

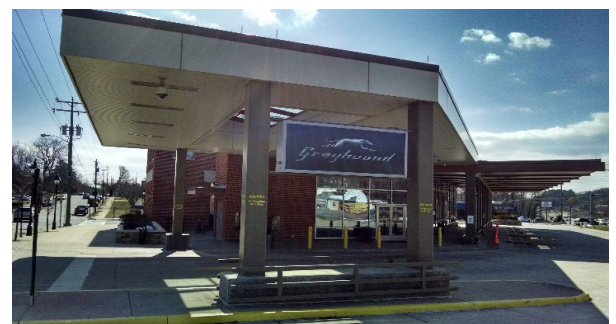


Virginia Department of Rail and Public Transportation

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Intercity Bus Service Needs Assessment

Final Report – October 2022



KFH Group, Inc.
Bethesda, MD | Austin, TX

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Intercity Bus Service Needs Assessment

Chapter 1: Existing Conditions and Previous Studies

Context

The next potential route in the development of Virginia's state-supported intercity bus network is the subject of this study, the U.S. 17 Corridor between Hampton Roads and Washington, D.C. It has been addressed by a number of previous studies for DRPT. It was most recently addressed in the *Virginia Breeze Expansion Alternatives Analysis* conducted in 2018-2019. In that study, potential service was analyzed in several permutations: Norfolk or Hampton to Fredericksburg or Washington, D.C. The recommended option was Norfolk to Washington, D.C.

The purpose of this study is to revisit that recommendation, applying the same methodology but reexamining the recommendation. Since the previous study was conducted, the COVID-19 pandemic has affected intercity bus ridership and revenue, which is one reason to focus on this route again. This chapter presents the existing conditions of intercity surface transportation in this corridor, and also includes information about the existing local transit that does (or could) connect with intercity services.

The Virginia Breeze led DRPT to contract with KFH for another study, the *Virginia Breeze Expansion Alternatives Analysis*. This study focused on the needs of the Commonwealth beyond the original Virginia Breeze corridor and included significant outreach as well as technical analysis. The study recommended four corridors as the focus of future implementation. The two recommended for initial implementation are now in service: Capital Connector (Martinsburg-Richmond-Washington, D.C.), and the Piedmont Express (Danville-Washington, D.C.). Subsequently KFH provided analysis for DRPT regarding intercity service in the I-81 Corridor from Bristol. Service has now been implemented there as the Highlands Rhythm. The Virginia Breeze is now the brand for all DRPT intercity bus services, and the original Virginia Breeze route has been renamed the Valley Flyer.

Service Inventory

This section provides an inventory of current intercity services in the Northern Neck, Middle Peninsula, and Hampton Roads areas, including existing intercity bus and rail services, commuter bus services, and local transit potentially connecting to intercity services. This includes:

- Intercity bus: Greyhound and Megabus
- Curbside intercity bus: Services to/from points in the corridor
- Intercity rail passenger: Amtrak and Amtrak Thruway connecting bus services
- Commuter bus service: Including HRT MAX at a minimum

- Local transit: Including existing connections to intercity services, and potential connections in the U.S. 17 Corridor.

The focus of this study is the area depicted in Figure 1-1, which shows the outlines of the existing intercity bus network with the current Virginia Breeze routes highlighted. Figure 1-2 shows the intercity bus services in the study area.

While there is intercity connectivity between the regions at the endpoints of this corridor, there is no current intercity bus service operating between Hampton Roads and the Washington, D.C. region on the eastern side of I-95. The Hampton Roads region and Washington, D.C. regions are connected by services that go through Richmond. Persons from the Middle Peninsula or Northern Neck wishing to connect with either Washington, D.C. or Hampton Roads need to access available bus or rail services at intermediate points.

Figure 1-1: Study Area and Virginia Intercity Bus Network

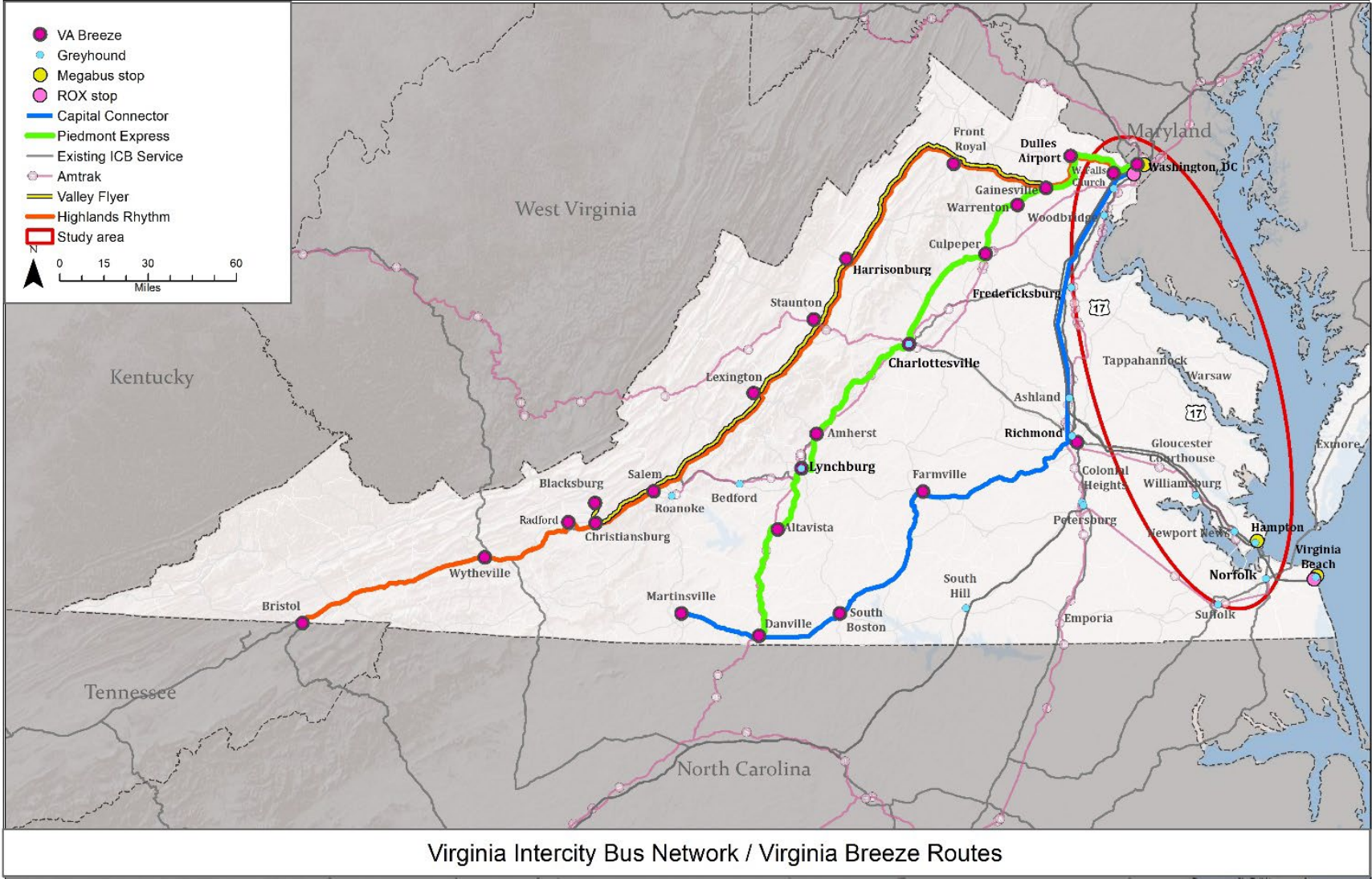
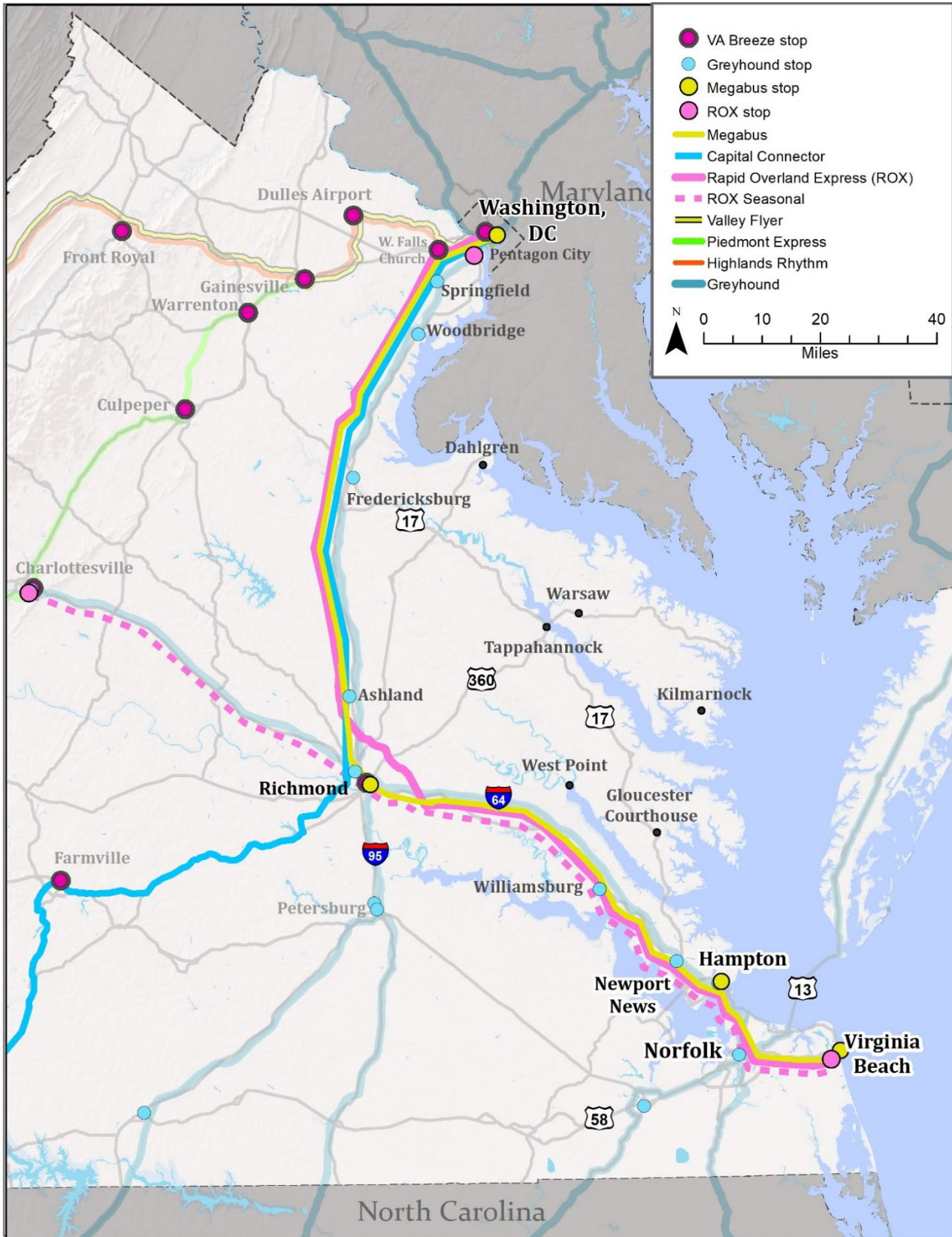


Figure 1-2: Intercity Bus Services in Study Area



Intercity Bus and Rail Services

Tables 1-1 and 1-2 present a summary of the intercity bus and rail services currently being operated in this corridor, drawn from current public timetables. Table 1-1 presents the northbound services from the Hampton Roads area, and Table 1-2 presents the southbound services from Washington, D.C. They combine the bus services operated by various carriers, and the Amtrak rail passenger service—combining them is intended to present the overall picture in one place, rather than separate individual tables for each carrier. Many services were suspended or reduced because of significantly reduced ridership, and bus carriers are adding service back as ridership returns (and they are able to find drivers)—so these schedules represent a snapshot in time.

The tables are limited to the services between Hampton Roads area stops and the Washington, D.C. region stops—some of these services continue beyond Washington or Hampton Roads stops to destinations elsewhere. The table presents the departure time at each stop, and the frequency is noted at the top of the columns. Table 1-1 presents northbound services from Virginia with the Hampton Roads stops at the top to the Washington, D.C. stop at the bottom. Southbound services from Washington, D.C. are presented in Table 1-2. In each table they are arranged by time of day, from earliest trips to latest. These are weekday schedules, for many carriers there are differences on weekends. Also, it is important to note that the bus industry is still recovering from ridership losses due to the pandemic.



Table 1-1: Northbound Services

Stop Name:	Carrier:	Amtrak	Greyhound	Amtrak	ROX	Greyhound	Amtrak	Wanda	Amtrak	Megabus	Amtrak	Greyhound	Megabus	Wanda
	Schedule:	174	3569	84		3630	94		138		186	1084		
	Frequency:	Daily	Daily	Daily	Daily	Ex. MT	Daily	Daily	Mon-Fri	SMFS	Mon-Fri	Daily	SMFS	Daily
Virginia Beach					7:30 a.m.			9:10 a.m.		2:00 p.m.		4:20 p.m.	7:00 p.m.	10:00 p.m.
Newport News		5:32 a.m.					8:00 a.m (T)				3:45 PM			
Norfolk			3:45 a.m.	6:15 a.m.			9:00 a.m.	9:30 a.m.	1:00 PM			4:55 p.m.		10:15 p.m.
Hampton			4:55 a.m.							3:00 p.m.		5:40 p.m.	0.833333	
Williamsburg		5:54 a.m.	5:35 a.m.								4:07 PM	6:20 p.m.		
Petersburg				7:42 a.m.			10:27 a.m.		2:27 PM					
Richmond (RVM)		6:47 a.m.		8:25 a.m.						4:30 p.m.	5:00 PM		9:30 p.m.	
Richmond (RVR)		7:18 a.m.					11:08 a.m.		3:10 PM		5:33 PM			
Richmond (GL)			6:35 a.m.			11:30 a.m.						7:30 p.m.		
Ashland				8:37 a.m.			11:23 a.m.		3:25 PM		5:46 PM			
Fredericksburg (ATK)		8:16 a.m.		9:25 a.m.			12:09 p.m.		4:11 PM		6:33 PM			
Fredericksburg (GL)						12:35 p.m.								
Quantico				9:47a.m.			12:29 p.m.		4:31 PM		6:55 PM			
Woodbridge						1:45 p.m.			4:44pm		7:09 PM			
Alexandria (ATK)		9:11 a.m.		10:26 a.m.			1:04 p.m.		5:11 PM		7:35 PM			
Pentagon City					11:00 a.m.									
Washington Union Station		9:42 a.m.		10:47 a.m.		2:40 p.m.	1:28 p.m.		5:38 PM	6:50 p.m.	8:04 PM		11:50 p.m.	
Washington (3355 Benning Rd, NE)								1:30 p.m.						2:15 a.m.

Notes:

SMFS=Sunday, Monday, Friday, Saturday service only

(T)=service provided by connecting Amtrak Thruway motorcoach service

Table 1-2: Southbound Services

Stop Name	Carrier:	Amtrak	Amtrak	Greyhound	Megabus	Greyhound	Greyhound	ROX	Amtrak	Wanda	Megabus	Amtrak	Amtrak	Amtrak
	Schedule:	65	67	1051		3570	3561		185			95	125	93
	Frequency:	FrSa	Su-Th	Daily	SMFS	Daily	Daily		Daily	Daily	SMFS	Daily	Daily	Daily
Washington, D.C. (3355 Benning Rd, NE)										1:30 p.m.				
Washington Union Station		7:00 AM	7:20 AM	8:20 a.m.	8:50 a.m.				12:05 PM		1:50 p.m.	2:35p.m.	3:50 p.m.	5:45 p.m.
Pentagon City								1:00 p.m.						
Alexandria (ATK)		7:18 AM	7:38 AM						12:22 PM			2:56 p.m.	4:09 p.m.	6:04 p.m.
Woodbridge				9:10 a.m.					12:40 PM				4:27 p.m.	
Quantico		7:44 AM	8:04 AM						12:53 PM				4:40 p.m.	6:32 p.m.
Fredericksburg (GL)				9:55 a.m.										
Fredericksburg (ATK)		8:05 AM	8:26 AM						1:18 PM			3:44 p.m.	5:07 p.m.	6:57 p.m.
Ashland		8:47 AM	9:08 AM						2:02 PM				5:49 p.m.	7:41 p.m.
Richmond (GL)				11:00 a.m.		10:20 a.m.	12:30 p.m.							
Richmond (RVR)		9:08 AM	9:34 AM						2:31 PM			4:52 p.m.	6:13 p.m.	8:12 p.m.
Richmond (RVM)		9:30 AM	9:59 AM		10:50 a.m.						3:50 p.m.		6:36 p.m.	
Petersburg									3:08 PM			5:29 p.m.		8:48 p.m.
Williamsburg		10:34 AM	10:58 AM				1:30 p.m.						7:28 p.m.	
Hampton					12:45 p.m.	11:55 a.m.	2:20 p.m.				5:45 p.m.			
Norfolk						12:35 p.m.	3:05 p.m.		4:47 PM	5:30 p.m.		7:07 p.m.		10:26 p.m.
Newport News		11:11 AM	11:29 AM										7:59 p.m.	11:15 p.m. (T)
Virginia Beach					1:10 p.m.		3:40 p.m.	5:00 p.m.		5:50 p.m.	6:10 p.m.			

Notes:

SMFS=Sunday, Monday, Friday, Saturday service only

(T)=service provided by connecting Amtrak Thruway motorcoach service from Norfolk

Greyhound Lines

Greyhound is still the only intercity bus operator with a national network, and it continues to provide the connective ticketing and information network for the national interline ticketing system, the National Bus Traffic Association (NBTA). During the onset of the COVID-19 pandemic as travel restrictions grew, ridership on its network fell to 20 percent or so of its pre-pandemic levels. To maintain the connectivity of the network, Greyhound suspended some low ridership services and reduced frequencies to minimal levels on most of the remaining services. Consequently, current service levels are low. In the Hampton Roads to Washington, D.C. corridor there is now a minimal level of service.

Hampton Roads to Richmond

There are two remaining daily round-trip schedules per day from Hampton Roads origins to Richmond (and return). Schedules 3569 operates between Norfolk and Richmond with stops in Hampton and Williamsburg. It is actually part of an overnight bus from New York, which also serves the Eastern Shore on its way to Norfolk. The northbound trip (3570) leaves Richmond at 10:20 a.m. and makes a stop in Hampton but not in Williamsburg. The other pair of schedules (1084 and 3561) serves Virginia Beach, Norfolk, Hampton and Williamsburg before terminating in Richmond. Persons wishing to continue north or south must transfer in Richmond—all Greyhound schedules meet at the Greyhound station.

Hampton Roads Connections

As noted above, one of the Greyhound schedules between Norfolk and Richmond is actually part of a through schedule that operates up the Eastern Shore to New York. There is also a connecting route linking North Carolina with the Greyhound service in Norfolk. Timetable 423 includes Schedule 4845 leaving Norfolk at 4:50 a.m. (except Saturday and Sunday) stopping in a number of small eastern North Carolina cities before reaching Raleigh at 10 a.m. The early departure from Norfolk allows persons from the Northeast on Schedule 3569 to connect and reach North Carolina destinations after an overnight trip. The return trip leaves Raleigh at 12:15 p.m., arriving in Norfolk at 5 p.m., leaving ten minutes later to arrive in Hampton at 5:40 p.m., with the potential connection to Schedule 1084 going through Richmond. It does not operate on Fridays or Saturdays. These North Carolina connections are funded by North Carolina DOT under their Section 5311(f) program.

Fredericksburg Greyhound Service

While there are a number of Greyhound schedules that operate between Richmond and northeast, of significance to the study area is that there are only two schedules per day, one each way, that continue to stop in Fredericksburg at the intermodal center. Northbound Schedule 3630 leaves Richmond at 11:30 a.m., stops at Fredericksburg (FRED Central) at 12:35 p.m. and Woodbridge at 1:45 p.m. before reaching Washington at 2:40 p.m. Southbound 1051 leaves Washington at 8:20 a.m., with a stop in Woodbridge at 9:10 a.m. and Fredericksburg at 9:55 a.m. before reaching Richmond at 11:00 a.m. Schedule 3630 does not operate on Mondays and Tuesdays. The former two daily round-trips between Charlottesville and Washington via Fredericksburg have been completely dropped.

The significance of the limited amount of remaining Greyhound service is that the option of operating local transit to connect with existing intercity service is very limited.

Figure 1-3: Greyhound Routes in Study Area



Megabus

Megabus is another carrier that did operate between Hampton Roads and Washington, D.C. Its service model was somewhat different from Greyhound in that it operates most of its services (those that are not operated under contract) as express services between larger population centers or major universities, with stops at curbside locations (often at transit hubs, but not always). Megabus suspended most of its services during the pandemic but has begun to bring routes back. Currently it operates two round-trips between Hampton Roads and Washington, with departures from Virginia Beach at 2:00 p.m. and 7:00 p.m., and arrivals at 1:10 p.m. and 6:10 p.m. Currently the services operate Sunday, Monday, Friday and Saturday. The only intermediate stop is in Hampton at the Transit Center. In Richmond the stop is located near Main Street station. Routes are presented in Figure 1-4.

Rapid Overland Express (ROX)

ROX is a new entrant in the surface transportation space. It is a locally based firm that initiated service just as the pandemic was taking effect. It provides a non-stop express service between Virginia Beach and Pentagon City (in Arlington, VA), using luxury buses with only 22 seats (instead of the usual 55), with onboard attendants and refreshments. There is a single daily round-trip, leaving Virginia Beach at 7:30 a.m., with a scheduled four-hour travel time. The return leaves Pentagon City at 1 p.m. Saturday schedules differ with an earlier departure (7 a.m.) and a later return (7 p.m.) The one-way fare is \$126. There are no intermediate stops. The pickup point in Virginia Beach is the Westin Hotel in Virginia Beach Town Center. ROX has also operated seasonal services from Virginia Beach to Charlottesville. Routes are presented in Figure 1-4.

Other Curbside Carriers

Prior to the COVID-19 pandemic and its effects on travel, there were a number of “curbside” bus firms operating between Norfolk and Washington, D.C., and Norfolk and New York. Such services generally do not use bus stations but stop at the “curb” at the endpoints, operating express with few (most often no) stops in between. Tickets were often sold through third-party travel sites, such as BusBud or Wanderu.

Most such firms suspended service at the onset of the pandemic. Some are still showing Hampton Roads to Washington, D.C. or New York in their online ticketing systems, but there are no available scheduled trips. Others have disappeared.

One carrier that is apparently operating is Wanda Coach, which provides two daily northbound trips, but only one southbound appears available. Tickets are available through BusBud or Wanderu. Another firm that had started service prior to the pandemic, OurBus, was operating service from Norfolk to Washington, D.C. with a stop in Richmond. The service is still shown on its website, but if you proceed to the ticketing step there are no available schedules.

There may be other firms that have begun operating Norfolk-New York services as well. For example, at www.GotoBus.com there are three carriers offering overnight trips from Norfolk to New York: SprintB, Lion VA and Hi Bus. At the moment there are few “curbside” options, but if the travel market improves it is likely that these or other firms will begin offering express services to major destinations at very competitive prices. However, their service model does not include trip origins or intermediate stops in non-urbanized locations, or connectivity with other carriers or local transit.

