DISTRICT OF COLUMBIA

STATE RAIL PLAN

EXECUTIVE SUMMARY

2017

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GOVERNMENT OF THE DISTRICT OF COLUMBIA
MURIEL BOWSER, MAYOR

The District Rail Network in 1877

Source: John Hopkins University libraries online

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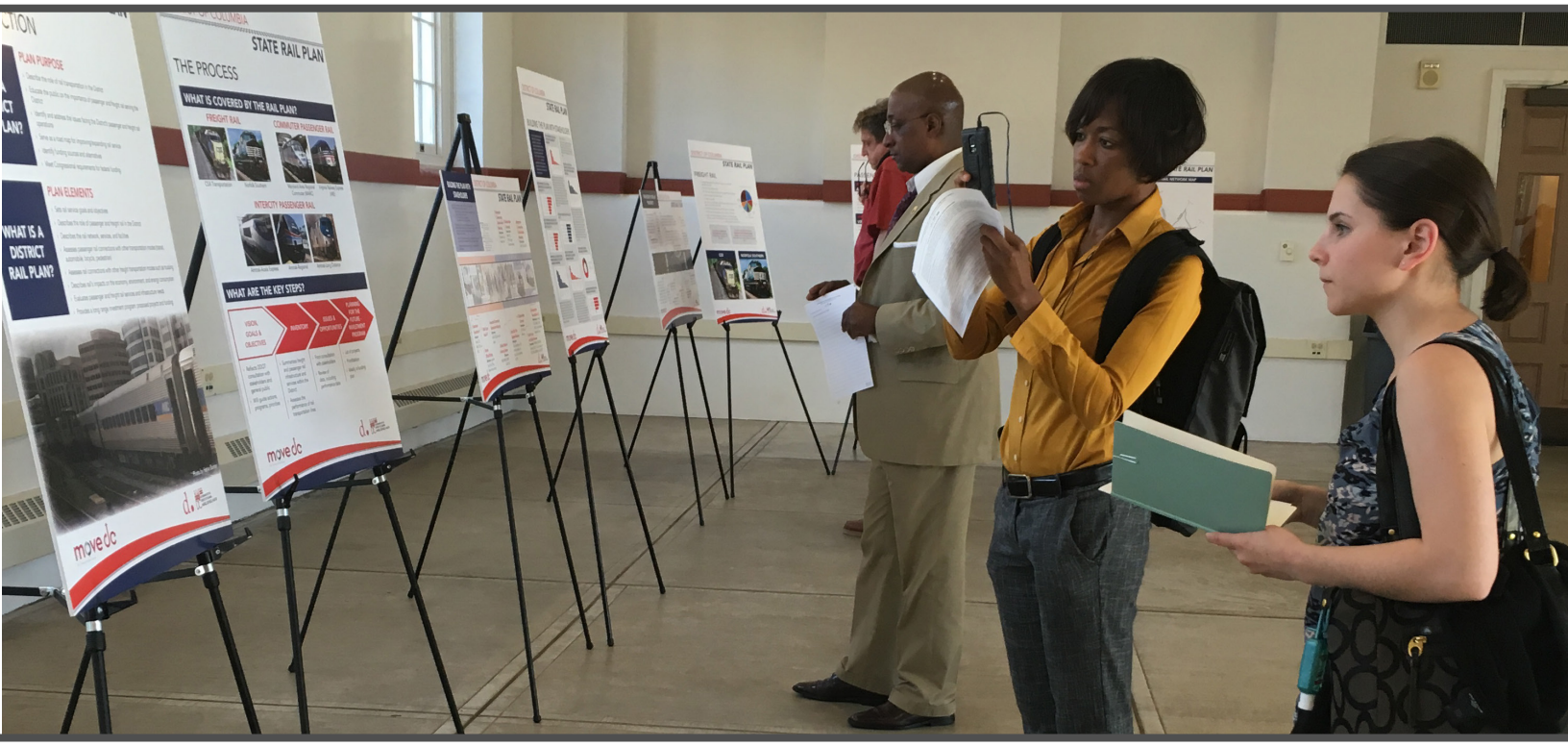


I. An Introduction to the Rail Plan

This document positions the District to proactively progress the vision for its rail network and facilities and implement improvements with federal funding.

The District of Columbia State Rail Plan (SRP) provides an actionable and pragmatic roadmap for future rail investment and policies in the District. The plan has been prepared by the District Department of Transportation (DDOT) to meet the requirements of the federal Passenger Rail Investment and Improvement Act (PRIIA), passed in 2008, as well as the subsequent State Rail Plan Guidance issued by the Federal Railroad Administration (FRA) in 2013. PRIIA requires each state to have an approved rail plan as a condition of receiving future rail funding for either passenger or freight improvements.

The primary components of the SRP are:

- A discussion of how stakeholder input was incorporated into the plan (see Chapter 2);
- A description of the District's existing rail system (Chapter 3);
- A discussion of passenger and freight needs and opportunities, and proposed improvements to meet these needs (Chapters 4 and 5), and
- The overall SRP vision and goals and a proposed investment program to address identified opportunities and needs (Chapter 6).

This SRP is the first rail plan completed by the District of Columbia in over 30 years and focuses on intercity passenger rail, freight rail, and commuter rail. Within the District, freight rail is provided by CSX Transportation, with Norfolk Southern holding rights for service. Intercity passenger rail is provided by Amtrak, and commuter rail service is provided by Maryland Area Regional Commuter (MARC) and the Virginia Railway Express (VRE).

II. Public Engagement

Developing the State Rail Plan included comprehensive outreach to and input from the public and key agencies. Over a nine-month period, involvement included stakeholder roundtables, stakeholder briefing the creation of a public- facing website as shown in Figure 1, an online survey, public meetings, and workshops.

