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## **New Orleans Claiborne Avenue Redevelopment Study: A University of New Orleans Analysis of Best Practices and Public Opinion**

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# New Orleans Claiborne Avenue Redevelopment Study



A University of New Orleans Analysis of  
Best Practices and Public Opinion

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# New Orleans Claiborne Avenue Redevelopment Study

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# New Orleans Claiborne Avenue Redevelopment Study: Executive Summary

The purpose of this study is to examine the potential implications of the removal of the Claiborne Expressway segment of Interstate 10 (I-10), a proposal that has gained traction since Hurricane Katrina. This study complements previous analyses of the impacts of removing the elevated expressway. It considers case studies of best practices in highway removal, the history of the study area, and the proposal in terms of its local and regional context -- in particular the transportation system, land-use patterns, the economy, and the community of the affected area. Stakeholder interviews and surveys were conducted to assist with drawing conclusions and recommendations about the proposed removal of the I-10 highway segment and redevelopment of the Claiborne corridor.

Interviews were conducted with 25 stakeholders, including representatives of adjacent neighborhoods, the business community, real estate interests, city and state elected

officials, commuters, and urban planners. Moreover, an online survey was completed by more than 800 residents from across the city. Each of these efforts informed conclusions and recommendations about the redevelopment of the Claiborne corridor.

While the study revealed substantial support for removing the highway, many participants expressed a desire for more information about the specifics of any removal project and its likely ramifications. Some interviewees in particular posited that removing the expressway alone would not fully address the problems plaguing the corridor and additional economic and community interventions would be needed.

Of the survey respondents, 58% supported removal and 16% were opposed. Twenty-one percent of respondents said they were uncertain of their stance on removal, while the remainder indicated indifference toward the proposal.

## Other key findings:

- The vast majority of respondents (82%) predicted that removing the expressway would positively impact the area by fostering economic and community revitalization.
- Only 28% of drivers who use the expressway four or more days a week oppose the removal.
- Respondents rated the following elements as “very important” to the successful revitalization of the corridor: sidewalks (87%), bike lanes (67%), a tree-planted neutral ground (63%), and light rail/streetcar (56%).
- Interviews revealed concern that gentrification could occur from the removal of the Expressway and revitalization of the corridor; however, only 31% of survey respondents “Agreed” or “Somewhat Agreed” that the removal of the Expressway would result in fewer housing options for lower income residents.
- Respondents “Agreed” or “Somewhat Agreed” that the removal of the Expressway would revitalize the following neighborhoods: Tremé (75%), the 7<sup>th</sup> Ward (70%), Tulane-Gravier (67%), the Central Business District (64%), Iberville Public Housing (63%), and the French Quarter (51%).
- Unknown impacts on travel patterns during and after removal were a significant concern of survey respondents.

## Based on these concerns we recommend the following:

- Incorporate transit and bikeable/walkable infrastructure into any redevelopment designs.
- Consider providing convenient interchanges from I-10 to I-610 to facilitate additional capacity for motorists as part of a follow-up traffic study.
- Educate the public concerning transportation alternatives.
- Address fears of housing and gentrification within the redevelopment of the Claiborne corridor as part of the ongoing planning process.
- Reach out to residents of the Claiborne corridor to better gauge resident stakeholder opinion.

# New Orleans Claiborne Avenue Redevelopment Study:

## 1 - Introduction

This study will examine the potential redevelopment of the Claiborne Avenue corridor (see Figure 1.1). Since Katrina, several plans for the future redevelopment of New Orleans call for the removal of the Claiborne Expressway portion of I-10 as a catalyst for redeveloping several neighborhoods, including the Tremé, Lafitte, and other neighborhoods within the core of New Orleans. Many of these neighborhoods within the Claiborne corridor currently suffer from high rates of crime, blight, and poverty. This area also includes some of the highest vacancy rates in the city and a stagnant local economy.

The report will examine case studies and best practices in highway removal. It will also address the history of the study area, the local and regional context, in particular the transportation system, land use patterns, the local economy, and the local community, including demographics. Stakeholder interviews and public opinion surveys were conducted to assist with drawing conclusions and recommendations about the proposed removal of the I-10 highway segment and redevelopment of the Claiborne corridor.

Chapter 2 includes a series of case studies of removal projects similar to the one proposed for Claiborne Avenue. Cities who decided to remove such expressways include Boston, Milwaukee, Portland, Oakland, two in San Francisco, and Seoul, South Korea. The cases in this chapter provide examples of how freeway removal impacts the travel patterns, environment, community, and



**Figure 1.2: North Claiborne Avenue, at Dumaine Street, looking towards Elysian Fields. "Oak Tree Conservation." Undated. City Archives New Orleans Public Library**

economic vitality of the surrounding area. By examining the policies and methods used in these cases, we can learn from their successes and failures when evaluating the removal of the Claiborne Expressway.

Built in the late 1960s, the Claiborne Expressway replaced a tree-lined boulevard with a section of elevated interstate

highway (see Figure 1.2). Chapter 3 investigates the history of the neighborhoods that make up the Claiborne corridor and the previous and current plans for revitalizing the area. These studies provide extensive groundwork for the removal of the Claiborne Expressway and redevelopment of the corridor. To better understand the needs of the residents of the corridor, we next present an overview of the local and regional context - the existing conditions - to provide background for our analysis.

Chapter 4 details current conditions along the corridor. Economic and demographic data for the neighborhoods show how the area has declined from historic conditions. Traffic data provides information on current usage patterns on and around the Claiborne Expressway. Land use and zoning are also presented as vital components of understanding the larger perspective. The Claiborne corridor clearly lacks economic and social advantages of other areas of New Orleans. Any plans for removing the Claiborne Expressway will need to include significant investment in the surrounding area to overcome the current conditions.

Many of the previous plans discussed in chapter 3 included resident advisory groups. In order for this report to better understand stakeholder views, we interviewed individuals including community, non-profit, and business leaders as well as local residents. These interviews revealed several social and cultural, economic, and transportation concerns about the Expressway removal. These themes informed the generation of a broader survey.

Surveys further investigated public opinion throughout Greater New Orleans. Both local residents and non-residents support removal of the Expressway. Most supported redevelopment of the area and thought social and economic conditions would improve. Many expressed concerns about traffic and were worried about increased commute time or more congestion on surface streets.

This report encompasses the history and present conditions of the Claiborne Expressway and provides recommendations for its future. Removing the freeway would impact transportation and the economy of both the corridor and the region and have dramatic effects on the surrounding communities. We hope this research contributes to the literature and provides useful information to the community as it considers the future of the Claiborne Avenue corridor.



**Figure 1.1: Claiborne-adjacent neighborhoods outlined in red. Base map source: GNOCDC (2004)**

# New Orleans Claiborne Avenue Redevelopment Study:

## 2 - Experiences and Best Practices

### 2.1 Introduction

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Highway removal projects have been successful in many other cities in the past two decades. After the post-World War II period of highway building, new transportation paradigms began to change communities' approach to infrastructure. Urban freeways were often a contentious issue, and some cities elected to remove parts or entire roads. To gain a better understanding of best practices in highway overpass removal, we studied cases from Boston, Milwaukee, Oakland, Portland, two from San Francisco, and Seoul, South Korea. These case studies illustrate the process and impacts resulting from highway removal. We identified and summarized several themes from these case studies, which can be found in a chart at the conclusion of this chapter. For the sake of brevity, summaries of the complete case studies are presented in this chapter. More in-depth accounts, including references, may be found in Appendix A.

### 2.2 Boston: Central Artery

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#### History

Boston, Massachusetts had one of the most congested highway systems in the United States, causing enormous traffic delays and car accidents. Traffic was expected to get critically worse over time due to the natural increase of people driving. In order to solve Boston's traffic problem, a plan was created in the 1980s to replace the Central Artery Highway with a new mostly underground infrastructure that was capable of handling the expected traffic flow. The project later became known as the "Big Dig", spanning over two decades and costing billions.

#### Travel Behavior

The Big Dig was highly successful in terms of travel impact. Traffic congestion was practically eliminated according to an assessment study showing that travel time in the project area was reduced on average by 62 percent, depending on the route and time of day. Indirectly, the project advocated public transit, along with cycling, by creating provisions for cyclists and extending light rail service. Along with reducing travel time and increasing mobility, the project connected neighborhoods that were severed by the elevated highway.

#### Environment

Boston's environment was affected both positively and negatively by the project. Large amounts of CO<sub>2</sub> were released during the construction process, yet after completion, the project lowered the amount of CO<sub>2</sub> emissions coming from idling cars stuck in traffic.

#### Community

This project designated lots of land to the residents of Boston in the form of public parks, fountains, recreational facilities, etc. The former space that was occupied by the elevated highway was utilized for the infamous Rose Fitzgerald Kennedy Greenway, which is an open strip of grass spanning four city blocks. Boston residents also



**Figure 2.1: Boston Artery Before and After. Source: HFBoards.com**

received Spectacle Island, which was once a dump, from the Big Dig. Spectacle Island was transformed using the dirt removed during construction of the underground expressway. It is now a popular destination that provides a scenic place to hike and relax.

Many residents were wary of the project, fearing that a rise in surrounding property taxes would price out the locals. Others criticized the project for going severely over budget and surpassing all project duration estimates. Lastly, critics have found fault with design components. The American Planning Association protested the Greenway as a massive open space with little to attract residents.

#### Economy

The Big Dig was estimated to cost \$22 billion - accounting for interest payments on bonds, and it will not be paid off until 2038. The good news is that the project has created numerous economic benefits, such as new development investments, wages from constructions, property price increases, and tax revenue from real estate. Other economic benefits are less obvious such as time saved commuting, and less fuel consumed.

# New Orleans Claiborne Avenue Redevelopment Study: 2 - Experiences and Best Practices

## 2.3 Milwaukee: Park East Freeway

### History

In 1960, Milwaukee hatched the grand scheme to create a loop of freeways surrounding their entire downtown. Park East freeway, the first freeway making up the loop was built and opened, but due to strong opposition, especially from the Mayor, the remaining freeways were not built. With the cancellation of the other proposed freeways that would have completed the loop, the remaining Park East Freeway had little purpose, making it a less controversial issue when the discussion came to tear it down. With the hopes of replacing the freeway with something more pedestrian friendly, demolition commenced June 2002 and was completed in April 2003. Connecting ground level roads have been reinstated, and currently construction is underway for new developments within the area.

### Environment & Travel Behavior

The environmental assessment of the removal project, conducted by the Wisconsin Department of Transportation, indicated no major environmental impacts occurred during the construction process for the removal of the Park East Freeway. Similarly, a 1998 evaluation of current and future traffic impacts concluded very minimal traffic effects or increased congestion were to be expected. The full environmental impacts have not been realized yet, since the redevelopment portion is not fully complete. There was no taking of commercial or residential property during the removal process, thus there are no negative social impacts anticipated. It is hoped that the freeway removal will pave the way for future sustainable transportation.

In 1999, the Park East freeway carried approximately 54 thousand vehicles on an average weekday. The Park East freeway was 0.8 miles long; therefore, its removal accounts for a reduction of 43,000 vehicle miles traveled each day. This also translates into 41,000 fewer pounds of CO2 per day emitted from freeway travelers.

### Community

Redevelopment was focused on residential homes, but it also included retail shops, office spaces, and the opening of a public waterfront. These new developments and ground-level roads connect downtown Milwaukee to surrounding neighborhoods. The absence of a freeway has created a lot of positive improvements for residents including reduced crime rates, lowered CO2 emissions,



Figure 2.2: Park East Freeway. Source: Marketplace.com

and promoted cycling or walking habits. These improvements have definitely made the area more appealing. Not just the project area, but all surrounding areas downtown have seen improvements since the removal project.

### Economy

The cost for the project came to \$ 37 million with separate plans for redevelopment costing an additional \$8 million dollars. It is expected that the tear down project will bring in between \$58 and \$800 million in investment to the Freeway footprint, depending on whether the source is local planners or political leaders. Redevelopment of the area has increased property values along with tax revenue for the city. Between 2001 and 2006, the average assessed land values in the Park East Tax Increment District grew by 45%. Opportunity for new growth has led to a decent amount of private investment and will hopefully continue to be an economic asset to the city and downtown.

The actual building of new development has been a slow process because many projects had trouble obtaining adequate financing. Pleas for financial assistance from the city were met with mixed emotions, and in 2007 the city declared that it would not help developments that were overly speculative.

# New Orleans Claiborne Avenue Redevelopment Study: 2 - Experiences and Best Practices

## 2.4 Oakland: Cypress Freeway

### History

As a result of the Loma Prieta earthquake that was 7.1 on the Richter scale, the Cyprus viaduct collapsed, killing 42 people and injuring 108. Although only 1.5 miles of the freeway collapsed, 160,000 cars were forced to disperse amongst the already heavily used Oakland highways and streets. The removal of this section of I-880 had serious implications on the local shipping industry and other local employment centers throughout the city. Community leaders opposed the rebuilding of the viaduct as it blighted and divided the community of West Oakland. Blight, noise, and pollution caused by the Cypress freeway were an eyesore and drove away businesses leaving behind gangs and violence. The main community revitalization proposal was the connection of I-80 to I-880; Caltrans believed that this would alleviate the majority of congestion running through the adjacent arterial streets.

### Environment

Adverse impacts of the freeway collapse included containment exposure, noise pollution, and visual pollution. The most detrimental impact was the reconstruction process, which mostly took place in an industrial corridor. Thirty-two contaminated sites were identified in the footprint of the new freeway. This contamination was found in both the soil and groundwater. These containments consisted of asbestos, lead, petroleum hydrocarbon, polynuclear aromatics, and VOC's.

### Travel Behavior

Immediately following the freeway collapse, travelers re-routed their travel patterns by detouring through nearby I-580 and I-980. In the days immediately following the earthquake, there was a significant spike in transit use. Daily rail ridership figures increased by over 50%, from 218,000 to 342,000. Once the connection to the Bay Bridge was completed, it was estimated that not having the connection would create a loss of \$2.5 million per month in travel time to the public.

### Community

The removal of the freeway led to community reunification and cultural wealth. The Community Emergency Relief Team (CERT) was formed and gave citizens an unprecedented voice in the decisions regarding



**Figure 2.3: Cypress Freeway. Source: Federal Highway Administration**

rebuilding their community. The community experienced reductions in freight trucks traveling through residential neighborhoods thanks to the construction of an interchange that services the Port of Oakland. From 1990 to 2000, the community residents also experienced 36.3% growth in average income and a 3.7% decrease in poverty. Attempts to bring in higher income housing developments have been rejected as gentrification. A focus on job placement services and community outreach led to an 82% success rate with finding community members employment.

### Economy

Immediately after the earthquake and shutdown of the freeway, added travel times for motorists, shipment delays, and higher vehicle operating costs amounted to \$22.5 million in lost revenue. Additionally in the short term, the demolition of the freeway cost the San Francisco Metropolitan area \$5,287,716. Federal relief funds totaling \$1.106 billion contributed to the repair of the I-880 freeway. Meanwhile, the San Francisco retail sector was not greatly affected.



# New Orleans Claiborne Avenue Redevelopment Study:

## 2 - Experiences and Best Practices

### 2.5 Portland: Harbor Drive Freeway

#### Background

Harbor Drive Freeway was a ground-level four-lane highway following the western side of the Willamette River. Upon completion in 1942, the three-mile long route carried 25,000 vehicles per day.

In the 1950s, with the approval of the Federal Highway Act in 1956, many more highways were planned for Portland. By 1964, Interstate 5 was completed and spanned the east bank of the Willamette, running in the same direction as Harbor Drive.

By 1968, in anticipation of rapid growth, Oregon further attempted to boost their infrastructure. During this process, the State Department of Transportation proposed widening the existing Harbor Drive Expressway from four lanes to six. That same year, groups of citizens began calling for closing down Harbor Drive and developing the land as a park instead.

Governor Tom McCall was the primary proponent of getting the road removed and sided with a citizen alliance as they argued against traffic engineers of the time. The alliance argued that the overflow traffic from shutting down the highway would find spillover lanes or follow I-5 in order to move north and south within the city. In 1974, Harbor Drive closed, and other roads handled spillover. Drivers were able to find manageable alternate routes.

#### Environment and Travel Behavior

Reducing roadway capacity reduces the overall number of auto trips. In fact, Robert Cervero found before and after comparisons for Harbor Drive showing 9.6% fewer vehicle trips on surrounding roads. Such reduction certainly goes a long way in lessening the health problems associated with exhaust-based air pollution.

The creative urban design of downtown streets, the successful diversion of traffic to alternative freeways, bridges, and roadways, and the development of an extensive intermodal public transit system have contributed to the alleviation of congestion, environmental degradation, and automobile dependency surrounding the former Harbor Drive Freeway. Affordable fares, efficient service, and easy access to multiple routes from various locations have perpetuated continued growth of transit ridership.

Planners redesigned downtown streets to be one-way, altered traffic signals to allow for more fluid flow of traffic, and reduced speed limits as a means of increasing safety for pedestrians and bicyclists. Additionally, there was a substantial increase in the number of drivers on I-5 and I-405. Some of this congestion was minimized by the



Figure 2.4: Tom McCall Waterfront Park, 2009. Source: Event.com

development of Fremont Bridge, which improved the connectivity between the two freeways.

The most significant change in travel patterns was the increase in the number of commuters choosing to use public transit services rather than drive private automobiles. The development of Portland's sophisticated transit system, Tri-Met, has caused gradual decline in automobile trips near the former Harbor Drive Freeway. Citizens were able to divert funds allocated for other highway projects in Portland for the creation of the city's first light-rail line, which now consists of four different lines with 85 total miles.

#### Community

The Harbor Drive Freeway was not taken down due to safety concerns or an estimated high cost of expansion versus demolition. The public's interest to make downtown Portland a more inviting place for all people fueled the success of this project.

Additionally, Portland has seen a 65% decrease in crime in the area surrounding the former freeway. The community also saw a new sense of empowerment against the current model of highway expansion.

The 36.59 acre Tom McCall Waterfront Park allows its visitors to take advantage of views of the Willamette River and recreational opportunities all seasons of the year. Among its bicycle and pedestrian paths and green space, the park hosts many different festivals and public events.

#### Economy

The removal has led to a substantial increase in property tax revenue for the city. Since its development, roughly 62 development projects (retail, mixed use housing, office space) have been successfully implemented. Some of the most profitable projects include the development of the Pioneer Place commercial building, RiverPlace retail and housing development, and The Yards at Union Station. There is continued interest in development within the district such as the revitalization of Old Town/ Chinatown, Ankeny/ Burnside, and the Portland Saturday Market.

# New Orleans Claiborne Avenue Redevelopment Study: 2 - Experiences and Best Practices

## 2.6 San Francisco: Central Freeway

### History

Mid-century California freeway designers envisioned a San Francisco with highway connections both through and outside the city. Soon after construction, one of the internal San Francisco highways, the Central Freeway, experienced a freeway revolt regarding its placement through the neighborhoods along Division and Octavia Boulevards. After the 1989 Loma Pieta earthquake, community support to remove the freeway strengthened again. While the damaged northern portion of the freeway could not be rebuilt, community leaders could get a full removal. A compromise was struck – part of the freeway would be removed, and part would be rebuilt. City leaders and citizen activists worked to replace the ruined elevated portion with housing and residential amenities in 1992. The boulevard portion replacing the structure measures 133 feet in width and contains four lanes for traffic, a grassy median, and two bicycle and pedestrian lanes. Construction of a new portion of freeway was completed in 2006.

### Environment

Due to the fact that Octavia Boulevard consisted of sustainable transportation choices, the environmental impacts were positive. Green transportation results in lower emissions as a result of less people choosing to drive, which was the case for the original Central Freeway. Noise barriers were also incorporated into portions of the new central freeway, thus reducing noise pollution. The designation of more green space within the project area proved to be very beneficial to the health of the community and provided more of a habitat for urban wildlife.

### Travel Behavior

As anticipated, the removal of the freeway led to the reduction of roadway capacity in the short term. However, through studies, traffic was found to have diverted and spread amongst other roadways in the long term. 76% of the 8,000 drivers that had previously used the freeway shifted their route to another freeway, 11% used city streets for their entire trips, 2.2% switched to public transit, and 2.8% said they no longer made the trip previously made on the highway. With the completion of Octavia Boulevard in 2005, residents' travel behaviors changed. With the complete streets design of the boulevard, traffic is much more dispersed. The design of the Octavia Boulevard was intended to be pedestrian and bicycle friendly. After completion, 47% of residents chose public transportation, and 16.5% of residents chose to



Figure 2.5: After Removal. Source: [Infrastructurist.com](http://Infrastructurist.com)

cycle to work. The remaining 26% of residents chose to drive to work.

### Community

Once the central freeway was removed, the community experienced a reduction in crime rates and higher land values in the communities of Hayes Valley, Market and Octavia. An increase in green space also improved the quality of life for residents of Octavia Boulevard. The community benefits of having a more sustainable transportation system are perhaps the greatest of all. No longer are streets congested, and residents have the option to utilize public transit or bicycling if they so choose. The removal of the Central Freeway led to an enhanced quality of life for all residents in its vicinity. The Central Freeway removal helped pave the way for urban revitalization. Now affected areas, such as the Hayes Valley neighborhood, are filled with fashionable stores, restaurants, and galleries.

### Economy

The impacted area greatly benefited from the freeway removal. Restaurants and shops appeared following the project, which attracted those who worked in the civic center. Octavia Boulevard was given the freeway project of the year award by the California Transportation Foundation. Prior to the reconstruction of the Highway after the earthquake, the highway contributed to low land values and a high crime rate, as well as urban decay. The restored highway provided neighborhood access to a regional freeway, created an aesthetically appealing public space, and raised land values. Since the removal of the highway, from 1996 to 2006, the average sales price of a Hayes Valley condo rose from \$203,000 to \$760,000 (City of Seattle: 2008). The City of San Francisco also profited with \$35 million from the sale of the lots that the previous central Freeway was placed upon. The revenue from these sales was invested into transportation and affordable housing.

# New Orleans Claiborne Avenue Redevelopment Study: 2 - Experiences and Best Practices

## 2.7 San Francisco: Embarcadero Freeway

### History

The Embarcadero Expressway was a 1.2-mile highway spur completed in 1959 and demolished in 1991. Originally part of a plan to crisscross San Francisco with highways, the Embarcadero was intended to connect the Bay Bridge with the Golden Gate Bridge along the waterfront. The system was never completed, due in part to resistance from the community. In 1989, the Loma Prieta earthquake exposed problems in the elevated highway's construction, leading to the decision to remove the Embarcadero section. In 2000, a six lane surface boulevard, streetcar route, bicycle lanes, and pedestrian promenade opened in place of the expressway. The area has become a key public space for the citizens of San Francisco, and the character and value of the surrounding land uses has improved dramatically.

### Environment and Travel Behavior

At one time, the Embarcadero carried over 60,000 cars per day (Seattle Department of Transportation, 2008). When the freeway suddenly closed due to the earthquake, traffic found other routes, surface streets were not overwhelmed, and transit use increased (Cervero, Kang, & Shively, 2007; Marquez, 1989). Currently, the six lane boulevard carries 26,000 cars per day and the streetcar carries 18,000 daily riders. The earthquake brought a perceived distrust of elevated highways, and the aftermath was made possible by a citywide increase in transit ridership. Combined with bicycling and walking, the transportation options along the Embarcadero are much more sustainable with the removal of the highway.

### Community

In the 1950s, community opposition challenged San Francisco's highway plan. Although the Embarcadero separated an industrial waterfront from the business center of downtown, extension of the road was halted by opposition from the Rincon Hill and South Beach residential neighborhoods (Siegel, 2007). One neighborhood that the road served well was Chinatown, causing merchants to oppose the removal four decades later. With the freeway gone, the character of the land use along the Embarcadero has changed dramatically. Commercial and residential uses have replaced industrial buildings, making the area one of the most desirable places to live in the city. The Embarcadero's public spaces and multi-modal corridor have drawn many more visitors and residents to the area, and Chinatown has seen little impact on its popularity (Seattle Department of Transportation, 2008).

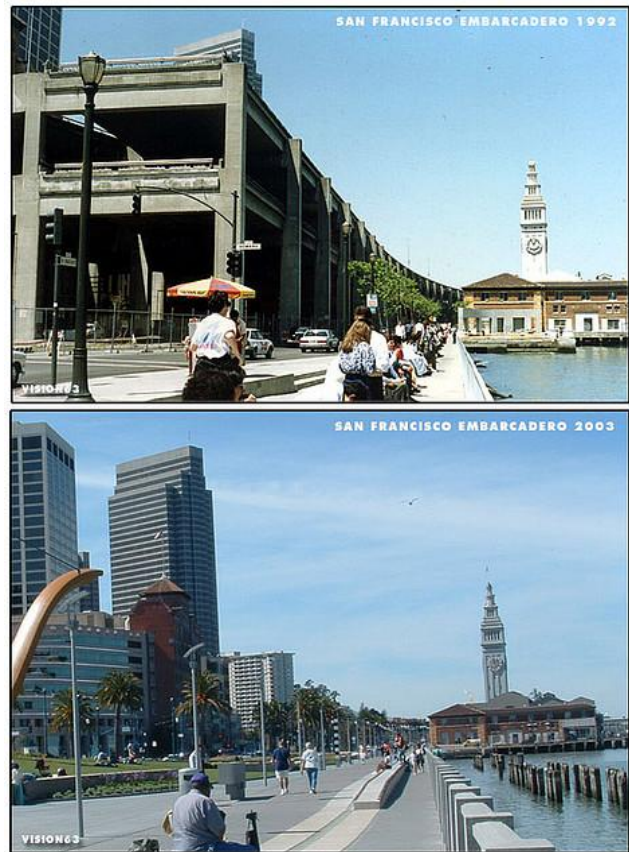


Figure 2.6: Before and After. Source: Flickr.com

### Economy

San Francisco's traditionally industrial waterfront had been losing business before the removal, so the transformation to a commercial and residential area was a positive change. Chinatown merchants worried about a large drop in tourism, but the area remains one of the top attractions in the city. In the immediate vicinity, quantities of housing increased by over 50%, and property values grew up to 25 times larger (U.S. Census Bureau). There are 23% more jobs in the area, as well as many new businesses (Congress for the New Urbanism, n.d.). The centerpiece of the Embarcadero is the Ferry Building, which remains a ferry terminal, but has also been repurposed for offices and a farmers market. The removal of the freeway made financial sense as well. The project cost \$50 million with only \$3.25 million for the actual demolition. A three year project to repair the expressway would have cost \$70 million (The Preservation Institute, n.d.).

# New Orleans Claiborne Avenue Redevelopment Study: 2 - Experiences and Best Practices

## 2.8 Seoul: Cheonggyecheon Highway

### Background

Seoul developed around the Cheonggyecheon (“clean water stream”), a former seasonal stream, which divides the city in two. The stream has been a pivotal part of Seoul’s landscape for centuries. By the 1950s, however, migration from the country that settled along the banks of the stream had exacerbated pollution.

From 1958 to 1967, the stream was encased underground, as a 3.7-mile elevated highway was built 164 feet to 262 feet above the former stream. The elevated highway ran parallel to a grade-level roadway, and included four lanes of two-way traffic that carried 168,600 vehicles daily before its deconstruction (Kil-Dong 2007).

Between 2003 and 2005, the metropolitan government planned and executed the removal of the Cheonggye Elevated Highway and the ground-level roadway beneath it that covered the stream. The Cheonggyecheon has been restored, and it is the centerpiece of a park with two-lane one-way streets on each side. The project cost an estimated \$384 million.

### Environment and Travel Behavior

Overall, the Cheonggyecheon restoration has been an unqualified environmental success. The restored river has been found to reduce the urban heat island effect and increase wind speeds, reducing summer temperatures in the corridor by more than 3 degrees Celsius (Revkin 2009; Vidal 2006). Air quality has also improved substantially due to reduced motor vehicle traffic. Small-particle air pollution has dropped 35 percent, which accounts for an economic value of up to \$40 billion per year (Revkin 2009; Hwang, 2006).

The restored riverbed was designed to maximize flood capacity and safely accommodate 200-year flood levels (Hwang 2006; Kil-Dong 2007; Revkin 2009). New sewage lines were installed to segregate rainwater and wastewater and prevent wastewater intrusion during flood events (Kil-Dong 2007). In addition, soil and groundwater contamination have been largely eliminated (Kil-Dong 2007). The river’s ecosystem has been greatly restored as the stream has been engineered to serve a variety of fish and wildlife. As a result, fish, bird, and insect species have multiplied.

A significant modal shift occurred, diverting motorists to buses and subways, and overall traffic flow and speeds downtown have improved (Revkin 2009). Subway ridership has increased 13.7% since the restoration project began (Lee 2006). Increases in bike, pedestrian, and public transit mode shares due to public infrastructure investment, crossing improvements, and education campaigns promote transportation equity for low-income commuters who save time and money due to these improvements (Young 2010).



Figure 2.7: Before and After. Source: Preserve.net

### Community

Along the Cheonggyecheon stream today, there are new running and pedestrian paths, waterfalls where children play, and a museum. The park serves as the backdrop to a variety of arts and entertainment events. Additionally, property values and interest in the downtown area have taken off in light of the freeway’s removal.

Although the restoration of the Cheonggyecheon seems to be reaping great benefits at a broader scale in a variety of levels, concerns have arisen for a local group of informal merchants that once occupied and worked in the streets around the expressway. Gentrification has caused concerns about former residents and merchants being forced out of the area by rising property values (Walsh 2006). In addition, the Commission for Architecture and the Built Environment declares the end result of the ambitious project an “inspirational space which is family-friendly,” but it faults designers’ failure to facilitate “inclusive planning” that would have better accounted for a full range of community concerns and interests such as handicap accessibility (Commission for Architecture and the Built Environment n.d.).

### Economy

Tourism has boomed in central Seoul. In the first three months after the project’s completion, approximately 12 million visitors came to the CGC, and in the three months following the grand opening, there were more than 71 million visitors to the CGC (Noh 2009).

The project has been economically beneficial to landowners and developers. Commercial land, located within five hundred meters of the CGC, enjoyed greater property value benefits with the urban greenway than they did with the elevated highway. In addition, the restoration of the CGC and its transformation into an urban greenway reversed the negative impacts of the highway but conferred beneficial economic impacts on residential landowners. The closer one lived to an entrance to the greenway, the higher one’s property value when compared to residents living more than three kilometers away.

# New Orleans Claiborne Avenue Redevelopment Study:

## 2 - Experiences and Best Practices

### 2.9 Best Practices

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All of the case studies demonstrate the concept of “induced demand.” When a freeway exists, people will use it. The traffic volumes that were observed on the original roadway are based on the perception that unrestricted access is available. When replaced with a surface street, the traffic relocates to the new street, other streets in the network, or to public transportation. In many of the cases, the traffic simply disappeared, with people choosing to make fewer trips. Thus, it is appropriate to replace freeways with lower traffic volume streets.

The case studies fall into two main categories of highways: redundant roads and spurs. In Boston, Portland, Seoul, and Oakland, the roads connected two highway sections that remain. In Portland, the road was redundant because of another existing highway. In Boston and Oakland, the projects involved replacing the freeway with another. Seoul took the most drastic approach, removing the roadway altogether. In all of these cases, removing a link caused a new equilibrium of highway traffic. In Milwaukee and San Francisco, the roads were spurs, leading to surface streets rather than another highway. In all three cases, these spurs were unnecessary, and removal was successful with the use of existing street grids.

In most of the case studies, stakeholders redeveloped the actual footprint into something other than private development. Linear parks are commonly chosen to feature prominently in the design. Surface boulevards often replaced the freeway, usually focusing on a more multi-modal facility with bike lanes, transit, and pedestrian facilities. In San Francisco, small pockets of new land were developed. Milwaukee was the only case study that used the footprint predominantly for new development.

Before a freeway is removed, traffic engineers and others will often express the need for a highway due to traffic. Building a new highway and alternate routes are popular options. These proposals were part of the planning process for all of the case studies but were only built in Boston and Oakland. Building a new freeway elsewhere can remove the financial benefits of highway removal; that is, it is cheaper to not rebuild. Boston is an oft-cited example of how expensive such a project can become.

Highway removal can reunite existing neighborhoods and create new neighborhoods. The roads in Boston, Milwaukee, Oakland, San Francisco (Central), and Seoul all featured urban development on both sides, and the division caused by the freeway was well documented. The highway is often cited as a location with increased blight and crime, and universally a place people don't like to spend time. Highways also provide a barrier to pedestrian travel. In these cases, the new design became an attractor

for neighborhood activity. In some cases, the new areas took on new names and identities. With the Portland and Embarcadero examples, the roadways followed the waterfront. This created a barrier in which city residents did not visit the water, and removal made the locations gathering points. In these cases, neighborhoods were not created, but they became more residential. Because highways often exist in industrial areas, many of the case studies featured industrial buildings being repurposed into residential and commercial space.

New development around highway removal increased property values in all of the case studies. As mentioned above, some of the cities were able to create new parcels, generating revenue with their sale. In several of the cities, special districts were created to capture the rise in property values or to encourage development with incentives. Many of these cases featured a vision of urban development consistent with New Urbanism, and used strict design requirements to achieve this.

The lifespan of an urban freeway was fairly consistent within these case studies: 30 to 50 years. In the Bay Area case studies, the freeways were damaged by a natural disaster, but the degrading quality of the structures had been documented beforehand. There is a necessary state of disrepair with these removals; the idea of removing them when they are new isn't likely to have traction. Repairing costs are often higher than removal, another reason for these lifespans.

Citizen action was a key ingredient to the movement to remove highways. These groups often protested the initial construction of the freeway but only found their voice again after the lifespan mentioned above. Unfortunately, the citizen action was not enough – a political champion was needed. Mayors, city councils, and governors were often the leading voice in the highway removal. City planning departments and traffic engineers were more likely to oppose the removal.

An important aspect to the success of highway removal observed in case studies was construction periods. Many of these projects took five or more years to complete and were disruptive to the neighborhoods around them. Business owners were often hesitant about the removal simply because of the drop in customers during the construction. There are techniques to minimize the disruption, such as pedestrian walkthroughs and signage for businesses. Many of these construction periods were lengthened because of political infighting, design disputes, and cost overruns. There are delays that should be better planned to reduce the time it takes to remove the highway.

**New Orleans Claiborne Avenue Redevelopment Study:  
2 - Experiences and Best Practices  
2.10 Case Study Comparison**

<b>Case Study</b>	<b>Boston: Central Artery</b>	<b>Milwaukee: Park East Freeway</b>	<b>Oakland: Cypress Freeway</b>	<b>Portland: Harbor Drive Freeway</b>	<b>San Francisco: Central Freeway</b>	<b>San Francisco: Embarcadero Freeway</b>	<b>Seoul: Cheonggyecheon Highway</b>
	<b>Built:</b> 1959 <b>Removed:</b> 2006 <b>Replaced with:</b> Tunnel and park.	<b>Built:</b> 1971 <b>Removed:</b> 2003 <b>Replaced with:</b> Mixed-use development.	<b>Built:</b> 1955 <b>Removed:</b> 1998 <b>Replaced with:</b> Parkway and alternate freeway.	<b>Built:</b> 1942 <b>Removed:</b> 1974 <b>Replaced with:</b> Waterfront park.	<b>Built:</b> 1959 <b>Removed:</b> 1992 <b>Replaced with:</b> Surface boulevard.	<b>Built:</b> 1959 <b>Removed:</b> 1991 <b>Replaced with:</b> Surface boulevard and streetcar.	<b>Built:</b> 1958 <b>Removed:</b> 2005 <b>Replaced with:</b> Urban stream.
<b>Economic Impacts</b>	<ul style="list-style-type: none"> <li>\$7.4 billion in real estate investment.</li> <li>\$1.3 billion increase in property values.</li> <li>43,000 new jobs.</li> </ul>	<ul style="list-style-type: none"> <li>11 developable city blocks.</li> <li>Land values grew by over 180%.</li> <li>Many planned mixed-use, residential, and commercial properties.</li> <li>Housing market downturn has stalled much of the development.</li> </ul>	<ul style="list-style-type: none"> <li>Increased travel times while closed.</li> <li>Oakland Private Industry Council provided jobs to local residents.</li> <li>Retail access did not suffer.</li> </ul>	<ul style="list-style-type: none"> <li>Tax Increment Financing to pay for the park.</li> <li>62 successful development projects generating millions in tax revenue.</li> </ul>	<ul style="list-style-type: none"> <li>Retail businesses open along Octavia Boulevard.</li> <li>7 acres and 22 parcels were newly developed, generating \$35 million for the city.</li> <li>Rise in condo prices.</li> </ul>	<ul style="list-style-type: none"> <li>Removal was less expensive than repair.</li> <li>Increased tourist activity, including in Chinatown.</li> <li>Large increase in property values.</li> </ul>	<ul style="list-style-type: none"> <li>Jobs and residents returned to the area.</li> <li>Storeowners reported fewer customers during construction.</li> <li>Property values rose.</li> </ul>
<b>Environmental Impacts</b>	<ul style="list-style-type: none"> <li>300 acres of green space.</li> <li>Shoreline restoration.</li> <li>New park on an old landfill.</li> </ul>	<ul style="list-style-type: none"> <li>Limits to sprawl through land efficiency.</li> <li>More green and permeable spaces.</li> </ul>	<ul style="list-style-type: none"> <li>Soil contamination in rail yards where freeway was relocated.</li> <li>Lower noise and air pollution in West Oakland.</li> </ul>	<ul style="list-style-type: none"> <li>36 acre public park.</li> <li>Vehicle trips on surrounding streets have actually dropped.</li> </ul>	<ul style="list-style-type: none"> <li>Patricia’s Green, a 16,000 square foot park, and another linear park.</li> </ul>	<ul style="list-style-type: none"> <li>Linear parks, public spaces, walking and biking promenade.</li> <li>Revitalized waterfront.</li> </ul>	<ul style="list-style-type: none"> <li>River had become an open sewer and flood hazard, both mitigated in the new design.</li> <li>Poor air quality near the highway.</li> <li>Water is artificially pumped into the stream.</li> <li>More wildlife present.</li> </ul>
<b>Travel Behavior Impacts</b>	<ul style="list-style-type: none"> <li>8.5% drop in daily traffic.</li> <li>62% drop in travel time.</li> <li>Reduced travel time to the airport.</li> <li>Slight increase in transit ridership.</li> </ul>	<ul style="list-style-type: none"> <li>No increase in congestion on surface streets.</li> <li>Vehicle Miles Traveled in Milwaukee has decreased.</li> <li>Reconnected the street grid pattern.</li> <li>Citywide drop in transit ridership.</li> </ul>	<ul style="list-style-type: none"> <li>New freeway has lower traffic volumes.</li> <li>Increase in transit use during earthquake recovery.</li> <li>No HOV lane added.</li> </ul>	<ul style="list-style-type: none"> <li>Other streets absorbed traffic with no problems.</li> <li>Large increase in transit ridership.</li> <li>Trucks and engineers opposed the removal.</li> </ul>	<ul style="list-style-type: none"> <li>Other highways and streets absorbed traffic, many people made fewer trips.</li> <li>Bicycle and pedestrian facilities contributed to an increase in use of these modes.</li> </ul>	<ul style="list-style-type: none"> <li>Traffic successfully absorbed by surface streets.</li> <li>Increase in transit use, and high ridership on new streetcar.</li> </ul>	<ul style="list-style-type: none"> <li>Two-lane road was built.</li> <li>Bus and subway system were coordinated.</li> <li>Significant modal shift.</li> <li>100,000 pedestrians daily.</li> </ul>
<b>Community Impacts</b>	<ul style="list-style-type: none"> <li>Development adjacent to the site.</li> <li>Gentrification of Chinatown and the North End.</li> </ul>	<ul style="list-style-type: none"> <li>Connection between two neighborhoods.</li> <li>New neighborhood identities.</li> <li>New overlay zoning guidelines.</li> </ul>	<ul style="list-style-type: none"> <li>Reunited the neighborhood.</li> <li>Growth in income and decrease in poverty in West Oakland.</li> <li>Community chose to preserve industrial zoning, has had trouble attracting new industry.</li> </ul>	<ul style="list-style-type: none"> <li>Affordable housing included in much of the development.</li> <li>Decrease in crime in the vicinity.</li> <li>Major festivals and markets in the new park.</li> </ul>	<ul style="list-style-type: none"> <li>Neighborhoods have less urban decay and higher land values.</li> <li>Affordable and senior housing in new developments.</li> </ul>	<ul style="list-style-type: none"> <li>New neighborhood identities formed.</li> <li>Change in uses from industrial to residential and commercial.</li> <li>Opposition from Chinatown merchants.</li> </ul>	<ul style="list-style-type: none"> <li>Large numbers of residences in the area.</li> <li>Public spaces are well used.</li> <li>Some handicapped accessibility issues.</li> </ul>

# New Orleans Claiborne Avenue Redevelopment Study:

## 3 - History and Background

### 3.1 Introduction

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The area directly adjacent to the Claiborne Expressway is comprised of several established neighborhoods varying in age, composition, and history. This chapter will outline the history of the Claiborne Expressway corridor and briefly discuss the history of the following neighborhoods adjacent to the Claiborne Expressway: Tremé, Seventh Ward, St. Roch, Tulane/Gravier, and the CBD. Many of these neighborhoods have shared histories and similarities because of their proximity to one another.

It should be noted that the construction of Interstate 10 in New Orleans in the late 1960s coincided with the population decline in New Orleans from its decennial census peak of 627,525 in 1960 to 593,471 in 1970 (Gibson, 1998). This pattern of decline has continued each decade since 1970 (Gibson, 1998), and according to 2010 Census data, New Orleans is now home to 343,829 residents (U.S. Census Bureau). The decline is attributed to several factors, including suburban out-migration, intrusive urban renewal projects, large infrastructure projects, and the relocation of industry away from the city of New Orleans. Such factors led to urban disinvestment in many neighborhoods, making the correlation between neighborhood decline and proximity to the interstate difficult to isolate.

### 3.2 North Claiborne Avenue

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North Claiborne Avenue in New Orleans was once a commercial district filled with grocery stores, restaurants, and businesses convenient to the neighborhood residents. The median (referred to as "neutral ground" locally) of the avenue was lined with established oak trees and greenery. The atmosphere was vibrant and friendly. The area was the heart of the surrounding neighborhoods, and Mardi Gras parades rolled by as residents celebrated on the North Claiborne Avenue neutral ground.

Until the mid-1950s, African-Americans were prohibited from participating in Mardi Gras celebrations on St. Charles and Canal streets (GNOCDC 2005a). Therefore, the Krewe of Zulu and tribes of intricately costumed Mardi Gras Indians paraded along the tree-lined avenue much to the delight of the parade goers that resided in the area. New Orleans Restaurateur Leah Chase was one of those residents. Her words paint a vivid picture exemplifying the neighborly feel of this once vibrant area of North Claiborne Avenue:



**Figure 3.1: North Claiborne Avenue, at Dumaine Street, looking towards Elysian Fields. "Oak Tree Conservation." Undated. City Archives New Orleans Public Library**

*We would go to see the Zulu parade, which was on Claiborne Avenue from Canal Street to St. Bernard Avenue. Claiborne was lined with beautiful oaks then. Some of the people held open houses on Claiborne, for their friends. The street was full of booths, with blacks selling fried chicken, fried fish, and red beans. My favorite thing about Mardi Gras was that we could eat in the street. My father never even let us eat candy outside normally. (Chase, 2009, p. 154)*

After World War II, however, the area suffered a devastating blow that severely impacted the character and vitality of the surrounding neighborhood.

# New Orleans Claiborne Avenue Redevelopment Study: 3 - History and Background



Figure 3.2: North Claiborne Avenue, showing oaks August 29, 1968. [Photograph by Joseph C. Davi]. City Archives New Orleans Public Library



Figure 3.3: Circle Food Store - 1954 – before the elevated expressway. City Archives New Orleans Public Library



# New Orleans Claiborne Avenue Redevelopment Study:

## 3 - History and Background

### 3.3 I-10 Expressway Construction

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During the 1950s, the Federal government paved the way for urban freeway construction by contributing 90% of the necessary funds for interstate projects (CNU 2011). Officials announced that the Interstate 10 Claiborne Expressway, an elevated highway, would be engineered and constructed above North Claiborne Avenue to allow better access to the Central Business District. At the same time, the Vieux Carré Riverfront Expressway was also proposed, to be constructed through the French Quarter to make the area more accessible.

The term "The Second Battle of New Orleans" has been used to describe the controversy in the 1960s over the Vieux Carré Riverfront Expressway. Richard O. Baumbach, Jr. and William E. Borah, opponents of the project themselves, described the expressway fight in: *The Second Battle of New Orleans: A History of the Vieux Carré Riverfront Expressway Controversy*. The idea of an elevated freeway along the riverfront was not a new one. It was suggested in 1946 by Robert Moses, a New York builder. Baumbach and Borah explain that the project drew opponents. Preservationists had been fighting for years to protect the character of the Vieux Carré. They suspected that the proposed expressway was an intrusion that would harm the fragile beauty of the old city. On the other hand, supporters of the expressway believed that the expressway would preserve the Vieux Carré by alleviating traffic on the narrow streets of the French Quarter. The Second Battle of New Orleans became more than just a conflict between preservationists and downtown developers; it was a battle of values, attitudes, and conflicting beliefs and perspectives about the character of the city (Weingraff 2011). The French Quarter Expressway was stopped by preservationists who battled fiercely and persuaded the federal government to withhold funding. However, residents of the North Claiborne Avenue area—which included some of the oldest African American neighborhoods in the country—did not have the funds or political clout to stop construction of the Interstate 10 Claiborne Expressway.

Five hundred homes along North Claiborne Avenue were torn down to prepare for the construction of the highway that opened in 1968 (CNU 2011). The final blow to the neighborhood was the removal of the quadruple rows of live oak trees from the neutral ground of the avenue. A May 2002 article in the *Times-Picayune* quotes Jerome Smith, a resident and community activist of the neighborhood, who recalls the days before I-10:

*Of the changes along the avenue since the 19th century, none has been more devastating than the cutting down of the oaks on the neutral ground in the mid-1960s to erect the interstate ramp. It took something out of the spirit of the neighborhood. The shady promenade ran for blocks down the center of the avenue and was a place where people embraced each other in the daily rituals of life. The old ladies would come out here and stretch their curtains. . . .When Joe Lewis was fighting, the men would be out here on the backs of their trucks, and our Mardi Gras was here. (GNOCDC 2005a)*



**Figure 3.4: North Claiborne Avenue, showing oaks. Undated. City Archives New Orleans Public Library**

The construction of the elevated Interstate 10 Claiborne Expressway permanently exchanged the historic green space for concrete. This further diminished the vibrancy of the neighborhood, and soon many more properties were abandoned. Soon afterward, the business district showed a marked decline, and the once-serene way of life for the neighborhood residents was gone. Interestingly, in 1968, the Zulu parade was finally allowed to roll on St. Charles and Canal due to the destruction of the North Claiborne neutral ground (GNOCDC 2005a).

# New Orleans Claiborne Avenue Redevelopment Study: 3 - History and Background

## 3.4 Overview of Impacted Neighborhoods

### Neighborhoods in Orleans Parish

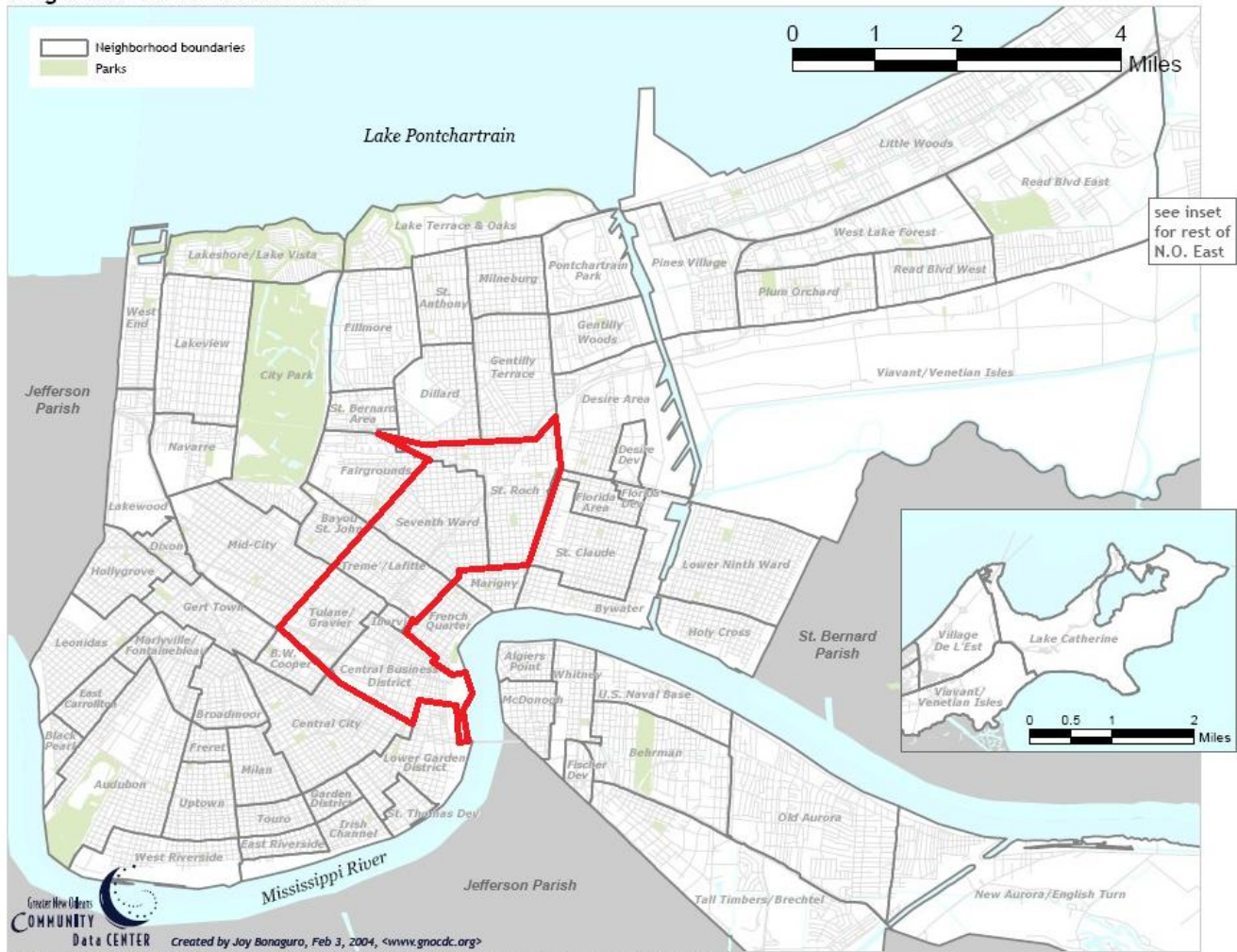


Figure 3.5: Neighborhoods of New Orleans; Claiborne-adjacent neighborhoods outlined in red. Base map source: GNOCDC (2004)

### Tremé

In 1730, Fort St. Ferdinand and Fort St. John were built in the area of New Orleans that is now known as Tremé. Chevalier Charles de Morand owned the city's first brickyard in the area, and his plantation was bounded by North Rampart, Claiborne Avenue, and Bayou Road (Governor Nicholls). As time passed, most of the Morand Plantation had been acquired by Claude Tremé, who built a plantation on Bayou Road. The area became more accessible, especially in 1794, when the Spanish Governor of Louisiana built a canal from the French Quarter to Bayou St. John right through Tremé's land. By 1810, Tremé had sold off most of his land, and the land was

subdivided for development. Free people of color, Caucasians, and Creoles who had recently arrived from Haiti purchased the subdivided lots. The people of color who resided in the area were some of the city's finest craftsmen and musicians.

