# Gowanus Expressway

**In a Nutshell**

The Gowanus Expressway in New York City is a 6.1-mile elevated highway that was built in 1941 by Robert Moses, between the Sunset Park and Red Hook neighborhoods of Brooklyn. The Gowanus Expressway connects Brooklyn, Manhattan, Queens and Long Island, and is regarded as the major truck route for moving freight in and out of Brooklyn, and between Long Island and New Jersey (Pérez-Peña, 1996). The 3.8 mile segment between the Brooklyn Battery Tunnel and the Belt Parkway is considered one of the ten worst traffic bottlenecks in the United States. About 175,000 vehicles use the Gowanus every day, and the result is congestion for about six hours a day (Castaneda, 1996). There are plans to overhaul this structure because the infrastructure is in poor condition. The cost of the project was estimated at about $600-$700 million in the mid-1990s, when NYSDOT favored an in kind reconstruction alternative (Pérez-Peña, 1995). This alternative was widely opposed by community groups who favored an at-grade boulevard or a tunnel alternative, and viewed this as an opportunity to revitalize the surrounding neighborhoods. The estimated price of the infrastructure may now cost anywhere between $1 and $9 billion as several alternatives to rehabilitation, including a tunnel option, are being considered (NYSDOT, Summer 1999).

## Background

Over the last few decades the goals of transportation projects have changed significantly. In the past the main goals were to provide an infrastructure that facilitated mobility and access to different places around the country. The popularity of the automobile in the United States, a growing urban population, a rapidly developing economy, and suburban development created a strong demand for highways. As a result, a massive public highway infrastructure system was built in the post-WWII period. Oftentimes, the expansion of the highway system led to the displacement of families and businesses, and altered surrounding neighborhoods. However, these costs were considered of secondary importance.

Today, mobility and access, while still important, are no longer the main goals that transportation projects have to address. Quality of life issues are also driving forces in infrastructure development. These include environmental quality, noise reduction, aesthetic concerns, historical preservation, and neighborhood and community development. These issues have become increasingly important as community participation in the decision-making process has grown significantly.

The Gowanus Expressway is a 6.1 mile stretch of elevated highway that runs through the Sunset Park and Red Hook neighborhoods of Brooklyn. It is a vital highway link in the New York City area. Like most of the highways in the area, it was built by Robert Moses. Today, the Gowanus Expressway is at the end of its useful life. It suffers from structural decay, due largely to lack of maintenance, and is widely regarded as one of the most congested highways in the country. As a result, New York State Department of

Transportation (NYSDOT), the agency responsible for the Gowanus Expressway, proposed to rebuild the structure in the early 1990s. Community groups were quick to oppose the project. To them rebuilding the Gowanus Expressway meant increased traffic and disruptions in their neighborhood. They also considered this as an opportunity to remove a structure that they view as a contributing factor to the decay of the area.

In 1997, the available alternatives to the elevated expressway were expanded when the Regional Plan Association (RPA) presented a proposal to build a tunnel to replace the elevated Gowanus Expressway. Although the proposal was initially met with derision by the transportation authorities, many community groups embraced the idea and lobbied NYSDOT and the Federal Highway Administration (FHWA), as well as local politicians, to seriously consider the alternative. Proponents and detractors then debated the costs and benefits of such an alternative. The opposition of community groups to the initial plans to rebuild the Gowanus Expressway with only some modifications to improve safety, and the agency's acceptance to carry out a Draft Environmental Impact Assessment (DEIS) to analyze all alternatives, including a tunnel, reflects an important change in priorities in transportation planning. As mentioned earlier, this change represents a shift in priorities from considering only a few transportation goals, such as mobility, access and safety, to a broader perspective that encompasses quality of life issues such as air and noise pollution, and neighborhood revitalization. This case study describes these changes by looking at the history of the efforts to improve the performance of the Gowanus Expressway.

## The Gowanus Expressway and Sunset Park

Construction of the Gowanus Expressway began in 1939, and it opened to traffic in October, 1941. It is located in Sunset Park, a neighborhood in South Brooklyn which then had a population of about 70,000 people. It was built over the elevated tracks of a subway train, along Third Avenue. In order to accommodate local traffic, Third Avenue was also widened from a four-lane street to a ten-lane thoroughfare. Afterwards, the Gowanus Expressway itself was expanded from two to three lanes in each direction. In 1964 a widening and extension project was completed, at a cost of $100 million. Despite these changes, the Gowanus Expressway has many design flaws. These include lack of shoulders, inadequate acceleration and deceleration lanes, and tight curves (Anderson, 2000).