Key agencies participated in two stakeholder roundtables to discuss rail needs as well as potential opportunities in September 2015 and in May 2016.

Figure 1: The District Rail Plan Website

Source: www.dcrailplan.com

A public outreach survey was conducted from late January through early March 2016. The survey gained more than 1,000 responses and highlighted what people who live and work in the District thought of as the most important considerations for the future of passenger and freight rail.

DDOT also hosted two public meetings to inform the public of the SRP planning work and to solicit input in September 2015 and in June 2016. Additionally, two workshops were held to address plans for L'Enfant Station (January 2016) and SRP goals (April 2016).

This public outreach informed the development of a vision for the District's rail network, as well as the goals and objectives necessary to fulfill this vision.

III. The District's Rail Network

The District plays an important role in the East Coast's passenger and freight rail network – in both the Northeast Corridor and the Southeast.

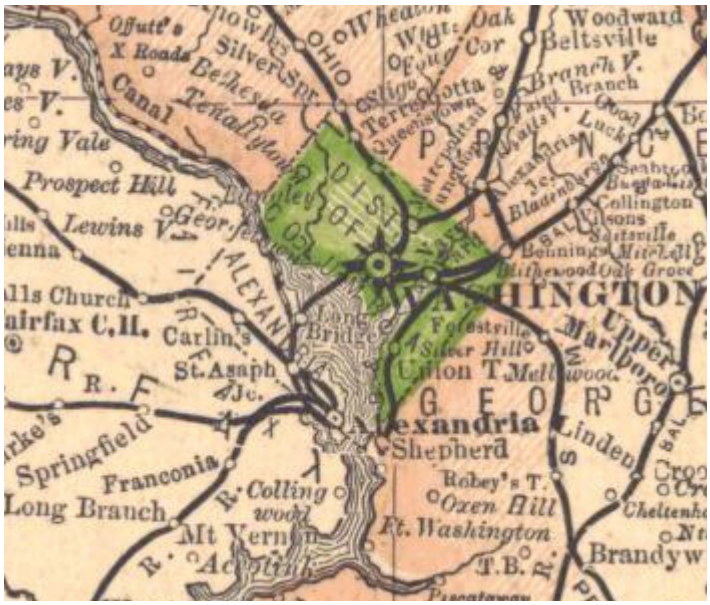
The rail network of the District of Columbia consists of 26.7 miles of rail line. Of these, 21.0 miles are owned and controlled by CSX, while 5.6 are owned and controlled by Amtrak shown in Figure 3. In addition to active rail lines, there are 6.7 miles of inactive railway that parallels the Anacostia River south of Benning yard known as the Shepherd Branch, which is owned by CSX. The District includes several rail yards used for passenger rail operations, including the Ivy City Yard, the Coach Yard, and the Wedge Yard. The largest freight yard located in the District is the Benning Yard.

Today's rail network in the District is the result of competitive forces between private railroads stretching back to the 19th Century. The first rail line established was the Baltimore & Ohio Railroad (B&O) in 1835, which is today's CSX Capital Subdivision on which the MARC Camden Line service operates. Growth continued through the 1800s as more railroads entered the market as shown in Figure 2. By 1900, the rail lines comprising the current system were essentially in place. In the early 1900s investments in an upgraded rail bridge over the Potomac, the Long Bridge, and a new Union Station largely established the network we have today. Some historic rail lines built during the 19th Century, have since been abandoned, such as the corridor that is now the Capitol Crescent trail, between Georgetown and Bethesda.

The District has emerged as a major rail gateway in the Mid-Atlantic. Washington Union Station represents the terminus of the Amtrak-owned Northeast Corridor (NEC). It is also the northern terminus of the planned Southeast High Speed Rail Corridor that will eventually connect Georgia, South Carolina, North Carolina, and Virginia to the nation's capital and the NEC.

The District is the end point of the rapidly growing MARC and VRE commuter rail services, and it is also the junction linking CSX's northeast, southeast, and midwest freight operations. As such, it is a key location in the CSX National Gateway initiative to improve rail traffic flows between the Eastern Seaboard and Midwest. Amtrak and CSX each host other railroads that have been granted access to their lines through trackage rights agreements. NS and VRE have rights over the CSX line south of the First Street Tunnel. NS has rights to the CSX line, which include operation through the Virginia Avenue Tunnel. MARC and Amtrak trains operate over the CSX Metropolitan Subdivision line to Point of Rocks, MD and MARC trains run over the CSX Capital Subdivision line to Baltimore. CSX, MARC, and NS each have trackage rights over the Amtrak-owned NEC.

