Northern Virginia Regional Fare Collection
Strategic Plan

May 2018

NVTC
NORTHERN VIRGINIA TRANSPORTATION COMMISSION

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EXECUTIVE SUMMARY

There is a need to replace or upgrade the regional fare collection system as components near end of life, and keep pace with customer expectations and changing technology. The Northern Virginia Transportation Commission (NVTC) has taken a leading role in planning and coordinating improvements among the Northern Virginia transit systems. This plan, developed by NVTC with input from the transit systems, justifies the need for improvements and identifies a path forward.

NVTC leads the coordination, planning, and technical assistance to the Northern Virginia transit systems on fare collection:

- Arlington Transit (ART)
- City of Fairfax CUE
- Alexandria DASH
- Fairfax Connector
- Loudoun County Transit
- Potomac and Rappahannock Transportation Commission (PRTC)
- Virginia Railway Express (VRE)

Currently the bus systems in Northern Virginia collect fares through the regional SmarTrip® system operated by the Washington Metropolitan Area Transit Authority (WMATA). SmarTrip® is a smart-card-based fare collection system that also supports cash payment on buses. VRE has its own paper and mobile phone ticketing-based fare collection systems but participates in the regional transit benefits program, SmartBenefits®, which also is operated by WMATA and linked to SmarTrip®.

In August of 2017, the transit systems entered into a Memorandum of Agreement (MOA) for NVTC to allocate grant funding and provide resources to coordinate upgrades to existing regional fare collection systems and explore options and enhancements for the regional fare collection program. To ensure these upgrades and enhancements are based on the transit system needs and that consensus is achieved on the activities and options to be pursued, NVTC implemented a strategic planning process. This process is intended to allow the transit systems to collectively organize around a shared vision for future regional fare collection methods. This document summarizes the results of this process, key takeaways, and the activities that are to be undertaken to support the region in enhancement of fare collection systems.

The planning process consisted of a workshop with the transit systems, a survey, and individual interviews with each system to gather a deeper understanding of specific issues and needs. The outreach findings were synthesized into this plan, which lays out a vision, identifies strategic priorities and initiatives, and translates these into actions to be taken by NVTC and the transit systems in the coming years.

STRATEGIC PLAN VISION STATEMENT

Northern Virginia transit systems envision an enhanced regionally-integrated fare collection system with local flexibility to meet evolving customer expectations.

This plan documents program priorities, or needs that describe the processes and principles that should guide the Northern Virginia fare collection activities, and system priorities, or needs that describe the features, functions, and capabilities that should be addressed through regional fare collection activities. Example strategic priorities include the need to:

- Increase the role of Northern Virginia transit systems in WMATA fare collection planning,
- Provide seamless travel and payment with neighboring or intersecting transit systems,
- Retain and improve interoperability with SmartBenefits®, and
- Replace obsolete components and improve system maintainability

In response to the gathered priorities, NVTC developed the following actions:

STRATEGIC PLAN ACTIONS
1. Continue Farebox Obsolescence Management
2. Implement a Coordinated Local Platform for Mobile Ticketing
3. Engage with WMATA on SmartBenefits® Enhancements
4. Engage with WMATA on SmarTrip® Upgrades
5. Support Retail Network Expansion
6. Initiate Long-Term Regional Fare Collection System Planning and Enhancements

This work determined that there was broad agreement on the continued need for an upgraded and enhanced, D.C. regional fare collection system but this can coexist and be complemented by local solutions to meet the transit systems' needs.

INTRODUCTION

The Northern Virginia Transportation Commission (NVTC), in coordination with Northern Virginia transit systems, developed this document to serve as a strategic plan for fare collection initiatives for Northern Virginia. There is a need to replace or upgrade the system as components near end of life, and to keep pace with customer expectations and changing technology.

In August of 2017, Northern Virginia's transit systems entered into a Memorandum of Agreement (MOA) for NVTC to allocate grant funding and provide resources to coordinate these upgrades and explore options and enhancements for the regional fare collections initiatives. This plan is the first step in implementing the goals of the MOA and outlines the specific actions to be taken by NVTC and the transit systems to advance fare collection in the region such as making improvement to the existing regional fare collection system, SmarTrip®, and implementing a local mobile ticketing platform.

NVTC manages most state and some regional funding for six bus systems, Metrorail, and Virginia Railway Express (VRE), which it co-owns. It also facilitates the planning and development of transit systems in Northern Virginia and provides technical assistance to its member jurisdictions. As such, NVTC is working with the Northern Virginia transit systems to ensure current and future needs for regional fare collection are met and assist in coordination with the Washington Metropolitan Area Transit Authority (WMATA), a major partner in regional fare collection.

NVTC organized a Regional Fare Collection Working Group to facilitate upgrades, which includes staff from the following transit systems and a representative from WMATA:

- Arlington Transit (ART)
- City of Fairfax CUE
- Alexandria DASH
- Fairfax Connector
- Loudoun County Transit
- Potomac and Rappahannock Transportation Commission (PRTC)
- VRE

Members of the group serve as representatives of their respective transit system on the topic of fare collection and discuss ongoing activities monthly. The group also provided NVTC input needed to develop this plan. The actions of the plan will enhance the fare collection systems used by these seven transit systems.

NORTHERN VIRGINIA REGIONAL FARE COLLECTION STRATEGIC PLAN

Purpose:
- Provide a roadmap for advancing fare collection in the region
- Provide input into WMATA fare collection modernization initiatives

Audience: Leadership, planners, implementers, and operators of transit fare collection systems in Northern Virginia

BACKGROUND AND NEED

The Northern Virginia bus systems (ART, CUE, DASH, Fairfax Connector, Loudoun County Transit, and PRTC) currently collect fares through the regional SmarTrip® system operated by WMATA. SmarTrip® is a smart-card-based fare collection system that also supports cash payment on buses and was first deployed by WMATA in 1999. The system was expanded to other regional partners, with many Northern Virginia transit systems joining in 2006.

The Virginia Railway Express (VRE) has its own paper and mobile phone ticketing-based fare collection systems but participates in the regional

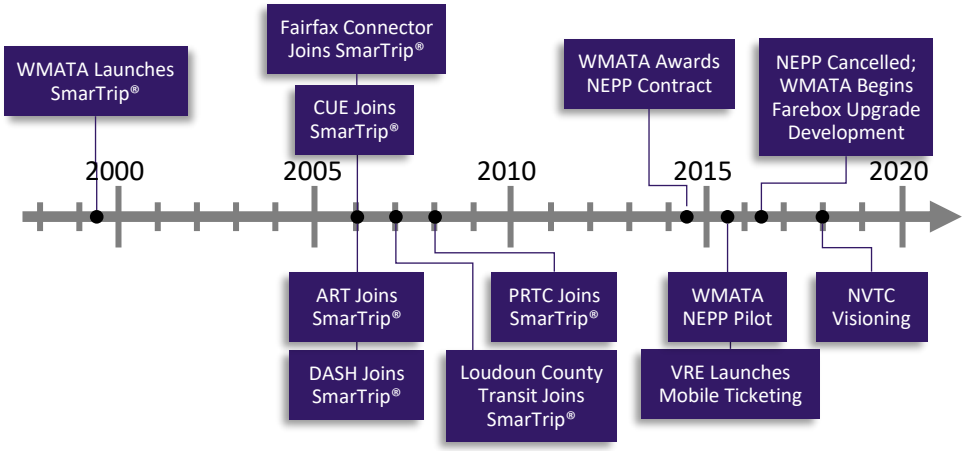


Figure 1. Fare Collection History

transit benefits program, SmartBenefits®, which also is operated by WMATA and linked to SmarTrip®.

