Reimagining DC 295 as a vital multi modal corridor:
The Case for Reconnecting Southeast Washington DC

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A capstone thesis paper submitted to the Executive Director of the Urban & Regional Planning Program at Georgetown University’s School of Continuing Studies in partial fulfillment of the requirements for Masters of Professional Studies in Urban & Regional Planning.

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ABSTRACT

Cities across the globe are making the case for highway removal. Highway removal provides alternative land uses, reconnects citizens and natural landscapes separated by the highway, creates mobility options, and serves as a health equity tool. This Capstone studies DC 295 in Washington, DC and examines the cases of San Francisco’s Embarcadero Freeway, Milwaukee’s Park East Freeway, New York City’s Sheridan Expressway and Seoul, South Korea’s Cheonggyecheon Highway. This study traces the history and the highway removal success using archival sources, news circulars, planning documents, and relevant academic research. This Capstone seeks to provide a platform in favor DC 295 highway removal.
KEYWORDS
Anacostia, Anacostia Freeway, Anacostia River, DC 295, Highway Removal, I-295, Kenilworth Avenue, Neighborhood Planning, Southeast Washington DC, Transportation Planning, Urban Infrastructure

RESEARCH QUESTIONS

- How can Washington’s DC 295 infrastructure be modified to better serve local neighborhoods?
- What opportunities can be created for the Southeast DC residents following these infrastructure modifications?
- What benefits and positive impacts are associated with removing a legacy freeway and how can they be measured?
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<th>Description</th>
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<tr>
<td>AWI</td>
<td>Anacostia Waterfront Initiative</td>
</tr>
<tr>
<td>AADT</td>
<td>Annual Average Daily Traffic</td>
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<tr>
<td>AASHO</td>
<td>American Association of State Highway Officials</td>
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<tr>
<td>BRT</td>
<td>Bus Rapid Transit</td>
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<tr>
<td>BW Pkwy</td>
<td>Baltimore Washington Parkway</td>
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<tr>
<td>CBD</td>
<td>Central Business District</td>
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<tr>
<td>DC</td>
<td>District of Columbia</td>
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<tr>
<td>DDOT</td>
<td>DC Department of Transportation</td>
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<tr>
<td>FHWA</td>
<td>Federal Highway Administration</td>
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<tr>
<td>GM</td>
<td>General Motors</td>
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<tr>
<td>HOV</td>
<td>High Occupancy Vehicles</td>
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<tr>
<td>I-295</td>
<td>Interstate 295</td>
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<td>I-395</td>
<td>Interstate 395</td>
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<tr>
<td>I-495</td>
<td>Interstate 495</td>
</tr>
<tr>
<td>I-695</td>
<td>Interstate 695</td>
</tr>
<tr>
<td>MD 210</td>
<td>Maryland 210 (also referred to as Indian Head Highway)</td>
</tr>
<tr>
<td>NCPPC</td>
<td>National Capital Park and Planning Commission</td>
</tr>
<tr>
<td>SE</td>
<td>Southeast</td>
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<tr>
<td>SE DC</td>
<td>Southeast Washington DC</td>
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<tr>
<td>SHA</td>
<td>Maryland State Highway Administration</td>
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<td>-----</td>
<td>--------------------------------------</td>
</tr>
<tr>
<td>US</td>
<td>United States</td>
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Introduction
The Federal Highway Act (FHWA) of 1956, enacted by President Dwight D. Eisenhower gave birth to the interstate highway system. Its purpose was to eliminate unsafe roads, inefficient routes, traffic jams, and to provide access to US Air Force bases for defense during an attack.\(^1\) It is also of equal importance to shed light on those parties who found interest in creating America’s highway infrastructure. Dating as far back as 1939, General Motors (GM) suggested that “whenever possible” urban highways should be “so routed” as to displace outmoded business sections and undesirable slum areas.” Highways could also offer cities “abundant sunshine, fresh air,” and “fine green parkways.”\(^2\) The construction of highways garnered support via intense lobbying by trucking, petroleum and tire interest.\(^3\) History also provides insight that as early as 1936, an illegal cartel and front corporation called National City Lines owned and operated by GM’s Alfred Sloan set out to destroy the trolley systems across the nation as a way to increase automobile sales. The automobile manufacturer had succeeded in the acquisition of New York Railways. The framework was used across the US to buy rail lines, tear them out, and replace the trolley with buses. The buses were uncomfortable, operated slower than trolleys and their schedules were

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deliberately made less convenient. As a result, ridership began to decline and the illegal corporation claimed lack of profit and eventually canceled bus routes, all in support of the highway and automobiles. As highways gained momentum across the US, the landscapes of cities changed. Some urbanist argue that the idea of highways gained momentum when Le Corbusier touted them as the ‘wave of the future’ when he designed a futuristic city with elevated roadways snaking between high rise towers intended to provide space for living and working (see Figure 1).

Figure 1: Urbanism as depicted by Le Corbusier

The late 1960’s freeway projects across the nation were hitting roadblocks as angry citizens fought to save their communities, parks and cities. Public opposition to freeway building was also starting to coalesce. By 1968, urban freeway projects were under fire

in at least twenty-five (25) cities across the nation, from Boston to Los Angeles. Protests and lawsuits that were born from this unrest collectively became known as America’s “freeway revolt.”

Few thought that the highway would have long lasting deleterious impacts on the cities they were intended to serve. The pattern of destruction and lack of mobility options can be prominently seen across the North American geographical footprint and arguably around the world. Cities have recently begun to undo the destruction by a new urban typology known as “highway removal.” In many cities, it has brought awareness to urban revitalization. The current surge in projects in the United States and abroad to include but not limited to: San Francisco’s Embarcadero Freeway, Milwaukee’s Park East Freeway, New York’s Sheridan Expressway and Seoul, South Korea’s Cheonggyecheon Highway brings the conversation to the Nation’s Capital to envisioning a section of DC 295 as a vital multi modal corridor.

I write this research with the intent that it will serve as a framework and be of interest to a wide array of audiences to include public policy makers, the global health community, and key community stakeholders who share a mutual interest in highway removal, mobility options and becoming better stewards of land use. In addition, real estate developers, and urban planners with various specialties such as: environmental,

historic preservation, housing, informatics, land use, sustainability, transit oriented development, and urban design would find this research relevant. My hope is that this research will prod the reader to ask: Why would anyone demolish a highway? The answer is multifaceted yet beneficial but not without its share of challenges. Highways are sources of air pollution, noise pollution, traffic congestion\(^7\), limited to vehicular use, and often contribute to visual clutter of cities. The aforementioned reasons adversely affect property values and consume large swaths or urban space that can be reimagined as alternative land uses such as public recreational space, residential and/or business use. Highways also tend to create physical and psychological barriers between different neighborhoods, disconnects citizens from major commercial districts, and natural landscapes. Lastly, highway maintenance is extremely exorbitant and costly to rebuild. This alone, is worthy of conversation and underscores the case to reimagine DC 295 as a vital multi modal corridor which currently isolates Southeast Washington DC neighborhoods, separates the Southeast DC quadrant from downtown, and limits access to the Anacostia River waterfront.

