ABSTRACT

Title of Final Project:	THE HORSE-POWERED CITY: WASHINGTON, D.C.- A CULTURAL LANDSCAPE REPORT Lucy Cooksey Medley, Master of Historic Preservation, and Museum Scholarship and Material Culture Certificate, 2023
Final Project Directed By:	Dr. Donald Linebaugh, Director of Historic Preservation, School of Architecture, Planning, and Preservation Dr. Mary Corbin Sies, Associate Professor and Director of Museum Scholarship and Material Culture Program, American Studies

This study focuses on the transition from horse-powered to automotive transit in Washington, DC and explores how the city's cultural landscape was adapted to fit this new means of transportation. Three main sources are used to establish an inventory of horse- and automotive-related structures: Sanborn Fire Insurance Maps, Baist's Real Estate Atlas of Surveys, and Boyd's City Directories of the District of Columbia. Inventoried structures are documented in their form and function between 1888 and 1935 to further understand the transitional period between transportation methods and changes to the city's infrastructure and livelihood. Documented changes are analyzed further in the context of the increasing prominence of the automobile in the 20th century. Trends in car manufacturing, specifically the Ford company, are included to support trends found in the analysis. Additionally, an inventory of extant structures is conducted to better understand the fate of these structures and their contemporary uses, if any.

THE HORSE-POWERED CITY: WASHINGTON, D.C.- A CULTURAL LANDSCAPE REPORT

by

Lucy Medley

Masters Final Project submitted to the Faculty of the Historic Preservation Program
of the University of Maryland, College Park in partial fulfillment of
the requirements for the degree of Master of Historic Preservation and
Museum Scholarship and Material Culture Program Certificate,
2023

Advisory Committee:
Professor Dr. Donald W. Linebaugh, Chair
Professor Dr. Mary Corbin Sies, Second Reader

PREFACE

The structure of this project is modeled on a similar paper which explores the transition from horse- to automotive-related transit in Alexandria, Virginia (Medley, 2021, Unpublished). That study established an inventory of horse-related structures in Old Town Alexandria between 1885 and 1959 using *Sanborn Fire Insurance Maps of Washington, D.C.* and city directories. A comprehensive inventory helped document changes in function and context of these structures while also revealing patterns in architecture, distribution, and reuse of the buildings. Additionally, the research surveyed extant structures to better understand the fate of these structures, particularly as the world transitioned from horse-power to the automobile.

Overall, trends observed within the inventoried structures and throughout the decades show that many horse-related structures were quickly repurposed for the automobile industry when automotive transit became widespread and accessible in the city. Additionally, the study revealed much about the timing of this transition. The first automotive structures documented in Old Town are found in the 1921 *Sanborn Fire Insurance Map of Alexandria*. *Sanborn Fire Insurance Maps* from 1941 demonstrate that all horse-related structures had been repurposed by this date.

DEDICATION

This research and degree are dedicated to Dad.

I know you would be proud.

Love you.

ACKNOWLEDGEMENTS

I would like to thank the entire faculty of the Historic Preservation program at the University of Maryland, College Park for their support of and encouragement for this project. Their insights throughout my education have been invaluable and I could not have done this without their help.

I would also like to thank my family for their unwavering love and support as I completed this degree program. I am forever grateful.

Thank you all.

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CHAPTER 1: INTRODUCTION

This study focuses on the transition from horse to automotive transit in Washington, DC and explores how the city's cultural landscape was adapted to fit this new means of transportation. Three main sources are used to establish an inventory of horse and automotive-related structures: *Sanborn Fire Insurance Maps of Washington, D.C.*, *Baist's Real Estate Atlas of Surveys of Washington D.C.*, and *Boyd's City Directories of the District of Columbia*. Inventoried structures are documented in their form and function between 1888 and 1935 to further understand the transitional period between transportation methods and changes to the city's infrastructure and residents' livelihoods. At the turn of the 20th century, cities throughout the United States were actively working to improve and beautify their cities in what is known as the City Beautiful Movement. With this movement came much urban renewal and revamping of inner cities, such as those demonstrated by the McMillan Plan in 1902 Washington D.C. As such, the transition from horse to auto-related transit was accompanied by great change within the city center.[1] Documented changes are analyzed further in the context of the increasing prominence of the automobile in the early 20th century. Trends in car manufacturing, specifically the Ford company, are included to support analysis and conclusions. Additionally, an inventory of extant structures is conducted to better understand the fate of these structures and their contemporary uses, if any.

Horse-related structures inventoried in this study include livery stables, expresses and drayages, carriage houses, carriage shops and factories, emergency service stations, and sales houses. Livery stables are designed to board horses for any length of time at various capacities.

[1] Jon A. Peterson, "The City Beautiful Movement: Forgotten Origins and Lost Meanings" (New York, City University of New York, 1976), https://doi.org/10.1177/009614427600200402.

They frequently also serve as points of sale for horses. These structures range from small residential one-horse stables to large-scale commercial establishments. Of the structures inventoried, livery stables are the most common. Included in the discussion of livery stables are expresses and drayages. Much like delivery drivers today, expresses and drayages are businesses that made deliveries for pay. Their structures vary based on the capacity of operation. Some function jointly as liveries and expresses while others occupy storefronts as a base of operations while utilizing the facilities of commercial liveries for their horses.

Like livery stables, wagon and carriage houses serve as boarding and storage for horse-drawn carriages and wagons and are typically separate from where horses are stabled. However, some demonstrate a joint use of stables and carriage houses.

Wagon shops and factories functioned as sales, repairs, manufacturers for horse-drawn carriages. Here, patrons may purchase a wagon or cart, modify their current carriage, or buy accessories. These shops vary in form based on the services offered by the individual businesses.

The primary emergency service structures discussed in this study are fire engine houses. These structures serve to house both the horses and fire engines and are typically small two-story structures with a first floor partly or fully dedicated to horse and engine storage.

Miscellaneous structures, such as banks and funeral homes, are discussed in this study as well. Though there are relatively few of these structures inventoried within the study area, their inclusion demonstrates the wide variety of uses and needs for horse-related transit, and their patterns of use following the introduction of the automobile.

Problem Statement

The birth of the automobile in the early 20th century initiated significant changes in the lives of everyday citizens in the United States. The introduction of this revolutionary means of

transport meant the obsolescence of a millennia-old transportation method: horses. This paper explores the impact of this transitional period on horse-related structures such as stables, wagon houses, and emergency services, like fire and police engine houses in Washington D.C. It further discusses changes seen in the broader cultural landscape and built environment brought about by this transition.

Research Questions

The main research question in this project asks when the District of Columbia fully transitioned into the automotive age and how the use of horse-related structures change after that date. After what date were there no longer any horse-related structures? Did the layout of these structures change as their use did? Additionally, how many of these structures survive today? How are surviving structures used currently? Is there evidence of the previous horse-related uses that remain today, such as entrances to carriage and fire engine houses? Are there trends in the uses, layouts, and survival rate of these structures?

Methodology

This research primarily uses *Sanborn Fire Insurance Maps of Washington D.C.* and *Baist's Real Estate Atlases of Washington D.C.* to establish the location and compile an inventory of horse transit-related structures between 1888 and 1935. An inventory of horse-related structures in DC is established from *Sanborn Fire Insurance Maps of Washington, D.C.*, dated 1888, 1903-1916, and *Baist's Real Estate Atlas of Surveys of Washington, D.C.*, dated 1909 and 1919. *Boyd's Directory of the District of Columbia* are used to cross-reference the location, function, and ownership of the structures identified on these maps, while also filling in the context of these structures during dates in which neither Sanborn or Baist's maps were published. These

directories are used strategically to track changes in horse-related and auto-related structures roughly every ten years beginning in 1888. Listed businesses in these directories often represent those that paid to list their services in the publication. Thus, the number of services listed from city directories may be lower than those actually present in any given year.

For structures listed only by function, Boyd's city directories are used to cross reference their addresses to provide a name for the business. This enables further analysis as the nature of their commerce can be investigated using sources such as newspaper advertisements. Livery stables, both commercial and residential, are identified on Sanborn and Baist maps with an "X" marked through the structure (Figure 1). This key further demonstrates how the physical structure of the inventoried buildings are determined from maps.

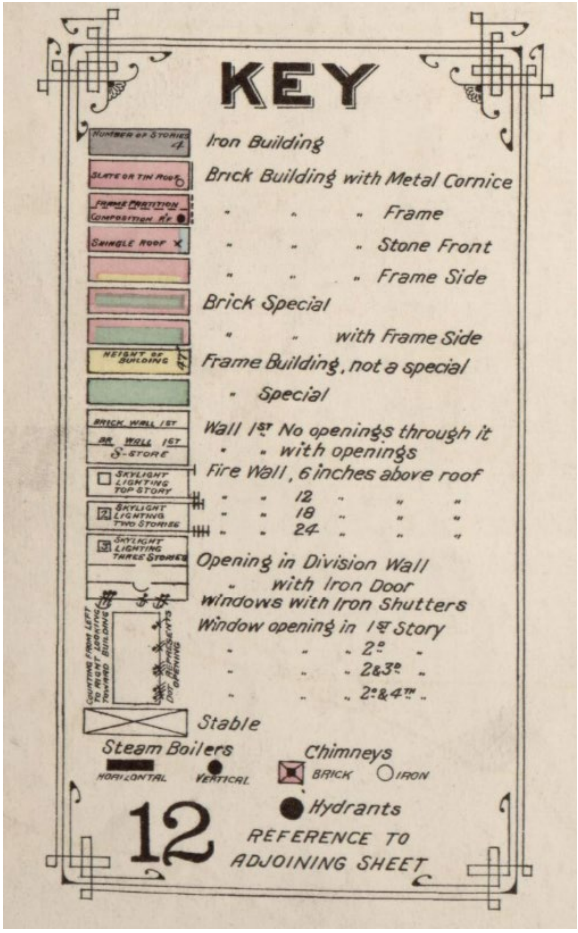


Figure 1. Map Key Showing Stables Marked as "X", *Sanborn Fire Insurance Map of Washington, D.C.*, 1888, Library of Congress.

Historic photographs and newspaper advertisements are also used to support and document the form of inventoried structures, their contexts, and changes over time. Newspapers provide insight into the business practices and services of structures. For example, a structure may be identified as a livery on a Sanborn map but a newspaper advertisement by the business can reveal details of how that business operated and what areas they served. Additionally, Historic American Buildings Survey records and photographs and other historic photographs and drawings are used to help document changes in function and form these structures during the mid- to late 20th century.

The structures discussed in this study primarily represent commercial uses such as liveries, wagon shops and factories, and carriage houses. Many commercial businesses are identified by their name or function, such as "Livery" or "Allison Nailor Jr. Livery," on Sanborn and Baist's maps (Figure 2).

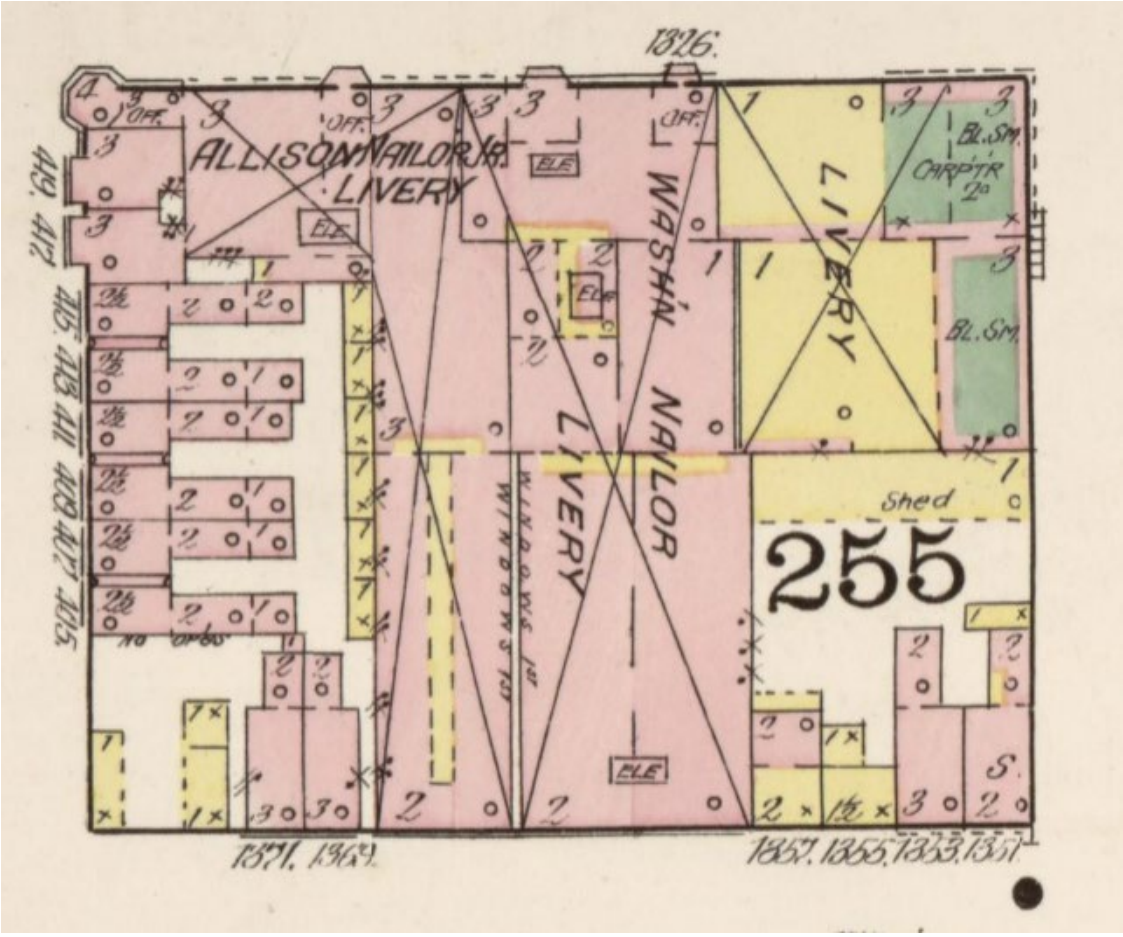


Figure 2. Allison Nailor Jr. Livery, Wash'n Nailor Livery, and Adjacent Livery, *Sanborn Fire Insurance Map of Washington D.C.,* 1888, Map 15, Library of Congress.

With these types of structures in mind, a study area was established, stretching from M St. NW to B St. (Constitution Avenue) NW on the north/south boundary to 1st St. NW to 21st St. NW on the east/west boundary (Figure 3). This study area was chosen for its large concentration of horse-related structures, based on initial examination of *Sanborn Fire Insurance Maps and Baist's Real Estate Atlas of Surveys*.

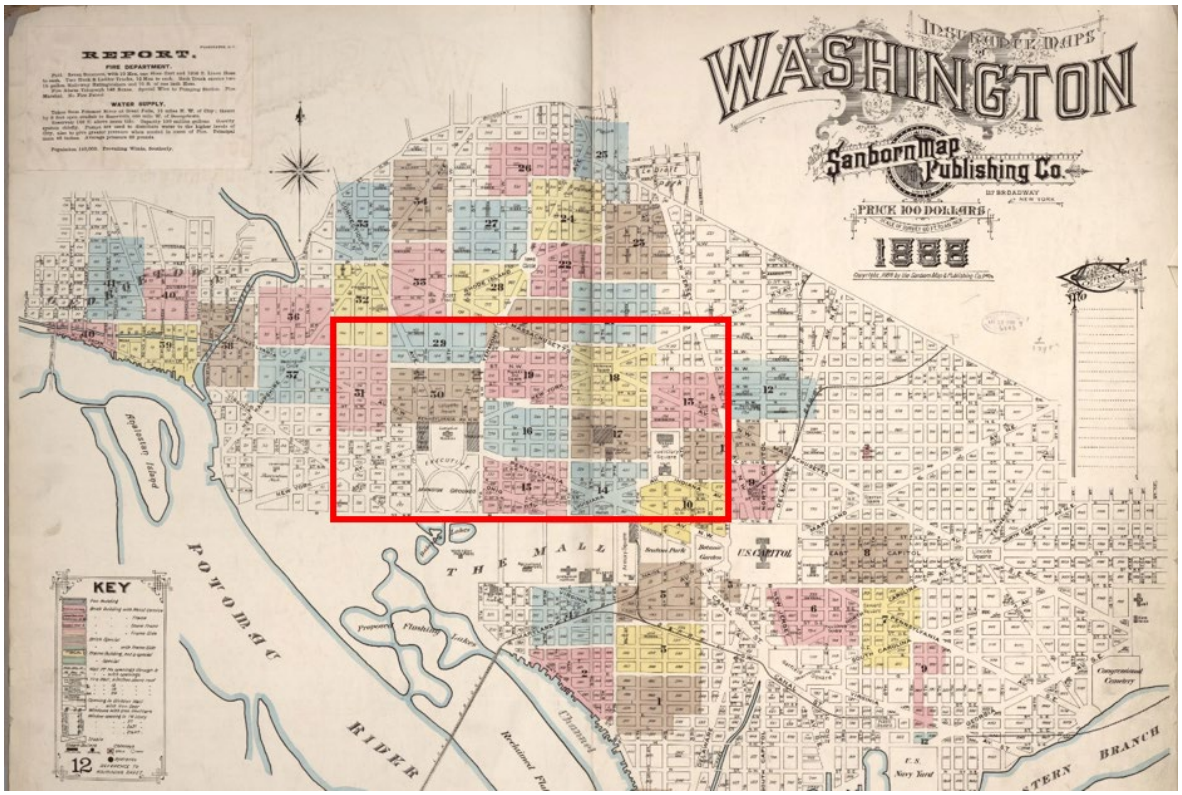


Figure 3. Study Area Identified Within Red Boarder, *Sanborn Fire Insurance Map of Washington, D.C.,* 1888, Library of Congress.

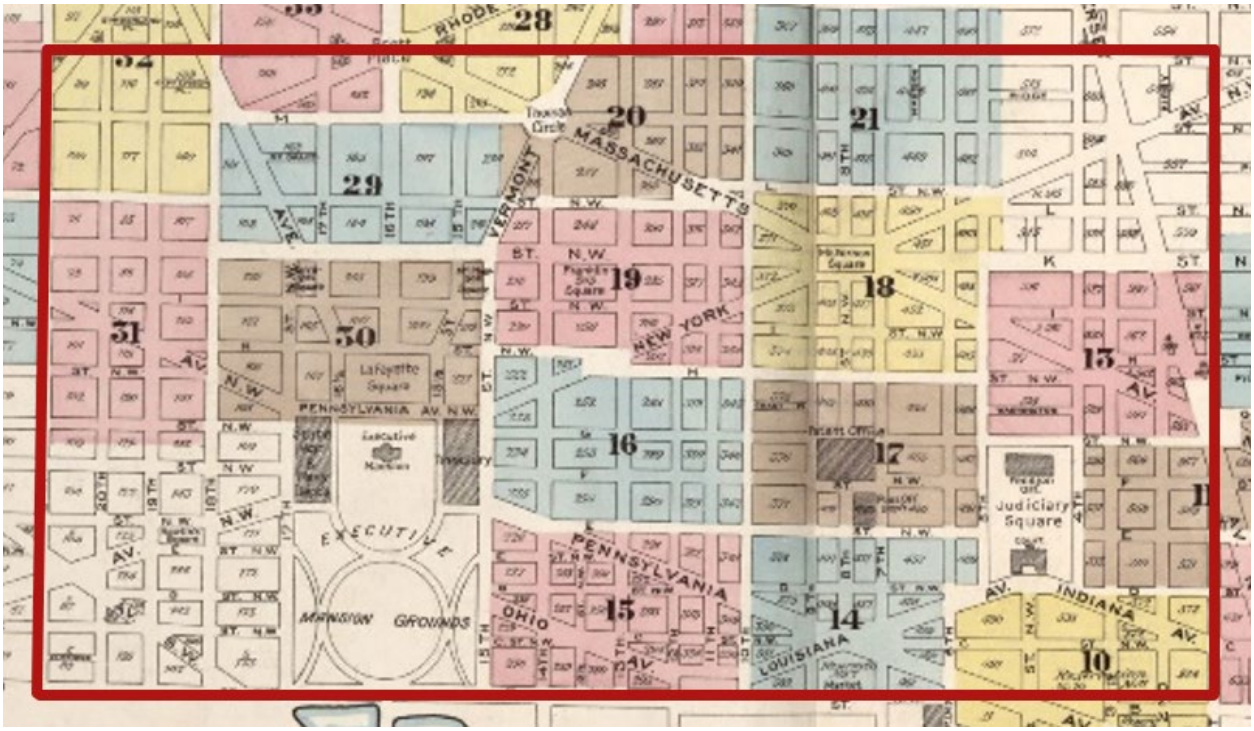


Figure 4. Detail of Study Area

This report is laid out into six chapters. Chapter 1 introduces the subject, goals, scope, methodology, and sources used in the study. To give some context of the cultural landscape and built environment before 1888, Chapter 2: The Pre-1888 Landscape examines how the city functioned in terms of horse-transit, such as horse-drawn streetcars, and coach-for-hire companies. Chapter 3: Livery Stables and Expresses explores the various types of livery stables documented within the study area. These include residential stables, commercial stables, stables associated with non-horse-related businesses, such as industrial or commercial yards, and stables associated with government agencies. Chapter 4: Carriage Houses & Wagon Shops discusses carriage manufacturing and storage facilities within the study area while Chapter 5: Emergency Services & Miscellaneous Structures explores fire engine houses, banks, and funeral homes and their use of horse transit to provide their services. Chapter 6: Transition to the Automobile discusses the new structures necessitated by automotive transit, such as gas stations, and garages, as well as changes to the cultural landscape. The final chapter, Chapter 7: Analysis & Conclusion, details the findings of this study and their implications for the history and preservation of the city. Chapter 7 further explores the topics of urban renewal, and extant structures within the study area.

CHAPTER 2: THE PRE-1888 LANDSCAPE

The pre-1888 landscape of Washington DC was filled with horse-based transit methods including horse-back, personal and commercial horse and wagons, and horse-drawn streetcars. All four of these uses are depicted in an 1885 photograph of Pennsylvania Avenue looking towards the Capitol from the Treasury Department (Figure 5). Individuals could own or rent horses and carriages for their own operation as needed from local businesses or hire a private coach. While horses were the most efficient means of transportation for centuries, they came with disadvantages: they were living beings that required nourishment, care, and shelter, which could be both time consuming and expensive. They also were incredibly messy, which would litter the streets and led to health concerns for city residents. Also discussed in this chapter are growth and settlement patterns of the city, as well as road improvements made within the study area.

Figure 5. Pennsylvania Avenue Looking East Towards the Capitol, 1885, W. L. Armstrong Washingtoniana Glass Negative Collection, National Museum of American History, Archives Center.

Horse-Drawn Streetcars

Horse-drawn streetcars first began operation in Washington D.C. on May 17th, 1852 by the Washington & Georgetown line which ran three routes, from Georgetown to Navy Yard, from Georgetown to the north end of 14th Street, and straight down 7th Street (Figure 6). In addition to the Washington and Georgetown line, four other main streetcar lines opened between 1852 and 1880 (Figure 7). The Metropolitan line, depicted in blue, largely mirrored the routes of the Washington & Georgetown line. The Metropolitan line had two main routes, one from north Georgetown, through city center, and ending at 8th Street NE, and the other from the northern end of 9th Street NW, cutting over to 4th Street SE, and ending at the water. The Capitol, North-O Street and South Washington line, represented in green, ran in a circular track which encapsulated the eastern part of the National Mall, Judiciary Square, and the U.S. Patent Office. Depicted in yellow, the Columbia line ran east from the Treasury Department primarily along I Street and ending at 15th Street NE. The Anacostia line, which does not run through the study area, is represented in purple and had the least amount of track laid, roughly 2.9 miles. The Anacostia line operated along M Street SE and began at the Potomac River and ended after crossing the Anacostia River.

Streetcar companies quickly began to out-compete coach-for-hire companies, such as the Herdic Phaeton Cab Company, discussed in Chapter 3. Companies like Herdic Phaeton operated much like taxi cabs do today and could carry no more than ten individuals at a time. Meanwhile, streetcars could transport as many as forty individuals, and for cheaper fares.

By 1889, a Congressional mandate went out to transition horse-drawn trolley lines to electric power. Streetcars continued to function with this new power source well into the 20th century.

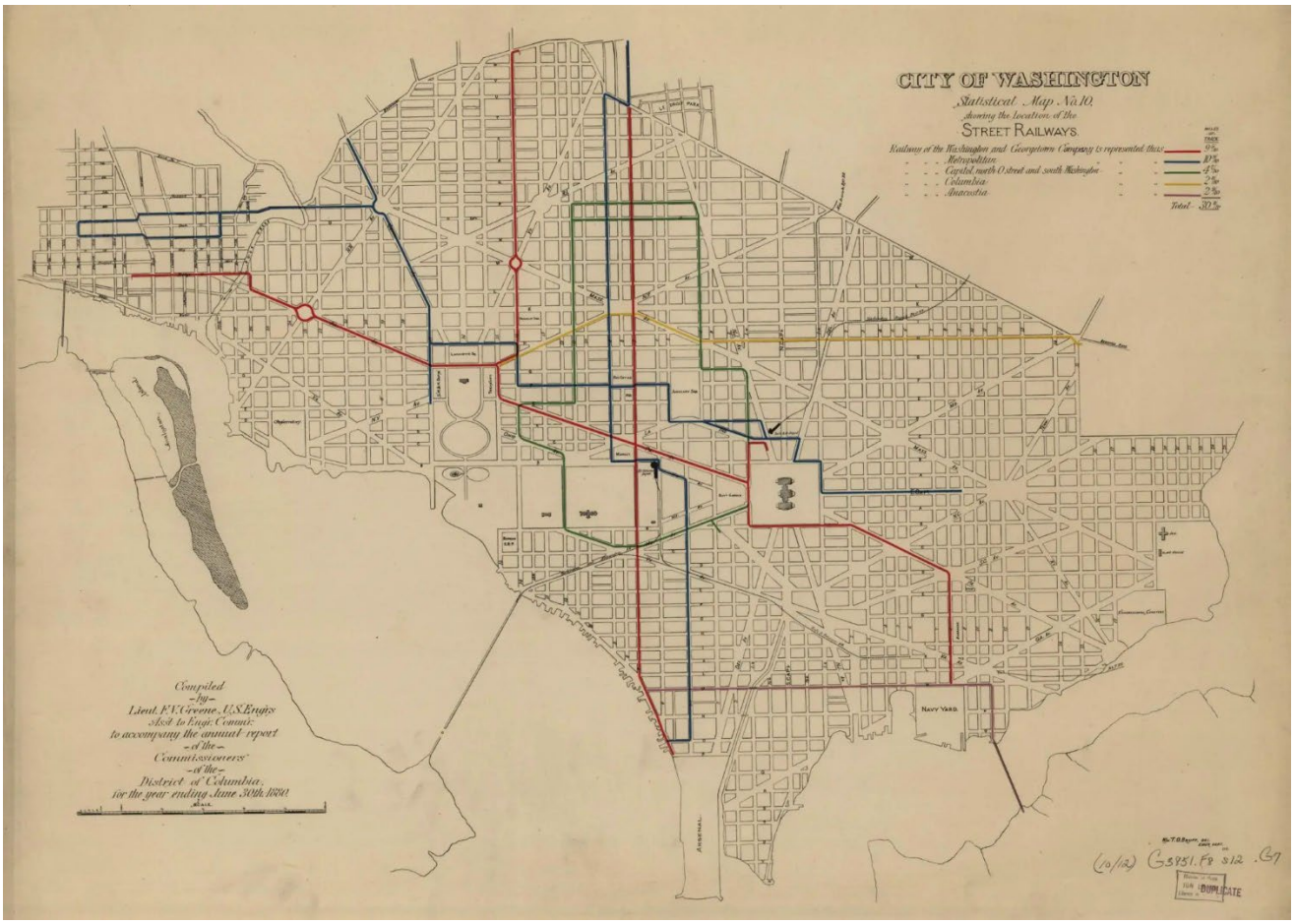


Figure 6. "City of Washington Statistical Map No. 10, Showing the Location of the Street Railways," June 1880, Francis Vinton Green & William T. O. Bruff, Geography & Map Division Washington D.C., Library of Congress.

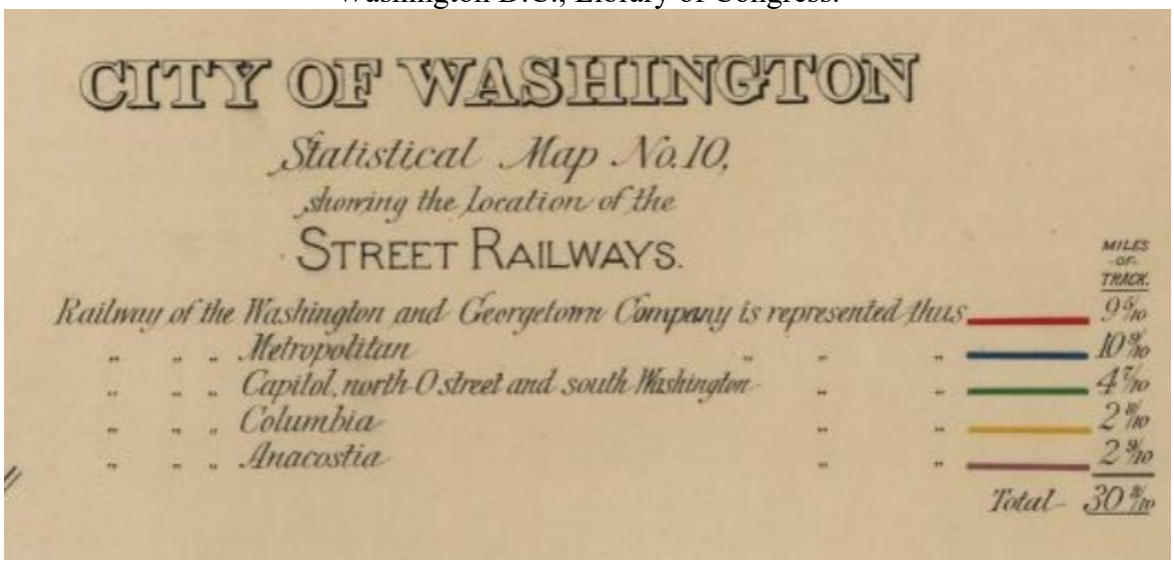


Figure 7. Key for **"**City of Washington Statistical Map No. 10, Showing the Location of the Street Railways," June 1880, Francis Vinton Green & William T. O. Bruff, Geography & Map Division Washington D.C., Library of Congress.