Amtrak Rail Passenger Service

The greatest amount of service is provided by the Amtrak services that have been developed with DRPT support. There are two daily round-trip trains between Norfolk and New York, with stops in Petersburg, Richmond’s Main Street Station, Ashland, Fredericksburg, Quantico and Alexandria. One of these schedules each way has a dedicated Amtrak Thruway bus connection to/from Newport News. There is also a daily round-trip from Newport News to Washington, D.C. with stops in Williamsburg, both Richmond stations, Ashland, Fredericksburg, Quantico, Woodbridge and Alexandria. Routes are presented in Figure 1-5.

Figure 1-4: Megabus and Rapid Overland Express in Study Area

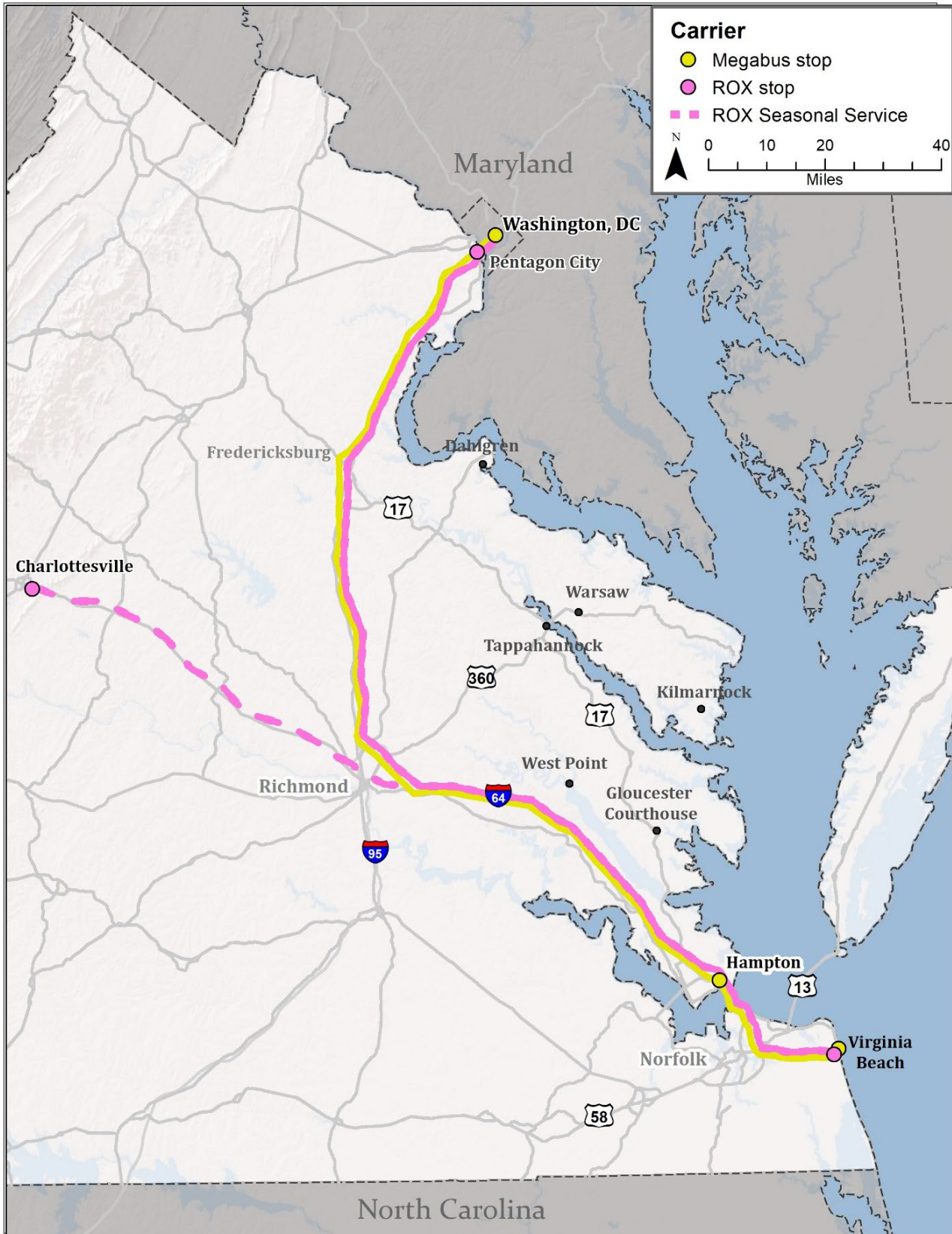
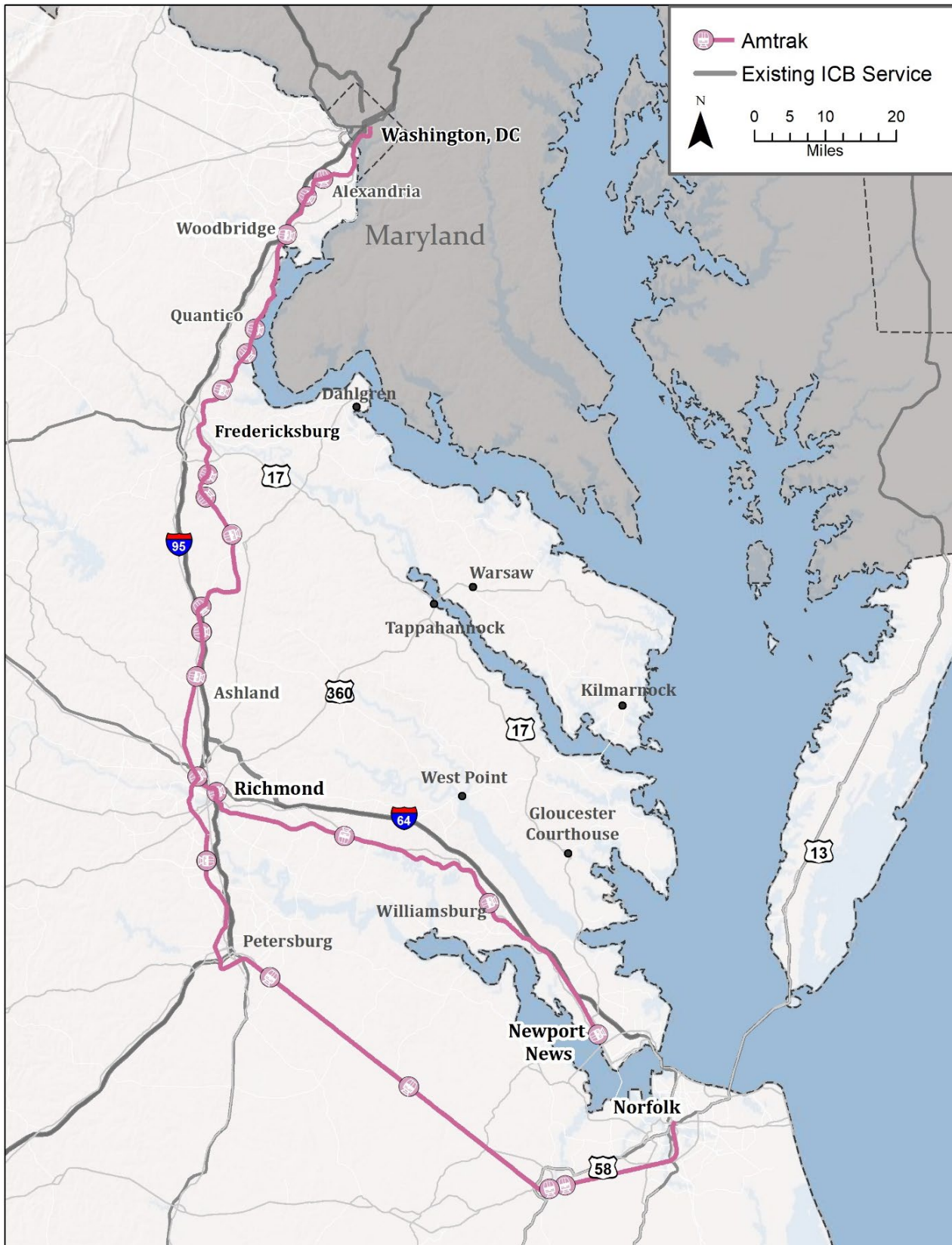


Figure 1-5: Amtrak Rail Routes in Study Area



Local Transit

Local transit is potentially important to this assessment of intercity needs in several ways. One is that the availability of local transit services to intercity stop locations at times when intercity services make stops allows local access for intercity trips without the need for a personal vehicle or a taxi—or Uber/Lyft trip. Related to that is the potential for intercity services to facilitate those connections and have some amenities for waiting passengers if they share the stop with local transit. Finally, there is the possibility that some longer distance services provided by local transit operators could meet some of the possible need for intercity service, for example if a commuter bus serves a location considered as an intercity stop.

Hampton Roads Transit (HRT)

HRT provides an extensive network of fixed-route bus services serving the entire region, along with the required ADA paratransit. If there was connectivity to intercity stops, this network would provide access to the longer distance services, but HRT is not a provider of intercity services that might be eligible for funding Section 5311(f), as even its longer routes are within the Urbanized Area.

The HRT MAX commuter routes might be considered as long routes with a potential for coordination with intercity services. There were six MAX routes operated prior to the onset of the COVID-19 pandemic. Two of them, the 919 Silverleaf Park and Ride to Naval Station Gate 4 and the 922 Greenbrier Mall Park and Ride to Naval Station Norfolk Gate 4, have been suspended. The remaining four include:

- Route 960 (MAX) Virginia Beach/Norfolk—Hourly service between 5:35 a.m. and 7:37 p.m. from Norfolk, and 6:30 a.m. to 7:35 p.m. from Virginia Beach. There is Saturday and Sunday service with shorter spans (later morning start, earlier evening end).
- Route 966 (MAX) Silverleaf Park and Ride/Newport News Transit Center/Newport News Shipbuilding—Two peak hour roundtrips, twenty minutes apart.
- Route 967 (MAX) Virginia Beach/Chesapeake/Newport News Transit Center/Newport News Shipbuilding—Operates weekdays only, offering five morning trips between 4:25 a.m. and 5:43 a.m. from the Military Station end, and six afternoon return trips between 3:00 p.m. and 5:13 p.m.
- Route 972 (MAX) Virginia Beach/Newport News/Newport News Shipbuilding—One round-trip per day, leaving Tidewater Community College at 5:15 a.m., with the return trip leaving at 3:40 p.m.

Of the remaining four, the 960 between Virginia Beach and Norfolk offers the combination of span and frequency that could facilitate some connections to intercity services that terminate in either Norfolk or Virginia Beach—assuming that the stops were co-located. Even with the hourly frequency, however, many of the intercity services depart or arrive outside the service span of this route. The Norfolk Downtown Transit Center is 1.2 miles from the Norfolk Amtrak Station, which is the Amtrak, Amtrak Thruway Bus, and Greyhound stop, and Megabus departs from Virginia Beach—so current services are not co-located, nor are they located at transit hubs.

The other set of HRT routes that might appear to have some role in supporting intercity services are the Peninsula Commuter Service routes. These five routes are all peak-hour, weekday only with frequencies of one or two inbound trips per day, and often a single outbound return trip. Two of the routes connect the Buckroe area with the Newport News Transit Center, and the other three connect the Denbigh area with the Newport News Transit Center. Because of the limited frequency and lack of weekend service it is unlikely that they could play a role in providing connections for intercity services. The only intercity service to/from Newport News is provided by Amtrak. One of the two daily Amtrak schedules is a Thruway Bus connection to/from Norfolk.

Bay Transit

Bay Transit operates on-demand public transportation services in twelve counties on the Middle Peninsula and Northern Neck: Charles City, Essex, Gloucester, King and Queen, King William, Lancaster, Mathews, Middlesex, New Kent, Northumberland, Richmond, and Westmoreland. Bay Transit also serves the towns of West Point and Colonial Beach and runs seasonal trolley service in the towns of Kilmarnock, Irvington, White Stone, Urbanna, and Colonial Beach. Bay Transit is a public transit provider, under the organizational umbrella of Bay Aging, the regional Area Agency for Aging (AAA).

While Bay Transit has long offered area-wide demand-response transit services (6:00 a.m. to 6:00 p.m. weekdays), some of Bay Transit's recent service innovations could provide potential access to any intercity services that might come to Tappahannock, West Point, or Gloucester (Gloucester Courthouse and Gloucester Point):

- **Gloucester Courthouse and Gloucester Point: hiveXpress:** Two buses operate route-deviation service covering these two towns and connecting them. The service operates weekdays between 8:00 a.m. and 4:05 p.m.
- **Gloucester Courthouse: Bay Transit Express:** Demand-response shared-ride microtransit service in the Gloucester Courthouse area, using an app to summon and schedule trips.
- **West Point: West Point Paper Trail:** Deviated fixed-route covers destinations around the town of West Point, operating between 10 a.m. and 2 p.m. weekdays, on a route taking approximately an hour.
- **Tappahannock: The Rivah Ride:** Provides deviated fixed-route service between 7:00 a.m. and 3:00 p.m. weekdays to destinations in and around Tappahannock, again on a route that takes approximately an hour.
- **All Twelve Counties: New Freedom Express:** Demand-response service for the entire Bay Transit service area providing seniors and persons with disabilities with transportation for any trip purpose both within the Bay Transit service area and to destinations outside the area. It can provide services outside the normal service hours of Bay Transit. Currently because of limited funding a single person is limited to two rides per month. Frequent destinations include the VA Medical Centers in Richmond and Hampton, regional hospitals and medical facilities in Fredericksburg, Richmond, Williamsburg and Norfolk.

The route-deviation services in Tappahannock, West Point, Gloucester Courthouse and Gloucester Point could potentially bring town residents to an intercity stop located in each of these towns, and in that sense could be supportive of a future intercity service. Because they are not located at the ends of a potential intercity route in the corridor, but closer to a mid-point, their span of service may not be as much of a problem—it is more likely that a future intercity bus would be going through late morning or late afternoon, rather than early morning or late evening.

The New Freedom Express is already providing a kind of intercity service linking to destinations outside the service area. Eligibility is limited to seniors and persons with disabilities, but because there is no trip purpose limitation a resident of the Bay Transit service area could potentially use it to connect to an Amtrak train in Fredericksburg or a bus in Richmond, though there would need to be a way to schedule the return trip pickup.

Fredericksburg Regional Transit

Fredericksburg Regional Transit (FRED) is the public transportation provider for greater Fredericksburg, including the city of Fredericksburg, Spotsylvania County and Stafford County. There are six routes in Stafford County, six routes in Fredericksburg, and four that extend into Spotsylvania County. The longer regional connections operated by FRED include the D3 route from Garrisonville to Stafford Court House (hourly 7:30 a.m. to 6:30 p.m., weekdays only), and the connecting route D5 (hourly 7:00 a.m. to 6:00 p.m., weekdays only) to their Fredericksburg terminal FRED Central. This is a connection of two local routes that permits a regional trip, but it is not intercity service. FRED Central is a Greyhound stop, but currently there is only one Greyhound trip per day each way. The F4 route links FRED Central, the University of Mary Washington, the Amtrak/VRE station on Caroline Street, and the River Club Shopping Center area further south on Business 17—but again it is not an intercity service, it is a long local route parts of which might also be served by a potential intercity bus route. There is no current intercity service on that route.

Martz Commuter Bus Service

Until April 2021, Martz Group operated the National Coach Works garage providing commuter bus service from Fredericksburg to Washington, D.C. The service was not subsidized or funded in any way, and Martz has terminated the services.

Stop Locations

Table 1-3 presents information about stop locations for existing services. Providers have their own stop locations, and there is no consistent pattern. Greyhound uses the Amtrak stations in Norfolk and Williamsburg, and the transit center in Hampton—but only its own station in Richmond. Megabus doesn't serve Norfolk but uses the Hampton Transit Center and the bus plaza at Richmond Main Street Station. Other carriers have other stops. In general, it would appear that at the Hampton Roads end the stops of any new service should be the Hampton Transit Center and the Norfolk Amtrak Station as a basis for improved connectivity. The Virginia Beach Megabus stop appears to be on-street at large parking lots, with no shelter or signage, limiting public recognition of available service.

Table 1-3: Stop Locations

Intercity Carrier	Stop Location	Stop Name	Stop Address	Transit at Stop
Amtrak	Norfolk	Norfolk Amtrak Station	280 Park Avenue Norfolk, VA 23510	HRT (Tide Light Rail at Harbor Park)
Amtrak	Newport News	Newport News Amtrak Station	9304 Warwick Blvd. Newport News, VA 23601	
Amtrak	Williamsburg	Williamsburg Transportation Center	468 N. Boundary Street Williamsburg, VA 23185	Amtrak, Greyhound, WATA, HRT
Greyhound	Hampton	Hampton Transit Center	2 West Pembroke Avenue Hampton, VA 23669	HRT, Megabus
Greyhound	Norfolk	Norfolk Amtrak Station	280 Park Avenue Norfolk, VA 23510	Amtrak
Greyhound	Richmond	Greyhound Station	2910 N. Arthur Ashe Blvd. Richmond, VA 23230	
Greyhound	Virginia Beach	Circle D Food Mart	971 Virginia Beach Blvd., Virginia Beach, VA 23451	
Megabus	Virginia Beach	On-Street on 19 th by parking lot	Pacific Avenue and 19 th Street, Virginia Beach, VA	
Megabus	Hampton	Hampton Transit Center	2 West Pembroke Avenue Hampton, VA	HRT, Greyhound
Megabus	Richmond	The Plaza at Main Street Station	1500 E. Main Street Richmond, VA	Amtrak, Virginia Breeze, GRTC Pulse

Intercity Carrier	Stop Location	Stop Name	Stop Address	Transit at Stop
Megabus	Washington, D.C.	Union Station (not used)		
ROX	Virginia Beach	Westin Hotel	4535 Commerce Street Virginia Beach, VA. 23462	
ROX	Washington, D.C.	Pentagon City	1250 S Hayes Street Arlington, VA. 22202	WMATA Metrorail
Wanda Coach	Washington, D.C.		3355 Benning Road, NE Washington, D.C.	
Wanda Coach	Virginia Beach		5792 Northampton Blvd. Virginia Beach, VA	
Wanda Coach	Norfolk		5859 East Virginia Beach Blvd., Norfolk, VA	

Previous Studies and Ongoing Planning Efforts

Intercity Bus Plans

U.S. 17 Corridor between Hampton Roads and Washington, D.C. has been considered in a number of previous intercity bus planning studies:

- **Feasibility Study for Intercity Bus Service Between Hampton and Fredericksburg, Virginia**
March 2003, KFH Group, Inc., for Bay Transit

This study was performed for Bay Transit to assess the feasibility of funding intercity bus service between Hampton and Fredericksburg. At the time, DRPT supported a program providing demonstration funding for new transit service initiatives, and this study was intended to assess the likely costs, ridership, revenue and operational structure for an intercity service demonstration. It included a history of previous intercity bus services in this region and an assessment of the demographics including transit dependency. Stakeholder interviews and a survey of Bay Transit riders showed interest and support for intercity bus service in the region, with Northern Neck residents seeing a need for service Fredericksburg and Washington, D.C. and Middle Peninsula residents favoring services to the south. Many riders also favored service to Richmond. Based on this identified need, a number of different potential service patterns were developed and evaluated, including Greyhound operation and operation of a connecting service by Bay Transit. It showed the potential for such service, but the demonstration did not go forward because there was no assurance of local match after the demonstration period which would have used state funding, and the Federal Transit Administration (FTA) Section 5311(f) program did not yet allow for in-kind match.

- **Intercity Bus Needs Assessment and Six-Year Plan and Program**

September 2003, KFH Group, Inc.

This study provided an inventory of Virginia’s regular-route intercity bus services, including several recently discontinued routes. Three scenarios were developed for varying levels of state involvement in support of intercity bus and commuter bus projects, ranging from limited support for rural public transit systems to operate feeder services, through a “Strategic Investment” scenario to maintain service on unprofitable links and ensure complete accessibility, to a third “Fully Integrated” scenario in which the state would support a statewide network, links to adjoining states, and expanded rural routes and frequencies. Although there was no individual corridor analysis, a rural intercity feeder route from Hampton through Tappahannock to Fredericksburg was included in the base scenario, and three routes from Tappahannock to, Fredericksburg, Richmond and Hampton were included in Scenarios 2 and 3.

- **Virginia Statewide Intercity Bus Study**

September 2013, KFH Group, Inc. under subcontract to Cambridge Systematics, Inc., for the Virginia Department of Rail and Public Transportation.

This study served as the basis for DRPT’s direct involvement supporting rural intercity bus services, including the model of contracted service used initially for the “Virginia Breeze” service between Blacksburg and Washington, D.C. The study recommended a change in DRPT policy to utilize Section 5311(f) funding to support service in high-priority corridors, with DRPT contracting for service operation and utilizing in-kind match for the local share of the operating deficit, eventually leading to the selection of the Blacksburg-Washington corridor and a contract for operation of the service under the “Virginia Breeze” branding.

The consultation process included input from Greyhound Lines suggesting funding for service between Norfolk and Fredericksburg via Tappahannock and Warsaw, with possible extension via Route 301 to Dahlgren and into Washington via southern Maryland. Analysis of demographic data did not identify this corridor as having a high need for intercity bus service based on numbers of transit dependent residents, though stakeholder input again recommended service in this corridor. A prioritization analysis included this corridor on the list of potential funding corridors, but ranked it relatively low with several others developed for earlier implementation.

- **Virginia Breeze Expansion Alternatives Analysis**

August 2018, KFH Group, Inc.

The success of the Virginia Breeze led DRPT to focus on the needs of the Commonwealth beyond the original Virginia Breeze corridor. It included significant outreach as well as technical analysis. The study recommended four corridors as the focus of future implementation. The two recommended for initial implementation are now in service: Capital Connector (Martinsburg-Richmond-Washington, D.C.), and the Piedmont Express (Danville-Washington, D.C.). Subsequently KFH provided analysis for DRPT regarding intercity service in the I-81 Corridor from Bristol. Service has now been implemented there as the Highlands Rhythm. The Virginia Breeze is now the brand for all DRPT intercity bus services, and the original Virginia Breeze route has been renamed the Valley Flyer.

The Hampton Roads-Fredericksburg-Washington corridor was also included in this study and was included among the remaining priority routes for implementation. The analysis ranked service from Norfolk and Hampton to Washington, D.C. much higher than service connecting at Fredericksburg due to likely higher ridership. The recommended option was Norfolk to Washington, D.C. At the same time, it was noted that there is a relatively low population that would gain access to the network, and so the likely performance would be lower than the previously implemented routes. The estimated ridership was 5,200 per year from Norfolk, or 5,100 per year if service was provided only to the city of Hampton. The estimated subsidy per passenger was just under \$100 for either the Norfolk or Hampton routes, with an annual net operating deficit of \$515,000. A potential timetable for this service was developed and presented, with connections at Washington to either Greyhound or Megabus service to New York.

Amtrak Plans

While there are a number of planning, policy and legislative initiatives that would need to be included in a full review of Virginia's Amtrak planning, the salient information is that the pre-pandemic level of state-supported Amtrak service between Washington and the Hampton Roads region has been restored, and that additional service is likely in the near future. There are two daily trains from Washington, D.C. to Newport News, and two daily trains between Washington and Norfolk.