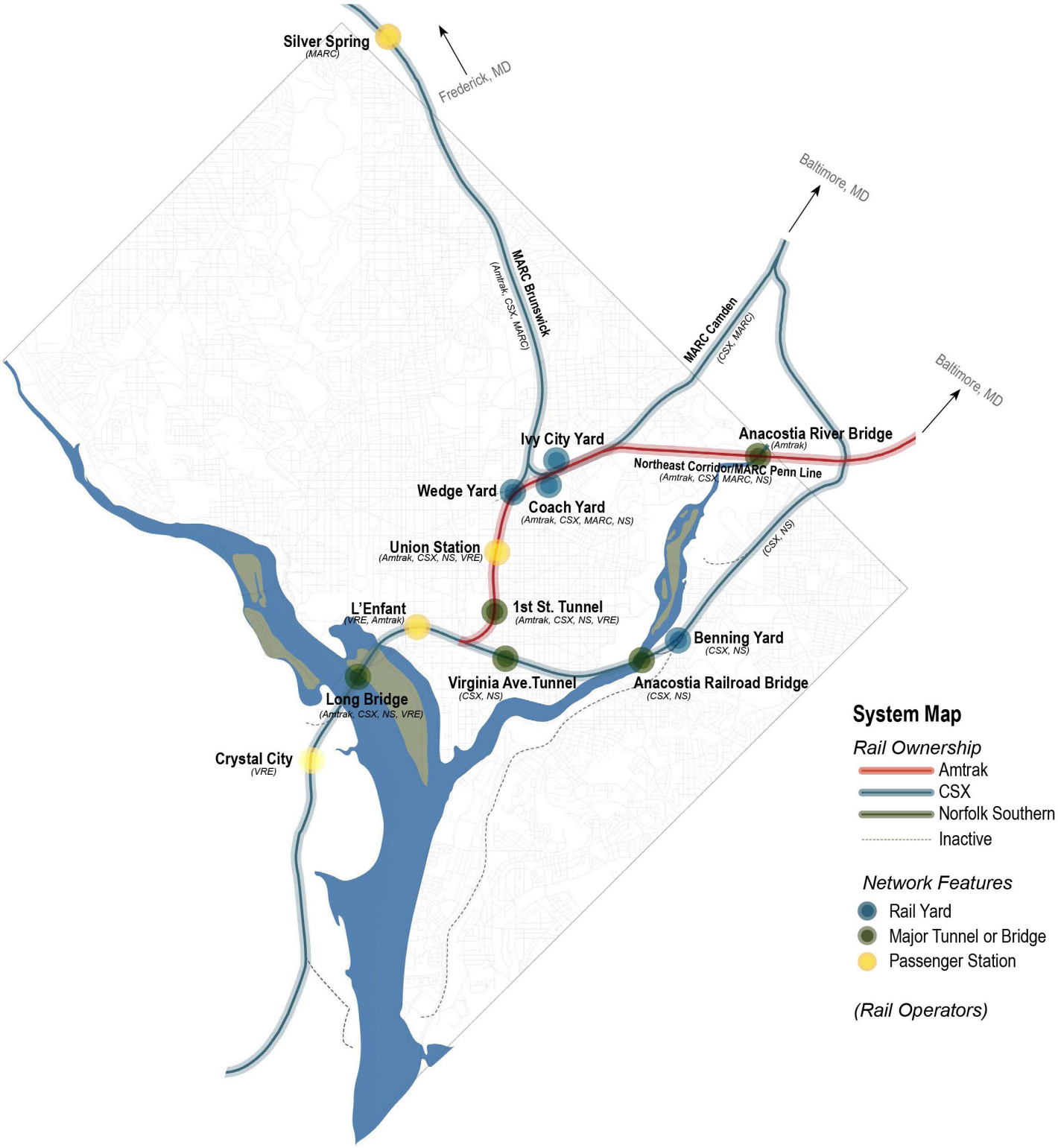
Figure 2: The District Rail Network in 1881