The existing SmarTrip® system has served the Washington D.C. region including Northern Virginia for the past 19 years. However, there is a need to replace or upgrade the system as components near end of life, and to keep pace with customer expectations and changing technology.

In 2014, WMATA awarded a contract to a systems integrator for its New Electronic Payment Program (NEPP), which was intended to replace the complete fare collection system with a modernized approach and provide more payment options. After a pilot program, WMATA cancelled NEPP in April 2016 and the region shifted its focus to maintaining and extending the life of the existing system.

Still, the need remains for enhanced fare collection options in the near- and long-term plans for a regional system that can enhance the customer experience and transit system operations.

With the cancellation of the regional NEPP and no alternate plan from WMATA, there was agreement between NVTC and the regional transit systems that undertaking a Northern Virginia regional fare collection planning exercise was necessary. NVTC has taken a lead role in planning and coordinating improvements among the Northern Virginia transit systems and with WMATA.

Without a cohesive plan and agreement on next steps for advancing the fare collection system, Northern Virginia transit systems face the following risks:

- Obsolete equipment for the existing fare collection system
- Costly inefficiencies from pursuing uncoordinated enhancements
- Reduced ability to collect fares
- Falling short of customer expectations for a convenient and modern travel experience

APPROACH AND PROCESS

Workshop

To begin the planning process, NVTC held a workshop on November 1, 2017. The purpose of the workshop was threefold:

1. Share information with regional transit systems on current and emerging technologies/approaches to fare collection
2. Discuss and identify current needs and issues to be addressed by fare collection systems
3. Develop a collective vision for what an enhanced regional fare collection system might look like

The workshop was attended by all seven of the Northern Virginia transit systems, WMATA, and the Federal Transit Administration (FTA).

The workshop included presentations on current and emerging fare collection technologies and procurement approaches as well as updates on off-board fare collection activities from WMATA. The workshop ended with an open discussion and brainstorming of needs for a next-generation system. A summary of the workshop can be found in **Attachment A – Visioning Workshop** Summary.

Survey and Follow-Up

After the workshop, NVTC followed up individually with each of the Northern Virginia transit systems through a survey and interview to obtain consistent input to the strategic plan. The objective of this follow-up was to gather a greater understanding of issues and needs from each transit system. The survey covered the performance of the existing fare collection system, regional collaboration, cash acceptance, and other challenges with fare collection. Plans for mobile ticketing were also explored, since many transit systems had indicated interest in this technology as a next step. The survey questions can be found in **Attachment B – Follow-Up Survey**.

Individual transit system profiles documenting findings from the survey and interviews are included in **Attachment C – Transit System Profiles.**

Figure 2. NVTC Visioning Workshop

Organization of the Plan

The results of the workshop, survey and follow-up calls have been synthesized to develop a strategic plan, which is structured according to **Figure 3.** The plan has been developed by NVTC and was validated by the Northern Virginia transit systems.

Figure 3. Document Structure

The vision statement was defined to capture at a high-level what Northern Virginia transit systems would like to achieve with their fare collection efforts in the coming years. The findings from the outreach activities have been documented in terms of strategic priorities and initiatives. These findings were then used to develop a list of actions to be taken by NVTC and the transit systems to advance the state of fare collection in Northern Virginia.

Vision Statement

A vision statement was developed by NVTC and validated by the transit systems to describe what Northern Virginia would like to achieve with its next-generation regional fare collection activities as follows:

> Northern Virginia transit systems envision an enhanced regionally-integrated fare collection system with local flexibility to meet evolving customer expectations.

This vision statement should be used to guide current and future actions to enhance the transit fare collection system(s) in Northern Virginia.

Strategic Priorities and Initiatives

The findings from the workshop and individual outreach have categorized into two areas:

- **Program Priorities**—needs that describe the processes and principles that should guide the Northern Virginia fare collection activities during the coming years. Program priorities cover how the transit systems should work together to deploy fare collection to best meet customer needs. NVTC's directive will be to carry out these processes and principles on behalf of and in coordination with the transit systems.
- **System Priorities**—needs that describe the features, functions, and capabilities that should be addressed through regional fare collection activities. NVTC plays an important role in ensuring that fare collection system enhancements are made in an efficient and cost-effective manner to meet the needs of the transit systems.

Program Priorities

Program priorities describe the processes and principles that should guide the Northern Virginia fare collection activities during the coming years. The following needs were gathered from the Northern Virginia transit systems and support the actions presented in the next section. The detailed needs have been grouped under five high-level needs:

P-1. Retain a broader regional fare collection system, but allow for local fare collection solutions

- Maintain a multi-transit system fare collection system, such as SmarTrip®, for regional travel
- Implement local fare collection solutions, either individually or in partnership among multiple transit systems, to meet local needs
- Provide interfaces between regional and local backend systems to allow multi-jurisdiction fare collection where feasible

P-2. Continue regional coordination between WMATA, Northern Virginia, D.C., and Maryland transit systems

- Continue information sharing amongst NVTC Regional Fare Collection Working Group
- Continue monthly SmarTrip® calls between transit systems to discuss fare collection topics and latest developments
- Participate in other regional coordination efforts that are both public and private
- Establish biweekly coordination call between NVTC and WMATA

P-3. Maintain WMATA's centralized role of operating a regional fare collection system with enhanced service to regional transit systems

- Improve communication channels between local transit systems and WMATA for technical and customer service issues
- Identify opportunities to provide more local transit system control of fare products
- Reduce lead time required by WMATA Automated Fare Collection (AFC) engineering to implement fare table changes

P-4. Increase role of Northern Virginia transit systems in WMATA fare collection planning

- Ensure NVTC involvement in all stages of fare collection enhancements that impact the region—concept, planning, procurement, and contracting—as a full partner with WMATA
- Obtain full visibility for Northern Virginia transit systems and NVTC into the WMATA fare collection planning process
- Ensure input is gathered by WMATA from regional partners and NVTC early in planning processes for changes to the regional fare collection system
- Ensure regional transit systems are involved in the development of technical requirements

P-5. Identify opportunities to coordinate fare collection procurements

- Coordinate or consolidate fare collection procurements among Northern Virginia transit systems to reduce duplication of effort and maximize customer benefit while permitting each transit system to deploy a customized solution to meet its specific goals
- Provide for coordinated but separate procurements across the broader region with D.C. and Maryland
- Establish contract mechanisms to allow transit systems in the region to benefit from negotiated pricing and provisions

System Priorities

System priorities describe the features, functions, and capabilities that should be addressed through regional fare collection activities. The following system needs were gathered from the Northern Virginia transit systems and support the actions presented in the next section. They are broadly categorized as:

1. **Fare Media and Payment** (S-1 to S-5)
2. **Support for All Customer Groups** (S-6 to S-7)
3. **Technology** (S-8)
4. **Transit System Control and Flexibility** (S-9 to S-12)

Fare media are the physical or electronic elements that fare products are carried on while fare products are stored value, passes or tickets useable for travel.