Under the Transforming Rail in Virginia initiative, planned passenger expansion in the near term would add a third train to each of these corridors. The proposed Virginia passenger rail service plan has the additional Washington-Norfolk train implemented in 2022, with the third Newport News train to be implemented during Phase I which goes through 2026. These dates are noted as dependent on the recovery of ridership following the pandemic. The Norfolk and Newport News trains had recovered to just over 50 percent of their 2019 ridership by September 2021, doing better than the other state-supported trains, based on Amtrak ridership reports.

One other additional rail passenger plan that would address a portion of this corridor is the *2021 Commonwealth Corridor Feasibility Study* completed by DRPT in January 2022. This analysis addresses the feasibility, costs and potential ridership for an Amtrak route linking Newport News with Roanoke and the New River Valley. It would add a fourth train to the Newport News-Richmond segment. The study included illustrative timetables for two round-trips per day, with estimated annual Operating and Maintenance and equipment leasing costs of \$27.55 million in 2030 dollars, and potential known capital costs of \$416.5 million. Ridership was estimated using the Virginia Statewide Travel Demand Model and Amtrak FY2019 origin-destination data. The estimated 2040 ridership was 177,200, 121 passengers per scheduled train trip. The operating cost per passenger would be \$155.47, but it is not clear how much passenger revenue might offset that, and what the subsidy per passenger trip would be. The study included ridership and costs for Amtrak Thruway connections from Newport News to Norfolk and Virginia Beach. Potentially a Hampton-Washington Virginia Breeze route could also connect in Newport News providing yet more of a statewide network effect.

State Transportation Plans

The *VTrans2035* statewide transportation plan elements were reviewed. The Northern Neck Corridor (Route 17) continues to be a Corridor of Strategic Significance (CoSS), with Key Functions:

- Major I-95 Alternative to Shore Destinations and Through Traffic (Alternative Route from Hampton Roads to Northern Virginia)
- Connection for Trucks Between Hampton Roads and I-95
- Tourism (Access to Northern Neck and Middle Peninsula)

Potential strategies for this corridor included improved transit in rural areas by expanding existing fixed-route services and offering increased demand-response services for the elderly and disabled—but no intercity connections were mentioned as a part of this strategy. The *Executive Summary and Draft Mid-Term Transportation Needs for Hampton Roads Construction District* identified a need for new or expanded public transit services and facilities, rail and public transit services and facilities for the Middle Peninsula as part of the Needs for Transportation Demand Management.

Local Transit Plans

Local transit development plans and strategic plans were reviewed to determine if there were identified needs for regional service in, to or from the study area; and if there were any planned services.

Hampton Roads Transit (HRT)

The HRT *Transit Strategic Plan FY2021-FY2030* and the *Annual Update for FY2022-FY2031* was reviewed. It did not address potential impacts or connections with possible intercity services outside the HRT service area. One new planned Limited/Express service might have some potential benefit for regional connectivity. New Route 975 planned for FY2026 implementation would provide new peak period directional commuter bus service between Gloucester (VDOT Park and Ride at the intersection of Route 216-Guinea Road and York Crossing) and the Newport News Shipyard via U.S. 17 and I-64. Three morning and three evening peak hour trips would be provided. Consideration is being given to other potential stops within the City of Newport News on route to the Shipyard. Though there is no change in service, the existing Route 121 service between the Newport News Transit Center and the Williamsburg Transit Center will be re-classified as a MAX route because it only has four trips per day, weekday only—potentially one could see it as a short intercity route.

Bay Transit

The FY2016-FY2021 Bay Transit Transit Development Plan (TDP) calls for extended services to Richmond, shifting some revenue hours from demand-response services to allow for an additional two revenue hours per day on the one bus currently operating from New Kent and Charles City to Richmond. The

existing service operates as an express to a limited number of stops in Richmond, on Mondays, Wednesdays and Fridays. The additional hours in Richmond are intended to allow service to more destinations. Other recommendations involved limited changes to the demand-response local services, including a second vehicle in Middlesex County and deviated fixed-route services between Gloucester Courthouse and Gloucester Point on Route 17, replacing some demand-response service.

Fredericksburg Regional Transit

The Fredericksburg Regional Transit (FRED) Transit Development Plan for the period FY2017-FY2022 was reviewed to determine if identified transit needs included intercity trips, and if there were any planned initiatives that would be relevant to possible intercity service from Hampton Roads to Washington, D.C.

There were no specific intercity needs identified from rider surveys or other stakeholder input. Surveyed FRED riders did not mention out-of-town (distant) cities as places they would like to go (p3-60), but they desired service to Walmart on Route 17, Spotsylvania County, King George, Harrison Crossing, and Ashland. Other suggestions included meeting each VRE train.

One FY2019 recommendation that could support intercity bus service called for expanded parking (24 spaces) at the FRED Central station, which is also the Greyhound station. While one justification for this recommendation was the possible loss of temporary parking at an adjacent church lot, parking at the station could support more usage of potential intercity bus services as well.

The only service recommendation with an intercity/regional character was Service Initiative #19: Add Commuter Service to the Naval Surface Warfare Center (NSWC) in Dahlgren. This recommendation called for a new proposed service from the park and ride planned for Plank Road (Route 3) and Salem Church Road, with stops at Idlewild Boulevard and the VRE/Amtrak Station, then to Dahlgren via Route 3 and 301. A TDM Project through GW Ride Connect and FAMPO revealed 10,000 daily trips to the Dahlgren NSWC, with twenty van pools and no transit option. The TDP presented the possibility of two-way service, offering King George residents service to Fredericksburg. Two vehicles would enable the service to offer two trips each in the morning and late afternoon commuter periods. This route would be one of the system's longest, at 38 miles. This proposal suggests there may be a need for transit services at the NSWC—but also that many of the employees actually live in Fredericksburg, potentially accessing intercity services there.

Summary and Conclusions

The review of existing and planned intercity services in the Hampton Roads to Washington, D.C. corridor revealed that there are a number of potential options, both bus and rail, between the Hampton Roads area (Norfolk, Hampton, Newport News and Virginia Beach) and Washington, D.C. at the present moment. Though current Greyhound and Megabus services are minimal, having been reduced during the pandemic, it is likely that both carriers will increase their service through to/through Richmond. In

addition, there are two additional Amtrak trains planned for near-term implementation, one to Newport News and the other to Norfolk. Other carriers have initiated service in the Hampton Roads to Washington, D.C. market, with connections or direct service to points beyond such as New York.

There are two areas of current unmet need:

- There is no intercity service linking the potential corridor endpoints with towns between Fredericksburg and Hampton along Route 17 Corridor, including Warsaw, Tappahannock and Gloucester Courthouse/Gloucester Point.
- The frequency of existing intercity bus connections at Williamsburg and Fredericksburg is now very minimal, to the level of one trip per day each way, and the commuter bus service from Fredericksburg to Washington, D.C. is no longer available.
- There is little national network intercity bus service from the Hampton Roads stops to North Carolina or the Eastern Shore, limiting the potential for feeder connections or in-kind miles (remaining service to/from North Carolina is already subsidized by North Carolina).

The lack of service in Fredericksburg particularly means that options involving a connection to intercity services there are no longer feasible, and intercity services would need to continue to Washington, D.C.—making the service truly intercity rather than a regional feeder. Williamsburg, although Urbanized, could use more service and might be considered as a potential stop, perhaps on an alternative routing serving West Point (as opposed to Hampton-Gloucester routings).

One other consideration is that none of the existing services make an airport connection in Washington, D.C. The connection to Dulles Airport has been a significant ridership generator for other Virginia Breeze services, potentially a connection to Reagan National Airport would provide additional access and ridership for service in this market that already has a lot of capacity connecting to Union Station.

A review of studies and plans determined there has long been interest in providing an intercity connection from the Middle Peninsula and Northern Neck to both Hampton Roads and the Washington, D.C. area (via Fredericksburg). Earlier studies included options for locally operated regional feeders to Fredericksburg, Hampton and Richmond as well as through intercity bus service. More recent studies included a potential route from Norfolk to Washington, D.C. via the Route 17 corridor, showing connections to national network intercity bus service at Union Station.

Intercity Bus Service Needs Assessment

Chapter 2: Needs Assessment

Introduction

This chapter examines the extent to which the study area between Washington D.C. and Hampton Roads along the U.S. Route 17 corridor has potential needs for intercity bus service. It identifies areas of high relative need based on the density and percentage of potentially transit dependent populations. And it also identifies places that are likely to be intercity bus destinations, including military bases, correctional facilities, educational institutions, and medical centers. By overlaying the existing bus network with potential origin areas of high need and potential destinations, the analysis reveals key intercity connections and gaps. Much of the current network is responsive to the needs identified within this chapter.

While this chapter focuses on the study area between the Hampton Roads region and Washington, D.C., needs in that area are identified as part of an updated statewide demographic analysis using the latest US Census data, including the 2020 Census and the latest American Community Survey (ACS) data which is the 2016-2020 Five-Year data.

Demographic Analysis – Trip Origins

In previous intercity bus studies, KFH Group has used Census data to identify locations where there is some level of density of persons more likely to need public transportation. These groups include:

- Overall population density,
- Young adults ages 18-24,
- Older adults, ages 65 years or older,
- Persons living at or below the poverty line, and
- Autoless households

One aspect of needs assessment is coverage of intercity services. The total population within a ten-mile radius of existing stops and also within a 25-mile radius is identified to assess the degree to which the population has access to intercity services. Need is assessed by looking at the population in Census block groups within each of these categories as compared to the state average, and then classifying the Block Groups in one of five categories from low need to very high need. In addition, these factors are combined to create two Transit Dependence Indices, one reflecting the level of need based on the percentage of the population in that area with that need, and the other reflecting the number and density of the population in each area with that need.

This methodology was used in the *Virginia Breeze Expansion Alternatives Analysis* performed in 2018-2019. The needs analysis in that study will be used as the basis for focusing on the U.S. Route 17 Corridor from Hampton Roads to Washington, D.C.

Methodology

For the demographic analysis, Census data was gathered at the block group level for each of four needs categories (young adults, older adults, persons living below the poverty level, and autoless households). The four categories were combined into aggregate measures of need including density and percentage.

Transportation services are typically prioritized in areas with greater population densities; however, it is also important to look at the percentage of transit dependent populations. Substantial percentages of transit dependent populations indicate a high proportion of people who may need transit, though spread out over large and primarily rural areas. The scale used for the demographic analysis ranges from “low” to “very high,” reflecting demographic characteristics in relation to the statewide average. See Table 2-1 for an explanation of the indexed values.

Table 2-1: Demographic Measurement Scale

Index Category	Value Relative to State Average (SA)
Low	Less than 1x SA
Elevated	Between 1x and 1.33x SA
Moderate	Between 1.33x and 1.67x SA
High	Between 1.67 SA and 2x SA
Very High	2x SA or more

Analysis of Unmet Transit Needs

It is important to recognize that identifying areas of high relative transit need is not the same as forecasting ridership. Mapping the density and percentage of transit dependent persons can highlight potential demand. However, rural areas especially may not have the density to support intercity bus service, even if it is subsidized. Such areas may be candidates for rural feeder services, particularly if operated by local transit providers.

Population Density

As of the 2020 Census, approximately 8,631,393 people live in the Commonwealth of Virginia. If the population was evenly distributed across the entire state, the population would be about two-hundred persons per square mile. However, since the 2010 Census, the population of the state and the study area has remained unevenly distributed with urbanized regions, small urban clusters and sparsely populated rural and wilderness areas. In Virginia, a strong majority of the state's population has nearby access to the intercity bus network. The population within 25 miles of an intercity bus stop represents an estimated 90 percent (or 7.7 million) of the state population, while the population within 10 miles of an intercity bus stop represents 72.8 percent (or 6.3 million) of the state population. About 1.4 million or 16.2 percent of the population lives between 10-25 miles from an intercity bus stop. The population density of the state and intercity bus network is displayed in Figure 2-1.

The study area includes urbanized areas at the periphery, including the Washington metropolitan area, Fredericksburg, Richmond and Hampton Roads. Beyond the urbanized areas and places beyond 10 miles of an existing intercity bus stop, there are few block groups with a population density of 1000 people/square mile or more. Some of these areas include Stafford which is about ten miles north of Fredericksburg, Gloucester Point, and Colonial Beach in Westmoreland County. There are some block groups with a population density between 500-1000, including parts of West Point in King William County, Tappahannock in Essex County, Kilmarnock in Lancaster County and Dahlgren in King George County, however these places would not likely have sufficient population or population density to support intercity bus service. The vast majority of block groups in the study area have less than 100 people per square mile.

One thing that stands out is that there are few concentrations of population in the study area. Most of the towns that might be potential intercity bus stops (that are not already served) have very small populations. As can be seen in Table 2-2, Colonial Beach, Dahlgren, Kilmarnock, Tappahannock, Warsaw, West Point and Gloucester Courthouse are all under 5,000 persons. However, Gloucester Point (about a 15-mile drive from Williamsburg) has 10,587 persons.

Figure 2-1: Population Density and Proximity to Intercity Bus Network

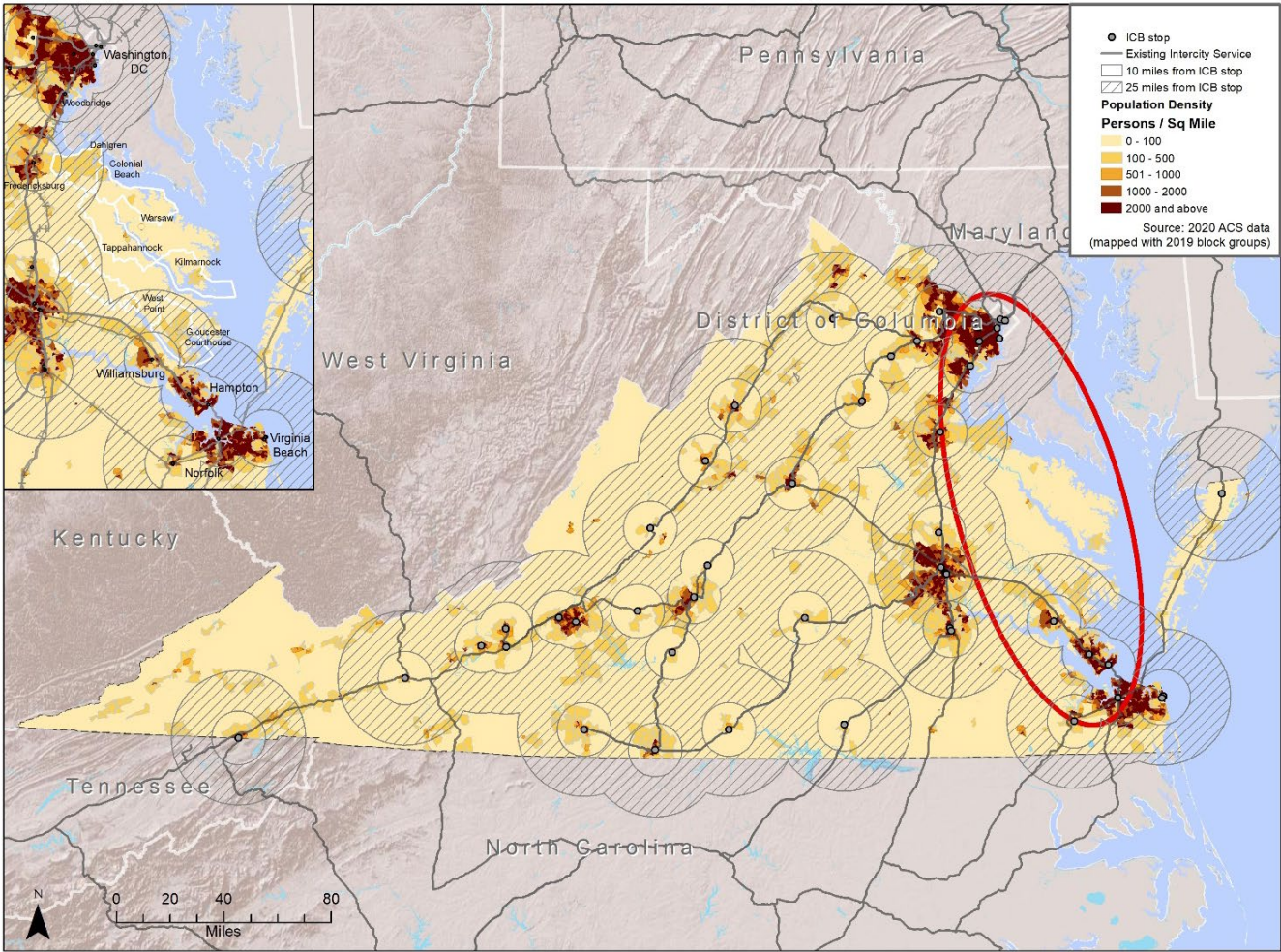


Table 2-2: Population of Towns and Places in the Study Area

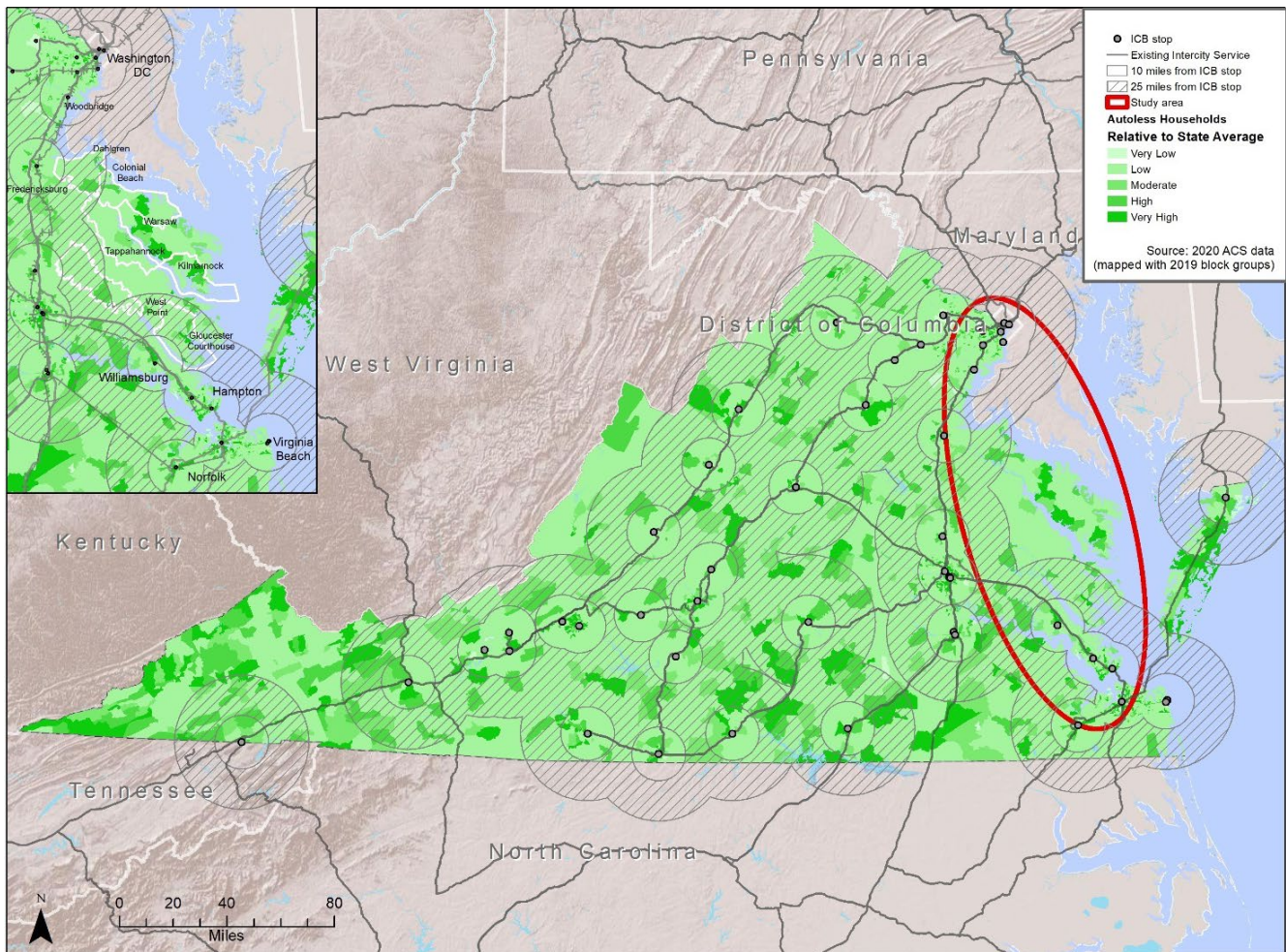
Town	2020 Population
Colonial Beach	3,908
Dahlgren	2,946
West Point	3,414
Tappahannock	2,193
Warsaw	1,512
Kilmarnock	1,445
Gloucester Courthouse	3,030
Gloucester Point	9,402

Source: 2020 Census

Autoless Households

Even though the majority of the study area is rural in nature, there are some block groups with a higher concentration of households (relative to the state average) that do not own a car (Figure 2-2). The vast majority of the area has a very low concentration of autoless households. Some noteworthy places that are more than 10 miles from an intercity bus stop and have high concentrations of autoless households include parts of Dahlgren, Warsaw, Kilmarnock and Gloucester Courthouse.

