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The End of the Road: The State of Urban Elevated Expressways in the United States

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May 26, 2016

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Executive Summary

In a January 2016 meeting, the Clark County Commission heard a proposal from the County Public Works Department about a \$200 million plan to build two urban elevated expressways constructed above existing roadways, potentially linking McCarran International Airport with the Las Vegas Strip’s resort corridor.ⁱ Commissioners lauded the project with a “high degree of confidence” for funding sources and praised the “magnificent way of moving traffic” and “out of the box thinking” of these urban elevated expressways.ⁱⁱ Yet the positive feedback that County Commissioners showered on this proposal flies in the face of decades of history on urban elevated expressways. Cities and states have spent over \$20 billion and nearly five decades locked in contentious battles to tear down these expressways. Such teardowns have reduced the social inequity associated with new freeway construction, and have shifted the discussion in urban planning from mere *mobility* of cars from point A to point B to increased multimodal *access* for pedestrians, bikes, cars, and light-rail transit. In light of this emerging public policy discussion, this white paper has been prepared for Brookings Mountain West as a primer on the state of urban elevated expressways in North America. For this white paper, a survey was conducted of the top 50 largest Metropolitan Statistical Areas (MSAs) in the United States and only found one example of an urban elevated expressway project in Tampa—a project far different from the Southern Nevada expressway on many fronts. In fact, cities have been at the forefront of urban elevated expressway removal, through what has been unofficially referred to as the “freeway revolt” movement. Engagement with urban planning experts in person and on social media revealed a similar consensus on the historic trend against urban elevated expressways.ⁱⁱⁱ This paper attempts to supplement local discussion on this topic with research on other cities’ experiences with these roads.

Methodology

For this white paper, there are short vignettes of cities that have successfully removed their urban elevated expressways (Portland, San Francisco, and Milwaukee), cities where proposals for expressway removals are under debate (New Orleans), and a city with a proposed elevated expressway project (Tampa). All of these cities are within the top 50 U.S. Metropolitan Statistical Areas and thus fit within a discussion on the state of urban elevated expressways. This research has found that for over the past fifty years, cities as diverse as Boston, New York City, Milwaukee, San Francisco, Seattle, Toronto, Portland, Ore., and Vancouver, British Columbia have spent over \$20 billion to decommission their urban elevated expressways.^{iv} Places such as Miami, New Orleans, Buffalo, Austin, and Syracuse are considering doing the same. Tampa has long considered building an urban elevated expressway to reduce congestion points, yet it has run into community opposition over the past 16 years.

This white paper briefly discusses the mid-twentieth century history of urban elevated expressways and provides short summaries of other cities' experiences with their elevated expressways. These discussions are instructive to Southern Nevada's proposed expressway because they suggest what awaits Las Vegas should this expressway plan become reality. The growing trend among cities that have built urban elevated expressways has been to tear them down, with expensive teardown costs accompanying removal. Urban planning experts are nearly unanimous in noting the progress that "highway revolt" movements have made in opposing new urban elevated expressway construction and supporting the removal of existing roadways. In literature on the topic, urban planners note the shift from mobility to access in transportation. Instead of prioritizing urban elevated expressways that merely attempt to reduce congestion, cities have replaced these roadways with surface-grade boulevards or green spaces that emphasize multimodal access (pedestrians, cars, light rail, etc.)

The Origins of the Urban Elevated Expressway: Norman Bel Geddes and “Futurama”

“These express highways will by their nature create a new type of motor transportation—trains of motorcars, beside which our present feeble attempts at trailers will look piffling.”^v

– Lewis Mumford, urbanist

No discussion of the state of urban elevated expressways is complete without reference to one of the fathers of modern American transportation planning, Norman Bel Geddes. After a decade of economic ruin caused by the Great Depression, the 1939 New York World’s Fair—with its theme of “Building the World of Tomorrow”—offered to show Americans a future of technological innovation, and Bel Geddes’s “Futurama” exhibit was one of the primary examples of this.^{vi} Futurama created a model transportation network for projected automobile ownership by 1960, and this network included series of cutting edge-technologies, such as an automated highway system, a plan for managing pedestrian flows, and a network of elevated expressways jutting through vast urban expanses. With its projection of growth in American car culture, Bel Geddes’s plan became a “plug for ambitious roadway construction.”^{vii} Futurama had an audience of over 25 million awe-struck visitors, and the long-term impact of his designs created significant pressure on the federal government to take a larger role in funding an expansive network of highways. In conjunction with state and local governments, Congress allocated billions of dollars to fund massive urban roadway networks based off the Futurama model. On a more local level, urban planners in cities across America took cues from Bel Geddes’s designs. Over 75 years later, future models of urban elevated expressways are still adapted from Futurama, with even Southern Nevada’s aforementioned proposed roadways demonstrating significant parallels with the designs from the 1939 World’s Fair Exhibit.^{viii} While these parallels may be novel, they reflect antiquated views on urban transportation and access.

