policy:** Promotes commitment to safety performance through SMS. — Establishes clear safety objectives, and commitment to manage to those objectives. — Defines methods, processes, and organizational structure needed to meet safety goals. — Establishes transparency in management of safety through fully documented policy and processes, employee hazard reporting and resolution system, and accountability of management and employees. — Facilitates cross-organizational communication and cooperation. ■ **Safety Risk Management (SRM):** Determines the need for, and adequacy of, new or revised risk controls based on the assessment of system risks. Develops formal process within the SMS composed of: identifying hazards, assessing the risk, analyzing the risk, and controlling the risk. ■ **Safety Assurance (SA):** Evaluates the continued effectiveness of implemented risk control strategies.

Department	Title	Staff	Department Responsibility
			— Safety Management Systems process management functions that systematically provide confidence that HRT meets or exceed safety requirement. — Ensures compliance with SMS requirements and FTA standards, policies, and directives. — Provides insight and analysis regarding methods/opportunities for improving safety and minimizing risk through Information Acquisition, Data Analysis, and System Assessment. ■ **NTD Safety Submission:** HRT is mandated to report monthly to the NTD all Safety and Security accidents and incidents meeting the NTD thresholds. Reporting is required across all HRT modes, and includes data on fatalities, injuries, safety events and reliability. ■ **Safety Promotion:** Includes training, communication, and other actions to create a positive safety culture within all levels of the workforce. Safety promotion activities within the SMS framework include: — Advocating/strengthening a positive safety culture — System and safety communication and awareness — Matching competency requirements to system requirements — Disseminating safety lessons learned
Operations	Chief Transit Operations Officer	James Price, Jr.	■ **Bus Maintenance Department:** — **Fleet Maintenance:** Conducts vehicle maintenance services, as well as management of all corporate inventory functions. There are three maintenance facilities: Norfolk, Hampton and one seasonally operated facility in Virginia Beach. — **Inventory Services:** Responsible for management and operation of two storage and distribution centers, as well as management of all purchase requisitions, delivery schedules, and storage levels of petroleum products, oils, and lubricants. — **Fleet Support Services:** Provides maintenance and support for mobile and portable radios, Advanced Communication System, Wi-Fi on buses, digital security camera systems, fare collection units, isolation boxes, Ticket Vending Machines, dispatcher consoles, towers, and emergency call boxes. Support Services team members are on-call 24 hours a day to respond to service needs. ■ **Bus Transportation Service Department:** — **Transportation Services:** Supervises more than 500 bus operators, and approximately 46 supervisors and dispatchers (during seasonal service). — **Bus Training:** Responsible for training all Bus Operators and Bus Supervisors on the operation of bus vehicles and operating rules and procedures. ■ **Rail Maintenance Service Department:** — **Light Rail Vehicle Maintenance:** Conducts preventive and corrective maintenance, which is accomplished by a preventive maintenance program, nightly cleaning and servicing, and from direct feedback received from the operators on corrective maintenance needs. — **Light Rail Inventory:** Ensures material needs for the department are met, including consumable supplies and spare parts for both LRV maintenance and System's maintenance divisions. — **Light Rail Systems:** Responsible for all maintenance along the Light Rail Right of Way and all HRT Operations Facilities equipment. Staffed 24 hours a day, 7 days a week. ■ **Rail Transportation Service Department** — **Light Rail Transportation Services:** Oversees a department of 23 light rail operators, 12 controllers/dispatchers and one Manager of Rail.

Department	Title	Staff	Department Responsibility
			— **Rail Training:** Responsible for training all Rail Operators and Rail Controllers on the operation of the rail vehicles and associated operating rules and procedures. — **Ferry Services:** HRT contracts with Norfolk-by-Boat to provide ferryboat service on the Elizabeth River between Downtown Norfolk and Olde Town Portsmouth. Ferry service is also provided for special events at Harbor Park Stadium, home to Norfolk's Minor League Baseball team. The fleet consists of three, HRT-owned T-class, 150-passenger ferries that operate with dual control twin diesel engines. — **Paratransit Services:** Oversees a contractor to provide these services which operate the same days and hours as the regular service and are limited to the same areas as HRT's fixed route bus service. The current fleet dedicated to HRT's Paratransit service is comprised of 75 Agency-owned lift-equipped passenger vans complemented by 26 mini vans provided by the contractor along with Taxi/TNC support as needed. ■ **Support Vehicle Services:** Staff maintains a fleet of 134 non-revenue (or support) vehicles used by HRT employees for company business. The department performs all scheduled maintenance and repairs for the support vehicles and is responsible for tracking mileage and drivers and ensuring proper usage of fleet vehicles. ■ **Security:** HRT's President/CEO is ultimately responsible for secure operations and communicating security as a top priority for all employees. The Deputy Chief Transit Operations Officer is the department head, the Security Manager leads the security department daily and has primary responsibility for implementing the tasks and requirements set forth in the HRT SEPP and responsible for developing relationships and agreements with external organizations that contribute to the security program; Manages security services for all HRT facilities, including transfer centers, light rail vehicles, revenue vehicles, as well as non-revenue vehicles; Security card access, surveillance camera systems, and key and lock systems for all agency facilities are also overseen by the Security department. Staff works with police departments throughout the Hampton Roads area.
Human Resources	Chief Human Resources Officer	Kimberly Wolcott	HRT has over 1,000 employees who maintain the fleet, operate buses and light rail vehicles, and maintain support services to the organization. Human Resources staff plays an integral role in providing quality supportive and innovative service and advice to our employees and to our management team while promoting a positive, safe, productive working environment that supports a work/life balance. Human Resources departments include Compensation & Benefits, Recruitment, Employee/Labor Relations, Performance Management and Compliance.
Legal	General Counsel	David Burton, Williams Mullen	The Legal Department is comprised of a Corporate Counsel who serves as a member of the Senior Executive Team and is responsible for providing legal advice and services to the President & CEO, other members of the Senior Executive Team, all departments, as well as the Board of Commissioners upon request.
	Corporate Counsel	Robert Travers	

Figure A-1: HRT Transportation District Commission of Hampton Roads – Senior Executive Team and Executive Department



A.3.2 Contracted Transportation Services

HRT owns its ferry vessels and contracts to provide ferryboat service on the Elizabeth River between Downtown Norfolk and Olde Town Portsmouth, as well as special event services from April-September to Harbor Park Stadium, home to the Norfolk Tides, Norfolk's Minor League Baseball team. HRT contracts with Via to provide daily paratransit operations (**Table A-3**).

Table A-3: HRT Contracted Transportation Services

Service	Contractor	Contract Expiration
Elizabeth River Ferry	Norfolk-by-Boat	July 11, 2023[9]
Paratransit Operation	Via	Jan. 31, 2023[10]

A.3.3 Labor Unions and Contracts

HRT's contract with Amalgamated Transit Union (ATU) Local 1177 is approved through June 2024 (**Table A-4**)**.** ATU Local 1177 represents full- and part-time operators and permanent full-time hourly maintenance department employees at HRT, excluding clerical employees, guards, professional employees, or supervisors.[11]

Table A-4: HRT Labor Unions and Contracts

Union	Contract	Contract Length
Amalgamated Transit Union Local 1177	Agreement between ATU Local 1177 and HRT	July 1, 2021 – June 30, 2024

A.4 Services Provided and Areas Served

A.4.1 Area Served

HRT serves a 431 square mile area within the Hampton Roads Region. HRT consists of six member jurisdictions: Chesapeake, Hampton, Newport News, Norfolk, Portsmouth, and Virginia Beach. The population of the six jurisdictions combined is approximately 1.35 million.[12]

A.4.2 Services Provided

HRT provides the following service:

- Local, limited stop, regional express, and seasonal bus
- Demand response paratransit
- Passenger ferry
- Light rail
- Transportation demand management vanpools

Table A-5 details the total vehicles operated in maximum service for each mode in FY 2020.

[9] The Norfolk-by-Boat contract has a two-year option period, which would extend the contract to July 11, 2023.
[10] The current paratransit contract has two one-year options available, which could extend the contract to January 31, 2025.
[11] Agreement between ATU Local 1177 and HRT, Contract Term July 1, 2021-June 30, 2024. Accessed at https://gohrt.com/wp-content/uploads/2021/11/CBA-2021-2024-public.pdf
[12] ACS 2011-2015 5-year estimates.

Table A-5: Vehicles Operated in Maximum Service (June 2021)

Mode	Number of Vehicles
Bus	210
Paratransit	80[13]
Ferry Boat	2
Light Rail	6
Vanpool	26[14]

Local Bus Service

HRT operates 50 local bus fixed-routes, 33 routes on the Southside, and 17 routes on the Peninsula. Fixed-route buses are equipped with bicycle racks and have low floors, ramps, or wheelchair lifts to assist the elderly and passengers with disabilities. Weekday service runs between approximately 4:30 AM and 1:30 AM (until 2:00 AM on the Virginia Beach (VB) Wave service in the summer).

Peninsula Commuter Service

HRT's Peninsula Commuter Service (PCS) is a five route, limited stop bus service that provides service to major employers on the Peninsula, including the Huntington Ingalls Shipyard in Newport News. PCS routes offer commuter service with only one or two trips per day, designed to coincide with shift change times of major employers.

Metro Area Express Service

HRT's Metro Area Express (MAX) is a nine route regional express bus service operating between Hampton / Newport News and Norfolk / Chesapeake / Virginia Beach, mostly along the interstate highways. The routes are designed for commuters; MAX service is limited stop and operates on coach style buses with free Wi-Fi. Some MAX routes operate throughout the day; others are designed for commuter service, only operating during peak periods.

Virginia Beach Wave and Bayfront Shuttle

The VB Wave and Bayfront Shuttle consist of three routes that operate seasonal service for residents and tourists in the Virginia Beach resort area. The VB Wave (Routes 30 and 31) use replica trolley-style diesel buses and the Bayfront Shuttle (Route 35) uses 29-ft diesel buses. These routes operate approximately from April to October 1st, from 8:00 AM to 2:00 AM.

The Tide Light Rail

HRT opened Virginia's first fixed guideway light rail system in August 2011, called "The Tide." It operates on 7.4 miles of track in the City of Norfolk, stopping at eleven stations and connecting Downtown Norfolk with the western edge of Virginia Beach. The Tide operates nine light rail vehicles, powered by an overhead electrical system. Each vehicle can carry up to 160 passengers. Nineteen HRT bus routes offer direct connections to eight Tide stations, and four Tide stations have a combination of almost 800 free parking spaces.

Passenger Ferry

HRT contracts with Norfolk-by-Boat to provide daily service on the Elizabeth River between Downtown Norfolk and Old Town Portsmouth, using three 150-passenger ferries. Ferry service is also provided to the Harbor Park baseball stadium between April and September when the Norfolk Tides (Minor League Baseball team) play home games.

[13] The 80 paratransit vehicles include 69 vehicles from HRT's fleet, three taxis, and eight TNC vehicles.
[14] The 26 vanpool vehicles are operated by a third party and are not part of HRT's revneue fleet.

Demand Response Paratransit

HRT contracts with Via to provide demand response paratransit service for persons with disabilities. Paratransit service is offered within three-quarters of a mile of any fixed-route bus service during the same hours of service as bus operations. Performance tracking for paratransit operations is accessible at HRT's online Accountability Center at https://gohrt.com/agency/accountability-center/.

A.4.3 Bus Stop and Shelter Placement

Bus Stop Location Guidelines

When establishing new bus stops or replacing existing bus stops, HRT coordinates with local jurisdictions to locate and identify mutually acceptable locations. Local jurisdictions make the final decisions about new bus stop placement or relocation. HRT considers many elements when locating a new bus stop:

- Stops should be placed based on population density and/or major passenger generators (i.e. major employment centers, regional shopping centers, hospitals, etc.)
- Distance between bus stops should be a minimum of 1,056 feet (one-fifth mile) and a maximum of 1,320 feet (one-quarter mile) apart or three to four blocks apart
- Presence of sidewalks, marked crosswalks, and curb ramps
- Protected crossings at signalized intersections
- Connection to nearby pedestrian circulation system
- Access for elderly and people with disabilities
- Convenient passenger transfers to other routes
- Effect on adjacent property owners.

Further guidelines for new bus stops – including bus operations, traffic and rider safety, placement at intersections, passenger boarding areas, bus stop access, and ADA requirements – can be found in HRT's *Bus Stop Location Policy* (updated May 5, 2016).[15]

Shelters

HRT's Passenger Guidelines classify different types of transit stops by level of use, and identify the appropriate amenities for each stop type, including bus stop shelters (**Table A-6**). Bus benches are typically placed at stops with an average of 25 or more daily boardings. Stops with 40 or more average daily boardings typically would warrant installation of a bus shelter unless there are right-of-way constrictions. As part of the 757 Express Program, HRT will also add additional passenger amenities along Regional Backbone Routes as described in Chapter Six. Some of these locations may not have 40 boardings per day, but with the increased service frequencies it is anticipated that ridership on the backbone routes will grow substantially.

[15] HRT Bus Stop Location Policy, PD 106, July 1, 2019.

Table A-6: HRT Shelter Placement Guidelines[16]

Stop Type	Average Daily Boardings	Bench, Trash Can	Shelter
Standard	0-24	N	N
Enhanced	25-39	Y	N
Sheltered	25+ Priority 40+	Y	Y
Transfer Center	5-9 routes	Y	Y
Transit Center	10+ routes	Y	Y
Fixed Guideway	Tide, Ferry	Y (bench only)	N

A.4.4 Bicycle Amenities

All HRT buses and light rail vehicles are equipped with bike racks. Bicycle amenities at HRT transit stops include bicycle parking, bicycle lockers, on-bus racks or other infrastructure. The distribution of these amenities may be based on a number of factors, including bicycle ridership, local infrastructure requirements, and connectivity. However, bicycle amenities are not currently required at transit stops – for each type of transit stop, HRT's amenity guidelines note that the bicycle amenities will vary.

A.4.5 Pedestrian Amenities

HRT's guidelines for pedestrian amenities, as found in its Passenger Amenity Policy, are classified by the level of transit stop. All HRT bus transit stops are required to have an ADA-accessible alighting pad, cover ADA accessibility, a minimum sidewalk width of five feet, and basic signage.[17] At a standard stop, HRT only requires a sidewalk, signage and an ADA alighting pad; however, enhanced stops, which expect 25-39 average daily boardings, are required to have a bench and trash receptable. Additional amenities, for stops with higher average daily boardings, include shelters, food and beverage vending machines and vendors, restrooms, and water fountains.

A.4.6 ADA Requirements

HRT provides demand response paratransit service for persons with disabilities. Paratransit service is offered to origins and destinations within three-quarters of a mile of any fixed route during the same hours of hours of service as bus, light rail and/or ferry operations. All paratransit riders must be certified through an eligibility application process.[18]

All HRT transit services are wheelchair accessible. HRT's Bus Stop Location Policy also includes ADA design requirements for bus stops, in particular at passenger boarding and alighting areas.[19]

The HRT Paratransit Advisory Committee (PAC) is a subcommittee under the TDCHR Executive Committee. The PAC provides a vital communication link between the TDCHR, persons with disabilities who use or may use HRT services, and service providers to the disabled community on matters related to paratransit service within HRT's service area.

A.4.7 TDM Program (TRAFFIX)

TRAFFIX was established in 1995 as Hampton Roads' regional Transportation Demand Management (TDM) program. TDM, also called transportation demand management, has traditionally focused on commuter ridesharing, air quality mitigation, reduced trip generation or parking needs, and increased multi-modal options in

[16] HRT Passenger Amenity Policy, PD 113, July 12, 2019.
[17] HRT Passenger Amenity Policy (7-1-2019)
[18] HRT Paratransit, Accessed at http://www.gohrt.com/services/paratransit/
[19] HRT Bus Stop Policy (5-10-16)

transportation plans. However, the U.S. Department of Transportation has updated the definition of TDM to focus on traveler choice:

"Managing demand is about providing travelers, regardless of whether they drive alone, with travel choices, such as work location, route, time of travel, and mode. In the broadest sense, demand management is defined as providing travelers with effective choices to improve travel reliability."[20]

TRAFFIX receives funding through the Virginia Department of Rail and Public Transportation (DRPT) as well as federal funding administered through the Hampton Roads Transportation Planning Organization (HRTPO). HRT administers TRAFFIX, and program grants are directed through HRT.[21] Through TRAFFIX, commuters have better access to vanpools, carpools, telework options, as well as parking options.

TRAFFIX Programs[22]

- **Vanpools/Carpools/Telework:** TRAFFIX provides and facilitates access to vanpools, carpools, and telework options for commuters; in FY 2021, 26 vanpools were registered with TRAFFIX and 188 commuters participated in vanpools via the TRAFFIX program. TRAFFIX is a partner in the Telework!Va Program and promotes, in conjunction with the DRPT, the annual Telework Week, as well as other telework messaging.
- **Employer Services:** TRAFFIX TDM Programs include Agile Mile, a ride-matching and commuter reward program that offers rewards to commuters logging non-SOV trips. In FY 2021, 14,702 commuters were members of the TRAFFIX Program with 2.8 million reduced vehicle miles traveled recorded in Agile Mile, including carpooling, vanpooling, biking, walking, telecommuting, and taking public transportation.
- **Guaranteed Ride Home:** Provides carpool, vanpool, transit, or active transportation commuters with a reliable ride home if an unexpected emergency occurs after they arrive at work. Commuters can use this program up to two times a month, not to exceed six times a year. In FY 2021, 25 rides were given under this program. Registration for the program also increased from 24 new registrations with a total of 1,671 commuters in the program.
- **GoPass365 Program:** GoPass365 is a discounted bus pass that allows users unlimited usage of HRT's services (light rail, bus, ferry, VB Wave and MAX) by showing a GoPass365 and photo ID. The passes are purchased by colleges, employers, and other businesses to provide a transit incentive or benefit to students or employees. In FY 2021, GoPass365 ridership reached 4,908. The top three GoPass365 clients were Newport News Shipbuilding, Tidewater Community College, and Downtown Norfolk Council Consortium.
- **Military Benefits:** To reduce the number of commuters driving alone to military installations, the U.S. Navy, Marines, and Air Force offer a Transportation Incentive Program (TIP) to their members, and the U.S. Army offers a Mass Transportation Benefit Program (MTBP). These transportation benefits are issued as debit cards, which can be used at HRT ticket vending machines or customer service centers.

A.4.8 Transportation Network Companies (TNCs)

Ride hailing services like Uber and Lyft are available across the entire HRT service area, shown in **Figure A-2** and **Figure A-3**, respectively. Both Uber and Lyft offer on-demand services in mid-size or larger vehicles; ride-pooling services (such as UberPOOL or Lyft Line) are not available in the region.

[20] U.S. Department of Transportation Federal Highway Administration, "Transportation Demand Management." Accessed at http://www.ops.fhwa.dot.gov/plan4ops/trans_demand.htm
[21] TRAFFIX Long-Range Transportation Demand Management (TDM) Plan, 2010. Accessed at http://www.drpt.virginia.gov/media/1256/traffix-tdm-plan_feb-2010.pdf
[22] 2019 TRAFFIX Annual Report

Figure A-2: Uber Service in HRT Service Area

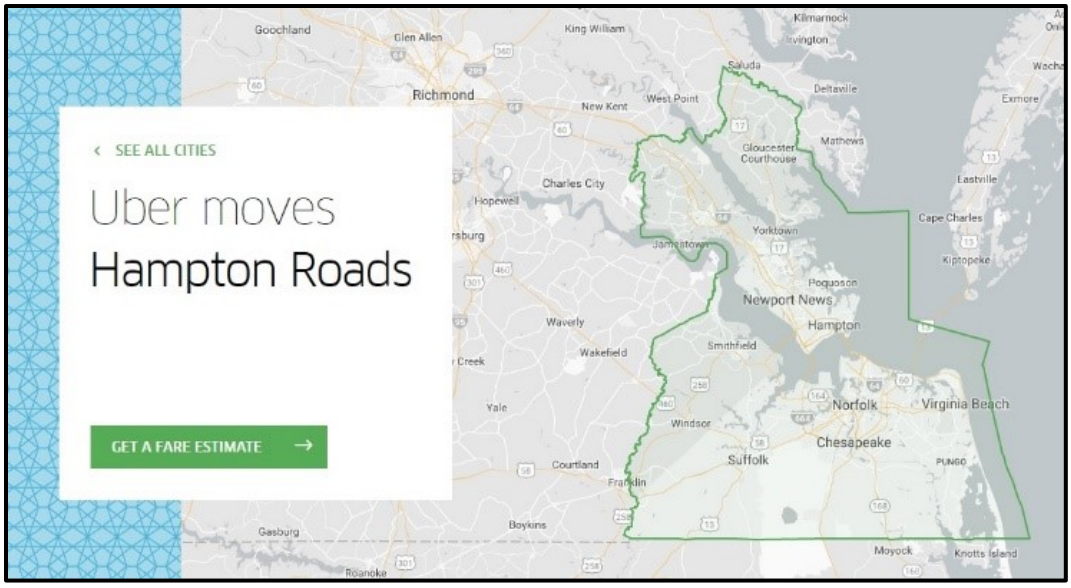
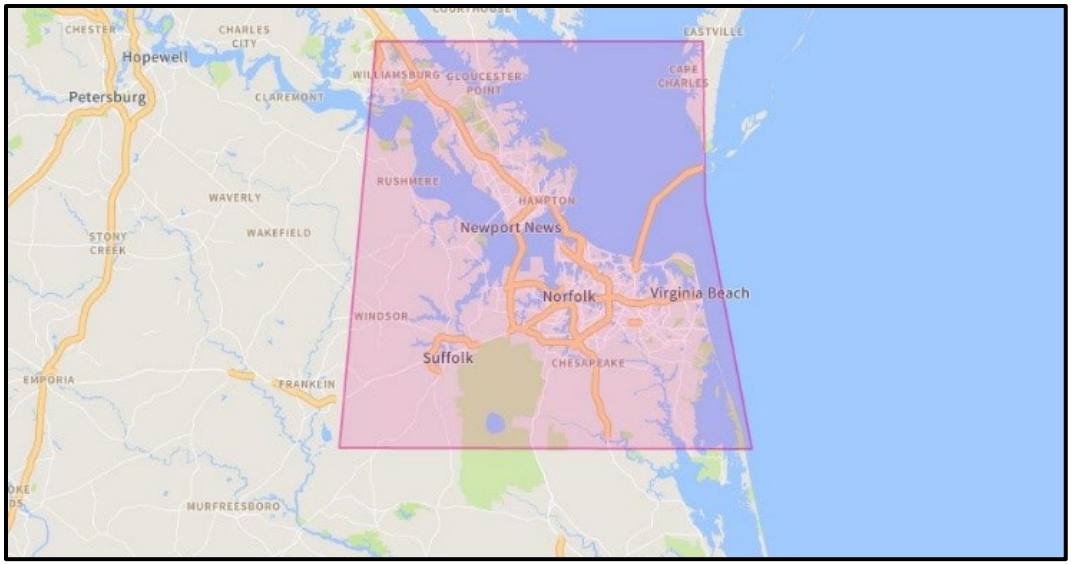


Figure A-3: Lyft Service in HRT Service Area



A.4.9 Taxi

For-hire vehicles, including taxis, are governed by each city's local ordinances rather than a taxicab commission. Some cities (e.g., Norfolk) allow the City Manager or a Board to create additional regulations for taxis.

Hampton Roads Transportation, Inc., provides a regional taxi dispatch service in the HRT service area. Taxis in the service (**Table A-7**) can be booked through phone, desktop website, or the smartphone app, App-a-Cab.[23] A full list of taxicabs authorized to operate in the Hampton Roads service area can be found on the Virginia Department of Motor Vehicles website.[24]

Table A-7: HRT Regional Taxi Services

Service	Location
Black and White Cabs	Norfolk
Black and White Cabs	Virginia Beach
Coastal Ride	Virginia Beach
Norfolk Checker Taxi	Norfolk
Yellow Cab of Norfolk	Norfolk
Yellow Cab of Hampton	Hampton
Yellow Cab of Newport News	Newport News
Hampton Roads Transportation, Inc.	Regional Taxi Dispatch/Aggregation

A.4.10 Transportation for Seniors

Seniors over the age of 65 qualify to ride HRT fixed-route services for a discounted fare. Seniors who are also paratransit customers using fixed-route services can present valid forms of identification to receive free service on HRT's bus, light rail, and ferry service. Several other organizations in the HRT service area offer senior transportation, including those listed in **Table A-8**.