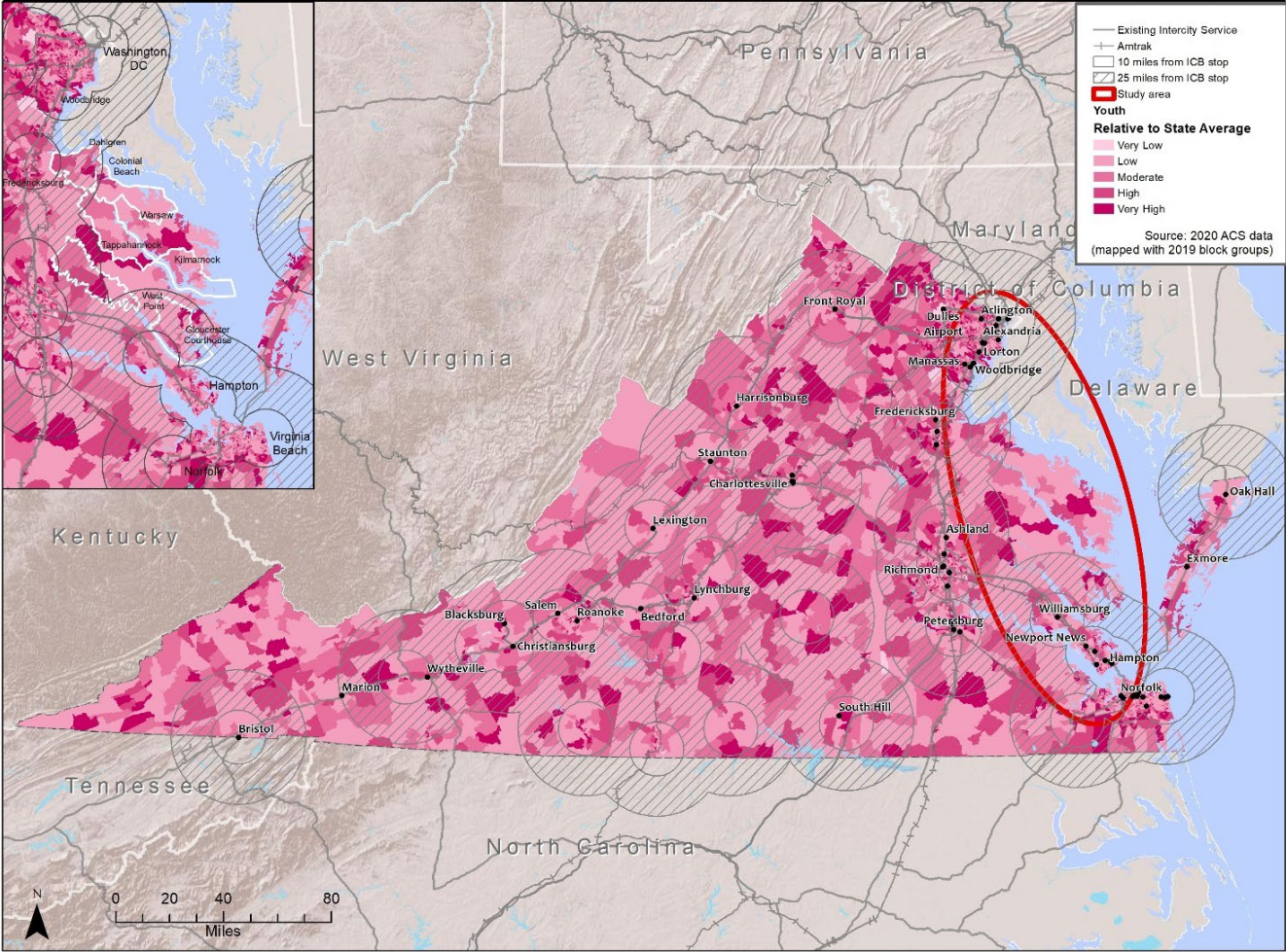
Figure 2-2: Autoless Households



Younger Adults

While most of the study area appears to have a very low concentration of younger adults (ages 18 to 24) relative to the state, some rural areas have a relatively high concentration of younger adults (Figure 2-3). This includes areas west and south of Essex County, parts of Gloucester Courthouse, a part of King George County near Dahlgren, and Colonial Beach.

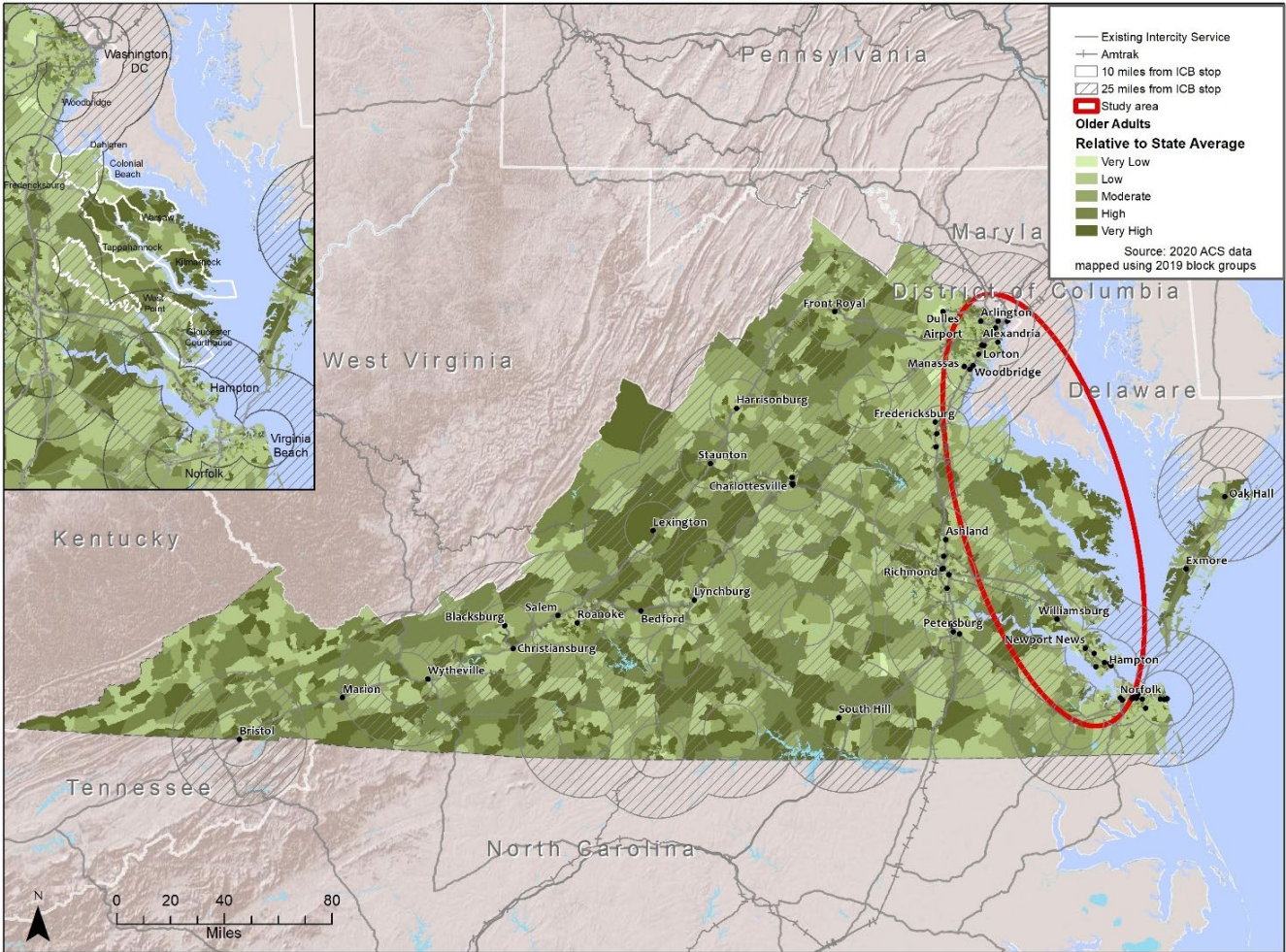
Figure 2-3: Younger Adults



Older Adults

The study area includes many large block groups with high to very high concentrations of older adults (Figure 2-4). Many of these block groups are along the eastern Virginia coast in some of the most rural areas of the state, in addition to a large block group north of Tappahannock in Essex County, Lancaster and Northumberland counties, and parts of the Gloucester Courthouse area.

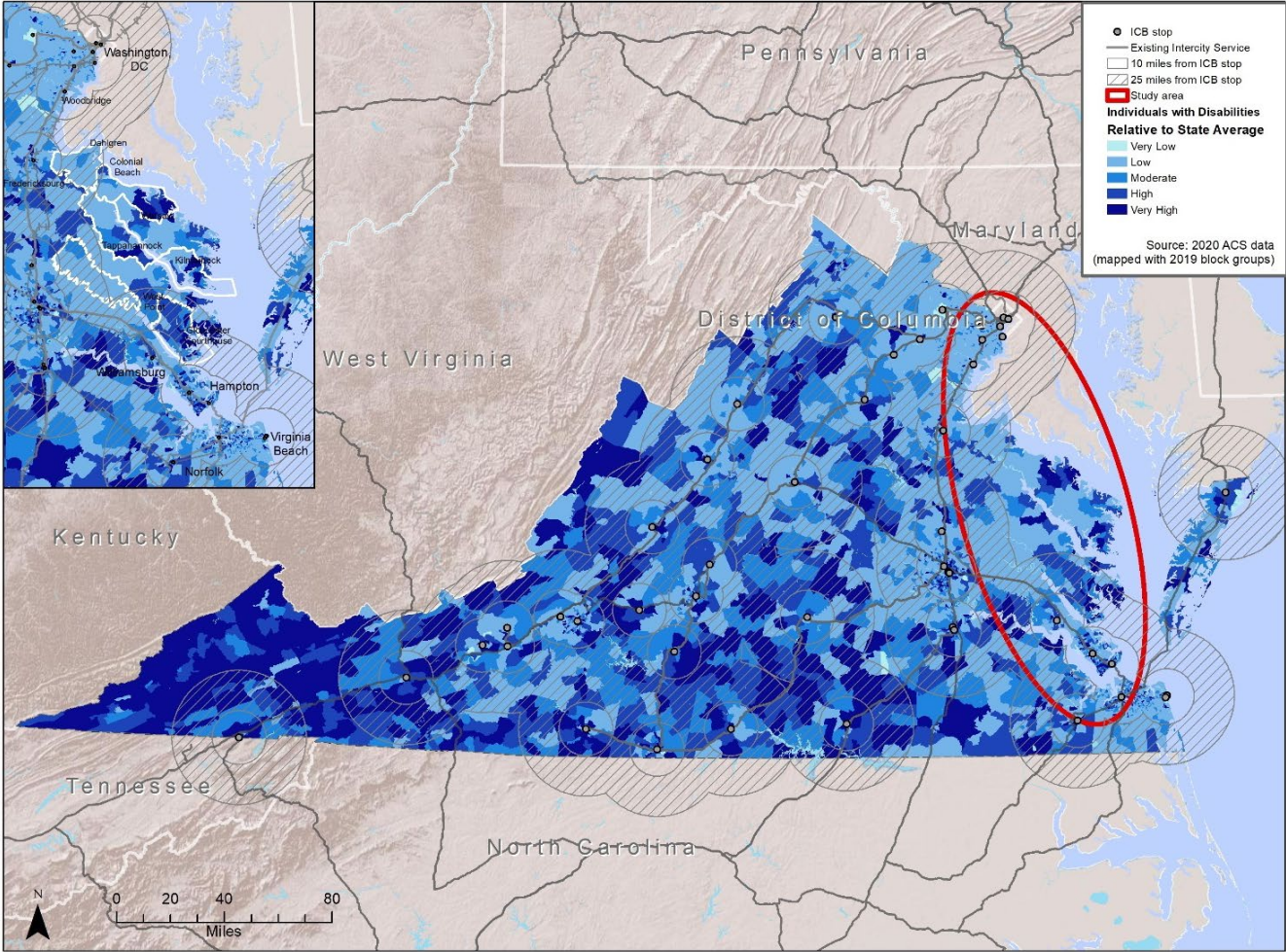
Figure 2-4: Older Adults



Individuals with Disabilities

Like areas with higher concentrations of older adults, there are higher concentrations of individuals with disabilities in areas along the Virginia coast including Kilmarnock (Figure 2-5). In the study area, places that stand out as having the highest concentrations of individuals with disabilities include Gloucester and Matthews counties, an area south of Tappahannock, the eastern part of Westmoreland County and parts of Lancaster County near Kilmarnock. Much of the study along the US-17 corridor has very low to low concentrations of individuals with disabilities, unlike some parts of rural Virginia such as the southwest region bordering Kentucky/Tennessee and the south-central region.

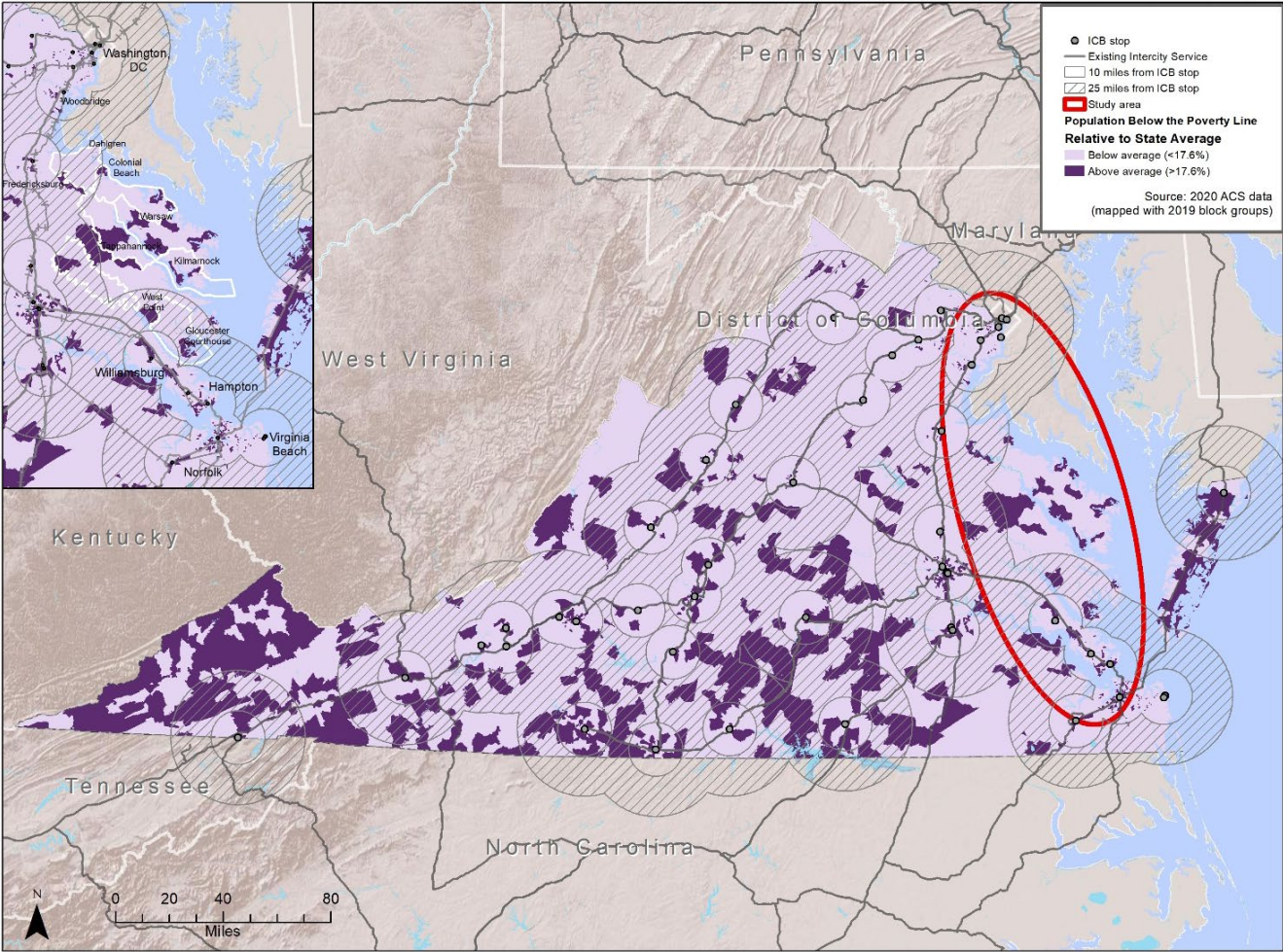
Figure 2-5: Individuals with Disabilities



Populations Below the Poverty Line

As seen in Figure 2-6, there are some block groups with above-average concentrations of people living below the poverty line in the study area including around Tappahannock, Colonial Beach, and Gloucester Courthouse. Most of these block groups are in more urbanized areas such as near Hampton, Norfolk, Richmond and Woodbridge. In contrast to southwest or south-central Virginia, there are overall lower concentrations of populations below the poverty line.

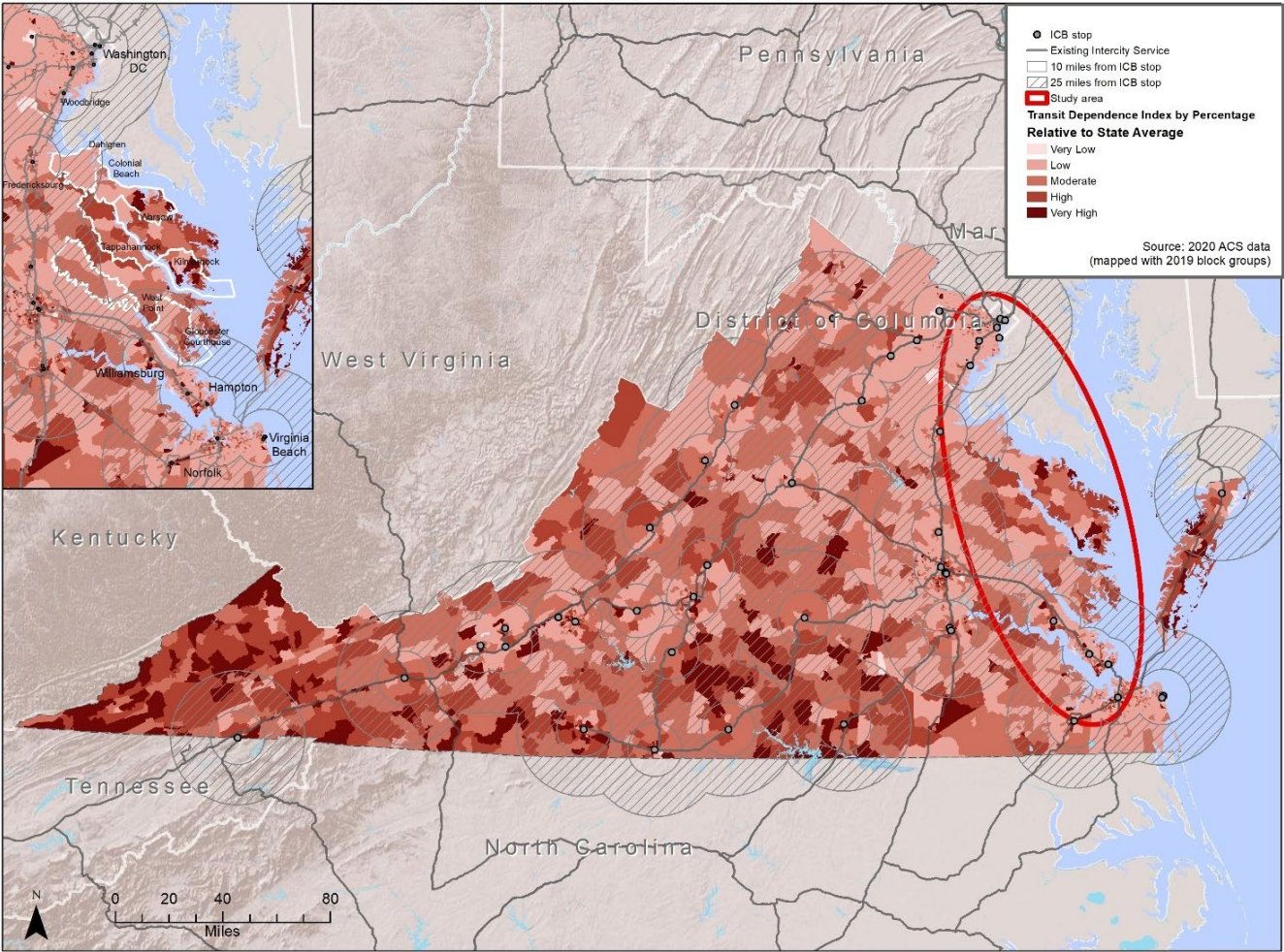
Figure 2-6: Population Below the Poverty Line



Transit Dependence Index Percentage (TDIP)

The Transit Dependence Index Percentage scores block groups based on their overall relative transit dependence excluding population density. While places that are more than 25 miles from an intercity bus stop are generally rural, some block groups have relatively higher transit need indicators such as higher populations of older adults, younger adults, individuals with disabilities or households without a car. These places (Figure 2-7) include some of the easternmost parts of the state including parts of Westmoreland County, Lancaster County and the town of Urbanna in Middlesex County. There are also many block groups less than 10 miles from an intercity bus stop that have high or very high transit dependence indicators near Hampton, Norfolk, Suffolk and Williamsburg. The rest of the study area has a low to moderate transit dependence index, in contrast to the south-central and southwest region of the state which has a higher overall transit dependence.

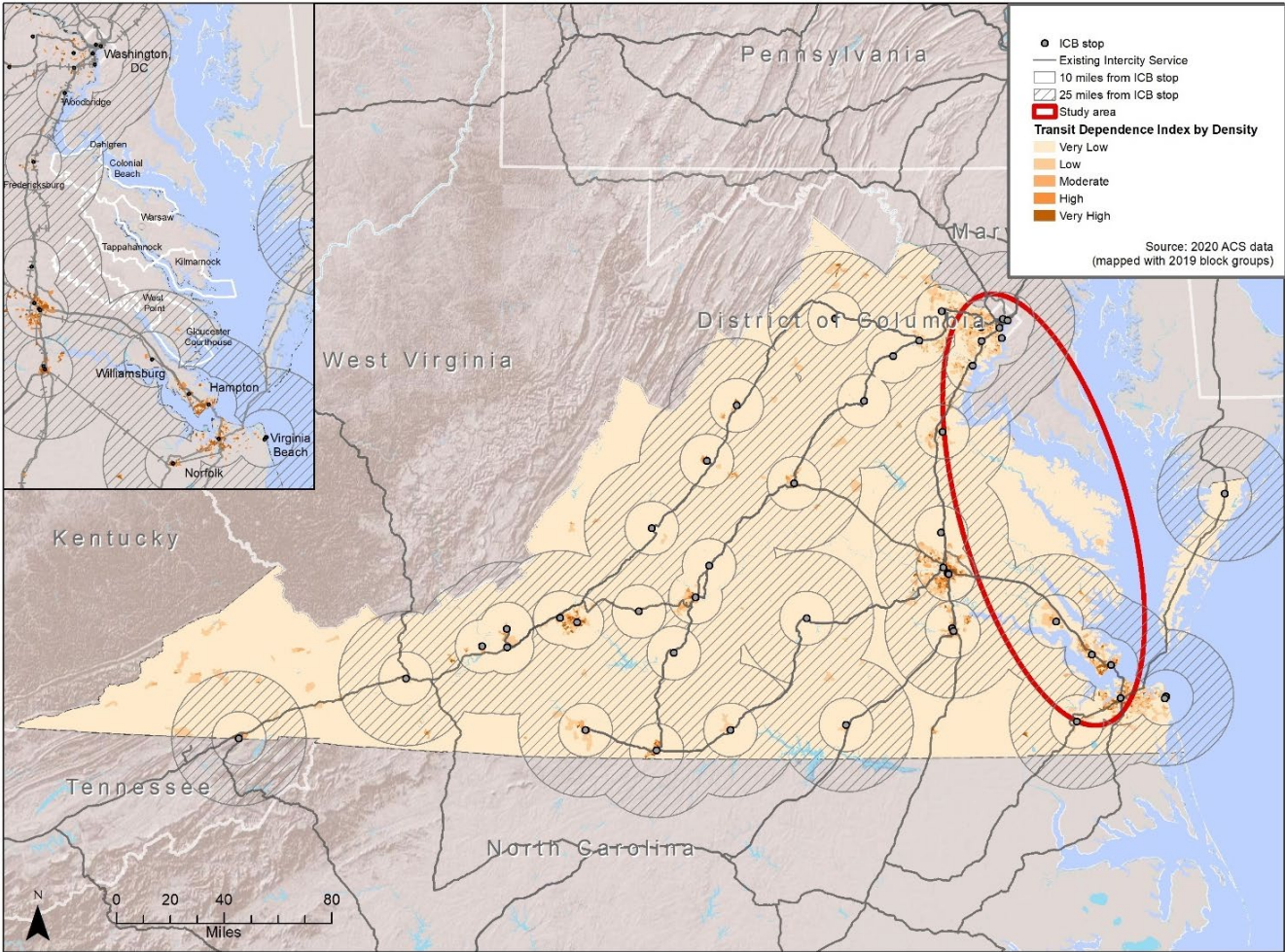
Figure 2-7: Transit Dependence Index Percentage (TDIP)



Transit Dependence Index Based on Population Density (TDID)

The Transit Dependence Index based on population density scores block groups based on their overall relative transit dependence including population density (Figure 2-8). Given the low population density of much of Virginia outside the metro areas, most of the state's area is classified as "low" need. However, there are a few pockets of high to very high transit need in the study area that are not within the 10 mile intercity bus service area (Figure 2-9). These areas include Colonial Beach, and a part of Gloucester Courthouse, Stafford and Franklin.