Likewise, the Haitian descendants excelled as writers, teachers, and doctors. Tremé grew in leaps and bounds, and by 1883, there were only a few undeveloped lots left. Double shotgun houses and Creole cottages stood among businesses (GNOCDC 2005a). The neighborhood was ethnically diverse and prosperous.

# New Orleans Claiborne Avenue Redevelopment Study:

## 3 - History and Background



Figure 3.6: Tremé Neighborhood Map. Source: Greater New Orleans Community Data Center, Pre-Katrina Data Center, Tremé Neighborhood. (www.gnocdc.org).

The livelihood of Tremé was dealt a huge blow in the 1920s when the Municipal Auditorium was constructed adjacent to Congo Square. This facility destroyed a portion of the neighborhood in order to create a venue for Mardi Gras balls, operas, and other events usually reserved for the upper echelon of New Orleans society. Then urban renewal began in earnest in the 1960s with the construction of Louis Armstrong Park. This project destroyed nearly one third (32 acres) of historic Tremé and limited access to the park. Congo Square and the Preservation Hall, hallmarks of the neighborhood, were now fenced off, along with newer facilities like the Mahalia Jackson Center for Performing Arts (Johnson 2001).

Around the same time as the Louis Armstrong Park was being developed, construction of the Claiborne Expressway began. The construction process crippled businesses located on Claiborne Avenue. The number of businesses along a eight block stretch on Claiborne Avenue declined from 132 in 1960 to 35 in 2000 (Lacho, Parker, and Carter 2005).

### Seventh Ward

The land occupied by the Seventh Ward neighborhood was first developed by Bernard Marigny in the late 1700's. After successfully developing Faubourg Marigny, he sought to develop the Nouveau Marigny, which was bordered by Elysian Fields Avenue, St. Bernard Avenue, St. Claude Avenue, and Gentilly Road. These boundaries

are essentially the same as those of the current day Seventh Ward, except that it is slightly larger, extending from Elysian Fields Avenue to Esplanade Avenue. This additional land was once owned by Charles de Morand of Tremé fame (GNOCDC 2005b).

The development of the Pontchartrain Railroad in 1830 helped to encourage growth in the area. By the latter half of the 19<sup>th</sup> century, the Seventh Ward developed into a mix of French Creoles, Germans, and free people of color. Throughout the 19<sup>th</sup> and 20<sup>th</sup> centuries, Seventh Ward was notable for its strong business community, contributions to early Jazz, Creole culture, and civil rights activists. However, the construction of I-10 through the Seventh Ward neighborhood shuttered many businesses and rendered many homes undesirable causing residents to relocate (GNOCDC 2005b).



Figure 3.7: 7th Ward Neighborhood Map. Source: Greater New Orleans Community Data Center, Pre-Katrina Data Center, Seventh Ward Neighborhood. (www.gnocdc.org).

### St. Roch

St. Roch developed considerably later than the abovementioned neighborhoods. It was settled after the completion of the now defunct Pontchartrain Railroad along Elysian Fields Avenue in 1830, which positioned the area favorably between the Mississippi River and Lake Pontchartrain. Additionally, railroad lines connecting New Orleans to the rest of the country have for decades crisscrossed the northern portion of the neighborhood.

# New Orleans Claiborne Avenue Redevelopment Study:

## 3 - History and Background

Culturally, the neighborhood is very similar to the Seventh Ward as it was historically settled by French Creoles, Germans, and free people of color. It was also home to many early Jazz musicians, most famously Jelly Roll Morton (GNOCDC 2005c).

St. Roch is notable for its public spaces and the St. Roch Market, one of the last remaining historic public markets in the city. The neighborhood's namesake is from the St. Roch shrine and cemetery, which was dedicated in 1867 after a German priest invoked the healing powers of St. Roch, the patron saint of good health, to protect his parishioners from the yellow fever epidemic. Miraculously none of the parishioners died in 1867 or 1868 (GNOCDC 2005c).

The portion of the Claiborne Expressway that runs through the neighborhood is in the northern portion near the railroad lines. The construction of the interstate further divided the neighborhood and created an undesirable stretch along its boundaries (GNOCDC 2005c).

### Tulane/Gravier

The early development of Tulane/Gravier involved many owners and exchanges of property, but its namesakes are those of Paul Tulane, founder of Tulane University, and Jean and Bertrand Gravier, developers of Faubourg St. Mary (CBD). The neighborhood began to develop in the mid 19<sup>th</sup> century (GNOCDC 2005d).

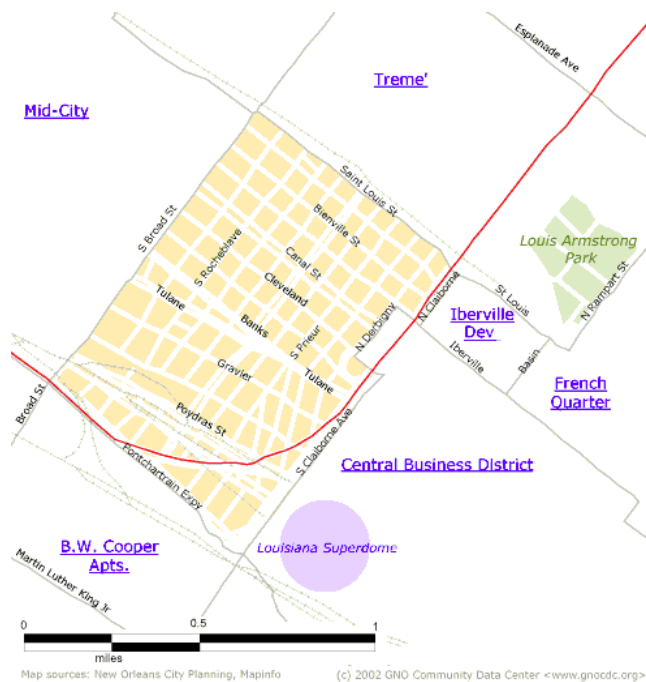


**Figure 3.8: St. Roch Neighborhood Map.** Source: Greater New Orleans Community Data Center, Pre-Katrina Data Center, St. Roch Neighborhood. ([www.gnocdc.org](http://www.gnocdc.org)).

There are many landmarks, such as the Dixie Brewery and Falstaff Brewery, which hint at the industrial past of the neighborhood. The area was essentially sandwiched between the Carondelet and New Basin Canals, providing easy access to both the lake and river. Later railroad development provided the backbone for an industrial boom (GNOCDC 2005d).

The 19<sup>th</sup> century saw increased commercialization, especially along the main avenues (Tulane, Broad, and Canal), in addition to increasing residential densities. Aside from the imposing structures of the now abandoned breweries, the neighborhood is also home to a large number of biomedical facilities such as University Hospital and the LSU School of Nursing (GNOCDC 2005d).

After Hurricane Katrina devastated many of the city's buildings, plans were made to abandon Charity Hospital in the CBD. LSU's medical facilities, previously housed in Charity Hospital, and the Veterans Affairs Hospital will relocate north of Claiborne Avenue into the neighborhood. They will also expand their facilities in an attempt to promote the Tulane Avenue corridor as a nationally competitive Biomedical District. Construction is underway, and though plans have been subject to scrutiny, the greatest impact has already occurred. The LSU and VA sites occupy 27 blocks and removed or demolished 249 buildings. It is anticipated that many of the streets will be removed and much of the traffic will funnel to Galvez St. (Save Charity Hospital 2011).



**Figure 3.9: Tulane/Gravier Neighborhood Map.** Source: Greater New Orleans Community Data Center, Pre-Katrina Data Center, Tulane/Gravier Neighborhood. ([www.gnocdc.org](http://www.gnocdc.org)).

# New Orleans Claiborne Avenue Redevelopment Study:

## 3 - History and Background

In addition to being situated adjacent to the Claiborne Expressway, this neighborhood is also bounded by the Pontchartrain Expressway portion of I-10.

### Central Business District (CBD)

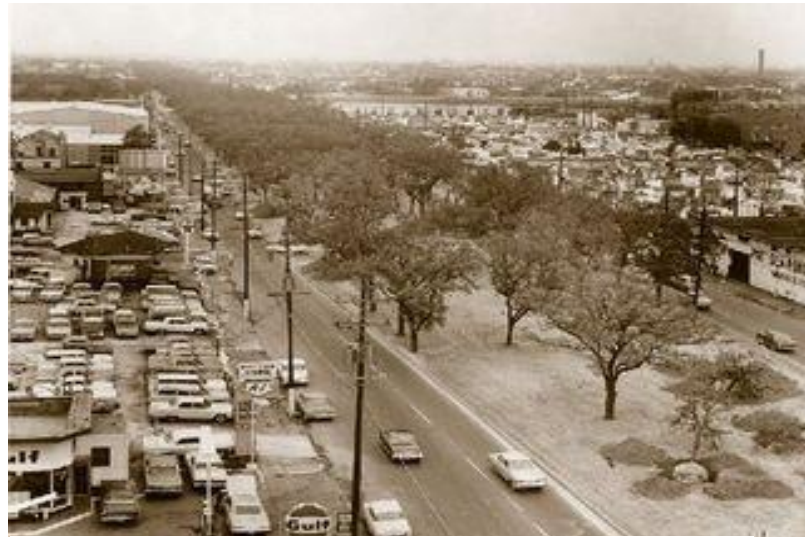
The CBD started out as Jean Baptiste LeMoynes plantation, granted by the Superior Council of Louisiana in 1719. It changed hands over the years and was subdivided after the French Quarter Fire of 1788 by Bertrand Gravier, who established the neighborhood as Faubourg St. Marie (St. Mary). Americans flocking to the city after the Louisiana Purchase (1803) made this the "American Quarter." By the 1830s, Canal Street had replaced Chartres Street as the commercial center of the city, and thus, the CBD was established (GNOCDC 2005e).

The CBD experienced a brief renaissance in the 1970s and 80s because of the oil boom. Poydras Street became the new hub for commerce, but when oil prices crashed in the late 1980s, the CBD was left with a surplus of office towers. Today, vacancy rates remain relatively high, but many of the buildings have been converted to hotels for the burgeoning tourist industry in New Orleans. Additionally, commercial and residential development is on the rise again with many projects slated for construction along Loyola Avenue where a new streetcar line is planned (Mowbray 2010).



**Figure 3.11: CBD Neighborhood Map.** Source: Greater New Orleans Community Data Center, Pre-Katrina Data Center, Central Business District Neighborhood. ([www.gnocdc.org](http://www.gnocdc.org)).

The construction of the New Basin Canal in the neighborhood and Louisiana’s booming sugar and cotton trade contributed to the rise of the CBD. While the Civil War and Reconstruction took its toll on the city, the CBD quickly rebounded. In 1870, New Orleans became a deepwater port, and skyscrapers, paved roads, and electric streetcars followed. The stock market crash of 1929 brought a period of decline, which was only exacerbated by the suburban white flight that occurred after desegregation in the 1960s (GNOCDC 2005e).



**Figure 3.12: Claiborne Avenue circa 1960 (Times-Picayune)**



**Figure 3.10: Claiborne Expressway/Interstate 10 above Claiborne Avenue today.** Source: Congress for New Urbanism (2010).

# New Orleans Claiborne Avenue Redevelopment Study:

## 3 - History and Background

### 3.5 Project Background: Summary of Claiborne Avenue Expressway Removal Proposals

Throughout the Post-Katrina planning process (2005-2010), the removal of the I-10 Expressway at Claiborne Avenue has been consistently identified—particularly by residents of surrounding communities—as a top long-term priority. In 2010, the Congress for New Urbanism released a report on the viability and desirability of the Expressway’s removal. In an effort to assess the feasibility of this proposal, the City of New Orleans submitted an application for federal funding to perform a detailed, comprehensive analysis, and received \$2M for the project. This section briefly outlines the various planning processes and proposals that address the Claiborne Avenue Expressway’s potential redevelopment.

### Bring New Orleans Back Commission (BNOB)

Immediately after Hurricane Katrina (October 2005), the Bring New Orleans Back Commission was created to develop recommendations to the City for recovery. The documents the commission produced, published in January of 2006, were focused on the city’s most immediate priorities and did not specifically call for the redevelopment of Claiborne Avenue. However, it did call for new and rebuilt roads to "be designed with the wide median (neutral ground) model for pedestrians, bicycles, transit, and open space" (BNOB 2006, p.33). In addition, the BNOB’s "Action Plan" called for the development of

53 miles of new light rail service, including a light rail line along Claiborne Avenue, extending from Carrollton Avenue to New Orleans East. The Commission also advocated the adoption of a "Neighborhood Center Model" of development (see Figure 3.13), which emphasizes mixed use boulevards, greenways, neutral-ground transit service, and regional connectivity.

### Lambert Neighborhood Rebuilding Plans

Next, in September of 2006, a series of neighborhood level recovery plans were published, in which neighborhoods outlined priority projects and needs for their communities. Both the 6<sup>th</sup> Ward/Tremé and 7<sup>th</sup> Ward Neighborhood Rebuilding Plans highlighted the negative impact that the Claiborne Avenue Expressway had on their communities, and identified a study of its potential removal as a key long-term recovery need. The neighborhoods’ final plans both included a stated recovery goal of "address[ing] the former civic importance of Claiborne Avenue, and the destruction and separation of the neighborhood caused by I-10" (New Orleans Neighborhood Revitalization Plans (Lambert Plans): 7<sup>th</sup> Ward Rebuilding Plan 2006, p.5).

The Lambert Plans proposed to transition the I-10 corridor to grade level at Elysian Fields Avenue, or, if necessary, at St. Bernard Avenue, in a phased process which would remove the expressway’s access ramps first, to be replaced with enhanced landscaping and open space, followed eventually by the removal of the highway entirely (see Figures 3.14, 3.15, and 3.16). The plan also calls for the restoration of the St. Bernard Avenue traffic circle. To this



Figure 3.13: BNOB Neighborhood Center Model. Image Source: BNOB (2006)

# New Orleans Claiborne Avenue Redevelopment Study:

## 3 - History and Background

end, the 7<sup>th</sup> Ward and Tremé plans demand a study to "determine how the impacts of this divisive and destructive elevated roadway can be minimized or eliminated" (New Orleans Neighborhood Revitalization Plans (Lambert Plans): 7<sup>th</sup> Ward Rebuilding Plan 2006, p.17).

The Lambert plans identified pollution from the I-10/Claiborne corridor as a public health concern, in addition to noise pollution and damage to historic buildings from vibration, and demands that, if the expressway cannot be removed, steps must be taken to mitigate its ongoing impacts. Interestingly, there seems to have been some discussion of adapting the open space underneath the expressway for recreational use, an idea which was rejected by the community based on the area's inhospitable character.



**Figure 3.14: Proposed Plan of Redesigned Claiborne/I-10: Phase II. Image Source: City of New Orleans (2006)**



**Figure 3.14: Proposed Section of Redesigned Claiborne/I-10: Phase II. Image Source: City of New Orleans (2006)**



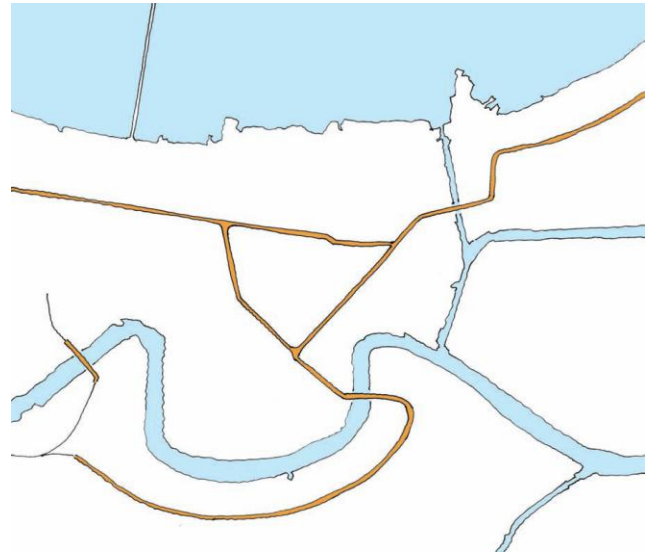
**Figure 3.15: Proposed Plan and Section of Claiborne Avenue Redesign, phase III. Image Source: City of New Orleans (2006)**

# New Orleans Claiborne Avenue Redevelopment Study:

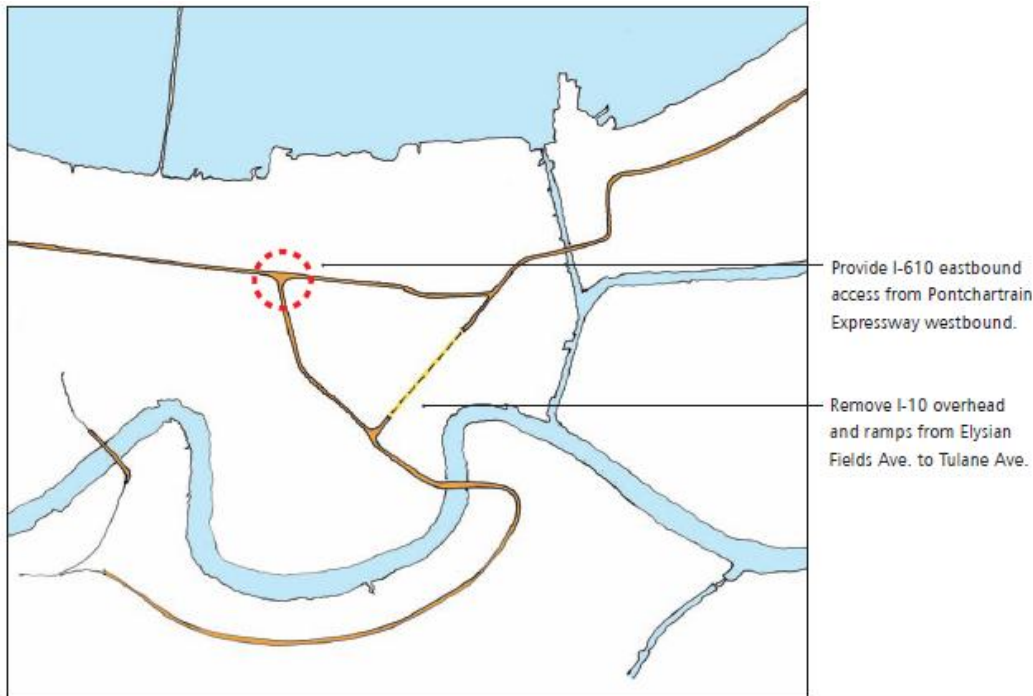
## 3 - History and Background

### Unified New Orleans Plan (UNOP)

The Lambert neighborhood plans were consolidated and reorganized into the City of New Orleans' *Unified New Orleans Plan*. The *District Four Recovery Plan* (City of New Orleans 2007) addresses the needs of the area impacted by the Claiborne Expressway. In this plan, the funding of a study examining the feasibility of removing I-10 (see Figures 3.17 and 3.18) was the second of 29 priority planning projects for planning District 4, with "high" priority. The proposed timeline for this study was 2-5 years. The previous neighborhood plans' recommendations for a phased removal of the highway are retained in this proposal (see Figures 3.19 and 3.20). The UNOP Plan called for coordination of this proposal with public transportation and green space planning efforts, and identifies the project as a "highest priority project both for planning and economic development interests" (Ch. 6, p.9). UNOP cites the expressway's key outcomes as reconnecting neighborhoods, restoring a tree-lined avenue (including the restoration of the St. Bernard Avenue traffic circle, see Figure 3.21), and providing economic benefits to the corridor by redistributing traffic to Claiborne Avenue businesses. The UNOP plan also suggests timing modifications to Louis Armstrong Park (e.g. a partially reconnected street grid through the park) with the expressway's removal.



**Figure 3.16: UNOP Map of Existing Freeway System. Image Source: City of New Orleans (2007)**



**Figure 3.17: UNOP Map of Proposed Freeway System Adjustments. Image Source: City of New Orleans (2007)**



# New Orleans Claiborne Avenue Redevelopment Study: 3 - History and Background

## Option 1: Partial Removal (Ramps Only)

Summary: Removes 9 individual I-10 ramps.  
Provides 12 to 15 revitalization blocks.  
Provides 4 blocks of neutral ground.

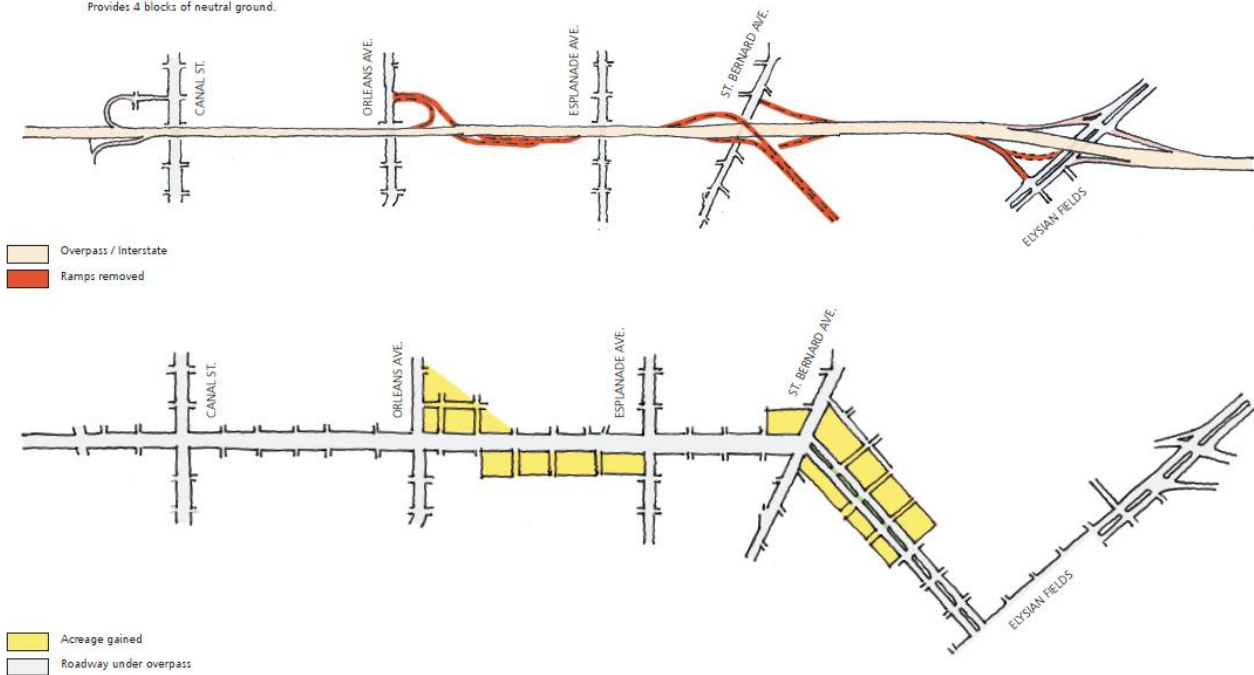


Figure 3.19: UNOP Phase I Removal Proposal. Image Source: City of New Orleans (2007)

## Option 2: Full Removal (Ramps Only)

Summary: Removes 2 miles of I-10 overhead.  
Removes 12 ramps.  
Provides 35 to 40 revitalization blocks.  
Provides 20 to 25 blocks of neutral ground.

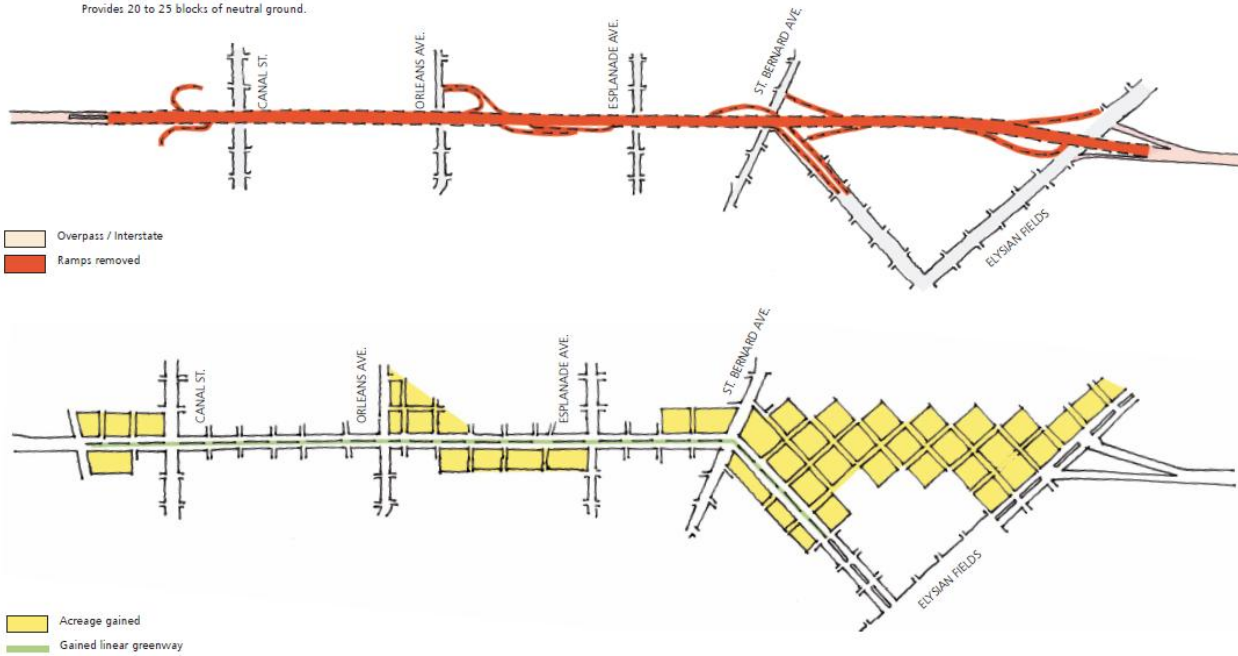
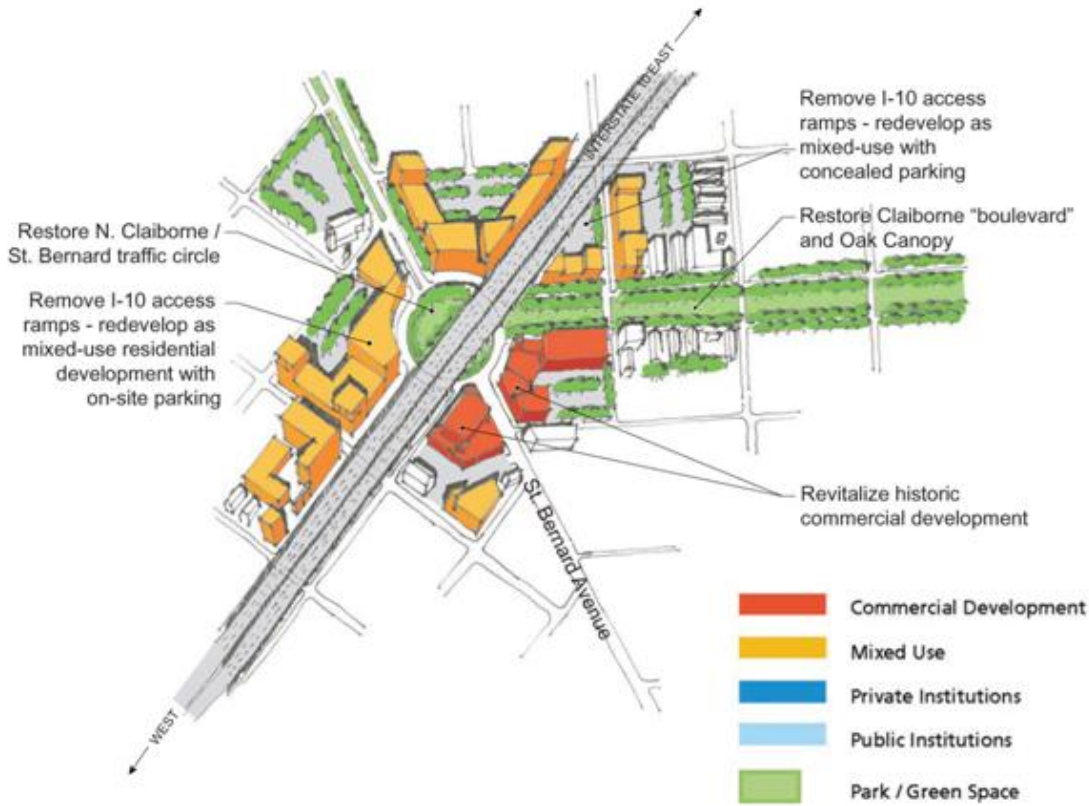


Figure 3.18: UNOP Phase II Removal Proposal. Image Source: City of New Orleans (2007)

# New Orleans Claiborne Avenue Redevelopment Study: 3 - History and Background

**St. Bernard at N. Claiborne**



**Figure 3.20: UNOP Proposed Re-Design of St. Bernard Traffic Circle. Image Source: City of New Orleans (2007)**

## New Orleans Master Plan--Plan for the 21st Century: New Orleans 2030

The recently adopted comprehensive *Plan for the 21<sup>st</sup> Century: New Orleans 2030* (New Orleans Master Plan and Comprehensive Zoning Ordinance, 2010) states as one of its goals: "Advance [transportation] projects that enhance connectivity, reduce barriers and improve attractiveness of neighborhoods, commercial sites and public spaces while addressing transportation mobility" (p. 11.20). Under the authority of this goal, studying the removal of the Claiborne Expressway—which the plan observe "attracted extensive comment" (p.11.21) during the planning process—is mandated. Its removal, the plan notes, would "right a decades' old wrong" (p.11.21) while enhancing the livability of surrounding neighborhoods and promoting private investment in the corridor.

The first step toward the expressway's potential removal is the execution of a feasibility and environmental impact study, funded by federal grants, to determine the relative costs and benefits of removal, as well as the anticipated near-term costs of maintaining the existing infrastructure.

Concerns about the proposal identified in the Master Plan include: the capacity of I-610 to handle increased traffic diverted from the Claiborne Expressway (see Figure 3.22) and how to maximize its capacity without widening; restoration of Claiborne Avenue to its historic appearance; how to best utilize land formerly occupied by the expressway and its on-and-off ramps (see Figure 3.23); and protecting neighborhoods from excessive through traffic.



**Figure 4.21: Rendering of Redeveloped Claiborne Avenue, 2030. Image Source: New Orleans Master Plan and Comprehensive Zoning Ordinance (2010).**

# New Orleans Claiborne Avenue Redevelopment Study: 3 - History and Background

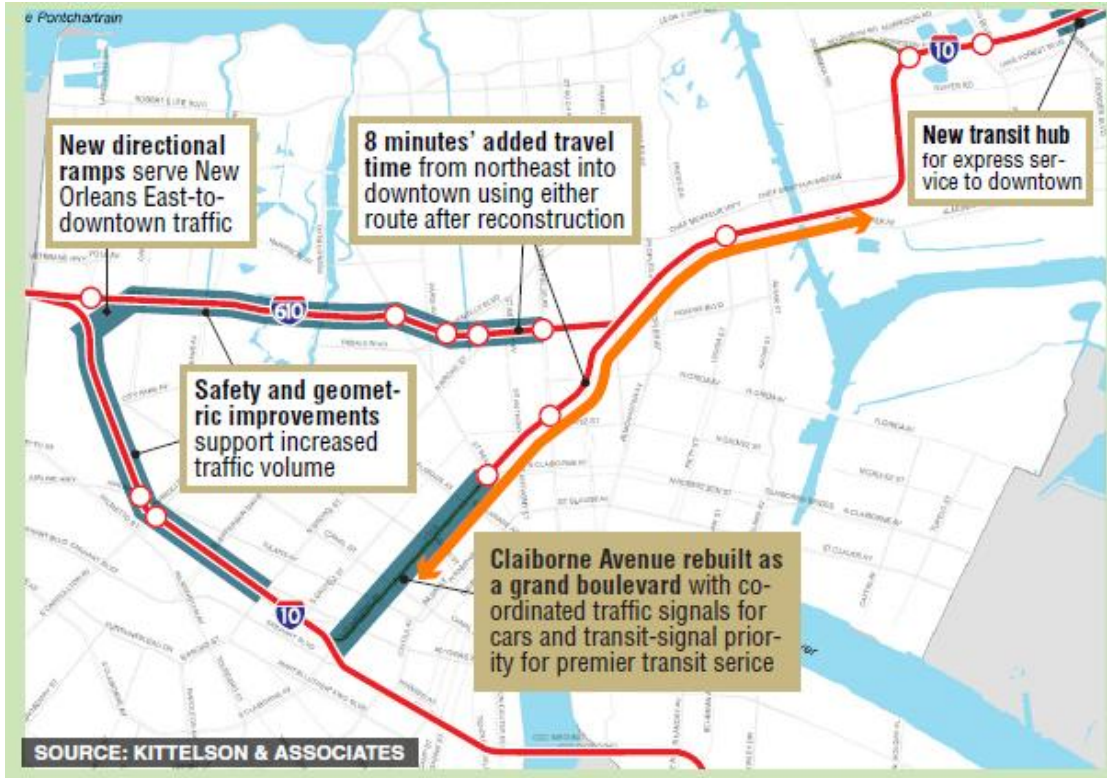


Figure 3.22: Diagram of Proposed Claiborne Avenue Expressway Removal and Freeway Redesign. Image Source: New Orleans Master Plan and Comprehensive Zoning Ordinance (2010).

## “Restoring Claiborne Avenue: Alternatives for the Future of Claiborne Avenue”

The 2010 *Restoring Claiborne Avenue: Alternatives for Future of Claiborne* report was commissioned by the Congress for the New Urbanism in order to explore future alternatives for the elevated Interstate-10 Claiborne Expressway corridor. The main goal of the report was to start the process of gathering expert opinion and community input to inform future discussion of restoring Claiborne Avenue. The report determined key baseline assumptions based upon review of traffic data by LADOTD, various studies, historical information, and present state of the Claiborne neighborhood. The key baseline assumptions are the following:

- Claiborne Expressway traffic is 30% or more below the pre-hurricane levels. Surface street volumes on parallel and intersecting streets also have below pre-hurricane volumes, which show that there exists capacity to absorb or redistribute traffic.
- Retaining the expressway would entail substantial new spending. Structurally, Claiborne Expressway is nearing the end of its useful life and beginning to deteriorate. Some of its exit ramps are far below current geometric standards and would require a larger footprint, potentially demolishing more urban fabric.

- The area is currently underserved by public transit. The removal would allow for new transit opportunities such as a rapid-bus transit, light rail, or streetcar, and commuters would enjoy improved circulation and accessibility to the street network.
- A study must be done dealing with the effect of restoring Claiborne Avenue to freight routes, since the expressway serves port traffic that is heading eastbound on I-10.
- Evacuation routes would not be affected by expressway removal since Claiborne is not part of the hurricane evacuation route.
- Bicycle and pedestrian issues need to be addressed since there are not bicycle facilities along Claiborne, and there are safety concerns for pedestrians along the corridor.

The 2008 data from the Louisiana Department of Transportation and Development ranges the volume on the Claiborne Expressway from 51,309 to 69,466 vehicles per day. The report assumes that a restored Claiborne Avenue would have traffic volumes of up to 50,000 vehicles per day, and assumes that 33% of the existing freeway traffic would disperse onto other routes. This assumption is based on the past experience of other highway removals. The removal of the expressway would also need to be accompanied by a number of changes to the New Orleans freeway system such as:

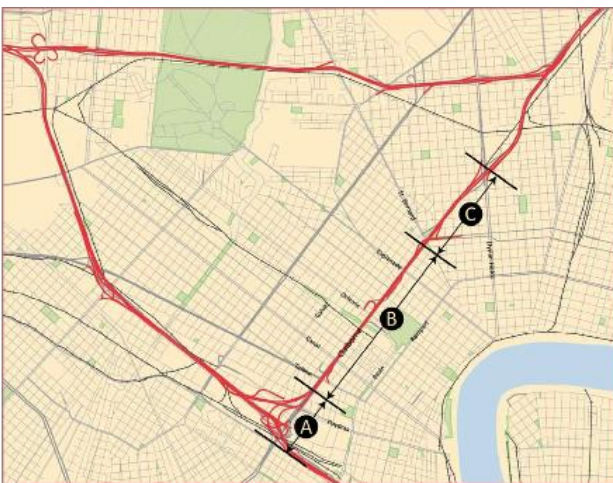
# New Orleans Claiborne Avenue Redevelopment Study:

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- Interstate designation would be changed to reflect the new system.
- Freeway interchanges would need to be redesigned to handle new traffic flows especially for freight transportation.
- A new interchange of Broad Street with the current I-10/Ponchartrain Expressway should be considered to further encourage dispersal of traffic onto alternate routes.
- Establishing Galvez as a through route can improve connectivity between uptown and downtown across the I-10 corridor.

The removal of the elevated expressway is organized into three segments. Segment A includes the interchange with I-10/Pontchartrain Expressway/North Claiborne Avenue. Segment B includes North Claiborne Avenue from the interchange to St. Bernard Avenue. Segment C is where the elevated expressway crosses the 7<sup>th</sup> Ward neighborhood, between St. Bernard and Elysian Fields.

Segment A: The high speed ramps that make up the interchange with the I-10/Claiborne Expressway would be removed and replaced functionally with a diamond interchange with Claiborne Avenue. A new crossing of the Pontchartrain would reduce the volumes crossing the Pontchartrain at Claiborne.



**Figure 3.24: Segments of Express Removal Plan.**  
Source: Smart Mobility, Inc

Segment B: The Claiborne Expressway is removed between the I-10 interchange and St. Bernard Streets and is replaced by a grade-level restored Claiborne Avenue. The restored avenue would have three travel lanes in each direction, a wide median that can be landscaped or put to other public uses, parallel parking, sidewalks and bicycle paths. The designed speed would be between 30 mph and 35 mph, and there would be signalized intersections as frequently as every other block. The restored avenue

would also provide a great opportunity to restore the historic St. Bernard Circle, which it would function as a three lane modern roundabout or as a traditional traffic circle with signals to control traffic.



**Figure 3.23: Drawing of Expected St. Bernard Circle.**  
Source: Smart Mobility, Inc. and Waggoner & Ball Architects

Segment C: There are two options for this area.

- Option C1: This option would create a new at-grade boulevard through the Seventh Ward between St. Bernard and Elysian Fields, in the path of the elevated freeway. The cross section would include three lanes of traffic in each direction, a landscaped median, and a parallel bicycle path.



**Figure 3.25: Option C1 Rendering.** Source: Smart Mobility, Inc. and Waggoner & Ball Architects

- Option C2: The expressway would be removed from Elysian Fields to St. Bernard, but not replaced with a boulevard. Rather, traffic circulation and access to several alternative corridors would be improved to encourage dispersal onto the street network.

# New Orleans Claiborne Avenue Redevelopment Study:

## 3 - History and Background



**Figure 3.26: Option C2 Rendering.** Source: Smart Mobility, Inc. and Waggoner & Ball Architects

The removal of the elevated expressway will have various impacts to New Orleans and the region. The report stated that a full analysis will be required and a more detailed feasibility study must be completed, but it found that following impacts that should be further studied:

- Traffic on the restored Claiborne Avenue is projected to be reduced to 70% or less of the current expressway volume.
- Traffic will divert to the I-10 portion of the Pontchartrain Expressway and I-610, resulting in an increase of less than 10% of existing volumes on these corridors.
- The freeway removal will allow for improved street connectivity, which can shorten pedestrian travel distances.
- The new avenue would result in improved conditions for bicyclists, and an opportunity for new modes in public transit.
- The freeway removal would improve neighborhood noise levels, air pollution, and opportunities for storm water retention.
- Economic impacts can occur due to increased local property values, redevelopment opportunities, and new acreage availability.

### The City's Application for Federal Funding for Further Study

Following the announcement of the federal HUD/DOT/EPA inter-agency partnership in 2009, the Sustainable Communities Partnership, more than a dozen meetings took place to discuss sustainable community building. What emerged was a priority to ensure that the significant affordable housing investments and existing

neighborhoods along the Claiborne corridor are linked to job centers, by leveraging infrastructure investments to connect a regional vision for redevelopment to catalytic projects along the spine of the Claiborne corridor. Recognizing that the Claiborne/elevated I-10 Expressway presents a physical and symbolic barrier to achieving connectivity and revitalization in adjacent low-income neighborhoods, the coalition is committed to study the future of elevated expressway (Claiborne Corridor Plan, 1).

In October of 2010, the City of New Orleans was awarded a federal grant for research on the city's Claiborne Corridor Plan. In order to be eligible for these federal funds, the city completed an application, the *Claiborne Corridor Plan: Leveraging Infrastructure to Build Inter-Parish Access and Equity*. In this application, the city requested a total of \$3 million in HUD Challenge and DOT TIGER II Grant monies. Despite not receiving the full amount requested, the city was awarded \$2 million in federal funding and raised over \$850,000 to be provided as the required minimum 20% match.

The city's requested federal funding to analyze possible infrastructure investments that could improve transit, connect housing to jobs, schools, and healthcare, manage soil and water, and promote livable communities as economic development. This analysis is to be completed using interagency partnerships with strong community input. The application also speaks of a strong focus on environmentally sustainable development. It has been recognized that there is a need and desire to re-integrate neighborhoods across the physical Claiborne boundary, but current investment in the area is burdened by physical and institutional barriers that hinder the corridors transformation. The main physical barrier being the elevated expressway itself, which has caused depreciated property values and therefore lack of further private investment. Also, disconnected planning efforts have led to inconsistent development plans and resistant investors.

The broad plans for funds addressed in the application included a study of the corridor challenges and opportunities to reunite a physically divided community, development of resident leadership to increase their planning and implementation capacity through technical assistance, and tying workforce and small business development to the corridor's investment opportunities. The application also discussed a gap analysis of all plans done since Hurricane Katrina to make sure investments are catalyzed to create sustainable communities.

Within this broad set of goals, the city application describes two more specific projects. Project A is to promote livable neighborhoods - revitalized corridors through targeted planning interventions. Using federal funds, these planning interventions will develop neighborhood and economic development revitalization

# New Orleans Claiborne Avenue Redevelopment Study:

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strategies in addition to Complete Streets and Infrastructure's policy and design prototypes to address storm water management, subsidence, multi-modal mobility, and urban design. The primary area of study for project A is the area between Napoleon Avenue and Elysian Fields, which includes the commercial heart of Claiborne and elevated I-10 Expressway and the surrounding historic neighborhoods. The secondary area of study will be East Claiborne Avenue in the lower ninth ward and in Hollygrove on the west end of the city. A future area for analysis will be Claiborne Avenue into Jefferson and St. Bernard Parish.

Project B as discussed in the city application addressed expanded mobility to link housing and employment centers along the Claiborne corridor. This project required the execution of a comprehensive data and alternatives study to evaluate the future of Claiborne elevated Expressway. It also included conducting a regional transit line feasibility assessment along the entire corridor. This project will be integral for the city to reach one of its major goals, which is to create a future with vibrant regional transit system including pedestrian and bicycle infrastructure with Claiborne as the spine.

Once the projects were outlined, the application then summarized the city's goals for the entire study. Along with each goal, they gave a brief description of the history and existing condition of the area in reference to that particular goal, as well as impediments to achieving the goal. The five goals listed in the application were briefly mentioned previously, but are worth listing again. They include:

- Create connections between affordable housing investments and jobs
- Study alternative futures of Claiborne elevated I-10 Expressway
- Strategically tackle blight and vacancy
- Advance a culture of interagency and public-private sector coordination
- Manage storm water runoff and subsidence

In the reminder of the city's application, they went into details about proposed outcomes and performance measures for progress and impact. One significant section of the application addressed an emphasis on increasing

citizen participation and decision-making, as well as capacity building and knowledge sharing between professional organizations and community stakeholders - an important aspect to the successful implementation of the planning interventions.

Many plans have been completed since Hurricane Katrina, and the city is committed to working consistently with three existing plans. It is essential to build on the extensive work that has already been done in the city, and leverage that work through cohesiveness and consistency. The plans that the city will want to build consistency with include the *New Orleans Master Plan 2030*, *Unified New Orleans Plan*, and *Louisiana Speaks Regional Plan*.

Part two of the application addresses the Work Plan. The city lays out a comprehensive list of tasks necessary to complete both projects. These plans include specific data collection objectives and community participation management goals. Also in part two of the application, a project completion schedule is outlined for their two years of budgeted time (Figure 3.28).

Part three of the application addresses leveraging and collaboration. The city raised \$858,500 for matching grant funds, which was over the federally required 20%. The city also voiced its desire to ensure that the billions in current and planned investments along the corridor are integrated, and that their benefits are maximized. Cited in the nearby investments is the groundbreaking on the \$2.2 billion VA and University Medical Center Complex and over \$700 million for the big four affordable and mixed income housing developments.

The final section of the application addresses capacity. The research projects will be tackled with a three-pronged leadership approach. This includes a governance committee of 15 with decision-making authority, a lead consultant, and a project advisory committee compiled of different community stakeholders. The governance committee and project advisory committee will work together to set specific goals, objectives, and evaluation criteria. They will also ensure open access to governance committee proceedings to ensure that all disputes will be resolved in a transparent and equitable manner.

# New Orleans Claiborne Avenue Redevelopment Study: 3 - History and Background

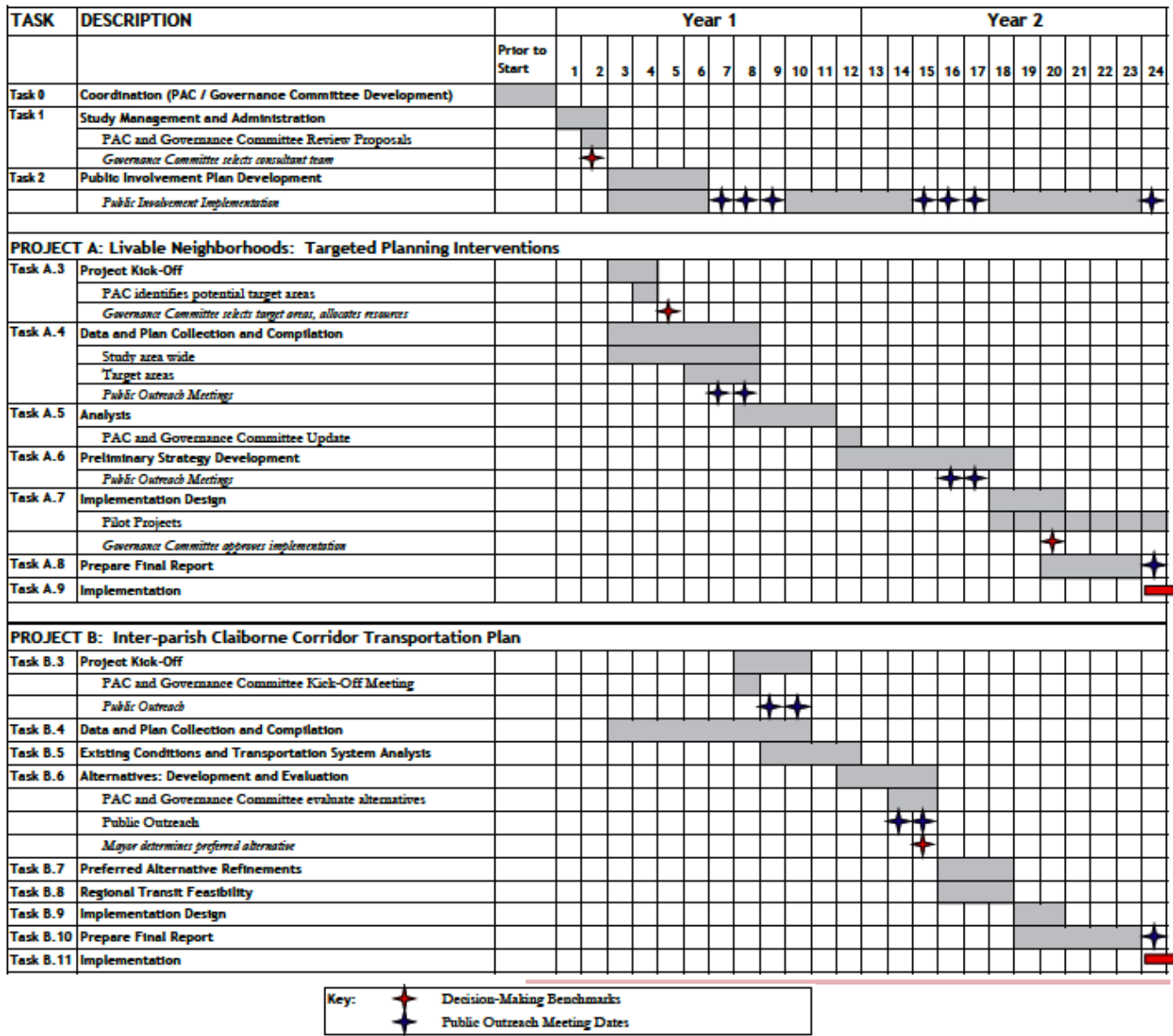


Figure 3.27: Project Completion Schedule. City of New Orleans. (2010)

# New Orleans Claiborne Avenue Redevelopment Study:

## 3 - History and Background

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# New Orleans Claiborne Avenue Redevelopment Study:

## 4 - Local and Regional Context

This section addresses the current context of the Claiborne Avenue corridor, including the existing transportation network, land use patterns, the local economy, and local community characteristics and demographics. This data provides background for our analysis of the proposed expressway removal.