Street Pavements

By 1880, dirty roads in the majority of the study area were paved in various types of materials (Figure 8). This includes asphalt and concrete pavements, represented in dark grey in Figure 8; granite and trap block, represented in light grey; wood, represented in orange; cobble stones and blue rock, represented in pink; macadamized streets, represented in green; and gravel, represented in yellow (Figure 9). Within the study area, the most common form of road improvements were asphalt and concrete pavements, followed by cobble stone and blue rock. A small section of the study area, roughly between B, D, 18th, and 21st Streets NW were left unpaved.

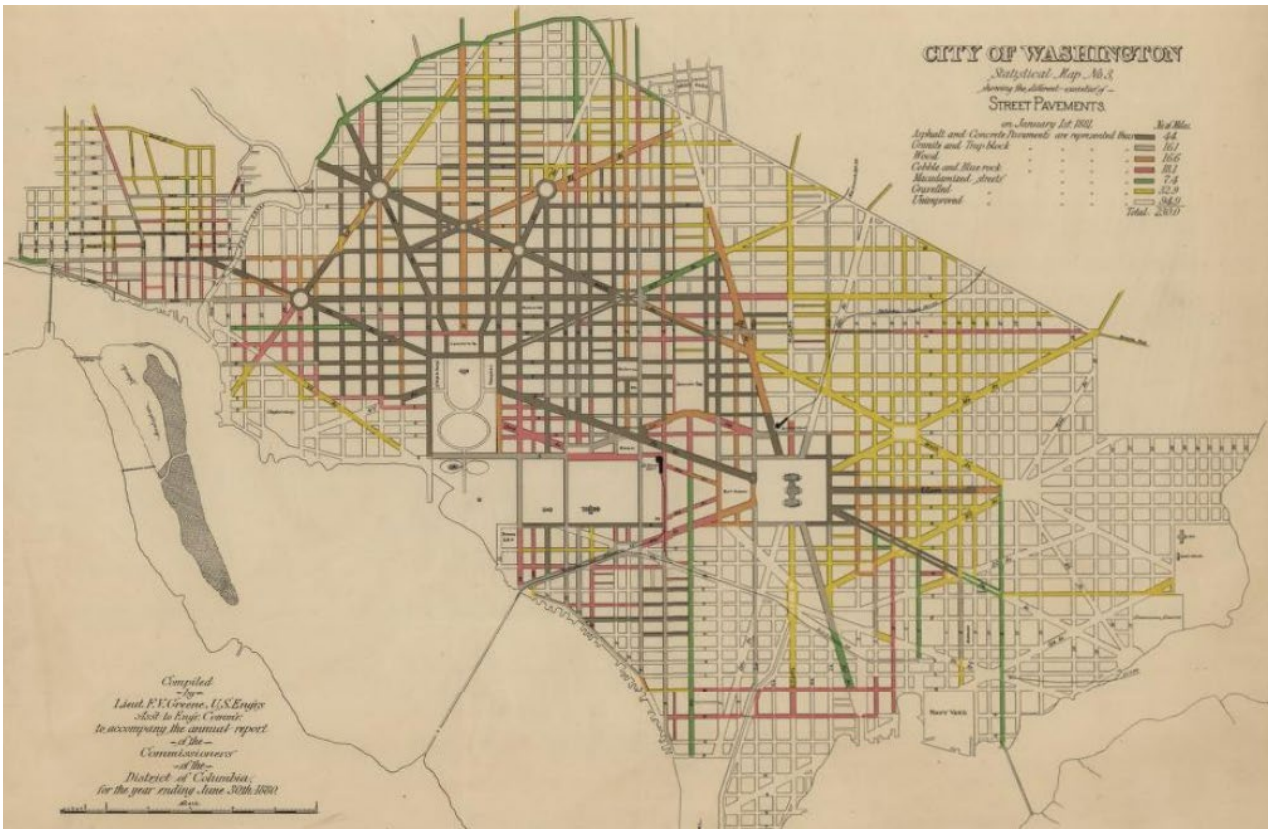


Figure 8. "City of Washington Statistical Map No. 3, Showing the Different Varieties of Street Pavements," January 1st, 1881, Francis Vinton Green & William T. O. Bruff, Geography & Map Division Washington D.C., Library of Congress.

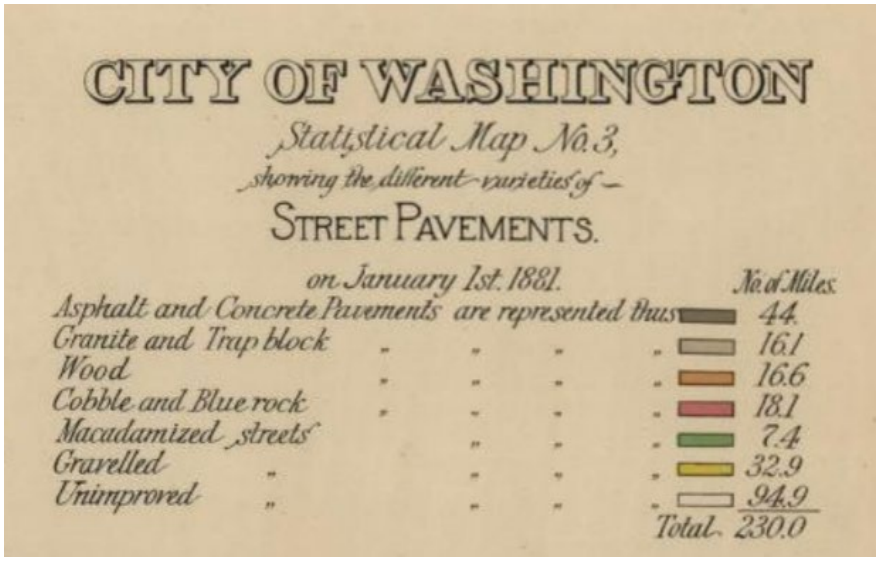


Figure 9. Key for **"**City of Washington Statistical Map No. 3, Showing the Different Varieties of Street Pavements," January 1st, 1881, Francis Vinton Green & William T. O. Bruff, Geography & Map Division Washington D.C., Library of Congress.

Highlighting the data recorded in 1880, an advertisement posted in President William McKinley's 1901 inauguration souvenir book brags about the "beauty and grandeur of Washington… due to its many miles of asphalt streets" (Figure 10).[2]

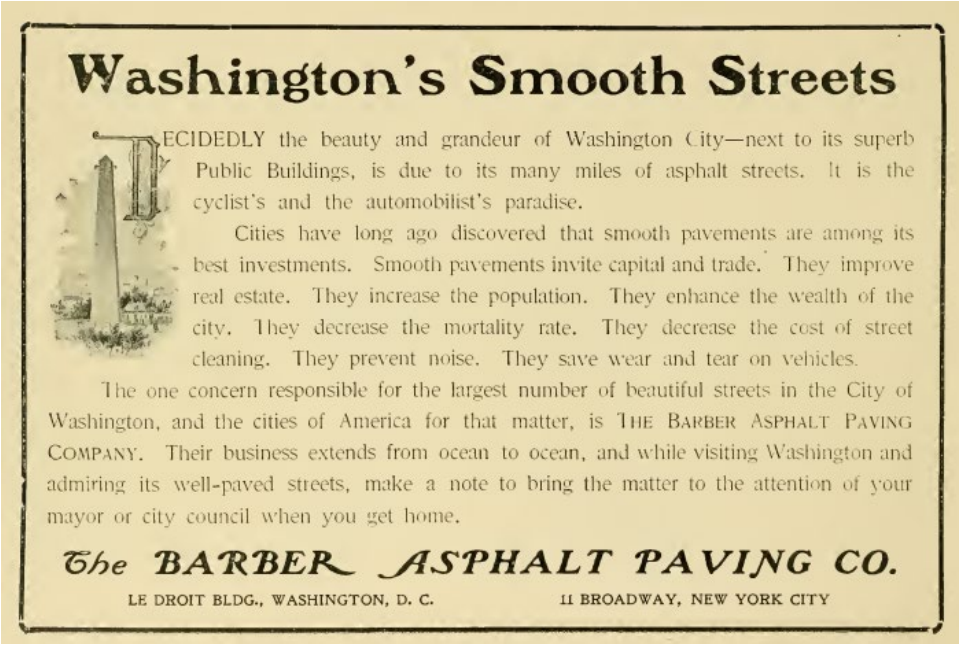


Figure 10. Washington's Smooth Streets, The Barber Asphalt Paving Co., from the Official Souvenir Program, Inaugural Ceremonies, March 4, 1901, Library of Congress.

[2] "Official Souvenir Program, Inaugural Ceremonies, March 4, 1901," March 4, 1901, Library of Congress.

City Growth & Settlement

The plan for Washington D.C. was laid out in a grid pattern with strategic and intersecting diagonal streets in 1792 (Figure 11). The city was to serve as the permanent seat of the Federal Government and was fashioned after major European capital cities such as Paris, France. Washington D.C.'s grid plan ensured that the city successfully housed and served the executive, judiciary, and legislative branches of government. As such, important axes and routes between these three seats of power were established, such as Pennsylvania Avenue which connects the White House to Capitol Hill.

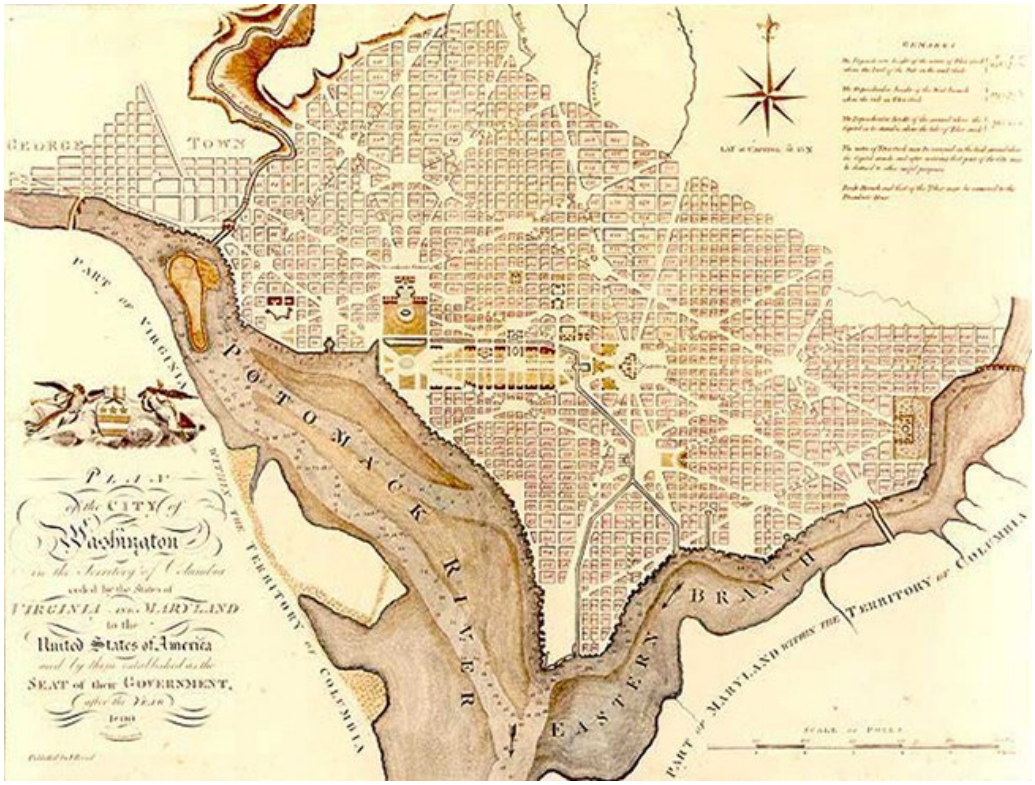


Figure 11. L'Enfant-Ellicot Map of Washington D.C., 1792, National Park Service.

As its primary role in serving the needs of the Federal Government, city growth and settlement largely developed around the White House, Capitol Hill, and Judiciary Square, and along major transit routes (Figure 12). The oldest areas of development are depicted in black in Figure 12 and date back to the very early years of the city in 1801. Newer settlement patterns are

represented in increasingly lighter tones up until 1934. Noticably, the outskirts of the study area for this research are largely undeveloped until 1887.

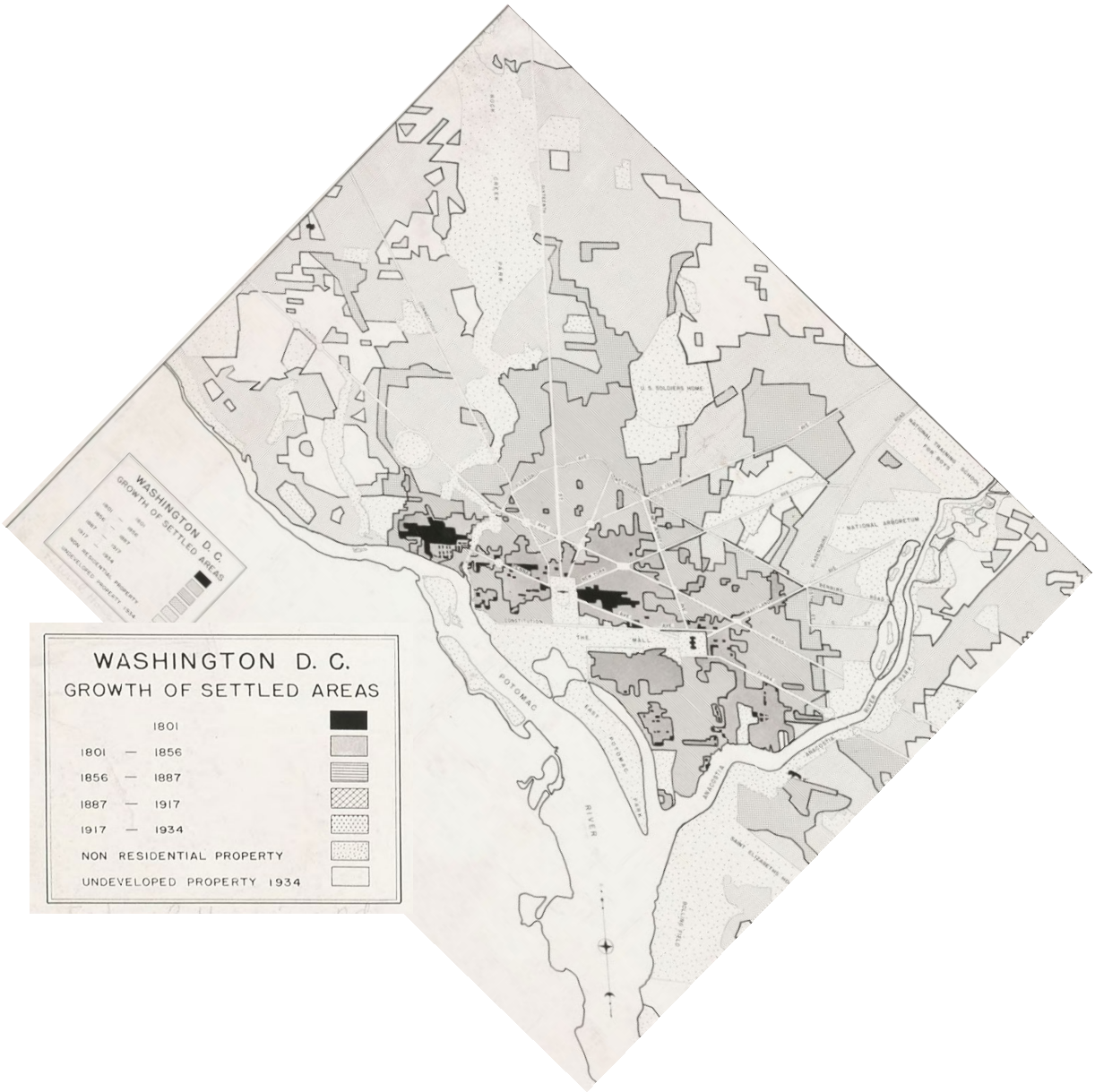


Figure 12. Growth of the city of Washington D.C. from 1801-1934, United States Federal Housing Administration, Division of Economics and Statistics, Digital District.

Even the southwest and northeast portions of the study area remain undeveloped and are not recorded in the 1888 *Sanborn Fire Insurance Map* (Figures 3 & 4). The slow development of the southwest corner of the study area is also supported by photographic from 1885 (Figure 13). At

the bottom right of this image, taken from the Washington Monument, is the Van Ness Mansion and Stables located just east of Virginia Avenue NW.

Figure 13. Aerial View of Washington D.C., Looking West from the Washington Monument, 1885, W. L. Armstrong Washingtoniana Glass Negative Collection, National Museum of American History, Archives Center.

CHAPTER 3: LIVERY STABLES

Livery stables discussed in this paper are divided into four categories: residential structures, commercial structures, and structures associated with other businesses not based in the horse industry. Residential structures in this study are largely confined to large-scale complexes constructed by elite families of Washington, as these structures are comprehensively documented. These structures, however, represent only a select few residential stables in Washington D.C. and do not represent the average experience or livelihoods of most city residents. More common than these large-scale residential complexes are individual stables oriented along alleyways and behind residential townhouses. Commercial livery stables include structures explicitly identified and listed as serving a horse-related function, such as "livery." Another category of livery stables considered in this study are stables associated with commercial and industrial businesses, such as iron works and lumber yards. The final category of livery stables are stables associated with the Federal Government. In this section, the term "livery" is used interchangeably with "stable." Commercial structures are the majority of livery stables discussed in this section as they are the most consistently identified and documented.

Residential Livery Stables

Many residences had private stables primarily located in the back of houses and accessed via alleyways (Figure 14). Occasionally, these common residential stables are labeled as "private," though not always. Several large estates in the study area had significant free-standing livery stables. These include the Octagon House and the Van Ness Mansion, both located in the western portion of the study area.

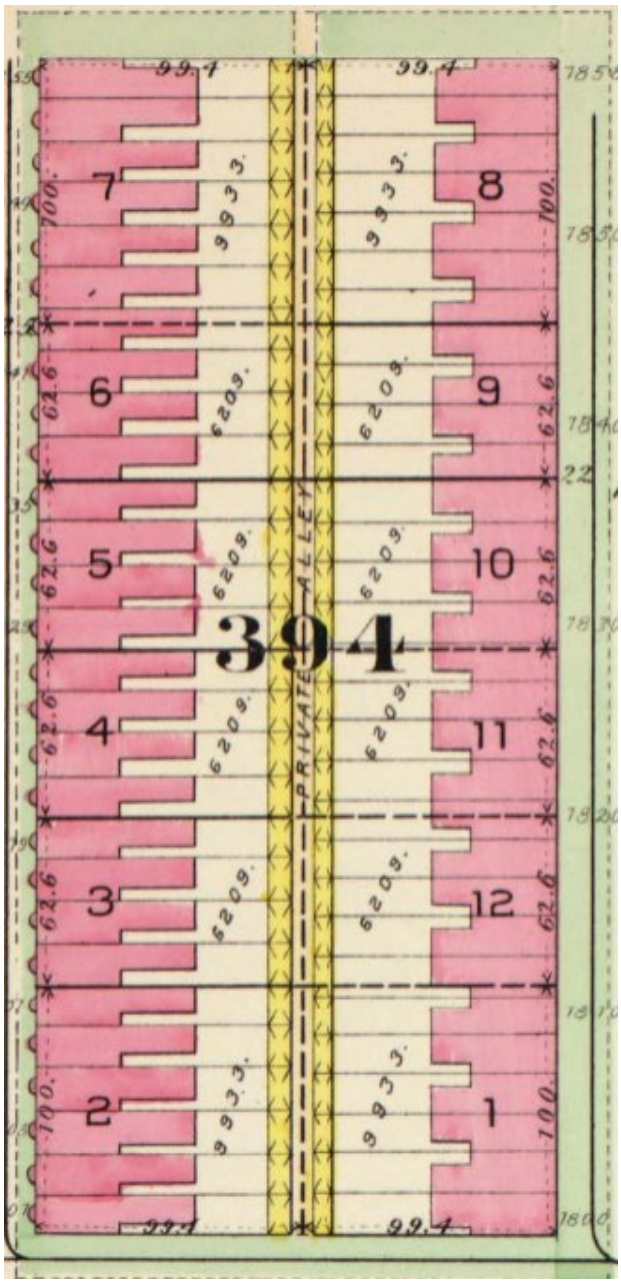


Figure 14. Residential Stables Oriented Along an Alleyway, *Baist's Real Estate Atlas Surveys of Washington, District of Columbia*, 1909, Plate 26, Library of Congress.

From 1813 to 1907, the Van Ness Mansion occupied an entire block immediately southwest of the White House. This estate had an impressive free-standing residential stable located along 18th Street NW.[3] Although this structure is within the study area, it was omitted from both the

[3] "Van Ness House Stables - From the Van Ness Mansion's Collection of Outbuildings, This Small Structure Is the Last One Still Standing."; "District of Columbia Inventory of Historic Sites," 118.

1888 and 1903-1916 Sanborn maps inventoried in this study. The reason for its omission is unclear, but may be due to this area not being highly developed until end of the 19th century.[4] It does, however, appear on a 1903 Baist's Real Estate Atlas of Surveys. While it is not documented on the primary sources used for the study before 1903, its existence and history is well known and documented, making it possible to include it in the analysis.

The Van Ness Mansion stable is one of the largest private residential stables inventoried in this study and is attributed to architect Benjamin Henry Latrobe. Baist's 1903 Atlas shows the structure as a large square brick stable situated about halfway along the block on 18th St. between B St. (Constitution Ave) and C St. NW. Historic photographs show the stable's symmetrical fenestration with a central entry facing the original mansion structure (Figure 15). The structure also boasts a massively-scaled cupola, roughly equal in height to the first story. Though little is known about the interior structure of the building, it is estimated that it could house between 10 and 15 horses at any given time. Photographs also suggest that there was a small second story loft space, indicated by the wooden horizontal frame seen through the three main archways and accentuated by the windows placed between the beam and the roof structure. This space most likely served as a storage space for hay to feed the horses.

Also seen in historic photographs of the Van Ness Mansion stable are two supporting structures, one of which is documented on the 1903 Baist's Real Estate Atlas. This structure, oriented immediately south of the main stable, is depicted as a long rectangular frame structure (Figure 16). From the photograph, this secondary structure appears to have been used as open-faced stalls for animal boarding, lacking an exterior fourth east-facing wall. Replacing this

[4] "Washington, D.C., Growth of Settled Areas | Dig DC," https://digdc.dclibrary.org/islandora/object/dcplislandora%3A44?solr_nav%5Bid%5D=014d90fa29c94db5b50b&solr_nav%5Bpage%5D=0&solr_nav%5Boffset%5D=3.

exterior wall were rows of livestock stalls which opened directly into the yard. The other structure located immediately north (right) of the stables may have functioned as a wagon shed.

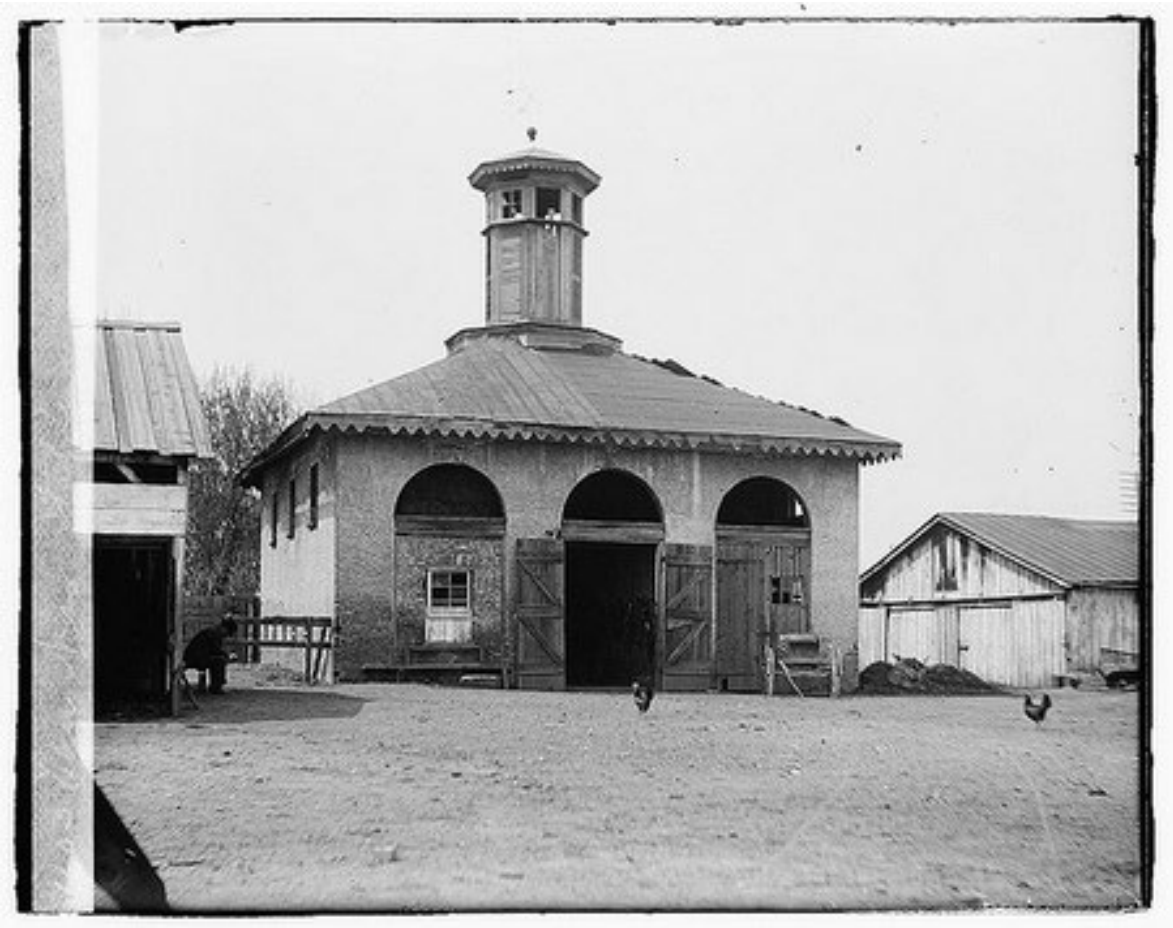


Figure 15. "Van Ness Stable," n.d., DC Historic Sites.

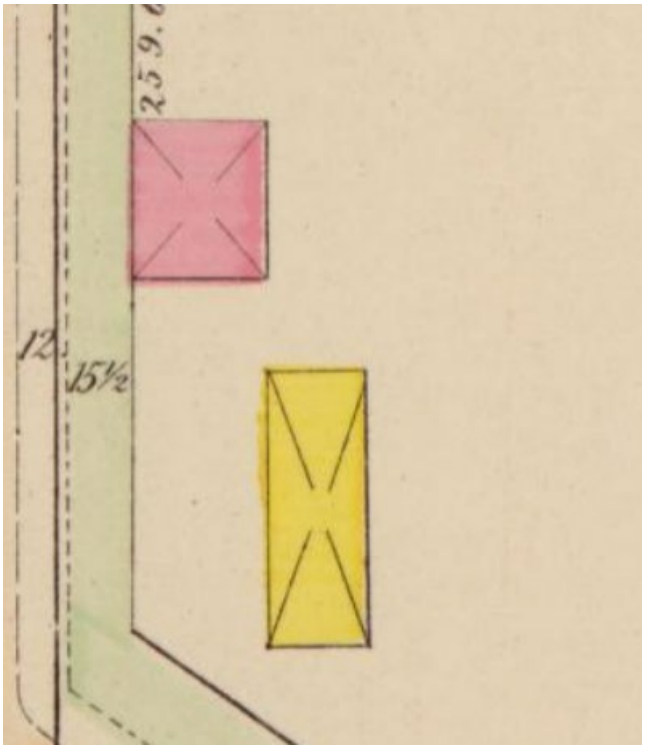


Figure 16. Van Ness Mansion Stables & Additional Structure, 1903, *Baist Real Estate Atlas of Washington, D.C.*, Library of Congress.

Though the Van Ness Mansion was demolished in 1907 by the State Department to construct the Pan American Union Building, the original stable structure still stands with relatively few exterior alterations. [5] However, the stable was relocated to the corner of 18th and C St. and has been converted to a more custodial use. In addition to this change, the structure seems to have been refinished with a stucco exterior, the three main arches seen in historic photographs have been filled in completely, standardized windows have been installed, and modified with a refinished standing seam metal roof with a less prominent cupola. Immediately surrounding the east and south facades of the structure is an asphalt parking lot which serves the Pan American Union building (Figures 17 & 18). The asphalt is laid in such a way that overlaps the fabric of the building's exterior stucco. Unfortunately, the two street-facing facades of the structure are

[5] "Van Ness House Stables - From the Van Ness Mansion's Collection of Outbuildings, This Small Structure Is the Last One Still Standing."; "District of Columbia Inventory of Historic Sites," 118.

almost entirely surrounded by large hedges which impact the ability to fully document this structure in photographs.

The Van Ness Mansion Stables Today

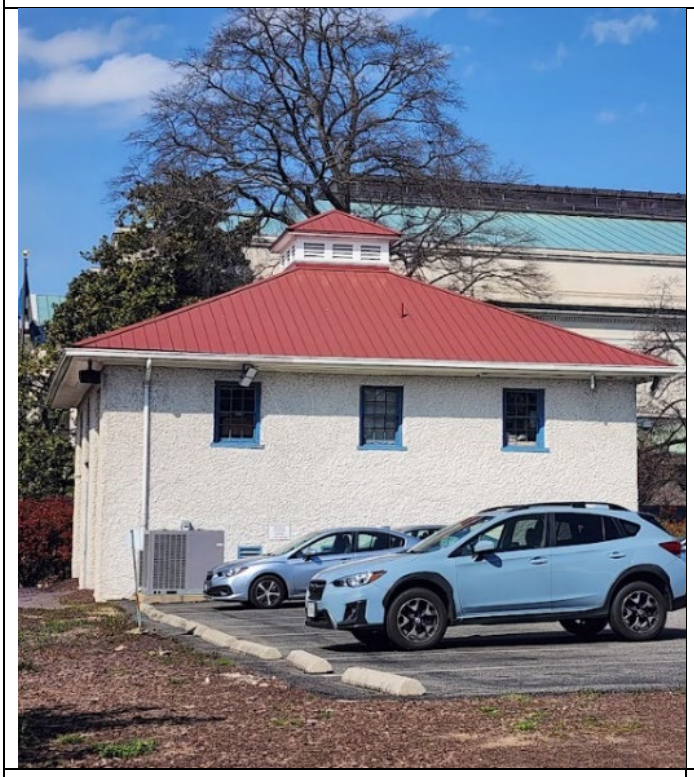


Figure 17. Southern Façade of the Van Ness Mansion Stable, March 2023, Image by Author.

