

RETHINKING THE URBAN FREEWAY

Options for Rebuilding, Replacing, Altering or
Otherwise Addressing Aging Freeways
November 2013

INTRODUCTION

The 1950s and '60s saw significant construction of freeways within cities. Many cities welcomed these freeways within their borders and even into their downtowns. Planners saw a freeway as an economic development tool to entice suburban dwellers back to the city for employment, shopping and cultural events. They also hoped highways would act as an urban renewal tool and eliminate what they felt were blighted neighborhoods.

Unfortunately, while freeways did provide vehicular access to downtown, they also disrupted the existing urban grid and street system. Freeways severed local commercial activity from customers, and many once vibrant streets now stand with shuttered businesses and negligible street activity. New commercial activity shifted to outside the city boundaries to isolated strip development accessible primarily by the automobile and not integrated into neighborhoods. Over the life of these expressways, it became clear that in addition to high long-term maintenance costs, these roads contribute to environmental degradation and negative public health impacts. Urban freeways occupy valuable real estate without contributing to the tax base, while increasing blight and decreasing property values nearby. They create barriers to movement within cities, institutionalize social inequities, and encourage suburban sprawl.

Across the country many urban freeways have reached or are reaching the end of their useful lives. Rebuilding a freeway imposes the huge financial costs of replacing elevated viaducts and other massive infrastructure associated with the facility. With cash in short supply, new solutions must be developed. The time is right to rethink freeways and how these transportation corridors function in cities. Some urban freeways are being torn down, replaced with boulevards, or otherwise re-imagined. Communities are organizing and discussing the future of freeway infrastructure. Decisions on the fate of an individual freeway will be very place specific, and must consider policy, budget, current and future transportation needs, and neighborhood impacts. There is no one-size-fits-all solution, but there is a tremendous opportunity to reconsider urban freeways, to mitigate or remove their negative impacts, and to secure a more healthy, equitable and prosperous future for our cities.¹

IMPACTS AND OPPORTUNITIES

When confronted with the question of rehabilitating, removing, or reconfiguring a downtown freeway, cities should enter into a serious



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SUMMARY

Across the country urban freeways are at the end of their design lives and cities are wrestling with the question of how to deal with them.

Cities have the opportunity to rethink, remove, or repurpose urban freeway space.

Freeway conversion can address environmental and social justice harm and result in significant local economic and social benefits.

Converting or removing an urban freeway will need the backing of a wide spectrum of stakeholders to move forward.

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dialogue about the costs and benefits of this type of infrastructure, and if it meets long-term goals for the city. The most common challenges associated with urban freeways are discussed in this section, and examples of how cities have met these challenges are offered.

Transportation

Freeways are, first and foremost, transportation infrastructure. Yet they may not actually promote safe and effective transportation within a city. Freeways in urban settings were designed to focus on throughput rather than promoting the city's economy or connecting travelers with destinations within a city. This type of transportation infrastructure does a good job moving high volumes of traffic long distances. Within cities, however, freeways sever the street grid in the neighborhoods they pass through, forming an effective barrier between people and their employment, educational, commercial, and cultural destinations.²

People driving on freeways do not travel on local roads and thus are much less likely to stop to patronize local businesses. For example, the tangled network of freeways, interstates and state highways in Buffalo, NY, has been criticized for draining commerce, and other activity from much of its local road network. As traffic shifted to the freeways it left businesses sited on once busy city streets starved for customers, and they eventually closed their doors.³

The safety of urban highways is challenging on several levels. Freeway off ramps are structurally mismatched with the capacity of a city street, creating congestion and safety concerns and are not compatible with mixed modes of transportation (e.g. biking and walking). Often, the design of older freeways does not meet current design standards, creating significant safety concerns for motorists. Typical non-standard or non-conforming features include roadway width, sight distances, grades, median width, curve radii, and distances between on and off ramps.⁴

Elevated freeways in cities create safety hazards for non-automotive travelers as well. Pedestrians and bicyclists are often at a loss for how to navigate around the freeway on and off ramps. Travelling underneath a freeway poses the additional hazards of restricted sight lines paired with the higher speeds of vehicles entering and exiting the freeway. Land directly below an elevated freeway is not easily visible to the public and can be a haven for undesirable or criminal activities.

One immediate question when considering freeway conversion or removal is "where will the cars go?" Cities that have removed freeways discovered that traffic formerly on the freeway dispersed throughout the larger urban grid road network. In many cases the cities saw either improvements to traffic flow and congestion or no meaningful increase in traveler delay. Portland, OR, for example, removed Harbor Drive in the 1970s, and adjacent highways and the local road network were able to absorb traffic that had previously used the freeway.⁵

Another factor is the general decline in car travel. Nationwide, per capita vehicle miles traveled has been flat or declining for about a decade. People are driving less and this trend seems to be enduring.⁶ In Vancouver, BC, for example, the city is considering removing the Georgia and Dunsmuir viaduct highways that currently

"In every city's evolution there are rare opportunities to take bold city-building steps to advance the city's goals and livability or correct a past planning wrong. The potential removal of the viaducts [highways] provides an opportunity for the City of Vancouver to do both."