**Literature and Professional Best Practice Review**

As the pendulum swings in favor of highway removal in cities, our need for more research grows as well. The body of research which speaks to highway removal is

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growing and capturing the attention of planners, policy makers, real estate professionals and citizens around the world. Urban Land, the magazine of The Urban Land Institute published “Top 10 Metro Highway Removal Projects” in 2011 compiling a list of highway removal projects and the progression. Research to date, generally is placed categorically to either measure the impacts of a highway removal project or on the success of a highway removal project. This body of research will focus on positive outcomes of highway demolition projects.

In “Shifting Urban Priorities: Removal of Inner City Freeways in the United States,” author Francesca Napolitan developed a list of conditions as part of her 2007 master’s thesis. The author’s theory was based on three case studies which considered highway removal which included: Milwaukee’s Park East Freeway (this highway is used as Research Finding Two in this Capstone), San Francisco’s Central Freeway and the District of Columbia’s Whitehurst Freeway. Napolitan’s provided two arguments which slightly differ from the other and are worth integrating into this body of research as conceptual ideas for recommendations.

**Napolitan’s Argument One**

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Urban highway removal will occur in locations where a policy entrepreneur for freeway removal exists and a window of opportunity occurs such that they are able to push the idea to a wider audience. Once the window has been opened, and the idea of a freeway removal has gained legitimacy as a valid option, there must be an individual or collective group who supports the opportunity cost for removing a freeway in order to benefit in another area. Ultimately for the alternative of freeway removal to be selected over other alternatives, those in power must value other benefits more than they value the benefits associated with freeway infrastructure.

**Napolitan’s Argument Two**

(1) the precondition is met: the condition of the freeway must be such that there is concern over its integrity and structural safety,

(2) a window of opportunity exists; the window may the precondition itself or an event like a public hearing, or planning process, or a temporary closure of a roadway,

(3) the value of mobility must be lower than other objectives such as economic development, quality of life, etc.,

(4) those in power must value other benefits more than they value the benefits associated with freeway infrastructure for the alternative of freeway removal to be selected over other alternatives.

These conceptual are defined as follows:

**Integrity and Safety Concerns:**
Napolitan argues that the freeway removal gains consideration if there are concerns about structural integrity and safety are merited.

**Policy Entrepreneur:**

Political Scientist John Kingdon defined a policy entrepreneur as someone who invests “their resources – time, energy, reputation, and sometimes money – in hope of a future return. That return might come to them in the form of policies of which they approve, satisfaction from participation, or even personal aggrandizement in the form of job security or career promotion.”  

11 Napolitan noted “policy entrepreneurs can be found in many parts of the policy community including within government agencies, elected or appointed officials, special interest groups, community organizations and research organizations.”

12 Napolitan argued that “urban highway removal will occur in locations where policy entrepreneurs for freeway removal exists and a window of opportunity occurs such that they are able to push the idea to a wider audience.”

**Window of Opportunity:**

Napolitan defines a “window of opportunity” as the thing that allows the teardown option to gain serious consideration. It can be any number of things, such as “the precondition itself or an event such as a public hearing, planning process, or temporary

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roadway closure.”¹⁴ Park East experienced a window of opportunity with the highways deteriorating physical condition.

It is also important to note that Napolitan draws on the research provided by Kim Tucker Henry, in her 2009 master’s thesis, “Deconstructing Elevated Expressways: An Evaluation of the Proposal to Remove the Interstate 10 Claiborne Avenue Expressway in New Orleans, Louisiana.”¹⁵ Henry’s framework is best illustrated in the Table 3 below:

<table>
<thead>
<tr>
<th>Necessary Conditions</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Integrity and Safety Concerns</td>
<td>Concerns over integrity and safety of structure.</td>
</tr>
<tr>
<td>Window of Opportunity</td>
<td>Some event that enables a freeway removal alternative to gain serious consideration.</td>
</tr>
<tr>
<td>Decreased Value of Mobility</td>
<td>Value of mobility is lower than other objectives such as economic development.</td>
</tr>
<tr>
<td>Power Brokers Value of Freeway Less than other Benefits</td>
<td>Power brokers value other benefits more than they value the benefits associated with freeway infrastructure.</td>
</tr>
<tr>
<td>Support of Business Enterprises</td>
<td>Spearheaded by business enterprises with very direct interest at stake.</td>
</tr>
<tr>
<td>Public Entrepreneurship</td>
<td>Originated in public sector and were then “sold” to prospective constituencies.</td>
</tr>
<tr>
<td>“Do No Harm” Principle</td>
<td>Not imposing more than trivial costs on neighborhood or the natural environment.</td>
</tr>
<tr>
<td>“Mitigated” Negative Impacts</td>
<td>Negative impacts “mitigated” as far as possible.</td>
</tr>
<tr>
<td>“Bottom Up Federalism”</td>
<td>Main constituency and support are local, with little if any regard for natural purposes. May be federally funded.</td>
</tr>
</tbody>
</table>

Table 3– Henry’s Expanded Necessary Conditions (Henry 2009)

¹⁴ Napolitan. Shifting Urban Priorities.
Recommendations draws on the evaluative framework of what is needed to foster an economic environment conducive for highway removal. In order to have a successful DC 295 removal, the author supports Napolitan’s and Henry’s framework to include:

1) an adequate window of opportunity;
2) strong advocate for the teardown option;
3) strong business support;
4) reasonable assurances from teardown proponents that the removal option will “do no harm.”

It is important to note that the recommendations exclude some of the aforementioned recommendations (3). Some conditions were omitted for the purposes of the rational in support of DC 295 removal. In addition, Napolitan’s conditions include:

“those in power must value other benefits more than they value the benefits associated with freeway infrastructure” was omitted because of its inability to speak to the success of the four (4) case studies provided in this Capstone. In addition, the atypical real estate development and land acquisition being realized in the District of Columbia was taken into consideration. Based upon my research, I do not think that a removal will face tremendous opposition by power brokers once benefits of land use is shared. I also chose to exclude the “do no harm” condition. If a highway teardown project of DC 295 is realized, negative impacts would already be abated.
The research also wishes to assert the importance of “mobility” in the context of a proposed reimagination of DC 295. Napolitan’s definition of “value of mobility” and its condition, although worth mentioning, does not prove to be a useful condition in this Capstone. I feel that there is a challenge with how ‘mobility’ was used. Napolitan defined it as “the quality of moving from one point to another.” This Capstone asserts that highways tend to cater exclusively to motor vehicle traffic and exclude other forms of movement (e.g. bicycle and pedestrian traffic). Thus, what Napolitan refers to as “mobility” would be more accurately described as auto-mobility as noted in Alex Snyder’s 2016 thesis “Freeway Removal in Milwaukee: Three Case Studies.”

