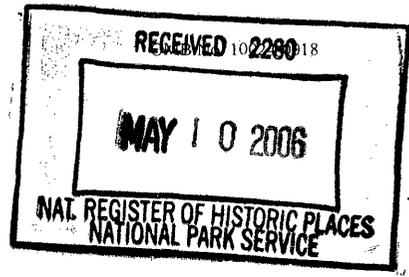


645-948



United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES
MULTIPLE PROPERTY DOCUMENTATION FORM

This form is used for documenting multiple property groups relating to one or several historic contexts. See instruction in *How to Complete the Multiple Property Documentation Form* (National Register Bulletin 16B). Complete each item by entering the requested information. For additional space, use continuation sheets (NPS Form 10-900a). Use a typewriter, word processor, or computer, to complete all items.

X New Submission Amended Submission

A. Name of Multiple Property Listing

Streetcar and Bus Resources of Washington, D.C., 1862-1962

B. Associated Historic Contexts

(Name each associated historic context, identifying theme, geographical area, and chronological period for each.)

Local Public Transportation, 1862-1962

C. Form Prepared by

name/title Laura V. Trieschmann, Robin J. Weidlich, Jennifer J. Bunting, Amanda Didden, and Kim Williams, Arch. Historians
organization E.H.T. Traceries, Inc. date June 2005
street & number 1121 Fifth Street telephone 202/393-1199
city or town Washington state DC zip code 20001

D. Certification

As the designated authority under the National Historic Preservation Act of 1966, as amended, I hereby certify that this documentation form meets the National Register documentation standards and sets forth requirements for the listing and related properties consistent with the National Register criteria. This submission meets the procedural and professional requirements set forth in 36 CFR Part 60 and the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation. (See continuation sheets for additional comments.)

David Maloney DAVID MALONEY ACTING SHPO May 9, 2006
Signature and title of certifying official date

State or Federal agency and bureau

I hereby certify that this multiple property documentation form has been approved by the National Register as a basis for evaluating related properties for listing in the National Register.

Patrick Andrews 6/19/2006
Signature of the Keeper Date of Action

Table of Contents for Written Narrative

Provide the following information on continuation sheets. Cite the letter and the title before each section of the narrative. Assign page numbers according to the instructions for continuation sheets in *How to Complete the Multiple Property Documentation Form* (National Register Bulletin 16B). Fill in page numbers for each section in the space below.

	Page Numbers
E. Statement of Historic Contexts (If more than one historic context is documented, present them in sequential order.)	E-1 through 70
F. Associated Property Types (Provide description, significance, and registration requirements.)	F-71 through 86
G. Geographical Data	G-87 through 92
H. Summary of Identification and Evaluation Methods (Discuss the methods used in developing the multiple property listing.)	H-93 through 94
I. Major Bibliographical References (List major written works and primary location of additional documentation: State Historic Preservation Office, other State Agencies, Federal agency, local government, University, or other, specifying repository.)	I-95 through 109
Maps	110-122

Paperwork Reduction Act Statement: This information is being collected for applications to the National Register of Historic Places to nominate properties for listing or determine eligibility for listing, to list properties, and to amend existing listings. Response to this request is required to obtain a benefit in accordance with the National Historic Preservation Act, as amended (16 U.S.C. 470 *et seq.*)

Estimated Burden Statement: Public reporting burden for this form is estimated to average 18.1 hours per response including time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding this burden estimate or any aspect of this form to the Chief, Administrative Services Division, National Park Service, P.O. Box 37127, Washington, DC 20013-7127; and the Office of the Management and Budget, Paperwork Reductions Projects (1024-0018), Washington, DC 20503.

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B. ASSOCIATED HISTORIC CONTEXTS

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C. ASSOCIATED PROPERTY TYPES

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- A. Car Barns and Yards
- B. Stables
- C. Terminals and Depots
- D. Waiting Stations and Shelters
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Bus-Related Resources

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EVOLUTION OF STREETCAR AND BUSES IN WASHINGTON, D.C.

Periods of Activity	Dates of Use
Horse-Drawn Era	1832-1900
Early Electric Traction and Other Experiments	1888-1899
Consolidation	1895-1902
Twentieth-Century Merger and Conversion	1900-1962
Capital Transit Company	1933-1956
D.C. Transit Company	1956-1962

STREETCAR AND BUS RESOURCES IN WASHINGTON, D.C., 1862-1962

Washington, D.C.'s transit history contains interesting variations on the evolution of the industry as a whole. The most profound of these was the streetcar, both horse-drawn and motorized. The early routes of the streetcar followed the 1791 plan for the Federal City, which was drafted by Pierre L'Enfant seventy years before the first railway tracks were laid. The earliest lines followed the plan's principle thoroughfares, connecting the established residential and commercial areas of Georgetown with the centers of government along Pennsylvania Avenue from the White House to the United States Capitol, and beyond to the Navy Yard. The railway lines linked the wharves in southwest Washington, D.C. with the mercantile corridor along 7th Street, 14th Street, and the growing residential neighborhoods to the north. These 1862 horse-drawn routes reflected the city's developing nineteenth-century residential, commercial, and employment patterns. Although a technological innovation, the earliest horse-drawn railway routes conformed to and reinforced existing transportation patterns that had been served by earlier, less efficient conveyances such as the horse-drawn omnibuses, herdics, and horse-drawn carriages. By the early 1890s, railway companies began to experiment with storage batteries, compressed air, overhead lines, underground cable, and electric traction that enabled streetcars to travel faster and climb steeper grades. Accordingly, the expansion of the railway lines became a tool used by real estate developers to encourage the city's burgeoning population to inhabit new neighborhoods, which improved the original city and then started to development localities outside the original city boundaries. These street railway lines were typically owned and operated by the real estate developers who maintained an interest in the neighborhood, streetcar line, and the first of the generating power companies. The late-nineteenth-century era of rapid

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transit expansion, spurred by land developers, was followed by a period of consolidation in the early twentieth century. Owners, seeking profits in transportation and utilities over land development, simplified the routes and generally extended lines to serve established employment and residential areas rather than to promote new ones. In its heyday, roughly between 1903 and 1933, Washington, D.C.'s electric traction system consisted of two large companies operating city and suburban services, several separate suburban lines, and three interurban lines. This service, which was instrumental in the development of the nation's capital, functioned along side the automobile by the second decade of the twentieth century, and eventually was replaced by the motor bus in 1962. Thus, for nearly one hundred years, streetcars, both horse-drawn and electric, played a major role in the development of Washington, D.C.

Year	Number of Companies	Mileage	Streetcar Motive Power	City Population
1870	4	About 20	Horse	131,700
1880	5	29	Horse	177,624
1890	11	45	Horse/Cable/ Electric	230,392
1900	2	Over 190	Electric	278,718

This table was gleaned from "Public Transport in Washington, D.C. before the Great Consolidation of 1902."¹

The streetcar and bus systems of Washington, D.C., whether horse-drawn, cable, or electric, included an array of building types designed and constructed specifically for or by the transportation industry. Analyzed by function, seven property types were identified that represent the significant variations in use and form, including car barns, stables, terminals, intermediate waiting stations, tunnels, bridges, repair shops, powerhouse, and substations. Unfortunately, with the abandonment of the streetcar system in 1962 and Washington, D.C.'s late-twentieth-century growth, many of the resources have been razed or dramatically altered. Many of the extant buildings have been renovated to serve as multi-family dwellings, commercial stores, and offices, although a select number have continued to serve the transportation industry as motor bus facilities. A significant number of extant resources retain

¹ John H. White, Jr., "Public Transport in Washington Before the Great Consolidation of 1902." *Records of the Columbia Historical Society of Washington, D.C.*, Francis Coleman Rosenberger, editor. (Washington, D.C.: Columbia Historical Society, 1966-1968), p. 218.

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sufficient integrity and historic characteristics to enable identification with the streetcar and bus systems, including the façade appearance, significant character-defining features, interior trackage, and the basic configuration of the original plan in its setting. In addition, the existence of rails, along with the abandoned tunnels, loops, corner configurations, plow pits, and turn-arounds, presents exceptional archaeological opportunities.

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HORSE-DRAWN TRANSPORTATION, 1791-1900

Early Development of the Federal City and its Transportation Routes, 1791-1862

As planned by Pierre L'Enfant in 1791, the streets of Washington, D.C. were laid out in four quadrants with the Capitol at the center. The federal government made modest attempts to improve a few of the most heavily used avenues following incorporation of the city in 1802, as well as create new routes for the growing population. For example, Pennsylvania Avenue was improved in 1803 by order of Thomas Jefferson, who rode down the avenue on horseback during his 1805 inauguration.² Yet, the overall lack of federal financial support resulted in a capital city without paved streets, piped water and sewer systems, and other conveniences except those that could be funded by modest local taxes. When incorporated, the city was given the power to tax residents for the funds needed to repair all existing streets and avenues, as well as create additional roadways. The authority to open or create streets was granted ten years later, in 1812. Described by the Secretary of the Interior in 1856, these powers were "permissive and not obligatory...and the construction which seems to have been given to it is that the government should provide for the opening and improvement of avenues, and the corporation for the numbered and lettered streets."³ Therefore, the only streets constructed from the city's budget during this early period were Pennsylvania Avenue from the Capitol to Georgetown, F Street, N.W. from 7th to 15th Streets, and the eastern section of Maryland Avenue where the post road entered the city. Because of the lack of government funding, Washington, D.C.'s private sector was responsible for initiating development of the infrastructure, thereby creating a base for commercial activity and residential neighborhoods. These settlements occurred primarily in the areas of F Street, N.W., Capitol Hill, the White House, Southwest Waterfront, Marsh Market, and the Navy Yard, as well as in Georgetown, which had been founded in the mid-eighteenth century. However, this growth, and the development of the city's transportation systems, was directly affected by the street grading and paving problems that persisted throughout the first half of the nineteenth century.

Other than riding on horseback or walking, horse- or mule-drawn carriages, wagons, and carts provided the primary means of transportation within Washington, D.C. as early as 1800. Private

² This major corridor was impervious to macadamizing efforts in the 1830s, and was unsuccessfully repaved with wooden blocks in 1871.

³ Report of the Secretary of the Interior, Report of the Commissioner of Public Buildings, October 11, 1856, p. 855.

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ownership of a full-time horse conveyance was not common as the middle class and moderately rich households did not have the wealth for such mobility. Rental cabs were more prevalent, but even these were comparatively infrequent. These coaches were restricted to primary roadways in adequate condition, and provided daily east-west access across the city from Georgetown to Capitol Hill. The two-horse stage left Georgetown via M Street near Wisconsin Avenue (then known as Bridge and High Streets) and provided three hours of service to William Tunnicliff's Tavern on Capitol Hill (now the site the U.S. Supreme Court Building). The line operated twice daily, serving mostly members of Congress and high-level government employees. The line was deemed a failure because of a lack of patronage, which was the result of the high fares and the limited route.

In the 1830s, the growing importance of Washington, D.C. as the nation's capital prompted weekly stage service to Annapolis, Baltimore, and Philadelphia. During the winter months, the stage traveled the Fountain Inn in Baltimore at 11 a.m., taking nine hours to reach Georgetown. The fare ranged from \$3.50 to \$4.00, with an allowance of twenty pounds of baggage. The trip commenced the following day to Alexandria before turning around to head northward to Philadelphia. In the summer months, the travel time by stage was reduced to just eight hours, allowing one day service to Alexandria from Baltimore.⁴

Despite the lack of early patronage, experimentation with a variety of public transportation systems occurred in the 1830s. However, many of the systems ultimately proved to be unprofitable. For example, the first omnibus lines, an urban version of the stagecoach, began to operate in 1829 in New York, 1831 in Philadelphia, 1835 in Boston, and 1844 in Baltimore. Gilbert Vanderwerken (1810-1894) introduced the omnibus in Newark, New Jersey, in 1826. With the bankruptcy of this omnibus line in 1837 because of the depression, Vanderwerken relocated to Washington, D.C. between 1848 and 1850 to take personal control of capital city's first successful omnibus line. The Vanderwerken Company line, closely following the horse-drawn coach routes of the early 1800s, traveled from Georgetown to the Navy Yard via M Street and Pennsylvania Avenue for a one-way fare of 12-1/2 cents. The omnibus, seating twelve passengers, bore the names of persons, historical events, or pictures of other fashionable modes

⁴ Wilhelmus Bogart Bryan. *A History of the National Capital*. (New York, NY: The Macmillan Company, 1914), p. 363.

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of transportation on the side panels. The stables were located at 3222 M Street in Georgetown. The **M Street Shops** (ca. 1858/1862/1898/1906/1943/1970, heavily altered) were constructed in part as a tobacco warehouse.⁵

By 1854, the Citizens Line and the Union Line were the two largest omnibus lines, having absorbed smaller lines. The two lines merged in 1855, under the control of Vanderwerken and his partner John E. Reeside. On the city's numerous unpaved roads, however, omnibuses were mired by mud in wet weather or raised clouds of dust when the roads were dry. Their size and usefulness limited the omnibuses, forcing the continued investigation of alternative modes of transportation.

Washington, D.C.'s First Horse-Drawn Railway Lines, 1862-1875

The Civil War (1861-1865) ended the city's slow growth, as Washington, D.C. became the supply and strategy center for the Union army. Troop movements displaced everyday commerce, and made physical improvements to the infrastructure difficult. Many public works projects, such as the street paving begun in the 1840s and 1850s came to a halt, as did most orderly development of the city. Washington, D.C.'s population exploded with military personnel, government workers, and vast numbers of displaced African Americans who came from the ravaged south seeking refuge and work after 1865. The capital city experienced its greatest single population jump during the 1860s – almost seventy-five percent – thus creating a severe housing shortage. The transient government population of the fledgling city resided in inns and boarding houses when Congress was in session, while permanent residents occupied dwellings ranging from small rowhouses to large estates.

Although the citizens of the nation's capital benefited from the amenities established by the federal government to aid in the defense of Washington, D.C., the damage done to the streets in the first years of the war “caused acute annoyance and some financial anxiety.”⁶ As recounted in *Washington: A History of the Capital, 1800-1905*, “heavily laden wagon trains jolting through

⁵ E.D. Merrill, “Changing Fashions in Transportation,” *Records of the Columbia Historical Society*, Volume 48-49. (Washington, D.C.: Columbia Historical Society, 1946-1947), p. 161.

⁶ Constance McLaughlin Green. *Washington: A History of the Capital, 1800-1950*. (Princeton, NJ: Princeton University Press, 1962), p. 256.

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the city and the hooves of thousands of horses, mules and cattle thudding by toward the Army corrals and slaughter houses cut the avenues and streets to ribbons; teamsters and cavalrymen riding on the sidewalks to avoid the muck in the roads demolished the footways too.”⁷ The newly formed local government, as well as citizens, was forced to attend to the poor conditions of the streets and sidewalks, all the while appealing unsuccessfully to Congress for assistance. As the war endured, however, northern businessmen began to buy Washington, D.C. real estate at rapidly mounting prices, new stores and hotels rose, and general amenities such as sewers and street lighting commenced. Seizing the opportunity for the city’s infrastructure to profit from these businessmen, Congress enacted a law that established a local street railway company on May 17, 1862. In granting this first charter, Congress established control of what would become Washington, D.C.’s public transportation network. Consequently, the local government did not financially profit from the establishment or sale of the railway franchises, which undertook the early street improvements used for the alignments.

⁷ Green, pp. 256-257.

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Street Railways Established in Washington, D.C. between 1862 and 1906⁸

<i>Year of Charter</i>	<i>Corporate Title</i>
1862	Washington & Georgetown Railroad Company
1864	Metropolitan Railroad Company
1868	Connecticut & Park Railway Company
1870	Columbia Railway Company
1872	Union Railroad Company
1872	Boundary & Silver Spring Railway Company
1872	Anacostia & Potomac River Railroad Company
1875	Capitol, North O Street and South Washington Railway Company
1888	Eckington & Soldiers' Home Railway Company of the District of Columbia
1888	Georgetown & Tenallytown Railway Company of the District of Columbia
1888	Brightwood Railway Company of the District of Columbia
1888	Rock Creek Railway Company
1889	Glen Echo Railroad Company (name changed to Washington and Glen Echo Railroad)
1890	Tenallytown & Rockville Railroad Company
1892	Columbia & Maryland Railway Company of Maryland
1892	Maryland and Washington Railway Company
1892	Washington and Great Falls Electric Railway Company
1893	Belt Railway Company
1894	Baltimore and Washington Transit Company
1895	Capital Railway Company
1895	West Washington & Great Falls Electric Railway Company of Montgomery County
1895	Capital Traction Company (consolidated Washington and Georgetown railways with the Rock Creek railways)
1896	Washington & Glen Echo Railroad Company
1897	Washington & Rockville Railway Company of Montgomery County
1898	City & Suburban Railway of Washington
1899	Washington Traction and Electric Company (consolidated all companies except Capital Traction)
1902	Washington Railway and Electric Company (successor to Washington Traction and Electric Company)
1906	Washington Spa Springs and Gretta (later known as Washington Interurban Railroad)
1906	East Washington Heights Traction Railroad Company

⁸ White, Jr., "Public Transport in Washington Before the Great Consolidation of 1902," p. 222.

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The Washington and Georgetown Railway Company

Ultimately, as manufacturing and construction in most parts of the country focused on the war effort, it increased tenfold in the nation's capital.⁹ One such entrepreneur was Jay Cooke, a businessman from Philadelphia who moved to Washington, D.C. during the early years of the war. In 1863, Jay Cooke and Company was established as a banking house on 15th Street. Upon passage of the National Banking Act of 1863, the company was reformed as the First National Bank with Henry D. Cooke (brother to Jay Cooke) as president. Henry Cooke also served as one of the directors of the newly chartered Washington and Georgetown (W&G) Railway Company.¹⁰ John Carter Marbury of Georgetown, George Gideon and Harris C. Fahnestock of Washington, D.C., Edward W. Clark and J. Barlow Moorehead of Philadelphia and William A. Darling of New York were the other officers of the Washington and Georgetown Railway Company.¹¹

Congress was fully aware that the new railway company would not only improve Washington, D.C.'s streets, but aid in the war effort. In keeping with these military needs, the railway charter also established the gauge or distance between the inner edges of the heads of the rails in the track "to correspond with that of the [overburdened] Baltimore and Ohio Railroad." It further provided that the corporation "shall, on demand of the President of the United States, Secretary of War, or Secretary of the Navy, cause to be transported over said railway any freight cars laden with freight for the use of the United States."¹²

The concept of using animal-drawn cars over metal rails was first developed for hauling coal from British mines in the late-eighteenth century. In 1832, the technology was successfully applied to the problem of public transportation in New York City, although the surge in horse railway construction in the United States did not come until twenty years later. Many progressive cities established horse-drawn railway systems by the middle part of the nineteenth century: New

⁹ Green, p. 264.

¹⁰ John W. Boettjer, "Street Railways in the District of Columbia," Master's thesis, The George Washington University, 1963, pp. 18-23.

¹¹ LeRoy O. King, Jr. *100 Years of Capital Traction: The Story of Streetcars in the Nation's Capital*. (Dallas, TX: Taylor Publishing Co., 1972), p. 4.

¹² King, p. 3.

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Orleans (1835), Boston (1856), Philadelphia (1855), Pittsburgh (1859), Cincinnati (1859), Baltimore (1859), and Chicago (1859).¹³ A street railway for Washington, D.C. was first proposed to Congress by investors in 1854, but met with public opposition. Thus, street railways were not installed until 1862, when the city's burgeoning wartime population and its new role as a war distribution center placed overwhelming burdens on the horse-drawn coach systems.

Horse-drawn street railways offered significant advantages over the traditional modes of transportation such as the horse-drawn coaches and free-wheel omnibuses. Horse-drawn street railways established regular service along set routes, with large capacity vehicles traveling along smoother riding metal rails. The interiors of the cars were about seven to nine feet wide with longitudinal seats for twenty to twenty-four passengers. Often, fine silk velvet covered the seats and stained or plain glass windows were curtained in damask. The interiors were typically painted white, while the outsides were cream and white. In contrast, the floors of the cars were covered with straw.¹⁴ The horses were initially dressed with a set of small bells attached to the harness at the top of their heads, presumably to give warning of their approach to pedestrians and drivers of vehicles. The use of these bells was discontinued pursuant to a police regulation that was made on July 14, 1887.¹⁵

Operation of the horse-drawn streetcars provided jobs for local residents as the larger vehicles required a conductor and a driver, utilizing six to seven men per day. The new streetcar routes improved accessibility from the inner core to the city's new northern suburbs, including Pennsylvania Avenue, Logan Circle, Dupont Circle, U Street, Boundary Street (now Florida Avenue), and Mount Vernon Square. The effect of railways on the outward expansion of the city was initially limited, however, by both the relatively slow speeds (4-mph) of horse-drawn vehicles and their inability to surmount the hills that bordered the city to the north beyond Florida Avenue.

¹³ R.J. Buckley, *A History of Tramways: From Horse to Rapid Transit* (North Pomfret, VT: David Charles, 1975), p. 9.

¹⁴ E.D. Merrill, "Urban Transportation of Yesterday and Today." *Public Utilities Fortnightly*, vol. XL, no. 1, July 3, 1947, p. 5.

¹⁵ William Tindall, "Beginning of Street Railways in the National Capital." *Columbia Historical Society Records* Volume 21, (Washington, D.C.: Columbia Historical Society), p. 50.

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The Washington and Georgetown Railroad Company (W&G) broke ground on the installation of the metal rails near the Capitol on June 12, 1862. Performed by nearly one hundred men, the work progressed steadily with service starting at the Capitol and extending to the State Department (now the site of the north annex of the Treasury Building, next to the Riggs Bank at 15th Street and New York Avenue) near the White House on July 29, 1862. At the end of the line, for just a period of sixty days until the line was extended, patrons had to transfer to Vanderwerken's omnibus for continuing service to Georgetown. Drawn by two horses, the cars completed the three-mile round trip in about forty-five minutes. The charter also called for the creation of two additional metal-rail lines -- the Seventh Street line, and the Fourteenth Street line -- both of which were completed by November 1862.

The new company purchased the horses, omnibuses, and personal property of the Vanderwerken omnibus line for \$28,500 in 1862. Maintaining his interest in transportation systems, Vanderwerken became a director in the new company and his stables at 3222 M Street became the location of repair shops. Because of its convenient location, the Vanderwerken stables were renovated in 1862 to serve as a repair shop for the street railway company. The wood-frame office/stable was encompassed within a brick structure that had a single surface track that crossed the canal at Warehouse Alley. The M Street Shops was both a repair shop with office space and a car barn for housing the vehicles.¹⁶

W&G erected a number of car barns and stables throughout the city along the established routes. The combined car barn and stables comprised long permanent sheds used to house the vehicles and horses. Often maintenance was performed within the confines of the car barn, which typically was a one- to two-story building with an intricate interior track-work for streetcar storage. Early examples include the **7th & T Streets Barn** (ca. 1862, demolished), the **New Jersey Avenue Barn** (1862, demolished), and the **1st & B Streets, S.W. Barn** (ca. 1874, demolished 1956). One of the largest stables and car barns constructed for W&G was the **14th & Boundary Streets Car Barn & Stable** (1877). The imposing brick building was constructed to the designs of John B. Brady, who also served as the architect for the Metropolitan Railroad Company's 4-1/2 Street Car Barn and Shop. The two-story 14th & Boundary Streets Car Barn &

¹⁶ In the 1980s, much-altered portions of the M Street Shops were incorporated into the Georgetown Park Mall now on the site.

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Stable was vernacular in design and commercial in plan, and eventually was altered in 1908 to serve as part of the Manhattan Laundry complex. The **Grace Street Powerhouse** (1878, demolished) structure was erected across the canal from the M Street Shops and the single connecting track removed. Designed in-house by the Washington & Georgetown Railroad Company, the one-story structure consisted of one car barn and two wings for stables. With the electrification of the city lines in 1898, the Grace Street Powerhouse was renovated to serve as the main power source. By May 4, 1898, the building was supplying the needs for the entire city system maintained by Capital Traction on its 7th Street, 14th Street, and Pennsylvania Avenue lines.

