THE LIFE AND DEATH OF URBAN HIGHWAYS
Introduction

From the 1940s to the 1960s, U.S. cities lost population and economic investment to suburban locations. To compete, many cities built urban highways, hoping to offer motorists the same amenities they enjoyed in the suburbs. Whatever their benefits, these highways often had adverse impacts on urban communities.

In the United States, federal policy and funding spurred investment in urban highways. The U.S. Highway Act of 1956 set the goal of 40,000 miles of interstate highways by 1970, with ninety percent of the funding coming from the federal government. Fifty percent federal funding was the norm for other transportation projects. By 1960, 10,000 new miles of interstate highways were built and by 1965, 20,000 miles were completed. While most of the investment occurred outside cities, about twenty percent of the funds went into urban settings.

In 1961, Jane Jacobs challenged urban renewal and urban highways in her seminal book, The Death and Life of Great American Cities. Jacobs commented on the effects of highways on communities, stating, “expressways eviscerate cities.” For the first time, the unintended consequences of urban highways, such as displaced communities, environmental degredation, land use impacts, and the severing of communities, were highlighted. Jacobs went on to successfully fight urban highways in New York City and Toronto, and helped spur the formation of some of the most active community-based organizations in the U.S.

This urban activism had, by the late 1970s and early 1980s, made it nearly impossible to build an urban highway or raze a low-income neighborhood in the United States. New environmental review procedures were put in place to protect communities and parks from the effects of highways. However, the U.S. continued to build and widen highways, moving the construction of virtually all of them to suburban or inter-urban locations. By 1975, the goal of 40,000 miles of new interstate highways had been achieved.
Many cities in Latin America, following the Unites States’ lead, also began building urban highways in the 1950s and 1960s. A spate of new urban highways were built in Brazil during the dictatorship in the 1960s and 1970s, such as Rio de Janeiro’s Rebouças Tunnel and the Freyssinet Viaduct that cut a direct route between the downtown and the fashionable South Zone of Copacabana, Ipanema, and Leblon. The debt crisis of the 1980s slowed the process considerably. With the return of economic growth to Latin America, new urban highways began to reappear again.

In China and India, recent urban highway construction is even more dramatic. Cities in China are building both new highways and surface roads at a rapid pace. In China, all urban land is owned by the government, so land acquisition presents less of an obstacle to highway expansion than in the rest of the world. In India, the pace of highway construction is slower, as land acquisition is far more complex, but state governments are upgrading many large urban arterials with strings of flyovers that over time grow into limited-access freeways.

These new roads carry a significant amount of traffic and contribute to economic growth, but they also blight large sections of cities, threaten historic urban neighborhoods, and concentrate air pollution in highly populated areas, threatening people’s health and causing other problems.

In the past fifty years, tens of thousands of miles of urban highways were built around the world. Many are now approaching functional obsolescence. This is leading many cities, not just in the United States, to question the place of major highways in urban areas and whether they merit further investment or should be removed. Today, some of the same urban highways that were built in that period are being torn down, buried at great expense, or changed into boulevards. As cities around the world grapple with congestion, growth, and decline, some, as seen in the following case studies, illuminate what can be done when a highway no longer makes sense.

In light of the fact that so many cities in developed countries are now tearing out urban highways, it is time to re-appraise the specific conditions under which it makes sense to build a new urban highway and when it makes sense to tear one down.
Why Urban Highways

Cities need roads, and sometimes they even need highways, but few cities have thought systematically about when and where they need highways. Highways have a very specific role to play in an overall transportation system: to move traffic long distances at high speeds.

While urban passenger trips can generally be moved most efficiently by some other means than private cars, buses and trucks need to use roads, and these trips are much harder to replace. Both long-distance trucks and buses are heavy-weight vehicles that tear up roads, have difficulty stopping suddenly, and have large engines that pollute heavily and make a lot of noise. Therefore, it is frequently desirable to get as many large trucks and long-distance buses as possible off of local streets. Urban highways should prioritize the rapid movement of suburban and inter-city bus and truck trips and could include exclusive lanes for buses to ensure high capacity passenger moment.

However, such facilities are not as useful for short urban trips, because the indirectness of routes between a trip origin and destination undermines the time saved from the higher speed achieved by limiting access points.