The assumption of defining mobility by the use of automobiles suggest that a reduction in urban freeway miles automatically equates to a reduction in mobility. As readers note in Research Findings Two – Park East Freeway – Milwaukee, Wisconsin, some stakeholders viewed Park East as a barrier, mostly psychological, but a barrier nonetheless. The barrier most cited was pedestrian movement between Milwaukee’s central business district (CBD) and adjacent neighborhoods. One could argue that the Park East teardown harmed the mobility of some Milwaukee motorists, this loss of mobility resulted in gains for non-motorized forms of mobility. Thus, it would be too

simplistic to suggest that the demolition of freeway infrastructure automatically reduces a city’s overall level of mobility.\textsuperscript{17}

For the purposes of this Capstone, I define mobility as it relates to the highway removal, specifically, I-295. Mobility is defined by “the ability to move or be moved freely and easily,” according to the Oxford Dictionary. In the Southeast quadrant of Washington, DC with emphasis on the neighborhoods adjacent to DC 295, the mobility of some people, in particular drivers is blatantly high. DC 295 makes a clear statement that it was designed for motorist to travel in and outside of Washington DC into neighboring Prince George’s County, MD and to the neighboring state of Virginia as it merges into I-295. As one travels this road, it is also clear that the mobility of certain populations is almost nonexistent. DC 295 lacks connectivity. In certain places along DC 295, by observation, one can see where pedestrians have made successful attempts to transect the interstate by cutting holes in fences and pedestrian paths. Non drivers cannot easily move from place to place within this area are therefore not so “mobile.” Thus, the argument that DC 295 creates mobility does not include those who do not have access to an auto-\textit{mobile}. Mobility should accommodate pedestrians, transit users, and bicyclists as well as drivers.\textsuperscript{18}

\footnotesize
\begin{itemize}
\item \textsuperscript{17} Snyder. Freeway Removal in Milwaukee.
\end{itemize}
Organization of Study

The Capstone research methodology is organized into three (3) parts. Section One (1) examines the teardown efforts of successful highway removal projects in the US and abroad and recognizes four (4) case studies to build support in favor of DC 295 being removed and replaced with a neighborhood boulevard. Section Two (2) researches the arguments posed by the author specific to DC 295. The reader can also find in this section existing proposals for DC 295. Section Three (3) provides urban planning recommendations that would benefit Southeast Washington DC and a conclusion.

Limitations

As with any body of research, there are limitations. The cases of San Francisco’s Embarcadero Freeway, Milwaukee’s Park East Freeway, New York’s Sheridan Expressway and Seoul, South Korea’s Cheonggyecheon Highway have clearly achieved success and support the theory of highway removal. The scope of this project was to make the case to reconnect Southeast Washington DC to downtown, and the Anacostia River. Georgetown University’s program provides a limited platform to research transportation and land use planning challenges, therefore, all aspects of highway removal are not able to be defined. The scope of this project was solely to support the notion of tearing down DC 295 and replacing it with a neighborhood boulevard providing mobility options to all users, neighborhood accessibility, reconnecting the street grid (where permissible), creating a new neighborhood commercial center, and
reconnecting the Anacostia waterfront. I am committed to this body of work and future research will consider more in depth neighborhood planning, land use challenges, transportation analysis, and urban design concepts. We are witnessing a growing interest around the idea of highway removal projects. This Capstone seeks to recommend highway removal of an interstate, a federally owned expressway. The author also spent a considerable amount of time in attempt to research local records, aptly named The Washingtoniana Collection. The collection is housed at the Martin Luther King, Jr Memorial Library which is currently closed for a three-year, major modernization and is open by appointment only. The attempt to confirm an appointment was unsuccessful. I was able to successfully schedule interviews and research materials at DDOT. However, the time spent identifying unlabeled reference material(s) and receiving favorable interview replies hindered further research efforts. It is also important to note that the highway in question uses several names interchangeably to include: DC Route 295, Anacostia Freeway and Kenilworth Avenue Freeway (please refer to Route Description) and merges with I-295, which pose its own set of challenges. Federal, local, and state agencies use each of the naming designations loosely to refer to the same highway. The idea alone is worthy of its own urban typology.
ACKNOWLEDGEMENTS

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To Gloria Samuels, if one would inspect every major door of opportunity that has opened for me in life they would find your fingerprints on the doorknob. Thank you. To Judy Richards, your example made this possible. To Troy Drew-Hargrove, thank you for the opportunity to complete this work. I must also express profound gratitude to Joi Bridgers, India Reaves, Latiera Streeter, Timothy Banner, Steven Cole, Travis Moore, and Pernell Hicks for providing me with unfailing support and continuous encouragement throughout my years of study.

For my parents, who instilled in me the desire and love to pursue my interests, and my mother, Ella Bush, for her resilience and enabling me to realize that anything is possible. Your unconditional love and belief in gives me the confidence to excel in all things. I hope this journey has make you proud.
Best Planning Practices

Case Study Projects from San Francisco, Milwaukee, New York City and Seoul

The method of selecting the most appropriate removal case studies for my Capstone is based upon several factors. The notion of highway removal in cities has been documented for more than forty years. Research revealed more than twenty case studies to choose from. I identified four cases of highway removal that would be relevant to the case for removing DC 295. Each of the cases listed in this section shared similarities to include: proximity to natural bodies of water, the way in which the highway separates the water from the adjacent neighborhoods, singular mobility options, opposition of being built at time of construction and/or planning, and manner in which the highway separates social classes, racial groups, and/or assists with concentrating poverty. Each of the cases also experienced freeway revolt. Freeway opponents made significant strides at the local level, while revolts were taking place among the Nations policy makers in Washington. Many successful opponents took the revolt to the courtroom as noted by Raymond Mohl.\(^{19}\) The revolt gave a voice to new federal oversight to include: Federal Aid Highway Act of 1966, the National Historic Preservation Act of 1966, and the National Environmental Policy Act of 1969.

Research Findings One –

Embarcadero Freeway – San Francisco, California

The City of San Francisco has a long-standing history with the “highway.” The Embarcadero Freeway pushed north along the waterfront for nearly a mile, two thick lines of concrete 70 feet high and 52 feet wide that hit the bay at Folsom Street and ended bluntly at Broadway. Instead of continuing above the waterfront, the highway was designed and constructed at ground level dispersing traffic to the city grid. It cut off the downtown from the water that gave birth to it, and it left the iconic Ferry Building -- a statuesque survivor of the 1906 earthquake -- stranded behind a dark wall of car exhaust and noise. Figure 2 provides a glimpse of what highways were planned for San Francisco in addition to the Embarcadero Highway.

Figure 2 - 1955 Plan of proposed web of highways

The Embarcadero Freeway, also known as State Route 480 that consisted of the elevated double decker coined by locals as the Embarcadero Skyway. Its history is long and storied defined in 1947 to connect US Route 101 at the Intersection of Lombard Street and Van Ness Avenue with US Route 40 and US Route 50. The first section of Embarcadero Freeway, from the Bay Bridge north to Broadway opened in 1959. San Francisco, like many American cities fell prey to the freeway revolt and the remainder of the plan was halted in 1964 after protest with some 200,000 attendees took place on May 17, 1964. The protesters rallied in Golden Gate Park against more new freeways. Route 480 was deleted from Interstate Highway System in January 1968 with Interstate 280 being rerouted onto Southern Embarcadero Freeway. Figure 3 shows the separation of the waterfront and downtown with the Embarcadero Freeway acting a separator and natural barrier.