Figure 18. Western Façade of the Van Ness Mansion Stable, March 2023, Image by Author.

In addition to the Van Ness Mansion, the Octagon House stables, another significant residential stable, is identified on the 1888 Sanborn Map. This structure is located at 1799 New York Avenue on a corner lot. Construction for the main house began in 1799 by enslaved laborers as a city residence for the Tayloe family, one of Virginia's wealthiest plantation owners at the time.[6]

Historic HABS photographs document the structure as a long rectangular unit with two central arched carriage entrances and a pedestrian entrance to the right. Additional building

[6] "The Octagon," Architects Foundation, n.d., https://architectsfoundation.org/octagon-museum/.

documentation of this structure reveals part of it to have been dedicated as a smoke house, though which area remains unclear (Figures 19 & 20). The photograph also shows it as a two-story structure with two pulleys on the second floor on either side of the carriage entrances above small access doors to the second floor loft. This detail implies that the upper level was used for hay and feed storage, a common trend seen in stable structures even to this day.

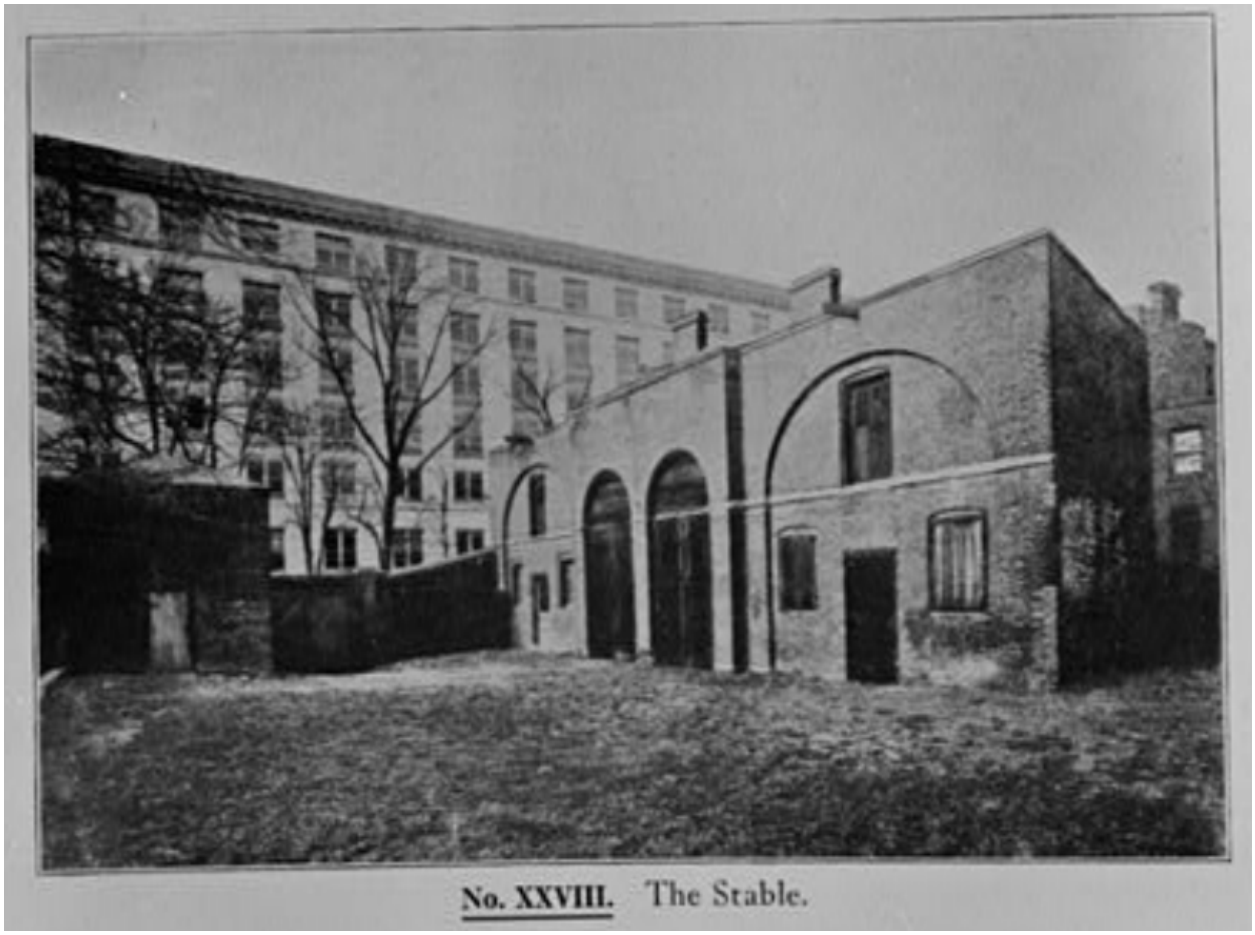


Figure 19. "The Stable," Octagon House, 1799 New York Ave NW, Historic American Buildings Survey, Library of Congress.

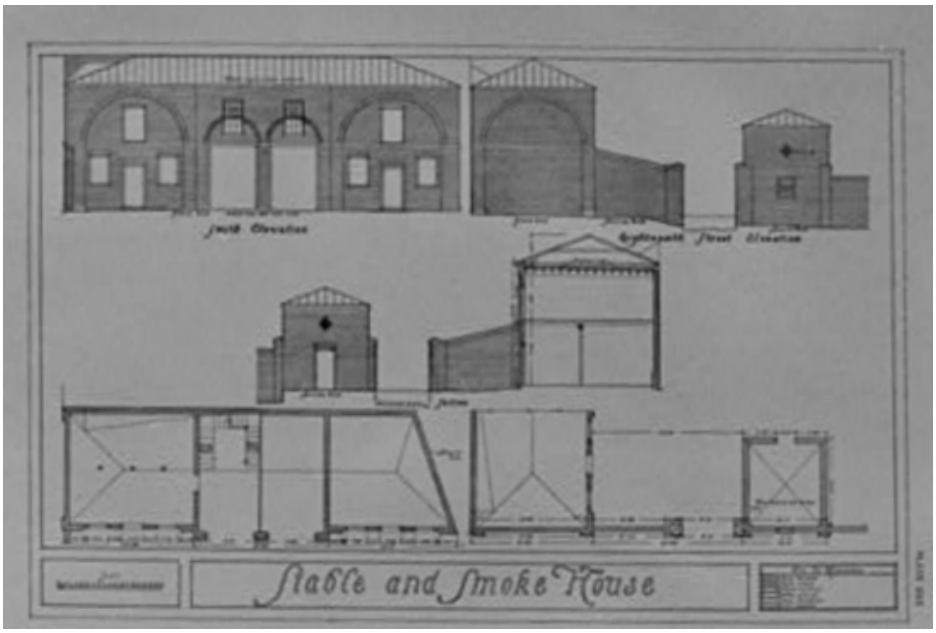


Figure 20. "Stable and Smoke House," The Octagon House, Historic American Buildings Survey, Library of Congress.

A plat map of the lot shows the orientation of the structure at the northern most corner of the lot adjacent to 18th Street NW (Figure 21). This map gives further insight into the general layout of the property with the main dwelling at the corner of 18th Street and New York Avenue enclosed by a brick wall bordering a diamond-shaped yard that served as a garden. Beyond the garden are the stables and other supporting structures which are also enclosed by a brick wall.

The stable structure and the second yard area were demolished in 1973 for the American Institute of Architects (AIA) building (Figure 22).[7] At present, only the first garden area and the original dwelling structure remain.

[7] "American Institute of Architects: History," American Institute of Architects, n.d., https://www.aia.org/history.

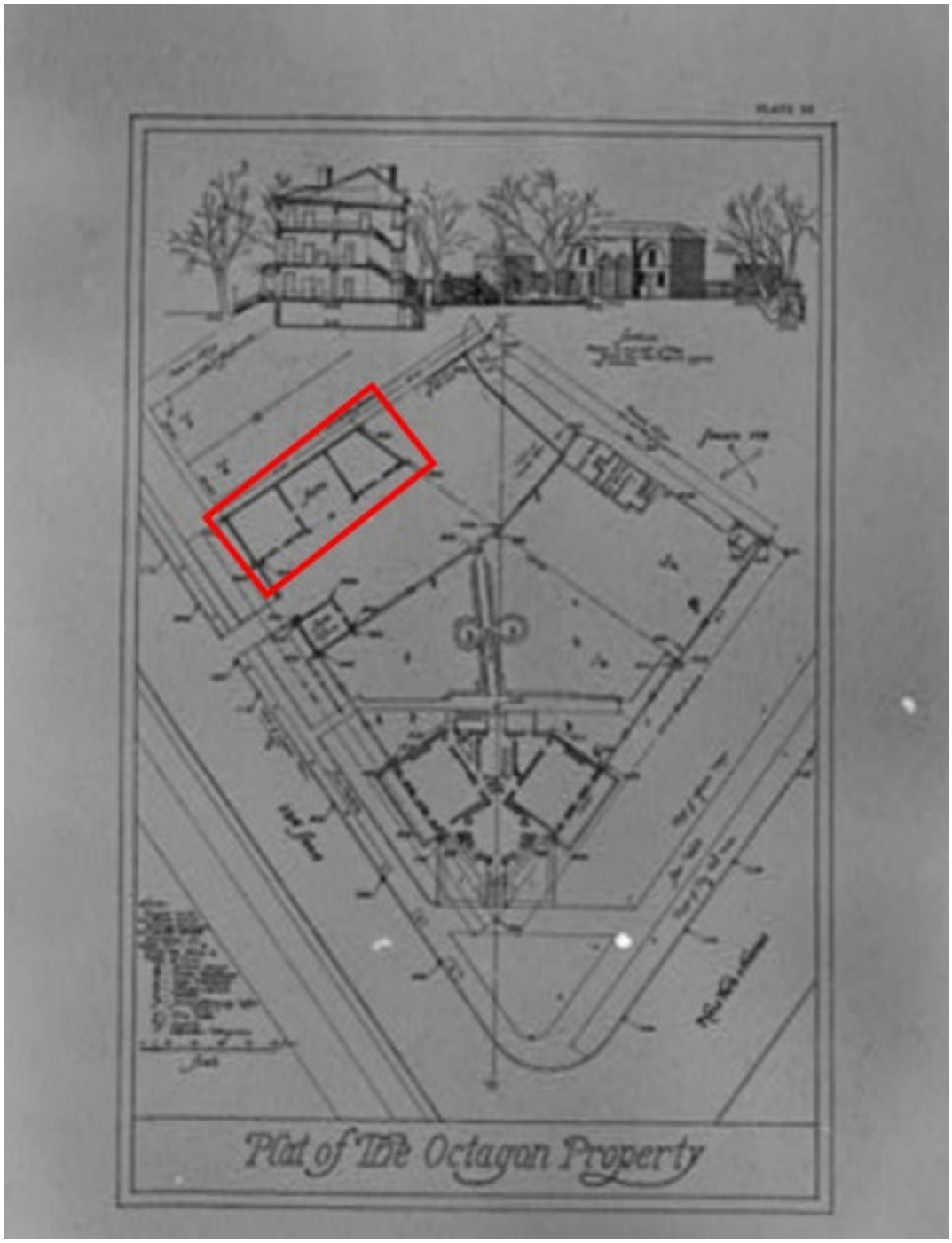


Figure 21. *Plat of the Octagon Property*, Stables Indicated in Red Boundary, Plate 3, Library of Congress.

Figure 22. West Boundary of the Octagon House Showing the Loss of the Former Stables Complex Which Stood Within the Footprint of the American Institute of Architects (AIA) Building, March 2023, Image by Author.

The Van Ness Mansion stables is the only residential livery structure in the study area with little alteration to its physical structure. Other smaller residential stables were either demolished during the mid- to late 20th century at the hands of urban renewal or repurposed as automobile garages. This transition is discussed further in Chapters 5 and 6.

Commercial Livery Stables

The 1888 Sanborn map identifies fifty-four commercial livery stables within the study area (Table 1). These businesses include the Magrath & Kennelly Livery located at the corner of 11th and C streets NW, the George W. Knox Express Stables located at 201-209 B St. NW, Downey's Livery at 622-624 L St. NW, the John T. Price & Sons Livery located at 311 6th St. NW, and the Wood Bros. Livery located at 1620 M St. NW. While these structures are identified by name on

the Sanborn maps, others are identified only as "Livery" at this date.[8] Additionally, a livery "being built" is identified at 641-647 New York Ave. NW. The importance of this structure demonstrates the continued growth of the commercial horse industry in Washington DC in the late 19th century.

Horse-Related Structures				
	1888 Sanborn	1909 Baist	1903-1916 Sanborn	1921 Baist
Livery Stables	54	49	51	30
Carriage Houses	10	10	8	0
Carriage Shops & Factories	11	3	5	1
Emergency Services	4	1	0	0
Expresses	2	0	2	0
Total	82	63	66	31

Table 1. Summary Table of Inventoried Horse-Related Structures Between 1888 & 1921, Data Collected From *Sanborn Fire Insurance Maps* & *Baist Real Estate Atlas of Surveys*.

Howard's Livery Stable

Howard's Livery Stable, located on G St. NW between 6th and 7th streets, is documented on the 1888 Sanborn map, though not identified by name (Figure 23). By 1888, the structure was shown as a brick, two to three-story building extending from G Street to the back alley. From an 1865 photograph it is evident that there was one main carriage entrance and a pedestrian entrance accessible from the main road (Figure 24). This livery played a particularly significant role in the assassination of President Abraham Lincoln. After the incident at Ford's Theater, John Wilkes

[8] Sanborn Map Company, *Sanborn Fire Insurance Map from Washington, District of Columbia* (Sanborn Map Company, 1888), 18, Geography and Map Division Washington, D.C. (20540-4650 USA), Library of Congress, https://www.loc.gov/item/sanborn01227_001/.

Booth hired a horse from the John C. Howard Livery & Sale Stables to escape from the city into Southern Maryland.[9]

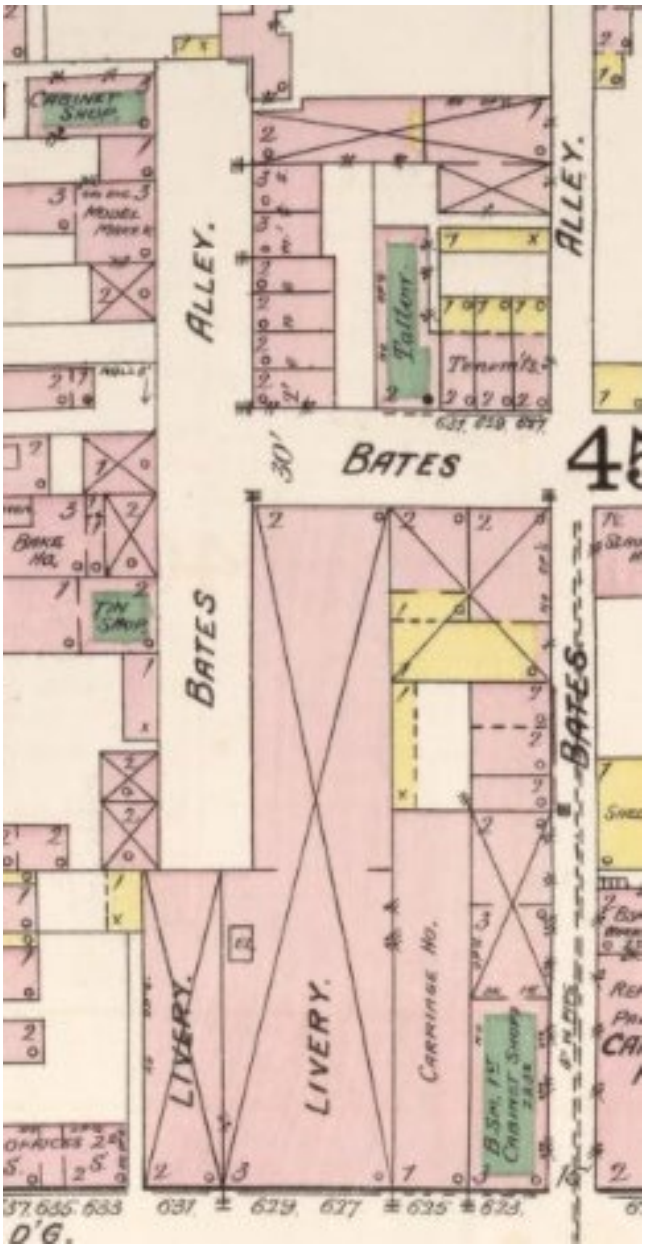


Figure 23. Howard's Livery Stable, 627-631 G St. NW, *Sanborn Fire Insurance Map of Washington D.C.*, 1888, Map 17, Library of Congress.

[9] "Howard's Livery Stable, Where Booth Hired the Horse on Which He Escaped. - United States Civil War - Huntington Digital Library."

Figure 24. Howard's Livery Stable, 627-631 G St. NW, Alexander Gardner, 1865, photCL 511 (13), The Huntington Library, San Marino, California.

In 1903, the structure was still designated as a stable on Baist's Real Estate Atlas of Washington, District of Columbia (Figure 25). Notably, it had expanded into the entire eastern portion of the parcel which borders the alleyway. There are also significant developments of stable structures directly north of the stable across the alley where the 1888 map showed a series of dwellings at that location. While it is unclear if these two complexes operated under the same owner or business, this additional structure demonstrates the continued growth of the horse industry in Washington DC into the early 20th century.

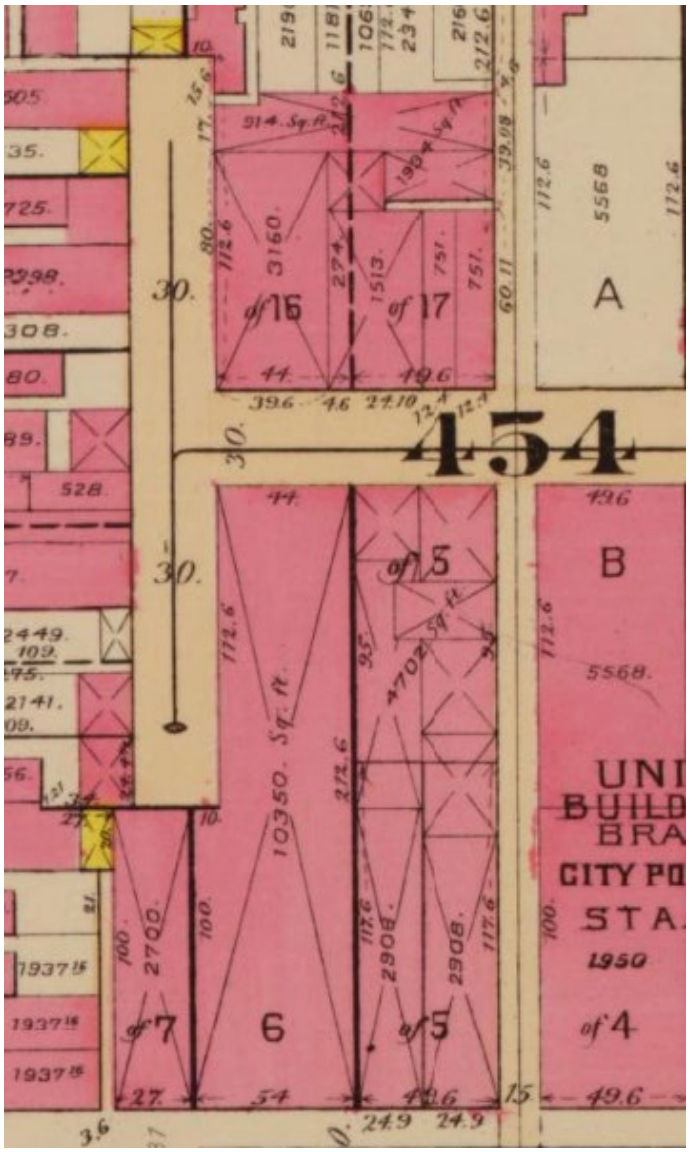


Figure 25. Formerly Howard's Livery Stables, *Baist's Real Estate Atlas of Surveys of Washington, D.C.*, 1903, Plate 35, Library of Congress.

By 1916, however, these complexes are recorded as "Coon & Co," a window warehouse and model shop. This example is much different than the majority of commercial liveries inventoried, which seamlessly transitioned into the automotive industry directly from their previous horse-related uses. However, this oddity demonstrates how large-scale liveries could also be repurposed as warehouses or showrooms for other commercial needs.

Sometime between the 1903-1916 *Sanborn Fire Insurance Map* and the 1919-1921 *Baist Real Estate Atlas of Surveys*, this structure is once again repurposed. This time, it follows the

trends seen in other commercial livery stables which were reused as public automobile garages. These trends are discussed further in Chapter 6.

Herdic Phaeton Stables and Cab Company

Another livery stable inventoried within the study area is Herdic Phaeton Stables located on a small triangular block between E St., 19th St., 20th St., and New York Avenue (Figures 26 & 27). This structure is first recorded in a 1903 Baist Real Estate Atlas as a seven-sided building designed to accommodate the irregular lot shape. It is also recorded on the 1903-1916 Sanborn Map, this time, however, it is listed as the "Herdic Cab Co. & Metropolitan Coach Co."[10]

Herdic Phaeton Stable

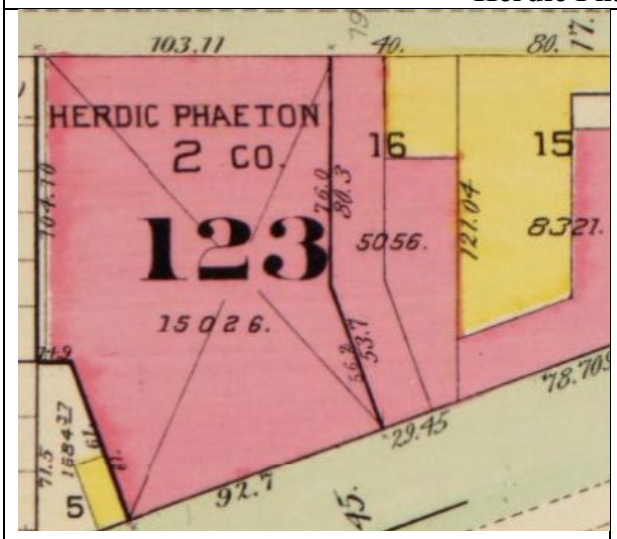


Figure 26. Herdic Phaeton Livery, *Baist's Real Estate Atlas of Surveys of Washington, D.C.*, Vol. 1, 1903, Map 10, Library of Congress.

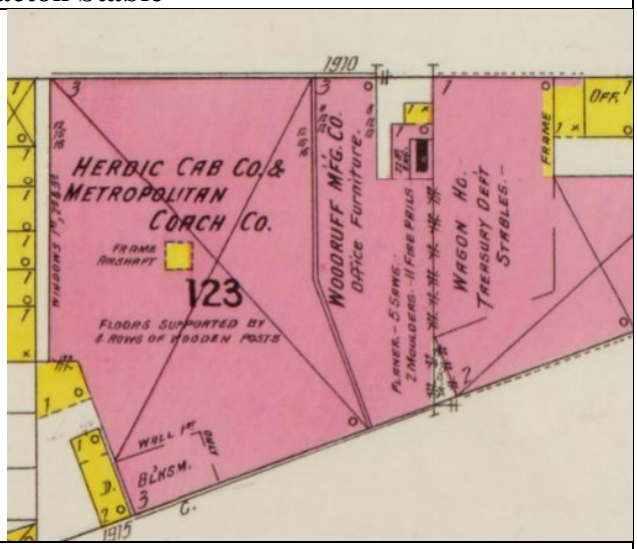


Figure 27. Herdic Cab Co. & Metropolitan Coach Co., *Sanborn Fire Insurance Map of Washington D.C.*, 1903-1916, Vol. 1, Map 37, Library of Congress.

[10] Sanborn Map Company, *Sanborn Fire Insurance Map from Washington, District of Columbia*, 1916 1903, image, 1916 1903, 37, https://www.loc.gov/resource/g3851gm.g01227002/?st=gallery; George William Baist, William Edward Baist, and Harry Valentine Baist, *Baist's Real Estate Atlas of Surveys of Washington, District of Columbia* (Washington D.C.: George William Baist, 1903), 10, Library of Congress, https://www.loc.gov/resource/g3851bm.gct00131a/?st=gallery.

Expresses and Drayages

The 1888 *Sanborn Fire Insurance Map of Washington, D.C.* identifies two express stables within the study area. These structures, located at the corner of B and 2nd Street NW, are adjacent to one another and are listed as the Adams Express Stable, and the George W. Knox Express Stables (Figure 28). Importantly, the Adams Express Stable is jointly listed as a wagon house, which may present the possibility of other express services in the study area that are not explicitly named as such. For example, the Boyd directory for 1917 identifies an express named Kreig's Express at 1226 H St. NW but it is listed under the "Carriages" section.[11] Based on their names and interchangeable functions, it is possible that other expresses are hiding under the identity of a livery stable or wagon house.

The George W. Knox Express Stables also has an area dedicated to blacksmithing, an important service needed to maintain and produce wagons, tack, and other gear.[12] Other horse-related structures, mainly livery stables and wagon houses, also have areas dedicated for blacksmithing.

Also identified in the 1917 *Boyd's City Directory of Washington, D.C.* are thirteen other expresses and drayages. All thirteen of these businesses are labeled as either "Drayage," "Express Companies," or "Express & Drayage." These include the American Express, the Southern Express, the George B. Baldwin Express, and others. By the 1903-1916 Sanborn Map, two additional expresses are identified. These two structures are the U.S. Express Company, located at 485 C St. NW, and the Adams Express Company, located at 322 Pennsylvania Avenue NW.

[11] William H. Boyd, *Boyd's Directory of the District of Columbia* (Washington D.C.: R. L. Polk & Co., 1917), 1718, https://babel.hathitrust.org/cgi/pt?id=uiug.30112107850254&view=1up&seq=11.

[12] Sanborn Map Company, "Sanborn Fire Insurance Map from Washington, District of Columbia," 1888, 10.

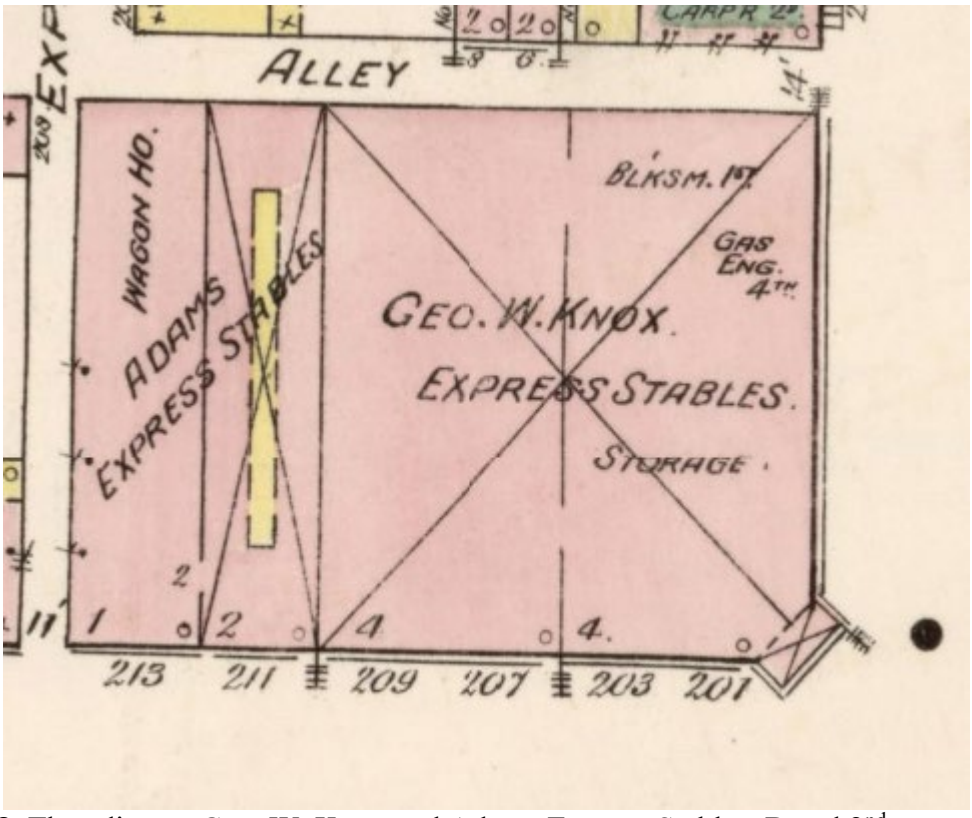


Figure 28. The adjacent Geo. W. Knox and Adams Express Stables, B and 2nd streets NW, *Sanborn Fire Insurance Map of Washington, D.C.,* 1888, Map 10, Library of Congress.

Stables Serving Commercial and Industrial Uses

Stables are also identified as being associated with and adjacent to various businesses on the 1888 Sanborn map. This includes stable complexes attached to a stock yard and hay market at the corner of B and 12th streets NW, E. E. Jackson & Co. Lumber Yard located at the corner of 13th ½ Street and Ohio Ave. NW, Pettit & Dripps Eagle Iron Works on B St. NW, Miller & Co. at the corner of 14th and C St., C. A. Schneider & Sons Union Iron Works located at 1208 C St. NW, and Chas E. Koller Bakery located at 313 13th St NW.[13] These structures, identified based on the key provided on Sanborn Maps (see Figure 1) demonstrate how the workers and patrons of these establishments accessed them through the use of horse transit, thus needing a place to

[13] "Sanborn Fire Insurance Map from Washington, District of Columbia, District of Columbia."

keep their horses while conducting business. These stables would have also been used to house and serve delivery wagons for the businesses.