Highways were typically sought as a solution to congestion. Years of evidence has shown that highways in fact do not alleviate congestion. While expanding road capacity might provide relief for the first few years, it is likely to have the opposite effect, even within the first five years of operation (Duranton and Turner, 2011).

By the late 1960s, traffic engineers from both the United States and the United Kingdom had observed that adding highway capacity was not decreasing travel times, and theorized that this was due to additional trips that were generated or induced because of the new roads. Since then, numerous empirical studies and analysis of real world case studies have shown that new road capacity usually induces traffic in direct proportion to the amount of new road space; removing roadways similarly reduces traffic (Cairns, Hass-Klau and Goodwin, 1998), with traffic growing by 0.4 to 1.0 as much as new capacity in the long-run (Hensher, 1977; Noland and Lem, 2000).
In practice, many urban highways were justified with some form of cost-benefit analysis. However, most experts in cost-benefit analysis point out that the tool was never meant to evaluate whether or not to build urban highways but rather to prioritize between competing inter-urban highway projects. Additionally, the analysis ignored important secondary effects, such as the adverse impact of the new road on surrounding property values, or the environmental costs that are generated by new induced traffic (Wheaton, 1978).

**Why Remove Urban Highways**

Cities are not removing all highways because of a sudden awakening of environmental consciousness or realization that car culture is bad. Rather, cities are removing urban highways in very specific circumstances, which include:

1. **Costs of Reconstruction and Repair:** In the United States, availability of ninety percent federal funding for roads was an incentive to build highways. Today, diminished federal funding and a growing reliance on private financing is spurring cities to more closely scrutinize costly investments. The costs of reconstruction and repair can be a compelling reason for cities to decide to remove highways. San Francisco, Milwaukee, and Seoul decided to invest in less costly alternatives instead of repairing or reconstructing some of their urban highways (CNU, 2010; Seattle, 2008).

   In Milwaukee, the city removed a thirty-year-old freeway spur for $25 million. Officials estimated it would have cost between $50 million and $80 million to fix that roadway (NPR, 2011). The removal freed up twenty-six acres of land for redevelopment including the freeway right-of-way and parking lots around it (Preservation Institute, 2011).

2. **Economic Revitalization:** Highways can blight the area around them, what Jane Jacobs called “the curse of the border vacuum.” Highways also can sever communities by creating inaccessible paths that bisect the city. Milwaukee, San Francisco, and Seoul wanted to revitalize areas blighted by elevated highways and eliminate the severance effects that were lowering adjacent urban property values (Preservation Institute, 2007).
After Seoul removed the Cheonggyecheon the average price for apartments in the area rose by at least twenty-five percent, as compared to only a ten percent growth in neighborhoods further away. Rents for commercial office space rose as well (Seoul Metropolitan Government, 2006). The area has also become a popular destination for locals and tourists alike. As of October 1, 2007, there had been 56 million visitors to Cheonggyecheon. According to the “Hi Seoul” program of the city of Seoul, there are on average 53,000 visitors to the reborn creek each weekday and 125,000 on each day of the weekend.

3. Increased Property Value: Some cities, including Portland, San Francisco, and Seoul have removed urban highways and reclaimed valuable real estate and sparked redevelopment, that in turn has generated more tax revenue for the city. In Portland, the removal of their expressway cleared the way for the creation of the Downtown Waterfront Urban Renewal Area in 1974 and the creation of a large new waterfront park. Land values in the area have increased 10.4 percent annually on average, from $466 million in 1974 to over $1.6 billion in 2008 (City of Seattle, 2008). When San Francisco replaced their double-decked freeway with the street-level boulevard, the “Embarcadero,” they saw an increase in property values in the adjacent neighborhoods of 300 percent and a dramatic increase in development in the area (Preservation Institute, 2007).

4. Making Waterfronts Accessible: Often, urban waterfronts used to be functioning ports with many truck movements needed to service the port. Highways were built along waterfronts to facilitate that. Waterfronts have often been polluted, smelly and undesirable. But with new environmental regulations, many waterfronts have become clean. In multiple cities, port activities have been moved and consolidated outside the city’s downtown. This has made waterfronts again desirable land. Harbor Drive in Portland and the Embarcadero in San Francisco are both examples where cities and local constituencies have wanted to reconnect to their waterfronts and develop the land for other purposes (Mohl, 2011).

