**Candidate Project Overview**

**Name:** Removal of Park East Freeway Stub  
**Location:** Milwaukee, Wisconsin

**Description:**
The Park East Freeway Stub was part of a 1960’s plan to encircle downtown Milwaukee with freeways. The plan called for a system of elevated freeways designed to carry large volumes of traffic over the downtown area. Park East was to link the primary interstate with the lakefront area. Construction was halted on the system in the mid-1970’s due to extensive community opposition although a one mile, six lane section of the Park East had already been completed. This Freeway Stub served to link I-43 with downtown Milwaukee through a series of exit ramps.

The Freeway Stub was to be replaced by an at-grade, six-lane boulevard integrated into the City’s grid street pattern which would allow for the redevelopment of 26 acres of land formerly occupied by the Freeway. This is a catalytic project in the overall redevelopment plan of the Park East area which encompasses 64 acres of land and three key redevelopment areas:

- McKinley Avenue -- large parcels near I-43 that make it a likely place for new offices
- Lower Water Street -- residential development overlooking the river, along with small and midsize offices and street-level retail and night-life tenants
- Upper Water Street -- additional residential developments

Demolition on the Freeway Stub began in 2002 with a new bridge over the Milwaukee River and the new Boulevard scheduled for completion in 2004.

**Cost:** The project cost $25 million to tear down the freeway and rebuild the adjoining streets, which was less than the nearly $80 million that would have been spent on the freeway's reconstruction project.

**How and why did this come to be?** When the freeway plan for downtown Milwaukee was killed by community opposition in the 1970's, land had already been cleared to complete the remaining section of the Park East Freeway. (The opposition largely came from city residents who did not want the lakefront area to be cut off from the downtown by a freeway.) This land remained vacant for many years as the DOT kept it as part of the transportation corridor. The Freeway Stub also had a blighting influence on the neighborhood beneath it and property values went down over time resulting in disinvestment and the rise of numerous parking lots as the predominant land use in the entire freeway area.

By the early 1990’s, property values were increasing in other sections of downtown Milwaukee due to a shortage of land for new development and an increased demand for quality office, residential, retail and other commercial uses. At the same time, the state finally removed the cleared land from the preserved transportation corridor which allowed for the development of East Pointe Commons in 1991. This new neighborhood returned the vacant land to productive use as a vibrant, mixed-use urban community consisting of shops, townhouses, condominiums and apartments. East Pointe Commons is a successful example of urban housing and neighborhood revitalization and won several awards including a 1999 Award for Excellence from the Urban Land Institute.

The success of East Pointe coupled with increasing land values and development in other parts of downtown ignited the thought process for demolishing the Park East Freeway Stub. The concept evolved from the broad public interest of many stakeholders in Milwaukee's downtown and nearby downtown neighborhoods. A 1995 traffic study by the Southeastern Wisconsin Regional Planning Commission also played a key role in convincing residents and elected officials that Milwaukee would not be crippled by the Park East Freeway’s demolition. The traffic study revealed that since the interstate was a spur and did not carry through traffic, the arterial street system could absorb the 25,000 vehicles per day without greatly increasing traffic congestion.

The idea for removing the Freeway stub was eventually incorporated into Milwaukee’s Downtown Master Plan in 1999. That plan identified the removal of the Park East Freeway as a catalytic project that could attract upwards of $250 million of new investment in downtown Milwaukee. Part of that investment was to come from...
Harley Davidson manufacturing which wanted to develop a museum, hotel and other attractions in the Park East area. The company believed that in order for their project to be attractive, and to create a positive atmosphere for the company’s 100th anniversary, the freeway had to come down.

The objectives identified in the plan for Park East included promoting residential, office, and mixed-use development, extending RiverWalk in front of the new mixed-use buildings, enhancing pedestrian connections across the Milwaukee River, enhancing the success of the Water Street area with new entertainment venues and providing urban open space. The plan recommended that new development meet certain standards for land use and design. These include:

- Preserve and re-establish the street grid pattern where it was interrupted;
- Develop mixed-use buildings with entertainment as a focus on one section of the neighborhood and residential on the remainder;
- Buildings should be four to six stories in height;
- Riverfront development should include continuation of the RiverWalk and allow for river access.

