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# System Overview and Strategic Vision



# 1. System Overview and Strategic Vision

This chapter provides a high-level overview of Fairfax Connector's services and strategic priorities.

## 1.1 System Overview

Located in Fairfax County fewer than 15 miles west of Washington, D.C., Fairfax Connector (Connector) is a locally owned and controlled fixed-route bus transit system. The transit system is managed by the Fairfax County Department of Transportation (FCDOT) with day-to-day operations, supervision, and maintenance provided by a private contractor. Connector provides services covering the majority of Fairfax County, Virginia, with a land area of 407 square miles, and an estimated population of 1,164,025 as of 2022<sup>1</sup>. Fairfax County includes the three incorporated towns of Clifton, Herndon, and Vienna, as well as several notable census-designated places such as Huntington, Franconia, Reston, Springfield, and Tysons. The independent cities of Fairfax and Falls Church are not included in these demographics, although Connector does operate service through those municipalities as well as through neighboring jurisdictions such as Arlington County, the City of Alexandria, and the District of Columbia.

Fairfax County is home to many large employment centers with seven companies employing more than 5,000 employees each, including Inova Health System with more than 10,000 employees<sup>2</sup>. The Federal government is the largest employer in Fairfax County, with Fort Belvoir being the county's single largest location of federal employment. Additionally, Fairfax County is home to several other federal institutions and facilities, most notably the Central Intelligence Agency (CIA) Headquarters in McLean (Langley) in addition to Fort Belvoir. Other noteworthy federal agencies headquartered in the County include the United States Fish & Wildlife Service in Bailey's Crossroads, the National Reconnaissance Office (NRO) in Chantilly, and the United States Geological Survey (USGS) in Reston.

Connector is a fixed-route bus system, funded by County General Funds that are partially reimbursed by grants from the Virginia Department of Rail and Public Transportation (DRPT), Northern Virginia Transportation Commission's (NVTC) Commuter Choice Program, and supplemented by fare revenue and other funding partners such as the Wolf Trap Center for the Performing Arts (Route 480) and the Central Intelligence Agency (partially funding Routes 721 and 722). The following subsection describes existing Connector services, as well as other regional transportation services. Additional details about the services provided and areas served can be found in **Appendix A**.

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<sup>1</sup> Fiscal Year 2022 National Transit Database (NTD) Report

<sup>2</sup> [Major Employers in Fairfax County Fact Sheet \(January 2023\)](#), Fairfax County Economic Development Authority



### 1.1.1 Services Provided and Areas Served

#### EXISTING FAIRFAX CONNECTOR SERVICES

Fairfax Connector implements service changes, often several times a year, to respond to changes in demand and opportunities for improvement. For example, recent service changes included new Reston-Herndon bus service that began on November 16, 2022 and the new Route 660 that began on February 4, 2023. Service summary measures presented here represent a snapshot of service during the development of the Transit Strategic Plan (TSP).

As of April 2023, Fairfax Connector operated 94 fixed bus routes—23 routes in the Reston-Herndon area, 36 routes in the Chantilly-Centreville-Vienna-Tysons area, 27 routes in the Franconia-Springfield area, and 8 routes in the Huntington area. **Figure 1-1** shows the coverage provided by existing Connector bus routes and locations of transit services provided by other operators in the region. It should be noted that Route 480 (Wolf Trap Express) operates only during special events and does not offer regular weekday service. Of the 93 routes that offered regular weekday service, 38 routes offered rush hour or peak-only service compared to 46 routes that offered all-day service. Additionally, 41 routes offered Saturday service and 38 routes offered Sunday service (see **Table 1-1**).

**TABLE 1-1: FAIRFAX CONNECTOR ROUTE BY SERVICE TYPE**

Route Type	Number of Routes
<b>Weekday</b>	93
<b>All-Day</b>	46
<b>Peak-Only</b>	38
<b>Saturday</b>	41
<b>Sunday</b>	38
<b>Special</b>	1