Fare Media and Payment:

S-1. Provide common fare media across multiple travel modes

- Provide customers with a fare media option that can be used across bus, heavy rail, and commuter rail, and complementary modes such as bike share, ride share companies, and parking

S-2. Provide seamless travel and payment with neighboring or intersecting transit systems

- Provide a platform for regional trips, maintaining transfer agreements and regional fare products
- Maximize the ability for local fare collection initiatives to provide compatibility across multiple transit systems

S-3. Provide fare collection alternatives that allow for self-service and bring your own device

- Provide ability for customers to purchase and use fare products with a smartphone
- Shorten the time required to transfer fare value/products from online purchases onto fare media

S-4. Provide customers with multiple payment options

- Implement solutions to support smart cards; mobile payments; mobile ticketing app(s); and credit, debit and prepaid cards
- Remove barriers related to fare collection and provide readily available, easy to use payment options to attract new riders

S-5. Retain and improve interoperability with SmartBenefits®

- Simplify use of SmartBenefits® funds for fare payment platforms other than SmarTrip®, including mobile ticketing

Support for All Customer Groups:

S-6. Expand support for cash customers

- Continue to provide the ability for transit systems to accept cash payments on buses, as decided locally by the transit systems
- Provide expanded off-board cash payment options to reduce cash payments on buses
- Increase ease and availability of point of sale, retail fare payment for cash customers

S-7. Expand SmarTrip® retail network

- Provide more options and locations for off-board reloading and purchase to support transit systems that choose to eliminate on-board cash loading to smart cards
- Increase ease of cash payment elsewhere to incentivize off-board transactions
- Increase speed of retail network transactions

Technology:

S-8. Replace obsolete components and improve system maintainability

- Pursue solutions to hardware obsolescence that use widely available hardware instead of custom parts
- Consider future enhancement of system functionality in solutions to obsolescence
- Modernize technology used for point-of-sale retail network transactions

Transit System Control and Flexibility:

S-9. Enhance ability to design and provide local fare products

- Improve ease and speed of implementing short-term or special fare products at the transit system level
- Provide ability to offer local fare promotions
- Provide capability to offer additional fare levels
- Provide greater transit system control over implementing changes, subject to sufficient training
- Integrate data from all new fare collection methods into existing fare data reporting system for consolidated transit system reporting

S-10. Improve fare data reporting capabilities

- Improve reporting by reducing data latency Use standard data format for interoperability with other transit business intelligence software
- Integrate any new fare collection systems into one backend reporting system to aggregate all fare data
- Provide access to data on customers' regional travel patterns (e.g., where they board or alight on connecting systems)
- Provide the ability to track ridership by bus stop with farebox data
- Provide web-based access to reporting, allowing multiple users and locations

S-11. Support off-vehicle payment and on-board inspection

- Provide solutions for all-door boarding for transit systems seeking to minimize dwell time
- Provide solutions for visual fare inspection and enforcement as well as electronic validation for VRE

S-12. Provide capabilities to integrate other customer services with fare payment solutions

- Provide solutions to integrate multimodal trip planning with fare payment

OBJECTIVES AND ACTIONS

NVTC developed actions in response to the program and system priorities synthesized in the previous section. The actions identify the areas NVTC will assist the transit systems in fare collection efforts, but not all transit systems will have required involvement in each action depending on its specific needs.

The actions have roles and responsibilities identified for NVTC, applicable transit systems, and WMATA, and are categorized into the following time frames:

- Short term (completed within two years)
- Medium term (completed within four years)
- Longer term (completed within five or more years)

Table 1 presents a summary of key features of the existing regional fare collection system and identifies those features that were identified as important to be retained and those which could be improved upon. The objective of the actions is to enhance and provide additional capabilities to the existing system.

Table 2 provides a traceability matrix that maps each action to the strategic priorities identified in the previous section.

Table 1. Existing Regional Fare Collection Features

Feature	Direction
Electronic fare payment medium that can be used for fare payment across the D.C. region (SmarTrip® card)	Keep and expand to other electronic media such as mobile phones
Regional fare products that can be used on multiple transit systems	Keep
Ability to provide fare transfers between different transit systems	Keep
Revenue sharing mechanism for fairly distributing fare revenues for different fare products and transfers	Keep
Ability for customers to add value to fare payment medium at retail locations across region	Enhance to provide increased number of locations and options for adding value
Ability for customers to add value to fare payment via internet and automatic loading	Enhance to improve speed of loading
Ability to support transit benefits	Enhance to make it easier for customers to use SmartBenefits® on non-SmarTrip® fare payment
Vehicle-based equipment for electronic and cash fare payment	Upgrade to mitigate obsolescence
Regional lab for configuring fare products and providing testing and technical oversight for regional fare collection technology	Keep
Ability to configure specialized local agency fare products	Change to provide additional capabilities to deploy fare products that are under the control of individual agencies
Consolidated fare collection and ridership reporting	Keep and enhance to incorporate any new fare collection initiatives and wider data access

Roles & Responsibilities: L = Lead, S = Support, C = Coordinate

Actions

	Roles & Responsibilities		
	NVTC	Applicable Transit Systems	WMATA
1. Continue Farebox Obsolescence Management — ***Short to Medium Term (within four years)***			
Northern Virginia transit systems and NVTC will continue working with WMATA to develop a solution for obsolescence of the current fareboxes. The following activities are required for this action:			
• Coordinate the NVTC transit systems in the integration and testing of the farebox upgrade being led by WMATA	**C**	**S**	**L**
• Explore and coordinate funding and contracting mechanisms for transit systems to purchase and install upgrades	**L**	**C**	**S**
• Monitor progress of the implementation farebox/driver control unit (DCU) testing and upgrades	**C**	**C**	**C**
• Identify mitigation strategies and support transit systems in exploring these strategies where schedule, scope, or cost risks occur	**L**	**S**	**S**
• Continue coordination with WMATA on upcoming farebox modernization initiatives	**C**	**C**	**C**
2. Implement a Coordinated Local Platform for Mobile Ticketing — ***Short to Medium Term (within four years)***			
Multiple Northern Virginia transit systems are interested in mobile ticketing and have expressed a desire to coordinate planning, procurement, implementation, and project management. The following activities are required for this action:			
• Coordinate with WMATA's mobile app initiative and determine whether Northern Virginia systems' mobile ticketing requirements can be met through one of the following: 1) WMATA's existing mobile app initiative scheduled for early 2019, or 2) NVTC provides input into WMATA's design to meet NVTC's requirements, or 3) Northern Virginia implements and deploys separate product(s)	**L**	**C**	**C**
• Develop a Northern Virginia regional mobile ticketing approach	**L**	**L**	
• Coordinate with VRE mobile ticketing	**C**	**C**	
• Define performance targets	**S**	**L**	
• Develop requirements for common elements and flexibility for transit systems to implement their own features	**L**	**S**	
• Identify need and opportunities for pilot projects	**L**	**S**	
• Identify opportunities to incentive mobile ticket usage over on-board cash payment	**L**	**L**	
• Identify funding sources	**L**	**S**	
• Issue a request for proposal and establish a blanket contract that transit systems can use to deploy custom mobile ticketing solutions	**L**	**S**	
• Support the implementation of local mobile ticketing applications	**S**	**L**	**S**