### 4.1 Transportation System

#### Highway and Expressway Facilities

The Louisiana Department of Transportation and Development (LaDOTD) maintains a publicly available database for annual estimated average daily traffic (ADT) counts for automobiles. These ADT estimates go back to 1994 or 1997 for different locations, with the most recent data available for 2010. The tables below, tables 4.1 through 4.4, summarize the absolute change and percentage change in estimated ADT volumes over time for the five LaDOTD count locations on the Claiborne Expressway and four LaDOTD count locations on nearby highways.

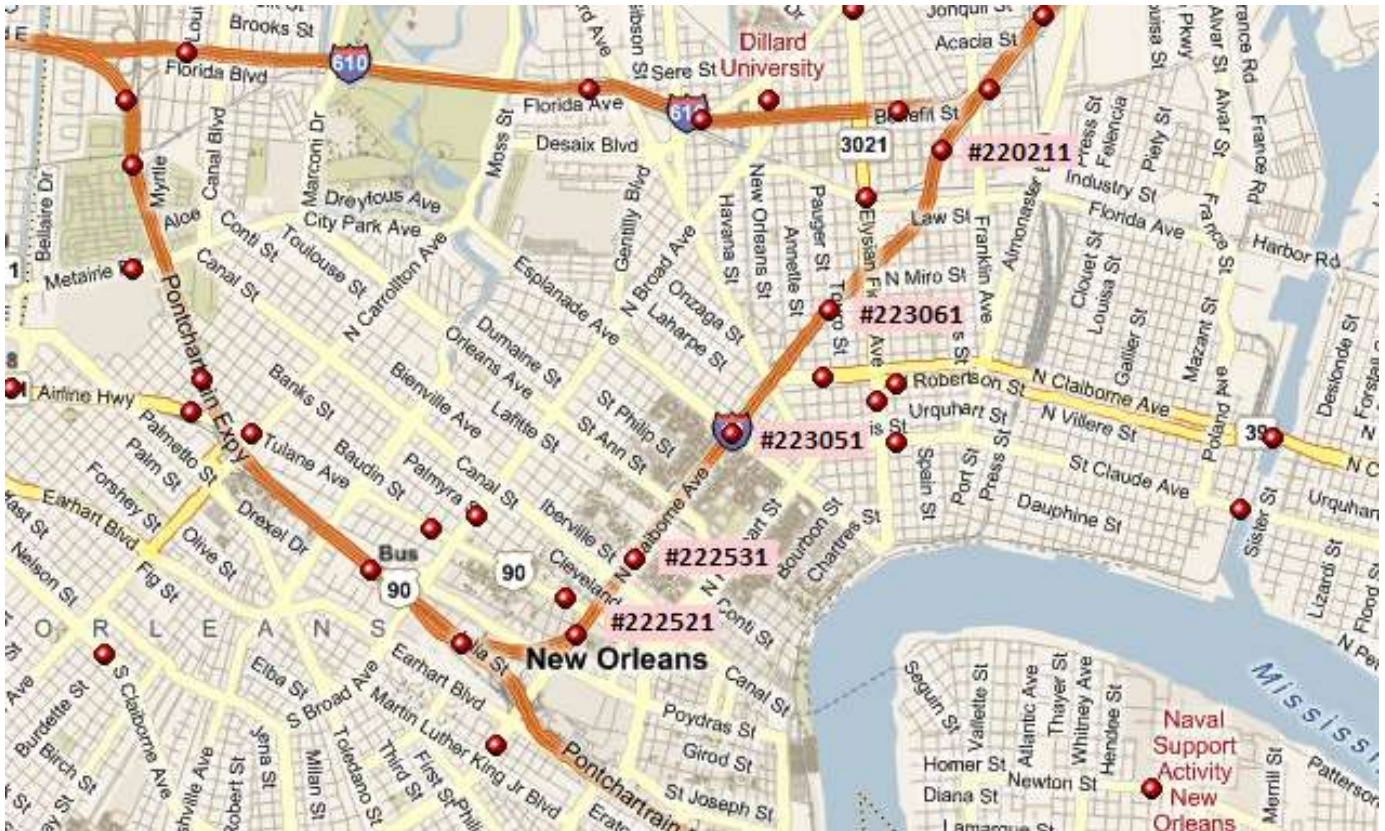


Figure 4.1: Claiborne Expressway Traffic Counts. Source: Louisiana Department of Transportation and Development

# New Orleans Claiborne Avenue Redevelopment Study:

## 4 - Local and Regional Context

**Figure 4.1: Estimated Average Daily Automobile Traffic, Claiborne Expressway**

Station ID	Description	1994	1997	2001	2004	2008	2010
222521	b/w Perdido St. and Gravier St.	99,049	103,460	<b>121,367</b>	101,467	66,343	95,844
222531	Near Bienville Ave.	118,940	<b>121,464</b>	99,531	91,600	69,466	109,923
223051	Near Esplanade Ave.	111,635	<b>117,681</b>	96,782	113,847	67,633	100,329
223061	Near Pauger St.	92,769	94,653	94,599	<b>121,700</b>	57,278	83,978
220211	b/w Music St. and Arts St.	78,723	82,148	81,904	<b>82,569</b>	51,309	69,323

Source: Louisiana Department of Transportation and Development

**Figure 4.2: Percent Change in Estimated Average Daily Automobile Traffic, Claiborne Expressway**

Station ID	Description	1994-1997	1997-2001	2001-2004	2004-2008	2008-2010	2010 as % of Peak
222521	b/w Perdido St. and Gravier St.	4.50%	17.30%	<b>-16.40%</b>	<b>-34.60%</b>	44.50%	79.00%
222531	Near Bienville Ave.	2.10%	<b>-18.10%</b>	<b>-8.00%</b>	<b>-24.20%</b>	58.20%	90.50%
223051	Near Esplanade Ave.	5.40%	<b>-17.80%</b>	17.60%	<b>-40.60%</b>	48.30%	85.30%
223061	Near Pauger St.	2.00%	<b>-0.10%</b>	28.60%	<b>-52.90%</b>	46.60%	69.00%
220211	b/w Music St. and Arts St.	4.40%	<b>-0.30%</b>	0.80%	<b>-37.90%</b>	35.10%	84.00%
<b>Average % Change:</b>		3.70%	-3.80%	4.50%	-38.00%	46.60%	81.50%

Source: Louisiana Department of Transportation and Development

From tables 4.1 and 4.12, the following patterns emerge:

- Traffic count sites on the western portion of the Claiborne Expressway (from Esplanade Avenue to the Central Business District (CBD)) peaked earlier, mostly in the late 1990s, than those in the eastern portion which peaked in 2004.
- Traffic count sites on the western portion of the Claiborne Expressway (from Esplanade Avenue to the CBD) generally have higher volumes than their eastern counterparts.
- All traffic count sites experienced significant *decreases* from 2004 to 2008 during which the metropolitan population drastically declined because of the devastation from Hurricane Katrina.
- All traffic count sites experienced significant *increases* from 2008 to 2010. This is interesting because while the metropolitan population is similar to pre-Katrina levels, the City of New Orleans is sitting around 75% of its pre-Katrina population (U.S. Census Bureau, 2010).
- On average, the traffic count sites are currently around 81% of their peak levels.

# New Orleans Claiborne Avenue Redevelopment Study: 4 - Local and Regional Context



Figure 4.2: Highway Traffic Counts Near the Claiborne Expressway. Source: Louisiana Department of Transportation and Development

Table 4.3 and Table 4.4 summarize the absolute change and percentage change in traffic volumes over time for the highway count sites most immediate to the Claiborne Expressway.

Station ID	Route	Description	1997	1998	2001	2004	2008	2010
220161	LA3021	Elysian Fields Ave, north of Claiborne	49,792	44,109	55,419	53,383	31,354	39,404
220391	LA3021	Elysian Fields Ave, south of Claiborne	28,274	27,370	29,113	25,204	23,034	21,137
220381	LA0039	Claiborne Ave, between St. Bernard and Elysian Fields	51,735	46,673	44,670	44,940	35,096	38,954
223011	US0090	Tulane Ave, north of Claiborne	22,265	25,049	19,562	36,261	17,467	19,185

Source: Louisiana Department of Transportation and Development

# New Orleans Claiborne Avenue Redevelopment Study:

## 4 - Local and Regional Context

Table 4.4: Percent Change in Estimated Average Daily Automobile Traffic for Nearby Highways

Station ID	Route	Description	1997-1998	1998-2001	2001-2004	2004-2008	2008-2010	2010 as % of Peak
220161	LA3021	Elysian Fields Ave, north of Claiborne	-11.4%	25.6%	-3.7%	-41.3%	25.7%	71.1%
220391	LA3021	Elysian Fields Ave, south of Claiborne	-3.2%	6.4%	-13.4%	-8.6%	-8.2%	72.6%
220381	LA0039	Claiborne Ave, between St. Bernard and Elysian Fields	-9.8%	-4.3%	0.6%	-21.9%	11.0%	75.3%
223011	US0090	Tulane Ave, north of Claiborne	12.5%	-21.9%	85.4%	-51.8%	9.8%	52.9%
<b>Average % Change:</b>			<b>-3.0%</b>	<b>1.5%</b>	<b>17.2%</b>	<b>-30.9%</b>	<b>9.6%</b>	<b>68.0%</b>

Source: Louisiana Department of Transportation and Development

Tables 4.3 and 4.4 show the following patterns:

- There is consistently significantly higher traffic on Elysian Fields north of the Claiborne Expressway as compared to south of the expressway. It should be noted that the northern Elysian Fields count site is within close proximity to Interstate 610.
- The disparity between the northern and southern Elysian Fields count sites was greatest in 2008 when the southern value was 73.5% of the northern value. The 2010 data saw this disparity shrink to 53.6%.
- All sites experienced decreases in traffic volumes between 2004 and 2008. The southern Elysian Fields site had a significantly lower decrease, in both absolute and percentage terms. However, it was the only site to decrease from 2008 to 2010, though at a rate similar the previous time period (~8%). Such consistency in its ADT volumes over the years, especially relative to the other sites, is noteworthy.
- 2010 traffic volumes for the highways near the Claiborne Expressway represent, on average, a considerably smaller percentage of their peak volumes than those for the Claiborne Expressway.
- Compare the 68% average to the 81% average of the Claiborne Expressway sites.
- The Tulane Avenue site's 2010 traffic volume as a percentage of its peak is extremely low compared to the rest of the highway sites. A possible explanation for this is the forced relocation of many residents that lived in the LSU and VA biomedical facilities footprints.

### Transit Facilities

The Claiborne Expressway corridor is served by many transit routes. Four of these routes, at some point, run directly adjacent to the expressway, along Claiborne Avenue. Two bus lines, #51 and #52, make up the St. Bernard route which runs 7 days a week from Canal Street to the University of New Orleans. The other two routes that follow Claiborne Avenue are express busses to New Orleans East. These routes, the Morrison Express (#62) and Lake Forest Express (#64), also run 7 days a week and originate near Canal Street (Regional Transit Authority, 2010).

In addition to the adjacent bus routes, four more bus routes and one streetcar route pass under the Claiborne Expressway. The Tulane route (#39), Galvez route (#84),

Jackson-Esplanade route (#91), and Elysian Fields route (#55) cross under the Claiborne Expressway at various locations. Additionally, the Canal St. Streetcar passes under the expressway. All of these routes run 7 days a week (Regional Transit Authority, 2010).

The Claiborne Expressway corridor is situated nearly equidistant between two of the four most popular bus routes. The Broad route (#94) and St. Claude/Jackson Barracks route (#88) have two of the highest levels of ridership in New Orleans. The Tulane route (#39), which crosses the Claiborne Expressway on Tulane Avenue, also has one of the top four ridership figures (New Orleans Master Plan, 2010).

# New Orleans Claiborne Avenue Redevelopment Study: 4 - Local and Regional Context

## Rail Facilities

Railroad facilities in New Orleans serve six out of the seven Class 1 railroads in the nation. Class 1 railroads are those with the highest revenue. The six Class 1 railroads in New Orleans are Norfolk Southern Railway, Kansas City Southern Railway, Canadian National Railway, Union Pacific Railroad, BNSF Railway, and CSXT Transportation, Inc. (New Orleans Master Plan, 2010). Each of these railroad's national systems can be seen in Figure 4.3. Such a large presence of railway operators makes New Orleans a national hub for rail transportation, for both freight and passenger rail.

According to the New Orleans Master Plan, railroad traffic is already a problem in New Orleans as there are considerable delays and bottlenecks attributed to the high number of at-grade crossings throughout the city

(New Orleans Master Plan, 2010). The Claiborne Expressway passes over railroad tracks at only one location, near Florida Avenue in the St. Roch neighborhood. Since the expressway is elevated this crossing is grade separated, allowing railroad traffic to pass uninterrupted. In studying the feasibility of removing the Claiborne Expressway, railroad crossings should be addressed in a manner that does not further impede the flow of railway traffic.

Regarding passenger rail service, Amtrak provides service in New Orleans with three direct routes heading West to Los Angeles, North to Chicago, and East to New York City (Amtrak, 2011). Amtrak routes in the area operate on freight right of ways, further contributing to railroad traffic delays (New Orleans Master Plan, 2010).

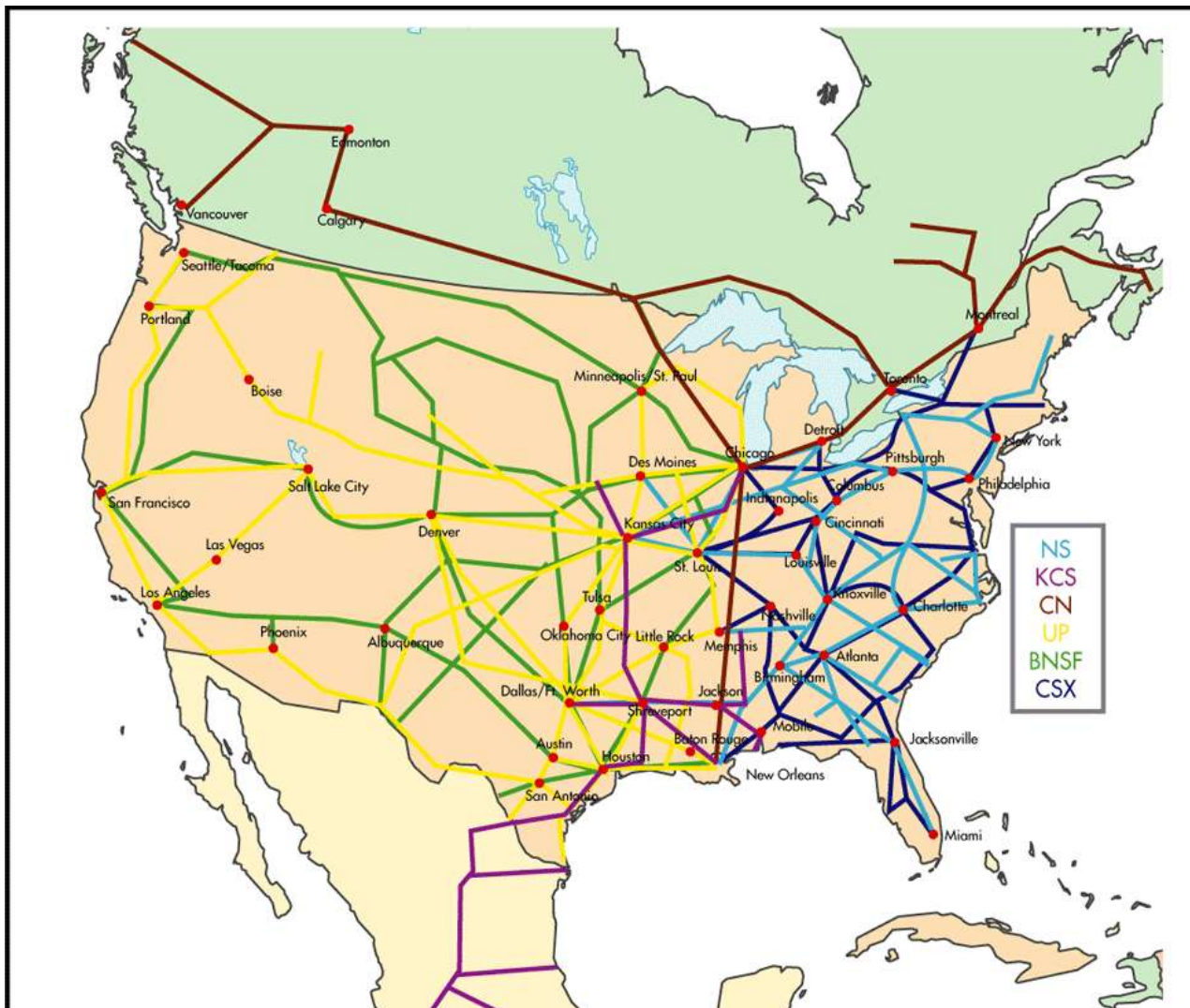


Figure 4.3 Railroads that Pass through New Orleans. Source: New Orleans Public Belt Railroad

# New Orleans Claiborne Avenue Redevelopment Study:

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### Non-Motorized Facilities

New Orleans is expanding its network of pedestrian and bicycle facilities through the construction of designated bike lanes, shared bike lanes (sharrows), improving sidewalk conditions, and expanding the multi-use trail system in the city. The Lafitte Greenway, shown in Figure 4.4, is one of the funded projects planned to improve non-motorized transportation in New Orleans. The proposed

Lafitte Greenway will stretch 3 miles from the French Quarter to Lakeview, passing through Tremé and Mid-City. It also happens to cross the Claiborne Expressway along Basin Street/Orleans Avenue (New Orleans Master Plan, 2010). Given that this facility is intended to be the crown jewel of New Orleans’ multi-use trails and serve as an example for future trails, its intersection with the Claiborne Expressway should be taken into consideration.

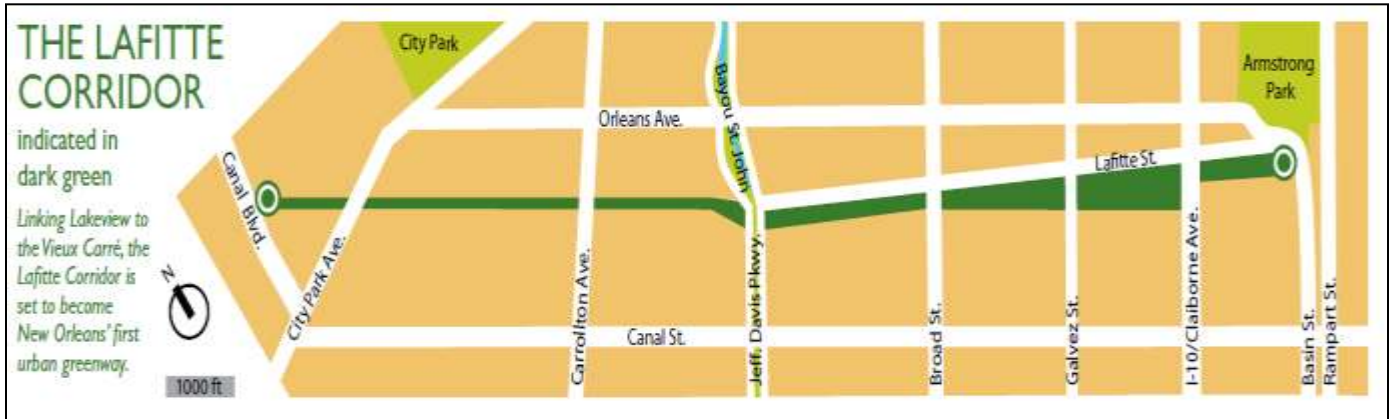


Figure 4.4: The Lafitte Corridor/Greenway. Source: Friends of the Lafitte Corridor

### Planned Transportation Infrastructure Improvements

Much of the discussion surrounding the feasibility of removing the Claiborne Expressway is founded on the premise that the expressway is in need of costly repairs to bring it into a state of good repair. Some argue that removal would be a less expensive alternative (Smart Mobility, Inc., 2010; New Orleans Master Plan, 2010).

Assuming that the RPC’s TIP currently acknowledges all of the necessary repairs for the Claiborne Expressway, the total expenditures over the next four years total less than \$2,000,000. The RPC’s Metropolitan Transportation Plan (MTP) estimates that reconstruction of at-grade facilities and transit along the I-10/Claiborne Avenue corridor would cost around \$400,000,000. Therefore, removal of the Claiborne Expressway may not immediately save money. However, it is worth noting that the RPC has not assigned this project a number and has it listed as a Tier III project in Fiscal Years 2025-2040. Also, the cost projection of removing the expressway and constructing transit along the corridor is a preliminary estimate as the RPC has yet to conduct a formal study (Metropolitan Transportation Plan, 2010).

The Regional Planning Commission’s FY2011-2014 Transportation Improvement Program (TIP) has three projects along the Claiborne Expressway corridor. All of these projects are deemed necessary by the Regional Planning Commission (RPC) in order to put/keep the facilities in a state of good repair. Figure 4.5 summarizes these projects, two of which directly involve the Claiborne Expressway and one which abuts it on Tulane Avenue (Metropolitan Transportation Plan, 2010).

Project #	FY	FY Range	Route	Project Description	Proposed Improvement	Est. Cost
450-90-0219	2010	10/1/09 - 9/30/10		I-10 at Tulane & St. Bernard	Slide Plate Joint Replacement	\$500,000
450-90-0228	2011	10/1/10 - 9/30/11	I-10	I-10 Ent. Ramp @ Carrollton Ave. - I-10 East)	Cold Plane & Overlay	\$270,000
006-03-0060	2014	10/1/13 - 9/30/14	US 90	E. End US 90 & I-10 Int. - Tulane @ N. Broad	Cold Plane & Overlay	\$1,175,000

Figure 4.5: Projects Planned by Metropolitan Planning Organization (MPO). Source: Regional Planning Commission, Metropolitan Transportation Plan: New Orleans Urbanized Area, Fiscal Years 2011-2040

# New Orleans Claiborne Avenue Redevelopment Study:

## 4 - Local and Regional Context

### 4.2 Land Use Patterns

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#### Existing Land Use Patterns

The Claiborne Avenue corridor is historically a mixed-use, neighborhood-scale commercial corridor today dominated by a mix of retail and residential uses and a significant number of vacant properties, particularly surrounding the former St. Bernard traffic circle (see Appendix B: Existing Land Use Maps). Three blocks border the historic St. Louis Cemetery No. 2, and the newly redeveloped Lafitte housing project (as well as the future Lafitte Greenway) abuts the avenue at St. Peter Street. A rough geographic breakdown of current land use is as follows:

##### Upper N. Claiborne: Tremé

(Canal Street to Orleans Avenue)

- Retail/office use dominates
- Three blocks cemeteries
- RV park
- Vacant land
- Park space and multi-family at Lafitte site

##### Lower N. Claiborne: Tremé

(Orleans Avenue to Esplanade Avenue)

- Mix of office/retail and residential (single family and duplex)
- A little light industrial/manufacturing
- Lots of vacant properties fronting expressway
- Several “unknown use” parcels

##### Lower N. Claiborne—7<sup>th</sup> Ward

(Esplanade Avenue to St. Bernard Avenue)

- Mix of office/retail and residential (single family and duplex); commercial uses dominate
- Lots of vacancy around St. Bernard Circle

#### Future Land Use Patterns

The New Orleans Master plan calls for North Claiborne Avenue within the study area to be entirely a “neighborhood commercial” corridor, with “medium-

density mixed-use” at St. Bernard Avenue (see Appendix C: Future Land Use Map). The master plan’s description of these land use categories, a classification within “Commercial and Industrial” land use and “Mixed Use” land use respectively, are as follows:

##### Neighborhood Commercial Land Use: Description

(New Orleans Master Plan 2010)

- **Goal:** “Provide areas for small-scale, neighborhood-oriented commercial development that enhances the pedestrian character and convenience of neighborhoods by allowing commercial establishments in select locations within walking distance to surrounding residential areas (p.14.11).”
- **Range of Uses:** “Retail and professional service establishments serving local neighborhood area residents. Common uses include small groceries, restaurants, barber shops/salons, clothing boutiques, banks, pharmacies, and small health professional offices (p.14.11).”
- **Development Character:** “Buildings are oriented to the sidewalk (parking in rear where possible) with maximum heights related to the character of the street. Landscape requirements for parking lots facing the street (p.14.11).”

##### Mixed-Use Medium Density Land Use: Description

(New Orleans Master Plan 2010):

- **Goal:** “Create medium-density neighborhood centers to enhance walkability and serve as focal points within neighborhoods. Proximity to transit encouraged (p. 14.13).”
- **Range of Uses:** “Medium-density residential and commercial uses. Limited light industrial uses (craft and value added industry and passive warehousing and storage) may be allowed in some areas (p. 14.13).”
- **Development Character:** “Height/mass of new development varied to ensure proper transitions to surrounding lower density residential neighborhoods. Many structures will feature ground floor retail with residences on upper floors (p. 14.13).”

# New Orleans Claiborne Avenue Redevelopment Study: 4 - Local and Regional Context



Figure 4.6: Claiborne Corridor Future Land Use /Source: New Orleans Master Plan 2010

## Future Land Use: Major Developments

### LSU/VA Hospital

The \$2 billion, 70 acre LSU Medical Center and VA Hospital complex, currently under development between Canal Street and Tulane Avenue in lower Mid-City will have a significant impact on land use in the vicinity of North Claiborne Avenue. The VA hospital is scheduled for completion in 2013, and the LSU Medical center is expected to open sometime in late 2014. In total, these projects will generate more than 7,000 new jobs in the area. The project involved the demolition of several residential blocks, and will result in substantial modifications of the street grid, reducing overall connectivity in the area, and changing the character of downtown New Orleans.

### Iberville Housing Redevelopment

The Iberville public housing development, located at the edge of the French Quarter and stretching to Claiborne Avenue, is currently a finalist for a HUD Choice Neighborhood Grant. The development is the Housing Authority of New Orleans' last conventional housing project, has long been discussed for redevelopment as a mixed-income community, and is expected to move forward regardless of the outcome of the federal grant. The redevelopment proposal submitted for grant consideration entails the preservation of roughly 1/3 of the existing 1940s buildings and would result in a net increase in residential population in the area. In addition, the redevelopment will include new retail and restaurants.



Figure 4.7: LSU/VA Hospital Footprint and Iberville housing development /Source: Times-Picayune

## Current Zoning Classifications:

The study area's current zoning is mixed, and includes general commercial district, central business district, neighborhood business district, light industrial district, multi-family residential district, and Historic Marigny/Tremé residential and commercial district classifications (see Appendix D: Zoning Maps). Curiously, the site of the planned Lafitte Greenway is currently zoned as C1-A "general commercial district." These zoning classifications are likely to change with the development of the city's new Comprehensive Zoning Ordinance.



# New Orleans Claiborne Avenue Redevelopment Study:

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### Upper N. Claiborne: Tremé

- C-1A General Commercial District    CBD-2 Central Business District
- CBD-2B Central Business District
- RM-3 Multiple-Family Residential District
- LI Light Industrial District

### Lower N. Claiborne: Tremé

- B-1 Neighborhood Business District
- HMC-2 Historic Marigny/Tremé Commercial District
- HMR-1 Historic Marigny/Tremé Residential District
- C-1A General Commercial District

### Lower N. Claiborne: 7<sup>th</sup> Ward

- B-1 Neighborhood Business District
- C-1A General Commercial District
- C-1 General Commercial District
- HMC-2 Historic Marigny/Tremé Commercial District (at Esplanade Only)

## Future Zoning Classifications:

The city's new Comprehensive Zoning Ordinance has not yet been released; however, the New Orleans Master Plan states that:

*“All land use actions must be consistent with, or at a minimum, not interfere with, the goals, policies and strategies of the Land Use element of the Master Plan and any future amendments to the Master Plan. This includes the Comprehensive Zoning Ordinance and any other land development regulations and amendments, including preliminary or final approval of a subdivision plan, site plan, approval of a planned unit development, or a similar site-specific development plan” (New Orleans Master Plan 2010, Executive Summary p.33)0*

Therefore, we can presume that the corridor should be primarily zoned as “Neighborhood Business District,” though historic Marigny/Tremé district designations will likely remain in place to protect the area's historic resources.

In addition, the Master Plan outlines the following “Zoning Principles” for Neighborhood Business Districts (p.14.27):

*Tailor the commercial districts to the form, function and use of various commercial areas.*

- Revise the current commercial district structure so that district standards are responsive to their purpose and desired character.
- Create a commercial district specifically designed to accommodate and encourage pedestrian-oriented, walkable shopping environments.
- Create commercial districts where shoppers arrive primarily by auto to be pedestrian-friendly and functional, but where parking is not the most prominent land use.
- Revise the current shopping center district standards to ensure a high quality of design and integration with other uses, as well as safety and comfort for pedestrians.
- Map commercial areas on the Zoning Map, based upon the future land use map and Master Plan policies, to create compact commercial and mixed-use development.
- Include design standards for each scale of commercial development. Districts like Magazine Street need different design approaches than commercial areas like the Bullard Avenue commercial corridor.
- Locate mixed-use development on the Zoning Map within or near commercial areas. Mixed-use development can also function as a buffer between large-scale commercial development and adjacent neighborhoods.

## 4.3 Local Economy

Before the construction of the Interstate 10, North Claiborne Avenue was the commercial center for the downtown African-American communities of Tremé and the Seventh Ward. The area developed as such because of Jim Crow; segregationist laws forbid African American businesses and patrons from participating in the main commercial sectors of Canal Street and the Central Business District (CBD) during the 1930s, 40s and 50s (Samuels 33). Today, the corridor does not carry the same significance but does represent an important employment center for the city.

## Employment

Within two blocks of N. Claiborne Avenue, there are 12,282 jobs divided between 340 registered employers (NORPC). Within five blocks of the avenue are 31,252 jobs between 1,837 employers. In both cases, the single largest employer in the area is Louisiana State University Health Sciences Center, which employs 7,000 people. Figure 5.8 displays the number of jobs supported by each

# New Orleans Claiborne Avenue Redevelopment Study:

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of the five largest employers within two and five blocks of N. Claiborne Avenue.

The numbers, however, are somewhat misleading. The LSU Health Sciences Center is within two blocks of North Claiborne Avenue but exists within the city’s biomedical district in the Tulane/Gravier neighborhood. This area is adjacent to the CBD and benefits from that proximity. The employment numbers increase substantially five blocks from the avenue because the commercial corridors of Loyola Avenue, North Rampart Street, and the upper half of Canal Street are included in the count. A look at both maps below show that employment is not concentrated directly on North Claiborne Avenue, but on the surrounding streets.

<b>Largest Employers Located Within 5 Blocks of N. Claiborne</b>	
<b>Company</b>	<b># of Employees</b>
Louisiana State Univ Health	7,000
US Post Office	4,000
Entergy Corp	1,000
Catholic Charities Archdiocese	800
Weiser Security Svc Inc	525

<b>Largest Employers Located Within 2 Blocks of N. Claiborne</b>	
<b>Company</b>	<b># of Employees</b>
Louisiana State Univ Health	7,000
Weiser Security Svc Inc	525
Gurvich Detective Agency	375
School of Allied Health	335
Louisiana State Univ Health	300

**Figure 4.8: Largest Employers within 2 & 5 Blocks of N. Claiborne Avenue. Source: New Orleans Regional Planning Commission**

The unemployment rates in Tremé, Seventh Ward, Tulane/Gravier, and Iberville are all significantly higher than state and national averages. Table 1 shows a higher percentage of the population is not in the labor force when compared to national averages, with almost all areas having a population of 50% or higher not in the labor force. This could indicate the areas around the Claiborne corridor have a significant retired and elderly population that is not actively searching for employment.

As expected in downtown New Orleans, the largest percentage of the employed population works in the food service industry. Residents of the neighborhoods surrounding the Claiborne corridor play an important role

in one of the city’s largest industries, which represents nearly 20% of industry employment distribution in both Tremé and Tulane/Gravier. Because the Louisiana State University Health Sciences Center is the largest employer in the area, health care and social assistance is the second largest employment industry for all four neighborhoods. Figure 4.8 shows the complete employment distribution for the Tremé, Seventh Ward, Tulane/Gravier, and Iberville neighborhoods.

### Real Estate

A good indicator of the economic health of a community is the housing vacancy rate. In the neighborhoods around North Claiborne, housing vacancy rates are very high. Iberville tops the list with 44% of all residences vacant. Tremé and the Seventh Ward have vacancy rates of 37% and 38% respectively. The high vacancy rates are partly because much of the population displaced by Hurricane Katrina has not returned, but unlike other neighborhoods in New Orleans, the North Claiborne area has not attracted many new residents either. This is not unique to the North Claiborne area. Most neighborhoods in New Orleans have higher housing vacancy rates in 2010 than they did in 2000 (GNOCDC, “Population Loss and Vacant Housing”). Detailed information on the number of vacant housing units is shown in Table 4.5.

<b>Neighborhood</b>	<b>Vacant units, 2010</b>	<b>Share of New Orleans total, 2010</b>	<b>Percent vacant, 2010</b>
<b>Iberville Development</b>	383	0.8%	44%
<b>Seventh Ward</b>	2,641	5.5%	38%
<b>Tremé/Lafitte</b>	1,124	2.4%	37%
<b>Tulane/Gravier*</b>	656	1.4%	35%

**Source: Greater New Orleans Community Data Center**

# New Orleans Claiborne Avenue Redevelopment Study: 4 - Local and Regional Context

## 4.4 Local Community and Demographics

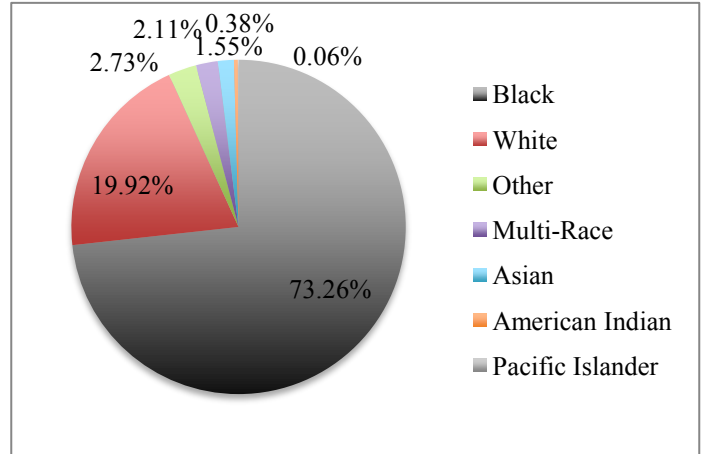
Ten Census tracts<sup>1</sup> surround the Claiborne Avenue corridor. Figure 4.9 outlines the relevant tracts in blue with Claiborne Avenue highlighted in green. The recently released data from the United States (US) Census 2010 only contained population counts and race data so for all other information the 2005-2009 American Community Survey (ACS) data was used. Additionally, the 2010 Census data contained no information for census tracts 58 and 59 so the 2005-2009 ACS data was used for all information, including population and race. Also, the 2005-2009 ACS data gives population estimates for census tract 44.02 whereas the 2010 Census reports the population as being zero. This discrepancy is due to tract 44.02 being the location of the Lafitte Housing Projects which was torn down in 2008 (Wulff, 2008, para 1). The population and race data which is reported below uses the 2010 Census data for tract 44.02 but for all information given the 2005-



**Figure 4.9: Census Tracts Surrounding the Claiborne Corridor/Source: U.S. Census 2006 Reference Map**  
2009 ACS estimates are used for that tract.

Because the 2010 Census data did not include census tracts 58 and 59, the figures reported below for the population counts and racial makeup of the census tracts surrounding the Claiborne corridor are based on the sum of the 2010 Census data from the New Orleans Regional Planning

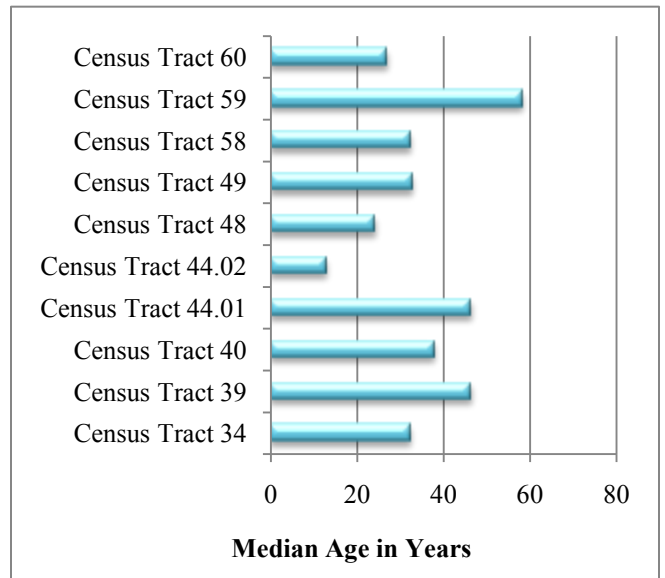
<sup>1</sup> Census tract numbers: 34, 39, 40, 44.01, 44.02, 48, 49, 58, 59, and 60.



**Figure 4.10: Racial Makeup of Census Tracts Surrounding the Claiborne Corridor.Sources: (1) New Orleans Regional Planning Commission, 2010 U.S Census Orleans Tract Shape File. (2) US Census Bureau, 2009 American Community Survey, 5-year estimates, Table B02001**

commission plus the 2005-2009 American Community Survey estimates for tracts 58 and 59. The total population in the area is approximately 10,916 people. The racial makeup of the area is approximately 73% Black, 20% White, 2% Asian, 2% Multi-racial, and 3% other (see Figure 4.10).

The area surrounding the Claiborne corridor has a fairly



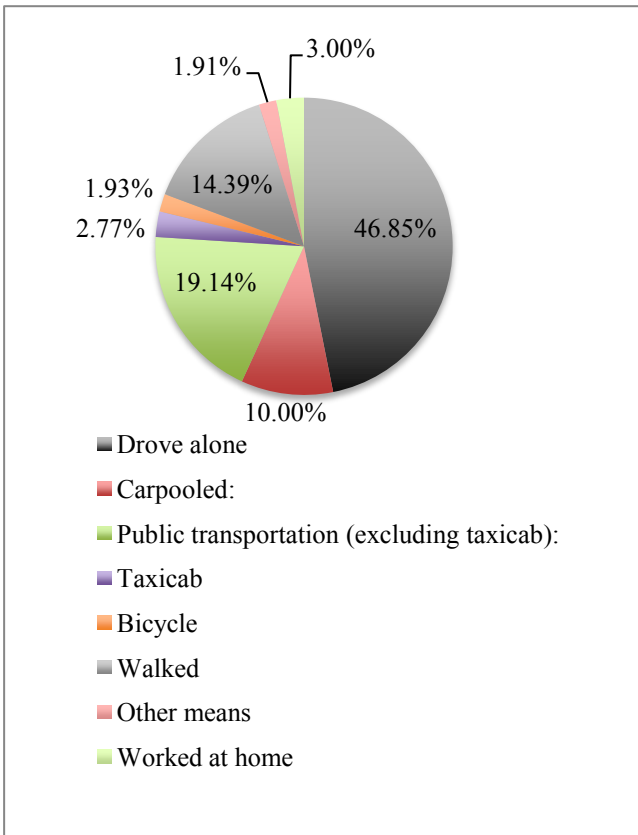
**Figure 4.11: Median Age for Census Tracts along Claiborne Corridor. Source: US Census Bureau, 2009 American Community Survey, 5-year estimates, Table B01002**

equal age distribution if only considering residents younger than 65 years old. Approximately 26% of residents are younger than 18 years old, 30% of residents are between 18 and 39 years old, and 35% of residents are between 40 and 64 years old. The percentage of people age 65 and above is much lower than the rest at 9% (U.S

# New Orleans Claiborne Avenue Redevelopment Study:

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Census, 2009a). Despite the overall age distributions being relatively large for residents under age 65, the median ages within each census tract varied greatly. The range of median ages are from age 13 in the now demolished Lafitte Housing Projects of census tract 44.02 to approximately age 58 in census tract 59 (U.S Census, 2009b). The median ages for each tract are shown in Figure 4.11.



**Figure 4.12: Means of Transportation to Work for all Claiborne Corridor Residents/Source: US Census Bureau, 2009 American Community Survey, 5-year estimates, Table B08301**

Along the corridor, almost half of all households (49%) are householders living alone. Approximately 9% of households are made of unrelated people living together. The remaining 52% of households consist of families. Approximately 28% of households surrounding the Claiborne corridor are made of female householders and their families with no husband present. Approximately 13% of households are made of married couples with their families, and approximately 1% of households are made of male householders and their families with no wife present (U.S Census, 2009j).

Regarding the workers ages 16 and older who live in the area around the Claiborne corridor, approximately 97% of workers work within the New Orleans-Metairie-Kenner Metropolitan Statistical Area. Furthermore, approximately 88% of workers from this Claiborne area work in New Orleans itself (U.S Census, 2009d). Of these workers who commute, approximately 63% of them will leave home to go to work between 6:00 A.M and 8:30 A.M (U.S Census, 2009h). The majority of workers who live in the area (approximately 74%) will take less than 30 minutes to get to their jobs (U.S Census, 2009i), and the majority of people (approximately 57%) drive to work in a personal automobile, whether alone or in a carpool (U.S Census, 2009g). For the remaining workers, approximately 19% take public transportation, approximately 14% walk, approximately 3% take a taxicab, and approximately 2% ride their bicycle (U.S Census, 2009g). The data regarding the modal split for workers is shown in Figure 4.12.

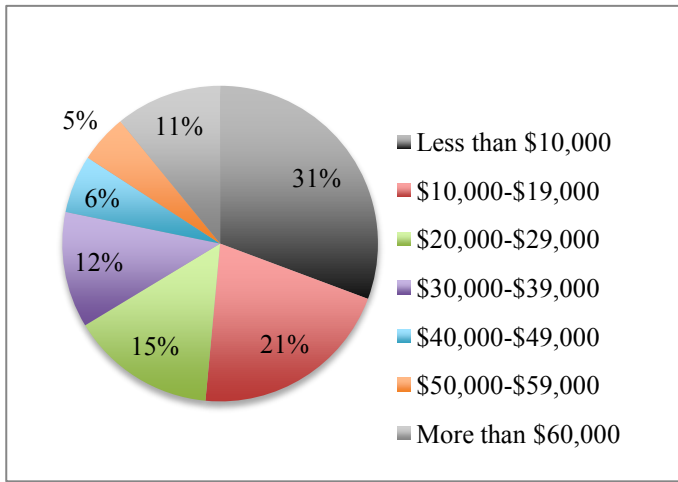
As noted above, only about 19% of workers who reside in the Claiborne corridor take public transit to work. However, public transit riders make up 45% of the commuters who take longer than thirty minutes to get to work and are overrepresented among those with relatively long commutes. In contrast, people who drive to work (whether alone or in a carpool) make up about 58% of all commuters from the area but only constitute approximately 48% of workers who take longer than 30 minutes to get to work. Similarly, people who take a taxicab, walk, or use a bicycle to travel to work make up about 22% of all commuters but represent only about 7% of the commuters who take longer than 30 minutes to get to work (U.S Census, 2009k). The burden of long commute times is spread unevenly across the population in the Claiborne corridor. Riders of public transit make up a disproportionately high amount of the the people who have long commutes while automobile and other non-public transit riders make up a disproportionately low amount of the workers with long commutes.

In addition to having long commutes, public transportation users often face other difficulties. For workers from the area surrounding the Claiborne corridor, approximately 80% of people who commute to work via public transit earn less than \$25,000 a year, and it is estimated that no

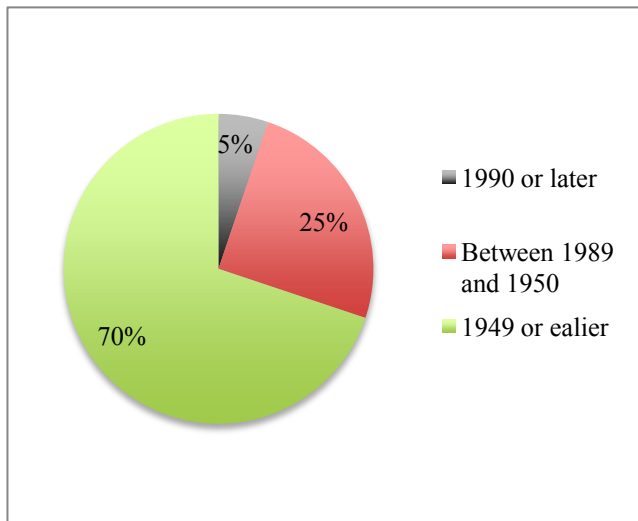
# New Orleans Claiborne Avenue Redevelopment Study:

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public transit riders make more than \$50,000 a year (U.S Census, 2009e). While relatively low incomes are not unique to workers who ride transit—84%, 71%, and 45% of walkers, taxicab and bicycle, and automobile commuters, respectively, earned less than \$25,000 per year—public transit users face the double burden of low income and long commute times (U.S Census, 2009e). The wealthiest commuters are automobile commuters since approximately 95% of commuters who earn more than \$50,000 commute by automobile, whether alone or in a carpool (U.S Census, 2009e).



**Figure 4.13: Household Income for Claiborne Corridor Residents/Source: US Census Bureau, 2009 American Community Survey, 5-year estimates, Table B19013**



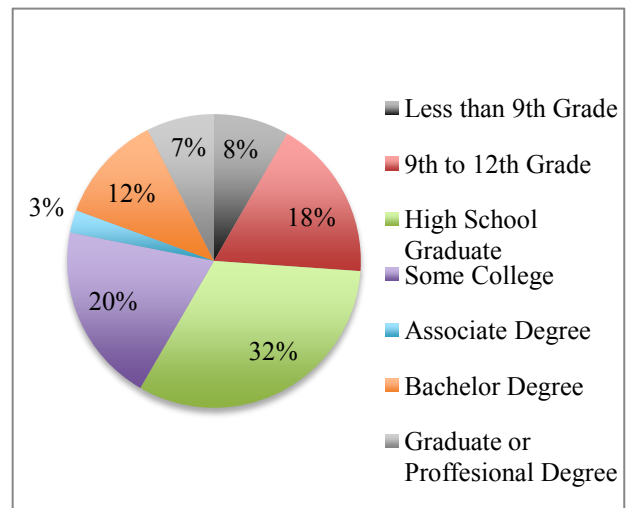
**Figure 4.14: Date of construction for Claiborne Corridor housing/Source: US Census Bureau, 2009 American Community Survey, 5-year estimates, Table B19013**

While public transit commuters from the areas around the Claiborne corridor tend to have longer commute times and have lower incomes than commuters who use other transportation modes, public transit users are not

completely without choice. Approximately 83% of all workers age 16 and older who live in a household have access to an automobile, and approximately 25% of all public transit commuters have one vehicle available to them (U.S Census, 2009f).

The area surrounding the Claiborne corridor is predominately low income: 52% of the households have an income less than \$19,000. A full breakdown of household incomes in the households surrounding the Claiborne corridor is provided in Figure 4.13. Also 71% of the occupied housing units are renter occupied (U.S Census, 2009).

The area also has a large proportion of historic properties since 70% of the units were built in 1949 or earlier (U.S Census, 2009m). The area of the district between North Claiborne Avenue and North Rampart Street is subject to the full control of the City of New Orleans' Historic



**Figure 4.15 Level of Education Attained for Claiborne Corridor housing/Source: US Census Bureau, 2009 American Community Survey, 5-year estimates, Table B19013**

District Landmarks Commission. The area above North Claiborne is subject only to control of demolition and demolition by neglect (Historic District Landmarks Commission, 2011). This can create administrative hurdles in renovating or building new units due to historic preservation rules. It would also create added renovation costs to the property owners and limit their development potential. At the same time, the number of historic units would create a unique neighborhood along the corridor and would bring support from preservation groups in revitalizing the corridor. Figure 4.14 presents an overview of the time period in which housing units in the Claiborne corridor area were built.

With respect to the residents, 28% of the residents over 3 years old are enrolled in school. The rate for females is 27%, while males have a slightly higher rate of 29%. Of

# New Orleans Claiborne Avenue Redevelopment Study:

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those who are enrolled in schools, 89% are enrolled in public school (U.S Census, 2009k). These facts are important in order to see which investments can have a greater effect to the residents. In this case, programs in public schools must be considered to strengthen the benefits to the residents. 32% percent of the residents have

obtained a high school degree or equivalent. And 20% have obtained some college education but not a college degree. Any plan for revitalization of the corridor must include jobs that match the skills of the residents. A disaggregated view of educational attainment is given in Figure 4.15.

### Comparing Expressway-Adjacent and Non-Adjacent Tracts

The aim of this section is to compare automobile ownership and commuting patterns of census tracts adjacent to the Claiborne Expressway to the remaining non-adjacent census tracts in New Orleans.

expressway and residents residing elsewhere in New Orleans. Upon isolating the adjacent census tracts from the rest of New Orleans' census tracts, it becomes apparent that residents of the adjacent census blocks are much less likely than other New Orleanians to own an automobile or to commute to work by automobile.

Data from Tables B08141 and B08301 of the 2005-2009 American Community Surveys show a distinct difference between residents living in census tracts adjacent to the

Figure 4.16 and Figure 4.17 below show the differences in vehicle ownership and means of transportation to work.

Some points of interest are:

- Approximately 27% of residents in adjacent census tracts do not have any vehicles available, a rate over three times that of non-adjacent tracts.
- Non-adjacent residents are three times more likely to have three or more cars per household than adjacent residents.
- Adjacent residents are about 20% less likely to commute to work by automobile than other non-adjacent residents. This means they are more dependent on transit, bicycling, and walking.
- Adjacent residents commute by public transit at rates twice that of non-adjacent residents
- Adjacent residents commute by walking at rates at rates three times that of non-adjacent residents.
- Commuting by bicycle is similar for both groups of residents. This is strange considering the high levels of other forms of non-motorized transportation for adjacent residents.