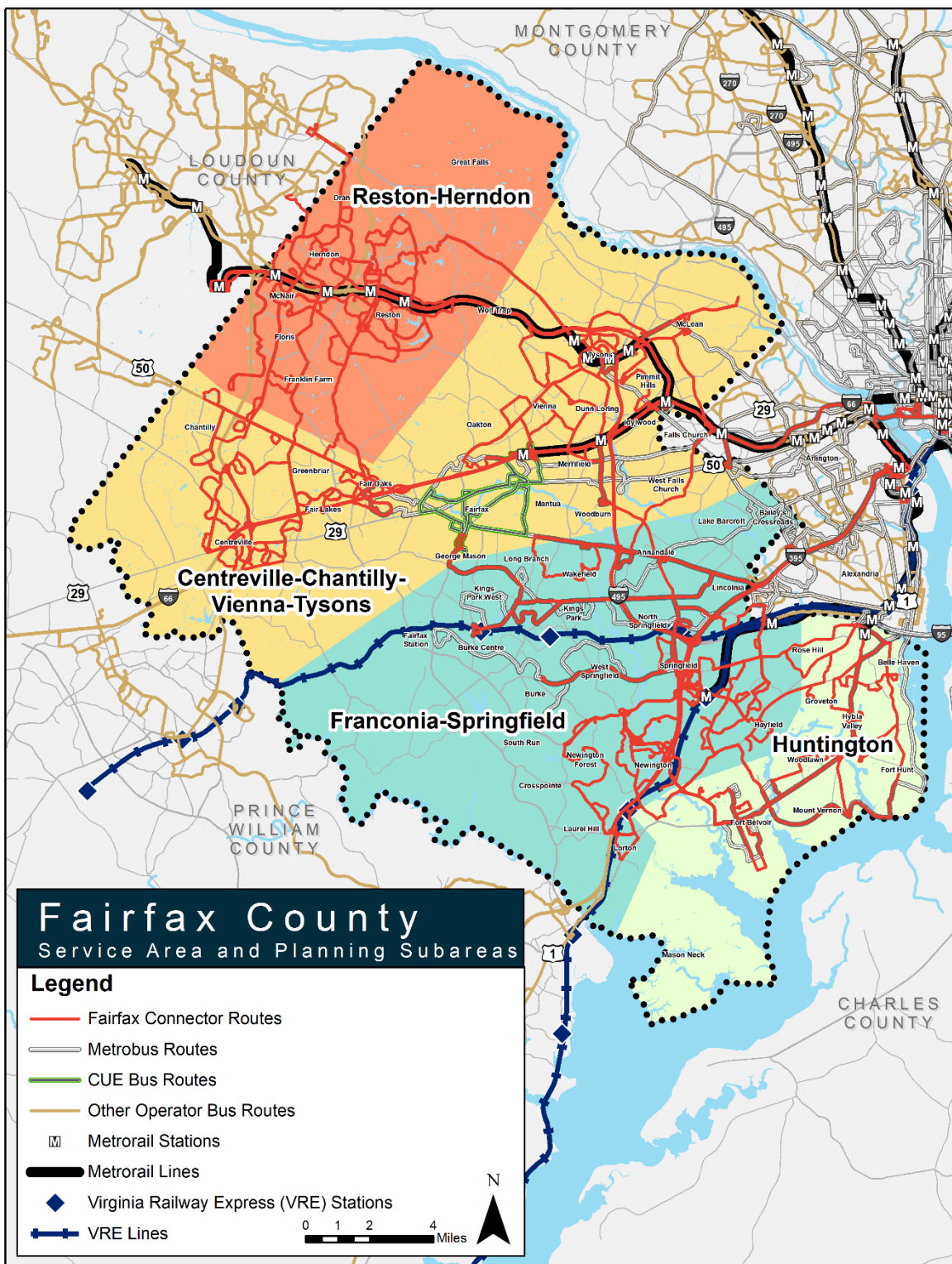
*Source: Fairfax County DOT, April 2023.*

Fairfax Connector serves most residential and commercial areas within the County; however, service does not extend to the lowest-density residential areas of the County which are difficult to serve by fixed-route transit cost-effectively. In compliance with the Americans with Disabilities Act (ADA) requirements, all Fairfax Connector vehicles are low-floor and equipped with wheelchair-accessible ramps. These systems are routinely tested by operations and maintenance staff to ensure a safe and equitable rider experience for all Connector passengers.





FIGURE 1-1: FAIRFAX CONNECTOR SERVICE AREA



Sources: Fairfax County DOT and Kimley-Horn, April 2023.



## OTHER FAIRFAX COUNTY TRANSPORTATION SERVICES

### Fairfax County Neighborhood and Community Services (Human Services Transportation)

The County's Neighborhood and Community Services department provides transportation services and resources for older adults, low-income individuals, individuals with disabilities, and individuals accessing Fairfax County Human Services who need transportation assistance. These transportation services include Fastran and the Taxi Voucher Program.

Fastran offers transportation to and from critical medical care facilities and provides other vital resources for older adults and individuals with intellectual or physical disabilities<sup>3</sup>. Destinations include adult day health care centers, the Recovery Women's Center, senior centers and residences, support services and worksites, and recreational activities for individuals with intellectual or physical disabilities. Services may have associated fees based on a sliding scale.