5. Offering Better Solutions to Meet Mobility Needs: Highways have a specific function—moving traffic long distances at high speeds. To meet mobility needs, investments in other forms of transportation are needed. Bogotá chose to invest in a whole mobility strategy that included bus rapid transit, bikeways, and greenways, instead of elevated highways. Seoul also introduced BRT and restrictions on car use to increase mobility options for all when they removed the highway to create a linear park (Hidalgo, 2004).
When Urban Highways Are Removed

When cities took down or chose not to build urban highways, what they got instead was:

» Harbor Drive, Portland, USA: The Tom McCall Waterfront Park has helped property values in the downtown rise on average 10.4 percent per year and led to a sharp reduction in crime in the area.

» Embarcadero, San Francisco, USA: A world-famous boulevard surrounded by a 25-foot-wide promenade led to a 300 percent increase in adjacent property values.

» Park East Freeway, Milwaukee, USA: Halting construction of the freeway preserved Juneau Park. Taking down the highway has opened 26 acres of land to be redeveloped and added back into the tax coffers. Land values have risen faster than in the rest of the city and the area is now reconnected with Milwaukee.

» Cheonggyecheon, Seoul, South Korea: An international best practice for greenways that has also seen an increase in development and rents along the corridor and a decrease in air and noise pollution and traffic.

» Bogotá, Colombia: A 45-kilometer greenway now connects low-income neighborhoods to the downtown, and includes a mass-transit system that revolutionized bus rapid transit and carries 1.8 million people, and over 300 kilometers of bike lanes.

By taking down or not completing their highways, these cities found that reimagining urban highways created better places and attracted higher investment in the surrounding area. More cities around the world, having learned from the cities presented here, are removing highways. Other cities might consider highway removal or halting construction as well. These case studies illustrate how it was done.
Urban Highway Removals
Completed and Planned

Alaskan Way Viaduct
Seattle, Washington, USA
Constructed: 1953
Status: Tear down began in 2011
Km: 4.5
Annual Vehicular Traffic: 100,000 daily
Construction Investment (mil USD): 3,100
Investment per km (mil USD): 688.1
Replacement Type: Tunnel—Boulevard

Harbor Drive Boulevard
Portland, Oregon, USA
Constructed: 1950
Status: Torn Down 1974
Km: 4.8
Annual Vehicular Traffic: 25,000 daily
Construction Investment (mil USD): Unknown
Investment per km (mil USD): Unknown
Replacement Type: Boulevard-Park

Central Freeway
San Francisco, California, USA
Constructed: 1959
Status: Community proposal to remove the freeway
Km: 3.2
Annual Vehicular Traffic: 86,300 daily
Construction Investment (mil USD): 4,100
Investment per km (mil USD): 1,314.1
Replacement Type: Boulevar

Embarcadero Freeway
San Francisco, California, USA
Constructed: 1959
Status: Torn Down 1991—2001
Km: 2.6
Annual Vehicular Traffic: 61,000 daily
Construction Investment (mil USD): 80
Investment per km (mil USD): 31.1
Replacement Type: Boulevard

Park East Freeway
Milwaukee, Wisconsin, USA
Constructed: 1965—1971
Status: Torn Down 2002—2003
Km: 1.6
Annual Vehicular Traffic: 35,000 daily
Construction Investment (mil USD): 25
Investment per km (mil USD): 15.5
Replacement Type: Boulevard

I-64
Louisville, Kentucky, USA
Constructed: 1961
Status: Community proposal to remove the freeway
Km: 3.2
Annual Vehicular Traffic: 86,300 daily
Construction Investment (mil USD): 4,100
Investment per km (mil USD): 1,314.1
Replacement Type: Boulevard

I-81 Boulevard
Syracuse, New York, USA
Constructed: 1957
Status: Community proposal
Km: 2.3
Annual Vehicular Traffic: 100,000 daily
Construction Investment (mil USD): Unknown
Investment per km (mil USD): Unknown
Replacement Type: Boulevard

Clairborne Expressway
New Orleans, Louisiana, USA
Constructed: 1968
Status: Community proposal for removal
Km: 3.2
Annual Vehicular Traffic: 69,000 daily
Construction Investment (mil USD): Unknown
Investment per km (mil USD): Unknown
Replacement Type: Boulevard