	Vehicles Available per Household			
	0	1	2	3 or more
Adjacent Census Blocks, Aggregate	27.15%	42.85%	23.98%	6.03%
Non-Adjacent Census Tracts, Aggregate	8.88%	33.74%	39.22%	18.16%

**Figure 4.16: Vehicle Ownership Rates, New Orleans, 2005-2009/Source: US Census Bureau, 2009 American Community Survey, 5-year Estimates, Table B08141**

	Mode Share					
	Automobile	Public Transport	Bicycle	Walked	Other	Worked at home
Adjacent Census Blocks, Aggregate	59.6%	19.1%	1.9%	14.4%	1.9%	3.0%
Non-Adjacent Census Tracts, Aggregate	81.3%	7.9%	1.4%	4.8%	1.1%	3.5%

**Figure 4.17: Means of Transportation to Work, New Orleans, 2005-2009/Source: US Census Bureau, 2009 American Community Survey, 5-year Estimates, Table B08301**

Note: Automobile includes motorcycles and taxicabs

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## 4 - Local and Regional Context

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# New Orleans Claiborne Avenue Redevelopment Study: 5 - Interview Stakeholder Results

## 5.1 Introduction

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This chapter identifies and describes concerns elicited during interviews with a variety of stakeholders affected by the proposal to remove and redevelop the Claiborne Expressway. A brief methodology explains our research design for this section. Upon analysis of interview responses, several reoccurring themes emerged. The sections that follow outline these primary themes and describe differences among interviewee responses. The most noted theme of economic impacts includes how the project would affect the planned medical district, fears of gentrification of the greater Tremé area, the costs of removal and construction, and traffic impacts. The final section details concerns related to the larger social and cultural impacts of the project on local neighborhoods, the greater New Orleans area, and the region.

## 5.2 Methodology

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Stakeholder interviews were conducted from March 29<sup>th</sup> through April 21<sup>st</sup>, 2011. Our study group identified key individuals from the public, non-profit, and private sectors, who represent a range of interests involved in the proposal to remove and redevelop the Claiborne Expressway. Interview requests were made by phone and through email. Some stakeholders who were identified either were unreachable or unable to complete the interview. Twenty-five stakeholder interviews were completed. For a complete list of stakeholder names and affiliations, see Appendix G. Individual team members conducted stakeholder interviews in person, over the phone, or via email. Each interview took between 20 minutes to one hour to complete.

The first question of the interview addressed the stakeholder's role in the community and his or her interest in the Claiborne redevelopment project. Afterward, each stakeholder was asked to explain his or her thoughts and opinions regarding the following questions:

- Do(es) you/your group support or oppose the freeway removal project?
- Assuming the highway were removed and replaced with an at-grade boulevard, how would the removal affect your community/interests?
- Who would you say champions the Expressway's removal?
- Who would you say are the major opponents of removal?
- Do you think there are viable alternative routes to take other than the current Claiborne Expressway?
- Would you consider public transit, bicycling or walking as real alternatives to driving along Claiborne Avenue?
- If the proposal went through, what redevelopment efforts would you expect?
- Do you or your community feel that the redevelopment project would accomplish those expectations?

*I would expect to see family businesses return to the area. We would see varied services pop up along the avenue from a farmer's market and outdoor cafes to movie theaters and funeral homes. It would turn into a livable, walkable community where people could find a variety of services and, behind that, housing. I am thinking of the Embarcadero area in San Francisco where that has already occurred.*



*-James  
McNamara,  
President and  
CEO of the New  
Orleans  
Biodistrict*

Interviewees provided personal opinions, recommendations, and thoughts on the removal and redevelopment of the Claiborne Expressway. The results of these interviews are documented along the next sections of this chapter.

# New Orleans Claiborne Avenue Redevelopment Study:

## 5 - Interview Stakeholder Results

### 5.3 Economic Impact

Proponents and opponents alike anticipate significant economic impacts arising from the expressway removal. Observers on both sides of the debate often point to the decimation of Tremé's residential and commercial fabric in the wake of the expressway's construction. Some see in its removal the potential for making the businesses along the Claiborne corridor more visible and accessible to the traffic passing by. A long-time Tremé restaurant owner, for example, believes removing the expressway will result in more traffic from vehicles and pedestrians to his business and others along Claiborne Avenue.

Leo Jackson, owner of Jackson Quality Used Cars, at Orleans and Claiborne, shares the belief that added car traffic in the area would help boost his sales. Although he believes most in his neighborhood are against the proposal, he said competent planning leadership and input from the community would help address concerns.

A long-time Tremé restaurant owner, for example, believes removing the expressway will result in more traffic from vehicles and pedestrians to his business and others along Claiborne Avenue.

Many interviewees predict significant new interest following the expressway removal in the property in and around the corridor, a section of the city now riddled with blight and vacancies. They envision new neighborhood retail amenities being attracted to the area, notable among them, a grocery store.

Keith Scarmuzza, a landscape architect who lives in the Tremé neighborhood, points to the various commercial corridors in the vicinity of Claiborne Avenue that, in addition to the avenue itself, could benefit from the expressway removal. These include St. Bernard, Tulane and Orleans Avenues as well as Canal Street.

"Since the expressway was put in, these commercial areas have become stagnant," Scarmuzza said. "Right now, the downtown economy stops at Claiborne." Should the expressway be removed, "they will become economically viable ... like they once were."

He specifically points to St. Bernard Avenue as a historic commercial corridor that could flourish again if the expressway were removed. Although there is some commercial activity along the corridor now, "it would experience a rebirth if the expressway was gone," he said.

Kurt Weigle, president of the Downtown Development District, considers fallow properties between Crozat and Claiborne, now occupied by parking lots and abandoned buildings, especially ripe for redevelopment. Additionally, there is potential for redevelopment on land now occupied by expressway infrastructure.

Residential development could also be substantial. Expressway removal proponents Bill Borah and James

McNamara both recall the Lower Garden District's comeback after the Camp Street up-ramp to the Pontchartrain Expressway was removed in the 1970s. That area now comprises prime New Orleans real estate.

Weigle predicts the removal of the Claiborne Expressway could spur new interest in the old Charity Hospital building on Canal Street, a roughly 1 million square foot structure that sits vacant, and that he envisions potentially becoming a mixed-use residential and retail space that houses doctors, medical residents and students working in the area.

But Jim Coningsby, director of Phoenix New Orleans (PNOLA), a nonprofit that provides rebuilding assistance to those affected by Hurricane Katrina, takes a more ambivalent view of the project. He cautioned that it may prove beneficial to the area, but worried that it could also go horribly wrong.

"New Orleans has a lot of big dream developments that turn into nothing regularly: film studio, computer chip factory," Coningsby said. "... They could do something really special, but they will probably just turn it all into parking lots."

The following subsections relate to more specific economic effects anticipated from the project. These include the potential impacts on the new medical district and gentrification along with the affiliated removal and reconstruction costs.

#### Medical District

Weigle, whose district runs from Iberville to the Pontchartrain Expressway and from the river to Claiborne, believes the expressway removal would eliminate a physical and psychological barrier now dividing two otherwise similar sections of downtown. Furthermore, he believes it would help boost businesses on the riverside of the existing expressway, especially in light of the new medical district taking shape on the lakeside of Claiborne.

"What we want is access to the 7,000 people in the medical district who can shop downtown, live downtown, and walk to work," Weigle said. "If we make it a simple stroll to that part of Canal Street (on the river side of Claiborne) or other parts of downtown, I think it would support a lot more residential and retail along that area. It's a few blocks' walk, but right now it seems as if it's on the other side of the moon."

#### Gentrification Fears

While proponents argue that new development will translate to more amenities for residents, more business for existing outlets and increased tax revenue for the city, some worry that the expressway removal project will generate so much interest in the corridor that the existing low-income residents will be priced out.

# New Orleans Claiborne Avenue Redevelopment Study:

## 5 - Interview Stakeholder Results

Coningsby is among them. He believes others in the neighborhood will likely view the project through a negative lens. “I suspect most of the neighborhood would be suspicious,” he said. “When the overpass was first built, it tore much of lower Mid City and Tremé apart, and most people feel it was a racially-motivated decision to build it there to begin with.”

Noting the displacement already occurring in Mid City in anticipation of the new LSU/VA medical complex, he said the expressway-removal project could provide yet another disruption to the area.

Jeff Schwartz, an urban planner who favors the expressway removal, points to mechanisms available that can minimize the negative effects of rising property values on existing residents. These include options such as the creation of a land trust to assist those who don’t own their homes.

### Removal costs

The relatively lower cost of tearing down the expressway as compared with maintaining it was another factor cited by proponents. They assert that it would be far less expensive to remove the expressway and construct a boulevard in its place than it would be to maintain the structure, which is nearing the end of its life span and will soon be in need of repair. “Why conduct a costly highway project that we know disrupted the surrounding neighborhoods . . . when we could build a good thing where a bad thing used to be?” said Patty Gay, director of the Preservation Resource Center of New Orleans.

Some, however, question the validity of these price estimates and caution that further analysis is necessary to determine actual costs. Furthermore, as Weigle points out, whatever investment is required to take down the expressway is money that cannot be used toward another public project. Weigle additionally notes that the deconstruction of the expressway and construction of a surface-level boulevard could prove lucrative for area construction companies, but that it could also provide a

*“It’s a mistake to build any expressway in any city. Highways should have been limited to the edge of cities and then stopped.”*



-Bill Borah

substantial disruption for existing businesses in and around the project’s vicinity.

One Tremé resident worries that the few existing small businesses along the Claiborne corridor would be especially vulnerable to business disruptions while Claiborne is removed.

### 5.4 Commuter Impacts

Removing the expressway would inevitably alter traffic flow. Some interviewees suggest that the resulting traffic patterns would be an improvement over existing conditions. For example, Borah argues that boulevards generally work very efficiently in terms of moving traffic. If a primary route is clogged, drivers may choose from numerous alternatives, something far more difficult on a limited-access interstate, he said. The grid pattern in place elsewhere in the city, he added, has served New Orleans well in terms of traffic flow.

Some predict that removing the expressway would increase commuting times. An elected official interviewed pointed to congestion already plaguing the corridor. He believes removing the expressway would exacerbate the problem.

Nick Malcovich lives Uptown but drives daily to the ammunition manufacturing facility he owns near the Stennis Space Center in Bay St. Louis. He worries that even a ten-minute extension of his 51-minute, one-way commute would become annoying. “It increases the whole concept of randomness that doesn’t exist on the freeway,” Malcovich said, noting the possibility of a second line – or a shooting – disrupting flow on the grade-level avenue. “Randomness in commuting,” he said, “is never good.”

Mehdi Qalbani, a Tremé resident and psychiatrist who frequently commutes to work on the West Bank using the expressway, on the other hand, would welcome a longer drive in exchange for the expressway’s removal. “I’d have a longer commute for a better life,” he said. He added that rejuvenating the core of the city should be foremost in planners’ minds, even if it means adding to the commute times of those living outside the center of the city.

Valuing the redevelopment of the city core over other neighborhoods angers some residents of New Orleans East, who see in the interest surrounding the removal project evidence that their neighborhood is being written off.

“People don’t understand the economic value of New Orleans East to New Orleans,” said a vocal project opponent who lives in New Orleans East. Those involved in the commercial sector of the East, which serves as a major economic engine to the entire city, agree that their success is tied to the Claiborne Expressway, the woman said. She further asserts that removing the expressway would have a tremendous negative impact especially on

# New Orleans Claiborne Avenue Redevelopment Study:

## 5 - Interview Stakeholder Results

the industrial companies that move their products between eastern New Orleans and the port.

Another New Orleans East resident who commutes to her corner shop job near Esplanade and Claiborne cringes at the concept of the expressway removal. “*With* the bridge, traffic is heavy,” she said. “Without the bridge it could only get worse.”

Another resident of eastern New Orleans, on the other hand, said she would support the removal project, but would like to see it done in conjunction with improved transit between downtown and her neighborhood.

### 5.5 Social and Cultural Impacts

Longtime Tremé residents and business owners recall a time when the oak-lined Claiborne Avenue neutral ground was a prime community gathering spot. As the owner of a 40-year-old Claiborne Avenue business remembers it, prior to 1965, families gathered there every Sunday for barbecues. End-of-weekend festivities continued into the evenings, when music could be heard trickling out of neighborhood bars.

These days, the business owner closes up shop around 6:30 every night to avoid what he describes as the criminal element that now menaces the area. The neighborhood surrounding his establishment, he said, is riddled with drug dealing, guns, and violence.

Some, including City Councilwoman Cynthia Hedge-Morrell, suggest the full potential of the Tremé neighborhood will not be realized so long as the expressway remains.

Removing the expressway would make for a more livable, pedestrian-friendly neighborhood, said Maggie Tishman, special programs developer for Providence Community Housing, which is working to redevelop the Lafitte Housing Project. The expressway’s teardown could create new space for community gatherings, encourage more bicycling and walking and open up space for new transit service, Tishman said.

Qalbani agrees. “I think it would make the neighborhood more of a neighborhood,” he said, pointing to nearby Esplanade Avenue as a model for what Claiborne could become. He hopes the removal will allow in particular for the resuscitation of the shuttered Claiborne Avenue Circle Foods Store.

But a Tremé restaurant owner is not convinced removing the expressway will translate to safer streets or a more cohesive neighborhood. The problem, he believes, lies in modern culture and not the expressway. It will take time, he said, to resuscitate the strength of community that once existed along the corridor. Others echoed this sentiment. As Weigle put it, removing the expressway alone will not “heal the wounds” of the neighborhood.

Emily Danielson, a Tremé resident, is involved in researching and organizing around social justice issues related to the expressway. Although she fully supports the expressway removal, she believes certain externalities need to be accounted for in order to make the project a complete success.

“If the overpass is taken down without any other programs or assistance, I doubt the street will become what it once was – a relatively safe, vibrant business and meeting

*“The multi-layer opposition this community faces has worked in concert with the overpass to cripple entrepreneurship, development, and political and economic power.” Emily Danielson*

*“Don’t let them tear it down, young man.” Tremé resident of 30 years*

space,” Danielson said. “The multi-layer opposition this community faces has worked in concert with the overpass to cripple entrepreneurship, development, and political and economic power. If the overpass is deconstructed and the street does not quickly represent its historical stature, the fault will be placed on Tremé/7th Ward and the black community of New Orleans.”

Meanwhile, among some residents of the predominantly black neighborhood of eastern New Orleans, there is a sense that removing the expressway would perpetuate another injustice, this time at their expense. “Do two wrongs make a right?” one resident asked.

Even in Tremé, not everyone is convinced of the merits of the removal project. Some grew up knowing the expressway as a community centerpiece – a place often used as a practice venue for brass bands, among other purposes. They worry ripping out the expressway will mark yet another wound inflicted on their neighborhood. One resident noted that there are no guarantees that removing the expressway would make Claiborne what it once was.

“That’s our area,” said a Tremé resident of 30 years, found sitting on a porch in the neighborhood with his son. “That’s our shelter from the heat. If they rip that out, they rip out our community spot.”

“We grew up barbecuing there all the time,” his son interjected. “It seemed like every weekend we were grilling out.”

Schwartz, meantime, points to various means of integrating the new ways in which the expressway is used by the neighborhood into the design of a surface-level roadway. He cited as an example a proposal for turning elements of the old expressway structure into a music-performance venue.

# New Orleans Claiborne Avenue Redevelopment Study:

## 5 - Interview Stakeholder Results

### 5.6 Topics for Further Study

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New Orleans residents recall a Claiborne Avenue of 50 years ago that was a community-oriented street in a minority-dominated area. The street and neutral grounds were used for residential and commercial gatherings central to neighborhood and city bonds. Soon after, a federal expressway eviscerated the landscape.

Removing the Claiborne Expressway is frequently held up as a project that would reverse an injustice imposed on Tremé decades ago and in the process help reinvigorate a historic section of the city experiencing a resurgence in public interest. This interest has been spurred in part by growing demand for downtown living and the introduction of the eponymous HBO television show.

Proponents say the project would benefit the neighborhoods in its immediate vicinity by catalyzing business development, attracting new amenities, and helping to reduce the blight and crime that now plague the area. Given careful thought and strategic investment, the

area has the potential to become socially and economically revitalized, they argue.

Opponents, including some commuters from Uptown and New Orleans East worry about negative traffic consequence stemming from the removal. The uncertain cost of the project and skepticism about the plan's benefits are two other sources of concern.

Several interviewees were uncomfortable taking a stand on either side of the expressway debate, citing a need for more information and further analysis of the project's implications.

The interviews themselves lead to further questions: How much inconvenience will commuters tolerate? How informed is the public about the potential benefits and drawbacks of the proposal? How substantially do these opinions vary by neighborhood? Additional studies are needed to address these topics before New Orleans residents can make an informed decision.

# New Orleans Claiborne Avenue Redevelopment Study: 6 - New Orleans Community Survey

## 6.1 Methodology

To better understand the community’s opinions regarding the future of the Claiborne Avenue corridor, a public survey was conducted. Given time and funding constraints, this survey was distributed and completed over the Internet. The limitations of this approach include the inability to capture responses from populations without regular Internet access and a low-likelihood that survey respondents reflect the same demographics of the city’s population.

The questionnaire was distributed using Qualtrics, an online survey response tool. This tool, hosted through the University of New Orleans, allowed for respondents to fill in responses from any computer with an Internet connection. Survey respondents were sought using a variety of paths: 1) advertising the survey online, 2) directly soliciting local stakeholder organizations, and 3) directly soliciting people. Appendix H contains a full list of stakeholder groups sought out for survey responses. The program included a feature that would not allow any computer to submit more than one response. This prevented “stuffing the ballot box.”

		<b>Survey Responses</b>	<b>Orleans Parish</b>
		<b>%</b>	<b>%</b>
<b>Gender</b>	Male	50.6	47
	Female	48.3	53
<b>Race</b>	White	87	32
	African American or Black	11	63
	American Indian and Alaska Native	2	0.2
	Asian	2	2.8
	Native Hawaiian and Other Pacific Islander	0	0.1
	Some other race	0	1.1
	<b>Ethnicity</b>	Hispanic or Latino (of any race)	5
<b>Education</b>	High school graduate or higher	100	82
	Bachelor's degree or higher	85	29

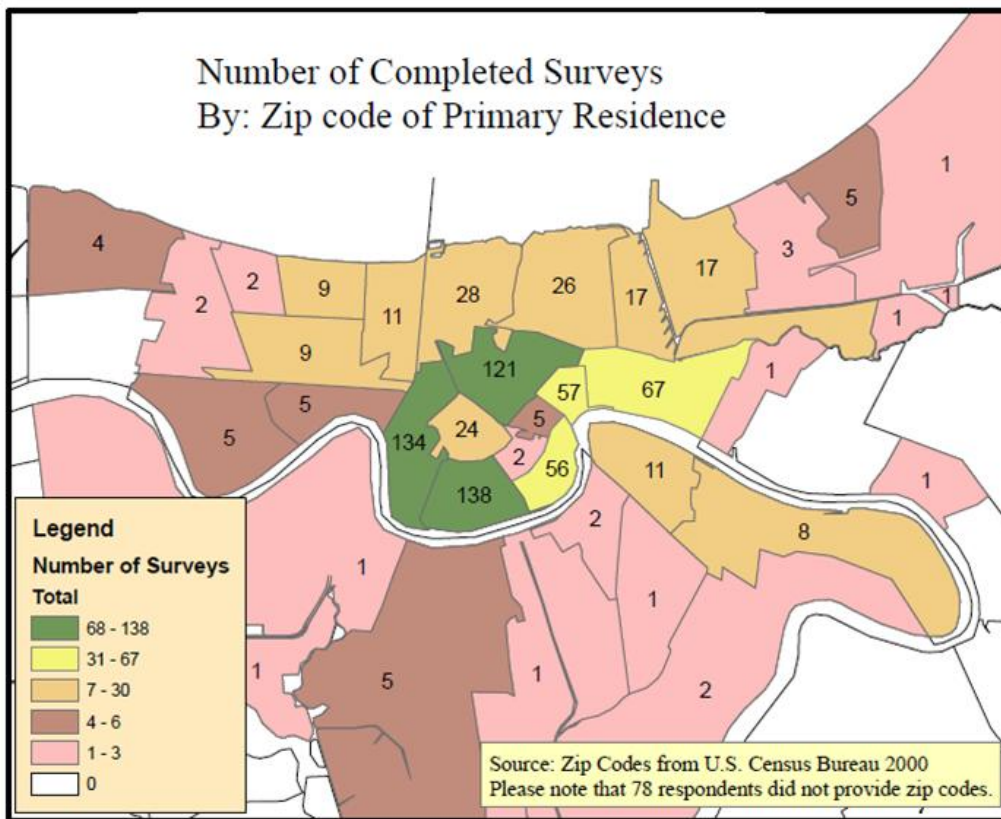


Figure 6.1: Survey respondents by Zip Code

# New Orleans Claiborne Avenue Redevelopment Study: 6 - New Orleans Community Survey

## 6.2 Demographics of Respondents

### Gender & Age

The survey obtained 829 respondents over the age of 20, with an almost even divide amongst males and females. The total number of respondents that completed the survey was 836. For the most part, age distribution was normal, with the most common age bracket being age 25-29, accounting for 26% of respondents. The median age for our survey sample was 34.3 years old, as compared to Orleans Parish’s median age of 36.7 years old.

### Race & Ethnicity

Looking at racial composition, 87% of respondents identified themselves to be white, 11% identified themselves as African American or Black, and 4% identified themselves with a race other than these two. People were allowed to self-identify themselves with more than one race, but less than 1% did so. Looking at ethnicity, 5% percent identified themselves as to be Hispanic/Latino.

### Education Level

The survey shows that respondents were well-educated with 42% holding a Bachelors degree, while 43% held a

	Survey Responses	Orleans Parish
<b>Median Age</b>	34.3	36.7
<b>Median household income*</b>	\$60,763	\$36,258

\*In 2009 inflation-adjusted dollars

Masters or professional degree, for a total of 85% holding college degrees.

### Income

Describing the average income of survey respondents proved difficult, as respondents fell into a clear bimodal distribution between two income brackets: \$100,000 or more per year and between \$30,000- \$49,999 per year. The higher earning bracket certainly aligns with the higher educational attainment described earlier. Perhaps the strong response numbers from \$30,000 - \$59,999 earners can be aligned with the distribution method, as these respondents may represent the student and young professional population most likely to complete the survey. In addition, the median household income for the sample surveyed was of \$60,793, which represents almost twice as much as the Orleans Parish’s median household income of \$36,258.

## 6.3 Key Findings

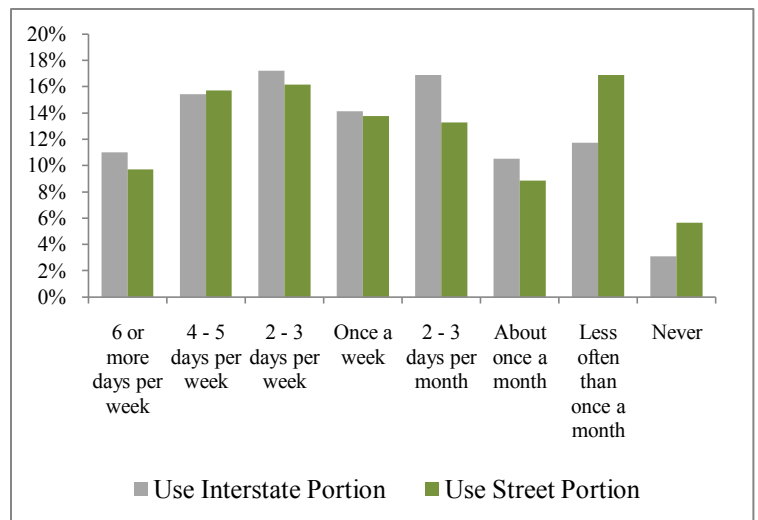
### Usage of Claiborne Corridor

Survey respondents use the corridor with varying frequency. Comparisons of usage between the interstate and street level portions shows respondents use the interstate slightly more (see Figure 6.1).

### Current perception and usage of neighborhood

When provided a map of the five block area around the corridor, survey respondents overwhelmingly disagreed that the corridor area was safe and inviting, possessed attractive community facilities, and provided parks and open space.

The majority of survey respondents did not live, work, or have family that lived within the corridor study area. Respondents were also asked if they shopped at stores, ate at restaurants, or drank at bars in the study area. Again respondents overwhelmingly did not use the area frequently, with a majority responding that they rarely or never spent money in the area in these capacities (see Figures 6.2, 6.3 and 6.4).



**Figure 6.1: Survey Respondents Usage of Corridor Infrastructure**

# New Orleans Claiborne Avenue Redevelopment Study: 6 - New Orleans Community Survey

## Opinions Regarding Expressway Removal & Future Revitalization

The survey revealed that 57% of respondents support the removal of the expressway and 17% oppose the removal (see Figure 6.5). Meanwhile, 21% are uncertain about the removal, and 6% are indifferent about the removal. Certainly if the removal project moves forward, more public education and additional analysis will be necessary as 21% of respondents expressed uncertainty. When asked how the removal of the expressway would change the corridor study area, 82% of respondents thought “it would be a change for the better.” Respondents appear to largely agree that the removal would improve the neighborhood in some way, but there are concerns associated with the change the removal might bring. As Table 6.3 shows, respondents agreed that property values would increase as a result of the removal. However, respondents did not agree that this property value increase would result in fewer housing options for low-income residents; in fact, more respondents disagreed than agreed. Similarly, respondents did not agree if the removal of the expressway would produce significant traffic delays elsewhere in the city. In fact, most respondents either disagreed or somewhat disagreed that the expressway removal would increase their commute by 1 to 10 minutes (47%) or more than 10 minutes (52%) (see Table 6.4).

As Table 6.5 shows, opinions on the revitalization effects produced by the expressway removal are diverse. Respondents agree most strongly that revitalization in the Tremé and 7<sup>th</sup> Ward neighborhoods will be aided by the expressway’s removal; however, respondents appear to believe in revitalization effects for several neighborhoods (including the CBD, Tulane-Gravier, and Iberville) surrounding the study area. The survey attempted to measure the demand for particular types of infrastructure necessary for the successful revitalization of the Claiborne Avenue corridor. Survey takers found certain infrastructure very important: sidewalks (87%), public parks and greenways (68%), bicycle lanes (67%), and a wide neutral ground with trees (63%). Interestingly enough, only 36% of respondents noted parking as very important (see Table 6.6).

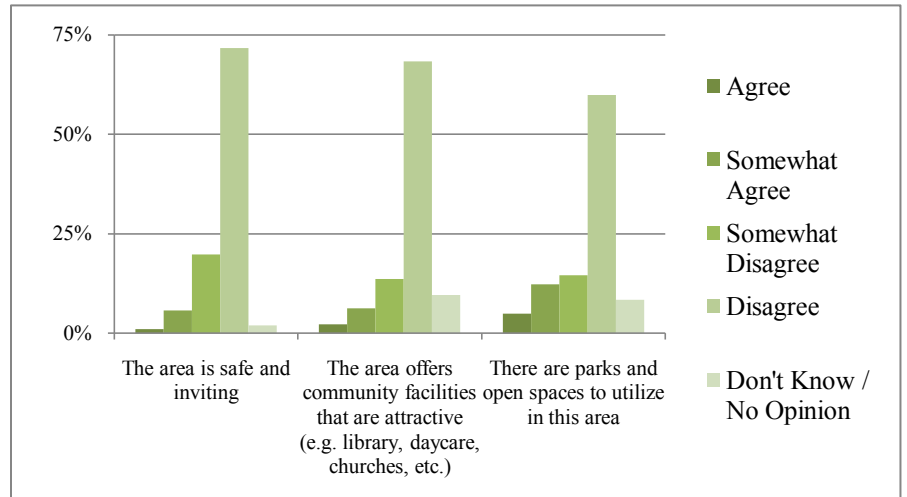


Figure 6.2: Survey Respondent's Perception of Community Attributes

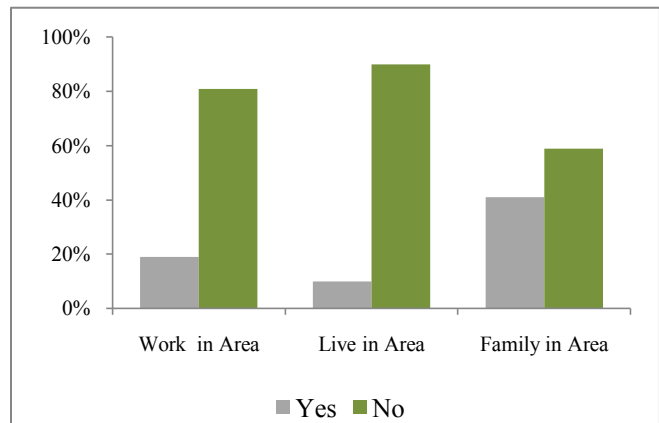


Figure 6.3: Survey Respondents Consumption in Corridor Study Area

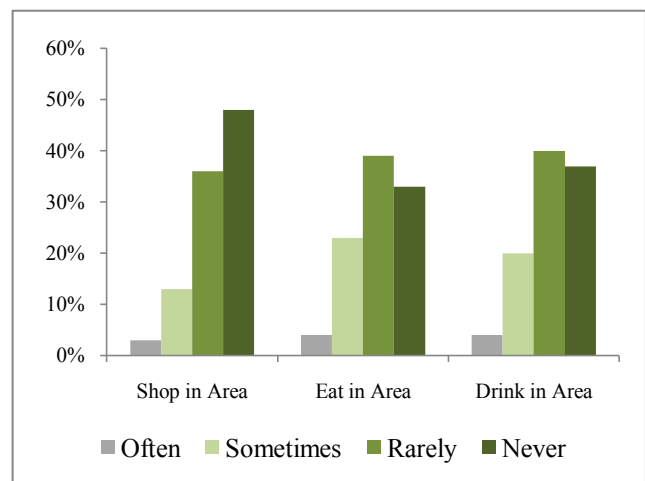


Figure 6.4: Survey Respondents Usage of Corridor Study Area

I support the removal of the expressway	58%	<div style="width: 58%;"></div>
I oppose the removal of the expressway	16%	<div style="width: 16%;"></div>
I am indifferent about the removal of the expressway	6%	<div style="width: 6%;"></div>
I am uncertain	21%	<div style="width: 21%;"></div>

Figure 6.5: Survey Respondents Favorability of Freeway Removal



## New Orleans Claiborne Avenue Redevelopment Study: 6 - New Orleans Community Survey

**Table 6.3: Removal of the expressway will...**

	Agree	Somewhat Agree	Somewhat Disagree	Disagree	Don't Know / No opinion
Result in higher property values in the area	46%	29%	4%	9%	12%
Result in fewer housing options for low-income residents	11%	20%	20%	27%	23%
Create significant traffic delays elsewhere in the city	21%	22%	18%	21%	18%

**Table 6.4: I am concerned that the removal of the Claiborne Expressway will increase my commute...**

	Agree	Somewhat Agree	Somewhat Disagree	Disagree	Don't Know / No opinion
10 minutes or more	19%	14%	8%	44%	15%
1 - 10 minutes	16%	22%	6%	41%	16%

**Table 6.5: The removal of the Claiborne Expressway will help revitalize...**

	Agree	Somewhat Agree	Somewhat Disagree	Disagree	Don't Know / No opinion
Downtown New Orleans (the Central Business District)	38%	26%	8%	16%	11%
French Quarter	27%	24%	15%	22%	12%
Treme	51%	24%	5%	11%	9%
7th Ward	45%	25%	5%	12%	13%
Tulane-Gravier	41%	26%	7%	13%	13%
Iberville Public Housing	39%	24%	8%	15%	13%

**Table 6.6: How important are the following elements to the successful revitalization of the corridor?**

	Very important	Somewhat important	Not important
Bike lanes	67%	25%	8%
Sidewalks	87%	11%	2%
Light rail / streetcar	56%	34%	10%
Wide neutral ground with trees	63%	27%	10%
Public parks and green space	68%	28%	5%
Public art	40%	37%	24%
Parking	36%	42%	21%

# New Orleans Claiborne Avenue Redevelopment Study:

## 6 - New Orleans Community Survey

### 6.4 Examination of Key Findings

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A crosstabs analysis allows for a more detailed analysis of how particular subsets of survey respondents feel about the proposed freeway removal. The following section highlights several key findings and isolates characteristics of particular respondents such as where they work, live, and travel.

When asked the level of support for removal of the expressway, a majority of respondents stated support for the project, regardless of their frequency of use of the Claiborne Expressway (see Table 6.7). However, among those respondents who stated that they use the expressway 4-5 days per week (likely to be commuters), 28% of them were opposed to removal, 18% were uncertain, and 50% were in support. Those who use the expressway 6 or more days per week had a slightly lower level of support as the previous group (48%) and the same level of opposition (28%).

Among respondents that claimed to live within 5 blocks the expressway (9% of the respondents), a strong majority (80%) are in favor of the removal (see Table 6.8). However, drawing conclusions as to actual neighborhood opinions will require additional survey work involving

neighborhood canvassing instead of electronic surveys given the lack of response from residents in this area. Meanwhile, for respondents claiming to work within five blocks of the expressway (18% of the respondents), a smaller majority (59%) were in favor of removal. Only 15% of workers in the immediate area stated removal opposition, while less than 20% of workers in the immediate area were uncertain of removal (17%).

The survey also attempted to illuminate respondent's primary concerns with potential removal. Respondents were asked to select as many concerns among the following options: "Longer Commute Time, Additional Traffic in the Neighborhood, or Gentrification." Also, a fourth option allowing respondents to fill in other concerns was available. Among completed surveys, 168 respondents left additional concerns, which could be summed up, in nine major categories.

The top three categories people expressed concern relate to traffic. These were "Longer Commute," "Increased Traffic Near Expressway," and "Heavy Traffic in Other Areas of the City." Other frequently expressed concerns were gentrification, general impacts on neighborhood, and general concern with the project (see Table 6.9).

## New Orleans Claiborne Avenue Redevelopment Study: 6 New Orleans Community Survey

**Table 6.7: Level of Support For Removal of The Claiborne Expressway Based On Frequency of Use.**

	Support Removal of The Expressway	Oppose Removal of The Expressway	Indifferent About Removal of The Expressway	Uncertain
6 or more days per week	48%	28%	5%	18%
4 - 5 days per week	50%	28%	4%	18%
2 - 3 days per week	51%	22%	4%	23%
Once a week	58%	11%	8%	23%
2 - 3 days per month	63%	8%	7%	21%
About once a month	59%	13%	5%	23%
Less often than once a month	65%	9%	5%	21%
Never	77%	4%	8%	12%

**Table 6.8: Level of Support For Removal of The Claiborne Expressway in Those Who Live or Work Near Expressway.**

	Support Removal of The Expressway	Oppose Removal of The Expressway	Indifferent About Removal of The Expressway	Uncertain
Live Within 5 Blocks of Expressway	80%	9%	4%	7%
Work Within 5 Blocks of Expressway	59%	15%	9%	17%

**Table 6.9: Concerns Regarding The Removal of the Claiborne Expressway**

	# Concerned
Longer Commute Time	106
Increased Traffic in Area Near Expressway	80
Heavy Traffic in Other Areas of the City	47
Gentrification	27
Other Impacts on Neighborhood Near Expressway	27
Too Great a Cost/ Where is Source of Funding	25
New Project Must be Safe for Pedestrians and Bicyclists	13
Removal Would Hinder Hurricane Evacuation	8
Too Much Existing Crime in the Area	7
Negative Economic Impacts on New Orleans	7
Confusion of What Project Entails	7
General Concern	27

# New Orleans Claiborne Avenue Redevelopment Study:

## 7 - Conclusions and Recommendations

### 7.1 Introduction

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This section summarizes key findings developed during the course of this project’s background research, examination of best practices from other cities, stakeholder interviews, and survey efforts, and it evaluates the implications of these findings within the context of the proposed removal of the Claiborne Avenue Expressway. It also provides recommendations for future research as the City of New Orleans moves forward with its feasibility study on removing the expressway.

### 7.2 Transportation Implications

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#### Traffic Impacts

A full analysis of the proposed removal’s traffic impacts is critical. Opponents of the expressway removal perceive that the project will increase traffic congestion and commute times. Stakeholder interviews show that some people feel these detrimental effects will be substantial and prohibitive. However, only 33% of survey respondents felt that removal would result in commute time increases of 10 minutes or more. Conversely, proponents of the removal believe that traffic flows will actually improve if the expressway is removed. They pointed to benefits such as drivers being allowed to make full use of the street grid if Claiborne Avenue itself is congested. For the redevelopment of Claiborne Avenue to move forward, it must be demonstrated that traffic flow will not be adversely impacted. Future traffic studies for the removal of the expressway should inventory nearby road facilities. For example, parallel roads such as N. Galvez, N. Rampart, N. Miro, N. Broad, and Basin Streets should be analyzed for capacity and quality in order to promote maximum efficiency of the grid network.

Some of the expressway removal case studies in this report, like that of the Central Freeway in San Francisco, illustrate the concept of induced demand. In such scenarios, induced demand was created by the construction and/or expansion of expressways. However, as the case studies demonstrate, when replaced with a surface street, traffic congestion does not necessarily follow; lower surface street capacities do lower traffic volume, but do not negatively impact traffic flow. This phenomenon should be considered in any traffic studies conducted.

#### Transit and Complete Streets Policy

Highway redevelopment provides an opportunity for the construction of landscaped boulevards, multimodal facilities including infrastructure for active modes of transportation and transit, and infill development. Throughout the planning for the possible removal of the Claiborne Avenue Expressway, care should be taken to ensure that transit service in the corridor is maintained or improved during and after construction, minimizing impact to transit users and encouraging a greater proportion of the future corridor’s users to utilize transit.

Failure to leverage public investment in this project—and in the RTA’s streetcar expansion program—by concurrently planning for transit enhancements, which facilitate transit use, would be a missed opportunity. These transit improvements may be immediate, such as the development of bus rapid transit (BRT) along the corridor, or may include redesigning the median in such a way as to accommodate the potential restoration of fixed-rail, such as streetcar or light rail in the future.

In addition, the redevelopment of Claiborne Avenue should fully align with the state’s Complete Streets policy and include enhanced bike and pedestrian facilities. 87% of survey respondents found the provision of sidewalks to be very important to the revitalization of the corridor. Additionally, 67% of respondents found bicycle lanes to be very important to revitalization efforts.

#### Access

The decision to bring expressways into cities was intended to increase access for multiple user groups, particularly residents and freight. While such access may have contributed to the urban exodus of the mid 20<sup>th</sup> century, the relationship between inner-city expressways and freight access was not studied in this report as freight statistics were difficult to find. However, freight accommodation is an important component of studying the impact of the removal of the Claiborne Expressway and should be included in future studies.

# New Orleans Claiborne Avenue Redevelopment Study:

## 7 - Conclusions and Recommendations

### 7.3 Economic Implications

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#### Construction Impacts

The lengthy construction periods involved in most highway removal projects are a significant drawback and stakeholder concern, impacting nearby businesses. Professionals and residents alike expressed worry over the deconstruction of the expressway potentially harming existing businesses. However, measures can be taken to mitigate these impacts, such as pedestrian walkthroughs and increased signage for businesses. Construction periods can be minimized with careful planning to avoid mid-project disputes and cost overruns.

#### Economic Development

Highway removal can reunite and reinvigorate neighborhoods - decreasing blight and crime, increasing pedestrian access, and attracting economic activity. Removal projects, like those of the San Francisco and Portland, have been shown to increase property values in the surrounding areas, thus increasing tax revenues for municipalities. Proponents of the expressway removal expect new businesses of diverse types, as well as new residential development to be drawn to the redeveloped Claiborne corridor.

Value in terms of economic growth and development can be further leveraged through the development of special districts to encourage new development in the blighted blocks along and near the corridor. The city must develop a plan for how to maximize economic impacts of the project; the case studies demonstrate that building the infrastructure alone is not always sufficient. In particular, the retention and attraction of small businesses should be prioritized, and supported by programs providing access to capital for entrepreneurs as well as technical support for small business development.

### 7.4 Community Impacts

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#### Neighborhood Revitalization and Gentrification

Neighborhood revitalization is one of the driving arguments for the Claiborne Expressway removal; it is hoped that blighted neighborhoods now divided by the highway can be restored and reunited through the corridor's redevelopment. The revitalization of Claiborne Avenue also has the potential to benefit low-income and working class residents through increased real estate wealth, economic investment, and new employment opportunities.

However, infrastructure alone is not enough, and the city must ensure that the economic development impacts noted above genuinely benefit the affected neighborhoods and do not displace existing residents. There were concerns in most stakeholder interviews that gentrification could occur, harming the residents of the area.

Some stakeholders believe that the removal would be harmful to the social and cultural integrity of the neighborhood. The area surrounding the Claiborne corridor is predominantly occupied by low-income households and is largely renter occupied. These factors must be considered in the expressway's proposed removal in order to avoid displacement caused by higher property values and increased rental prices. Many others, however, believe that the removal has the potential to be a catalyst for positive change if it is supported by other programs and assistance to the area, such as the development of land trusts to ensure the continued existence of affordable housing.

#### Coalition Building

The removal of the expressway is consistent with goals identified by impacted communities during the various post-Katrina planning processes, as well as with the City's new Master Plan. Yet, many stakeholders lack adequate information about the possible impacts of the expressway's removal and are, therefore, uncomfortable forming an opinion on the issue. 21% of the surveyed respondents said they were uncertain about removal. Therefore, the City's upcoming feasibility study for the removal of the expressway and redevelopment of the area has the potential to have significant influence on public opinion through its process and findings.

The case studies demonstrate that in order for highway removal projects to move forward and succeed, they must have the strong support of a wide cross-section of community members and other stakeholders. Citizen activism is a key component of highway removal. However, the identification of political champions to drive the redevelopment process forward and mitigate the political and logistical squabbles which lead to project delay is equally important. This may include a mayor, governor, or city council leaders. The development of an organized coalition of project proponents to build community buy-in, correct misperceptions, fill public information gaps, and provide a strong voice for residents of impacted neighborhoods will be essential to the Claiborne Avenue redevelopment proposal's implementation.

# New Orleans Claiborne Avenue Redevelopment Study:

## 7 - Conclusions and Recommendations

### 7.5 Recommendations for Further Research and Analysis

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The demographic make-up of the survey respondents were not reflective of the demographic make-up of New Orleans or the North Claiborne Avenue communities, and we did not have the time to statistically weigh the survey results so that they would better represent the city and communities which may be affected. Because the survey effort had over 800 respondents, the results should be weighted and the data should be reexamined on a weighted basis.

In addition to the reexamination of our survey data, a full cost-benefit analysis and feasibility study of potential transit alternatives should be completed to provide communities and residents with a better understanding of possible alternatives to the expressway structure. This analysis should include, but not be limited to, streetcars, light rail and bus rapid transit – including both electric

trolley buses and combustion powered vehicles, as well as cycling and pedestrian amenities.

The redevelopment proposal's possible role in ongoing storm water management master planning efforts should be considered. For example, Claiborne Avenue once had a canal that connected to the Bayou St. John via the Carondelet Canal and was used to help drain storm water from the surrounding neighborhoods. The reopening of that canal should be considered. Perhaps a water feature in the neutral ground with green space could complement the redevelopment of a boulevard along Claiborne Avenue.

There is some skepticism of the claim that it will actually cost less to remove the expressway than to maintain it. Further studies to determine the actual costs of removing the expressway and of maintaining it are needed.

# Appendix A: Case Studies

## 1 Boston: Central Artery

### 1.1 History

Boston, Massachusetts had one of the most congested highway systems in the United States. The primary culprit was an elevated highway called the Central Artery that ran through the center of downtown. Traffic on the Central Artery remained constantly jammed up with cars slowly lurching forward. The same problem plagued the two tunnels under Boston Harbor between downtown Boston and East Boston (Massachusetts Department of Transportation, 2006). In order to solve Boston's enormous traffic problem, a plan was constructed in the 1980s to build new infrastructure that was capable of handling the expected traffic flow. The plan was initially called the Central Artery Tunnel Project and later became known as "The Big Dig."

The Big Dig consisted of a series of construction projects reshaping the entire city. The Central Artery highway, consisting of six-lanes, was torn down and replaced with a ten-lane underground expressway directly beneath it. This would separate fast highway traffic from slower traffic that existed downtown. The vacant surface land would undergo beautification and have a large portion designated for public green space.



Figure 1.1: The Zakim Hill Bridge



Figure 1.2: Construction of the Tunnel

The Big Dig also called for the Leonard P. Zakim Hill Bridge to be built. It is the world's largest cable-stayed bridge, carrying 10-lanes of traffic from the new underground expressway across the Charles River.

The Big Dig also encompassed the extension of the Massachusetts Turn-pike I-90 to Logan Airport. To extend the turn pike, Ted Williams tunnel was built underneath Boston's Harbor (Massachusetts Department of Transportation, 2006).

This mammoth project required countless man-hours, spent billions of dollars, consumed enormous amounts of resources, and took over a decade to complete. The Big Dig is truly one of the biggest, most complex projects in the United States.

The Big Dig's most difficult challenge was to build the project in the middle of Boston without cutting off transportation. Special care was taken to maintain access to residents and businesses throughout construction. The city even waited until the underground expressway was operational before they started tearing down the existing highway.

### 1.2 Travel Behavior Impacts

Boston's horrendous traffic congestion created a huge burden on the city and its residents. Cars stuck in traffic, wasted fuel and emitted harmful pollutants like carbon dioxide into the city. Traffic congestion also meant more car accidents putting people's life at risk and draining revenue from the city (Massachusetts Department of Transportation, 2006). The Big Dig successfully fixed these problems by eliminating traffic congestion and by indirectly promoting public transit along with cycling.

In 2004, with most of the traffic projects completed, Boston's Department of Transportation hired an independent company to assess the impact of the Big Dig. The study found that total Vehicle Miles Traveled (VMT) had risen thirteen percent from 1994 to 2004. This increase was expected and is due two factors: 1) the natural growth of traffic volume during this time period and 2) the slightly

Table 1.1: Timeline for the Central Artery Project	
1985	Final Environmental Impact Statement.
1986	Bechtel/Parsons Brinckerhoff begins work on the design.
1990	Congress allocates \$755 million to project.
1991	Federal Highway Administration gives final approval. Construction begins on Ted Williams Tunnel.
1995	Ted Williams Tunnel opens to commercial traffic.
1999	Overall construction 50 percent complete.
2002	Leonard Bunker Hill bridge completed.
2004	Dismantling of the elevated Central Artery Highway (I-93).
2006	The Big Dig completed. Spectacle Island Park opens.
2007	Restoration of Boston city streets. Construction of the Rose Kennedy Greenway and other parks.
Source: Massachusetts Department of Transportation	

## Appendix A: Boston: Central Artery

**Table 2.2: Changes in Volumes & Times: Central Artery**

Measures of Highway Use and Speed/Time Performance	Pre-Construction 1994-1995 <sup>A</sup>	Post-Construction 2003-2005 <sup>B</sup>	Absolute Change	Percent Change
	<i>Old Elevated Route</i>	<i>New Underground Route</i>		
<b>(A) Total Daily Traffic</b>				
<i>Northbound (1.7 miles)</i>				
Average Volume/Day	96,656	83,671	-12,985	-13.4%
<i>Southbound (1.7 miles)</i>				
Average Volume/Day	71,727	70,339	-1,388	-1.9%
<i>Total Northbound + Southbound</i>				
Average Volume/Day	168,383	154,009	-14,374	-8.5%
<b>(B) Peak Hour Traffic**</b>				
<i>Northbound (1.7 miles)</i>				
<i>AM Peak Hour (7-8 am)</i>				
Travel Time (minutes)	3.3	2.4	-0.9	-26.2%
Average Volume/Hour	5,982	5,115	-867	-14.5%
<i>PM Peak Hour (3-4 pm)</i>				
Travel Time (minutes)	19.5	2.8	-16.7	-85.6%
Average Volume/Hour	6,615	5,269	-1,346	-20.4%
<i>Southbound (1.7 miles)</i>				
<i>AM Peak Hour (7-8 am)</i>				
Travel Time (minutes)	4.1	2.8*	-1.3	-31.7%
Average Volume/Hour	4,580	4,437	-143	-3.1%
<i>PM Peak Hour (3-4 pm)</i>				
Travel Time (minutes)	8.5	2.8	-5.7	-67.1%
Average Volume/Hour	4,285	3,448	-837	-19.5%

Source: Economic Development Research Group, 2006

longer mileage involved for those using the Massachusetts Turnpike Extension which is 0.3 miles longer than the old route going through the Central Artery. The study also found a drastic reduction in people's traveling time through the project area. Travel time in the project area was reduced on average by 62 percent, depending on the time of day. This means it takes people less than half the time it



**Figure 1.3: Spectacle Island, which was once a city dump. It is now a national park with miles of hiking trails.**

use to, to get from point A to point B (Massachusetts Department of Transportation, 2006).

The Big Dig created no infrastructure for bikes, but it indirectly created provisions for bikes through government mandates. In order to offset the carbon-dioxide emissions emitted from the construction of the Big Dig, the Federal Government and the Environmental Protection Agency required the City of Boston to curb carbon dioxide emissions and to increase public transit citywide (Ragovin, 2010). Immediately after the project was completed in 2007, the city started promoting cycling as a way to curb carbon-dioxide emissions. To accommodate cyclists, several bike racks were installed throughout the city, giving people a place to park their bikes. Miles of bike-only-lanes were created, providing safety for cyclists by separating

them from potentially dangerous automobiles. The city's efforts paid off, and there has been a huge surge in cycling. Although the Big Dig did not directly create this surge, it was the driving force behind it (Amiton, 2010).

As part of the agreement for the Big Dig, the city increased the availability of public transit along with doing several things to promote public transportation. More light-rail stops have been created between existing stops and the city is running additional buses. Park-and-ride stations were constructed allowing residents to early park their cars and take light rail to work. New housing developments were built specifically around light rail stations to make light rail convenient for people, thus encouraging ridership. Plans are currently underway to expand light rail services. For instance, the city plans on extending the Green Line by 2014 to reach areas that house lower income neighborhoods. The city's effort to promote public transportation is working, and the Massachusetts DOT is seeing a gradual increase in ridership (Ragovin, 2010).