The Taxi Voucher Program provides discounted taxi vouchers for eligible residents of Fairfax County and the City of Fairfax, allowing qualified users access to affordable, safe, and flexible transportation<sup>4</sup>. The program includes three qualifying options:

- **Seniors On-The-Go!** – for Fairfax County and City of Fairfax residents aged 65 or older with individual incomes at or below \$40,000 (\$50,000 for a married couple)
- **TaxiAccess** – for Fairfax County and City of Fairfax residents who are registered MetroAccess users
- **Dial-A-Ride** – for Fairfax County and City of Fairfax residents with annual income at or below 225% of the current poverty level

## REGIONAL TRANSPORTATION SERVICES

### Washington Metropolitan Area Transit Authority

The Washington Metropolitan Area Transit Authority (WMATA) operates heavy rail, bus, and paratransit services in Fairfax County via Metrorail, Metrobus, and MetroAccess, respectively.

#### METRORAIL

WMATA's Metrorail provides service along four heavy rail lines in Fairfax County—Blue Line, Orange Line, Silver Line, and Yellow Line. The Blue and Yellow Lines each provide service at one station within Fairfax County at each line's southern terminus—Franconia-Springfield station on the Blue Line and Huntington station on the Yellow Line. Additionally, the Van Dorn Street station on the Blue Line is located on the County's boundary with the independent City of Alexandria. The Orange Line provides service at three stations in Fairfax County including Vienna/Fairfax-GMU (western terminus), Dunn Loring-Merrifield, and West Falls Church stations before joining the Silver Line to operate on concurrent tracks east toward the District of Columbia. The Silver Line currently provides service at eight stations in Fairfax County including the Innovation Center, Herndon, and Reston Town Center stations that opened in November

<sup>3</sup> Fastran: <https://www.fairfaxcounty.gov/neighborhood-community-services/transportation/fastran>

<sup>4</sup> Taxi Voucher Program: <https://www.fairfaxcounty.gov/neighborhood-community-services/transportation/tops>



2022, and the Wiehle-Reston East, Spring Hill, Greensboro, Tysons, and McLean stations that opened in July 2014.

### *METROBUS*

WMATA's Metrobus currently provides fixed-route bus service for 31 routes in Fairfax County<sup>5</sup>. Many of these routes connect to Metrorail stations and provide parallel service along high-capacity corridors such as US Route 1, Columbia Pike, US Route 50, US Route 29, and Little River Turnpike. Major areas served include Tysons-McLean, Annandale, Fairfax-Vienna, Burke, and Huntington<sup>6</sup>.

### *METROACCESS*

WMATA's MetroAccess provides shared-ride, door-to-door, paratransit service for users who are unable to independently navigate bus and/or rail service due to a disability. Trips must begin or end within a ¾-mile distance from the nearest bus stop or Metrorail station in the "Transit Zone" which consists of the District of Columbia, Montgomery and Prince George's Counties in Maryland, Arlington and Fairfax Counties in Northern Virginia, and the independent cities of Alexandria, Fairfax, and Falls Church. Additional information can be found in the MetroAccess Customer Guide<sup>7</sup>.

### **Virginia Railway Express**

The Virginia Railway Express (VRE) is a commuter rail operator providing service on two lines (Fredericksburg Line and Manassas Line), which provide service in the I-95 and I-66 travel sheds from the periphery of the Washington, D.C., metropolitan area primarily during weekday peak periods<sup>8</sup>. Within Fairfax County, VRE provides service at five stations with the Fredericksburg Line serving the Lorton and Franconia-Springfield stations and the Manassas Line serving the Burke Centre, Rolling Road, and Backlick Road stations. Free surface and/or garage parking is available at all stations except for Franconia-Springfield, which has paid parking maintained by WMATA.

Passengers transferring from the VRE system to a Fairfax Connector bus are allowed a free, one-way transfer when boarding at a VRE station. Passengers must display valid VRE fare media (passes, tickets). Passengers returning on a Fairfax Connector bus to a VRE station are required to pay the full, applicable bus fare.

VRE additionally offers a cross honor agreement with Amtrak<sup>9</sup> to allow VRE multi-ride passengers the ability to use Amtrak-operated trains listed on VRE schedules. VRE riders must have a valid Virginia Railway Express – Transit Link Card or Monthly, Five-Day, or Ten-Trip

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<sup>5</sup> As of June 2023

<sup>6</sup> WMATA Virginia System Map: [https://www.wmata.com/schedules/maps/upload/WEB\\_WMA\\_MAG\\_VA\\_21x34\\_230625.pdf](https://www.wmata.com/schedules/maps/upload/WEB_WMA_MAG_VA_21x34_230625.pdf)

<sup>7</sup> WMATA MetroAccess Customer Guide: <https://www.wmata.com/service/accessibility/metro-access/upload/MetroAccess-Customer-Guide.pdf>

<sup>8</sup> VRE System Map: <https://www.vre.org/service/map/>

<sup>9</sup> VRE Cross Honor Agreements: <https://www.vre.org/service/amtrak/>



tickets accompanied by a Step-Up ticket to board Amtrak trains. The sole Amtrak station in Fairfax County is located at Burke Centre.