Robert Moses and the Social Clash of Urban Elevated Expressways

Federal transportation historian Richard F. Weingroff notes that although urban interstates are “integral parts of our urban landscape,” they proved controversial during construction “because of their impacts on people—their homes, businesses, and communities.”^{ix} During the mid-twentieth century rise of urban elevated expressways, nowhere was this controversy more heated than in New York City, with urban planner and expressway proponent Robert Moses on one end, and social activist Jane Jacobs on the other end. Moses, dubbed by *Boston Globe* reporter Anthony Flint in his book Wrestling with Moses as a “master builder,” wielded unfettered control as an urban planner in New York. He attempted to use this power to force a series of huge public works projects on Manhattan, including a planned four-lane highway through the middle of Washington Square Park, another plan to raze 14 blocks in Greenwich Village under the specter of “urban renewal,” and the most controversial of all, a plan to build a 10-lane expressway through Lower Manhattan.^x Jane Jacobs and her band of neighborhood opposition leaders successfully led the fight against the Lower Manhattan Expressway by decrying the steep cost for this project: the eviction of 2,200 families, the demolition of over 400 buildings, and the relocation of 800 businesses.^{xi} New York public works officials eventually relented to the pressure and quashed this project. Flint’s book chronicles this epic historical battle, which showed the stark reality associated with the construction of urban elevated expressways. From then onwards, cities viewed urban expressways with an increasingly skeptical eye, even seeking to remove their own versions of these roadways. What follows are several short vignettes of cities that have successfully removed their own urban elevated expressways or are undergoing public debate on the potential removal of these roadways.

Freeway Removal Case Study #1: Portland, Oregon

As one of the first cities to intentionally remove an urban elevated expressway, Portland's removal of its Harbor Drive catalyzed the broader "highway revolt" movement. Overwhelmed with high air pollution and a tangle of highways, both of which turned swaths of downtown into crime ridden areas, Portland replaced its waterfront Harbor Drive after a mere 29 years of use. This mid-1970s project saw the teardown of this elevated expressway and a corresponding replacement with a 37-acre riverfront park that marks the western stretch of the Willamette River. This roadway teardown helped transform Portland from an automobile-oriented city to one with multimodal (pedestrian- and mass transit-oriented development). The beautification of the downtown riverfront yielded a number of benefits for Portland, including marked decreases in crime and higher property values. According to urban historian Raymond A. Mohl, Portland also anticipated the "complete streets" movement by working with city, state, and federal officials to craft "a redevelopment plan that emphasized mass transit, a walking downtown, and environmental protection of the riverfront."^{xii} The removal of Harbor Drive served as a cornerstone for this plan, and the presence of the riverfront park where this expressway once stood continues to yield quality-of-life benefits for Portland residents to the present. For its efforts, Portland was listed as a "model city" by former Milwaukee Mayor John Norquist's Congress for the New Urbanism, a nonprofit organization that seeks to "create vibrant and walkable cities, towns, and neighborhoods where people have diverse choices for how they live, work, shop, and get around."^{xiii} Portland's teardown of Harbor Drive also catalyzed similar freeway removals in other cities, including the closure of the West Side Highway in 1973 and the eventual replacement of Boston's Central Artery with the "Big Dig" project. One of the next freeway removal efforts came from San Francisco.

Freeway Removal Case Study #2: San Francisco, CA

Another West Coast city with a history of freeway removal is San Francisco. With years of existing anti-freeway sentiment among local residents, and galvanized by the 1989 Loma Prieta earthquake, San Francisco tore down the nearly-35 year old Embarcadero Freeway at a cost of nearly \$50 million. An oft-cited example of the aforementioned “complete streets movement,” San Francisco removed its Embarcadero Freeway in 1991 and replaced it with enhanced street-level boulevard that made urban access more multimodal for pedestrians, trolley users, and cyclists. As Mohl notes in describing the expressway teardown movement in American cities, the Embarcadero teardown opened up access to San Francisco Bay, with a street-car line traversing the waterfront’s palm-tree lined boulevard and bringing locals and tourists to restaurants and cultural activities in the “formerly isolated, dingy area left in the shadow of the unfinished, double-decked expressway.”^{xiv} San Francisco’s deconstruction of its urban elevated expressways was particularly revealing because it suggested that despite the high cost of tearing down urban elevated expressways (as opposed to surface-grade highways), cities would still proceed with freeway removal because of the countless access-oriented transit, commercial, and quality-of-life benefits. As in New York City and elsewhere, citizen movements and ballot initiatives compelled public works departments in San Francisco to oppose new expressways and support deconstruction of these roads. Perhaps the project’s success is characterized best by San Francisco Mayor Art Agnos, who struck the symbolic first blow to begin the demolition of the Embarcadero Freeway. After leaving office, Agnos remarked that the removal of the city’s embattled freeway was “the best decision I made as mayor [because] it removed that scar and opened up one of the most important parts of [San Francisco] for development.”^{xv}