The Washington and Georgetown Railroad Company was an immediate success, quickly exceeding the financial expectations of its investors. With net earnings in the first year of over \$61,000, the railway company was operating seventy streetcars and 490 horses a day over four thousand car miles.¹⁷ The service was regular and reliable with just a five-minute headway between cars on each line. LeRoy O. King, Jr. recounts in *100 Years of Capital Traction*, that “typical wages were \$8 a week for drivers, \$500 a year for timers and \$600 a year for conductors. Fare was five cents with free transfer.”¹⁸ The routes were changed with the completion of the lines and purchase of adequate rolling stock by July 1863. With a total of seventy cars, the W&G offered travel along the Georgetown-Navy Yard line (28 cars), Georgetown-B&O Depot on Capitol Hill line (21 cars), 7th Street-Boundary Street to Potomac River line (16 cars), and 14th Street-Boundary Street to 15th Street and New York Avenue line (5 cars).¹⁹ In 1865, the company provided public transportation service for more than 8,651,223 passengers for a network of about fourteen miles.²⁰

The Washington & Georgetown Railroad Company's well established, centralized lines served as the backbone of the street railway system in Washington, D.C. throughout the horse-drawn era, a period that extended from July 29, 1862 to May 26, 1900. The company's Pennsylvania Avenue line served the major business and commercial districts in the city, passing the White House, the Treasury, Center Market, the Navy Yard, and the Capitol.

¹⁷ King, p. 4.

¹⁸ King, p. 5.

¹⁹ King, p. 5.

²⁰ Boettjer, p. 26.

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The Metropolitan Railroad Company

The success of the Washington and Georgetown Railroad Company spawned competition. In July 1864, Congress chartered a second railway company known as the Metropolitan Railroad Company. Formed by local businessmen, the railway company was headed by Alexander R. Shepherd (known also as "Boss" Shepherd) and Richard Wallach. Shepherd was appointed in 1871 as commissioner of the Board of Public Works that undertook a massive program to modernize the city. Like Cooke, Shepherd served as governor of the District of Columbia from 1873 to 1874 during the city's brief period of territorial government. Wallach, a political ally of Shepherd's, served as mayor of the City of Washington between 1861 and 1868.

The Metropolitan Railroad Company was initially authorized to provide a line that ran east from 17th and H Streets to 14th Street, and, after a series of turns, terminating on A Street North, near the Capitol. The westbound cars operated north on New Jersey to D Street, thus creating a one-way route around the Indiana Avenue, C Street, New Jersey Avenue, and D Street area. Ground was broken near the War Department at 17th Street and Pennsylvania Avenue on November 17, 1864, with construction completed by January 1865. The western end of the line began at the nearby car barn at the corner of **New York Avenue and 17th Street, N.W.** (ca. 1865, demolished), the present site of the Corcoran Gallery of Art. The extension to the nearby car barn on New York Avenue, along with a short run on A Street at the eastern end of the line, were never authorized by Congress. Astonishingly, the company made a relatively frequent practice of extending the railway lines without authorization; sometimes gaining Congressional approval after construction was completed.

After overcoming its initial financial difficulties, the Metropolitan Railroad Company expanded its services east to the intersection of East Capitol and 9th Streets, and south to the Arsenal via 4-1/2 Street, S.W. In the early 1870s, it also extended lines by merging with or buying out other railways chartered by Congress in the decade following the Civil War. It acquired the Union Railroad Company, which maintained a route running west to Georgetown from Connecticut Avenue via the first P Street Bridge (built ca. 1855). In December 1872, the Metropolitan formally acquired the Boundary and Silver Spring Railroad Company, which ran north along

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Brightwood Turnpike (later Georgia Avenue) from Florida Avenue to the District line.²¹ Without Congressional authorization the Metropolitan absorbed the Connecticut Avenue and Park Railway Company, owner of the railway line on Connecticut Avenue running from 17th and H Streets, N.W. to Florida Avenue which had been serviced by Metropolitan's horsecars.

The *Union Railroad Company* (chartered 1872) also merged with the Metropolitan Railroad Company before construction of its line without obtaining congressional authorization. The line, completed in 1873, was a loop that ran west from Dupont Circle into Georgetown along P Street to 35th Street and returned via O, Dumbarton and 28th Streets. According to the *Evening Star*, the charter was obtained "...by a number of enterprising and public-spirited citizens of Georgetown, who, dissatisfied with the neglect of President Riker, of the Washington and Georgetown Railway Company, to afford the people proper facilities, resolved to build a road of their own."²²

The *Boundary and Silver Spring Railroad Company* (B&SS) was chartered in January 1872 specifically to build a railway along what is now Georgia Avenue from Florida Avenue to the District of Columbia/Maryland state line. The Metropolitan Railroad Company, which bought out the Boundary and Silver Spring Railroad Company in December 1872, built an extension of its line from M Street north along 9th Street to join the B&SS Railroad line. The tracks along Georgia Avenue ended at what is now Rock Creek Church Road. Initially, this line served mainly as a transportation route to and from Schuetzen Park, a German picnic ground, and amusement park located on the east side of Georgia Avenue just north of the Columbia Road intersection. The line eventually played an important role in the development of the Brightwood residential subdivision. **The B&SS Car Barn** (1872, demolished) was located on the west side of the line in the vicinity of Georgia Avenue and V Street, N.W. Within three years, the car barn's functions were expanded to include use as a barn, stable, and shop, and later it was converted to serve as a loop for the end of the 9th Street line. This loop provided car service to Griffith Stadium.

The *Connecticut Avenue and Park Railway Company* (chartered 1868) was essentially an extension of the Metropolitan line, extending from its terminus at 17th Street and New York

²¹ King, p. 9.

²² *The Evening Star*, September 27, 1872. (From R. A. Truax Collection).

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Avenue, N.W. north along Connecticut Avenue to Florida Avenue. Construction of the line was made possible by, and was simultaneous with the grading and paving of Connecticut Avenue in 1873. The *Washington Star* wrote in 1872 "many people residing on Kalorama Heights and on Connecticut Avenue have long desired a street railway such as they will soon possess and own the principal part of the stock of the road."²³ The company's president was J.W. Thompson, who also served as president of the Metropolitan Railroad Company.

The Metropolitan Railroad Company, which traveled less populous and hillier routes into the largely unimproved "suburbs" of the city, did not have the same immediate financial success experienced by the Washington and Georgetown Railway Company. One account describes the Metropolitan Railroad Company lines as passing through a "...comparatively sparsely settled region" stating that it derived "...its main patronage during sessions of Congress from members of the two houses and visiting strangers."²⁴

In an effort to be more conveniently located, the Metropolitan Railroad Company moved its main car barn in 1874 from 17th Street to ten acres of land on P Street, just west of Rock Creek Park. Located at 2411 P Street, N.W., the purpose-built **P Street Shops** (1874, demolished) consisted of a series of one-story brick sheds that originally serviced horse cars. Renovated in 1891 to serve as the main repair and service shops, the complex contained the facilities necessary to generate electricity and service storage batteries during the company's experimentation with storage battery cars. The property was divided to include machine and motor repair stations, warehouses, electrical and painters' shops, and numerous offices. The location was the main shop and repair center for the railways consolidated into the Washington Railway and Electric Company (WRECo). Ultimately, the shop was abandoned after the WRECo merger with the Capital Traction Company in 1933.²⁵ Another company car barn and stable was the wood frame **Metropolitan Barn** (1875, demolished), located on the west side of 7th Street, N.W., south of Pomeroy Street.

²³ *The Evening Star*, September 27, 1872. (From R. A. Truax Collection).

²⁴ *National Republican*, November 1, 1883, p. 6.

²⁵ From R. A. Truax Collection.

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In 1875, the tracks around the Capitol had to be rerouted when the grounds were enlarged. The new landscape plan for the Capitol grounds included three ornate cast iron **waiting stations** with wooden benches, constructed circa 1876 to the designs of Frederick Olmsted. Commissioned by the Federal government for streetcar patrons, the waiting stations were placed at the north and south ends of the Capitol building, along its eastern façade. Tracks laid in the late 1860s by the Metropolitan Railroad Company were removed and new tracks placed that connected the line to the B&O Railroad Depot. Instead of turning south on New Jersey Avenue, thence east on A Street to 1st Street, S.E., the new route continued on C Street to Delaware Avenue, then southward to B Street North, and east to 1st Street, S.E. where it connected with the original route. The alteration to the route provided the Capitol grounds with additional landscaping to the north.

The balance of the Metropolitan Railroad's Georgetown/P Street route was not completed until 1880. The company had an ornate starter's station constructed in June 1898 at 1233 36th Street in Georgetown. Designed by architect Appleton P. Clark, the **36th Street Waiting Station** (1898, demolished) was one story in height, measuring 27 feet square. The brick building was modest in size, although imposing in style and massing with its semi-circular arched parapet and main entry opening. The pressed brick façade incorporated recessed brick panels at the corners. At the other end of the line stood the two story brick plant and car house known as the **4-1/2 Street Car Barn and Shops** (1892, demolished 1963).²⁶

The Columbia Railway Company

In 1870, Congress chartered a third horse-drawn railway -- The Columbia Railway Company -- that connected the highly developed areas of the Federal City with the turnpike to Baltimore via H Street, N.E. The potential for financial profit from land development along the proposed line was one of the major reasons for its creation.²⁷ The line began at New York Avenue and 15th Street, N.W. already the intersection of an important transfer point for the Washington and Georgetown Railroad Company. For a total of five and a half miles, the route moved eastward

²⁶ The 4-1/2 Street Car Barn is discussed at length for its significance as a battery charging station under "Early Electric Traction And Other Experiments, 1888-1899" of this report.

²⁷ *National Republican*, November 16, 1883, p. 6.

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along New York Avenue and then Massachusetts Avenue to H Street, terminating at the eastern tollgate of the Columbia Turnpike Company (at what is now 15th and H Streets, N.E.). Planned as a more modest railway than the other two lines, this route was originally a single track road with turn-outs that ran a congressionally mandated minimum of eight trips a day, six days a week. It was converted to double tracks in 1872, operating nine cars with forty horses that year alone.²⁸

The original car barn was located on 15th Street, just north of Gales Street, N.E. Cars went south on 15th Street to enter the **Columbia Railway Company Car Barn** (1871, demolished) sited on the south side of Benning Road. In later years, with the acquisition of adjoining property, the new brick car barn and powerhouse known as the **Columbia Barn** extended along the south side of Benning Road. This alteration afforded a more accessible entrance from the main tracks on Benning Road.

Minor Horse-Drawn Railway and Free-Wheel Coach Companies

Belt Railway Company

The Capitol, North O Street and South Washington Railway Company, which later formally adopted the nickname Belt Railway Company, was chartered in 1875 specifically to build a line that circled the Federal City's core. It began on 1st Street just west of the Capitol, traveled northerly along 1st, G and 4th Streets to O Street, west along O Street to 11th Street and then, with a series of jogs, ran as far west as 14th Street, and south to Ohio Avenue where it turned east to follow Virginia and Maryland Avenues back to 1st Street. The company's car barn and stable facilities were located at 3rd and B (now Independence) Streets, S.W. The imposing **Belt Line Barn** (1877, demolished ca 1893) had the capacity to house double the number of horses to pull the cars. Additional barns and stables were eventually erected: the brick **Belt Line Horsecar Stable** (1881, demolished) at the corner of 12th and V Streets, N.W.; and **11th Street and Florida Avenue, N.W.** (1892, demolished 1925). Richardson and Burgess constructed the Florida Avenue stable and car house to the designs of architect William Bruce Gray. Located in a triangular block at the edge of the Federal City, the building was constructed of brick with a

²⁸ King, p. 13.

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single tower and four projecting bays. It measured 200 feet by 392 feet. The building replaced the original Belt Line Barn located along the canal at B and 3rd Streets, S.W.

The Belt Railway Company line had a track length of 8-1/2 miles. Initially, the operation was modest compared to some of the more central lines. It started with bobtail cars pulled by a single mule, later converting to a single horse. The bobtail cars, which were unpopular with passengers who had to enter at the back and work their way up to the front to pay, were pulled by one horse with one driver who was also the conductor, and had no rear platform. Business grew steadily and passenger receipts doubled in the period from 1877 to 1885. By 1892, the company had 52 cars drawn by 230 horses carrying a total of 2,805,985 passengers in one year.²⁹ Most of the line was laid with eighty-pound grooved rails that were placed on white oak ties spaced three feet six inches apart.³⁰ Over the years, there were modifications and extensions to the route, and eventually it merged with the Anacostia and Potomac River Railroad Company. Despite its extensive system, the Belt Railway line was never as prosperous as the major streetcar companies because it was poorly capitalized and operated a limited loop route without connections to the expanding suburbs.

Anacostia and Potomac River Railroad

The Anacostia and Potomac River Railroad was the first line to cross the Anacostia River into the two major residential developments of Anacostia. In 1854, a group of investors established Uniontown for white persons across the 11th Street Bridge. After the Civil War, the Freedmen's Bureau bought Barry's Farm, which was located between Uniontown and Asylum Hill (site of present-day St. Elizabeth's Hospital) to provide home sites for freed slaves.³¹ Within two years, 500 African American families owned houses in Barry's Farm. Meanwhile, Uniontown was slow to develop. As late as 1871, only 70 to 80 families had settled there. Yet, despite the lack of substantial development in the southeastern quadrant of the city, roads across the river were upgraded. The wooden Navy Yard Bridge at 11th Street, damaged by heavy use during the war, was replaced in 1874 by an iron truss bridge. The Anacostia and Potomac River Railroad

²⁹ Boettjer, pp. 32-34.

³⁰ King, p. 14.

³¹ Thomas S. Cantwell, "Anacostia: Strength in Adversity," *Records of the Columbia Historical Society* 49 (Washington, D.C.: Columbia Historical Society, 1973-1974), pp. 334-343.

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Company (chartered 1872), based at the Navy Yard, became operational in 1875 with the completion of the bridge. Initially, the line traveled from Nichols Avenue (now Martin Luther King, Jr. Avenue) and V Street in Anacostia to 7th and M Streets, S.W. via 11th and M Streets, S.E. The 1875 company prospectus stated that:

The route was designed to accommodate the public of the southwest and southeast sections of the city of Washington and of Uniontown, portions of the District of Columbia very much neglected, and to enhance the value of property along its route.... It embraces in its route almost every wharf and steamboat landing in the city, as well as the Anacostia bridge, whose foot passenger travel alone is over 1000 daily, and unites by a band of iron the waters of the Anacostia and Potomac rivers...³²

Within two years, the Anacostia and Potomac River Railroad Company had been extended on its western end to connect with the Washington and Georgetown Railway at 7th and Water Streets and on its eastern end to the foot of the hill at St. Elizabeth's Hospital. A decade later, Congress authorized additional extensions of the line, including a western extension to Center Market and an eastern extension (never completed) along Nichols Avenue and Livingston Road to the District of Columbia/Maryland state line. The **Anacostia and Potomac River Railroad Company Car Barn and Stables** (1876, demolished) were located at Nichols Avenue and V Street, S.E., to the west of the street toward the B&O Railroad tracks. This facility was superseded twenty years later by the **Anacostia Starter's Station and Waiting Room** (1898, demolished) at the intersection of Nichols Avenue and Talbert Street, S.E.

Herdic Phaeton Company

In 1879, despite the success of the street railway, the Herdic Phaeton Company of Wilmington, Delaware established a free-wheel coach service whose lines also followed those of the Washington and Georgetown Railroad Company. The herdic, named after designer Peter H. Herdic, was a rear-entry vehicle with a patented suspension system. Drawn by two horses, the herdic allowed for a heavier load and smoother ride than earlier free-wheel carriages like the

³² Prospectus from the collection of R. A. Truax.

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omnibus. The vehicles held twelve to fifteen passengers, charging five cents a fare. With no tracks to lay or maintain, herdics proved to be much cheaper to operate than street railways and omnibuses.³³ The herdic stables were located at the western end of the route at the intersection of 20th Street with E and F Streets, N.W. A second stable was located on M Street in Square 907, bounded by 7th and 8th Streets, S.E. An 1881 *Washington Post* article described the herdic as the ultimate form of modern transportation and predicted that it would soon replace horse-drawn railways.³⁴ Competition between the herdics and railways continued well into the 1880s, when in 1883, the Herdic Phaeton Company opened a line that traveled through the Capitol grounds where it deposited passengers under the Capitol steps in inclement weather. Although unable to serve passengers in such a convenient manner, W&G did add a line that traveled on the Capitol grounds in response to the expanding herdic line.³⁵

Although the herdic vehicles initially rendered a blow to the revenue of the street railway, the latter ultimately prevailed. The herdics were not popular with passengers, who had to walk to the front of the moving vehicle to deposit their fare in a slot. Yet, the convenience of the free-wheel routes led to the herdics use as “livery” or “call service” vehicles. The herdics, together with the hansom cabs introduced by the company, were ultimately used primarily for serve from the railroad stations at 6th and C Streets, N.W., and Capitol Hill.³⁶ Although various firms and individuals operated herdic cabs throughout the city, the Herdic Phaeton Company ceased to operate because of a lack of patronage in 1896.

The Climate for Expansion

Although the end of the Civil War brought a drop in military-related ridership, the city's population continued to grow and fuel the need for an expanded transportation system within the Federal City. As the economy gained momentum during the Reconstruction Period, horse-drawn railways were seen as an integral part of urban progress. A September 1872 article in the *Evening Star* captures the optimism of the era:

³³ Boettjer, pp. 35-37.

³⁴ Quoted in Boettjer, p. 40. (*Washington Post*, March 17, 1881, p. 4.)

³⁵ Tindall, pp. 72-73.

³⁶ Merrill, p. 163.

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Among the more important agencies which tend to materially promote the prosperity of a city are street railways. To say nothing of their convenience as a cheap mode of transit for all classes of people and especially for the middle and poorer classes whose means will not permit them to indulge in the luxury of private traveling equipages, they bring those residing in the suburbs into easy communication with the central and business portions of the city, facilitate the transaction of business, enhance the value of property, give employment to a large number of clerks, conductors, drivers, laborers, etc., and finally bring people into closer social intercourse, and offer encouragement to foreign capital, which otherwise shun the town as holding out no special inducement to speculative investments. Within a short time past, under the stimulus of great work of improvement being carried on by the board of public works, Washington has received an impetus in the direction of street railway enterprises which will very soon make our local traveling facilities at least equal to those of any other city of its size in the United States, and commensurate with its necessities as the capital city of the nation.³⁷

Although regulated by Congress, the city's first horse-drawn streetcar lines, and those introduced over the next quarter century, were all privately initiated and owned. Financial profit was the major incentive for the creation of the railway companies and, therefore, the location of the streetcar lines. Early lines sought to make money by plying heavily traveled routes, such as the Georgetown-Navy Yard and 7th Street and 14th Street lines, which provided access to major employment centers and established residential neighborhoods within the original boundaries of the Federal City. Later, transportation companies sought financial gains through land speculation, specifically laying lines into developing suburban areas that were promoted as premier residential neighborhoods created for the middle and upper income residents of the capital.

With the creation of a territorial government in 1871, Washington County was annexed to the City of Washington, thus opening the area north beyond Boundary Street (now Florida Avenue) and east of the Anacostia River to development. The initial establishment of the horsecar

³⁷ *The Evening Star*, September 27, 1872. (From R. A. Truax Collection).

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railways in the city encouraged the development of what were then considered "outlying" suburbs. One of the earliest of the planned subdivisions was LeDroit Park, located just north of Florida Avenue and east of 7th Street. The existence of the W&G Railroad's 7th Street horse-drawn line made possible the successful development of this gated, suburban community during the 1870s. An 1877 advertising brochure produced by the proprietors of LeDroit Park highlighted the ease of access to the neighborhood via three established streetcar lines and one proposed line. These lines were the Metropolitan Railroad's 9th Street route, the W&G Railroad's 7th Street line, the Belt Railroad's line, and a projected track that would run from the center of the city through LeDroit Park to the Soldiers' Home, and near the campus of Howard University.³⁸

By the 1870s, when the Metropolitan Railroad Company began to expand, horse-drawn streetcar lines were the domain of local men, often with varied local financial interests. The development implications of railway expansions within new neighborhood communities played an important part in the placement of new tracks. One of Metropolitan's founders, Alexander R. Shepherd had a vested interest for himself and close associates, initiating an extensive, publicly funded street grading and paving program in the early 1870s that reshaped Washington, D.C. By the late 1890s, developers were erecting electric railways with underground conduits that were intended to bolster profits in land development. Gambling on their development plans, the railway companies often lost money in terms of passenger revenue until the newly established communities became stable. In turn, these improvements facilitated the privately financed construction of street railways in developing neighborhoods of the city.

Another original investor of the Metropolitan Railroad Company was Samuel P. Brown, who served as the company's first president. Brown, who came to Washington, D.C. in 1861 as a government contractor, bought a section of the large eighteenth-century estate known as Pleasant Plains, just west of Meridian Hill, from the former United States Treasurer William Seldon. Under the new territorial government in the early 1870s, Brown was appointed to the Board of Public Works, putting him in a position to bring improvements to the growing neighborhood along 14th Street, north of Ontario Street (now known as Mount Pleasant).³⁹ Thus, he subdivided

³⁸ A.L. Barber & Co., Proprietors of LeDroit Park, "LeDroit Park Illustrated," (Washington, DC: R. Beresford, Printers, 1877), p. 5.

³⁹ Kathryn Schneider Smith, ed., *Washington At Home: An Illustrated History of Neighborhoods in the Nation's Capital* (Northridge, CA: Windsor Publications, Inc., 1988), pp. 132-133.

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his land holdings into one-acre lots and sold the parcels individually for a higher price after the service amenities had reached the area. Brown's involvement in establishing a streetcar line and subdividing property while at times holding public office illustrates recurring themes in the development of Washington, D.C.'s transportation system after the Civil War: 1) the intertwining of land developers' interests with the development of modes of transportation and, 2) the intimate connection between public policy and private gain.

The development of the nation's capital in conjunction with the growth of the railway lines is clearly stated in an 1883 *National Republican* article that describes the Columbia Railway Company's streetcar line "as the creation of one unnamed man's development vision" and credits the line for stimulating development along its route:

It was in the mind of one of the active men of that period that a business center should be established at the intersection of Pennsylvania and New York Avenues and Fifteenth Street. In furtherance of this idea two street railways were projected.... The Columbia street railway was originated by a man whose name does not even appear among the incorporators, but who projected the route, drew up the charter and accomplished much of the laborious work incidental to securing the franchise....

The arguments used in its favor were that a short line upon an easy grade between the points mentioned in the proposed route could be managed at a small cost, and that the prospective growth in value of property along the line would recompense the owners of lots in the eastern section by making a market for them.... [T]hose opposed...pointed to the Egyptian darkness of all that portion of the route east of the government printing office, the absence of Streets or grades, and the non-existence of any sewerage, whole squares of ground being perpetually covered with water....