Funding for the removal of the freeway was secured in the 1999 Interstate Construction Estimate Agreement between former Governor Tommy Thompson, former County Executive Tom Ament, and former Milwaukee Mayor John Norquist. This agreement occurred because the Milwaukee area was credited federal dollars that were supposed to be used for freeway construction, freeways that were never built. The elected officials were then required to agree on how to use the credit. The money was divided 50/50 between the state and county/local governments, a portion of which was designated for the removal of the freeway stub. The elected officials were willing to gamble on the project when it was estimated that reconstructing the Park East Freeway could cost over $80 million. Tearing it down and rebuilding surface streets was a much cheaper alternative and made sense as the stub was not needed.

In 2001, following the decision to tear down the Freeway, the City initiated a redevelopment planning effort for the Park East area. The redevelopment plan covers roughly 64 acres in the area where the Freeway once stood and describes the redevelopment opportunities for the area that are consistent with what was set forth in the Downtown Master Plan. The redevelopment plan was divided into three sections including a renewal plan, the master plan (which links the redevelopment plan to Milwaukee’s Downtown Master Plan and Comprehensive Plan) and the development code which defines the land use and design standards. The Park East Redevelopment Plan won a 2003 award from the Congress for the New Urbanism. The City adopted the Park East Redevelopment Plan in 2004.

How long did it take for this concept to become reality? The initial concept came to light in the early 1990’s and was studied by the MPO in 1995. Although not yet finished, it will have taken nearly 10 years for the freeway to be torn down and the street system to be completed.

Was this initiative developed through a process or a Champion? The key champion for the removal of the freeway stub was former Mayor John Norquist. He was and remains a big supporter of the New Urbanism and generally dislikes freeways. That said, all of the ideas and concepts were documented in an extensive planning process that included analyzing the impact of removing the freeway from the transportation system, incorporating its removal into the City’s Downtown Master Plan and finally creating the Park East Redevelopment Plan to guide development on the newly vacant land.

Controversy or struggles this concept faces or is facing? Opponents of the project were unhappy to hear that a few minutes would be added to their travel time when accessing the Park East area. They also felt that using arterial streets is not as safe as using the interstate system. There were also complaints that money recently spent rehabilitating the Park East freeway stub was wasted when the plan arose to tear it down after the rehab was completed.

Current Status/Public attitude toward this initiative? The freeway stub was torn down beginning in 2002 for a cost of $25 million and the new surface roads and a bridge over the Milwaukee River should be completed by the end of 2004. The redevelopment plan was adopted by the City in June 2004. The overall public attitude toward this project is overwhelming positive although Harley Davidson not only didn’t build their hotel/museum complex, but moved their facility out of the Park East area. However, other development opportunities have taken its place.

What were the expectations of the concept? The primary expectations were to better utilize the land that the Park East Freeway Stub occupied to promote economic development in the City.

What agency implemented this concept? The responsible parties are U.S. Department of Transportation, Wisconsin Department of Transportation, Milwaukee County and the City of Milwaukee.
Name: State Route 91 Congestion Pricing
Location: California (Orange County to Riverside County)

Description:
The SR-91 Variable-Toll Express Lanes is the first fully automated toll road in the world. It is located in the freeway median between SR-91/55 junction in Anaheim and the Orange/Riverside County Line. This 12-lane freeway connects the employment centers of Orange County to the residential developments of Riverside County. The toll facility provides two extra lanes in each direction, separated from the adjacent freeway lanes by a "soft" barrier consisting of a painted buffer with pylons. The lanes operate as an express facility, meaning that there are no intermediate exits or entrances along the 10-mile length. Heavy vehicles are not permitted in the toll lanes.