Freeway Removal Case Study #3: Milwaukee, WI

Milwaukee's Park East Freeway posed a great deal of problems for its residents. The roadway looped around downtown and cut off neighborhoods; it was out-of-date and required costly repairs for long-term maintenance. According to M.I.T. urbanist consultants Francesca Napolitan and P. Christopher Zegras, the neighborhood immediately surrounding the freeway contained abandoned industrial sites, and local leaders recognized the freeway as a hindrance to Milwaukee's redevelopment plans.^{xvi} Instead of spending public funds to repair the expressway, Milwaukee Mayor John Norquist proposed the removal of the Park East Freeway in 2002 at a cost of approximately \$45 million. These costs came from a variety of local, state, and federal sources. The freeway was replaced with an at-grade, six-lane boulevard, as well as a walkable urban space. Moreover, the corridor that once housed the freeway is under significant redevelopment, with adjacent neighborhoods seeing increased growth and corresponding rises in property values. According to the Congress for the New Urbanism, between 2001 and 2006, the average assessed land values per acre in the footprint of the Park East Freeway grew by over 180%, and average assessed land values in the Park East Tax Increment District grew by 45%, a much higher growth rate than the citywide increase of 25% experienced during the same time period.^{xvii} Moreover, the freeway's deconstruction reduced traffic congestion in downtown Milwaukee by dispersing traffic among two dozen streets instead of on the Park East Freeway. The "highway revolt" movement was led by Mayor Norquist, who came into office in the late 1980s with a platform that supported the Park East Freeway's demolition, and supported by Milwaukee's downtown business community. The freeway removal movement in Milwaukee proved that residents prioritized complete transportation access and the financial benefits associated with expressway removal over mere mobility and congestion reduction.

Freeway Removal Case Study #4: New Orleans, LA

The emerging discussion about a proposed teardown of 2.2 miles of I-10’s elevated expressway in New Orleans—known to local residents as the Claiborne Overpass—represents a discussion on the social inequities caused by these roads. The road, built during the 1960s, features deteriorating ramps, separation of neighborhoods, and represents a chokehold on housing, retail activity, and green space. The City of New Orleans is conducting a study on the various repair or replacement options for the road, one of which includes a complete teardown and replacement with vast green spaces. But for many New Orleanians, the specter of racial politics looms large over this discussion on transportation infrastructure. As one resident remarked at a recent debate about tearing down this expressway, “the Claiborne area has always been populated by people of color.”^{xviii} Regardless of the end result of the Claiborne Overpass, this example from New Orleans raises the broader question of how urban elevated expressways have exacerbated social inequities in American cities. Transportation Secretary Anthony Foxx recently argued that cities have spent federal money building highways through cities and cutting off neighborhoods, often through low-income and minority neighborhoods, which created “disconnections from opportunity” for the residents of these neighborhoods.^{xix} Secretary Foxx estimates that nearly half a million American households were compelled to relocate because of the construction of the interstate highway system between 1957 and 1977, and most were people of color living in low-income urban neighborhoods.^{xx} From the urban expressways that divided the neighborhoods surrounding Foxx’s childhood home in Charlotte to the social inequities associated with the West Side Elevated Expressway in New York, these expressways have devastated communities, often irreparably, by uprooting families and dividing neighborhoods along racial and socioeconomic lines.