- City of Vancouver, BC Staff Report⁷

"Sometimes we have to explain that ... highways do end someplace and those [places] are our streets."

- Andrew Stober, City of Philadelphia, PA⁸

separate multiple downtown neighborhoods from each other. These were designed to carry 1,800 vehicles per lane per hour, but they currently carry only 750.⁹ Similarly, the McGrath freeway in Boston and Somerville, MA, has seen decreasing traffic volumes, partly due to the impact of the Big Dig, and is expected to see more when Boston's subway is extended in to the area. The Massachusetts Department of Transportation currently has the McGrath scheduled for reconstruction as a boulevard.¹⁰

Social and Economic Equity

The construction of freeways did notorious damage to neighborhoods, and had a disproportionate impact on neighborhoods that were primarily African-American and/or low income. Because state departments of transportation wanted the cheapest land with the least powerful opponents for their freeways, and because the "urban blight" freeways were supposed to mitigate was often code for African-American neighborhoods, freeways were built in poor and minority neighborhoods, cutting off neighbors from each other and from stores and work.

In Miami, FL, the Overtown neighborhood was a thriving neighborhood and a center for African-American business and culture.¹¹ In the 1960s, interstates 95 and 395 were built, displacing nearly half the population and decimating the neighborhood.¹² Today, over half of Overtown residents live in poverty, a third of the population lives in subsidized housing, and only three percent own their homes.¹³ North Claiborne Avenue in New Orleans, LA's Treme neighborhood is another example. Once a busy boulevard filled with majestic oak trees that was called "black people's Canal Street," the street and nearly 500 homes were razed in 1966 to build Interstate 10.¹⁴ Today, the city is considering alternatives to reconstructing the now-crumbling I-10, including restoring a boulevard. The same questions of disenfranchisement remain, however¹⁵ – in this and other affected neighborhoods, residents had little or no voice in the initial construction of freeways. It is essential that they have a voice in any reconstruction or removal.

Freeways continue to have a disproportionate impact on these communities because freeways lower property values, increase blight, and maintain marginal neighborhoods nearby. Environmental justice and public health issues impact these communities disproportionately due to their proximity to the freeway. Low-income families and communities of color continue to be particularly vulnerable to and harmed by the transportation barriers freeways create. As we reconsider freeways, we can lessen these harms and work to make inner-city neighborhoods healthier and more prosperous. Reviewing the need for an urban freeway gives a city the opportunity to right an historical wrong and any solution adopted for a freeway should particularly address these concerns.

Environmental and Public Health

Urban freeways, elevated or surface, bring vehicles through dense downtown environments. This through-traffic produces documented environmental and health consequences such as locally hazardous air pollutants, globally significant greenhouse gas emissions, flooding, and noise.

"In Tennessee, plans for the construction of Interstate 40 were in fact redrawn to route the highway through the flourishing Jefferson Street corridor, home to roughly 80 percent of Nashville's African-American-owned businesses. Not only did the construction of I-40 destroy this commercial district; it also demolished 650 homes and 27 apartment buildings while erecting physical barriers separating the city's largest African-American universities: Fisk University, Tennessee A & I University, and Meharry Medical College."

- F. Kaid Benfield, Matthew Raimi, and Donald D. T. Chen¹⁶

Studies link vehicle emissions to increases in asthma rates near highways. Current research is documenting the health and economic impacts from cardiovascular disease resulting from auto-related air pollution.¹⁷ Freeways also add to elevated temperatures in their vicinity through the heat island effect, making heat waves more severe and contributing to negative health outcomes. Auto emissions also contribute to ground-level ozone production, which is exacerbated by heat, and which puts additional strain on the well-being of older adults, and those with asthma or other respiratory conditions. Overall, living next to a freeway can have serious negative health consequences. One recent study found that the risk of preterm birth and low birth weight increased dramatically when mothers lived closer to highways.¹⁸

Urban freeways tend to concentrate truck traffic. Diesel trucks present a much greater threat to nearby residents than passenger vehicle traffic due to their more harmful emissions and, to a lesser extent, the noise and vibration they produce. Long-term exposure to diesel emissions is linked to lung cancer as well as heart disease.¹⁹ Short-term exposure can cause irritation of the eyes, nose, throat and lungs, as well as coughing, headaches, lightheadedness and nausea.²⁰ Exposure to diesel exhaust may also aggravate chronic respiratory symptoms and increase the frequency and intensity of asthma attacks. The elderly, children, and people with chronic respiratory problems are at the greatest risk from diesel pollution.²¹ Noise from diesel trucks poses another important, although less understood, risk to nearby communities. Along with annoyance, noise exposure can contribute to cardiovascular disease, cognitive impairment in children, sleep disturbance, and tinnitus—the sensation of sound in the absence of an external sound source.²²