Figure 2-8: Transit Dependence Index (TDID)



Potential Destinations

Potential destinations for intercity trips are identified by finding the location and scale of key institutions that might generate intercity bus ridership. These include:

- Four-year colleges and universities
- State correctional facilities
- Tourist attractions
- Major medical centers
- Military bases

Trip generators from the study area between Fredericksburg and Virginia Beach were identified. While most identified trip generators are located within 10 miles of an intercity stop, there are exceptions.

Military Bases

The study area is home to various types of military bases, which also serve as a residential community and place of employment. Most bases are in the Hampton Roads area. There are two bases between 10-25 miles from the Fredericksburg stop: The Naval Surface Warfare Center in Dahlgren and the U.S. Army Garrison Fort A.P. Hill which is near Bowling Green.

Correctional Facilities

Most correctional facilities in the study area are within 10 miles of an intercity stop. The Haynesville Correctional Center is at least one facility that is more than 25 miles away from a stop. There are also two facilities south of Norfolk in Chesapeake: The Indian Creek Correctional Center and St. Brides Correctional Center.

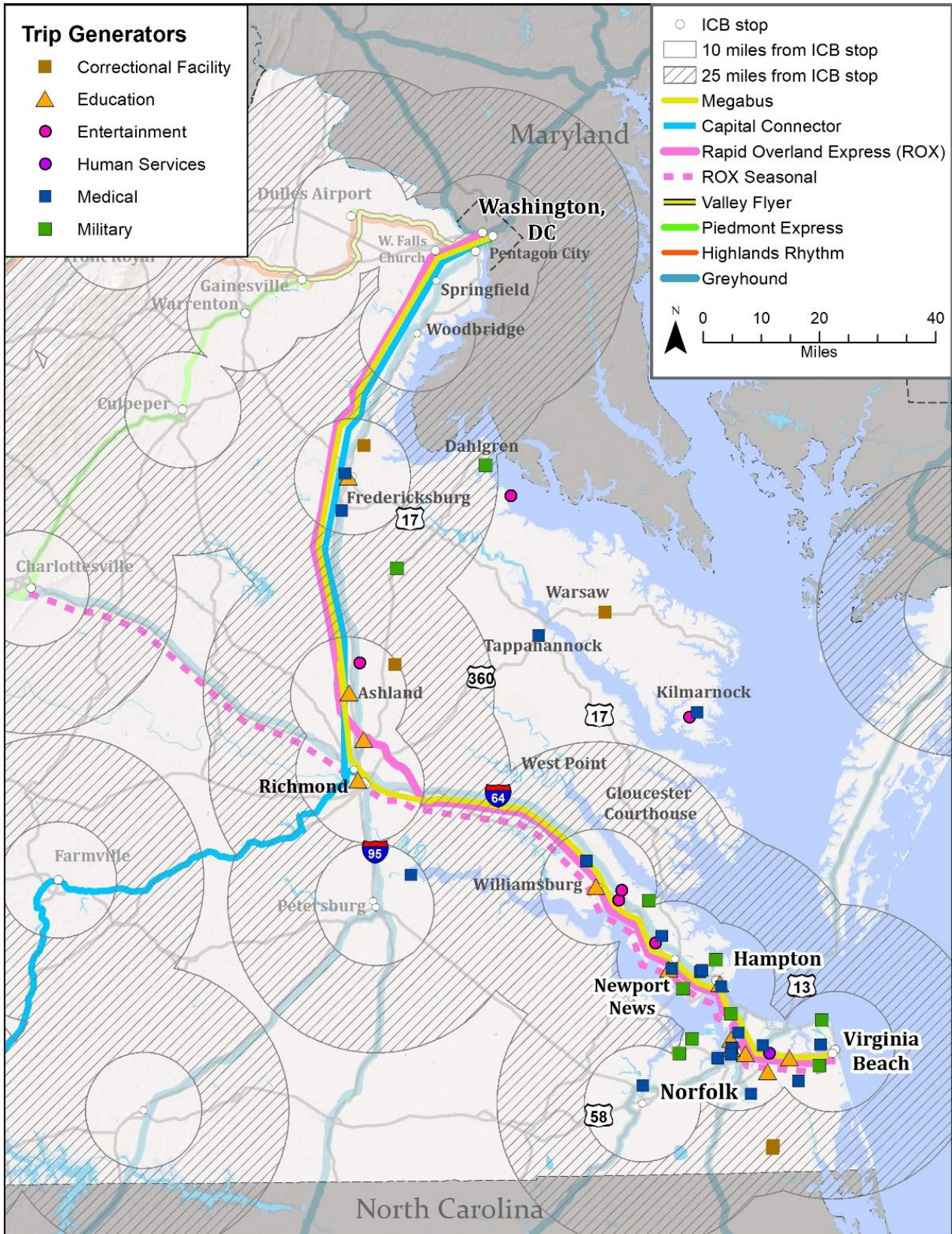
Tourist Attractions

The region features several major amusement parks or centers that could generate ridership such as Busch Gardens in Williamsburg or Kings Dominion (in Doswell) about ten miles north of Richmond. While these places are within 10 miles of an intercity stop, there are at least two other locations which are more than 25 miles from a stop: Colonial Beach and the Compass Entertainment Complex in Irvington. Colonial Beach is the site of a municipal pier and a state park for camping.

Medical Facilities

There are a few major medical facilities more than 25 miles from an intercity bus stop, including Rappahannock General Hospital in Kilmarnock and VCU Health Tappahannock Hospital. The implication of this is that many persons in the study area may need to travel to locations in urban areas for consultation, treatment or visitation. The Veterans Administration hospitals in Richmond and Hampton are key destinations that could require intercity access from the rural parts of the study area, particularly for those that are not eligible for Bay Transit's New Freedom service.

Figure 2-9: Trip Generators in Study Area



Summary

In terms of coverage, the current intercity network (broadly defined to include some long distance commuter transit routes) provides a high degree of coverage to Virginia's population. As of 2020, approximately 72.8 percent of Virginia's residents (an increase of 2% since the last study using 2012-2016 ACS data) live within 10 miles of an intercity bus stop or station, and 90 percent (a decrease of 1.4%) live within twenty-five miles. Overall, there has been a slight decrease (about 1.4%) in the number of Virginia residents who live more than 25 miles from an intercity bus stop, which are generally rural areas, but also a slight increase in residents living within ten miles from an intercity bus stop.

This suggests that large, urbanized areas continue to grow and that they have some intercity bus service. Meanwhile, about 1,400,000 people or 16.2 percent of the population live between 10-25 miles from an intercity bus stop, which is larger than the population that live more than 25 miles away from a stop (about 931,000 people or 10.8% of the population).

As was suggested in the 2019 VA ICB study, considerations of expansion or changes may need to focus on the population living in the band between 10 and 25 miles. As for the current study area, there are several block groups between 10 and 25 miles which were identified as having high or very high transit need. These places included Gloucester Courthouse (which previously was served by Greyhound), Stafford (about 10 miles north of Fredericksburg) and Franklin (about 22 miles west of Suffolk).

The demographic analysis of the study area along Route 17 between Hampton Roads and Washington, D.C. identified only one location more than 25 miles from an intercity stop (Colonial Beach) with an overall high transit dependence score while considering population density. However, ridership to and from this location may only be feasible in the summer season—note that Bay Transit's Colonial Beach shuttle is seasonal. There are also some areas in the study area such as in Lancaster or Westmoreland County which have high transit dependence but have low population density (Figure 2-7).

Chapter 1 identified existing intercity service, and local transit that could provide regional trips or connect with intercity service. Accessing intercity bus services from the parts of the study area that are not in proximity to existing intercity bus stops by using local transit is theoretically possible for some, but there are no current arrangements for such connectivity. If new intercity services were to be implemented in the U.S. 17 corridor, there are local transit services that could provide access to it, particularly if the appropriate information was made available to potential users.

Intercity Bus Service Needs Assessment

Chapter 3: Stakeholder Involvement

Introduction

In the previous statewide study, stakeholder input called for service in the U.S. Route 17 Corridor between Hampton Roads and northern Virginia. To obtain additional input, the process was expanded to include surveys and virtual regional meetings. Outreach methods included:

- Surveys of key stakeholder groups:
 1. Regional transportation planning agencies
 2. Local transit agencies
 3. Other key stakeholders
- Virtual stakeholder meetings

This chapter details each engagement activity, presents findings from the three surveys and explores key themes from input and feedback received from stakeholders during the meetings.

Surveys

Stakeholder surveys were developed and emailed to a list of regional stakeholders that included:

- Regional planning agencies (planning district commissions),
- Public transit operators in the region,
- County and town governments,
- Other potential stakeholders (universities, veteran's hospitals, airport planning staff, major medical centers, state correctional agencies, community-based advocacy groups, and Medicaid programs) in the corridor.

A transmittal email was developed explaining the purpose of the study and some background on the intercity services and DRPT's role in planning for and providing intercity service. The questions were limited, focusing on needs for intercity connections. Questions included whether there are particular user groups (for example students) with a need for intercity service, unserved trip purposes (for example access to airports), or key destinations. The transmittal and the surveys were emailed to the identified respondents, and follow-up emails made to encourage responses. The goal was to gain a sense of the overall need/demand from persons in the region, and any aspects that should be addressed in developing service alternatives.

Regional Planning Agency Survey

Six regional transportation planning organizations were identified as serving the region:

1. George Washington Regional Commission
2. Hampton Roads Planning District Commission
3. Middle Peninsula Planning District Commission
4. Northern Neck Planning District Commission
5. Northern Virginia Regional Commission
6. PlanRVA

DRPT provided contact information for the six agencies. In order to make reply easy, two versions of the survey were developed, one as a fillable PDF, and the other through the online survey tool Survey Monkey. In the transmittal the consulting team provided both the PDF version of the survey and a link to the Survey Monkey platform. The transmittal also encouraged participation in the virtual stakeholder meetings. Appendix A includes the transmittal and the surveys for the regional planning agencies. The initial transmittal of the survey was April 5, 2022, and follow-up reminders were sent on April 14 and 18.

Despite the effort to make response quick and easy, and the reminders, the number of responses was limited, with only three responses from the six agencies. Overall, the regional planners were not aware of any current intercity bus services in the area but noted the need for such a service. There was some awareness of local charter bus companies. A need for transportation options to either Richmond or Northern Virginia was identified.

Participants were asked about what intercity bus services needed to be prioritized and the answers included:

- Connections to airports and other travel nodes,
- Middlesex to Northern VA, and
- Communities with mobility challenges.

Regional planners were asked to identify the most important potential destinations: Richmond, Washington, D.C., North Carolina, and airports were most important to their communities. When addressing areas and places in the region that do not have intercity bus services and have a need for this service, the participants mentioned Southampton County, City of Franklin, Saluda, and Deltaville.

Participants were asked to identify particular groups that would use the intercity bus services if they were available. All participants mentioned college students, military personnel, and communities with potential mobility challenges. Another group mentioned was those that wanted to travel to Washington, D.C. or Richmond for special events.

Next, participants were asked about possible expansion or modifications to transit services in the region to connect with existing intercity bus services. All participants agreed that expansion or modifications are needed because there are no transportation options in their area or ones that connect to major travel facilities, such as Amtrak or airports. Another participant mentioned that running up Route 33 and 17 in Middlesex County would greatly benefit their community.

Transit Operator Survey

Transit managers and planners at six transit agencies were sent surveys that were similar to the regional planning agency surveys. Appendix B presents the transmittal and the survey sent to transit agencies. The six agencies included:

1. Bay Transit
2. Fredericksburg Area Transit
3. Hampton Roads Transit
4. Potomac and Rappahannock Transportation Commission
5. Williamsburg Area Transit
6. Virginia Railway Express

The survey was also administered online through the Survey Monkey platform. DRPT provided contact information for the transit agencies and the consulting team again provided the link and a PDF version of the surveys. The transit agency staff members were also encouraged to participate in online community meetings that included facilitated discussions of system needs and potential ideas for addressing the identified needs. Of the six transit agencies that were contacted three gave their input in the surveys.

The survey asked participants to state what distant cities the public or advisory groups have mentioned needing to travel to, which included Virginia Beach, the Newport News airport, Fredericksburg, and the Richmond airport. Participants were asked whether their services connect to any current intercity bus services, such as Williamsburg Transportation Center, the Greyhound station in Fredericksburg, and Gainesville. None of the participants had transit systems that serve park and ride lots that had an intercity bus carrier or commuter bus stop. When participants were asked whether they could suggest any intercity bus services as options for traveling to and from distant cities from their communities, one respondent mentioned there were no intercity bus options in their service area.

The survey asked whether there is a need for extension of local transit services to connect with intercity bus services. A majority of respondents stated their community would either benefit from having a local bus connect to intercity services or that their transit service is willing to connect with potential intercity bus services in the region. Only one respondent stated they currently operate a commuter bus, while the other respondents do not operate any long-distance services.

All respondents were asked about how they make their services' information available to the public; all respondents stated this can be found in brochures, their website, and posted schedules.

Stakeholder Survey Results

Other key stakeholders were asked to provide input. They included human service agencies, colleges/universities, military bases, county and local officials, and board members. Appendix C presents

a list of those surveyed and the transmittal and survey for this group. The survey was also administered online through the Survey Monkey platform. KFH Group provided the link and a PDF version of the surveys. Stakeholders were encouraged to participate in online community meetings that included facilitated discussions of system needs and potential ideas for addressing the identified needs.

KFH Group received nine surveys from stakeholders. The service areas of the organizations they represented include the Northern Neck, Middle Peninsula, Richmond, and city of Fredericksburg. The client groups represented include seniors, persons with disabilities, and low-income populations, as well as rural areas more generally. About half of the respondents stated they assist their clientele in finding long-distance transportation when needed, including providing information or utilizing referral services. A majority of respondents stated that no financial assistance is provided to individuals for intercity or other long-distance travel.

Areas and corridors throughout the study area that were identified as needing intercity bus service (or more service) included:

- The U.S. Route 17 corridor generally
- Gloucester and Gloucester Courthouse
- Tappahannock
- Richmond
- Williamsburg
- the Western Tidewater area west of Norfolk

When asked about particular markets or groups that would benefit from more intercity bus services, respondents mentioned the need for services to provide access to medical centers, grocery shopping, and transportation hubs.

Many respondents stated that they provide on-demand services within their service area for either local trips or medical appointments and that expansion or modification to current transit services to connect with existing intercity bus services would benefit their communities.

Virtual Stakeholder Meetings

The study team together with DRPT staff held two virtual stakeholder meetings on May 3 and May 5, 2022. Each stakeholder meeting attracted about ten participants. The organizations represented are listed in Appendix D. The meetings began with introductions and a presentation with information about the purpose of the study, the study area, the state's intercity bus services (including the Virginia Breeze program), demographic information, and the purpose and scope of the study. Appendix E presents a copy of that presentation.

The purpose of these meetings was to engage the stakeholders. The participants were asked to:

- Identify and discuss key transportation needs in the study area
- Provide feedback and input on possible intercity bus routes within the study area

Some key themes included 1) a need for connectivity from the study area to intermodal terminals offering travel options to more distant locations, 2) a need for intercity/regional services in the rural areas currently lacking general public transit access, and 3) access to particular regional destinations.

Needs for access to these terminals or connections were identified:

- Williamsburg Transportation Center
- Richmond Airport
- Newport News Airport
- Dulles Airport
- Reagan National Airport
- Fredericksburg—FRED Central and the Amtrak/VRE station
- Washington, D.C.—Metro and Union Station

Access to airports was a key theme. Dulles Airport was singled out as a needed destination because of the international air services available there that are not directly accessible from Richmond, Newport News or Norfolk. International students attending universities in Hampton Roads would benefit from bus access to Dulles. The Williamsburg Transportation Center offers connections to Amtrak services, but Greyhound service is now very limited. Similarly, in Fredericksburg the major intermodal connection is with Amtrak and VRE, as intercity bus services have diminished. Connections to other intercity bus services and Amtrak corridor trains were identified as the need to access Union Station in Washington.

The discussion also covered areas needing intercity bus service. These included:

- Virginia Beach (as a destination from the rural areas)
- Western Tidewater/Suffolk (as an origin area going to Norfolk/Hampton Roads destinations)
- Chesterfield County (as an origin area going to Richmond)
- Norfolk (as a destination from the rural areas)
- Middle Peninsula (Route 17 corridor) as both an origin and destination (tourism)
- Gloucester and Gloucester Courthouse (as an origin)
- Fredericksburg (as a destination—new VA hospital)
- Newport News (as a destination)
- Williamsburg (as both an origin and destination)

Participants expressed a need for intercity/regional transit service in the rural areas along the Route 17 corridor. Intercity or regional commuter access open to the general public without eligibility restrictions in the rural areas east of the I-95 corridor along the Route 17 corridor is needed. Transportation options for the rural communities was seen as increasing access to employment options, though that would likely be a different kind of service from the typical intercity bus service (and could not be funded with Section 5311(f)). If service was available there would also be potential visitors coming to the area as a destination, perhaps in conjunction with service to Williamsburg or Virginia Beach. It was also noted that the population of Gloucester is growing, with the highest population density in the Middle Peninsula; therefore, it would make sense to have a stop in Gloucester.

Fredericksburg is already a destination for regional medical trips, and as the southern terminus of the commuter services into the Washington area. Its potential role as a connection point to the national intercity bus network has declined with the loss of Greyhound service—there is not much to connect with, and another need identified is for service between Fredericksburg and Charlottesville to replace service that ended with the pandemic. Its potential role as a destination from the rural areas will increase when the new VA hospital opens.

Another topic of discussion included whether the population within the study area would prefer to travel to Richmond, Fredericksburg or Washington, D.C. On this issue there were several perspectives. In terms of regional trip needs, many thought that the rural areas of the Middle Peninsula and Northern Neck should be connected to Richmond, primarily based on observed travel patterns for medical, social service and shopping trips.

Others thought that service from the rural areas should be oriented to travel north to Fredericksburg and Washington, D.C. One comment stated there are many transit options in Northern Virginia, and it would make sense to connect with them for access to many northern Virginia destinations rather than forcing riders to go to Union Station and double back. These other services include VRE, Amtrak, and possible future commuter bus service from Fredericksburg. The point was made to consider utilizing the existing and near-term planned infrastructure in northern Virginia (particularly enhanced rail, the I-95 Express Lanes, and possible commuter bus service on them) rather than providing expensive additional miles to access Washington. At the same time the potential funding source for rural intercity bus service requires a meaningful connection with the national intercity bus network, which is most likely found in Washington at Union Station.

There seemed to be little interest in service through Dahlgren/Colonial Beach to southern Maryland and Washington—the need is for service from that area to Fredericksburg.

Connecting new intercity bus service to the Williamsburg Transportation Center would create a connection point with WATA, potentially feeding other Greyhound services if they return, and Amtrak. It was also noted that there is a new transportation center in Newport News that could provide connections to other types of transit services—a link from Williamsburg to that facility and the airport would benefit the Williamsburg and Yorktown areas.

Conclusions

Overall, despite any issues resulting from the COVID pandemic, the study team was able to gather significant input regarding the needs for intercity and regional bus services in this region. This input affects the need for service, potential routes/coverage, strategy for the program, and the need for improved information.

Need for Service to/from Rural Areas

There was consensus on the need to connect unserved rural communities in the study area to major travel hubs and adjacent urban areas. This was clearly identified as an unmet need. Much of the discussion focused on trip purposes that are less of an intercity need than a regional transit need (service to medical facilities, employment/commuting, etc.). Some of these needs were identified for rural areas on the periphery of the study area, such as Western Tidewater, Suffolk or Chesterfield, as well as the Middle Peninsula and Northern Neck areas.

Potential Routing

There was less consensus on the potential routing of intercity service to address these needs. Service from the Middle Peninsula and Northern Neck to Richmond was favored by a number of people, based on the shorter travel time and current regional trip patterns. A connection to Richmond was believed to be a more useful trip for the rural communities than Washington, D.C. Supporters of this option noted that if the potential route were to connect with other transit services that travel to Washington, D.C., the intercity bus route could focus on transporting riders to Richmond (and potentially Williamsburg), while providing a shorter travel time for most riders. At the same time, others favored linkages to Washington, D.C., and Hampton Roads destinations. Travel to Washington offers many potential trip purposes, and many rural residents are not likely to drive themselves given the traffic, etc. It also offers many more connections to other buses, trains, and air services. Travel to or through Fredericksburg could add the potential to serve some regional trips, including medical trips.

If alternatives are developed to link the peninsulas with the Washington area, there should be linkages to the transit services to facilitate access to northern Virginia destinations as well as those at Union Station. Major investments such as the I-95 Express Lanes or expanded VRE services may offer other options in the future as well.

It was clear that there is not much interest in a route going up Route 301 through Dahlgren to access Washington, D.C. via southern Maryland. The need from Colonial Beach and Dahlgren is a regional need—commuter service from Fredericksburg to Dahlgren, and medical/services/shopping from Colonial Beach to Fredericksburg.

Next Steps

The next task in this study is to develop potential alternative service options and estimate their costs, ridership and revenue.

In developing alternatives responsive to this stakeholder input, it is likely that service design and funding considerations will also come to into play—how much potential funding is available, what schedule times would work to make convenient connections, how different services could complement Amtrak services, where connections with unsubsidized services can be made (needed for in-kind local match), and if there are other potential funding sources to address more regional needs.

One other very relevant question raised in the stakeholder discussion concerned the criteria to be used to measure success. Ridership (and revenue) from rural areas may not be as high as for services between more urban areas—will that be enough to justify service? Or are other factors such as access and coverage the more relevant yardsticks. This needs to be considered both in developing and evaluating the alternatives.

Intercity Bus Service Needs Assessment

Chapter 4: Potential Alternatives

Route Alternatives and Potential Ridership

This chapter examines potential intercity bus service alternatives for the study area between Washington D.C. and Hampton Roads along the U.S. Route 17 corridor. There are two subtasks to be addressed—one is the development of potential route and schedule alternatives and the estimation of potential demand, and the other is the analysis of the operating costs and financial requirements of each.

In developing route alternatives, the key questions to be addressed include:

- Does the project fall within the parameters of this program? Is it eligible for Section 5311(f) funding?
 - Meaningful connection to the national network of intercity bus services (same terminal or stop, coordinated scheduling, information about connections, coordinated ticketing)
 - Serves non-urbanized populations
 - Not commuter or charter service
 - Could meet requirements for ADA accessible vehicles with luggage capacity
- Does it provide for additional access to intercity services for people living in rural (non-urbanized) places?
- Does it provide service to locations with concentrations of persons with a higher need for transit?
- Does it provide service to any key destinations that would otherwise be unserved, such as colleges and universities, major medical centers, military bases or major medical facilities?
- Does it provide connections in the network that reduce travel times or the need to transfer—does it improve network connectivity without duplicating existing service?
- Is it cost-effective? Does the current or projected ridership support the investment required for that service?