Prior to its organization the only sign of improvement in that direction was the immense block of houses erected on square 623.... But after the road became a settled fact quite a number of new enterprises sprang up. The old Douglas square was reduced to grade and completely filled with modern houses. Other squares in

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the vicinity, through which the Tiber ran, were taken hold of by builders and covered with commodious houses. A large number of dwellings were put up at the extreme end of the line, Streets were opened and graded, sewerage established, gas and water introduced, and a permanent population located where before had been a few hovels and a dangerous neighborhood.⁴⁰

The same article also quoted Superintendent William Morgan's November 1874 report on land values along the Columbia streetcar line east of North Capitol Street, documenting that the value of land increased from \$244,762 in 1869 to \$418,119 in 1873, and that the value of improvements grew from \$96,900 to \$257,100.⁴¹

Again, the *Evening Star* describes a proposed eastward extension of the Metropolitan Railroad from its A Street terminus east along East Capitol Street, and south along 11th Street, S.E. to the Navy Yard Bridge as:

...Being the pet enterprise of the 'Hill folks,' who own most of the stock of the road, and they cherish great expectations in regard to the benefits they are to derive from a street railroad running through their midst. Already property near the line of the road has increased from 10 to 20 percent in value.⁴²

Property development had not been the motivating factor in the initial development of the earliest horse-drawn railway line. The Washington and Georgetown Railroad Company was financed largely by out-of-town capitalists who had no real estate interests in the Washington, D.C. area. However, some of the principal men involved in establishing the city's railways did maintain business and civic interests that reached far beyond transportation. Many of these men continued to affect development throughout the city for many years in other capacities. For example, Henry D. Cooke of the W&G Railroad became the city's first territorial governor in 1871. Matthew G. Emery was the last mayor of the City of Washington before the creation of a territorial government. Emery was serving in that capacity while involved in the founding of the Columbia

⁴⁰ *National Republican*, November 16, 1883, p. 6; Square 623 is bounded by North Capitol Street to the east, H Street to the south, 1st Street to the west, and I Street to the north.

⁴¹ *National Republican*, November 16, 1883, p. 6.

⁴² *The Evening Star*, September 27, 1872. (From R. A. Truax Collection).

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Railroad Company. Henry A. Willard, a prominent local businessman and founder of the Willard Hotel, also served as president of the Columbia Railroad, and was an investor in the Union Railroad Company.

Obsolescence of the Horse-Drawn Railway, 1875-1892

Between 1875 and 1888, no new street railway companies were chartered by Congress in Washington, D.C. The railway expansion that took place in the nation's capital during this period continued to extend already existing lines to newly established and developing neighborhoods. By the late 1880s, inventors across the country were working on alternative power sources for public rail transportation. The new innovations, together with the extensive paving program begun under Alexander Shepherd, improved all modes of transportation. For example, by 1877, private carriages and coaches for hire became more prevalent, which provided passengers more flexibility in transportation routes. In 1888, 385 licensed vehicles operated in the city, including 151 cabs and 29 coaches.⁴³

There was increasing dissatisfaction, however, with the limitations of horsepower and travel conditions. The metal rails occupied a great deal of space on the public roadways, and tended to catch the wheels of other vehicles. Cobblestones, located between the rails so the horse could get a proper grip in order to pull the streetcars, provided a rough ride for free-wheel vehicles. Within the city limits, vehicles were not permitted to exceed nine miles per hour. In the outlying areas, this was increased to twelve miles per hour. Yet, the maximum speed of horse-drawn railways was approximately six miles an hour. In general, passengers were reluctant to commute more than one-and-a-half-hours one way. Thus, the maximum length of a horsecar line from residential areas to employment centers was effectively limited to nine miles.⁴⁴

The horse-drawn railways were also limited in transportation route options by the necessity of avoiding steep grades. Two geologic provinces that meet in Washington, D.C. -- the Piedmont Plateau Province and the Atlantic Coastal Plain Province -- create the city's steep grades. The Piedmont Plateau Province stretches eastward from the foot of the Blue Ridge Mountains, lying

⁴³ "City and District," *Evening Star*, April 14, 1888,

⁴⁴ Buckley, p. 24.

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under the entire District. Comprised of granite and other crystalline rocks, the province is exposed close to the surface in the northwestern third of the city. The southeastern two-thirds of the city are part of the flat-lying sedimentary Atlantic Coastal Plain Province, composed of a series of slightly tilting terraces dating from the Tertiary Period Age (above 100 feet) and the Quaternary Period Age (below 100 feet) of the Cenozoic geologic era. The large escarpment north of Florida Avenue, N.W., where a change in sea level occurs, marks the transition between the Tertiary and Quaternary Periods. The 85-100 foot terraces along Florida Avenue, East Capital Street, Cedar Hill, and Mount Alto Hospital define the younger Quaternary Period Age, visible to the south of Florida Avenue. The 60-foot terrace of I and N Streets is a small ill defined ridge that is more accentuated in the downtown region of the northwest quadrant of the city. The lowest well-defined Quaternary terrace in the District of Columbia is the 40-foot terraces at F Street and the White House, and along Minnesota Avenue. The higher terraces of the older Tertiary Period Age -- the 170-200 foot terrace where Mount Pleasant and St. Elizabeth's Hospital sit and the 230-420 foot terraces of Crestwood and West Brightwood, Tenallytown-Reno Reservoir, the Soldiers' Home, and Good Hope Hill at Alabama Avenue -- were beyond the reach of horse-drawn railways.⁴⁵ For the steep gradients, such as those of Capitol Hill and 15th Street by the Treasury, extra "hill" horses were hitched to the front of railcars at the bottom of the hill, and then led back down after each ascent. Originally, the extra horse was permitted to return to the bottom of the hill on its own, but this practice was given up when neighbors complained about the horses eating the bark off the trees as they trotted back down Capitol Hill to the waiting area.

Street railways required large numbers of horses -- as many as seven per car. The demanding nature of the work meant horses could be used for only a few years. Census records for 1870 indicate that in Washington, D.C. there were 5,496 horses serving in the transportation industry.⁴⁶

The streetcar companies frequently employed high quality horses that were often purchased at a minimum price by passengers. There was also the danger of an epizootic epidemic, which swept through the eastern seaboard in the winter of 1873, killing ten thousand of horses, and halting railway operations in many cities. The care and replacement of horses was a considerable ongoing expense. Horses were expensive, prone to sickness, fatigue, and were rarely capable of

⁴⁵ Martha Carr, "The District of Columbia: Its Rocks and Their Geologic History," *Geological Survey Bulletin* 967, (Washington, D.C.: Government Printing Office, 1950), pp. 5-8, 39-43.

⁴⁶ Agricultural Census Records, 1870. National Archives, College Park, Maryland.

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more than four years of service. Additional drawbacks of horse traction, as perceived in the 1880s and 1890s, were described in a report of the United States House of Representative's District Committee on an 1886 proposal to create a cable company.

The present facilities afforded by the horse railroads are entirely inadequate for the needs of the present population.... The cable system ...will rid the Streets of the present unsightly, annoying and frequently dangerous horse-car rail, leaving the surface of the street from curb to curb smooth and even, thus giving to the owners of vehicles of every kind a safe and comfortable roadway. The danger and annoyance that attends the use of Streets where the rail is necessarily in use where horse railroads are run is well known....

From a sanitary point of view the cable system has much to commend it, ridding, as it does, the city of stables, the Streets of filth, and the air of noxious smells.⁴⁷

Transportation innovations and changing community needs led Congress in 1889 to legislate the end to horse-drawn traction within the original boundaries of the Federal City. No alternative source of power had been demonstrated to be suited to the needs of all the District of Columbia railways. Yet, the District of Columbia Appropriation Act of 1890 (enacted March 2, 1889) required that all lines operating within the city switch to some other forms within two years. This proved impossible for several lines and a great number of extensions were granted as the street railway companies struggled to find an economic and practical replacement for horse traction. The loss of the horse traction affected the railway companies in a number of capacities, including lost revenue from the sale of manure. The exclusive use of horses for motive power continued until the fall of 1888 with the operation of the Eckington and Soldiers' Home Railway line. Congress, however, made clear indications that the existing franchises would eventually be terminated and all rights to operate would be forfeited. Although horses were still the dominant source of power in 1890, the days of the horse-drawn railway were limited. The number of horses not on farms in the District of Columbia reached 11,604 in 1910, but was drastically

⁴⁷ United States Congress, House of Representatives. Committee of the District of Columbia, Washington Cable Railway Company, 49th Congress, 1st Sess., Rept. No. 2549 (Washington, DC: Government Printing Office, 1886), p. 1.

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reduced to 4,015 just ten years later.⁴⁸ This decrease reflected the advent of the automobile, however, rather than the evolution of the street railway industry.

EARLY ELECTRIC TRACTION AND OTHER EXPERIMENTS, 1888-1899

In the late nineteenth century, there was a period of widespread experimentation with new underground power sources for the railways. Experimentation with propulsion was attempted in Cleveland, Pittsburgh, and Toronto, although large-scale use was limited to Washington, D.C. and Manhattan/New York City, London, Paris, Budapest, and Brussels. By the end of the 1890s, most cities had converted to electric power. The search for alternatives to horsepower included experiments with magnetic power, storage batteries, surface contact systems, compressed air, overhead wires, and cable systems. Steam had long since been proven the most efficient source of power, but it could not be readily applied to inner-city transportation. The W&G Railroad had experimented between 1870 and 1880 with steam motor cars, which ran on Pennsylvania Avenue near the Capitol, although this mode was not adopted permanently.⁴⁹ The noise of steam locomotion engines frightened horses, in addition to expelling smoke, embers, and a great deal of heat, thus forcing steam to be utilized solely as a stationary power source with cables for urban transport.

Firsts in Motive Power Experimentation in the District of Columbia

<i>Year of First Experiment</i>	<i>Power Source</i>	<i>First Company to Experiment</i>
October 1888	Overhead Wires	Eckington & Soldiers' Home Railway Company
September 1889	Storage Battery	Metropolitan Railway Company
November 1889	Compressed Air	Brightwood Railway Company
May 1890	Cable	Washington & Georgetown Railroad Company
December 1890	Magnetic Surface Contact	Eckington & Soldiers' Home Railway Company
July 1893	Love Conduit	Rock Creek Railway Company
July 1895	Underground Electric Conduit	Metropolitan Railway Company
1896	Gasoline/Oil Motors	Capital Railway

⁴⁸ Agricultural Census, 1910 and 1920. National Archives, College Park, Maryland

⁴⁹ Tindall, pp. 51-52

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Overhead Wires, 1888-1902

In the 1880s and 1890s, numerous inventors, including Thomas Edison, were exploring ways to use electric power to operate street railways. Many of the new technologies for both street railways and interurban lines used overhead wires to transmit power. Dr. Charles G. Page of northwest Washington, D.C. experimented with an electrically operated car (patent 10,480) as early as 1854. The car ran northwest along the tracks of the Baltimore and Ohio Railroad from the station at 2nd Street and Pennsylvania Avenue, N.W. to Hyattsville. The electrically powered car failed to complete its run to Bladensburg and returned to the station under horsepower.⁵⁰ Nearly thirty-five years later, inventor and electrical engineer Frank Julian Sprague developed the first successful commercial electric traction system. Having previously worked with Edison, Sprague was able to overcome many of the technical problems, demonstrating the superiority of electric traction over all previously employed sources of power. In February 1888, Sprague had proven the electric streetcar was both technically and economically feasible with the installation of twelve miles of electric overhead trolley lines in Richmond, Virginia. The experiment made horse-drawn cars obsolete. By the turn of the twentieth century, there were approximately 100,000 electric cars in service in the United States compared with the twenty-two thousand horse-drawn cars before the introduction of electric traction.⁵¹

Eckington and Soldiers' Home Railway Company

Seven months after the success of the Sprague Electric Railway and Motor Company in Richmond, Congress chartered Washington, D.C.'s first electric railway, the Eckington and Soldiers' Home Railway Company. Constructed by the Thomson-Houston Company, the line opened on October 17, 1888, and proved to be an immediate public success. The railway line was described in a congressional report three months later as "undoubtedly the best electric railway in the United States and beyond comparison superior to any horse railway."⁵² Colonel

⁵⁰ Tindall, p. 52.

⁵¹ Walter Rice and Emiliano Echeverria, "San Francisco's Pioneer Electric Railway: San Francisco & San Mateo Railway Company." Located on the Museum of the City of San Francisco Web Page, www.sfmuseum.org/hist10/sf&sm.html.

⁵² U.S. House of Representatives. Committee on the District of Columbia, Eckington and Soldiers' Home Railway Company, 50th Cong., 2d Sess., Rept. No. 3821 (Washington: Government Printing Office, 1889), p. 1.

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George H. Truesdell (1842-1921) was the first president and the organizing force behind the Eckington and Soldiers' Home Railway Company. Truesdell came to Washington, D.C. in 1872, immediately becoming involved in construction and real estate development. In 1887, he purchased Eckington; a country estate located at what is now 3rd and T Streets, N.E., just north of McKinley High School. Over the next few years, Truesdell subdivided and developed this area into a suburban residential neighborhood. Truesdell later developed Washington Heights located between Columbia Road and Rock Creek "which in pre-World War I years became Washington's top suburban area, and included the handsome Truesdell mansion known as 'Manacasset,' located at 19th Street and Columbia Road (later Kalorama Road). Later he became president of the Washington Traction and Electric Company, which converted the horse drawn lines and he remained for years a leader in expanding Washington, D.C.'s street railway system."⁵³

The first Eckington and Soldiers' Home Railway line traveled two and a half miles from the east side of Mount Vernon Square at 7th Street along New York Avenue past Florida Avenue. Once outside the original boundary of the city, the line worked its way north through the Eckington estate to the steam power plant on Eckington Place to 4th and T Streets, N.E. The first **Eckington Car Barn** (1888) at 4th and T Streets, N.E. was a one-story structure measuring 80 feet in length. As indicated on the building permit, the wood frame building was constructed by J.H. Lane on Square 18, and provided steam power to the electric cars. On December 3, 1898, the Eckington Car Barn and thirty electric cars burned. The second **Eckington Car Barn** (1899), located on Square 17 along 5th Street, was constructed of brick with steel and corrugated iron. This extant one-story building measures 105 feet by 201 feet.

Extensions to the Eckington and Soldiers' Home Railway line in the early 1890s stretched to Bunker Hill Road, to the entrance of Glenwood Cemetery, and along North Capitol Street to the Soldiers' Home. With the stipulation that the electric railway could not use overhead wires, Congress also authorized an extension running through the central part of the city along G Street from 5th to 15th Streets. The 1890 legislation stated the extension could not use overhead wires if powered by electricity and had to utilize underground wires if motivated by electricity.

⁵³ Stanley Phillips, "Unsung Landmarks," *The National Republican*, p. 22.

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Although successful, the first application of an overhead wire system in the nation's capital greatly affected the future of street railway development in the District of Columbia as there was strong public opposition to erecting overhead wires within the city limits. This sentiment was prompted by the major deployment of telegraph and telephone lines that had been placed in 1845 and 1878, respectively, along several streets of the old city.⁵⁴ Theodore W. Noyes of the *Washington Star* was one of many who strongly criticized the installation of overhead lines because of the danger of electrocution, and the concern for preventing the capital from being "disfigured by ugly standards carrying a network of wires."⁵⁵ According to the *Washington Star*, the advocates of overhead trolley lines included "some seeking merely an outlet for local capital, others working in the interests...of the manufacturers of trolley equipment, and still others representing certain large systems of trolley lines in other cities, eager to break down the barriers which held their favorite device out of Washington."⁵⁶

As a result of the opposition, street railway electrification in the Federal City was delayed for over half a decade until alternative methods were developed. Opponents of the overhead electric wires were successful in securing an amendment to the District Appropriations Act (approved July 18, 1888) that prohibited the erection of any additional overhead wires for any purpose within the city and called for a study of underground systems as an alternative.⁵⁷ Although the overhead trolley was the most reliable and versatile form of electric power and much less expensive than underground wire or steam-powered cables, Congress required companies operating horse railways in the District of Columbia to substitute "electric power by storage or independent electrical batteries or underground wire, or underground cables moved by steam power."⁵⁸ This legislation did not affect the already approved Eckington and Soldiers' Home Railway Company, but it did impact the Rock Creek Railway south and east of Florida Avenue at Columbia Road.⁵⁹

⁵⁴ Constance McLaughlin Green, Washington, *A History of the Capital, 1800-1950*, (Princeton, NJ: Princeton University Press, 1962), p. 50.

⁵⁵ "Fiftieth Anniversary Supplement," *Evening Star*, December 16, 1902.

⁵⁶ "Fiftieth Anniversary Supplement," *Evening Star*, December 16, 1902.

⁵⁷ This prohibition was extended for street railways, but not other overhead wires, in the 1890 District of Columbia Appropriations Act enacted March 2, 1889. Stats. 25, p. 797.

⁵⁸ Enacted March 2, 1889. Stats. 25, p. 797.

⁵⁹ See discussion of the Love Conduit System.

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Overhead Expansion outside the Federal City

Whereas electric railways operating within the original Federal City were prevented from adopting the most efficient new overhead electric technology, no such limitation was placed on suburban lines that operated beyond the confines of Florida Avenue. The motivation for most of the suburban rail lines was land development and community growth. Unlike the earliest railways which relied on revenues from providing transportation in heavily settled areas, the next generation of railways was the creation of developers who realized that good transportation was the key to opening up new areas of the District of Columbia and nearby Maryland and Virginia to residential development. The railways themselves were generally not expected to be profitable, as most of their routes initially ran through vacant land. Rather, the real estate developers hoped to gain profits from land speculation. To this end, developers had to erect powerhouses and substations that provided power not only to the streetcars but also to the neighborhoods in form of residential electricity and streetlights. In some cases, developer-owned railway companies built amusement parks or other recreational facilities at the ends of lines as attractions to draw people out of the city and past the newly subdivided land. Thus, improvements in the city's infrastructure followed the streetcar lines, with real estate values directly tied to a lot's proximity to the railway route. Consequently, many upper and middle class citizens relocated to the outlying areas of the city, about one to two miles. This enabled the unskilled and low-income laborer to redefine their residential neighborhoods in the core of downtown Washington, D.C..

The dominance of real estate speculators in the development of these streetcar lines is attested to by several congressional hearings on the subject reported in the *Evening Star*. During a debate over the relative merits of the street railways, one senator expressed concern over the motivation behind the establishment of the lines:

A syndicate...buys a large tract of land out in the country. It seeks to better its fortunes, to double and treble its money, and it desires communication with its land out there. There is no movement on the part of the laborers or of the poor of the city to build the road, but this syndicate comes forward with its plans and ruthlessly takes possession of every avenue that the people of the District ought to

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have--not simply those who roll in luxurious carriages....⁶⁰

This sort of operation was apparently the norm, and continued to be a contentious point for Congress, which held the power to approve or reject proposed streetcar routes. Yet the close ties between real estate and streetcar development continued to have a tremendous influence on the growth of the city throughout the late nineteenth and early twentieth centuries. In fact, the officers and principal stockholders of the land development companies and the railway companies were often the same.

Rock Creek Railway Company

One of the better examples of the relationship between land developer and railway company was the Rock Creek Railway Company, chartered on June 23, 1888. The Rock Creek Railway Company was an integral part of the Chevy Chase Land Company's plan for development along Connecticut Avenue. The investors included John F. Waggaman, who had development investments in Woodley Park, and Eckington Railway president George Truesdell, who was also the developer of Washington Heights in the Columbia Road area. Not surprisingly, by 1890, the officers and principal stockholders of the Chevy Chase Land Company and the Rock Creek Railway Company were the same.

Nevada senators Francis G. Newlands and William M. Stewart, together with Lieutenant Colonel George A. Ames founded the Chevy Chase Land Company of Maryland in 1890. Having been involved previously in the development of the Dupont Circle area, Newlands began to purchase undeveloped land north of Rock Creek in the late 1880s. The company's 1,700 acres flanked the corridor now known as Connecticut Avenue, extending into Chevy Chase, Maryland. Considered to be a long-term investment for the Chevy Chase Land Company, great attention was given to the infrastructure and amenities, including paved streets, landscaping, design guidelines, schools, libraries, churches, and the Chevy Chase Country Club.⁶¹ Located five miles from the original boundaries of the Federal City, Chevy Chase, Maryland was largely inaccessible, forcing Newlands to construct road and railway systems that connected the newly

⁶⁰ "Street Railway Projects," *Evening Star* (April 23, 1890), p. 3.

⁶¹ Smith, *Washington at Home*, p. 196.

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created suburb to downtown Washington, D.C.. In the 1880s, Connecticut Avenue ended at Florida Avenue, cutting off the area to the north and west of Rock Creek. Newlands constructed trestle bridges at Calvert and Klingle Streets, and extended Connecticut Avenue directly through his 1,700-acre property into Maryland.

In 1890, Congress amended the charter creating the Rock Creek Railway Company, authorizing its extension from 18th and U Streets, north on 18th Street to Calvert Street, and then northwest on Connecticut Avenue to the “north line of the District of Columbia.” As recounted in *Chevy Chase: A Home Suburb for the Nation’s Capital*, “this circuitous route of linking Connecticut Avenue downtown to Connecticut Avenue Extended was dictated by exorbitant costs and the engineering constraints of building a road across the Rock Creek Valley. The Rock Creek Railway was designed to tie into existing streetcar lines within the city. On the west, a horse-drawn spur along Boundary Street [Florida Avenue] would connect it [the line] to the Metropolitan Railway’s horsecar line on Connecticut Avenue. On the east, it would connect with the W&G’s 14th Street streetcar line at U Street. North of the District line, the Chevy Chase Land Company acquired a charter to build the Maryland section of the Rock Creek Railway to its suburban terminal, known as Chevy Chase Lake (at today’s Connecticut Avenue and Chevy Chase Lake Road).”⁶²

The company proposed the construction of a 130-foot-wide corridor that was heavily wooded and marked by several steep ravines. Unsure of the viability of even laying the road, William Kesley Schoepf was engaged as civil engineer. Schoepf concluded “that in order to construct the road, two major and costly trestle bridges would need to be erected to span the proposed crossing of the Rock Creek Valley.... Construction of the two bridges, one at Klingle Valley (just south of Today’s Cleveland Park shopping district), the other at today’s Calvert Street, presented the most formidable challenges.”⁶³ On August 1, 1891, the *Evening Star* reported:

To make the crossing at Rock Creek an iron bridge has been built 180 feet high and 750 feet long. It is seventy-five feet higher than the new Woodley road Bridge [a former bridge that stood at the site of today’s Taft Bridge], which is just

⁶² Elizabeth Jo Lampl and Kimberly Prothro Williams. *Chevy Chase: A Home Suburb for the Nation’s Capital*. (Crownsville, MD: Montgomery County Historic Preservation Commission, et al, 1998), pp. 28-29.

⁶³ Lampl and Williams, pp. 29-31.

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to the south, and twice as long. The bridge, including the masonry, has been built at a cost of \$85,000. It passes over the south end of the Zoological Park. Another bridge has been erected to carry the road over the Kingle road at an elevation of seventy feet. This bridge is 400 feet long and, including the masonry, has cost \$42,000.⁶⁴

The same article reported that the construction of Connecticut Avenue was making “favorable progress.” Three miles of the Connecticut Avenue roadbed, from Calvert Street to the District line, had been fully excavated. With the materials secured, laying of the rails proceeded. A March 1892 *Evening Star* article recounted “...the rails for the Rock Creek Railroad have been transported and a gang of workmen are engaged in laying the rails at the rate of about a mile a week.”⁶⁵

Rock Creek’s original suburban line opened on September 18, 1892 with twenty-five cars. As laid, the Rock Creek Railway used overhead lines for the majority of its route, traveling from beyond the city limits at Calvert Street to Maryland. The overhead lines were constructed with tracks made of T-rails placed on wooden ties along the right-of-way with wooden trolley line poles at the center of the double set of tracks. The 1889 ban on overhead lines within the city limits required the 1.8-mile segment of line within the city to operate by an underground electric conduit system known as the Love Conduit System.⁶⁶

The southern terminus of the Rock Creek Railway line connected with the Metropolitan Railroad line at Connecticut Avenue and, prior to 1900, horse-drawn streetcars were used along the Florida Avenue segment of two blocks. The northern terminus extended just two miles beyond the District of Columbia and Maryland State line at Chevy Chase Circle to meet with the Georgetown Branch of the Baltimore and Ohio. The focal point of the extension into Maryland was Chevy Chase Lake, an artificial lake and amusement park created by Francis Newlands to lure potential residents and increase railway revenue.

⁶⁴ Lampl and Williams, p. 31.

⁶⁵ Lampl and Williams, p. 32.

⁶⁶ See subsequent discussion of the Love Conduit System.