Cities that have removed freeways document decreases in air pollution, particularly fine particulates in the area where the former freeway stood. When Seoul, South Korea, removed the 3.6-mile-long Cheonggyecheon Highway that passed through the center of the city, automobile traffic in the area dropped by 9 percent. The reduction in pollutants from single-occupancy vehicles helped drive numerous environmental benefits. Documented improvements include a reduction in the urban heat island effect – measuring a drop in temperature of approximately 8 degrees centigrade, a 21 percent reduction in small particulate pollution, as well as significant reduction in other airborne pollutants.²³

A freeway’s impervious surface reduces the ability of rainwater to infiltrate, causing a flooding hazard. Also, storm water runoff from urban freeways contributes to reduction in water quality of the local water shed, threatening human health. Urban storm water is also toxic to many aquatic species, thereby compromising local ecosystems.²⁴ Vehicle emissions are a significant source of greenhouse gas emissions, which contribute to global climate disruption and a myriad of negative consequences for ecosystems and human health.

Land use

The opportunity costs associated with having a freeway in the middle of a large city are numerous. Urban freeways restrict local policy makers from encouraging desirable land uses in three primary ways: by occupying valuable land without paying taxes; by reducing the value of nearby properties; and by reducing quality of life in nearby neighborhoods.

“Each time a highway has been torn out of the core of a city, surprisingly (to traffic planners) congestion actually dropped. Roughly, 75% of the traffic simply re-routes. It takes other roads or other highways. The other 25% disappears. It takes transit. It carpools. It telecommutes. It could be doing a variety of things, but what we know for sure; it is no longer needing nor using the highway. This is like reversing Induced Demand. If you remove capacity, you reduce some of the demand.”

- Patrick Kennedy and Brandon Hancock²⁵

Freeways take up lots of valuable land and don't pay taxes. When the Milwaukee, WI successfully demolished the mile-long Park East Freeway in 2003, it unlocked 26 acres of land for redevelopment. The \$25 million cost and subsequent economic benefits of redevelopment compare very favorably with the \$80 million that would have been needed to reconstruct the freeway. Since demolishing Park East, firms have begun to relocate to this part of Milwaukee and developers are now investing in new apartment building construction. This infuses the city with jobs during construction and helps grow the tax base, as new residents move downtown.²⁶

The downward pressure a freeway exerts on the value of adjacent land further reduces tax revenues. The building of I-65/70 in Indianapolis, IN produced a staggering downward push on real estate values adjacent to the interstate, with one estimate showing a loss of \$99 million in real estate value for a single mile of freeway analyzed in downtown Indianapolis.²⁷ The removal of the Embarcadero freeway in San Francisco, CA provided waterfront access that was previously unavailable, and adjacent real estate values rose 300 percent.²⁸ Not surprisingly, truck traffic also has a measurable effect on residential property values. One recent study estimated that a 1 percent increase in truck traffic on an urban freeway results in a 0.5 percent decrease in property values for homes 100-400 meters from the road.²⁹ Other researchers have estimated reductions in quality of life caused by noise impacts of heavy-duty truck traffic in populated areas.³⁰

"I don't think there's anything that could be more impactful to the revitalization of downtown and the city's North End business district than dealing with the Robert Moses Parkway."
- Niagara Falls Mayor Paul Dyster³⁷

The location of freeways and the sub-optimal land uses near them degrade the quality of life in cities. Urban freeways often skirt a city's waterfront, restricting resident's access to these amenities. Washington, DC, is a classic example of a city cut off from its waterfront.³¹ New York City, with its Sheridan Expressway – a 1.2-mile, never-completed highway separating residents from the Bronx River -- is another example. Removal of the stub expressway would free 28 acres of property adjacent to the river for housing, a greenway, and economic development.³² Perhaps surprisingly, Niagara Falls, NY, is another example – the Robert Moses Parkway in downtown Niagara Falls has blocked pedestrian access to the riverfront for half a century. Bowing to public demand, the New York State Department of Transportation recently agreed to remove a stretch of the highway altogether.³³

Philadelphia, PA has similar issues – Interstate 95, built in 1979, runs along the Delaware River, separating the city from the waterfront. The Delaware River Waterfront Corporation is considering capping a portion of the freeway with an 8-acre park to connect neighborhoods to the waterfront and help spur economic development.³⁴ And Los Angeles, CA, notoriously short on public green space in its downtown, is considering capping the 101 freeway to create a park and better pedestrian connections.³⁵ Dallas, TX's Kyle Warren Park already sits atop the Woodall Rodgers Freeway, and this green space is kept open by a public-private partnership.³⁶ Siting of a freeway through a city precludes the use of that land for commercial, residential, or other activities. This cost comes in lost municipal tax revenues, and decreased social, cultural, and economic vibrancy.