Source: University of Alabama online

Source: University of Alabama online

Figure 3: The District Rail Network in 2016

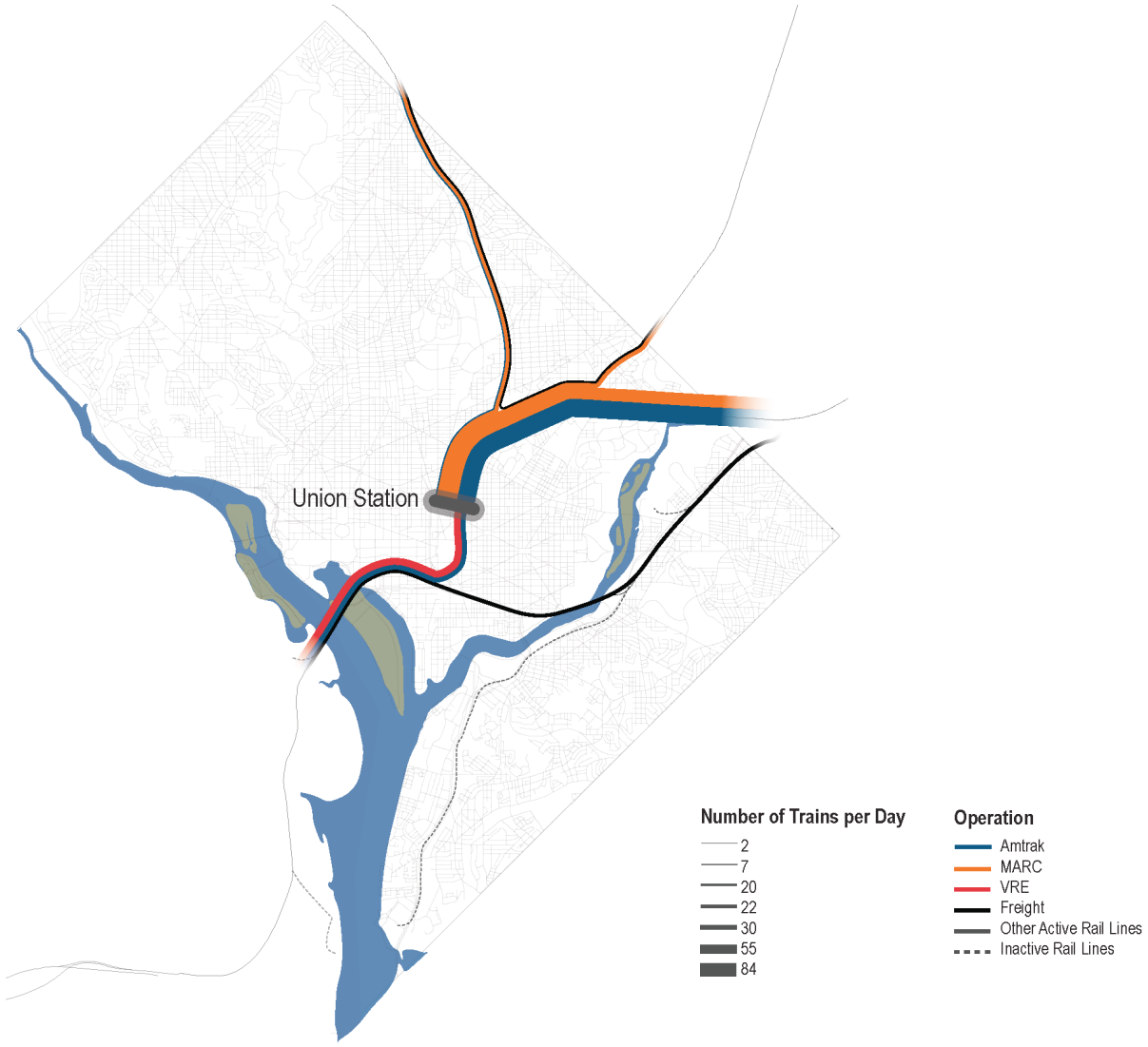


IV. District Rail Operations

Passenger and freight rail have experienced tremendous growth in recent years, and this growth is expected to continue well into the future.

Although not large geographically, the District's rail network plays a major role in both the metropolitan and national rail networks for both passenger and freight. The District serves as the southern terminus of the NEC with the second busiest rail station in the country while also connecting freight networks from the southeast, midwest, and northeast. Figure 4 shows the number of trains per day by operator.

Figure 4: Trains Per Day by Operator



V.1 Passenger Rail

Over 220 trains pass through, depart, or arrive in the District on a typical weekday. Of these, most are passenger rail. MARC operates over 90 trains north of Union Station on a typical weekday, of which approximately 55 are on the Penn Line, and approximatly 20 are on both the Brunswick Line and Camden Line. Amtrak operates a total of 86 trains to Union Station, over 10 of which travel south of the District. VRE also operates over 30 trains south of Union Station each weekday. All of the trains mentioned serve Union Station and most trains terminate there. Union Station is the second busiest rail passenger station in the nation after New York City's Penn Station.

Train traffic over the District's rail network is expected to increase significantly. The Long Bridge Phase II Study predicts that train traffic will more than double from 2013 levels by 2040 (see Table 1) driven largely by increases in the number of Amtrak, MARC, and VRE passenger train offerings. Ridership at Union Station (excluding Metrorail) is expected to grow from 14 million in 2013 to 34 million in 2040 (see Figure 5). VRE/Amtrak ridership at L'Enfant Station is expected to increase from 1.9 million in 2015 to 4.1 million in 2040 (see Figure 6).

IV.2 Freight Rail

Freight operations in the District consist of approximately 10 to 25 trains per day almost entirely limited to the service and tracks of CSX. Freight seldom passes through the First Street Tunnel through Union Station, and little freight is carried on the NEC within the District. CSX provides all freight service in the District, although it handles some NS cargo through a haulage agreement. The vast majority of rail freight on the District rail network passes through the District, although a small amount of waste and scrap metal and other commodities originate from the District and a small amount of coal, waste and scrap metal terminate in the District.

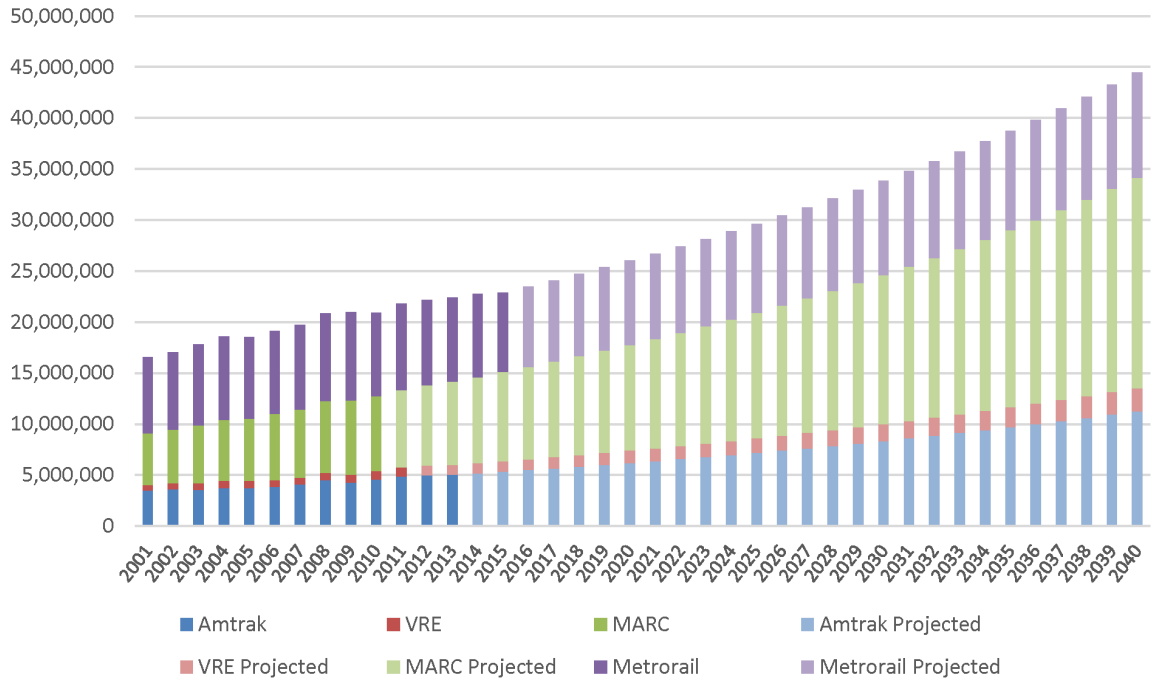
Table 1: Forecast Trains Per Day Over Long Bridge