### 1.3 Environmental Impacts

The Big Dig created several positive changes to Boston's environment. Three-hundred acres of green space were created, over two-thousand trees were planted, and the city's carbon-dioxide emissions lowered. Boston became a greener city overnight. Besides these obvious environmental benefits, the project also helped the environment in less obvious ways, such as shoreline



## Appendix A: Boston: Central Artery

restoration. Dirt removed in order to build the underground expressway was used to rebuild local shorelines that had eroded away.

The area, where the central artery highway once stood, was redeveloped for people rather than automobiles. Seventy-five percent of the new area was designated specifically for Boston residents in the form of parks and open space (Mass. DOT). This included public plazas, water fountains, park benches, and other amenities. The most well known open space is the Rose Fitzgerald Kennedy Greenway, which is a narrow tree lined boulevard, spanning over twenty-five blocks in the heart of downtown.

### 1.4 Community Impacts

The construction of the Central Artery created more development opportunities in Boston. Also, it has contributed positively in reducing travel time for residents traveling from south and west Boston heading to Logan Airport by 74 percent (International Tunneling And Underground Space Association [ITA], n.d.). Along with reducing travel time and increasing mobility, the project connected neighborhoods that were served by the elevated highway (ITA, n.d.).

The former space that was occupied by the elevated highway was utilized as parks and open spaces for the residents of Boston. It contributed positively in connecting neighborhoods that were once separated by the elevated highway. The project introduced almost 45 parks and public plazas. On the old path of the elevated highway from Chinatown through Wharf District and North End, a series of parks and fountains were introduced and are now known as the Rose Kennedy Greenway (ITA, n.d.).

During the early stages of the project, aside from the massive engineering difficulties, it was important to convince the public that this project will not harm the local residents. During the 1950s, the construction of the elevated Central Artery displaced thousands of residents. In the planning process of the project, it was planned that there will be no destruction of any family houses; however, a displacement of residents would affect the area indirectly (Goodnough, 2008).

The increase in development opportunities would increase property taxes in the area, thus raising property taxes. This fear of gentrification was noticed in residents in areas

adjacent to the Central Artery. Residents of the Chinatown, South Boston, and North End have been concerned of the consequences of such development as to be similar to the



Figure 1.4: The Central Artery in the 1950s separated neighborhoods. Source: xtimeline.com

early case of gentrification in the South End after constructing expensive lofts and shops (Economic Development Research Group, 2006). Some argue that the proposed 27-story residential development in Chinatown would impact the neighborhood's theme (Goodnough, 2008).

Along with the concerns that the increase in property values and taxes might price out local residents, another concern was foreseen. It was the concern that landowners might sell their lands as a result of the increase in its value to seek more profit. However, the city of Boston hired Ken Greenburg, a Canadian urban design consultant that was responsible to draft a future visualization of the city's future Greenway. The consultant saw the importance of keeping the current lifestyle and theme of the area through maintaining existing North End Italian atmosphere (Economic Development Research Group, 2006).

As for the Greenway, it was seen as a massive open space. Jerold Kayden, an urban planning professor at Harvard, said to the *New York Times* that the parks have created an urban void (Goodnough, 2008). He adds on "It might have been more interesting to leave the highway intact as an elevated park ... One would be hard-pressed to say this is a creative, cohesive, singular public space that will redefine the city of Boston... And that is too bad, when you have that much space" (Goodnough, 2008).

### 1.5 Economic Impacts

In 2006, after 14 years, the Big Dig was completed and its cost has been estimated to be \$22 billion, accounting for interest payments on bonds, and it will not be paid off until 2038 (Boston Globe, 2008). As stated before, this project was a great undertaking and cannot be easily described in how much steel, engineering plans, or labor it consumed.

The most important description is the benefits this project brought to the Region of Boston. Since this project brought



Figure 1.5: Residents showing concern.

## Appendix A: Boston: Central Artery

**Table 1.3: Describing Structural and Non Structural Economic Benefits**

Structural Economic Benefits	Non Structural Economic Benefits
New private development Property price increases Jobs from new construction New land available for development	Commuters time saved Less fuel consumed

benefits that range from social, economic, and environment impacts, it is hard to extract a cost benefit analysis. Instead, this section of the report will only focus on the economic benefits of the project. The economic benefits will be categorized into two categories: Structural and Non Structural Economic Benefits. The Structural economic benefits are those related to real state, such as new development investments, wages from constructions, property price increases, and tax revenue from real estate. The non structural economic benefits are those related to Boston residents, such as time saved commuting and less fuel consumed.

**Table 1.4: Real Estate Development by Central Artery Since 1990**

Site	Investment (in millions)	Apt. Units (sf.)	Hotel (sf.)	Office (sf.)	Retail (sf.)	Other (sf.)
Charlestown	101.4	141	0	213000	3000	0
Chinatown	1991.5	3695	951000	1405000	136000	147000
Downtown	2182.2	1075	1600000	4086000	254000	256000
Kenmore	200	375	250000	0	0	0
North End	304.3	683	33000	105000	48000	202000
Seaport	2671.3	1721	3884000	3403000	249000	75000
<b>Totals</b>	<b>7450.7</b>	<b>7690</b>	<b>6718000</b>	<b>9212000</b>	<b>690000</b>	<b>680000</b>

Source: Boston Redevelopment Authority, Massachusetts Turnpike Authority

As of 2005, Boston holds the third highest Class A office rents in the country. In part, this is thanks to the Central Artery Project that began in 1982 (Ford, 2005). High rental rates increase property tax revenues and accelerate real estate development projects.

The greatest economic benefit of the Big Dig was the \$7.4 billion in private investment due to new real estate development since 1990, shown in Table 1.4. This private development will translate into 43,425 jobs as seen on the chart on the following page.

These jobs will create additional indirect benefits, such as tax revenue from wages and additional economic activity to the area. Also, the construction of the development will add additional temporary jobs (Massachusetts Department of Transportation, 2006).

As stated before, the Big Dig added green and open space to the new areas. It has been recorded that these additions would increase property value of the adjacent areas, and such was the case for the Central Artery Tunnel Project (Tajima, 2006). A study done on the

effect of the green and open spaces created by the Project calculated the total change in property values was \$1.3 Billion (Tajima, 2006). This number was calculated by looking at the increase in property values around Boston and the new green spaces, along with surveying people to see how

much they would pay for close proximity to those new green and open spaces. The final results are listed on Table 1.5.

The removal of the elevated highway created the potential of 1,000 acres of new development, which accounts for a total of more than \$4 billion in benefits if completely build out to the Boston Area, as seen in Table 1.6.

Table 1.6 shows the low and high estimates of each scenario if the whole 1,000 acres are completely developed (Boston Redevelopment Authority, 2000). The study done by the Boston Redevelopment Authority shows that there is potential for yearly property tax revenue of \$99 million to \$122 million, which would go to the city. The study doesn't account for indirect benefits such as temporary constructions jobs or long-term growth in economic activity.

The Big Dig succeeded in reducing the time commute of many travelers, as well as reducing the time they would wait in traffic (Massachusetts

Department of Transportation, 2006). These reductions created two added benefits. The first one is that reduction in time commute can be translated into a monetary benefit by estimating each traveler's cost of time. The second is that a reduction in traffic congestion translates into savings in fuel consumed and also costs associated in operations of a vehicle. As we can see in Table 1.7, these savings added to \$167 million annually, which is composed of \$143 million in timesaving and \$24 million annual savings in

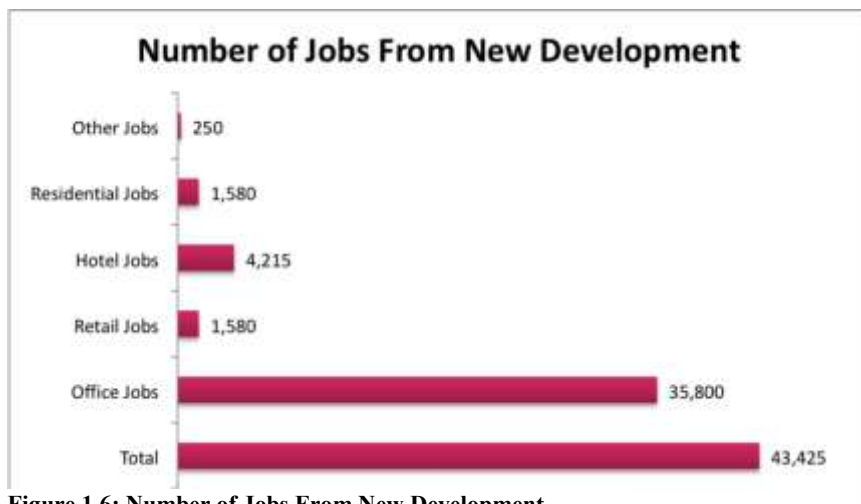


Figure 1.6: Number of Jobs From New Development

## Appendix A: Boston: Central Artery

vehicle operating costs (Massachusetts Department of Transportation, 2006). It is important to know that this total savings does not take into account the reduction in accidents from the new highway, the delays during construction of the project, or the increase in traffic of subsequent years beyond 2010.

It is difficult to describe and quantify every single economic benefit the Central Artery project brought to the city of Boston and to predict the continuation of those benefits in the years ahead. The economic benefits listed in this section are simply to demonstrate that the Big Dig brought changes in Boston. This section did not try to show a cost benefit analysis because of the many unquantifiable benefits such as improved quality of life or increased positive perception of the city.

**Table 1.5: Total Changes in Property Values**

Type of Property	Total
Other Residential	\$2,319,346
Commercial	\$866,104,681
Condos	\$448,493,976

Source: On Top of The Big Dig Economic Analysis of the Urban Parks Created by The Boston Central Artery/Tunnel Project

**Table 1.6: Potential Economic Benefit of New Development**

Potential Build Out		
	Low Estimate	High Estimate
Office	4200000	5400000
Hotel	6000000	6000000
Residential	5000000	8000000
Retail	500000	750000
Industrial	500000	1250000
Total	16200000	21400000
Potential Construction Costs		
	Low Estimate	High Estimate
Office	1033200000	1328400000
Hotel	1500000000	1500000000
Residential	1180000000	1888000000
Retail	123000000	184500000
Industrial	125000000	312500000
Total	3961200000	5213400000
Potential Property Tax after build out		
	Low Estimate	High Estimate
Office	33764976	43412112
Hotel	49020000	49020000
Residential	8532580	13652128
Retail	4019640	6029460
Industrial	4085000	10212500
Total	99422196	122326200

Source: Boston Redevelopment Authority, Seaport Public Realm Plan and interviews

**Table 1.7: Change in Value of Time and Operating Costs (in millions)**

Category	Pre Construction	Post Construction	Savings
Traveler Time Cost	198	56	142
Vehicle Operating Cost	76	52.1	23.9
Total			167

Source: The Economic Impact of the Massachusetts Turnpike Authority

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## 2 Milwaukee: Park East Freeway

### 2.1 History

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The highway movement that was sweeping the nation in the 1950s and 60s also took hold of Milwaukee. In the 1960s, the city hatched the grand scheme to create a loop of freeways surrounding their entire downtown. In 1958, the plans for the Park East Freeway were drawn. The original plans called for the freeway to go from I-794 to Lake Michigan. In 1965, the city began to acquire property for the freeway. They then began to demolish the houses and businesses that would become the Park East Freeway. In 1971, the Park East Freeway opened for use, though it was only one mile long stretch. Old Park East Freeway was a remnant of the original plan of a freeway system to surround the city, which did not achieve complete build out.

From the start of construction, a campaign began to stop the construction of the freeway by environmentalists and surrounding neighborhoods. Ted Seaver was the leader of the campaign against the Park East Freeway, along with the rest of the freeways in Milwaukee. The greatest argument against the Park East Freeway was that it would run through Juneau Park. The people didn't want the park to be cut off from the lakefront. The elected officials eventually joined the activists with attempting to stop the freeway (The Preservation Institute).

In 1972, Mayor Henry Maier vetoed the funding for the relocation of the utilities. The mayor's greatest argument was the cost to the city to finish the construction of the Park East Freeway. He said, "America is the only nation in the world to let her cities ride to bankruptcy on a freeway....My city has discovered that the freeway is not free" (The Preservation Institute, 2007). Since the Park East Freeway was never completed, it was an under-used one mile stretch of freeway (The Preservation Institute).

In 1988, the city of Milwaukee elected Mayor John Norquist. One of Norquist's major objectives was the removal of both the Park East Freeway and the southern part of the I-794 loop (Napolitan and Zegras, 2008). He hired Planning Director Peter Park who helped develop the Downtown Plan with guidelines for the removal of the Park East Freeway and the integration of a surface level boulevard in its place (The Preservation Institute). Park was an urban planning professor at the University of Wisconsin, and in 1995, he had one of his classes study the possibility of replacing the freeway with a boulevard. Wisconsin Governor Tommy Thompson and the Department of Transportation did a traffic study of the Park East Freeway. They found that with the low traffic volume, a boulevard would not be needed and that restoring the local street grid and building a new bridge over the Milwaukee River would suffice (The Preservation Institute).

The process of removing the Park East Freeway took many years due to a group of people, called the Save Our Spur, which did not want the freeway to be demolished. George Watts was the biggest advocate against the destruction of the freeway, claiming that the freeway system "is the life blood of the city" (The Preservation Institute). He tried many tactics to try and stop the removal of the freeway, including spending almost all his money to run for mayor against Norquist so that he could have been a part of the decision making process. He contested the information given by the traffic engineers and threatened suits against the city to delay the destruction of the freeway. An article written by him in a column of the *Milwaukee Journal Sentinel* stated that "sixteen downtown businesses would be damaged if the freeway were to be removed" (The Preservation Institute). Gary Grunau, a developer, talked with fourteen of the business owners. Ten said they supported the removal of the freeway, and four thought that it would not affect them (The Preservation Institute).

In 1999, the County Board decided to remove Park East Freeway with a vote of 20-2. Following that meeting, the Public Improvement committee of the Milwaukee Common Council approved the removal of the freeway with a vote of 5-0. Watts finally sued the city saying that the traffic studies were incorrect and the environment impacts would be severe. The study was ordered to be redone, and the findings are half of what was anticipated. Finally a U.S. District Judge, Charles Clevert, sided with the city of Milwaukee. The demolition of the Park East Freeway began in June of 2002 and was completed in April 2003 (The Preservation Institute).

The proposal to tear down the East Park Freeway had a lot of elements in its favor, and the final decision ended up being made in convincing manner. First, the highway was in need of repairs, despite lack of heavy use, which were estimated around \$100 million. Demolition estimates came in around \$25 million, of which the Federal government had committed 80% through ISTEA funds. Second, the Spur was only a small part of a larger proposal and therefore had never carried its engineered capacity. Many considered it simply a mile-long off ramp, even though it had been engineered to carry well above its daily traffic volume of 35,000. Because of this, studies and modeling showed that a boulevard was not needed for displaced traffic; simply restoring the street grid would be adequate to handle the traffic.

## 2.2 Environment and Travel Behavior Impacts

With the removal of the Park East Freeway and the redevelopment of the land in its footprint, there are many positive environmental impacts to be had. Because redevelopment in the actual footprint has not occurred to date, the full environmental impacts of the removal of the freeway in this area are not yet realized. However, a few impacts can be measured currently. Furthermore, the future redevelopment of this area downtown will have the potential to meet many sustainable transport goals as outlined by the Victoria Transport Policy Institute, such as limiting pollution emissions, reversing climate change, preserving natural land and habitats, and maintaining a livable aesthetic (Litman, 2011).

The Environmental Assessment of the removal project, conducted by the Wisconsin Department of Transportation, indicated no major environmental impacts during the construction process for the removal of the Park East Freeway. Similarly, the Southeastern Wisconsin Regional Planning Commission completed an evaluation of current and future traffic impacts in July 1998 entitled, "Analysis of Existing and Year 2020 Traffic Impacts of the Termination of the Park East Freeway at N. 4th Street." Their analysis concluded very minimal traffic effects or increased congestion. At the time, much of the land surrounding the freeway was used for parking. Some parking would be lost in the reconstruction project, but there would be no taking of businesses or residences in the removal project and reconfiguration of the area (Amendment to the Regional Transportation Plan, 2001). The Commission stated that the evaluation of the environmental impacts indicated no substantial socio-economic, natural environment, physical environment, or cultural environment impacts were anticipated (Amendment to the Regional Transportation Plan, 2001).

The primary motivation in the removal project was the redevelopment of the land within the freeway's right of way, as well as the redevelopment of the surrounding area downtown. A major component of sustainability is "land efficiency," meaning conserving valuable land resources by limiting sprawl, and in the case of transportation, minimizing land used for transportation infrastructure (Litman, 2011). The Park East Freeway was built through the historic downtown. In the 1960s, much land was cleared in the downtown area to make room for the multiple freeways in plan. As a result, thousands of homes were displaced and torn down, thereby encouraging growth in outlying areas (Bessert, 2009). The Park East Freeway comprised almost 30 acres of downtown land. Removal reclaimed 11 developable blocks (Milwaukee Downtown Plan, 1999). The removal project and subsequent redevelopment of the center of Milwaukee encourages a more conservative and sustainable use of land. The 1999 Milwaukee Downtown Plan called the removal a "re-annexation" of land that could be used for other purposes besides transport, such as residences and

business, and would remove obstacles to pedestrian activity. In addition, the creation of the on grade boulevard has provided more green and more permeable spaces to the area than there were before. Minimizing impervious surfaces helps to maintain adequate water quality and replenishes groundwater stock. Also, the lesser proportion of pavement in the area can potentially mitigate heat-island effects caused by excessive concrete in urban environments.

Before its removal in 2003, the Park East Freeway crossed the Milwaukee River at two points. Since its removal, the two overpasses crossing the river were replaced with a vertical lift bridge and helped to reinstate the river as a visual feature of Milwaukee. This replacement does much to enhance the waterfront aesthetics, another component of sustainability. Tearing down the freeway allows for better development along this natural resource.

Besides enhancing the aesthetics of the waterfront, the removal of the overpass also aesthetically enhanced the land in its surrounding areas. Before, the Park East Freeway was perceived as a physical barrier in the downtown region. This freeway, as well as the I-794 overpass just south of the Park East, both going in east-westerly directions, acted as 2 linear divisors that split downtown Milwaukee into 2 regions. Although there were sidewalks provided around and under the infrastructure, the lack of direct sunlight and the lack of green landscaping created a psychological barrier and dissuaded pedestrian trips through the area (Milwaukee Downtown Plan, 1999). Its removal brings back the sense of connection between the downtown districts. As more development occurs in the Park East footprint, more pedestrian activity will be encouraged.

The new form-based zoning envelope of the area allows for much mixed use development including housing, retail, office, and entertainment uses, as well as different height variances (Norquist, 2011). The form-based code outlines the standards for uses and design in the newly reclaimed area. On McKinley Avenue, in particular, most blocks require a minimum of 3 or 4 story buildings and a maximum of 12 stories. Some blocks allow large venue buildings and require special features, such as unique shapes and facades, in order to continue entertainment and commercial uses in the neighborhood. The code allows for the following uses on all blocks: residential, office, retail/service, entertainment/accommodations, and institutional. It defines street edges and corners to create a pedestrian friendly public area (Park East Redevelopment Code, 2004). This is another example of efficient use of land resources. In fact, on February 24, 2011, ground was broken on the new apartment and condominium tower that will house 203 apartments and 14 condominiums (cityofmilwaukee.gov).

Adding mixed use districts in the downtown Milwaukee area could potentially encourage more walking trips, thereby decreasing the city's overall vehicle miles traveled (Milwaukee Downtown Plan, 1999). Since 2000, overall

## Appendix A: Milwaukee: Park East Freeway

vehicle miles traveled in Milwaukee have decreased almost every year.

<b>2009</b>	7,173,100,000
<b>2007</b>	7,376,900,000
<b>2003</b>	7,946,000,000
<b>2000</b>	7,816,076,000

**Source: Wisconsin DOT**

Besides redevelopment of the downtown, another major objective of the Park East Freeway removal and reconfiguration was the reinstatement of the grid traffic pattern in the area. This initiative also has beneficial impacts on the environment. Before, there were only 3 exits off the Park East Freeway into downtown. As a result, many auto travelers would have to overshoot their destination and back track, increasing their VMT. Also, the 3 arterials that collected the exit traffic would become more congested. The reinstatement of the grid allows for more efficient and direct travel in the area. It disperses traffic as well as decreases idle times.

In 1999, the Park East Freeway carried approximately 54,000 vehicles on an average weekday (Congress for New Urbanism). The freeway spur was 0.8 of a mile, so the removal accounts for a reduction of 43,200 vehicle miles traveled each day. This also translates into 41,904 pounds less of CO<sub>2</sub> being emitted each day on account of travel on the freeway, and approximately 15 million less pounds of CO<sub>2</sub> being emitted each year (EPA.org). How those vehicle miles have been dispersed on other routes is not known. Transit ridership in Milwaukee has not seen an increase in trips since 2003 and the removal of the freeway. The National Transit Database recorded 64,033,885 unlinked trips in 2002 just before removal and only 47,972,057 unlinked trips in 2009. There are 5 bus routes that intersect the new on-grade boulevard built in place of the freeway. Transit decline may have more to do with transit policies made under the current mayor and may have no relationship to the freeway's removal.

Overall, significant changes in travel behavior in the area have yet to be realized. As the footprint begins to be developed, it is likely that changes in behavior will be more apparent.

### 2.3 Economic Impacts

Although only a small portion of the freeway was ever built, the right of way for the entire planned freeway was purchased and cleared. By 1969, 99% of the land in the right of way had been acquired, and 1,590 homes had been cleared at a cost of \$22 million (Bessert, 2009). The process of clearing a large amount of land through the central part of an established traditional neighborhood in downtown Milwaukee created a drastic decrease in surrounding property values as well as a loss of former and future tax revenues. In addition to lowering the value of the surrounding land, the spur also resulted in causing the primary land use directly surrounding it to become surface

parking, even though some of the land was directly on the Milwaukee River and seemingly desirable plots. These highway/freeway projects were thought to be big investments to improve downtowns by giving the automobile easy access into their core; in reality, most created easy access for residents to flee while simultaneously leading to further blight and disinvestment by the private sector. The economic effects after the 1968 completion in Milwaukee's Park East section of downtown were no different.

The Park Freeway was just a part of a larger network of freeways, many of which never came to fulfillment. Therefore, due to the cancellation of two other proposed freeways that would have completed the loop, the Park East Freeway survived with little purpose making it a less controversial issue when the discussion came to tear it down.

During the 1980s, neighborhoods lying just beyond the freeway spur started to experience a resurgence of investment. Happening at least twelve years after the spurs completion, it was determined that the resurgence and development was in spite of the freeway and not due to it. This led to the decision for a major redevelopment project on the land cleared for the continuation of Park East Freeway to Lake Michigan. In the 1990s, this sizeable area was redeveloped into a community of residential and retail land uses reconnecting the traditional neighborhood called East Pointe (Norquist, 2011). The development called East Pointe Commons was an \$85.3 million project that initially created 122 apartments and 62 townhomes, with plans to eventually reach 700 total apartments (Daykin, 2005).

After the initial plan for tear down was agreed upon, the city expanded the amount of the spur pinned for demolition by one block leading to an increase in the teardowns cost. The raised cost for the project came to \$37 million with separate plans for redevelopment planning and infrastructure costing an additional \$8 million (Daykin, 2005). Many new development plans and propositions came were presented to the city. According to a 2006 statement by Michael D'Amato, chairman of the Common Council's Zoning, Neighborhoods and Development Committee, the \$45 million tear down project would bring \$800 million of new construction, which would have been double the total value of new construction in all of Milwaukee for 2005 (Daykin, 2006). Local planners had more conservative estimates than the \$800 million suggested by Mr. D'Amato. Based on their projections, they expected the assessed values in the entire 64 acre redevelopment area to increase from \$58 million to \$500 million at build out (Knapp and Wiewel, 2005).

With the completion of the removal of Park East Freeway in 2003, the city of Milwaukee now had a prime 64-acre redevelopment site. The city created several planning and development guidelines, including implementing a form-based code that included specificity in design and developer guidelines that mandated the use of union wage pay for construction worker done on county owned parcels (Daykin, 2006). Some believe the county's strict

## Appendix A: Milwaukee: Park East Freeway

guidelines have hindered the redevelopment process on the footprint of the Park East (Hiebert, 2011). However, the downtown plans propose many improvements for these potential redevelopment sites including improving and adding to housing stock, adding entertainment venues, providing travel connections to other downtown destinations, and creating a mixed use pedestrian oriented design.

Some of the projects proposed early on in the redevelopment include the following, which were cut from a 2006 *Milwaukee Journal Sentinel* newspaper article:

The North End, planned by Mandel Group Inc., at the 8-acre site of the former Pfister & Vogel tannery, overlooking the Milwaukee River along N. Water St., mainly south of E. Pleasant St. Mandel eventually plans to have 395 condos, 88 apartments and 20,000 to 25,000 square feet of street-level retail space on the site, which the firm bought nearly five years ago. Mandel plans to begin demolishing the former tannery this fall and begin construction on The North End's first phase in early 2007, said Richard Lincoln, senior vice president of development. The firm's executives continue to talk with city development officials about obtaining financial assistance for the project


(Daykin, 2006).

Park East Square, planned by Chicago developer Richard Curto for 4 acres east of N. Water St. and north of E. Ogden Ave. Curto wants to build a 125-room boutique hotel and a 140-room hotel catering to business travelers; 120 apartments, 270 condos and over 215,000 square feet of retail and restaurant space. Curto's firm, RSC & Associates, has until October to exercise its options to buy the vacant parcels from Milwaukee County and is continuing to work on its plans (Daykin, 2006).


A 44,000-square-foot office building proposed by MLG Development Inc. for a small parcel bordered by N. Water, N. Edison and E. Knapp streets. MLG has a purchase option for the county-owned site (Daykin, 2006).

Terraces at River Bluff, a 160-unit condo development planned for south of E. Ogden Ave., between N. Broadway and N. Milwaukee St. Big Bend Development LLC bought the site in 2005, demolished the former Milwaukee Center for Independence facility and is completing design work for Terraces at River Bluff, said Randy Scoville, Big Bend partner. The firm hopes to


### Proposed, Planned and/or Under Construction Projects within the Park East Corridor



**Manpower (Block 9)**  
Construction of the new world headquarters for Manpower Inc. was completed in fall 2007. The \$87 million development employs 1,200 people and includes a parking structure, public plaza, and extension of the Milwaukee Riverwalk. The building is the recipient of the 2007 Midwest Construction Award and the 2007 Real Estate and Construction Review Building of America Award. Gilbane Building Company was the general contractor.





**North End-Phase 1 and 2 (Blocks 23, 24, & 27)**  
A \$175 million project developed in phases over the next 5-7 years is expected to become a neighborhood within itself with a variety of housing options and supportive retail services. Construction began earlier this year on phase 1: a 5-story apartment building featuring 83 apartments and 12,000 sq ft of 1st floor neighborhood retail (Block 24 on the Park East map.) Construction of phase 2 is planned to begin later this year (Block 23) and will consist of two 5-story apartment buildings that will offer 130-160 apartments, a new RiverWalk segment, public plaza, and new road. KBS is the general contractor.




**Flatiron (Block 25)**  
Mixed use project developed by Legacy Real Estate Partners, LLC with ground level retail, a corner public plaza, and 38 condominiums. This project was completed in Fall 2007. Currently, there are remaining condo units for sale and the retail space remains for lease. Altius Building Company was the general contractor.

#### Park East Redevelopment Corridor







**MSOE Kern Center (Block 20)**  
A \$25 million investment completed by MSOE in 2005. The development includes a 210,000 sq ft facility with a fitness center, 3 classrooms, 1,600-seat hockey arena, 1-200 seat basketball arena, field house, running track, wrestling area, offices, facilities associated with athletics, counseling and health services.




**The Aloft (Block 10)**  
A 5-story, 160-room hotel development with 3,200 square feet of ground floor retail, a Riverwalk, and public green space. Total investment equals approximately \$24 million.



**The Moderne (Block 8)**  
Owned by Milwaukee Moderne LLC. This will be a 30-story development to include 14 condos (priced between \$258,000-\$2.8 million), 203 high-end executive residences for lease and 7,200 sq/ft retail (spa and restaurant). Total private investment will be \$72 million. Hunzinger is the general contractor.



**Park East Square-Phase 1 (Block 26)**  
Although there are over 4 blocks that have been optioned by Milwaukee County, this is the first block within the Park East corridor that has been officially sold by Milwaukee County. RSC & Associates has purchased the property and is proposing a hotel with ground floor retail and outdoor seating.



**Convent Hill (Block 29)**  
Senior housing owned and operated by the Housing Authority of the City of Milwaukee. Phase 1 of the transformation of a former 120-unit, high-rise building into 182 on-site and 20 off-site housing units occurred in 2006. The new high-rise is a green, LEED certified building with mixed income units and a garden roof top.



## Appendix A: Milwaukee: Park East Freeway

break ground within six months, he said (Daykin, 2006).

Rubin Development Inc. and Dallas-based Gatehouse Capital Corp. are proposing a \$104 million project, including a 175-room hotel, 70 condos, 55,000 square feet of offices, 31,000 square feet of retail space and a 330-car parking structure. Rana Enterprises wants to build a \$34 million project, featuring a 202-room hotel, a gas station/convenience store, 14,000 square feet of offices, 9,000 square feet of additional retail space and a 400-car parking structure (Daykin, 2006).

Reaching build out has become a longer process than initially thought. The Park East community in downtown Milwaukee has run into some bad timing. As the freeway fell, so did housing prices. This coupled with the credit crunch caused developers to postpone, change, or cancel many projects due to trouble obtaining adequate financing. Since the down market began, many developers have been approaching the city to ask for funding help. These pleas for financing assistance were met with mixed emotions, especially those that looked to be more speculative (2007 Daykin). In 2007, the City Development Commissioner said the city would not help finance developments that were too speculative and that he didn't want to potentially hurt existing downtown developments (2007 Daykin). Although the city wouldn't help some speculators, they did act as a conduit for bond sales in order to acquire cheaper financing for some development projects.

Currently much of the 24 acres of the Park East Freeway footprint still lay vacant, but there were a couple of significant advances in the Park East District. First, the Moderne finally received financing for a 30 story, \$70+ million development that includes condos, executive residences, and retail, and although it has yet to officially break ground, site preparation has already started. Secondly, The North End Phase II project received funding, though it is still working with the City of Milwaukee to complete the project's financing. Finally, Milwaukee School of Engineering (MSOE) proposed the building of a parking garage/athletic facility in the Park East, which seems to be on the fast track. So, with an improving economy it looks possible that the Park East project will be able to get back on track in 2011 (Reid, 2011).

The city's new commissioner for the Department of City Development has stated that the continued redevelopment plan will not be "mega-block buildings" but small construction that will need city financing (Daykin, 2007). His development plan envisions a number of three to four story office, retail, restaurant, and living space buildings. Obviously, the difficulties implementing some of the large-scale redevelopment projects have had an effect on the commissioner. But regardless of what direction the city attempts to steer further redevelopment efforts, the razing of the Park East Freeway has led to a tremendous amount of private investment and will continue to be an economic boon to the city and downtown.

## 2.4 Community Impacts

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The Milwaukee Park East Freeway was built on a stretch of land that consisted of houses and business. In total, there were 26 acres of houses and businesses that were demolished to make room for the freeway. Because only one mile of the freeway was built, the remaining land remained vacant and turned into surface parking lots (The Preservation Institute).

The Milwaukee Park East Freeway was initially welcomed in the community, but soon after construction began, the controversy began. The freeway divided the downtown area from the neighborhoods, which made walking from downtown Milwaukee to the surrounding neighborhoods unpleasant. The freeway route was going to run through Juneau Park and separate it from Lake Michigan. The cherished open space caused the construction of the freeway to end (The Preservation Institute).

Before the Milwaukee Park East Freeway was demolished, the land surrounding the freeway and surface parking lots became blighted, which was an eyesore as people were headed toward the downtown area. After the demolition of the freeway, the roads surrounding the freeway were restored to the original street grid to handle to traffic. The redevelopment of the area created three new neighborhoods: McKinley Avenue District, Lower Water Street District, and Upper Water Street District (The Preservation Institute).

The McKinley District is planned for office development, retail shops, and entertainment. The district is set up for large sites and waterfront access, making the area ideal for restaurants and clubs (The Preservation Institute).

The Lower Water Street District is planned for offices near the water front, with some retail businesses and residential buildings. The east part of the district is predominantly residential area, which is adjacent to an existing neighborhood (The Preservation Institute).

The Upper Water Street District is planned for some office buildings, but the majority of the area will be mixed use buildings. The emphasis is on residential development, which has already started (The Preservation Institute).

The building of the areas that was previously demolished for the Milwaukee Park East Freeway has connected the downtown Milwaukee to the surrounding neighborhoods. The walk from the downtown area to the neighborhoods has become safer. The improvements of turning vacant, blighted land to buildings have made the area more appealing for the residents in the area. Not just the Park East footprint, but all surrounding areas downtown have seen improvements since the removal project.

The city of Milwaukee has approved the use of art to draw people into the new neighborhoods. The art was done to try to beatify an area that is not beautiful. The art was done to create a sense of value to the real estate in the area. The art was also done to bring awareness of how important

## Appendix A: Milwaukee: Park East Freeway

the Milwaukee River is to the community (Schultze, 2009).

Though the development of the area has been slow, the neighborhoods are no longer full of blight. They now have a better physical connection with the downtown area without the congestion that was previously feared. Many other cities are in similar situations and can learn a lot from the actions taken from demolition of the Milwaukee Park East Freeway. The redevelopment of the area has

increased the property values in the area and increased tax revenue for the city. 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% between 2001 and 2006. This growth is much higher than the citywide increase of 25% experienced during the same time period (Case Studies for the I-81 Challenge, 2011).

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## 3 Oakland: Cypress Freeway

### 3.1 History

On the 17<sup>th</sup> of October 1989, the Loma Prieta earthquake, at 7.1 on the Richter scale, shook Oakland to the point that a key component of its highway infrastructure, the upper level of the Cypress viaduct, collapsed and killed 42 and injured 108 people. Although the section of the viaduct that collapsed was only 1.5 miles, 160,000 cars per day were left with no other choice but to disperse amongst the heavily used Oakland freeways and streets. This further added to the city's existing traffic congestion. The excess congestion from the removal of this section of I-880 had serious implications on the shipping industry and other employment centers throughout the city.

Reconstruction of the infrastructure was initiated with an Environmental Review in January 1990. California Department of Transportation or Caltrans proposed rebuilding the project in the same location as the original Cypress Freeway. Community leaders opposed this plan as the previous freeway in 1955 blighted and divided the community of West Oakland. At that time, the predominately black community of West Oakland was split in two by the double deck section of interstate leaving the area beneath for storage of equipment. The blight, noise, and pollution caused by the Cypress Freeway were an eyesore and drove away businesses leaving behind gangs and violence (Nadel 2011). The Community

Environmental Relief Team charged with evaluating placement of the project instead proposed moving the freeway east toward the bay where it would run near the more industrialized port of Oakland and the military base. Caltrans accepted this alternative and finalized the freeway location in September 1991. The Oakland community was included in a decision the city made for them; in the past, their opinions were largely ignored (Brett, 1998) (CDOT, 1999).

Actual construction of the project did not commence until January of 1994. The new stretch of freeway and connectors span 5.2 miles in length accommodating traffic and providing additional connections. Service to key economic areas and through routes for vehicle users were to be improved by connecting I-80 with the San Jose and East Bay Area. The new Cypress Freeway, at 6 lanes, has a lower vehicle capacity than the original 8-lane freeway. By providing High Occupancy Vehicle, or HOV, lanes to promote carpooling and public transit, Caltrans believed they could operate the freeway more efficiently (Audit, 1998) (Brett, 1998). Even with HOV lanes, connecting metropolitan areas proved to be the project's greatest asset. The main community revitalization proponent of the plan was the connection of I-80 to I-880. Caltrans believed that it would alleviate the majority of congestion running through the adjacent arterial streets.

The Cypress Freeway Project was scheduled for completion by March 1997 though delays pushed back the opening until November 1998. The freeway replacement project faced several delays in acquiring a right-of-way on I-880 providing financial difficulties (Audit, 1998) (Brett, 1998). Redeveloping the site of the previous freeway continued with the construction of Mandela Parkway from 2004-2005. Developers have shown interest in building mixed use projects throughout West Oakland though much debate continues over concerns of gentrification.

### 3.2 Economic Impact

Freeway closures have unprecedented economic impacts. A year after the Loma Prieta Earthquake shut down the 1.5 mile stretch of highway; the cost amounted to \$22.5 million in added travel times for motorist, delays in shipment of products, and higher vehicle operating costs (LA Times, 1990). The cost associated with the destruction of structures amounted to \$5,287,716 for the 9 county San Francisco Metropolitan Area. This is aside from the cost of the collapsed freeway (Kroll, 1991), giving some idea of the earthquakes magnitude in respect to financial damage. By 1994, \$1.106 billion in Federal relief funds had been allocated to the repair of the I-880 freeway. \$650 million was spend on construction, \$350 million on right of way acquisition, and another \$56 million in costs remained that were not eligible for federal funding and left for the state level to contribute. Before the project was complete,



Figure 3.1: Location of Cypress Freeway Project in Relation to Cypress Viaduct Source: Caltrans

## Appendix A: Oakland: Cypress Freeway

Oakland lost \$491,000 in toll revenue from the Oakland Bay Bridge.

Not all aspects of Oakland suffered greatly economically from the freeway collapse. The San Francisco Bay Area retail sector was not really affected. Access to retail proved to be an economic priority of the San Francisco Bay residents. A survey conducted in January 1990 with a rating system of 1-no problem to 5- very severe, consumer access after the earthquake ranked a 3.5 for the City of Oakland. This rating implied that accessibility may have been reduced but not necessarily sales. A deterrent to consumer spending was an indirect implication of the closure of the I-880 highway. The provision of adequate infrastructure is central to the economic success of an urban community or what can be inferred from the research into Oakland. (Audit, 1998)

Negotiations over the project design between Caltrans, the City of Oakland, and West Oakland community groups produced promises of many favorable economic outcomes. One such provision was a direct off ramp on the new freeway offering a means to service the Port of Oakland in turn removing the presence of heavy freight trucks traveling through residential neighborhoods. \$25 million was spent on adding this interchange to the newly constructed portion of the highway. In terms of economic development, this feature would enhance the port's competitiveness amongst other west coast ports as well as facilitate employment opportunities. Taking local businesses concerns of limited access into consideration, Caltrans refrained from removing the existing off-ramp on Market Street. The preservation of the Market Street off-ramp maintained accessibility to local businesses thus directly boosting the revenues of community and business groups. Caltrans claimed the replacement for the Cypress freeway, the Mandela Parkway project, would enhance the quality of life in Oakland and in turn raise property values through the enrichment of Oakland. The remediated highway design included green space, bike paths and pedestrian trails as well as an opportunity of redevelopment in the heart of West Oakland. (CDOT: 1999)

Another investment into the economic livelihood of Oakland was the establishment of a community outreach venue. The Oakland Private Industry Council was set up to provide Oakland residents with the training necessary to become involved with the freeway reconstruction project. The center was an extremely effective utility towards alleviating unemployment with an 82% job placement rate. Caltrans believed that this would stimulate a unity between West Oakland and Oakland. As of 1999, 700 people graduated from the center and 82% were placed in construction related employment in northern California, though only 65 graduates worked on the Cypress Freeway Replacement Project.

Oakland City Council approved the Freeway Performance Agreement in 1993. It encouraged investment from disadvantaged and local contractors to generate employment. The initiative primarily focused on hiring

minorities, women and local residents. According to the agreement, contracts and jobs from the relocation of the highway were allocated in the following ways: 35% Disadvantaged Business Enterprise participation or businesses owned by women or minorities, 20% Local Business Participation, with the 45% remaining employment consisting of local residents, women, and minorities. Over 1000 people received employment through this project (CDOT, 1999). In order to enforce compliance of the Agreement, Caltrans later sent associates out to monitor the projects compliance with the stated employment targets and found that, although employment goals are being achieved, minorities were under represented in the resulting hiring initiative. Despite some flaws, this project performed an economic revival of Oakland with awarding \$90 million in contracts to local businesses in its construction phase (Kroll, 1991).

### 3.3 Environmental Impacts

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The environmental impacts of removing and relocating the Cypress Freeway had both negative and positive environmental impacts including: contaminant exposure, noise/visual pollution, community reunification, and cultural wealth. The most detrimental environmental impact of replacing the Cypress Freeway was the reconstruction process, which mostly took place in an industrial corridor. Much of the site was formerly the location of Southern Pacific's railroad yards and industrial shops. The facilities on site included paint shops, vehicle washing facilities, foundries, gas works, fuel storage, battery shops, etc. which are known producers of hazardous byproducts like hydrocarbons, solvents, heavy metals, and asbestos (Snyder, 1992). Of course, contaminants were eventually discovered and environmental remediation of such contributed to a final project cost nearly double the original plan (Miami Herald 1997).

32 contaminated sites were identified in the footprint of the new freeway. Contamination was found in both the soil and groundwater and included the following contaminants: asbestos, lead, petroleum hydrocarbon, Polynuclear aromatics, VOCs (Toulene, Vinyl Chloride), DDT, and a semi-VOC (Benzopyrene). The contaminated soil was either shipped to a disposal facility or remediated and reused in embankments while the contaminated water was treated and used for construction, dust abatement, or simply discharged into the ground (Caltrans, 1999). The vinyl chloride contamination posed the largest problem as it caused months of delay while the EPA deliberated the proper process of dealing with the carcinogen. Ultimately, it was decided that the level of contamination was below what was deemed unsafe. Still, construction avoided excavating in these contaminated areas, and the U.S. EPA filtered the groundwater (Jackson, 1998).

Addressing noise and visual pollution for the new freeway, Caltrans installed noise barriers on freeway structures and embankments in addition to installing sound walls and

## Appendix A: Oakland: Cypress Freeway

dense landscaping along residential portions of the corridor (Caltrans, 1999).

The environmental impact of replacing the Cypress Freeway was positive in many ways for the local community, such as its relocation away from major residential areas, cultural excavations, and seismic upgrades.

Relocation of the freeway resulted in significantly lower noise pollution and vehicle emissions for the former corridor, which affected a larger residential population. It also allowed for the redevelopment of the median into a landscaped, multi-use pathway called the Mandela Parkway (Caltrans, 2004). Many residents of West Oakland attributed their higher incidences of certain health issues to vehicle exhaust, a notion supported by health officials. Therefore, removal of the freeway should also lower rates of related health concerns. These environmental improvements in the former corridor likely contribute to its improved economic development as well. Unfortunately, a small residential area in the extreme west of West Oakland, known locally as the “Lower Bottom,” was severely impacted by the new route of the Cypress Freeway. Residents of this area entered a legal battle to locate the new freeway completely away from residential areas but ultimately settled for increased mitigation measures (USDOT).

During the demolition phase of construction, archeologists discovered large quantities of historical artifacts from the 1800’s. Most of these were related to the African-American heritage of West Oakland and its railroad industry. These artifacts were placed in exhibits and museums locally and nationally (USDOT).

The improvement of the seismic resistance of the new freeway is another beneficial environmental impact. The old freeway was known to be fatally flawed, and reconstruction allowed for utilization of the newest and most seismic-sensitive construction methods. Light-weight embankments were constructed so as to not put unnecessary pressure on the local soil, Bay Mud. Precautions were also taken to avoid the rusting of steel and concrete and to withstand an earthquake of 7.4 magnitude (Caltrans, 1999).

Overall, the beneficial environmental impacts seem to outweigh the negative impacts. The issue with vinyl chloride in the “Lower Bottom” is unfortunate but has been resolved.

### 3.4 Travel Behavior Impacts

The relationship between travel behavior patterns and the impact of removing the Cypress Freeway is best understood when broken into three post-Loma Prieta Earthquake phases: Reactionary Phase, Liminal Phase, and Terminal Phase.

- Reactionary Phase: the immediate travel patterns resulting from the collapse of the Cypress Freeway.

These patterns only persisted until debris was removed and non-controversial infrastructure was repaired.

- Liminal Phase: the travel patterns between a restoration of non-controversial travel infrastructure and the ultimate transportation system outcome (relocation and reconstruction of the Cypress Freeway). This phase is characterized by planning and construction. It is subject to high degrees of variability because of the construction process and sheer length of the project.
- Terminal Phase: the travel patterns after reconstruction is complete, i.e. reconnection of I-80 to I-880 via the relocated Cypress Freeway. This phase is defined by two significant events: the completion of the new Cypress Freeway and the creation of the Mandela Parkway.

As per the request of the local community, the destroyed portion of I-880, known as the Cypress Freeway, was to be relocated to the periphery of West Oakland, allowing the reunification of the community of West Oakland. This portion of I-880 was heavily traveled as it linked Oakland and surrounding communities with San Francisco, Berkeley, and the South Bay. Prior to the Loma Prieta earthquake, an estimated 160,000 motorists used this facility every day (Jackson, 1998). Needless to say, the absence of the original Cypress Freeway would alter travel patterns, especially amongst motorists. Even once the new freeway was completed, its capacity was estimated to be 116,000 vehicles daily (Miami Herald 1997).

The immediate impact of the collapse of the Cypress freeway was rather interesting. As could be expected many motorists simply re-routed their travel patterns by detouring through nearby I-580 and I-980. This re-route resulted in an increase in traffic on these facilities and additional travel time (Fernandez, 1998). However, in the days immediately following the earthquake, during the reactionary phase, there was a simultaneous decrease in automobile use and significant spike in transit use. While surface transportation facilities were devastated by the earthquake, the Bay Area Rapid Transit (BART) rail system survived relatively unscathed. Residents of the East Bay were essentially limited to travel by rail or water to get to San Francisco. During the week following the earthquake, daily ridership figures increased by over 50%, from 218,000 to 342,000. This spike put pressure on the BART system, so ferry service between San Francisco and the East Bay was expanded during the month-long closure of the Bay Bridge. Perhaps as result of these post-disaster travel behaviors, BART ridership has steadily increased over the years and commuting by ferry has become a “mainstay of the North Bay commute market” (SPUR, 2010).

In the nine year liminal phase that followed the reactionary phase, new traffic patterns emerged. However, due the intermittent completion of reconstruction, these patterns were relatively in flux and difficult to come by. In addition

## Appendix A: Oakland: Cypress Freeway

to the use of I-580 and I-980 as alternate routes, many motorists began to navigate through local roads in West Oakland to avoid traffic on the now heavily congested freeways (Jackson, 1998). The reconstruction process was essentially completed in 3 portions: the 2.5 mile main line running along the Southern Pacific Railroad and skirting West Oakland, a 1.3 mile connection to the Bay Bridge to the west, a 1.4 mile connection to I-80 in Emeryville to the north. Caltrans decided to complete the connection to the Bay Bridge first as an economic study concluded that every month without that connection would result in a loss of \$2.5 million per month in travel time and vehicle operating expenses for the public. Unfortunately, the construction process ran into considerable delays, especially regarding HOV lanes (USDOT, 1998).

It should also be noted that a multi-use pathway, The Mandela Parkway, was created in the footprint of the old Cypress Freeway. Aside from revitalizing a corridor, it also provides bike lanes and a pedestrian trail (Caltrans, 2004). This could lead to more pedestrian, bicyclists, and transit users in the immediate area.

Because this project deals with highway removal and relocation as opposed to mere removal, its overall travel behavior impacts are expected to be minimal and localized. The key impact is that traffic was relocated to the periphery of a community that abhorred its omnipresence. Also, the collapse and devastation of highway infrastructure in the area could be attributed to overall gains in transit and ferry ridership.

### 3.5 Community Impacts

The history of the West Oakland community runs deep. Many of today's social conditions can be traced back over 100 years. In the 19<sup>th</sup> century, wealthy residents of the San Francisco Bay area settled in the hill, leaving the middle and lower classes to live along the alluvial plain that is now the city of Oakland. Racial divides, both implicit and explicit perpetuated this divide into the early 20<sup>th</sup> century. West Oakland became notable after a group of African American rail workers unionized and bargained for higher wages. For the first time they were able to own homes and many settled in the neighborhood closest to the rail yard—West Oakland (Nadel, 2011). After WWII, lower costs and taxes lured much of West Oakland's industry south leaving little more than an elicited economy (Nadel, 2011) (Praetzellis & Praetzellis, 2004). In 1955, the city of Oakland decided to build the I-880 Cypress Freeway through this neighborhood taking advantage of disenfranchised residents with little resources to fight and low right of way costs due to the depressed property values and widespread abandoned buildings.

After Caltrans selected the alternate site for the I-880 exchange closer to the industrial area of West Oakland, they enlisted the help of the Anthropological Studies Center at Sonoma State University (ASC) to conduct a study of the area. As part of compliance with the National Historic Preservation Act, they were charged with examining the area of potential effects of 22 city blocks. Since the freeway was being built so close to the San Francisco Bay, large footings were required that they knew would destroy artifacts of the area's 100+ year old history. The Cypress Archaeology Project that resulted produced an extensive historical overview of the early years of West Oakland. Caltrans then compiled the artifacts into a traveling exhibit called *"Holding the Fort: An Exhibit of African American Historical Archaeology and Labor History in West Oakland."* This study and resulting exhibit help shed light on the formation of West Oakland's culture, and the authors hoped their report would act as a source of historical knowledge and pride for the present-day community (Praetzellis & Praetzellis, 2004).

Status of the Cypress Freeway Project

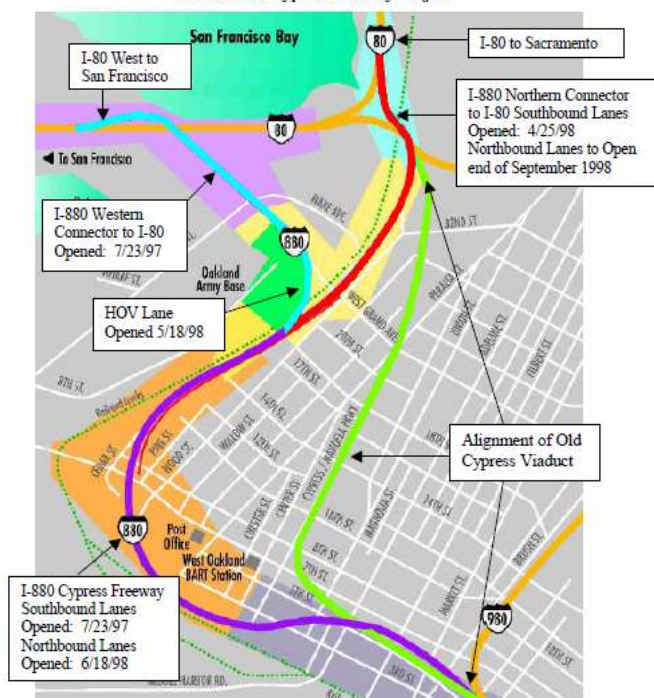


Figure 3.2: Status of the Cypress Freeway.