In this case another key factor needs to be considered in the development of route alternatives even though it is primarily a financial consideration, and that is related to the need for a national network intercity connection. DRPT does not provide operating match for routes in the Virginia Breeze program, relying instead on in-kind match based on the value of connecting unsubsidized intercity bus service. In order to develop enough in-kind match any proposed service will have to provide a close connection with an unsubsidized route of approximately the same mileage length. As seen in Chapter 1, in the wake of the pandemic, the frequency of unsubsidized intercity bus service has been severely reduced due initially to a severe decline in ridership which is not fully recovered, but now also due to a lack of drivers.

This means that route alternatives will need to connect with the national intercity network at stations that offer a lot of services for potential connections.

Previous Study Route Alternatives

2003 Feasibility Study for Intercity Bus Service Between Hampton and Fredericksburg, Virginia

This 2003 study examined the same corridor. It also included an examination of the demographics and developed and evaluated route alternatives. Four alternatives were examined:

- **Alternative 1:** the Greyhound Lines Incorporated (GLI) Northern Route linked Hampton with Fredericksburg via Gloucester Point, Gloucester Courthouse, Saluda, Tappahannock, Warsaw, Colonial Beach, and King George via U.S. 17 and Route 3.
- **Alternative 2:** the GLI Southern Route linked Hampton with Fredericksburg via Gloucester Point, Gloucester Courthouse, Saluda, and Tappahannock via U.S. 17.
- **Alternative 3:** called Bay Transit Feeder Service was the same as Alternative 1 but operated by Bay Transit, but with services originating in Tappahannock with one route to Fredericksburg, and one to Hampton.
- **Alternative 4:** called Build Out Bay Transit Feeder Service added a third route linking Kilmarnock, Warsaw, Tappahannock, and Aylett with Richmond.

All of these route options were evaluated at both a single daily frequency and two round-trips per day. Ridership was estimated using two different models, one based on the experience of a similar service operated by a rural transit agency in Arkansas, and the other a national 1982 rural intercity bus demand model. The route level national model forecast low ridership levels for the GLI routes. For a single daily frequency, it forecast annual ridership of 906 to 1,108 persons. The other model, using the Arkansas ridership response but calibrated with data from the region, resulted in higher ridership forecasts. The GLI Northern route had estimated boardings of 2,126 for a single daily round trip, the route using Route 17 only 1,392 riders, and the Bay Transit Alternative 3 was projected to carry 2,126, while the full Build Out model for three routes was forecast to carry 2,848.

While it was anticipated that service could be initiated using DRPT demonstration funding (required a 5 percent local match at the time), there was no possibility that the local governments or non-profits would be able to provide the local match for service beyond the demonstration period, even if it was operated at a lower per-mile cost by Bay Transit.

2013 Virginia Statewide Intercity Bus Study

This 2013 statewide study included a route from Norfolk to Washington, D.C. via Tappahannock in the analysis. The route used U.S. 17 from Norfolk to Fredericksburg, and I-95 from Fredericksburg to Washington, D.C. It was estimated to have annual ridership of 7,050 but was still ranked low compared to alternatives due to a relatively high subsidy cost per passenger, a low projected farebox recovery, and the fact that major stops on the route already had service.

2019 Virginia Breeze Expansion Alternatives Analysis

In 2019, the included two versions of a route in its analysis—one set linking Norfolk or Hampton to Fredericksburg, and the other linking either of the Hampton Roads cities to Washington, D.C. via Fredericksburg. Based on higher likely ridership, the preferred option was a route: Norfolk-Hampton-Gloucester Courthouse-Tappahannock-Warsaw-Fredericksburg-Reagan National Airport-Washington, D.C. (Union Station). The estimated ridership for this route was 5,200, with an annual net operating deficit of \$513,076 and a subsidy per passenger of \$98.67. At that time the estimated operating cost per bus-mile was \$4.50 per mile. The study also included options for a service between Norfolk and Fredericksburg, showing connections with Greyhound that could generate in-kind match miles.

Exhibit 4-1: Proposed Timetable Virginia Breeze Expansion Alternatives Analysis (2019)

Southbound		Northbound		
Read Down	Stop Name			
12:00	<i>LV</i>	<i>New York (Greyhound)</i>	<i>ARR</i>	6:45
4:20	<i>ARR</i>	<i>Washington, D.C.(Union Station)</i>	<i>LV</i>	2:00
12:00	<i>LV</i>	<i>New York (Megabus)</i>	<i>ARR</i>	5:15
4:15	<i>ARR</i>	<i>Washington, D.C.(Union Station)</i>	<i>LV</i>	1:00
5:15	<i>LV</i>	Washington, DC (Union Station)	<i>ARR</i>	12:00
6:00	<i>LV</i>	Reagan National Airport	<i>ARR</i>	11:35
7:00	<i>LV</i>	Fredericksburg	<i>LV</i>	10:30
8:05	<i>LV</i>	Warsaw	<i>LV</i>	9:25
8:15	<i>LV</i>	Tappahannock	<i>LV</i>	9:15
9:10	<i>LV</i>	Gloucester Court House	<i>LV</i>	8:20
10:10	<i>LV</i>	Hampton	<i>LV</i>	7:20
10:45	<i>LV</i>	Norfolk	<i>LV</i>	6:45

Read UP

Italic=Connecting Bus Schedule

Boldface=PM

Route Alternatives 2022

For this analysis, it is worth noting that the geography of the region has not changed, with the same highway network and same towns. Populations have stayed stable across the rural region between Hampton Roads and Fredericksburg. Route alternatives will therefore be very similar to previous studies, particularly given the continued input about needs for service from the rural areas to both Fredericksburg and Washington, and to Richmond. Most of the same considerations brought to bear in the statewide analysis still hold true—a single-seat ride to Washington will be more attractive than a forced change in Fredericksburg, direct service to an airport with significant service levels will attract a higher level of ridership, etc.

However, there are changes that will affect the potential options. What has changed in the wake of the pandemic is the amount of potential connecting service. There is now only a single Greyhound trip each way stopping in Fredericksburg, there is very little service at Norfolk. Therefore, route options terminating in Fredericksburg are essentially moot unless there is a significant change in the amount of intercity bus service. The other changes since 2019 that will have the most significant impact are those affecting ridership levels in the wake of the pandemic, and cost increases—both of which affect the potential costs of operations and the funding.

In developing route alternatives for this study, there are two steps. In the initial step, the need is to identify the potential stops and the length of the route, which are needed for the demand estimation tool. However, the model is insensitive to impact of multiple stops in an urbanized area, so various stops in the Washington, D.C. region and in the Hampton Roads region have little impact on estimated demand, which is primarily generated by those rural points that do not currently have intercity bus service. This is a weakness of the model, which was developed for estimating demand of rural intercity bus services. Additional stops inside an urbanized area may add ridership or reduce it if it adds too much travel time.

The routes and potential stops are developed from the analysis of existing services, the analysis of population characteristics, and the input from stakeholders. Five alternatives have emerged:

- **Alternative 1A:** Norfolk-Hampton-Gloucester Courthouse-Saluda-Tappahannock-Warsaw-King George-Fredericksburg VA-Fredericksburg - D.C. (Franconia - Springfield Metrorail Station or Reagan National Airport), Washington, D.C.
- **Alternative 1B:** Norfolk-Hampton-Gloucester Courthouse-Saluda-Tappahannock-Fredericksburg VA-Fredericksburg - D.C. (Franconia - Springfield Metrorail Station or Reagan National Airport), Washington, D.C.
- **Alternative 1C:** Norfolk-Hampton-Gloucester Courthouse-Saluda-Tappahannock-Warsaw-Tappahannock-Fredericksburg VA-Fredericksburg - D.C. (Franconia - Springfield Metrorail Station or Reagan National Airport), Washington, D.C.
- **Alternative 2A:** Kilmarnock-Warsaw-Tappahannock-Central Garage-Richmond Airport - (Broad Street Station/Greyhound Station)

- **Alternative 2B:** Warsaw-Tappahannock-Central Garage-Richmond Airport - (Broad Street Station/Greyhound Station)

Table 4-1 lists all the stops, which alternatives include them, and the rationale for including them in the analysis. It should be noted that in the ridership projections there are actually eight alternatives, because each of the Alternative 1 options has been tested with direct airport service (a stop at Reagan National Airport) and without (a stop at the Franconia-Springfield Metrorail station—which would also permit a Metro trip to Reagan National and Dulles, but with the need to transfer).

Table 4-1: Proposed Stops

Potential Stop Location	Included in Alternatives	Rationale:
Norfolk Amtrak Station	All	Facility serves Amtrak and Greyhound, potential capacity for bus, waiting area, parking
Old Dominion University	Potential flag stop in 1A, 1B, 1C	24,000 students, residential population, location near potential route
Hampton University	Potential flag stop in 1A, 1B, 1C	3,500 students, location near potential route, Hampton Transit Center
Hampton Transit Center	1A, 1B, 1C	Existing Greyhound facility with waiting area, bus parking, HRT connections
Gloucester Courthouse	1A, 1B, 1C	Non-urbanized population center (2020 pop 2969), Gloucester County seat
Saluda	1A, 1B, 1C	Non-urbanized, Middlesex County seat, (2020 pop 606) potential stop en route
Tappahannock	1A, 1B, 1C; 2A, 2B	Non-urbanized, Essex County seat, (2020 pop 1,911)
Warsaw	1A, 2C; 2A, 2B	Non-urbanized, Richmond County seat, (2020 pop 2,368)
King George	1A	Non-urbanized, King George County seat, (2020 pop 4,601), 10.6 miles to Dahlgren, 14.5 miles to Colonial Beach
Central Garage	2A, 2B	Non-urbanized, King William County, (2020 pop 1,574), on route from Tappahannock to Richmond.
Kilmarnock	2A	Commercial center of Northern Neck, straddles Lancaster and Northumberland Counties, (2020 pop 1,488).
Fredericksburg Veterans (New)	1A, 1B, 1C	Opens late 2024, nation's largest VA Clinic, proximity to FRED Central

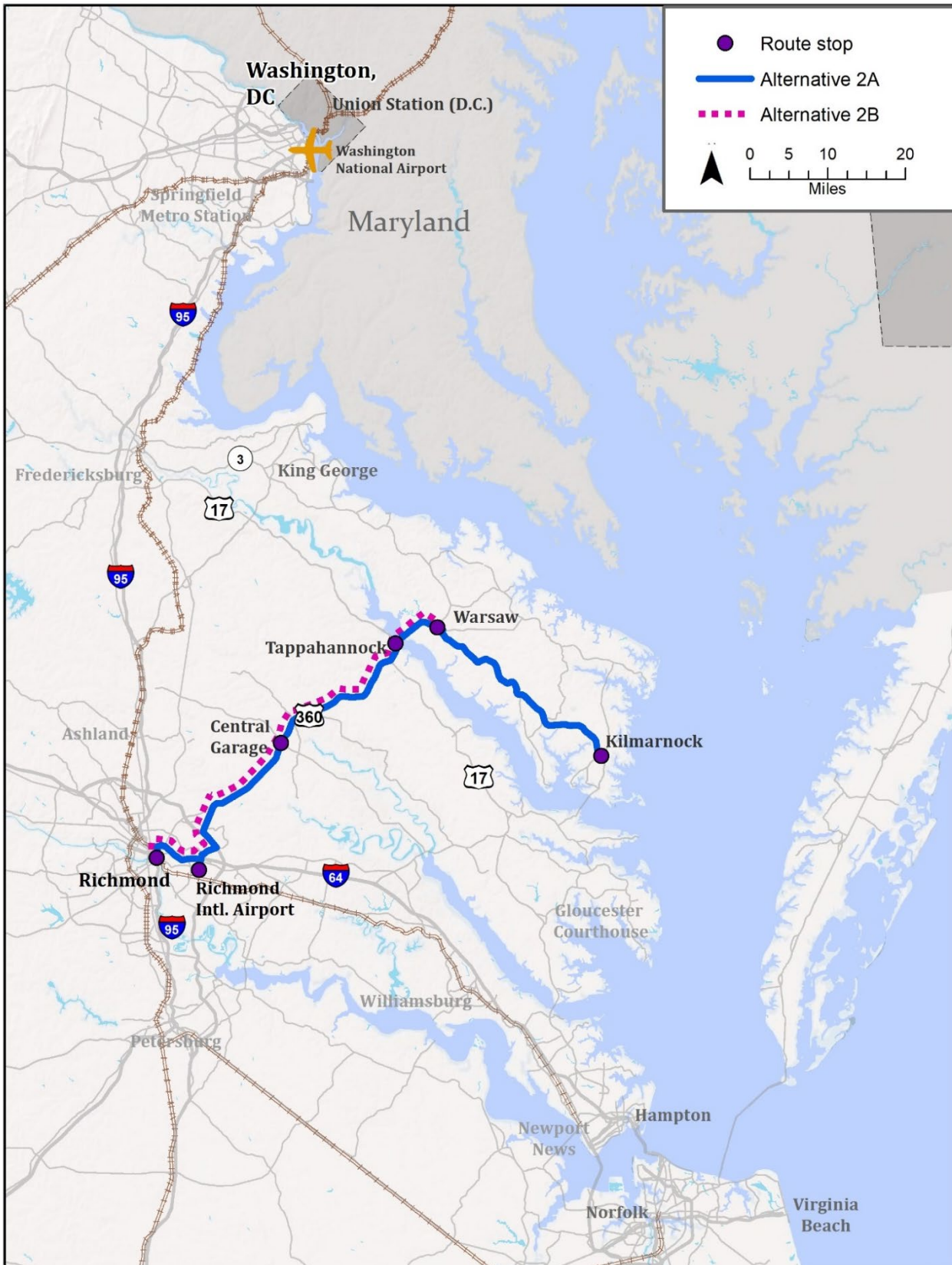
Potential Stop Location	Included in Alternatives	Rationale:
FRED Central-Fredericksburg	1A, 1B, 1C	Fredericksburg Regional Transit hub, existing intercity bus stop with waiting area, bus slip
Franconia-Springfield Metrorail	1A, 1B, 1C No airport options	Intermodal transfer to Metro Blue line which serves Reagan Airport, connects to Silver Line to Dulles Airport, Orange Line. Near intersection of I-95, 395, Fairfax Parkway for drive access to/from northern Virginia. Former Greyhound stop with ticket kiosk. Alternative with Reagan Airport stop
Reagan National Airport	1A, 1B, 1C With airport	Single-seat ride directly to major airport, Blue Line connects to Silver Line to Dulles Airport, Orange Line for other northern Virginia coverage
Union Station	1A, 1B, 1C	Connections to national intercity bus network, in-kind match connections, Amtrak, and Metrorail Red Line

Figure 4-1 presents the Norfolk-Washington alternatives, and Figure 4-2 presents the Kilmarnock-Warsaw-Richmond alternatives. The alternative route aspects are presented as dashed lines.

Figure 4-1: Norfolk-Washington Alternatives



Figure 4-2: Kilmarnock-Richmond Alternatives



Potential Ridership

For potential routes (including existing unsubsidized routes), ridership was estimated using the TCRP rural intercity bus demand model presented in TCRP Research Report 147.¹ The model uses 2010 Census data. It utilizes the populations of Urbanized Areas and Urban Clusters, which are not yet available from the U.S. Census for 2020. The populations of the rural areas in this corridor have not changed significantly, and the model does not include the populations of the major urban areas at the route ends (which likely have the major change). The characteristics of the routes are used as input to estimate the demand—route length, populations of the stops, number of stops, whether or not the service is operated by a national intercity bus company, whether it serves an airport, and whether it serves a town with a major correctional facility. Most intercity bus routes in the calibration base offered a single round-trip per day, and with little variation in frequency, that variable was not significant, and so the model is insensitive to frequency.

The toolkit has two different models that can be applied. The regression models in the toolkit were calibrated with data from 52 different rural intercity bus routes, and the trip rate model with data on trips over 100 miles from rural areas (by region) from the National Household Travel Survey. For the trip rate model, the model selects the appropriate trip rates for the state where the route will be operated and multiplies it by the stop population. The total is adjusted by the error term of the regression model. When the error term is larger than the estimated ridership this model shows zero ridership.

The basic relationship driving demand in the model is the average population of the stops. If the total population served by the route (excluding the largest stops—assumed to be the major city origin and/or destination) is divided by a large number of stops, the average population will be lower, and the demand also lower, reflecting the fact that too many stops increase trip times and discourages ridership. A route with a few large stops will have higher ridership than one with the same overall population divided among many stops. Direct airport service has a significant effect on the potential ridership.

The tool provides data on the four most similar routes from the calibration base, allowing the user to evaluate the reasonableness of the estimates. Although the two model results usually differ, they may be averaged to provide a mean demand estimate.

For each of the identified route alternatives in this study, the TCRP 147 model was used to estimate ridership. The estimates are conservative in that the populations of towns already receiving service were not included. It was assumed that all routes would be operated by a national network carrier or interline partner. Route lengths were calculated based on mileage between stops, using terminal addresses and the shortest route between them.

Table 4-2 presents the initial model results. The mean demand estimates are not inconsistent with the estimates from earlier studies.

¹ Frederic D. Fravel, Reyes Barboza and Jason Quan of the KFH Group, Inc, and Jason K. Sartori of Integrated Planning Consultants, LLC; *TCRP Report 147: Toolkit for Estimating Demand for Rural Intercity Bus Services*; Transportation Research Board, Washington, D.C. 2011.

Table 4-2: Estimated Ridership and Incremental (New) Population Served

Alternative	Description	Route Length	Regression	Trip Rate	Mean	Previously Unserved Stops	Incremental Population Served
1-A	NFK-WAS via 17 and 3, no airport	218	5,600	0	2,800	Gloucester, Saluda, Tappahannock, Warsaw, King George	12,295
1-A	NFK-WAS via 17 and 3, airport stop	222	10,600	0	5,300	Gloucester, Saluda, Tappahannock, Warsaw, King George	12,295
1-B	NFK-WAS via 17 only, no airport	202	4,800	0	2,400	Gloucester, Saluda, Tappahannock	7,480
1-B	NFK-WAS via 17 only, airport stop	205	9,500	0	4,750	Gloucester, Saluda, Tappahannock	7,480
1-C	NFK-WAS via 17, Warsaw, no airport	215	4,600	0	2,300	Gloucester, Saluda, Tappahannock, Warsaw	8,992
1-C	NFK-WAS via 17, Warsaw, airport	218	9,700	0	4,850	Gloucester, Saluda, Tappahannock, Warsaw	8,992
2-A	Kilmarnock-Richmond, airport	93	9,900	0	4,950	Kilmarnock, Warsaw, Tappahannock, Central Garage	6,851
2-B	Warsaw-Richmond, airport	62	9,600	400	5,000	Warsaw, Tappahannock, Central Garage	5,364

At this point in time demand estimation for transit is very difficult, because it is not yet clear how travel behavior may change in the wake of the COVID-19 pandemic. Typically, intercity bus riders are not commuting for work, so the ability to work from home may have little impact on the intercity bus ridership directly. If there are more people moving to rural areas because they can work from home, that could have a positive impact in the long run. At the same time, continued concern about the inability to social distance on public transportation, including intercity buses, may make potential riders reluctant to return or use intercity buses. The most recent general information is that intercity bus ridership is currently about 75 percent of its pre-pandemic levels, but that is only at the moment. It is even difficult to use the recent ridership on other Virginia Breeze routes to adjust these estimates because they have been affected by the pandemic.

March 2022 data for Virginia Breeze showed ridership higher than budgeted (estimated annual ridership/12, except for the Highland Flyer which is a new route), on three of the four routes. The budgeted ridership is based on demand estimates made for the 2019 study using the same model and technique. In the absence of any clear pattern relating actual recent ridership to the demand model estimates, Table 4-2 reports the figures from the model rather than make any adjustments.

Operations and Finance

Table 4-3 presents estimates of operating costs, revenues (based on the ridership estimates above), net operating deficit, and key performance measures. The methodology and assumptions are designed to be comparable to the 2019 statewide study and are presented below.

Table 4-3: Estimated Costs, Revenues and Performance

Alternative	Description:	One-Way Route Length	Annual Vehicle Trips	Annual Bus-Miles	Regression Demand	Trip Rate Demand	Mean Demand	Fare per Mile	Estimated Passenger Miles	Estimated Revenue	Cost per Bus-Mile	Estimated Annual Cost	Net Operating Deficit	Subsidy per Passenger	Farebox Recovery	Boardings per Trip
1-A	NFK-WAS via 17 and 3, no airport	218	730	159,140	5,600	0	2,800	\$0.20	488,320	\$97,664	\$6.00	\$954,840	\$857,176	\$306.13	10.23%	3.84
1-A	NFK-WAS via 17 and 3, airport stop	222	730	162,060	10,600	0	5,300	\$0.20	941,280	\$188,256	\$6.00	\$972,360	\$784,104	\$147.94	19.36%	7.26
1-B	NFK-WAS via 17 only, no airport	202	730	147,460	4,800	0	2,400	\$0.20	387,840	\$77,568	\$6.00	\$884,760	\$807,192	\$336.33	8.77%	3.29
1-B	NFK-WAS via 17 only, airport stop	205	730	149,650	9,500	0	4,750	\$0.20	779,000	\$155,800	\$6.00	\$897,900	\$742,100	\$156.23	17.35%	6.51
1-C	NFK-WAS via 17, Warsaw, no airport	215	730	156,950	4,600	0	2,300	\$0.20	395,600	\$79,120	\$6.00	\$941,700	\$862,580	\$375.03	8.40%	3.15
1-C	NFK-WAS via 17, Warsaw, airport	218	730	159,140	9,700	0	4,850	\$0.20	845,840	\$169,168	\$6.00	\$954,840	\$785,672	\$161.99	17.72%	6.64
2-A	Kilmarnock-Richmond, airport	93	730	67,890	9,900	0	4,950	\$0.20	368,280	\$73,656	\$6.00	\$407,340	\$333,684	\$67.41	18.08%	6.78
2-B	Warsaw-Richmond, airport	62	730	45,260	9,600	400	5,000	\$0.20	248,000	\$49,600	\$6.00	\$271,560	\$221,960	\$44.39	18.26%	6.85

Estimation of Costs and Revenue

- The annual miles operated on each route were estimated through the assumption that it would operate seven days per week, 365 days per year, and one round-trip per day. In other words, 730 annual trips multiplied by the one-way length of the route.
- The annual operating cost was estimated by multiplying the annual miles times \$6.00 per bus mile, which is a current estimate of typical fully allocated costs for privately provided intercity bus service. In March 2022 the Virginia Breeze costs ranged from \$4.17-\$4.97 per mile, based on the current contract, but since then fuel costs have increased. Increasing fuel costs and increases in CDL driver wages are affecting bus operating costs and are likely to continue and then stabilize at a higher level. In addition, carriers are operating fewer miles than anticipated prior to the pandemic, so fixed costs are spread over few miles, further increasing the cost per mile. Use of the higher cost provides a more conservative (high) estimate of net deficits that might be used in budget considerations—actual costs will not be known contract bids are opened.
- Revenue was estimated in two steps.
 - The first step involved an estimate of passenger-miles for each route. The total estimated ridership for the route is multiplied by the annual bus-miles, which provides an estimate of the number of passenger-miles that would be generated if each passenger rode from beginning to end. Some passengers will board or alight at stops along the way, so an adjustment is made to reduce the number of passenger miles. If there are few intermediate stops it is likely that most passengers will ride end-to-end, and it is assumed that the actual passenger-miles will be only 80 percent of the theoretical maximum. If the route has many intermediate stops, or they are of significant population size, this factor may be as low as 50 percent. These are assumptions based on expert judgement. For these routes the assumption of 80 percent was applied.
 - The second step involves multiplying the average fare per passenger-mile times the estimated passenger miles. The average fare was developed by taking a sample of fares from existing services in Virginia for next-day trips and for trips two weeks out, and then averaging the fare per mile. Appendix I presents the sample of fares, which were collected in late April 2019. Generally, shorter trips have a higher fare per mile and longer trips have a lower fare, so long routes were assigned a slightly lower fare.
- With costs and revenues estimated for each route, the next step was to develop performance measures.