Roles & Responsibilities: L = Lead, S = Support, C = Coordinate

Actions

	Roles & Responsibilities		
	NVTC	Applicable Transit Systems	WMATA
3. Engage with WMATA on SmartBenefits® Enhancements — ***Short Term (within two years)***			
WMATA is working on updates to the SmartBenefits® program. Currently there is limited, coordinated regional participation. This effort would strengthen coordination to improve the program with the goal of making it easier for customers to use SmartBenefits® on other regional fare payment platforms. The following activities are required for this action:			
• Work with WMATA to incorporate Northern Virginia requirements	**L**	**C**	**S**
• Monitor implementation of program enhancements	**L**	**C**	**S**
4. Engage with WMATA on SmarTrip® Upgrades — ***Medium Term (within four years)***			
WMATA will remain responsible for supporting and enhancing the SmarTrip® system in the near term. To ensure that NVTC's Northern Virginia transit systems needs and timelines are addressed, the following activities are required:			
• Participate in WMATA analysis and planning for SmarTrip® continuation and improvement	**L**	**C**	**S**
• Define performance targets for needed enhancements	**S**	**L**	**S**

• Seek implementation of changes to provide enhancements including:
  ○ Faster autoload to fareboxes
  ○ Faster fare product changes
  ○ Improved access to reporting, including web-based access and travel pattern analysis
  ○ Coordination with WMATA's mobile app initiative
  ○ Coordination with WMATA's faregate procurement to determine the need for hardware supporting future acceptance of mobile ticketing technology
	C	**C**	**L**

5. Support Retail Network Expansion — ***Medium Term (within four years)***			
There are limited retail locations in Northern Virginia where value can be added to SmarTrip® cards. To expand the retail network, the following activities are required:			
• Gather lessons learned from the existing network to understand barriers to retail expansion	**L**	**S**	**S**
• Identify how regional transit systems can promote and coordinate expansion and mitigate barriers to expansion	**L**	**S**	**S**
• Identify SmarTrip® improvements needed to address barriers to retail expansion and pursue implementation through the short-term improvements action	**C**	**C**	**L**
• Identify opportunities for promotion and incentives to expand network	**C**	**L**	**L**
• Identify opportunities to continue to allow cash payment in support unbanked and underbanked customers	**L**	**S**	**S**

Roles & Responsibilities: L = Lead, S = Support, C = Coordinate

Actions

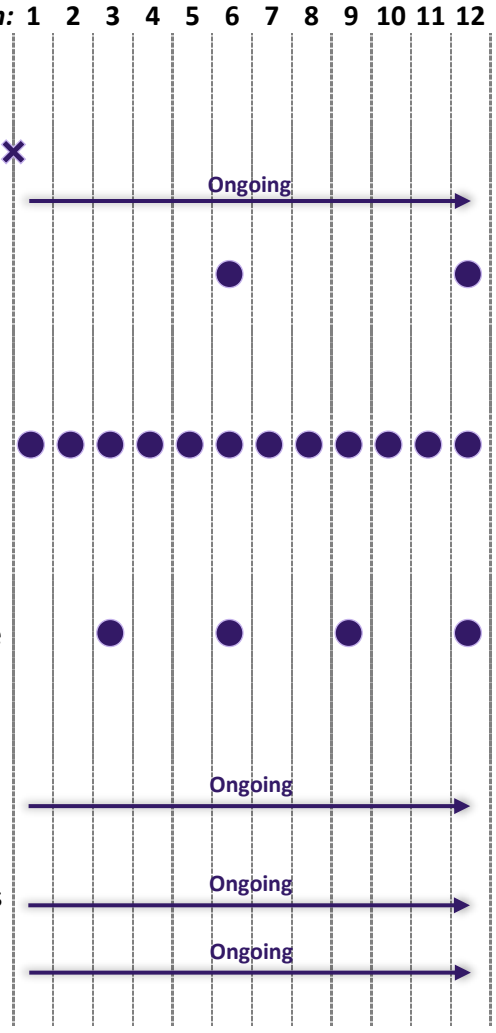
6. Initiate Long-Term System Planning and Enhancements — *Short to Long Term (within five or more years)*	Roles & Responsibilities: NVTC	Applicable Transit Systems	WMATA
The region must look at the long-term electronic fare collection system needs to determine whether upgrade, enhancement, or migration to a new system is required. This is a broader regional effort that WMATA is expected to lead with the participation of regional partners. To ensure Northern Virginia's needs are properly represented, this action will require the following activities:			
• Coordinate, through all phases of WMATA activity, as a full partner including concept analysis, strategy development, planning, procurement, and contracting for the future of regional fare collection	**C**	**C**	**C**
• Establish role of retail network and cash payment in long-term system	**C**	**C**	**C**
• Identify and log issues, concerns, and decisions on a regular basis and seek input from Northern Virginia transit systems	**L**	**S**	**C**
• Coordinate and communicate with WMATA at least biweekly	**C**	**C**	**C**
• Continue coordination with all parties – WMATA and regional transit systems	**C**	**C**	**C**

Table 2. Regional Fare Collection Strategic Priorities, Initiatives, and Actions

Strategic Priorities and Initiatives		ACTION #1	ACTION #2	ACTION #3	ACTION #4	ACTION #5	ACTION #6
Program Priorities	P-1. Retain a broader regional fare collection system, but allow for local fare collection solutions	✓	✓	✓	✓	✓	✓
	P-2. Continue regional coordination between WMATA, Northern Virginia, D.C., and Maryland transit systems	✓	✓	✓	✓	✓	✓
	P-3. Maintain WMATA's centralized role of operating a regional fare collection system with enhanced service to regional transit systems	✓		✓	✓	✓	✓
	P-4. Increase role of Northern Virginia transit systems in WMATA fare collection planning	✓	✓	✓	✓	✓	✓
	P-5. Identify opportunities to coordinate fare collection procurements	✓	✓		✓	✓	✓
System Priorities	S-1. Provide common fare media across multiple travel modes		✓		✓		✓
	S-2. Provide seamless travel and payment with neighboring or intersecting transit systems	✓	✓		✓		✓
	S-3. Provide fare collection alternatives that allow for self-service and bring your own device		✓	✓	✓	✓	✓
	S-4. Provide customers with multiple payment options		✓	✓		✓	✓
	S-5. Retain and improve interoperability with SmartBenefits®		✓	✓			✓
	S-6. Expand support for cash customers	✓	✓		✓	✓	✓
	S-7. Expand SmarTrip® retail network					✓	✓
	S-8. Replace obsolete components and improve system maintainability	✓	✓		✓		✓
	S-9. Enhance ability to design and provide local fare products		✓		✓		✓
	S-10. Improve fare data reporting capabilities		✓		✓		✓
	S-11. Support off-vehicle payment and on-board inspection		✓				✓
	S-12. Provide capabilities to integrate other customer services with fare payment solutions		✓		✓		✓