Table A-8: Senior Transportation HRT Service Area

Organization	HRT Service Area	Service Name
Senior Services of Southeastern Virginia	Chesapeake, Norfolk, Portsmouth, Virginia Beach	I-Ride Transit[25]
Peninsula Agency on Aging, Inc.	Hampton, Newport News	PAA Transportation Services[26]

A.4.11 Other Transportation Services

Amtrak

Amtrak service is available at the Newport News station on the Peninsula and Harbor Park station in Norfolk. Amtrak service is also available in Williamsburg. Both the Norfolk and Newport News stations provide connections to Amtrak's Northeast Regional service, which operates on the Northeast Corridor between Boston and Washington, D.C., with several additional Virginia destinations (**Table A-9** and **Figure A-4**).[27]

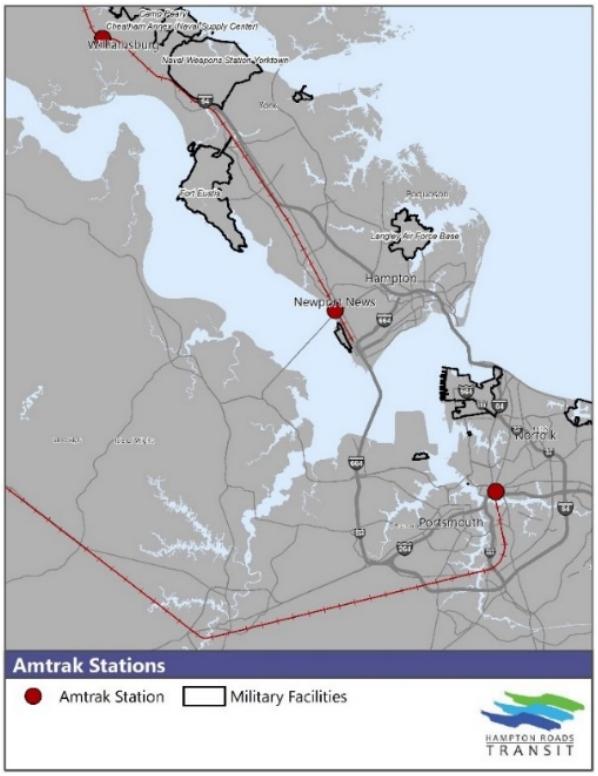
[23] Hampton Roads Transportation, Inc. Accessed at http://www.hrtitaxi.com/about-us
[24] Virginia DMV, Search/Filter Licensed Transportation Services. Accessed at http://www.dmv.virginia.gov/as/mcs/default/aspx
[25] I-Ride Transit. Accessed at https://www.ssseva.org/page/i_ride-transit/
[26] PAA Transportation Services, Accessed at https://www.paainc.org/transportation-services.html
[27] Amtrak Virginia Service Timetable, Updated November 2016. Accessed at https://www.amtrak.com/ccurl/1018/288/Northeast-Corridor-Scheudle-W06-11416.pdf

On the Peninsula, the City of Newport News is nearing completion of a new multi-modal station near Bland Boulevard in Newport News, which will replace the current Amtrak station near Mercury Boulevard. The new facility is planned to accommodate HRT buses, as well as taxis and airport shuttles. The new station is expected to open in 2022 and will be served by Route 108.[28]

Table A-9: Amtrak Service in Hampton Roads

Station	Trains per day	Amtrak Bus Service	HRT Routes
Newport News	**Monday-Thursday:** two arrivals, two departures **Friday:** three arrivals, two departures **Saturday-Sunday:** two arrivals, one departure	Norfolk, Virginia Beach	106, 107
Norfolk	**Monday-Friday:** Two arrivals, two departures daily **Saturday-Sunday**: one arrival, one departure daily	Virginia Beach	The Tide
Williamsburg	**Monday-Thursday:** two arrivals, two departures **Friday:** three arrivals, three departures **Saturday-Sunday:** two arrivals, two departures		121

Figure A-4: Hampton Roads Amtrak Train Station Locations



[28] The Daily Press, "Long-awaited transportation hub, Amtrak station in Newport News slated to open in two years." Jul. 22., 2020. Accessed at https://www.dailypress.com/news/transportation/dp-nw-transportation-hub-newport-news-20200722-kyyv5hpwlbgvfnw4wpa33mvhoq-story.html

Regional Bus

Greyhound, an intercity bus service with over 2,700 destinations in the United States, stops at four locations in the HRT service area: Hampton, Norfolk, Virginia Beach, and Williamsburg.[29] Megabus, which provides intercity regional bus service in many parts of the United States, stops at the Hampton Transit Center and at the bus pullout on Pacific Avenue in Virginia Beach **(Table A-10)**.[30]

Table A-10: Intercity Bus Service in HRT Service Area

Station	Address	Bus Services
Hampton Bus Station	2 W Pembroke Avenue, Hampton, VA	Greyhound, Megabus, HRT Routes 101, 102, 103, 109, 110, 114, 115, 117, 118, 120, 403, 961
Norfolk	Brambleton Avenue near Church Street Norfolk, VA	Greyhound, HRT Routes 9, 13, 18
Circle D Food Market	971 Virginia Beach Boulevard, Virginia Beach, VA	Greyhound, HRT Route 20
Virginia Beach Bus Stop	1900 Pacific Avenue, Virginia Beach, VA	Megabus, HRT Routes 20, 33, 35, 960
Williamsburg Bus Stop	468 N Boundary Street, Williamsburg, VA	Greyhound, HRT Route 121, WATA Routes Blue, Gray, Jamestown, Orange, Red, Tan

Other Public Transit

The City of Suffolk, located just west of HRT's Southside communities, operates Suffolk Transit, which provides fixed-route and paratransit service to Downtown Suffolk and surrounding areas. Suffolk Transit was formed in January 2012, utilizing Virginia Regional Transit as the City's contracted service provider. Suffolk Transit operates six fixed routes. The Purple route currently connects with HRT Route 47 at the Walmart in Suffolk, and the Pink route connects with HRT Route 45 at Chesapeake Square shopping area. Suffolk Transit is developing and will soon be operating a new commuter bus service between Suffolk and Portsmouth.

The Williamsburg Area Transit Authority (WATA) operates twelve routes serving the City of Williamsburg and parts of James City County, Surry County, and York County. Six WATA routes (Route 1: Gray Line, Route 2: Blue Line, Route 3: Orange Line, Route 5: Red Line, Route 7: Tan Line, Route 9: Purple2 Line) serve the Williamsburg Transportation Center, which connects to HRT Route 121. HRT Routes 108 and 116 also connect with the WATA Route 1: Gray Route at Lee Hall in Newport News.

Carshare

Zipcar, a short-term car-rental service, has cars at Old Dominion University in Norfolk and the College of William and Mary in Williamsburg.[31]

A.5 Fare Structures, Payments, and Purchasing

A.5.1 HRT Fare Structure and Types

Fare Structure

Passenger boardings on HRT buses are subject to the fares shown in **Table A-11**. In 2014, after nine public hearings, HRT raised fares for the first time in 15 years, from $1.50 to $1.75; the fares increased again in October 2017 from $1.75 to $2.00.

[29] Greyhound Bus Station Locator, Accessed at http://locations.greyhound.com/
[30] Megabus Route Map, Accessed at https://us.megabus.com/journey-planner/map
[31] Zipcar, Where the Cars Are. Accessed at http://www.zipcar.com/cities

Table A-11: HRT Fares

Ticket/Pass Type	Adult	Discounted Fare
Local Bus, Limited Stop MAX, Light Rail, & Ferry		
Cash	$2.00	$1.00
1-Day Pass	$4.50	$2.25
1-Day Pass *(Bundle of 5)*	$21.00	$10.50
7-Day Pass	$22.00	n/a
30-Day Pass	$70.00	$40.00
VB Wave		
Cash	$2.00	$1.00
1-Day Pass	$4.50	$2.25
3-Day Pass	$8.00	$4.00
MAX		
Cash	$4.00	$2.00
1-Day Pass	$7.50	n/a
1-Day Pass *(Bundle of 5)*	$35.00	n/a
30-Day Pass	$125.00	n/a
Paratransit		
Clients - Cash	$3.50	-
Personal Care Attendant[32] - Cash	$0.00	-
Guests - Cash	$3.50	-

In July 2021, HRT updated its fare policy to include a new fare classification: Limited Stop MAX. MAX Route 960 and MAX Route 961 have operating characteristics that are unlike any of the other MAX routes—both serve large employment sites (MAX 960 serves the Virginia Beach Oceanfront hotels and restaurants and MAX 961 serves the downtown Newport News government center and the Huntington Ingalls Shipyard) and make several key stops to collect and drop-off passengers en route to their terminal points. These routes have been traditionally grouped into the MAX route fare classification; however, traditional MAX routes typically start at a park-and-ride while these two routes have more in common with limited stop service. HRT determined that the new fare class for limited stop MAX service would be created to remain consistent with previous HRT policy wherein limited stop services would have local bus fare.

Under HRT's fare policy HRT staff report annually to the TDCHR with a "review of farebox revenues, farebox recovery ratio and ridership for the entire system and by mode." Tracking and reporting of these metrics and other key performance information is also done on a monthly basis during TDCHR committee and board meetings. HRT staff make recommendations for solutions, which may include fare adjustments, to maximize transit service usage and achieve farebox revenue goals.[33] In that regard, it is the intention of HRT to change the fare structure for the MAX Route 960 in FY22 to be level with the local bus fare structure. HRT will be amending its Fare Policy to reflect this new type of MAX fare for MAX routes that share similar characteristics as the MAX 960.

Bus/Light Rail Fare Types

The following fare types are available for all HRT bus and light rail services.

- **One Day GoPass:** Unlimited access to all HRT services, except MAX, which requires an additional fee. The One Day GoPass is good for bus, light rail and ferry services.

[32] A personal care attendant (PCA) provides personal assistance to disabled passengers.
[33] Hampton Roads Transit Fare Policy (5-2018)

- **Children/Youth:** Those 17 years old and younger can ride on any HRT vehicle for free if they:
  - Are accompanied by an adult fare-paying passenger
  - Use a Student Freedom Pass
  - Provide a valid proof of age, including a school ID with photo, DMV identification card, or HRT Youth ID.
- **Senior citizens:** Those 65 years old and over can pay a reduced fare for local bus, light rail, ferry, VB Wave, and MAX cash fare (half the full fare for all products except the 30-day pass) with a DMV ID, Medicare ID (with photo ID), HRT's Discounted Fare ID, or any other proof of age that includes a photograph.
- **Persons with Disabilities:** Persons with disabilities can pay a reduced fare for local bus, light rail, ferry, VB Wave, and MAX cash fare (half the full fare for all products except the 30-day pass) with an HRT Discounted Fare ID, or an ADA Paratransit ID (with photo). Identification is also required at time of farecard purchase.
- **Medicare Cardholders:** Medicare cardholders can pay a reduced fare for local bus, light rail, ferry, VB Wave, and MAX cash fare (half the full fare for all products except the 30-day pass) with a Medicare card ID or HRT Discounted Fare ID.
- **Cash fare:** HRT accepts exact fare only; bus/light rail/ferry operators cannot make change.
- **MAX:** Passengers can board the MAX using any valid fare pass, but an additional fee may be required for some passes, including the One Day GoPass.
- **Paratransit:** Persons with disabilities who have applied for and received an ADA Paratransit ID can use this service and bring a personal care attendant (PCA) at no additional cost and a guest at the same fare as the paratransit-eligible rider.

HRT's complete Discounted Fare ID guidelines and a list of accepted forms of ID are available at https://gohrt.com/fares/discounted-fare-id/ or on an HRT route schedule. HRT does not refund any purchase.

A.5.2 HRT Fare Payment

On-Board Payment Methods

All HRT buses, trolleys, and ferries are equipped with electronic fareboxes which accept cash, coins, and HRT magnetic-stripe farecards.

Ticket Vending Machines

Ticket vending machines (TVMs) are located at transfer centers, Tide Light Rail stations, Naval Station Norfolk, the High Street ferry dock, and several VB Wave stops (**Table A-12**). TVMs sell fare cards for local bus routes, MAX services, VB Wave, and ferries, as well as reduced fare passes for seniors and persons with disabilities. TVM screens prompt customers to select and purchase a fare card, which is then dispensed from the machine. TVMs accept cash, credit, and debit transactions. Passes are not active until inserted into a farebox.

Table A-12: Ticket Vending Machine Locations

Locations	Address
Downtown Norfolk Transfer Center	434 St Pauls Boulevard, Norfolk
Newport News Transfer Center	150 35th Street, Newport News
Hampton Transfer Center	2 W Pembroke Avenue, Hampton
Naval Station Norfolk	Building C-9, Bacon & Gilbert, food court/mini-mart area
Elizabeth River Ferry	1 High Street, Portsmouth
The TIDE Light Rail Stations	EVMC/Fort Norfolk York Street/Freemason Monticello MacArthur Square Civic Plaza Harbor Park Norfolk State University Ballentine/Broad Creek Ingleside Road Military Highway Newtown Road

Retail Outlets

HRT fare cards are also sold in numerous retail outlets in Chesapeake, Hampton, Newport News, Norfolk, Portsmouth, and Virginia Beach. Retail locations include approximately 145 locations that are distrusted as follows:

- 92 grocery stores
- 9 gas stations
- 24 convenience stores
- 17 tourism centers
- 3 military bases.

A full list of retail outlets, organized by jurisdiction, is available on the HRT website here: https://gohrt.com/fares/where-to-buy/.

Bulk Purchases

HRT administers bulk purchases of fare cards. Orders can be placed online at HRT's website. There is a $300 minimum purchase for mail orders.

Transfer Agreements

HRT does not currently have any transfer agreements between HRT transit services and other transit services in the region (for example, free or reduced-price transfers, etc.).

A.6 Transit Asset Management Plan - Existing Facilities and Vehicle Fleet

In October 2018, HRT developed and began implementation of its Transit Asset Management Plan (TAM) to achieve a state of good repair (SGR) for all public transit assets. The TAM Plan supports a data-driven approach to maintenance, rehabilitation, enhancement, and replacement. With over $796 million in value, HRT's assets represent a significant public investment in public transit infrastructure and services. HRT monitors and manages its assets to enhance safety, reduce maintenance costs, increase reliability, and improve performance by implementing the following initiatives:

- Building an inventory of capital assets with up-to-date asset condition.
- Identifying risks and level of impact from asset management activities.
- Setting condition and performance targets for major asset classes.

- Developing prioritization criteria and methods for smart investments.
- Implementing specific asset maintenance, rehabilitation, enhancement, and retirement actions.
- Evaluating and reporting agency performance against targets.
- Identifying and acquiring the necessary resources to meet these targets.

These initiatives are guided by HRT's Asset Management Policy, which includes five Guiding Principles for Transit Asset Management:

1. Quality, reliable, and safe service
2. Financial stewardship
3. Success through a diverse, innovative, and inspired workforce
4. Sustainable and efficient service, growth, practices, and assets
5. Accountability and integrity

HRT's TAM Plan contains fundamental guidance for today and serves as the baseline for HRT's future asset management efforts. It is an essential tool for the agency to undergird an organization-wide culture and directive to achieve State of Good Repair (SGR) through a data-driven approach to maintaining, rehabilitating, enhancing, and replacing assets in an efficient, financially responsible, and sustainable way. The plan also demonstrates compliance with the FTA's associated reporting requirements.

Every department at HRT is responsible for implementing asset management practices for their assets. The President and CEO is responsible for overseeing the development of asset management plans and procedures, enforcing policy, and reporting to HRT's governing board on the status of asset management. The Engineering and Facilities department leads the coordination of these activities and maintains the TAM Plan.

HRT will review and update the plan at least once every four years to ensure continued improvement and a relevant strategy for achieving SGR and levels of service commensurate with the needs of HRT's customers. More frequent updates of this plan may occur based on the process for evaluation described in the plan.

HRT acknowledges the challenge of managing key public transit assets for the region under realistic budget constraints. Therefore, HRT is committed to implementing a data-driven, outcome-based approach to maintaining assets in SGR and prioritizing reinvestments in critical assets. To support ongoing improvement in asset management practices, the TAM Plan includes an Improvement Program to guide HRT's short, medium and long-term actions to achieve the best level of service from existing assets.

A.6.1 Existing Facilities

HRT service delivery relies on four key asset groups:

- Revenue Vehicle Fleet (see **Section A.6.2 Vehicle Fleet.**)
  - Bus Fleet
  - Ferry Fleet
  - Light Rail Fleet
  - Demand Response Fleet.
- Light Rail Guideway and Systems
  - Bridges
  - Track
  - Signaling and Power (catenary).
- Passenger Facilities
  - Bus stops and amenities
  - Transit Centers
  - Light Rail Stations/Platforms

  - Ferry Docks
  - Park & Ride lots.
- Support Facilities
  - Administrative and Employee Restrooms
  - Maintenance Facilities
  - Maintenance Equipment.

Light Rail Bridges

The Tide light rail system includes five bridges, of various lengths, which are inspected periodically and maintained by the Facilities department. These bridges include:

- Smith Creek Bridge
- Lamberts/Brambleton Viaduct
- Sewells Point Branch Bridge
- Moseley Creek Bridge
- Broad Creek Bridge.

Passenger Facilities

Bus Stops & Amenities

HRT operates bus services at approximately 2,700 bus stops – including bus bays at Transit Centers. A majority of these stops, over 2,300, are "signage only" stops where HRT only owns the bus route signs. The remainder of stops include HRT-owned passenger amenities, which can be any combination of the following:

- Signage/Display Cases
- Shelter(s)
- Benches/seating.
- Trash cans
- Lighting
- Bike Rack
- Security Cameras
- Site Improvements (pedestrian sidewalks, paving, landscaping, etc.).

Transit Centers

HRT maintains four transit centers, the most recent opening in 2016:

- Downtown Norfolk Transit Center
- Hampton Transit Center
- Newport News Transit Center
- Silverleaf Transit Center.

Light Rail Stations and Platforms

As already noted, The Tide includes 19 platforms serving 11 passenger stations all opened in 2011.

Ferry Docks

HRT operates its Elizabeth River Ferry from four ferry docks. The oldest ferry dock, Waterside, is believed to have opened in 1983 – though the structure may be older. Harbor Park and High Street opened in 1997, and North Landing in 2001. HRT completed full reconstruction of all ferry docks in 2020.

Park & Ride Lots

Twelve Park & Ride Lots are listed on HRT's website for transit services (**Table A-13**); however, HRT only owns three of these lots. All lots have free parking and are monitored by security officers. The lots service six cities in the region. Lot sizes range from 32 to over 458 parking spaces (averaging 199) and feature passenger waiting pavilions, lighting and surveillance systems, emergency call boxes, signs, and public address systems. The three HRT-owned Park & Ride Lots are all in Norfolk, and are the only lots included in the condition and needs assessment:

- **Newtown Road:** 125 spaces
- **Military Highway:** 541 spaces
- **Ballentine Boulevard:** 278 spaces

Table A-13: HRT Park & Ride Lots

City	Number of Lots	Parking Spaces
Chesapeake	1	50
Hampton	1	138
Newport News	2	297
Norfolk	5	1,237
Portsmouth	1	119
Virginia Beach	2	543
Total	**12**	**2,384**

Support Facilities

Administrative and Employee Restrooms

HRT operates two employee restrooms and one building strictly for administration, as listed in **Table A-14**.

Table A-14: HRT Administrative and Restroom Facilities

Facility	Facility Type	Municipality
Newtown Road Operator's Restroom	Restroom	Norfolk
Ward's Corner Operator Restroom	Restroom	Norfolk
Southside Complex (4 small buildings)	Administration	Norfolk
Southside Operations & Maintenance / Administration Facility, Building 4	Administration	Norfolk

Maintenance Facilities

Facilities that mix administrative, operations and maintenance functions are described in the TAM Plan "Maintenance Facilities" which include:

- Norfolk Tide Facility (NTF)
- Northside Operations & Maintenance / Administration. Facility
- Light Rail Warehouse (expected to move to new Princess Anne Facility in early 2022)
- Southside Operations & Maintenance / Administration Facility, Building 1
- Southside Operations & Maintenance / Administration Facility, Building 2
- Southside Parking Deck Building 3
- Northside Daily Services Building
- Virginia Beach Trolley Base.

HRT owns its maintenance, operations and administration facilities, with the exception of the Rail warehouse which is leased. Maintenance equipment in the facilities include bus and train lifts, bus and train washers, fueling stations, oil tanks and air compressors, etc. The maintenance equipment located at the maintenance and operations facilities is owned by HRT.

Bicycle Facilities

Transit

HRT transit stop bicycle amenities can include bicycle parking, bicycle lockers, on-bus racks, bike share programs, or other infrastructure. The distribution of these amenities may be based on a number of factors, including bicycle ridership, local infrastructure requirements, and connectivity. Bicycle amenities, while listed in the HRT Amenity

guidelines, are not currently required at transit stops – for each type of transit stop, the amenity guidelines note that the bicycle amenities will vary.[34]

Paths and Trails

There are over 1,300 miles of shared use paths, bike lanes, paved shoulders, wide sidewalks, signed shared roadways, shared roadways, and trails in the Hampton Roads metropolitan planning organization area.[35] Major trails (two miles or longer) in the HRT service area include: (descriptions of existing trails adapted from the Rails to Trails Conservancy). [36]

- **South Hampton Roads Trail:** A planned 41-mile trail connecting Suffolk and the Virginia Beach Waterfront. Over three miles of the trail near the Suffolk Seaboard Coastline is currently open[37]
- **Elizabeth River Trail Atlantic City Spur (9.5 miles):** The Elizabeth River Trail–Atlantic City Spur runs between Harbor Park Stadium and the Norfolk International Terminals
- **Wesley Drive/Haygood Road Trail (2.7 miles):** The trail runs parallel to its namesake roads between Independence Boulevard and Baker Road (Virginia Beach)
- **Little Neck Road Trail (3.3 miles):** The trail runs parallel to its namesake road between W. Little Neck Road and Virginia Beach Boulevard (US 58) (Virginia Beach)
- **Cape Henry Trail (7.5 miles):** The Cape Henry Trail crosses the heavily wooded First Landing State Park, located on Cape Henry north of Virginia Beach. The trail provides access to the Narrows Recreation area, located in the park, as well as to neighborhoods and shops just west of the park boundary (Virginia Beach)
- **General Booth Boulevard Trail (6.1 miles):** The trail runs parallel to its namesake road between Princess Anne Road and Norfolk Avenue (Virginia Beach)
- **Virginia Beach Boardwalk (2.6 miles):** The trail runs between 40th Street on the north and Rudee Inlet on the south with access to the Atlantic Ocean the whole way (Virginia Beach)
- **Birdneck Road Trail (2.1 miles):** The trail runs parallel to its namesake road between Norfolk Avenue and General Booth Boulevard (Virginia Beach)
- **Great Neck Road/London Bridge Road Trail (11.5 miles):** This 11.5-mile paved trail begins in the busy commercial area just south of Shore Drive/US 60 in Virginia Beach, and ends at the Virginia Beach Boardwalk (Virginia Beach)
- **Rosemont Road Trail (3.5 miles):** The trail runs parallel to its namesake road between Holland Road and Whiteberry Lane (Virginia Beach)
- **Dam Neck Road Trail (7.9 miles):** The trail runs parallel to its namesake road between Salem Road and Terrier Avenue, along the southern border of the Dam Neck Naval Air Station (Virginia Beach)
- **Lynnhaven Parkway Trail (6.4 miles):** The trail runs parallel to its namesake road between Lishelle Place and Stewart Drive (Virginia Beach)
- **Independence Boulevard Trail (3.8 miles):** The trail runs parallel to S. Independence Boulevard in two disconnected segments (Virginia Beach)
- **Kempsville Road Trail (7.3 miles):** The trail runs parallel to its namesake road between Providence Road (SR 40) and Battlefield Boulevard (Virginia Beach/Chesapeake)

[34] HRT Passenger Amenity Policy (7-1-2019)
[35] Hampton Roads TPO, "The State of Transportation in Hampton Roads – 2018."
[36] Rails-to-Trails Conservancy, Accessed at www.traillink.com
[37] Hampton Roads TPO, "The State of Transportation in Hampton Roads – 2018."

- **Trillium Trail - Sandy Bottom Nature Park (3.3 miles):** Sandy Bottom Nature Park is a 456-acre recreational oasis in Hampton, bordered on the northeast side by Interstate 64 and surrounded by busy residential, shopping and entertainment areas (Hampton).[38]

A.6.2 Vehicle Fleet

The following sections summarize the revenue fleet by mode and the non-revenue fleet by type. The FY 2023 - FY 2032 Capital Improvement Plan provides in-depth fleet asset management plan, with a detailed schedule for replacement, expansion, overhaul and rebuild for each vehicle within the fleet.

Revenue Fleet

The HRT fixed-route bus fleet consisted of 316 vehicles, as of August 2021. Ninety percent of the fleet, or 284 total buses, were manufactured by Gillig. The HRT fleet also includes two, nineteen year old Optima buses, seven Nova buses, six Proterra battery electric buses and 14 Hometown replica Trolley buses. Hometown Trolley buses are only operated on VB Wave routes, which operate during summer months. Aside from the trolley-style buses, the remainder of HRT's fleet is standard buses that range in length from 29-ft to 40-ft. HRT has no articulated buses or over-the-road coaches.

In addition to the buses listed above, HRT owns three ferry vessels, nine light rail transit vehicles, and 74 paratransit vehicles. HRT is also responsible for the federal reporting of an additional 10 Mercedes Mertis vans leased and operated by Via, HRT's current paratransit service contractor. Regardless of ownership, all paratransit vehicles are operated by Via.

HRT does not own the vehicles used in its vanpool program. Instead, vanpool drivers use a van leased from a third-party or one that they themselves own. The vanpool drivers are also responsible for vehicle maintenance.

Table A-15 summarizes the number of revenue vehicles in HRT's fleet by mode, across both fixed route and demand responsive vehicles. Because HRT rotates vehicles between routes to ensure mileage is distributed appropriately among its vehicles, individual vehicles are not separated into an active or reserve fleet. HRT's spare ratio for its bus fleet in June 2021 was 34 percent. This high ratio is due to pandemic-related service reductions and 40 buses at the start of the fiscal year that were in HRT's fleet but in the process of disposal/retirement.

Table A-15: Revenue Fleet by Mode (June 2021)

Mode	Fleet Size	Vehicles Operated in Maximum Service	Spare Ratio
Bus	316	210	34%[39]
Light Rail	9	6	33%
Ferry	3	2	33%
Paratransit	84	80[40]	5%

Non-Revenue Fleet

HRT's non-revenue fleet consists of sedans, vans, SUVs, pick-up trucks and special purpose vehicles that are used as system support vehicles by HRT's administrative and maintenance staffs. In total, there are 102 non-revenue vehicles employed by HRT for purposes that range from revenue vehicle maintenance to facility upkeep to sedans driven by HRT staff for field work purposes (**Table A-16**).

[38] Rails-to-Trails Conservancy, Accessed at www.traillink.com
[39] This spare ratio is high temporarily due to pandemic-related service reductions and 40 buses at the start of the fiscal year that were in HRT's fleet but in the process of disposal/retirement.
[40] The 80 paratransit vehicles include 69 vehicles from HRT's fleet, three taxis, and eight TNC vehicles.

Table A-16: Non-Revenue Fleet by Type

Type	Count of Vehicles
Vans and SUVs	61
Travel Training Bus	1
Sedans	8
Pick-Up Trucks	31
Special Purpose Vehicles	11
Total	**112**

ADA Accommodations

Transit

HRT fixed route buses offer low floor "kneeling" buses, which allow the operator to bring the entire bus down to curb level, eliminating steps for boarding passengers, as well as wide doors and front aisles, interior visual and audio destination and stop announcements, and priority seating for those in need. In addition, the buses are equipped to accommodate two wheelchairs at one time.

HRT Tide Light Rail Stations offer tactile strips on every platform, audio and Braille Ticket Vending Machines, directional Braille tablets at platform entrances, height accessible 911 emergency call buttons on platforms, platform level train vehicles for easy boarding, and priority seating for those in need. Visual and audio departure, arrival, and destination signage and announcements are used on all trains/stations, as well as visual and audio indicators for door opening and closing operations. Each train vehicle is equipped to accommodate four wheelchairs.[41]

All HRT ferries are accessible; ramps and boarding docks allow for level boarding.

Paratransit

HRT provides demand response paratransit service for persons with disabilities. Paratransit service is offered within three-quarters of a mile of any fixed route service during HRT's hours of operation. All paratransit riders must be certified through an eligibility application process.[42]

A.7 Transit Security Program

HRT has a commitment to creating a quality safety and security program.

- In 2000, HRT developed the Security Manager position.
- In 2004, the TDCHR approved the support to pursue a Special Police appointment.
- In 2011, HRT hired a Chief of Safety and Security Officer and a Safety Manager.
- In 2019, HRT reorganized the Safety and Security Department, separating the two and placing the Security Department under Operations.
- In 2019, HRT hired the Emergency Management Security Specialist.
- In 2019, HRT hired the Security Specialist.
- In 2019 HRT hired the Security System Specialist.
- In May 2020, the HRT Security Department developed an additional mobile security mechanism through an expanded partnership with the agency's contracted private security firm. These mobile patrol staff

[41] HRT Service Accessibility, Accessed at http://www.gohrt.com/services/hrt-accessibility/
[42] HRT Paratransit Service, Accessed at http://www.gohrt.com/services/paratransit

collaborated with transportation control centers across the bus, light rail, and ferry modes to both proactively patrol the Hampton Roads Transit service area as well as respond to calls for service.

- Currently, HRT has an additional Extra Duty Officer (EDO) Supervisor, 25 law enforcement officers, and additional contracted security.