Performance Measures - Net Cost per Trip, Farebox Recovery, and Boardings per Trip

With the ridership, costs and revenue estimated, performance measures can be calculated.

- The cost per passenger trip is calculated by taking the total operating cost, subtracting estimated revenue to get the net operating deficit, and then dividing by the predicted ridership. This is the cost to DRPT for transporting each rider individually.
- Farebox recovery is calculated by dividing the estimated revenue by the estimated operating cost.
- The boardings per trip measure is calculated by dividing estimated ridership by the number of annual trips.

Results

The analysis of potential costs, revenues, and performance demonstrates that all of these alternatives have relatively low cost effectiveness. Several factors:

Low Estimated Ridership: Because there is substantial intercity service between the Hampton Roads region, Richmond, and Washington, D.C. there is likely to be limited end-to-end ridership. Most ridership would come from the rural areas of the Middle Peninsula and Northern Neck, which are currently unserved. The towns that are logical stops are small in population and are not growing rapidly. The routes have been designed to try and add destinations that would encourage ridership, such as the new Veterans medical facility in Fredericksburg and the airports. Existing Virginia Breeze ridership includes a substantial student population. Stops in Norfolk and Hampton are included to try and attract student ridership by bringing the bus closer to the major campuses.

Low Farebox Recovery, High Subsidy Per Passenger: While ridership is not likely to be higher than the pre-COVID levels used to calibrate the model, it could be less. At the same time fare levels are likely to remain the same to attract riders. But operating costs are significantly higher, and may remain at those levels, so the predicted farebox recovery levels are low for intercity service, though not unlike rural public transportation generally. The subsidy per passenger levels are higher because they reflect the much greater trip length of intercity riders—a subsidy of a dollar per mile is much higher for a 150-mile trip than the more typical rural public transportation trip.

Airport Service: Options with direct service to an airport are likely to do much better in terms of ridership. The demand model used is calibrated on data showing a substantial ridership impact from direct airport service, and the other Virginia Breeze routes also show that many riders utilize the airport stops. The model variable is a simple yes/no on airport service, so the impact of a stop at a Metro station on a line serving an airport is open to speculation.

In this case a stop at Franconia-Springfield Metrorail would allow a passenger to access Reagan National Airport without transferring a second time and will be able access Dulles with a second transfer when the Silver Line opens. Transfers always reduce ridership, and input by stakeholders reflecting the desire of rural riders to have as simple a trip as possible suggests that a bus dropping riders directly at the airport would do better, rather than requiring them to access Metro first. This is true in the case of alternatives headed to Richmond as well—taking riders downtown and requiring them to backtrack by cab or TNC to the airport will not be very attractive.

Additional Coverage: Route alternatives with more stops add population which should add ridership, but at some point the additional stops discourage more riders than they add, particularly if the stops have low populations. The model is designed to take some account of this by looking at the average population per stop as a key factor. In this case more stops could potentially be added but the populations of additional stops are very low. Adding miles to serve King George appears to offer ridership benefits, because it is one of the largest towns in the potential service area.

Potential for In-Kind Match: While the options to Richmond cost less and offer somewhat better performance measures, a key issue is that there is no longer enough intercity bus service in Richmond for potential connections to unsubsidized service. There is good connectivity possible for schedules operated by Megabus between Richmond and Washington, but those are actually Virginia Breeze schedules not available to provide in-kind match. Depending on the timetables, the amount of bus service leaving from/arriving at Union Station in Washington is much more likely to be able to provide in-kind match. It should be noted that intercity bus schedules are still recovering from the pandemic, and that there may be more unsubsidized options at some point in the future.

Of these options, Option 1A with service on U.S. 17 and Route 3 and a stop at Reagan National Airport appears to offer the best combination of access, cost-effectiveness and feasibility for Section 5311(f) funding. If other funding was available (including local match), service to Richmond would also address many of the regional needs identified by stakeholders, but the level of connectivity to the broader intercity networks would be much lower because of the limited service options.

Table 4-4 presents a potential timetable for this service, based on a combination of vehicle travel times between designated stops combined with estimated dwell times at each stop², generally rounded up to the nearest five minutes. Test runs with a coach could results in some differences. The overall run time is approximately six hours ten minutes, end-to-end.

In addition, this timetable presents the potential connecting services in Washington. It is not known whether any of these services are already pledged as in-kind match, either for Virginia routes or for other states. By the time implementation occurs there could well be additional connecting frequencies available—also it is not known whether Flixbus will begin providing in-kind match for Section 5311(f) services, either for services it operates or for Greyhound (now that Flixbus owns Greyhound).

² Ten minute stops at Reagan National Airport, Fredericksburg FRED Central, and at Fredericksburg Veteran’s medical facility. Other stops are either three minutes (smallest populations) or five minutes (all others).

Table 4-4: Draft Timetable for Option 1A

Southbound		Stop Name	Northbound	
Read Down			Read Up	
<i>10:00</i>	LV	<i>New York (Mega)</i>	ARR	5:45
2:20	ARR	<i>Washington, DC (Mega)</i>	LV	1:20
<i>10:00</i>	LV	<i>New York (GLI)</i>	ARR	7:30
4:05	ARR	<i>Washington, DC (GLI)</i>	LV	2:00
5:15	LV	Washington, DC	ARR	12:55
5:35	LV	Reagan National Airport	ARR	12:35
6:30	LV	Fredericksburg (FRED Central)	LV	11:25
6:40	LV	Fredericksburg Veterans Medical	LV	11:15
7:15	LV	King George	LV	10:35
8:05	LV	Warsaw	LV	9:45
8:15	LV	Tappahannock	LV	9:30
9:10	LV	Gloucester Court House	LV	8:35
10:00	LV	Hampton (Transit Center)	LV	7:45
10:05	ARR	<i>Hampton University</i>	LV	7:35
10:30	ARR	<i>Old Dominion University</i>	LV	7:05
10:45	ARR	Norfolk	LV	6:45

Italic=Connecting Bus Schedule

Boldface=PM

GLI=Greyhound Lines Incorporated

Mega=Megabus

A consideration for DRPT in rebidding Virginia Breeze services in the future is that the increased operating costs will require more funding in the absence of significant growth in fare revenue. Maintaining the existing network could well be more expensive in future contracts, and DRPT might even be faced with the need to reduce service in such a situation, despite projected increases in federal funding.

Appendix A:

Transmittal Letter and Regional Planner Survey

Good afternoon,

The KFH Group, under contract to the Virginia Department of Rail and Public Transportation (DRPT), is requesting your input on the needs for rural intercity bus services needs in this region of Virginia. We are writing to you as a representative of an organization with constituents who may have unmet transportation needs that could be met by new or improved intercity bus service. We invite you to complete a survey Virginia regarding the need for scheduled intercity bus services in your area.

By April 22nd, 2022, please complete the online survey at:

<https://www.surveymonkey.com/r/HamptonRoadsIntercityBusRegionalPlanningAgenciesSurvey>

If you would prefer to complete this as a PDF, it has been attached to this email message.

You are also invited to participate in a virtual stakeholder meeting, which will be held at the end of April. If you have any interest or know anyone else who would have interest, please let us know. To sign up for a meeting and receive log-in/dial-in information, please send an email to slasky@kfhgroup.com by April 22nd.

About the Virginia Intercity Bus Service Needs Assessment

DRPT is conducting a study of intercity bus needs in the corridor between Hampton Roads and Washington, D.C. to determine if there is a need for additional "Virginia Breeze" intercity bus service in this part of the state. It would potentially be funded by Section 5311(f) rural intercity bus funding from the Federal Transit Administration (FTA). The FTA defines intercity bus service as "...regularly scheduled bus service for the general public that operates with limited stops over fixed routes connecting two or more urban areas not in close proximity, that has the capacity for transporting baggage carried by passengers, and that makes meaningful connections with scheduled intercity bus service to more distant points, if such service is available." Commuter bus service is not included in this definition. Also, it should be noted that this funding is only available for services that operate in part in Non-Urbanized areas (under 50,000 population).

Thanks,
Sarah Lasky
Transportation Planner
KFH Group

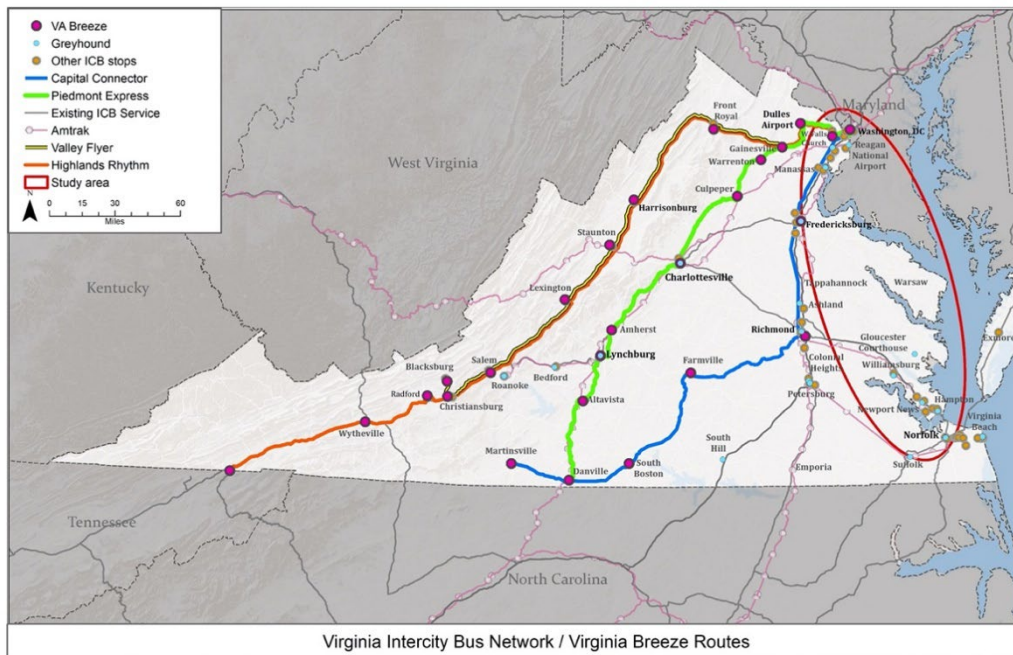
Survey of Regional Planning Agencies to Identify Unmet and Future Intercity Bus Needs in Virginia



This study is focused on determining if there are unmet intercity bus needs in the peninsular areas of Virginia between Norfolk/Hampton Roads and Washington, D.C. The Virginia Department of Rail and Public Transportation (DRPT) has implemented rural intercity bus service on four routes in other parts of Virginia under the Virginia Breeze brand (see <https://virginiabreeze.org/> for more information), and is interested in knowing if there are additional unmet needs for bus service to connect rural places with major activity centers.

By intercity bus service we mean:

- Regularly scheduled bus service for the general public that operates with limited stops over fixed routes connecting two or more urban areas not in close proximity
- Has the capacity for transporting baggage carried by passengers
- Makes meaningful connections with scheduled intercity bus service to more distant points, if such service is available (think Greyhound- or Megabus-type service)



Please help us by answering the following questions:

1. Referring to the map and description in the cover letter, are you aware of all of the current intercity bus services in your region? Please explain.
2. Are you aware of any other intercity bus services not shown on the map? If so, please specify.
3. Given the possibility that services may be reduced as result of revenue losses resulting from the pandemic, how important is it to residents in your region to have access to intercity bus service?
4. What intercity bus services would you prioritize?
5. What destinations are the most important? (For example, specific cities or types of destinations)
6. Are there places (towns or cities) in your region that do not have intercity bus service even though there is a need for service from that location? If so, please specify.
7. Are there particular groups in your region that currently use or would benefit from intercity bus service, for example college students, seniors with family in other locations, military personnel, persons needing specialized medical services?
8. Please provide any comments regarding other aspects of intercity bus services that you see as needing improvement, such as vehicles, facilities such as stations or park and ride lots, schedule information systems, wheelchair accessibility, marketing, etc.
9. Do you see any potential need or opportunity to expand or modify any transit services in your region to connect with existing intercity bus services or meet needs for connections to intercity bus services? If so, please explain.
10. Are you aware of any recent planning efforts or needs assessments that included intercity bus services? For example, were intercity bus service needs identified as part of the locally developed public transit-human services coordination plan? If yes, please explain or share the report from that planning effort.
11. Do you want to receive future notifications about this study, including any additional surveys, meeting notices, or study reports?
12. If you answered yes to question 11, please provide your contact information

Contact Information:

Name / Title:	
Organization:	
Mailing Address:	
Address 2:	
City/Town:	
State / Province:	
ZIP / Postal Code:	
Country:	
Email Address:	
Phone Number:	

Please return your completed survey by April 22, 2022 to:

Sarah Lasky
slasky@kfhgroup.com
KFH Group, Inc.
4920 Elm Street
Bethesda, MD 20814

Thank you!

For more information about this study, please contact Fred Fravel at ffravel@kfhgroup.com or Taylor Jenkins at taylor.jenkins@drpt.virginia.gov

Organization	Survey Response
George Washington Regional Commission	Sent
Hampton Roads Planning District Commission	Completed
Middle Peninsula Planning District Commission	Sent
Northern Neck Planning District Commission	Sent
Northern Virginia Regional Commission	Sent
PlanRVA	Sent

Appendix B:

Transmittal Letter and Transit Agency Survey

Good afternoon,

The KFH Group, under contract to the Virginia Department of Rail and Public Transportation (DRPT), is requesting your input on the needs for rural intercity bus services needs in this region of Virginia. We are writing to you as a representative of an organization with constituents who may have unmet transportation needs that could be met by new or improved intercity bus service. We invite you to complete a survey Virginia regarding the need for scheduled intercity bus services in your area.

By April 22nd, 2022, please complete the online survey at:

<https://www.surveymonkey.com/r/IntercityBusUnmetNeedsForTransitOperators>

If you would prefer to complete this as a PDF, it has been attached to this email message.

You are also invited to participate in a virtual stakeholder meeting, which will be held at the end of April. If you have any interest or know anyone else who would have interest, please let us know. To sign up for a meeting and receive log-in/dial-in information, please send an email to slasky@kfhgroup.com by April 22nd.

About the Virginia Intercity Bus Service Needs Assessment

DRPT is conducting a study of intercity bus needs in the corridor between Hampton Roads and Washington, D.C. to determine if there is a need for additional "Virginia Breeze" intercity bus service in this part of the state. It would potentially be funded by Section 5311(f) rural intercity bus funding from the Federal Transit Administration (FTA). The FTA defines intercity bus service as "...regularly scheduled bus service for the general public that operates with limited stops over fixed routes connecting two or more urban areas not in close proximity, that has the capacity for transporting baggage carried by passengers, and that makes meaningful connections with scheduled intercity bus service to more distant points, if such service is available." Commuter bus service is not included in this definition. Also, it should be noted that this funding is only available for services that operate in part in Non-Urbanized areas (under 50,000 population).

Thanks,
Sarah Lasky
Transportation Planner
KFH Group

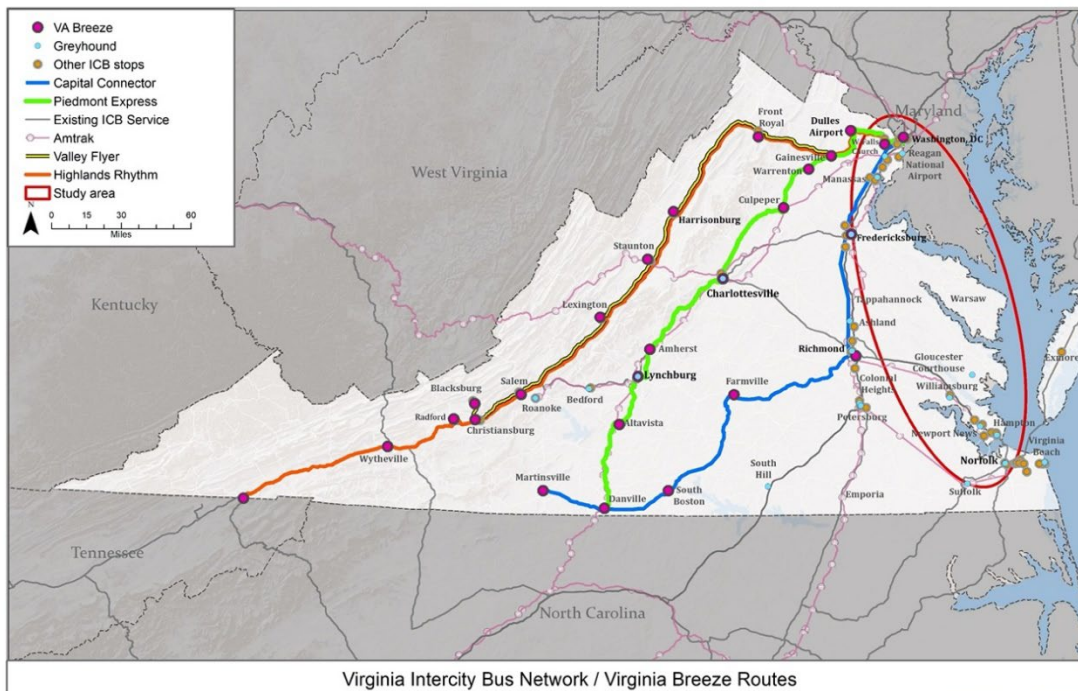
Survey of Transit Operators to Identify Unmet and Future Intercity Bus Needs in Virginia



This study is focused on determining if there are unmet intercity bus needs in the peninsular areas of Virginia between Norfolk/Hampton Roads and Washington, D.C. The Virginia Department of Rail and Public Transportation (DRPT) has implemented rural intercity bus service on four routes in other parts of Virginia under the Virginia Breeze brand (see <https://virginiabreeze.org/> for more information), and is interested in knowing if there are additional unmet needs for bus service to connect rural places with major activity centers.

By intercity bus service we mean:

- Regularly scheduled bus service for the general public that operates with limited stops over fixed routes connecting two or more urban areas not in close proximity
- Has the capacity for transporting baggage carried by passengers
- Makes meaningful connections with scheduled intercity bus service to more distant points, if such service is available (think Greyhound- or Megabus-type service)



Please help us by answering the following questions:

1. Referring to the map and description in the cover letter, are you aware of all of the current intercity busservices in your region? Please explain.
2. As the provider of public transit services in your area, have you been asked from the public or advisory groups who want to know how to travel to more distant cities? If so, which cities?
3. Does your transit agency provide service to places that connect with intercity bus? If yes, which intercity bus or rail stations?
4. Does your transit system serve any park and ride lots with an intercity carrier or commuter bus stop? Which ones?
5. If a member of the public asked about how to travel to and from distant cities, do you suggest any outside services, such as Greyhound, Megabus or any other intercity bus service? If yes, please specify.
6. Are there any potential needs for an extension of local transit services to connect with intercity bus services?
7. Are there places (towns or cities) in your region that do not have intercity bus service even though there is a need for service from that location?
8. Do you currently operate any long-distance services? (e.g. scheduled or demand-response)
9. If you answered yes to question 8, please describe in terms of pickup points, destinations, stops served, how passengers make reservations, eligibility restrictions, schedules, fares, etc. (Attach timetables or other information if available)
10. How/Where do you make information of these services available to users? Websites, brochures, posted schedules, etc.
11. Do you want to receive future notifications about this study, including any additional surveys, meeting notices, or study reports?

Contact Information:

Name / Title:	
Organization:	
Mailing Address:	
Address 2:	
City/Town:	
State / Province:	
ZIP / Postal Code:	
Country:	
Email Address:	
Phone Number:	

Please return your completed survey by April 22, 2022 to:

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slasky@kfhgroup.com
KFH Group, Inc.
4920 Elm Street
Bethesda, MD 20814

Thank you!

For more information about this study, please contact Fred Fravel at ffravel@kfhgroup.com or Taylor Jenkins at taylor.jenkins@drpt.virginia.gov

Organization	Survey Response
Bay Transit	Completed
Fredericksburg Regional Transit (FRED)	Sent
Hampton Roads Transit	Sent
Potomac and Rappahannock Transportation Commission	Completed
Virginia Railway Express	Sent
Williamsburg Area Transit	Completed

Appendix C: Transmittal Letter and Stakeholder Survey

Good afternoon,

The KFH Group, under contract to the Virginia Department of Rail and Public Transportation (DRPT), is requesting your input on the needs for rural intercity bus services needs in this region of Virginia. We are writing to you as a representative of an organization with constituents who may have unmet transportation needs that could be met by new or improved intercity bus service. We invite you to complete a survey Virginia regarding the need for scheduled intercity bus services in your area.

By April 22nd, 2022, please complete the online survey at:

<https://www.surveymonkey.com/r/HamptonRoadsIntercityBusStakeholderSurvey>

If you would prefer to complete this as a PDF, it has been attached to this email message.

You are also invited to participate in a virtual stakeholder meeting, which will be held at the end of April. If you have any interest or know anyone else who would have interest, please let us know. To sign up for a meeting and receive log-in/dial-in information, please send an email to slasky@kfhgroup.com by April 22nd.