### **City-University Energysaver**

The City of Fairfax operates the City-University Energy Saver (CUE) bus system, providing fixed-route bus service to George Mason University, various retail locations in the City of Fairfax, and the Vienna/Fairfax-GMU Metrorail station<sup>10</sup>. CUE operates four routes (Green 1, Green 2, Gold 1, and Gold 2), and all vehicles are fully accessible to persons with disabilities.

### **OmniRide**

The Potomac and Rappahannock Transportation Commission (PRTC) operates OmniRide transit services from Prince William County into Fairfax County. This includes separate routes from Woodbridge, Gainesville, and Manassas to Tysons and from Dale City/Woodbridge to Franconia-Springfield Metrorail station. These provide connection opportunities to Fairfax Connector at the Metrorail station.

### **Loudoun County Transit**

Loudoun County Transit also provides service into Fairfax County. This includes Silver Line bus routes and local routes from various locations in Loudoun County to Innovation Center and Reston Town Center Metrorail stations and a local route connection to Dranesville. These provide connection opportunities to Fairfax Connector routes in Reston, Herndon, and Dranesville.

### **Shuttle Services**

Multiple organizations operate shuttle services in Fairfax County, including businesses, residences, and educational institutions. One such example is the George Mason Shuttle Service which provides free transportation for students, faculty, and staff with a valid Mason ID.

## **1.1.2 Current/Recent Initiatives**

The development of the Transit Strategic Plan was largely conducted during the proliferation of the novel coronavirus (COVID-19) throughout the United States and the world in 2020 and 2021. While these impacts may be reflected in shorter-term planning, the TSP is largely a high-level, long-term strategic visioning document. The overarching priorities reflected in this document will remain constant, regardless of specific objectives that may need to be adjusted at a future time to reflect the uncertain long-term changes to the provision of transit services that may arise from the COVID-19 public health emergency.

COVID-19 has had several recent operational impacts on Fairfax Connector service that were considered in the context of this plan. Connector reduced service levels effective Saturday April 11, 2020. Connector continued to provide regular service on 38 routes; provided reduced service on 14 routes; and discontinued service on 41 routes at that time. Full service resumed on all routes beginning on Saturday, August 29, 2020 including implementation of two new

<sup>10</sup> CUE System Map: <https://www.fairfaxva.gov/government/public-works/transportation-division/cue-bus-system/cue-bus-map-and-schedule>





routes—697 and 722. As a result, service data for fiscal year 2020 represent atypical conditions due to reduced ridership levels while travel behaviors for many people were altered. Ridership trends are explored further in **Chapter 2 - System Performance and Operations Analysis**.

Beginning Tuesday, March 24, 2020, Connector customers were required to enter and exit the bus using the rear doors. This did not apply to customers who need to use a wheelchair ramp. Fare collection on buses was also temporarily suspended due to the location of fareboxes at the front entrance of buses. Fare collection and front door boarding resumed normal operations on January 4, 2021. Resumption of fare collection was made possible with the installation of protection barriers between the bus driver and passengers at the farebox in 2020.

**Table 1-2** summarizes Connector's ongoing and recent initiatives which impact the provision of transit services. Additional details can be found in **Appendix A**.

**TABLE 1-2: SUMMARY OF FAIRFAX CONNECTOR INITIATIVES**

Initiative	Summary
<b>Marketing Survey (2018-2019)</b>	A marketing survey of Fairfax County residents to evaluate ridership changes and to ascertain the attitudes of Connector riders and non-riders toward the system and its strategies
<b>On-Board Survey (2019)</b>	An on-board survey of Fairfax Connector customers in the Vienna, Tysons, Huntington, Franconia-Springfield, and Reston-Herndon areas to collect demographic, travel pattern, passenger behavior and tendencies, and origin-destination information for future planning purposes
<b>Bus Service Review Studies</b>	Studies to understand how shifting demographics and employment have affected travel patterns and to evaluate efficient and effective service opportunities for improvements to bus routes. Subareas of the county are studied on a recurring basis and service improvements are incorporated into the Transit Strategic Plan.
<b>Franconia-Springfield (2018)</b>	Preferred Plan developed
<b>Reston-Herndon (2019)</b>	Preferred Plan developed
<b>Centreville-Chantilly-Vienna-Tysons (2020/2021)</b>	Preferred Plan developed. Alternative development began in December 2020 and Preferred Plan developed concurrently with the TSP process.
<b>Huntington (2020/2021)</b>	Preferred Plan developed. Long-term recommendations made as part of the Richmond Highway Bus Rapid Transit (BRT) feeder plan (short- and mid-term recommendations developed as part of the TSP)