By this time, the Gowanus Expressway attained its current characteristics. It is 6.1 miles long, and serves the southern extension of the Brooklyn-Queens Expressway. It also connects the Brooklyn Battery Tunnel approach, the Belt Parkway and the Verrazano-Narrows Bridge. It is part of the I-278 highway and it's official name is the Brooklyn-Queens Expressway. However, it is usually know as the Gowanus Expressway. Today, it handles about 175,000 vehicles every day (Pierre-Pierre, Garry). Of these, about 10,000 are trucks.

The construction of the Gowanus Expressway is related to several important changes that have taken place in surrounding neighborhoods. In his biography of Robert Moses, *The*

*Power Broker*, Robert Caro argues that the construction of the Gowanus Expressway was a leading factor in the deterioration of Sunset Park (Caro, 1974). According to Caro, before the Gowanus Expressway was built, Third Avenue was the focal point of Sunset Park. There were several movie theaters, and scores of restaurants and stores along the length of the avenue. The construction of the Gowanus Expressway overhead, and Third Avenue's subsequent expansion into a ten-lane thoroughfare to handle local traffic, resulted in the demolition of various storefront buildings. Moreover, the Gowanus Expressway cast a strong shadow over Third Avenue.

Whereas the previous elevated structure was forty feet wide and had gaps between railroad ties that allowed sunlight to get through, the Gowanus was ninety-four feet wide and was a slab of concrete that blocked sunlight. The increased traffic on the ten-lane surface road beneath it also turned it into a physical barrier as many people found it difficult and intimidating to cross. These changes resulted in the flight of the stores and other activities that had flourished along Third Avenue. Instead, they were replaced by prostitution, drug trafficking, and gang violence, and quality of life in the neighborhood quickly deteriorated.

The effects of the Gowanus Expressway over Sunset Park were exacerbated by wider changes in the neighborhood's economic activity. Up until the 1960s, there was much activity along the finger piers that dot Sunset Park's waterfront, south of the Gowanus Expressway. Cargo handling provided jobs to thousands of longshoremen. In addition, manufacturing activities provided thousands of additional jobs. However, this changed in the early 1960s, as containerization technology on the New Jersey side of the harbor shifted shipping service demand away from Brooklyn. Aging infrastructure, high taxes, lack of affordable space for expansion, inadequate rail freight links, and high energy prices, are also believed to have caused the decline of manufacturing activity in Sunset Park. Another influential factor was the closing of the Brooklyn Navy Yard in the mid-1960s.

As a result of an expanding economy, important changes are taking place again in Sunset Park. In 1994, former Governor Cuomo designated the area an economic development zone. Tax credits for investments are provided to spur growth and create new jobs. Economic activity has been slowly changing from manufacturing to warehousing, distribution activities, and retail uses. It is estimated that only one in four firms in the area today are in manufacturing. Average occupancy is about 95% of capacity (SWBIDC, 2000).

Today, Sunset Park is an ethnically diverse neighborhood of about 100,000 people. At various times, Dutch, Scandinavian, Italian, Latino, and Asian immigrants have lived there. Although after 1965 it was named after the 25 acre park that overlooks the neighborhood, it is considered to have the lowest park density of any neighborhood in New York City. It is in this context that discussions about the reconstruction, rehabilitation and possible elimination of the elevated Gowanus Expressway have taken place since the early 1990s.

## NYSDOT's Project to Rebuild the Gowanus Expressway

As mentioned earlier, traffic congestion is a major concern along the Gowanus Expressway. In 1997, the American Automobile Association (AAA) ranked it as one of the ten most congested highways in the country. One measure adopted to improve traffic was the adoption of HOV lanes. In the mid-1990s, one eastbound lane was dedicated to high-occupancy vehicles, such as carpools and express buses with EZ Pass tags. This measured has proved to be very successful in terms of increasing vehicle occupancy. According to a study by NYSDOT, during morning rush hour, over 1,200 vehicles carrying more than 11,000 people use the HOV lane, and the average vehicle occupancy is 9.1 persons per vehicle. This compares favorable with average lanes where occupancy is 1.25 persons per vehicle (Anderson, 2000).