About the Virginia Intercity Bus Service Needs Assessment

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Thanks,
Sarah Lasky
Transportation Planner
KFH Group

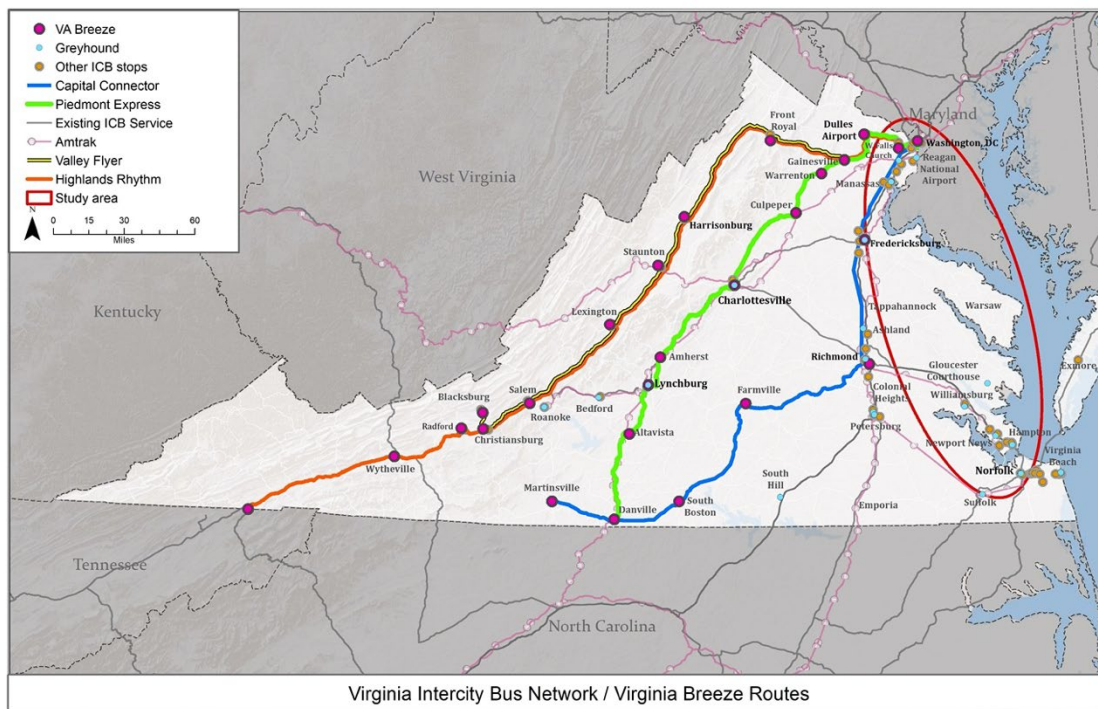
Survey of Stakeholders Regarding Unmet and Future Intercity Bus Needs in Virginia



This study is focused on determining if there are unmet intercity bus needs in the peninsular areas of Virginia between Norfolk/Hampton Roads and Washington, D.C. The Virginia Department of Rail and Public Transportation (DRPT) has implemented rural intercity bus service on four routes in other parts of Virginia under the Virginia Breeze brand (see <https://virginiabreeze.org/> for more information), and is interested in knowing if there are additional unmet needs for bus service to connect rural places with major activity centers.

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- Has the capacity for transporting baggage carried by passengers
- Makes meaningful connections with scheduled intercity bus service to more distant points, if such service is available (think Greyhound- or Megabus-type service)



Please help us by answering the following questions:

1. If you are representing an organization, what type of services does your organization provide?
2. What is your organization's service area?
3. Does your organization serve a particular clientele or stakeholder group? Please indicate characteristics of your target market/those eligible for your services.
4. Does your organization assist your clientele in finding long-distance transportation when needed? (information and referral, carpool matching, operation of transportation services, arranging for rides with volunteers or other providers, etc.)
5. Do you provide financial assistance to individuals or other organizations for intercity or other long-distance travel? (bus/train tickets, mileage reimbursement, gas vouchers, etc.)
6. Are there areas or corridors that you consider as having a need for more intercity bus service (particularly in rural areas)? This could be areas with no service, or places with existing service that could benefit from additional service (more schedules, local service, etc.).
7. Are there particular markets or groups that you see needing more service? Where do you think people wish to go—are there destinations needing additional service?
8. Is any long-distance service currently operated in your area? If so, is it scheduled or demand-response?
9. If you do have scheduled or demand-response service in your area, please describe in terms of pickup points, destinations, stops served, how passengers make reservations, eligibility restrictions, schedules, fares, etc. (attach timetables or other information if available)
10. Please offer any comments regarding other aspects of intercity bus services that you see as needing improvement, such as vehicles, condition of bus facilities, schedule information, wheelchair accessibility, marketing, amenities, etc.
11. How/Where is information of these services made available to users? Websites, brochures, posted schedules, etc.
12. Do you see any potential need or opportunity to expand or modify these services to connect with existing intercity bus services or meet needs for intercity bus services?
13. Do you want to receive future notifications about this study, including any additional surveys, meeting notices, or study reports?

Contact Information:

Name / Title:	
Organization:	
Mailing Address:	
Address 2:	
City/Town:	
State / Province:	
ZIP / Postal Code:	
Country:	
Email Address:	
Phone Number:	

Please return your completed survey by April 22, 2022 to:

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slasky@kfhgroup.com
KFH Group, Inc.
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Bethesda, MD 20814

Thank you!

For more information about this study, please contact Fred Fravel at ffravel@kfhgroup.com or Taylor Jenkins at taylor.jenkins@drpt.virginia.gov

Organization	Survey Response
Gloucester Virginia	Sent
Lancaster County Virginia	Sent
Northumberland County Virginia	Sent
Middlesex County Virginia	Completed
Essex County Virginia	Sent
Westmoreland County Virginia	Sent
King William County Virginia	Sent
Richmond Virginia	Sent
Mathews County Virginia	Sent

Organization	Survey Response
King and Queen County Virginia	Sent
City of Charles Virginia	Sent
New Kent Virginia	Sent
West Point Virginia	Sent
Tappahannock Virginia	Sent
Colonial Beach Virginia	Sent
Urbanna Virginia	Sent
Kilmarnock Virginia	Sent
Bay Aging	Completed
VCU	Sent
Hampton University	Sent
Marymount University	Sent
Rappahannock Community College	Sent
Randolph-Macon College	Sent
Old Dominion College	Sent
Senior Services of Southeastern Virginia	Completed
Loudon County Area Agency on Aging	Sent
Alexandria Division of Aging & Adult Services	Sent
Peninsula Agency on Aging	Sent
Senior Connections - Capital Area Agency on Aging	Sent
Rappahannock-Rapidan Community Services Board	Sent
Healthy Generations Area Agency on Aging	Completed
Prince William Area Agency on Aging	Sent
Hampton Roads Community Action Program	Sent
Virginia Community Action Partnership	Sent
Lorton Community Action Center	Sent
US Army Garrison Fort A.P. Hill HQ	Sent
Quantico USMC Base	Sent
Norfolk Naval Station	Sent
University of Mary Washington	Sent
City of Bristol VA - Bristol VA Transit	Completed
Chesterfield County	Completed
Northern Shenandoah Valley Regional Commission	Sent
Middle Peninsula Planning District Commission	Completed

Appendix D: Participating Agencies Represented - Virtual Stakeholder Meetings May 3 and May 5, 2022

Organization	3-May	5-May
Bay Aging	X	
City of Bristol	X	
Lorton Community Action Center	X	
Hampton Roads Transportation	X	
Bay Transit	X	X
Williamsburg Area Transit Authority	X	X
Fredericksburg Regional Transit	X	
Senior Services of Southeastern Virginia	X	
Mathews County Government	X	
Middle Peninsula PDC	X	
Chesterfield County Mobility Services		X
Healthy Generations		X
Northern Shenandoah Valley Regional Commission		X
Gloucester County		X

Appendix E: Virtual Stakeholder Meeting Presentation



Intercity Bus Service Needs Assessment

May 2022 Stakeholder Meetings

5/3/2022
5/5/2022

DRPT Virginia Department of Rail and Public Transportation





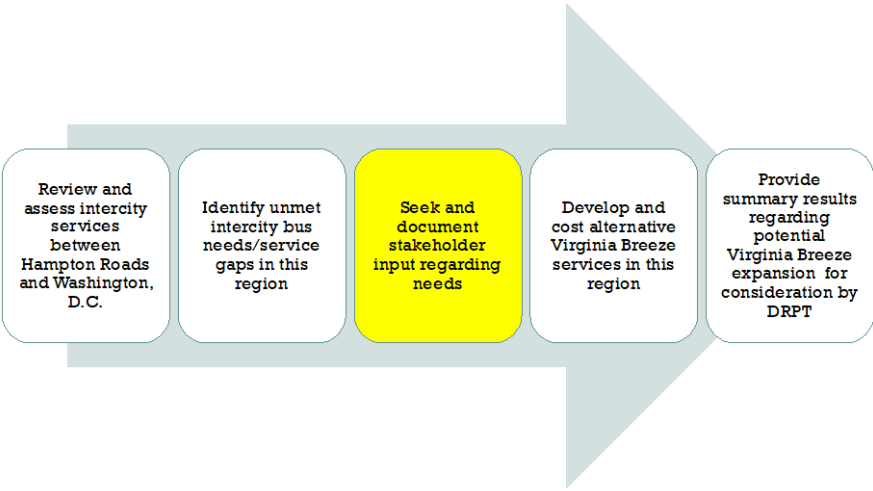
Today's Agenda:

- 1 Welcome
- 2 What is the Intercity Bus Service Needs Assessment study?
 - What is Virginia Breeze?
 - What is Intercity Bus Service?
 - What is Virginia's Intercity Bus Network?
- 3 Discussion of intercity needs and issues
- 4 Provide input to study team

2



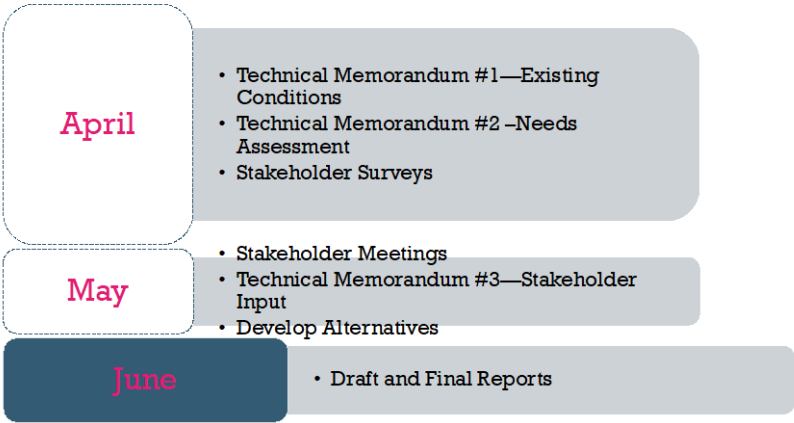
About this project...



3



Project Schedule



4



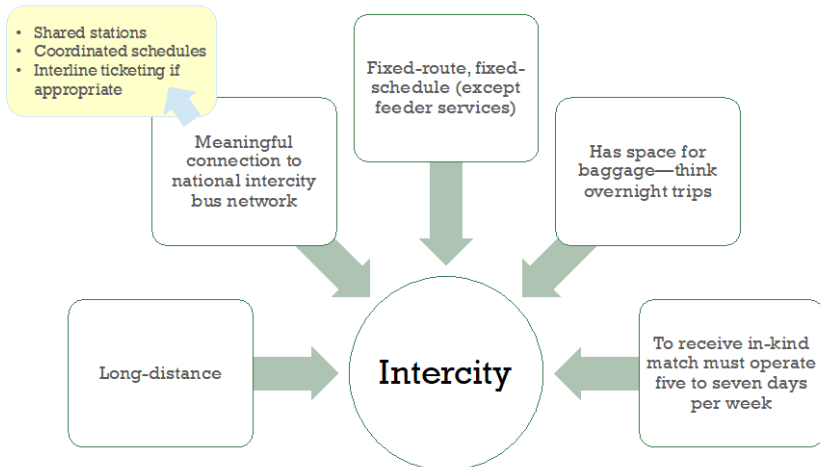
Provide Input

- Surveys of regional planning agencies
- Surveys of public transit providers
- Interviews with private intercity carriers
- Surveys of other stakeholders – Mobility Managers, human service agencies, colleges, etc.
- Regional public meetings (**this is one of them!**)

5



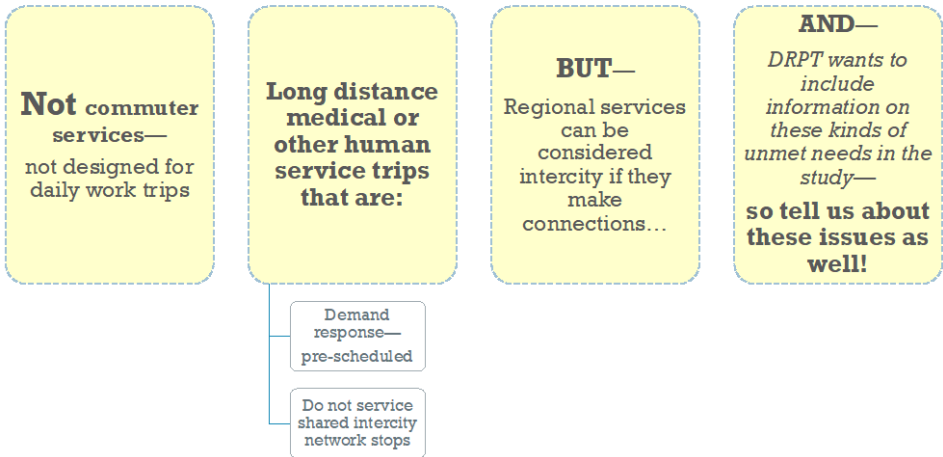
What do we mean by “Intercity”?



6



What long-distance services are **not** “Intercity”?



7



DRPT's Vision for Intercity Bus Service:

A Statewide Network of Connected Public Transportation Services

Improved linkages between the state's rural areas and the services available in the state's urban areas, particularly for persons with limited options for personal mobility,

and

Access to the national intercity bus, rail and air networks for persons living in rural areas and small towns and cities.

8



Virginia's Intercity Network:

→ **Virginia Breeze:** Four routes: Valley Flyer, Capital Connector, Piedmont Express, Highlands Rhythm

Greyhound service statewide

Amtrak rail passenger and connecting Thruway Bus service

Megabus express service

Curbside service—express to major cities

9



Coverage of Virginia's Intercity Network

Virginia Total Population: **8,631,393** (2020 ACS)

Population within 10 miles of an intercity bus stop:;
6.3 million

Population within 25 miles of an intercity bus stop:
7.7 million

72.8% of Virginia's population lives **within 10 miles** of an intercity bus stop.

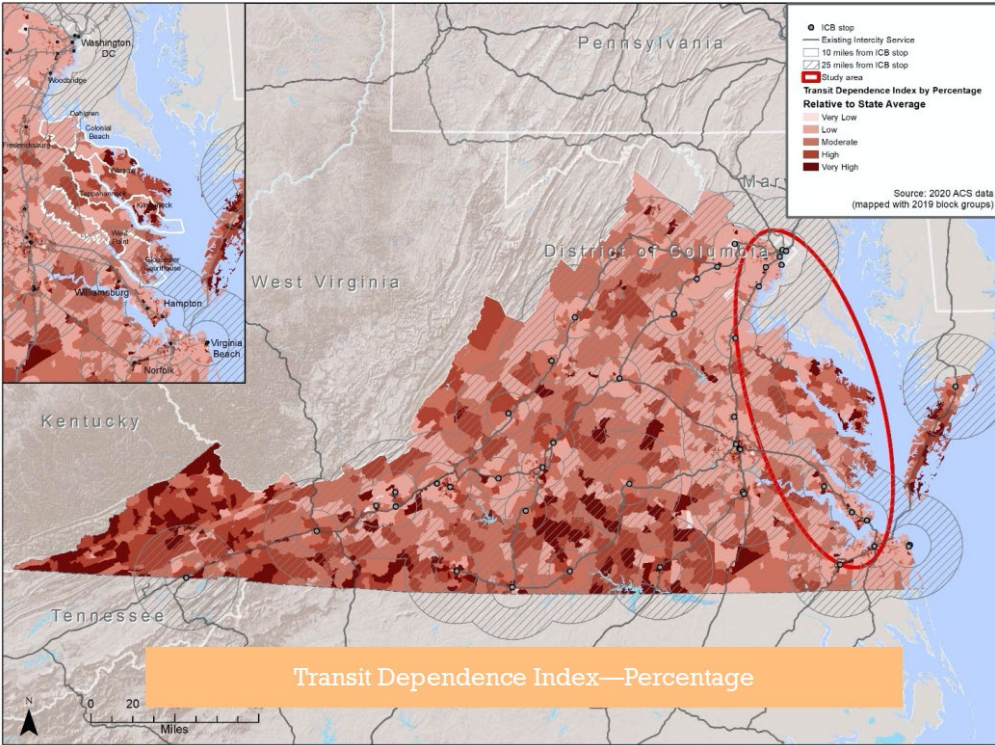
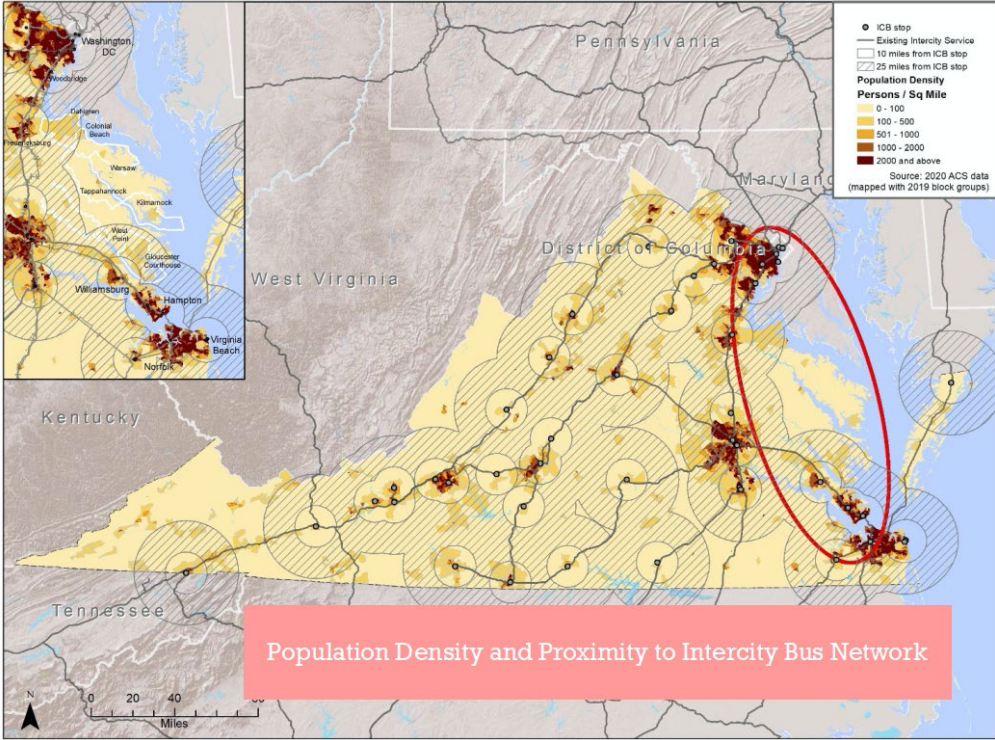
90% of Virginia's population lives **within 25 miles** of an intercity bus stop.

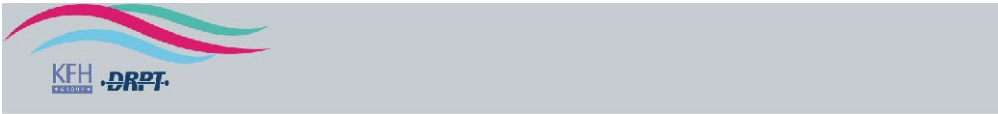
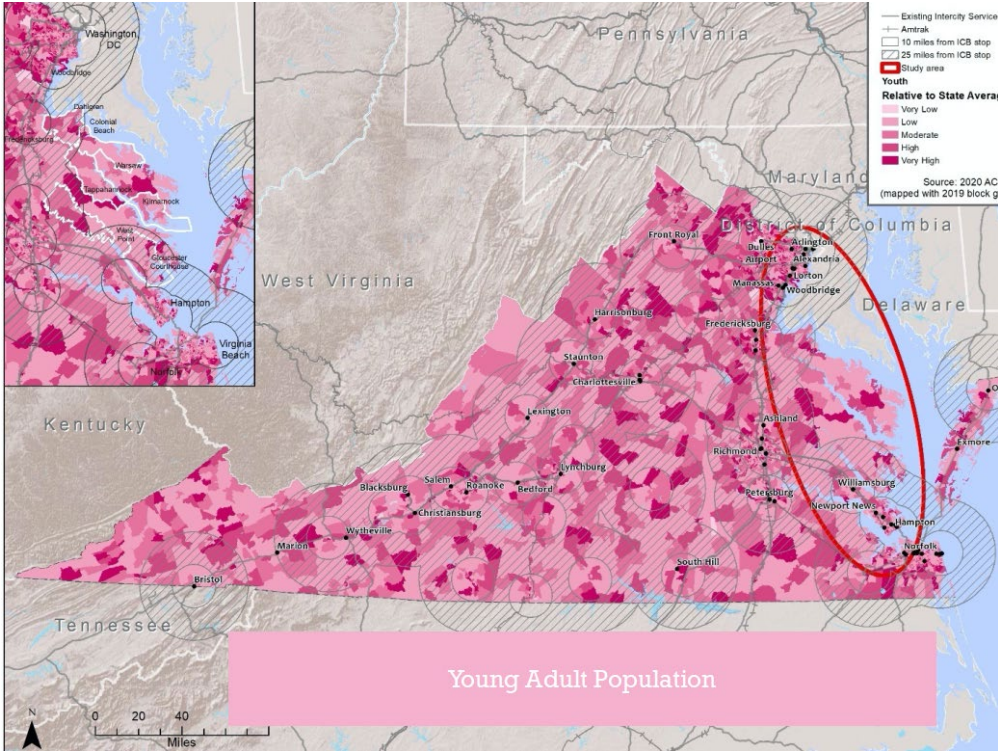


Intercity Routes in 1983 (prior to Deregulation)

- there was intercity service
- connections to Washington via Colonial Beach (not Fredericksburg)
- connections to Richmond, Hampton Roads







Now we need to hear from you...

**YOUR
OPINION**





Tell us about your intercity travel needs:

Where do you want to go?
How often?
Do you use any of the existing services?
How well do they work?



Where do we need additional service?

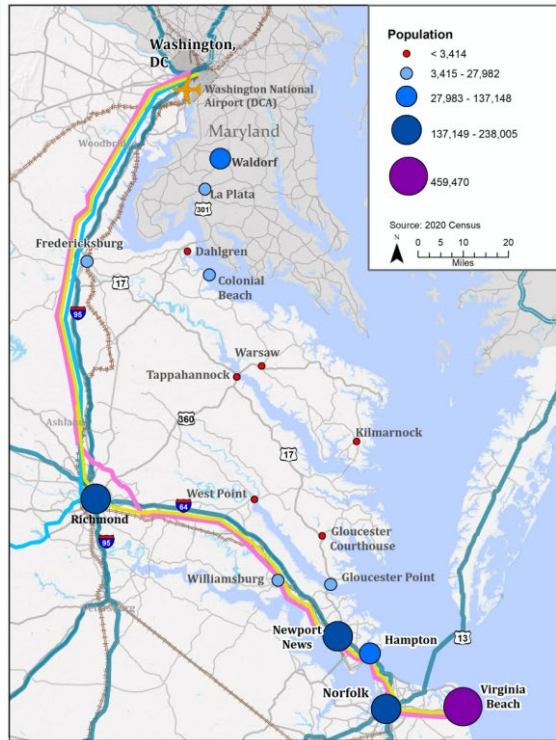


New **routes**?
More **schedules**?
More/better **connections** with other services?



How would you link rural areas east of I-95 between Virginia Beach and Washington D.C?

- What **routes**?
- What **stops**?



**For More Information Or
to Tell us what you forgot to say today:**

DRPT:

- Taylor Jenkins
Taylor.Jenkins@drpt.virginia.gov
- Avery Daugherty
Avery.Daugherty@drpt.virginia.gov

KFH:

- Fred Fravel (240-461-4477)
ffravel@kfhgroup.com
- Sarah Lasky
slasky@kfhgroup.com

Thank you for your help today!