Source: Caltrans

The terminal phase marks the completion of construction. It should be noted that the new Cypress Freeway has a lower capacity than its predecessor. The two connection facilities are each 4 lanes total. It was the hope of highway planners that by including a High Occupancy Vehicle (HOV) lane, the capacity of the new freeway would match that of the old. Much to their chagrin, HOV lanes were eliminated from all portions of the Cypress Freeway project except for the 1.3 mile connection to the Bay Bridge. This was done in response to the cost of restoring other earthquake-damaged infrastructure in the region. Still, the project did considerably reduce congestion in the immediate area, especially West Oakland. By providing better connection to the Port of Oakland, the Oakland Army Base, and certain industrial and commercial areas via new interchanges, much of the truck and industry related traffic in West Oakland was reduced (USDOT, 1998).

## Appendix A: Oakland: Cypress Freeway

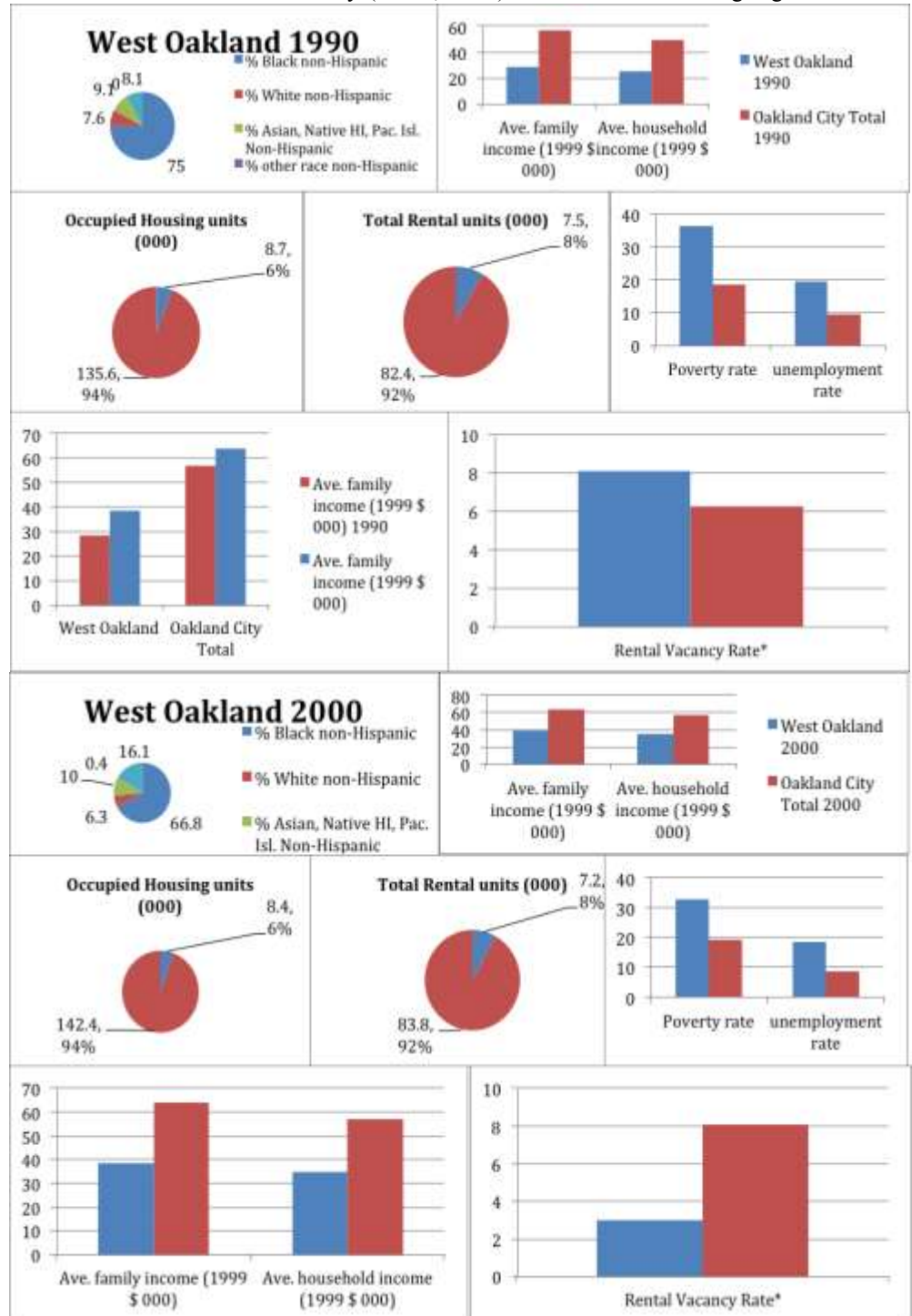
In 1989, residents seized on an opportunity to reunite their community after the Loma Prieta earthquake destroyed the Cypress Freeway. A team of community and civic leaders, Caltrans, and interested citizens were formed as a Community Emergency Relief Team, or CERT, which gave the citizens an unprecedented voice in the rebuilding of their community. The charts below show a snapshot of West Oakland in 1990. As the 1990 census data shows, the predominantly African American West Oakland community had higher poverty rates, lower incomes, lower home ownership, and higher rental vacancies than the city of Oakland (U. S. Census, 1990).

Eleven years after the earthquake, the I-880 had been rebuilt but debate continued on the fate of the previous site of the Cypress Freeway. The 2000 census reported several changes in the community (see Figure 3.3) though overall, West Oakland still lagged behind the rest of the city. A 36.29% growth in average income along with a 3.7% decrease in poverty from 1990 to 2000 indicates some improvement in the area's economy. Housing indicators show a possible gap developing between those who can buy and many who can barely afford to rent. Average income for borrowers rose 32% to \$95,600, well over the average family income of \$38,600. At the same time rental housing units decreased by 300 even as vacancy rate stayed constant and of the 8,700 housing units in West Oakland, 18.4% were either overcrowded or severely overcrowded (U. S. Census, 2000).

Even with the obvious need for economic development, debate over what to do with the former Cypress Freeway site delayed economic and community improvement. Local businesses petitioned the city to make the wide median an extensive parking lot, but many in the community wanted a linear tree-lined park. Again, community members won, and the Mandela Parkway project with winding sidewalks and green spaces, decorative lighting, and benches

was completed between 2002 and 2005. (Caltrans, 2004)

Redevelopment in West Oakland has been a struggle as well. One notable mixed-use development, Mandela Gateway at the corner of Mandela and 7<sup>th</sup> Street includes "168 [affordable] residential rental units, 14 for sale townhomes, and 6,500 sq. ft. of retail space" (Oakland Housing Authority, n.d.). Located across from the West Oakland BART station and close to the Oakland Main Post Office, the development is the only mixed use development on Mandela and will most likely stay that way (Nadel, 2011). Other efforts to bring higher income



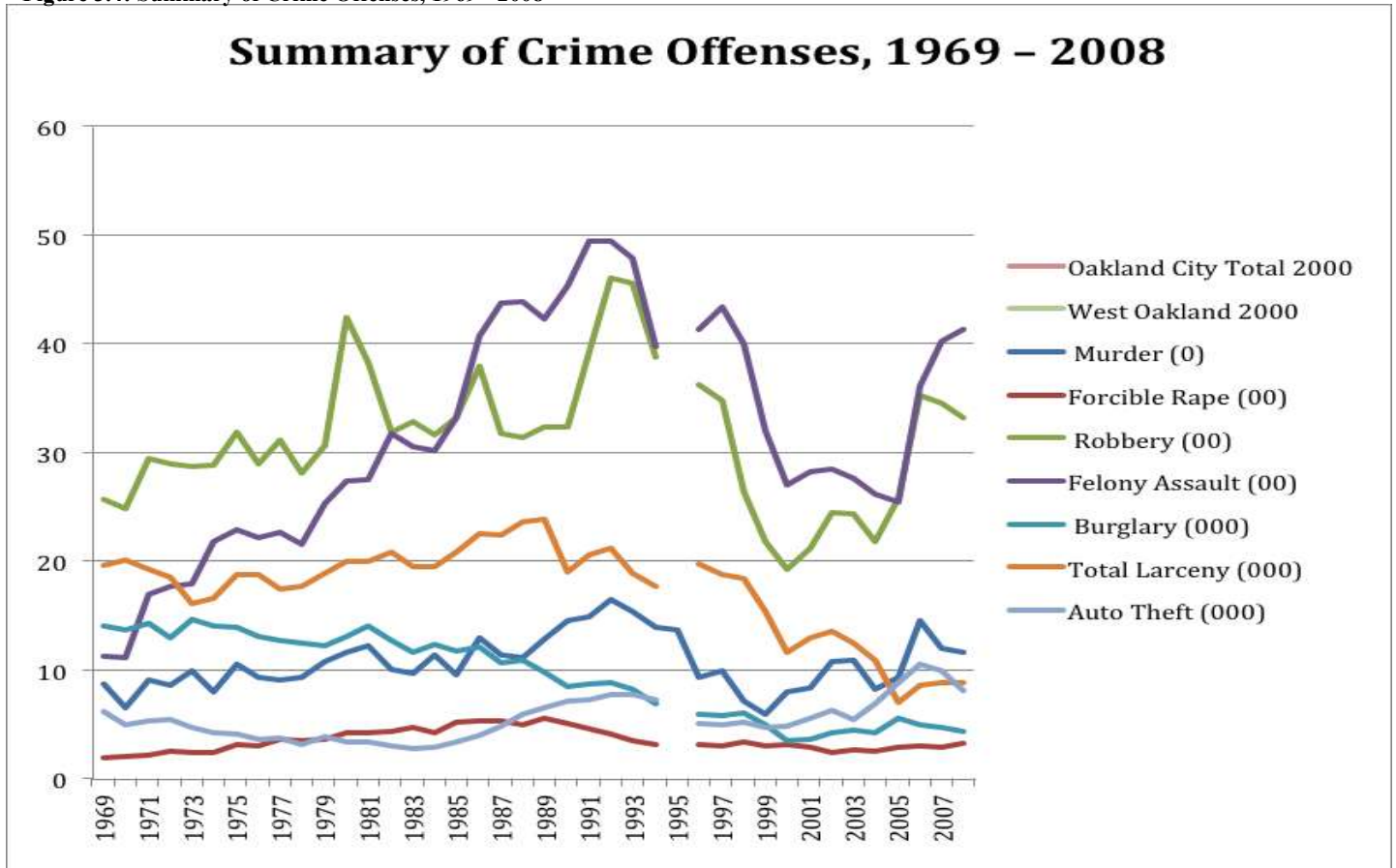
**Figure 3.3: Demographic Change in West Oakland**  
Source: Census

### Appendix A: Oakland: Cypress Freeway

housing developments or rezone abandoned industrial facilities for mixed use high density residential/commercial/light industrial have been denied as threats of gentrification. West Oakland's Councilwoman Nancy Nadel says would rather preserve the zoning to maintain the historic manufacturing tradition of West Oakland. Efforts to attract new industry have not yet succeeded, though the local high school will be implementing a manufacturing focus to train the next generation of West Oakland's youth (Nadel 2011).

Given the crime rates from 1969-2008, the earthquake probably had little impact with minor exceptions (see Figure 3.4). Notable exceptions include total larcenies, felony assault, murder, and robbery which showed substantial decreases throughout the 1990s. Whether or not the I-880 rerouting had any effect is hard to say as there may be a variety of forces at work (No data was provided for 1995 except for Murders).

Figure 3.4: Summary of Crime Offenses, 1969 - 2008





## Appendix A: Oakland: Cypress Freeway

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## 4 Portland: Harbor Drive Freeway

### 4.1 Introduction

Portland has long been progressive in their efforts for urban renewal. Nearly forty years ago, Portland, led by the efforts of Governor Tom McCall along with strong public support, razed Harbor Drive freeway to replace it with a large park and reclaim their waterfront. While the nation was still going strong in their efforts to build veins of highways linking cities, Portland was the first to remove a freeway from an urban area and hasn't looked back since.<sup>1</sup>



Figure 4.1: Portland, Oregon. Highlighted portion shows area of Former Harbor Drive Freeway. Source: Google Maps.

### 4.2 History

In winding back the clock to discover the genesis of the Harbor Drive Freeway, it's not necessary to look any further than the "master builder" Robert Moses. In the early 40s, the City of Portland invited Moses to lead guidance in writing the town's road construction plan.<sup>2</sup> After a couple months and with the aid of his team, Moses released his report that included blueprints on what he thought best for the town in order to thrive in what he saw as a concrete-laden and sprawling future. Among the roads and routes drawn in the blueprint and carving up the



Figure 4.2: Robert Moses' Proposed Harbor Drive Freeway Source: www.PortlandMercury.com

cityscape were I-84, I-5, I-405, I-205 and the Harbor Drive Freeway<sup>3</sup>.

Funded by the Roosevelt Administration, Harbor Drive was a ground-level four-lane highway following the western side of the Willamette River, essentially walling off downtown Portland from the waterfront. It was termed as an expressway even though it was not built to the modern freeway standards of the time because it was a "limited access road, closed to pedestrians and to cross traffic, with access through freeway interchanges."<sup>4</sup> Upon completion in 1942, the three mile long route was carrying 25,000 vehicles per day.<sup>5</sup> By 1950, the Harbor Drive Freeway could still be classified as limited access and carried US Route 99W.<sup>6</sup>

As the US entered the 50s and with the passage of the Federal Highway Act in 1956, many more highways were planned for Portland but none would technically qualify as a limited access road.<sup>7</sup> By 1964, I-5 was completed and spanned the east bank of the Willamette, running in the same cardinal directions as Harbor Drive and built to highway modern standards- now two highways hugged the Willamette.<sup>8</sup>

During the late 60s and early 70s, Portland was also fighting urban blight and the barrier between the downtown and the river in the form of Harbor Drive was only exacerbating a rough situation. By 1968, in anticipation of rapid growth and to aid in their bid to host the 1968 Olympics, Portland and Oregon as a whole

<sup>1</sup> Seattle Department of Transportation. (2008). *Seattle Urban Mobility Plan: Case Studies in Urban Freeway Removal*. City of Seattle. (6B-1). Retrieved from <http://www.cityofseattle.net/transportation/docs/ump/06%20SEATTLE%20Case%20studies%20in%20urban%20freeway%20removal.pdf>

<sup>2</sup> Mirk, S. (2009, September 24). The Dead Freeway Society: The Strange History of Portland's Unbuilt Roads. *The Portland Mercury*

<sup>3</sup> Mirk.

<sup>4</sup> The Preservation Institute. (2007). *Removing Freeways – Restoring Cities*. Berkeley. Retrieved from <http://preservenet.com/freeways/FreewaysHarbor.html>

<sup>5</sup> Seattle, 6B-1.

<sup>6</sup> Congress For the New Urbanism. (2010). *Portland's Harbor Drive*. Retrieved from

<http://www.cnu.org/highways/portland>

<sup>7</sup> Seattle, 6B-1.

<sup>8</sup> Preservation.

## Appendix A: Portland: Harbor Drive Freeway

further attempted to bolster their infrastructure<sup>9</sup>. During this process, the State Department proposed widening the existing Harbor Drive expressway from four lanes to six. More politicians and citizens were finding their voices in letting their displeasure of widening the road be heard.<sup>10</sup> Thus began a long, winding battle for the removal of Harbor Drive.

As a corollary, the 60s were a period of upstart and grass roots activism. The young visionaries and generally younger politicians that were beginning to populate offices were more prone to hear the citizens' voices. In 1968, groups of citizens began calling for closing down Harbor Drive and developing the land as a park instead. Simultaneously, as the state began purchasing land around Harbor Drive in an effort to expedite the widening process, a citizen alliance against the expansion found an audience with the Governor, Mayor, and County Commissioners.<sup>11</sup>

Then-Governor Tom McCall was the primary proponent of getting the road removed. These politicians sided with the alliance as they argued against traffic engineers of the time, who said that closing the freeway would be a disaster. In turn, the alliance argued that the overflow traffic from shutting down the highway would find spillover lanes or follow I-5 in order to move north and south within the city.<sup>12</sup> By 1969, the governor had formed a task force to hold public hearings on the future of the expressway. The task force came up with three options:

- 1) Widen the lanes from four to six; straighten them.
- 2) Sink the expressway and cover it with parks.
- 3) Widen the road to six lanes AND relocate it one block away from the riverfront.

Nowhere in the options was closing Harbor Drive considered.<sup>13</sup> Traffic Engineers claimed that the expressway was essential to the community and must remain open since a projection at the time showed that they would have 90,000 trips per day on that span by the year 1990.<sup>14</sup>

The chair of the task force, Glenn Jackson, recognizing the outcry of a public feeling left out, gave his word that the public's input would carry actual weight with the final decision. He also urged the hiring of an independent contractor to study the feasibility of removing the expressway altogether and recommended that the state work far more closely with the citizens<sup>15</sup>. Subsequently, a committee of citizens was implemented as a result of Jackson and McCall's urging. The citizens' committee held their first meeting two months afterward and

coordinated with the consulting firm to research the various Harbor Drive options.<sup>16</sup>

The independently contracted consulting firm issued a plan that would route existing traffic on two newly designated one way streets. Engineers, the citizens, and the Governor were all against this plan, as was Glenn Jackson, who led the taskforce to adamantly oppose it.<sup>17</sup> A local planner argued Front Avenue alone could handle a good portion of the spillover traffic if the lights were improved, a median constructed, and better pavement put in place to support additional weight<sup>18</sup>



**Figure 4.3: Harbor Drive Freeway prior to closure, 1974.**  
Source: Portland City Archives

In response to this plan, Governor McCall pushed for the closing of Harbor Drive altogether so a park could be put in its place. Traffic engineers remained unconvinced and fought against the closure of the freeway.<sup>19</sup> To achieve closure, the Governor and Task Force needed to convince the City Council that traffic can be safely and efficiently routed to the surrounding roads and highways.<sup>20</sup> They recommended closing Harbor Drive upon the completion of I-405 in 1973 in addition to providing ample notice to the public of the impending closure, so alternative routes could be discovered as the most beneficial to the city.<sup>21</sup>

On the day in 1974 Harbor Drive finally closed, traffic engineers saw not a "ripple" in the traffic patterns that day as other roads handled spillover and drivers found manageable alternate routes.<sup>22</sup> Following the removal of Harbor Drive, there were very few negative impacts. This was in part due to the existing traffic grid pattern and also the traffic management of downtown Portland.<sup>23</sup> All streets

<sup>9</sup> Mirk.

<sup>10</sup> Mirk.

<sup>11</sup> Mirk.

<sup>12</sup> Mirk.

<sup>13</sup> Preservation.

<sup>14</sup> Seattle, 6B-2.

<sup>15</sup> Preservation.

<sup>16</sup> Preservation.

<sup>17</sup> Preservation.

<sup>18</sup> Preservation.

<sup>19</sup> Preservation.

<sup>20</sup> Preservation.

<sup>21</sup> Seattle, 6B-2.

<sup>22</sup> Preservation.

<sup>23</sup> Seattle, 6B-2.

## Appendix A: Portland: Harbor Drive Freeway

in the downtown area were converted to one-way streets and the traffic lights were synced to ensure smooth travel through the downtown area. As a bonus, the one-way pattern allows for a better walking and bicycling environment.<sup>24</sup>

### 4.3 Economic Impacts

Prior to the removal of the Harbor Drive Freeway, Portland was a struggling city that had both mounting environmental and economic problems. Like many other cities during that era, Portland was coping with suburban sprawl and decay of its urban core. The creation of the Downtown Waterfront Plan and the lack of the support of the community and politicians for the expansion of the Harbor Drive Freeway in 1968 led to the removal of the freeway and the revitalization of the city's under-utilized and undervalued waterfront property. In 1974, the freeway was closed completely, and the park that was designed to replace it was opened in 1978.<sup>25</sup> In 1984, the park was renamed Tom McCall Waterfront Park, after one of its staunch supporters. Tom McCall Waterfront Park not only functions as an accessible and walk-able buffer between Downtown Portland and the Willamette River, but also as a catalyst for economic growth and contributed to the revitalization and resurgence of the city as well.

Local support for the use of Tax-Increment Financing (TIF) to pay for Tom McCall Waterfront Park and the establishment of the Downtown Waterfront Urban Renewal Area (DTWF URA) surrounding the park has perpetuated continuous growth and development in the area since it was created. The development has led to a substantial increase in property tax revenue for the city. Since its development, roughly 62 development projects (retail, mixed use housing, office space) have been successfully implemented.<sup>26</sup> Some of the most profitable an economically viable of these projects include the development of the Pioneer Place commercial building, RiverPlace retail and housing development, and The Yards at Union Station. Continued interest in development within the district (Revitalization of Old Town/Chinatown, Ankeny/Burnside, and the Portland Saturday Market) illustrates that the land that once was a three-lane highway and Brownfield site is still thriving.

Once local leaders decided that they were going to officially close down the freeway in 1974, the Portland Development Commission (PDC) officially designated the area as the Downtown Waterfront Urban Renewal Area (DTWF URA). The Portland Development Commission designated this land as an urban renewal district in order to



**Figure 4.4: Tom McCall Waterfront Park, 2009.**  
Source: Event.com

fund large-scale projects through tax-increment financing (TIFs). Tax-increment financing is a process where assessed value of real property is frozen within a designated urban renewal. As the other investors and the city continue to invest in the area, property values increase. The increase in property taxes above the frozen amount is then reinvested into the development. After 20- 25 years, property taxes are unfrozen, and the city benefits with massive influx in new property tax revenue.<sup>27</sup>

In the case of the DTWF URA, the use of TIFs has been quite successful. According to the Portland Development Commission, property values in the DTWF URA have increased by 10.4% annually between 1974 and 2008, from \$466 million to roughly \$1.6 billion.<sup>28</sup> When the urban renewal district was first created in mid 1970s, most of the properties within its boundaries were worth the same or less than the value of the land. Since 1975 property values in the area have tripled and as of 2002, the DTWF URA was growing at a 7% faster rate than the rest of Portland.<sup>29</sup> Much of the success of the DTWF URA should be accredited to the vitality and popularity of Tom McCall Waterfront Park, the first and most important developments within the boundaries of the urban renewal district.

<sup>24</sup> Seattle, 6B-2.

<sup>25</sup> Preserve.

<sup>26</sup> Portland Development Commission. (2010) *Downtown Waterfront Projects Map*. Portland Development Commission. Retrieved from <http://www.pdc.us/pdf/maps/dtwf/dtwf-ura-projects-map.pdf/>

<sup>27</sup> Arambula, Crandall. *Tax Increment Financing: Revitalizing Cities*. Crandall Arambula. Retrieved from <http://www.ca-city.com/images/news/pdfs/Tax%20Increment%20Financing.pdf>

<sup>28</sup> Portland Development Commission. *Downtown Waterfront Home*. Portland Development Commission. Retrieved from <http://www.pdc.us/ura/dtwf/dtwf.asp>

<sup>29</sup> Seattle, 6B-2.

## Appendix A: Portland: Harbor Drive Freeway

Tom McCall Waterfront Park is a 36.59-acre open park that stretches from RiverPlace to the Steel Bridge that comprises of 13 tax lots.<sup>30</sup> The park continues to attract both locals and visitors into Downtown Portland and the Waterfront. Though much of the economic benefits of Tom McCall Park are reflected by increased property values of nearby housing and retail shops, many of the festivals and the Saturday Market in Ankeny Plaza do generate a substantial amount of money for the local and state economy. In 2008, the Oregon Brewers Festival generated more than \$1.5 million dollars for the state of Oregon.<sup>31</sup> In 2010, the Safeway Waterfront Blues Festival raised roughly \$600,000 for the Oregon Food Bank, a festival record.<sup>32</sup> Tom McCall Waterfront Park is also home to the famous Portland Saturday Market, which annually attracts close to 750,000 visitors and generates roughly \$8 million.<sup>33</sup> There are also a number of privately run hotels and restaurants that generate a great deal of revenue and have high valued property taxes as well.

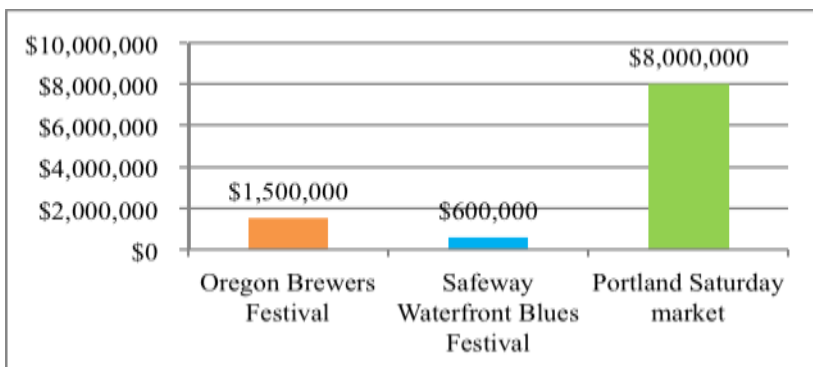
The RiverPlace development project is one of the first large scale mixed-use projects in the Downtown Waterfront Urban Renewal Area. Located adjacent to Tom McCall Waterfront Park, Harbor Drive, and River Parkway, the RiverPlace development project was initiated in the early 1980s and completed over three phases from



**Figure 4.6: Pioneer Place, 2008.**  
Source: Flickr.com User: Yuichiro

1985 to 1995.<sup>34</sup> After the final phase of the project was completed in 1995, the site featured a mix of residential, retail, and office space, resulting in 480 condos, 6,000 square feet of retail, and 42,000 square feet of office space.<sup>35</sup> Of the total \$84.3 million dollar cost, \$60.8 million dollars were funded through private contributions; the PDC funded the rest through TIF money.<sup>36</sup> Of the money allocated for this development, more than half went towards development of residential housing units and \$33.8 million dollars went into developing adequate commercial infrastructure. As of 2002, the assessed value of the RiverPlace is \$67 million dollars and has generated roughly \$1.45 million dollars in property tax revenue.<sup>37</sup> Due to its ideal location near the Esplanade of Tom McCall Waterfront Park and close proximity to Downtown, housing occupancy at RiverPlace is nearly 150% higher than other housing developments in other parts of the city.<sup>38</sup>

In 1990, the Pioneer Place office tower and commercial center was created in the Downtown Waterfront Urban Renewal Area. The commercial center comprises of a 16-story office tower that contains 316,884 square feet of office space, 215,196 square feet of retail space, and an 830 space parking garage that cost roughly \$147 million to build.<sup>39</sup> As of 2002, the assessed value of the property was



**Figure 4.5: Annual Revenue generated by Festival/Market**

<sup>30</sup>Portland Parks and Recreation. (2002) *Waterfront Master Plan*. Portland: City of Portland. Retrieved from <http://www.portlandonline.com/parks/finder/index.cfm?action=ViewFile&PolPdfsID=328&/Waterfront%20Park%20Master%20Plan.pdf>

<sup>31</sup> Portlandbeer.org. (2008, August 2). *Oregon Brewers Festival Bucks the Economic Downturn, Celebrates Banner Year with Record Attendance and Sales*. PortlandBeer.org. Retrieved from <http://www.portlandbeer.org/blog/tag/press-release/page/2/>

<sup>32</sup>White, Ryan. "Waterfront Blues Festival Day 4: Is the Blues Dead, or Has It Moved to Sweden?" *The Oregonian*. OregonLive.com, 6 July 2010. Web. [http://www.oregonlive.com/music/index.ssf/2010/07/waterfront\\_blues\\_festival\\_day\\_3.html](http://www.oregonlive.com/music/index.ssf/2010/07/waterfront_blues_festival_day_3.html)

<sup>33</sup> Oregon Uncovered *Portland Saturday Market*. World News. Retrieved from [http://wn.com/Portland\\_Saturday\\_Market/](http://wn.com/Portland_Saturday_Market/)

<sup>34</sup> Portland Development Commission. *RiverPlace: At A Glance* Portland Development Commission. Retrieved from [http://www.pdc.us/pdf/dev\\_serv/pubs/riverplace-casestudy.pdf](http://www.pdc.us/pdf/dev_serv/pubs/riverplace-casestudy.pdf)

<sup>35</sup> Portland Development Commission, *RiverPlace*.

<sup>36</sup> Portland Development Commission, *RiverPlace*.

<sup>37</sup> Portland Development Commission, *RiverPlace*.

<sup>38</sup> Buntin, Simmons B. (2005) *Unsprawl Case Study: Portland's RiverPlace*. Terrain.org, 2005. Retrieved from <http://www.terrain.org/unsprawl/7/>

<sup>39</sup> Portland Development Commission. *Pioneer Place: Phase I*. Portland Development Commission. Retrieved from [http://www.pdc.us/pdf/dev\\_serv/pubs/pioneerplace-casestudy.pdf](http://www.pdc.us/pdf/dev_serv/pubs/pioneerplace-casestudy.pdf)

## Appendix A: Portland: Harbor Drive Freeway

**Table 4.1: Costs/Revenue from Large Scale Developments in the DTWF URA**

	Cost of project	Estimated Property taxes generated (as of 2002)	Estimated Revenue generated (as of 2002)
<b>RiverPlace</b>	\$84.3 million	\$1.45 million	\$67 million
<b>Pioneer Place</b>	\$147 million	\$1.26 million	\$70 million
<b>Yards at Union Station</b>	\$50 million	N/a	N/a

Source: Portland Development Commission

at \$70 million and has generated \$1.26 million in property tax revenue.<sup>40</sup> Pioneer Place continues to be one of the most attractive retail destinations in the city and brings in visitors from the surrounding local and outside areas. Pioneer Place is also located in close proximity to the Pioneer Courthouse Square, a public space that is also the origin of multiple light rail lines in Downtown Portland.

Development has not been limited to expensive housing and retail in the DTWF URA. A mixed income, multi-family development designed to accommodate more than 650 residents in heart of the River District Neighborhood, The Yards at Union Station were completed in two phases (Phase 1 in 1998 and Phase 2 in 2000) using a variety of funding sources. The funding sources used to construct the \$50 million project included: Low Income Housing Tax Credits (LIHTC), developer equity, city funds for public improvements, PDC Loans, tax abatements, and tax exempt bond financing from the Oregon Housing Authority.<sup>41</sup>

Half of the 158 affordable rental units built during the first phase of the development were reserved for individuals earning less than 60% of median income.<sup>42</sup> During the second phase of development, 56 apartments were for sale at market value, while 40% of the 321 available for rent were reserved for individuals earning less than 60% of the local median income, and another third was designated as affordable housing.<sup>43</sup> The development is one of the first housing projects in the River District (adjacent to the DTWF URA). The Yards requires only .75 parking spaces per unit as a means of minimizing congestion of automobiles and increase in public transit with its close proximity to the light rail.

These large-scale developments projects have had significant economic impact on Portland in the area near the former Harbor Drive Freeway. The Portland Development Commission is currently working on several other large-scale projects that will have a positive impact on the local economy vitality of Downtown Portland.

<sup>40</sup> Portland Development Commission, Pioneer

<sup>41</sup> Portland Development Commission. *River District: The Yards at Union Station*. Portland Development Commission. Retrieved from [http://www.pdc.us/pdf/dev\\_serv/pubs/dev\\_proj\\_fs\\_yards.pdf](http://www.pdc.us/pdf/dev_serv/pubs/dev_proj_fs_yards.pdf)

<sup>42</sup> Portland Development Commission, River District.

<sup>43</sup> Portland Development Commission, River District.

These projects include improvements to Tom McCall Waterfront Park, the revitalization of Old Town/ Chinatown, Ankeny/ Burnside, and the establishment of the permanent Saturday Market. According to the PDC Waterfront Development Opportunities Project, there are 13 blocks available for redevelopment, an estimated \$4.5 million in estimated annual tax revenue, and roughly \$200 million in market value increase as well.<sup>44</sup>

The Portland Development Commission has also already started creating plans for the revitalization of two blocks in Old Town/ Chinatown as a means of increasing tourism in the somewhat depressed area. The PDC is also working on creating a permanent, year around, public market in Ankeny Square. Based on the financial success of the existing Saturday Market, this project seems as though it will be very successful in the near future.



Figure 4.7: The Yards at Union Station.

Source: [www.realsave.com](http://www.realsave.com)

All in all, the tearing down of the Harbor Drive Freeway has created a plethora of economic opportunities for the Downtown Waterfront Urban Renewal Area and the city of Portland. The removal of the freeway not only was historically significant for anti-freeway activists, but also was a huge catalyst for economic development and sustainability for the city Portland as well.

<sup>44</sup> Lewis, Bowers, and Amy Dowell. *PDC Waterfront Opportunities Project*. Rep. Emmons Architects.

### 4.4 Environment

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In the 70s, before Harbor Drive closed, the road still averaged around 24,000 vehicles per day. At a total distance of three miles, that is roughly 72,000 vehicle miles daily on the Harbor Drive Freeway.<sup>45</sup> Based on today's emission standards at .0465 mile per gallon, that was about 3,348 gallons used on that stretch alone every day.<sup>46</sup> For CO<sub>2</sub>, at 72,000 total miles per day and at .916 pounds emitted for every mile, that is an estimated 65,952 pounds a day.

Similarly, if the Portland traffic engineers' estimates held true from 1969, and there really did end up being 90,000 vehicles per day in 1990, then the above numbers increase greatly.<sup>47</sup> The gallons burned would reside at 12,555 gallons per day, and the CO<sub>2</sub> emissions increase to 247,320 pounds coughed up daily.

Roughly 12,839 days have passed since Harbor Drive became a park and in that amount of time, had numbers remained unchanged since 1970 *and* if all cars previously driving that route were to continue driving that exact route, 42,984,972 gallons of fuel would have been spent in total. Furthermore, an additional 846,757,728 pounds of CO<sub>2</sub> would have been released into the air.

However, things did not remain constant as The Harbor Drive Freeway was torn down in Portland. Robert Cervero found before and after comparisons for Harbor Drive showing 9.6% fewer vehicle trips on surrounding roads.<sup>48</sup> Based on the above numbers, that significantly decreases them both. It also suggests that by removing the road and thereby reducing the number of trips, that the removal of the expressway was an overall better and healthier alternative than keeping it.

Reducing roadway capacity reduces the overall number of auto trips. While that sounds somewhat commonsense, the benefits derived from this reduction are not. These benefits include "decreased energy usage and carbon emissions; improved air quality and [overall] public health; increased safety for motorists...; and a reduction in fumes and noise pollution."<sup>49</sup> In fact, ozone and particulate matter stemming from exhaust have both been connected to lung development issues and asthma within children.<sup>50</sup> The

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<sup>45</sup> Preservation.

<sup>46</sup> US EPA. (2000). *Emission Facts: Average Annual Emissions and Fuel Consumption for Passenger Cars and Light Trucks*.

<sup>47</sup> Seattle, 6B-2

<sup>48</sup> Cervero, R. (2006). Proceedings from the International Symposium for the 1<sup>st</sup> Anniversary of the Cheonggyecheon Restoration: *Freeway Deconstruction and Urban Regeneration in the United States*. Seoul, Korea.

<sup>49</sup> Seattle, 6A-1

<sup>50</sup> Handy, S. (2006). The Road Less Driven. *Journal of the American Planning Association*, 274-278).

9.6% reduction in trips goes a long ways in lessening the effects of these ailments.

Additionally, Portland has seen a 65% decrease in crime in the area surrounding the former freeway as compared to just a 16% drop for the rest of the city (Seattle Urban Mobility Plan). Factor that into the overall improvement in quality of life, increase in nearby property values, and generally healthy growth in the area, and it proves to be a generally healthy environment.

### 4.5 Travel Patterns

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Despite skepticism by transportation experts and civil engineers, the removal of the Harbor Drive Freeway in 1974 has had minimal negative impacts on travel patterns throughout the city of Portland. The creative urban design of downtown streets, the successful diversion of traffic to alternative freeways, bridges and roadways, and the development of an extensive intermodal public transit system have contributed to the alleviation of congestion, environmental degradation, and automobile dependency surrounding the former Harbor Drive Freeway and throughout the rest of the city as well.

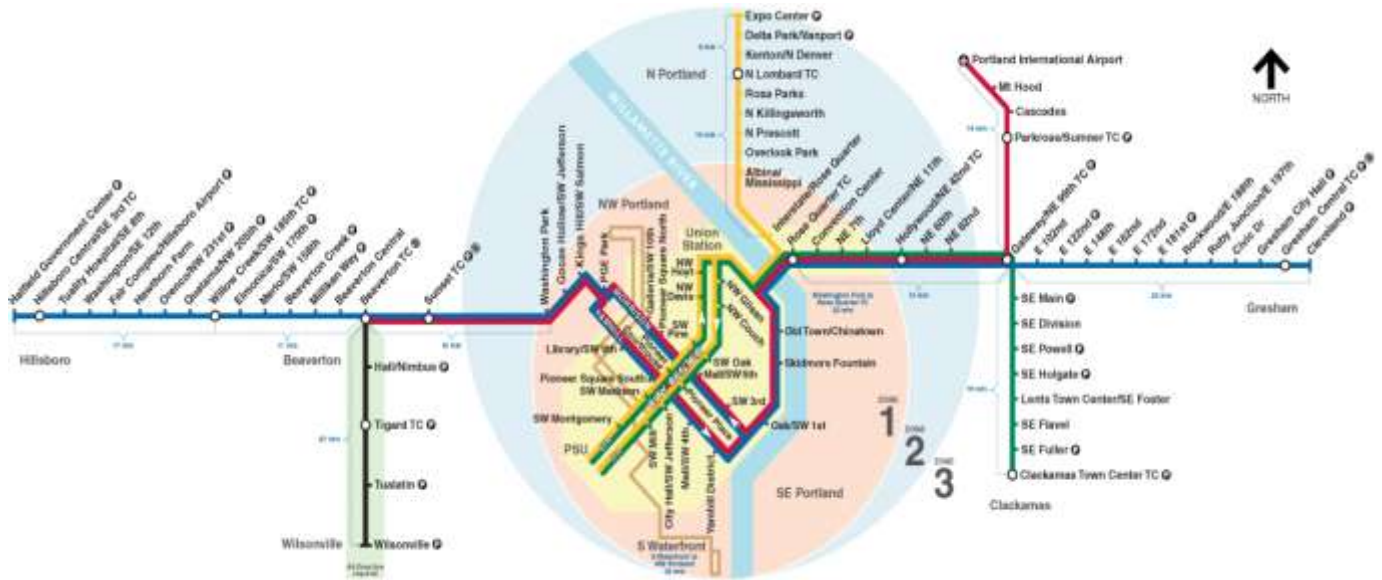
As has been stated above, city planners and traffic specialists understood that they needed to redesign the street grid pattern in Downtown Portland in order to accommodate more automobiles after the Harbor Drive Freeway was closed. To alleviate some of the hysteria and frenzy caused by this removal, civic leaders gave proper notice of the road closure to Portland residents. Certain modifications were made to street grid patterns in the Downtown District as well. Planners redesigned the streets to be one-way, altered traffic signals to allow for more fluid flow of traffic, and speed limits were reduced as a means of increasing safety for pedestrians and bicyclists.<sup>51</sup> The development of the Naito Parkway along the Tom McCall Waterfront Park served as a wide boulevard that provided as an adequate replacement for the Harbor Drive Freeway to drivers for whom this route was unavoidable.

The Harbor Drive Freeway was eventually closed when the construction of the Fremont Bridge had been completed which connected I-405 to I-5. There was a substantial increase in the number of drivers on I-5 and I-405, but some of the congestion was minimized by the development of the Fremont Bridge. The creation of the bridge improved the connectivity between the two major freeways. A change in attitude by residents and civic leaders against freeways also contributed to minimal growth in congestion on existing freeways of the time. Anti-freeway activists were gaining support of Portland citizens, which could have contributed to less congested freeways.

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<sup>51</sup> Seattle, 6B-1.

## Appendix A: Portland: Harbor Drive Freeway



**Figure 4.8: Map of Tri-Met MAX Light Rail Lines.**  
 Source: <http://trimet.org/maps/railsystem.htm>

The most significant change in travel patterns that has occurred since the removal of the Harbor Drive Freeway is the massive increase in the number of commuters choosing to use public transit services rather than drive private automobiles. The development of Portland’s sophisticated transit system, Tri-Met, has caused gradual decline in automobile trips near the former Harbor Drive Freeway and throughout the entire Metro region as well. Many of the citizens, whom advocated for the removal of the Harbor Drive Freeway, were in favor of minimizing the environmental impacts of the automobile, increasing pedestrian mobility, and investment in adequate public transit. Citizens were able to divert funds allocated for other highway projects in Portland and to create the city’s first light-rail line. Since the 1980s, four different lines have been built with 85 total miles and as of 2008, serving roughly 118,200 riders per day on all lines.<sup>52</sup>

Affordable fares, efficient service, and easy access to multiple lines from various locations have perpetuated continued growth of ridership in all areas of the city, especially in the Waterfront and Downtown neighborhoods. The Red and Blue MAX lines run near the former Harbor Drive Freeway, and most likely function as alternative transit for those who would have utilized the Harbor Drive Freeway if it was still in existence. In 2008, 21.91 million riders used the MAX Blue line (average 60,027 per day), while the Red Line saw 8.83 million trips (roughly 24,191 per day).<sup>53</sup> Less than half a mile from Tom McCall Waterfront Park (former site of the Harbor Drive Freeway) is several Green, Yellow, Blue and Red

MAX line stations as well. Individuals living near the Waterfront and downtown have plenty of access to all modes of the Tri-Met network.<sup>54</sup> Congestion and overcrowding on other major highways and the grid-street pattern near the site of the former Harbor Drive Freeway has been greatly avoided, due to high ridership rates on the MAX and other Tri-Met transit systems.

### 4.6 Community Impacts

Looking at community impacts from the removal of Harbor Drive Freeway, one sees that the few that have lasted are largely positive. As opposed to other highway deconstructions that have taken place around the country, the Harbor Drive Freeway was not taken down because of safety concerns or an estimated high cost of expansion versus demolition. Interests to the public and making downtown Portland a more inviting place for all people directly fueled this project.

In terms of negative impacts, there were more present when the highway was still in operation than after it had closed. For one, the I-405 Freeway, which ran around the downtown, was not easily accessible to trucks heading to the industrial district in Northwest Portland resulting in them using Harbor Drive.<sup>55</sup> As result of this, truckers were one of the voices in the community speaking up against the removal of the freeway according to former chair of the Portland Development Commission Elaine Cogan, “The only people who really objected were the truckers, because they said, „We can’t get to North Portland.’ And that’s how

<sup>52</sup> Redden, Jim. (2008, July 12). Tri- Met Ridership Sets New Records. *Portland Tribune*. Retrieved from [http://www.portlandtribune.com/news/story.php?story\\_id=121581282918348800](http://www.portlandtribune.com/news/story.php?story_id=121581282918348800)

<sup>53</sup> Tri-Met. About Tri-Met, History of Max Lines. Tri-Met. Retrieved from <http://trimet.org/about/history/index.htm>

<sup>54</sup> Tri-Met. *Stops and Stations*. Tri-Met. Retrieved from <http://trimet.org/go/cgi-bin/cstops.pl>

<sup>55</sup> Baldwin, Bob interview with Ernie Bonner, December 1994, <http://www.pdx.edu/usp/planpdxorg-interview-robert-baldwin>



## Appendix A: Portland: Harbor Drive Freeway

I-405 came about. That was a way of saying, „Okay, we'll give you another route.”<sup>56</sup>

This freight corridor clearly made for a very unfriendly environment for pedestrians and bicyclists to try and negotiate with, only to get to the small existing waterfront park. A 1969 report by the Portland City Club stated:

The present combination of Harbor Drive and Front Avenue along the river leaves only a narrow green strip and islands of grass and trees, which are more pleasant for the passing motorist than asphalt paving, but do nothing to attract people to the area. Pedestrian access across Front Avenue is so difficult and the fast traffic on Harbor Drive is so dangerous that little use is made of the area except when the fleet is in during the annual Rose Festival and policemen supervise traffic.<sup>57</sup>

The other leading group against the removal was the local traffic engineers. The engineers, led by Don Bergstrom, justified the need to expand the freeway by citing the projection of 90,000 trips a day by 1990 and that closing it would cause massive traffic congestion as mentioned above.<sup>58</sup> A critic of this viewpoint, however, was Richard Ivey (director of the downtown plan partnership for engineering firm CH2M) who predicted, “If you let people know well ahead of time that you're going to close Harbor Drive, people who use it now will use I-405 which is under-used right now, some of them will cross the river and take both bridges because they're headed for the Northwest district to go to work. The river is a psychological barrier, but the fact is that the distance involved isn't much more.”<sup>59</sup> This did prove to be the case as roads and bridges around the freeway saw a reduction of 9.6% after the closure.<sup>60</sup>

Residents and local businesses were largely in favor of the removal of the freeway both because of the proposed increased access to the waterfront, and the parallel I-5 on the other side of the river.<sup>61</sup> A public interest group founded by community activists and architects, Riverfront

<sup>56</sup> Cogan, Elaine interview with Ernie Bonner, December 18, 2002, <http://www.pdx.edu/usp/planpdxorg-interview-elaine-cogan>

<sup>57</sup> Portland City Club. (1969). *Interim Report on Journal Building Site Use and Riverfront Development*. Portland, OR: Special Committee, David J. Lewis (Chair). Retrieved from

[http://www.pdxcityclub.org/system/files/reports/Building\\_Development\\_1969.pdf](http://www.pdxcityclub.org/system/files/reports/Building_Development_1969.pdf)

<sup>58</sup> Preservation

<sup>59</sup> Ivey, Dick interview with Ernie Bonner, (1995). Retrieved from <http://www.pdx.edu/usp/planpdxorg-interview-richard-ivey>

<sup>60</sup> Cervero.

<sup>61</sup> Thompson, Gregory L. (2007). Taming the Neighborhood Revolution: Planners, Power Brokers, and the Birth of Neotraditionalism in Portland, Oregon. *Journal of Planning History*. 2007 6: 214. doi: 10.1177/1538513206297457

For People, was instrumental in getting the community voice heard in the process, by their peaceful picnics in the area where the freeway was to be expanded.<sup>62</sup> These helped to encourage the governor to schedule a public hearing on the expansion project.<sup>63</sup> The resulting hearing featured an outpouring of community voices both against existing proposals for the freeway and in favor of eliminating the route altogether.<sup>64</sup>

One positive impact the community saw was a new sense of empowerment against the current model of highway expansion. The same year that the Harbor Drive Freeway was closed, residents won a lawsuit effectively killing the Mount Hood Freeway from continuing to develop and instead the city used federal money to develop its light rail system. As Gregory Thompson identified, it was a crucial victory for the city in, “regaining control over the design of its transportation system from technocrats in the state capital and in DC.”<sup>65</sup>



**Figure 4.9: Free Community Bike repair station, Tom McCall Waterfront Park, 2010. Source: Author.**

The single loudest voice for removal as well as community involvement was Oregon's Governor at the time, Tom McCall. McCall who, was an environmentalist and created a documentary prior to taking office about the Willamette River (Disaster in Paradise), pushed for the removal of the freeway and increased waterfront access, largely to benefit the public. At a meeting in October of 1968, he stated, “We cannot afford to spawn, through inattention and inaction, a sort of a Berlin Wall of layer upon layer of cement and high-speed traffic which would bar our citizens from what should and must be one of the most attractive, livable and useful sections of the core city.”<sup>66</sup> Former Oregon Land Conservation and Development Commission Director Arnold Cogan remembered, “[Governor McCall] didn't have a specific idea of what it

<sup>62</sup> Bonner, Ernie. *Riverfront for People*. PlanPDX.org. Retrieved from <http://www.pdx.edu/usp/planpdxorg-riverfront-people>

<sup>63</sup> Preservenet

<sup>64</sup> Bonner

<sup>65</sup> Thompson.

<sup>66</sup> Portland City Club.

## Appendix A: Portland: Harbor Drive Freeway

should be, he just knew that Harbor Drive shouldn't be there, and that it ought to be an open green space.”<sup>67</sup>

One of the biggest impacts on the community is what sits in the footprint of the former freeway. A report issued in 1969 outlined the final project should, “be varied so as to provide for and encourage activities at all seasons of the year and over a large number of hours of the day [...] Easy and attractive access to the river itself should be provided to pedestrians for scenic and recreational purposes.”<sup>68</sup>

Today the 36.59-acre Tom McCall Waterfront Park and greenway allows visitors and residents alike to take advantage of views of the Willamette River and recreational opportunities. Among its ample bicycle and pedestrian paths and green space, the park hosts many different festivals and public events. It is home to the Portland Saturday Market, which moved to its current location in 1976, and is open every weekend from March through December earning it the title of, “Largest continually operating outdoor arts and crafts market in the nation.”<sup>69</sup> The park also served as a campaign rally for President Obama in May of 2008, hosting 75,000 people including some in kayaks watching from the river, a task that could never have happened were the freeway still in use.

### 4.7 Conclusion

The removal of the Harbor Drive Freeway was in the best interest of the environment, the public, and future growth of Portland. Like many other things that Portland has done and continues to do, this project has served as a model in city planning both nationally and internationally with cities as far away as Seoul, South Korea following suite. When Robert Moses came to Portland after World War II, he suggested two things: create massive parks and a sprawling concrete highway system. As history has shown, Portland made the correct choice in which of the two directions to follow, and in turn end up leading the rest of the world.



**Figure 4.10: Portland, OR with former site of Harbor Drive Freeway at center of image, 2003.**

**Source: Portland Development Commission.**

<sup>67</sup> Cogan, Arnold interview with Ernie Bonner, December 10, 1999. Retrieved from <http://www.pdx.edu/usp/planpdxorg-interview-arnold-cogan>

<sup>68</sup> Portland City Club.

<sup>69</sup> Portland Saturday Market. (2010). *About the Saturday Market*. Retrieved from <http://www.portlandsaturdaymarket.com/index.htm>.