Year	Freight	Passenger	Total
2016	18	60	78
2040	48	144	192

Source: Long Bridge Phase II Study, 2017

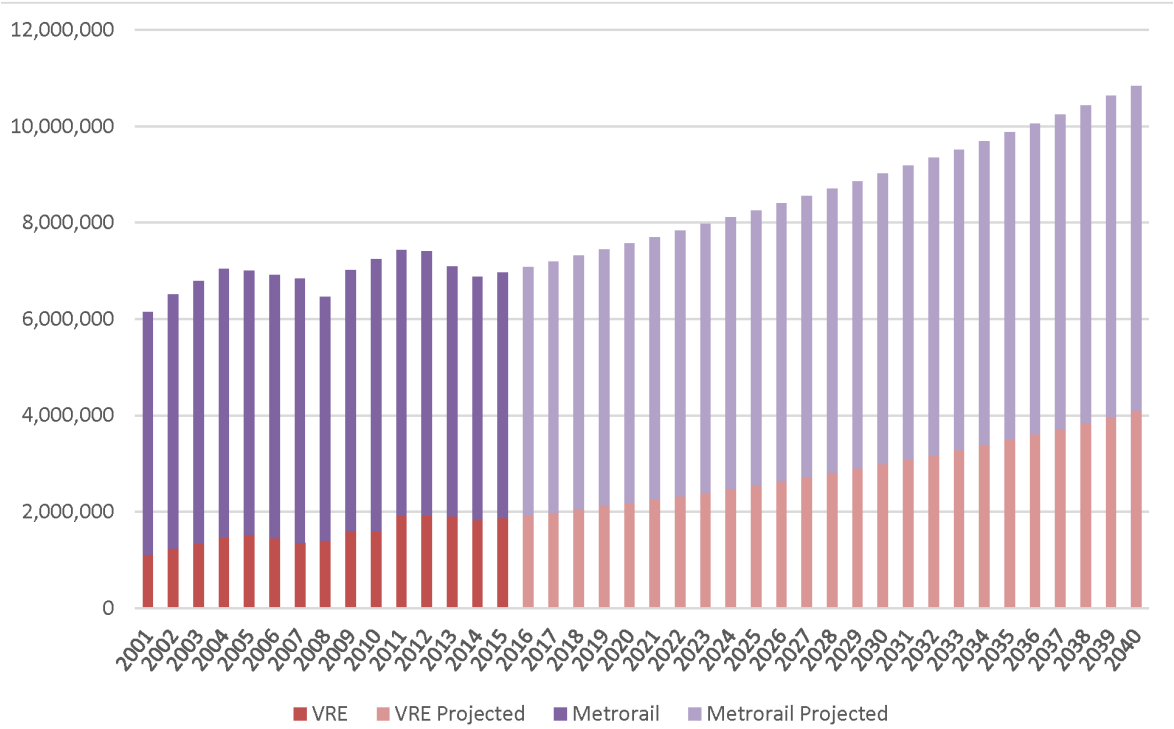
Although freight rail traffic in the District declined between 2005 and 2014, over a long-term planning horizon, freight traffic is expected to grow with the U.S. economy.

Figure 5: Amtrak, VRE, MARC and Metro Historic and Projected Annual Ridership at Union Station*



Source:VRE, MARC, WMATA

Figure 6: VRE and Metrorail Ridership Recorded and Projected at L'Enfant Station*



Source:VRE, WMATA

**Ridership projections are based on information provided by rail agencies in 2016 and may differ from future modeling efforts conducted as part of NEC FUTURE, the Washington Union Station EIS, and the Long Bridge EIS*

IV.3 Safety and Security

The District's rail system faces unique safety and security issues due to its proximity to the nation's capital. The CSX mainline passes within several blocks of the U.S. Capitol and through densely populated neighborhoods. A derailment or terrorist act that causes an explosion, fire, or release of toxic substances from rail cars passing through the District is a potential national security concern.

According to CSX, no high hazardous materials, including toxic by inhalation/ poison by inhalation products, certain explosives, and spent nuclear fuel pass through the District. No trains of crude oil pass through the District. Other types of hazardous materials do pass through the District, and the CSX website indicates that in 2015, about seven percent of carloads passing through the District contained hazardous materials.

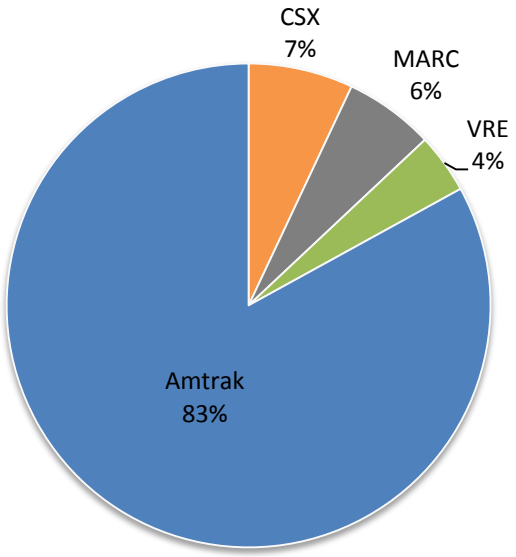
154 train accidents have occurred within the District since 2000, 93% of which are passenger rail related (see Figure 6). The FRA requires railroads to report a variety of accidents/incidents as they relate to the safety of rail operations. According to the FRA's safety database, 1,828 accidents/incidents occurred on the District's rail network over the past fifteen years with the vast majority consisting of minor passenger related injuries mostly involving boarding or disembarking from trains at Union Station. Of these, 11 resulted in fatalities; 1,666 involved injuries, resulting in 1,698 involved injuries; and 151 were property damage only (see Table 2). Of the fatalities, nine were trespassers struck by trains. The other two were Amtrak passengers who later died from injuries sustained from a fall while disembarking from a train or walking on the platform. Of the injuries, most either were Amtrak employees reporting work-related injuries or illnesses.