But traffic congestion is not the main problem on the Gowanus Expressway. Although it is a vital transportation link, providing connections with Verrazano-Narrows Bridge, Shore Parkway, Prospect Expressway, BQE, and Brooklyn Battery Tunnel, it is in poor structural shape, having exceeded it's design life. The concrete deck is in critical condition. Every day it has to be maintained while future major rehabilitation is being planned. It can not be saved in the long run and must be replaced. The steel beams that support the highway are also in poor shape and need substantial repairs. However, it is believed that these can be brought up to prime condition with proper maintenance. Safety is also an important issue. The Shore Parkway Interchange and the BQE Connector have weaving conflicts. Loss of a traffic lane at the BQE connection causes a bottleneck. This means that the accident rate is high. Other safety deficiencies include tight curves, inadequate lighting, signs, shoulders and barriers.

As a result of these concerns, NYSDOT began to consider options to improve the Gowanus Expressway in the early 1990s. The main objective stated initially by NYSDOT was the rehabilitation/reconstruction of a deteriorated piece of infrastructure. Within this main objective, the main goals cited by the agency were to make the Gowanus Expressway structurally sound and safe, to make it more durable, to make it easier to maintain, to strengthen it so it can better resist earthquakes, to improve traffic flow, to provide alternatives to people who drive alone, and to encourage through traffic to stay on the highway rather than to shift to local streets. These goals are in line with the main goals of transportation projects of previous generations, which, as stated earlier, reflect concerns about mobility, access and safety.

Given the importance and size of this piece of infrastructure, any option to replace or rehabilitate the Gowanus Expressway would be constrained by several construction/ rehabilitation goals. NYSDOT cited the following construction/rehabilitation goals: to reduce traffic, move traffic, clear incidents as soon as possible, and inform travelers of what is happening. Again, these goals reflect values associated with mobility, access and safety.

The first set of proposed alternatives to address the current condition of the Gowanus Expressway are shown in the following table:

| Proposed Alternatives | Estimated Cost ($) | Duration |
|---|---|---|
| 1. No build/maintenance | $375 million+cost of future rehab or replacement | Continuous |
| 2. Rehabilitation with operational and safety improvements | $598 million | 6 years, 4 months |
| 3. Reconstruction of existing alignment | $1.39 billion | 7 years, 6 months |
| 4. Reconstruction of interstate on new alignment | $1.86 billion | 6 years, 3 months |
| 5. Reconstruction as an At-Grade (Controlled Access) Interstate | $911 million | 6 years, 3 months |
| 6A. Reconstruction to Provide At-Grade Arterial Street Within Existing Right-of-Way. | $656 million | 6 years, 6 months |
| 6B. Reconstruction to Provide At-Grade Arterial Street With Light Rail and Rapid Transit. | $2.1 billion | 8 years, 6 months |

Source: NYSDOT, 1994.

In 1994 NYSDOT recommended alternative 2 - rehabilitation with operational and safety improvements. The selection of this alternative was met with strong opposition by community groups, who also viewed changes to the Gowanus Expressway as an opportunity to address wider concerns such as economic and neighborhood development. As the media often points out, neighborhoods such as Red Hook have seen economic decline and increasing social problems since the Gowanus Expressway was built in 1941, and separated it from the rest of Brooklyn (Daily News, 1999). Improving/changing the Gowanus Expressway could potentially improve economic development in Red Hook and Sunset Park. As a result of pressure from various groups, the alternatives under consideration have changed significantly. The community groups that have participated in discussions about the Gowanus Project are varied and include the Gowanus Canal Development Corporation, the Brooklyn Heights Association, the Bay Ridge Community Corporation, the South Brooklyn Business Development Corporation, United Puerto Ricans of Sunset Park, Amalgamated Transit Union, and others. Several of these groups are represented by the Gowanus Community Coalition, which is considered to be a chief community spokesperson (Appleton, 1998).

In October, 1994, members of the Gowanus Expressway Community Coalition, a group of community and business interests, presented their concerns over the reconstruction of the Gowanus Expressway to Federal Highway Administrator Rodney Slater and other Brooklyn elected officials. The meeting was hosted by the Brooklyn Chamber of

Commerce. Community groups were dissatisfied with the proposed NYSDOT project because according to them the reconstruction plan would put thousands of vehicles on local streets for up to ten years. The Coalition had been calling on NYSDOT for over a year to carry out an EIS that incorporated an analysis of removing the elevated structure in favor of an at-grade expanded boulevard and improved public transportation (TSTC, October 5, 1994).

A major source of tension between community groups and NYSDOT officials has been the latter's attitude towards environmental review and public input. In 1995, NYSDOT began work on expanded ramp links to the renovated Gowanus Expressway. This was viewed as the agency's anticipation that a specific solution and design for the Gowanus Expressway project had already been chosen before any comprehensive environmental assessments were made public and discussed (TSTC, September 1, 1995).