ASSESSMENT

NVTC will continually measure progress and report to the transit systems as the actions of this strategic plan are taken. It will be important to remain flexible to changes in needs, technology, and funding availability. Progress will be assessed based on how the overall purpose and need of the strategic plan is being addressed. The annual assessment and reporting cycle that NVTC will use with support from the transit systems and WMATA is as follows, beginning upon implementation of this plan:



Provide a roadmap for advancing fare collection in the region

- Complete and adopt strategic plan
- Complete actions from strategic plan
- Report progress on actions to transit systems every six months; reflect changes to needs, technology, and funding

Provide input into WMATA fare collection modernization initiatives

- Document and report monthly to transit systems on coordination efforts with WMATA

Replace or upgrade the system as components near end of life

- Gather input from each transit systems quarterly on completed replacements and upgrades; document schedule to reflect changes to needs, technology, and funding

Keep pace with customer expectations

- Monitor customer feedback gathered by transit systems

Keep pace with changing technology

- Attend relevant industry conferences and report on findings
- Produce best practice research, as needed, to reflect changes in technology

BACKGROUND DOCUMENTATION

- Attachment A – Visioning Workshop Summary
- Attachment B – Follow-Up Survey
- Attachment C – Transit System Profiles

ATTACHMENT A – VISIONING WORKSHOP SUMMARY

Next-Generation Regional Fare Collection Visioning Workshop

November 1, 2017 10 a.m. - 1 p.m.
NVTC Offices, 2300 Wilson Blvd., Suite 620, Arlington, VA 22201

Attendees

Name	Organization
Lynn Rivers	Arlington County
Steve Yaffe	Arlington County
Pierre Holloman	City of Alexandria
Chloe Ritter	CUE
Wendy Sanford	CUE
Raymond Mui	DASH
Tristan Cunningham	DASH
Kris Miller	Fairfax County
Richard Wood	Fairfax County
Brian Jackson	FTA
Murat Omay	FTA
Jeremy Siviter	IBI Group
John Ward	IBI Group

Name	Organization
Paul Lavallee	IBI Group
Mike Harris	Kimley-Horn
Tyler Beduhn	Kimley-Horn
Scott W Gross	Loudoun County
Matt Cheng	NVTC
Patricia Happ	NVTC
Byren Lloyd	PRTC
Chuck Steigerwald	PRTC
Chris Henry	VRE
Clint Leslie	WMATA
Greg Garback	WMATA
Mark Phillips	WMATA
Terri Anomnachi	WMATA

Workshop Purpose

The purpose of the workshop was threefold: 1) educate the NVTC regional partners on current and emerging technologies and approaches to fare collection; 2) discuss and identify current needs and issues to be addressed by the fare collection system; and 3) develop a collective vision for what a next-generation fare collection system might look like. The vision will be communicated to WMATA as input to regional fare system planning for the next 10 years.

Workshop Summary

Introduction

- NVTC presented desired outcomes and a brief program history
- Meeting participants introduced themselves; staff from all Northern Virginia transit operators, WMATA, FTA, NVTC, and consultants were in attendance
- Murat Omay, ***Senior Transportation Program Analyst***, presented background information on FTA programs and initiatives, focusing on fare collection
    - Major themes: technology, collaboration, and partnership

- Focus has shifted to the customer trip (point A to point B) agnostic of travel mode
- Mobility On-Demand Sandbox Program (MOD)
  - Aims to provide a network of safe, reliable, affordable options for all
  - Project selection made in 2016 for funding 11 MOD public transportation projects
- Accessible Transportation Technologies Research Initiative (ATTRI)
  - Research and development of applications and systems to help all people, particularly those with disabilities, plan and execute their travel
- Multimodal Payment Integration
  - Allows FTA to better understand what is going on in the payment landscape and what the US Department of Transportation's (DOT) role is
  - Research activities are starting with an industry scan and will involve calls and forums with transit agencies and other organizations in the payment industry
  - Outcomes will be a roadmap and whitepapers

Current and Emerging Technologies

- Paul Lavallee, ***Director***, presented current and emerging fare collection technologies, trends, and examples
- Card-based—all fare information held on the card and does not require online communications (most existing systems)
- Account-based—card or other forms of payment are simply a token and all fare computation is done in the "back end" with online communications. Open payment and closed loop are two forms of account-based systems
- Mobile and self-service are trends—customers want a choice
- Transit agencies have been driving the push towards account-based systems
- Most transit customers still prefer a card over other media or payment methods
- There is a high penetration of open payment in Europe because the penetration rate of contactless credit cards is very high. This is not the case in the U.S.
- In the U.S., contactless credit cards likely will be overtaken by mobile payment systems
- Vancouver is a hybrid account and card-based system; paratransit transactions are handled through the dispatch center, which has worked well
- Mobile ticketing
  - Good for tying fare payment to trip planning
  - Trying for lighter solutions; getting more sophisticated
  - Generic hardware still lacking
  - Low penetration rates overall—people still prefer cards
  - Barcode and low energy Bluetooth are the current focuses

Procurement Approaches

- Paul Lavallee, ***Director***, presented procurement approaches for fare collection systems
- The ideal model (which does not fully exist yet) is a modularized system with individual subsystems interfacing with Application Programming Interfaces (API)
- Four approaches were presented, each with its own advantages and disadvantages
  1. "Forklift" replacement—entire system with single vendor
  2. Upgrade—modernize elements of existing system

3. Distributed systems (integrated)—deploy separate systems with front- and back-end integration
4. Distributed systems (non-integrated)—deploy separate systems with no integration

- Public-private partnerships may be challenging because private organizations would not have a lot of control of the revenue stream (ridership, quality of service, etc.); there needs to be a financial attractiveness to the private sector
- There is no universal model—agencies must determine their comfort with a range of control, risk, desired features, and funding approaches
- Risk and funding are major drivers to procurement approaches

Roundtable Updates on Fare Collection in the Region

- **City of Alexandria**—funding for its off-board payment initiatives has been repurposed or delayed
- **DASH**—began accepting student identification (ID) and have had some challenges with students properly displaying IDs; interested in implementing mobile ticketing and have had talks with a few vendors
- **Arlington County**—has expanded its iRide program (SmarTrip® product) for middle and high school students; has been participating in the Fast & Flexible Fare Payment Study with WMATA, DDOT, and Federal City Council (see below)
- **VRE**—launched mobile ticketing in 2015 and now about 30 percent of tickets are through mobile; allocation of SmartBenefits® is a challenge along with requiring passengers to be aware and awake for mobile ticket validation
- **CUE**—participating in a free student program in partnership with Fairfax County; the program is administered through the schools and requires students to show their ID when boarding
- **Loudoun County**—considering mobile ticketing for local fixed routes and is interested in understanding how SmartBenefits® can be incorporated. Loudoun is adamant that any new fare collection systems have to be integrated with the SmarTrip® backend reporting system so that ridership reports reflect the total system usage.
- **WMATA**—will begin working on their strategic plan for fare collection in the first quarter of 2018 in coordination with regional partners; making investments into SmartBenefits®; making website improvements
- **PRTC's OmniRide**—interested in implementing mobile ticketing within the next 18 months; have a request for proposals (RFP) out for a real-time passenger info mobile application; interested in microtransit
- **Fairfax Connector**—the student pass has been successful; recent upgrades to West Ox garage