Economic Development

Urban freeways disrupt local commerce and degrade the business districts they run through. Their initial construction directly removed and contributed to the decline of once-thriving businesses, and they continue to impact downtown business districts. People driving through a city on a freeway have limited opportunity to patronize local businesses, so local economic opportunity is diminished through the freeway corridor. Those businesses cannot be restored, but freeway removal, capping and conversion all offer fresh possibilities for

economic development. Parcels formerly occupied by the freeway, can be repurposed for uses that support economic and residential development and generate jobs, retail activity and tax revenue.

In Boston, MA, increases in value of commercial properties along the former Central Artery outpaced citywide increases by more than 30 percent. Buildings lining the old artery, now a linear park, have been reoriented towards the street. Bricked up windows are now open. Entire areas of Boston are now more accessible than they have been for decades.³⁸

Returning traffic to city streets, and to downtown in general, can have a positive economic impact as well. After Portland, OR closed Harbor Drive in 1974 the city experienced significant economic growth in the area formerly occupied by the freeway. This part of downtown transformed into a vibrant space with mixed use commercial, residential, and business development. The businesses thrived and increased tax revenue from the increased commercial activity has helped the city's budget bottom line.³⁹

"They are neighborhoods of the past that we want to bring back... There is no bigger barrier in East Somerville and perhaps this entire city, than McGrath Highway."
- Somerville Mayor Joseph Curtatone⁴⁵

Cost

Freeways cost, by any measure, an exorbitant amount of money. The American Society of Civil Engineers estimates the US surface transportation system needs a total of \$1,732 billion in investment to restore it to good condition – and that we need to invest \$20 billion for bridges and about \$170 billion for urban highways every year.⁴⁰ As the gas tax declines and transportation funds become scarce, that's money we don't have. To make matters worse, cities are often burdened with at least a portion of the maintenance costs for these aging freeways. And then there's the cost to society each year of increased vehicle operating costs (estimated at \$97 billion) and safety costs (estimated at \$1.2 billion) from roads in poor condition, and environmental costs from freeways (estimated at \$590 million).⁴¹

INFRASTRUCTURE AND POLICY OPTIONS FOR AGING FREEWAYS

There are numerous possibilities for rethinking the future of an urban freeway. City priorities and development policies will help frame decision making for each city trying to make choices on what to do with an old freeway. While a traditional, full rebuild of a freeway is an obvious option, it is probably not the best choice for a city working to improve environmental and public health, the city's transportation system, social justice, economic development and quality land use, and thus we do not discuss a full rebuild here. Cities with downtown freeways should consider the following options:

1. Convert to surface boulevard

Removing an elevated freeway and replacing it with a surface boulevard has been a popular way to mitigate the historic damage freeways have imposed on cities. Conversion to a boulevard offers the benefits of reconnecting the city street grid and improving local economic vibrancy. This option also disperses through-traffic, as people not needing to access the city will choose other routes.⁴² West Sacramento, CA transformed the old State Route 275 into a pedestrian and bicycle friendly business hub in 2011.⁴³ Chattanooga, TN's Riverfront Parkway was an expensive and underused four-lane freight highway, so the city changed it into a walkable, green boulevard.⁴⁴ San Francisco, CA replaced the Central Freeway with Octavia Boulevard in 2002. The new boulevard included park space, streetscaping, and pedestrian amenities. The Hayes

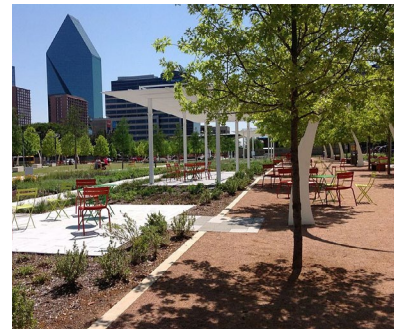
Valley neighborhood, where the freeway was located, saw condominium prices rise from 66 percent of the city average to 91 percent of the city average. The liquor stores and auto repair shops that dotted the neighborhood with the freeway have given way to new restaurants and neighborhood retail.⁴⁶

2. Construct a sunken expressway

A sunken expressway is a below normal street grade highway. Sunken highways mitigate sound impacts but still cut off neighborhoods from other areas in a city, as people can only cross where there is a bridge.⁴⁷ Sinking a freeway doesn't reduce traffic or address any transportation demand management goals. While a sunken expressway can help deal with unwanted traffic noise and the city street grid may be reconnected by construction of bridges, it does not effectively address air quality and associated environmental and health concerns. In addition, below-grade corridors may be more expensive to maintain. Vine Street Expressway (Interstate 676) in Philadelphia is one example of a sunken freeway.