Additional mistrust between community groups and NYSDOT resulted when the latter refused to pay for an independent community engineer that would help citizen groups to understand detailed technical documents. According to community groups this would also allow them to better respond when NYSDOT requests public response to its plans. In response to NYSDOT's attitude, Brooklyn Borough President, Howard Golden, provided $150,000 to pay for an engineer in 1997 (TSTC, July 3, 1997).

One possible reason for NYSDOT's initial reluctance to carefully analyze all possible alternatives and to choose Alternative 2 could have been their desire to avoid carrying out a Major Investment Study (MIS). The MIS was included in ISTEA as a way of creating a process that would allow transportation professionals to plan with the public and to consider public input as crucial to decision-making. It's purpose is to analyze solutions to address substantial transportation problems and present this information to decision-makers (USDOT/FHWA, 1995). A major investment is considered to be the construction of a large new facility or a substantial expansion of an existing facility. These studies are required in metropolitan areas where there is a need to consider major investments and where federal funds are involved. Included in the categories of projects that require an MIS are highway and transit improvements of substantial cost that are expected to have a significant impact on capacity, travel, or level of service, at a corridor level or sub-area level. The objectives of MIS are to improve transportation decisions by providing detailed information on the different options available to address transportation problems (Sermons, 2000). In addition, when MIS were created, they were seen as a way of meeting the various requirements of ISTEA, the Clean Air Act Amendments (CAAA), and the National Environmental Protection Act (NEPA).

The MIS process is very flexible in that it provides a general framework that is tailored to each individual project. It is required to evaluate the overall effectiveness and cost-effectiveness of alternative investment strategies. It should also consider the different project alternatives' impacts on social, economic, environmental, safety, operating efficiencies, land-use, economic development, financing, and energy consumption (USDOT/FHWA, 1995). Such requirements are a regulatory effort to support the shift from traditional transportation values such as mobility, access and safety to a broader set

of values that center on quality of life.

Under the Transportation Equity Act for the 21st Century (TEA-21), the major investment study is no longer a separate requirement, but must be integrated, where appropriate, as part of the analyses required to be undertaken pursuant to the agency's planning provisions and NEPA.[1]

## A Tunnel Alternative and Community Participation

In 1997 RPA released a report paid by the New York City Council indicating that a tunnel to replace the Gowanus Expressway was technically feasible. The tunnel proposed by RPA would connect the Belt Parkway directly to I-278 at the Verrazano-Narrows Bridge. This would allow for the closing of the Shore Parkway north of the Verrazano, and would allow for the restoration of the entire Bay Ridge waterfront. The traffic on Prospect Expressway would not enter the Gowanus tunnel. It would travel on Hamilton Avenue, with the increased space provided by the demolition of the elevated expressway accommodating this traffic on a boulevard that would resemble Ocean Parkway (TSTC, July 3, 1997).

RPA lobbied for the inclusion of its tunnel alternative in the NYSDOT environmental impact study (EIS), and recommended that the EIS be expanded into an MIS that would compare the benefits and costs of all alternatives (TSTC, July 3, 1997).

According to RPA a tunnel alternative would have a price tag of about $2.4 billion. At first, this seems to be much higher than the cost of replacement which was initially billed by NYSDOT as $600,000. However, the long-term costs and benefits are more difficult to ascertain. Defenders of the project argue that maintenance of a tunnel is much cheaper than that of an elevated highway, and that tunnels last three to five times as long as elevated expressways (Ketcham, Brian and Carolyn Konheim, 2000). They also argue that the benefits of reviving neighborhoods in the Southeast part of Brooklyn would be very high over the long term. A tunnel could allow the Bay Ridge and Red Hook neighborhoods to develop esplanades, parks and light-rail systems of much value to surrounding communities.

In addition, the tunnel alternative would allow for traffic to continue using the elevated structure while the tunnel is built. This would avert the traffic of up to 4,000 vehicles per hour expected to choke local streets if the Gowanus is rebuilt. Supporters of a tunnel project also point out that new tunneling technologies are being employed in cities such as Paris, London and Tokyo.

Those who oppose a tunnel alternative argue that tunnels are very expensive to build. NYSDOT argues that a tunnel alternative would cost between $6-9 billion, not $2.4 billion. This could mean that other transportation projects are not funded, delayed or forgone. In addition, these estimates may be too low. Experience with other tunnels, such as the Channel Tunnel, and Boston's Central Artery/Tunnel Project have proven to be

[1] See http://www.fhwa.dot.gov/tea21/factsheets/envstr.htm. Access date: 18 April, 2000.

very expensive endeavors. The Central Artery's costs increased from $2.8 billion in 1982 to $12 billion in 2000.