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As written in *Chevy Chase: A Home Suburb for the Nation's Capital* "by 1893, the Rock Creek Railway streetcar schedule offered both winter and summer hours. In the winter, a 20-minute schedule was maintained during the week with the number of cars increased on Sunday. During the summer months, as recreational streetcar use increased, one streetcar ran every 12 minutes during the week and every six minutes on Sunday. Several stations stood along the streetcar route between the Rock Creek Bridge at Calvert Street and the Chevy Chase terminus."⁶⁷ By transfer from the various intersecting lines of the other railway companies, passengers could go from nearly every part of the city to Chevy Chase for a single fare.

The Rock Creek Railway Company maintained two powerhouses: the **Rock Creek Railway Powerhouse** (1893, demolished) between 17th and 18th Streets on Champlain Street, N.W. and at **Chevy Chase Lake Powerhouse** (1893). The power station and depot built at Chevy Chase Lake was built as part of the agreement between the Metropolitan Southern Branch of the Baltimore and Ohio Railroad and the Chevy Chase Land Company. It generated power for not only the overhead trolley section of the line outside the City of Washington, but was designed to also provide power for the street lighting and houses of the new community.⁶⁸ The railway served as a supply line from the city as well as a passenger route, with a freight car bringing mail, groceries, and medicines twice daily.⁶⁹ Coal and ice, also carried by the electric railway, could be ordered through the Land Company.

The railway company erected a modest brick freight station in 1899. The **Rock Creek Terminal** (1899, demolished) was located at the eastern end of the Calvert Street Bridge. Designed by architect Waddy B. Wood, the structure was one story in height, measuring 34 feet square. The building, later known as the Calvert Street Waiting Station, became the terminus for streetcar operations in 1935 when buses replaced streetcar service across the bridge.

Upon completion of Connecticut Avenue, the Chevy Chase Land Company deeded that portion of the thoroughfare in Washington to the District of Columbia, and that in Montgomery County to Maryland. Similarly, the Rock Creek Railway deeded the Rock Creek Bridge and Klingle

⁶⁷ Lampl and Williams, p. 34.

⁶⁸ Albert W. Atwood, "The Romance of Senator Francis G. Newlands," *Records of the Columbia Historical Society* (Washington, D.C.: Columbia Historical Society, 1966-1968), p. 299.

⁶⁹ Atwood, p. 300.

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Bridge to the District of Columbia.⁷⁰

Georgetown and Tenallytown Railway Company

Unlike contemporary railway companies chartered in the late 1880s, the Georgetown and Tenallytown Railway Company served existing communities. The Georgetown and Tenallytown Company (chartered August 1888) began operations on April 25, 1890, connecting Georgetown to the extant village of Tenallytown. One of the investors for the railroad company, John W. Thompson, had previously served as president of the Metropolitan Railroad Company for almost twenty years (1865-1884). The line traveled along present-day Wisconsin Avenue, stretching from the Potomac River to Maryland. Although Congress required that Georgetown become part of the City of Washington in 1871, the community was still perceived to be outside of the city proper, thus allowing for the use of overhead trolley wires along the Wisconsin Avenue route.

The Georgetown & Tenallytown Powerhouse and Car Barn (1890, burned 1914) were originally located on the east side of Wisconsin Avenue at Calvert Street. The wood frame structure was constructed on a lot about one-and-a-half-stories below street grade. The main portion of the building was actually the second story, with a transfer table and three tracks emerging from the north elevation of the barn. The basement contained a shop that was reached by an elevator. Outside the building, to the rear of the lot, was a steam power plant and water reservoir. The power plant burned Cumberland coal, which came to Georgetown via the C&O Canal. The building was eventually replaced by the **Tenallytown Barn** (1909, demolished) at 5230 Wisconsin Avenue. The coal was delivered to the new barn in small single truck hoppers via the streetcar line, which was a tremendous feat given the steep grade from the river through Georgetown to Calvert Street.

Shortly after it began operating, the Georgetown and Tenallytown Company linked itself to two Maryland lines – the *Tenallytown and Rockville Railroad* and the *Washington and Glen Echo Railroad*. The Tenallytown and Rockville Railroad traveled 3.75 miles from the Georgetown and Tenallytown Railroad's terminus at Wisconsin and Willard Avenues, along Old Georgetown Road to Bethesda. At the end of the line was Bethesda Park, an amusement park that attracted

⁷⁰ Lampl and Williams, p. 32.

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riders until its destruction by a hurricane in 1896. The company had no barn, shop, or power stations. Out-of-service cars were stored at the Bethesda Terminal while the car operating at night was parked near the motorman's house. The Georgetown and Tenallytown Company supplied the power and repaired road and rolling stock.

Sharing the Wisconsin and Willard terminal was the Glen Echo Railroad Company, comprising of two branches – the Tenallytown and the Chevy Chase lines. Chartered in December 1889, the lines were placed into operation in June 1891. The original line ran from the terminal westward to Sycamore store at Conduit Road (now MacArthur Boulevard) and Walhonding Road. It was a single track from the junction to the point where it joined the double track Chevy Chase-Conduit Road line. As recounted by King, “from Sycamore store to Glen Echo and Cabin John, the route was in line with the Washington Aqueduct. The aqueduct was controlled by the U.S. Army Engineers who, in turn, supervised construction of the railway in the area of the aqueduct. Engineer control over construction made progress [along] this portion of the line slower than the rest, so it wasn't until April 1, 1896, that operation began to Glen Echo. Operation to Cabin John began a month later.”⁷¹ The name of the company was changed to the Washington and Glen Echo Railroad Company in 1896.

With the extension of the line along the Washington Aqueduct to Glen Echo and Cabin John, a transfer station was erected at the corner of Willard and Wisconsin Avenues. This one-story pie-shaped transfer station, known as “**The Junction**” (ca. 1891, demolished) was a wood frame structure that served the Glen Echo cars on the west platform, while Georgetown cars utilized the east side. A room was located at the rear of the building, serving as the home of the Italian family that ran the refreshment stand. The railway had its own masonry car barn and powerhouse near the intersection of Walhonding and Conduit Roads. The car barn remained in use until 1902, and was not totally removed until after 1940. The Washington and Great Falls car barn, known as the **Falls Car Barn** (1896, demolished 1949) was located at 38th and Prospect Streets. The one-story wood frame building housed six interior tracks.

The goal of the railway companies was Great Falls, as indicated by the corporate names. However, it was not until some seventeen years later that the Maryland side of the scenic falls on

⁷¹ King, p. 42.

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the Potomac River was actually reached. Initially, a contract was negotiated with the Metropolitan Railroad Company to redeem coupons for passengers transferring between the separate lines at 36th and Prospect Streets. A track connection was installed in 1899 and on May 16, 1900, one of the classic fourteen-bench open cars of the Metropolitan made a trial run from Lincoln Park to Cabin John inaugurating the new summer service. However, it was not until January 29, 1902, that a formal contract providing for joint operations was signed to allow cars from either company to operate on a regular schedule. In October 1902, operation ended on the Glen Echo Railroad, except for that portion running from Walhonding Road to Cabin John. This extant portion of the line became an integral part of the Washington and Great Falls Electric Railway Company line.⁷²

Storage Battery System, 1889-1893

The Metropolitan Railway Company opted in September 1889 to experiment with storage battery cars as a substitution for horse-drawn power. The company hired C.O. Mailloux, the leading expert on storage battery systems, to supervise the installation. Accordingly, in 1891, electricity generating facilities and storage batteries were constructed at the existing P Street Shops at 2411 P Street, N.W. Similar facilities were established at the **4-1/2 Street Car Barn and Shops** (1892, demolished) on P Street between Water and 4-1/2 Streets, S.W.⁷³ This two-story brick shop was the first, and only building erected in Washington, D.C. for use with the storage battery system. The company had commissioned architect John B. Brady in 1892 to design the large, utilitarian building, which illustrated the Romanesque Revival style. Its imposing tower, with rounded corners and patterned brick cornice, had the impact of a church bell tower. In 1896, one year after the building began operations, a severe hurricane caused part of the roof, including a portion of the brick tower, to collapse and a number of the cars inside the building were damaged beyond repair. Although the P Street building was eventually repaired, the tower was never fully reconstructed.

For the next three years, the Metropolitan Railway Company continued to utilize the battery storage system. The company ultimately concluded, however, that the system was not the best

⁷² King, pp. 48-50.

⁷³ King, pp. 25-27.

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solution for replacing horse-drawn power, particularly with the local success with cable. Thus, the last car motivated by storage battery for the Metropolitan Railway Company was operated on October 29, 1893. The cars that had utilized the battery system were converted for use elsewhere.⁷⁴

The Eckington and Soldiers' Home Railway Company also investigated with the storage battery system. The experimentation began on March 13, 1891, with two EDCO storage battery cars owned by the Accumulator Company of Philadelphia traveling between 5th and New York Avenue, and 15th and G Streets.⁷⁵ In the spring of that year, the railway company purchased six battery cars from the J.G. Brill Company of Philadelphia for use along the previously tested routes. Like the Metropolitan Railway Company, the Eckington and Soldiers' Home Railway Company eventually concluded that the battery cars were too slow and cost too much to maintain and charge. Thus, the battery systems were replaced temporarily by horsecars in May 1893, and the company's lines converted to electric power by the following year.⁷⁶

In the first part of the twentieth century, storage battery cars were purchased by the *Washington, Spa Spring and Greta Railroad Company* of Maryland to determine their feasibility. When chartered in 1905, the Washington, Spa Spring and Greta Railroad Company transported a route that ran from the District line along Bladensburg Road to 15th and H Streets, and Maryland Avenue, N.E. Development was the stimulus for the line's construction and its ultimate extension to Berwyn where the company owned the land under the name of the Bladensburg Development Company. A wood frame barn, known as the First Bladensburg Barn, was erected at 806 Bladensburg Road in Maryland circa 1910.⁷⁷

With permission granted in 1911 by the Public Service Commission of Maryland, the Washington, Spa Spring and Greta Railroad Company sold bonds to finance a four mile extension from Bladensburg to Berwyn Heights. One year later, four cars and all the necessary equipment were purchased. The Federal Storage Battery Car Company of Silver Lake, New Jersey, built the new vehicles, which were popularly known as "Edison-Beach" cars. These

⁷⁴ King, p. 27.

⁷⁵ King, p. 27.

⁷⁶ King, p. 27.

⁷⁷ King, pp. 103 and 289.

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battery-powered cars allowed the company to experiment not only with an alternate source of power but also the patronage of new routes at limited expense. Each car cost \$9,000 plus shipping. The extended Bladensburg line was opened in 1912, with 2.89 miles of track within the boundaries of the District and 5.55 miles in Maryland. The District was serviced by two Washington Railway 100 series cars that traveled from the **waiting station at 15th and H Streets, N.E.** to Bladensburg, where the transfer was made to the storage battery cars. Accordingly, the company had changed its name to the *Washington Interurban Railway Company* in October 1912. To service the Maryland cars, a second Bladensburg Barn was erected in 1912, opposite the Mount Olivet Cemetery gates.⁷⁸

The line suffered competition, however, from WRECo's nearby Maryland line and the Baltimore and Ohio Railroad line. Additionally, the transfer from the electric streetcar to the battery-operated cars required a hundred-foot unsheltered walk along the track, as there was no coordinating platform. In June 1914, the Federal Storage Battery Car Company, which had changed its name to Railway Storage Battery Car Company two years prior, foreclosed on its mortgage. The storage battery franchise operated by Washington Interurban Railway Company was sold in 1915 to Gustave Herre, who formed the Washington Interurban Railroad Company on January 27, 1916. The continued lack of ridership, coupled with the inconsistency of the line, prompted it to be incrementally abandoned between 1921 and 1925, and replaced with motor bus service.

The Baltimore and Washington Transit Company, which became the Washington and Maryland Railway Company in 1910, also utilized storage battery cars in the first part of the twentieth century. The troubled company also experimented with electric and gasoline powered cars. By August 1911, two Edison-Beach storage battery cars were operating on the line. One of the battery-operated cars was sold and the remaining car destroyed when a fire engulfed the company's second car barn on Blair Road at 3rd Street and Aspen Road, N.W. on September 16, 1913. Although streetcar operations commenced one year later, the line was fully electrified and the storage battery system abandoned.⁷⁹

⁷⁸ King, pp. 103 and 289.

⁷⁹ King, p. 99.

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Compressed Air, 1889-1897

The Brightwood Railway Company, chartered in 1888 to build a railway from Florida Avenue along 7th Street and Brightwood Avenue (later Georgia Avenue) to the Maryland line, was the first railway company to experiment with compressed air. Originally, the company in Washington, D.C. was authorized to use only horsepower or underground steel cables with electric power, thus precluding the overhead trolley system that had proven so successful on the Eckington line. Despite the need for a transportation system that extended to the District line, tracks were laid only as far as Brightwood, one and one-half miles short of the expected terminus in Maryland. The original motive power for the line was the Judson Pneumatic system, a complicated system invented by Whitcomb L. Judson, the inventor of the zipper.

In November 1889, the Judson Pneumatic Street Railroad Company of New York agreed to construct, at their expense, a single track with turnouts from Florida Avenue to Rock Creek Church Road. The track was laid along side existing horse car rails. This compressed air system of motive power consisted of two parallel tubes six or eight inches in diameter installed in an underground conduit. The tubes revolved against a set of staggered friction wheels attached to the car. The rotary motion, which impelled the car on the principle of a screw, was imparted to the tubes by small engines about five hundred feet apart along the tubes. As the air escaped from the exhaust, however, it absorbed so much heat from the moisture in the surrounding atmosphere that ice clogged the gearing of the engines.⁸⁰ Based on its fair weather performance, the Brightwood Railway purchased the pneumatic operation for \$45,000 on June 11, 1890 from Judson. The system's failure eventually forced the Brightwood Railway to revert to horse-drawn cars operated by the Metropolitan Railroad Company. The Metropolitan's Silver Spring line already traveled along part of this route on the track laid by the then-dissolved Boundary and Silver Spring Railway Company.

The Columbia Railway Company also experimented unsuccessfully with a single compressed air car, which was furnished by the Hydro Pneumatic Company in 1892.⁸¹ Four years later, in 1896,

⁸⁰ Tindall, p. 56 and King, p. 19.

⁸¹ King, p. 32.

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the Eckington and Soldiers' Home Railway Company and the Belt Line Railway Company equipped their existing horse-drawn lines with compressed air motors. A Congressional Act, dated June 10, 1896, allowed the two companies three years to determine the practicality of the air motors. If successful, the conversion was to be done within six months of the act; otherwise, the companies were to convert to underground conduit within eighteen months. The Eckington and Soldiers' Home Railway Company promptly ordered ten compressed air motors from H.K. Porter and Company of Pittsburgh. Soon thereafter, the Eckington and Soldiers' Home Railway Company went into receivership and the air motor order canceled. Ultimately, under the pressure from the company vice president W. Kesley Schoepf, the Compressed Air Power Company agreed to lend a single car. The car was equipped with a Headley-Knight compressed air system. Schoepf was responsible for freight and the compressor itself, a \$500 cost. The experimentation began on March 10, 1897. No record of experimentation by the Belt Line Railway Company exists.⁸²

As written in *100 Years of Capital Traction*, "the first car, number 91, carried air at 2,000 pounds per square inch in thirty-four reservoirs which had to be charged once each trip at the powerhouse which was at Eckington. In addition, the car was equipped with a coke heater to heat the air before it entered the cylinders, both to prevent freezing and for greater efficiency. The coke heater was not satisfactory and the Receiver [Schoepf] therefore prevailed on Compressed Air to supply another car with a hot-water heater. This second car, number 400, arrived in June and was run on regular schedules. Mr. Schoepf stated in May that the experiments were so successful that fifteen cars were ordered. The public didn't match his enthusiasm however. There were complaints of dust from the exhaust, and heat, smoke and smell from the heating device. In addition, the cars were noted for the inability to make the grade on Eckington Place at Quincy Street. The experiment was soon abandoned probably due to poor public reception and the impracticality of having to recharge the cars each trip."⁸³

⁸² King, pp. 16 and 27.

⁸³ King, p. 28.

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Cable Cars, 1890-1899

As early as 1872, a successful cable road was built and operated in San Francisco, California. Slowly, during the late 1870s and early 1880s, thirty other American cities deployed cable for some of their major routes. The system used stationary power sources to operate underground steel cables. The United States House of Representative's Committee on the District of Columbia began to investigate the use of a cable car system in the mid-1880s. In 1886, the Committee published a report, describing cable as "the best known method of passenger transit through city streets, insuring speed, safety, cleanliness, and a uniformly cheap service."⁸⁴

The transition to underground cable cars was boosted by the 1889 Congressional legislation that mandated the phasing out of horse-drawn railway vehicles and prohibited the use of overhead electric wires. Since the only feasible electric traction system in use during this period required overhead electric wires, the law gave great funding advantage to underground cable car railways within the original boundaries of the District of Columbia. Although short lived, the cable system replaced the use of horsepower on four major lines by 1890.

A stationary power source, commonly steam, provided motive power that was transmitted through continuously moving steel ropes, or cables, housed in conduits beneath the street. The cables moved through underground conduits at the rate of nine miles an hour. The cable cars were equipped with a mechanism that could grasp or release the underground cable at the operator's will. Usually a trailer, which could carry more passengers, was attached to the grip car.⁸⁵ A typical train would have an open grip car coupled to one or two trailers. Only the grip car was connected to the underground wire cables. The trailers were open or closed, depending on the season; but the grip cars were always open, allowing passengers to ride on the running boards while gripping onto the stanchions on the sides of the car. The closed cars were heated by stoves in cold weather, and illuminated by gas or oil lamps.

⁸⁴ U.S. Congress, House of Representatives, Committee of the District of Columbia, Washington Cable Railway Company, 49th Congress, 1st Sess., Rept. No. 2549 (Washington, DC: Government Printing Office, 1886), p. 1.

⁸⁵ Merrill, "Urban Transportation of Yesterday and Today," p. 6.

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Purpose-Built Cable Resources

<i>Resource</i>	<i>Location</i>	<i>Built</i>	<i>Railway Company</i>
7 th Street Car Barn and Powerhouse	P and Water Streets, SW	1890-1891	W&G Railroad Company
Navy Yard Car Barn	770 M Street, SE	1891	W&G Railroad Company
Mount Pleasant Car Barn	3200 14 th Street, NW	1891	W&G Railroad Company
Pennsylvania Avenue Powerhouse	14 th and E Streets, NW	1891	W&G Railroad Company
Columbia Barn	15 th and Benning Streets, NE	1895	Columbia Railway Company
Georgetown Car Barn	3600 M Street, NW	1895-1897	Capital Traction Company

On May 12, 1890, the District of Columbia's first cable car operation opened along the existing 7th Street line. It ran from the Arsenal (now Fort McNair, located at 4th and P Streets, S.W.) at the waterfront through the major shopping district and the dense residential neighborhoods around 7th Street to the intersection of Florida Avenue, not far from the future site of Griffith Stadium. Established by the Washington and Georgetown Railroad Company, the single line was three-and-one-half miles long with its stationary powerhouse located at the Arsenal terminus. Following the immediate success of their 7th Street line, the W&G quickly converted its other two lines -- along Pennsylvania Avenue and 14th Street -- to cable operation. Charles C. Glover, the company's vice president, had been the driving force behind the decision to install cable. Together with company president Henry Hurt, Glover spent five weeks touring street railway systems across the country before selecting Daniel Bontecou of Kansas City to design the District's first cable line.⁸⁶

With the transition to cable, the W&G undertook a massive \$3,500,000 building campaign that included the erection of new car barns, powerhouse complexes, and the installation of miles of cable. According to the company's president Henry Hurt, the aim was to establish a transportation model for the country. This investment demonstrated "the growing importance of

⁸⁶ "The New Cable Road," *Evening Star*, July 2, 1892, p. 12.

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this city" according to a contemporary account.⁸⁷ W&G commissioned Walter C. Root, following his tenure with his brother's Chicago firm of Burnham and Root, to design their three car houses and the main powerhouse for the nation's capitol. The choice of an out-of-town architect is not all that unusual as the company was financed largely by out-of-town capitalists who had no real estate interests in the Washington, D.C. area. Additionally, at the time Root was hired to design the new cable buildings for the nation's capital, he had been working in Kansas City, the home of the systems designer Daniel Bontecou. The new buildings designed by Root include **Mount Pleasant Car Barn** located at 14th Street south of Park Road, N.W., (1891, demolished); the **7th Street Car Barn and Powerhouse** at P and Water Streets in S.W., (1890-1891, demolished); the **Navy Yard Car Barn** (1891, extant) in the 700 block of M Streets, S.E.; and the **Pennsylvania Avenue Powerhouse** at 14th and E Streets, N.W., (1891, burned 1897). The buildings were all completed in 1891, illustrating the distinctive Romanesque Revival style of architecture.⁸⁸

The *Evening Star* published detailed accounts of the railway company's operations in 1892. The articles recounted that the "public will be able to travel by streetcar from Georgetown to the Navy Yard in about forty minutes.... In a little more than twenty minutes a passenger can go from the Center Market to Mount Pleasant."⁸⁹ Serviced by the powerhouse at Pennsylvania Avenue, the lines ran from Georgetown along Pennsylvania Avenue to the Navy Yard and from the Baltimore and Ohio Depot northwest of the Capitol to Mount Pleasant via Pennsylvania Avenue and 14th Street. This line served the major business and commercial districts in the city, passing the White House, the Treasury, Center Market, the Navy Yard, and the Capitol. The powerhouse at P and Water Streets in S.W. provided service for the 7th Street line, which ran along M Street, S.W. to 7th Street, terminating at Florida Avenue. The cars traveled at a speed of 9.33 miles per hour, which proved to be a substantial increase over the typical six miles per hour speed of the horse-drawn railway cars. The cable cars of the W&G, which ran every three-and-a-half minutes and utilized sixteen trains, proved to be one of the nation's most prosperous cable

⁸⁷ "The New Cable Road," *Evening Star*, July 2, 1892.

⁸⁸ The Mount Pleasant Car Barn was razed in 1907; the 7th Street Car Barn and Powerhouse was demolished in 1961; and the Pennsylvania Avenue Powerhouse was destroyed by fire in 1897. The Navy Yard Car Barn is the only Walter C. Root designed streetcar-related building that remains standing in the District of Columbia.

⁸⁹ "The New Cable Road," *Evening Star*, July 2, 1892.

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lines.⁹⁰ With this headway, the W&G line provided seventeen services per direction per hour, with capacity for 100-150 riders per two or three cars (1,700-2,500-rider capacity per hour per direction). Allowing riders to get on and off the trains, more than 3,500 passengers per hour were served.

By 1895, Congress had authorized a fifteen hundred foot extension from the original Georgetown terminus at 32nd Street (Wisconsin Avenue) to 36th and M Streets in order to provide a connection with the *Washington and Old Dominion Railroad* that crossed the Potomac River over the Aqueduct Bridge in Georgetown. The railroad also laid a previously authorized extension of the 14th Street line from Florida Avenue up the steep hill to Park Road, thus linking Mount Pleasant to the downtown city lines. In order to provide the required connections west of the city, the W&G constructed a new terminus at 36th and M Streets in 1895. Designed by Waddy Wood, the imposing brick structure was sited on a lot at the western end of M Street, a parcel that required the excavation of 90,000 cubic yards of material, mostly rocks. The hillside nature of the site, a rise of sixty feet across 250 feet, required massive concrete retaining walls along the north and most of the east and west sides of the building. The walls were thirteen feet thick at the base. The building was 180 feet by 242 feet and three stories tall. The Washington and Georgetown Railroad Company used the ground floor on M Street, while the Washington, Arlington and Falls Church line planned to use the second floor and the projected Washington and Great Falls would occupy the third floor. The Metropolitan Railroad Company was allocated the flat roof accessible from Prospect Street. Construction of the building began in early 1895. The terminal contained waiting rooms, toilets, and offices for the various railways on the M Street side of the upper floors. During the construction of the building, the Washington and Georgetown Railroad Company merged with the Rock Creek Railway Company, and thus, the immense brick terminal became known as the **Capital Traction Terminal** (1895, also known as the Georgetown Car Barn). Prior to the construction of the steam railway Union Station, the Capital Traction Terminal was known as Union Depot.