A.7.1 Security and Emergency Preparedness Plans

HRT has completed a Security and Emergency Preparedness Plan (SEPP). The SEPP establishes methodologies for threat and vulnerability assessments for the Tide light rail system and establishes roles and responsibilities for personnel involved in the organization's security and emergency readiness postures. It delineates security practices for HRT's security contractors, off-duty police officers working for HRT, and all pertinent employees engaged in security and emergency preparedness. HRT also has security policies for the bus, ferry, and trolley, and has established a program to routinely inspect HRT facilities and other assets for security vulnerabilities.

In accordance with the Public Transportation Agency Safety Plan (PTASP) 49 CFR Part 673, the Safety Department is required to document its Integration with Public Safety and Emergency Management. This ensures integration of programs that have input into, or output from, the Safety Management Systems. Safety and Security work in parallel to establish procedures for both external organizations and internal departments for dealing with emergencies and abnormal operations, as well as the return to normal operations. Emergency Preparedness procedures are developed to ensure the safety of employees, passengers, assets, and the community, which in turn helps to protect the business investment itself.

Emergency Preparedness Preparations include:

- Developing plans founded on the principles of emergency management.
- Obtaining buy-in from the leadership team ensuring personnel (e.g.; employees, affiliates, patrons) will be safe in emergencies.
- Planning for business and operations continuity under emergency conditions.
- Preparing contingency plans and redundancies.
- Conducting drills, exercises and training with multiple stakeholders.

HRT has always worked to be prepared, to the greatest extent possible, to respond to all-hazard disasters and emergencies. However, HRT has become increasingly aware of how disasters and emergencies could interrupt its primary mission of moving people safely. Considering this, HRT has determined to develop and maintain a Continuity of Operations (COOP) Plan, an Emergency Operations Plan (EOP), and in response to the health crisis, a Contagious Virus Response Plan (CVRP). COOP, EOP, and CVRP planning are designed to develop and maintain programs that preserve, maintain, and reconstitute the ability to function effectively in the event of a threat or occurrence of any disruptive disaster or emergency.

A.7.2 Fare Inspection

HRT conducts fare inspection on its light rail system Monday – Saturday, 5:30 AM – 10:30 AM and 3:30 PM to 7:30PM, and Sunday from 11:00 AM to 7:00 PM. In 2020, HRT inspected approximately eleven percent of fares on the light rail system (the National average is approximately ten percent).

A.7.3 Security Features on Vehicles

HRT maintains video cameras on buses, light rail vehicles, trollies and ferry vessels that can be used to investigate incidents aboard, as well as to validate customer complaints about operators, justify employee discipline and/or termination, and verify workers' compensation claims and auto claims from drivers involved in crashes with HRT buses and vessels.

HRT also has in place an audio monitoring system that records calls between bus operators and dispatchers, which can aid in investigations of safety or security incidents onboard HRT vehicles. Each vehicle has security features to enable the driver or operator to contact dispatch for emergency situations, and GPS systems.

A.7.4 Security Features at Transit Stations and Facilities

At Tide Light Rail stations, emergency call boxes can be used to contact the City of Norfolk's 911 system as well as the rail's Operations Control Center. The FY 2023 HRT Capital Improvement Plan also proposed passenger information display systems for both Tide stations and HRT is in the process of implementing displays at key bus transfer locations, which could provide both audio and visual security alerts to passengers. Transit stations are monitored and patrolled by contract security and augmented by a municipal police presence, as available.

HRT facilities are secured through, identification-based card access controls, key and lock systems, and surveillance cameras. Cameras benefit riders, employees, and the general public alike by both deterring crime and helping to investigate incidents on HRT property. Gates and guards also secure entrances to HRT's 18th Street (Southside) and 3400 Victoria Boulevard (Peninsula) facilities. All HRT properties are fenced and are designed using Crime Prevention Through Environmental Design (CPTED) concepts.

HRT's 3400 Victoria Boulevard facility currently has a functionally obsolete system that is used to collect the farebox revenue from the buses in which the revenue is transferred into an antiquated collection box. HRT plans to install an in-wall vault system consistent with what is used at 18th Street as part of Phase II of the renovations, slated to be funded starting in FY 2025.

Significant resources have been allocated to the Norfolk Tide Facility, where new access control hardware and software as well as a public announcement system were installed. The security technologies added to the site greatly strengthened the building's security and emergency preparedness posture and represented a first step towards enterprise-wide investments that will close capability gaps and work towards increasing agency resilience.

A team of agency stakeholders has made significant progress in bringing valuable change by addressing security technology system needs and performing research and various project management efforts. The team has been able to bring the organization closer to enhancing crisis communications capabilities through the acquisition of a mass alert notification system, which will be used to communicate emergency conditions to staff and affiliates alike.

A.7.5 Security Training Programs

Currently, there is security training for new employees. All Operations employees receive a security awareness training, based on the National Transit Institute (NTI). In addition, segments of the monthly Operations Safety and Security Committee meetings are devoted to security and emergency preparedness training topics for HRT management personnel. . New employees are instructed on best practices to the "active shooter" threat, as well as introduced to members of the Security department and available programs.

Anticipating changes to security awareness training requirements governed by 49 CFR 1582, the Security department has designed an enterprise-wide security training program that will be implemented when HRT adopts the anticipated Learning Management System.

In accordance with a Department of Homeland Security directive, HRT has trained its mid-level through senior management in the National Incident Management System (NIMS), which will include an annual refresher course.

Two safety/security drills (locational and a tabletop) are required annually by FTA and VDRPT on the light rail system; five were conducted prior to the start of light rail revenue operations. Also, TSA VIPR readiness drills are performed annually. The Security department has a goal of executing an emergency or security-minded drill every quarter, and partners with local, state and federal players to augment security and emergency preparedness activities.

By collaborating with partners at the Surface Division of the Transportation Security Administration, as well as by participating as pilot-members in FEMA's Public Transportation Risk Assessment Methodology, the HRT Security department has its eyes on the needs of the future, which will include additional uniformed personnel, enhanced video surveillance systems, updated card access control management, and new tools to aid in emergency and crisis management.

A.8 Intelligent Transportation Systems Programs

HRT is currently in the process of documenting its Intelligent Transportation Systems (ITS) plan in conjunction with its Technology Project Management Plan. The following sections summarize the agency's current ITS programs and projects. HRT maintains a policy of updating its software assets at the end of their useful life, typically every four years, in accordance with State of Good Repair principles.

A.8.1 Computer Aided Dispatch / Automatic Vehicle Locator Systems

HRT's bus fleet is equipped with Trapeze TransitMaster Computer Aided Dispatch/Automatic Vehicle Location (CAD/AVL) system. The system includes onboard software and hardware for vehicles, radio communications infrastructure, as well as fixed side software, computing, and networking infrastructure. AVL hardware is installed and in use on all buses in HRT's fleet. AVL hardware is also installed on ferry vessels.

A.8.2 Automatic Passenger Counters

Automated Passenger Counter (APC) units are installed on HRT's bus and light rail fleet. Approximately 67 percent of HRT's bus fleet and 100 percent of light rail fleet is equipped with APC. Approximately 36 percent of the APC units on the bus fleet are beyond their useful life. Moving forward, it is HRT's policy to equip with APC units any buses purchased as replacements for the current fleet. HRT has plans to purchase APC units for remaining buses in the future. More information about certification, maintenance, and planning for APC improvements is available in **Section A.12.7**.

A.8.3 Traffic Signal Priority

Traffic Signal Priority and traffic signal pre-emption is used to improve travel times and reliability on The Tide Light Rail System. HRT is studying the introduction of signal priority at select intersections for its bus services. HRT has applied for federal earmark funding to install transit signal priority on Jefferson Avenue and Mercury Boulevard in Newport News.

A.8.4 Trip Planners

HRT provides a Google Maps-based trip planning tool to its customers via the gohrt.com website. Customers can also access trip planning assistance from HRT by calling the Customer Service Center.

HRT also makes schedules available to the public via the General Transit Feed Specification (GTFS), which is used by websites and apps such as Google Maps to help plan trips using HRT services.

A.8.5 Scheduling Software

HRT uses GIRO HASTUS software for bus, light rail, and ferry route planning and scheduling. HRT's Service Planning and Operations departments use the software to create bus schedules, construct bus runs, and schedule operators. HASTUS is also used to geographically locate and analyze routes and bus stops and monitor the performance of the system.

For paratransit scheduling, Via (HRT's contracted paratransit service provider) uses its proprietary software. The software compiles customer profiles, fixed route service geography, and operating hours, along with fleet and driver information, to schedule paratransit trips.

A.8.6 Maintenance, Operations and Yard Management Systems

The Operations Department uses Infor Spear fleet maintenance management software to store information and schedule activities relevant to fleet maintenance. HRT also uses FTA's Transit Economic Requirements Model (TERM) Lite tool to track the condition of assets and the level of investment necessary to reach a State of Good Repair. TERM Lite measures:

- **State of Good Repair (SGR) backlog**: Total dollar value and by asset type
- **Level of Annual Investment:** To attain SGR or other investment objective
- **Impact of Variations in Funding:** Regarding future asset conditions and reinvestment needs

- **Investment Priorities:** By mode and asset type.
- HRT is in the process of Implementing Trapeze EAM software to provide a modern asset management system that will be used to manage facility and rolling stock assets. The Trapeze EAM system will replace the existing Infor Spear fleet management software.

A.8.7 Information Displays

HRT currently plans to provide passenger information displays at its transit passenger facilities (DNTC, HTC, and NNTC).

A.8.8 Real Time Arrival

Upgrades to HRT's CAD/AVL system for the bus fleet in 2019-2020 have made it possible for HRT to provide real-time information for HRT bus services, for the first time in the agency's history, starting in 2022. Real-time information for HRT buses is available on Google Maps app for mobile devices as well as on Google Maps for desktop browsers. HRT plans to make its schedules (as well as newly available real-time information) available to app developers in the General Transit Feed Specification (GTFS) format, which enables trip planning for HRT services on mobile apps like Google Maps. HRT customers can also access the real-time bus arrival information by using the HRT Customer Service Interactive Voice Response (IVR) phone system.

A.8.9 Information to Mobile Devices or Applications

HRT distributes information about its services and collects feedback from customers through a variety of Fare Collection System mobile devices and applications. Customers can engage with HRT through Facebook, Twitter, and YouTube mobile apps, where HRT also distributes important service alerts and information.

HRT makes its schedules available to app developers in the General Transit Feed Specification (GTFS) format, which enables trip planning for HRT services on mobile apps like Google Maps. Additionally, AVL data has been made available on to third-party app developers, who have created a real-time arrival application for HRT services.

In addition, the CIP-funded bus video surveillance equipment project will equip the bus fleet with cellular connectivity. Fleet wide connectivity to the high-speed broadband will open new possibilities for real-time data acquisition and delivery across all vehicle systems (e.g., passenger amenities in the form of Transit WiFi, information display systems, connectivity to the smart fareboxes, greater bandwidth for ITS systems, remote access to security systems, and possibility of monitoring the vehicle vital systems). While every system mentioned will not be able to leverage all the broadband capabilities, they will be developed over time; broadband connectivity is now part of the standard revenue vehicle build order.

A.9 Data Collection and Ridership/Revenue Reporting Method

HRT's methods for collecting, processing, verifying, storing, and reporting ridership and revenue service data vary based on the data source and report format required.

A.9.1 Electronic Registering Fareboxes

HRT uses Electronic Registering Fareboxes manufactured by Odyssey and Fast Fare to collect ridership and fare revenue data. Fareboxes are the source of ridership counts for HRT's bus services. Data from fareboxes is stored in a Genfare database before being imported into HRT's CRIS database, the internal system of record for National Transit Database (NTD) reporting (see **Section A.9.13** National Transit Database Data Submission Practices**.**). For ferry services, ridership is pulled from manual logs kept by ferry crew and entered into the CRIS database.

A.9.2 Automatic Passenger Counters (APCs)

Iris IRMA and Trapeze TransitMaster APCs are installed on approximately 70 percent of HRT's fixed route buses and 100 percent of HRT's light rail vehicles. APCs track the number of boardings and alightings by stop for each vehicle. Raw APC data is transmitted from each vehicle in real-time or in a batch upload when the vehicle returns to a garage. Each service day, this data is processed and stored in a data mart.

In 2019, the light rail APCs were certified and are used in FY 2020 and later NTD unlinked passenger trip and passenger miles traveled reporting. Manual sampling of bus trips based on NTD sampling guidelines are used to generate the number of passenger miles traveled. This process is described in the following section. More information about certification, maintenance, and planning for APC improvements is available in **Section A.12.7**.

A.9.3 Manual Ridership Counts

HRT employs data collectors whose primary purpose is to gather data required to meet the FTA/NTD Sampling requirements. Manual forms include: the name of data collector, date, weather, bus number, boardings, alightings, load, the time the scheduled trip starts and ends, as well as scheduled time at the timepoints are included on the form. Each data collector is provided with individual training on the detail and regulations of capturing the data and meeting the sampling requirements.

For ferry services, manual counts are the primary source of ridership data. Not only are manual counts of passengers boarding and alighting at each stop required by the US Coast Guard, the fareboxes used for ferries have been found to produce inconsistent counts of ridership.

Vanpool services operated by Enterprise also provide ridership counts to HRT through manual counts. Daily ridership logs are imported into the CRIS database for further reporting.

A.9.4 Scheduling Software

HASTUS data is stored in an Oracle database for at least five years before it is expunged. Exports from this database are used to support both NTD reporting and other internal reports.

A.9.5 Accounting/Payroll Systems

HRT uses Oracle PeopleSoft Financials and Human Capital Management (HCM) software for its accounting, financial management, human resources, and payroll processes. These systems manage the collection, processing, verification, storage and reporting of such data. Data from accounting and payroll systems are reported in the agency's annual budget and Comprehensive Annual Financial Reports, as well as reports for various internal, local, state, and federal stakeholders.

A.9.6 Mobile Data Terminals

HRT's paratransit provider Via uses tablet devices as mobile data terminals (MDTs). These tablets download schedules from Via's proprietary software and provide drivers with turn-by-turn directions. While the vehicle is in operation, the tablets also transmit information to the software system, including vehicle location, arrivals, and departures. In the event of a Via system outage, the devices store up to two hours of schedules in memory.

Using information generated from these mobile devices, the software generates a monthly route productivity report. This report is imported into HRT's CRIS database for further reporting.

A.9.7 Automatic Vehicle Locator

Trapeze TransitMaster AVLs are installed on all of HRT's revenue vehicles. These devices track and report vehicle location for use by dispatchers, ridership reporting, and planning activities.

As with APC data, AVL data on schedule adherence and location is transmitted from each vehicle in real-time or in a batch upload when the vehicle returns to a garage. This data is ultimately processed and stored in a data mart.

A.9.8 Odometer Readings for Mileage

Bus mileage is automatically collected by Fleet Watch, a system used to monitor fuel and fluid usage in the fleet. This data is uploaded to the Spear fleet management system on a daily basis.

Fleet Watch generates reports on the fuel efficiency of the fleet and a variety of other canned reports for use by bus maintenance staff. Odometer readings are also reported in the agency's annual Capital Improvement Plan.

For the purposes of calculating revenue miles and hours, however, HRT utilizes the scheduled miles and hours, generated from the HASTUS scheduling software, and deducts the exceptions. This process is performed for both bus and rail. Revenue hours and miles data for paratransit service are generated from the vendor's system.

A.9.9 Operating Expense and Revenue Data

The system of record for operating expense and revenue data is the Microsoft D365 system, which include revenues from fares, leases, advertising, contract service and other sources. These systems comprehensively manage the collection, processing, verification, storage and reporting of such data.

A.9.10 Agency Accountability Policy

HRT's Comprehensive Annual Financial Reports are audited by an independent public accounting firm. Submissions to NTD are certified by the HRT CEO or his designee.

A.9.11 On-Line Grant Administration Performance Data Submission

HRT complies with DRPT's On-Line Grant Administration (OLGA) submission requirements by submitting required data into OLGA by the 20th day of each month. The same data reported to NTD is also reported here, including measures such as revenue hours, revenue miles, and ridership for each mode.

In 2016, HRT entered into a contract with CelWell Services to provide Vehicle Miles Reduced tracker application software and support services. The system collects information on TRAFFIX programs, and data on employers and their commuter programs. The system supports monthly Online Grant Administration (OLGA) reporting requirements (daily, weekly, monthly, and annually) for the TRAFFIX program.[43]

A.9.12 Executive Director or Board Certification of Adherence to Standards and Accuracy of Data Submitted to OLGA

HRT does not currently have a certification process for OLGA submission, as it is not required.

A.9.13 National Transit Database Data Submission Practices

To produce HRT's submissions to the NTD, HRT compiles data from various departments into the HRT CRIS database. This database is the repository of data for various NTD measures and includes built-in reports

The Finance Department and Safety and Security Departments enter data for NTD submission separately, and these submissions are reviewed by Chief Financial and Safety Officers. All submissions are ultimately certified by the CEO. Submissions to NTD take place on a monthly or annual basis, depending on the type of data.

A policy document describing the processes for NTD data collection and submission was adopted by the agency in July 2019 and updated in June 2021.[44]

A.9.14 Financial Audit Review of Verification Method

HRT publishes a Comprehensive Annual Financial Report, which includes an independent audit of the agency's financial statements by an outside accounting firm.

A.10 Coordination with Other Transportation Service Providers

Section 2.5 of the TSP contains detailed information about HRT's efforts to coordinate transit service with surrounding jurisdictions.

[43] TDCHR Commission Meeting Packet, April 28, 2015. Hampton Roads FY2016 Financial Report, Accessed at https://gohrt.com/wp-content/uploads/2015/12/April-TDCHR-Meeting-Package.pdf
[44] PD-111 - NTD Random Sampling Procedures

A.11 Public Outreach/Engagement/Involvement

A.11.1 Public Outreach - Major Service Changes

HRT's Marketing and Communications Public Outreach staff is notified by the Chief of Planning and Development when the agency is proposing a major service change(s), elimination of a route, or fare increase. HRT's Public Hearings and Meetings policy details the formal process of scheduling public hearings and meetings relative to these service/fare changes, including internal procedures, external communications, and follow-up.

A.11.2 Public Participation Plan Overview

Besides actions defined as a fare change or a major reduction in service, any change in HRT service will be the subject to "meaningful public engagement methods as appropriate to the nature of the proposed change."

HRT uses a broad range of outreach tools, documented in its Title VI Program Public Participation Plan and the HRT Policy and Procedures Manual for Public Hearings and Meetings, to conduct meaningful public engagement, which can include:

- **Public Meetings and Hearings:** Open public meetings and formal public hearings are frequently used in an effort to gain public review and comment.
- **Stakeholder Communications:** Public agencies and elected officials may be notified by mail of significant service changes.
- **Community-based Organizations:** HRT is in communication with many community-based organizations throughout the region, including cultural organizations, senior organizations, city partners, and business associations. HRT staff often attends meeting and events sponsored by these groups.
- **Social Media:** Facebook status updates, Twitter feeds, and website comment forms may be used to provide access through the internet.
- **Distribution of Written Materials:** At major transfer points.
- **Informational Postings:** Flyers in public places and postings on the HRT website:
  - Notices (signs and brochures) describing proposed action(s), date(s) and location(s) of any hearings or meetings posted on buses and at transfer centers.
  - Notices may also be published in major local and/or relevant neighborhood newspapers and on the HRT website.

All public comments submitted to HRT through any of these outreach tools become part of the official record. If special accommodation is needed at an HRT public meeting, meeting attendees can call HRT Customer Service 48 working hours before the meeting to arrange proper accommodations, which include language translation services. HRT selects meeting and hearing locations to provide reasonable accommodations in accordance with the Americans with Disabilities Act of 1990.

A.11.3 HRT's Public Participation Process

HRT adheres to a proactive public participation process. All public involvement activities must be functional for HRT decisions and must be meaningful to the public. HRT benefits from public involvement by engaging the public at the earliest project stages from the development of the purpose and need through project implementation. HRT's public involvement activities increase public awareness and give the public an active voice in planning decisions. HRT's public participation process includes the following steps:

- **Step 1:** Outline a public participation plan at the beginning of key HRT planning projects
- **Step 2:** Previously established mailing and email lists are identified
- **Step 3:** Update existing mailing and email lists; new lists are identified

- **Step 4:** All project documentation is archived with HRT's records management department throughout the life of the project
- **Step 5:** Based on a project's milestones and requirements, a public involvement timeline is created. The public involvement timeline outlines each activity of the project's outreach efforts
- **Step 6:** The effectiveness of the public participation plan is periodically assessed throughout the life of the project, to determine if the public involvement objectives were achieved:
  - The public participation strategy is assessed at different stages of a project to determine if the practices were effective in reaching each of the expected population and whether the events created opportunities for meaningful involvement
  - HRT will change the public participation strategy to improve future performance in response to the assessment

A.11.4 Customer Satisfaction and Feedback

HRT gauges customer satisfaction throughout the year during focused efforts on surveys, customer outreach and public meetings. As a matter of routine, data is compiled monthly on the number and nature of complaints and commendations received in-person or via social media, phone, email and mail. Complaints per 100,000 Boardings are summarized monthly.

Additionally, the Transit Riders Advisory Committee, comprised of two representatives from each of the six cities, provides bimonthly input on customer perceptions and areas of interest. The Paratransit Advisory Subcommittee (PAC) provides input on quality of service issues related to paratransit services provided.

A.11.5 Transit Transformation Project Public Involvement

Community feedback for the *Transit Transformation Project* was gathered in person through public meetings, small group workshops and "pop-up" meetings. Comments were also solicited through a regional survey and "trade-off" exercises, which were done both in-person and online through the project website. The project website also provided additional information and project documentation.

A.12 Current/Recent Initiatives

A.12.1 757 Express

In November 2018 HRT initiated the *Transit Transformation Project* with the goal of conducting a comprehensive review and planning effort to improve the design and performance of HRT bus services. The culmination of that effort was documented in chapter six of the 10-year Transit Strategic Plan (TSP) that was adopted by the TDCHR in June 2020. The work resulted in the identification of 13 Regional Backbone routes that serve destinations across the region. These routes, along with MAX and Peninsula commuter routes, share common characteristics in terms of serving key employment centers, educational institutions, medical facilities, military installations, and other key businesses. The 13 routes will have increased service frequencies and expanded spans of service which will be standardized across the region. Key passenger facilities and amenities, technology investments related to mobile fare payment, real time passenger information, passenger information displays, and other technology upgrades were also identified in the TSP. Collectively, these investments have been designated as the "757 Express" Program. The 757 Express "brand" and related logo will be utilized on backbone rotes, passenger facilities, and anything else that is funded by the Hampton Roads Regional Transit Program.

A.12.2 HRT 2021 Strategic Planning

HRT reevaluated its vision, mission, values, and agency goals and objectives that were part of previous planning efforts and initiated a new Strategic Planning Process (SPP). As part of the SPP, HRT conducted an annual SET retreat in April 2021 in preparation for the new regional high-frequency bus network, the 757 Express. The actionable plan that came out of the retreat includes detailed steps in the areas of Management and Oversight, Communications, Planning, Operations, Facilities, Human Resources, Safety and Security, and Technology.

HRT will continue to utilize the Transit Strategic Plan and outcomes from these efforts to implement organizational improvements. Additionally, in 2020 HRT adopted a new organizational policy in support of an improved Strategic Planning Process (SPP). The SPP is the process by which HRT develops strategic goals and objectives and implements, monitors, and continuously improves on key processes, plans, programs, and business activities to achieve the agency's vision and mission.

A.12.3 HRT Transit Strategic Plan

HRT completed and approved its ten-year Transit Strategic Plan in June 2020. The first minor annual update was adopted in March 2021. The TSP effort involved a review of existing services and the socio-economic setting in which they operate, an assessment of agency structure and policy, and the development of a ten-year action plan for service changes across the region. DRPT requires each transit agency to complete a major TSP update every five years, with a minor update being developed annually for anything that has changed from the previous year.

A.12.4 Naval Station Norfolk Transit Corridor Project

The Naval Station Norfolk Transit Corridor Project aims to establish high-capacity transit on the east side of the City of Norfolk between the existing Tide Light Rail system and Naval Station Norfolk. As of Fall 2021, two projects have been identified for advancement in a multi-phased expansion of the transit network in the Military Highway Corridor. Phase 1 is an extension of the world-class Tide light rail to the Military Circle redevelopment area. Phase 2 is the development of an innovative Bus Rapid Transit (BRT) to Naval Station Norfolk. Ongoing alternatives analysis and environmental documentation for various high-capacity transit modes to Naval Station Norfolk.

Leading up to the ongoing study, HRT, the City of Norfolk, and the Hampton Roads region have identified a need for high-capacity transit mobility and connectivity from the light rail system to Naval Station Norfolk. In 2015, HRT, in partnership with the City of Norfolk, completed the Naval Station Norfolk Transit Extension Study (NSNTES), which functioned as an Alternatives Analysis to look at a wide variety of alignments and technologies throughout the City of Norfolk.[45] As documented in the NSNTES, no consensus was achieved regarding the precise alignment connecting from the light rail to Naval Station Norfolk on the east side of the City, but five options were selected to be advanced for further discussion. HRT and the City of Norfolk evaluated initial corridors and development needs within the City and have determined that a connection along the eastern side of Norfolk would serve this need at a regional level and would provide for resiliency and redevelopment opportunities to support both the City of Norfolk and the greater Hampton Roads region.

As an outcome of the 2015 NSNTES study and at the request of the FTA, a refined analysis of alignment alternatives on the west side of the City of Norfolk was conducted in order to evaluate the feasibility of high-capacity transit. The conclusion of the Norfolk Westside Transit Study in 2018 was a "No-Build" solution for the west side of the City of Norfolk.

A.12.5 Peninsula Bus Rapid Transit Documented Categorical Exclusion

This is an ongoing corridor environmental documentation for BRT service between Hampton and Newport News in accordance with NEPA since it is anticipated that HRT will be seeking federal funds through the Capital Investment Grant program.

In 2016 and into 2017, the Peninsula Corridor Study defined potential high-capacity transit connections between existing and future activity centers in Hampton and Newport News.[46] The study identified two bus rapid transit (BRT) corridors—the Jefferson and Mercury corridors—as the most feasible and cost-effective alternatives, representing the Peninsula's best opportunity to meet the high-capacity transit needs of the community and effectively compete for FTA funding. These corridors provide the best mobility and community benefits with the least impacts to the existing environment.

The Peninsula BRT project will address a number of key opportunities including using transit to connect activity centers and decreasing transit travel times. HRT will evaluate and document the project's effects on the natural,

[45] https://gohrt.com/wp-content/themes/gohrt_com/includes/reports/20161103_FINAL-NSN_Report_05122015_V2_with-Appendices.pdf
[46] https://www.peninsulabrt.com/

cultural, and human environment; potential property impacts; and transit-oriented development (TOD) opportunities.

The Peninsula BRT Documented Categorical Exclusion (DCE) process is expected to conclude by Summer 2022. It will further define corridor alternatives and environmental documentation will be completed to prepare for future processes and application under the federal Capital Investment Grant Program. Subsequent to the completion of the DCE process, it will be the decision of both City Councils if they wish HRT to proceed with the next phase of project development under the federal Capital Investment Grant process.