## New Alternatives are Considered by NYSDOT

In November, 1997, the Federal Highway Administration (FHWA) announced that they would study proposals for rebuilding Brooklyn's Gowanus Expressway as a tunnel. This came at the urging of Representatives Nydia Velazquez and Jerrold Nadler (TSTC, November 14, 1997). Moreover, in April 1999, State Senator Martin Connor and State Assemblywoman Joan Millman proposed legislation to require NYSDOT to commission an independent study of worldwide tunnel boring technologies (Doyle, 2000). Such measures were adopted to ensure that the analysis of a tunnel alternative is fair and balanced. These politicians felt such legislative measures were needed because communities around the Gowanus Expressway have expressed little trust in NYSDOT.

Although NYSDOT added a tunnel option to the environmental review process, many feel that the agency is still predisposed against a tunnel alternative. One point of contention is the type of technology that can be used. In their cost analyses, which suggest a cost of $6-12 billion for a tunnel alternative, NYSDOT assume a cut-and-cover tunneling approach. This involves digging a trench where the tunnel is laid in and buried. However, in an attempt to change attitudes towards tunneling, in 1998 RPA assembled a group of European tunneling experts to brief Brooklyn Borough President Howard Golden's Gowanus Expressway Task Force and others on tunneling boring technology. Tunnel boring consists of using large drill-like machines to dig out a tunnel underground without disrupting the ground surface. Such technology is widely used by European engineering firms in projects such as the Lyon subway in France, subway tunnels in Cairo, Egypt, a metro in Lisbon, Portugal, and road and rail tunnels in Berlin, Germany. The examples presented at the meeting were carried out under soil conditions that were more difficult than those found under the Gowanus Expressway. The Cairo subway, for instance, showed that even shallow tunneling can be done without subsidence or surface disruption (TSTC, November 6, 1998).

As a result of community and elected-officials pressure, NYSDOT has changed the alternatives being considered for a Gowanus Expressway reconstruction/replacement project. The alternatives being studied as part of the DEIS as of 1999 included:

1. No build/Maintenance Alternative
2. Rehabilitation with operational and safety improvements alternative (Rehab alternative)
3. Relief viaduct with partial replacement alternative (relief viaduct alternative)
4. Tunnel alternative

## Conclusions

Plans to rehabilitate or replace the Gowanus Expressway were modified throughout the

1990s as a result of pressure from community groups to avoid rebuilding the elevated expressway. NYSDOT initially favored rebuilding the structure because this would avoid the increased costs associated with an MIS and the environmental review process, and because they viewed this as the most cost-effective option. NYSDOT's attitude also reflects an "old-school" approach to transportation planning that considers values such as mobility, access and safety as the main guiding principles.

Community interests differed from those of NYSDOT substantially. At first, they favored an at-grade boulevard to replace the elevated expressway. They saw this as an opportunity to replace a piece of infrastructure that they viewed as detrimental to neighborhood development. When RPA suggested the possibility of a tunnel to replace the Gowanus Expressway, community groups became very enthusiastic and supported the idea. This option was in line with a wider set of quality of life values, and they believed this would allow for increased access to the waterfront and other desirable community developments.

These differing sets of values between traditional transportation goals and quality of life are likely to arise as the complexity of infrastructure projects increases. In his book *Rescuing Prometheus*, Thomas P. Hughes describes how this juxtaposition of values affected engineers and others working on Boston's Central Artery/Tunnel project, the most complex infrastructure project in the history of the United States (Hughes, 1998). Hughes argues that engineers who had been trained to maximize traditional goals of mobility, access, safety, and other technical and economic factors, had problems dealing with the level of public participation in the decision-making process required by that project. Such managerial problems are likely to arise in the Gowanus Expressway also. As Jo Ann Simon, chairwoman of the Gowanus Expressway Community Coalition said, "One of the problems you have is you've got a lot of people who were … raised in the Robert Moses era of slash-and-burn transportation" (Thomas, 2000).

The Gowanus Expressway reconstruction project will provide important challenges to decision-makers in the New York City area. As quality of life issues become increasingly important in transportation projects, construction and reconstruction infrastructure projects will require increasing amounts of public participation in project design and implementation. Previous experiences, such as Manhattan's West Side Highway, have shown how public opposition to infrastructure projects have drastically changed their outcome. In addition, complex urban infrastructure projects, such as Boston's Central Artery/Tunnel project, show that if public participation and quality of life issues are not included at the design stage, the result is constant delays and cost overruns.