Table 2: Rail-Related Accidents and Incidents in the District, 2000 – 2014

	2000 - 2014 Total
Fatalities	11
Injuries	1,698
Property Damage Only	151
Total Accidents/ Incidents	1,828

Source: FRA Safety Database

Figure 6: Percentage of Train Accidents by Reporting Railroad (2000 – 2014)



Source: FRA Safety Database

V. The Rail Plan Vision

DDOT has developed a vision for the District's long-term rail system and a series of goals to meet this vision.

V.1 Vision, Goals, and Objectives

DDOT has defined the vision for its rail network through the SRP development process. The vision is consistent with previous DDOT planning efforts, namely moveDC, and includes input from the public, industry and agency stakeholders while considering safety and future needs.

> *The District of Columbia will preserve and enhance our rail transportation system to move people and goods to, through, and from the Nation's Capital in a manner that encourages economic opportunities while fostering safe, secure, sustainable, and reliable transportation choices.*

The vision will be realized through an integrated process of planning and implementing improvements in the rail system as it intertwines with the economy, environment, and communities of the District, continually engaging business and resident stakeholders, and the owners and operators of rail service. The rail system vision is expressed across five specific goals:

1. Enhance Safety and Security
2. Increase Operational Flexibility
3. Provide Added Rail Capacity
4. Grow Economic Opportunity
5. Improve Quality of Life

Each of these goals are further developed in Table 3.

Figure 7: McMillan Plan

Source: Mcmillan Plan

Table 3: Goals of the District of Columbia State Rail Plan

Enhance Safety and Security
Facilitate appropriate and effective rail oversight to safeguard general public and critical infrastructure.
Support maintenance and upkeep of rail infrastructure in the District to highest standards to maintain a state of good repair.
Provide rail safety planning, emergency response and education at the community level.
Maintain appropriate rail perimeter control to minimize community impacts.
Increase Operational Flexibility
Work with regional rail stakeholders to identify and address chokepoints in the rail network to minimize operational delays and improve efficiency.
Support the arrangement of track, terminal, and yard layouts to increase flexibility and reduce constraints on rail throughput.
Provide Added Rail Capacity
Facilitate rail capacity enhancement projects to augment the ability to move people and goods to and through the District.
Support improvements in station rail and person capacity along with horizontal and vertical circulation to allow seamless connectivity to other modes of transportation.
Encourage investment in terminal yard capacity to meet service needs.
Grow Economic Opportunity
Identify industrial, intermodal, or freight rail service opportunities to capitalize on rail service in the District for economic growth and equitable development outcomes.
Use passenger rail service and station enhancements as anchors for mixed-use and commercial development.
Improve Quality of Life
Promote rail as a means to move passengers and freight in a way that sustainably improves and protects environmental quality and natural resources in the District.
Utilize rail infrastructure to improve multimodal accessibility to community destinations.
Support rail projects that are of high visual quality and celebrate the historic role of rail in the District.

VI. Projects and Initiatives

Numerous rail planning initiatives are currently underway in the District. The SRP identifies how DDOT will participate in these efforts.

Projects and initiatives identified within the District of Columbia SRP are intended to support and promote the goals put forward in this plan in order to advance DDOT's vision. These efforts consist of expanded station platforms, widened bridges, additional rail storage capacity, and a Rail Safety Office.

The District has a unique relationship with many of the rail-related investments that occur within its borders. In many cases, the District will help plan or play a coordinating role and represent an important stakeholder, but funding and project management will primarily fall to other governmental or private entities.

Rail projects are organized based on whether they are a near-term need, future need, a potential future need, or the need still must be determined.

An overview of major efforts advanced through the SRP follows. It includes infrastructure investments, generally divided into passenger and freight elements. In addition to infrastructure projects, policy and programming initiatives were also are included.

The initiatives represent potential policies directing the District's future courses of action, organizational recommendations, or potential future areas of study

Highlights of the plan projects and initiatives are in the following sections.

VI.1 Safety and Security

During development of the SRP, District residents expressed concern over the safety of freight rail lines passing through the District, particularly with potential risks posed by hazardous materials.

In response to safety and security concerns, District government recently created a Rail Safety Office, which will have the ability to complete rail inspections on all rail infrastructure. This new office will be tasked to coordinate with FRA and District agencies, specifically DOEE, DDOT, FEMS, and HSEMA to manage safety and emergency response issues.