Stables Associated with the Federal Government and Military

Several inventoried stables are documented as serving United States Federal Government agencies. For example, a stable labeled "U.S. Gov't" is identified on the 1903-1916 Sanborn Map and is adjacent to the Treasury Department. Likewise, a Quartermaster's stable is documented off of 20th St. NW between L and M streets (Figures 29 & 30). Additionally, the United States Treasury Department utilized a combined wagon house and stable at the corner of E and 19th Street NW adjacent to the Herdic Cab Co. & Metropolitan Coach Co. in the 1903-1916 (Figure 27).

Government and Military Stables

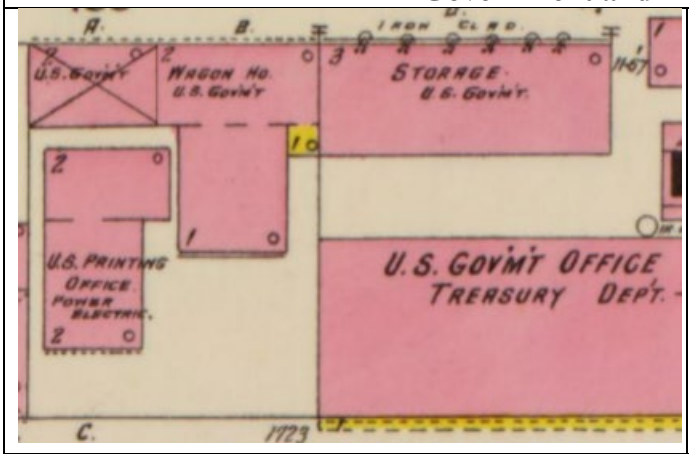


Figure 29. Stable Labeled "U.S. Gov't" Associated with the Treasury Department, *Sanborn Fire Insurance Map of Washington, D.C.,* Vol. 1, 1903-1916, Map 38, Library of Congress

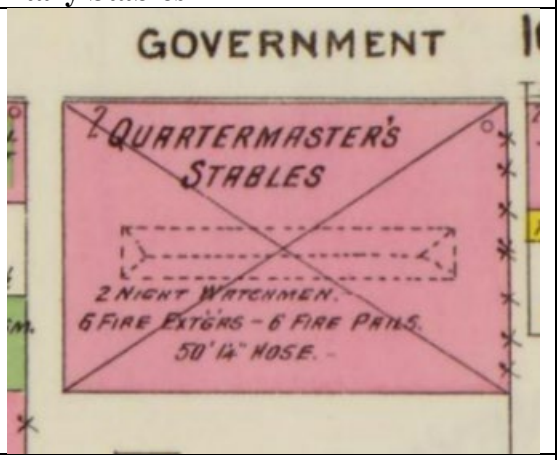


Figure 30. "Quartermaster's Stables" Associated with Government Agency, *Sanborn Fire Insurance Map of Washington, D.C.,* Vol. 1, 1903-1916, Map 41, Library of Congress.

In addition to these three structures, the White House had a functioning stable from 1800-1909. The stable complex was reconstructed at various points in history at the discretion of the government for either aesthetic or functional needs. A historic photograph from 1900 shows the

Grant Administration's (1869-1877) rebuilding of the complex (Figure 31). Though it ceased to function as a stable after 1909, the structure remained standing until its demolition in 1912. [14]

Figure 31. "The White House Stable in 1900," White House Historical Association, Kiplinger Collection.

The entire White House complex, including the stables, are omitted from Sanborn maps and Baist's Real Estate Atlases. However, its existence is well documented in other historical documents. A 1901 map of the Ellipse and White House grounds shows the exact location of this structure to the west side of the property along 17th Street (Figure 32).

[14] Monkman, "The Executive Stables."

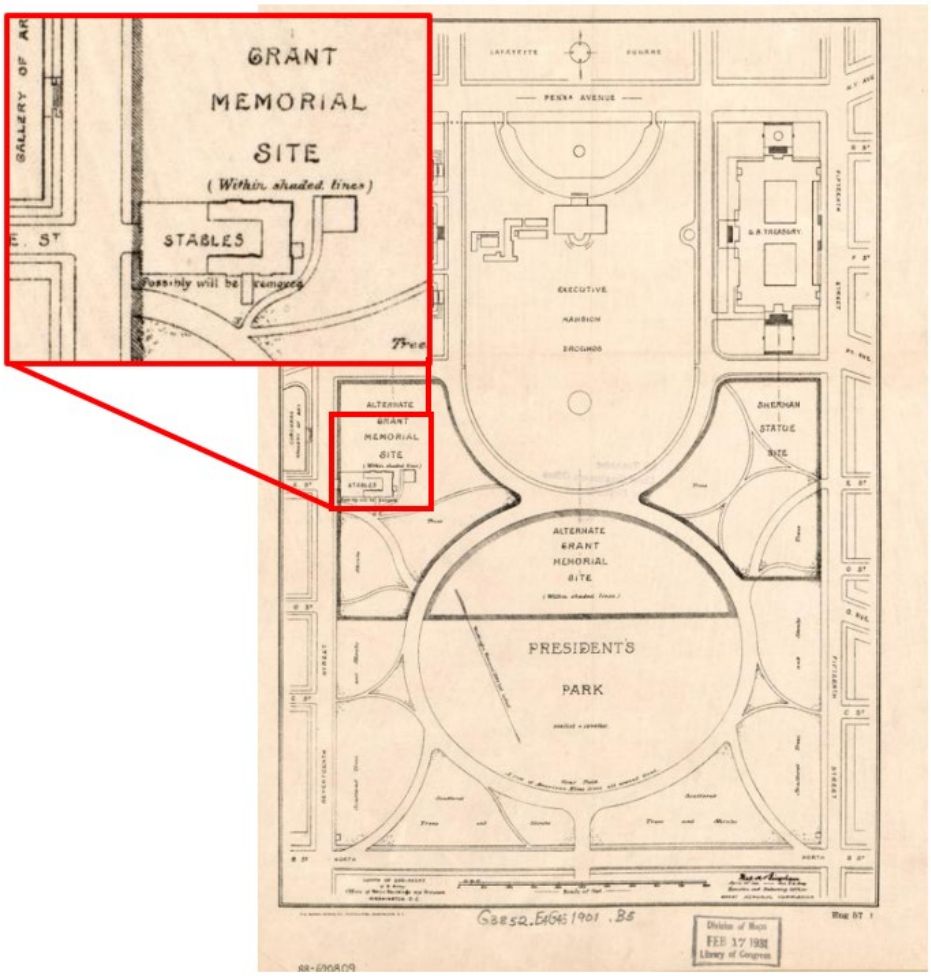


Figure 32. "Map of the Ellipse and White House Grounds Showing Proposed Sites for the Grant Memorial and Sherman Statue, Washington D.C.," Published 1901, Library of Congress.

Many Federal agencies, such as the White House, are documented to have traded in their horses and carriages for cars by 1909, marking a pivotal year in the transition to automobiles.[15] However, as demonstrated by the 1903-1916 Sanborn Maps, not all government agencies transitioned at the same time. In fact, as demonstrated by the quartermaster's stables and the stable serving the Treasury Department, most government structures within the study area transitioned after 1916. As they are government structures, these buildings and their function are not listed in city directories.

[15] Monkman, "The Executive Stables," https://www.whitehousehistory.org/the-executive-stables

Summary

Commercial, residential, and government stables all demonstrate similar trends in construction materials. They tend to be brick structures of one or two stories. While they share the same function, commercial stables vary in size from small residential to large government structures based on their anticipated needs. Residents with private stables only built to serve their own requirements, typically for one or two horses and carriages. Comparatively, commercial stables were designed to accommodate large-scale businesses meant to serve the public.

Additionally, the location and land use of these structures differ. Residential stables are highly concentrated behind rowhomes and along alleyways, hidden from the public eye. Commercial structures, however, are prominently located along city streets and tend to take up the entire lot, sometimes stretching across entire blocks. Though most inventoried liveries are accessible from main roads, they are also documented as being accessible from alleys and byways. They also typically have wider and multiple carriage entrances to increase access for customers. Commonly, commercial stables are shown with interior or adjacent blacksmith shops that would have been necessary for maintenance and upkeep of wagons and tack. These trends found only in commercial livery stables emphasize the desire to offer ease of access to customers, and maximize space, thus increasing business.

Government stables demonstrate the greatest variation in these trends. They share the same design and materials as residential and commercial structures, though they are not constant in their orientation and land use. Some government stables are smaller scale, somewhere between residential and commercial sizes, others are as big as commercial liveries. The variation seen in government stables then suggests that the size of specific government agencies may relate to the size of their annexed buildings throughout the city.

CHAPTER 4: CARRIAGE HOUSES & WAGON SHOPS

This chapter explores carriage houses and wagon shops as documented from historic maps and directories within the study area. Eleven wagon shops and factories, and ten carriage houses are documented for 1888. Like livery stables, carriage houses offered places to store horse-drawn wagons and carriages which required a considerable amount of space for storage. Wagon shops and factories offered various services to manufacture, sell, and repair carriages and wagons. These structures are listed interchangeably as "Carriage Factory," "Wagon Shop," or "Wagon Factory." In this report they are only referred to as "Wagon Shops" unless the name of the business lists them otherwise.

Carriage Houses

Three primary carriage houses are identified on the 1888 Sanborn Map. They are located at the corner of New York Avenue and 6th Street NW, along 17th Street NW behind the Corcoran Art Gallery, and along an alleyway identified as "Chain House." Seven other carriage houses are documented as supporting structures to businesses and liveries discussed in previous chapters. The size and context of these structures suggest a commercial use as opposed to residential. The carriage house associated with the Corcoran Art Gallery, for example, likely served visitors and employees of the institution.

An additional carriage house is identified in a historic photograph from 1901 (Figure 33). This structure is located on 6th Street NW near the intersection of C Street, at the far left of the image, and advertises itself as a "…Stables Carriage House" (Figure 34). This instance further demonstrates how carriage houses and liveries operated under the same roof, having shared joint functions.

6th Street Carriage House

Figure 33. 6th Street carriage house and stable (far left), 1901, Washington, D.C., Street Survey Collection, Prints & Photographs Division, Washington, D.C., 20540, Library of Congress.

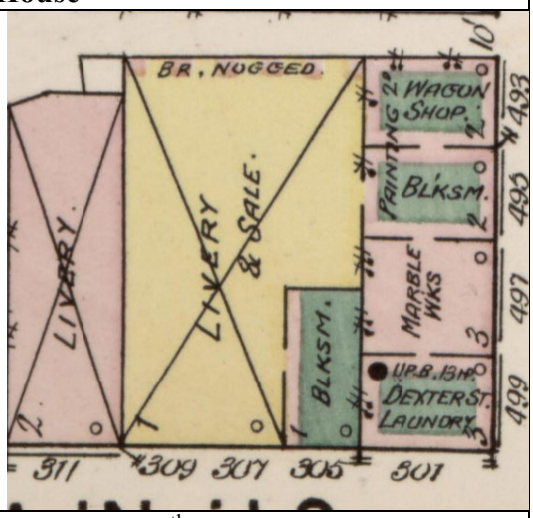


Figure 34. 6th Street carriage house, labeled as "Livery & Sale," 1888, *Sanborn Fire Insurance Map of Washington D.C.*, Map 10, Library of Congress.

Wagon Shops

The 1888 Sanborn Map identifies six wagon shops within the study area. These include the Andrew J. Joice & Co. Wagon Factory located on the corner of 14th and E streets NW, William Walter's Sons Wagon Factory located at 317 14th St. NW, and several other unnamed establishments. Of these unnamed wagon factories, two are relatively close to each other, situated at 105 and 109 6th St. NW. One is located at 621 G St. NW, and 635-637 New York Ave.

An advertisement from Boyd's 1908 City Directory of Washington DC demonstrates what types of vehicles these Wagon Shops may have manufactured (Figure 35). Though this manufacturer was located in Philadelphia, the advertisement lists this particular model as serving "for asphalt and Belgian block paving, grading and generic contract work, hauling ashes, garbage, mortar, etc." This description hints to the various finishes to roads which were present

in Washington DC and other major metropolitan areas at the time, such as asphalt and brick paving.

Figure 35. Advertisement for Watson Wagon Co, *Boyd's Directory of the District of Columbia*, 1908, pg 77.

Summary

Both carriage houses and wagon shops tend to be associated with livery stables and used as auxiliary services. Wagon shops especially are associated with liveries in this study, many of which offer wagon shop and blacksmith services in addition to livery and sales. While carriage houses are commonly joined with livery stables, some exist as stand-alone structures. Those

which stand alone are associated with other structures, such as the Corcoran Art Gallery, or along alleyways. Carriage houses located along alleyways have two distinct trends: those accompanied by a nearby commercial livery and likely served these businesses in some capacity, and those primarily surrounded by residential structures and likely served the needs of nearby residents.

CHAPTER 5: EMERGENCY SERVICES & MISCELLANEOUS STRUCTURES

This chapter examines structures serving emergency services, such as fire engine houses, as well as several miscellaneous structures, including banks and funeral homes. While post-office and funeral home structures are documented in historic maps and directories within the study area, there is no indication of them having horse-related facilities, though they are known to have used horse-drawn mail delivery wagons and hearses. Due to the lack of documentation of horse-related uses of these structures, this chapter primarily focuses on emergency services and miscellaneous structures.

Emergency and Government Services

Emergency services, such as police stations and fire houses, are also included in this study as they too faced the transition from horse to automotive transit. Sanborn maps identify four of these structures from 1888 onward. Fire stations and engine houses include Engine House Number 1, located at 1643 K St. NW, Engine House Number 2, located at 1206 D St. NW, and Engine House Number 6, located at 422 Massachusetts Ave. NW. A photograph of what these horse-drawn fire engines looked like is seen in Figure 36.

Each engine house follows a similar structure and orientation. They are typically two or three-storied brick structures with two main doors wide enough for fire engine carriages to access the street (Figures 37-39). These structures are not documented as having exterior stable structures to house the horses needed to pull each wagon (Figures 40-42). Rather, many of these structures, as documented on Sanborn and Baist's maps, contain an interior stable area to house their horses.

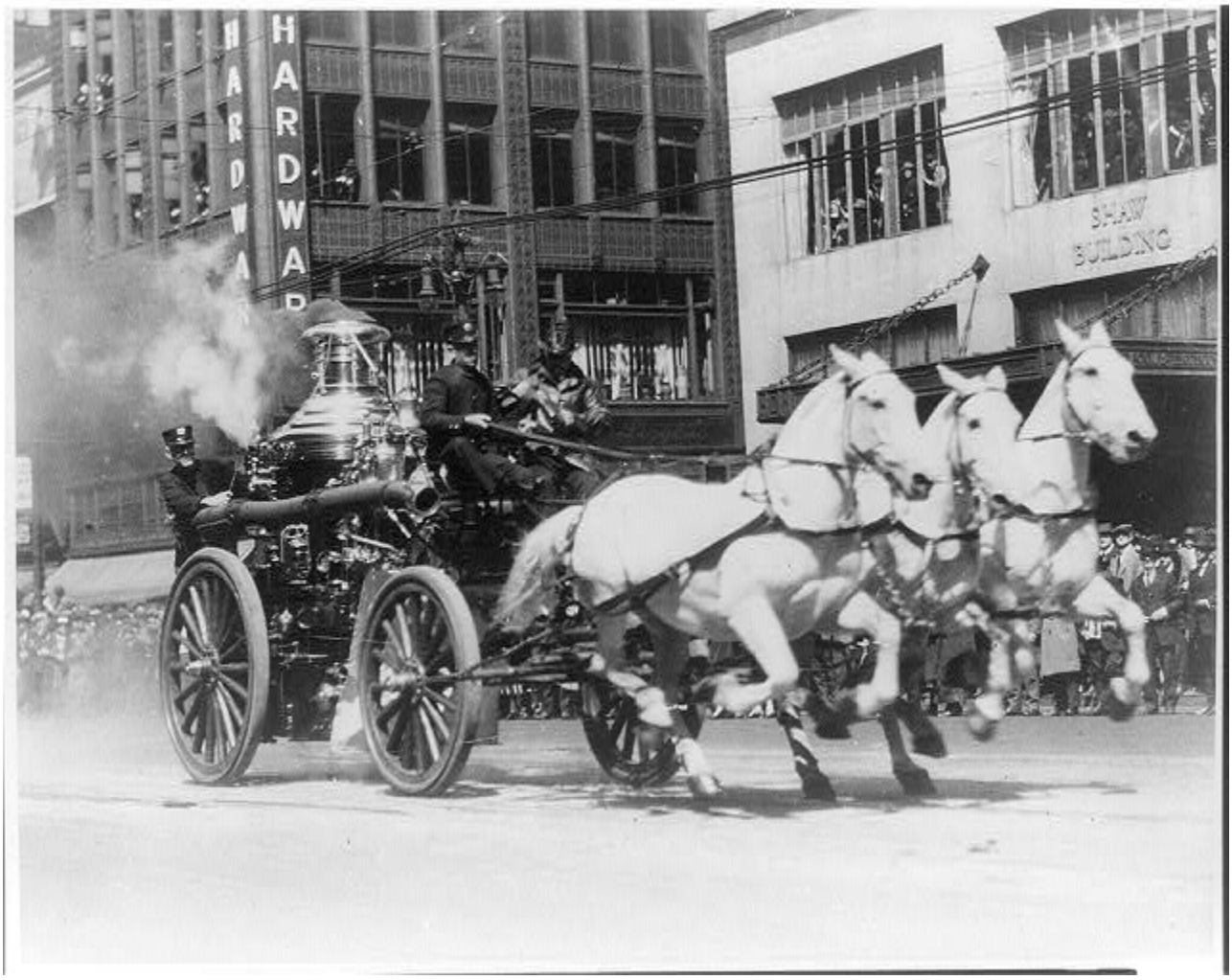


Figure 36. Horse-Drawn Fire Engine In Action, 1900-1920, Prints & Photographs Division, Washington, D.C., 20540 USA dcu, Library of Congress.

Based on inventoried fire engine houses, horse-drawn fire engines remained operational until 1909. The *Baist Real Estate Atlas of Surveys* published in 1909 shows that all three of these fire engine houses transitioned to automotive fire engines before that date.

Engine Houses

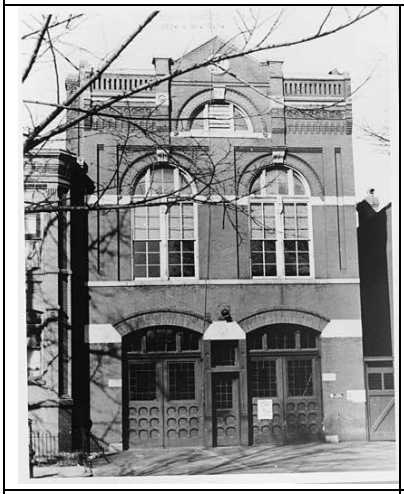


Figure 37. *Engine Company Number One*, 1643 K Street NW, Historic American Buildings Survey, Library of Congress.

Figure 38. *Engine Company Number Four*," Historic American Buildings Survey, Library of Congress.

Figure 39. *Engine Company Number 6*, 422 Massachusetts Avenue NW, Before 1960, Historic American Buildings Survey, Library of Congress.

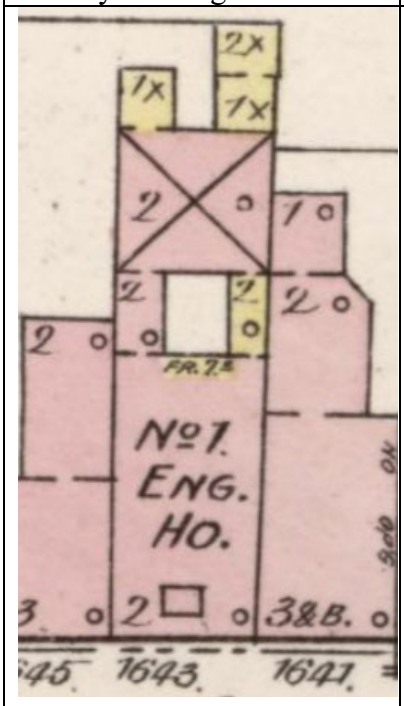


Figure 40. Fire Engine House Number One, *Sanborn Fire Insurance Map of Washington, D.C.,* 1888, Map 29, Library of Congress.

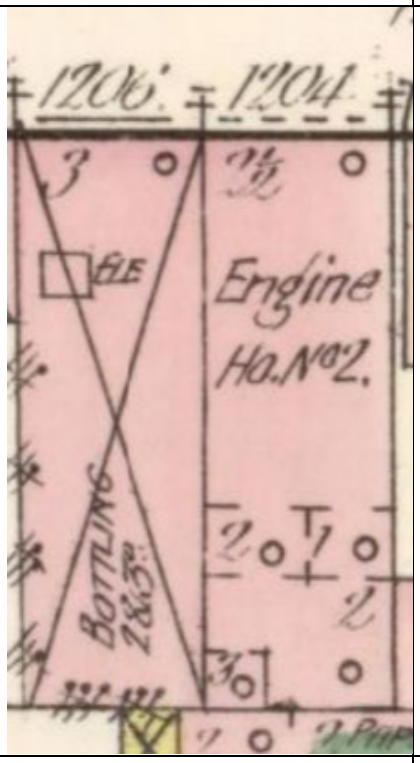


Figure 41. Fire Engine House Number Two, *Sanborn Fire Insurance Map of Washington, D.C.,* 1888, Map 15, Library of Congress.

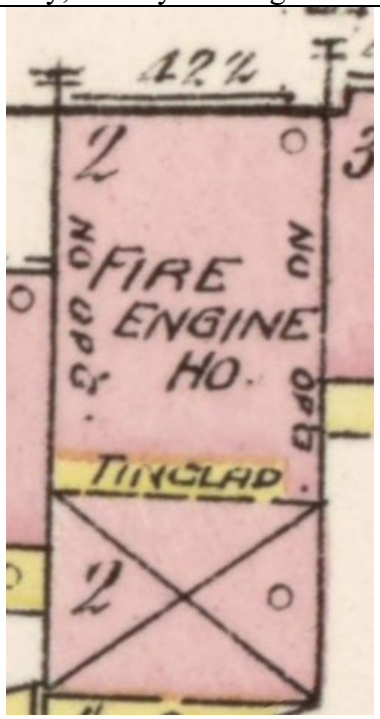


Figure 42. Fire Engine House Number Six, *Sanborn Fire Insurance Map of Washington, D.C.*, 1888, Map 13, Library of Congress.

Miscellaneous Structures

Within the study area are several other businesses with horse-related structures and functions. Primarily discussed in this section are banks and funeral homes. Both necessitated horse-drawn carriages for transportation of their services. Much like armored trucks today, banks used horses to transfer deposits and funds from other businesses and institutions in the area to their safes. Likewise, funeral homes used horse-drawn hearses to transport the dead. Though there are relatively few of these businesses within the study area, they demonstrate the widespread and diverse use of horse-transit in the pre-automotive city.

Banks

Though located outside of the study area, the Bank of Columbia, located at 3210 M Street NW, demonstrates how carriages were housed on-site for transferring funds (Figure 43). Much like fire engine houses, this bank had two adjacent carriage entrances and a single pedestrian door. A floorplan of the bank shows that the first floor had a primary purpose of storing horses in the "duty horse area" and as an "apparatus," likely carriages (Figure 44). Additionally, this floor plan identifies a "hose tower," suggesting that the bank had previously been repurposed from a fire engine house.

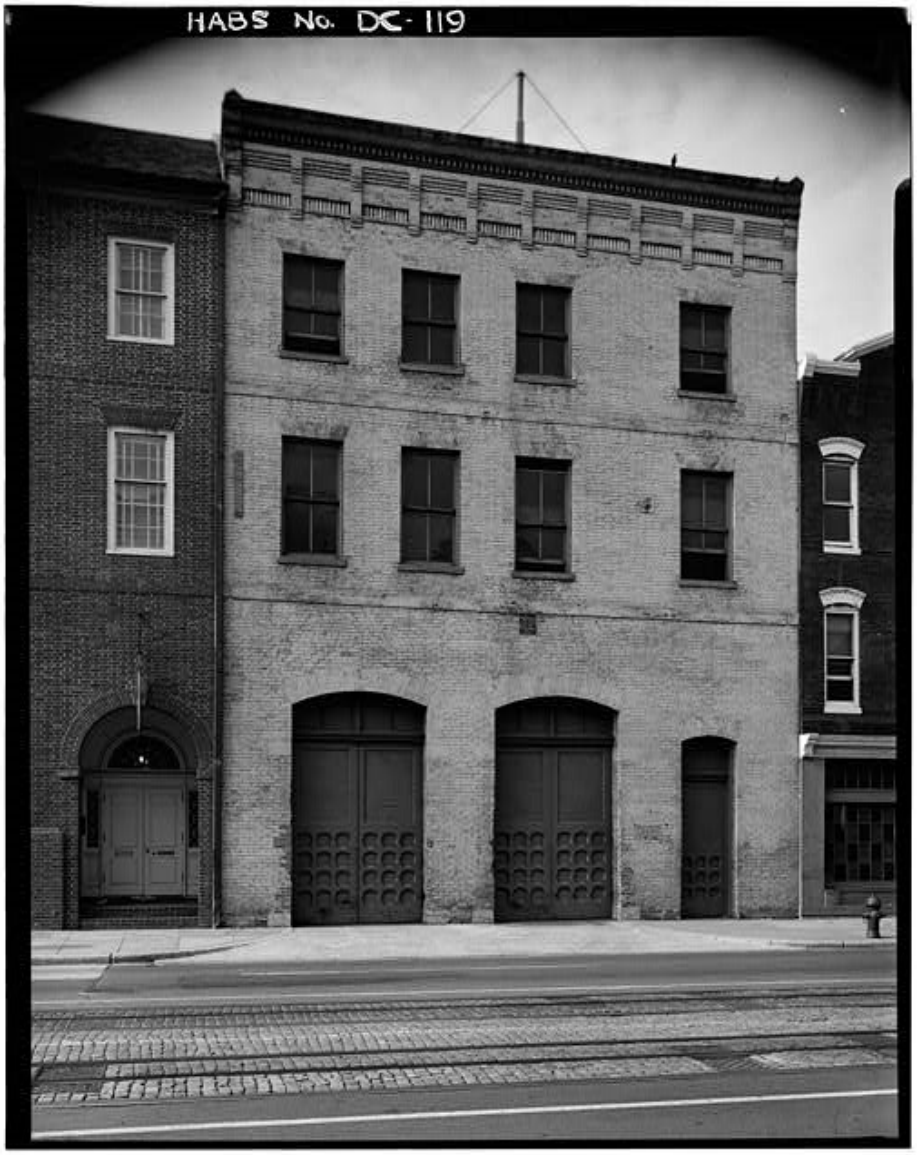


Figure 43. Bank of Columbia, 3210 M Street Northwest, Historic American Buildings Survey, Library of Congress, HABS DC, GEO, 78—1.

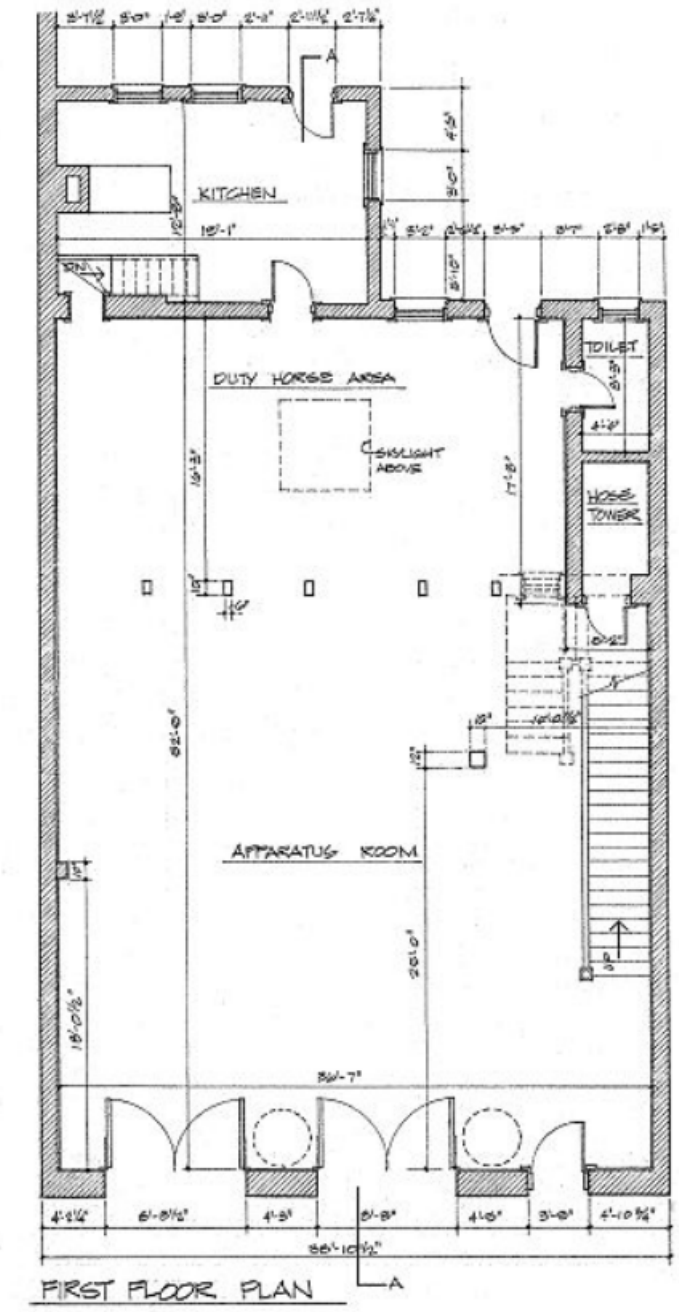


Figure 44. First Floor Plan of the Bank of Columbia, Historic American Buildings Survey, Library of Congress, HABS DC, GEO, 78 (sheet 2 of 6).

Funeral Homes

Though funeral homes are largely absent within the study area, several newspaper articles shed light onto their use of horse-drawn hearses. A newspaper article from September 17th, 1901 details President William McKinley's funeral march from the White House with the president's

casket by a six-horse carriage.[16] While this is an example of a prominent procession meant to honor the life of a United States president, most everyday people would not have had the same pomp and circumstance as McKinley. More commonly, everyday citizens would have been transferred in a hearse drawn by two horses, as seen here (Figure 45).

Figure 45. Horse-Drawn Hearses Outside a Funeral Parlor, 1908-1924, George Grantham Bain Collection, Library of Congress, Lot 10884.