## References:


Anderson, Steve, *Gowanus Expressway* [on-line] at: http://www.nycroads.com/roads/gowanus. Access date: April, 2000.

Appleton, Al, "The Gowanus Tunnel Controversy," ICIS, 1998, page 8, unpublished.

Boston Globe, "AAA lists 10 worst US highway bottlenecks," October 31, 1996, p. A30.

Caro, Robert A., 1974. *The Power Broker: Robert Moses and the Fall of New York City*. Third Printing (1989). New York: Alfred A. Knopf. Pages 520-25.

Castaneda, Carol and Steve Marshall, "City roads merge into mayhem AAA cites 10 of the worst bottlenecks," USA Today, October 31, 1996, p. 3.

Daily News, "Red Hook on the Rebound," September 9, 1999, p. 7 (suburban section).

Daily News, "Buses Battle for HOV It's Time to Ban Cars," August 23, 1999, P. 1 (suburban section).

Daily News, "Gowanus Buses-Only Lane Urged," January 13, 2000, p. 2.

Doyle, Michael, "Gowanus Tunnel or Bust," about.com, found at: http://brooklyn.mininco.com/citiestowns/…a042699.htm?terms=New+York+roads&COB=home. Access date: 6 April, 2000.

Hevesi, Dennis, "Driving in Brooklyn? Expect the Worst," The New York Times, October 24, 1991, p. B1-B2).

Hughes, Thomas P., 1998. *Rescuing Prometheus*. New York: Pantheon Books. Page 240.

ICIS, "The Gowanus Tunnel Controversy," unpublished, 1999.

Ketcham, Brian and Carolyn Konheim, "The Greater Brooklyn Tunnel: Thinking Big Again," found at: http://www.where.com/%7ekk/TransportLink/news/btunnel.html. Access date: 6 April, 2000.

Myers, Steven Lee, "Fearing Lead, Dinkins Opposes Sandblasting," The New York Times, September 18, 1992, p. B1.

New York State Department of Transportation (NYSDOT), "Gowanus Expressway I-278 Rehabilitation Project, Project Overview," 1994.

Pérez-Peña, Richard, "Rebuilding the Gowanus (?)," The New York Times, July 30, 1995, p. 29.

Pérez-Peña, Richard, "As Unpopular Gowanus Overhaul Looms, a Tunnel Plan Gains Notice," New York Times, Monday, November 11, 1996, page B5.

Pierre-Pierre, Garry, 1997. "Study Backs Tunnel To Replace the Gowanus," July 1, The New York Times.

Regional Plan Association (RPA), *A Gowanus Tunnel, An Initial Feasibility Study*, July 1, 1997.

Regional Plan Association (RPA), [on-line] <http://maestro.com/~rpa/gowintro.html#INTRO>

Sermons, M. William, ENCE 673 Urban Transportation, Evaluation: Part II, at: http://www.eng.umd.edu/~sermons/ence673/Notes3/tsld001.htm. Access date: 5 April, 2000.

Stamler, Bernard, "Gowanus Expressway: Trouble Overhead," The New York Times, December 13, 1998, p. 15.

SWBICD (Southwest Brooklyn Industrial Development Corporation), Neighborhood History [on-line], at: http://www.swbidc.org/history.html. Access date 6 April, 2000.

Thomas, Katie, "Tunnel Vision Is Looking Dim," at: http://future.newsday.com/8/fbak0813.htm. Access date: 6 April, 2000.

Tri-State Transportation Campaign (TSTC), "Gowanus Expressway Meeting," October 5, 1994, *Mobilizing the Region*, Issue 5. Available at: http://www.tstc.org/bulletin/19941005/mtr00501.htm. Access date: 6 April, 2000.

Tri-State Transportation Campaign (TSTC), "Prospect Link Suggests Compromised Gowanus Review," *Mobilizing the Region* Issue 49, September 1, 1995. Found at: http://www.tstc.org/bulletin/19950901/mtr04910.htm. Access date: 6 April, 2000.

Tri-State Transportation Campaign (TSTC), "RPA Finds Gowanus Tunnel Feasible," *Mobilizing the Region* Issue 133, July 3, 1997. Found at: http://www.tstc.org/bulletin/19970703/mtr13301.htm. Access date: 6 April, 2000.

Tri-State Transportation Campaign (TSTC), Feds Want Gowanus Tunnel Analysis," Mobilizing the Region Issue 151, November 14, 1997. Found at: http://www.tstc.org/bulletin/19971114/mtr15108.htm. Access date: 6 April, 2000.