The terminal opened on May 27, 1897, providing Washington, D.C. with its only cable loop.⁹¹ The 140-foot tower contained an elevator for transferring passengers between the various railway

⁹⁰ George Woodman Hilton, *The Cable Car in America: A New Treatise upon Cable or Rope Traction as Applied to the Working of Street and Other Railways* (San Diego, CA: Howell North Books, 1982), p. 442.

⁹¹ King, p. 64.

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lines. On the roof, a central covered passageway connected the elevators with the Metropolitan Railroad Company lines at Prospect Street. Passenger rooms were handsomely finished in red oak wainscoting, tinted walls, paneled ceilings with stucco, and ornate black iron grills and stair railings. After the 1897 fire at the cable powerhouse on Pennsylvania Avenue, the Capital Traction Company moved its offices to the M Street terminal. With the end of cable traction, the loop was converted to electric. The many modes of streetcar traction, in addition to the consolidation of railway companies, prompted several changes in use and a series of interior alterations. For example, in 1906, and again in 1908, portions of the second floor were converted into office space, as the terminal was not being used to the extent originally envisioned. In 1910 and 1911, the building was extensively renovated to permit the handling and storage of double truck cars. Much of the steel structure was either replaced or strengthened, a car elevator was installed, as were transfer tables on the first, second, and third floors. The office portions of the building were also renovated, and the upper floors were extended to provide additional space.

Contemporary accounts describe the increased speed of cable as a great benefit, providing rapid communication between the center and outlying sections of the city. The five-mile trip from Georgetown to the Navy Yard was cut from an hour in a horse-drawn streetcar to forty minutes by cable car. Residents of Mount Pleasant could reach Center Market in a little over twenty minutes, a thirty-percent reduction in travel time. Comparing the existing horsecars with the anticipated cable, the *Washington Star* reported that the public would be able to "travel with comfort and ease, which is considerably more than can be said of the road as at present equipped."⁹²

Nevertheless, nationwide innovations affecting electric traction were demonstrating their superiority over the cable system, which proved not to be as successful on curved lines. For two years after the economic crisis of 1893, no new cable systems had been installed in any American city, including Washington, D.C. Having restricted the use of overhead electric lines after 1891, Washington, D.C. was actually the last city in the United States to install a cable line. Opened in 1895, this cable line was operated by the Columbia Railway Company, one of the city's original horse-drawn railway companies. The profitable operation ran a single route along its original double track horsecar line from the Treasury Department at 15th Street, N.W. along

⁹² *Evening Star*, 2 July 1892, p. 12.

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Massachusetts and New York Avenues, terminating at 15th and H Streets, N.E.

The Capital Traction Company dominated Washington, D.C.'s cable railway system. This firm emerged from the consolidation of the early Washington & Georgetown Railroad with the newer Rock Creek Railway in 1895. On the evening of September 29, 1897, the cable powerhouse at 14th Street and Pennsylvania Avenue, N.W. was destroyed by fire. This forced the Pennsylvania Avenue Line and the 14th Street Line to return to horse-drawn services as a temporary measure. The **W&G Pennsylvania Avenue Powerhouse** (1891, burned 1897), one of the biggest and best equipped in the industry, was also one of the largest private buildings in the city at the time. The building's excess space allowed portions of it to be rented to individual businesses that could make use of the convenient steam power source on the first floor.⁹³ In order to operate the cable lines, the building housed two 36" by 72" Reynolds-Corliss engines (750 HP each). The site, located between 13-1/2th and 14th Streets, was later purchased by the District of Columbia government for the erection of the District Building.

With the fire providing the impetus for electrification, underground wiring for electric traction was installed under Pennsylvania Avenue, 7th and 14th Streets in May 1898, using recent advances in technology to provide electric traction without overhead wires. The cable car era in Washington, D.C. lasted just under a decade -- from the first car's run on May 12, 1890 to Columbia's last cable car trip on July 23, 1899.⁹⁴ However brief the technology, the cable system left a long-term legacy in the District of Columbia by improving transportation services and road conditions. With the conversion of the W&G lines from steel cables in 1898, almost all of the railway lines within the old city boundaries of Washington, D.C. had been replaced by an underground electric conduit system that provided efficient, reliable transit.

Magnetic Surface Contact, 1890-1899

With the ban on overhead lines mandated to begin by a specified date, the Eckington and Soldiers' Home Railway Company was forced to conduct additional motive experimentation. Beginning in December 1890, the railway company laid three-quarters of a mile of track north

⁹³ Hilton, p. 447.

⁹⁴ King, pp. 19-24.

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from New York Avenue along North Capitol Street. The experimental line, known as the Wheless Surface Contact System, used energized contact plates located between the tracks. The cars were equipped with long contact plates set close enough together so the bars remained in constant contact with at least two of the plates. Magnets located on the cars were supposed to energize the contact plates while the car traveled directly overhead. The demise of the system was the lack of safety, as there was no way to insure that the contact plates would not be energized after passage of the car, creating a situation for electrocution of horses and people.⁹⁵

In the closing months of 1894, the Electro Magnetic Company of West Virginia took over the surface contact experiment. The work was sponsored by Westinghouse and used the patents of Wheless. The experimentation, however, proved unsuccessful.⁹⁶ Eckington and Soldiers' Home Railway Company again tested the electro-magnetic system of propulsion, using the Willis System. Tested in 1898, the Willis System was utilized on North Capitol Street between New York Avenue and T Street, N.W., and also proved to be unsuccessful⁹⁷

The Capital Railway Company also experimented with the electro-magnetic surface contact system. Chartered by Congress on March 2, 1895, the railway company was part of Arthur E. Randle's development plan for his land holdings in Anacostia. The line provided the first electric railway transit into southeast Washington, D.C. beyond the Anacostia River. The railway was authorized to carry not only passengers but also mail, parcels, and milk. The original charter called for a line, using cable, electric, or other mechanical power, to run from a point on the District Line near the Potomac River southeast of Shepherd's Ferry over a route to be selected by the District Commissioner. It would then travel to the south bank of the Anacostia River where a transfer ferry would operate to the foot of South Capitol or 1st Streets and up to M Street, N.W. The route was never laid and the original Act was amended on May 28, 1896.

The amended charter of the Capital Railway Company called for an underground electric conduit within the city boundaries, with double overhead lines outside the city. Although the underground conduit was practical at the time of its charter, Capital Railway attempted to utilize the less expensive electro-magnetic surface contact system of propulsion. The Brown Magnetic

⁹⁵ King, p. 27.

⁹⁶ King, p. 27.

⁹⁷ Tindall, p. 53.

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Surface Contact System consisted of magnets set in boxes at regular distances along the track that were designed to impart energy to the driving mechanisms of the car. Like the Wheless Surface Contact System, the magnets used with the Brown System were brought in constant contact with a shoe or bar that ran the length of the car. The contact plates of the Brown system, unfortunately, sometimes remained energized after the passage of the car. This safety issue could not be corrected, leading to the very early dismantling of the system. This magnetic system was laid from 8th and M Streets, S.E. to the Navy Yard Bridge, with a system of double overhead lines that continued over the bridge. The Brown System contact was dated March 22, 1897, and by January 20, 1899, the District Commissioners granted permission to remove the system.⁹⁸

The **Congress Heights Car Barn** (1896, demolished) was located on the east side of Martin Luther King, Jr. Avenue, just beyond the grounds of St. Elizabeth's Hospital. The wood frame building, erected by the Capital Railway Company, could only store three cars. The railway operated a small amusement park, known as Wilson Park/Wilson Woods, near the barn in Congress Heights to attract patrons. Congress eventually took the land on which the park was located for the expansion of St. Elizabeth's Hospital in 1898.

Love Conduit System, 1893-1899

The Rock Creek Railway Company was responsible for installing Washington, D.C.'s first electric underground conduit system in 1893 when it extended its line east along U Street from 18th Street almost to 200 feet east of 7th Street, N.W. The Love Conduit System, named for its inventor, operated with two underground electric wires with tension springs every five hundred feet. This system was found to be faulty and underground copper bars eventually replaced the wires.⁹⁹ Despite the drawback, the Love Conduit System was the practical forerunner of the conduit system adopted later for use on all city streetcar lines. This later system replaced the copper bars with less expensive and less problematic iron bars. The Love Conduit System was replaced in the spring of 1899.

⁹⁸ Tindall, p. 56.

⁹⁹ King, p. 28.

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Gasoline/Oil Motors, 11897-1910

As early as 1897, Capital Railway experimented with the use of a self-propelled vehicle that used oil and gasoline. Yet, within one year, the system was no longer in use. Similarly, the Metropolitan Coach Company, organized in May 1897 to succeed the Herdic Company, had begun to utilize motorized gasoline vehicles as early as 1909, when they replaced their horse-drawn buses. Although both these modern ventures ultimately failed, they presaged the eventual replacement of all street rails by automobiles and motor buses.

The Baltimore and Washington Transit Company, which became the Washington and Maryland Railway Company in 1910, also utilized storage battery cars in the first part of the twentieth century. The company was chartered in 1894 with a plan that was never realized to construct a line from the Brightwood Railway terminal to Baltimore via Ellicott City. Largely unsuccessful, the original line ran from the terminal at 4th and Butternut Streets, N.W. through Takoma Park to the Wildwood Amusement Park and the Glen Sligo Hotel at Elm and Heather Avenues. By 1907, however, the line was derelict, missing wires and most of the rails. On May 30, 1910, the line was reopened using gasoline cars rather than electric. Stephenson built the gasoline cars with Brill trucks, each consisting of a single vehicle with center doors. The cars had forty PD Sintz-Wallen Marine engines designed to give a twenty-mph speed at 600 rpm.¹⁰⁰ Under a lease from the Capital Traction Company, a route change was made in 1918 that extended the line out Carroll Avenue to the grounds of the Seventh Day Adventist Sanitarium.

Underground Electric Conduit, beginning in 1895

By the turn of the twentieth century, public transportation in central Washington, D.C. had been converted entirely to underground electric traction systems. Electric underground systems provided speed, comfort, and ease of travel far more effectively than cable power. The cable system proved to be an expensive technology with limited application and its use in the nation's capital had clearly been propelled by congressional mandates that banned both horse-power and overhead electric power lines. The *Evening Star* had advocated conduits since 1892 when its editor, Theodore W. Noyes, proposed adopting the electric conduit system used in Budapest,

¹⁰⁰ King, p. 99.

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Hungary.

In 1894, Congress enacted legislation requiring the Metropolitan Railroad Company, now two years beyond the original non-horse-power deadline, to construct an underground electric conduit system. The technology in this country was still experimental, and the Metropolitan Railroad Company chose a new system developed by General Electric for the Metropolitan Railway of New York (no connection to the Metropolitan Railroad Company operating in Washington, D.C.) The system, installed on the 9th Street line in 1895, was an immediate success and, by 1896, the Metropolitan Railroad began to electrify all of its lines and simultaneously extended some of them.

The Metropolitan Railroad Company constructed the **East Capitol Street Car Barn** (1896) with a turn-around loop for its electric cars at 1400 East Capitol Street. Designed by prominent Washington, D.C. architect Waddy Wood, the brick car barn demonstrated that an essentially industrial structure could exist in harmony with residential surroundings. The car barn was originally designed as a storage shed for the streetcars, a repair shop, and administrative offices for the streetcar company. The massive symmetrical building was Romanesque Revival in style. Its central block was flanked by long one-story hyphens linked to end pavilions. Panels of brick diapering formed by glazed headers encircled the frieze of the pavilions and central block.

The underground electric conduit system pioneered by the Metropolitan Railroad Company in 1895 within the original Federal City proved to be the solution to the Congressional restrictions. By the end of the decade, this form of traction had supplanted both the horse and the cable car. The underground electric conduit that became standard for the capital city was highly unusual and existed in only one other American city, New York.

CONSOLIDATION (1895-1910)

With the rush of new railway charters in the latter part of the nineteenth century, Washington, D.C. had a dozen independent streetcar lines by 1895. The economic condition of many of these companies was perilous and with overlapping routes, there was significant competition. The lack of transfer agreements between independently owned lines was a continuing problem for

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passengers and companies. The innovations of electrification required costly new investments and repairs. Many lines had been built with the expectations of land profits that were slow to materialize, particularly after the stock market crash of 1893.

General George Harries, who became president of the Metropolitan Railroad Company in 1896, and was later vice-president of the consolidated Washington Railway and Electric Company, described the pre-consolidation conditions in vivid terms:

A large number of lines, many beginning nowhere and ending in a like locality, bobtail cars, two-horse cars, all the varieties of ancient construction and equipment, operated according to the respective wills of many boards of directors or no directors at all, unable most of the time to pay for horse feed, and piling up a floating indebtedness and all the other things that go to trouble a man who has to wrestle with such propositions....¹⁰¹

In the late nineteenth century consolidation of utilities was a national trend. Streetcar companies followed the same pattern, often consolidating under the management of out-of-town syndicates.¹⁰² Although outside interests played a part in the consolidation of streetcar companies in Washington, D.C., management generally remained in the hands of local companies. Although a few minor independent street railway lines operated in Washington, D.C. after 1902, the majority of routes and services were provided by two dominant companies: the Capital Traction Company and the Washington Traction and Electric Company. The formation of the Capital Traction Company in 1895 provided high frequency service on four major routes, while a score of smaller firms were consolidated in the Washington Railway & Electric Company (WRECo), which was formed in 1902. This organizational structure lasted for the next thirty years.

¹⁰¹ U.S. Congress, House of Representatives, Committee on the District of Columbia, Report of Hearings of January 13, 16, and 17, 1908 on H.R. 11759 authorizing certain extensions.... (Washington: Government Printing Office, 1908), p. 29.

¹⁰² Boettjer, p. 80.

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Capital Traction Company

The first major consolidation in the Washington, D.C. area occurred in 1895 and was fueled by financial reasons, resulting in the creation of the Capital Traction Company. The consolidation involved the Washington and Georgetown Railroad Company (W&G) and the Rock Creek Railway Company. As the W&G had been limited to a capitalization of just \$500,000 by Congress in its original 1862 charter, expansion and modernization to underground cable traction was severely restricted. Once merged with the Rock Creek Railway Company, which had no such limitations, the new company was able to recapitalize at \$12,000,000. Approximately \$5,000,000 of this capital was considered "blue sky" stock, which represented no tangible assets.¹⁰³ Actual integration of the two lines did not take place for another three years, when, in 1898, the former W&G lines were electrified.¹⁰⁴

In its first several years, the Capital Traction Company streamlined and modernized Washington, D.C.'s public transportation system to support the population of 300,000 residents. Streetcar routes were reworked and the trackage was simplified in several locations in order to eliminate congestion, particularly in the area between New York and Pennsylvania Avenues and 14th and 15th Streets. The wharves warehouse at 4th and P Streets, S.W., the barns at 3222 M Street, N.W., the Navy Yard, S.E., and 1st and B Streets, S.E. continued to service the newly created company.

In 1901, Capital Traction had the cars from Chevy Chase Lake terminating at 15th Street and New York Avenue, N.W. (where the United States Treasury is presently located). By 1912, the company constructed a loop around F and G Streets N.W. from 17th and 26th Streets, N.W. in Foggy Bottom that served as the southern terminus for its Chevy Chase Lake cars. The line had been extended along Pennsylvania Avenue, S.E., from 8th Street to 17th Street, S.E. in 1901. The 14th Street line was extended in 1906-1907 from Park Road to Colorado Avenue and a new car barn was constructed at 14th and Decatur Streets, N.W. The **Capital Traction Car Barn** (1906) at 4615 14th Street, N.W., south of Decatur Street, replaced the original car barn at Park Road that was designed by Walter Root in 1891. The architectural firm of Wood, Donn, and Deming

¹⁰³ White, p. 226.

¹⁰⁴ King, p. 61.

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designed the new barn with Richardson and Burgess, Inc. working as the contractor. It stands two stories in height, measuring 537 feet by 208 feet with an entry pavilion parapet along 14th Street and an imposing three-story tower. The Romanesque Revival style building featured brick with concrete stringcourses, keystones, classically inspired surrounds, and quoins. Opening in 1907, the car barn was considered to be one of the most attractive buildings of its type in the city.

Washington Traction and Electric Company

The City and Suburban Railway Company, which was formerly the Eckington and Soldiers' Home Railway Company, brought together a number of suburban companies, including the Maryland and Washington Railroad Company, and the Columbia and Maryland Railway Company in June 1898. Promoters had hoped to link Baltimore and Washington, D.C. with a high-speed electric railway. This scheme never materialized, and the new company provided service to northeastern Maryland suburbs rather than attempting a Baltimore link. By May of 1899, the line offered service from Hyattsville to the Treasury Building and, later that year, completed its line to the Baltimore and Ohio Station in Riverdale, and had started construction as far as Berwyn, Maryland. The entire company was under the control of the Washington Traction and Electric Company by the turn of the twentieth century.

As the name suggests, the Washington Traction and Electric Company combined two public services -- street railways and electric power. This was a natural combination; the two principal uses of electric power in this era were streetcars and arc lighting,¹⁰⁵ used for streets and businesses. Streetcar lines were often owned or constructed by the same company that provided their electricity. Furthermore, the electric companies often furnished electrical power to the residents and businesses that were moving into the newly established neighborhoods promoted by the streetcar companies. Ultimately, with the demise of the streetcar era, the power companies successfully provided utilities such as electricity rather than transportation.

The Washington Traction and Electric Company was a short-lived, but crucial player in the consolidation of Washington, D.C.'s street railways. The man behind the company was Oscar T.

¹⁰⁵ Arc lighting provided light by creating a continuous spark between two carbon rods and was too bright and hot for home use.

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Crosby, an electrical engineer who had worked with Frank Sprague on the installation of Richmond's electric railway, and served as general superintendent of the Sprague Electric Railway and Motor Company. Crosby's ambition was to consolidate all of Washington, D.C.'s street railways and its two power companies under one management.¹⁰⁶ The Potomac Electric Company, organized in 1891 by a Washington, D.C. syndicate, was bought out in 1894 by Minnesota transportation and utility magnate, Amherst B. Wilder. Wilder's death one year later opened the way for Crosby's purchase of the company.

The syndicate, headed by Crosby and his partner Charles A. Lieb, purchased the Georgetown and Tenallytown Railroad Company in April 1895 and, by 1896, had purchased the Tenallytown and Rockville Railroad Company. Over the next several years, Crosby acquired control of most of the street railway companies, with the exception of the Capital Traction Company. By 1899, Crosby had gained partial control over Potomac Electric's only competition, the United States Electric Lighting Company.¹⁰⁷

Incorporated on June 5, 1899 in Norfolk, Virginia, the Washington Traction and Electric Company served as a holding company for the following properties:

- The Anacostia and Potomac River Railroad Company
- The Brightwood Railway
- The City and Suburban Railway of Washington
- Columbia Railway Company
- Georgetown and Tenallytown Railway Company
- Metropolitan Railroad Company
- Washington and Rockville Railway Company
- Washington, Woodside and Forest Glen Railway and Power Company
- Washington and Glen Echo Railroad Company
- Washington and Great Falls Electric Railway Company

¹⁰⁶ Potomac Electric Power Company, *100 Years of Matchless Service: An Illustrated History of Potomac Electric Power Company*, (Washington, D.C.: Potomac Electric Power Company, 1996), pp. 16-17.

¹⁰⁷ With the move to re-equip existing facilities, the original power plant was supplied with two General Electric rotary converters of 150 kilowatt capacity each. Thus, power supplied by Potomac Electric Power Company at 6500 volts was converted to 600 volts for railway use.

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United States Electric Lighting Company
Potomac Electric Company

Although most of the separate corporate identities were retained, Washington Traction and Electric began to integrate the railway systems. Connections were made between transportation lines with several new routes established, including an 11th Street line between Florida Avenue and Anacostia, and a line running from LeDroit Park to the wharves. Despite its success, Washington Traction and Electric soon collapsed under the weight of the combined debts of its separate affiliates and the Depression of 1900. After failing to make its interest payments in June 1901, the company was ordered to be sold in foreclosure proceedings. In 1902, the Washington and Great Falls Electric Railway purchased all of Washington Traction and Electric's stock holdings, changing its name to the Washington Railway and Electric Company (WRECo).

In the early years of the twentieth century, WRECo acquired additional lines, particularly routes that provided suburban access. One such line that extended into Maryland was the Washington, Berwyn and Laurel Railroad Company. The suburban line launched its first direct service from the Treasury Building to Laurel, Maryland in 1902, only to become part of WRECo in 1910. Another example was the line traveling out Benning Road to Deanwood Junction and Seat Pleasant, where transfer was made to the Chesapeake Beach Railway. In 1907-1908, this became the track connection for the Washington, Baltimore & Annapolis.

TWENTIETH CENTURY MERGER AND CONVERSION, 1900-1962

By 1900, Washington, D.C. and its immediate suburbs had about 190 miles of streetcar track. These tracks were concentrated in the downtown business district, connecting selected suburban areas in Maryland and Virginia to the nation's capital. The array of lines in and around the city were ultimately connected when Congress approved the right of railway companies to utilize the tracks of other companies, easing congestion and facilitating more direct travel routes. The law was approved in June 1898, requiring the railway companies to conform within one year.

The construction of Union Station (1907) as the primary steam railroad station in the city required a major rerouting of streetcar lines of both the Capital Traction Company and Washington Railway and Electric Company. Prior to the construction of this grand structure

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north of the Capitol, the nation's capital was served by two main railroad stations -- the Baltimore & Ohio at New Jersey Avenue and C Street, N.W., and the Baltimore & Potomac at 6th and B Streets, N.W. on the Mall (both buildings were razed after 1907). Prominent architect Daniel H. Burnham designed the new railroad terminal, which took five years to construct. The first Baltimore & Ohio train arrived at the terminal on October 27, 1907, while the first Baltimore & Potomac train left the station on November 17, 1907. Arguments immediately ensued relating to the re-routing of the streetcars lines to Union Station, suggesting the streetcars would spoil the new railroad station's monumentality and that there was a need for a universal transfer of all railway lines. Ultimately, after many debates, the act enabling construction of streetcar trackage was passed on May 23, 1908, without the universal transfer provision. Streetcar operations to Union Station began on December 6, 1908.

Expansion of Services within and outside Washington, D.C.

WRECo extended its North Capitol service to Brookland in 1899-1900, in part to serve Catholic University. The existing radial lines to Forest Glen, Congress Heights, and 11th and Monroe Streets operated non-stop service. One route traveled to Forest Glen at 4th and P Streets, S.W. and the other provided service via Center Market to Congress Heights at 11th and Monroe Streets, S.E. This latter line was extended from Alabama Avenue about three blocks to the south, terminating at Sterling Street, S.E. In 1912, WRECo erected a single track that served as a connecting line from Nichols Avenue along Portland Street to the new Firth Sterling Steel Works, now part of Bolling Air Force Base. This consisted of about a mile of track. In 1916, this line was converted to a double-track in order to serve the increased employment of the plant. However, in 1921-1922, the steel plant failed and, by 1923, service was suspended.

Trackage enabled the predecessor of WRECo to serve the Bureau of Engraving (this line existed as early as 1895) and the Department of Agriculture.

In 1911, to service their extensions, the Capital Traction Company erected the imposing **Wisconsin Avenue & K Street Powerhouse** (1911, demolished) in Georgetown. Constructed of red brick, the massive power plant housed twelve boilers that operated five turbo generators, which in turn fed four substations throughout the city. With the services of Capital Traction merged into that of the Capital Transit Company, the Wisconsin Avenue powerhouse was closed

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on December 15, 1933. The empty building remained a Georgetown landmark until it was razed in October 1968.