Birch's Funeral Home, located at 3034 M St. NW, shows how the structure was designed to house three carriages, likely hearses, for their patrons (Figure 46). This funeral home functioned from the 1840s to 1962 when the business was repurposed for residential usage, including garages and a second-story apartment.[17] This reuse of carriage houses associated with

[16] "A Funeral March," *Evening Star*, September 17, 1901, 1, 6, Chronicling America.
[17] Lucy E. Moore, "'The Dead-Surest Business in Christendom'; Undertakers and Funeral Directors in Washington, DC 1862-1954," 2013.

funerals homes demonstrates a direct transition from horse to automotive transit. The structural similarity and requirements for horses, carriages, and automobiles permitted a seamless shift from one mode of transit to another.

Figure 46. *Birch Funeral Home*, 1967, 3034 M Street Northwest, Historic American Buildings Survey, Library of Congress.

Summary

Fire engine houses and miscellaneous structures demonstrate similar physical structures of two or three stories with a first floor dedicated to the storage and boarding of carriages and horses. These structures are typically brick constructions with two or more wagon entrances accompanied by a single pedestrian door. There are, however, subtle differences in the design and fenestration patterns of these buildings. Fire engine houses are nearly identical to one another with symmetrical fenestration. Meanwhile, miscellaneous structures, like banks and funeral homes, are asymmetrical in their placement of carriage entrances. While the function of

these structures vary, their similarities in structure emphasize their reliance on horses as a means of transportation and commerce.

CHAPTER 6: TRANSITION TO THE AUTOMOBILE

The introduction of the mass-produced automobile by Henry Ford and the first Model T from an assembly line production in 1913 brought about a tremendous change in the structural fabric of Washington, DC, and cities around the world. Henry Ford's assembly line production manufactured cars in as little as ninety-three minutes, a major improvement from previous manufacturing times of more than twelve hours. Not only was car production expedited, but lower cost production made automobiles widely accessible at different economic levels.[18] Just over thirty years later, data from the Federal Highway Administration (FHWA) reports that Washington DC had 130,799 motor-vehicle registrations (Table 2).[19]

Washington DC Motor Vehicle Registrations in 1946							
Total	Private & Commercial				Publicly Owned		
	Total	Automobiles & Taxi Cabs	Busses	Trucks	Total	Federal	State, County, & Municipal
130,799	127,352	110,250	26,148	14,954	3,447	1,538	1,909

Table 2. Data from the Federal Highway Administration for 1946 Motor Vehicle Registrations in Washington, D.C.

New Structure Types

During this period new types of structures emerge to support this new mode of transport, including gas and service stations, automotive repair shops, automobile garages, and automotive dealerships. Additionally seen in this transitional period are shifts in coach-for-hire businesses, such as the Herdic Phaeton and Metropolitan Coach Company which transitioned to automobiles by 1909.[20]

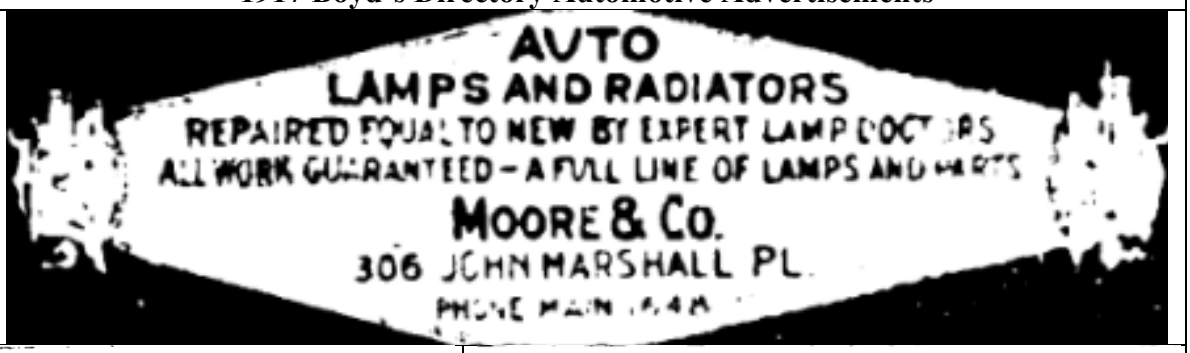
[18] Clay McShane and Joel Tarr, *The Horse in the City: Living Machines in the Nineteenth Century* (Baltimore: Johns Hopkins University Press, 2007), 179, https://search-ebscohost-com.proxy-um.researchport.umd.edu/login.aspx?direct=true&db=nlebk&AN=249380&site=ehost-live.

[19] "Highway Statistics 1946" (USA: Federal Highway Administration, 1946), 12, Federal Highway Administration, https://rosap.ntl.bts.gov/view/dot/8307.

[20] Laura V. Trieschmann et al., "Streetcar and Bus Resources of Washington, D.C., 1862-1962," National Register of Historic Places Mutliple Property Documentation Form (Washington, D.C.: United States Department of

Boyd's 1917 City Directory of Washington DC advertises several of these new structure types including an auto repair and parts shop for automotive lamps, radiators, gasoline tanks, and mud guards. Additionally advertised in the same publication are public automobile garage structures (Figures 47-49).

1917 Boyd's Directory Automotive Advertisements



Figures 47 (Top), 48 (Left), & 49 (Right). Various Advertisements for Automotive Businesses, *Boyd's City Directory of the District of Columbia*, 1917, pg. 1705.

Gas & Service Stations

As automobiles rely on fuel, service stations providing gasoline popped up at strategic points across the city. However, no gas stations are documented within the study area. Their absence implies that these businesses existed outside of the study area or that gasoline for automobiles was not yet acquired by consumers in the same way that is it today.

the Interior: National Park Service, 2006), https://npgallery.nps.gov/GetAsset/9ea78f08-8661-406d-90cb-9db0bfe9cb2b. the Interior: National Park Service, 2006), https://npgallery.nps.gov/GetAsset/9ea78f08-8661-406d-90cb-9db0bfe9cb2b.

Automotive Garages

Another new automotive structure that emerged during the transitional period are parking garages. Similar to livery stables, these structures are used to store automotives for various periods of time based on their context as either residential or commercial. Within the study area, some liveries were directly converted into automobile garages as both businesses required similar structural and capacity needs. These structures which demonstrate this trend of reuse are documented in the 1919-1921 Baist Real Estate Atlas and are discussed further in Chapter 7.

Electric Versus Gasoline Power

While the automotive industry was growing throughout Washington DC and the rest of the world, there existed a struggle between how automobiles were powered: are they electric, or gasoline? The former Battle of Manassas/Second Bull Run Panorama building was repurposed as a sale and manufacturing center for the Washington Electric Vehicle Transportation Company (Figures 50 & 51). This building is the only example of that struggle represented within the study area and demonstrates an interesting case of adaptive reuse. However, by the 1919-1921 Baist map, this structure was demolished for the construction of the War Industries Building.

Figure 50. Battle of Manassas/Second Bull Run Panorama Building, 1885, W. L. Armstrong Washingtoniana Glass Negative Collection, National Museum of American History, Archives Center.

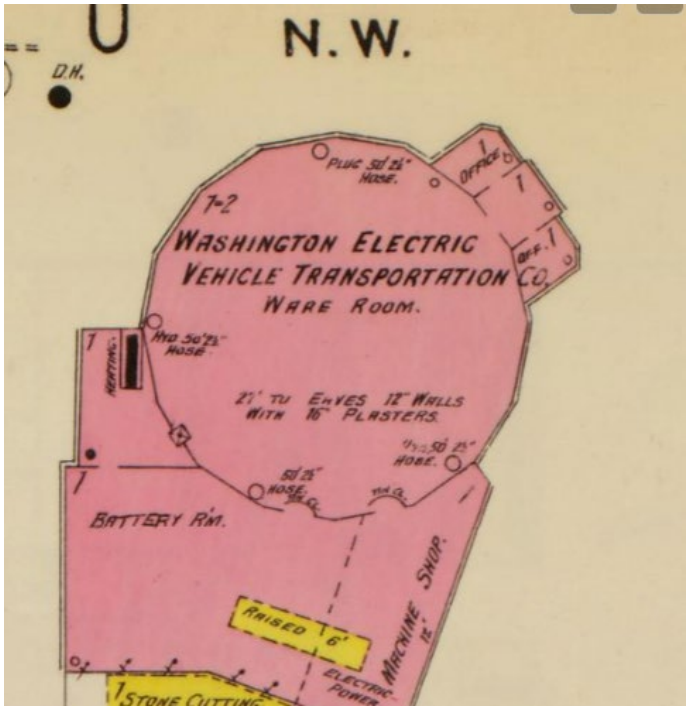


Figure 51. The Washington Electric Vehicle Transportation Ware Room, Battery Room, & Machine Shop, 1903-1916, *Sanborn Fire Insurance Map*, Vol. 1, Map 7, Library of Congress.

Changes In the Landscape

In addition to new types of buildings and businesses required by the introduction of the automobile, the city's infrastructure changed as well.[21] These changes include but are not limited to the paving of roads and necessity of asphalt companies, the widening of major transit routes, the installation of traffic lights, and infrastructure to supply gasoline.

Paving and Widening of Roads

The 1898 Boyd's Directory lists three paving companies located within the study area. The Barber Asphalt Paving and Cranford Paving companies are both located along M Street and within a few blocks of each other. The third, Colburn Brothers, is located at 72 M Street NW, six blocks away.[22] The inclusion of these structures demonstrates that roads in this area of DC were already being paved in the pre-automobile age. Just ten years later in the 1908 Boyd's Directory, only one asphalt company is listed.[23] Though this business is located outside of the study area for this project, its singular presence suggests that companies offering these services had relocated outside of the study area as the Federal Government and developments expanded, or that there was less business for them in this area. If it is the latter, this may suggest that most roads were already paved by this date.

In addition to simply paving roads to ease the wear of automotive tires, roads were also widened to accommodate increased traffic. Street widths, as indicated on Sanborn Maps, demonstrate a slight increase from 1888 to 1916 (Table 3). Diagonal streets named after various states, such as Pennsylvania, Ohio, New York, and Massachusetts avenues have not changed from their original width in 1888 (130'-160') to today. However, north-south (numerical) and

[21] McShane and Tarr, *The Horse in the City: Living Machines in the Nineteenth Century*, 179.
[22] Boyd, *Boyd's Directory of the District of Columbia*, 1898.
[23] Boyd, *Boyd's Directory of the District of Columbia*, 1908, 55.

east-west (alphabetical) oriented streets have changed slightly. In 1888 numerical streets within the study area ranged from 80' to 110' in width, averaging 93.6'. By 1916 their street widths ranged from 85'-160', averaging 102'. The biggest increase in numerical street widths is seen on 16th street which was widened from 100' to 160' between the map publication years. Additionally, 19th street was widened from 90' to 110' and 11th street from 85' to 112' during this same time period.

Alphabetical streets, running east-west, within the study area show the least amount of change in widths between 1888 and 1916. In 1888 their widths range from 70' to 147.5' with an average of 94.3'. By 1916 only one street within this category and the study area had been widened: B street increased from 90' to 135'.[24]

By 1913, main transit routes were documented in Washington DC by the American Automobile Association (Figure 52). The most frequented and well-fitted roads for automobiles are indicated with thick outlines with most of these being on diagonal streets, such as Pennsylvania and Massachusetts avenues, and oriented around the White House and the Capitol. A few decades later in 1939, Pennsylvania Avenue is photographed showing the flow and level of traffic along that route (Figure 53).

[24] Sanborn Map Company, "Sanborn Fire Insurance Map from Washington, District of Columbia," 1888; Sanborn Map Company, "Sanborn Fire Insurance Map from Washington, District of Columbia," 1916 1903.

Street Widths in Washington DC as Recorded by Sanborn Maps		
	1888	**1916**
Street	Width (Feet)	Width (Feet)
Pennsylvania Avenue NW	160	160
Massachusetts Avenue NW	160	160
Ohio Avenue NW	160	160
New York Avenue NW	130	130
B Street NW	90	135
C Street NW	90	90
D Street NW	70	70
E Street NW	90	90
F Street NW	100	100
G Street NW	90	90
H Street NW	90	90
I Street NW	90	90
K Street NW	147.5	147.5
L Street NW	90	90
M Street NW	90	90
1st Street NW	85	90
2nd Street NW	90	90
3rd Street NW	110	110
4th Street NW	80	110
5th Street NW	80	110
6th Street NW	100	100
7th Street NW	80	85
8th Street NW	100	100
9th Street NW	85	85
10th Street NW	85	85
11th Street NW	85	112
12th Street NW	85	85
13th Street NW	110	110
14th Street NW	110	110
15th Street NW	110	110
16th Street NW	100	160
17th Street NW	110	110
18th Street NW	90	90
19th Street NW	90	110
20th Street NW	90	90
21st Street NW	90	90

Table 3. Street Widths Summary Table, Data Collected From *Sanborn Fire Insurance Maps of Washington, D.C.*, 1888 & 1903-1916.

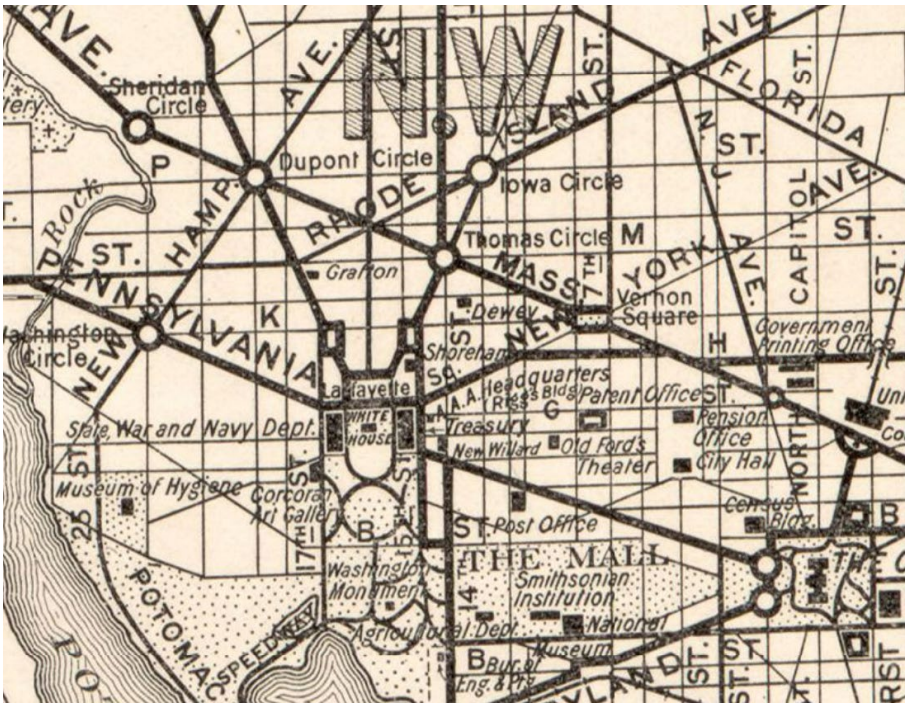


Figure 52. Detail of "Washington, District of Columbia," American Automobile Association, Route & Map Service, 1913, New York, Library of Congress.

Figure 53. Traffic at the Corner of 14th Street & Pennsylvania Avenue, 1939, David Myers (David Moffat), Library of Congress.

Gasoline Infrastructure

In 1946 the FHWA reported the District of Columbia to have consumed 147,524,000 gallons of gas for the entire year, the 6th lowest quantity behind Rhode Island (132,990,000 gallons), New Hampshire (102, 622,000 gallons), Wyoming (94,473,000 gallons), Delaware (71,283,000 gallons), and Nevada (60,827,000 gallons).[25] This data, combined with that of automotive vehicle registration data from 1946 show that of the 130,799 vehicles registered in this year, each vehicle consumed roughly 1,127 gallons.

[25] "Highway Statistics 1946," Federal Highway Administration, 2, https://rosap.ntl.bts.gov/view/dot/8307.

CHAPTER 7: ANALYSIS & CONCLUSION

The analysis of the collected transition from horse to automotive transit is presented by the dates of historic maps and directories available for the study area. In sequential order this includes the 1888 Sanborn map, the 1909 Baist Real Estate Atlas, the 1903-1916 Sanborn Map, and the 1919-1921 Baist's Real Estate Atlas. As the 1903-1916 Sanborn Map does not distinguish which years certain pages were documented, it is considered strictly as a 1916 map. Likewise, the 1919-1921 Baist Real Estate Atlas is considered to be a 1921 as there are no indications of when certain areas were documented.

While maps are primarily used in this analysis, Boyd's City Directories from 1896 and 1922 were also used to fill in gaps between map publication years. Importantly, the 1922 directory provides further insight into how the city continued to transition following the last available Sanborn and Baist maps for the city.

Analysis

A total of eighty-one horse-related structures were recorded within the study area in 1888 (Table 1). This includes fifty-four livery stables (both residential and commercial), ten carriage houses, eleven wagon shops, four emergency services structures, and two expresses.

The 1909 Baist Real Estate Atlas of Surveys documents sixty-three horse-related structures. This includes forty-nine livery stables, ten carriage houses, three wagon shops, and one emergency service structure. No expresses are explicitly identified, though may have continued to function alongside livery stables. However, the atlas does identify several structures which have joint automotive and horse-related functions. One of these structures is an auto and carriage factory located on L Street NW (Figure 54).

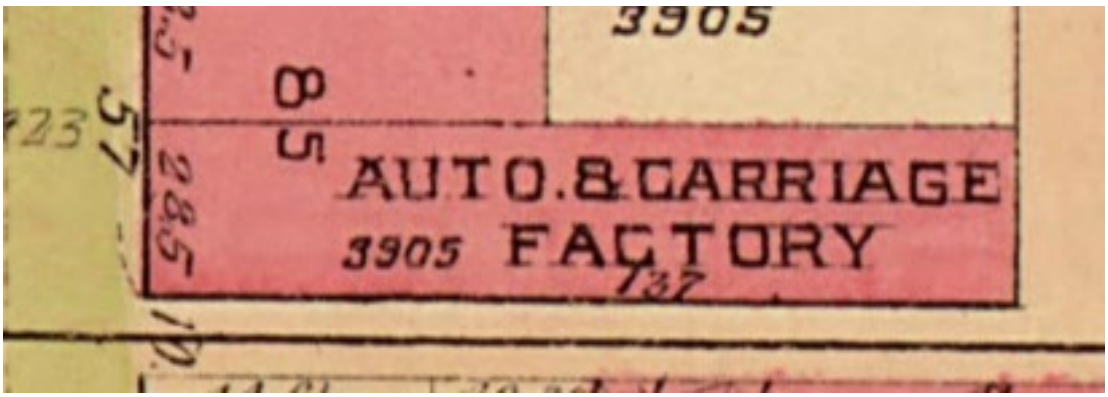


Figure 54. Auto & Carriage Factory Located on L St. NW, Demonstrating Joint Automotive & Horse-Related Functions, Baist Real Estate Atlas of Surveys of Washington D.C., 1909, Library of Congress.

These numbers are a slight decrease from the 1888 Sanborn Map. However, the disadvantage of using Baist Real Estate Atlases is that they inconsistently identify structures by function. Like Sanborn maps, Baist Atlases identify stables by an "X" marked through the building. Other businesses, such as feed stalls, sales businesses, and carriage houses are not always identified. For this reason, the Boyd Directory from the previous year (1908) is helpful in getting a more accurate number of horse and auto-related structures in this year.

In addition to horse-related structures, the 1909 Baist Atlas also documents nine structures related to automotive transit (Table 4). This includes one repair shop, six public automotive garages, and three auto-powered emergency service structures. Engine House Number Two, discussed in Chapter four, and Engine House Number Fourteen, built sometime after 1888, suggest they have transitioned to automotive engines through the lack of stable facilities.

Auto-Related Structures				
	1888 Sanborn	1909 Baist	1903-1916 Sanborn	1919 Baist
Repair Shops	0	1	6	1
Garages	0	6	2	35
Gas & Service Stations	0	0	1	0
Emergency Services	0	2	3	3
Total	0	9	12	39

Table 4. Summary Table of Inventoried Auto-Related Structures Between 1888 & 1921.

By the 1908 edition of *Boyd's Directory of Washington D.C.*, there is a major presence of automotive businesses. These include sightseeing automobiles, automobile "liveries," service stations, automotive schools, automobile insurance agencies, repair shops, and many more. Roughly thirty of these automotive-based structures exist by this year.

Sixty-six horse-related structures are identified on the 1903-1916 Sanborn Map. This includes fifty-one livery stables, eight carriage houses, five wagon shops, and two expresses. The express identified in 1888 has been repurposed by this date.[26] However, expresses and drayages may have also functioned alongside liveries.

Data from the 1903-1916 Sanborn documents twelve auto-related structures. This includes six repair shops, two public automotive garages, one gas service station, and three auto-powered emergency service structures. Few horse-related structures were directly reoriented to automotive functions by the time of the map publication.

[26] Sanborn Map Company, "Sanborn Fire Insurance Map from Washington, District of Columbia," 1903-1916.

From this data, the 1903-1916 *Sanborn Fire Insurance Map* demonstrates a co-existence and function of automobiles and horse-drawn transit methods. Map 12 from Volume 1 of this map series demonstrates this in two adjacent examples of residential auto sheds and stables (Figure 55).

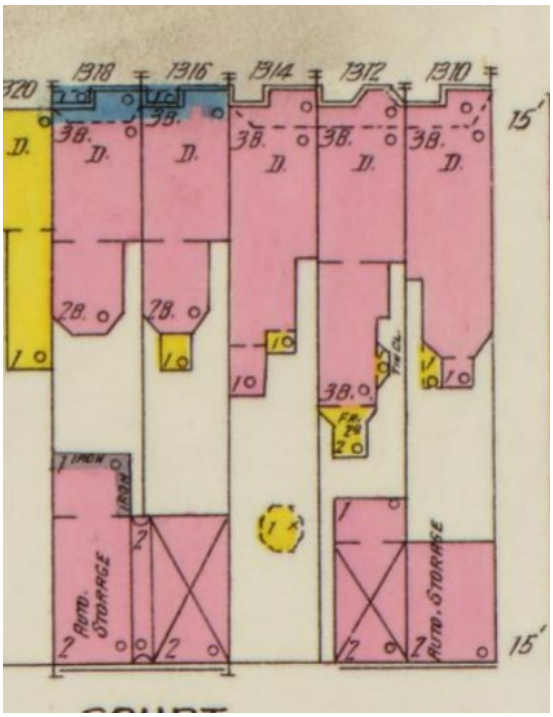


Figure 55. Adjacent Auto Sheds and Stables, along Stanton Court (alley), Between L, K, 13th, and 14th Streets, *Sanborn Fire Insurance Map of Washington D.C.,* 1903-1916 Vol. 1, Map 12, Library of Congress.

The 1919-1921 Baist Real Estate Atlas documents only thirty-one horse-related structures, nearly half as many as were documented in the 1903-1916 Sanborn map. These structures primarily include liveries, of which thirty are recorded, and one wagon shop.

While horse-related structures starkly decrease between 1916 and 1921, automobile structures drastically increase in number. Of the automotive-related structures, thirty-nine are recorded and include one repair shop, thirty-five public garages, and three fire engine houses.

Though few horse-related structures are documented as having been repurposed directly into automotive uses in the 1903-1916 *Sanborn Fire Insurance Map*, the 1919-1921 *Baist Real Estate*

Atlas of Washington, D.C. shows how several commercial liveries were reused as automobile garages (Figures 56 & 57).

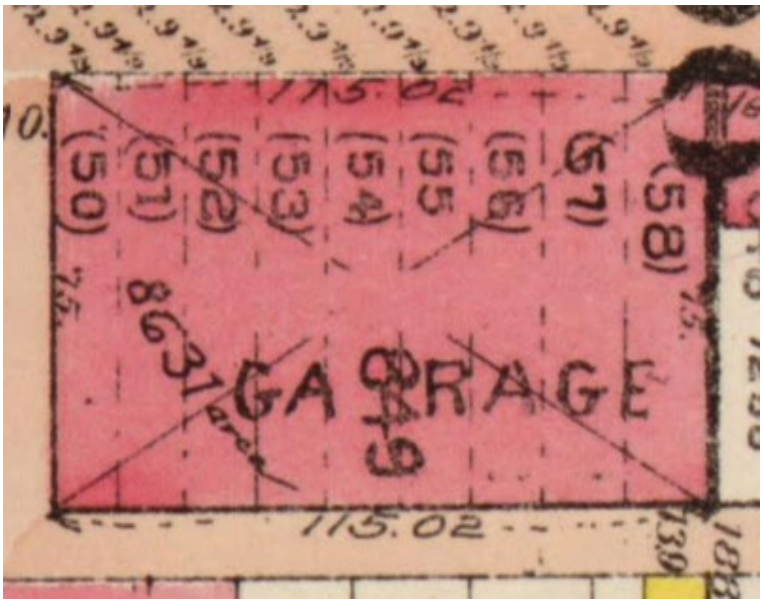


Figure 56. Garage Located in Alleyway Between L, M, 20th, and 21st Streets, 1919-1921, *Baist Real Estate Atlas of Surveys of Washington D.C.*, Library of Congress.

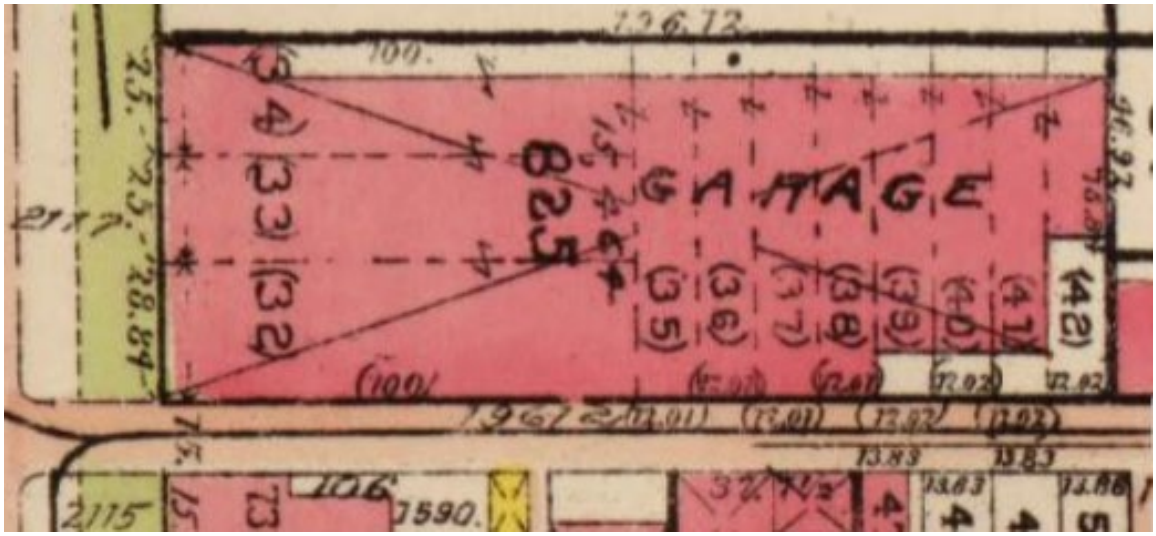


Figure 57. Garage Located on E St. NW, 1919-1921, *Baist Real Estate Atlas of Surveys of Washington D.C.*, Library of Congress.

Distribution Patterns: 1888-1921

The distribution of horse-related structures has been mapped out for the 1888 and 1903-1916 Sanborn maps, and the 1909 and 1919-1921 Baist Real Estate Atlases. General trends

demonstrate how horse-related structures, primarily liveries, continually move outward as the city grows and develops around downtown D.C.

In 1888, these structures are documented as being centered within what is currently the Federal Triangle between Pennsylvania Avenue and Constitution Avenue (Figure 58). There is also a heavy concentration between H, M, 10th, and 19th streets. By the 1909 publication of the Baist Real Estate Atlas, horse-related structures are more evenly distributed throughout the study area, though a small concentration of roughly ten structures remain within the Federal Triangle (Figure 59). Notably, data from 1909 show the first example of structures revolving around automotive transit (shown in black). These automotive structures mainly include automobile garages, which follow livery trends seen in 1888 and are centered around the Federal Triangle.

Distribution data collected from the 1903-1916 Sanborn map shows fluctuations in the number of horse and automotive-related structures as compared to data from 1909 (Figure 60). Notably, the concentration of automotive structures centered around the Federal Triangle have been dispersed throughout the study area. Meanwhile, livery stables and other horse-related structures move back into this area. There is also an increase of "private," or residential stables during this period, most of which are in the western portion of the study area.

While horse-related structures are still documented in data from the 1919-1921 Baist Real Estate Atlas, they continue to move outward towards the edge of the study area and are remarkably matched by the number of automotive-related structures (Figure 61). Automotive structures are primarily located within the Federal Triangle and along Connecticut Avenue NW, replacing many of the horse-related structures in those areas.

Trends showing the concentration of both horse and automotive structures around the Federal Triangle and along the Connecticut Avenue NW corridor follow patterns in the growth of the

city of Washington, D.C., where these areas were densely populated by the late-1800s (see Figure 12). This trend also follows major transit routes as documented in a transit map of the city published by the American Automobile Association in 1913 (see Figure 52). Both Pennsylvania and Connecticut Avenue are diagonal streets designed for quick and effective routes for transportation throughout the city. With these trends, it makes sense that the greatest concentration of auto and horse-related structures are oriented along these routes as they likely would have the best access in and out of the city, as well as from one neighborhood to another.