Tri-State Transportation Campaign (TSTC), "Tunnel Experts Say Underground Gowanus Obstacles Exaggerated," *Mobilizing the Region*, Issue 195, November 6, 1998. Found at: http://www.tstc.org/bulletin/19981106/mtr19505.htm. Access date: 6 April, 2000.

USDOT/FHWA, 1995. *A Guide to Metropolitan Transportation Planning Under ISTEA:*

*How the Pieces Fit Together*, Publication No. FHWA-PD-95-031. Pages 17-19.

U.S. News & World Report, " Congestion count," November 11, 1996, p. 17.

## Chronology:

| | |
|---|---|
| 1939-41 | The Gowanus Expressway is built. |
| 1964 | The Gowanus Expressway was expanded from two to three lanes in each direction. |
| 1974 | Robert Caro publishes his biography of Robert Moses, *The Power Broker*, arguing that the construction of the Gowanus Expressway was a leading factor in the deterioration of Sunset Park. |
| 1990-92 | NYSDOT proposes Gowanus project and legally categorizes it as a replacement in kind. |
| 1991 | NYSDOT indicates that the concrete deck and many steel supports on the Gowanus Expressway have reached their useful life, and have suffered from neglect and lack of maintenance. (Hevesi, 1991). |
| 9/1992 | Due to concerns about lead, sandblasting of Gowanus Expressway is halted. (New York Times, Sept. 18, 1992). |
| 1992-94 | Community groups around the Gowanus Expressway began to organize against the Gowanus Project. This was caused mostly by the prospect of having 4,000 vehicles an hour diverted to local streets. |
| 1994 | In October, members of the Gowanus Expressway Community Coalition, a group of community and business interests, presented their concerns over the reconstruction of the Gowanus Expressway to Federal Highway Administrator Rodney Slater and other Brooklyn elected officials (MTR, 1994). |
| 1995 | NYSDOT began work on expanded ramp links to the renovated Gowanus Expressway. This was viewed as the agency's anticipation that a specific solution and design for the Gowanus Expressway project had already been chosen before any comprehensive environmental assessments were made public and discussed (MTR, 1995). |
| 10/1996 | The American Automobile Association (AAA) ranks the Gowanus Expressway as one of the country's 10 worst traffic bottlenecks. (Castaneda et al, 1996). The primary congestion point is identified as a 3.8 mile stretch between the Brooklyn Battery Tunnel and the Belt Parkway. (Boston Globe, 1996). In a typical day, drivers along this 3.8-mile stretch of highway experience six hours of delays. (U.S. News & World Report, 1996). |
| 12/1996 | A Bus/HOV lane opened on the Gowanus Expressway. (NYSDOT, |

| | |
|---|---|
| | Summer 1999). It is in operation during morning rush hours from 6 a.m. to 10 a.m. on weekdays. (Daily News, August 23, 1999). |
| 1997 | RPA presents its initial feasibility study titled "A Gowanus Tunnel". The tunnel proposed by RPA would connect the Belt Parkway directly to I-278 at the Verrazano-Narrows Bridge. |
| 1997 | NYSDOT agrees to include a tunnel alternative in its environmental review process. (RPA, 1997) |
| 1997 | In response to NYSDOT's reluctance to assist community groups with the hiring of an independent engineer to help them review technical documents, Brooklyn Borough President, Howard Golden, provided $150,000 to pay for an engineer. |
| 1997 | The Federal Highway Administration (FHWA) announced that they would study proposals for rebuilding Brooklyn's Gowanus Expressway as a tunnel. |
| 1999 (?) | The Community and Economic Interest Task Force, and a smaller Working Group were created so that representatives of communities all along the Gowanus Corridor and in Staten Island can meet together, share their concerns and help the authorities to select the best solutions. |
| 1999 | A new Bus/HOV lane opened to EZ Pass users on Prospect Expressway (NYSDOT, Summer 1999). |
| 4/1999 | State Senator Martin Connor and State Assemblywoman Joan Millman proposed legislation to require NYSDOT to commission an independent study of worldwide tunnel boring technologies. |
| 1999 | Investigation of the soils in the Gowanus corridor are carried out to provide information for alternative measures. |
| 1999 | A Tunnel Technical Advisory Panel (TTAP) is convened to serve as a high-level technical advisory group to the Gowanus Project. The panel consists of experts in tunneling from around the world. (NYSDOT, Summer 1999). |
| 1999 | Johansson & Walcavage is a landscape architecture and urban design firm that was hired to explore ways to enhance the Gowanus corridor under all of the Draft Environmental Impact Statement build alternatives. (NYSDOT, Summer 1999). |
| Summer 1999 | FHWA and NYSDOT prepare a full Draft Environmental Impact Statement (DEIS) for the Gowanus Expressway Project. (NYSDOT, |

Summer 1999)

Summer 1999 NYSDOT begins to analyze options for tunnel alternatives to for the Gowanus Expressway. (NYSDOT, Summer 1999).