- Mark Phillips, ***Senior Planner***, presented on the ongoing Fast & Flexible Fare Payment Study (Arlington, WMATA, the District Department of Transportation (DDOT), and the Federal City Council)
  - The study was motivated by the costs of bus dwell time and cash collection—a disproportionate amount of dwell time is due to cash transactions
  - Two related studies, a technical feasibility study and a financial analysis, provide a scenario-based assessment of costs and benefits of moving away from cash transactions
  - Will lead to limited pilot
  - After assessing technology options, mobile ticketing was selected for assessment under three scenarios and on five corridors in D.C. and Arlington

- Financial analysis is ongoing

Visioning

- Workshop participants began discussing goals, guiding principles, and the needs to guide planning for a next-generation fare collection system; NVTC will continue gathering input on the vision
- **Goals**—the following ideas were gathered for goals of a next-generation fare collection system: Forward-thinking system
  - Reliability
  - Flexibility
  - Single platform
  - Agility
  - Simple for customers to use
  - Maintain pace with customer expectations
  - Attractive to the next-generation of transit users
  - Remove barriers—promote ease of access
- **Guiding Principles**—the following ideas were gathered on how fare collection should be deployed throughout the region to meet the needs of the customer. Remain regional in some form, but agency-specific solutions may be needed
  - There is not a "one size fits all" approach
  - Different customers and trip types require different fare collection solutions
- **Needs (Customer)**—the following ideas were gathered on customer needs:
  - Multimodal—payment accepted on bus, Metrorail, VRE, and bike share
  - Bring your own device (BYOD)—self-service
  - Support cash customers
- **Needs (Agency)**—the following ideas were gathered on agency needs:
  - Backend reporting
  - Backend processing to apply discount
  - Leverage emerging retail networks
  - Forward compatible hardware
  - Cost effective
  - Maintainability
  - Scalability

Next Steps

- NVTC will follow up with meeting participants to continue gathering input on the vision

ATTACHMENT B – FOLLOW-UP SURVEY

Next-Generation Regional Fare Collection Visioning

Follow-Up Questions

Instructions: The following questions are intended to create a greater understanding of your agency's vision for next-generation regional fare collection. They are follow-ups from the in-person workshop held at NVTC on November 1, 2017. NVTC will gather information from each of the Northern Virginia transit agencies to develop a draft vision plan. Agencies will then review and provide additional input to the vision.

Please complete **one** survey on behalf of your agency and return it by email to Tyler Beduhn (tyler.beduhn@kimley-horn.com) before your scheduled call with NVTC. Do your best to answer all questions to facilitate a productive discussion call with the NVTC team.

Name: _____ Jurisdiction/Agency: _____ Date: _____

1. **Please respond to the following questions regarding your current fare collection system.**
   a. **What is working well? What do you like about it?**

   b. **What are your concerns with the fare collection system? In what ways is it not meeting your needs?**

   c. **What changes or additional capabilities would you like to see that are not offered now?**

   d. **What *don't* you want to see go away?**

   e. **Are you comfortable with the current governance structure for SmarTrip® or do you have suggestions on ways to improve?**

2. **Where is your agency on the scale below regarding preferences for a next generation fare collection system and regional involvement?**

1	2	3	4	5
Completely local fare system; little to no regional interoperability		Retain a regional fare system but allow local fare collection methodologies; some regional interoperability		Completely regional fare system; full regional interoperability

3. **Where is your agency on the scale below regarding cash customers and the tradeoff between providing cash customer convenience and efficient transit operations?**

1	2	3	4	5
Provide high convenience to cash customers				Achieve significantly improved transit operations

4. **Which of the following goals for a fare collection system are relevant and most important to your agency?**

   Mark your **top 5 goals** from the list below with an **X**.

   ____ Meet expectations of customers – provide a superior customer experience

   ____ Increase ease of use for customer

   ____ Increase ridership (identify rider types you would like to target) _____

   ____ Achieve seamless travel with neighboring or intersecting transit agencies

   ____ Achieve seamless travel across multiple modes

   ____ Increase pricing flexibility (fare products and passes, more direct control over creation of fare product)

   ____ Interoperability with SmarTrip

   ____ Interoperability with SmartBenefits

   ____ Reduce use of cash

   ____ Improve accessibility to cash customers

   ____ Improve transit operations (reduced dwell time, etc.)

   ____ Improve reliability of fare equipment

   ____ Provide forward-capable technology

   ____ Common reporting platform for all fare collection methods (e.g., SmarTrip and mobile ticketing reported together)

   ____ Other _____

5. **What major trends, if any, are you seeing in customer expectations and preferences for payment?**

6. **What are your leadership and Board's expectations and desires for fare collection?**

7. **In what areas does your agency anticipate having concern when implementing a future fare collection system?**

   Place an **X** in the appropriate row.

   ____ Funding - capital

   ____ Funding – operations and maintenance

   ____ Staff resources – skills and expertise

   ____ Staff resources – operations and maintenance staff

   ____ Business rules

   ____ Customer issues

   ____ Technical constraints

   ____ Other _____

8. **Where is your agency on the scale below regarding desire to coordinate fare collection procurements at the Northern Virginia level and greater regional level (Virginia, D.C., Maryland)?**

Northern Virginia	**1**	**2**	**3**	**4**	**5**
Greater Region	**1**	**2**	**3**	**4**	**5**
	Low need for coordinated procurements		Coordination but separate procurements		High need for regional procurements

9. **How important is it for you to understand what WMATA is planning on this topic? Is it relevant to your agency's plans?**

10. **What other areas do you want support and coordination with the other Northern Virginia transit systems? With WMATA?**

Answer the following questions if your agency is interested in implementing mobile ticketing in the near-term:

11. What is your timeline for implementing mobile ticketing?

12. How important are the following features of a mobile ticketing app for the near- and long-term?

Place an **X** in the appropriate column for each feature.

Feature	Near-Term Desire	Long-Term Desire	Not Desired
Visual validation			
Barcode validation			
Agency-specific app branding and visual appearance			
Trip planner			
Integration with transportation network companies (Uber, Lyft, etc.)			
Integration with bikeshare			
Integration with parking			
Real-time info			
Emergency alerts			
Ability to accept cash payment for mobile tickets			
Ability for mobile ticketing system to provide account-based fare collection and support other electronic tokens (e.g. smart watch, NFC etc.)			
Other _____			

13. What are your expectations for mobile ticketing?

Place an **X** in the rows that align with your expectations for mobile ticketing.

____ Improve customer perception of service

____ Improve agency brand recognition

____ Increase ridership

____ Reduce reliance on cash on the bus

____ Reduce dwell time

____ Reduce reliance on ticket vending machines

____ Provide a means to communicate with customers

____ Generate non-fare revenue

____ Benefits outweigh the costs

____ Other _____

14. In what areas would you benefit by collaborating with other Northern Virginia transit systems on mobile ticketing?

Place an **X** in the rows to indicate areas of collaboration you would benefit from.

____ Developing functional requirements

____ Procurement – e.g., NVTC establishes contract vehicle and base capabilities; agencies purchase from contract and work directly with vendor for custom deployment

____ Implementation and project management

____ Customer service

____ Marketing

____ Interagency mobile tickets and transfers

____ Ensure customer can use app to buy tickets for other regional agencies without new download

____ Other _____

15. What are your ideas about partial or full regional procurements?

16. Are you interested in seeking regional funding through NVTC and/or pooling resources for implementing mobile ticketing?