![Figure 3 – Embarcadero Freeway](image)

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Opposition resurfaced in 1980 to raze the freeway. On November 5, 1985, the San Francisco Board of Supervisors voted to tear down the Embarcadero Freeway but was defeated by voters in 1987. The choice to reroute the interstate systems, based on the concept of reduced demand, may have happened purely by accident and has been heavily studied since. Just before Game 3 of the 1989 World Series between the San Francisco Giants and the Oakland Athletics, a 6.9 Richter scale earthquake hit the Bay Area. The resulting tremors lasted 15 seconds and heavily damaged the region’s Central Freeway (63 people also died as a result of the quake). State officials chose not to repair the artery despite warnings of impending traffic nightmares. Surprisingly, traffic actually improved as motorists made do and adapted to fewer commuting options through car-pooling, taking transit and just being more patient. Figure 4 shows a collapsed Embarcadero Freeway.

Prior to the earthquake, the freeway carried approximately 70,000 vehicles daily in the vicinity of the Ferry Building. Another 40,000 vehicles/day used associated ramps at Main and Beale Streets. The strongest opposition came from Chinatown and other neighborhoods north of downtown.

The birth of the 1990s witnessed the razing of the Embarcadero Freeway. Real estate values witnessed a spike some as much as 300 percent. Entire new neighborhoods oriented towards the waterfront, were built and thrived in areas that had been hard to develop when the freeway stood as a wall that cut them off from the waterfront.

The Embarcadero leaves a legacy. Along the waterfront, the former freeway was replaced with a wide palm lined boulevard with light rail tracks in the median. Light rail lines were extended to run along the Embarcadero. Parks replaced off ramps and a plaza was constructed in front of the newly renovated San Francisco Ferry Building. According the Congress for New Urbanism, the area has sprung to life since the freeway demolition with more than 100 acres of land being redeveloped. Dense commercial development has lined the street, housing in the area increased by 51% and jobs have increased by 23%. High profiled redevelopments like The Gap, Pier One and other businesses have continued to transform the waterfront. Figure 5 shows a view of the waterfront at grade neighborhood boulevard designed to replace the Embarcadero Freeway.

Figure 5 – A view of the waterfront after Embarcadero demolition

Research Findings Two –
Park East Freeway – Milwaukee, Wisconsin
This section traces the history of the construction of Park East from after World War II to through the early 1980s. This period of time is known as the ‘golden age’ of Milwaukee’s highway construction and highway (freeway) revolt. The construction of Park East was a result of automobile congestion resulting from post war auto sales. The City of Milwaukee experienced a 61% increase in motor vehicle ownership from 1945 to 1953.28 Rising congestion resulted in longer commutes, higher crash rates and some touted, a general economic loss to the city. One consulting firm advised that “if substantial additions to traffic ways are not provided within the next few years…motorists will experience rapidly increasing delays and accidents.”29

Park East was considered by many transportation officials to be a late birth in America’s expressway system with an expansion in subsequent years. Like many highway latecomers, Park East faced significant opposition, which succeeded and left Park East abruptly terminating in a corridor that was excavated for the portion of the highway that was never built. Construction initially started in 1954 under the auspices of the City and was later transferred to the County’s new expressway commission.30

Park East was designed to “provide greater access to the CBD and to relieve the

anticipated traffic overload on the Central Interchange sections of the North-South and East-West Expressways.31

Park East opened in the 1960s as a 0.8 mile long elevated freeway that carried 40,000 vehicles per day along the northern edge of downtown Milwaukee.32 The 1980s delivered a process called “de-mapping” by the State of Wisconsin. De-Mapping is defined as removing the un-built portion of the highway from the states maps. The early 1990s was when officials began to acknowledge the deterioration of Park East and that it was reaching the end of its useful life. Estimated repairs totaled $80 million.33 The following years, Mayor John Norquist (1988-2004) began planning for the aging infrastructure and began a 15-year fight to win both the public and governmental approval, and the necessary funding.34 Figure 6 below, shows a view of Park East traversing through Milwaukee as an obvious physical and social barrier while Figure 7 show illustrates how underutilized Park East was as it relates to traffic counts.

The removal of Park East freeway marked a milestone in Milwaukee and the United States. The demolition began in June 2002 and was completed in April 2003. The city began to prepare its redevelopment plan for the land uses where Park East once

separated the city. Before its demolition, the Park East Freeway and the surface parking lots around it was blighted and led traffic pass the Milwaukee River toward downtown.38 The illustration below in Figure 8 shows the off ramps and how it concentrated traffic on three streets.

![Figure 8](image_url)

Figure 8 – The freeway generated congestion by traffic concentrating traffic on a few local streets.39

Park East certainly had its fair share of criticism and praise.40 If we consider the views of Mayor John Norquist, his planning director Peter Park, and other urban freeway critics who were tied to the project, there would seem to be evidence to suggest the teardown of Park East was marked by a decrease in the value of automobility (see Urban Planning Recommendations section), but Figure 9 disputes that showing the restored street grid.

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40. Snyder, Alexander. Freeway Removal in Milwaukee.
Governor Tommy Thompson, whose significant role in favor of tearing down Park East was well documented. James Conant, a renowned professor of government and politics, noted that ‘transportation was a particular interest of Tommy Thompson. Road building was an area where he could reward those who supported him, and he aggressively pushed his road building agenda.”

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>68/69</td>
<td>First section of the Park East Freeway from Hillside Interchange to 4th Street completed</td>
</tr>
<tr>
<td>1971</td>
<td>Second and final section of the Park East Freeway from 4th Street across the Milwaukee River to Jefferson Street completed</td>
</tr>
<tr>
<td>1977</td>
<td>Ten-year moratorium on all new freeway construction adopted by the Southeastern Wisconsin Regional Planning Commission (SWRPC)</td>
</tr>
<tr>
<td>1991</td>
<td>Development of the East Pointe Commons by the Mandel Group</td>
</tr>
<tr>
<td>7/98</td>
<td>&quot;Analysis of Existing Year 2020 Traffic Impacts of the Termination of the Park East Freeway at N. 4th Street and Points East&quot; released by the SWRPC</td>
</tr>
<tr>
<td>1999</td>
<td>Milwaukee Downtown Plan approved</td>
</tr>
<tr>
<td>6/99</td>
<td>Milwaukee Board of Supervisors approves a resolution endorsing the removal and reconfiguration of the Park East Freeway</td>
</tr>
<tr>
<td>10/99</td>
<td>City of Milwaukee Common Council approves by resolution the programming and engineering for the Park East Freeway’s removal and reconfiguration</td>
</tr>
<tr>
<td>8/00</td>
<td>City of Milwaukee Common Council approves by resolution the removal and reconfiguration of the Park East Freeway</td>
</tr>
<tr>
<td>10/00</td>
<td>&quot;Evaluation of Year 2020 Traffic Impacts of Two New Potential Sixth Street and Fourth Street Termination Options for the Park East Freeway&quot; released by the SWRPC</td>
</tr>
<tr>
<td>12/00</td>
<td>The results of an alternatives study sponsored by Milwaukee County, City of Milwaukee and Wisconsin DOT released for a public hearing</td>
</tr>
<tr>
<td>02/01</td>
<td>An amendment to the &quot;Regional Transportation Plan 2020&quot; for the Park East Freeway Corridor released by the SWRPC</td>
</tr>
<tr>
<td>2002</td>
<td>The City of Milwaukee adopts a tax increment finance district</td>
</tr>
<tr>
<td>04/02</td>
<td>Removal of the Park East Freeway begins</td>
</tr>
<tr>
<td>12/03</td>
<td>Park East Redevelopment Plan adopted by the Redevelopment Authority of the City of Milwaukee</td>
</tr>
<tr>
<td>06/04</td>
<td>Park East Redevelopment Plan adopted by the City of Milwaukee</td>
</tr>
<tr>
<td>2004</td>
<td>McKinley Ave and Knapp Street Bridge completed</td>
</tr>
<tr>
<td>06/04</td>
<td>City of Milwaukee Common Council approves the Park East Redevelopment Plan</td>
</tr>
</tbody>
</table>