Summer 1999 The New York State Department of Transportation plans to open a Gowanus Project Community Office in Sunset Park, Brooklyn. The goal is to allow community members to access information and make comments on the project. (NYSDOT, Summer 1999).

1/2000 Transportation advocates back proposal to create a buses-only lane on the Gowanus Expressway. (Daily News, January 13, 2000). It is argued that bus riders comprise 80% of the passengers who use the HOV lane each day but cars account for 85% of traffic.

## Stakeholders:

New York State Department of Transportation (NYSDOT)

Federal Highway Administration (FHWA)
Federal Highway Administrator Rodney Slater

Community boards

Elected officials
Brooklyn Borough President, Howard Golden
Representatives Nydia Velazquez and Jerrold Nadler

Business and civic groups
* Regional Plan Association (RPA), a nonprofit group that advises governments on development.
* Gowanus Expressway Community Coalition (advocacy group composed of more than 20 community organizations). (New York Times, Dec. 13, 1998).
* Amalgamated Transit Union, local 726, represents Staten Island bus drivers. (Daily News, August 23, 1999).
* United Puerto Ricans of Sunset Park, an activist group (Daily News, August 23, 1999).
* Sunset Park Restoration, a community group that fought to stop the rehabilitation project. (Pérez-Peña, 1995).
* Gowanus Canal Development Corporation
* The Brooklyn Heights Association
* The Bay Ridge Community Corporation
* The South Brooklyn Business Development Corporation

## Fact Sheet:

* The Gowanus Expressway is a 6.1 mile elevated highway that was built in 1941 by Robert Moses.

* It was built over the elevated tracks of a subway train, along Third Avenue, in the Sunset Park neighborhood of Brooklyn. In order to accommodate local traffic, Third Avenue was widened from a four-lane street to a ten-lane thoroughfare. In the 1960s, the Gowanus Expressway itself was expanded from two to three lanes in each direction.

* The Gowanus Expressway connects Brooklyn, Manhattan, Queens and Long Island, and it is regarded as a major truck route for moving freight in and out of Brooklyn, and between Long Island and New Jersey.

* The 3.8 mile segment between the Brooklyn Battery Tunnel and the Belt Parkway is considered one of the ten worst traffic bottlenecks in the United States.

* About 175,000 vehicles use the Gowanus every day, and the result is congestion for about six hours a day.

* Today, the Gowanus Expressway has exceeded it's design life. As a result, it is in critical condition, and it suffers from structural decay. New York State Department of Transportation (NYSDOT), the agency responsible for managing the Gowanus Expressway is currently examining a set of alternatives to replace it.

## Performance Measures:

Measures associated with the construction of the Gowanus Expressway and the neighborhood:

Demolition of storefront buildings with the expansion of the structure in the early 1960s.

Shadow cast beneath the Gowanus Expressway, over Third Avenue.

Restricted access to waterfront and other areas, as the widened throughfare was difficult for pedestrians to cross.

Sunset Park neighborhood has the lowest park density of any neighborhood in New York City. This is one reason why access to waterfront is regarded as very important by some community groups.

Measures associated with present structure:

Congestion: AAA ranked the Gowanus Expressway as one of the ten most congested highways in the country.

Structural decay: The concrete deck is in critical condition.

Design flaws: lack of shoulders, inadequate acceleration and deceleration lanes, and tight curves. There are weaving conflicts between the Shore Parkway Interchange and the BQE connection.

Measures associated with Gowanus Expressway reconstruction project:

A critical point of opposition to rebuilding the Gowanus Expressway is the prospect of having thousands of vehicles on local streets for up to ten years.

Future goals include improving performance on the following areas: structural soundness and safety, durability, ease of maintenance, earthquake resistance, improving traffic flow, encouraging through traffic to stay on the highway rather than to shift to local streets.

A tunnel alternative could improve community access to waterfront, reduce shadow over Third Avenue, improve economic activity along Third Avenue and surrounding areas (neighborhood development), reduce noise, and improve air quality.