ATTACHMENT C – TRANSIT SYSTEM PROFILES

Individual transit system profiles that document findings from the follow-up survey and calls after the workshop are included on the following pages.

Arlington Transit

Summary

Arlington Transit's position is characterized by a desire for a regional, multimodal payment system. ART also wants to reduce cash handling and acceptance, particularly on priority corridors like Columbia Pike and the Metroway. There is a desire to proceed alongside WMATA with mobile ticketing given that Metrorail and Metrobus provide a lot of service in Arlington, though ART is not opposed to coordinating with other Northern Virginia transit systems on this effort.

Top Goals for Fare Collection

- Achieve seamless travel with neighboring or intersecting transit systems
- Achieve seamless travel across multiple modes
- Interoperability with SmartBenefits®
- Improve transit operations
- Utilize forward-capable technology

Existing Fare Collection System

Pros

- Single, regionwide system
- Financial transactions on backend
- Seven-day regional bus pass

Cons

- Delays caused by on-board cash loading to SmarTrip® cards
- Obsolete components

Desired Capabilities

- Single, multimodal platform for payment and information
- Multiple payment options, including mobile
- Shift cash to retail networks
- Non-proprietary and interoperability
- Off-vehicle payment and on-board inspection
- All-door boarding

Must Keep

- Regionalization

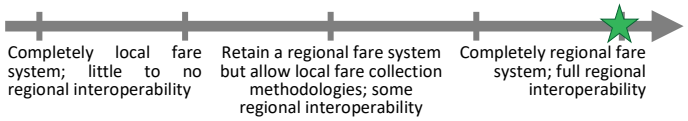
Customer Expectations

- Fast and easy payment

Transit System Expectations

- Transition away from cash

Regional Involvement Position



Very high desire for regionalism and coordinated procurements

Cash Collection Position

Very high desire to reduce or eliminate cash handling to achieve better operations. Could first see elimination of cash on priority corridors.

Mobile Ticketing Position

Timeline: Implementation within 18 months

Status:

- Completed off-board fare payment feasibility study with WMATA, DDOT, and Federal City Council
- Considering piloting mobile ticketing with all-door boarding with WMATA
- Open to coordination with other Northern Virginia transit systems

City of Fairfax CUE

Summary

CUE's position is characterized by a desire and need for regional involvement given its small size and many transit connections to the larger region. Its vision is to make fare payment as easy as possible for the customer, increasing transit's attractiveness. While there is a desire to reduce delays caused by on-board cash loading to SmarTrip® cards, other options need to be provided to maintain convenience for cash customers.

Top Goals for Fare Collection

- Achieve seamless travel with neighboring or intersecting transit systems
- Achieve seamless travel across multiple modes
- Increase pricing flexibility
- Improve reliability of fare equipment
- Utilize forward-capable technology

Existing Fare Collection System

Pros

- Individual fare structures
- Ability to promote and monitor local fares and programs

Cons

- Delays caused by on-board cash loading
- Obsolete components
- Need for more off-board loading options

Desired Capabilities

- Ridership by stop tied to farebox
- Mobile and open ticketing
- Options to eliminate on-board cash loading
- More off-the-shelf parts instead of custom

Must Keep

- Ability to set individual transit system fares
- Ability to pay cash, in some form

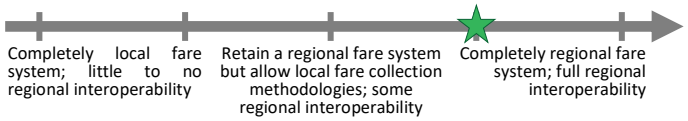
Customer Expectations

- Easier process for purchasing fares and making the trip

Transit System Expectations

- Minimize capital and operating costs
- Opportunities for efficiencies
- Maintain ridership and service quality

Regional Involvement Position



Wants to be as regional as today in the future, if not more. Wants to be as, if not more, regional in the future than it is today. Local autonomy over fare policies is needed. High desire for coordinated Northern Virginia procurements.

Cash Collection Position

Desires efficiency but needs to support cash customers. Most delays come from loading value, not single-ride customers.

Mobile Ticketing Position

Timeline: Unknown

Status:

- Interested, but not actively pursuing; would be willing to pilot technologies
- Desires coordination with other Northern Virginia transit systems

Alexandria DASH

Summary

DASH's position is characterized by a desire to coordinate on a regional fare collection system but to also innovate on some efforts independently of WMATA. Its vision is to eliminate fare-related barriers to using the service. DASH is planning to implement mobile ticketing and is open to coordinating this effort with other Northern Virginia transit systems on the same timeline.

Top Goals for Fare Collection

- Increase ease of use for customer
- Increase ridership
- Achieve seamless travel with neighboring or intersecting transit systems
- Interoperability with SmarTrip®
- Improve transit operations

Existing Fare Collection System

Pros

- Widespread acceptance of SmarTrip®
- Simplicity of stored value
- Mature product

Cons

- Not keeping pace with technology and customer expectations
- Not enough transit system control over fare products

Desired Capabilities

- Improved, point of sale capabilities
- Promotions or limited-use fare products
- Streamline customer complaint response and required involvement of AFC Engineering
- Faster availability of products after purchase
- Leverage existing communication capabilities of buses

Must Keep

- Widespread regional acceptance

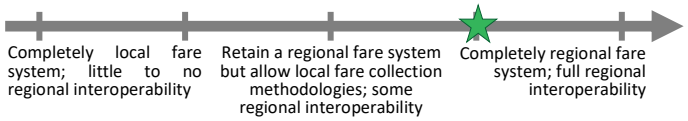
Customer Expectations

- Credit card acceptance

Transit System Expectations

- Reduce fare-related barriers
- Pilot new technologies that make it simpler and easier to pay fares

Regional Involvement Position



High desire for regionalism and coordinated Northern Virginia procurements

Cash Collection Position

Has eliminated on-board loading and wants to reduce barriers to using the service

Mobile Ticketing Position

Timeline: Implementation within 12-18 months

Status:

- Exploratory phase; have had discussion with vendors and VRE
- Open to coordination with other Northern Virginia transit systems that can move on the same timeline

Fairfax Connector

Summary

Fairfax Connector's position is characterized by a desire to coordinate closely with WMATA on fare collection efforts. It prefers WMATA maintain its centralized role for the region. Fairfax Connector has many in-house technical experts and is willing to use its scale to support other Northern Virginia transit systems in fare collection collaborations. Fairfax County plans to implement mobile ticketing for the Richmond Highway bus rapid transit (BRT), which is in preliminary design.