Freeway Building Case Study: Tampa, FL and the Urban Elevated Expressway

The only example of an urban elevated expressway project within the top 50 U.S. Metropolitan Statistical Areas is the “Gateway Expressway” in Tampa, FL. In April 2016, the Florida Department of Transportation revealed a plan with six multifaceted projects, among them a plan to build a new four-lane elevated expressway from the Bayside Bridge near Clearwater and U.S. Highway 19 to Interstate 275.^{xxi} The project also includes a “four-lane elevated tolled expressway that would provide a direct connection from Interstate 275 to U.S. Highway 19 and from Interstate 275 to St. Petersburg-Clearwater International Airport and the Bayside Bridge.”^{xxii} Although this project appears comparable to Southern Nevada’s urban elevated expressway proposal on a superficial level, it differs on a handful of fronts. First, Tampa’s proposed expressway attempts to bypass congestion points and divert traffic past red lights by connecting two existing infrastructures, while the Southern Nevada plan directly feeds traffic from the airport to the Las Vegas Strip. Second, the Tampa project includes an option for a future light rail corridor, whereas the current Clark County Commission plan currently does not include a light rail component. Third, the Tampa plan has been in the planning phases for 16 years, whereas the Clark County plan has barely existed for 16 weeks. Despite the Tampa plan’s projections that motorists will save significant time and fuel, it still faces community opposition given that gas stations, garages, hotels and restaurants that rely on the pass-through traffic could suffer, according to a 2009 study by the University of South Florida’s Center for Urban Transportation Research.^{xxiii} Moreover, at a cost of \$192 million, the Tampa plan ranks within the top 10 most expensive road projects in Florida’s history.^{xxiv} Given the nationwide trend of urban elevated expressway removal, Tampa’s ambitious plan appears to be one of the last urban infrastructure projects in the spirit of twentieth century urban planner Robert Moses.

Conclusion

As long as Americans are driving automobiles, discussion will continue on the most efficient methods of transporting people between places. While the enthusiasm surrounding Norman Bel Geddes's "Futurama" prototype of an American transportation network catalyzed federal funding for roadways, history has transitioned from cities using antiquated urban elevated expressway models to relieve congestion and increase mobility to "complete streets" that emphasize multimodal access for all: pedestrians, cars, cyclists, and light rail. The social activism that compelled New York to oppose the Lower Manhattan Expressway bred a nascent "highway revolt" movement. The freeways that were deconstructed over the last fifty years appear markedly similar to the aforementioned Southern Nevada elevated expressway proposal from McCarran International Airport to the Las Vegas Strip. Historical evidence suggests that if this plan was enacted, the teardown costs may be upwards of several hundred million higher than the initial building costs of \$200 million, as well as the fact that new construction of multi-mile urban elevated expressways would be in defiance of the intended utility of urban elevated expressways. The perspectives of these urban policy experts are supported by historical precedence, which suggests that cities tearing urban expressways down, not building more. Among the top 50 U.S. Metropolitan Statistical Areas by population, four cities—Portland, San Francisco, Milwaukee, and New Orleans—illustrate the pitfalls that cities have in building urban elevated expressways. All four have these cities went through different experiments with urban roadways, yet yielded the same net experience: neighborhood destruction, traffic congestion, and social inequity. Even Tampa's proposed urban elevated expressway project—a 16-year old plan that features a light rail component and attempts to bypass congestion points with significant pass-through traffic—bears little relevance to Southern Nevada's expressway plan. Future

research can illustrate how many cities bypass a discussion on urban elevated expressways and proceed directly to light rail as a means for increasing transportation access.

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ⁱⁱⁱ Brasuell, James. "Opposition Emerging to Las Vegas Elevated Expressway Proposal." Planetizen: The Urban Planning, Design, and Development Network. April 19, 2016. Accessed April 26, 2016.

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^v Blaszczyk, Regina L. *Norman Bel Geddes Designs America*. Edited by Donald Albrecht. New York City: Harry Ransom Center, 2012.

^{vi} Ibid.

^{vii} Ibid.

^{viii} ClarkCountyNV. "Paradise Road Portion of Las Vegas Elevated Roadways Project." YouTube.

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^x Garner, Dwight. "When David Fought Goliath in Washington Square Park." *New York Times*. August 04, 2009. Accessed April 26, 2016. <http://www.nytimes.com/2009/08/05/books/05garner.html>.

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^{xii} Mohl, Raymond A. "The Expressway Teardown Movement in American Cities: Rethinking Postwar Highway Policy in the Post-Interstate Era." *Journal of Planning History* 11, no. 1 (November 9, 2012): 89-103.

^{xiii} "Welcome to CNU." Congress for the New Urbanism. Accessed April 26, 2016.

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^{xv} "Removing Freeways - Restoring Cities." Preservation Institute. Accessed April 26, 2016.

<http://www.preservenet.com/freeways/FreewaysEmbarcadero.html>.

^{xvi} Napolitan, Francesca, and P. C. Zegras. "Shifting Urban Priorities?: Removal of Inner City Freeways in the United States." *Transportation Research Record: Journal of the Transportation Research Board* 2046 (2008): 68-75

^{xvii} "Milwaukee / Park East Freeway | CNU." Milwaukee / Park East Freeway | CNU. Accessed March 01, 2016. <https://www.cnu.org/highways-boulevards/model-cities/milwaukee>.