Figure 8: CSX First Responder Training

Source: CSX

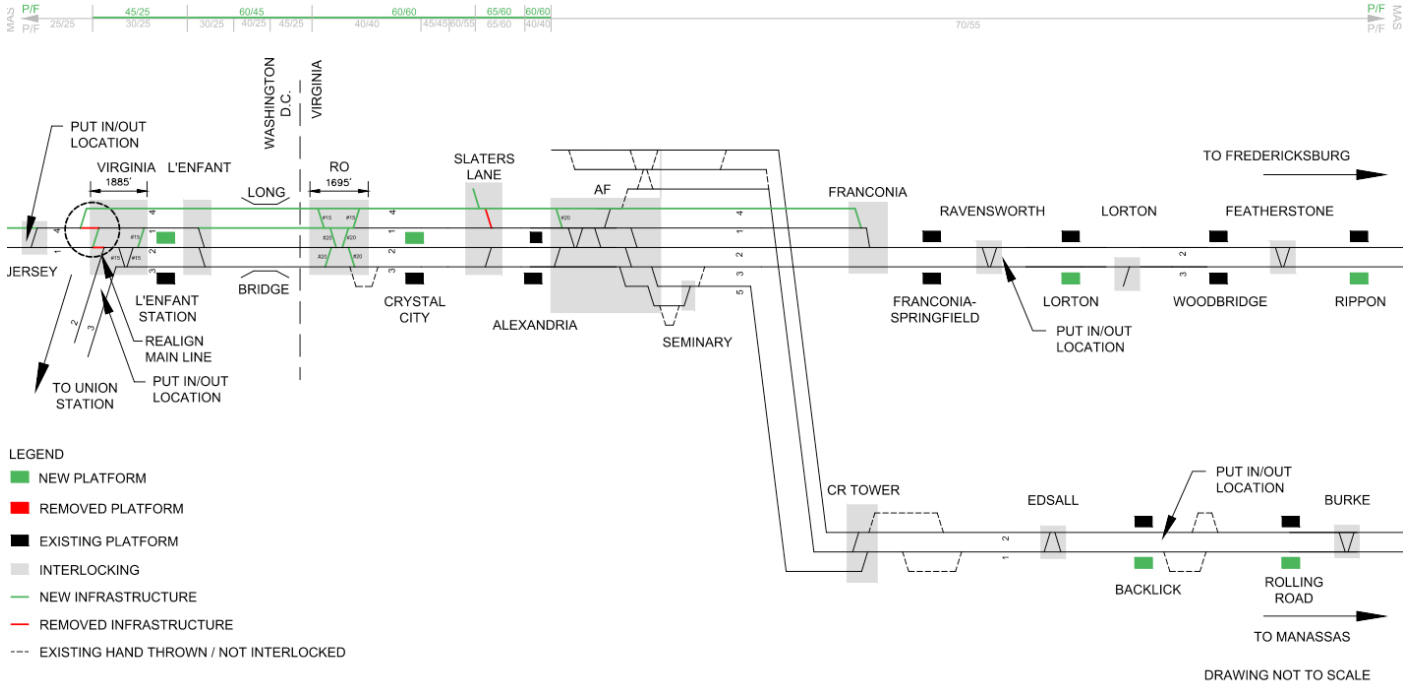
VI.2 Long Bridge

The current Long Bridge was originally constructed in 1904. The bridge is a two-track railroad bridge and was modified in 2014 as part of the National Gateway initiative to provide the required bracing and needed railcar clearance for double-stack trains.

Current and projected expanded cross-Potomac River passenger and freight services have led DDOT to further study needs at this crossing. DDOT, in conjunction with the FRA, is preparing an Environmental Impact Statement (EIS) to study these needs. This study will build on prior Phase I and Phase II studies, which identified concepts based on the long-range service needs.

The EIS will identify and evaluate alternatives to meet long-term needs; and identify, collect, and evaluate data in support of the recommended improvements. Figure 9 displays a series of track and bridge improvements identified in the Long Bridge Phase I Study.

Figure 9: Potential Configuration of Railroad Infrastructure to and from Long Bridge with Four Tracks



Source: Long Bridge Phase I Study, 2015

VI.3 Union Station

Ridership at Washington Union Station has shown continuously high growth rates, and projections of passenger and train volumes are forecasted to exceed the existing capacity. To make room for this growth in riders and trains, Union Station will need to be expanded. FRA, in conjunction with Amtrak and the Union Station Redevelopment Corporation (USRC), are advancing an EIS for the expansion and DDOT is a Cooperating Agency.

The expansion will include expanded platforms, additional station space, along with necessary supporting facilities. Ultimately, the expansion, which includes a series of near-term upgrades and the long-term expansion as envisioned in the EIS, could double station capacity and provide horizontal and vertical circulation improvements (see Figure 10).