3. Cap or deck the highway

Decking an urban freeway essentially constructs a "roof" over a sunken expressway. This option is most often used to create a linear park. Decking carries a high initial cost but, with a proper value-capture arrangement,⁴⁸ this cost can be recovered in increased property value. This strategy can provide numerous environmental, economic development and community benefits.⁴⁹ It does not, however, do anything to achieve VMT reduction or Transportation Demand Management goals a city may hold. The city of Dallas, TX established a linear park over the Woodall Rogers Freeway (state highway 366). Funded through a public-private partnership, the Klyde Warren Park offers 5.2 acres of green space for mixed uses.⁵⁰ Austin, TX is considering capping highway I-35 (the 4th busiest American roadway) and building a boulevard and parkway over it.⁵¹



Klyde Warren Park in Dallas, TX. By Kevin1086 (Own work) [CC-BY-SA-3.0], via Wikimedia Commons

4. Relocate

As the name implies, relocating a freeway moves the alignment of a highway to a new location. This may be done for a variety of reasons, including urban revitalization near the old freeway, or changes in traffic flows or destinations. Freeway relocations have been used to the benefit of property owners adjacent to the old alignment. But by moving a freeway, a city simply shifts the associated challenges or decreased urban vibrancy, decreased property values, and pollution to a new location. This option also does not reduce traffic, and can carry a very high cost. Providence, RI, is relocating Route 195. The project will free 20 acres of land for redevelopment, help restore the street grid, and provide access to the waterfront. Purchasers for the vacated parcels are already coming forward and include Brown University and Johnson & Wales University. Plans are also underway to create public space along the waterfront.⁵²

5. Tunnel the freeway

Different than building a deck on an existing freeway, tunneling a freeway reconstructs it underground. This type of project carries similar benefits and downsides to freeway decking and carries a high initial cost. These upfront costs can be recovered through value capture and increased property value. Hiding Boston, MA's

Central Artery (I-93) in an underground tunnel - known as the big dig- carried an unprecedented cost (\$14 billion) and became synonymous with waste. However, few argue that the city isn't improved by the project. It created a network of parks and public spaces and unlocked millions of dollars in real estate value that the original freeway had depressed. Still, such a solution might be practical with modern value capture financing, like a special assessment on properties that will benefit from the infrastructure investment.⁵³ Even without value capture, burying a freeways can spur millions in business development, private investment, and tax revenue.

6. Complete removal

This option entails removing an urban freeway without constructing a replacement roadway. It is extremely unlikely that an urban freeway would be removed completely, although Portland, OR did remove Harbor Drive. The city closed the expressway in 1974 and began removal shortly thereafter. However, even then the frontage road was retained to absorb the traffic that formerly traveled on the freeway.

HOW TO MAKE IT HAPPEN

Despite the high cost and obvious negative impacts to communities, the default option for an aging freeway is reconstruction, and sometimes even expansion. This is the result of many factors, but one of the most important is that urban freeways are usually not controlled by the cities they run through - they are controlled by state Departments of Transportation (DOT), toll authorities, counties or other larger entities. These agencies are likely to be motivated by travel time, congestion levels and other measures of moving traffic through a place - all things at odds with city priorities like economic development, public health and quality of life.

Examples of this abound, and include the Alabama DOT proposal for Interstate 20/59, which calls for an expansion of an existing freeway cutting through Birmingham's downtown⁵⁴ and Oklahoma DOT's proposal to replace a downtown Oklahoma City freeway with a partially elevated highway instead of the boulevard envisioned by the City Council.⁵⁵ The Citizen driven study "A New Dallas" is currently exploring ways to renovate the declining Highway 345. Their study includes

A new future for downtown Rochester: Removing the Inner Loop Highway

Rochester, NY has wanted to remove the Inner Loop sunken freeway since 1990. In the area targeted for removal, there are just four bridge crossings, severely limiting access to the downtown, hampering economic development in the area, and creating a formidable barrier to any mode of transportation other than motor vehicle. In fact, the city itself has called the Inner Loop a "noose around the neck of downtown."

Rochester applied unsuccessfully for federal funds to redo this portion of the expressway twice, in 2009 and 2011.⁵⁶ Undaunted, the City committed \$2 million to develop a plan and create preliminary engineering documents. This sent a strong signal to the U.S. Department of Transportation that Rochester is serious about removing this freeway, and contributed to the success of their application in the 2013 TIGER grant awards.

The City received \$17.7 million to facilitate the removal and reconstruction of the expressway and frontage roads as a parkway. A design proposal is complete -the sunken segment will be brought up to grade.⁵⁷ The project will remove 8-12 lanes of expressway and frontage roads and replace them with a two-lane street with parking, a separated bicycle track and sidewalks.