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## 5 San Francisco: Central Freeway

### 5.1 History

California's Division of Highways decided that San Francisco needed highway connections both outside of the city and also routes throughout the city. By 1945, the state had laid out a plan of freeways. However, as plans were made and construction started, the ugliness of the plan became clear. Citizens soon saw the demise of dense residential neighborhoods.

One of these routes - the Central Freeway - was planned to bring about a web of freeways within the city. The original plan for the freeway was broken up into two parts. One part would go past the Civic Center and continue through the city and connect to the Golden Gate Bridge. The second part would go half-way through Golden Gate Park and also end by connecting to the Golden Gate Bridge (Figure 5.1).

Construction began in the 1950s, and the first phase of the Central Freeway opened in 1959. At first, the only part that was built was a freeway spur to the west of San Francisco's Civic Center. The double-deck concrete structure demolished a wide right-of-way through houses along Division and Octavia Boulevards (Figure 5.2). Over the next five years, other neighborhood groups realized that the same thing was planned for their neighborhoods, and they revolted, otherwise known as the San Francisco Freeway revolt (Big Disasters, 2001).



**Figure 5.2: The southern portion of the Central Freeway loomed over Octavia Street.**

In 1959, due to this revolt and city-wide protests to protect cherished neighborhoods, city's supervisors voted to kill seven of the ten planned freeway projects in the 1951 plan. Thirty thousand residents signed a petition to shut down the construction (Big Disasters, 2001). Their voices were heard; construction stopped. This left the freeway incomplete. The portion of the Central Freeway continuing up Van Ness to the Golden Gate Bridge was halted, as were plans to build several other cross-town routes. It went from I-80 across Market Street and through the Hayes



**Figure 5.1: Map of San Francisco showing Civic Center, Golden Gate Bridge, Golden Gate Park, I-80, Market, Fell, and Oak Streets**

Valley neighborhood. When the project was stopped, ramps connected to Fell and Oak Streets (Figure 5.1). It was a one way route but helped move traffic effectively.

In the early part of 1960, the freeway planners tried resurrecting the freeway that would go through Golden Gate Park through a place called the Panhandle. In 1964, Sue Bierman organized a campaign against this proposed plan. Politicians ignored this initially, but not after they noticed that voters were becoming influenced. Mayor Shelley was a firm supporter of the freeway because its construction created jobs. However, the day before the vote, Bierman was walking in Golden Gate Park with Supervisor Jack Morrison, who was planning to vote for the freeway project, though he was known as an anti-growth activist. As they walked, she pointed out the trees that would be removed in order to build the freeway. Morrison was quiet for a long time, and then he made the decision to vote against the freeway (Preservation Institute, 2007). If it had not been for his last minute change of heart, the freeway would probably have been built.

In 1989, while millions watched the World Series that was being held in San Francisco, the Loma Prieta earthquake damaged the northern portion of the Central Freeway so badly that experts said it could not be rebuilt (Preservation Institute, 2007). It was removed in 1992, and the Board of Supervisors voted to ban any new freeways north of Market Street (Figure 5.3). This ban made it impossible to replace any part of the Central Freeway, and the area would now be used for housing. There was a remaining stretch of freeway north of Market Street that ran above Octavia Street. In 1995, the city task force suggested the freeway should be replaced by a surface boulevard, named Octavia Boulevard. This would help local traffic to move quicker.

The State of Department of Transportation decided that this freeway was worth saving. The freeway was reopened to traffic and plans were made to demolish its upper deck and provide growth to the lower deck. In the fall of 1996, they began demolishing the upper deck.

## Appendix A: San Francisco: Central Freeway



**Figure 5.3: Demolishing San Francisco's Central Freeway (Preservation Institute, 2007)**

Meanwhile, Patricia Walkup and Robin Leavitt were leaders of the movement for highway removal. They wanted to replace the freeway with Octavia Boulevard. Mayor Willie Brown was in favor of this plan but residents of the western part of San Francisco wanted the freeway rebuilt for their benefit. In 1997, Mayor Brown was convinced by his western San Francisco constituents to reopen the lower deck of the freeway to traffic. He eventually withdrew his support for the Octavia Boulevard plan. The plan to rebuild passed, and designs for the new freeway began to be created. However, in 1998, the opponents of the freeway, led by Walkup and Leavitt, rallied supporters and placed the issue on the ballot once again. This time, the removal of the freeway was settled in favor of the freeway opponents (Preservation Institute, 2007). Debate went back and forth about which parts of the freeway should be demolished. Environmentalists wanted to demolish the southern part, and there was additional pressure to keep the freeway overpass over Market Street, which would allow it to connect with Octavia Boulevard. Finally, an agreement was reached in which there would be no overpass over Market Street, but

instead, a route would be built through a light-industrial district south of Market Street. Once the plan had been developed to remove certain parts, they now faced the task of removing the lower part of the Central Freeway.

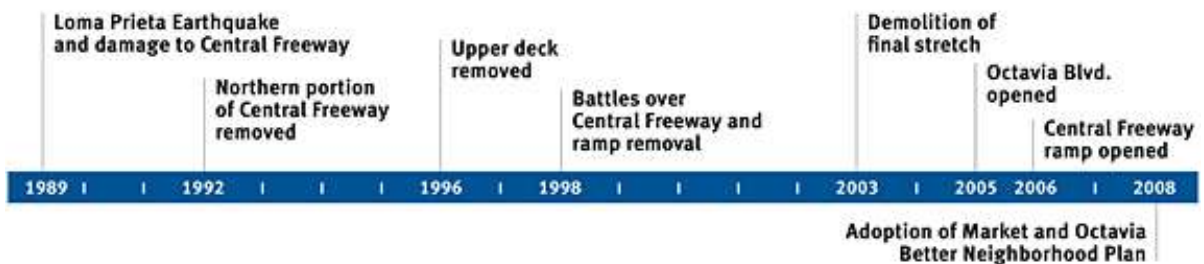
The proposed boulevard was designed by a team led by Allan Jacobs, formerly San Francisco Planning Director



**Figure 5.4: Central Freeway (south of Market Street) leading to Octavia Boulevard**

and a professor at UC Berkeley (Preservation Institute, 2007). The boulevard would be one hundred thirty-three feet wide with four lanes for traffic, a grassy median, and two bicycle and pedestrian lanes. Buffers would be made to make the road less noisy for nearby residents. The San Francisco Planning Department developed a plan for transit and a new park near the end of the freeway. The center lanes towards the end were not needed so they have been replaced by a park and playground. The final stretch of the Central Freeway was removed in 2003 almost fourteen years after the Loma Prieta earthquake (Figure 5.3). Octavia Boulevard was finally completed in 2005. The Central Freeway south of Market was completed in 2006 (Figure 5.4).

The area brought about great economic opportunities. Interesting restaurants and shops began to appear on Hayes Street and attract people who worked in the Civic Center. In June 2006, the Octavia Boulevard was given the Freeway Project of the Year award by the California Transportation Foundation. The park at the end of the



**Figure 5.5: A timeline of historical Central Freeway events (<http://www.sfcta.org/content/view/655/431>)**

## Appendix A: San Francisco: Central Freeway

freeway was named after activist Patricia Walkup who died just a few days after the project completion.

The San Francisco Freeways were failures in planning, engineering, and design. The plans failed because they did not take into account the new problems they might create. There was no consideration to integrate freeway traffic or to build a transit system that might better fit in with the areas. It all resulted in huge costs to the city in depressed land values, increases in crime, and urban decay (Big Disasters, 2001).

The 1989 Loma Prieta earthquake began a transformation that led to the opening of the Octavia Boulevard/Central Freeway in 2005 and the adoption of the Market and Octavia Better Neighborhood Plan in 2008. The Octavia Boulevard project redefined traffic engineering planning with sensitive solutions. The Octavia Boulevard project provides neighborhood access to a regional freeway while providing an attractive public space. A timeline of key Central Freeway/Octavia Boulevard events is shown here (Figure 5.5).

### 5.2 Community Impacts

As previously stated, the San Francisco Freeway system was a failure. Planners and state officials did not consider the problems a freeway system would create. There should have been more consideration to build a transit system that benefits the whole San Francisco community. Negative impacts arose for several neighborhoods that the Central Freeway passed through. The freeways led to an increase in neighborhood crimes, urban decay, and depressed land values in the communities of Hayes Valley and Market and Octavia Streets. However, since the removal of the Central Freeway, these areas have rebounded and are continuing to prosper.

The destruction of the freeway made city officials look at several issues and options for the new transit system. First, did San Francisco want to build new facilities, seismically retrofit existing facilities, or replace structures with slower moving at-grade facilities? Second, while fixing the transit system, did the city want to open up access to waterfronts, remove physical obstructions, and redevelop economically stagnant neighborhoods? City officials listened to their citizens. Officials elected to build a new surface level transit system that will lead eventually to the redevelopment and betterment of crime-ridden and/or economically depressed neighborhoods. San Francisco communities such as Hayes Valley and the Market/Octavia neighborhoods have prospered since the freeway was removed.

San Francisco tore down several miles of the Central Freeway. Figure 5.6 shows the northern stub of the Central Freeway before removal. Central Freeway was replaced with a beautifully landscaped boulevard, a new and improved transit system, bikeway and pedestrian facilities, as well as new public community areas. San Francisco



Figure 5.6: The northern stub of the Central Freeway before highway removal.



Figure 5.7: The northern stub of Octavia Boulevard after highway removal.

helped pave the way for a reform in the way people view urbanization. Cities and communities, like San Francisco's Hayes Valley Neighborhood, that have opted to build at-surface boulevards in the place of freeways have experienced a transformation or "renaissance" for the better. Figure 5.7 is an after-shot of the northern end.

According to Marnie Hunter of CNN, the Hayes Valley neighborhood was "crime plagued" before the Loma Prieta Earthquake damaged the freeway overpass in 1989 (Hunter, 2007). Home to prostitutes and drug dealers, Hayes Valley was a place to avoid. After the Loma Prieta, the city put in a tree-lined boulevard instead of rebuilding the freeway. Hayes Valley is now filled with "stylish shops, restaurants, and galleries" (see Figure 5.8). Businesses have been continually moving into the neighborhood's "colorful storefronts" and Victorian buildings, helping to drive out the crime of the past.

The demolition of the Central Freeway supported the development of the Market & Octavia Plan. The Market & Octavia Plan is a comprehensive land use and transportation strategy for almost 400 acres of the San Francisco community and Hayes Valley area. Planning professors Allan Jacobs and Elizabeth Macdonald from the University of California, Berkeley, designed the Octavia Boulevard to meet the needs of the local community's traffic (Blackwell, 2006). Figure 5.9 shows the Octavia Boulevard design plan. The affected area begins at Market Street, stretching nine blocks till Hayes Street.

## Appendix A: San Francisco: Central Freeway



**Figure 5.8:** Photo by Ingrid Taylor © 2007. Hayes Street is the main artery of Hayes Valley – a neighborhood that until the late 80s suffered for a noisy freeway ramp and a reputation for crime and drug-related problems (about.com).

Another important point is the creation of many new public spaces and public parks for citizens to use. For example, revenues from the sales of the freeway’s parcels were used to fund construction of a 16,500 square foot park (City of Seattle, 2008). This 16,500 square foot park is otherwise known as Patricia’s Green, named after community activist Patricia Walkup. Patricia’s Green is located at the intersection of Octavia Boulevard and Hayes Street’s retail strip. A second example of more public green space includes Octavia Boulevard itself. The boulevard was designed as somewhat of “linear park.” The street is lined with sidewalk cafes, shops, and beautifully landscaped green space for citizens and visitors to enjoy.

### 5.3 Economic Impacts

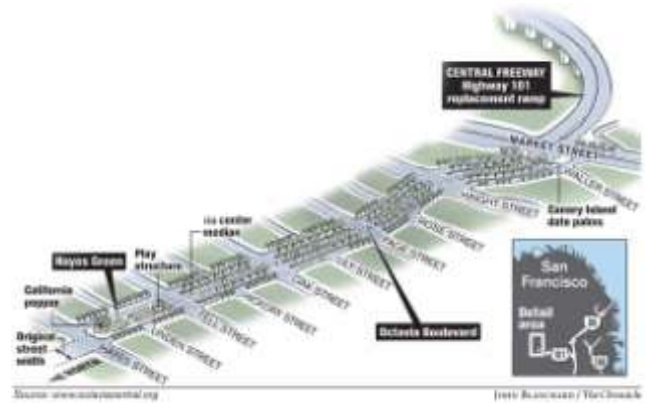
Demolition of the Central Freeway presented substantial redevelopment opportunities. Seven acres of land contained 22 parcels. The city’s General Plan and the Better Neighborhood Plan for the Market and Octavia Neighborhood indicate that approximately half of the parcels were used for affordable and senior housing (SF Planning Dept, 2008). The other parcels were sold by the city to private developers for high density mixed use projects (Ocuillbo, 2007). The City of San Francisco made around \$35 million from the sales of the old Central Freeway land lots to make investment on transportation and affordable housing (Wang, 2009).

Two adjacent parcels around the Hayes Valley intersection were transformed into a creative compound, including restaurants and galleries. Table 5.1 compares the occupied and vacant numbers of housing units in 1990 and 2000 in

**Table 5.1: Occupancy Status**

	Year 1990	Year 2000
	Tract 168.98, San Francisco County, California	Census Tract 168, San Francisco County, California
<b>Occupied</b>	<b>3030</b>	<b>3194</b>
<b>Vacant</b>	<b>285</b>	<b>119</b>
<b>Total</b>	<b>3315</b>	<b>3313</b>

Source: U.S. Bureau of the Census 1990, 2000 Census of Population and Housing



**Figure 5.9:** Design Plan for the Octavia Boulevard (www.octaviacentral.org)

Census Tract 168 where contains Octavia Boulevard, formerly the elevated Central Freeway. From 1990 to 2000, the percentage of vacant housing units in the area has decreased by 58%.

Since the removal of Central Freeway, the Market & Octavia neighborhood has gone through a complete transformation like the Hayes Valley neighborhood. Houses and condos in the area were renovated and upgraded. Vacant land and blighted buildings were purchased and developed for residential and commercial purposes.

The transformation of Hayes Valley into a hip, stylish area has also helped to increase real estate prices in Hayes Valley and in San Francisco. From 1996 to 2006, the average sales price of a Hayes Valley condo nearly quadrupled. The average sales price of a Hayes Valley condo rose over half a million dollars, from \$203,000 to \$760,000 (City of Seattle, 2008). Hayes Valley’s average condo prices were 66% of the average for all of San Francisco in 1996. By 2006, average condo prices increased to 91%.



**Figure 5.10:** Twenty-two parcels were available for redevelopment along Octavia Boulevard (<http://www.socketsite.com/archives/Octavia%20Parcels.jpg>)



## 5.4 Environment and Travel Behavior

Urban designer Elizabeth Macdonald (2006, P6) writes about the possible traffic impacts of boulevards that replace freeways, “Focusing on every potential traffic conflict or possible bad-driver behavior and trying to solve each by adding greater lane widths, wider turn radii, great tree setbacks, or more movement restrictions is a misapprehension of the complex manner in which good boulevards operate.” Yes, the removal of the freeways would reduce the capacity of the roadway in the short term. However, studies found that traffic and congestion was diverted and spread more evenly throughout other roadways. Yes, the traffic congestion and car-pedestrian accident levels may increase. This will most likely happen, since Octavia Boulevard was designed to be bike and pedestrian friendly. So, since the removal of the Central Freeway, how did commuters respond to the changes? Did motorists switch to carpooling, bicycling, or walking? Or maybe they choose not to make their commute anymore?

According to Billheimer, etc. (1998), a 1996 travel behavior survey shows 76% of the 8,000 drivers who previously used the freeway had shifted their commute to another freeway, while 11% used city streets for their entire trips, 2.2% switched to public transit, and 2.8% said they no longer made the trip previously made on the freeway. The survey also revealed that nearly 20% of the survey takers made fewer trips since the freeway closure (Figure 5.11). There is no evidence that closing of the Central Freeway had any significant impact on carpooling propensities in the Area.

With the completion of Octavia Boulevard in 2005, the residents’ travel behaviors changed. San Francisco’s Octavia Boulevard is a four-block-long multi-way boulevard. It has narrow one-way access roadways on each side for slower traffic and parking, and finally, at the edges, tree-lined sidewalks. Although only a few miles long, Octavia Boulevard is the first true multi-way boulevard built in the United States since about the 1920s (Macdonald, 2006). Octavia Boulevard has been honored

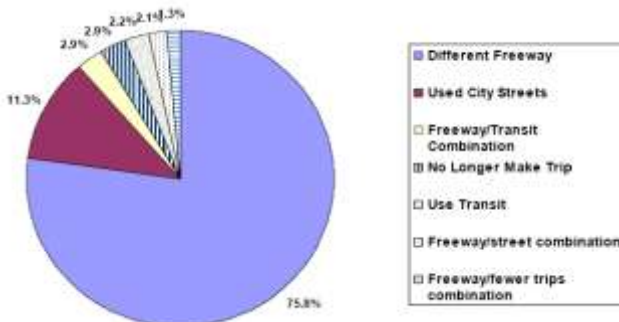


Figure 5.11: Source of traffic shifts following removal of San Francisco’s Central Freeway, Cervero, R. (2006)

**Table 5.2: Commuting Characteristics by Sex in Census Tract 168**

Subject	Total	Male	Female
Workers 16 years and over	4,230	2,497	1,733
<b>MEANS OF TRANSPORTATION TO WORK</b>			
Car, truck, or van	25.7%	29.6%	20.0%
Drove alone	21.7%	26.2%	15.2%
Carpooled	3.9%	3.4%	4.7%
Workers per car, truck, or van	1.1	1.06	1.21
Public transportation (excluding taxicab)	47.0%	43.1%	52.6%
Walked	9.8%	8.3%	11.9%
Bicycle	6.7%	6.7%	6.6%
Taxicab, motorcycle, or other means	1.5%	1.8%	0.9%
Worked at home	9.4%	10.4%	8.0%

Source: American Community Survey, 2005-2009

**Table 5.3: Commuting Characteristics by Sex in San Francisco**

Subject	Total	Male	Female
Workers 16 years and over	431,900	233,992	197,908
<b>MEANS OF TRANSPORTATION TO WORK</b>			
Car, truck, or van	46.7%	48.2%	45.1%
Drove alone	38.9%	40.4%	37.0%
Carpooled	7.9%	7.7%	8.0%
Workers per car, truck, or van	32.4%	29.8%	35.5%
Public transportation (excluding taxicab)	9.6%	9.6%	9.6%
Walked	2.6%	3.2%	2.0%
Bicycle	1.9%	2.4%	1.3%
Taxicab, motorcycle, or other means	6.7%	6.8%	6.5%
Worked at home	431,900	233,992	197,908

Source: American Community Survey, 2005-2009

at the local and national level, including an award from the American Planning Association. The boulevard begins on the north side of Market Street, across from broad ramps leading to and from Highway 101. The Octavia Boulevard which replaced the elevated Central Freeway is not perfect, but it keeps cars moving while making the surrounding neighborhood a better place for people (King, 2007). The old ramps of Central Freeway carried about 90,000 cars a day, and the new Octavia Boulevard has the similar use, while the design of the Octavia Boulevard roadway is to disperse traffic. People will have more choices (Gordon, 2005).

From the 5-year estimates of the 2005-2009 American Community Survey, there are 47% residents in Census Tract 168 area choose public transportation for the means of transportation to work, and 16.5 % walk or ride a bicycle to work. Only 26% residents drive to work (Table 5.2). Compared to the citywide average of 33% taking buses plus 12% walking or bicycling, the percentage of people transit to work in this area is high (Table 5.3).

## Appendix A: San Francisco: Central Freeway

### 5.5 Conclusion

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By removing the Central Freeway, the city of San Francisco showed its commitment to community, economic, and environmental sustainability, while setting an example for other cities to follow. Removal of the Central Freeway presented the world with a new form of urban reprioritization. The benefits of the freeway's

removal have greatly outweighed the negative impacts. Benefits of the Central Freeway's removal include a decrease in crime, an increase in the average sales price of real estate, an increase in public green space, and a greener, more sustainable transportation system. San Francisco was able to improve its citizens' quality of life, without significantly sacrificing the city's transportation performance.

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## 6 San Francisco: Embarcadero Freeway

### 6.1 Introduction and History

In 1991, the City of San Francisco demolished a 1.2 mile stretch of elevated expressway. The Embarcadero Freeway had a distinctive past and was the object of much disgust over its 32 year lifetime. Its past, its removal, and the impacts of that removal are the subjects of this case study. With the removal of the Embarcadero Expressway, the city reclaimed its downtown waterfront. The city experienced real estate price increases, residential communities created, the rejuvenated connectivity of its downtown's to the water, environmental protection, increased accessibility to transit opportunities, and various positive economic impacts.

During the post-war era, the expansion of interstate and expressway infrastructure around the country helped the automobile become the dominant mode of travel in the United States. In San Francisco, City Supervisor Leo McCarthy recalled that “the momentum behind freeway construction was extraordinary ... The Federal Transportation Department and the California Department of Transportation had the kind of power that comes with having hundreds of millions of dollars to spend annually” (McCarthy, 1996). The interstate system was making efficient and cost-effective automobile travel between cities a reality. However, the system originally designed to create high-speed transport infrastructure in *between* cities had subtly and significantly morphed into high-speed transport infrastructure *inside* cities.

The perception in San Francisco was that highways could accommodate commuters coming in from suburban areas and would maintain downtown as the retail and financial hub of the region by helping it compete with newer suburban regional shopping centers (McCarthy, 1996). In this way, freeways inside San Francisco metropolitan areas were supported by the chamber of commerce, the contractors, the building trades unions, the downtown merchants, and the aforementioned Federal and state stakeholders (McCarthy, 1996). The governor, along with state and local agencies and planners, promoted a 1948



Figure 6.1: 1948 San Francisco Freeway Plan (Source: The Preservation Institute)



Figure 6.2: Freeway protestors in 1964. (Source: Carlsson)

plan to crisscross San Francisco with a network of freeways (see Figure 6.1). Implementation of this plan began with two north/south highway corridors traversing underutilized industrial land south of the city. Eventually the construction of these highways reached more residential areas where the community, local newspaper, and several elected officials revolted against this attempted destruction of their neighborhoods.

One highway in particular, the Embarcadero Freeway (labeled Interstate-480 in those 1948 plans) was originally intended to connect the Bay Bridge and the Golden Gate Bridge (Seattle Department of Transportation, 2008; Cervero, Kang, & Shively, 2007). However, with the vocal uproar of citizens and the assistance of several city supervisors, the city was able to wield one of its few powers against the ongoing process of freeway construction - it had to give permission for the federal and state construction to cross city streets (McCarthy, 1996). With a 1.2 mile stretch was completed in 1959, the rest of the project was canceled, along with 7 other freeways in the 1948 plan (The Preservation Institute, n.d.). By halting the Embarcadero Expressway completion, the city forfeited \$280 million in Federal funds (National Research Council, 1980, p. 103). The completed section was controversial because it disrupted connectivity between the Market Street part of downtown and the waterfront. Had it continued, the freeway would have gone through Telegraph Hill and Russian Hill, two well-known neighborhoods. Members of these communities, along with Sunset, Potrero, Polk Gulch, and Haight-Ashbury neighborhoods, successfully organized in the late 1950s to stop freeway construction (see Figure 6.2). This well-documented protest is known as the original “freeway revolt” (Cervero, Kang, & Shively, 2007; Carlsson). This community action sparked a series of similar freeway revolts around the US reacting to highway construction occurring inside the urban cores of US cities.

A minority of San Francisco residents continued their displeasure with the remaining Embarcadero Expressway. In 1986, Mayor Dianne Feinstein brought referendum

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**Figure 6.3: Embarcadero Freeway Demolition. May 9, 1991**

measures to the citizens of San Francisco regarding the demolition of the expressway and construction of 4 lanes of surface level street infrastructure complete with light rail and bike paths in its place. The two measures were defeated by voters by a margin of two to one at the recommendation of Supervisor Richard Hongisto (The Preservation Institute, n.d.). Despite direct support from the mayor, several elected officials, and several neighborhood groups, the freeway would remain. The movement to transform the Embarcadero from elevated highway to a multi-use boulevard was based upon community activism and political will, but it had gone to a vote of the people and failed. However, in 1989, an earthquake measuring 7.1 on the Richter scale struck San Francisco, causing \$6 billion in damages and killing 42 people. The Loma Prieta earthquake exposed problems in the way highways were built, frightened many Bay area drivers, and changed perceptions of transportation around the region. Several area double decker bridges collapsed and other highway infrastructure were severely damaged. Meanwhile, the Embarcadero Freeway was severely damaged, thereby making removal a more palatable solution.

**Table 6.1: 1991 Board of Supervisors Decision Options**

<b>Elevated Expressway Repair Estimate</b>	\$69.5 million
<b>Sub-surface Expressway Estimate (no Federal match)</b>	\$135 million
<b>Removal and surface street replacement</b>	\$93.7 million
<b>Extension of Light Rail Service</b>	\$52.6 million

**Source: San Francisco Board of Supervisors**

Community activism once again led the charge against the freeway. Proponents of repairing the damaged structure included business interests in the Chinatown Merchants Association and the Northshore Business Association. Concerned about a drop in visitors due to traffic congestion without the highway, the Chinatown Merchants Association organized against the removal in a similar manner as the other community groups (Yip, 1997; Seattle Department of Transportation, 2008). Immediately after the earthquake, the repair of major elevated highways bridges was a primary concern and consequently the traffic using the Embarcadero was rerouted. Therefore, commuters were forced to take surface streets and alternative routes. This time the movement to remove the Embarcadero Freeway was led by key decision makers, including Mayor Agnos and several City supervisors agreed that removal was a good option (Wicker, 1991). City planners, the Board of Supervisors, and two mayors all took initiative to approve of the removal (The Preservation Institute). Famously, Mayor Art Agnos called the Embarcadero “the world’s longest off-ramp” (Carlsson, n.d.). While there was much popular support, the business associations and the state transportation department favored the repair or replacement of the expressway, while the mayor supported a subsurface expressway removing the eyesore that blocked the scenic waterfront views. For the better part of a year after the earthquake, these two sides waited as cost estimates for all options were prepared (see Table 6.1). Eventually, more than a year after the Loma Prieta earthquake, the Chinatown and other business groups opposing the removal of the freeway threw their support behind the proposals claiming that it would be the fastest way to get customers back to their business districts. Finally in September 1990, the San Francisco board of supervisors voted 6 to 5 to remove the elevated expressway and replace it with either a surface street or a subsurface expressway. Later these options were clarified once Federal funding for the subsurface expressway was denied.

**Table 6.2: Embarcadero Transportation Timeline**

	1959	Embarcadero Freeway Opens
<b>October</b>	1989	Loma Prieta Earthquake severely damages structure; freeway closed
<b>June</b>	1990	Responding to complaints of lose of Chinatown and Northshore neighborhood business, Mayor Agnos distributes maps providing routes to inaccessible neighborhoods
<b>September</b>	1990	Supervisors vote 6-5 recommending “replacing freeway with either surface level or subsurface artery.”
<b>February</b>	1991	Destruction of Embarcadero Freeway begins
<b>March</b>	1991	San Francisco Redevelopment Agency gives \$2 million to Chinatown Merchants Association
<b>October</b>	1991	Freeway Construction completed; Surface street construction begins
	2000	Embarcadero construction complete; streetcar service begins

**Source: San Francisco Chronicle articles: 1990-2004**

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### 6.2 Community Impacts

Now that the Embarcadero Boulevard has been completed, the affected areas have benefited from neighborhood revitalization in the creation of new public spaces. Merchants had seen a decline in business while the freeway was closed after the earthquake and were worried about this becoming permanent with the highway gone. However, the waterfront areas around Chinatown now feature more jobs and residences, potential customers in Chinatown, and the district continues to be one of the top attractions in San Francisco (Cervero, Kang, & Shively, 2007).

Although the current roadway takes up a similar footprint to the freeway, several new neighborhoods have been formed due to the removal. Existing areas that featured some development added thousands of offices and residences. These neighborhoods also gained an identity, Rincon Hill and South Beach (Siegel, 2007). These areas are now known for some of the best locations to live and work in the city (Congress for the New Urbanism, n.d.).

The most noticeable addition to the area formerly occupied by the freeway is the public spaces. The boulevard does feature travel lanes for automobiles, but streetcars, bike lanes, and a large pedestrian promenade are all fellow travelers. New public plazas and the promenade draw users to the area and are cited as a reason for the economic development of the waterfront (Congress for the New Urbanism, n.d.). The original footprint of the elevated highway is memorialized by a series of plaques, but the character of the area is completely changed (Eckerson Jr., 2006). The former industrial piers have also become an attraction for visitors, housing shops and other public amenities (Seattle Department of Transportation, 2008).

With any freeway removal project, the concept of gentrification must be addressed. Before the construction of the freeway, there wasn't a neighborhood to be bulldozed; instead, the area was generally industrial and commercial. The freeway's construction caused many of the buildings that lined the elevated expressway to be built without consideration of street interactions as monolithic structures (Eckerson Jr., 2006). With the removal of the elevated expressway, the surrounding area's character changed dramatically; dense land use patterns of residential and commercial properties began to replace the largely industrial and commercial warehousing patterns witnessed before the freeways construction. The changes in property values because of the removal could be classified as a gentrification effect, but the area beforehand was not primarily residential (Carlsson, n.d.; Cervero, Kang, & Shively, 2007).

Industrial facility jobs and investment along the waterfront had been precipitously declining since the end of World War II - 1947 saw 7.8

million tons of shipping, which fell to 5.2 million in 1964 (the year of the highway revolt), and to 2.3 million tons in 1977 (National Research Council, 1980, p. 103). This decline mirrored the increase in usage of the Port of Long Beach and the Port of Seattle as major freight ports for the Pacific Coast of the US (National Research Council, 1980). This phenomenon of industrial decentralization follows patterns seen around the US as the industrial warehousing economy of San Francisco morphed into a more service and finance oriented urban industrial city.

A good measure of success for the Embarcadero Freeway removal is to examine how public sentiment has changed about the area. Approval of the transformation into a boulevard is almost unanimous, with freeway proponents being almost nonexistent (The Preservation Institute, n.d.). People have also voted with their feet and dollars, showing up in large numbers to live, work, and play in the area. The waterfront is now more accessible for people, no matter what mode of transportation they are using. Even in Chinatown, the merchants begrudgingly concede that "the vista is beautiful" (Seattle Department of Transportation, 2008).

### 6.3 Environmental and Travel Behavior Impacts

As we have discussed, the Embarcadero Freeway, completed in 1959, was originally supposed to connect the Bay Bridge to the Golden State Bridge via downtown San Francisco, but protests to the plan by neighborhood residents limited construction to a 1.2 mile double decker, elevated highway (The Preservation Institute, n.d.). Because of the halt in construction, the highway stopped at the Broadway off-ramp which directed traffic into North Beach and Chinatown (The Preservation Institute, n.d.).

At its peak, the Embarcadero Expressway carried over 60,000 cars per day (Seattle Department of Transportation, 2008) and served as a connecting highway between the Bay Bridge and downtown San Francisco. In 1989, the Loma Prieta Earthquake severely damaged the freeway structure and forced the city to close the roadway for safety reasons (Cervero, Kang, & Shively, 2007). With the freeway suddenly closed, San Francisco drivers found alternative routes, with much of the traffic being absorbed by other roadways (Cervero, Kang, & Shively, 2007). Surface roadways were never overwhelmed by additional traffic, and commuters also took to transit in record

Mode	2000 Percent	2009 Percent	% Change
Drive Alone	40.5	38.9	-1.6
Carpool	10.8	7.4	-3.4
Public Transit	31.1	31.8	+0.7
Taxi, Motorcycle, other	1.6	1.8	+0.2
Bicycle	2.1	3	+0.2
Walk	9.4	10.3	+0.9
Worked at Home	4.6	6.8	+2.2

Source: SFMTA, 2010

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**Figure 6.4: Embarcadero Freeway ending at the Broadway off-ramp (Lost SF, 2010)**

numbers (Marquez, 1989). This situation persisted until the opening of a new, six-lane surface boulevard in 2000.

The new Embarcadero Boulevard was designed as a complete street, incorporating auto, pedestrian and transit into its design (The Preservation Institute, n.d.). The six-lane boulevard was designed and built to handle a significant amount of traffic without cutting the waterfront off from downtown (The Preservation Institute). In the middle of the boulevard, a historic streetcar line was built (Seattle Department of Transportation, 2008). Furthermore, the removal of the freeway allowed for the creation of a number of waterfront parks and pedestrian plazas that served to increase the walk-ability of the area (Cervero, Kang, & Shively, 2007). One such amenity is the Herb Caen Way, a 3.2 mile pedestrian promenade that follows the waterfront next to the Embarcadero from South Beach to Fisherman's Wharf (The Preservation Institute, n.d.).

Overall, the removal of the freeway has resulted in significant traffic reductions and increases in usage of public transit on the Embarcadero. The boulevard currently carries about 26,000 cars per day (Seattle Department of Transportation, 2008), while the streetcar line handles about 18,000 daily riders (San Francisco Metropolitan Transit Authority). Assuming the 18,000 transit riders would have driven on the freeway had it still been up, the removal of the freeway and the opening of the streetcar line reduced approximate CO<sub>2</sub> emission in that corridor by 18,062 pounds per day (18000 riders x 1.2 miles of freeway/23.2 avg mpg x 19.4 lbs CO<sub>2</sub> per gallon gasoline) (Environmental Protection Agency, 2005). Twenty years later, the freeway removal could have saved 66 thousand tons of CO<sub>2</sub>.

Since the reopening of the Embarcadero, auto usage has gone down and transit usage has increased along with cycling and walking in the entire city (San Francisco Metropolitan Transit Authority, 2010). City-wide auto usage has dropped from 51.3% to 46.3% of mode share going to work while transit, cycling and walking has increased from 42.6% to 45.1% in the first nine years (see Table 6.3) (San Francisco Metropolitan Transit Authority,

2010). While we certainly cannot attribute this change entirely to the Embarcadero, the removal of the freeway certainly did play a role.

The Loma Prieta earthquake in 1989 was a major reason the freeway was torn down. If it was never severely damaged, the roadway may still be up today. The earthquake also brought forward a serious concern with elevated highways in the San Francisco Bay Area – even though the freeway had been retrofitted in the early 1980s for earthquake safety, and the freeway did not collapse, portions of the freeway structure did fall, injuring a number of people below (Cervero, Kang, & Shively, 2007; The Preservation Institute, n.d.). The decision, therefore, to tear down the damaged freeway in 1991 actually increased the hazard resiliency of the area, simply by removing the possibility of a structural collapse rendering a major thoroughfare impassable during a disaster. As far as resiliency goes, Rod Diridon, chairman of the Metropolitan Transportation Committee, may have said it best - “what we found out from this experience is that transit survives-highways don’t” (Diriniger, 1989). A similar sentiment was shared by Jim Knox, a statewide transportation planner, saying, “If we had no transit right now, the Bay Area would be closed. It would be shut down” (Diriniger, 1989).

Today, the Embarcadero is a bustling, multi-use boulevard that has helped reconnect downtown San Francisco to the waterfront (Seattle Department of Transportation, 2008). The removal of the double-decker freeway has opened up the Northwest San Francisco waterfront to a host of transportation modes and in the process also helped improve the overall air quality by reducing automobile dependency and promoting transit, walking, and cycling (Cervero, Kang, & Shively, 2007; Seattle Department of Transportation, 2008).

### 6.4 Economic Impacts

From an economic perspective, the Embarcadero Freeway removal and redevelopment is generally viewed by business interests as a very successful project. The sheer quantity of real estate investment is telling enough, but statistics and a number of studies also help to measure the success of the Embarcadero. One author summarizes much of the data and research saying: “All day long the area, particularly around the Ferry Market building is teeming with locals and tourists alike... On game days, the southern end is inundated with sports fans and ticket scalpers” (Sussler & Daniel, n.d., p.6).

Waterfront business along the Embarcadero Freeway prior to the 1989 Loma Prieta earthquake was essentially nonexistent. With nearly 1.2 miles of double-decker highway blocking lining the waterfront, convenient access to the majority of the port facilities and the city’s historic Ferry Building was negligible (Equity Office). Once the

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**Figure 6.5: Embarcadero Freeway, 1960. (Source: Telstar Logistics)**

earthquake hit, the freeway extension became unusable and traffic diverted onto other streets (Cervero, Kang, & Shively, 2007). Particularly hit hard was the Chinatown area less than a mile away, who's businesses claimed a "20-40% drop in tourism" in the following years (Chinese Historical Society of America, 2006). When discussion of freeway removal was rumored from the Board of Supervisors in April of 1990, "hundreds of Chinatown merchants" appeared to protest the proposition (The Preservation Institute, n.d.). Despite the economic downturn experienced in the late 1980s, after the removal of the Embarcadero Freeway, the waterfront has experienced eight years of development and "San Francisco's Chinatown is still bustling" (Seattle Department of Transportation, 2008, p.6D-2).

Although the Seattle DOT acknowledges the impossible task of isolating the Embarcadero Freeway's removal on economic development in the area (2008), a number of indicators show prodigious economic growth. Housing values in the surrounding neighborhoods rose by 300% by the late 1990s (The Preservation Institute, n.d.), indicating a market demand increase for area properties. Also by the late 2000s, housing quantity increased by 51% (Congress for the New Urbanism, n.d.), further transforming perceptions of downtown as a place to live and spend money. Meanwhile, international corporations such as Gap clothing have chosen to build headquarters along the redeveloped Embarcadero. By analyzing US Census and American Community Survey data, one can additionally find that the 2009 aggregate property value in the affected Embarcadero impact zone grew to 25 times its 1990 value, while San Francisco aggregate property value has grown by less than 5 times its 1990 value. Figure 6.6 demonstrates how the impact zone, which includes Chinatown, compares to the city of San Francisco overall when considering average growth using 1990 as a base year.

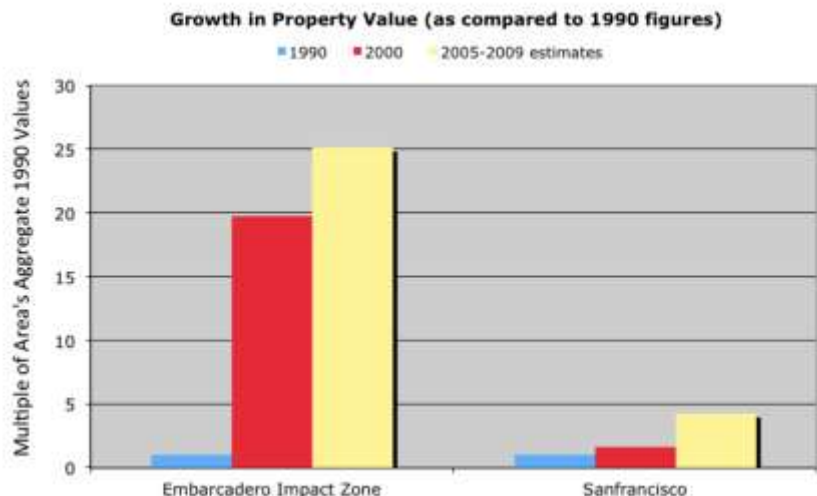
Although freeway removal may not be the sole cause for such a stark contrast to the rest of the city, it seems impossible to negate any correlation altogether. In addition to increased

residential space, the Embarcadero area is now home to over one million square feet of commercial office, retail, café, and restaurant space (San Francisco Redevelopment Agency, 2011). Jobs have increased by 23% within the last few decades (Congress for the New Urbanism, n.d.) and new development has sprung up in the form of small business enterprise, commercial office space, professional sport investment, and various other kinds of retail and residential structures (Congress for the New Urbanism, n.d.).

A combination of public participation along with public and private sector investment helped to develop most of commercial space on Embarcadero Boulevard. Although millions of square feet of retail, commercial, and residential development were privately financed (San Francisco Redevelopment Agency, 2011), the entire length of the boulevard remains welcoming to pedestrians, bicyclists, transit, as well as motorists (Cervero, Kang, & Shively, 2007; The Preservation Institute; San Francisco Bike Coalition, 2010).

Of the most notable icons along the Embarcadero's waterfront is the Ferry Building. Originally built in 1898, the twice earthquake-shaken structure, now owned by Equity Office (a private nationwide joint venture), is home to forty diversified small businesses, an iconic 245-foot clock tower, and 175,000 square feet of Class A commercial office space (Equity Office). Equity Office also claims a daily count of 11,000 ferry riders passing through its terminal, and a farmer's market that takes place 3 days a week drawing in 10-15,000 additional weekly shoppers (Equity Office).

Existing industrial piers currently numbered one-and-a-half, three, and five are collectively known as The Piers. This redevelopment supports a collection of mixed used retail, commercial, and residential space (The Piers, 2010). These historic structures now house nearly 60,000 square feet of Class A commercial office space and 17,000 square feet of retail, cafes, and restaurants (The Piers, 2010). Additionally, since 2000, the 13-acre AT&T Park constituted a \$357 million investment at the far southern



**Figure 6.6: Rise in aggregate property value (Source: US Census 1990 & 2000 and American Community Survey 2005-2009)**

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end of the Embarcadero boulevard area. The San Francisco Giants home field ranks 2<sup>nd</sup> in the National League for number of visitors with over three million visitors a year (San Francisco Giants, 2006). The ferry provides transportation for over 50,000 visitors to the Giants games a year (Golden Gate Bridge Highway and Transportation District, 2010).

If the city had chosen to repair the freeway to its previous state after the earthquake, the City of San Francisco would have had to pay at least \$70 million and waited until at least 1992 before reaping the freeway's benefits once again (Wicker, 1991). Instead, the city invested nearly \$50 million into the project, the demolition for which only cost \$3.25 million (Wicker, 1991). Now, users enjoy a 3.2 mile long (and 25 foot wide) promenade that runs the length of the Embarcadero from South Beach to Fisherman's Wharf, employees get the opportunity to enjoy a positive and diversified work environment, and tourism in San Francisco has a view of the bay while dining near the Embarcadero (The Preservation Institute, n.d.).



Figure 6.7: Ferry Building on New Year's

A report co-sponsored by the Federal Highway Administration identifies the quality of location, variety of passenger travel services, and amount of capital investment made by developers as important signifiers of economic developments (Forkenbrock & Weisbrod, 2001). Although this case study does not cover the greatest depth, the breadth of praise, inclusion of diverse modes of transport, and significant private investment each demonstrate a measure of success agreed upon by many.

## 6.5 Conclusion

The removal of the Embarcadero Freeway and the subsequent creation of a complete street boulevard to replace it can be considered by measures of community, environmental, and economic indicators a success. As this case study has shown, the removal of the freeway had positive community effects namely: neighborhoods experiencing revitalization, communities benefiting from additional jobs, and real estate value increasing. All Bay Area residents were benefitted by an increase in accessibility to the community asset of the waterfront. Environmentally, the region was benefitted by changes in transportation patterns leading to greater transit usage and consequent reductions in air pollution, increased walkability aiding in public health, and greater resiliency with the addition of greater transportation opportunities, and more reliable infrastructure. Economically, the city has benefitted greatly with a new found tourist attraction - real estate values have raised dramatically; rejuvenated usage of ferry facility and other investments have been leveraged to make full use of water front; the private and public investment in infrastructure has led to an overall renaissance at the waterfront for San Francisco. The city of San Francisco in making the courageous decision to not rebuild their Embarcadero Expressway after the tragedy of the Loma Prieta earthquake has recreated a formerly underutilized area for the benefit of all residents of the Bay Area.

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## 7 Seoul: Cheonggyecheon Highway

### 7.1 Introduction

Between 2003 and 2005, the Seoul, South Korea metropolitan government planned and executed the removal of the Cheonggye Elevated Highway and the ground-level roadway beneath it that covered the Cheonggyecheon (CGC), a stream that used to run through the center of the city (Kil-Dong 2007).

Historically, Seoul developed around the Cheonggyecheon stream, which runs east to west, dividing the city in two. The Cheonggyecheon restoration project has been called “the boldest and most dramatic freeway removal to date” (Kang and Cervero 2008, p. 3) and has won widespread praise from the international urban design and planning community. Despite earlier worries about the project’s potentially negative economic and traffic impacts, it has gained widespread popularity among Seoul tourism and business interests, as well as the city’s general public. Thanks in no small part to its ambitious scope, Seoul’s Cheonggyecheon Restoration Project is one of the world’s most often-cited examples of highway removal and subsequent urban revitalization.

### 7.2 History

#### Joseon Period

The Cheonggyecheon has been a pivotal part of Seoul’s landscape for centuries. In 1406 King Taejo, first king of the Joseon Dynasty, commissioned several projects to build dykes in order to control flooding in the area. Stone embankments and bridges were built over the Cheonggyecheon and its tributaries. Taejo’s successor, King Sejon, continued projects on the Cheonggyecheon by digging ditches to divert some of the water to its tributaries (Noh, 2009). During King Sejon’s rule, his advisors were divided as to what the role of the river should be. Some believed that the river should be kept clean according to the principles of Feng Shui, while others believed that Seoul need sewage options. King Sejon sided with the



Figure 7.2: Huts lining the edge of the Cheonggyecheon  
Source: PreserveNet

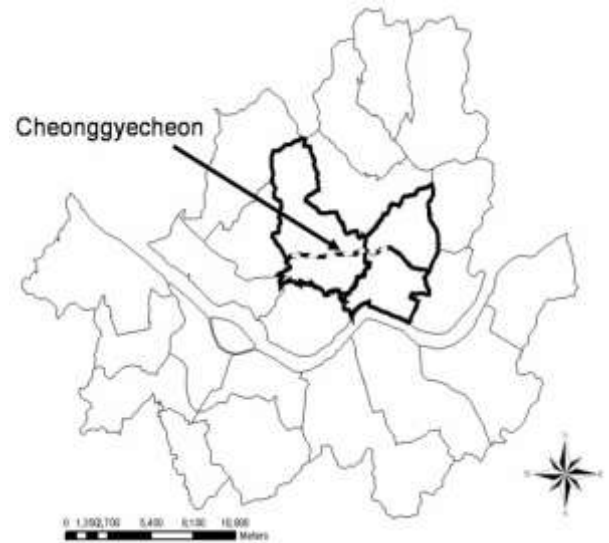


Figure 7.1: Map of Seoul (central city in black outline, CHC in stripes) Source: Kang, C.D. and Cervero, R. (2009)

latter camp and opened the stream for sewage purposes. During the five centuries of the Joseon Dynasty, the tributaries provided Seoul with clean water, while the Cheonggyecheon washed out the wastewater.

By 1675, the population in Seoul had grown to almost 190,000 people from 100,000 at the start of the Joseon Dynasty (Seoul Metropolitan Government 2009c). The stream was no longer able to accommodate sewage for the city. It was not until almost a century later, during the 1760s and early 1770s, that King Yeongjo commissioned yet more projects to dredge the river and build new embankments and dykes.

#### Japanese Occupation - Construction of the Cheonggye Highway

Around 1914, during Japanese occupation, it is believed that the stream got its current name, Cheonggyecheon, which means, “clean water stream.” During this period, many farmers that lost their land migrated toward Seoul settling around the edge of the Cheonggyecheon. The increase of the urban poor along the stream led to more pollution, making the stream a source of diseases and crime (Kil-Dong 2007).

## Appendix A: Seoul: Cheonggyecheon Highway



**Figure 7.3: Cheonggye Elevated Highway Source: PreserveNet**

In 1925, the Japanese started to cover up many of the tributaries, converting them into sewers as part of a project designed to give Seoul a proper underground sewage system. The idea was to cover the Cheonggyecheon as well. From 1926 to 1940, the Japanese devised several plans to cover the river for different purposes. These included proposals calling for filling in the stream to create new land for development, the creation of a roadway with an elevated railroad over it, the creation of a road for cars, and the construction of a tram on the surface and a subway underground. These early proposals floundered, mainly because of the economic strain that the Sino-Japanese war was exerting on Japan. But the Japanese had covered a small section of the river by 1937 (Noh 2009).

After World War II, South Korea developed plans to dredge the Cheonggyecheon, which had become heavily silted under Japanese occupation. Once again, plans for the improvement of the stream were halted, this time because of the Korean War. By the 1950s, the Cheonggyecheon had come to symbolize the poverty and grime left behind after fifty years of colonialism and war. It was essentially an open sewer in the middle of the city that deterred investment (Noh 2009).

In the late 1950s, the huts surrounding the edge of the stream were removed, and the Cheonggyecheon was encased underground in a four-phase construction project that lasted from 1958 until 1976. A 3.7-mile elevated highway was built 164 feet to 262 feet above the former stream (Kil-Dong 2007). The elevated highway ran parallel to a grade-level roadway, and included four lanes of two-way traffic that before its deconstruction carried 168,556 vehicles daily (Kil-Dong 2007). As with many other highway projects, it was originally considered a successful urban renewal project, one that brought modernity to the city and would inevitably attract people and business.

### Highway Removal and Stream Restoration

In 2003, Seoul's mayor, current president of South Korea Lee Myung-bak, commissioned a project to remove the elevated highway and restore the stream. The project cost

an estimated \$384 million (Revkin 2009). Several organizations were established to guide the project, among them the Citizen's Committee for Cheonggyecheon Restoration Project and the Cheonggyecheon Restoration Research Corps. The project was completed within two years. Since 2005, the Cheonggyecheon stream has been open to the public and it stands as a major success story in urban rejuvenation and beautification.

The project was rendered politically feasible by the fact that the Cheonggye Elevated Highway was in need of serious and expensive repair (Kil-Dong 2007; Kang and Cervero 2008), but the real impetus behind the project was then-Mayor Lee Mung-Bak's desire to "make a city where people come first, not cars" (quoted in Cervero 2006, p.1). In other words, the CGC project represents a political paradigm shift in South Korea, a nation that had long viewed highway construction as a signal of the nation's modernity. The project represented an explicit move away from favoring increasing automobile capacity toward improving the quality of the urban environment and the quality of life of urban residents (Kang and Cervero 2008).