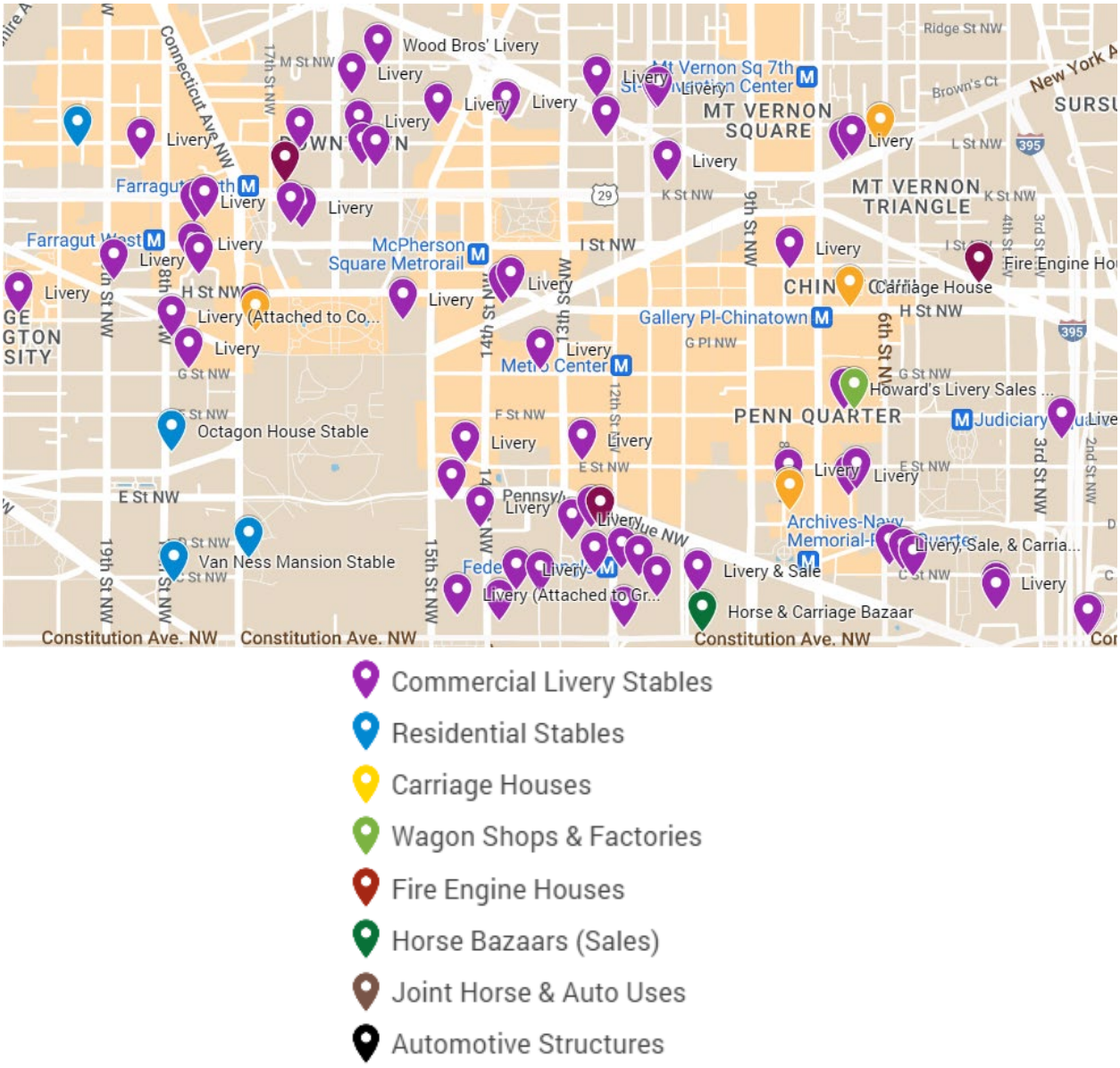


Figure 58. Map Showing Location and Distribution of Horse and Auto-Related Structures, Inventoried from the 1888 *Sanborn Fire Insurance Map of Washington, D.C.*, Library of Congress, Generated by My Maps, Google.

Figure 59. Map Showing Location and Distribution of Horse and Auto-Related Structures, Inventoried from the 1909 *Baist Real Estate Atlas of Surveys of Washington, D.C.*, Library of Congress, Generated by My Maps, Google.

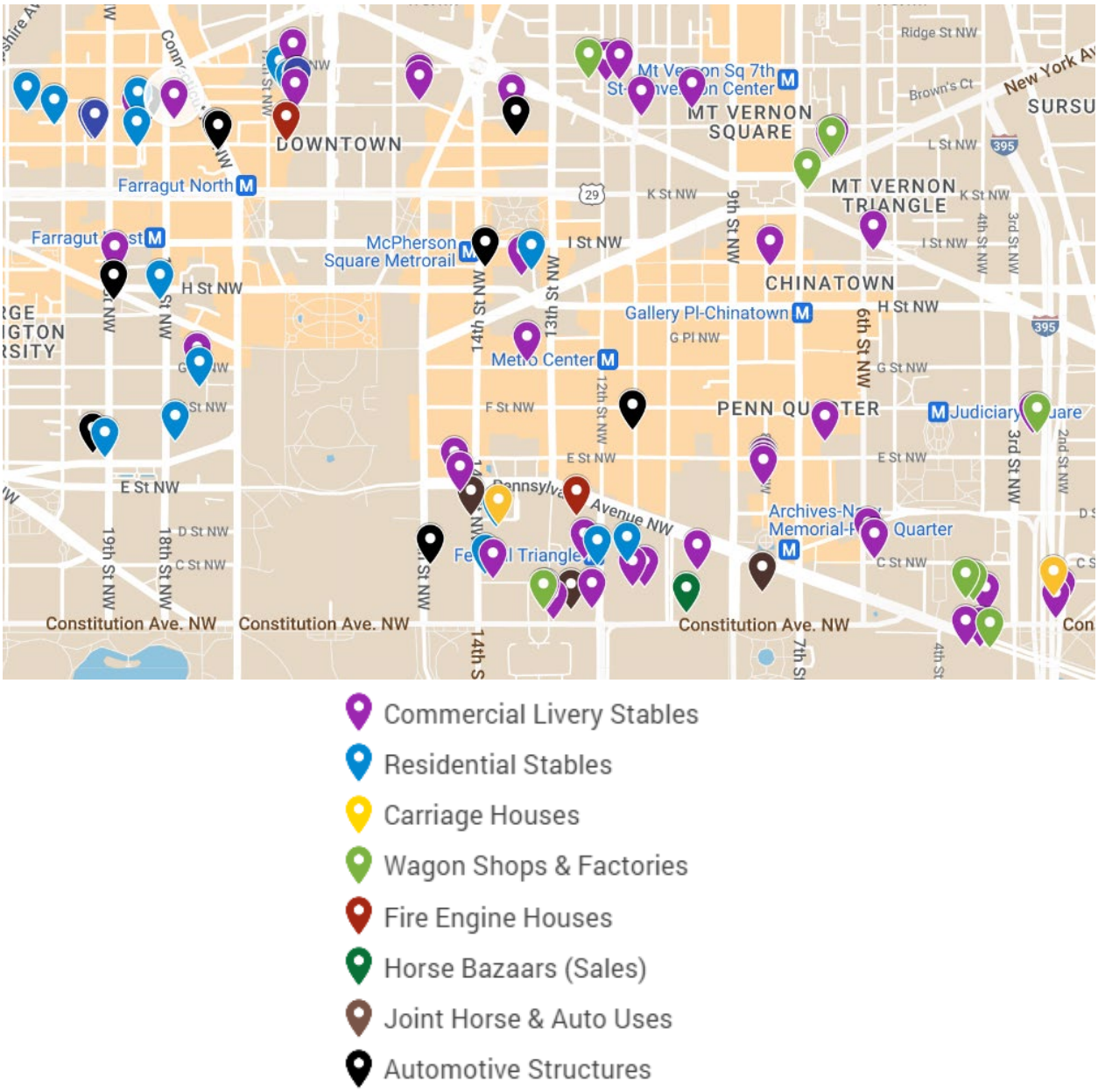


Figure 60. Map Showing Location and Distribution of Horse and Auto-Related Structures, Inventoried from the 1903-1916 *Sanborn Fire Insurance Map of Washington, D.C.*, Vol. 1-2, Library of Congress, Generated by My Maps, Google.

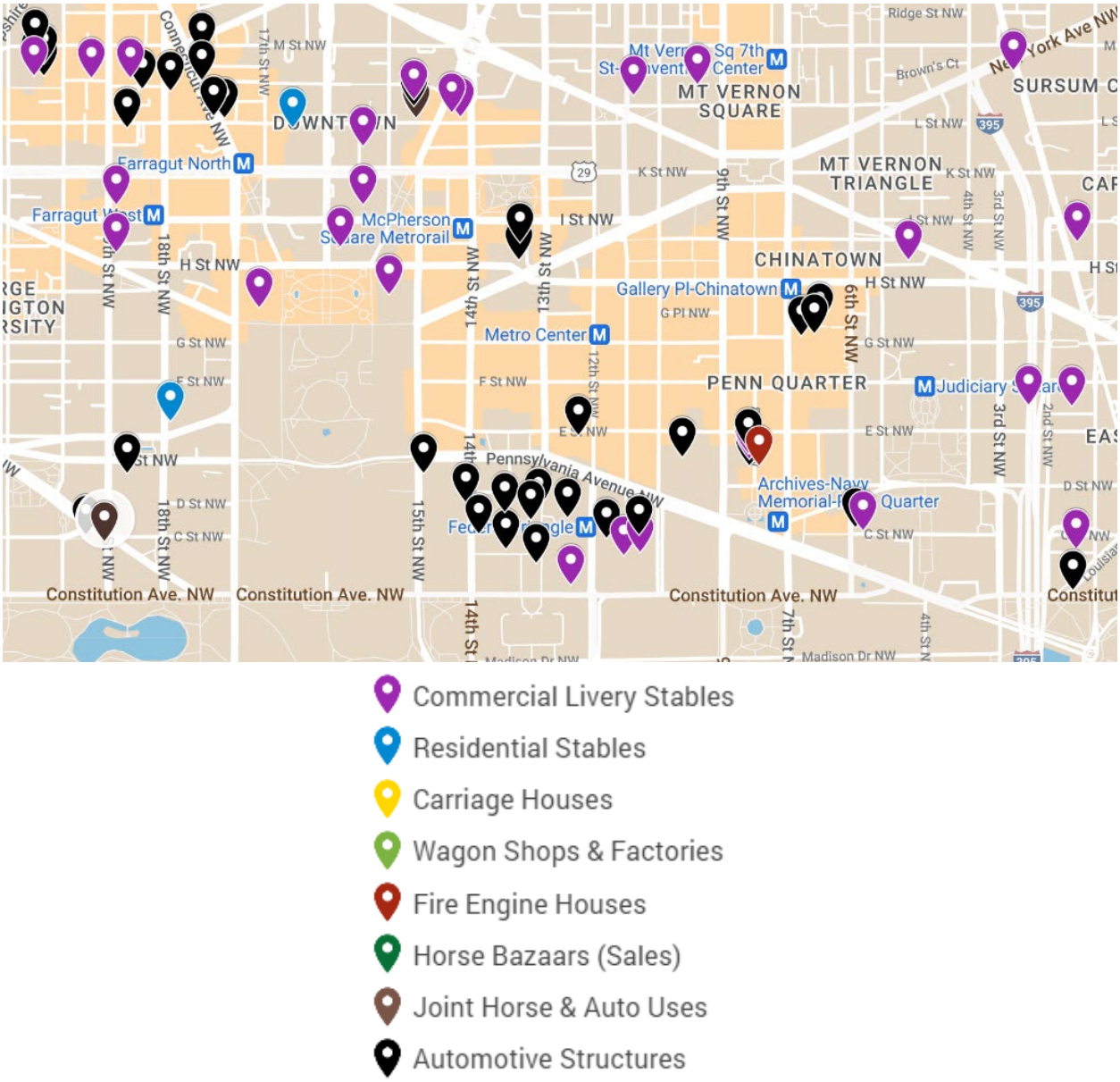


Figure 61. Map Showing Location and Distribution of Horse and Auto-Related Structures, Inventoried from the 1919-1921 *Baist Real Estate Atlas of Surveys of Washington D.C.,* Library of Congress, Generated by My Maps, Google.

Advertisements

Newspaper advertisements for cars become increasingly present in the 1920s while horse-related advertisements become largely restricted to horse racing content. Car companies and businesses, such as Ford and Chevrolet, publish advertisements such as this one (Figure 62).

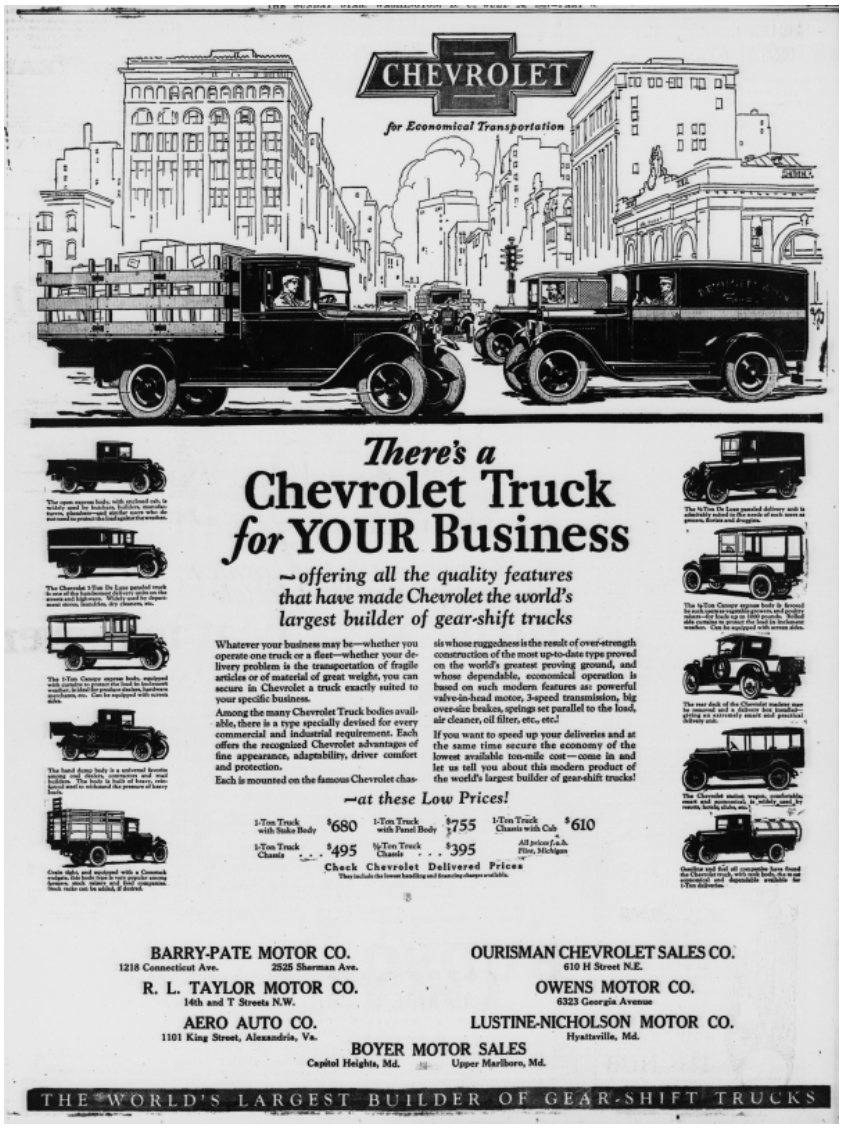
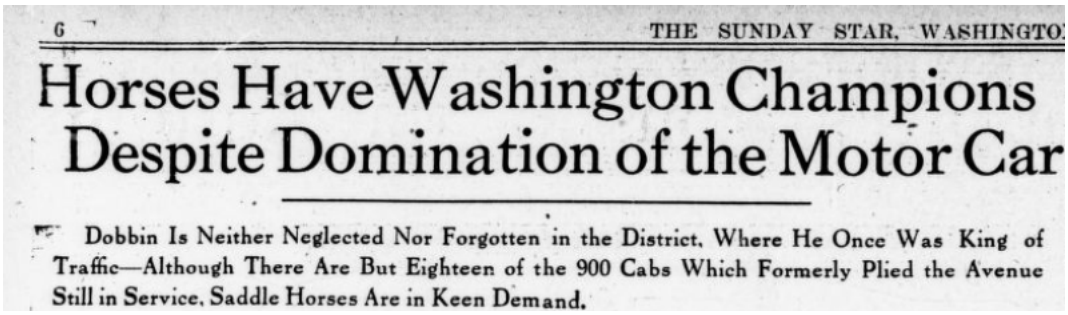


Figure 62. Chevrolet Advertisement, *Evening Star*, July 24th, 1927, pg. 51, Chronicling America.

This Chevrolet ad promotes the purchase of their trucks for business purposes: "There's a Chevrolet Truck for YOUR Business." The advertisement also provides insight into the cost of automobiles during the early years of auto transit. The price of these trucks range from $395 for a ½-ton truck to $755 for a 1-ton truck with a paneled body.[27]

By the 1920s, the automotive industry was in full swing. Cars and automotive businesses increasingly outnumber horse-related ones during this decade. One *Sunday Star* newspaper article from August of 1923 speaks more to this trend. The article, titled "Horses Have Washington Champions Despite Domination of the Motor Car," speaks to the harsh decline in horse-drawn carriages for hire in the city. Specifically, a carriage company owned by B. F. McCaully once employed over 900 horse-drawn cabs. By 1923, only eighteen remain in service (Figure 63).[28]



6 THE SUNDAY STAR, WASHINGTO

Horses Have Washington Champions Despite Domination of the Motor Car

Dobbin Is Neither Neglected Nor Forgotten in the District, Where He Once Was King of Traffic—Although There Are But Eighteen of the 900 Cabs Which Formerly Plied the Avenue Still in Service, Saddle Horses Are in Keen Demand.

Figure 63. "Horses Have Washington Champions Despite Domination of the Motor Car," *The Sunday Star,* August 19th, 1923, pg. 6, Chronicling America.

An *Evening Star* advertisement from 1920 further demonstrates the trends away from horse transit to the automobile. The advertisement for a parade honoring World War I veterans mentions that "…hearses, twelve men acting as guard of honor, and automobiles with wounded

[27] "Chevrolet Advertisement," *Evening Star*, July 24, 1927, https://chroniclingamerica.loc.gov/lccn/sn83045462/1927-07-24/ed-1/seq-51/.

[28] "Horses Have Washington Champions Despite Domination of the Motor Car," *Evening Star*, August 19, 1923, https://chroniclingamerica.loc.gov/lccn/sn83045462/1933-08-13/ed-1/seq-68/.

soldiers…" will lead the march.[29] A similar advertisement for new mail delivery vehicles demonstrates this trend further (Figure 64).[30]

Figure 64. "Brush Package Cart Solves the Problem of Modern Merchandise Delivery," *The Washington Times,* October 4, 1908, Chronicling America.

Boyd's 1922 directory lists over 228 automotive-based structures, showing a drastic change from 1908 (see Table 4). These include twenty-two gas and service stations, fifty-five repair shops, 75 automotive sales and rental companies, five auto-based tourism companies, one automotive school, and more. Interestingly, this directory lists both automotive garages and automobile "liveries," demonstrating the co-existence of transit methods during this period.[31] Of these "liveries," thirteen are auto-related while eight are dedicated to horse transit.

Surprisingly this directory also shows that the horse industry remains present even as its demand is threatened by new forms of transit. Only twenty horse-related structures are

[29] "MacSwiney Memorial Ceremonies."
[30] "Brush Package Cart Solves the Problem of Modern Merchandise Delivery."
[31] Boyd, *Boyd's Directory of the District of Columbia*, 1922, 2060.

documented in this directory. This includes the eight livery stables mentioned previously, seven horseshoers, four horse dealers, and one horse, carriage, and wagon auctioneer.[32]

While horse transit declines during this period, the significance and symbolism of horses shifts as well. While horse transit for everyday travel became obsolete by the introduction and widespread accessibility of the automobile, the horse took on a new identity, one that became increasingly elitist in nature: pleasure riding and horse racing. No longer were horses used by the everyday man for their daily needs in Washington DC. Horses were now a pastime, and an expensive one at that. Advertisements such as is seen in Figure 65 discusses the cost of buying into the horse-racing industry, where one unfortunate owner purchased their racehorse for $65,000, though the horse died before he was entered into any races.[33] While these trends in Washington DC demonstrate a shift to an elitist pastime, it is important to note that horses remained prominent in farming uses well into the 1940s.[34]

[32] William H. Boyd, *Boyd's Directory of the District of Columbia* (Washington D.C.: R. L. Polk & Co., 1922), https://babel.hathitrust.org/cgi/pt?id=uiug.30112107850288&view=1up&seq=3.

[33] "Buy A Race Horse," *Evening Star*, August 13, 1933, https://chroniclingamerica.loc.gov/lccn/sn83045462/1933-08-13/ed-1/seq-68/.

[34] McShane and Tarr, *The Horse in the City: Living Machines in the Nineteenth Century*.

Figure 65. "How to Lose Your Bankroll Fast—Buy a Race Horse," *Evening Star,* August 13th, 1933, pg. 4.

Urban Renewal

More than a century of growth and development in Washington, D.C. brought drastic changes in the cultural landscape. Urban renewal projects and the expansion and establishment of new government agencies necessitated large-scale demolition projects to fit their growing needs. Here, the impact of the construction of the Federal Triangle, Gallery Place-Chinatown Metro station, and the Capitol One Arena are discussed in detail. It should be noted, however, that while the focus is placed on these three projects, they are not the only to impact the landscape of the study area.

The Federal Triangle

Many horse-related structures inventoried for this study between B St. (Constitution Avenue), E St., 15th Street, and Pennsylvania Avenue were demolished by the Federal

Government to construct the Federal Triangle in the mid-1930s. Today, this area contains the Department of Commerce, the Post Office Department Building, the Environmental Protection Agency, the Old Post Office Pavilion, the Internal Revenue Building, the Department of Justice, and the National Archives (Figure 66).[35] Other structures within the study area were also subject to this same fate, though not typically at the hands of the Federal Government.

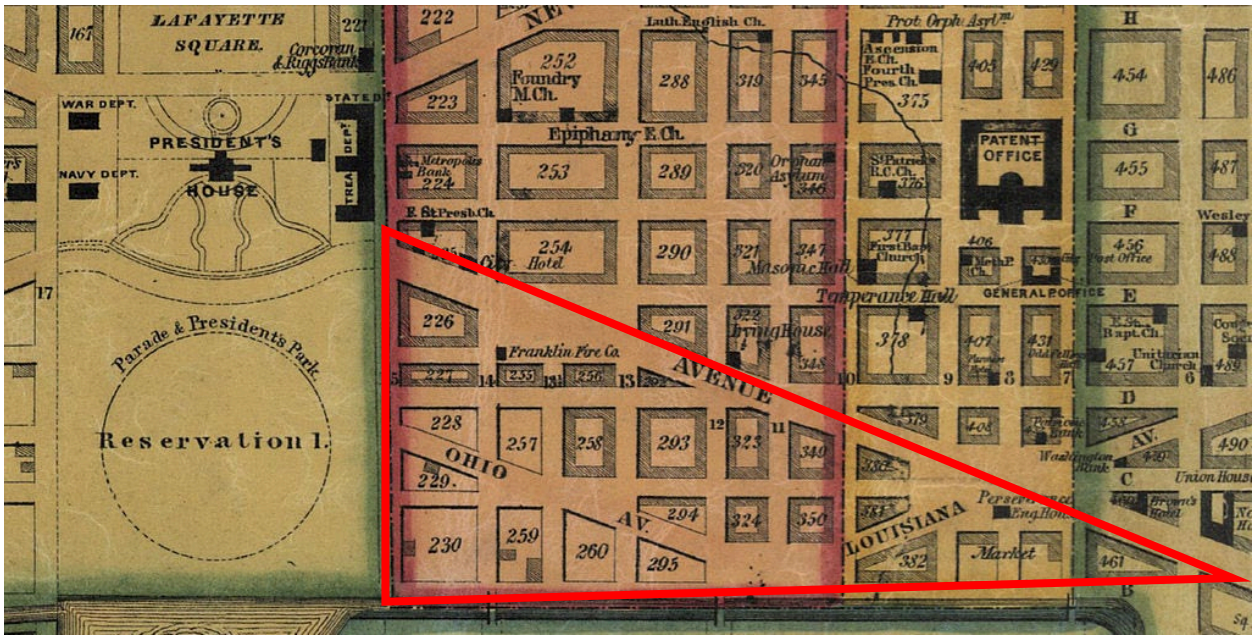


Figure 66. Map of the City of Washington D.C. Showing Impacted Areas by the Construction of the Federal Triangle (Red Boundary), 1851, James Keily and Lloyd Van Derveer, Library of Congress.

Additionally, the urban renewal projects surrounding DC's Chinatown, orientated along H and I street and between 5th and 8th streets NW, drastically impacted the cultural landscape of the city in the late 20th century. These projects include the construction of the Gallery Place-Chinatown Metro station in 1986 and the 1997 construction of the Capitol One Arena.[36] As a result of these urban renewal practices, several inventoried structures were demolished. This

[35] Lee, *Architects to the Nation*.

[36] Evelyn Khoo, "Under the Arch of Friendship: Culture, Urban Redevelopment and Symbolic Architecture in D.C. Chinatown, 1970s-1990s" (College Park, Maryland, University of Maryland, College Park, 2009), DRUM, file:///C:/Users/lmedl/Downloads/Khoo_umd_0117N_10438.pdf.

includes a stable at the corner of 8th and I street NW, the former Howard's Livery Stables, and a significant number of residential stables oriented along alley ways. The site of the stable at H & 8th street is now occupied by newer developments while the former Howard's Livery Stables site is where the Capitol One Area stands.

Extant Structures

Today, few horse-related structures exist within the study area, let alone in their original context. Inventoried structures which do exist primarily include engine houses and residential carriage houses and stables. Larger buildings, such as commercial liveries and wagon factories, were demolished to suit the needs of a growing city. The lack of horse-related structures may largely be contributed to the pace of growth in the city, which took off in the first half of the 20th century, and large-scale urban renewal projects that followed as result of city growth. Between 1880 and 1930, Washington D.C.'s population grew from 177,000 to 487,000 (Figure 67). As the city grew to accommodate increasing populations, obsolete structures, such as those related to the horse industry, were replaced with new structures to suit contemporary needs.[37]

[37] Matthew B. Gilmore, "District of Columbia Population History," 2020, https://matthewbgilmore.files.wordpress.com/2020/04/dcpopulation-history2019cropped.pdf.

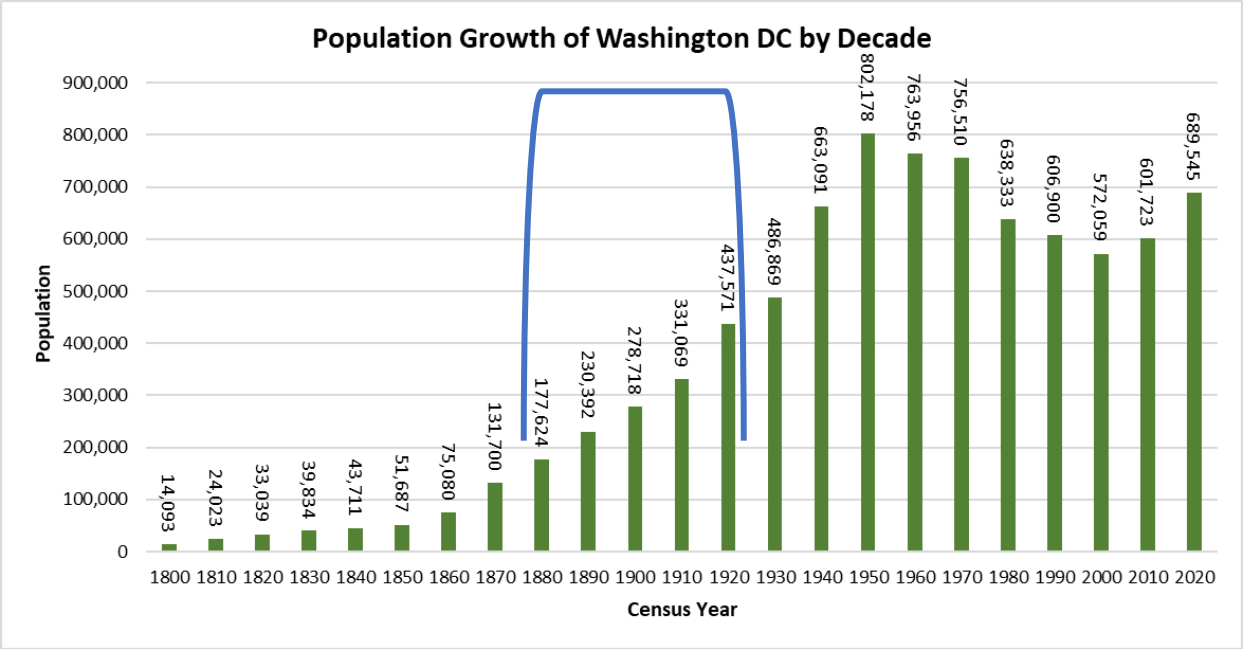


Figure 67. Population Growth of Washington D.C. by Decade, Data previously collected by Matthew B. Gilmore, "District of Columbia Population History."

Engine Houses

The most common types of horse-related structures which remain today are fire engine houses. The current function of these structures is split between those which still serve their original purpose and those that have been reused.

Engine House Number 6 still stands at 438 Massachusetts Ave. NW though its function has changed. Number 6 is presently used as a restaurant and bar called the Present Company Public House. It still boasts its original façade with two engine entrances on either side of a central pedestrian door (Image 68). Its interior has been completely renovated to fit the needs of the restaurant, though the business does play off of the structure's historic character and function as a firehouse.

Figure 68. Former Fire Engine House Number 6, Currently the Present Company Public House Restaurant, Present Company Public House.

Likewise, Engine House Number One remains in its original physical structure though its function has changed. It has been relocated to 931 R Street NW and relisted as Engine House

Number Seven from which it maintained operation well into the mid-20th century.[38] At present, it has been repurposed for residential needs and serves as an AirBnB (Image 69). The first floor has been refitted to suit the needs and livelihood of the owner while the second floor, nicknamed "The Penthouse," serves as an AirBnB rental. The listing offers enough room for fourteen guests, five bedrooms, eight full-sized beds, and four bathrooms. To allow for such accommodations, recent renovations were undertaken and documented on a Netflix series titled *Stay Here*. These renovations converted the entire first floor, which previously housed fire engines, into residential spaces and played off the historic character and function of structure.[39]

In both instances, the engine houses have experienced relatively little change to their exterior physical structures while transitioning to residential or commercial needs. This is likely due to their continued use throughout the 20th century which secured their survival throughout significant periods of urban renewal.

[38] Mike Legeros, "Historic and Former District of Columbia Firehouses," 2009, https://www.legeros.com/history/dc/.