Under Caltrans supervision, the express lanes were designed, built and are operated by the California Private Transportation Company (CPTC) on land leased from the State of California. The franchise agreement gives CPTC 35 years to return a profit to its investors, after which time the toll lanes revert to full state control. The agreement between CPTC and Caltrans also contains a "non-compete" provision through which Caltrans agreed not to make freeway improvements that undermine CPTC’s business, unless required for highway safety.

The tolls which vary from a low of $0.75 during periods of lowest demand to $3.75 during the height of the Friday afternoon peak period. The current tolls follow a published schedule; however, the technology would permit the toll levels to vary dynamically. As of May 19, 2003 carpools of 3 or more people can drive on it free, with the exception of eastbound weekday travelers from 4 PM to 6 PM who continue to pay a 50% discounted toll charge. A “91 Express Club” was created in January 1997, which permits frequent users to pay a flat $15 monthly fee and receive a $0.75 discount on each trip made, regardless of time of day. This monthly club is beneficial for those who use the express lanes more than 20 times per month.

FasTrak is the electronic toll collection (ETC) system that is used for these lanes. Cash payments are not allowed on this facility. Only registered customers equipped with suitable FasTrak transponders are permitted in the toll lanes.

Cost:
The four-lane, 10-mile long toll facility was constructed for approximately $135 million as a private for-profit investment, which is a relatively low capital cost (less than $3.5 million per lane-mile).

This private-public partnership experiment was authorized by the California Legislature under the AB 680 legislation enacted in 1989. It became a candidate for implementation under AB 680 because of the region's inability to fund necessary improvements in the corridor within a short time frame. Had public funds been used for improvements, the added capacity would have included new HOV lanes, or a combination of HOV and general purpose lanes. However, implementation would have been 5 or more years later than the improvements constructed through the private-public partnership.

How and why did this come to be?
Rapid growth in commuting and lack of an alternative route in the SR-91 corridor during the 1980’s and 1990’s had put a severe strain on SR-91. By the mid-1990s the average commuting time on SR-91 had grown to over an hour a day each way, almost three times the national average. Along with the congestion issues that California was facing, in 1989 the California budget lawmakers also faced a serious budget crisis, which led to the California Toll Road Experiment. The California legislature passed a law enabling the California Transportation Department to entertain proposals for up to four privately funded highway projects. This experiment was conducted to test the idea that private capital might be willing to invest in expanding and improving the state’s highway system, letting tolls substitute for some of the increased gas-tax revenues that would otherwise be used to fund California’s projected growth. It was also done to test whether variable pricing...
could be used to manage traffic flow to provide congestion relief. Last, it was a test to see if electronic toll collection technology was mature enough to make it feasible to operate toll roads without toll booths.

The SR-91 Express Lanes plan was the first privately funded project. This was seen as a great opportunity for the state because the private sector took the financial risk while the state gets congestion relief at no cost to taxpayers. In 1990, the state awarded the franchise to an entity called the California Private Transportation Company (CPTC), a consortium of three companies (Kiewit Diversified, Compagnie Financiere et Industrielle des Autoroutes, and Granite Construction, Inc.), to build a roadway down the SR-91 median that had been built extra wide for the purpose of future additional lanes. It opened on December 27, 1995. Prior to the opening of the express lanes to traffic, CPTC formally transferred ownership of the facility to the State of California. Caltrans then leased the lanes back to CPTC for a 35-year operating period. This officially made the lanes a part of the California State Highway System and allowed for the California Highway Patrol to provide police services at CPTC’s expense. The project worked fairly well for a couple of years, because congestion went down significantly. However in 1998, due to general growth in the area and a new link to another busy highway, the congestion levels in all the lanes had nearly returned to pre-Express Lane days.

The problem with the public-private agreement was that in giving the contract to CPTC the state had consented to the company’s requirement for a non-competing agreement. This agreement stipulated that the state highway department would not do anything that might damage the private company’s business, such as build a new roadway or other improvements to relieve congestion along its own parallel highway. A 1.5 mile protection zone along each side of SR-91 freeway was created as part of this deal until 2030. Within the protection zone, improvements along the corridor were prohibited, which created mobility problems as the region and corresponding transportation demands continued to grow.