Initiative	Summary
<b>Richmond Highway Bus Rapid Transit Project (Ongoing)</b>	A plan for the design and construction of a bus rapid transit system along the Richmond Highway (US Route 1) Corridor from Fort Belvoir to the Huntington Metrorail station
<b>Alternative Transit Study (2020)</b>	A study to identify flexible transit options which could be implemented in areas of Fairfax County where traditional fixed-route transit is not an efficient means of providing service
<b>Title VI Program Update (2023)</b>	A revisit of the Major Service Change and Disparate Impact and Disproportionate Burden (DI/DB) policies every three years and revisions as necessary.
<b>Autonomous Electric Shuttle Pilot Project (2020-2023)</b>	Public-private partnership with Dominion Energy and other local and state entities to test an autonomous electric shuttle between the Mosaic District and the Dunn Loring Metrorail station, which concluded in June 2023. Fairfax County is considering options for future autonomous pilot services.
<b>Metrorail Silver Line – Phase II (2022)</b>	Final construction phase of the WMATA Metrorail Silver Line, extending the existing rail line from Reston through the Dulles International Airport to its western terminus in Ashburn (Loudoun County), which opened on November 15, 2022.

Fairfax Connector has been a stakeholder for several regional transit initiatives that influence future provisions of transit services in the County. **Table 1-3** summarizes these other regional transit initiatives.



TABLE 1-3: SUMMARY OF REGIONAL INITIATIVES

Initiative	Summary
<b>Washington Area Bus Transformation Project</b>	Plan to transform bus service in the Washington region and improve service and customer experience, creating a more cohesive system that works for riders. The Strategy and Action Plan outline a new vision and series of recommendations to guide the future of bus service in the region.
<b>Better Bus Network Redesign</b>	A collaborative planning effort led by WMATA to design and deliver a bus network that better meets customer needs and expectations. The Bus Network Redesign will deliver a near-term package of service changes as well as a mid-range Visionary Network that advances community and regional goals. Implementation of the new network is expected to begin in 2025.
<b>Commuter Choice</b>	Program administered by the Northern Virginia Transportation Commission (NVTC) that invests toll revenues in public transit and other multimodal projects along two expressway corridors, I-66 and I-395/95. Projects are selected through a competitive process.
<b>I-495/American Legion Bridge Transit/Transportation Demand Management (TDM)</b>	A joint study conducted by Virginia Department of Rail and Public Transportation (DRPT) and Maryland Department of Transportation Maryland Transit Administration (MDOT MTA) of current and potential future multimodal solutions that could be implemented to enhance travel across the American Legion Bridge.
<b>I-495 Southside Transit/TDM Study</b>	A study conducted by DRPT of potential future multimodal solutions that could be implemented to enhance travel on the I-495 Southside corridor between the Springfield interchange and Maryland Route 210.



## 1.2 Strategic Vision

Fairfax County's 2013 Comprehensive Plan provided the basis for the goals, objectives, and strategies that were adopted in Connector's FY 2016-2022 Transit Development Plan (TDP) which have been updated within this Transit Strategic Plan. Updates were informed by both past and ongoing public engagement as well as the 2017 update to the Comprehensive Plan and One Fairfax, a joint social and racial equity policy of the Fairfax County Board of Supervisors and School Board. This policy commits the County to considering equity in the provision of its services to ensure that all residents have equitable opportunities, regardless of race, color, sex, nationality, sexual orientation, religion, disability, income, or where they live, and Connector strives for its strategic visioning to reflect those same commitments.

**Fairfax Connector's vision is to provide equitable, safe, reliable, clean, and effective public transportation service that complements the other elements of the multi-modal transportation system in Fairfax County.**

Previous and recurring public survey efforts, discussed in greater detail in **Section 2.1**, identified the primary service improvement needs: frequency, service hours, travel time, connectivity, and information.

- Riders and non-riders alike desire **increased frequency** of buses
- **Increased span of service** outside of peak commuting hours
- More direct routes and fewer transfers for **faster travel times**
- More cross-county connections and reverse-commute routes for **increased coverage and connectivity**
- Accurate real-time information

These takeaways from the public and stakeholder outreach conducted in Winter 2020/2021 for the TSP, past Marketing and On-Board surveys, and multiple rounds of outreach through the Bus Service Review Studies from 2019 to 2023 informed the updates to Connector's goals and objectives in this section.

### 1.2.1 Goals and Objectives

Four themes, each with corresponding goals and objectives, have been identified that support Fairfax Connector's strategic vision:

#### CHOICE

**Goal 1: Accommodate both through and local movement of people via Fairfax Connector as a component of a multi-modal transportation system that provides transportation choices and, consequently, reduces single-occupancy vehicle usage and improves air quality**



- **Objective 1.1:** Increase transit access to large employment sites and retail centers
- **Objective 1.2:** Support the County's designated higher-density, mixed-use developments through the provision of transit service that facilitates internal and external trips

## QUALITY

**Goal 2: Provide high-quality public transportation service that meets the needs of County residents, workers, and visitors**