Table 1 – Park East Timeline
New York City is home of Robert Moses who constructed 627 miles of highway in and around the City in a 40-year period. Opposition pressured the New York State Department of Transportation to remove the Sheridan Expressway that blocks the Bronx from using the waterfront along its mile and a quarter length. The New York State Department of Transportation with surmounting pressure to excavate the Sheridan Expressway that blocks the Bronx from using the waterfront along its mile and a quarter length. The Bronx has served been adversely impacted by highways with four highways built between 1948 through 1958. Studies have also shown that the areas adjacent to the Sheridan Expressway have the highest asthma rates.

As this Capstone is being written, Governor Andrew Cuomo announced that he’s moving forward with the removal of the Sheridan Expressway, a 1.25 miles Moses-era highway. Construction is scheduled to start in 2018. This announcement marks the significant victory in the long neighborhood advocacy campaign. The available land will be replaced with housing and parks. Figure 10 shows conceptual plans of the Sheridan Expressway Surface Road project.

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Research Findings Four –
Cheonggyecheon Highway - Seoul, South Korea

“…recreate itself from an industrial city to an ecological city that is sensitive to its historical and cultural past…”
- Myung-Bak, Mayor, Seoul, South Korea

There are moments in history where highways were a symbol of progress. When the Cheonggyecheon Freeway was built in the 1970’s citizens praised the completion. By the early 2000’s it was considered as noisy and the most congested part of Seoul. This is one of the most recent projects that is worthy of mention is a dramatic example of urban typology. Seoul, South Korea led by Mayor Myung-Bak ordered the removal of the city’s central six lane elevated highway. He also vowed to accommodate the displaced traffic by building a Bus Rapid Transit (BRT) System and cutting automobile use in half.46

45. Meyer, David. Cuomo Moves to Tear Down the Sheridan Expressway.
Cheonggyecheon, The Heart of Seoul

The growth of Seoul is attributed to its proximity to Cheonggyecheon that divided the northern from the southern half of the city. The river was fed by twenty-three (23) tributaries and enticed the population to live nearby. Figure 11 shows the river and its tributaries which spread into other regions within Seoul.

![Figure 11 – Cheonggyecheon and its Tributaries The Preservation Institute](image)

These rivers were often dry in the spring and fall and tended to flood during the summer rainy season. For the 500 years of Joseon Dynasty, the tributaries supplied the city with clean water, and the Cheonggyecheon washed away its wastes. In the mid-1950s, the river was considered a symbol of poverty and filth that were the legacy of a

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47. The Preservation Institute. *Removing Freeways - Restoring Cities*
half century of colonialism and war. Refugees built huts along the river during the
Korean War as depicted in Figure 12.

![Refugee Huts](image)

Figure 12 – Refugee Huts

During his campaign, Lee spearheaded the removal of the Cheonggyecheon
(pronounced chung-gye-chun) Highway and the City designed a pedestrian oriented
space on the new land known as the Cheonggyecheon River linear park. Mayor Lee
credits viability of this river reclamation project to Seoul lasting well into the next
century.

Water serves a key to Asian economies and Seoul is no different. The
Cheonggyecheon was the heart of Seoul since being selected by a king during the
Choson Dynasty more than 600 years ago. As the city’s population swelled towards 10
million the stream became polluted and was entombed by pavement and to many

forgotten. An elevated expressway was built over the stream after the Korean War
during the industrial era.\textsuperscript{49}

The Cheonggyecheon Freeway – similar in form to Seattle’s Alaskan Way Viaduct was a
standing symbol of successful industrialization and modernization of Korea. As with all
highways, traffic, pollution and downtown Seoul’s demise followed. When the
planning phase began in 2001, the highway carried 168,000 cars per day as noted in
Figure 13. The project, although successful, did not come without its share of
opposition. May Lee Myung-Bak served as the former president of the construction
company that built the highway in the 1950’s. More than 3,000 street vendors relied
upon the traffic congestion to stay afloat selling their wares to the people stuck in
traffic. Some threatened suicide if the project went forward. The Mayor created a staff of
public engagement to garner support.\textsuperscript{50}


Since opening in 2005, the open-air environment is home to more than 90,000 pedestrians daily and has become a tourist destination as shown in Figures 14 and 15. The biodiversity and environmental benefits can be quantified according to city officials. The project serves as a major flood relief channel during major flood events. The reclamation project removed three (3) miles of elevated highway that substantially cut air pollution to 48 micrograms per cubic meter from 74, enriched the ecosystem with increased fish, bird and insect species. The removal of the highway has also favorably affected the ‘urban heat island’, with temperatures on average 5.6 F lower than surrounding areas according to city officials.52

51. The Preservation Institute. *Removing Freeways - Restoring Cities*
52. Revkin, Andrew C. *Peeling Back Pavement to Expose Watery Havens*. 
Figure 14 - Cheonggyecheon River Project I

Figure 15 - Cheonggyecheon River Project II


54. Wang, Lucy. How the Cheonggyecheon River Urban Design Restored the Green Heart of Seoul
The goal for the corridor is centered around highway removal focusing on the economic, cultural and environmental activity of the river reclamation project. The new and planned developments are funded by Seoul Development Institute (SDI), is funded by the City. The reclamation project has achieved the following goals:

- A central business district revitalization plan is now underway.
- The success of another elevated freeway in Seoul has been removed and replaced with a surface street.
- A sixteen (16)-lane road in Seoul was reduced by half and a massive public plaza built with the additional space.
- A major street interchange in front of Seoul’s City Hall was replaced with a public plaza.
- Urban streams renaissance spreads across the country, with citizens desire to reclaim local rivers and streams.
- Property values adjacent to the corridor increased by 300 percent.\(^55\)

The project highly praised also draws its fair share of critics. Its hefty price tag of $360 million and unsustainable water practices of being fed by treated water pumped from the Han River, rather than recycled wastewater causes major concern among environmentalists.