Although Washington, D.C.'s street railways were consolidated into two companies, a number of independent railway lines continued to operate and expand in the Maryland and Virginia suburbs. Often their operations were linked with the Washington, D.C. lines, many having been chartered in the 1890s as real estate ventures. Examples include the *Washington and Great Falls Railway and Power Company*, which was chartered in 1912 to aid in the development of the residential area along its route from Wisconsin Avenue and Bradley Lane to Great Falls, Maryland. Although independently owned, the Washington Railway and Electric Company was contracted to operate the lines of this suburban company. The *Washington and Old Dominion Railway Company* was chartered by an Act of the General Assembly of Virginia in January 1900. As formed, the company was known as the Great Falls and Old Dominion Railroad Company. Authorization to enter the District of Columbia was granted by an Act of Congress in January 1903. The District route traveled across the Aqueduct Bridge by a single track at M Street, running to 36th Street, south of Prospect Street. Similarly, the *Washington and Gettysburg Railway Company* was incorporated in the State of Maryland in March 1899. The company was authorized to erect a city-suburban branch within the District of Columbia for carrying passengers, milk, garden produce, and other small freight. The line as required by the charter was not constructed, however.¹⁰⁸

Congestion and Decline in Streetcar Patronage

The route additions during the pre-World War I era essentially completed Washington, D.C.'s street railway system.¹⁰⁹ However, the adequacy of service was a primary issue. Many citizen associations testified during congressional hearings in favor of line extensions and spoke of the lack of service in residential areas, particularly Northeast Washington, D.C., and urged the construction of an east-west line.¹¹⁰ The lack of routes, coupled with improper service and the advent of the automobile, reduced the total number of Capital Traction's revenue passengers by

¹⁰⁸ Tindell, p. 48.

¹⁰⁹ King, p. 92.

¹¹⁰ U.S. Congress, House, Committee on the District of Columbia, Report of Hearings of January 13, 16, and 17, 1908 on H.R. 11759 authorizing certain extensions. (Washington, D.C.: Government Printing Office, 1908).

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over two million between 1913 and 1915, although World War I activity in the nation's capital briefly reversed this trend.¹¹¹ In fact, during the war, cars were extremely over-crowded, particularly during the evening rush hour with cars running at half-minute intervals.

Service on lines built to stimulate development was also a problem. In 1912, the District of Columbia Commissioners, responding to a Senate inquiry on the District's streetcar needs, wrote that "When a separate company is chartered to build a line through undeveloped territory...for the most part it is apparent that the builders of such lines regard the main function of the latter to be one of advertising. The lines are in general operated wretchedly and often transfers must be paid for before patrons can come to the business portion of the city."¹¹²

As a result of such complaints and congressional dissatisfaction, Congress required the Interstate Commerce Commission (ICC) to oversee local streetcar regulation between 1909 and 1912. The main purpose of the ICC, however, was national regulation of all public inter-state transportation, principally steam railroads. Expansion of ICC duties' prompted Congress to establish the Public Utilities Commission for the District of Columbia in 1913. The Commission, made up of three D.C. Commissioners, oversaw all of Washington, D.C.'s street railways, as well as all public utilities including electric companies, gas companies, telegraph and telephone companies, and pipelines. The Commission's first act involving streetcars was to require air brakes on all cars weighing sixteen short tons or more before December 1, 1914.¹¹³ The air brakes proved to be safer as well as quieter.

In the war's final years, the Public Utilities Commission produced a study of congestion in the street railway system.¹¹⁴ The report examined the frequency of car service, the number of staff on each line, the location of stops, and the over- or under-utilization of each segment of the lines. It found that "...where the population extends farthest out, the greatest streetcar congestion

¹¹¹ King, p. 92.

¹¹² U.S. Congress, Senate, 62nd Cong., 2nd Sess. Letter from the Commissioners of the District of Columbia, "Street Car Lines in the District of Columbia," Sen. Doc. 441 (Washington, D.C.: Government Printing Office, 1912).

¹¹³ King, p. 84.

¹¹⁴ District of Columbia, Public Utilities Commission, *Street Railways in the District of Columbia*, U.S. Senate Document No. 197 (Washington, D.C.: Government Printing Office, 1918).

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prevails.”¹¹⁵ The report went on to note that the District’s 1917 population of 395,947 showed an increase of 65,000 over the 1910 census. Not surprisingly, approximately 70,000 of the residents were government employees. New war buildings in Potomac Park housed the burgeoning government agencies, and were in need of proper transportation services. This increase in congestion prompted the Commission to recommend banning automobiles from major streetcar routes, such as 15th Street between G Street and New York Avenue.¹¹⁶ The report further noted that during this period, walking was still the way many people commuted to work. “...[M]ost of the people walk to and from their work, and many prefer to live within easy walking distance of their place of employment. At present, others do so because of the street car congestion.”¹¹⁷

Following the publication of the Commission’s report, numerous changes were instituted in the hope of relieving the congestion. In 1914, the Washington Railway and Electric attempted to ameliorate the crowding on its longer suburban routes by instituting express service with limited stops on the inner portions of the lines. However, despite consolidation, improvements, and extensions, the automobile began to encroach on railway patronage. By the mid-1920s, streetcars were retrenching and the Public Utilities Commission was granting permission to replace less used routes with bus service.

The Rise of Buses

Attempts at providing alternatives to the city’s streetcar system met with little initial success, but by the 1920s, as riders grew weary of the discomfort of streetcar travel and impatient with increasing traffic congestion, the development of an all-bus system progressively gained in popularity. The first alternative to the city’s streetcar system began in 1900, when 100 automobiles for hire were introduced to the streets of Washington, D.C. These forerunners of the modern-day taxicab at first failed to appeal to the broad public. By 1915, however, the “jitney” appeared, offering notable competition to the city’s streetcars. The jitney—an automobile with rubber wheels—carried five or more passengers along a fixed route and stopped when hailed.¹¹⁸

¹¹⁵ *Street Railways in the District of Columbia*, U.S. Senate Document No. 197, p. 110.

¹¹⁶ *Street Railways in the District of Columbia*, U.S. Senate Document No. 197, p. 44.

¹¹⁷ *Street Railways in the District of Columbia*, U.S. Senate Document No. 197, p. 110.

¹¹⁸ Boettjer, p. 125.

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In 1913, the Metropolitan Coach Company introduced the city's first known all-bus line along 16th Street, N.W. The route extended from 16th Street north of Florida Avenue to the downtown shopping district and government offices along Pennsylvania Avenue. Although the company failed within two years, and bus service experienced a six-year hiatus, the Washington Rapid Transit Company (WRTC) resumed bus service along the same route beginning in 1921. The company began operation with ten "Duplex" buses, each one of which seated 21 passengers and was operated by a single driver. During its first year in service, the company added several buses to its fleet and expanded its routes. By 1922, 36 buses were running. In 1925, four double-decker buses seating 51 passengers each were purchased and the company's routes were again expanded.¹¹⁹

Because of low operating costs and the absence of high outlay, the WRTC saw an immediate return on its small investment. This early success attracted the attention of the huge North American Company (NAC)—one of the pioneer public utility holding companies.¹²⁰ In 1925, Harley Wilson, director of NAC purchased 97% of WRTC stock—a significant move that later gave the company control over a city-wide consolidated transit system. The all-bus WRTC inspired the growth of competition and encouraged expanded bus routes. Even the city's streetcar companies began operating buses as a supplement to existing streetcar service. Confronted with the high cost of track construction and looking to expand into new-growth areas, namely the growing suburbs, the city's established streetcar companies began to introduce bus service primarily as "feeder" lines. These feeder lines led from the end-of-the-line streetcar station to new outlying suburban areas not accessible by track. Although the streetcar companies initially saw these feeder bus lines as an economical way to compete with the bus companies and preserve existing streetcar service, the rise of automobiles and more extensive bus routes cut increasingly into the streetcar's patronage, and ultimately led to its demise.

By the early 1920s, Washington, D.C.'s streets were filled with a variety of transportation modes, including pedestrians, streetcars, buses, automobile jitney services, and increasing numbers of private automobiles, not to mention the outmoded horse-drawn vehicles still traveling the streets. Right-of-way rules were lax and the few traffic signals that existed were uncoordinated, causing

¹¹⁹ Boettjer, 126.

¹²⁰ Boettjer, 126.

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major street congestion. As cars wove their way across lanes in order to avoid other stopped vehicles, including streetcars and horse-drawn carriages, automobile pile-ups became commonplace. Pedestrian safety was compromised, too, as streetcar riders tried to thread their way across the traffic to the streetcar stops located at the center of the wide city streets. Streetcars came to be seen as a cause, rather than a victim of this congestion.¹²¹ The stalled traffic and public safety issues encouraged a movement to rid the city of its “obtrusive streetcars.” At the same time that passengers voiced concern over safety and traffic issues, they also complained more vociferously about the uncomfortable conditions of streetcar travel versus bus travel. Cobblestone streets, metal rails, and metal wheels, combined to form a rough ride for streetcar commuters.

By the mid-1920s, bus service was perceived as the solution to the traffic problems and thus emerged as the alternative to the streetcar system. According to the thinking at the time, the motorbus could, unlike the streetcar, load at the curb and thereby improve safety; it could “go with the flow” (i.e. swerve and change lanes), and it could move out of the way of faster-moving traffic, thereby avoiding congestion.¹²² In addition to providing greater flexibility according to opinions at the time, buses were considered more comfortable, a consideration that further increased their popularity. The internal combustion engine, improved pneumatic tire technology, and the smoother paving of streets all provided for a smoother and more enjoyable commute for riders. As public sentiment in favor of rubber-tired vehicles increased, the abandonment of the city’s extensive streetcar network commenced.¹²³

¹²¹ Ronald H. Deiter, *The Story of Metro: Transportation and Politics in the Nation’s Capital*, (Glendale, CA: Interurban Press, 1985), p. 20.

¹²² Deiter notes that it never occurred to traffic engineers at the time that the streetcar’s controlled and predictable path made it part of the solution to traffic congestion and that the bus’s maneuverability made it part of the problem. Indeed, the replacement of streetcars with buses did nothing to address the true problems of public transportation and did much to exacerbate them. See Deiter, pp. 20-21.

¹²³ Deiter, p. 21.

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Capital Transit Company, 1933-1956

Peak usage, congestion, re-organization, and the gradual replacement of the street railway system by the more economical and flexible bus system marked the final chapter in the story of Washington, D.C.'s streetcars. This transformation was under the direction of the Capital Transit Company (CTC), which was formed in December 1933. The company joined all street railways in the District of Columbia and the Washington Rapid Transit (an independent bus company established in 1921) under one management for the first time. The various companies had sought to merge at numerous times between 1900 and 1930, although Congress and the Public Utilities Commission had not approved the union. Authorization was eventually granted in 1932, and the final merger occurred in November 1933. The newly created company maintained 703 streetcars, 214 buses, and 217 miles of track. Universal transfers and passes were introduced; re-routing and elimination of parallel lines was accomplished; and route numbers were formulated. Because of the new routes and ease of transfers, the number of passengers increased by sixty million fares in the first year of the merger.¹²⁴

After the 1933 merger, the newly created CTC maintained hundreds of miles of streetcar track and several hundred streetcars, along with a growing fleet of approximately 180 buses operating over 355 miles of bus routes. The new company—more receptive to the growing anti-streetcar sentiment, but primarily interested in increasing company profitability—was quick to begin the systematic substitution of streetcar lines with all-bus routes. In 1933, at the time of the rebuilding of 9th Street, Capital Transit converted the 9th Street streetcar service to all-bus service. Eventually, political and economic pressures combined to force the elimination of Washington, D.C.'s streetcar system altogether. In 1935, five major lines or segments of the Capital Transit Company were replaced by bus service. Streetcars no longer served the LeDroit Park line, the Connecticut Avenue line from Calvert Bridge to Chevy Chase Lake, or the Rockville line. The P Street line from Dupont Circle to Wisconsin Avenue was converted to bus service, as was the Anacostia-Congress Heights line east of 1st and B Streets, S.E. The removal of trackage began as early as 1935, when the rails of the Chevy Chase line were removed. One year later, in 1936, Capital Transit reorganized its remaining streetcar routes. The reworkings and extensions of trackage, particularly in the area of the New York and Pennsylvania Avenues

¹²⁴ Florenz Hinz. "A Century of Transit Progress," *The Washington Post*, October 28, 1962. Section L

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intersection, allowed for unimpeded travel. The modification in trackage was due in part to the gradual change from double-ended cars to single-ended cars that required turning at the end of the line. Routes were freed of the constraints that had been set by their creation as separately owned lines with congressionally mandated routes. The routes that were established in 1936 remained the basic routes for the rest of the streetcar era.

The Capital Transit Company sought to retain riders by modernizing its rolling stock, increasing transit speeds, and making further conversions to buses. Accordingly, in August 1937, Capital Transit inaugurated the Electric Railway Presidents' Conference Committee (PCC) car, said to be the finest public transportation vehicle Washington, D.C. had seen.¹²⁵ This modern vehicle, produced by the St. Louis Car Company, was faster, quieter, more comfortable, and did not exhaust noxious fumes. The transit company first used the new cars along its 14th Streets line, then on the Mount Pleasant line, and eventually the PCC operated along all existing lines.

During this period, new construction consisted primarily of turn-around loops where shortened streetcar lines met the newly created bus routes. However, new buildings, including streetcar car barns, bus garages, and streetcar and bus waiting stations and terminal buildings were also built during this period. In 1934, a planned park between the Capitol and Union Station was completed with streetcar lines running through the **Capital Plaza Gardens' Tunnel** beneath.¹²⁶ With the still-growing Federal bureaucracy, which increased by 30,000 jobs between 1933 and 1935, new track construction was required between 1939 and 1941 to provide service to the new government buildings southwest of the Mall. Several of the streetcar and bus-related buildings erected during this period survive, including the **14th Street and Colorado Avenue Terminal** (built 1937), the **Chevy Chase Circle Terminal** (built 1940-1941), the **Calvert Street and Rock Creek Terminal** (built 1950), the **Tenleytown Bus Garage** (built circa 1934), the **Benning Road Car Barn** (built 1941), and the present-day **Metro Transit Company Bus Garage** (built as the Capital Transit Company Bus Garage, 1936).

¹²⁵ King, p. 157.

¹²⁶ Frederic M. Miller and Howard Gillette, Jr., *Washington Seen: A Photographic History, 1875-1965* (Baltimore, MD: The Johns Hopkins University Press, 1995), p. 141.

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Capital Transit also undertook substantial projects involving the alterations or conversions of existing facilities from streetcar usage to bus or other related usage. In particular, in 1933, Capital Transit renovated the 36th and M Streets car barn as general offices for the company. The closed passageway on the roof of the building, originally for transfer to Metropolitan Railroad cars, was removed, and the roof over the central portion of the building was removed to form a light well for office space created in the third floor car storage space. The Washington Railways' shops at 2144 P Street, N.W. was closed and abandoned. All body and motor bus heavy maintenance was concentrated at WRECo's former car barn at 4-1/2 Street, S.W., while electrical work was done at the former Capital Traction shops at 3222 M Street, N.W.

During World War II, rubber and gasoline shortages caused a decrease in automobile and bus uses and an increase in electric street railway service. In fact, streetcar usage in the nation's capital peaked during the war, with 895 streetcars in operation, including 252 of which had been purchased since the 1933 merger. The population was also increasing, reaching 663,000 in 1940, a 36 percent increase from 1930. The growing number of people commuting into the city, along with the pressure of gasoline rationing, placed heavy demands on the transit system. The system's ridership, which was over 250 million in 1940, peaked at more than 535 million in 1944.¹²⁷ Additional strains were caused by the shortage of experienced manpower as streetcar workers were called up for military service.

Following the War, however, the shortages of gasoline and rubber disappeared, and automobile production was renewed. Confronted with substantial track and equipment needs, increased labor costs and greater taxes, Capital Traction instead purchased over 200 new buses. In 1952 and 1953, the Capital Transit Company added a new collection of "improved" buses to its fleet, giving the company the largest fleet of modern mass transit vehicles privately owned in the United States.¹²⁸

The District's Public Works Department, rather than the Capital Transit Company, directed construction of the **Dupont Circle Underpass** (1949), the final major project in the city's railway history. Since Dupont Circle was at the intersection of two major thoroughfares, and

¹²⁷ King, p. 162.

¹²⁸ Boettjer, p. 164.

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because the streetcars still went both directions around one side of the circle, it was the focus of intolerable traffic congestion. The project consisted of two single-track tunnels in line with Connecticut Avenue from N Street to S Street and a separate vehicular tunnel. At the station under the circle, car tracks followed the layout of the outer edge of the circle to save patrons from having to walk from the center of the circle to the bus transfer on the street above. During construction, Connecticut Avenue cars ran on a \$225,000 conduit that was temporarily placed across the circle and on the sidewalks. The first streetcar operated through the tunnel northbound on November 2, 1949. Final construction costs for the project reached four million dollars.¹²⁹

Although the growing population and added work force brought record numbers of riders, major peripheral urbanization required continual expansion of public transit services into Virginia and Maryland. Maps of the system during these years show the slow shrinkage of the streetcar lines, which provided service almost exclusively in the Federal City, while the suburbs were serviced totally by buses from 1940 onward. And as anticipated, ridership dropped after World War II as the automobile once again became a major form of transportation. The Griener DeLeuw Engineering firm had produced a study in 1946 for the City of Washington Public Works recommending streetcar subways, although the system was never implemented. The Benning Road route, where streetcars had not been able to keep up with the needs of the heavy ridership, was ultimately converted to buses in 1949 due to equipment needs and political realities of the times.¹³⁰

In 1950, rider totals were down to about 350 million, almost 200 million less than a half-decade before. The Capital Transit Company's 1951 annual report acknowledged significant inroads made by the automobile, citing car registration statistics in the District of Columbia that showed an increase of 8 percent between March 1950 and March 1951.¹³¹ By 1955, the number of streetcars operating in the nation's capital had decreased to 508, while bus operations flourished.¹³²

¹²⁹ "Dupont Circle Underground Terminal Opens," *Washington Post* (November 3, 1949).

¹³⁰ *Sunday Evening Star*, May 1, 1949.

¹³¹ Capital Transit Company, Capital Transit Company Annual Report, 1951.

¹³² Florenz Hinz, "A Century of Transit Progress," *Washington Post* (October 28, 1962), Section L.

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During this period, the Capital Transit Company was conservatively managed under the North American Company, and it retained most of its earnings for reinvestment. The Public Utility Holding Company Act, however, forced the North American Company to divest itself of overlapping controls. The company had to sell either the power company or the transit company; however, the problem of finding a buyer had delayed the sale for a number of years. The North American Company foresaw the benefits of retaining the power company, and therefore sold the Capital Transit Company to Louis Wolfson of Jacksonville, Florida in September 1949. The new managers, under the direction of Wolfson, increased stock dividends, cut back on maintenance expenditures, and sought fare increases.

D.C. Transit Systems, Inc., 1956-1962

As a result of deteriorating labor management, a five-week strike occurred in the summer of 1955, bring tensions between the Wolfson management, Congress, and the Public Utilities Commission to a head. Congress enacted Public Law 389 that enabled the District of Columbia Commissioners to settle the strike, and also revoked Wolfson's franchise as of August 14, 1956. Furthermore, and most importantly, the law specified that the new operator of the franchise was required to provide an all-bus system. As anticipated by all but Congress, bidders did not materialize. Eventually New York financier O. Roy Chalk arranged to purchase the franchise. The charter of his new company, D.C. Transit Systems, Inc. specified the elimination of streetcars from Washington, D.C.'s streets by 1963, although Chalk had initially proposed retaining some rail lines. Ultimately, the lines were phased out over a five-year period, an activity coordinated with other major public works projects in the city and suburbs. Such public works projects included the redevelopment of the southwest quadrant of the city and the widening and re-decking of the Key Bridge.

The incremental closure of the various streetcar lines in turn raised the cost of operations. With the system quickly becoming uneconomical, only the best cars and two car barns (Lincoln Park and Navy Yard) remained in operation. No major repairs were necessary, as there were plenty of extra cars not being utilized. The Seventh Street barn had been closed when the Georgia Avenue line was discontinued; the Capital Traction Company Car Barn at 14th and Decatur Streets was converted into a bus garage although it continued to serve as a streetcar turn-around; and the Friendship Heights barn was torn down to make a bus parking lot. The shops at both M Street

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and 4th Street continued to operate until 1962, but were not physically connected to the track work.

Between 1956 and early 1962, all the remaining streetcar lines were either eliminated or converted to bus routes. The streetcars, which had provided transit in and around Washington, D.C. since 1862, made their last trips on January 28, 1962, thereby ending an era of transportation that had profoundly affected the residential development and economic growth of the nation's capital. By comparison, the streetcar lines of Washington, D.C. were among the last of the major cities to retain such a high degree of streetcar services. The D.C. Transit System, Inc. was able to create a second-hand market by providing rolling stock to other locations. These included Fort Worth, Texas, Barcelona, Spain, and Sarajevo, Yugoslavia. Out of the 489 modern cars, the company was able to resell 190 units for further operation. In 1970, O. Roy Chalk donated (or sold) many of the remaining streetcars of the D.C. Transit System, Inc. to the National Capital Trolley Museum, located in Silver Spring, Maryland. The collection presently holds nine streetcars that traveled the streets of the nation's capital. This includes five Capital Transit Company cars; one Washington, Alexandria, and Mount Vernon Railway snow sweeper; and two D.C. Transit System PCC cars. Additionally, the Smithsonian Institute has an original two-car train that operated along 14th Street and Pennsylvania Avenue.

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F. Associated Property Types

Name of Property Type: *Streetcar System Resource*
(TRANSPORTATION/Rail-Related)

1. Description

The streetcar resources of Washington, D.C. includes buildings and structures designed and constructed specifically for or by the transportation industry; or by another industry, such as real estate development, for the transportation of people to a particular location. Analyzed by function, there are seven subtypes representing the significant variations in use and form—including car barns, stables, terminals, waiting stations (streetcar and buses), tunnels, bridges, powerhouses, substations, and repair shops. A number of the resources historically associated with the streetcar system have been renovated to serve the autobus, a road-related subtype of transportation that supplemented streetcar services after World War II and gradually replaced the streetcar by the end of the 1950s. Each of the property sub-types, listed below, includes, in narrative form, a description, significance statement, and registration requirements.

Streetcar-Railway Resources

- A. Car Barns and Yards
- B. Stables
- C. Terminals and Depots
- D. Waiting Stations and Shelters
- E. Tunnels and Bridges
- F. Repair Facilities
- G. Powerhouse and Substations
- H. Rail Infrastructure

Bus-Related Resources

- I. Bus Waiting Stations
- J. Bus Garages

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A. *Name of Property Subtype:* *Car Barns and Yards*

Description:

Car barns were designed as large sheds built for the express purpose of housing vehicles and doing minor repairs on horse-drawn streetcars, overhead trolley cars, and electric railway cars. In Washington, D.C., car barns were often substantial buildings, more permanent than the term shed conveys. Streetcars were stored in the car barns when not in service, beginning and ending their daily routes from this point. The car barns often served a dual function, housing for the streetcars as well as stabling the horses that originally pulled the vehicles. Additionally, depending on the location of the building, the car barns also housed the main power generators for the electric traction systems. The inclusion of generating power was found in car barns as early as 1905, if not before. With improvements in electric generation, the building of the Benning Road Power Plant, and changes in service, the older small electric units were decommissioned and power was concentrated to just two or three major locations that were not directly connected to the day-to-day operation of the streetcars.

Primarily erected between 1860 and 1941, the majority (76%) of the car barns were constructed before 1900. In fact, forty-eight percent were constructed in the 1890s when electrification played a major role in the expansion of the railway lines. Car barns make up the largest percent of both extant (8) and demolished (21) streetcar resources in Washington, D.C. Extant car barns include, those located in Georgetown, Brightwood, Eckington, and at 14th and Decatur Streets, 14th Street and Florida Avenue, the Navy Yard, Benning Road, and East Capital Street.

The twenty-nine car barns studied represent a wide variety of architectural styles from the period between 1862 and 1941. The majority of the resources display characteristics of the imposing Romanesque Revival style, while a limited number exhibit detailing of the Classical Revival style or the more modest elements of industrial vernacular. Although no two-car barns are exactly alike in detailing, style, or massing, it is interesting to note that nine of the car barns originally incorporated towers that were used to the dry sand necessary for traction and clean up.