A.12.6 Newport News Transit Signal Priority

HRT has applied for federal earmark funding to install transit signal priority on Jefferson Avenue and Mercury Boulevard in Newport News. The project would implement signal preemption for transit vehicles at 83 intersections along the Peninsula BRT corridor in Hampton and Newport News. Buses used to provide service on routes 112 and 114 under the 757 Express program would be outfitted with transponders to realize improvements in schedule reliability and travel time.

A.12.7 Automatic Passenger Counters (APC)

Light Rail

Automatic Passenger Counters (APCs) are installed on each light rail vehicle and have recently been certified by the Federal Transit Administration for NTD reporting purposes. This certification process involved validating the data generated by the APCs, outlining processes related to data cleaning, and creating a maintenance plan. Beginning in 2020, HRT was able to use APC-generated data to report ridership and passenger miles traveled to NTD, the certification is valid for three years.

Bus

HRT is in the process of certifying its Bus Automatic Passenger Count (APC) system to replace manual ride-checks performed for NTD reporting. As a result of this project, only periodic manual sampling would be required to continue maintenance of the APC systems, but also additional resources to continuously monitor, store, and process APC data so it can be used for additional analysis outside NTD reporting.

The Hampton Roads Transit (HRT) APC Certification and Maintenance Plan project sought to produce an Automated Passenger Counter (APC) benchmarking report that would allow for APC data from HRT buses to be used for National Transit Database (NTD) reporting. By using APC-generated unlinked passenger trip (UPT) and passenger miles traveled (PMT) statistics, HRT has the opportunity to produce NTD statistics more quickly, accurately, and cost efficiently. However, to date, HRT's APC devices have not produced data sufficiently accurate for use in NTD reporting. Based on the study recommendations, HRT will need to conduct further calibration of its APC devices and TransitMaster system, followed by an additional round of benchmark comparisons. Once APC data is successfully validated against a manual sample, APC Benchmarking and Maintenance Plans may be submitted to FTA.

Although HRT APCs did not satisfy NTD accuracy thresholds, HRT is nevertheless well positioned to use APC data for NTD reporting. APC devices are installed on approximately 70 percent of the bus fleet, and APC-equipped buses are rotated evenly across HRT services. APCs receive regular preventative maintenance, and when APCs show clear malfunctions, issues are reportedly addressed quickly.

A.12.8 Fleet Electrification Pilot

HRT has successfully been awarded grant funding which totals $7.8 million through two federal Low or No Emission Vehicle (LoNo) Program awards, a combination of Volkswagen Environmental Mitigation Trust and DRPT state funding, and a local capital contribution. In partnership with Proterra Bus, HRT acquired six 40-foot, all-electric buses and seven supporting charging stations to demonstrate the capabilities of all electric buses on a Southside route. The Southside bus maintenance facility in Norfolk at 18th Street was retrofitted with charging stations and was connected to the Dominion Power electric grid. After construction was completed, the buses entered a testing period to determine operating characteristics and their adaptability to Hampton Roads' operating conditions. The testing phase is anticipated to last two years while data is gathered and analyzed to

support electric bus operations. Only the Southside facility can support the charging infrastructure at this time due to physical and infrastructure constraints elsewhere. If the all-electric buses prove to have advantageous operating characteristics, HRT will explore the opportunity to diversify the composition of the fleet.

As of Fall 2021, the testing period is going smoothly. The buses have amassed more than 53,000 trouble free miles since entering revenue service on Route 20. HRT operates each bus between 75 and 100 miles during each peak. While the daily operating mileage is below the available range for each unit per peak, the mileage operated conveniently fits the blocks of work assigned. Each bus returns to base with greater than 40 percent state of charge and are prepared for the afternoon peak by topping off battery charge. Full charge is completed overnight after the PM peak service. HRT is currently investigating the procurement of data analytic software aimed at maximizing battery electric bus range and usage.

A.12.9 Mobile Fare Collection System

In July 2018, HRT introduced the first phase of its first mobile ticketing app on the three VB Wave trolley routes as part of an initial introduction to the technology. In years past, VB Wave trolley passengers—many of them tourists—would have needed exact change or a pre-purchased fare card to ride. In April 2019, the second phase commenced with many improvements over the 2018 season's "Phase 1" of the pilot program. All 14 trolleys were fitted with fare validator equipment that can scan fare barcodes on mobile devices, eliminating the need for operators to visually inspect customers' mobile devices and allowing for a more efficient and accurate boarding process. During 2019, HRT also worked with the vendor, Moovel, to pilot a Loyalty/Reward program as an opportunity to grow ridership. Utilizing knowledge gained from the mobile ticketing pilot and incorporating emerging fare technologies, HRT will be expanding a mobile fare system agency-wide for all services.

A.12.10 TAP Grant

HRT has nearly 2,800 bus stops in the six cities of its service district that serve over 50,000 passenger trips per day. Currently nearly 65 percent of its bus stops are still out of compliance with Americans with Disabilities (ADA) requirements regarding accessible ramps for wheelchairs and sidewalks at the bus stops. HRT has been awarded $350,000 under the TAP grant program to retrofit some of the most utilized, non-compliant bus stops with sidewalks and wheelchair accessible ramps. HRT anticipates continuing to retrofit non-compliant bus stops in its system beyond this grant.

A.12.11 2021 Origin-Destination On-Board Survey

HRT is planning to conduct an on-board customer survey to understand the travel patterns of riders and demographic and attitudinal information. This project is in the planning phase; work was expected to begin in FY 2022 but will be delayed due to the current reduction in service under the Service Reliability Plan. It is anticipated that the survey will be conducted in 2022.

A.12.12 Regional Transit Planning Process and New Regional Transit Advisory Panel

Virginia law (§ 33.2-286 D) requires the transit agencies in Planning District 23 to develop a regional transit planning process to be coordinated by the Hampton Roads Transportation Planning Organization (HRTPO). The transit agencies this applies to are Williamsburg Area Transit Authority (WATA), Suffolk Transit, and Hampton Roads Transit (HRT). The TSP Guidelines issued by DRPT reiterate the regional transit planning process requirement placed upon WATA, Suffolk Transit, and HRT.

Between 2018 and 2020 transit agency and HRTPO representatives met several times to discuss and work on issues related to their joint responsibility and to develop the regional transit planning process and its supporting policies and procedures that are now in place. At the center, it was determined that the Transit Strategic Plans (or Transit Development Plan in the case of WATA) adopted by each agency's governing body shall serve as the foundation for regional transit planning, with ongoing special attention to **Section 2.5** of the TSP to assist WATA, Suffolk Transit, and HRT in prioritizing activities and joint undertakings to promote ongoing inter-agency coordination and collaboration. It was also determined that updates may be made from time to time as the transit agencies collectively deem necessary, and for both the development of and revisions to the regional transit planning process, updates will require the unanimous consent and approval of all three agencies.

Concurrent with implementing the regional transit planning process through the TSP and TDP guidance, the HRTPO established the Regional Transit Advisory Panel (RTAP) in late 2020, which is required pursuant to § 33.2-286 of the Code of Virginia, to focus on the long-term vision for a multimodal regional public transit network in Hampton Roads. The RTAP is composed of representatives of major business and industry groups, employers, shopping destinations, institutions of higher education, military installations, hospitals and health care centers, public transit entities, and other groups identified as necessary to provide ongoing advice to the regional planning process. HRT has been and plans to continue to be an active participant in RTAP meetings. RTAP's nine subcommittees and their preliminary focus areas (as of mid-2021) are listed below:

- **Advocacy/Ambassador Work Group**
  - Create a strong group of diverse influencers who can advance the transportation efforts in the region.
  - Meet with legislators and discuss the importance of transportation to the future of our region.
  - Create awareness – Transportation Day.
- **Affordable/Accessible Housing Work Group**
  - Key factors in calculating housing affordability.
  - Prioritizing investment in affordable housing as a fiscally responsible pursuit.
  - Emphasis on coordinating across agencies and organizations.
- **Bus Stop Amenities Work Group**
  - Lighting solutions for non-sheltered stops.
  - "Adopt a Stop" campaign for partnering with the private sector.
  - Sidewalk improvements for safety and accessibility.
  - Information technology at stops.
- **Military and Transit Work Group**
  - Survey personnel from Naval Station Norfolk to determine the level of interest from base personnel for using public transit.
  - Exploration of an internal circulator route.
  - Park and Ride lots.
- **Major Employment Centers Work Group**
  - Provide enhanced transit service to the emerging health care epicenter including Eastern Virginia Medical School, CHKD, ODU health care center in Norfolk.
  - Discussions between HRT leadership and Newport News Shipbuilding to explore approaches to encourage increased ridership.
  - Virginia Ship Repair Association to initiate discussion on opportunities for Regional Backbone Network to better serve Shipyard Employees.
  - Explore use of large, under-utilized parking lots at big-box commercial establishments along Regional Backbone routes as potential Park and Ride locations; Recommend that the Virginia Peninsula and Hampton Roads Chambers convene roundtables between HRT/WATA transit systems and property representatives to discuss and explore opportunities.
- **Technology Work Group**
  - Make real-time GPS data available for existing third-party apps.
  - Expand service on existing HRT app.
  - Create app for fare purchase and mobile ticketing.
  - Expand apps with additional services like traffic data and last-mile availability.
  - Explore possibility of a combined regional transit app.
- **Tourism Work Group**
  - Focus on how transit could create opportunities for all stakeholders, and improve hospitality and tourism for employers, workers, and tourists alike.
    - Most immediate need is moving the workforce; focus on tourists will follow a fuller recovery from the pandemic.

        - HRT, WATA, and Hampton Roads tourism/hospitality venues and attractions must commit to collaboration to develop routes more fully between the venues/attractions and where workers live.
        - Begin outreach to stakeholders to garner broad support for a strategic workforce transportation plan for tourism/hospitality venues and attractions within the Hampton Roads region.
    - Opportunities for connection to tourism jobs in the Historic Triangle:
        - Improving the peak period frequency of one or more existing WATA bus routes that serve tourism sites within the Historic Triangle, including to Lee Hall which requires coordination with HRT.
        - Creating Park and Ride opportunities at locations such as shopping centers, government buildings, schools.
        - WATA is working on a plan for a new bus route along the Route 17 corridor in York County. Due diligence is underway.
- **Transit Oriented Development (TOD) Work Group**
    - Met with cities' planners and found that cities are ready for TOD; zoning is in place to accommodate TOD; success is dependent upon frequent and reliable service on Regional Backbone; must change perception that transit only serves minimum wage riders.
    - Recommendations to understand core ridership and their needs; incentivize services at transit stations; study peer region TOD efforts; focus on Regional Backbone routes with microtransit connections; expand access for workers; create and implement a PR campaign.
- **Universities/Colleges Work Group**
    - Connecting four College/University Campuses/Anchors of Innovation and improving access to them.
        - Encourage HRT to apply for Transit Ridership Incentive Program Zero Fare/Low Pilot for The Tide (GO Pass/GOPASS365).
        - Encourage HRT to explore potential for dedicated shuttle between Fort Norfolk Light Rail Stop and ODU Campus.
    - Explore potential for autonomous vehicle demonstration project on a college/university campus and/or Granby St between Brambleton Ave and Main St.
    - Encourage HRT and city stakeholders to explore micromobility for first- and last-mile connections.

A.12.13 Office of Program and Project Excellence

HRT's new Office of Program and Project Excellence (OPPE) has been established within the Executive Department with the mission to achieve agencywide excellence in planning and administration of programs and projects. An initial priority focus will be to organize and facilitate HRT's agenda and organizational development in light of new dedicated regional transit funding. OPPE staff will work in a spirit of collaboration and teamwork to achieve the following:

- Organize and facilitate agencywide efforts to comply with legislative and regulatory mandates related to the establishment of the Hampton Roads Regional Transit Program, and maximize all available resources to implement the Program and other HRT services, projects, and programs.
- Lead the annual Strategic Planning Process (SPP) and develop methodologies and standards to be documented in policies and procedures and applied agencywide.
- Lead the development and administration of Capital Improvement Program.
- Lead the development and administration of mature, consistent and disciplined processes, consistent with the Capital Improvement Program, to ensure successful initiation of projects, oversight, controls, project managers training and ongoing support, and integration of project efforts with strategic business goals and objectives.
- Consult with project initiators and assist them in discovery and diagnostic processes. Scrutinize project applications and justifications, including but not limited to scope, prioritization, schedules and phasing, budgets, risks, management plans, integration with agency strategic goals and objectives, etc.
- Liaison across departments to ensure programs and projects meet policy and procedure standards, regulatory compliance, and fit to safety, capital, and operating resources and requirements.

- Develop and conduct training and ongoing support efforts for project managers such that project management disciplines, best practices, policies and processes are well defined and uniformly supported across the agency.
- Routinely engage in program and project governance and oversight by engaging with managers for active monitoring, milestone reporting and deliverables, and identification and implementation of corrective actions as needed. Ensure that project efforts, including any changes, are integrated back to core business interests and strategic goals and objectives.
- Represent HRT and the Office of Program and Project Excellence in oversight and management meetings, including with external stakeholders. Foster accountability to budgets, schedules, contracts and other requirements being met, and assist project teams in identifying and overcoming obstacles to success.
- Regularly serve as a principal liaison in communications and coordinating with Federal, State, and local agencies for implementation of programs and projects and ensuring compliance with administrative guidelines and requirements.
- Manage records.
- Monitor performance reporting through the Accountability Center and assist in development and management of standards and processes for departmental performance reporting.
- Conduct evaluations of projects, including ex post analyses, to identify and report on successful and unsuccessful project elements and recommendations to improve and achieve targeted outcomes. Suggest and foster use of best practices and tools for project execution and management.
- Assist project managers to proactively address changes in scope, identify potential crises, and devise and deploy contingency plans.
- Foster a culture of excellence in program and project management and engage in continuous improvement efforts that assist HRT in being a learning organization.
- Develop and implement communications strategies that keep team members, senior management, and other stakeholders informed.

A.12.14 Microtransit Demonstration Grant and Pilot Programs

HRT made a grant application to the Virginia Department of Transportation in February 2020 for two pilot projects: one in Virginia Beach and one in Newport News. In Summer 2020 HRT was notified of the awarding of $1.6 million of funding under a “demonstration grant”.

An RFP is currently out for a third-party contractor to operate “turnkey” on-demand service for pilot programs in Virginia Beach and Newport News (responses due October 21, 2021). The pilot programs will be funded through a Virginia Department of Transportation “demonstration grant” of $1.6 million plus matching local funds from both cities as required by the state grant. It is expected that pilots would begin in Spring 2022.

Additionally, HRT is currently working with the City of Hampton to explore microtransit options to identify demand responsive service to cover areas losing service due to the planned elimination of Route 118. An initial microtransit zone has been discussed with the City of Hampton in January 2021 and a subsequent presentation was made to the Hampton City Council.

A.12.15 Interstate Operations and Enhancement Program

The goal of this Commonwealth program is to improve the safety, reliability, and travel flow along interstate highway corridors.[47] The funding will be used to enhance transit services that either directly utilize I-64 or run parallel to I-64.

Routes 106 and 107 operate along Warwick Blvd between the Denbigh Fringe and Fort Eustis serving the Newport News Shipyard as well as downtown Newport News. They are both relatively strong producers of ridership (pre-pandemic) and serve several major employment sites along the routes. The program will pay for three years of

[47] http://www.ctb.virginia.gov/resources/2021/feb/pres/ctb_-_2021-02_-_interstate_operations_and_enhancement_program_-_final.pdf

additional service to include one additional weekday AM trip on Route 106 and an increase to 30-minute headways (from 60-minutes currently) on both Route 106 and Route 107 during the weekday peak periods.

The MAX Route 972 originates at the Tidewater Community College campus in Virginia Beach and stops at the Indian River Road P&R before utilizing I-64 to bring workers to the Newport News Shipyard, where there is strong ridership demand. The program will pay for three years of additional service by adding one AM peak trip and one PM peak trip.

The performance of these service increases will be evaluated after three years of the program implementation.

A.12.16 TRIP Grant Application

HRT has applied for two TRIP grants[48] and has been notified that one will be funded, and one will not (as of October 2021). One grant application is to fund potential internal service on Naval Station Norfolk as an extension of Route 21, similar to a circulator-type of service. If the grant application is successful, Route 21 would be modified in a future TSP update for its western end to operate a service pattern on the base that connects to key destinations. The other grant application is a request to fund two additional positions and equipment in order to more efficiently deploy more Student Freedom Passes for eligible students.

[48] http://www.drpt.virginia.gov/transit/trip-transit-ridership-incentive-program/

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APPENDIX B

Phased System Maps

FY2023 – FY2032

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Contents

Figures

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Appendix B: Phased System Maps

This appendix contains 22 maps depicting HRT's bus system throughout the ten years of the TSP as described in **Chapter 3**. Maps depict route headways during the Weekday AM Peak time period.

Figure B-1: FY 2023 Weekday AM Peak Frequency (Peninsula)

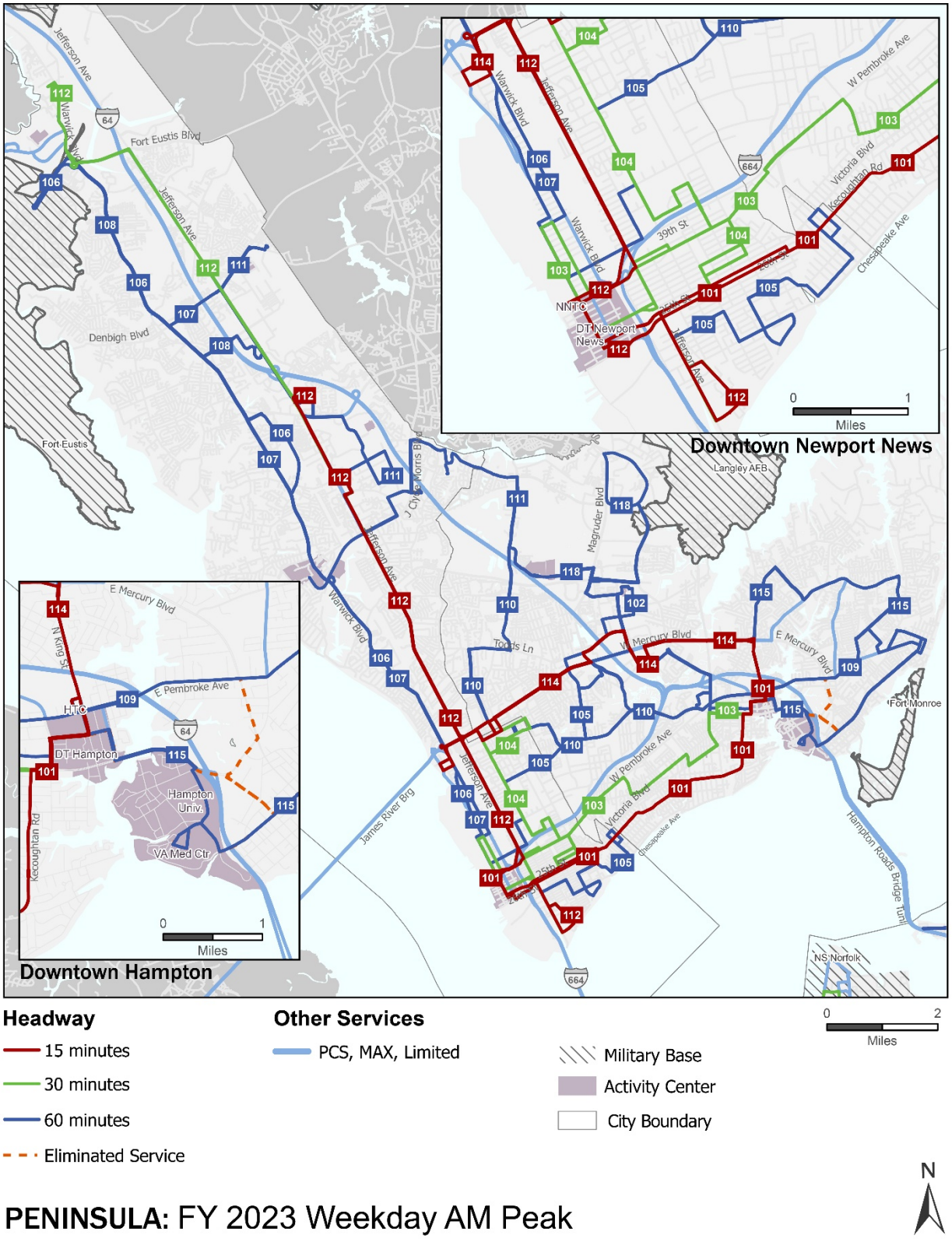


Figure B-2: FY 2023 Weekday AM Peak Frequency (Southside)

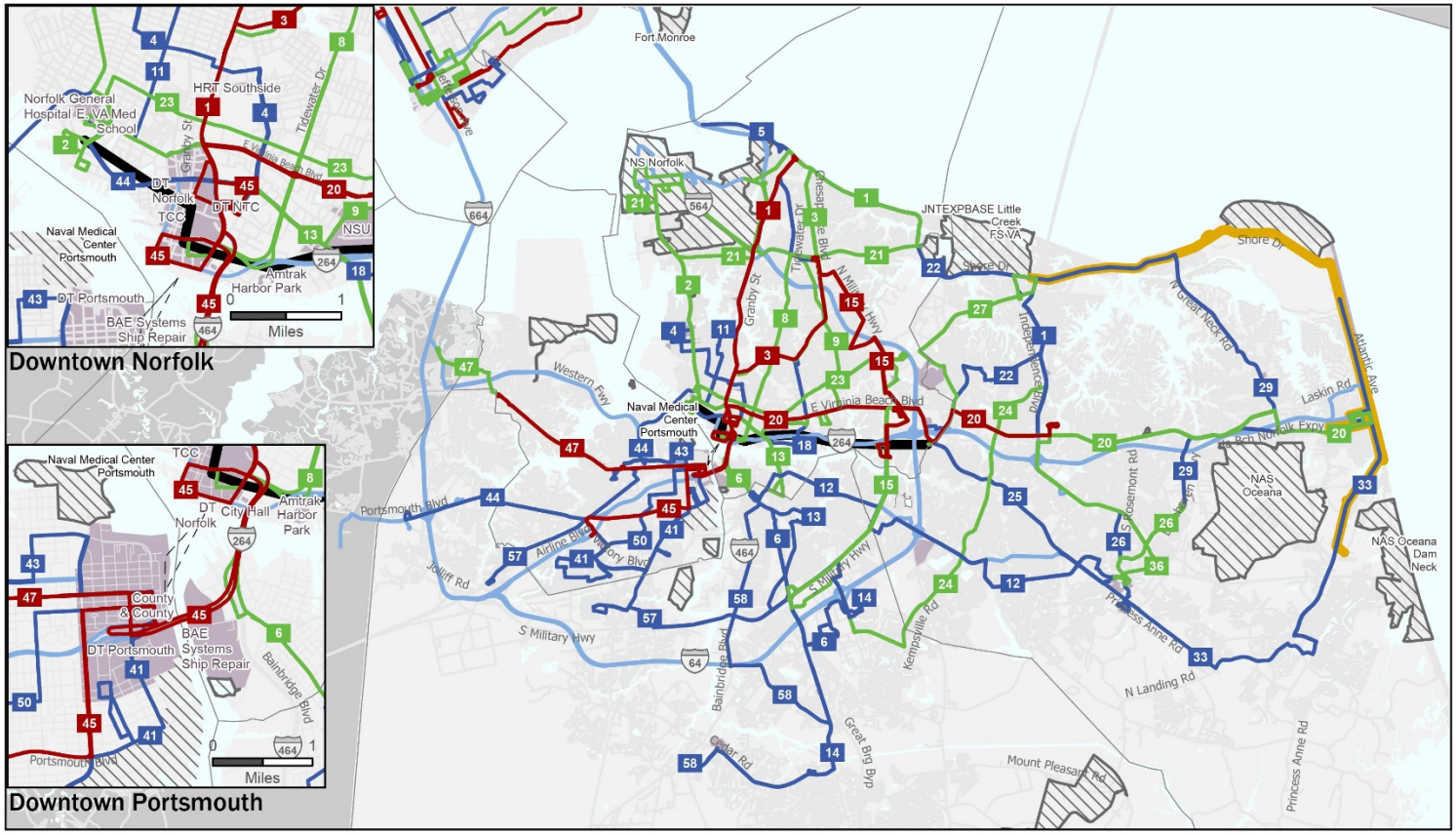


Figure B-3: FY 2024 Weekday AM Peak Frequency (Peninsula)