Figure 10: Rendering of New Union Station Concourse

Source:Amtrak

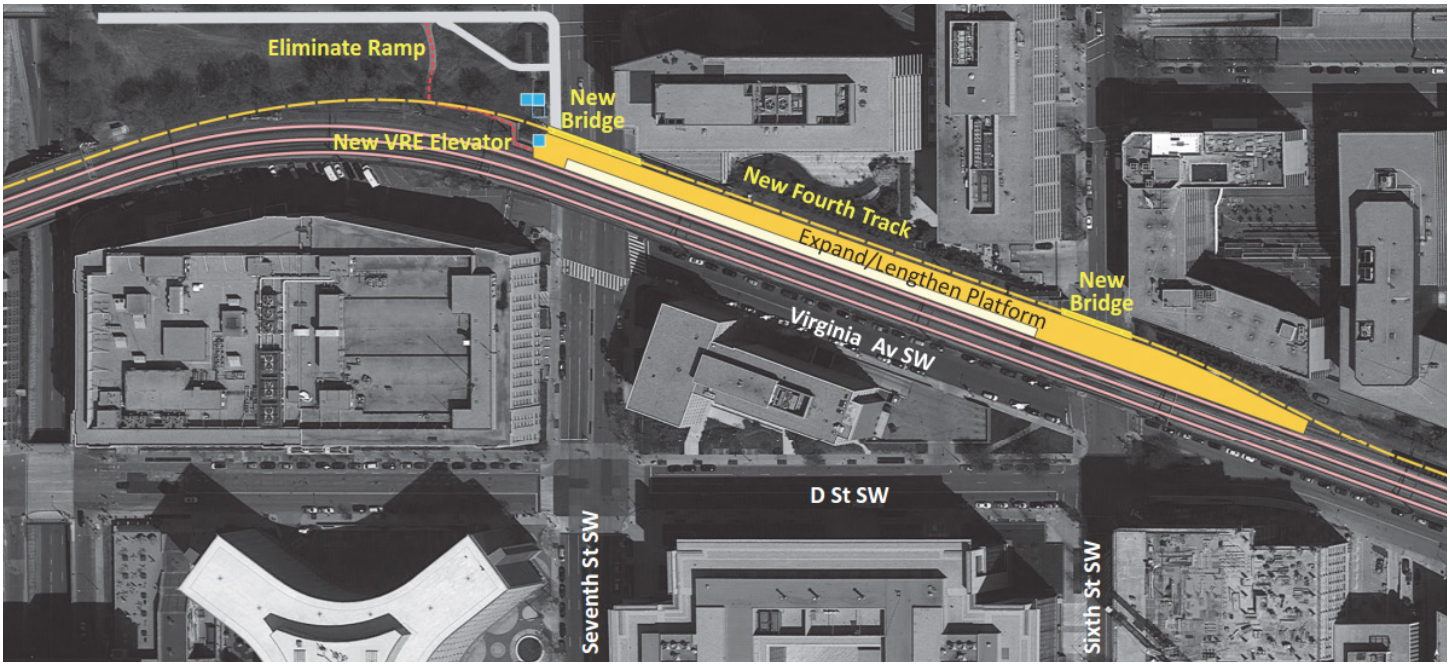
VI.4 L'Enfant Station

Additional platform capacity, with multiple boarding platform faces, is needed at L'Enfant station to remove one of the bottlenecks to rail traffic entering the District from the south. L'Enfant Station consists of a sheltered platform on the north side of the tracks.The station can accommodate boarding/alighting of VRE trains of up to eight cars. The width of the platform is not sufficient, which results in crowding during peak periods. The station platform serves a single track, which limits both VRE's as well as freight operations. In addition, the expanded station would need improved vertical circulation to the street level as well as Metrorail (see Figure 11).

VI.5 National Gateway/Virginia Avenue Tunnel

When District rail lines were built in the 19th Century, railcars were generally no higher than 16 feet above rails. But high capacity intermodal railcars in double stack configuration can be as high as 20 feet 2 inches above the rails. Double-stack cars are more efficient than intermodal trains in single stack configuration since they can accommodate more containers per train. CSX launched the National Gateway initiative as shown in Figure 12, aimed at improving the railroad's capacity between the Midwest and Mid-Atlantic.

Figure 11: Summary of VRE Concept for L'Enfant Station



Source: VRE; Note that upcoming work will seek to minimize and/or avoid NPS property altogether.

CSX has completed several projects in the District for this initiative and is in the process of expanding the Virginia Avenue Tunnel to include two tracks and to increase the clearance to allow double stack intermodal trains. Construction began 2015 and is expected to be completed in 2018 at an estimated cost of around $170 million.

VI.6 Train Storage Facilities

After commuter trains bring passengers into the District in the morning, it is in many cases most cost-effective to store the train sets near their terminus at Union Station so that they are ready to carry passengers out of the District in the afternoon. Unfortunately, the areas to store trains around Union Station are at capacity. Both VRE and MARC are exploring additional options for train storage that would add midday storage capability.

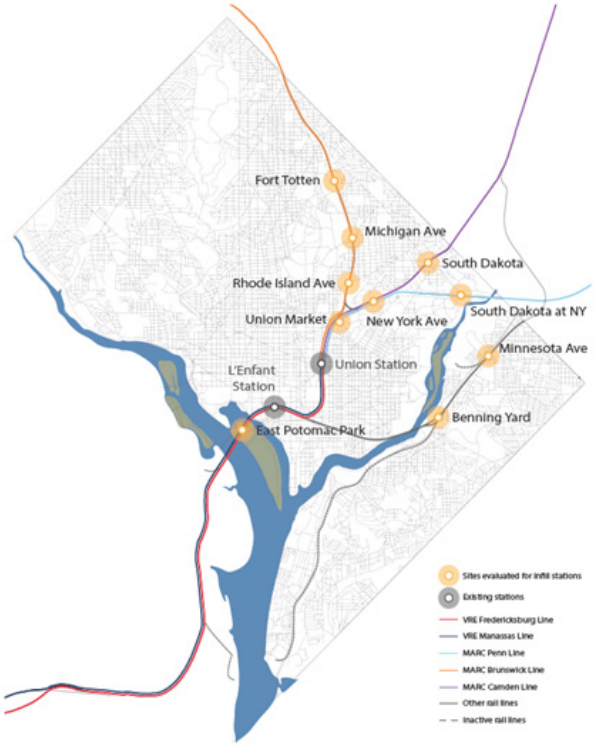
VI.7 Infill Stations

The SRP investigates whether pursuit of additional commuter rail stations could be worthwhile. DDOT performed an analysis of ten potential new commuter rail stations in the context of the current rail network as shown in Figure 13. The goal of the analysis was to ascertain which potential stations could provide the greatest potential for new services. Future additional study would be necessary to advance any station planning, but a first tier of potential station locations was identified.

Figure 12: CSX National Gateway Projects

Source: CSX

Figure 13: Potential Infill Station Locations



VI.8 Freight Rail Facilities

Large volumes of rail freight pass through the District of Columbia without stopping, providing little economic benefit to the District. One of several interrelated reasons for this situation is that the District lacks a commercial transload center or intermodal terminal where cargoes could be transferred between rail and truck.

Figure 14: Potential Freight Facilities

Figure 15: Intermodal Terminal

Source: William Grimes

This plan takes the first step in exploring a rail freight strategy for the District by identifying potentially viable sites for various types of freight facilities. The SRP identified and analyzed ten potential sites as shown in Figure 14, where expanded freight facilities should be explored. DDOT recommends further exploration of these facilities and potential sites.

Figure 16: Bulk Transload from Railcar to Truck

Source: UP Distribution Services


Offutts
Cross Roads
Knowles
Paint Br.
Silver Spring
College
DISTRICT OF COLUMBIA
Georgetown
WASHINGTON
Bladensburg
Magru
Alexandria
Cheltenha

d. delivers

District of Columbia State Rail Plan

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