The City succeeded in building a team of stakeholders across multiple interest groups, invested in a quality plan, and built relationships with influential elected officials who helped make this grant award a reality.⁵⁸ According to a U.S. DOT factsheet on the project, "the new street will restore connectivity and transform blighted, isolated neighborhoods into a livable community. The project improves mobility choices, enabling residents to walk or bike to nearby jobs and destinations that were previously separated by a freeway. Converting the freeway to a more appropriate and interconnected complete street is expected to catalyze investment and economic development in Rochester."⁵⁹

Table 1: Weighing Different Freeway Options

Conversion	Boulevard	Decking/Tunnel	Relocation	Below grade/sunken freeway
<p>Potential Benefits</p> <p>(Compare to opportunity costs associated with retaining freeway)</p>	<p>Local economic development</p> <p>Reconnect street grid</p> <p>Address air quality, heat island effect</p> <p>Improved public health outcomes</p> <p>Less costly than a full re-build both for construction and maintenance.</p>	<p>Local economic development</p> <p>Opportunity for green space/parks</p> <p>Improved public health outcomes</p> <p>Noise reduction</p> <p>Heat island effect</p> <p>Reconnect street grid</p>	<p>Local economic development</p> <p>Reconnect street grid</p> <p>Localized air quality, heat island improvements</p>	<p>Some local economic development</p> <p>Opportunity to partially reconnect street grid</p> <p>Limited opportunity for park space on overpasses</p> <p>Noise reduction</p>
<p>Potential Compromises</p> <p>(Compare to opportunity costs associated with retaining freeway)</p>	<p>Traffic study needed to document anticipated changes in travel time, traffic flow, and shift to transit with conversion</p>	<p>Limited air quality improvements unless paired with TDM</p> <p>High capital construction and maintenance costs.</p>	<p>Impacts shifted to new location unless paired with TDM</p> <p>Traffic study needed to document potential travel time increase with relocation/removal</p> <p>Does not provide construction cost or maintenance savings compared to rebuild</p>	<p>Limited air quality improvements unless paired with TDM</p> <p>Likely to be higher cost than a boulevard or rebuild, but lower in cost to a tunnel or decking</p>
<p>Potential opposition or controversy</p>	<p>Concern over congestion or displacement of traffic</p> <p>Concern from suburban businesses over regional freeway connectivity</p>	<p>Taxpayer concern with cost</p>	<p>Equity concerns of residents near new freeway</p> <p>Concern over congestion or displacement of traffic</p> <p>Taxpayer concern with cost</p>	<p>Taxpayer concern with cost</p> <p>Does not address connectivity as below-grade freeway crossings are limited.</p>

detailed plans to create four more urban greenways in the vein of the aforementioned Klyde Warren Deck Park. However, “A New Dallas” still needs to convince the Texas Department of Transportation to go along with the proposal.⁶⁰

In the past, freeway re-evaluation, removal, or re-tooling has occurred when unless certain variables converged. The freeway was approaching or at the end of its design life; the freeway’s condition raised concerns about its structural integrity and safety; there was a significant event that allowed freeway removal alternatives to gain serious traction; mobility for long distance travelers could be maintained; and those in

power valued other benefits more than they valued the benefits associated with throughput on a freeway.⁶¹ It is also crucial that there is an active group of stakeholders offering up new design ideas and community goals.

There are many things a city can do to increase the chances that something other than complete freeway reconstruction happens. Even before highway agencies begin considering what to do with an existing freeway, cities can begin the process of telling their story by conducting planning and visioning processes, engaging their metropolitan planning organization, and by including alternatives to a freeway in their comprehensive, land use and transportation plans. Cities should be prepared to provide data, especially data that supports the ability of programs like transit improvements or restoring the street grid to support any proposed alternatives to basic freeway reconstruction or expansion.⁶² Once the federal and state agencies begin their consideration, it is essential to open a dialogue early in the process, ensuring the city has an influential seat at the table. One success story is Knoxville, TN: Mayor Madeline Rogero worked with the Tennessee Department of Transportation to suspend future extension of the James White Parkway in favor of promoting urban wilderness, noting the benefits of area's aesthetic qualities and its walkability.⁶³

The process of considering alternatives to a freeway will be a long one, and it should be an inclusive one. While highway agencies have their own public outreach processes, cities should work to ensure that all stakeholders are engaged in the conversation, especially those most affected by a freeway, and those least likely to engage on their own. Cities must make sure that their goals for the area are clearly articulated in plans, and that any alternatives under consideration are evaluated against those goals.

Cities, area property owners, developers and neighborhoods all stand to gain if freeway harms are lessened. This interest can help counter suburban-commuter interests (and, depending on location of the freeway, downtown business interests) in maintaining freeways and even expanding capacity. Road builders may also weigh in in favor of freeways, but if the replacement solution brings them business, they may not be a strong voice. Overcoming technical/administrative challenges will be specific to each city considering how to handle an aging urban freeway. Challenges will likely include entrenched positions and assumptions about congestion, delay, commute times, among others. Based on emerging best practice, we can make the case that surface streets and transit have proven to be better than the freeways they replaced, but the number of examples is small, and each case has unique problems.

