



In Seoul, South Korea, an elevated freeway ran over this river. Once the structure was removed and the river rehabilitated, it now serves as a relaxing park-like reprieve in the middle of the city.

# URBAN FREEWAY REMOVAL

## Rejuvenating cities through open space

BY KATE SHIRLEY

Considered by some to be the greatest public works project in history, the creation of the United States Interstate Highway System was a boon to this country, modernizing automobile transportation and facilitating an unprecedented ease of travel and commerce. President Eisenhower, a long-time champion of a national highway system, believed that such transportation corridors — high-speed, unobstructed and connected — were essential to national defense, an argument that always trumped concerns about preserving aesthetics or neighborhood character. As a result, freeways often bisected cities, resulting in isolated neighborhoods

and underutilized land space, which frequently created blight and reduced the quality of life for many residents. These urban transportation corridors were disconnected from their surroundings, limited transportation options and disrupted otherwise functional street networks.

A few decades after their construction, numerous cities began to discover that the crumbling interstate structures that seemed innovative in the 1950s could no longer efficiently accommodate urban transportation needs. Some cities opted to tear down their urban thoroughfares, replacing them with



mixed-use buildings, green spaces and residential or commercial centers. This trend has resulted in a host of benefits to the urban landscape, including better street connectivity, higher land values, invigorated downtown cores and improved air quality. Lessons learned from various freeway removal projects reveal that instead of causing urban gridlock, lessening freeway roadway capacity tends to reduce the number of auto trips, increases transit use, and contributes to other social and environmental benefits.

### Replacing Outdated Structures

Consider the Big Dig project in Boston, Massachusetts. When it opened in 1959, the main downtown highway, the Central Artery, could comfortably accommodate approximately 75,000 cars per day, but by the early 1990's, it was shouldering the burden of upwards of 200,000. Boston-area commuters experienced complete gridlock for nearly 10 hours a day and the accident rate on the deteriorating highway was four times the national average. In addition to traffic congestion, the old six-lane elevated Central Artery carried Interstate 93 straight through the downtown core, cutting off the waterfront and popular North End

neighborhood from the rest of the city and disrupting the urban grid. The dark and dirty streets that wove under the structure were unwelcoming to pedestrians and bicyclists, and cut off residents from fully participating in the economic life of the city.

The solution chosen by city leaders was to remove the elevated structure, relocating the interstate to a series of underground tunnels, making way for a tree-lined boulevard and green space, and creating more than 45 parks and public plazas in the process. In addition, due to the resultant traffic improvements, total vehicle-hours of travel through Boston dropped 62 percent between 1995 and 2003, providing approximately \$168 million annually in time and cost savings to travelers. While the old Central Artery had 27 on- and off-ramps, this number was reduced to 14 with the new system. Coupled with an improved surface street system, local traffic can exit the main highway and distribute itself on surface roads while through traffic flows easily under the city. And according to the Massachusetts Department of Transportation, the improved mobility of the downtown area has resulted in a 12 percent drop in city carbon dioxide levels.

### Uncovering the Realities

When it comes to right of way redevelopment, holistic street design that seeks to accommodate all users, traffic calming and other engineering techniques should be applied. Take for example the Embarcadero Freeway in San Francisco, which opened in 1959. City planners and activists fought for decades for the removal of the elevated two-tiered eyesore, which separated the city from its own waterfront, creating blight in the entire area. In spite of this, when the removal proposal was first put before voters in 1987, it was resoundingly defeated. Project opponents protested the removal, countering that traffic on city streets would become unbearable and that tourist areas like Chinatown would lose visitors as a result. However, in 1989, an earthquake damaged the freeway and forced its closure. While Caltrans originally planned to retrofit and retain the highway, when traffic and roadway capacity easily adjusted to the freeway closure, the San Francisco Board of Supervisors moved forward with the original plan, narrowly voting to demolish the freeway after months of heated debate.



Boston's Big Dig project took 15 years to complete, but now an underground freeway flows through downtown Boston, freeing up park space above ground.



**Before**



**After**

The Embarcadero Freeway in San Francisco was replaced by a beautiful public plaza that is now a source of civic pride.

In 1999, San Francisco voters approved the development of residential and mixed-use projects on the old freeway's right of way. Now instead of a waterfront hidden by concrete, the Embarcadero is a wide-open, visitor-friendly space that has experienced a three-fold jump in property values. The removal made way for a beautiful, palm tree-lined boulevard that perfectly blends alternative modes of transportation, including a pedestrian promenade, a bicycle corridor and a popular streetcar line along with various shops as well as unfettered access to the restored Ferry Building, a famous tourist destination. By making the freeway removal part of a larger civic strategy, the city was able to best leverage the opportunities that came with the new open space.

### Barrier to Development

When downtown cores are cut off from valuable riverfront real estate, such as in the case of the Park East Freeway in Milwaukee, Wisconsin, urban freeways can serve as significant barriers to redevelopment opportunities. This one-mile elevated highway loop connected I-43 to downtown Milwaukee, and was originally intended to continue east to the waterfront. However, when only half-way completed, local opposition grew strong enough that further construction was put on hold before it reached Lake Michigan. Still, by then the damage was done. The Park East displaced multiple blocks of

development and occupied 16 acres, limiting access to downtown Milwaukee and interrupting the street grid. In the 1990s, a redevelopment project along the Milwaukee River through downtown renewed interest in the riverfront and sparked a downtown housing boom. But the area around the Park East Freeway remained underutilized with surface parking lots and aging industrial parcels. Leaders began to recognize the freeway as a barrier to redevelopment efforts and disruptive to the urban street grid, and in 1999, the city council unanimously approved the freeway's removal. Demolition began in 2002 and the freeway was replaced by a leafy street-level boulevard, encouraging civic activity and restoring the urban grid.

The traffic congestion problems feared by project opponents never materialized, and the removal freed up 26 acres of land in downtown Milwaukee, kicking off a redevelopment effort that is still continuing today. The resultant boost in land values has been considerable. Between 2001 and 2006, the average land values in the footprint of the Park East Freeway grew by over 180 percent and average land values in the immediately surrounding area grew by 45 percent.

### Conclusion

Although urban freeway removal has taken place all across the United States

for a number of decades, it really took off in the 1990s as infrastructure aged and transportation needs and preferences began to change. The urban freeway removal trend continues to gain traction, as city leaders seek to connect their cities with increased transit-oriented development and multi-modal transportation options, encouraging the pedestrian and bicycle-friendly lifestyle favored by the Millennial generation. In addition to the examples named above, notable projects have taken place in Portland, Oregon, Madrid, Spain and Seoul, South Korea, with similarly successful results. In addition, recent research conducted by the Center for the New Urbanism has identified 10 "Freeways Without Future," which it recommends be demolished and redeveloped, as well as six current urban freeway removal campaigns that are underway.

Removing these transit relics has rejuvenated cities across the globe and set the stage for developing urban centers that are better equipped to cater to changing modern living and transportation needs, while reducing air pollution in the process. As part of a larger civic strategy, urban freeway removal can result in innumerable benefits for communities. 🌟

*Kate is the Senior Editor at Right of Way Magazine*