[39] "Stay Here," *Stay Here: DC Firehouse* (Washington, D.C.: Netflix, 2018), Netflix, https://www.netflix.com/watch/80201747?trackId=14277283&tctx=-97%2C-97%2C%2C%2C%2C%2C%2C80201870%2CVideo%3A80201747%2CdetailsPageEpisodePlayButton; "The Historic DC Firehouse 4," Listed for $1,123 Per Night, AirBnB, n.d., https://www.airbnb.com/rooms/22745173?source_impression_id=p3_1682889287_97FaWWrmvKkzP%2FvW.

Figure 69. Former Fire Engine House Number One, Relocated to 931 R Street NW, AirBnB.

The Van Ness Mansion Stable

The Van Ness Mansion Stable, while still standing, does not function in its original context. It is the only remaining structure of the once prominent Van Ness estate located to the southwest of the White House grounds. Its size and potential for reuse may be the only factor to save it from demolition. Now used for maintenance and office spaces, the structure serves the Pan American Union Building.

Residential Carriage Houses

The most common form of reuse of horse-related structures are carriage houses repurposed to suit automotive needs. Though few of these structures remain within the study area as it is now largely commercial and government-oriented, their presence remains in residential areas of the

city, such as Georgetown. One such structure located at 1313 31st Street NW demonstrates how seamlessly carriage entrances are reused as garage doors (Image 70).

Figure 70. Residential Carriage House, 1313 31st Street NW, Historic American Buildings Survey, Library of Congress.

Conclusion

For centuries, horse transit was the primary and most efficient means of transit throughout the world. As the industrial revolution raged on during the late 19th and early 20th centuries and new automotive means of transportation emerged, horse transit became increasingly obsolete. Importantly, the invention of assembly line production by Henry Ford and its application to automotive manufacturing in 1913 lead to quicker production times, lower production costs, and more affordability for the everyday American. With automobiles more accessible in cost and

quantity, horse-powered transportation was largely left behind as less reliable, more time-consuming, and, overall, antiquated.[40]

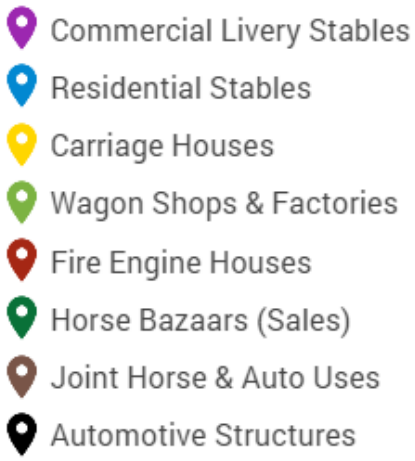
However, this transition from horses to automobiles was not instantaneous in Washington D.C. In fact, it was a slow and gradual process that stretched over two decades (1900s-1920s). During this period the horse and automobile industry co-existed, as demonstrated by the presence of both structure and business types during this period.

This transition also signified a shift towards modernity and refinement to Americans across the country. Horses that once symbolized an individual's class, wealth, or political status were redefined and associated as lower-class and rural life.[41] During the first half of the 20th century, horses remained viable as farm animals to help with farming activities, thus providing an association with rural activities that existed well after the transition to the automotive transit methods While horse transit declined as the primary means of transportation, the horse industry evolved into more recreational and increasingly elitist activities, such as horse racing and shows, maintaining their previous status to some degree within cities.

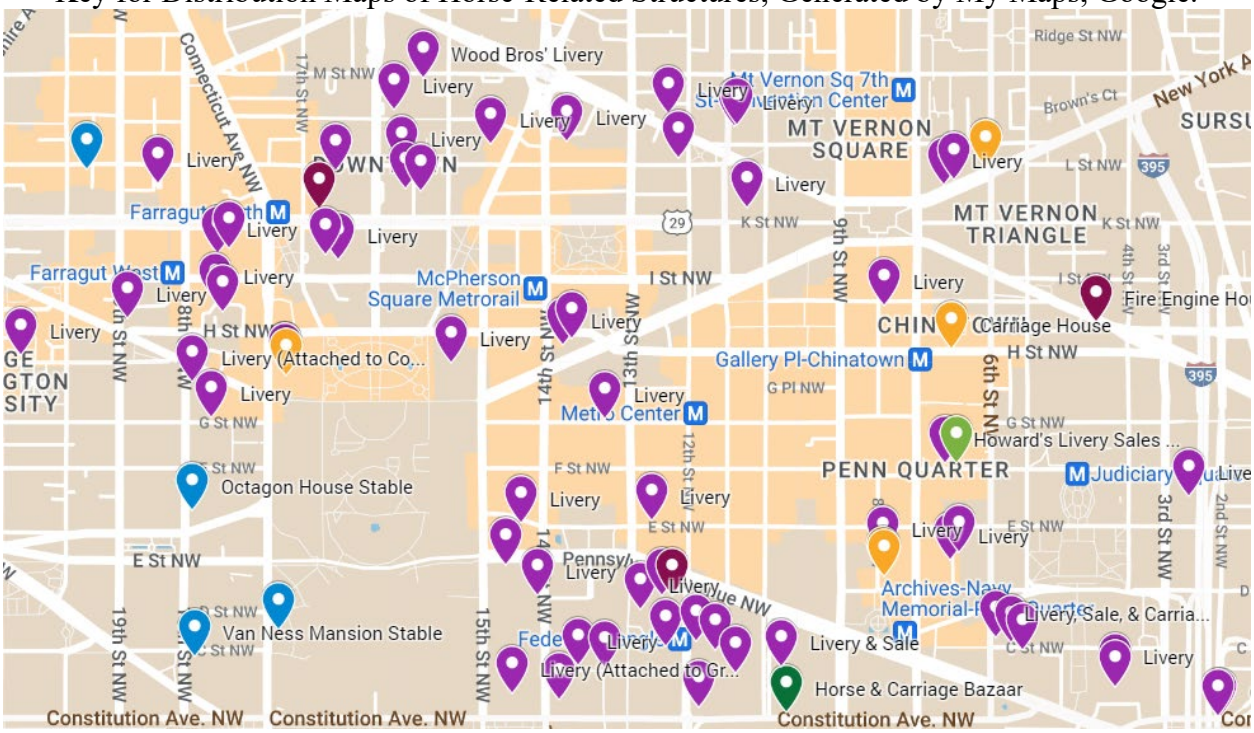
The transition from horse to automotive transportation also brought with it immense change that impacted the very fabric of Washington D.C. This change necessitated new structures and businesses oriented towards automotive transit, such as garages and gas stations. Gas stations popped up at strategic points throughout the city, primarily at major intersections, and required new infrastructure to direct and store gasoline at these locations. Meanwhile, garages began to occupy large areas within the city to accommodate residents, tourists, and retail shoppers. Their impacts remain an issue for preservationists and urban planners to this day.

[40] Lucy Medley, "The Horse-Powered City: Alexandria, Virginia," 2021.
[41] McShane and Tarr, *The Horse in the City: Living Machines in the Nineteenth Century*, 179.

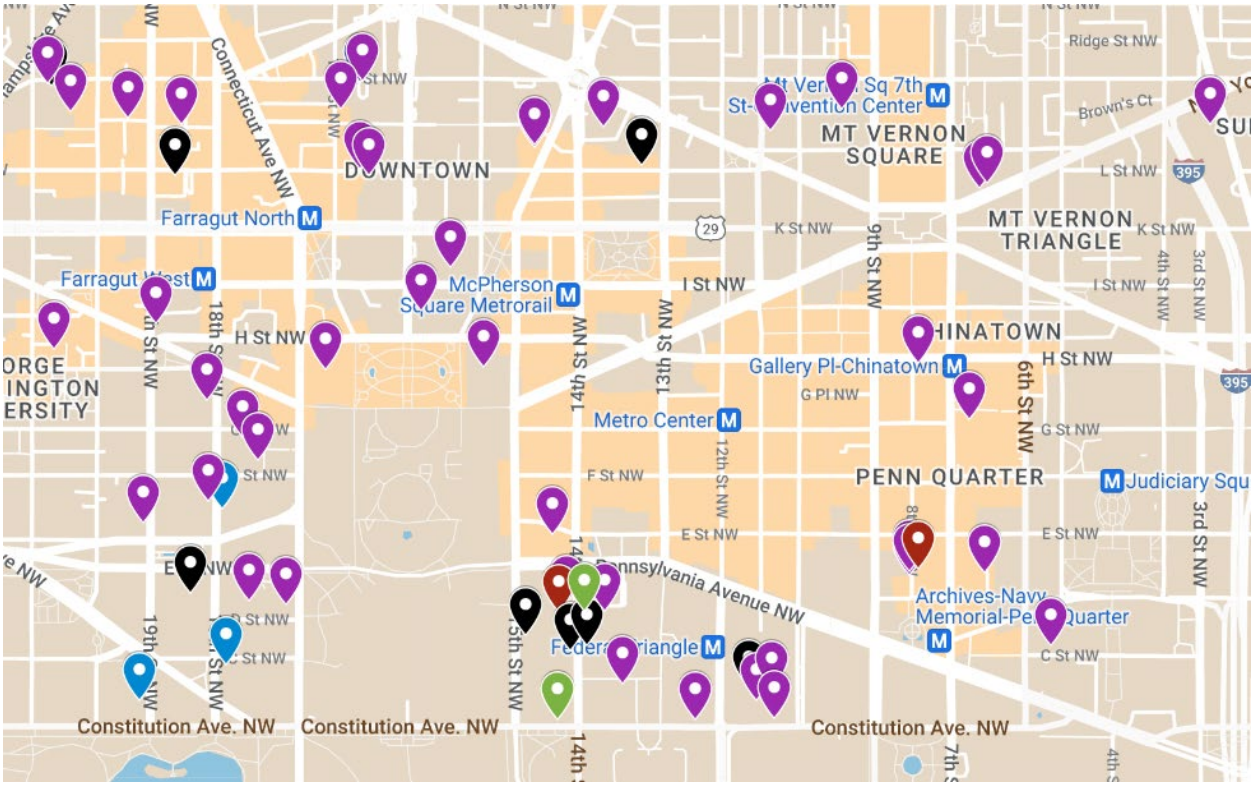
APPENDIX I: INVENTORY OF HORSE & AUTO-RELATED STRUCTURES



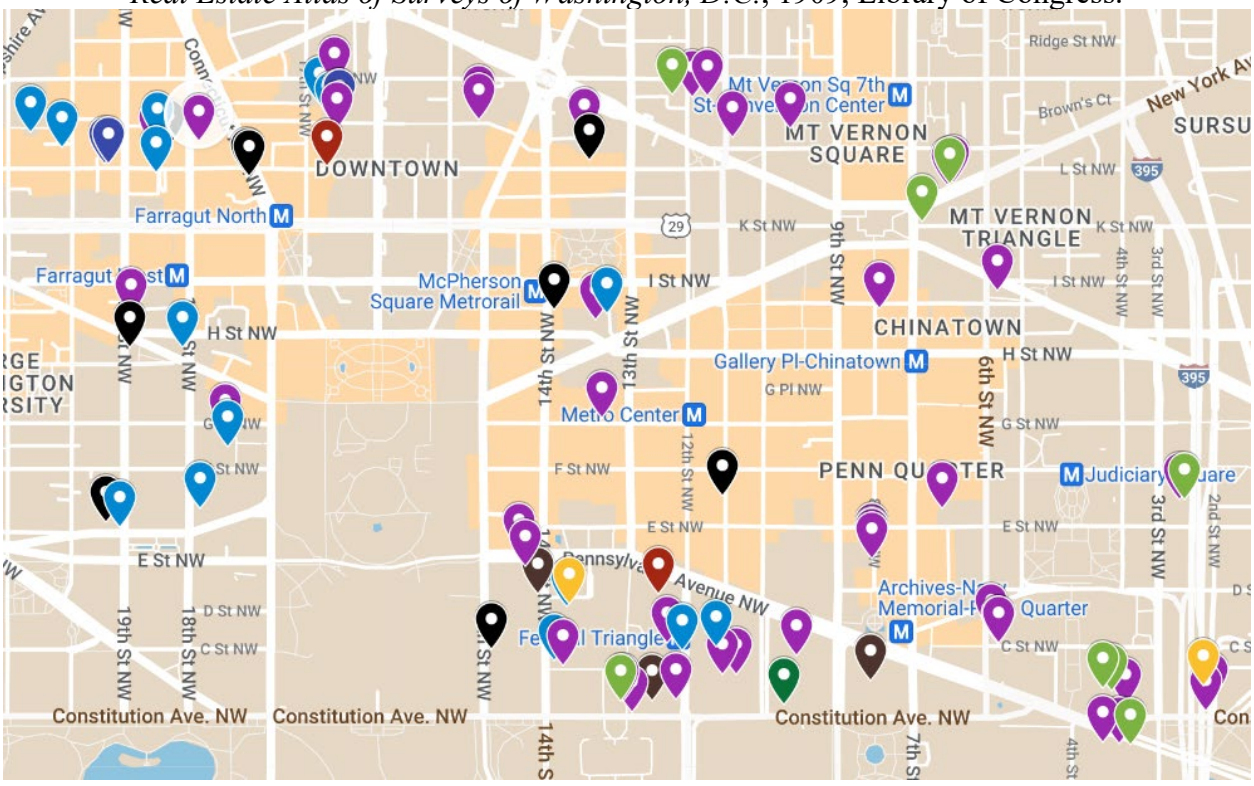
Key for Distribution Maps of Horse-Related Structures, Generated by My Maps, Google.



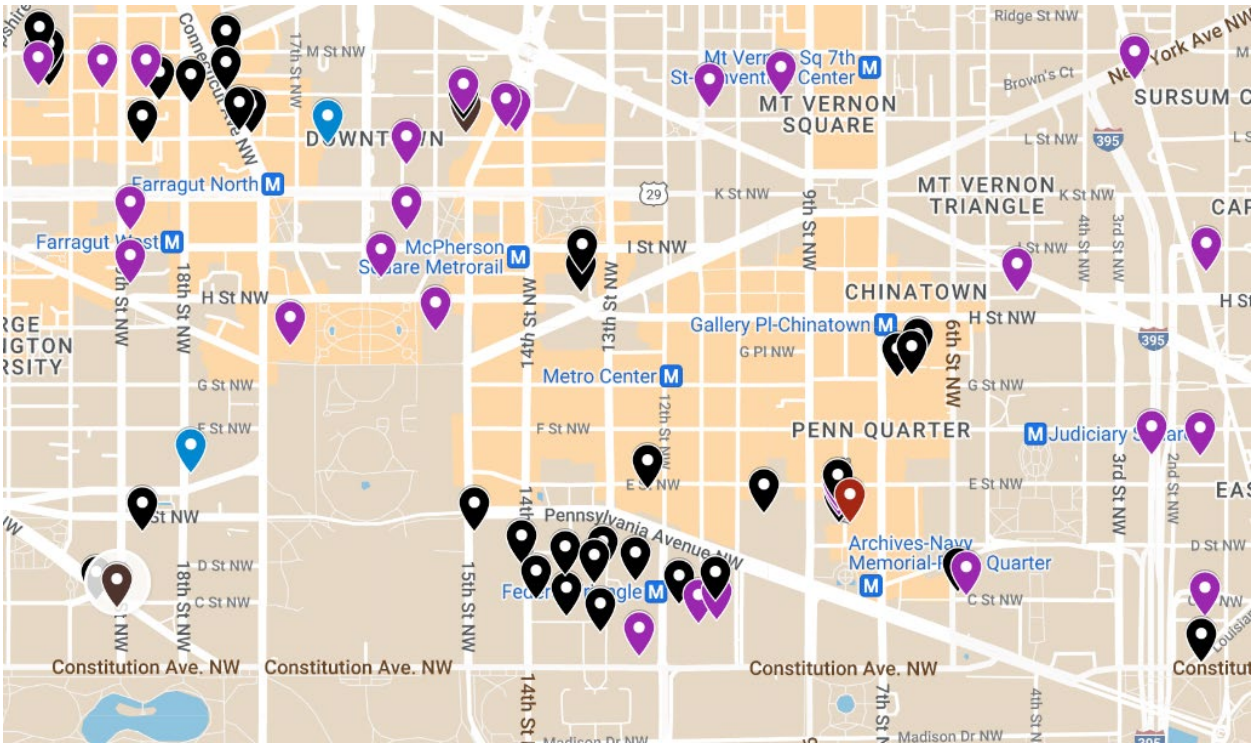
Map 1. Location and Distribution of Horse and Auto-Related Structures, Inventoried from *Sanborn Fire Insurance Map of Washington, D.C.*, 1888, Library of Congress.



Map 2. Location and Distribution of Horse and Auto-Related Structures, Inventoried from *Baist Real Estate Atlas of Surveys of Washington, D.C.*, 1909, Library of Congress.



Map 3. Location and Distribution of Horse and Auto-Related Structures, Inventoried from *Sanborn Fire Insurance Map of Washington, D.C.*, 1903-1916, Vol. 1-2, Library of Congress.



Map 4. Location and Distribution of Horse and Auto-Related Structures, Inventoried from *Baist Real Estate Atlas of Surveys of Washington D.C.,* 1919, Library of Congr

Comprehensive Inventory of Horse & Auto Related Structures																			
1888 Sanborn Fire Insurance Map				1909 Baist's Real Estate Atlas of Surveys				1903-1916 Sanborn Fire Insurance Map Vol. 1				1903-1916 Sanborn Fire Insurance Map Vol. 2				1919-1921 Baist Real Estate Atlas of Surveys			
Business Name	**Structure Type**	**Address**	**Map**	**Business Name**	**Structure Type**	**Address**	**Map**	**Business Name**	**Structure Type**	**Address**	**Map**	**Business Name**	**Structure Type**	**Address**	**Map**	**Business Name**	**Structure Type**	**Address**	**Map**
J. M. Young Carriage Repository	Carriage House	479-481 C St	10	Livery	Stable	M NW	7	Carriage Repository	Carriage House	309 1/2 14th St	7	General Wardw. & Carriage Supplies	Carriage Supplies	1001 7th NW	132	Garage (Repurposed from Livery)	Garage	Alley between M, L, 20th, and 21st St	7
Adams Express Stables (and Wagon House)	Stable	Corner of B and 2nd	10	Garage	Garage	M NW (btwn 21 and 20)	7	Ebbitt Ho. Wagon & Carriage House	Hotel/Carriage House	Corner of 13th 1/2 and C St	7	J. G. Bowen Livery	Stable	623-627 NY NW	132	Garage	Garage	M St. NW	7
Wm. McGalt & Co. Flour and Feed (Hay & Straw House, Warehouses, mills, etc.)	Feed	Corner of 1st, Penn, and D	10	Livery	Stable	alley, M NW (btwn 21 and 20)	7	Engine Co. No. 2	Stable	1408 D St	7	Draney's Portland Stable	Stable	643-645 NY NW	132	Garage	Garage	Alley between M, L, 20th, and 21st St	7
Orrison George A.	Stable	470 C St. NW	10	Stables (x3) Attached to Coal Yard	Stable	531 I NW	8	Stable (attached to W. T. Galliher & Bro. Lumber Yard)	Stable	Corner of B and 13th 1/2	7	H. T. Ries Wagon MKR	Stable	635-637 NY NW	132	Garage	Garage	Alley between M, L, 20th, and 21st St	7
Price John T. & Sons	Stable	311 6th St. NW	10	Herdic Phaeton	Stable	E, NY, 19th, and 20th NW	10	John Simmons Sale Stable	Stable	12th and Ohio	7	J. W. Preston Midway Livery	Stable	714 I NW	133	Livery	Stable	Alley between M, L, 20th, and 21st St	7
Livery (x2)	Stable	Jackson Hall Alley) btwn 3rd and 4th_	10	Quarter master's Stables	Stable	19th NW	10	Stable (M. H. Sullivan Accomodation	Stable	1210-1214 Ohio	7	Livery	Stable	rear 615-621 E NW	135	Livery	Stable	Alley between M, L, 19th, and 20th St	7

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Business Name	Structure Type	Address	Map	Business Name	Structure Type	Address	Map	Business Name	Structure Type	Address	Map	Business Name	Structure Type	Address	Map	Business Name	Structure Type	Address	Map
								Repository)											
Livery	Stable	466 C St	10	Cairo Stables	Stable	M NW	14	Stable	Stable	1208 C	7	Liveries x4	Stable	410-416, 418-420, 422-424, 426 8th NW	135	Quartermasters Garage	Garage	Between NY Ave., C, and 20th St. NW	10
Livery & Sales	Stable	307-309 6th St	10	Large Stable Complex	Stable	17th NW	14	Stable (attached to Punching & Cutting/ Storage)	Stable	1210-1212 C	7	Livery	Stable	Hook & Ladder Alley (btwn 5th, 4th, MA and H)	149	U.S. Quartermasters Garage and Stables	Garage/Stables	Corner of C and 19th St. NW	10
Geo. W. Knox Express Stables	Stable	201-209 B St. NW	10	Herdic Cab Co.	Transit Company	M NW	14	Stable x2 (attached to J. Edward Chapman coal & Wood Yard/ W. A. Pierce Lumber Yard)	Stable	B, C, 14th, and 15th	7	Kann's Livery Stable	Stable	Sheriffs and Goff Allies (btwn E, F, 2nd, and 3rd)	152	Garage	Garage	L St. NW	14
B & O Express Stables	Stable	485-485 2/3 C St	10	Wagon Works	Wagon Works	L NW	14	Fire Truck "C"	Stable/Emergency Services	13th 1/2, 14th, C st and Ohio Ave	7	Wagon House	Wagon House	Btwn Sheriffs and Goff Alley (2nd, 3rd, F, E NW)	152	Garage	Garage	L St. NW	14
John McDermott & Bros.	Wagon Shop	Corner of Pennsylvania &	10	Garage	Garage	L NW	15	Police Station No. 1	Stable/Emergency Services	314-316 12th St	7	U.S. Express Co	Express	485 C NW	153	Garage	Garage	M St. NW	14

Comprehensive Inventory of Horse & Auto Related Structures																			
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Coach Factory		Missouri Ave																	
Wagon Shop	Wagon Shop	105 6th St. NW	10	Large Stable Complex	Stable	L NW	15	Chemical Engine No. 1	Stable/Emergency Services	1204 D	7	Virginia Stables	Stable	485 1/2 C NW	153	Garage	Garage	17th St. NW	14
Wagon Shop	Wagon Shop	Behind 350 Penn	10	Stable	Stable	17th NW	15	Washington Electric Vehicle Transportation	Transit Hub(?)	C, Ohio, 14th, & 15th St	7	National Stables & Wagon House	Stable	305-311 6th NW	153	Garage (Repurposed from Livery)	Garage	18th St. NW	14
Wagon Shop	Wagon Shop	109 6th St. NW	10	Stable	Stable	19th NW	15	Union Transfer Co. with "Carriage & Wagon Works."	Transit Hub(?)	1358-1362 D St	7	"Carriage Repository/ M'F'G Co"	Carriage House	310 PA NW	154	Garage	Garage	Alley btwn 18th, 19th, L, and M St. NW	14
Livery	Stable	Btwn Sheriff and Goff Alleys	11	Stable adjacent to YMCA building	Stable	F NW	16	Andrew J. Joyce Carriage Co.	Carriage House	410-414 14th	8	Adams Express Co.	Express	322 PA NW	154	Livery	Stable	Alley btwn 18th, 19th, L, and M St. NW	14
Stable (large, residential ?)	Stable (R?)	Griffin Alley (btwn 1st and 2nds St, and F and G St)	11	Octagon House Stable	Stable (R)	1799 NY NW	16	Stable	Stable	1418 E	8	Geary's Livery	Stable	Jackson Hall Alley (btwn PA, C, 4 1/2, and 3rd NW)	154	Garage	Garage	L St. NW	15
Fire Engine House with Stables	Emergency Services	422 MA Ave. NW	13	Garage	Garage	Alley off 18th NW	17	Stable/Ambulance (attached to	Stable/Emergency Services	401 15th	8	[Livery] "Fire Proof"	Stable	rear 328 PA NW	154	Washington Riding Academy	Riding School	L St. NW	15

Comprehensive Inventory of Horse & Auto Related Structures																			
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								Nurses' Home)											
Carriage House	Carriage House	411(?) 8th St	14	Auto Carriage & Factory	Auto Factory	L NW	21	"Hack"	Stable/Sales(?)	1405 E	8	[Wagon House]	Wagon House	Jackson Hall Alley (btwn PA, C, 4 1/2, and 3rd NW)	154	Stable Attached to Commercia Building	Stable	19th NW	15
Flour and Feed	Feed	208 7th St	14	Stable associated with Lenox Hotel	Stable	L NW	21	The Willard Automobile Station & Stables	Stables/Auto	400-408 14th	8	"Carriage Ho."	Wagon House	Jackson Hall Alley (btwn PA, C, 4 1/2, and 3rd NW)	154	Octagon House Stables	Stable	NY Ave. NW	16
John Harrison Livery Stables	Stable	930 C St. NW	14	Livery	Stable	I NW	22	Hay & Feed	Feed	915 Louisiana/ 918-920 C	9	Adams Exp. Co's Stables	Stable	211-213 B NW	165	Stable Attached to Dept. of State Annex	Stable	PA Ave. NW	16
Horse & Carriage Bazar	Sales	933 B St	14	Automobile Garage (Hall of the Ancients)	Garage	NY NW	23	Horse & Carriage Bazaar	Sales	940-942 Louisiana/ 933 B	9	Geo. W. Knox Express Co's Wagon House and Stables	Stable	212-220 2nd NW	165	Garage	Garage	19th NW	17
Livery	Stable	419 (?) 8th St	14	Automobile Garage	Garage	15th, C, and Ohio NW	24	Sales Stable "P. Dougherty"	Stable	208-210 11th	9	"Blksm. Shop & Wagon Repairing of Geo. W. Knox Exp. Co."	Wagon Repair	Express Alley (C, B, 2nd, and 3rd NW)	165	Livery	Stable	Alley btwn 15th, Vermont Ave., L, and M NW	21

Comprehensive Inventory of Horse & Auto Related Structures																			
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Livery (x3) and carriage house, with wheelwright and painting, and blacksmith	Stable	410-428 8th St	14	Garage	Garage	C NW	24	"Private" Stable	Stable	1112 C	9					Garage	Garage	Alley btwn 15th, Vermont Ave., L, and M NW	21
Livery	Stable	927 D St (behind storefront)	14	Engine House No. 2	Emergency Services (auto)	D NW	24	Magrath & Kennelley Sales Stable	Stable	205-207 11th	9					Auto & Carriage Factory	Auto/Wagon Shop	L St. NW	21
Carriage Repository	Carriage House	309 1/2 14th St	15	Stables associated with Printing Works	Stable	D NW	24	Stable (attached to "Hay Market Square")	Stable	Corner of B and Ohio	9					Livery	Stable	Alley btwn 13th, 14th, L, and MA NW	21
Engine House No. 2	Emergency Services	1206 D St NW	15	Stable, adjacent to Potomac Electric Power Co	Stable	C NW	24	"Printing./Auto. F Alarm."	Auto Repair	512 11th	10					Garage	Garage	H St. NW	22
Police Station No. 4 (with stable behind)	Emergency Services	314-316 12th St NW (214-216?)	15	Stable	Stable	D NW	24	Stable (attached to Merchant's Transfer & Storage Co.?)	Stable	Temperance Hall Alley	10					Livery	Stable	16th St. NW	22

Comprehensive Inventory of Horse & Auto Related Structures																			
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Feed Stall	Feed	1009 Ohio Ave	15	Carriage Works	Wagon Works	B NW	24	Sale Stable	Stable/Sales	Alley btwn D St and Temperance Hall Alley	10					Garage	Garage	Alley btwn H, I, 13th, and 14th St. NW	22
Feed Stall	Feed	1011-1013 Ohio Ave	15	Carriage Factory	Wagon Works	D NW	24	Automobile Repairing & Storage	Auto Repair	817-819 14th	11					Livery	Stable	Madison Pl.	23
Livery	Stable	410 14th St NW	15	Stable, possible associated with The Royalton Hotel	Stable	alley btwn 9th, 10th, M and L NW	28	Livery	Stable	1905-1909 G	11					Garage	Garage	15th St. NW	24
Allison Nailor Jr. Livery	Stable	1826 E St NW	15	Stable	Stable	corner of I and 9th NW	29	Livery	Stable	Chain House Alley	11					Garage	Garage	14th St. NW	24
Livery	Stable	1107 C St NW	15	Engine House No. 14	Emergency Services (auto)	8th NW	30	Private Stables	Stable	Chain House Alley	11					Garage	Garage	D St. NW	24
Livery	Stable	311-313 12th St NW	15	Automotive Garage	Garage	C NW	31	Automobile Storage & Repair Co.	Auto Repair	1919 L	12					Union Transfer Co.	Stable	D St. NW	24
Livery	Stable	1010 C St	15	Police Station No. 1	Emergency Services (Horse)	12th NW	31	Stable (residential)	Stable	Green Court (alley)	12					Truck House "C"	Garage	Ohio, C, and 14th St. NW	24
Livery	Stable	Corner of E and 14th St NW	15	Stable	Stable	11th NW	31	Prof. Gale School & Livery (with attached carriage house)	Livery	1105 11th	17					Garage (Repurposed from Livery)	Garage	Corner of C and 13 1/2 St. Nw	24

Comprehensive Inventory of Horse & Auto Related Structures																			
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Magrath & Kennelly	Stable	11th St NW/1010 C St Nw	15	Stable	Stable	11th NW	31	Woodward & Lothrop Ware Ho's & Stable, House No. 1 & No. 20	Stable	Shepherd Alley	17					Federal Taxicab & Auto Livery	Garage	Block btwn 13th and 13 1/2 St. Nw	24
Livery	Stable	Corner of 13th 1/2 and C Streets NW	15	Livery & Planing Mills	Stable	Ohio NW	31	"Carriages"	Carriage House/Sales?	Wylie's C't	21					Municipal Garage	Garage	13 1/2 St. NW	24
Livery	Stable	1407(?) E St	15	Livery (x3)	Stable	NY NW	34	Mount Vernon Livery (x2, one on Proctor Alley)	Livery	1236 12th	21					Garage	Garage	D St. NW	24
Stable (@ Grayson & Cain./Geo. A. Shehan Lumber Yards)	Stable	15th and B Streets NW	15	Stable	Stable	C NW	37	Wm. Sauter Carriage Factory	Carriage Factory	1625-1627 L	29					Livery	Stable	11th St. NW	28
Stable (@ Miller & Co.)	Stable	Corner of 14th and C St NW	15					L. Mangan Feed W. Ho.	Feed	1619 L	29					Livery	Stable	Alley btwn L, M, 9th, and 10th St. NW	28
Stable (@ Pettit & Dripps. Eagle Iron Works)	Stable	B St NW	15					Downey's Livery Stable	Livery	1622-1624 L	29					Garage	Garage	E St. NW	31