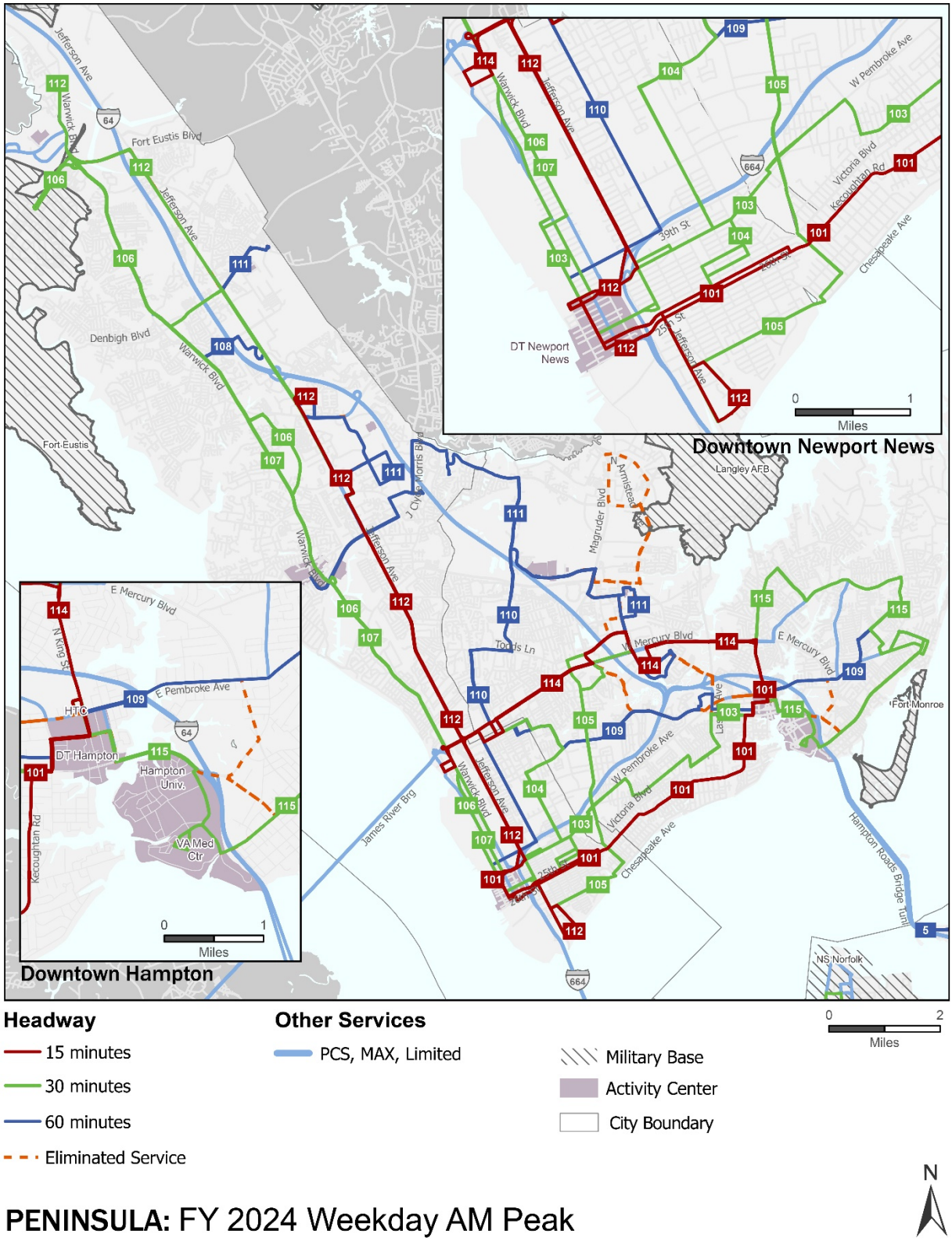
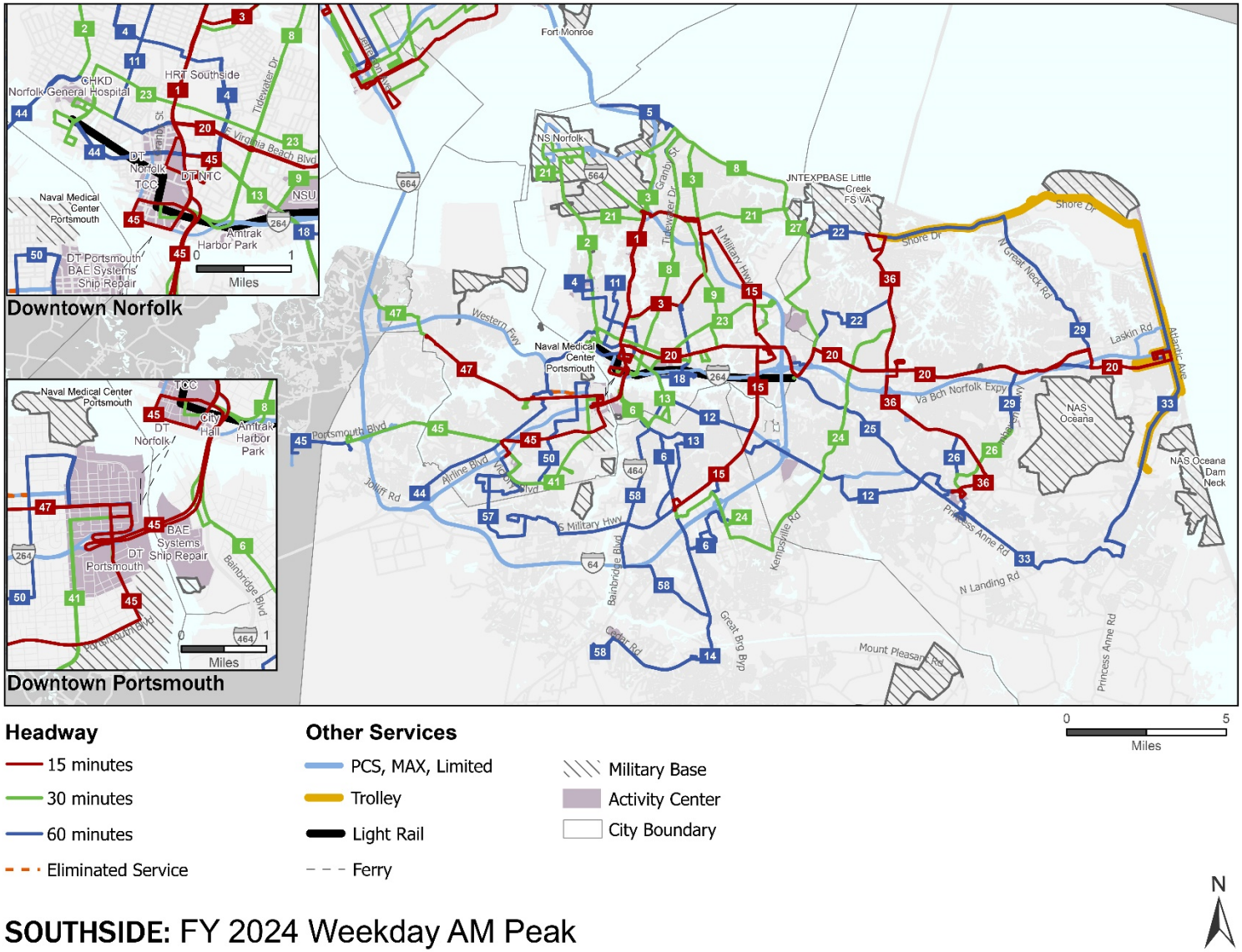
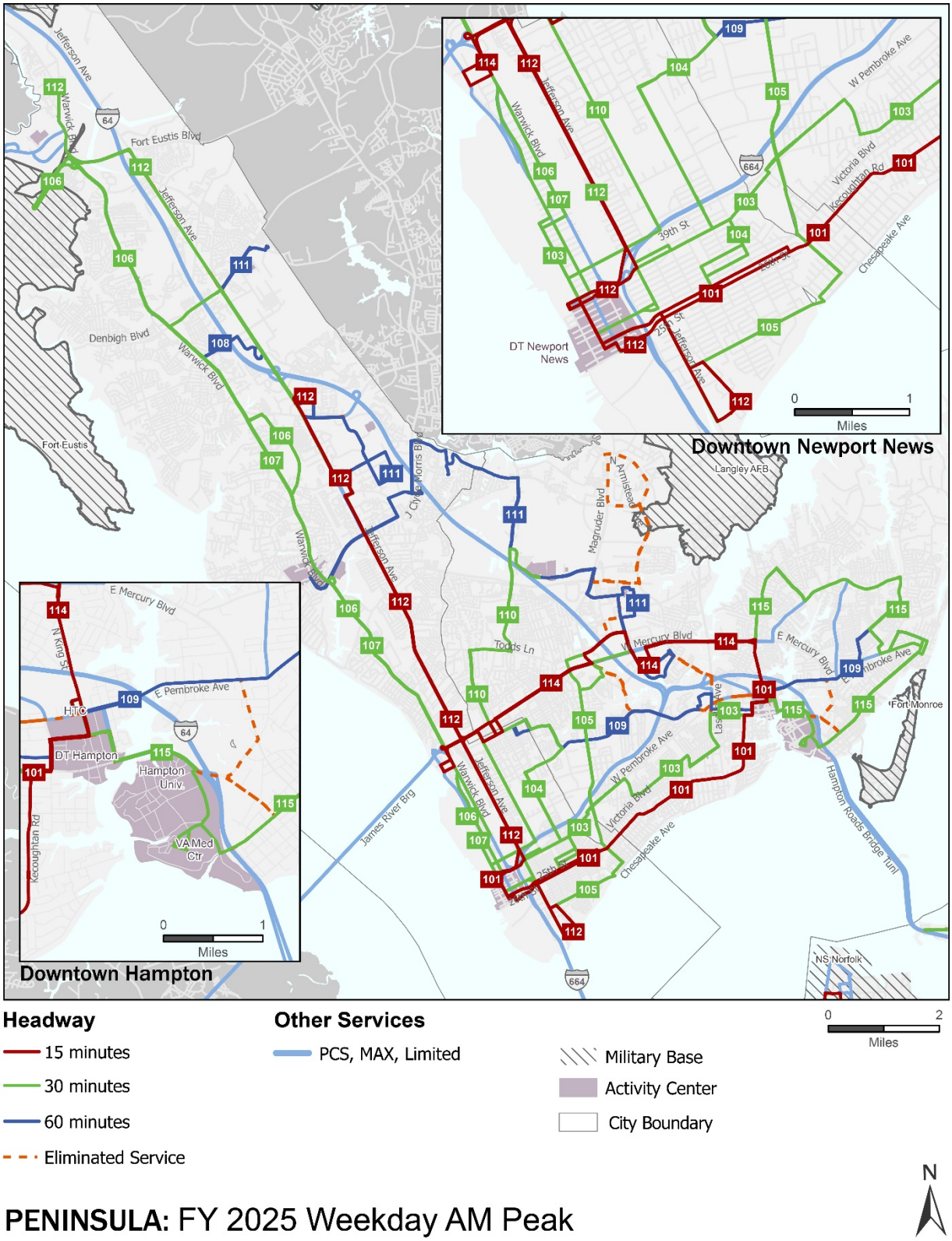


Figure B-4: FY 2024 Weekday AM Peak Frequency (Southside)



SOUTHSIDE: FY 2024 Weekday AM Peak

Figure B-5: FY 2025 Weekday AM Peak Frequency (Peninsula)



PENINSULA: FY 2025 Weekday AM Peak

Figure B-6: FY 2025 Weekday AM Peak Frequency (Southside)

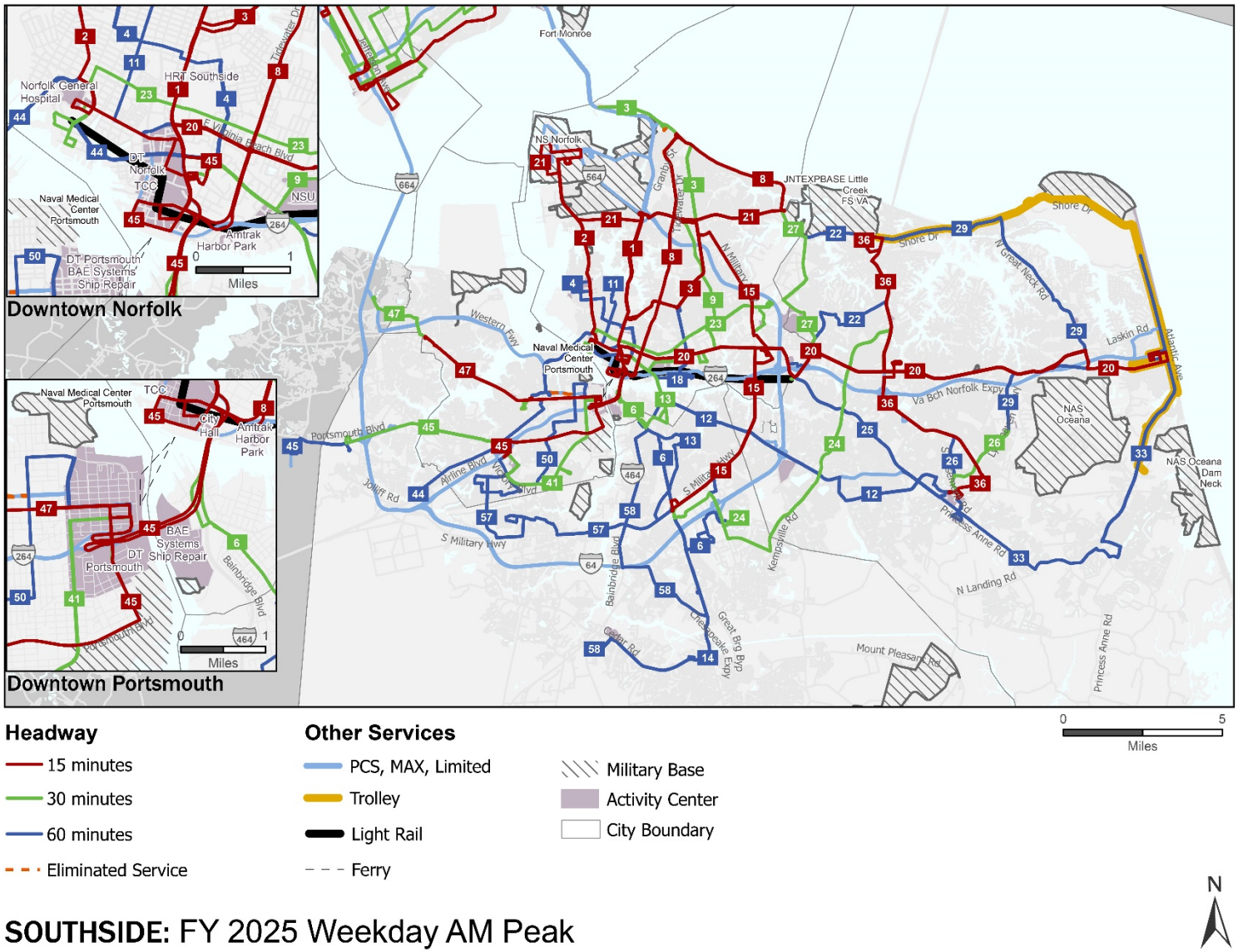
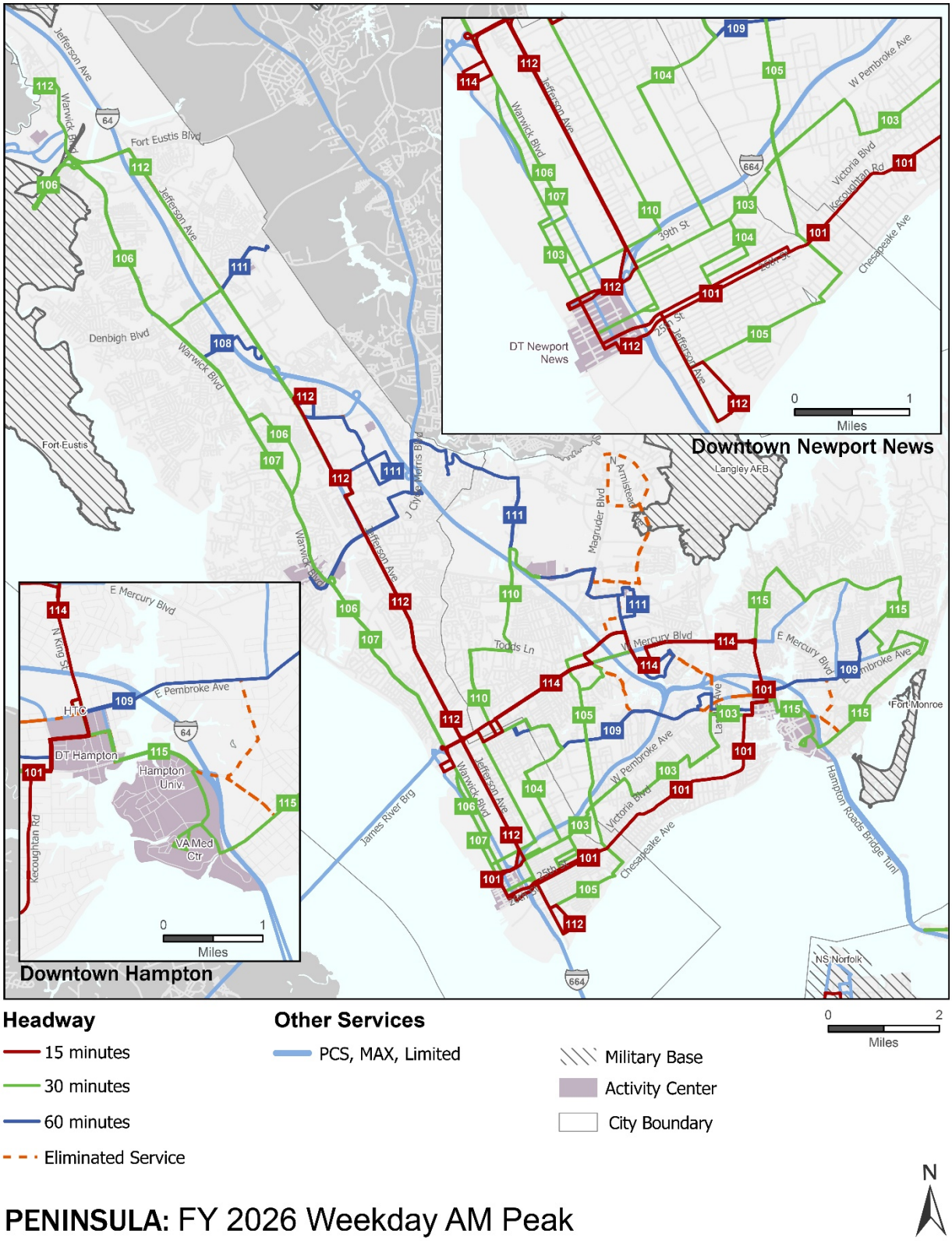


Figure B-7: FY 2026 Weekday AM Peak Frequency (Peninsula)



PENINSULA: FY 2026 Weekday AM Peak

Figure B-8: FY 2026 Weekday AM Peak Frequency (Southside)

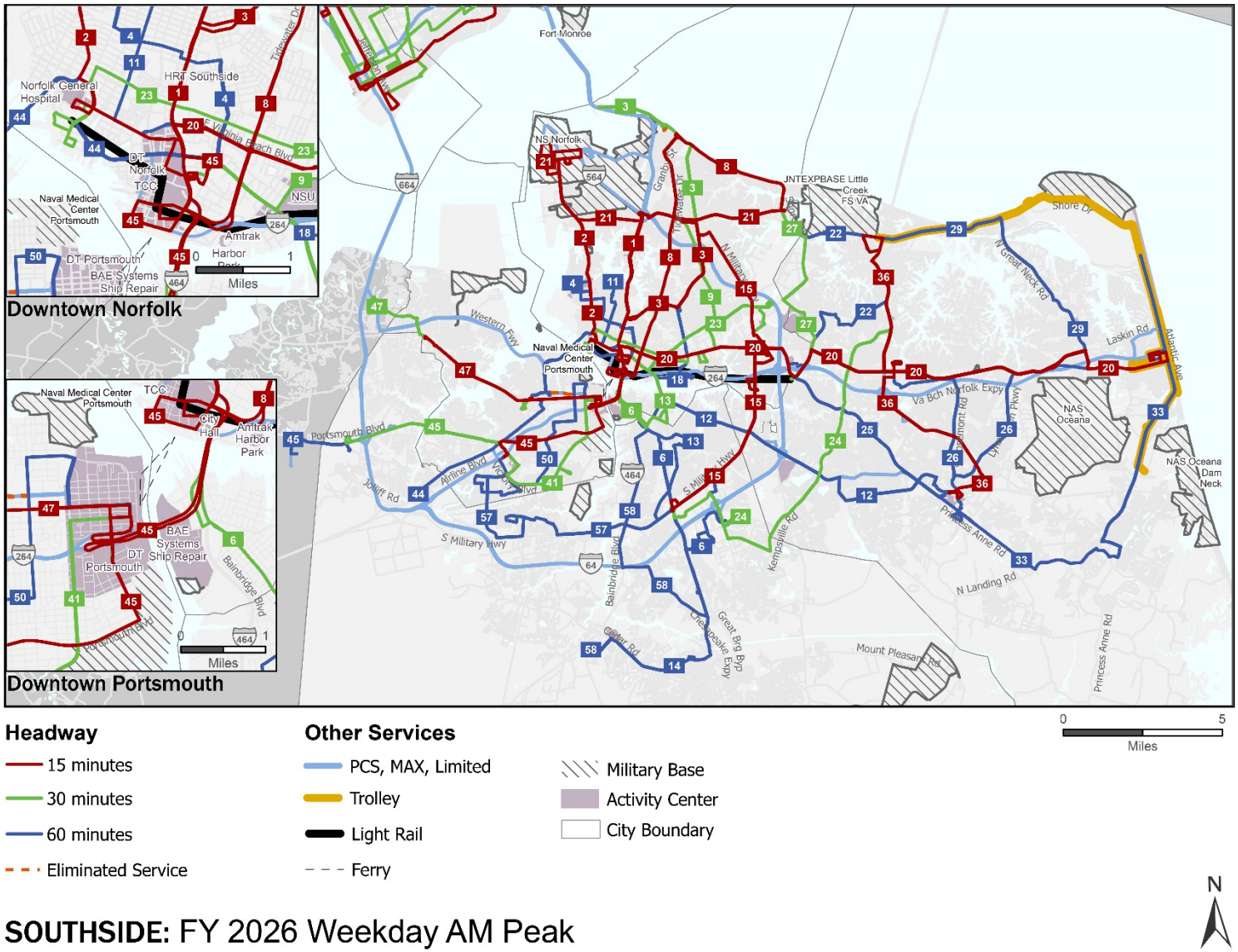


Figure B-9: FY 2027 Weekday AM Peak Frequency (Peninsula)

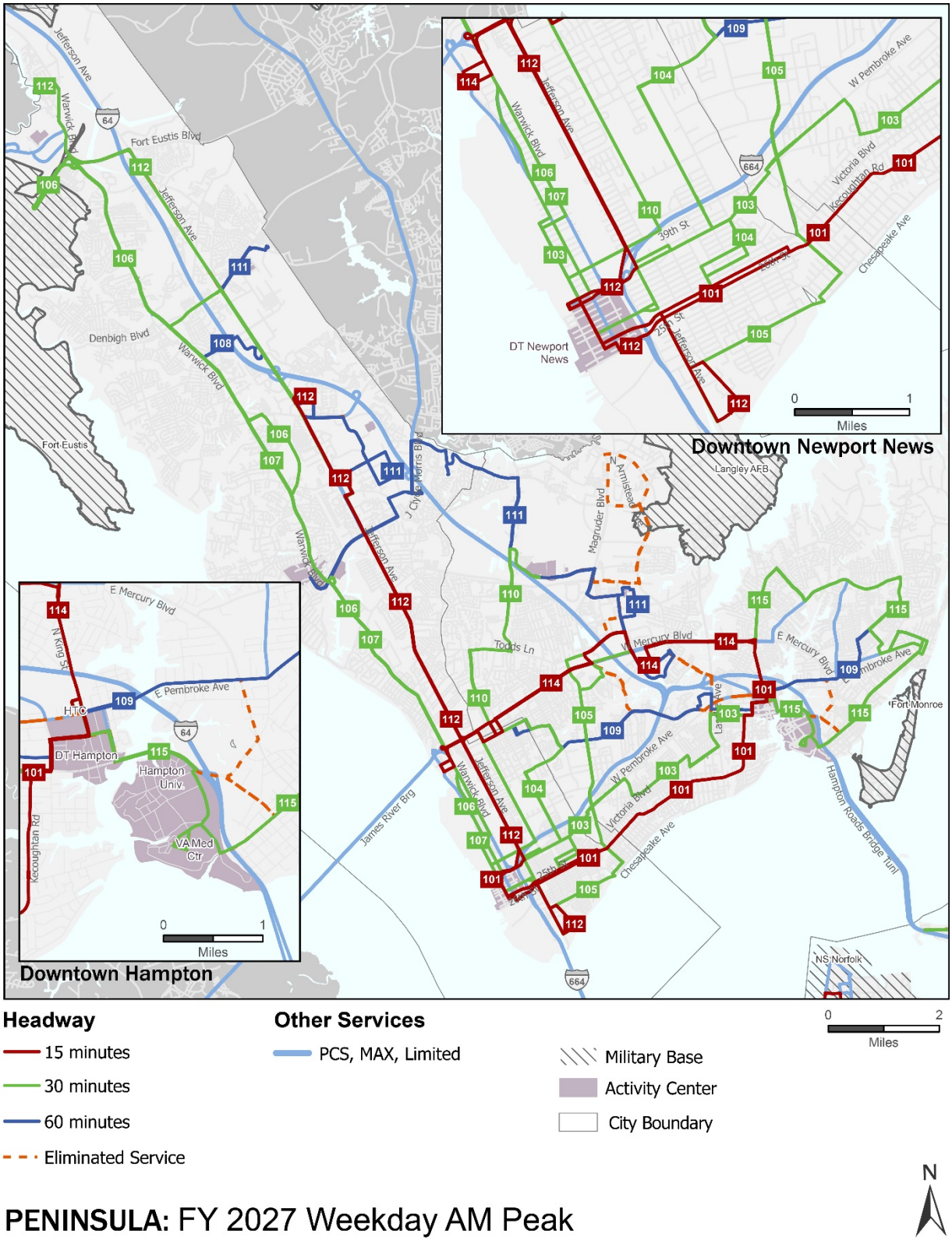
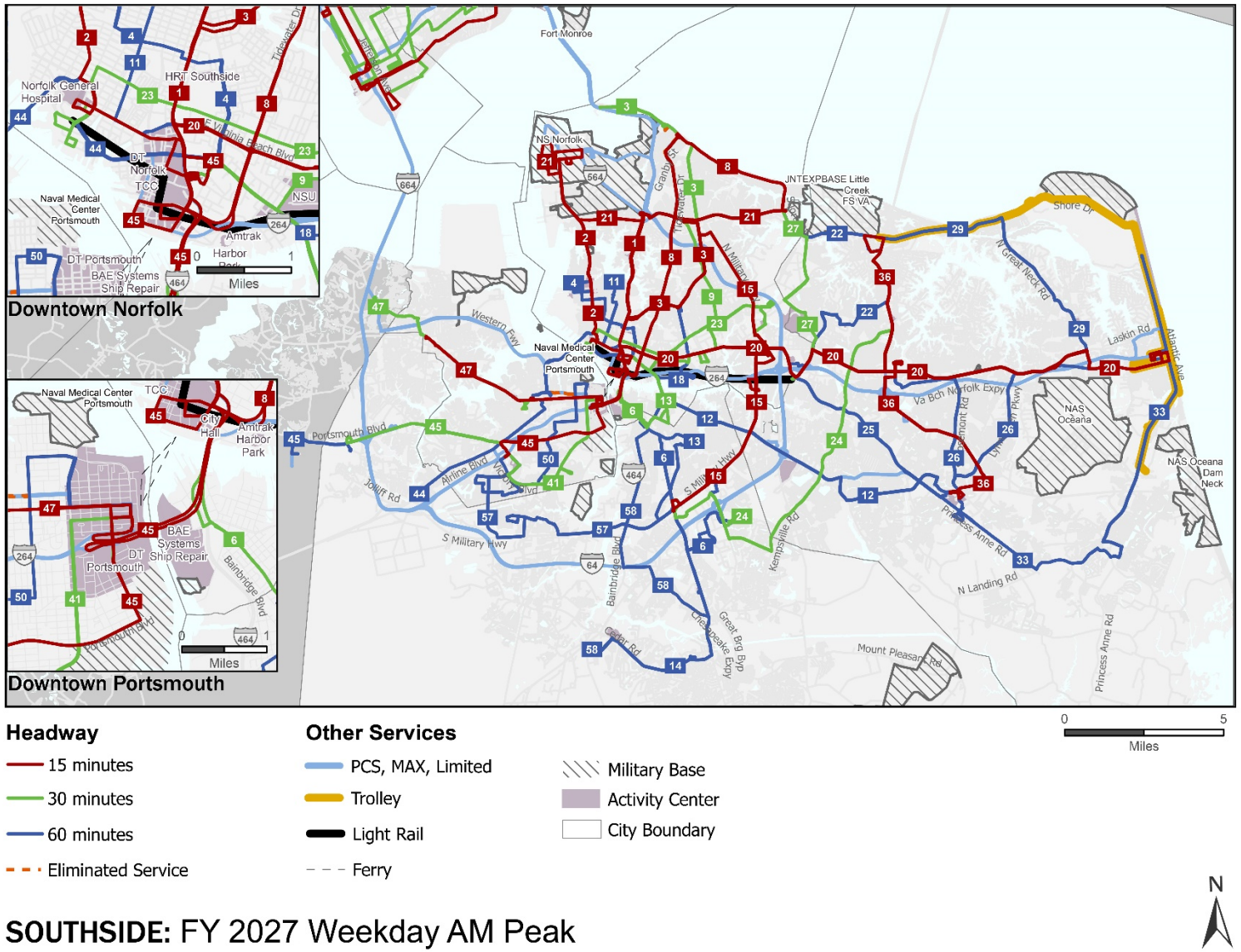
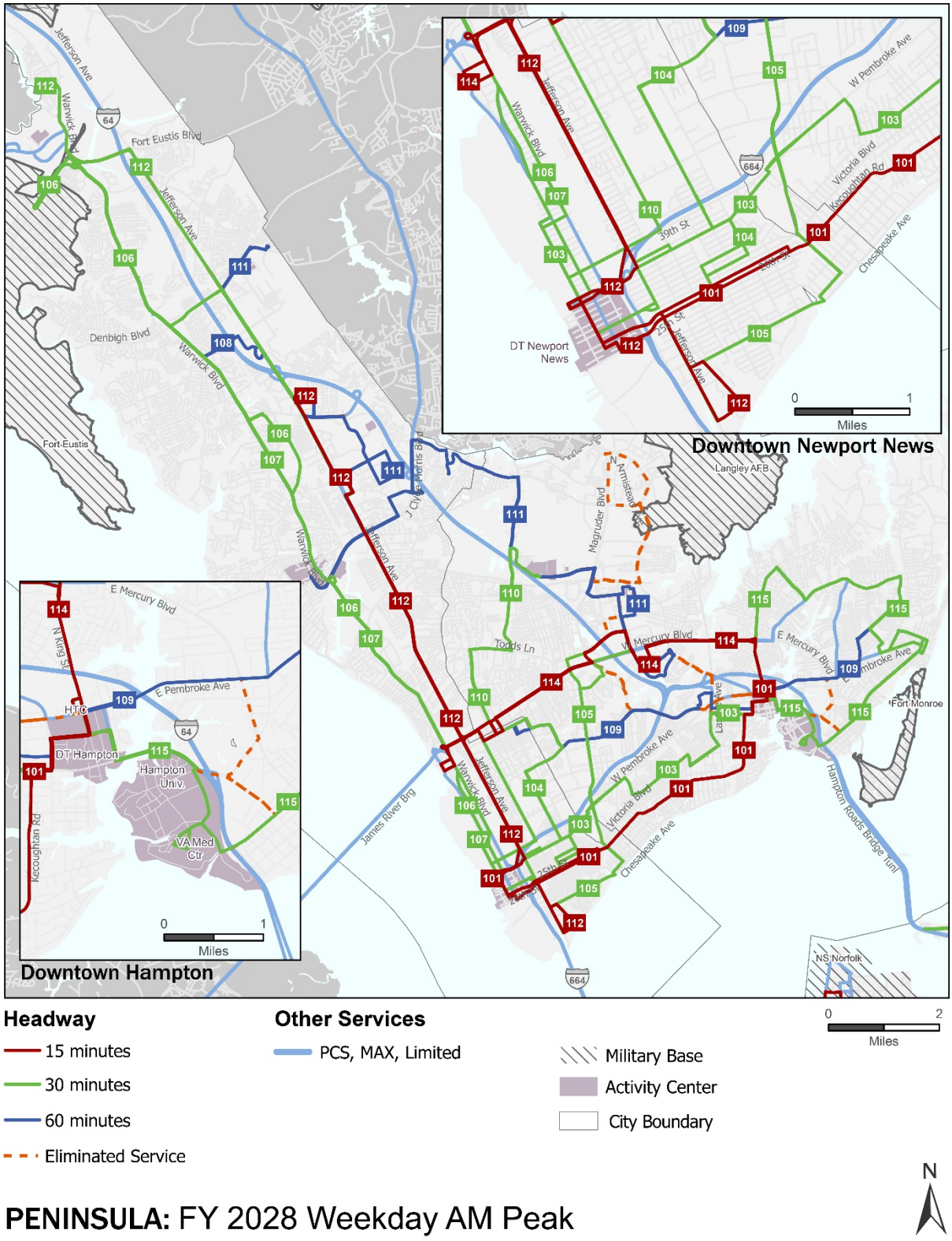