Walter C. Root, a Kansas City based architect, designed three of the car barns erected in Washington, D.C. These included the Mount Pleasant Car Barn located at 3200 14th Street, N.W.; the 7th Street Car Barn and Powerhouse at P and Water Streets in S.W.; and the Navy Yard Car Barn at 770 M Street, S.E. The buildings were all completed in 1891 in the distinctive Romanesque Revival style of architecture.

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The standard car barn was a freestanding building with horizontal massing. The earliest examples of the resource, erected during the horse-drawn period from 1862 to 1889, were typically one-story in height, constructed of wood frame with a rectangular plan. With the electrification of the railway system in 1886, car barns were more commonly constructed of brick, thereby reducing the potential for severe fire damage to the structure when the mechanical equipment failed. The typical plans associated with the car barns of the latter part of the nineteenth century included rectangular, L-shaped, U-shaped, trapezoidal, and even a pentagonal footprint. An intricate system of tracks ran through the building, allowing the streetcars to be efficiently moved into and out of the car barns. The tracks are still present in the Georgetown Car Barn and at 14th and Decatur Streets Car Barn.

Often car barns stood adjacent to an open yard that allowed vehicles to be stored. Security fencing or walls surrounded the yards with limited entry from the street. The Benning Road Car Barn, erected in 1941, is an excellent example of the open yard with enclosed shop. The use of an open yard also reduced costs for the railway company, which was not required to dedicate additional funds to the construction of a building.

Significance:

The car barn, and the associated open yard, is a significant property type for its role in the early public transportation system of the District of Columbia. Within the general context of Historic Streetcar Resources in Washington, D.C., the car barn holds a principle role as the most prevalent example of a property type constructed during the reign of the streetcar. The car barns, which are often quite imposing on the streetscape, represent the transportation system's direct influence on the growth of the city, as well as the development and the social/economic status of its residents.

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Registration Requirements:

For the period between 1862 and 1962, the car barn resources are eligible under Criterion A. Properties eligible under Criterion C include those resources exhibiting the high-style architectural designs of the period, elements of the functional industrial vernacular, or the mechanical equipment necessary for the movement of the streetcars. The eligible property must retain its original form or shed-like appearance, as well as the streetcar entry openings. For both criteria, enough of the railway tracks should exist on the interior to represent the original site configuration and function of the resource. The eligible car barns must retain integrity of location, workmanship, feeling, design, setting, materials, and association in the areas of horse-drawn railways and/or electric traction.

The abandonment of the street railway and its associated resources has resulted in deterioration, and even demolition, of many individual components. In order to be eligible under Criterion D, the site of the razed car barn must be able to yield information on the historic functions of the structure, or engineering of streetcars. Eligible resources must retain setting, configurations, and original materials including railway tracks, loops, and/or plow pits.

Three car barns have been listed in the DC Inventory and the National Register of Historic Places: 14th & Boundary Street Car Barn (now known as Manhattan Laundry, 1877) at 1346 Florida Avenue, NW; the East Capitol Street Car Barn at 1400 East Capitol Street, NE (1896); and the Georgetown Car Barn at 3600 M Street, NW (1895).

B. Name of Property Subtype: *Stables*

Description:

Stables were designed and constructed for the purpose of housing and caring for horses. The stable resources specifically associated with the railway systems in Washington, D.C. were constructed in the period between 1858 and 1894. Prior to the construction of car barns (specifically utilized to house the streetcars), stables were used to store a limited number of omnibuses and herdcics as well as the horses. With the change over from horse to electric and/or cable, the need for horses ended and the stable became surplus to the public transit companies needs. Starting in the late 1880s, the companies converted the stables into powerhouses or car barns. Of the streetcar resources studied, only two structures served exclusively as stables: Proctor Alley Livery Stable (1894) and the Beltline Horsecar Stable (1881, demolished). Nine

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combined car barns and stables were documented, with only the 14th & Boundary Streets Car Barn and Stable at 1346 Florida Avenue, NW (1877) and the M Street Shops at 3222 M Street, N.W. (ca. 1858, heavily altered) extant. The dearth of stables occurred when the railway companies began to experiment in the 1880s with electrification, suppressing the need for resources related to the horse-drawn streetcar era (1862-1892).

The standard stable was two to three stories in height. The earliest examples were constructed of wood frame, however, with the citywide utilization of brick, those resources erected after the Civil War were typically built with masonry bearing walls of brick, as required by law. The freestanding structures were typically horizontal blocks with square or rectangular footprints divided on the interior by horse stalls. The buildings were vernacular in style with limited applied ornament, and were typically located along and within alleys.

Significance:

The streetcar-related stable is a significant property type for its role in the early public transportation system of the District of Columbia. Within the context of Historic Streetcar Resources in Washington, D.C., the stable served as the primary resource for the housing of horses and streetcars until the building's pairing with car barns in the 1870s. Additionally, the limited number of resources erected in Washington, D.C. that were exclusively utilized as stables by the horse-drawn railway companies elevates the importance of the property type. This is particularly significant, as only a single example of this exclusive type is extant (Proctor Alley Livery Stables).

Registration Requirements:

For the period between 1862 and 1894, stables are eligible for listing in the National Register under Criterion A in the area of horse-drawn railways. The eligible property must exhibit its original form, retaining integrity of location, design, materials, and association.

The Proctor Alley Livery Stable at 1211 13th Street, NW was individually listed in the DC Inventory and the National Register of Historic Places. The property, designed by architect J.F. Denson, was recognized as an integral part of the livery stable and horse-drawn streetcar railway business. The M Street Shops, which was erected as a stable for the Vanderwerken Company about 1858, is located within the Georgetown Historic District. The streetcar companies later converted the building for use as a repair shop. The 14th and Boundary Streets Car Barn and

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Stable (now known as the Manhattan Laundry) was individually placed on the National Register, and is a contributing building within the Greater U Street Historic District.

C. Name of Property Subtype: *Terminals and Depots*

Description:

Buildings in which several different railway lines converged were known as streetcar terminals and depots. The resource also contained a passenger waiting area, which, unlike waiting stations, provided access to more than one line. Terminals constructed in the nineteenth century were primarily vertical blocks standing three to four stories in height with masonry bearing walls of brick. The earliest terminals were architecturally high style with projecting towers or oriels, ornate cornices, and arched openings for streetcar entry. The prominently located buildings served as advertisements for the railway companies and the routes that they provided. Often, the railway companies maintained office space in the terminals. Of the streetcar-related resources included in this survey, seven terminals were identified. This includes the Rock Creek Terminal (1899, demolished); the two Washington, Alexandria & Mount Vernon Terminal that stood on Pennsylvania Avenue (1892 and 1905, both demolished); the Bureau of Engraving Terminal (1942), and the 14th Street and Colorado Avenue Terminal (1937). One of the larger transit shelters stood on the northeast corner of the United States Treasury Building, near the intersection of G Street, N.W. This structure was dismantled before 1920.

The most significant extant example of a nineteenth-century terminal in Washington, D.C. is the Capital Traction Terminal (1895) at 36th and M Streets (also known as the Georgetown Car Barn) in Georgetown. The Washington and Georgetown Railroad Company used the ground floor on M Street, while the Washington, Arlington and Falls Church line planned to use the second floor and the projected Washington and Great Falls would occupy the third floor. The Metropolitan Railroad Company was allocated the flat roof accessible from Prospect Street. Designed by prominent local architect Waddy Wood, the terminal contained waiting rooms, toilet facilities, and offices for the various railways on the M Street side of the upper floors. The 140-foot tower contained an elevator for transferring passengers between the various railway lines. Passenger waiting rooms were handsomely finished with red oak wainscoting, tinted walls, paneled ceilings with stucco, and ornate black iron grills and stair railings. The imposing terminal was described as a union station for the use of all roads that might terminate at that point.

The earlier terminals differed from those constructed after 1937. All of the later examples were

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modest one story in height with brick bearing walls and pyramidal roofs. The freestanding buildings had horizontal block massing and rectangular footprints with overhanging metal awnings. Traditionally Colonial Revival in style, the modest terminals were constructed within residential neighborhoods near the boundaries of the city. With conversion to motor buses, the modest terminals were rehabilitated to function as waiting stations and turn-arounds.

Significance:

The streetcar terminals represent a significant property type in the history of railway transportation, particularly during the latter part of the nineteenth century in the area of early electric traction and suburban electric traction. The location of the earlier terminals in downtown Washington, D.C. and the siting of the later examples in the outlying residential neighborhoods document the evolution of the railway routes.

Registration Requirements:

Streetcar terminals are eligible for the National Register under Criterion A and C. In order to be eligible under Criterion A, the terminals must retain integrity of setting, location, design, workmanship, and association. The resource should display contributing ornamental elements that denote the building's use, as well as the railway company that utilized it. This includes the building's original form, streetcar and pedestrian entry openings, and any ornamental corporate insignia that adorned the structure. To be eligible in the area of electric traction under Criterion C, the resources must retain sufficient contributing elements that represent the original design and function of the resource. The projecting towers or oriels, arched openings for streetcar entry, and masonry walls are contributing elements that must be intact on the nineteenth-century examples of the property type. For the mid-twentieth-century examples, the siting with its intact turn-around lanes, overhanging metal awnings, and roof form are considered contributing to the historic significance of this property type in the area of suburban electric traction.

D. Name of Property Subtype: Waiting Stations and Shelters

Description:

Streetcar waiting stations provided shelter for passengers awaiting the streetcar. The stations were placed along the route, particularly in residential neighborhoods and at prominent government agencies like the United States Capitol. Waiting stations served many of the same

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purposes as streetcar terminals. However, the stations typically served only one railway line, while the terminals provided access to any number of lines. Some waiting stations housed ornate passenger rooms; yet, the majority consisted of benches set under an ornate metal canopy. Waiting stations constructed in the last decade of the nineteenth century were freestanding, horizontal blocks. Typically, the modest structures were one story in height with a rectangular footprint.

The earliest examples of waiting stations were designed in 1876 by Frederick Law Olmsted as part of the Capitol grounds landscape. The three stations are highly detailed with back-to-back benches covered by ornate metal canopies composed of foliage. The structures originally served the horse-drawn streetcar, and with the conversion to electrification, provided shelters benches for the electric railways.

By the latter part of the nineteenth century, in 1898, two high-styled waiting stations were constructed in Anacostia and Georgetown. The now-demolished structures were modest in form, standing one story in height with grand entry openings and detailed cornices. The buildings were composed of a single room lined with rows of wooden benches for waiting passengers. Located at Talbert Street and Nichols Avenue (now Martin Luther King Jr. Drive) in southeast Washington, D.C., the Anacostia waiting room was coupled with a starter station, the location were the railway line began its suburban route.

Significance:

The high style of the waiting stations, much like the grand terminals of the late nineteenth century, were significant to the history of street railways. The siting of the resources along the highly traveled routes of the railways was strategically planned by the transportation companies in order to provide conveniently placed benches and waiting areas.

Registration Requirements:

In this context, the waiting stations are eligible under Criterion A in the area of horse-drawn railways, early electric and suburban traction, and twentieth-century development and expansion. In order to be eligible under this criterion, a resource must be associated with an important streetcar line that displays the link between the railway lines and the neighborhoods they served. As such, integrity of setting and location are essential contributing elements. Customarily, the waiting stations displayed the fashionable architectural styles of the period with the ornate

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detailing of the late-nineteenth-century Renaissance Revival styles, or the modest Colonial Revival mode of the twentieth century. Waiting stations under Criterion C must express the architectural influences of the period in which it was constructed, retaining its original form, applied detailing, canopy, and seating arrangement.

The only extant waiting stations identified are the three outdoor benches designed by Olmsted at the United States Capitol and the twin Dupont Circle Stations (1949). With a direct association to the landscaping plan of the Capitol grounds, as well as the renowned landscape architect who designed the plan, the Capitol waiting stations have been listed on the DC Inventory of Historic Sites. The Colonial Revival Dupont Circle Stations, erected as part of the tunnel construction in 1949, are located within the Dupont Circle Historic District.

E. Name of Property Subtype: Tunnels and Bridges

Description:

Underground railway tunnels were designed and built specifically to reroute traffic beneath existing roadways, separating the streetcar lines from other traffic. Stone and concrete were used to build the retaining walls for the tunnels, which were set underneath major transportation routes where traffic traditionally proved to be slow. These modern resources were constructed in the 1930s and 1940s, and marked the final phase of the railway systems. The first tunnel was constructed at the Capital Plaza Gardens in 1934. The second tunnel was built in 1942 under 14th Street where it intersected with Independence Avenue at the Bureau of Engraving. The massive Dupont Circle underpass proved to be the final major construction project in Washington, D.C.'s street railway history. Construction was completed at the end of 1949, and the tunnel was immediately considered a white elephant because of the exorbitant construction costs. The three tunnels were closed for transit use in 1962. The Capital Plaza Garden's tunnel is now used for hill-staff parking. The Bureau of Engraving station area is used for storage, while the approach to it has been backfilled in an attempt to ease congestion for auto traffic. Buses could not use the Dupont Circle Tunnel because the lateral clearance was too tight for safe, fast passage and highway officials wanted the ramps filled in to ease the street traffic. The twin waiting areas remain, however, along with five or more pedestrian stairways.

Bridges, both purpose-built for streetcars and those that served a variety of transportation modes, provided access across the waterways and ravines of Rock Creek. Typically, the nineteenth-century structures were constructed of wood frame and/or iron with a single track running down

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the center. During the twentieth century, with the advent of the automobile and autobus, streetcar tracks were laid along side pavement, and were viewed as secondary to the function of the bridge. One of the best examples of streetcar bridges were the structures erected by the Chevy Chase Land Company to allow newly developed northern suburbs to be easily accessible to residents. Under the direction of Francis Newlands, the land company constructed trestle bridges at Calvert and Klingle Streets, and extended Connecticut Avenue into Maryland. The construction of the bridges had been proposed by civil engineer William Kesley Schoepf, who recommended that the cost of erecting the bridges was cheaper than grading the steep slopes of Rock Creek. The two iron structures were completed in 1891, for a cost of \$127,000. The Calvert Street Bridge spanned 750 feet, while the Klingle Street Bridge was 400 feet long.

Significance:

The streetcar tunnel and bridge are significant property types related to the demise of the once-prominent streetcar railway enterprise. Designed to allow motorized vehicles to travel along side the streetcars, the innovative tunnels and bridges contribute to the historic context of the railway system in the areas of late-nineteenth-century and twentieth-century development, expansion, and decline.

Registration Requirements:

In order to be eligible under Criterion A, the resource must retain the visual appearance of a tunnel with its balustraded ramps. For the same criterion, enough of the stone and concrete retaining walls must stand to represent the original function of the feature. The bridges must retain the trackage on which the streetcar traveled.

F. Name of Property Subtype: Repair Facilities

Description:

Repair shops were designed and constructed specifically as a place where the streetcars, and later buses, were repaired and serviced. The streetcar repair shops were typically paired with car barns, thus allowing the streetcars to be serviced when not operating. Constructed primarily in the last quarter of the nineteenth century, the standard shop was a two to four story freestanding building with brick bearing walls. They had horizontal massing and rectangular footprints. Built in a variety of architectural styles, the repair shops exhibited commercial and industrial

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vernacular detailing. Identified examples of building used exclusively as repair facilities include the Vanderwerken M Street Shops at 3222 M Street (circa 1858, extensively altered) and the P Street Shop at 2411 P Street, N.W. (1874, razed 1934).

As buses supplanted streetcars, new repair facilities were constructed specifically for buses, often behind existing streetcar car barns that were converted to bus use. The brick building at the rear of the 1521-1547 Benning Road (built 1941) survives as an example of a purpose-built bus repair building.

Significance/Registration Requirements:

An essential component, the repair shops are significant for their role in the early public transportation system of the District of Columbia. Repair facilities are eligible under Criterion C. The eligible property must retain its original form or shed-like appearance, as well as the streetcar entry openings. Enough of the railway tracks should exist on the interior to represent the original configuration and function of the resource. The eligible repair shops must retain integrity of location, design, materials, and association in the area of horse-drawn railways, cable railways, and electric traction.

G. *Name of Property Subtype:* *Powerhouse and Substations*

Description:

The powerhouses and substations erected by the railway and development companies were the direct result of experimentation and suburban expansion. Primarily dating from the 1890s, the powerhouse generated power for not only the streetcar lines, but was designed to also provide power for the street lighting and houses of new community. The powerhouses were typically located at the beginning or end of the line, with substations located intermittently along the track to provide addition power. The powerhouses typically were high style architect designed buildings, presented as the showpiece of the railway company. In contract, the substations were often located along alleys within squares and, although typically architect designed, were more modest in style and ornamentation in an effort to blend with existing residential and commercial buildings.

The largest and most ornate powerhouse erected in Washington, D.C. to date, was the W&G Pennsylvania Avenue Powerhouse (1891, burned 1897). Contemporary accounts described the

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building one of the biggest and best equipped in the industry. In fact, the building's excess space allowed portions of it to be rented to individual businesses that could make use of the convenient steam power source on the first floor. Designed by Walter C. Root, the powerhouse was prominently located at the corner of 13-1/2 and 14th Streets along Pennsylvania Avenue (now the site of the District Building). It was erected as part of W&G's massive \$3,500,000 building campaign that included the erection of new car barns, powerhouse complexes, and the installation of miles of cable. According to the company's president Henry Hurt, the aim was to establish a transportation model for the country. This investment demonstrated "the growing importance of this city" according to a contemporary account. On September 29-30, 1897, the powerhouse on Pennsylvania Avenue was completely destroyed by fire, forcing the company to revert temporarily to horse-drawn power, and abandoned cable traction permanently.

Although powerhouses were typically purpose-built, the Grace Street Powerhouse (1878, demolished) was originally erected to serve as a car barn and stable. The brick structure, erected across the canal from the M Street Shops in Georgetown, was renovated in 1898 to serve as the main power source for the Capital Traction Company.

The Capital Traction Company, to service their extensions constructed the last of Washington, D.C.'s powerhouses in 1911. The imposing Wisconsin Avenue & K Street Powerhouse (1911, demolished 1967ca), located in Georgetown, was constructed of red brick. The massive power plant housed twelve boilers that operated five turbo generators, which in turn fed four substations throughout the city. The L-shaped building had a five-story entry pavilion, crossed by a northern hall that ran perpendicular to the southern hall that extended to the river. The cast stone of the pavilion cornice was repeated in the white sills and keystones to further accentuate the massing. The Flemish bond brick walls were relieved by belt courses, pilaster, and projecting panels. Two buff colored chimneys rose about 220 feet above the building.

Significance:

The streetcar powerhouses and substations represent a significant property type in the history of railway transportation, particularly during the 1890s period of experimentation. The location of the powerhouses in downtown Washington, D.C. and the siting of the substations in the outlying residential neighborhoods document the evolution of the railway routes and the varying modes of transit used.

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Powerhouses and substations are eligible for listing under Criteria A and C. In order to be eligible under Criterion A, the powerhouses and substations must retain integrity of setting, location, design, workmanship, and association. The resource should display contributing ornamental elements that denote the building's use, as well as the railway company that utilized it. This includes the building's original form, streetcar and pedestrian entry openings, and any ornamental corporate insignia that adorned the structure. To be eligible in the area of electric traction under Criterion C, the resources must retain sufficient contributing elements that represent the original design and function of the resource. The projecting towers or oriels, arched openings for streetcar entry, and masonry walls are contributing elements that must be intact. This survey documented seven powerhouse (none of which stand today) and approximately twenty-five substation. Many of the extant substations have been taken over by utility companies, continuing to generate power to the neighborhoods in which they stand.

H. Name of Property Subtype: *Rail Infrastructure*

Description:

Rail infrastructure includes, but is not limited to, streetcar tracks and alignments. Although streetcars are no longer a viable transportation system in Washington, D.C., remnants of the streetcar tracks and their alignments may survive in some areas and may have the potential to yield important information on streetcar technology. Removal of the streetcar tracks began as early as 1925 with the closure of service on Portland Street, Bladensburg Road, and services to Laurel, Maryland, and culminated in 1962 when the city's remaining streetcars made their last runs in the city. No comprehensive survey work has been conducted to identify the surviving streetcar tracks in the city and no records have been consulted to determine which rail infrastructure elements have been removed, or simply paved over. It is known, however, that metal rails were intentionally exposed along O and P Streets, west of Wisconsin Avenue in Georgetown, together with the cobblestone streets. These rails mark the turn-around loop for the underground conduit system of the Metropolitan Railway Company. Extant loops and turn-arounds are visible on the interior of the Georgetown Car Barn at 3600 M Street, NW and at the Capital Traction Company Car Barn at 4615 14th Street, N.W. The existence of rails, along with the abandonment of tunnels, loops, corner configurations, plow pits, and turn-arounds, presents exceptional archaeological opportunities.

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Significance:

The streetcar infrastructure represents a significant property type in the history of rail transportation. The rail alignments, well documented on historic maps, illustrate the evolution of the streetcar system from a relatively confined city-based horse drawn system to a more extensive one that reached deep into the outlying regions. Although many of the tracks were taken up, others were eventually paved over following , or in the case of Georgetown, left exposed, following the demise of the streetcar system.

Registration Requirements:

Streetcar infrastructure may be eligible for listing under Criteria A and D. In order to be eligible, the rail infrastructure must have the potential to yield information important to our understanding of the streetcar system in Washington, D.C. and must retain integrity of location, design, setting, materials, workmanship, feeling and association.

Name of Property Type:

Bus-related Resources
(TRANSPORTATION/Road-Related)

1. Description

The bus-related resources of Washington, D.C. include buildings and structures designed specifically for the newly emerging bus industry. Unlike streetcar resources that were altered to accommodate new transportation uses, these bus-related resources were purpose-built for buses. By the mid-1920s, bus service had emerged as an alternative to the city's streetcar system. According to the thinking at the time, the motorbus provided greater flexibility and safety, was more comfortable and was cheaper to introduce into expanding suburban areas. As new bus lines expanded beyond the streetcar network, new bus stations were constructed where no streetcar waiting station previously existed. While many streetcar car barns were converted for the storage and repair of buses, new purpose-built bus garages were also constructed. By the time the city's streetcars were being phased out, a single consolidated company, Capital Transit Company, was operating within the city. Each of the property subtypes, listed below, includes, in narrative form, a description, significance statement, and registration requirements.

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I. Name of Property Subtype: Bus Waiting Stations

Description:

Bus waiting stations provided shelter for passengers awaiting buses. The bus stations, also considered transfer stations, were often placed at the end of a streetcar line and the beginning of a bus route, particularly in the growing suburban residential neighborhoods. The stations provided rail turn-arounds for the streetcars, as well as room for buses for drop-off and pick-up passengers. The waiting stations were generally small, one-room structures with overhanging porches on either side of the building to provide shelter for waiting passengers. In 1936, when the Rockville Streetcar line was cutback to Western Avenue at the District line, the Capital Transit Company built the first of its purpose-built bus transfer stations. The now-demolished building was designed in a Georgian Revival style that served as a stylistic model for its future bus stations. By the early 1940s, the Capital Transit Company had developed a standard model bus station, designed by architect Arthur B. Heaton. This model, illustrated by the two extant bus stations at 14th Street and Colorado Avenue and Chevy Chase Circle, consisted of a single-story, one-room brick building designed in a mid-twentieth-century Colonial Revival style. Square in plan, the cube-like structure features a hipped slate roof with central cupola, brick quoins at the corners and metal canopies providing shelter on either side of the building. The façade is divided into three bays with a central entrance flanked by single windows.

Significance:

The introduction of buses as a means of public transportation represents the final phase of the history of streetcars in the nation's capital. In the initial years, bus service emerged primarily as a feeder service to new growth areas at the end of the streetcar routes and was thus an integral part of the larger streetcar network. Streetcar terminus became bus turn-arounds, while new bus waiting stations were built along the extended routes. Recognized as an important public building by the bus companies and the public, bus stations were well-designed and physically substantive buildings that reflected the aesthetic preferences of the day.