Top Goals for Fare Collection

- Increase ease of use for customer
- Achieve seamless travel with neighboring or intersecting transit systems
- Achieve seamless travel across multiple modes
- Interoperability with SmartBenefits®
- Utilize forward-capable technology

Existing Fare Collection System

Pros

- Ease of use for customers
- Regionally seamless system

Cons

- Obsolete components
- Limited by quantity of fare levels allowed
- Data latency when generating reports
- Slow process of fare table changes

Desired Capabilities

- Web-based access to fare and ridership data by multiple users
- Promotions
- Off-board loading and payment
- Mobile ticketing

Must Keep

- Centralized role of WMATA
- Amount of on-board hardware—additional hardware would create visibility issues

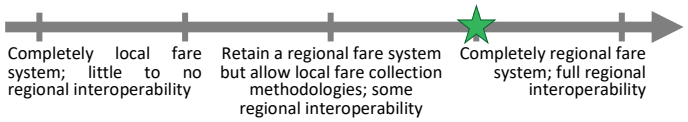
Customer Expectations

- Promotions and benefits for riding

Transit System Expectations

- Supportable technology
- Seamless travel
- Regional system
- Ease of use for customer

Regional Involvement Position



Will mirror WMATA but wants to expand fare levels

Cash Collection Position

Will not be eliminating on-board loading in the near-future. Cash use varies by location in the county.

Mobile Ticketing Position

Timeline: With rollout of Richmond Highway BRT

Status:

- Interested, but not actively pursuing
- Wants to be involved in all regional conversations as initiatives can change quickly

Loudoun County Transit

Summary

Loudoun County Transit's position is characterized by a desire to maintain a regional fare collection system without forcing the system to do everything. It desires a system that is reliable, easy to maintain, and flexible to meet local needs and the evolving expectations of customers. It is planning to implement electronic fare collection on its local routes and is evaluating mobile ticketing.

Top Goals for Fare Collection

- Increase ease of use for customer
- Achieve seamless travel with neighboring or intersecting transit systems
- Increase pricing flexibility
- Interoperability with SmartBenefits®
- Utilize forward-capable technology

Existing Fare Collection System

Pros

- Historical reliability
- Ease of maintenance
- One card for multiple systems

Cons

- Obsolete components
- Not keeping pace with technology and customer expectations
- Growing expense of operations

Desired Capabilities

- More flexibility and greater ease in implementing fare products
- Ability to accept multiple payment methods
- Customer- and operator-friendliness
- Ongoing training

Must Keep

- The regional electronic fare collection system itself
- Accountability the system provides for drivers
- Data reporting capabilities

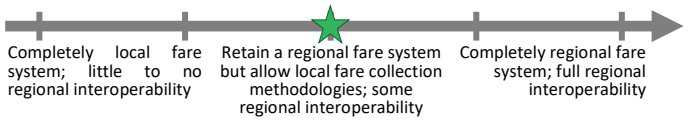
Customer Expectations

- Technology savvy customers
- Mobile payment and credit/debit card acceptance

Transit System Expectations

- Maintain pace with current technology
- Accountability and traceability
- Agility in implementing upgraded system—not dependent on WMATA

Regional Involvement Position



More flexibility to implement local fare collection initiatives, but not completely isolated

Cash Collection Position

Accommodate cash customers but encourage transition to electronic payment. Commuter buses could go cashless, and loading could be first eliminated on buses serving Metro.

Mobile Ticketing Position

Timeline: Unknown

Status:

- Data gathering and evaluation
- Needs clear answers on concerns related to transfers, SmartBenefits®, multi-system integration, and data reporting before making a decision
- Open to coordination with other Northern Virginia transit systems if there is benefit

PRTC

Summary

PRTC's position is characterized by a desire to maintain a regional fare collection system with flexibility to pursue its own fare collection initiatives. PRTC's vision is to be more forward-thinking and attract new customers to the service, and fare collection technology should support this. PRTC may implement mobile ticketing for local routes on its own but is open to coordination with other Northern Virginia transit systems on this effort.

Top Goals for Fare Collection

- Meet expectations of customers
- Achieve seamless travel with neighboring or intersecting transit systems
- Increase pricing flexibility
- Interoperability with SmartBenefits®
- Utilize forward-capable technology

Existing Fare Collection System

Pros

- Relatively seamless regional mobility with single fare media
- Farebox data reporting

Cons

- Aging technology
- Limited ability to design and provide fare products

Desired Capabilities

- More flexibility and greater ease in implementing fare products
- Short-term special fares
- Ability to accept new payment methods (Apple Pay, etc.)

Must Keep

- Regional cooperation
- Transfer agreements
- Ease of SmartBenefits®
- Cash acceptance
- Level of data available

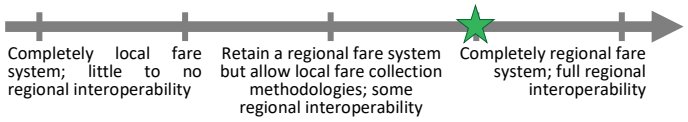
Customer Expectations

- Fare payment is not a major concern
- In general, mobile payment and multimodal integration

Transit System Expectations

- Ease of use and customer experience
- Innovative technology
- Flexible products

Regional Involvement Position



Maintain current level of regional involvement but pursue some initiatives on its own

Cash Collection Position

Currently still need to allow on-board cash payment and loading

Mobile Ticketing Position

Timeline: Implementation within 18-24 months

Status:

- Exploratory phase; have had discussions with vendors
- Likely to do mobile ticketing on a self-contained service like local routes
- Open to coordination with other Northern Virginia transit systems that can move on the same timeline

VRE

Summary

Unlike the bus operators in Northern Virginia, VRE currently operates its own paper ticket and mobile ticketing fare collection systems. VRE plans to continue operating and innovating its existing fare collection systems. It recognizes the importance of finding a regional solution that meets VRE's needs and can be utilized across all modes, and desires involvement in the planning of such a system. VRE's vision is to transition more customers to mobile ticketing.

Top Goals for Fare Collection

- Meet expectations of customers
- Increase ease of use for customer
- Achieve seamless travel with neighboring or intersecting transit systems
- Achieve seamless travel across multiple modes
- Interoperability with SmartBenefits®

Existing Fare Collection System

Pros

- Overall effectiveness of paper ticket and mobile ticketing systems
- Cost-effectiveness of mobile ticketing
- Backend customer service of mobile ticketing

Cons

- Cannot directly access SmartBenefits® for mobile ticketing
- Conductor effort and required customer awareness for ticket validation

Desired Capabilities

- Ability to accept new payment methods (Google Wallet, Apple Pay)

Must Keep

- Visual fare inspection and enforcement

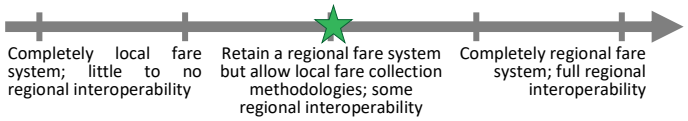
Customer Expectations

- More features on the mobile ticketing app

Transit System Expectations

- Interoperability with regional system
- Cost-effectiveness
- Passenger convenience

Regional Involvement Position



Finding a regional platform that truly meets VRE's needs is important but VRE does not have the flexibility to change existing procedures and infrastructure

Cash Collection Position

Currently does not accept cash at ticket vending machines and is not getting pressure from customers

Mobile Ticketing Position

Timeline: Already implemented

Status:

- Adding additional features to the app: real-time train arrivals, customer feedback, app links to Lyft, Car2Go, Zipcar, and Capital Bikeshare (still separate payment)
- No plans to change to a different mobile ticketing system but interested in advancing the adoption of mobile ticketing across the region
- Open to participating in a Northern Virginia solution if the integration is technically feasible