\(^{55}\) The Grist. Seoul tears down an urban highway and the city can breathe again.
**Research Findings Synopsis**

The research findings prove that highway removal can have favorable outcomes. Most notably, it has a positive effect on real estate values. Chang Deok Kang and Robert Cervero examined property value impacts from Seoul’s Cheonggyecheon River linear park. During period of 2003 through 2005, the municipal government tore down 9.4 km elevated freeway, which resulted in an increase in property values.\(^{56}\) The same is true for San Francisco’s demolition of the Embarcadero Freeway. A 2009 study conducted by Cervero, Kang and Kevin Shively studied the 2.6 km double decker freeway that separated the waterfront and found nearby land values were positively impacted by the highway removal.\(^{57}\) The studies also concluded that while these removal projects reduced traffic capacity in the corridor, they also had a redistributive effect on traffic, diffusing previously concentrated traffic streams over adjacent streets and other freeways.\(^{58}\) In all cases, research concludes that “the fears involved with removing freeways are unwarranted and that overall the changes seem to be of benefit to the city.”\(^{59}\) Table 3 provides a comparison of each Research Findings/Case Study and provides information significant in favor of DC 295 removal.

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57. Kang, Chang Deok, and Robert Cervero. From Elevated Freeway to Urban Greenway
58. Snyder, Alexander. *Freeway Removal in Milwaukee.*
Table 3 – Replacement of Highway with Boulevard Comparison

<table>
<thead>
<tr>
<th>Freeway Removal</th>
<th>Context</th>
<th>Cost of Removal</th>
<th>Year of Completion</th>
<th>Miles of Highway Removed</th>
<th>Vehicles/day</th>
<th>Impetus for Teardown</th>
<th>Real Estate Value (increase)</th>
<th>Waterfront Accessibility</th>
<th>New Urban Development Achieved</th>
</tr>
</thead>
<tbody>
<tr>
<td>Embarcadero Freeway</td>
<td>San Francisco, CA</td>
<td>$171 mm</td>
<td>2000</td>
<td>2 1/2</td>
<td>110,000</td>
<td>1989 Loma Prieta Earthquake separated the downtown and adjacent neighborhoods from waterfront</td>
<td>300%</td>
<td>YES</td>
<td>51%</td>
</tr>
<tr>
<td>Park East Freeway</td>
<td>Milwaukee, WI</td>
<td>$25 mm</td>
<td>2003</td>
<td>1</td>
<td>54,000</td>
<td>Community Activism created a major physical &amp; psychological barrier in the heart of Central City</td>
<td>YES</td>
<td>NO</td>
<td>YES</td>
</tr>
<tr>
<td>Sheridan Expressway</td>
<td>New York, NY</td>
<td>project underway</td>
<td>1.25</td>
<td>1</td>
<td>Public Opposition prohibits the Bronx from accessing the waterfront</td>
<td>project underway</td>
<td>YES</td>
<td>project underway</td>
<td>major health disparities with alarming respiratory illness rates</td>
</tr>
<tr>
<td>Cheonggyecheon Highway</td>
<td>Seoul, South Korea</td>
<td>$360 mm</td>
<td>2005</td>
<td>3</td>
<td>168,000</td>
<td>Political ran through the city and served as a barrier to a natural resource - the river</td>
<td>300%</td>
<td>YES</td>
<td>YES</td>
</tr>
</tbody>
</table>

The Case for DC 295

Having considered the aforementioned successful highway removal projects we can now set the stage to reimagine a portion of DC 295 as a vital multi modal corridor with mobility options. There has been a great deal of internal debate within defining the highway in the title. The interstate, a federally owned expressway assumes several names to include: DC Route 295, Anacostia Freeway and Kenilworth Avenue Freeway (please refer to Route Description) and merges with I-295. Long time native Washingtonians refer to the highway by either of those names. For the purposes of this research, the author will refer to it as DC 295 but will define which section is being recommended for partial removal.
Route Description

I-295 according to the Department of Transportation begins at the Capital Beltway (i-95/I-495). A pair of mainline ramps connects the southern terminus of the route to the nearby MD-210. Continuing north from this interchange, I-295 enters the District of Columbia. The highway is also known as the Anacostia Freeway. The highway runs adjacent to Oxon Cove Park to its west and north and parallel to the Potomac River and enters the Southeast quadrant of DC. The highway forms the eastern boundary of Bolling Air Force Base and the Anacostia Naval Station. Near the southern end of Anacostia Park, the route turns eastward and begins to run parallel to the Anacostia River, interchanging with South Capitol Street SE.

I-295, within the park, encounters the junction of I-695 (which travels northwest across the 11th Street Bridges) and DC Route 295 at Exit 4. I-295 ends at this junction and the mainline freeway through the interchange assumes the identity of DC Route 295 (also known as the Kenilworth Avenue Freeway) and continues to Baltimore, though it changes identities several times: DC 295, MD 201, the Baltimore-Washington Parkway (BW Parkway, an unnumbered federally owned expressway operated by the National Park Service) and MD 295.61

**Paved With Good Intentions**

Conceived as the Anacostia Freeway by the National Capital Park and Planning Commission (NCPPC) in 1950, it was a result of the metropolitan area’s postwar traffic plans. The freeway was built to connect the Baltimore-Washington Parkway via Kenilworth Avenue, providing accessibility to downtown Washington, Anacostia Naval Station, Bolling Air Force Base, and the Capital Beltway. The route would also provide access to the Anacostia Waterfront that was used for recreation and industrial purposes. Like countless other cities across the US, the highway is viewed as a separator versus a connector.

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The Anacostia Freeway was among the freeways to be built under a ten year program outlined in the NCPPC’s 1952 report, “Recommended Highway Improvement Program,” and was dealt with separately in a 1955 NCPPC report. District officials approved construction in 1955 of the northerly stretch of the freeway from the East Capitol Street Bridge to Suitland Parkway.62 The remainder of the construction was approved by District of Columbia and Maryland officials in 1956.63 The Interstate Highway Systems approved ninety (90) percent Federal funding for the southern portion of the freeway from the 11th Street Bridges to the Capital Beltway. The remainder of the freeway’s $20 million cost was to be covered from Maryland and District of Columbia funds. Costs incurred for the Kenilworth Avenue section north to the Baltimore Washington Parkway was evenly split between the Federal government and the District government.

During the 1950’s and 1960’s there were several request made for highway designations that included a proposed I-63 designation for the Anacostia Freeway but was denied by the American Association of State Highway Officials (AASHO). AASHO later proposed an I-195 designation for the route, but because it was designed to connect the Capital Beltway with a proposed “Inner Loop,” District Officials proposed

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an I-295 designation. In July 1958 AASHO accepted the resubmission. To date, the I-295 designation continues across the 11th Street Bridges, while the DC 295 designation continues north along the Anacostia and Kenilworth Avenue freeways. The initial construction for the Anacostia Freeway began in 1957 as a southerly extension the Kenilworth Avenue freeway, which at the time was nearing completion.

Figure 18 – Anacostia Freeway (DC 295) at/near East Capitol Street SE

Land acquisition was not an issue because the freeway was built on right-of-way for proposed Shepard Parkway. The original 7.8 miles of the Anacostia Freeway opened to traffic on August 7, 1964 upon completion of the Capital Beltway to the south. Designed with four lanes (two in each direction), through much of its length, a travel lane in each direction was provided catering to Bolling Air Force Base to the north.