Figure B-10: FY 2027 Weekday AM Peak Frequency (Southside)



SOUTHSIDE: FY 2027 Weekday AM Peak

Figure B-11: FY 2028 Weekday AM Peak Frequency (Peninsula)



PENINSULA: FY 2028 Weekday AM Peak

Figure B-12: FY 2028 Weekday AM Peak Frequency (Southside)

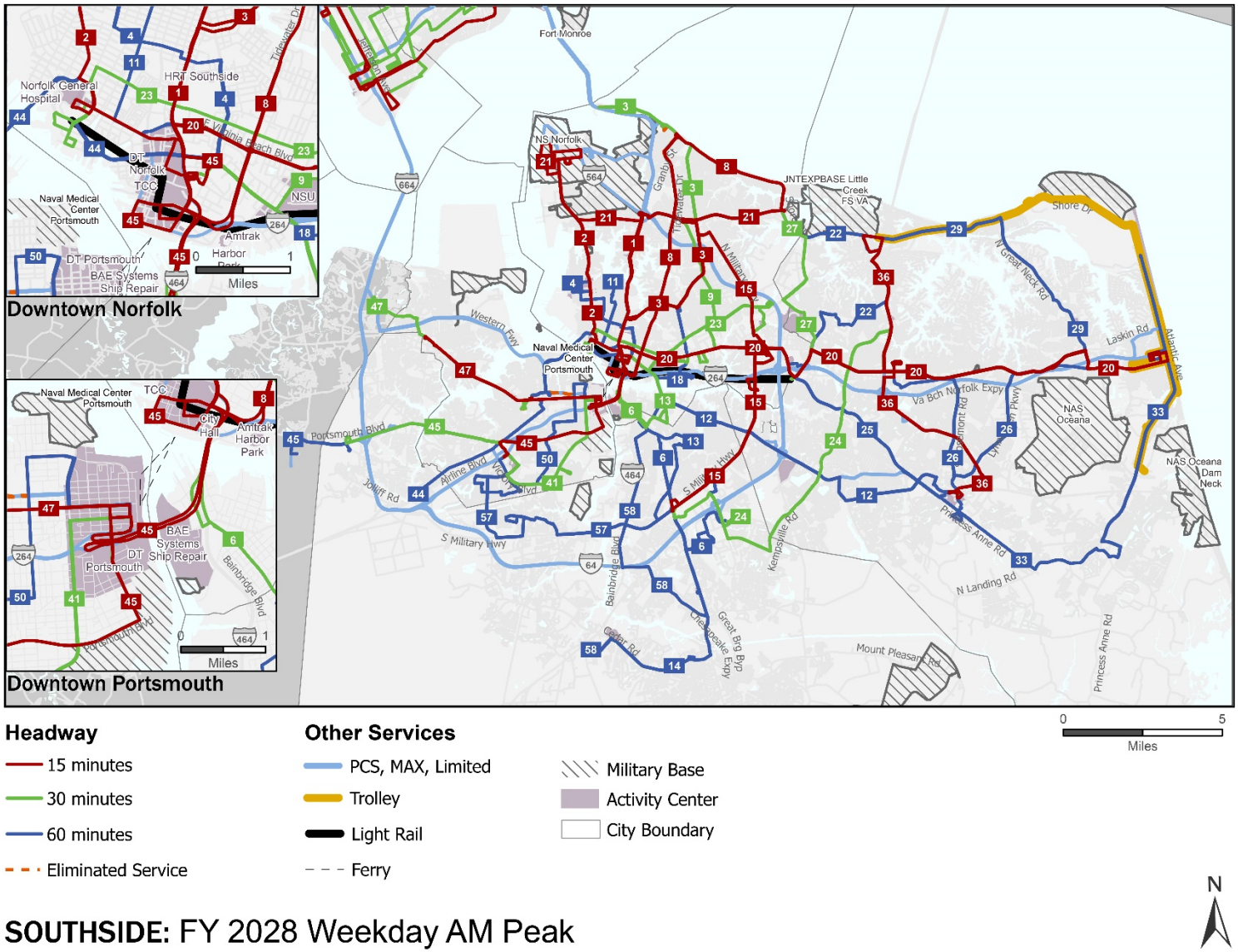


Figure B-13: FY 2029 Weekday AM Peak Frequency (Peninsula)

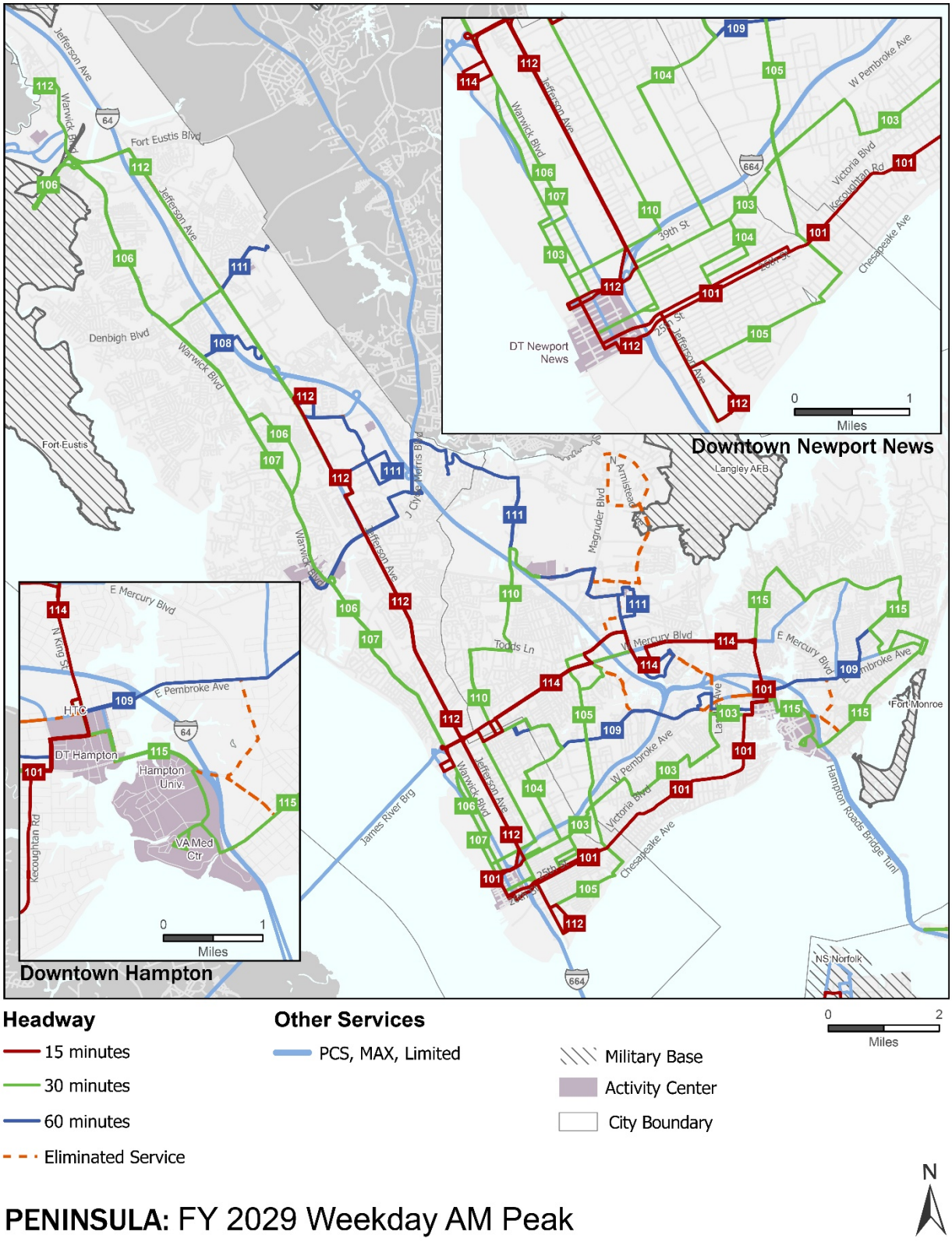
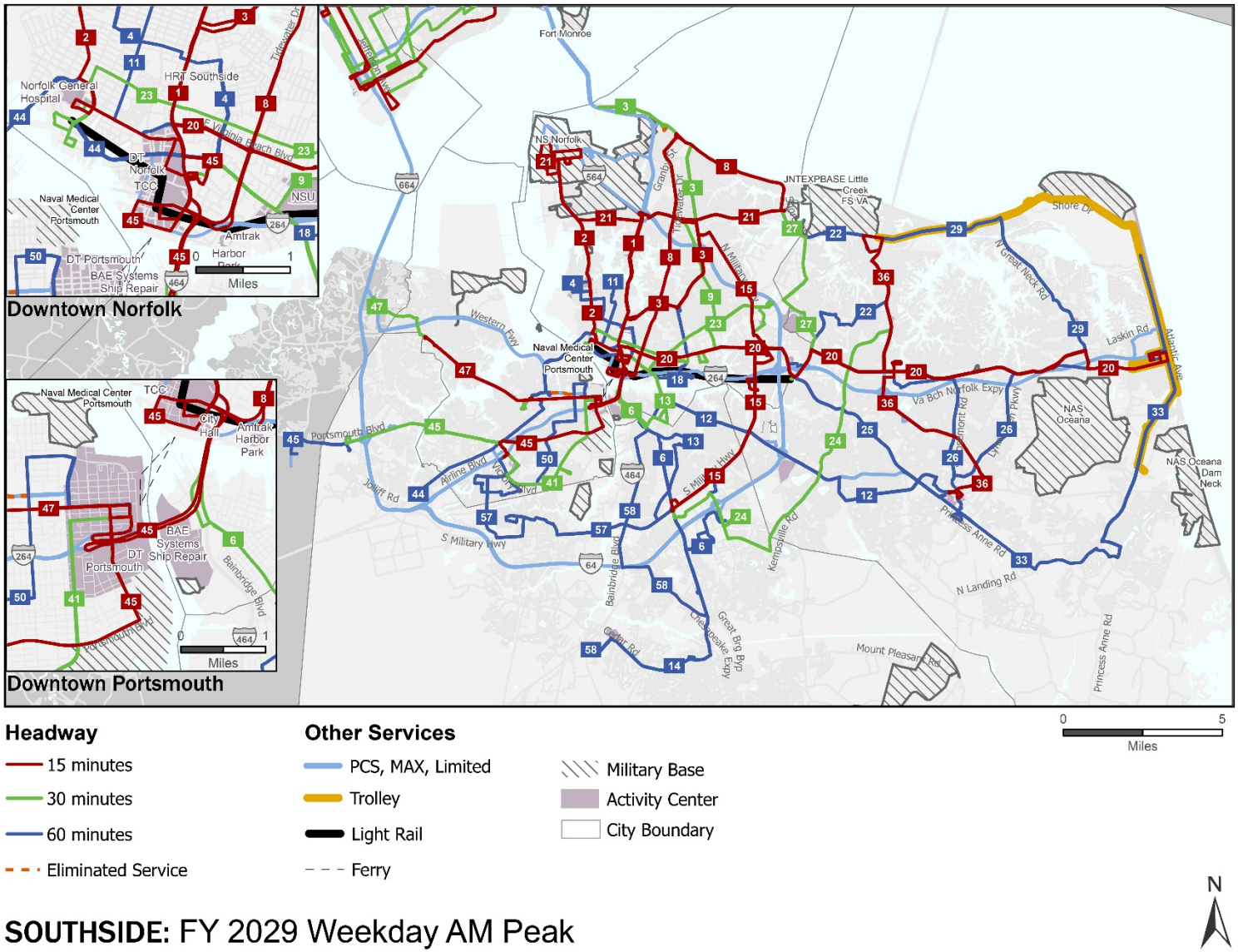
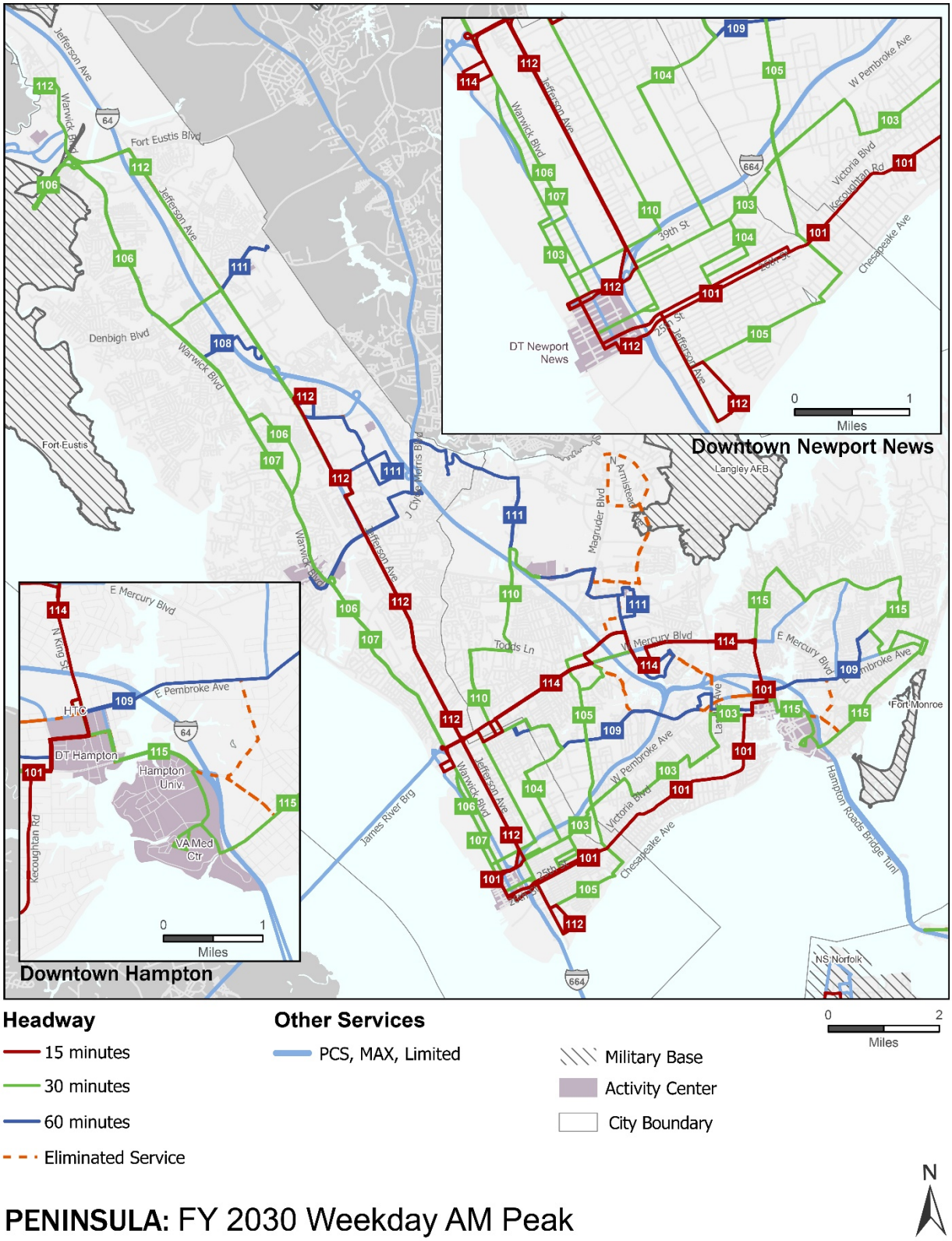


Figure B-14: FY 2029 Weekday AM Peak Frequency (Southside)



SOUTHSIDE: FY 2029 Weekday AM Peak

Figure B-15: FY 2030 Weekday AM Peak Frequency (Peninsula)



PENINSULA: FY 2030 Weekday AM Peak

Figure B-16: FY 2030 Weekday AM Peak Frequency (Southside)

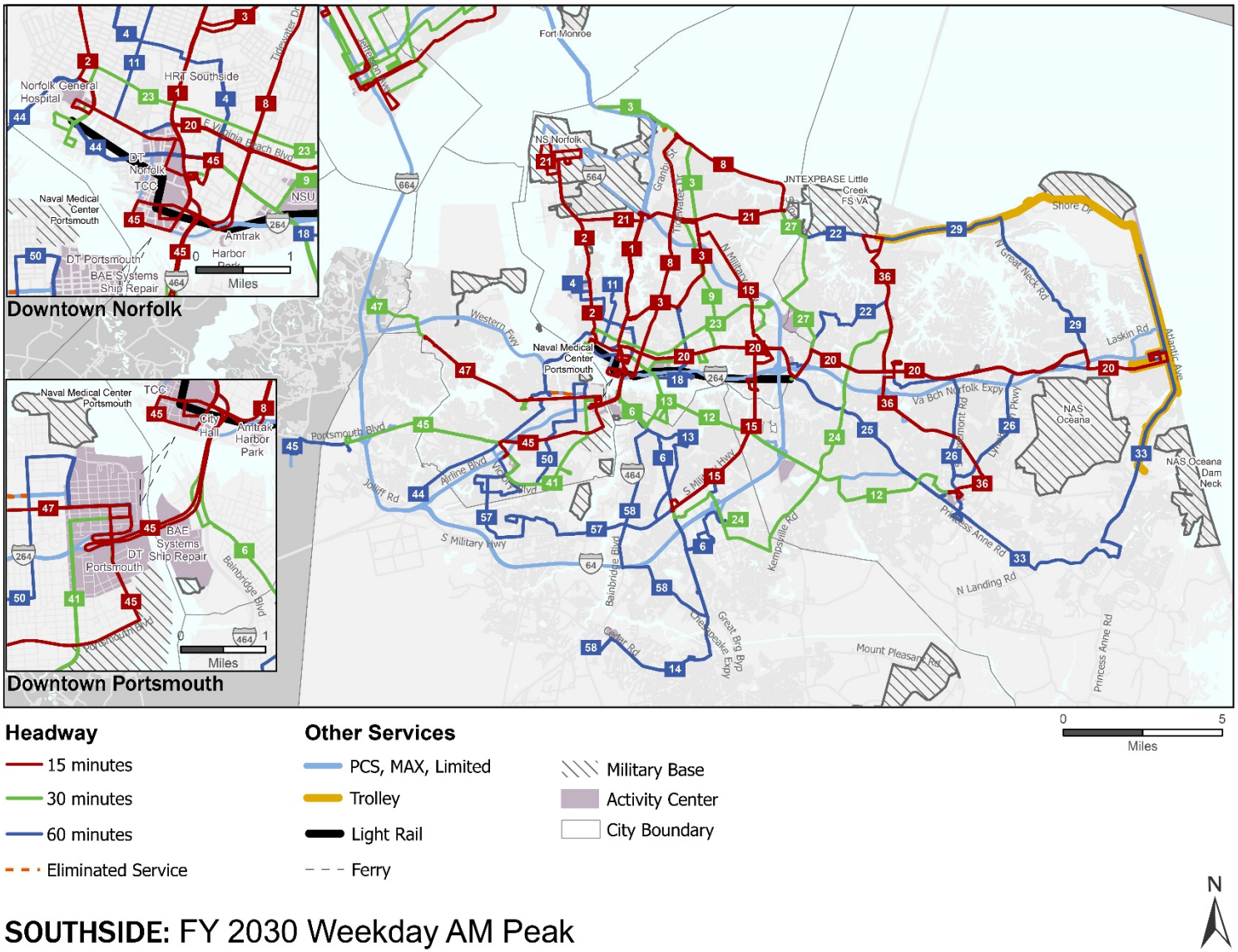


Figure B-17: FY 2031 Weekday AM Peak Frequency (Peninsula)