City officials and community advocates must be ready to counter the entrenched opinions of transportation planners or engineers who may object to converting a freeway. These groups will cite the need to plan for future growth, that there are no alternative routes, or that there is simply too much traffic for a surface roadway. Groups working to replace a freeway should be ready with both specific data on their location as well as real world examples from cities across the country that have removed their freeways.⁶⁴ Ottawa, Ontario's King Edward Boulevard provides an example of the power of engineers. An unfinished eight-lane highway in the middle of Ottawa's Lowertown neighborhood, this street has long irked the community. Over the long and storied history of this street, the city's traffic engineers have consistently succeeded in making it

The following ingredients can make urban freeway removal appealing:

1. Low traffic volumes
2. High maintenance costs
3. Safety concerns associated with a freeway's aging infrastructure
4. A local government willing to invest in planning and engineering studies to develop alternatives
5. Champions at the local, state, and federal level
6. Civic interest in support downtown revitalization
7. Willing partners at the state and US Department of Transportation

more like a highway, despite concerted efforts by the neighborhood, a citizen task force, and the city council.⁶⁵

Cities should adopt a robust Transportation Demand Management (TDM) policy to help manage capacity post freeway removal, and to provide reassurance to those concerned about congestion and displacement of traffic. This type of strategy has proven its ability to manage auto travel demand. A good TDM policy invests in frequent transit service, and manages parking availability and pricing. Investing in mass transit using money saved by not rebuilding the urban freeway and reducing the subsidies for parking will help shift drivers to transit and reduce pressure on the existing road network.⁶⁶ When Seoul, South Korea, removed the 3.6-mile-long Cheonggyecheon Highway that passed through the center of the city, automobile traffic in the area dropped by 9 percent. By managing transportation demand and completing a bus rapid transit line, the city effectively dealt with mobility needs of the area. This project is now an example of best practice internationally.⁶⁷

To make it possible for residents of neighborhoods adjacent to a freeway targeted for removal to benefit from the project, cities should consider tools such as community benefits agreements and community workforce agreements.⁶⁸ These agreements provide a framework to negotiate with the community and the contractors doing the work, and to identify specific benefits that will accrue to the community, such as:

- Agreeing to hire a portion of the project's workers from surrounding zip codes
- Providing prevailing and/or living-wage jobs
- Giving special consideration to low-income or otherwise disadvantaged residents
- Providing training that allows workers to obtain the necessary job skills
- Guaranteeing that affordable housing will be part of post-removal development

Because of the history of harm to these communities, cities need to take special care to make sure that they benefit from a freeway removal, and are not displaced by subsequent development. In particular, should consider the potential for increases in property values adjacent to the former freeway to displace lower income residents and small businesses. Policies guiding redevelopment of newly available land that includes below market rate housing should be considered, as is proposed for the removal of the Sheridan Expressway in the Bronx.⁶⁹

Job Training and Employment in Denver

The city has established job training and employment programs specifically to reach out to communities adjacent to new light rail that is under construction.

Residents in these receive training in construction, maintenance, and as operating personnel on

the new trains. The Denver Regional Transportation District (RTD) established Workforce Initiative Now (WIN), a collaborative partnership between RTD, Community College of Denver, Denver Transit Partners (the contractor) and the Urban League of Metropolitan Denver. WIN helps job seekers, companies, and local communities through the creation of career opportunities in the transportation and construction industries. The program works with employers to identify needed skills and trains job seekers for these skills. The Denver metro region's rapid expansion of local public transportation has led WIN to focus its efforts on workforce opportunities along the I-70 corridor to Denver International Airport. This multi-year project is part of a public-private partnership that will construct 36 miles of rail corridor by 2016.⁷⁰



By vxla from Chicago, US (RTD D Line Light Rail Vehicle) [CC-BY-2.0], via Wikimedia Commons

The I-81 Challenge: Syracuse Stakeholders Have Their Say

Syracuse, NY, in partnership with the metropolitan planning organization and the New York State Department of Transportation (NYSDOT), launched the I-81 Challenge to gather input and assess options for the 1.4 mile segment of Interstate 81, known locally as “the viaduct”, an aging, elevated freeway that cuts off Syracuse University from the downtown. As stakeholders began to consider the fate of the viaduct, representatives from the city, university, metro area, and state agencies issued a letter calling for a collaborative effort to evaluate the alternatives and decide whether to replace, repurpose, or rebuild the highway.⁷⁵ This process can serve as a model for other communities wrestling with similar decisions.