### 7.3 Economic Impacts

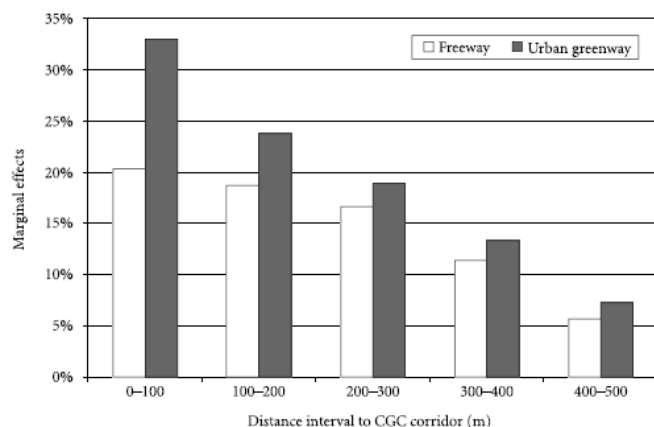
The highway and road removal was part of an overall plan to revitalize the economy of the city since the area was "becoming a slum and losing any appeal it may have had as a residential or commercial area" (Kil-Dong 2007, p. 12). The CGC area contains more than 100,000 small shops and is South Korea's largest commercial district, but it had suffered from both residential and job depopulation in the years before the project's implementation and declining importance as a business center (Lee 2006). In the ten years prior to 2002, the population of the CGC area decreased by 40,000, the number of jobs fell by 80,000, and several business headquarters moved out of the CGC area (Lee 2006). The CGC Restoration Project aimed to reverse these negative economic trends by attracting residents and various industries back to the area (Kil-Dong 2007).



**Figure 7.4: Street Vendors in Seoul. Source: <http://evelynhoward.blogspot.com/2010/11/street-vendors-seoul.html>**

## Appendix A: Seoul: Cheonggyecheon Highway

Despite the promised benefits of the project, there were major concerns about the short-term economic impacts. The two main segments of the population that objected to the roadwork were the owners of the CGC area's many shops and the street vendors who worked along the CGC corridor (Noh 2009). These store owners and street vendors organized into three interest groups to speak out against the project. These groups held at least 14 demonstrations between December 2002 and December



**Figure 7.5: Marginal Effects of the Elevated Highway and Urban Greenway on Commercial Properties, by distance interval.**

Source: Chang and Cervero (2009), page 2786.

2003 (Noh 2009), demanding that the city either cease the CGC Restoration Project or provide shop owners and vendors with restitution for loss of business due to noise and dust from demolition and traffic congestion caused by the decrease in available road space (Noh 2009; Lee 2006).

While the store owners and street vendors were adamant that the CGC Restoration Project would cause them economic harm, the Seoul Metropolitan Government (SMG) did not believe this to be case (Noh 2009). As a result, the city government did not compensate store owners directly. The city instead took actions to encourage commerce along the CGC corridor for store owners who wished to remain there during the roadwork. Some of the efforts included lowering parking fees in the area, creating a nearby parking lot with free shuttle buses, providing grants for remodeling of CGC markets, providing loans to renew buildings throughout the CGC, and purchasing goods needed by the city from stores in the corridor (Noh 2009, Lee 2006). Importantly, the SMG also provided a 500,000 square meter logistic complex as a new business site for any storeowners who wished to move (Noh 2009). This new business site has been noted as a key factor that appeased storeowners along the CGC corridor (Noh 2009).

The SMG refused to negotiate with street vendors because "...sidewalk peddling is illegal and measures had to be taken to get rid of them [the vendors]" (Noh 2009, p. 37). Such disdain for street vendors was physically evidenced by the forced removal of their equipment by the City of Seoul (Noh 2009). This removal prompted "strong resistance" by the CSVRPC on November 30, 2003 (Noh 2009, p. 34). Street vendor resistance eventually caused the

SMG to propose that vendors peddle at Dongdaemun Stadium, which was being used as the new temporary parking lot for the CGC area (Noh 2009). As with the storeowners, the provision of a new business site helped placate the street vendors by giving them a location that was free of the dust and noise that they feared would hurt their sales.

Taken together, the commercial incentives given to storeowners in the CGC area, the new business sites provided to storeowners and street vendors, and the host of transportation changes (described below) made prior to the highway removal all served to mitigate most of the negative, short-term economic impacts that the CGC Restoration Project may have had. At the very least, enough negative impact was accounted for so that the merchants' resistance subsided, and the project could be completed without continued disruption.

Since the completion of the project, tourism has boomed in central Seoul. In the first three months after the project's completion, approximately 12 million visitors came to the CGC, and in the three months following the CGC's grand opening, there were more than 71 million visitors to the CGC (Noh 2009). These visitors provide increased business to the CGC merchants who operate in the area as they shop and eat and make use of the robust commercial district surrounding the greenway. The CGC has indeed become the "vibrant cultural attraction" that it was promised to be (Young 2010, p. 4).

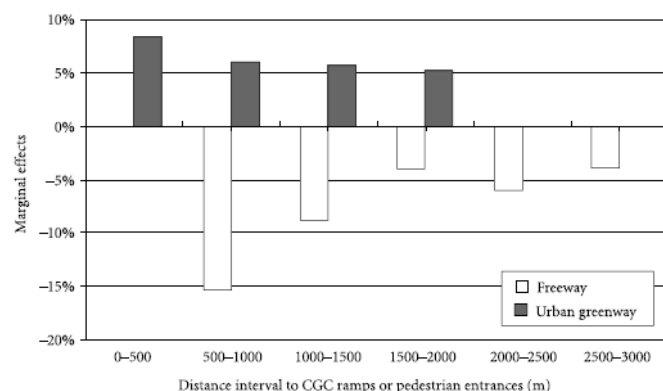
Aside from boosting revenues for local merchants, transit providers, and tourist industries, the CGC Restoration Project has been economically beneficial to land owners and developers as well. For commercial landowners along the CGC corridor, the deconstruction of the elevated highway and covering road was a risky undertaking; since proximity to the highway increased commercial land values, and it was not conclusively known whether the conversion to an urban greenway would confer equal or greater benefits (Kang and Cervero 2009). The commercial landowners could have been economically hurt by the CGC Restoration Project. However, research shows that at each distance interval for up to five hundred meters around the CGC, the non-residential land values had higher premiums with the urban greenway than they had with the elevated highway (Kang and Cervero 2009). This means that compared to commercial land located more than five hundred meters from the CGC, commercial land located within five hundred meters of the CGC enjoyed greater



**Figure 7.6: Urban Greenway**

## Appendix A: Seoul: Cheonggyecheon Highway

property value benefits (marginal effects) with the urban greenway than with the elevated highway. These results are shown below in Figure 7.5.



**Figure 7.7: Marginal Effects of the Elevated Highway and Urban Greenway on Residential Properties, by distance interval.**

Source: Chang and Cervero (2009), page 2789.

For residential landowners near the CGC corridor, the highway removal and CGC restoration presented a much lower risk than for commercial landowners. The original elevated highway over the CGC provided some mobility advantages to residential landowners, but these benefits were reduced since most residents live more than half a kilometer away from the highway (Kang and Cervero 2009).

Moreover, the highway and the traffic it induced created visual blight, noise, and air quality detriments for nearby residences that overwhelmed any mobility advantages from the highway (Kang and Cervero 2009). These highway drawbacks led to a generally inverse relationship between residential proximity to the highway and effects on property values. The closer people lived to the highway, the lower their property values in comparison to residents living more than three kilometers away (Kang and Cervero 2009).

Conversely, the restoration of the CGC and its transformation into an urban greenway led to a positive relationship between distance to the park and residential property values (Kang and Cervero 2009). The closer one lived to an entrance to the greenway, the higher one's property value when compared to residents living more than three kilometers away. These results are shown in Figure 7.7. The highway removal and CGC Restoration Project, therefore, not only reversed the negative impacts of the highway but conferred beneficial economic impacts on residential land owners.

As a corollary to the increase in land values around the CGC corridor, land use changes and new development began to take place in the area in anticipation of and after the highway removal and CGC restoration (Kang and Cervero 2009). New high-rise apartment buildings have been developed, new restaurants and shops have appeared, and new retail complexes like the one constructed by the SMG for the original storeowners along the CGC have

been built (Young 2010; Kang and Cervero 2009). Furthermore, even in existing buildings, the high land values have led to high rents for offices, retail shops, and apartments (Kang and Cervero 2009; Noh 2009).

Overall, the CGC highway/road deconstruction and subsequent transformation into an urban greenway appears to have been of great economic benefit to the City of Seoul. There have been increases in the construction, real estate, tourism, retail, and transportation industries (Noh 2009). However, while there may have been a net economic gain, the effects of the CGC Restoration Project do not appear to have been distributed equitably (Noh 2009). As mentioned earlier, the street vendors were not officially recognized by the City of Seoul as legitimate participants in the economy, so their equipment was forcibly removed from the CGC area.

After being relocated to Dongdaemun Stadium, the vendors had to move again. Many still operate near the CGC, constantly on the lookout for the SMG or police trying to shut them down (Noh 2009). Since the individuals working in the informal economy as street vendors are primarily in the lower economic classes, the CGC Restoration Project has disrupted the economic livelihoods of these people more than that of the wealthier storeowners who were provided for by the city government.

Additionally, the greatest benefits on land values from the CGC project are being experienced by the commercial landowners who own property in the closest proximity to the CGC as opposed to the residential landowners who own land further away, and who may be assumed to be less wealthy than business owners. Even worse off are the poorer residents who might have lived in or near the CGC but may now be experiencing gentrification as rents rise to reflect the increasing land values, and the lower class residents are priced out of their homes. For other cities hoping to reap similar economic benefits by removing highways and turning them into public amenities, special care should be taken to ensure that no particular population segment is overly disadvantaged by the project.

## 7.4 Environmental and Travel Behavior Impacts

### Environmental Impacts

The expressway built over the Cheonggyecheon river was itself a response to a serious environmental problem, as the river had become a highly contaminated open sewer and public health hazard. Covering the river and constructing a highway over it was partly intended to mitigate the negative effects of its pollution (Hwang 2006; Kang and Cervero 2009).

However, environmental degradation of the area was exacerbated by the highway development. The underlying riverbed was polluted with lead, chromium, and other heavy metals from highway run-off, and underground

## Appendix A: Seoul: Cheonggyecheon Highway

gasses (e.g. carbon monoxide and methane gas) caused corrosion to the expressway's infrastructure, exacerbating safety concerns surrounding the aging highway (Kil-Dong 2007). In addition, the corridor's heavy daily traffic contributed to a serious air pollution problem in the surrounding area. Pollution levels for various emissions and particulates (including highly carcinogenic Volatile Organic Compounds (VOCs) like benzene) exceeded Seoul's environmental air quality standards and were significantly higher than other areas in the city (Hwang 2006; Young 2010). Seoul residents who lived or worked near Cheonggyecheon were more than twice as likely to suffer from respiratory illness (Hwang 2006). Quality of life for nearby residents and employees was further impacted by the very high levels of noise pollution generated by the corridor's traffic (Hwang 2006).

Finally, the Cheonggyecheon corridor had become a major flood hazard. The riverbed had always served as a seasonal flood zone, but due to climatic changes, serious floods resulting from summer downpours had become more and more frequent, creating a serious risk to lives and property (Hwang 2006; Kil-Dong 2007; Revkin 2009).

The environmental impacts of the CGC restoration project have been significant. Over the last few decades, South Korea has become increasingly concerned with environmental and ecological protection, as well as with enhancing its international image (Kil-Dong 2007). A survey conducted by Hongik University Professor Kee Yeon Hwang prior to the CGC project revealed that the majority of Seoul residents believed that the environment and water were the most important concerns for the city (Vidal 2006). The deconstruction of the highway and resurrection of the Cheonggyecheon river were completed with the goals of ecological restoration and hazard mitigation in mind.

The restored riverbed was designed to maximize flood capacity and safely accommodate 200-year flood levels (Hwang 2006; Kil-Dong 2007; Revkin 2009). New sewage lines were installed to segregate rainwater and wastewater and prevent wastewater intrusion during flood events (Kil-Dong 2007). In order to promote safety, as well as maximize the new river-park's accessibility, the stream is accessible at 17 points, including seven handicapped access locations, and sixteen emergency-escape ladders have been constructed along the riverbank (Kil-Dong 2007). In addition, the stream has been engineered to serve a variety of fish and wildlife: marshland has been constructed, and channels have been constructed to allow fish to pass through the river unobstructed (Kil-Dong 2007).

Historically, the Cheonggyecheon is a seasonal river with an intermittent stream: part of the year, the riverbed is naturally dry. The CGC restoration project, however, requires a constant flow of water which is currently pumped in from the nearby Han River. The fact that most of the Cheonggyecheon's water must be pumped in artificially (and at significant cost) has been a point of political contention throughout the project (Revkin 2009);

however, most dissent has been quelled by the overwhelming popularity of the project. Eventually, Seoul plans to supplement the river's stream with the output of the Jungnang Sewage Treatment Plan, which is currently undergoing expansion and technological upgrades (Kil-Dong 2007; Hwang 2006).

Positive environmental impacts have begun to be quantified by researchers. Soil and groundwater contamination have been largely eliminated (Kil-Dong 2007). As anticipated, the river's ecosystem has been greatly restored: fish, bird, and insect species have multiplied (Revkin 2009; see Table 7.1).

Air quality has also improved substantially. Due to reduced motor vehicle traffic, small-particle air pollution has dropped from 74 micrograms per cubic meter to 48 (Revkin 2009). Kee-Yeon Hwang (2006) cites the economic value of this reduction in air pollution as up to 40 billion won per year. In addition, other unplanned benefits have emerged from the CGC restoration project. For example, the restored river has been found to reduce the urban heat island effect and increase wind speeds, reducing summer temperatures in the corridor by more than 3 degrees Celsius compared to other points in the city only 400 meters away (Revkin 2009; Hwang 2006; Vidal 2006). Overall, the Cheonggyecheon restoration has been an unqualified environmental success. It has reduced summer temperatures, improved air, soil, and water quality, mitigated flood risks, and restored a long-dormant ecosystem to health and diversity.

	Before CGC Restoration	After CGC Restoration
<b>Fish Species</b>	4	25
<b>Bird Species</b>	6	36
<b>Insect Species</b>	15	192

Source: Revkin 2009

## Travel Behavior Impacts

Beginning in the 1980s, Seoul began to develop new towns on the fringe of the city in an effort to relieve inner-city traffic congestion by dispersing the population (Kang and Cervero 2009). In fact, the resulting increase in automobile travel from suburban commuters made congestion problems much worse, despite concurrent increases in highway capacity. This may be explained as a prime example of the Braess Paradox: "in a network in which all the moving entities rationally seek the most efficient route, adding extra capacity can actually reduce the network's overall efficiency" (Baker 2009). The CGC Restoration project is an example of the solution to this paradoxical problem: by reducing capacity, efficiency and effectiveness are improved.

Before the Cheonggye Road and Cheonggye Elevated Highway were deconstructed, they carried 65,810 and 102,747 vehicles daily, respectively, for a total of more

## Appendix A: Seoul: Cheonggyecheon Highway

than 168,000 vehicles per day on the corridor (Kil-Dong 2007). At the outset of the project, there was, predictably, a public and political outcry against the perceived negative impact that deconstructing the highway would have on traffic congestion throughout the city (Kil-Dong 2007). The planned CGC restoration project would mean narrowing the corridor to only two, 13.5 meter-wide (two-lane) surface roads on either side of the river (Hwang 2006). Traffic models developed in advance of the project indicated that impacts would be positive overall (Vidal 2006), and a pilot simulation test which involved temporarily cutting off access to the highway and narrowing the Cheonggye surface road with roadblocks was conducted. These tests were paired with an aggressive advertising campaign publicizing the project and encouraging drivers to seek alternate routes or modes helped to dispel this fear by making residents aware of alternative options (Kil-Dong 2007).

This publicity campaign was employed leading up to and throughout the duration of the CGC reconstruction. Traffic information was disseminated and staff was deployed to sites of severe congestion to provide guidance to drivers (Kil-Dong 2007). This public education program was critical in ensuring the project's success (Vidal 2006). Even more importantly, public transportation investments and enhancements were made which facilitated modal shifts and minimized traffic disturbances. The entire bus system was reconfigured into a trunk-and-feeder system, to facilitate transfers between local buses and the city's subway system. Payment systems were simplified to make public transit more convenient. Sixty-eight kilometers of bus-rapid-transit-only median lanes were opened along arterial streets (including a new BRT route along the Cheonggyecheon corridor), new downtown shuttle buses were established, and certain streets were designated as one-way or left-turn limited (Hwang 2006; Kil-Dong 2007; Kang and Cervero 2009; Young 2010).

As a result, the traffic disaster feared by residents never materialized. Instead, a significant modal shift occurred, diverting motorists to buses and subways, and overall traffic flow and speeds downtown have improved (Revkin 2009). In the process of making all of the public transit enhancements to cope with the reduced roadway capacity, the City of Seoul captured one of its first long term benefits: subway ridership has increased 13.7% since the restoration project began (Lee 2006). These positive impacts on traffic flow are consistent with evidence from highway deconstruction projects in the United States

(Baker 2009; Cervero 2006). In urban areas in particular, traffic can be easily redistributed through other routes with very little disruption. Large modal shifts are not required to alleviate traffic conditions, although if transit enhancements are implemented concurrent with highway removal, transit is likely to absorb a greater share of road users. "The tearing down of the motorway has had both intended and unexpected effects," says Hwang. "As soon as we destroyed the road, the cars just disappeared and drivers changed their habits. A lot of people just gave up their cars... In some cases, they kept using their cars but changed their routes" (quoted in Vidal 2006, p.1).

Only 1.3 percent of downtown residents believed that the project had worsened traffic conditions, and the subway system experienced a 3.6 percent overall growth rate following the project (Hwang 2006). Pedestrian activity has been observed to have increased substantially, due to infrastructure and crossing improvements on the formerly auto-centric roadway (Hwang 2006). Increases in bike, pedestrian, and public transit mode shares due to public infrastructure investment and education campaigns compound and multiply the environmental benefits of the river reconstruction, while promoting transportation equity for low-income commuters who save time and money due to these improvements (Young 2010).

### 7.5 Community Impacts

Several million people turned out to celebrate the opening of the new, five-mile, 1,000-acre linear park that now occupies the site of the removed overpass (Vidal 2006). An average of 100,000 pedestrians visits the restored Cheonggyecheon daily, according to a Seoul government estimate (Seoul Metropolitan Government 2009a). The site has gone from "a dark tunnel of crumbling concrete" (Revkin 2009, A4) to an inviting epicenter of leisure activity and exercise, a tranquil oasis at the center of this bustling megalopolis. At 10.4 million people, Seoul is one of the world's largest, and also one of its most densely-populated, cities. Roughly 17,219 people live on each square kilometer in the city proper, putting Seoul's population density at roughly eight times that of New York City ("Seoul ranks highest" 2009).

Along the Cheonggyecheon stream today, there are new running and pedestrian paths, waterfalls where children play, and a museum. The park now serves as the backdrop to a variety of arts and entertainment events. Property values and interest in the downtown area have taken off in light of the freeway's removal (Hwang 2006). The Web site for the Korea Tourism Organization includes the following idyllic description of daily life along the Cheonggyecheon's banks:

[A] surging waterfall provides a lively acoustic start to the river's flow and to delight the children, stepping stones are placed so that even the most cautious of them can venture into the middle of the stream. At lunchtime and in the early evenings the paths on either side become a strolling route for



Figure 7.8: Cheonggyecheon restored.  
Source: pleasetakemeto.com

## Appendix A: Seoul: Cheonggyecheon Highway

office workers to exercise their lungs outside their air-conditioned work stations or even to jog for a few kilometers to work off the excesses of the night before. [The streets on either side of the stream] have also become invigorated, with restaurants and pavement cafes permitting dining al fresco during the warm summer months. With the rushing water constantly replenishing the area with oxygen, average temperatures in the summertime have dropped a few degrees, so that the benefits are not just confined to the immediate water's edge (Korea Tourism Organization 2010).

Seoul Metropolitan Government, on its official Cheonggyecheon Web site, references a survey designed to gauge residents' attitudes about the restoration project. It reports that roughly 67 percent of respondents "made some positive remarks" about the endeavor and that close to 78 percent expected positive results to come from it in the future (Seoul Metropolitan Government, 2009b). Journalists and bloggers who have covered the restoration generally reinforce the government's contention that Seoul residents are overwhelmingly happy with the project. "The city centre is so much cleaner," Rhoda Chung, a pharmaceutical worker, told *The Guardian* a year after the restoration's completion (Vidal 2006). "The shopkeepers were arguing against the restoration, but now that they can see the difference they all like it" (Vidal 2006).

Hwang, primary author of the master plan for the overpass removal and stream restoration, points to air quality problems that plagued the traffic-clogged Cheonggyecheon corridor before the freeway's removal as a community benefit of the project. Pollution levels, he writes, were notably higher than in other parts of the city, and people living and working in the highway's vicinity were found to be more than twice as likely to suffer from respiratory problems (Hwang 2006). He doesn't point to any empirical data showing that the health of area residents has improved since the freeway's removal, however.

Property values are also on the rise, and the city is working to reinvigorate once-decaying downtown neighborhoods in the vicinity of the Cheonggyecheon in light of the project (Hwang 2006). "Because of a massive inflow of visitors, the CBD area has been resurrecting [sic] as the center of Seoul again," Hwang writes. "The businesses are booming and real estate price is skyrocketing and redevelopment projects are now going on in many sites (Hwang 2006)." He cites a study showing a 30 percent average increase in downtown land values, while commercial rents were up an average 5 percent (Hwang 2006).

Of course, not everyone sees the transformation as flawless. While many laud the effects the Cheonggyecheon restoration project has had on its surroundings, there are, as observed above, concerns about former residents and merchants being forced out of the area by rising property values, and about the estimated \$2 million spent annually pumping water in to keep the stream flowing where it would otherwise flow only intermittently (Walsh 2006).

Even some generally pleased with the outcome fault project architects for ramming the plans through with little public input and scrutiny. "There was limited consideration of certain user groups, for example older people, people with visual impairments and people with mobility problems," advises the Commission for Architecture and the Built Environment (CABE). In response to a 2005 protest march by a group demanding handicapped access along the stream, the group notes that new elevators were installed and free wheelchairs provided along the Cheonggyecheon (Commission for Architecture and the Built Environment, n.d.). CABE declares the end result of the ambitious project an "inspirational space which is family-friendly and welcoming for a wide range of groups," but it faults designers' failure to facilitate "inclusive planning" that would have better accounted for a full range of community concerns and interests (Commission for Architecture and the Built Environment, n.d.).

Still, few would doubt the substantial psychological effect the overpass removal and stream restoration has had. The project has helped inspire city leaders to adopt other sustainability and pedestrian-oriented initiatives (Vidal 2006). As Hwang told *The Guardian* newspaper in 2006, the project was "above all, a symbolic act" (Vidal 2006). "We've made people realize that quality of life is important," then-Mayor Lee Myung-bak told *Time Magazine* in 2006 (Walsh 2006). Myung-bak, who staked his successful mayoral candidacy in part on tearing down the Cheonggyecheon Freeway, and became president of South Korea in 2008, declared of the project: "We've set a new standard not just for Seoul, but for Korea" (Walsh 2006). It's an example that an increasing number of cities internationally are looking to as they consider tearing down freeways of their own.



**Figure 7.9: Former Seoul Mayor and current South Korea President Lee Myung-bak dips his feet in the Cheonggyecheon stream.**

Source: [Streetsblog.net](http://Streetsblog.net)



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# Appendix B: Existing Land Use Maps

New Orleans Existing Land Use Maps (Source: <https://sites.google.com/site/nolaczko/>)

## 1. Upper N. Claiborne



# Appendix B: Existing Land Use Maps

## 2. Upper N. Claiborne Continued



## Appendix B: Existing Land Use Maps

### 3. Upper N. Claiborne (Upper Left Corner tangent to Claiborne)



## Appendix B: Existing Land Use Maps

### 4. Lower N. Claiborne (Tremé)



# Appendix B: Existing Land Use Maps

## 5. Lower N. Claiborne (7<sup>th</sup> Ward)



# Appendix C: Future Land Use Maps

FUTURE LAND USE MAP: NOLA MASTER PLAN (Source: [https://www.communicationsmgr.com/projects/1371/docs/District%207\\_062210\\_adopted\\_11x17.pdf](https://www.communicationsmgr.com/projects/1371/docs/District%207_062210_adopted_11x17.pdf))



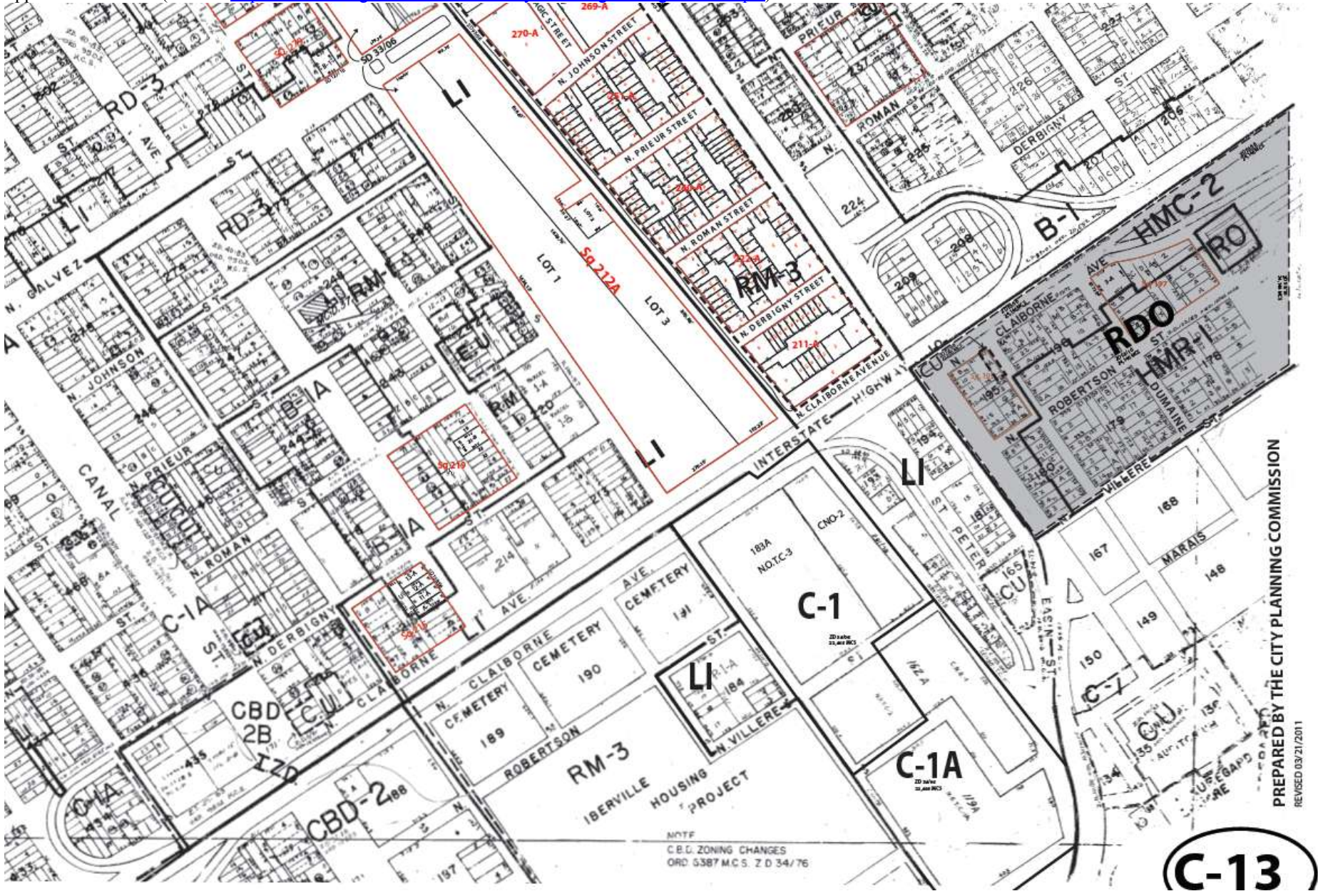
## Legend

### Future Land Use Categories

-  Residential Semi-Rural
-  Residential Single-Family Post-war
-  Residential Low Density Post-war
-  Residential Multi-Family Post-war
-  Residential Single-Family Pre-war
-  Residential Low Density Pre-war
-  Residential Medium Density Pre-war
-  Residential Multi-Family Pre-war
-  Neighborhood Commercial
-  General Commercial
-  Downtown Exposition
-  Mixed-Use Low Density
-  Mixed-Use Medium Density
-  Mixed-Use High Density
-  Downtown Mixed-Use
-  Mixed-Use Health/Life Sciences Neighborhood
-  Mixed-Use Maritime
-  Business Center
-  Industrial
-  Institutional
-  Parkland and Open Space
-  Cemetery
-  Natural Area
-  Transportation
-  Planned Development Area

# Appendix D: Zoning Maps

1. Upper N. Claiborne (Source: <http://www.nola.gov/RESIDENTS/City-Planning/Zoning-Base-Maps/>)







## Appendix E: Employment Tables and Map

**Table: 1**

Division of labor force (2000)							
	Tremé/Lafitte	7th Ward	Tulane/Gravier	Iberville	Orleans Parish	Louisiana	US
Total population 16 years and over	6,115	12,335	3,287	1,287	370,138	3,394,546	217,168,077
Not in labor force	52.4%	49.4%	56.6%	59.2%	42.2%	40.6%	36.1%
In Armed Forces	0.0%	0.0%	0.0%	0.0%	0.5%	0.5%	0.5%
Employed	37.4%	43.6%	36.5%	22.5%	51.8%	54.6%	59.7%
Unemployed	10.2%	7.0%	6.9%	18.3%	5.5%	4.3%	3.7%

Source Citation: U.S. Census Bureau. Census 2000 Sample Characteristics (SF3). From a compilation by the GNO Community Data Center. <<http://www.gnocdc.org>>

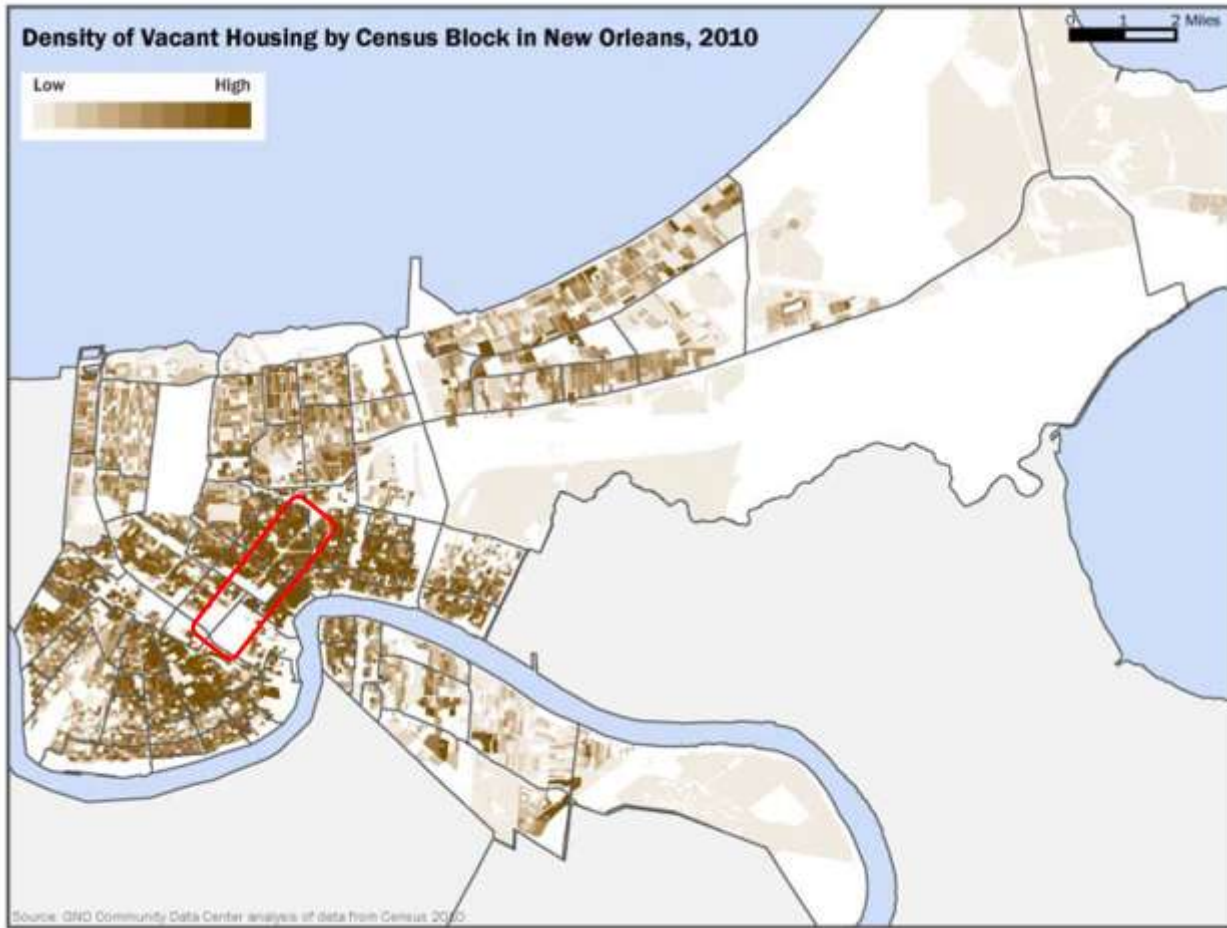
**Table: 2**

Employment by industry (2000)							
	Tremé/Lafitte	Seventh Ward	Tulane/Gravier	Iberville	Orleans Parish	Louisiana	US
Total employed civilian population 16 years and over	2,287	5,382	1,199	290	191,739	1,851,777	129,721,512
Agriculture, forestry, fishing and hunting, and mining	0.6%	0.5%	0.8%	0.0%	1.0%	4.2%	1.9%
Construction	3.6%	7.3%	4.1%	0.7%	4.9%	7.9%	6.8%
Manufacturing	5.6%	5.3%	4.3%	4.5%	5.2%	10.1%	13.8%
Wholesale trade	2.2%	2.3%	2.1%	7.6%	2.5%	3.5%	3.6%
Retail trade	9.5%	11.1%	10.3%	10.0%	9.8%	11.9%	11.7%
Transportation and warehousing, and utilities	2.8%	7.0%	7.2%	2.8%	5.9%	5.3%	5.2%
Information	2.5%	1.2%	0.0%	0.0%	2.4%	2.0%	3.1%
Finance, insurance, real estate and rental and leasing	3.9%	3.1%	0.6%	1.7%	5.6%	5.7%	6.9%
Professional, scientific, and technical	2.3%	1.8%	2.7%	1.0%	5.8%	4.6%	5.9%
Management of companies and enterprises	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%
Administrative and support and waste management services	5.7%	4.4%	3.9%	6.2%	4.0%	3.0%	3.4%
Educational services	9.7%	8.3%	15.3%	5.2%	11.8%	9.6%	8.8%
Health care and social assistance	14.4%	13.7%	16.7%	11.0%	14.1%	12.1%	11.2%
Arts, entertainment, and recreation	3.6%	3.7%	0.3%	0.0%	3.2%	2.4%	1.8%
Accommodation and food services	19.7%	17.0%	20.1%	45.5%	12.1%	6.7%	6.1%
Other services (except public administration)	7.7%	7.8%	5.1%	3.8%	5.3%	5.2%	4.9%
Public administration	6.2%	5.5%	6.5%	0.0%	6.4%	5.8%	4.8%

Source Citation: U.S. Census Bureau. Census 2000 Sample Characteristics (SF3). From a compilation by the GNO Community Data Center. <<http://www.gnocdc.org>>



## Appendix E: Employment Tables and Map



## Appendix F: Interview Questions

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1. How would you describe your role in the community and your interest in the Claiborne corridor? (address biographical aspect of the question)
  - Part of a neighborhood organization?
  - A business owner?
  - A renter/homeowner in the area?
  - A planner or policy maker?
  - Other roles?
2. What are your thoughts regarding the possible removal and redevelopment of the Claiborne highway?
  - Do you support or opposed the removal?
  - Please explain the major reasons behind your opinion.
  - Do you think most of your neighbors/colleagues share your opinion?
  - Do you think the majority of the community supports or opposes the removal of the highway?
3. Assuming the highway was removed and replaced with an attractive boulevard, how would the removal of the highway impact you or your community?
  - From a travel perspective?
  - From an economic vitality perspective?
  - From a social equity perspective?
  - From an environmental perspective?
4. Who are the major champions of the highway's removal?
5. Who do you envision are the major opponents of the highway's removal?
6. Do you feel there are viable alternate routes to take other than the highway?
  - If so, what?
7. Would you consider public transit, bicycling or walking as real alternatives to driving along the Claiborne corridor?
8. If the proposal went through, what redevelopment efforts would you expect?
9. Do you or your community feel that the redevelopment project would accomplish those expectations?
  - Why or why not?

## Appendix G: List of Stakeholders Interviewed

Cheryl Austin	Greater Tremé Consortium, Executive Director
William Borah	Author and Environmental Attorney
Adriane Brown	New Orleans East Resident
Jim Coningsby	The Phoenix of New Orleans, Director
Emily Danielson	
Patty Gay	Preservation Resource Center, Executive Director
Cynthia Hedge-Morrell	Elected Official
Charlie Ho	West Bank Commuter
Leo Jackson	Jackson Quality Used Cars, Tremé Business Owner
Nick Malcovich	Uptown Resident
James McNamara	NOLA BioDistrict, CEO
Lauren	New Orleans East Resident
Medhi Qalbani	Tremé Resident
Keith Scarmuzza	Tremé Resident, Landscape Architect
Jeff Schwartz	Broad Community Connections, Executive Director
Maggie Tishman	Providence Community Housing, Special Programs Development Director
Kurt Wiegler	New Orleans Downtown Development District, President and CEO
Name Withheld	Elected Official
Name Withheld	Transportation Planner
Name Withheld	New Orleans Resident
Name Withheld	Tremé Resident
Name Withheld	Tremé Resident
Name Withheld	Tremé Resident
Name Withheld	Tremé Employee
Name Withheld	New Orleans East Employee

## Appendix H: Survey Distribution

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### Advertising:

- Local newspaper's online edition (Times-Picayune, Nola.com)
- Facebook page
- Craigslist posts
- Twitter posts
- UNO Planning Student Organization web pages
- UNO's website

### Direct soliciting of organizations:

- Tulane
- Loyola
- Dillard
- SUNO
- Delgado
- Xavier
- LSU Medical School and Dental School
- UNO Planning Department
- Catholic Charities
- Faith based communities in adjacent neighborhoods
- American Planning Association local chapter
- Urban Land Institute local chapter
- Neighborhoods Partnership Network

### Direct soliciting of people:

- Email blasts to authors' local network of colleagues, friends and family
- Interviewees previously providing input

# Appendix I: Survey Questions

## Introduction:

We want your opinions on the future of the Claiborne Avenue corridor. It has been suggested that the elevated Claiborne section of I-10 be removed. This expressway would be replaced with a street-level boulevard and could also include pedestrian, bicycle and transit amenities. Additional improvements to the road and highway network could potentially accommodate traffic diverted from the expressway.

Given this proposal, transportation planning students at the University of New Orleans are researching this topic and conducting this survey to determine public opinion about the project.

Please note we are conducting this study independently and have no affiliation with the City of New Orleans or any other governmental entity. The survey will take approximately 5 minutes to complete.

## SECTION I: These questions gauge your use of the Claiborne Corridor.

### SECTION I: These questions gauge your use of the Claiborne Corridor.

Please refer to the map below in answering the following questions:



1. How often do you drive on the Claiborne Avenue Expressway portion of I-10 (shown in the figure)?

- 6 or more days per week
- 4 - 5 days per week
- 2 - 3 days per week
- Once a week
- 2 - 3 days per month
- About once a month
- Less often than once a month
- Never



# Appendix I: Survey Questions

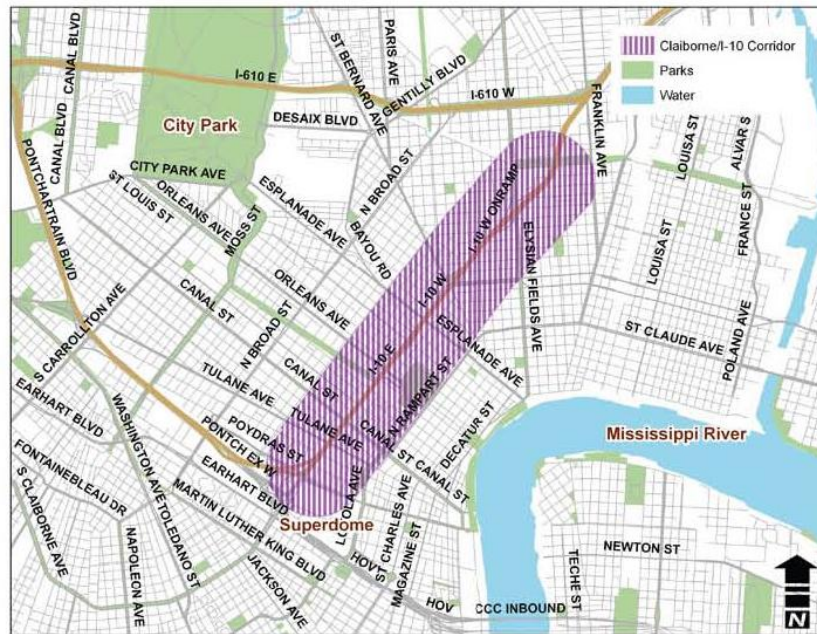
2. How often do you use the section of Claiborne Avenue beneath the Expressway?

- 6 or more days per week
- 4 - 5 days per week
- 2 - 3 days per week
- Once a week
- 2 - 3 days per month
- About once a month
- Less often than once a month
- Never

**SECTION II: These questions gauge your perception of the existing neighborhood and if you use this area.**

**SECTION II: These questions gauge your perception of the existing neighborhood and if you use this area.**

Please reference this map for the questions below:



3. Please state if you (agree, somewhat agree, somewhat disagree, disagree, or don't know) about the following statements regarding the existing conditions of the neighborhood in the shaded area depicted in the figure:

	Agree	Somewhat Agree	Somewhat Disagree	Disagree	Don't Know / No Opinion
The area is safe and inviting	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The area offers community facilities that are attractive (e.g. library, daycare, churches, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There are parks and open spaces to utilize in this area	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

4. Do you work in the area within 5 blocks of Claiborne (as depicted in the shaded area in the map above)?

- Yes
- No

5. Do you live in the area within 5 blocks of Claiborne (as depicted in the shaded area in the map above)?

- Yes
- No

# Appendix I: Survey Questions

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6. Do you have friends or family in the area within 5 blocks of Claiborne (as depicted in the shaded area in the map above)?

- Yes
- No

7. How often do you shop in the area within 5 blocks of Claiborne (as depicted in the shaded area in the map above)?

- Often
- Sometimes
- Rarely
- Never

8. How often do you eat at restaurants in the area within 5 blocks of Claiborne (as depicted in the shaded area in the map above)?

- Often
- Sometimes
- Rarely
- Never

9. How often do you patronize bars, pubs or music venues in the area within 5 blocks of Claiborne (as depicted in the shaded area in the map above)?

- Often
- Sometimes
- Rarely
- Never

**SECTION III: These questions gauge your opinions on the removal of the Claiborne Expressway and the possible revitalization of the neighborhood.**

**SECTION III: These questions gauge your opinions on the removal of the Claiborne Expressway and the possible revitalization of the neighborhood.**

10. How do you feel about the removal of the Claiborne Avenue Expressway?

- I support the removal of the expressway
- I oppose the removal of the expressway
- I am indifferent about the removal of the expressway
- I am uncertain

11. What concerns do you have regarding the removal of the Claiborne Avenue Expressway (select all that apply)?

- I am concerned about a longer commute time
- I am concerned about additional traffic in the neighborhood
- I am concerned about gentrification
- Other, please explain
- I do not have any concerns

12. The removal of the expressway is an important aspect of successful future neighborhood revitalization.

- Agree
- Somewhat Agree
- Somewhat Disagree
- Disagree
- I don't know

# Appendix I: Survey Questions

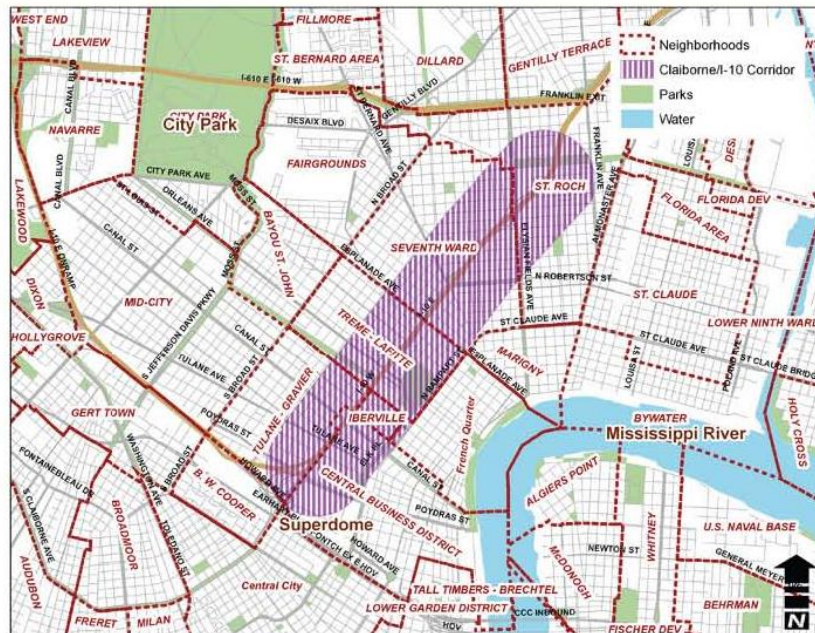
13. How would the removal of the expressway change the community shaded in the figure?

- It would change for the better
- It would not change
- It would change for the worse
- I don't know

14. How would the removal of the expressway change your community?

- It would change for the better
- It would not change
- It would change for the worse
- I don't know

Please reference this map for the questions below:



# Appendix I: Survey Questions

15. Please state if you (agree, somewhat agree, somewhat disagree, disagree, or don't know) about the following statements:

	Agree	Somewhat Agree	Somewhat Disagree	Disagree	Don't Know / No opinion
I am concerned that the removal of the Claiborne Expressway will increase my commute by 10 minutes or more.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am concerned that the removal of the Claiborne Expressway will increase my commute by 1 - 10 minutes.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The removal of the Claiborne Expressway will help revitalize downtown New Orleans (the Central Business District).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The removal of the Claiborne Expressway will help revitalize the French Quarter.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The removal of the Claiborne Expressway will help revitalize the Tremé.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The removal of the Claiborne Expressway will help revitalize the 7th Ward.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The removal of the Claiborne Expressway will help revitalize Tulane-Gravier	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The removal of the Claiborne Expressway will help revitalize Iberville	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The removal of the Claiborne Expressway will result in higher property values in the area.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The removal of the Claiborne Expressway will result in more business in the area.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The removal of the Claiborne Expressway will result in fewer housing options for low-income residents.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The removal of the Claiborne Expressway will create significant traffic delays elsewhere in the city.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

16. I would frequent the area within 5 blocks of Claiborne (as depicted in the shaded area in the map above) (much more often, somewhat more often, less often, the same or less often) if...

	Much More Often	Somewhat More Often	The Same	Less Often
The area is safe and inviting	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The freeway is removed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A variety of shopping existed in the area	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A variety of restaurants existed in the area	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The area were to offer more community facilities (e.g. library, daycare,)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Parks and open spaces were safe and attractive	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

## SECTION IV: Please share your opinions on the vision for the future.

### SECTION IV: Please share your opinions on the vision for the future.

17. How important are the following elements to the successful revitalization of the corridor:

	Very important	Somewhat important	Not important	I don't know
Bike lanes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sidewalks	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Light rail / streetcar	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Wide neutral ground with trees	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Public parks and green space	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Public art	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Parking	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

# Appendix I: Survey Questions

**SECTION V: The following questions ask about your current travel habits. They will help us categorize your answers to the questions above.**

**SECTION V: The following questions ask about your current travel habits. They will help us categorize your answers to the questions above.**

18. How do you get to work in a typical week? If you used more than one method of transportation during the trip, select the box of the one used for most of the distance.

- Car, truck or van
- Bus or trolley bus
- Streetcar or trolley car
- Ferryboat
- Taxicab
- Bicycle
- Motorcycle
- Walked
- Worked at home

19. How often do you use public transit (bus, streetcar or ferry)?

- 6 or more days per week
- 4 - 5 days per week
- 2 - 3 days per week
- Once a week
- 2 - 3 days a month
- About once a month
- Less often than once a month
- Never

20. How often do you bike?

- 6 or more days per week
- 4 - 5 days per week
- 2 - 3 days per week
- Once a week
- 2 - 3 days a month
- About once a month
- Less often than once a month
- Never

## **SECTION VI: DEMOGRAPHICS**

### **SECTION VI: DEMOGRAPHICS**

Please tell us a bit more about yourself to categorize your answers better:

21. What is the zip code of your primary residence?

22. What is your age?

- 0 to 14 years
- 15 to 19 years
- 20 to 24 years
- 25 to 29 years
- 30 to 34 years

# Appendix I: Survey Questions

- 35 to 44 years
- 45 to 54 years
- 55 to 64 years
- 65 to 74 years
- 75 to 84 years
- 85 years and over

23. What is your sex?

- Male
- Female

24. Are you of Hispanic, Latino, or Spanish origin?

- Yes
- No

25. In addition, select one or more of the following racial categories to describe yourself:

- American Indian or Alaska Native
- Asian
- Black or African American
- Native Hawaiian or Other Pacific Islander
- White

26. What is the highest level of education that you have completed?

- Less than high school
- High school/GED
- Some college
- 2-year college degree (Associates)
- 4-year college degree (BA, BS)
- Master's degree or higher

27. What is your total household income?

- Less than \$10,000
- \$10,000 to \$19,999
- \$20,000 to \$29,999
- \$30,000 to \$39,999
- \$40,000 to \$49,999
- \$50,000 to \$59,999
- \$60,000 to \$69,999
- \$70,000 to \$79,999
- \$80,000 to \$89,999
- \$90,000 to \$99,999
- \$100,000 to \$149,999
- \$150,000 or more

28. Please fill in any additional comments in the box below.

## Block 7

Thank you for filling out this survey! If you would like to receive further information about this project, including the results of this survey, please provide your email address below (this will remain confidential):