This agreement outraged the public. Public pressure along with several internal developments within the three parent companies finally led CPTC to get out of the business. In January 2003, the Orange County Transportation Authority (OCTA) purchased the express lanes from CPTC for $207.5 million, which will be paid off with future toll revenues. The highway department is currently planning improvements that should help mitigate the traffic congestion. OCTA is also planning to earmark some of the toll revenue to subsidize its existing public transit system once it recoups the money it spent on buying the system.

**How long did it take for this concept to become a reality?**
In 1989, AB680 authorizes Caltrans to enter into four public private toll road project agreements. In December 1990, CPTC entered into an agreement with Caltrans. The express lanes opened for service on December 27, 1995. Then in September 2002, the Assembly Bill 1010 legislation authorized Orange County Transportation Authority (OCTA) to purchase the 91 Express Lanes from CPTC. As of January 3, 2003, OCTA officially took public ownership of the express lanes.

**Was this concept developed through a process or a Champion?**
This public private toll road was made possible by Assembly Bill 680 (1989), which authorized Caltrans to enter into agreements with private entities for development, construction and operation of four demonstration transportation projects at private sector expense without the use of state funds. A development franchise agreement was executed in December 1990 and January 1991 for 91 Express Lanes and three other transportation projects.

**What controversies or struggles did this concept face?**
Opinion surveys of peak period travelers were conducted in the SR-91 corridor during the fall of 1995, spring of 1996, fall-winter of 1996-97, and spring of 1997, and a survey of area businesses was conducted in the winter of 1996-97. The surveys were conducted to understand the public’s opinion about travel conditions, variable toll pricing, and the other innovative technical and institutional features of the SR 91 Express Lane project. All surveys were done by telephoning individuals identified through license plate numbers from vehicles observed traveling on SR 91 during the weekday peak periods. A summary of the results found from these surveys is provided below.

- Providing extra toll-financed lanes to bypass congestion was consistently popular among SR 91 commuters. Overall, nearly 80% of the commuters surveyed approved of providing more highway capacity, regardless of how it is financed.
- Varying tolls depending on the severity of the congestion bypassed was not very popular in the first survey. However, by the third survey, conducted about a year after the toll lanes opened, commuter approval of congestion-based tolls increased from about 45% to 60-75%.
- As of the fourth and final survey, 50-60% of commuters approved of replacing the published toll schedule with a dynamic toll scheme, where tolls would be based on actual current traffic conditions with an established maximum.
• The private for-profit aspect of the SR 91 Express Lanes was not popular among commuters in the first two surveys, receiving approval percentages in the 35 to 50% range. Proponents of this concept cite the efficiency of the private sector as their reason for support. However, opponents of this concept cited that it is either the government’s job to provide highways, or that for-profit operation of highways is unfair.

• The commuter surveys revealed high levels of approval for other technical and institutional features of the express lanes, including exclusive AVI toll collection, photo-enforcement, and toll discounts for HOV-3+ users.

• Randomly selected businesses in the area of the express lanes were also surveyed. About half of the surveyed businesses indicated that the new express lanes improved ease and reliability of travel, not only for their workers but also for their customers, suppliers, and the firm’s own work-related travel. About 63% of the companies contacted stated that the express lanes are good for local business.

What is the public attitude toward this concept?
In general, the 91 Express Lanes are highly regarded by its users because there is a perceived time savings over the general purpose lanes.

How does the FasTrak system work?
As the vehicle enters the toll lane, sensors detect the vehicle. The two-antenna configuration reads a transponder mounted on the vehicle’s windshield. As the vehicle passes through the exit light curtain, it is electronically classified by the treadle based on the number of axles, and the ETC account is charged the proper amount. Feedback is provided to the driver on an electronic sign. If the vehicle does not have a transponder, the system classifies it as a violator and cameras take photos of the vehicle and its license plate for processing.