South of Bolling, a grassy median was incorporated into the design for an additional lane that was scheduled to be built in 1975. The design of DC 295 reflected more contemporary Interstate era design. By the time it opened, construction costs far exceeded the original budget catapulting to $36 million from $20 million. A new four-lane freeway was extended in 1990 to the southeast to connect MD 210 (Indian Head Highway) in Oxon Hill.
Maintained by the DC Department of Transportation (DDOT), The Anacostia Freeway was designed to carry an annual average daily traffic (AADT) of 25,000 vehicles per day according to reports. The Freeway now carries approximately 75,000 AADT according to District of Columbia officials. The Maryland portion of the Freeway

carries 95,000 vehicles per day (AADT) near the Frederick Douglas and 11th Street bridges.66

Planning Recommendations

“…Forget the damned motor car and build cities for lovers and friends…”
- Lewis Mumford, famed US intellectual67

Argument 1
How can Washington’s DC 295 infrastructure be modified to better serve local neighborhoods?

Specific to DC 295 (Kenilworth Avenue), currently separates neighborhoods along the highway. It currently operates as a sole use for automobile traffic and is a major barrier to mobility options to include pedestrian and bicycle movement east of the Anacostia River. The roadway currently allows for short merging zones. This proposed infrastructure modifications would reconstruct DC 295 from north of the Pennsylvania Avenue interchange to the Maryland border. The modifications to the defunct highway would reconstruct accommodating a four lane boulevard. The at grade thoroughfare will provide reduced traffic capacity in the corridor, but a redistributive effect on traffic, diffusing previously concentrated traffic streams over adjacent streets and other freeways as noted in aforementioned Research Findings.68

66. Georges, Jim K. DCRoads.net.
70. Pyati, Archana. Freeway Lids: Reconnecting Communities and Creating New Land.
The proposal would also eliminate the existing access roads with an at grade roadway between Pennsylvania and East Capitol Street, and a depressed roadway at Eastern Avenue with a ‘freeway lid’ returning to at grade to the DC/MD border. New development along the at grade thoroughfare will reorient itself to the street rather away from it provide limited surface parking opportunities. The freeway lid defined, is a land bridge over freeway trenches. Its purposes will be to reestablish the grid, neighborhood connectivity and make new land available for future uses. The author recommends the freeway lid at Eastern Avenue be purposed for public green space. Lids not only reestablish neighborhood connectivity but also create an opportunity for new land – a noble planning tool for cities who need more land like the District of Columbia. The City of Philadelphia has announced plans to incorporate a freeway lid over I-95 in Center City between Walnut and Chestnut streets connecting the downtown area to the waterfront.70

The highway facility currently provides three lanes in each direction with single lane service roads in each direction with on street parking capacity. The service roads are accessible via at grade slip ramps. Three pedestrian bridges that were constructed in the 1950s span over the freeway to connect the communities of Eastland Gardens, Parkside, Deanwood, Kenilworth and the NE DC of Upper and Lower Central. A visual observation shows that the bridges do not pass over the service lanes making it an arduous task for pedestrians. The service roads heading northeast toward Prince Georges County are primarily dotted with industrial uses. None of the bridges meet current American with Disabilities Act (ADA) requirements. Argument 1 recommends removing the bridges and providing pedestrian access with at grade street opportunities.

71. McQuade, Dan. Mayor Kenney to Propose $90M for Park Over I-95.
The corridor has a series of disconnected roadways. The roadways along the site that are disconnected due to the freeway will be (re)integrated into the street grid with traffic lights and defined pedestrian walkways. The improvements associated with

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Google Images 2017
reconnecting the grid, and eliminating the service road will provide space for a neighborhood main street along the corridor with ground level retail and mixed use above.

Planning renderings are not furnished at this time due to limited software capabilities.
Figure 20 – Map of I-295/DC 295 Google Images

73 (Google Images 2017)
### I-295/Anacostia Freeway/DC Route 295/Kenilworth Avenue Freeway Timeline

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>1950</td>
<td>Conceived by NCPPC</td>
</tr>
<tr>
<td>1955</td>
<td>District officials approved the Suitland Parkway and E Capitol Street portion</td>
</tr>
<tr>
<td>1956</td>
<td>Remainder of the route receives approval from District officials</td>
</tr>
<tr>
<td>1956</td>
<td>Included in the Interstate Highway System budget</td>
</tr>
<tr>
<td>1958</td>
<td>Designed as an interstate by AASHO</td>
</tr>
<tr>
<td>8/1964</td>
<td>First leg opened simultaneously with the Capital Beltway</td>
</tr>
<tr>
<td>1971</td>
<td>DC Freeway plans scrapped that would have turned east at the northern end of the 11th street bridge</td>
</tr>
<tr>
<td>1990</td>
<td>Highway was extended to connect with MD 210</td>
</tr>
<tr>
<td>2009</td>
<td>DCDOT replaced the I-295 bridges over South Capitol Street near Bolling Air Force Base</td>
</tr>
<tr>
<td>2008-2011</td>
<td>Reconstruction of the southern terminus; modifications were made to the MD 210 linkages</td>
</tr>
<tr>
<td>2011-2012</td>
<td>Reconstruction of the northern terminus</td>
</tr>
</tbody>
</table>

Table 4 – I-295 Timeline Source:

Recent Improvements to the highway include the Maryland State Highway Administration (SHA) rebuilt ramps between I-295, the Capital Beltway (I-95 and I-495) and MD 210. New ramps were designed into the new development. Major construction is also planned for the interchange between the Anacostia Freeway (I-295 and DC 295) and the 11th Street Bridges. Noted as the “twin bridges,” it carries the I-295 designation via eight lanes of traffic between the Anacostia Freeway and the Southeast Freeway (I-695). The Barney Circle extension of I-695 that was to supply the missing movements between downtown and the Baltimore-Washington Parkway, was never built. A newly built directional “Y” interchange would supply the “missing moves” between the Anacostia Freeway and the bridge. There are also preliminary designs to connect the
proposed Massachusetts Avenue Bridge as part of the “Kenilworth Avenue Corridor” study, this plan is only in the preliminary design stage.74

Figure 21 – DC 295 (Kenilworth Avenue/Anacostia Freeway) AA Roads75

Objectives of Removing DC 295/DC 295

The objective for the recommendation of highway removal of DC 295 are solely based on the authors visual observation of the study area and interest in the neighborhood revitalization, preservation efforts (where necessary) of Southeast Washington DC. Objectives, once achieved, will provide connect communities along both sides of the

74. DDOT. 2007. Kenilworth Avenue Corridor Study. Study, DC: AECOM
freeway, promote a pedestrian friendly atmosphere, provide alternative land uses once occupied by the highway, and improve mobility options.