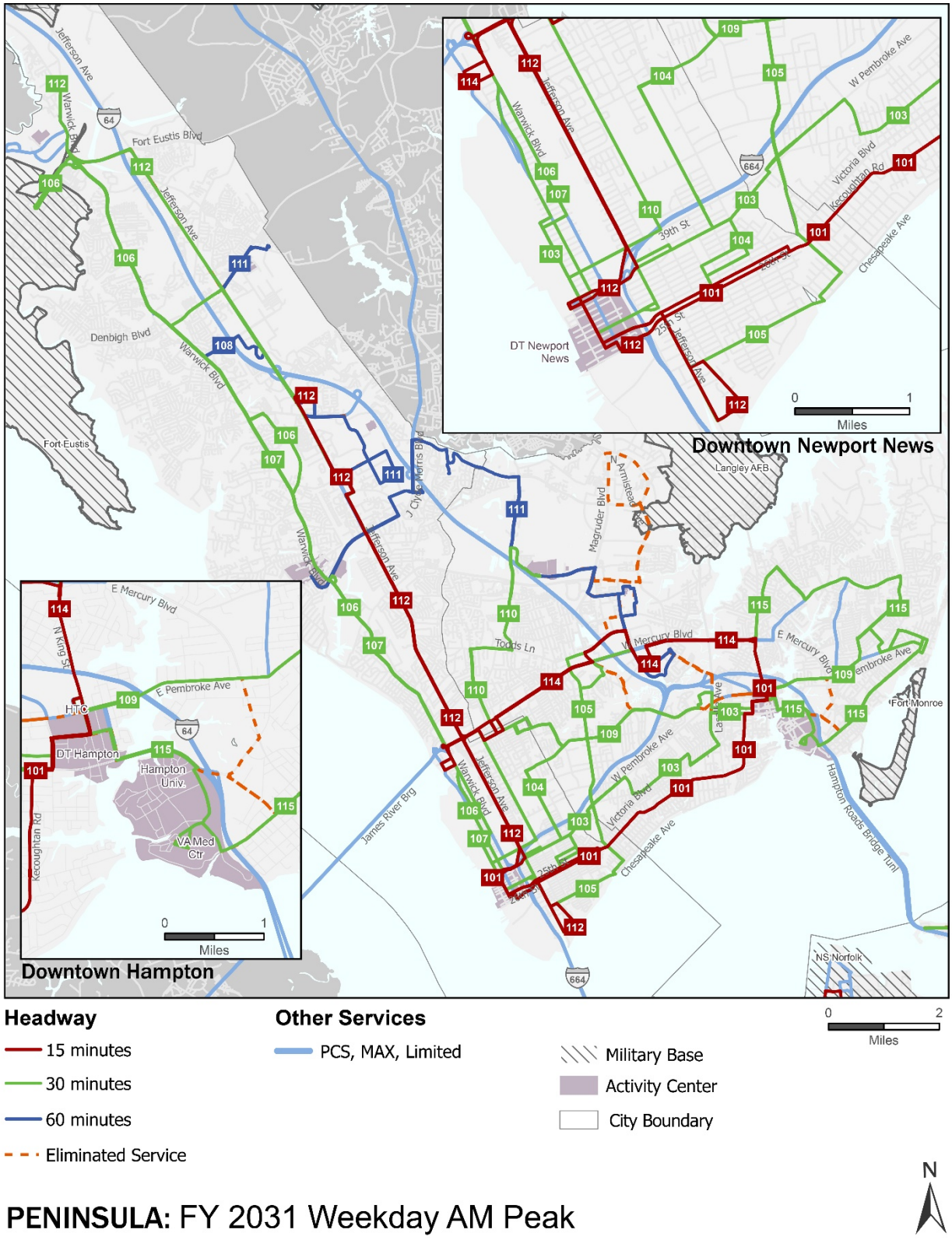
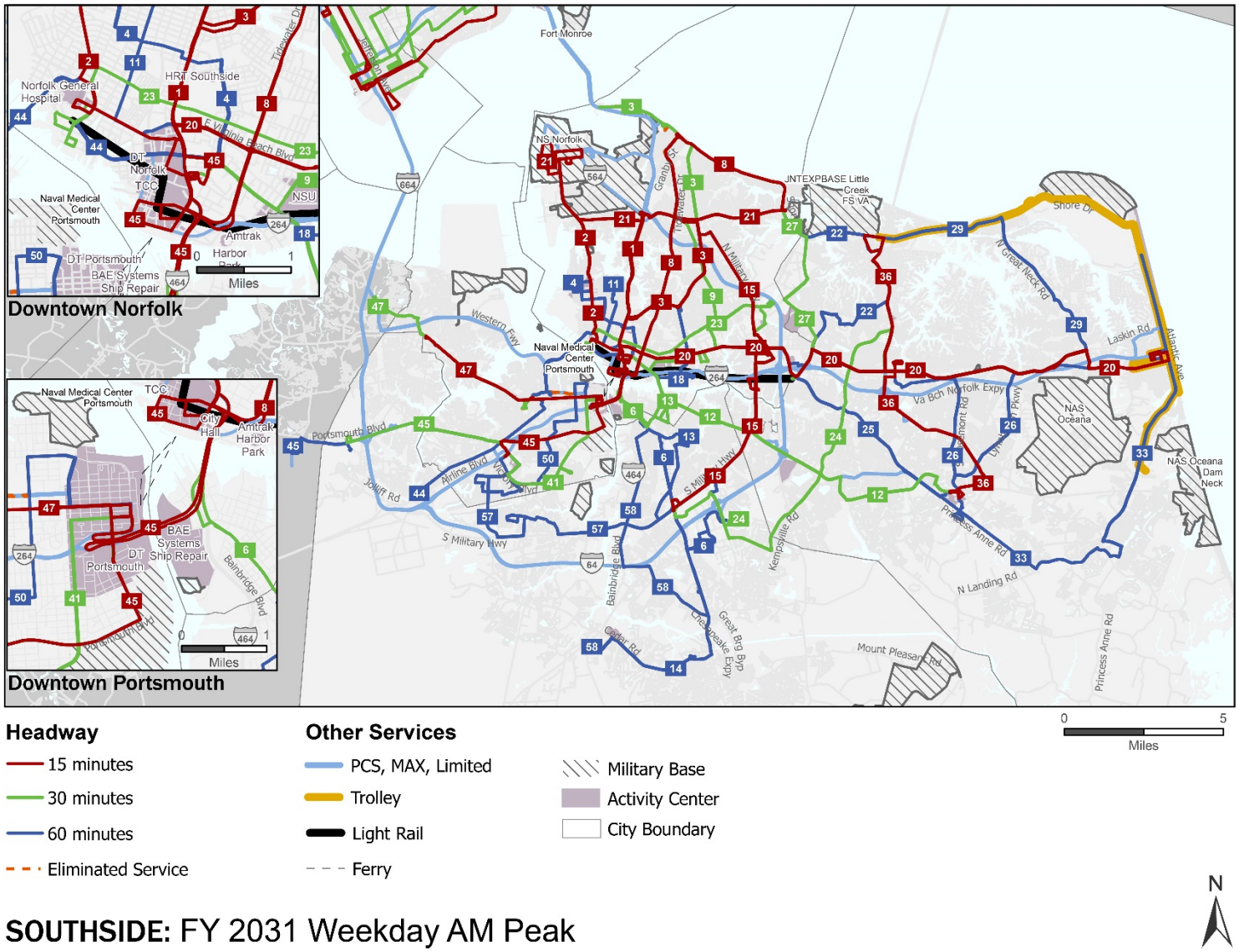


Figure B-18: FY 2031 Weekday AM Peak Frequency (Southside)



SOUTHSIDE: FY 2031 Weekday AM Peak

Figure B-19: FY 2032 Weekday AM Peak Frequency (Peninsula)

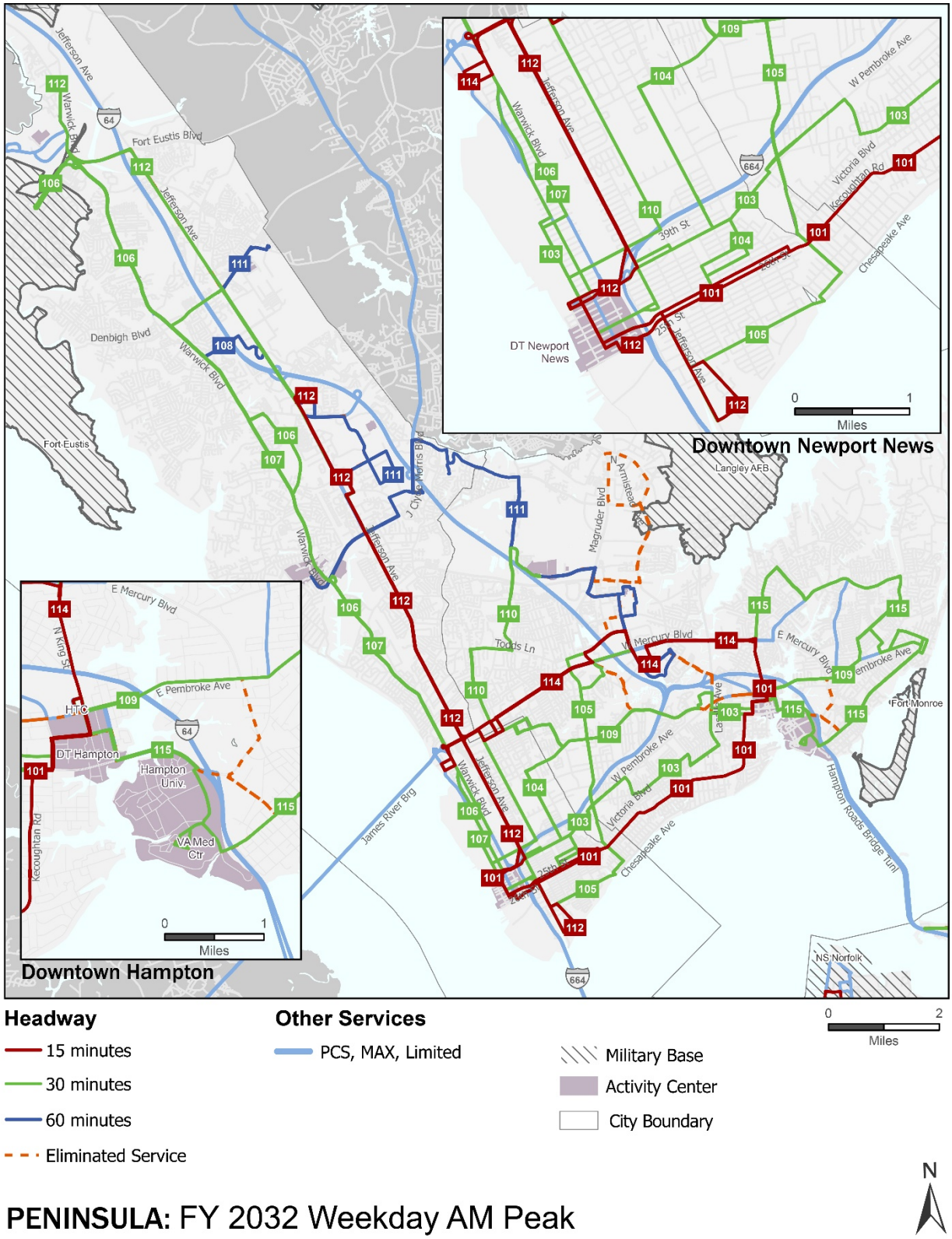
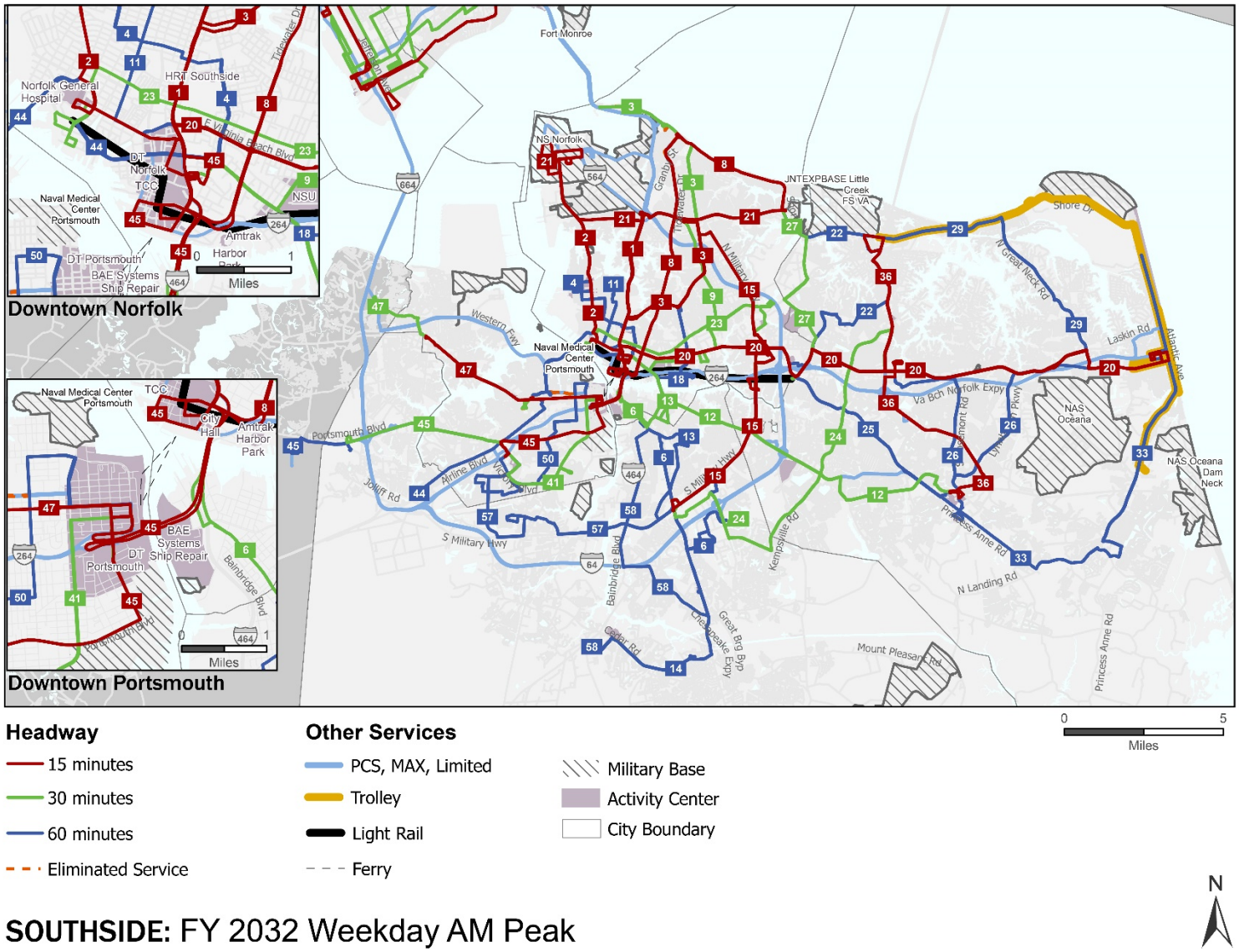


Figure B-20: FY 2032 Weekday AM Peak Frequency (Southside)



SOUTHSIDE: FY 2032 Weekday AM Peak

Figure B-21: Service Target Weekday AM Peak Frequency (Peninsula)

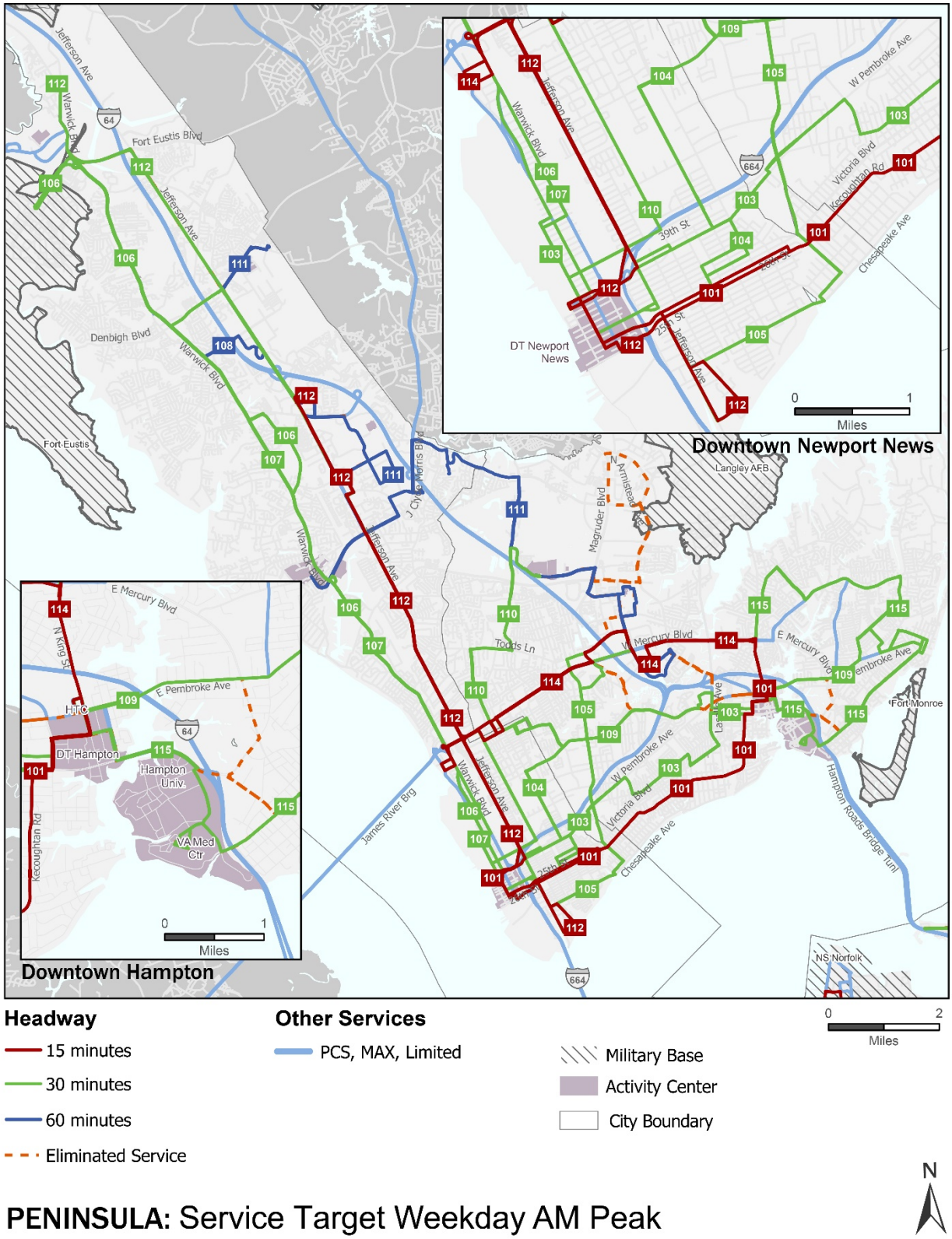
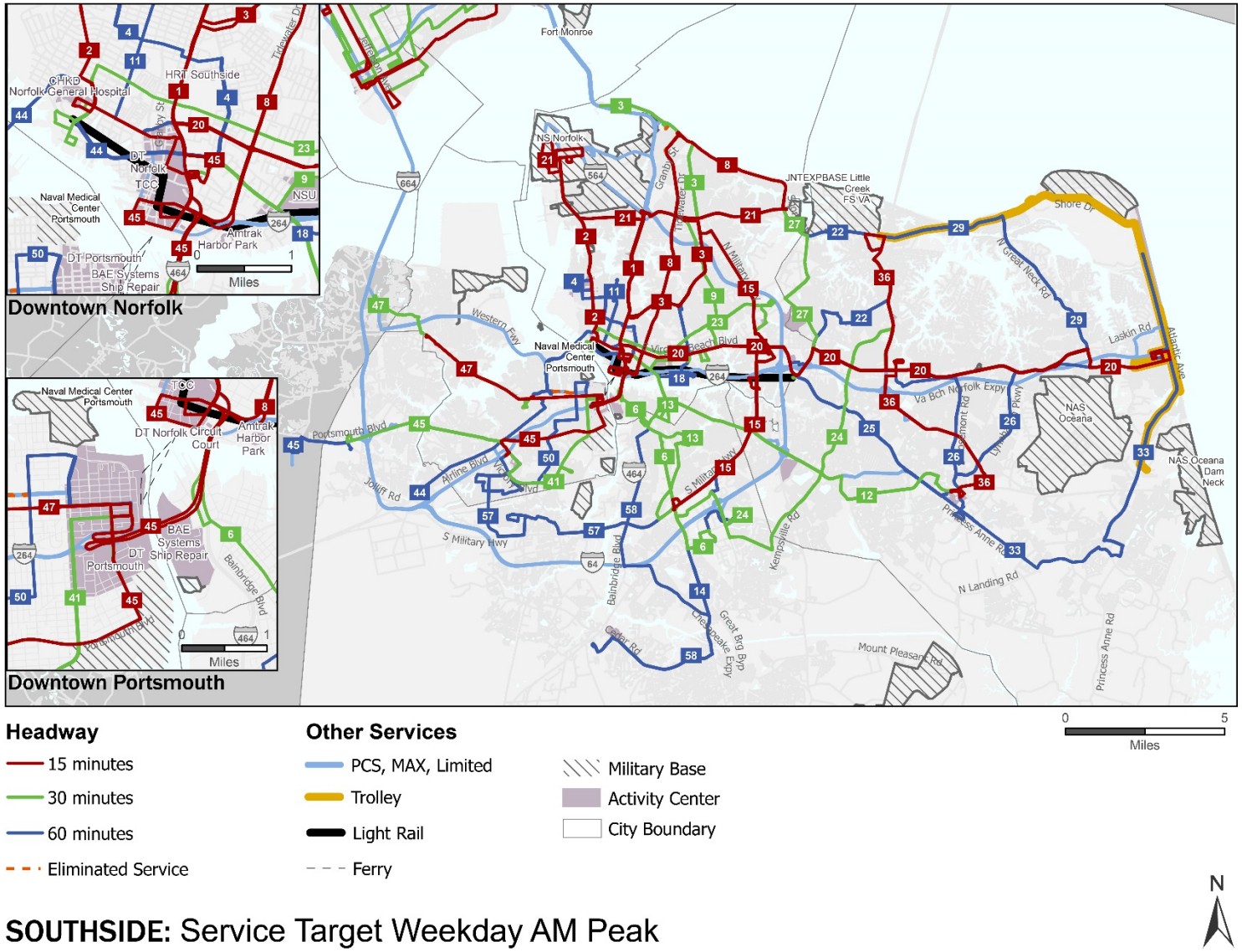


Figure B-22: Service Target Weekday AM Peak Frequency (Southside)



SOUTHSIDE: Service Target Weekday AM Peak

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APPENDIX C

Estimated Ridership Methodology and Results

FY2023 – FY2032

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Appendix C: Estimated Ridership Methodology and Results

This appendix explains the methodology used to estimate ridership for the proposed FY 2032 bus system (Regional Backbone, Local Priority, Coverage, and Limited/Express routes) and presents the results for weekdays, Saturdays, and Sundays. A summary of these results is presented in **Chapter 3**.

C.1. Overview

Future-year ridership was estimated for fixed-route service (Regional Backbone, Local Priority, and Coverage service types) by estimating the ridership impact for every service change between the existing and proposed system. Three types of service changes were defined, with a separate estimation method for each: alignment changes, span changes, and headway changes. The impacts of these changes were estimated in order, starting with stop-level ridership adjustments caused by alignment changes, followed by the application of ridership demand elasticities for span and headway changes. These methods are described in further detail in the following sections.

Ridership for Limited/Express routes, including Peninsula Commuter Service (PCS) and Metro Area Express (MAX) routes, was estimated at the trip level. Ridership estimation was not conducted for service modes without proposed changes in **Chapter 3**, including demand response service, the Elizabeth River Ferry, and the Tide Light Rail.

Calendar year 2019 average weekday boardings data by stop and route served as the baseline ridership for every route. For all routes, ridership estimates were calculated separately for weekdays, Saturdays, and Sundays, according to the routes and levels of service provided on each service day. The estimates for these days were then used to find a total annual ridership estimate, based on the number of weekdays, Saturdays, and Sundays (or holidays) occurring in a calendar year.

C.2. Alignment Changes

First, the ridership impacts of alignment changes were estimated at the stop level. In order to reflect the stops newly served or no longer served by a route due to realignment, boardings were added or subtracted from each route's baseline ridership.

For every realigned route, the existing stops served by the route before and after the proposed realignment were cataloged. From the existing alignment to the proposed alignment, there could be stops which are eliminated, stops which already exist but are being newly served by the route, or stops which are entirely new.

C.2.1 Stops Eliminated from a Route

Boardings at stops eliminated from a route were subtracted from the route's average daily ridership. In cases where one or more other routes were proposed to replace the route's service at a stop, those boardings were captured by those routes as described in the next section. In cases where all service to a stop is eliminated, those boardings were removed from the system entirely.

C.2.2. Stops Added to a Route

Boardings at existing stops added to a realigned route were estimated using the ridership from the existing routes which serve those stops. First, the realigned route captured any boardings belonging to a route that currently serves the stop but for which service at that stop (or along the whole route) is eliminated. In this way, the new route serves as a replacement for the eliminated service. At stops where no service was eliminated, all existing boardings at the stop were split proportionally between the routes according to the number of proposed daily trips (i.e., the number of proposed daily trips on each route divided by the total number of proposed daily trips across all routes at that stop).

C.2.3 New Stops

Some proposed route alignments provide service along street segments that do not have existing HRT service. For those segments, the number of new bus stops was estimated using 1,000-foot spacing in each direction. The boardings at each new stop were then estimated using the average existing boardings per stop for the route.

C.3. Level of Service Changes

Ridership impacts of the two types of level of service changes, span and headways, were estimated using ridership demand elasticities. These elasticities represent the change in transit demand, or ridership, caused by a change in level of service. The equation shown below demonstrates the usage of ridership demand elasticities, where ε represents the elasticity value and x represents either the span or headway.

$$Boardings_2 = Boardings_1 \cdot e^{\varepsilon \cdot \ln\left(\frac{60/x_1}{60/x_2}\right)}$$

The span elasticity value is positive, since an increase in span of service affects an increase in demand. In contrast, the headway elasticity value is negative, since an increase in headway (lower frequency) results in decreased demand. Elasticity values are calculated based on the observed effects of level of service changes on transit demand in existing fixed-route bus systems. The elasticity values used in this analysis were 0.83 for span and -0.46 for headways, which represent averages of the observed transit demand patterns of bus systems in the United States.[1]

C.3.1 Span Elasticity

After estimating ridership changes due to realignments, the span elasticity was applied to each route. The total number of hours of daily service (not revenue hours) was calculated for the existing and proposed conditions. For routes with short turns, the span for the short turn and full-length segments were applied separately, according to the ridership along each segment.

C.3.2 Headway Elasticity

Following span elasticity, the headway elasticity was applied for each route. Many routes have varying headways throughout the day, so the existing and proposed PM Peak headways were used for calculating the impacts of headway changes. In the case that PM Peak headways did not change in the proposed plan, midday headways were used to apply headway elasticity. Similar to span elasticity, routes with short turns were split into the respective boardings on each segment, with the headway elasticity applied to each segment according to the effective headway.

C.4. Weekend Ridership

Ridership for Saturday and Sunday planned service were estimated using the same methodology as weekday estimates. However, for routes which do not currently have weekend service but have proposed service on those days, Saturday and Sunday ridership were assumed to be 50 and 25 percent of the estimated weekday ridership, respectively, based on observed ridership patterns.

C.5. Limited/Express Routes

Future-year ridership on Limited/Express routes, including PCS routes, MAX routes, and Route 64, was estimated at the trip level. For routes with eliminated trips, the observed average daily boardings for those specific trips were subtracted from the existing route's ridership. For routes with added trips, the route's existing average boardings per trip was added for each new trip.

[1] TCRP Report 95, "Traveler Response to Transportation System Changes Chapter 9—Transit Scheduling and Frequency." It is important to note that these values carry uncertainties which limit the precision of final ridership estimates.

C.6. Limitations

The ridership estimates in this report contain a set of uncertainties which limit their potential accuracy. A major source of uncertainty for this methodology were the exclusion of future-year socioeconomic conditions. The results of this analysis are based only on existing ridership levels and the estimated impacts of changes to level of service. This approach does not employ population, employment, or land use forecasts to develop estimates, though population increases and changes in land use patterns in the Hampton Roads region may cause greater ridership increases than have been estimated. While the proposed service changes are designed to accommodate anticipated changes to land use and employment destinations, the method of using existing ridership data as a base for estimating future ridership does not account for such changes to transit demand, which may have varying ridership effects on different areas or routes within the transit network.

In addition, the impacts of service changes on each route did not affect the results for other routes, since estimates for each route are calculated independently, with the exception of realignments that shift boardings at certain stops from one route to another. Changes in waiting times for transfers may result in further ridership changes that are not reflected in these estimates.

C.7. Estimation Results

Table C-1 shows the existing and forecasted average daily ridership by route for the FY 2032 proposed system. Regional Backbone Routes are highlighted with a light grey background, and routes with newly introduced service are marked with "New" in the percent change column.