1-81 in Syracuse, NY. By jimcchou (jimcchou's Flickr Page) [CC-BY-2.0], via Wikimedia Commons

Recognizing that the decision on I-81 will affect city residents and the region for decades to come, the Cast Study_Syracuse Metropolitan Planning Council and the NYSDOT convened meetings with those who use I-81 and live or work in the area. The planning and outreach project asked residents, agencies, and other stakeholders to contribute to a vision for how the freeway might look under a variety of alternatives. The I-81 Challenge gave stakeholders access to information and developed and documented public outreach. Public involvement included numerous charrettes and a web platform that allowed participation digitally through a “virtual meeting.” Use of social media provided a virtual community for people interested in the discussion. After extensive public input and engineering and cost analysis, the group has narrowed the alternatives to either a boulevard or reconstruction.⁷⁶

Many, including the current NYSDOT Commissioner, are excited about developing a new vision for what the elevated highway could or should be.⁷⁷ A coalition of local businesses, education, and political leaders interested in supporting new economic development in downtown have called this an “opportunity of a lifetime” for reinvigorating downtown Syracuse. This coalition asserts that the existing viaduct is harming the economic vitality of the city by segregating downtown from the university district and by severing neighborhood, social, and economic connections.⁷⁸ Opinions are not unanimous, however. Some commercial establishments that have based their business models on easy access on and off the highway are understandably leery of removing the viaduct.⁷⁹ The Challenge does a good job sparking productive discussion of local goals and objectives that are being incorporated into the decision-making. Some of the improvements emerging from this process could include reconnecting the city grid, economic development, and multimodal improvements. Although a decision is still pending, reconfiguring the elevated freeway segment to a surface boulevard emerged as the most cost-effective option.⁸⁰

Removing a freeway creates immediate construction job opportunities. The Massachusetts Turnpike Authority estimates that the revitalization sparked by the Central Artery tunnel generated 36,000 new jobs and 4,200 new housing units.⁷¹ Rochester, NY anticipates removing the East segment of its Inner Loop will create between 700 and 1,400 construction jobs over the 2-year life of the project. The longer-term community revitalization and economic development opportunities anticipate 450,000 - 900,000 square feet of new mixed use development and \$65 million to \$130 million in new community investment. New commercial activity and investment will bring new employment opportunities with it, as commercial interests and firms move to the newly available land.⁷² Cities can take advantage of this opportunity to create new jobs, access tax credits for on the job training,⁷³ and target communities in need, which are often communities immediately adjacent to the freeway.⁷⁴ State and federal funding is available to assist cities in establishing

job-training programs. Mayors can look to job training programs that many state DOTs run. These programs typically work with local colleges to provide training at the pre-apprenticeship level. These trainings are directed at minorities, women and disadvantaged individuals and provide intensive training in highway construction-related skills such as math, job readiness, carpentry, concrete flatwork, blueprint reading, site plans, tools use and OSHA 10 certification.⁸¹ While these programs focus on road construction, students learn skills that apply more broadly in the construction industry.

CONCLUSION

With challenges come opportunities. The costs of reconstruction and/or repair of an urban freeway often provide a disincentive to rebuilding an aging freeway. Most freeways were initially constructed with 90 percent of the design and construction costs covered by the federal government, a fact that made the decision to construct a freeway seemed simple. The current economic climate and reductions in federal funding assistance is motivating a closer assessment of the costs and benefits of reconstructing these freeways. The realization that a city and state simply cannot afford to replace an aging urban freeway can spark discussions on how to balance regional transportation needs and community goals for economic development, greater social equity, improved environmental outcomes, to name a few. As the number of freeways that cities have successfully removed and replaced with infrastructure that is less damaging to the urban environment, increases, other cities have more success stories and best practices to look to.

GETTING STARTED

When evaluating a potential freeway removal, cities should undertake the following activities:

1. Craft or amend city planning and policy incorporating goals and policies
2. Begin conversation with highway agencies concerning freeway plans
3. Identify stakeholders and begin a public discussion on the freeway
4. Gather data on traffic numbers and flow, safety, income, property values to create a profile of land uses and opportunity cost near freeway
5. Make a plan to capture the increase in value of the land post-removal and use it to fund the work and improve the surrounding community
6. Incorporate community benefits for immediately adjacent neighborhoods including job training, employment, affordable housing and business opportunities.

RESOURCES

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“The Life and Death of Urban Highways”
http://www.itdp.org/documents/LifeandDeathofUrbanHighways_031312.pdf
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“Case Studies in Urban Freeway Removal”
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ENDNOTES

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About us

The Mayors Innovation Project is a learning network among American mayors committed to "high road" policy and governance: shared prosperity, environmental sustainability, and efficient democratic government. We are a project of COWS (Center on Wisconsin Strategy). This work is generously supported by the Surdna Foundation. We can be contacted at:

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