- **Objective 2.1:** Increase the use of Fairfax Connector for all types of trips, including during both peak commute periods and off-peak periods
- **Objective 2.2:** Increase the proportion of commute trips made by transit, contributing to a reduction in the use of single-occupancy vehicles for commuting
- **Objective 2.3:** Improve the speed, quality, reliability, and convenience of transit service
- **Objective 2.4:** Increase awareness of public transportation

## EFFICIENCY

**Goal 3: Facilitate efficient and cost-effective movement of people as part of a multi-modal transportation system that provides transportation choices**

- **Objective 3.1:** Enhance access to Fairfax Connector
- **Objective 3.2:** Reduce travel times for trips made by Fairfax Connector
- **Objective 3.3:** Maintain and enhance cost-effectiveness of Fairfax Connector service
- **Objective 3.4:** Increase on-time performance
- **Objective 3.5:** Maintain and enhance connections to other local and/or regional public transportation providers

## SAFETY

**Goal 4: Ensure safety for users of Fairfax Connector facilities and services and for the general public**

- **Objective 4.1:** Adequately maintain County transit vehicles and other County transit facilities in a state of good repair
- **Objective 4.2:** Actively promote a safety culture
- **Objective 4.3:** Maintain a low number of safety and security-related incidents
- **Objective 4.4:** Enhance maintenance resources wherever possible
- **Objective 4.5:** Utilize best practices and provide the best available safety and security training for all employees

### 1.2.2 Transit Service Standards and Guidelines

In order to guide the equitable provision of services and amenities and to ensure sustained operations, Fairfax Connector has developed a set of service standards and policies. These service standards are used for service monitoring under Title VI of the Civil Rights Act of 1964 (as amended).





In addition, the County has service design guidelines that it uses to inform the provision of transit service. While it is always the goal of Connector to adhere to these guidelines, doing so can be limited by financial constraints as well as the overall transit environment. As such, these guidelines are benchmarks rather than requirements. They provide an objective basis for decision-making and are composed of criteria that measure both the quantity and quality of Connector services.

Service standards and guidelines are organized into four categories: (1) coverage, scheduling, and route planning; (2) transit amenities; (3) reliability; and (4) safety and security.

## COVERAGE, SCHEDULING, AND ROUTE PLANNING

### Service Availability (*Standard*)

Service availability is a measure of coverage, indicating how many residents in a service area have access to fixed-route transit. FCDOT sets a standard whereby **at least 50 percent of the Fairfax County's population are within a quarter-mile walking distance of a local route alignment or express route stop**. In terms of trade-offs, service availability is often a balance of coverage versus frequency. As the total service area increases, the cost of maintaining higher frequencies often increases accordingly.

### Span (*Guideline*)

Fairfax Connector's spans of service generally reflect the system hours and the periods of time in which bus services are available. **Table 1-4** summarizes the spans of service Connector offers for each type of route.

**TABLE 1-4: SPAN OF SERVICE GUIDELINE**

Route Type	Span of Service
<b>Full-Day Routes</b>	
<b>Weekday</b>	5:00 a.m. – 10:00 p.m.
<b>Saturday</b>	6:00 a.m. – 9:00 p.m.
<b>Sunday</b>	8:00 a.m. – 8:00 p.m.
<b>Weekday Peak-Only Routes</b>	
<b>Morning</b>	5:00 a.m. – 9:00 a.m. <sup>11</sup>
<b>Afternoon</b>	3:00 p.m. – 7:00 p.m. <sup>12</sup>

Since the spans of service above are guidelines and not standards, Fairfax County has flexibility to apply them based on the purpose of the route and the connections it provides. For example,

<sup>11</sup> These reflect arrival times at the relevant Metrorail station. Note that buses need to arrive shortly before 5:00 a.m. at the outer terminal stations and slightly later at the downstream stations.

<sup>12</sup> These reflect departure times from the relevant Metrorail station.



a weekday peak-only route may provide service to a trip generator that generates demand at specific times within the peak period.

### Vehicle Headway (Standard)

Vehicle headway, or frequency, represents the amount of time between two vehicles traveling in the same direction on a given route. While higher frequencies result in shorter customer wait times and are thus desirable, they are costly due to the required amount of buses and operators to maintain the desired headways. As such, balancing frequency and cost-effectiveness are important. **Table 1-5** summarizes the minimum frequency Fairfax Connector has set for each type of route. These vehicle headway standards were developed as part of Fairfax Connector's previous Transit Development Plan (TDP) for fiscal years 2016-2022 and are maintained in this superseding Strategic Plan. They are also used for Fairfax County's Title VI service monitoring<sup>13</sup>.