Comprehensive Inventory of Horse & Auto Related Structures																			
1888 Sanborn Fire Insurance Map				1909 Baist's Real Estate Atlas of Surveys				1903-1916 Sanborn Fire Insurance Map Vol. 1				1903-1916 Sanborn Fire Insurance Map Vol. 2				1919-1921 Baist Real Estate Atlas of Surveys			
Business Name	Structure Type	Address	Map	Business Name	Structure Type	Address	Map	Business Name	Structure Type	Address	Map	Business Name	Structure Type	Address	Map	Business Name	Structure Type	Address	Map
Stable (attached to C. A. Schneider & Sons Union Iron Works)	Stable	1208 C St Nw	15					"Private" Stables, large	Stable	1139 17th	29					Garage	Garage	Alley btwn D, E, 9th, and 10th St. NW	31
Stable attached to E. E. Jackson & Co. Lumber Yard	Stable	Corner of 13th 1/2 St NW and Ohio Ave	15					Cairo Stables and Repository	Stable	1618-1624 M	29					Garage	Garage	8th St. NW	31
Stable attached to Chas. E. Koller Bakery	Stable	313 13th St NW	15					"Private" Stable	Stable	1621 L	29					Garage	Garage	8th St. NW	31
Stables attached to stock yard and hay market	Stable	B and 12th Streets NW	15					Engine Ho. No. 4 "1 steam F. Eng. 12 Men, 1000' Hose 1 Hose Carriage "	Stable (x2), Emergency Services	1643 K	29					Livery	Stable	8th St. NW	31
Stables (x2)	Stable (R)	1006-1008 C St NW	15					G. C. Mountcastle Livery Stable	Livery	Vermont Ct.	30					Livery	Stable	8th St. NW	31
Residential Stables (x2)	Stable (R)	10th St NW	15					M. Mulvihill Livery Stables	Livery	Vermont Ct.	30					Fire Engine House No. 14 (Auto)	Emergency Services	8th St. NW	31

Comprehensive Inventory of Horse & Auto Related Structures																			
1888 Sanborn Fire Insurance Map				1909 Baist's Real Estate Atlas of Surveys				1903-1916 Sanborn Fire Insurance Map Vol. 1				1903-1916 Sanborn Fire Insurance Map Vol. 2				1919-1921 Baist Real Estate Atlas of Surveys			
Business Name	**Structure Type**	**Address**	**Map**	**Business Name**	**Structure Type**	**Address**	**Map**	**Business Name**	**Structure Type**	**Address**	**Map**	**Business Name**	**Structure Type**	**Address**	**Map**	**Business Name**	**Structure Type**	**Address**	**Map**
Stable	Stable (R)	1219-1221 C. St NW	15					Herdic Cab Co. & Metropolitan Coach Co.	Coach Co.	1910 E	37					Garage	Garage	C St. NW	31
Stables (x2)	Stable (x2)	1105-1109 Ohio Ave	15					"Wagon Ho. Trasury Dept. Stables-"	Stable	1910 E St (corner of NY, 19th, and E)	37					Liveries & Planing Mills	Stable	Ohio, B, 12th, and 13th St. NW	31
Stables (x3) attached to Geo. Bogus. Wood & Coal Yard	Stable (x3)	14th and B Streets NW	15					Arlington Stables Livery	Livery	1724 G	38					Livery	Stable	11th St. NW	31
Union Tansfer Co.	Transit Hub	1354-1356 D St NW	15					"Private" stables and wagon house (x5)	Stable	"D." 18th	38					Livery	Stable	11th St. NW	31
Andrew J. Joice & Co. Carriage Factory	Wagon Shop	412-416 14th St NW/ 1402 E St NW	15					Stable and Wagon House belonging to "U.S. Gov'm't Printing Office"	Stable/Wagon House	1723 F	38					Garage	Garage	11th St. NW	31

Comprehensive Inventory of Horse & Auto Related Structures																			
1888 Sanborn Fire Insurance Map				1909 Baist's Real Estate Atlas of Surveys				1903-1916 Sanborn Fire Insurance Map Vol. 1				1903-1916 Sanborn Fire Insurance Map Vol. 2				1919-1921 Baist Real Estate Atlas of Surveys			
Business Name	**Structure Type**	**Address**	**Map**	**Business Name**	**Structure Type**	**Address**	**Map**	**Business Name**	**Structure Type**	**Address**	**Map**	**Business Name**	**Structure Type**	**Address**	**Map**	**Business Name**	**Structure Type**	**Address**	**Map**
Wm. Walter's Sons Carriage Factory	Wagon Shop	317 14th St NW	15					Automobile Repair Shop/Machine Shop	Auto Repair	713-715 19th	40					Garage (Repurposed from Livery)	Garage	G St. NW	35
Blacksmith & Wagon Shop	Wagon Shop	1012-1014 C St	15					Livery	Livery	809-817 19th	40					Union Building Garage	Garage	G St. NW	35
Livery	Stable	1223 E St. NW	16					Private Stable with Horse Shed	Stable	716-720 18th	40					Garage	Garage	Alley btwn G, H, 6th, and 7th St. NW	35
Livery	Stable	309 G St	16					Hay & Feed (x2)	Feed	1915-1917 L	41					Livery	Stable	Alley btwn H,4th, 5th, and MA NW	35
Carriage Factory	Wagon Shop	1221(?) E St. NW	16					Quartermaster's Stables	Stable	Government Alley	41					Garage	Garage	6th St. NW	37
Carriage House	Carriage House	625 G St	17					Private Stables	Stable	2028 1/2 M	41					Livery	Stable	C St. NW	37
Carriage Repository	Carriage House	622 G St	17					National Capital Automobile Co. "Auto. Storage & Repairing"	Auto Repair	Queens Court	42					Livery	Stable	Corner of 3rd, NJ, and NY NW	40

Comprehensive Inventory of Horse & Auto Related Structures																			
1888 Sanborn Fire Insurance Map				1909 Baist's Real Estate Atlas of Surveys				1903-1916 Sanborn Fire Insurance Map Vol. 1				1903-1916 Sanborn Fire Insurance Map Vol. 2				1919-1921 Baist Real Estate Atlas of Surveys			
Business Name	**Structure Type**	**Address**	**Map**	**Business Name**	**Structure Type**	**Address**	**Map**	**Business Name**	**Structure Type**	**Address**	**Map**	**Business Name**	**Structure Type**	**Address**	**Map**	**Business Name**	**Structure Type**	**Address**	**Map**
Livery (x2)	Stable	627-631 G St. NW	17					Automobile Storage & Repairing	Auto Repair	1028 Connecticut	42					Livery	Stable	Alley btwn 1st, NJ, I, and K NW	41
Livery	Stable	627-629 G St. NW	17					Automobile Storage	Auto Storage	1026 Connecticut	42					Livery	Stable	Alley btwn 2nd, 3rd, E, and F St. NW	42
Carriage Factory/ Wheelwright	Wagon Shop	621 G St. NW	17					Stable (attached to Walters & Co Wood & Coal Yard)	Stable	1117 18th	42					Livery	Stable	Alley btwn 1st, 2nd, E, and F St. NW	42
Carriage Factory	Wagon Shop	636 G St	17					Private Stable	Stable	Queens Court	42					Livery	Stable	C St. NW	43
Carriage Repository	Carriage House	601-603 NY Ave. NW/1020-1022 6th St. NW	18					Private Stable	Stable	1828 L	42					Garage (Repurposed from Livery)	Garage	B St. NW	43
Feed Stall	Feed	507 K St	18					Livery	Livery	Queens Court	42								
Livery and Carriage House	Stable	Corner of 8th and I st	18																
Livery	Stable	625-633 NY Ave. NW	18																
Livery "(Being Built)"	Stable	639-649 NY Ave. NW	18																
Carriage Factory	Wagon Shop	1004 9th St	18																

Comprehensive Inventory of Horse & Auto Related Structures																			
1888 Sanborn Fire Insurance Map				1909 Baist's Real Estate Atlas of Surveys				1903-1916 Sanborn Fire Insurance Map Vol. 1				1903-1916 Sanborn Fire Insurance Map Vol. 2				1919-1921 Baist Real Estate Atlas of Surveys			
Business Name	**Structure Type**	**Address**	**Map**	**Business Name**	**Structure Type**	**Address**	**Map**	**Business Name**	**Structure Type**	**Address**	**Map**	**Business Name**	**Structure Type**	**Address**	**Map**	**Business Name**	**Structure Type**	**Address**	**Map**
Wagon Shop (x2, attached to liveries?)	Wagon Shop	635-637 NY Ave. NW	18																
Carriage House	Carriage House	Chain House Alley	19																
Livery	Stable	Chain House Alley	19																
Livery	Stable	1327 H St. NW	19																
No. 1 Engine House with Stables	Emergency Services	1643 K St. NW	29																
Wood Bros Livery	Stable	1620 M St. NW	29																
Livery	Stable	1527-1529 L St. NW	29																
Downey's Livery	Stable	622-624 L St. NW	29																
Stable (x2, attached to Wood and Coal Yard)	Stable (x2)	Corner of M and 16th st	29																
Carriage House	Carriage House	17th St. NW	30																

Comprehensive Inventory of Horse & Auto Related Structures																			
1888 Sanborn Fire Insurance Map				1909 Baist's Real Estate Atlas of Surveys				1903-1916 Sanborn Fire Insurance Map Vol. 1				1903-1916 Sanborn Fire Insurance Map Vol. 2				1919-1921 Baist Real Estate Atlas of Surveys			
Business Name	**Structure Type**	**Address**	**Map**	**Business Name**	**Structure Type**	**Address**	**Map**	**Business Name**	**Structure Type**	**Address**	**Map**	**Business Name**	**Structure Type**	**Address**	**Map**	**Business Name**	**Structure Type**	**Address**	**Map**
Livery	Stable	805-817 19th St. NW	31																
Police Station No. 3	Stable	K St	31																
"Private Stables"	Stable (R)	1822 (?) L St. NW	31																
Straw House	Feed	20th St	32																

APPENDIX II: TABLES AND GRAPHS

Horse-Related Structures				
	1888 Sanborn	1909 Baist	1903-1916 Sanborn	1919 Baist
Livery Stables	54	49	51	30
Carriage Houses	10	10	8	0
Carriage Shops & Factories	11	3	5	1
Emergency Services	4	0	0	0
Expresses	1	0	2	0
Total	80	62	66	31

Summary Table of Inventoried Horse-Related Structures Between 1888 & 1919.

Auto-Related Structures				
	1888 Sanborn	1909 Baist	1903-1916 Sanborn	1919 Baist
Repair Shops	0	1	6	1
Garages	0	6	2	35
Gas & Service Stations	0	0	1	0
Emergency Services	0	2	3	3
Total	0	9	12	39

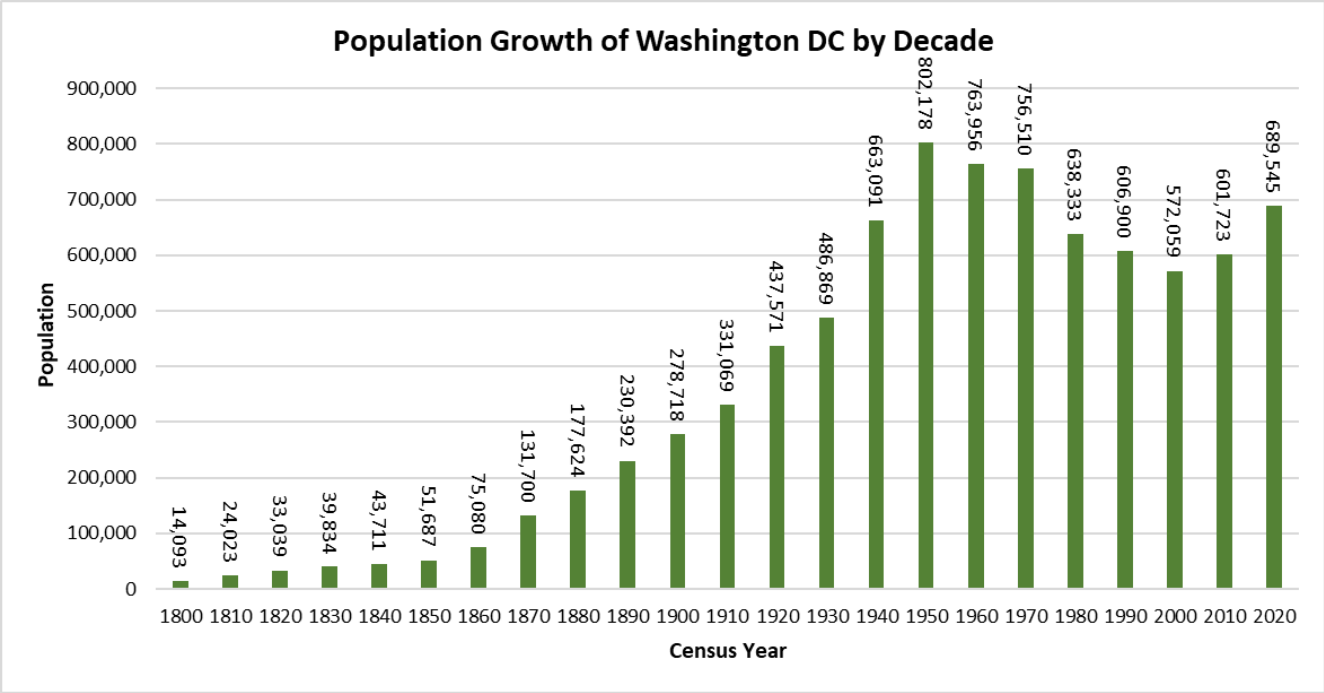
Summary Table of Inventoried Auto-Related Structures Between 1888 & 1919.

Washington DC Motor Vehicle Registrations in 1946							
Total	Private & Commercial				Publicly Owned		
	Total	Automobiles & Taxi Cabs	Busses	Trucks	Total	Federal	State, County, & Municipal
130,799	127,352	110,250	26,148	14,954	3,447	1,538	1,909

Data from the Federal Highway Administration for 1946 Motor Vehicle Registrations in Washington D.C.

Street Widths in Washington DC as Recorded by Sanborn Maps		
	1888	**1916**
Street	Width (Feet)	Width (Feet)
Pennsylvania Avenue NW	160	160
Massachusetts Avenue NW	160	160
Ohio Avenue NW	160	160
New York Avenue NW	130	130
B Street NW	90	135
C Street NW	90	90
D Street NW	70	70
E Street NW	90	90
F Street NW	100	100
G Street NW	90	90
H Street NW	90	90
I Street NW	90	90
K Street NW	147.5	147.5
L Street NW	90	90
M Street NW	90	90
1st Street NW	85	90
2nd Street NW	90	90
3rd Street NW	110	110
4th Street NW	80	110
5th Street NW	80	110
6th Street NW	100	100
7th Street NW	80	85
8th Street NW	100	100
9th Street NW	85	85
10th Street NW	85	85
11th Street NW	85	112
12th Street NW	85	85
13th Street NW	110	110
14th Street NW	110	110
15th Street NW	110	110
16th Street NW	100	160
17th Street NW	110	110
18th Street NW	90	90
19th Street NW	90	110
20th Street NW	90	90
21st Street NW	90	90

Street Widths Summary Table, Data Collected From *Sanborn Fire Insurance Maps of Washington, D.C.*, 1888 & 1903-1916.



Population Growth of Washington DC by Decade.

APPENDIX III: FEDERAL HIGHWAY ADMINISTRATION DATA TABLES

PUBLIC ROADS ADMINISTRATION
FEDERAL WORKS AGENCY

STATE MOTOR-VEHICLE REGISTRATIONS-1946

COMPILED FOR CALENDAR YEAR FROM REPORTS OF STATE AUTHORITIES 1/

TABLE MV-1, 1946
ISSUED APRIL 1947

STATE	MOTOR VEHICLES								TRAILERS AND SEMITRAILERS				MOTORCYCLES				COMPARISON OF REGISTRATIONS OF PRIVATE AND COMMERCIAL MOTOR VEHICLES, 1945-1946			STATE
	TOTAL	PRIVATE AND COMMERCIAL				PUBLICLY OWNED			TOTAL	PRIVATE AND COMMERCIAL 6/	PUBLICLY OWNED		TOTAL	PRIVATE AND COMMERCIAL	PUBLICLY OWNED		TOTAL 1945 REGISTRATIONS	INCREASE 1946	PERCENTAGE INCREASE	
		TOTAL	AUTOMOBILES (INCLUDING TAXICABS)	BUSSES 2/	TRUCKS AND TRUCK TRACTORS 3/	TOTAL	FEDERAL 4/	STATE, COUNTY, AND MUNICIPAL 5/			FEDERAL	STATE, COUNTY, AND MUNICIPAL			FEDERAL	STATE, COUNTY, AND MUNICIPAL				
ALABAMA	437,428	430,247	323,079	3,331	103,837	7,181	1,147	6,034	7,708	7,630	34	44	4,723	4,631	-	92	359,237	71,010	19.8	ALABAMA
ARIZONA	164,154	159,729	124,037	668	35,044	4,425	2,210	2,215	12,889	12,709	16	164	1,592	1,563	-	29	143,017	10,712	11.7	ARIZONA
ARKANSAS	323,597	318,837	223,582	1,014	94,241	4,760	860	3,900	22,209	22,135	5	69	1,986	1,962	-	24	275,221	43,616	15.8	ARKANSAS
CALIFORNIA	3,161,142	3,099,510	2,661,638	6,453	431,419	61,632	6,298	55,334	310,405	307,822	48	2,535	38,121	36,350	4	1,767	2,856,662	244,848	8.6	CALIFORNIA
COLORADO	394,004	388,118	302,320	934	84,864	5,886	1,839	4,047	3,603	3,573	30	-	3,418	3,416	2	-	342,425	45,693	13.3	COLORADO
CONNECTICUT	555,161	549,840	470,215	2,455	77,170	5,321	372	4,949	16,011	15,579	-	432	4,339	4,179	-	160	505,385	44,455	8.8	CONNECTICUT
DELAWARE	73,867	72,829	57,845	485	14,599	1,038	113	925	3,447	3,335	2	110	587	507	-	80	68,316	4,513	6.6	DELAWARE
FLORIDA	605,611	597,087	477,208	2,255	117,624	8,524	1,143	7,381	62,444	62,051	14	379	8,816	8,634	-	182	518,185	78,902	15.2	FLORIDA
GEORGIA	583,000	575,615	450,072	3,429	122,114	7,385	1,678	5,707	23,289	23,211	7	71	4,656	4,447	-	209	523,196	52,419	10.0	GEORGIA
IDAHO	172,908	169,740	7/ 124,688	251	7/ 45,441	3,168	1,320	1,848	23,795	23,672	21	102	1,090	1,082	-	8	150,570	19,170	12.7	IDAHO
ILLINOIS	1,869,682	1,856,056	1,611,046	3,382	241,628	13,626	2,126	11,500	45,930	45,591	5	334	16,016	15,605	-	411	1,721,060	138,996	7.8	ILLINOIS
INDIANA	1,075,257	1,066,689	894,058	6,322	166,309	8,568	712	7,856	120,829	120,478	4	347	17,551	17,349	-	202	983,767	82,922	8.4	INDIANA
IOWA	749,188	741,019	623,405	1,068	116,546	8,169	476	7,693	108,344	107,819	1	524	5,660	5,597	-	63	692,969	48,030	6.9	IOWA
KANSAS	651,708	644,825	502,228	510	142,087	6,883	583	6,300	11,386	11,580	6	-	5,787	5,787	-	-	600,471	44,354	7.4	KANSAS
KENTUCKY	495,733	489,267	386,007	2,632	100,568	6,466	710	5,756	19	(8/)	19	-	3,501	3,501	-	-	433,007	54,260	12.5	KENTUCKY
LOUISIANA	427,597	423,499	328,057	3,273	92,169	4,098	941	3,157	26,701	26,573	7	121	4,971	4,870	1	100	404,253	19,246	4.8	LOUISIANA
MAINE	232,760	229,826	171,784	844	9/ 57,198	2,934	350	2,584	16,673	9/ 16,376	-	297	1,705	1,594	-	111	207,069	22,757	11.0	MAINE
MARYLAND	529,725	525,211	437,944	2,854	84,413	4,514	1,286	3,228	14,874	14,759	15	100	5,457	5,422	-	35	458,676	66,535	14.5	MARYLAND
MASSACHUSETTS	979,418	969,911	836,836	5,782	129,293	9,507	1,293	8,214	38,777	38,774	3	-	4,579	4,579	-	-	858,973	110,938	12.9	MASSACHUSETTS
MICHIGAN	1,602,392	1,579,095	7/ 1,400,465	1,750	7/ 176,880	23,297	1,275	22,022	205,437	205,435	2	-	13,099	13,099	-	-	1,453,573	125,592	8.6	MICHIGAN
MINNESOTA	815,610	807,610	674,514	1,859	131,237	8,000	1,066	6,934	59,037	10/ 58,651	17	369	6,002	5,845	-	157	749,553	58,057	7.7	MINNESOTA
MISSISSIPPI	323,909	318,987	248,723	4,068	95,536	4,922	1,038	3,884	20,761	20,696	24	41	2,216	2,210	-	6	267,296	55,691	21.1	MISSISSIPPI
MISSOURI	970,939	965,206	776,808	3,530	184,868	5,733	1,284	4,449	64,530	64,368	2	160	6,487	6,468	2	17	851,291	110,915	13.0	MISSOURI
MONTANA	179,136	175,069	120,102	651	54,296	4,067	1,730	2,357	5,018	4,855	9	154	712	712	-	-	156,885	18,164	11.6	MONTANA
NEBRASKA	440,787	436,475	350,620	711	85,144	4,312	694	3,618	51,803	51,398	13	394	3,966	3,915	-	51	405,841	30,634	7.5	NEBRASKA
NEVADA	51,890	50,057	39,117	150	10,790	1,773	633	1,140	3,763	3,718	30	15	328	316	-	12	45,936	4,121	9.0	NEVADA
NEW HAMPSHIRE	144,594	142,015	109,510	616	31,889	2,579	159	2,420	7,699	7,659	-	40	1,229	1,229	-	-	128,316	13,699	10.7	NEW HAMPSHIRE
NEW JERSEY	1,137,693	1,125,280	968,296	5,963	171,021	12,413	901	11,512	20,214	20,199	15	-	10,999	9,043	-	456	1,019,586	103,694	10.4	NEW JERSEY
NEW MEXICO	136,282	133,702	11/ 96,986	11/ 1,861	34,855	2,580	1,325	1,255	4,701	4,676	25	-	950	945	4	1	118,385	15,317	12.9	NEW MEXICO
NEW YORK	2,673,745	2,642,435	2,268,932	10,510	362,993	31,310	2,785	28,525	91,571	90,358	4	1,209	19,880	18,909	1	950	2,329,995	312,440	13.4	NEW YORK
NORTH CAROLINA	695,466	680,320	553,691	2,883	123,748	15,142	1,220	13,922	64,024	62,963	11	1,050	6,454	6,354	-	100	605,807	74,515	12.3	NORTH CAROLINA
NORTH DAKOTA	194,847	193,089	138,953	268	53,868	1,758	655	1,103	1,091	1,086	5	-	575	574	-	1	180,890	12,199	6.7	NORTH DAKOTA
OHIO	2,110,845	2,087,268	1,843,892	3,319	240,057	23,577	1,517	22,060	183,268	182,089	10	1,169	26,034	26,293	3	338	1,905,072	182,196	9.6	OHIO
OKLAHOMA	568,041	559,653	429,621	1,908	128,124	8,388	1,252	7,136	10,212	10,007	20	185	4,390	4,390	-	-	504,681	55,172	10.9	OKLAHOMA
OREGON	468,583	460,659	360,168	1,456	12/ 99,025	7,924	2,146	5,778	30	(12/)	30	-	3,097	3,091	6	-	414,369	40,270	11.2	OREGON
PENNSYLVANIA	2,208,605	2,184,271	1,845,886	8,850	329,535	24,334	1,704	22,630	66,959	65,912	5	1,042	19,947	19,471	3	473	1,960,634	223,637	11.4	PENNSYLVANIA
RHODE ISLAND	195,567	193,808	167,431	823	25,554	1,759	116	1,643	2,829	2,798	3	28	1,734	1,640	-	94	178,106	15,702	8.8	RHODE ISLAND
SOUTH CAROLINA	399,640	393,513	315,795	3,396	74,322	6,127	615	5,512	8,314	8,307	7	-	4,359	4,277	-	82	335,520	57,993	17.3	SOUTH CAROLINA
SOUTH DAKOTA	195,626	192,944	150,549	233	42,162	2,682	867	1,815	27,387	27,214	9	164	1,013	994	-	19	170,575	14,369	8.0	SOUTH DAKOTA
TENNESSEE	533,795	526,513	421,513	3,402	101,598	7,282	1,887	5,395	106	(8/)	104	2	5,304	5,297	-	7	460,081	66,432	14.4	TENNESSEE
TEXAS	1,819,049	1,794,860	1,623,437	2,014	369,409	24,189	3,670	20,519	84,700	83,946	37	717	17,390	17,073	12	303	1,583,451	211,409	13.4	TEXAS
UTAH	176,281	171,081	139,402	341	31,318	3,220	1,123	2,097	1,208	1,154	35	19	905	869	-	36	153,890	17,171	11.2	UTAH
VERMONT	102,409	101,585	13/ 88,117	491	13/ 13,007	824	198	626	4,466	4,460	3	-	717	717	-	-	89,935	11,650	13.0	VERMONT
VIRGINIA	636,699	627,085	507,380	2,959	116,746	9,414	1,476	7,938	27,280	27,073	13	194	8,223	8,040	10	173	548,329	78,756	14.4	VIRGINIA
WASHINGTON	657,826	644,686	525,964	1,549	117,173	13,140	2,866	10,274	50,253	49,835	53	365	4,555	4,331	2	222	614,027	30,659	5.0	WASHINGTON
WEST VIRGINIA	389,497	324,164	258,874	1,148	63,942	5,333	417	4,916	8,414	8,362	1	51	2,889	2,878	-	11	284,362	39,802	14.0	WEST VIRGINIA
WISCONSIN	919,047	907,849	744,911	1,998	160,940	11,198	881	10,317	9,986	9,717	1	268	6,274	5,955	-	319	819,752	88,097	10.7	WISCONSIN
WYOMING	95,725	91,429	65,812	440	24,177	2,296	870	1,426	11,334	11,202	5	127	516	516	-	-	82,422	9,007	10.9	WYOMING
DISTRICT OF COLUMBIA	130,799	127,352	110,250	2,148	14,954	3,447	1,538	14/ 1,909	1,354	1,245	6	103	1,064	916	51	97	110,570	16,782	15.2	DISTRICT OF COLUMBIA
TOTAL	34,373,002	33,945,817	28,100,188	119,937	5,725,692	427,185	63,425	363,760	1,967,282	1,933,053	734	13,495	314,073	306,580	101	7,392	30,698,429	3,307,388	10.8	TOTAL

1/ REGISTRATION PERIODS ENDING NOT EARLIER THAN NOVEMBER 30 AND NOT LATER THAN JANUARY 31 ARE CONSIDERED CALENDAR-YEAR PERIODS. IN THOSE STATES WHERE THE REGISTRATION PERIOD IS DEFINITELY REMOVED FROM THE CALENDAR YEAR, REGISTRATION FIGURES GIVEN ARE FOR THE TWELVE CONSECUTIVE MONTHS OF THE CALENDAR YEAR.

2/ FOR STATES WHICH DID NOT SEGREGATE BUSSES FROM OTHER VEHICLES, THE SEGREGATION HAS BEEN APPROXIMATED FROM OTHER DATA AVAILABLE. FOR DETAIL OF BUS REGISTRATIONS, SEE TABLE MV-10 TO BE PUBLISHED LATER.

3/ FOR DETAIL OF TRUCK AND TRUCK-TRACTOR REGISTRATIONS, SEE TABLE MV-9 TO BE PUBLISHED LATER.

4/ DOES NOT INCLUDE VEHICLES OWNED BY THE WAR AND NAVY DEPARTMENTS, OR BY THE MARITIME COMMISSION.

5/ FOR STATES THAT DID NOT SEGREGATE STATE, COUNTY, AND MUNICIPAL MOTOR VEHICLES, THE SEGREGATION HAS BEEN APPROXIMATED FROM OTHER DATA AVAILABLE. FOR CLASSIFICATION OF STATE, COUNTY, AND MUNICIPAL VEHICLES, SEE TABLE MV-7.

6/ FIGURES FOR TRAILERS AND SEMITRAILERS ARE GIVEN AS REPORTED BY THE STATES IN MOST CASES. APPARENT INCONSISTENCIES ARE DUE TO THE FACT THAT SOME STATES REQUIRE THE REGISTRATION OF HOUSE TRAILERS, LIGHT WORK TRAILERS, AND SIMILAR VEHICLES, WHEREAS OTHER STATES REGISTER ONLY FREIGHT-CARRYING TRAILERS AND SEMITRAILERS.

7/ TAXICABS INCLUDED WITH TRUCKS.

8/ HEAVY SEMITRAILERS INCLUDED WITH TRUCK-TRACTORS AS ONE UNIT. FULL TRAILERS NOT PERMITTED. AUTOMOBILE TRAILERS PERMITTED BUT NOT REQUIRED TO REGISTER.

9/ COMMERCIAL FULL TRAILERS INCLUDED WITH TRUCKS.

10/ INCLUDES 45,560 LIGHT TRAILERS USED WITH AUTOMOBILES. SUCH TRAILERS ARE REGISTERED FOR A THREE-YEAR PERIOD, AND ONLY THOSE REGISTERED DURING 1946 ARE INCLUDED HERE.

11/ TAXICABS AND CARS FOR RENT INCLUDED WITH BUSSES.

12/ TRAILERS INCLUDED WITH TRUCKS.

13/ TRUCKS UNDER 1,500 POUNDS CAPACITY INCLUDED WITH AUTOMOBILES.

14/ INCLUDES 841 AUTOMOBILES OF THE DIPLOMATIC CORPS.

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