Registration Requirements:

Bus waiting stations are eligible for listing in the National Register under Criteria A and C. In order to be eligible, bus stations must retain integrity of setting, location, design, workmanship, and association. The resource should display original massing and elements that denote the

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building's use.

J. Name of Property Subtype: Bus Garages

Description:

Bus garages were specifically built to house and service buses. After buses replaced streetcars in the city, many of the streetcar car barns were converted to bus garages. Eventually, however, purpose-built bus garages were constructed, of which two have been identified. Both of these structures—the Capital Transit (Western) Bus Garage at 44th Street between Harrison and Jenifer Streets, N.W. and the Capital Transit Bus Garage at 32 M Street, S.E.—are one-story brick buildings with large door openings to accommodate buses and character-defining industrial steel windows. The buildings have three-part elevations with a central pavilion and end wings. The central pavilion is equipped with large bus doors and the end wings with industrial window sash lighting the interior of the repair shops.

Significance:

The bus garage is a significant property type for its role in the continuing evolution of public transportation in Washington, D.C. Although the two known bus garages were not as visible to the public as bus waiting stations, the Capital Transit Company recognized them as important public buildings and hired prominent local architect Arthur B. Heaton to design them. The architect exploited the design techniques with the use of pilasters and brick stringcourses to break the large massing of the building and ornamental brickwork to relieve the monotony of the long facades, elevating these bus stations from industrial structure to public building.

Registration Requirements:

Bus garages are eligible for listing in the National Register under Criteria A and C. In order to be eligible, bus garages must retain integrity of setting, location, design, workmanship, and association. The resource should display original massing and elements that denote the building's use.

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G. Geographical Data

EXTANT RESOURCE	ADDRESS	BUILT	DESIGNATION
14 th & Boundary (Florida) Streets Car Barn & Stable (Manhattan Laundry)	1346 Florida Ave., NW	1877	Individual Landmark Greater U Street HD
14 th Street and Colorado Ave. Terminal	5409 14 th St., NW	1937	
Capital Traction Company Car Barn (Decatur Street Car Barn)	4615 14 th St., NW	1906	
Benning Road Car Barn and Shop	Benning Road & Kenilworth Ave., NE	1941	
Brightwood Car Barn (2 nd)	5929 Georgia Ave., NW	1909	
Bureau of Engraving Tunnel & Terminal	14 th Street, SW	1942	
Capital Plaza Gardens' Tunnel	Between the Capitol and Union Station, NW	1934	
Capital Transit Company Bus Garage	17 M Street, S.E.	1936	
Capital Transit Company Terminal (Chevy Chase Bus Terminal)	5716 Connecticut Ave., NW	1940-1941	
Dupont Circle Streetcar Tunnels and Stations	Dupont Circle, NW	1949	Dupont Circle HD
East Capitol Street Car Barn	1400 East Capitol St., NE	1896	Individual Landmark
Eckington Car Barn (2 nd)	5 th & T Sts., NE	1899	

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Georgetown Car Barn (Capital Traction Terminal)	3600 M St., NW	1895/1912	Georgetown HD
M Street Shops	3222 M St., NW	ca. 1858/1862/1906/ 1943/1970	Georgetown HD
Navy Yard Car Barn	770 M Street, SE	1891	Individual Landmark Capitol Hill HD
Proctor Alley Livery Stables	1211 13 th St., NW	1894	Individual Landmark
Tenleytown/Friendship Heights Bus Garage (Western Bus Garage)	44 th Street between Harrison and Jenifer Sts., NW	1936	
U.S. Capitol Horsecar Waiting Stations	U.S. Capitol Grounds	1876 ca	Part of the U.S. Capitol landscape

RESOURCE NAME	ADDRESS	BUILT	DESTROYED
1 st & B Streets Car Barn & Stable	107 B Street, SW	1874 ca	1961 ca
4 1/2 Street Car Barn & Shops	4-1/2 & O Sts., SW	1892	1962
7 th Street Car Barn & Powerhouse	P & Water Sts., SW	1890-1892	1940
7 th & T Streets Car Barn & Stable	7 th St. & Florida Ave., NW southeast corner	1860s	1890s
11 th Street Car Barn	2244 10 th St., NW	1892	1930s
13 th & D Streets Car Barn & Stable	13 th & D Sts., NE	1894	1912 (fire)
36 th Street Waiting Station	1233 36 th St., NW	1898	1959 ca

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Anacostia Car Barn/Stable	John & Lincoln Sts., SE	1876 ca	1907 (fire)
Anacostia Starter's Station And Waiting Room	Nichols Ave. & Talbert St, SE	1898	1935 ca
Belt Line Car Barn & Stable	Independence Ave, SW At 3 rd St.	1877	1976 ca
Belt Line Horsecar Stable	12 th & V Sts., NW	1881	1893 ca Abandoned
Brightwood Railway Car Barn (1 st)	Georgia Ave., between Gallatin & Farragut Sts., NW	1888 ca	1895 (fire)
Columbia Railway Co. Car Barn & Powerhouse	S. Side of Benning Road, NE	1895	1971
Congress Heights Car Barn	Nichols Ave., SE	1896	1899/1900
Falls Car Barn	38 th & Prospect Sts., NW	1896	1946
Georgetown & Tenallytown Car Barn & Powerhouse	Wisconsin Ave and Calvert St, NW	1890	1920
Grace Street Power Plant	Grace St., NW	1898	Unknown
Metropolitan Car Barn	W. Side of 7 th St, NW	1875	1895 ca Abandoned
Metropolitan RR Co. Car Barn & Stable	17 th St. & NY Ave., NW	1865	1894
Mount Pleasant Car Barn	3200 14 th Street, NW	1891	1915

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New Jersey Avenue Car Barn & Stable	Constitution St. & New Jersey Ave. at B St, NW	1862	1900s
P Street Shops	2411 P St., NW	1874	1934
Pennsylvania Avenue Powerhouse	13-1/2 & 14 th at E Sts., NW	1891	1897 (fire)
Pennsylvania & Minnesota Avenues Car Barn	SE Corner of Pennsylvania & Minnesota Avenues, SE	1905	1923
Rock Creek Railway Powerhouse	Champlain at 17/18 th , NW	1893	1896 ca
Rock Creek Terminal	N. side of Calvert Street at Duke Ellington Bridge, NW	1899	1990
Second Baltimore & Washington Transit Car Barn	3 rd St., Aspen Road, & Blair Road, NE	1910 ca	1913 (fire)
Tenallytown Car Barn	5230 Wisconsin Ave., NW	1909	1962
Washington, Alexandria & Mt. Vernon Terminal (1 st)	1320 Pennsylvania Ave., NW	1890s	Unknown
Washington, Alexandria & Mt. Vernon Terminal (2 nd)	1202 Pennsylvania Ave., NW	1905	Unknown
Washington & Great Falls Car Barn	Arizona Ave, NW	1896	Unknown
Capital Traction Powerhouse	3140 K St., NW	1911	1968

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Partial List of Loops and Turn-arounds (located at intermediate and end points along the track)

14th Street & Maine Ave. Underground Loop
P and O Streets, N.W. at 35th and 36th Streets in Georgetown
Mount Pleasant Loop and Reserve Track
Seat Pleasant Loop
Griffith Stadium Loop
GAR Monument Loop at 7th Street and Indiana Avenue, N.W.
McLean Gardens Loop at Wisconsin Avenue, N.W.
11th and Monroe, N.W. Loop
Calvert Street Loop and Reserve Track
Peace Monument Loop at Pennsylvania Avenue and 1st Street, N.W.
36th and M Streets Loop (inside Georgetown Car Barn at 3600 M Street, N.W.)
14th and Decatur Streets Loop (inside Capital Traction Company Car Barn at 4615 14th Street, N.W.)
Washington Circle Loop at Pennsylvania Avenue and 23rd Street, N.W.
Mount Rainier Loop on Rhode Island Avenue
Branchville Loop on Greenbelt Road
Riverdale Loop
Cabin John Loop and Reserve Track
Municipal Center, N.W.
F Street, N.W. between 18th and 19th Streets
Potomac Park (C Street, N.W. between 18th and 19th Streets)
F and G Streets, N.W., up to 25th Street
6-1/2 Street and Pennsylvania Avenue

Partial List of Power Changes Pits at Street Level: Plow Pits

Benning Road in front of Columbia Barn (WRECo and WB&A)
North Capitol Street at W Street (WRECo)
Nichols and Talbot Streets, S.E. (WRECo)
North side of 11th Street Bridge, S.E. (WRECo)
Long Bridge at 14th Street, S.W. (WAMtV)
14th Street Highway Bridge, S.W. (WAMtV)
37th and Prospect Streets, N.W. (WRECo)
Wisconsin Avenue and Q Street, N.W. (WRECo)
Wisconsin Avenue and P Street, N.W. (Capital Transit)
East side of Calvert Bridge, N.W. (Capital Traction)
14th and Colorado, N.W. (Capital Traction)

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Partial List of Substations in 1925²⁶⁵

Capital Traction Power Generating Facilities

Main Generating Station: Wisconsin Avenue and K Street, N.W., at the Potomac River
Substation 1: 14th and B Street, N.W.
Substation 2: 1st and B Streets, S.W.
Substation 3: At main generating station
Substation 4: Connecticut Avenue and Fessenden Street, N.W.

Washington Railway and Electric Company

Main Generating Station: Benning Station
Substation 1: 405 8th Street, N.W.
Substation 2: 450 Washington Street, N.W. (between 4th and 5th Streets)
Substation 3: Rear of Eckington Barn
Substation 4: Riverdale at Pierce Street
Substation 5: Brightwood Car Barn
Substation 6: Four miles south of Rockville at Grosvenor Lane
Substation 7: 56th and Dix Streets, N.E.
Substation 8: Anacostia, rear of starters office at plow pit
Substation 9: Ammendale, Maryland
Substation 10: Intersection of alleys in block bounded by 14th, 15th, H, and I Streets, N.W.
Substation 11: 13th and D Streets, N.E.
Substation 12: Georgetown at 33rd Street and South Bank of C&O Canal
Substation 13: Northwest corner of Sherman Avenue and Harvard Street, N.W.
Substation 14: Adjacent to Benning Power Plant
Substation 15: Glen Echo
Substation 17: 14th and B Streets, N.W.
Substation 20: West side of 10th Street, north of E Street
First consolidated power plant at 14th and B (now Constitution) Streets, N.W. operated by PEPCo/WRECo.

²⁶⁵ King, p. 302.

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H. Summary of Identification and Evaluation Methods

The multiple property listing of historic streetcar and bus resources in Washington, D.C. is based upon a 1996 D.C. Early Transportation Systems Survey, with particular focus on streetcars, early roads, and steam railroads. The D.C. Early Transportation Systems Survey was the second stage of a multi-phased study of historic transportation-related resources in Washington, D.C. The ultimate goal of the multi-phased study was the identification, documentation, and registration of significant resources related to the city's transportation history. The purpose of the project was to officially acknowledge and protect these significant resources which have, until now, been unrecognized and undocumented. The survey identified eighteen extant and thirty-two razed streetcar- and bus-related properties.

An advisory committee provided expertise and guidance to the professional and technical staff in the development of the study plan. The committee was comprised of individuals highly knowledgeable in the history of transportation, the evolution of transportation corridors in the city, the history and geography of Washington, D.C., and historic preservation. In addition, the project relied upon volunteers who gave their time and expertise in surveying, researching and compiling documentation and bibliographies for the project. The study resulted in the following accomplishments: 1) continued utilization of the Advisory Committee that provided overall direction into a variety of documentation and research avenues; 2) expanded the transportation historic context with regard to streetcars and buses and how the industry relates to the development and growth of Washington, D.C. from pre-history to the middle part of the twentieth century; 3) conducted on-site surveys, photography and archival research on those properties extant and demolished that relate to streetcars and buses; and 4) developed a set of historic maps that document streetcars and buses in and around Washington, D.C.

A team of professional historians and architectural historians, who documented the development history and growth of the streetcar systems and associated properties, conducted primary and secondary research. The research assignments included the investigation of primary and secondary sources, maps, and historic photographs for information into the history of streetcars in and around Washington, D.C. The context of the research assignments ranged from the examination of general histories of Washington, D.C. for an understanding of the development of transportation systems, to specific research tasks, such as the investigation of horse-drawn

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carriages and the 1962 conversion from streetcar to all buses. The research assignments were presented to the Advisory Committee and revised based upon their comments. In particular, the Advisory Committee encouraged not only the examination of how the streetcar railways and buses effected the growth and development of the built environment, but how the physical environment impacted the development of streetcar railway and bus routes. This work was conducted primarily through an analysis of historic maps; for instance, particular attention was paid to historic points of intersection over time to see how they may have attracted transportation corridors and vice versa. As gleaned from maps, this information was incorporated into the historic context. Based upon the research conducted, the historic context was prepared. The work was based on the outline established in the planning phase of 1994.

The properties are grouped under six historic context themes: 1) Horse-Drawn Era (1791-1889); 2) Early Electric Traction and Other Experiments (1888-1899); 3) Consolidation (1895-1910); 4) Twentieth-Century Merger and Conversion (1900-1962); 5) Capital Transit Company (1933-1956); and 6) D.C. Transit System (1956-1962). The establishment of the first streetcar line in 1862 and the conclusion of streetcar service and the conversion to an all-bus system one hundred years later determined the period of significance for the historic context. All streetcar- and bus-related resources with the boundaries of the District of Columbia were documented, extant and razed. The property types are organized chronologically, with overlapping periods rated to technological experimentation and advancements.

The survey identified a wide range of resources in Washington, D.C. spanning from the 1860s to the late 1940s. Seven streetcar subtypes and two bus subtypes were identified for their functional association with the storage, repair, operation, and mobility of the streetcar railways and bus routes. Thus, only those properties constructed between the period of streetcar and bus operation (1862-1962) in Washington, D.C. were documented. The architectural and physical features of the surviving properties were considered in developing the outlines of potential registration requirements, particularly when only a single representative of the property type remained.

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Georgetown Car Barn (Capital Traction Terminal)	3600 M St., NW	1895/1912	11
M Street Shops	3222 M St., NW	ca. 1858/1862/1906/ 1943/1970	12
Navy Yard Car Barn	770 M Street, SE	1891	13
Proctor Alley Livery Stables	1211 13 th St., NW	1894	14
U.S. Capitol Horsecar Waiting Stations	U.S. Capitol Grounds	1876 ca	15
Demolished Streetcar Resources			
1 st & B Streets Car Barn & Stable	107 B Street, SW	1874 ca	16
4 1/2 Street Car Barn & Shops	4-1/2 & O Sts., SW	1892	17
7 th Street Car Barn & Powerhouse	P & Water Sts., SW	1890-1892	18
7 th & T Streets Car Barn & Stable	7 th St. & Florida Ave., NW southeast corner	1860s	19
11 th Street Car Barn	2244 10 th St., NW	1892	20
13 th & D Streets Car Barn & Stable	13 th & D Sts., NE	1894	21
36 th Street Waiting Station	1233 36 th St., NW	1898	22

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Anacostia Car Barn/Stable	John & Lincoln Sts., SE	1876 ca	23
Anacostia Starter's Station And Waiting Room	Nichols Ave. & Talbert St, SE	1898	24
Belt Line Car Barn & Stable	3 rd and Independence Ave, SW	1877	25
Belt Line Horsecar Stable	12 th & V Sts., NW	1881	26
Brightwood Railway Car Barn (1 st)	Georgia Ave., between Gallatin & Farragut Sts., NW	1888 ca	27
Columbia Railway Co. Car Barn & Powerhouse	S. Side of Benning Road, NE	1895	28
Congress Heights Car Barn	Nichols Ave., SE	1896	29
Falls Car Barn	38 th & Prospect Sts., NW	1896	30
Georgetown & Tenallytown Car Barn & Powerhouse	Wisconsin Ave and Calvert St, NW	1890	31
Grace Street Power Plant	Grace St., NW	1898	32
Metropolitan Car Barn	W. Side of 7 th St, NW	1875	33
Metropolitan RR Co. Car Barn & Stable	17 th St. & NY Ave., NW	1865	34
Mt. Pleasant Car Barn	3200 14 th Street, NW	1891	35
New Jersey Avenue Car Barn & Stable	Constitution St. & New Jersey Ave. at B St, NW	1862	36
P Street Shops	2411 P St., NW	1874	37

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<p> Pennsylvania Avenue Powerhouse </p>	<p> 13-1/2 & 14th at E Sts., NW </p>	<p> 1891 </p>	<p> 38 </p>
<p> Pennsylvania & Minnesota Avenues Car Barn </p>	<p> SE Corner of Pennsylvania & Minnesota Avenues, SE </p>	<p> 1905 </p>	<p> 39 </p>
<p> Rock Creek Railway Powerhouse </p>	<p> Champlain at 17/18th, NW </p>	<p> 1893 </p>	<p> 40 </p>
<p> Rock Creek Terminal </p>	<p> N. side of Calvert Street at Duke Ellington Bridge, NW </p>	<p> 1899 </p>	<p> 41 </p>
<p> Second Baltimore & Washington Transit Car Barn </p>	<p> 3rd St., Aspen Road, & Blair Road, NE </p>	<p> 1910 ca </p>	<p> 42 </p>
<p> Tenallytown Car Barn </p>	<p> 5230 Wisconsin Ave., NW </p>	<p> 1909 </p>	<p> 43 </p>
<p> Washington, Alexandria & Mt. Vernon Terminal (1st) </p>	<p> 1320 Pennsylvania Ave., NW </p>	<p> 1890s </p>	<p> 44 </p>
<p> Washington, Alexandria & Mt. Vernon Terminal (2nd) </p>	<p> 1202 Pennsylvania Ave., NW </p>	<p> 1905 </p>	<p> 45 </p>
<p> Washington & Great Falls Car Barn </p>	<p> Arizona Ave, NW </p>	<p> 1896 </p>	<p> 46 </p>
<p> Capital Traction Powerhouse </p>	<p> 3140 K St., NW </p>	<p> 1911 </p>	<p> 47 </p>
<p><i>Extant Bus Resources</i></p>			
<p> Chevy Chase Circle Terminal </p>	<p> 5716 Connecticut Ave., NW </p>	<p> 1940-1941 </p>	<p> 48 </p>
<p> Tenleytown/Friendship Heights Bus Garage </p>	<p> 44th Street between Harrison and Jenifer Streets, NW </p>	<p> 1936 </p>	<p> 49 </p>
<p> Western Bus Garage </p>	<p> 17 M Street, S.E. </p>	<p> 1936 </p>	<p> 50 </p>

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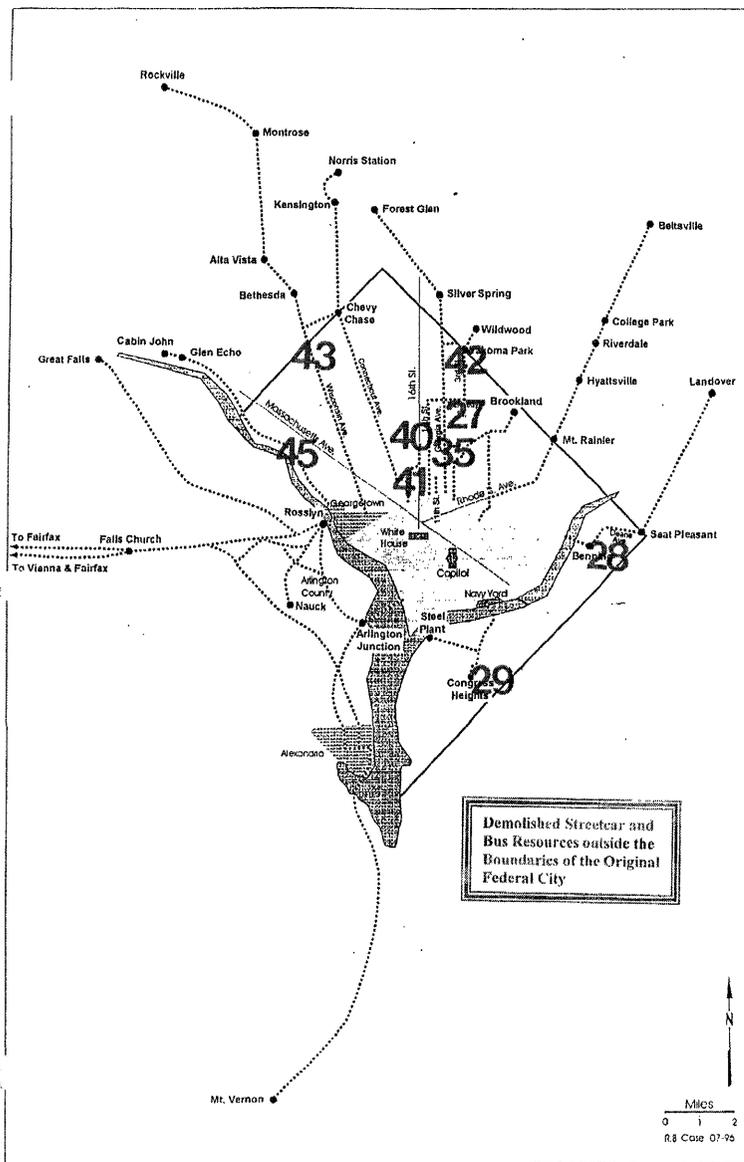
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The following is common to all photographs:

Photographer: EHT Tracerics, Inc., photographer

Date of Photographs: December 1998

Location of Negatives: D.C. Historic Preservation Office

- 1) 14th and Boundary Street Car Barn and Stable (Manhattan Laundry)
1346 Florida Avenue, NW
Washington, D.C.
View looking southwest
1/23
- 2) 14th and Boundary Street Car Barn and Stable (Manhattan Laundry)
1346 Florida Avenue, NW
Washington, D.C.
View looking southeast
2/23
- 3) 14th and Colorado Avenue Terminal
5409 14th Street, NW
Washington, D.C.
View looking northeast
3/23
- 4) 14th and Decatur Street Car Barn
4615 14th Street, NW
Washington, D.C.
View looking southeast
4/23
- 5) 14th and Decatur Street Car Barn
4615 14th Street, NW
Washington, D.C.
View looking northeast
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- 6) Brightwood Car Barn
5929 Georgia Avenue, NW
Washington, D.C.
View looking northeast
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- 7) Benning Road Car Barn
Benning Road and Kenilworth Avenue, NE
Washington, D.C.
View looking northwest
7/23

- 8) Chevy Chase Circle Terminal
5716 Connecticut Avenue, NW
Washington, D.C.
View looking northwest
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- 9) Dupont Circle Streetcar Tunnel and Station
Dupont Circle, NW
Washington, D.C.
View looking northwest
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- 10) East Capitol Street Car Barn
1400 East Capitol Street, NE
Washington, D.C.
View looking northeast
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- 11) East Capitol Street Car Barn
1400 East Capitol Street, NE
Washington, D.C.
View looking northwest
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- 12) East Capitol Street Car Barn
1400 East Capitol Street, NE
Washington, D.C.
West Elevation, View looking northeast
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- 13) Eckington Car Bar
5th and T Streets, NE
Washington, D.C.
View looking northeast
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- 14) Georgetown Car Barn
3600 M Street, NW
Washington, D.C.
View looking northwest
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- 15) Georgetown Car Barn
3600 M Street, NW
Washington, D.C.
North elevation, looking southeast
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- 16) M Street Shops
3222 M Street, NW
Washington, D.C.
View looking southeast
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- 17) Navy Yard Car Barn
770 M Street, SE
Washington, D.C.
View looking northwest
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- 18) Navy Yard Car Barn
770 M Street, SE
Washington, D.C.
East Elevation, view looking northwest
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- 19) Proctor Alley Livery Stables
1211 13th Street, NW
Washington, D.C.
View looking southwest
19/23

- 20) Tenallytown Car Barn
5230 Wisconsin Avenue, NW
Washington, D.C.
View looking northeast
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- 21) U.S. Capitol Horse Car Waiting Station
U.S. Capitol Grounds
Washington, D.C.
View looking north
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