**TABLE 1-5: MINIMUM VEHICLE HEADWAYS**

Route Type	Minimum Frequency	
	Peak	Off-Peak
<b>Full-Day Routes</b>		
<b>Weekday</b>	30 minutes	30 minutes (60 minutes after 9:00 p.m.)
<b>Saturday</b>	30 minutes (base <sup>14</sup> )	60 minutes (fringe <sup>15</sup> )
<b>Sunday</b>	60 minutes	60 minutes
<b>Weekday Peak-Only Routes</b>		
<b>Morning</b>	20 minutes	30 minutes
<b>Afternoon</b>	(peak of the peak)	(fringe of the peak)

### Road Types and Routing (Guideline)

Fairfax Connector generally strives to operate its buses on arterial streets with adequate pedestrian infrastructure (e.g., sidewalks) and limited on-street parking. Direct routing is desirable, except in unique circumstances when significant generators are present away from main corridors.

### Bus Stop Locations (Guideline)

Connector bus stops are located following the *Fairfax County Bus Stop Guidelines* published in July 2004. Bus stops are located to maximize pedestrian access whenever possible. **Table 1-6** provides a summary of bus stop spacing criteria.

<sup>13</sup> <https://www.fairfaxcounty.gov/connector/titlevi>

<sup>14</sup> Saturday base is defined as 9:00 a.m. to 5:00 p.m.

<sup>15</sup> Saturday fringe is defined as before 9:00 a.m. and after 5:00 p.m.



TABLE 1-6: BUS STOP SPACING GUIDELINES

Density Class	Criteria
<b>High density (750-foot spacing)</b>	Primarily commercial with a high concentration of employment, or with a population density of more than five per acre
<b>Moderate density (1,000-foot spacing)</b>	Population density of two to five people per acre
<b>Low density (spacing based on activity centers rather than distance)</b>	Population density of less than 2 people per acre

## TRANSIT AMENITIES

### Bus Shelters (*Guideline*)

A bus shelter may be installed at stops with an average of **50 or more boardings per day**, at a transit center or park and ride lot owned by Fairfax County, or if the stop is at a major activity center.

### Benches (*Guideline*)

Benches with pads may be installed if the stop is located at a transit center or park and ride lot or if the stop is a major activity center, generating **25 or more passenger boardings per day**, or at stops located near significant populations of seniors, the disabled, students, or other special uses (e.g., tourist attractions).

### Passenger Information (*Guideline*)

Bus stop signs should be installed at all locations. These signs consist of two variations: local and regional (for stops jointly served by WMATA's Metrobus) designs. Each bus stop has a unique bus stop ID that can be used for [BusTracker](#) real-time arrival and route information available via phone and internet applications. Rider information displays containing schedule and system maps should be installed at all transit stations and park and ride lots with designated Fairfax Connector service bays.

### Escalators and Elevators (*Guideline*)

Fairfax Connector does not generally provide or maintain escalators or elevators at any bus stops with a few exceptions. Fairfax County maintain escalators and elevators at the Wiehle-Reston East Metrorail station garage and elevators at the Innovation Center Station garage, Herndon-Monroe garage, and Burke Centre garage. The County will also maintain elevators at the new Monument Drive Commuter Parking Garage and the Springfield Community Business Center (CBC) Commuter Parking Garage which are both anticipated to open in 2023.



### Waste Receptacles (*Guideline*)

Waste receptacles are installed at all stops with a demonstrated issue with littering.

## RELIABILITY

### On-Time Performance (*Standard*)

For all Fairfax Connector riders, particularly those who rely on it as their main mode of transportation, it is essential that buses show up at their scheduled and anticipated times. Late buses inconvenience riders and can have serious ramifications for riders traveling to major appointments like job interviews and medical exams. On-time performance is a measure of this expectation of reliability.

Connector requires its operating contractor to maintain a systemwide standard of **85 percent of all trips for each route** to be “on-time,” which is defined as being **between one minute early and six minutes late** at each timepoint. Maintaining this standard is essential to a positive customer experience and ensuring that Connector has a reputation for consistently reliable service.

## SAFETY AND SECURITY

### Vehicle Load (*Standard*)

Vehicle load is the level of passenger crowding that is acceptable for a safe and comfortable ride. This is expressed as a ratio of the number of passengers on the vehicle to the number of seats on the vehicle averaged over the peak one-hour in the peak direction. Fairfax Connector uses different vehicle load factors for its commuter/express and local services. **Table 1-7** shows the maximum load factors for both commuter and local services. **The standard for commuter/express services is 1.00**, representing one passenger per seat because these services often operate on limited-access highways which would pose a safety hazard for standing passengers. **The load factor for local services is 1.25**, as these services generally do not operate on limited access highways and the safety hazard to standing passengers is somewhat reduced.

**TABLE 1-7: MAXIMUM ACCEPTABLE VEHICLE LOADS**

Service Type	Maximum Load Factor
<b>Commuter Services</b>	1.00
<b>Local Services</b>	1.25

### 1.2.3 Performance Standards

Fairfax Connector uses a two-tiered approach to performance monitoring. Connector routinely conducts systemwide and route-level performance monitoring.