Gardiner Expressway
Toronto, Canada
Constructed: 1955—1966
Status: Portions were removed in 2001 and 2003, there is a study underway to remove another portion
Km: 18
Annual Vehicular Traffic: 200,000 daily
Construction Investment (mil USD): 490
Investment per km (mil USD): 27.2
Replacement Type: Boulevard

West Side Highway aka “Westway”
New York, New York, USA
Constructed: 1927—1931
Status: Torn Down 2001
Km: 7.6
Annual Vehicular Traffic: 140,000 daily
Construction Investment (mil USD): 380
Investment per km (mil USD): 50.2
Replacement Type: Boulevard
<table>
<thead>
<tr>
<th>Project</th>
<th>Location</th>
<th>Year of Construction</th>
<th>Years of Operation</th>
<th>Length (km)</th>
<th>Daily Vehicular Traffic</th>
<th>Construction Cost (Million USD)</th>
<th>Investment per km (Million USD)</th>
<th>Replacement Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sheridan Expressway</td>
<td>New York, USA</td>
<td>1958-1962</td>
<td>Proposal</td>
<td>1.9</td>
<td>45,000</td>
<td>Unknown</td>
<td>Unknown</td>
<td>Boulevard</td>
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<tr>
<td>Route 34/Downtown Crossing</td>
<td>New Haven, USA</td>
<td>1960</td>
<td>Construction slated to begin 2014</td>
<td>0.9</td>
<td>30,000</td>
<td>342</td>
<td>401</td>
<td>Boulevard</td>
</tr>
<tr>
<td>I-93 aka “The Big Dig”</td>
<td>Boston, USA</td>
<td>1959</td>
<td>Torn Down 2007</td>
<td>2.9</td>
<td>200,000</td>
<td>15,000</td>
<td>5179.2</td>
<td>Tunnel—Boulevard</td>
</tr>
<tr>
<td>Marechaux 411</td>
<td>Paris, France</td>
<td>1932—1967</td>
<td>Plans</td>
<td>7.9</td>
<td>100,000</td>
<td>411</td>
<td>52</td>
<td>Tramway</td>
</tr>
<tr>
<td>Georges Pompidou Expressway</td>
<td>Paris, France</td>
<td>1967</td>
<td>Government proposal</td>
<td>1.8</td>
<td>70,000</td>
<td>Unknown</td>
<td>Unknown</td>
<td>Boulevard</td>
</tr>
<tr>
<td>A-100 Tunnel</td>
<td>Berlin, Germany</td>
<td>1995</td>
<td>Torn Down 2000</td>
<td>1.7</td>
<td>170,000</td>
<td>276</td>
<td>162.4</td>
<td>Tunnel—Boulevard</td>
</tr>
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About the project

The freeway was a response to the city’s concern about its economic competitiveness and its ability to easily move goods from Milwaukee to major hubs like Chicago. To solve that problem, Milwaukee developed the freeway network that included the Park East Freeway. Property acquisition began in 1965, resulting in the demolition of hundreds of houses and scores of businesses.

By 1971, the first section of the freeway was open and around that same time, local opposition grew because of the highway’s detrimental effect on the city, including the pending severance by the highway of Juneau Park from Lake Michigan and the polluting of the park. Elected officials soon supported the opposition and the project was halted. What remained was a one-mile freeway spur that extended from I-43 in the east, near the waterfront, into downtown Milwaukee. The freeway separated the north side of the city from the downtown area with only three exits as well as interrupting the street grid network. Further construction of the freeway was finally terminated in 1972, when Mayor Henry Maier vetoed any additional funds to the project. (Preservation Institute, Milwaukee, Wisconsin).

Background

In the late 1940s and 1950s, the Milwaukee city government introduced plans for the construction of a ring of freeways around the downtown. The Park East Freeway was to connect to I-794, a 3.5-mile freeway linking Lake Michigan to the southern suburbs, and, in combination with the Park West Freeway, would create an east-west regional expressway. The project began in 1971 and was halted in 1972 due to community opposition, and then later abandoned completely, due to rising construction costs and opposition. The incomplete freeway was underused and the land around it, previously cleared for further highway construction, sat vacant for years.