Table C-1: Weekday, Saturday, and Sunday Average Daily Ridership Estimates

Route		Existing Daily Ridership (CY 2019)			Forecasted Daily Ridership (FY 2032)			Percent Change		
		Weekday	Saturday	Sunday	Weekday	Saturday	Sunday	Weekday	Saturday	Sunday
Southside Total		**29,825**	**21,419**	**9,725**	**37,984**	**25,528**	**15,426**	**27%**	**19%**	**59%**
Southside Routes	1	2,735	1,571	823	2,839	1,870	1,321	4%	19%	60%
	2	841	351	290	1,103	485	387	31%	38%	33%
	3	1,745	1,255	733	2,912	1,635	1,264	67%	30%	72%
	4	347	231	145	364	231	155	5%	0%	7%
	5	238	179	0	0	0	0	Route Eliminated		
	6	661	499	123	782	528	236	18%	6%	92%
	8	1,288	1,017	525	2,938	1,428	1,278	128%	40%	144%
	9	809	369	0	838	369	210	4%	0%	New
	11	173	118	59	202	126	77	17%	7%	30%
	12	433	292	0	586	276	146	35%	-5%	New
	13	951	644	279	1,115	719	463	17%	12%	66%
	14	357	229	0	292	218	73	-18%	-5%	New
	15	2,219	1,463	593	2,895	1,864	732	30%	27%	23%
	18	131	80	0	136	80	34	3%	0%	New
	20	3,680	2,574	1,530	4,968	3,453	2,126	35%	34%	39%
	21	1,720	1,191	555	2,041	969	708	19%	-19%	28%
	22	322	206	0	375	279	94	16%	35%	New
	23	1,227	872	377	1,352	897	657	10%	3%	75%

Route		Existing Daily Ridership (CY 2019)			Forecasted Daily Ridership (FY 2032)			Percent Change		
		Weekday	Saturday	Sunday	Weekday	Saturday	Sunday	Weekday	Saturday	Sunday
	24	146	101	73	233	179	51	60%	78%	-30%
Southside Routes	25	485	262	0	514	265	129	6%	1%	New
	26	193	130	0	354	220	88	83%	70%	New
	27	382	271	0	660	455	165	73%	68%	New
	29	315	228	0	221	158	55	-30%	-31%	New
	30	1,986	2,472	1,759	1,986	2,472	1,759	0%	0%	0%
	31	397	553	413	397	553	413	0%	0%	0%
	33	457	345	63	485	328	52	6%	-5%	-18%
	34-Sum[2]	-	-	-	-	-	-	-	-	-
	34-OS[2]	-	-	-	-	-	-	-	-	-
	35	633	686	478	633	686	478	0%	0%	0%
	36	530	301	0	1,391	844	348	162%	180%	New
	41	374	264	0	1,034	720	258	176%	173%	New
	43	174	142	0	0	0	0	Route Eliminated		
	44	423	290	105	419	308	105	-1%	6%	0%
	45	1,598	1,102	509	1,713	1,381	924	7%	25%	81%
	47	932	499	217	1,240	910	458	33%	82%	112%
	50	199	118	78	339	223	73	71%	90%	-6%
	55	190	137	0	0	0	0	Route Eliminated		
	57	360	271	0	431	291	108	20%	7%	New
	58	175	108	0	198	111	0	13%	3%	New
Peninsula Total		**11,791**	**8,831**	**4,800**	**16,239**	**10,892**	**8,632**	**38%**	**23%**	**80%**
Peninsula Routes	101	829	613	369	1,539	746	722	86%	22%	96%
	102	223	125	103	0	0	0	Route Eliminated		
	103	882	682	317	1,016	770	609	15%	13%	92%
	104	680	524	189	548	286	182	-19%	-45%	-4%
	105	661	540	310	860	664	524	30%	23%	69%
	106	1,130	810	474	1,464	950	633	30%	17%	34%
	107	949	765	457	1,252	611	398	32%	-20%	-13%
	108	541	515	293	618	495	324	14%	-4%	11%
	109	211	161	106	1,298	632	370	517%	292%	250%
	110	480	319	204	470	323	241	-2%	1%	18%
	111	402	290	187	761	495	299	89%	71%	60%
	112	1,687	1,378	662	3,231	2,666	2,382	92%	94%	260%

[2] VB Wave Route 34 summer and off-season ridership could not be estimated using existing data sources and would require a specialized ridership estimation approach due to its unique service characteristics as a seasonal, weekend-only shuttle.

Route		Existing Daily Ridership (CY 2019)			Forecasted Daily Ridership (FY 2032)			Percent Change		
		Weekday	Saturday	Sunday	Weekday	Saturday	Sunday	Weekday	Saturday	Sunday
Peninsula Routes	114	1,284	1,098	473	2,190	1,722	1,534	71%	57%	224%
	115	358	211	126	919	533	413	157%	153%	228%
	116	452	233	140	0	0	0	Route Eliminated		
	117	230	71	46	0	0	0	Route Eliminated		
	118	550	367	247	0	0	0	Route Eliminated		
	120	169	131	98	0	0	0	Route Eliminated		
	64	74	0	0	74	0	0	0%	0%	0%
PCS Total		**312**	**0**	**0**	**468**	**0**	**0**	**50%**	**0%**	**0%**
PCS Routes	403	30	0	0	60	0	0	101%	0%	0%
	405	50	0	0	99	0	0	97%	0%	0%
	414	110	0	0	110	0	0	0%	0%	0%
	415	32	0	0	62	0	0	94%	0%	0%
	430	90	0	0	137	0	0	52%	0%	0%
MAX Total		**1,613**	**732**	**481**	**2,294**	**829**	**582**	**42%**	**13%**	**21%**
MAX Routes	121	48	0	0	48	0	0	0%	0%	0%
	919	81	0	0	70	0	0	-14%	0%	0%
	922	64	0	0	50	0	0	-21%	0%	0%
	960	275	277	250	294	318	300	7%	15%	20%
	961	732	455	230	732	455	230	0%	0%	0%
	962	0	0	0	337	0	0	New	0%	0%
	966	93	0	0	138	0	0	50%	0%	0%
	967	276	0	0	276	0	0	0%	0%	0%
	970	0	0	0	104	0	0	New	0%	0%
	972	44	0	0	89	0	0	100%	0%	0%
	975	0	0	0	78	0	0	New	0%	0%
	980	0	0	0	78	56	51	New	0%	0%
System Total		**43,541**	**30,982**	**15,005**	**56,985**	**37,250**	**24,639**	**31%**	**20%**	**64%**

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APPENDIX D

On-Demand (Microtransit) Service

FY2023 – FY2032

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Appendix D: On-Demand Microtransit Service

D.1 Overview

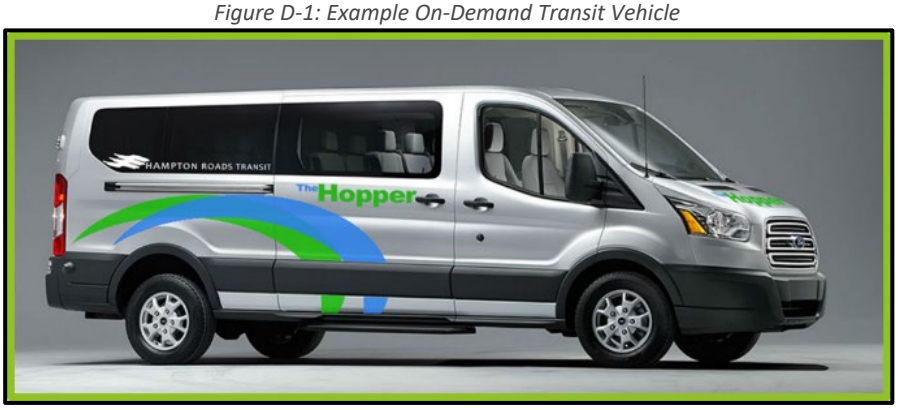
D.1.1 Introduction

Appendix D documents how on-demand microtransit has been an integral part of the Transit Strategic Plan planning process and the next steps toward future implementation through initial pilot projects.

The transportation marketplace is continuously evolving. Reliable fixed-route bus service is the centerpiece of public transportation in communities across the United States. This will continue to be essential for Hampton Roads. At the same time, it is essential for agencies to adapt and innovate to meet the needs of current and would-be customers as the mobility landscape changes.

HRT embraces this concept as part of its vision to function as ***a progressive mobility agency*** and to fulfill its mission ***to connect Hampton Roads with transportation solutions that are reliable, safe, efficient, and sustainable.***

Figure D-1: Example On-Demand Transit Vehicle



HRT believes that achieving this vision and mission must include exploring new partnerships, service models, and leveraging new technologies. Exploring on-demand "microtransit" operations is an example of this.

The new regional standards outlined in **Chapter 1** will guide the design and operation of different types of services in the years ahead. This includes "On-Demand" as one of five new classifications of HRT route types. Another term for this is "microtransit." In contrast to fixed-route bus services, microtransit is characterized by flexible on-demand scheduling, routing, and customer experiences that resemble private industry ride-hailing, ride-sharing activities. This will be a new type of service in Hampton Roads. **Table D-1** shows the characteristics of the On-Demand service classification.

Table D-1: On-Demand Classification

Route Classification	Description	Interjurisdictional	Population / Job Density
On-Demand	On-Demand transit service will operate in specified zones, connecting lower-density areas to local destinations and transfer opportunities to fixed-route service.	Can operate within a jurisdiction or cross jurisdictional boundaries.	Densities warrant transit service but are low enough that regular fixed route service would be less effective

D.1.2 What's New

An RFP is currently out for a third-party contractor to operate "turnkey" on-demand service for pilot programs in Virginia Beach and Newport News. The pilot programs will be funded through a Virginia Department of Rail and Public Transportation "demonstration grant" of $1.6 million plus matching local funds from both cities as required by the state grant. It is expected that the pilots would begin in Spring 2022 and run for a period of six months.

Additionally, HRT is currently working with the City of Hampton to explore microtransit options to identify demand responsive service to cover areas losing service due to the planned elimination of Route 118. An initial microtransit

zone has been discussed with the City of Hampton in January 2021 and a subsequent presentation was made to the Hampton City Council.

D.2 Strategic Approach

HRT believes on-demand service is an important innovation that needs testing in Hampton Roads. Microtransit may effectively serve multiple goals and objectives (e.g., new transit usage, more cost-effective operations to replace lesser-performing service, etc.). A pilot project(s) approach would be ideal to assess this. This would allow for experimentation so that microtransit's viability can evaluated in different use cases. The objective is to empirically determine how on-demand service characteristics and performance may work as a sustainable new travel option, especially as compared to fixed-route bus service.

The specific approach for piloting microtransit would be to use small- or medium-size vehicles to operate within a pre-defined zone or zones to provide transit trips based on passenger requests. Results of pilot projects would ultimately inform broader planning and implementation efforts, which in turn would be included in updates to HRT's Transit Strategic Plan.

D.3 Background: Preliminary Planning Snapshot

As part of a potential bus system redesign and implementation of new services, HRT has identified several “flex zones” in which new on-demand services could potentially be deployed. Seven zones were initially identified. At HRT’s direction, an additional zone was subsequently analyzed for the City of Newport News using other professional service resources, bringing the number of zones to eight, with at least one in each HRT member city.

The basic concept was for on-demand transit service to potentially operate in these specified zones, connecting lower-density areas to local destinations and transfer opportunities to fixed-route service (for example, connecting to the Regional Backbone high-frequency bus system). As initially conceived, these zones were relatively small in size (an average of 8.6 square miles) and located strictly within a city’s boundaries rather than crossing any jurisdictional boundaries (although more recent planning updates do include cross-jurisdictional zones).

D.4 Additional Due Diligence Planning

RideCo assisted HRT to further evaluate and improve upon the eight preliminary flex zones. This resulted in significant modifications and improvements for defining the most feasible operating scenarios in these areas.

D.4.1 Methodology

Each zone was evaluated and scored based on seven criteria. These high-probability success criteria included:

- **Local, limited stop, regional express, and seasonal bus**
- **Zone Size & Boundaries**: Ideal zone size spans from 10 to 35 square miles—rounded shape (not too long/narrow).
- **Population Density:** Population plus Jobs > 35,000—density to warrant transit, but low enough that high-quality fixed route is ineffective.
- **Land Usage:** Combination of residential, commercial and sometimes industrial—not overly concentrated in any one of these, but potential to serve many types of trips, e.g. commute, shopping, seniors, students.
- **Major Points of Interest:** 1 to 5 major points of interest that serve many trips per day—characteristics that typically drive repeat usage, e.g., high-quality transit hub, large mall, Costco, Target, Walmart.
- **Income Levels:** Best adoption is typically in areas of medium to medium-low wealth bracket—patrons that are price sensitive.
- **Connection to Existing Transit:** High-quality transit connections that leave the zone (e.g. LRT, frequent bus)—little overlap with transit within the zone.
- **Community Trips:** Evaluated for strong intra-zone travel patterns—commutes, local trips, shopping, etc.

Empirical data was combined in a zone quality index. The index aggregated independent scores from the analysis of each high-probability success criteria, for each zone, resulting in a standardized score for zone strength. HRT provided route, cost, and ridership data for existing services, as needed, and population and employment data based on U.S. Census. A workshop with HRT cities was conducted October 24, 2019, reviewing outcomes from this additional due diligence work and solidifying zones and use cases that fit best for a Regional Microtransit Demonstration Project. The zones that were considered are shown in Error! Not a valid bookmark self-reference..

Table D-2: On-Demand Success Criteria

High-Probability Success Criteria	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6	Zone 7	Zone 8
	Portsmouth	Virginia Beach West	Virginia Beach East	Chesapeake	Hampton	Norfolk	Virginia Beach Salem	Newport News
Overall Average	4.9	5.6	4.0	2.9	-	-	5.3	5.4
Zone Boundaries	6	5	5	5	-	-	6	5
Population + Jobs	5	6	4	4	-	-	6	6
Land Usage Distribution	6	4	5	2	-	-	6	5
Major Points of Interest	4	6	2	3	-	-	6	5
Income Levels	4	6	3	2	-	-	4	5
Connection to Existing Transit	5	6	5	2	-	-	6	6
Community Trips	4	6	4	2	-	-	3	6

Zone 2 (Virginia Beach West) and Zone 8 (Newport News) were highest rated by HRT's consultant team's methodology. Follow up meetings with Newport News and Virginia Beach further scrutinized these zones to finalize initial planning to pilot on-demand (microtransit) service. These two zones were selected for a demonstration grant application. In January 2020, HRT submitted a FY 2021 demonstration grant request to the Virginia Department of Rail and Public Transportation to help fund the Regional Microtransit Demonstration Project, which was awarded in August 2020. The other zones remain on a list awaiting the outcome of the pilot program. Additionally, HRT is currently working with the City of Hampton to explore microtransit options to identify demand responsive service to cover areas losing service due to the planned elimination of Route 118. An initial microtransit zone has been discussed with the City of Hampton in January and a subsequent presentation was made to the Hampton City Council.

D.5 Pilot Project(s) Recommendation Summary

HRT made a grant application to the Virginia Department of Rail and Public Transportation in February 2020 for the two pilot projects described below. In Summer 2020 HRT was notified of the awarding of $1.6 million of funding under a "demonstration grant". Each city will provide matching local funds as required by the state grant. It is anticipated that the pilot projects would be implemented as a "turnkey" operation using a third-party contractor. It is expected that pilots would begin in Spring 2022.

Based on consultation with experts, HRT expects average wait times of 15-20 minutes or less when deploying a fleet of small vehicles in each zone initially recommended for piloting on-demand microtransit. The innovation objective would be to leverage cloud-based route optimization technology and app-based booking of rides to move people around the defined zones with better frequency and shorter trip times than offered by some conventional fixed-route transit options, and in geographies traditionally harder to serve with conventional fixed-route transit efficiently.

D.5.1 Zone Descriptions

Newport News - Zone 8

The unique, elongated northwest-southeast shape of Newport News has over time lent to development and concentration of more commercial and mixed-use activities along in the middle portion of the city (westward), generally aligned along Jefferson Boulevard, and more residential and lower-density development generally aligned with Warwick Boulevard in areas eastward. Fixed-route bus services along major arterial roadways has effectively supported north-south travel. However, achieving effective east-west transit connectivity has been a challenge, which on-demand service could potentially help remedy. Residential and employment densities are shown in **Figure D-2** and **Figure D-3**. The commuting patterns of the zone are displayed in **Figure D-4**, which details the potential for success of the on-demand service for this zone.

Figure D-2: Zone 8 Residential Density

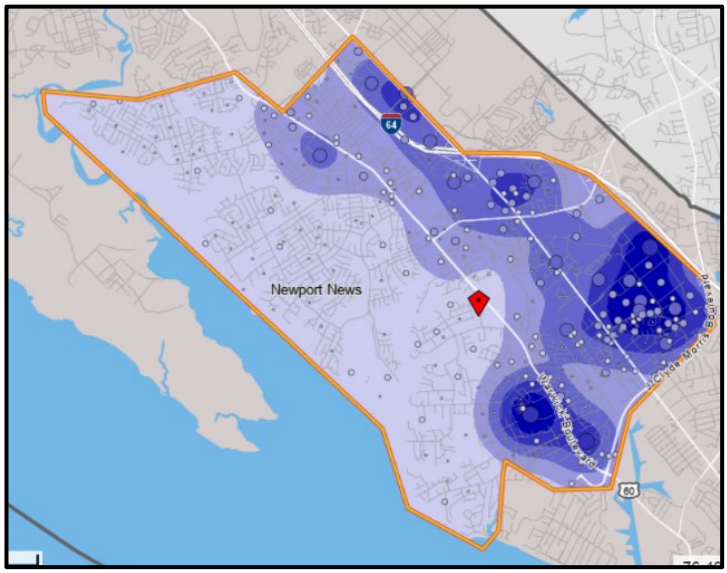


Figure D-3: Zone 8 Employment Density

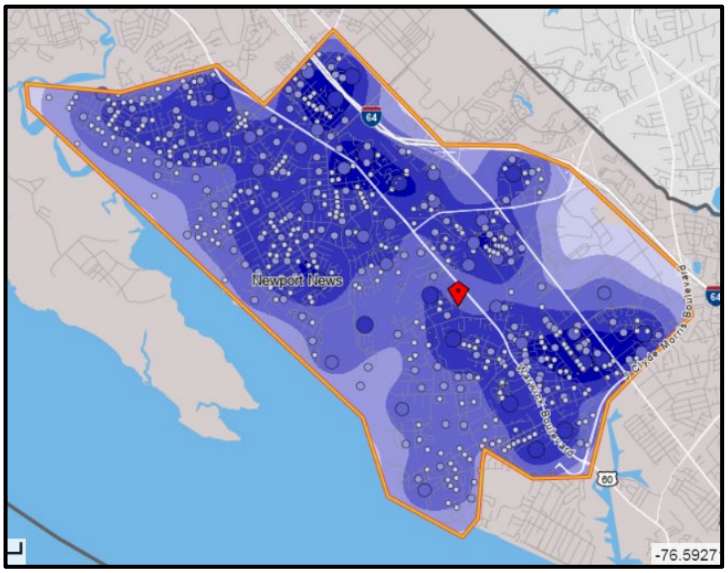
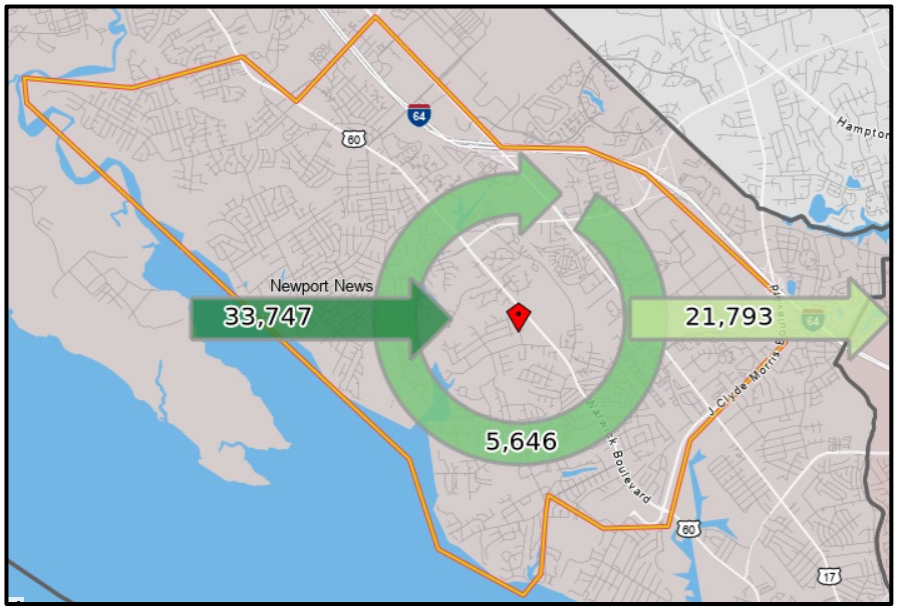


Figure D-4: Zone 8 Inflow, Outflow, and Intra Zone Commutes



Virginia Beach West – Zone 2

Zone 2 in Virginia Beach seeks to connect residents to the Tide Light Rail and other intra-zone points, with the potential to serve adjacent portions of Norfolk as well including the JANAF Shopping Center and the Norfolk Premium Outlet Mall. This zone serves people who live in residential areas north of Virginia Beach Boulevard (**Figure D-5**) and directly connects to job centers via access to the commercial and economic activity concentrated along Virginia Beach Boulevard (**Figure D-6**). **Figure D-7** details the existing commute patterns of those who live and/or work in the zone, exhibiting the potential for the success of this demand responsive service zone.

Figure D-5: Zone 2 Residential Density

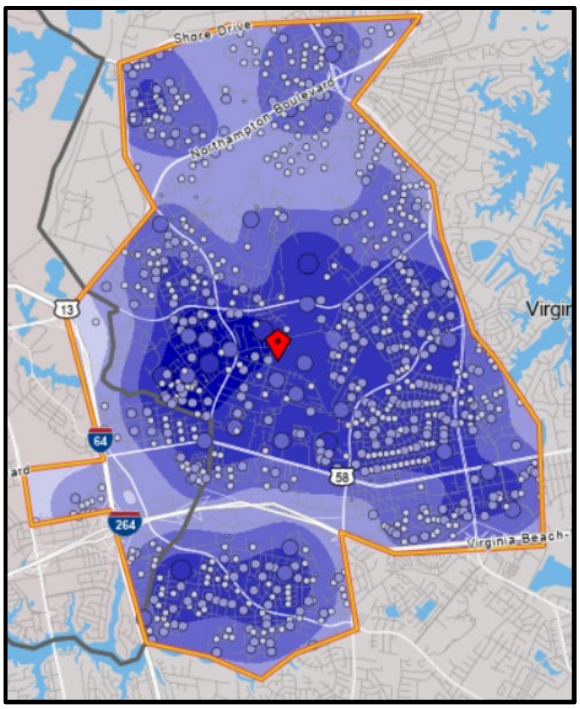


Figure D-6: Zone 2 Employment Density

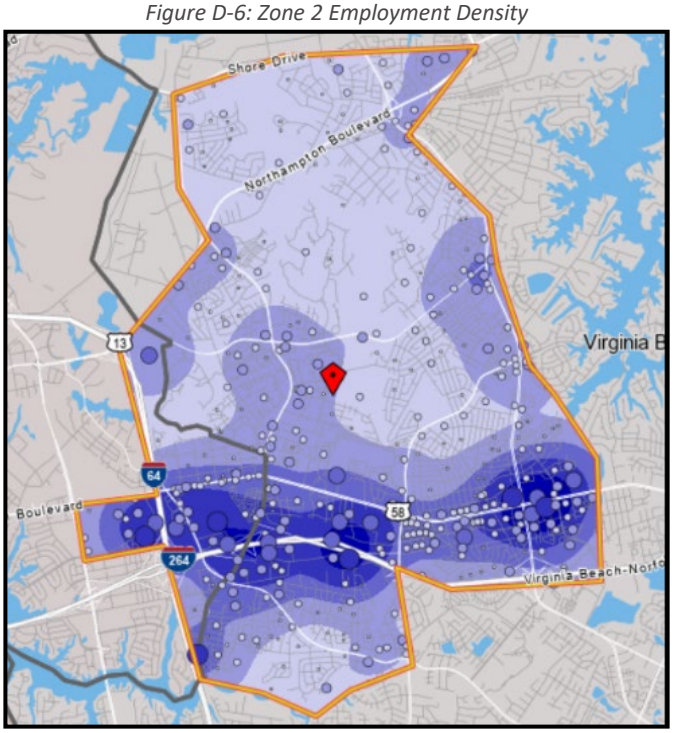
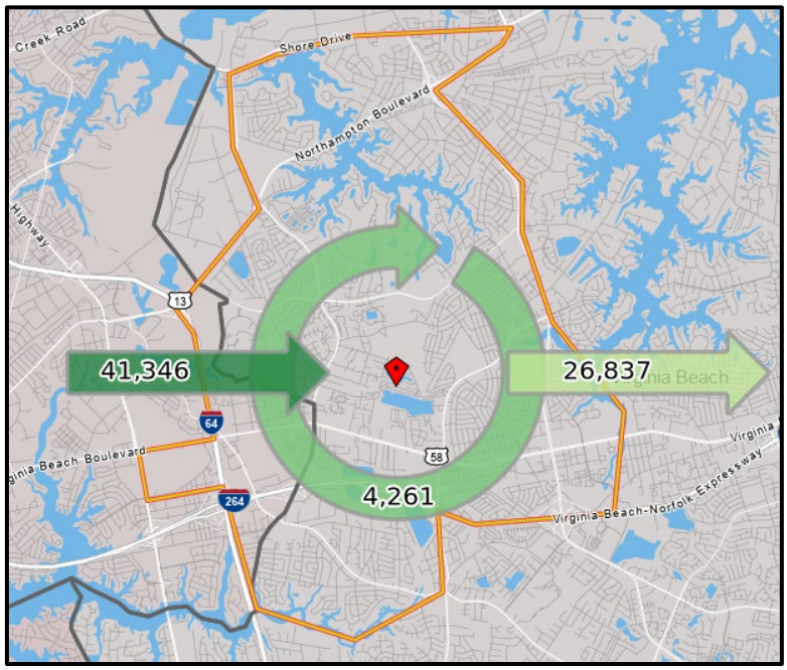


Figure D-7: Zone 2 Inflow, Outflow, and Intra Zone Commutes



D.5.2 Project Design

As noted above, microtransit could effectively serve multiple goals and objectives (e.g., new transit usage, more cost-effective operations to replace lesser-performing service, etc.). Unique factors will affect the success and lessons learned for new on-demand service in any particular zone.

Depending on costs and available resources, initially piloting services in only one zone may be warranted. However, an intentional two-city pilot design would allow for clear differentiation and comparative post-hoc assessments to provide HRT and others with the richest possible data and learning to be shared.

D.6 Conclusion

The justifications and benefits for piloting on-demand transit services in the HRT service area include:

- Allowing the region to effectively determine microtransit as a feasible alternative and complement to fixed-route transit with respect to customer experiences, performance KPIs, and cost-effectiveness.
- Exploring new markets for transit that could reduce reliance on single-occupancy vehicles.
- Enabling HRT to enhance organizational capacities (i.e., human resources, organizational learning, etc.) for innovation, service planning, customer-centric operations, and responsiveness to the dynamic environment.
- Supporting knowledge transfer to benefit other agencies as HRT partners with the Virginia Transit Association and others to document and share lessons learned via webinars, conference presentations, and other information sharing opportunities.
- Informing updates to 10-year the Transit Strategic Plan that will further refine and potentially expand the use of on-demand services throughout the HRT service area, in accordance with new regional standards and route classifications.
- Aligning with a mission and vision of becoming a progressive mobility agency that provides transportation solutions that are reliable, relevant, and responsive to the needs of today's commuters.