The objectives the highway removal are the following:

- Accommodate existing and future traffic volumes without significant deterioration in peak period traffic operations;
- Become better stewards of land resources;
- Connect Southeast Washington DC to downtown;
- Create a commercial business district at Eastern Avenue and proposed new boulevard intersection;
- Improve pedestrian access to adjacent neighborhoods and to the Anacostia riverfront;
- Improve traffic operations between Pennsylvania Avenue SE and Eastern Avenue during time periods when it is experiencing congested levels;
- Improve urban design and visual environment by minimizing the presence of a visual barrier to the Anacostia Waterfront;
- Incorporate recreational components into new;
- Minimize impacts on historic structures;
- Provide mobility options to residents of Southeast Washington DC;
- Significantly mitigate adverse effects to natural water resources;
- Foster economic development and meet mobility needs.
Argument 2

What opportunities can be created for the Southeast DC residents following these infrastructure modifications?

“…Those freeways were there to carry people through my neighborhood, but never to my neighborhood…”

– Anthony Foxx, former Secretary of US Department of Transportation

The potential concerns over the traffic effects of highway removal are valid and worthy of a response. As each of the case studies in the Research Findings showed, residents realized opportunities in the short and long runs. Each of the cases had its share of opposition. For example, the possibility of removing the Embarcadero in San Francisco was not an option until the city had to function without it after the Loma Prieta earthquake. Southeast DC residents will experience accessibility to their immediate area with new land that could potentially provide retail experiences within distance. The removal of the highway will also provide accessibility to the Anacostia Riverfront. The return on investment will also be realized in an increase in property values as noted in the research findings case studies. There are several opportunities that can be realized for the Southeast DC residents upon the successful highway removal.
Mobility Options

The idea of the removal of DC 295 more about shifting priorities from moving cars to moving people. Currently, the residents in the neighborhoods along DC 295 are serviced primarily by car, with the exceptions of metro and bus. The proposal of creating a four lane neighborhood boulevard with portions of it at-grade and returning to above and below grade at portions will be provide alternative modes of transportation to residents via bicycle, metro rail, bus, on foot, and lastly by automobile.

Active transport and recreation opportunities can result in people being physically active and healthier. Highway removal not only provide alternative modes of travel, but can also provide a platform for recreational amenities. In the case of DC 295, this can be realized with improved access to the Anacostia waterfront, and the potential of new recreational space where the highway once snaked through Washington DC.

Highway removal as demonstrated throughout this Capstone has real health and economic benefits.

Air Pollution & Heat Island

The design calls for a neighborhood boulevard with green amenities. This can assist with reducing the ‘urban heat island’ as successfully noted in Cheonggyecheon model. Highways have become synonymous with noise pollution, idling in DC traffic, and litter. This replacement will significantly reduce the idling by redistributing the traffic to the reconnected street grid.
Road Safety

DC 295 has visual proof that pedestrians have made successful attempts to cross the highway by cutting through fences along the shoulder and fences in the median that separate the southbound and northbound lanes. The neighborhood boulevard will eliminate this dangerous pattern. A more in depth analysis of car crashes along DC 295 must be completed to identify the number of crashes, frequency and the ability to pinpoint the locations. Highway removal provides the opportunity to shift motorists to safer transportation modes and could assist in local bus system with improving transportation routes once the street grid is reconnected.

The residents could also realize the following potential merits:

- A more efficient replacement road network that has the ability to accommodate the District's rapid population growth.
- More affordable housing opportunities.
- Positive health equity outcomes.
- New transit routes
- Neighborhood connectivity.
- More opportunities for award winning urban design with the freeway lid, and architecture façade opportunities.
- A defined gathering space/public recreation space for civic events.
- An opportunity to reconcile the cultural history within the boundary area.
**Argument 3**

What benefits and positive impacts are associated with removing a legacy freeway and how can they be measured?

Cities are making significant strides to foster economic development, to provide affordable housing, a variety of housing stock, and good pool of jobs. One additional key aspect is to consider the health and quality of life of citizens being planned for. Citizens come in contact daily with health impacts to include: traffic congestion, air pollution, traffic crashes, and heat. Argument 3 seeks to make the case that highway removal is also a health equity planning tool. We can observe from existing research.

**Heat Island and Air Pollution**

The ability to replace an urban freeway with an at-grade boulevard with natural landscaping can reduce the ‘urban heat island’ effect and remove particulates from the air. Research Finding 4 illustrated how the Cheonggyecheon Expressway, once removed reduced the heat island lower than nearby paved roadway conditions.

According to the report, air quality also improved. Levels of coarse particulate matter, or PM10 (emitted by vehicles and dangerous to human health) decreased between 2002 and 2006 in areas both near and far to the Cheonggyecheon, dropping 21 percent near the project, compared to 3 percent farther away. Other pollutants decreased in areas around the highway after the restoration project. Nitrogen dioxide density went from the average level found in the city to 0.83 times of that in the
surrounding area. BETX (benzene, ethylbenzene, toluene and xylene) pollutants around the Cheonggyecheon decreased by as much as 65 percent.77

Active Transport and Recreation

Shifting the priority is what highway removal is about. It is about a paradigm shift of moving cars to moving people. This can result in people being more physically active and healthier.78 Countless studies reveal that people who travel by mass transport, walking and biking as their primary mode of transportation are physically more active than those who primarily use cars. Highway removals can create recreational opportunities as noted in Argument 1 with the ‘freeway lid.’

Safety

Highway removal provides opportunities to shift people to safer transport modes with a focus on pedestrian safety and mass transport. BRT corridors and rail reduce injuries significantly. Cities that have achieved a highway removal project report less crashes a reduction in traffic crashes.79

78. Welle, Ben. Urban Highway Removal: To Your Health
79. Welle, Ben. Urban Highway Removal: To Your Health
Conclusion

“...The country is reaching the end of the useful life of a lot of our infrastructure, and we’re going to have to replace and rebuild a lot, so I want people to be thinking about this. We ought to do it better than we did the last time...”

– Anthony Foxx, former Secretary of US Department of Transportation

I conclude that local, state, and federal governments will begin to create incentives in favor of highway removal projects as the love affair with cities continues to intensify. The shift in priorities will occur when officials see value added of available land, the economic impact of mobility options and when citizens desire to live in closer proximity to places of employment, civic space and recreation. The abundance of highway removal projects serve as a new urban design typology. These successful case studies contained in this Capstone acknowledge the challenges caused by freeways and help lead the path for other cities to become healthier, greener, safer and more pedestrian friendly without them. Municipalities that are slated or proposing highway removal are encouraged to use past precedence as a compass to guide design processes. Cities should view their highway removal projects as a broader approach to address challenges that plague many cities versus assessing it on a siloed platform. Highway removal gives way to Increased access to mobility options and enhanced connectivity.
decreases travel time and generates higher rates of direct employment, keys to elevating overall economic opportunity according to The World Bank.\textsuperscript{81}

One key goal of this project is not to have a successful highway removal project, achieve accessibility, connectivity, and mobility \textit{and} create a diaspora at the expense of the African American community simultaneously. In addition, the preservation of single family housing options, the special consideration of future land uses and future rezoning is also of key interest of this study. Success will be realized once the aforementioned has been integrated into the plan and the connection of the Washington’s CBD to SE DC neighborhoods without displacement.

As Urban Planners, we have a responsibility. We have a mandate to undo the sins of the interstates past and reweave the fabric of our cities back together. We have an obligation to build communities through transportation rather than build transportation through communities. Now is the time to invest in reconnecting Southeast Washington DC.

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