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^{xxii} Ibid.

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Appendix A: Select List of Completed Elevated Expressway Teardowns

| <u>Name</u> | <u>City</u> | <u>Road Name</u> | <u>Teardown Status</u> | <u>Removal Date</u> | <u>Teardown Cost</u> | <u>Road Length (mi)</u> | <u>Teardown Cost/Mile</u> | <u>Road Lifespan (years)</u> | <u>Replaced with</u> | <u>Source for Costs</u> |
|----------------------------|--------------------|------------------|------------------------|---------------------|----------------------|-------------------------|---------------------------|------------------------------|--|--------------------------------------|
| Central Artery/"Big Dig" | Boston, MA | I-90/I-93 | Completed | 2006 | \$15 billion | 7.8 | \$1.92 billion | 47 | 15 acre Rose F. Kennedy Greenway and underground freeway | Boston Globe |
| Rio Madrid | Madrid, Spain | M-30 | Completed | 2003 | \$4.5 billion | 6 | \$900 million | 36 | 6 mile park | The New York Times |
| West Side Elevated Highway | Manhattan, NY | NY-9A | Completed | 1989 | \$380 million | 4.7 | \$81 million | 60 | At-grade West Side Highway; Robert Moses project | The New York Times |
| Park East Freeway | Milwaukee, WI | I-43 | Completed | 2002 | \$45 million | 1 | \$45 million | 40 | At-grade boulevard; corridor under redevelopment | Congress for the New Urbanism |
| Harbor Drive | Portland, OR | U.S. 99W | Completed | 1974 | \$20 million | 2 | \$10 million | 29 | Waterfront district and park | Seattle Department of Transportation |
| Embarcadero Freeway | San Francisco, CA | | Completed | 1991 | \$50 million | 1.7 | \$29.4 million | 35 | Parks, urban redevelopment, pedestrian areas, trolleys | Preservation Institute |
| Cheonggye Freeway | Seoul, South Korea | | Completed | 2003 | \$313 million | 3.6 | \$86.94 million | 27 | Linear park | D Magazine |
| Ahyeon Overpass | Seoul, South Korea | | Completed | 2014 | \$13.5 million | 0.62 | \$21.77 million | 46 | Central-bus only lane | The Guardian |

Appendix B: Select List of Elevated Expressway Teardowns In Progress or Under Debate

| <u>Name</u> | <u>City</u> | <u>Road Name</u> | <u>Teardown Status</u> | <u>Road Length (mi)</u> | <u>Road Lifespan (years)</u> | <u>Replaced with</u> | <u>Source for Costs</u> |
|-------------------------------|-------------------|------------------|------------------------|-------------------------|------------------------------|--|--|
| Alaskan Way Viaduct | Seattle, WA | WA-99 | In progress | 2 | 58 | New tunnel under Seattle waterfront | U.S. Department of Transportation - Federal Highway Administration |
| Gardiner Expressway | Toronto, Canada | Highway 427 | In progress | 1.06 | 55 | At-grade boulevard | CBC News |
| Georgia and Dunsmuir Viaducts | Vancouver, Canada | | In progress | 2 | 45 | At-grade boulevard and 13 acre park | CBC News |
| East Austin Freeway | Austin, TX | I-35 | Under debate | 1 | 50 | At-grade highway and mixed use development | StreetsBlog USA |
| Sheridan Expressway | Bronx, NY | I-895 | Under debate | 1.29 | 54 | Proposal to shrink highway, add pedestrian/cyclist crossings; Robert Moses project | The New York Times |
| Buffalo Skyway | Buffalo, NY | NY-5 | Under debate | 1.1 | 63 | Proposal to replace with waterfront parkway; bridge is rated as "fracture critical" by NY State DOT | New York State Department of Transportation |
| Overtown Expressway | Miami, FL | I-395 | Under debate | 1.3 | 51 | Florida DOT proposed to expand highway from 4-6 lanes for \$580 million despite organized neighborhood opposition | Congress for the New Urbanism |
| Claiborne Overpass | New Orleans, LA | I-10 | Under debate | 2.2 | 50 | Proposal to replace with surface-grade highway | New Orleans Times-Picayune |
| Syracuse Expressway | Syracuse, NY | I-81 | Under debate | 1.4 | 55 | Proposal to replace with street-level boulevard through downtown | Politico (Capital New York) |
| Whitehurst Freeway | Washington, D.C. | U.S. 29 | Under debate | 0.6 | 67 | Various proposals include burying highway in enclosed trench and replacing land with a parkway; last feasibility study was in 2007 | D.C. Department of Transportation |