In the early 1990s, the state of Wisconsin finally removed the transportation corridor designation on the cleared land that had prevented it from being developed, and the vacant area was redeveloped into the lively mixed-use development known as East Pointe. The success of its revitalization inspired Mayor John Norquist to remove the under-utilized freeway for further redevelopment and revitalization. Demolition of the Park East Freeway began in 2002 and was completed by 2003.

Today, the area that once housed the Park East Freeway is a neighborhood of shops, apartments, and townhouses, on a traditional street grid. The freeway removal not only helped reduce congestion in the area but helped stimulate development.
Mayor John Norquist, mayor from 1988 to 2004, was inspired by the revitalization and success of the East Pointe neighborhood that developed in the 90s and decided that it was time to demolish the Park East Freeway. Initially, there was some opposition to the teardown, especially from George Watts, a long-time Milwaukee resident, who claimed that the freeway brought vital business to the shop owners in the area. A further analysis showing how under-used the Park East Freeway was eventually discredited any claims to Watts’ assertion. Other opponents included business owners that feared the removal would congest their streets and further blight the area. A traffic impact study quelled this sentiment, finding that the project would not impact traffic levels because it offered better connections with existing streets.

A successful redevelopment design competition further won over area residents and business owners.

Demolishing the freeway cost $25 million, with the federal government paying 80 percent of the cost. The cost of keeping the freeway would have been $50 to $80 million in repairs and reconstruction—saving the city $25 to $55 million. It also freed twenty-six acres of land for new development, which also meant a new tax base for the city.

**Stakeholders**

Local neighborhood and environmental activists were the original catalysts for reversal around the freeway. Mayor Maier stopped construction of the freeway. The federal government played a key role, financing both the highway construction and its takedown. The National Environmental Policy Act (NEPA), passed in 1969, also helped stop the construction of the highway (Cutler, 2001). Opponents brought suit claiming that the environmental impact statement had to be prepared under NEPA before construction started. Although part of the highway had been built and the acquisition of land and destruction of homes had already commenced, the judge upheld the suit and all construction stopped. The Governor and State Department of Transportation were also involved in authorizing the creation and demolition of the freeway.

John Norquist, mayor, and Peter Park, city planning director, were the primary figures pushing for the Park East takedown.

Anton Nelessen Associates were responsible for the revisioning of the Park East area.

George Watts was the key figure in opposition to highway removal. Watts claimed that the freeway system “is the life blood of the city,” and, in 2000, even ran against Norquist for Milwaukee mayor to prevent the removal.
**Effects**

The Park East Freeway was replaced with a surface boulevard that reconnects the grid. Since the take-down, access to downtown Milwaukee has improved. Most of the one-way streets in the area were converted to two-way streets, improving connectivity. The lane widths on the road were narrowed, slowing down traffic and allowing more space for pedestrians. Sidewalks and pedestrian connections were put over the bridges.

Peter Park, the city planning director, used form-based codes, instead of traditional zoning codes, to encourage better development in the area. Three new neighborhoods were created on the new acres of real estate, including: the McKinley Avenue District, which was slated for office, retail, and entertainment development; Lower Water Street District, with offices and existing waterfront residences, and the Upper Water Street District slated for mixed-use infill office development.

Between 2001 and 2006, the average assessed land values per acre in the footprint of the Park East Freeway grew by over 180 percent and average assessed land values in the Park East Tax Increment District grew by forty-five percent during the same period. This growth exceeded the city’s overall growth by twenty percent.

Although parcels for redevelopment in the area were ready to enter the market since 2004, development has been slow to happen. The reasons for this may include the recession that began in 2007, the lot sizes being too large, and the fact that control of the land resides in the county and not the city.

There has been some new developments though, including the new headquarters for Manpower Inc.—a Fortune-500 company—the Aloft Hotel, the Flatiron mixed use and condominium project, the North End neighborhood development, and the Park East Square.

**Timeline**

**Park East Removal Project**

1971 Park East Freeway construction begins, 1 mile spur is built.
1972 Construction is halted and then terminated due to local opposition and veto of funds.
1990 The transport corridor designation of the vacant land around Park East is eliminated, allowing the land to be redeveloped.
2002 Demolition of Park East begins.
2003 Demolition ends.

McKinley Avenue Boulevard completed.