## SYSTEMWIDE PERFORMANCE MONITORING (TIER ONE)

A performance-based evaluation methodology—or *six-band analysis*—has been developed to identify operational inefficiencies. This six-band analysis incorporates a scoring structure that can be used to evaluate performance across any metric and rank the top and bottom-performing routes in the system. Connector uses the following metrics in its six-band analysis:

- Passengers per Vehicle Revenue Hour
- Passengers per Vehicle Revenue Mile
- Passengers per Trip
- On-Time Performance

The scoring procedure is as follows:

- For each metric, a systemwide mean and standard deviation is defined
- Each route receives a score of 0, 2, 4, 6, 8, or 10 for each metric, with 0 being the worst and 10 the best
- The score attributed to each metric is based on the following methodology, which forms the six bands:
  - More than two standard deviations below the average = 0 points
  - Between one and two standard deviations below the average = 2 points
  - Between the average and one standard deviation below the average = 4 points
  - Between the average and one standard deviation above the average = 6 points
  - Between one and two standard deviations above the average = 8 points
  - More than two standard deviations above the average = 10 points

## SUBAREA PERFORMANCE MONITORING (TIER TWO)

While Connector routinely monitors route-level productivity, a more detailed route evaluation methodology is also used in recurring Bus Service Review studies. This process is more applicable to planning potential route changes, but it can also be used as a benchmark to evaluate the performance of existing service. The methodology evaluates the following:

- **Facilities Accessibility:** The number of key points of interest (job centers, education facilities, hospitals, transit centers, Metrorail stations, VRE stations, and park and ride lots) within a walkable service area, define as areas within a quarter mile of one or more local route alignments (or quarter mile of express route stops)
- **Transit Origin-Destination Travel Time:** The estimated transit travel times between popular origin-destination pairs based on route alignment and assumed travel speeds of various transit modes
- **Ridership Potential:** The estimated number of transit riders living within a quarter mile of a local route alignment (or quarter mile of express route stops)

## PERFORMANCE STANDARDS SUMMARY

Both tiers of performance monitoring help Connector identify operational inefficiencies, whether at the route level or across a group of routes, in order to meet the performance standards summarized in **Table 1-8**. These standards align with the goals, objectives, and service



standards and guidelines set out in previous sections. Several of the key performance indicators rely on a quantitative comparison of a route's performance to the performance of the overall system. These benchmarks are calculated as one standard deviation below or (above in the case of cost efficiency) the average systemwide measure and are evaluated for local and express routes separately as the two types of service have different operating characteristics. For the purposes of performance evaluation, routes are classified as:

- **Local:** service focused on providing connectivity within and between activity centers, as well as between residential areas and activity centers or Metrorail stations.
- **Express:** service focused on long trips or limited stop service delivering commuters more directly to high-employment areas without making regular stops over the trunk of the route.

Routes that do not meet a benchmark may be flagged as an opportunity to improve service; however, low-performing routes by one indicator may also be important for the overall system goals of Connector, like choice. FCDOT typically takes a deeper look at routes with performance outside of two standard deviations. This methodology helps Connector make data-driven and targeted improvements that better serve customers. Performance standards are further discussed and applied in **Chapter 2**.



TABLE 1-8: SUMMARY OF FAIRFAX CONNECTOR PERFORMANCE BENCHMARKS

Service Aspect	Key Performance Indicator	Route Classification	Benchmark
<b>System Accessibility</b>	Fairfax County Population Within Service Area	Systemwide	50% within ¼-mile of <u>local</u> route alignments or <u>express</u> route stops
	Passengers per Vehicle Revenue Hour	Local	Greater than (systemwide <u>local</u> route average – one standard deviation)
<b>Ridership</b>	Passengers per Vehicle Revenue Mile	Express	Greater than (systemwide <u>express</u> route average – one standard deviation)
		Local	Greater than (systemwide <u>local</u> route average – one standard deviation)
	Passengers per Trip	Express	Greater than (systemwide <u>express</u> route average – one standard deviation)
		Local	Greater than (systemwide <u>local</u> route average – one standard deviation)
	Maximum Vehicle Load Factor	Express	1.00
		Local	1.25
<b>Reliability</b>	On-Time Performance	Local	85% at scheduled time points
		Express	
<b>Cost Efficiency</b>	Operating Cost per Passenger	Local	Less than (systemwide <u>local</u> route average + one standard deviation)
		Express	Less than (systemwide <u>express</u> route average + one standard deviation)
<b>Safety</b>	Bus Collisions	Systemwide	< 2.0 per 100,000 miles
	Customer Injuries	Systemwide	0 requiring immediate medical attention away from the scene
<b>Customer Service</b>	Customer Complaints	Systemwide	< 2.5 complaints per 10,000 passenger trips