There is no fee for the transponder and no service charge to open and maintain a FasTrak account. The only requirement is that you keep a minimum balance in your prepaid account, which can automatically be kept by authorizing regular payments from your credit card.

What were the expectations of this concept?
The primary purpose of the express lanes was to reduce congestion on the 91 Freeway and to provide a faster alternative for those who are willing to pay a toll.

What agency implemented this concept?
Under Caltrans supervision, the express lanes were designed, built and are operated by the California Private Transportation Company (CPTC) on land leased from the State of California.
**Name:** Minnesota DOT Noise Abatement Program

**Location:** Minnesota

**Description:**
A unique component of Minnesota’s Noise Abatement Program is that it includes Type II noise abatement projects (those on existing highways). A statewide Noise Abatement Study conducted in 1997 identified 811 sites in residential areas that are located adjacent to Minnesota highways. Of those sites, 54 areas were identified in the study as offering the most cost-effective opportunities for retroactive noise mitigation. In order to be included in the priority list, the noise level at the site had to exceed 67 dBA. Cost-effectiveness is based on the cost per housing unit to meet state noise standards. Therefore, those areas with higher density housing and lower construction requirements to meet the state noise standards are ranked the highest. The cost effectiveness formula essentially works out to being $3,250 per dBA * Number of Residences Receiving > 5 dBA noise reduction. The Metro District of Mn/DOT (Minneapolis/St.Paul) is the only district in the state actively involved in traffic noise abatement where 48 of the 54 key sites were identified. To date, over 20 miles of noise barriers have been built in the Minneapolis/St. Paul area.

**Cost:**
Mn/DOT’s Metro division has set aside $1.5 million a year beginning in 2000 from its construction and maintenance budgets to address noise abatement. Generally, the state can build 1 mile of wall for about $1.5 million although construction costs are increasing. There is no local match; however, if the municipality desires a more attractive or ornate wall, the state will generally ask for their financial assistance to offset the costs. The set aside may increase to something between $2 and $4 million a year to account for increasing construction costs. No federal funding is used in the program as there are a number of restrictions on its use for Type II noise abatement projects.

**How and why did this come to be?**
Minnesota began addressing noise pollution following the passage of the National Environmental Policy Act (NEPA) in 1969 and the Federal-Aid Highway Acts of 1970 and 1973. In sum, the language in these acts required that USDOT develop guidelines to control traffic noise on new and existing federal-aid highways. To implement this, FHWA issued a Policy and Procedures Manual entitled Noise Standards and Procedures in which they established noise abatement criteria for different land use types over an entire day.

At the same time, Minnesota was enacting its own environmental laws. The 1973 Minnesota Environmental Policy Act had as one of its goals the minimization of noise, particularly in urban areas. The Minnesota Pollution Control Agency was directed by the state legislature to create state noise standards, which were adopted in 1974. The standards identify maximum outdoor hourly noise levels for various land use activities, including transportation. Minnesota’s standards are stronger than FHWA’s as they include both daytime (7 AM to 10 PM) and nighttime hours (10 PM to 7 AM). They are also stronger than FHWA’s for residential areas.

During the 1970’s, Minnesota DOT began receiving complaints about traffic noise, especially following the enactment of the various pollution control laws. To address highway noise, Mn/DOT began constructing noise barriers as part of new construction and major reconstruction projects in the state. In 1975, the Minnesota Legislature used a one cent state gas tax, coupled with federal-aid interstate matching funds, to begin constructing noise walls on existing interstates in the Twin Cities area. This effort was stopped in 1978 when the Legislature placed a moratorium on the construction of any additional noise walls on already completed trunk and interstate highways, except for those programmed before 1978. This moratorium expired in 1980 however the gas tax was shifted to other needs effectively ending the retrofit program. Noise walls continued to
be constructed as part of new construction projects.

Through the 1980s and 1990s, the state DOT and the Legislature received numerous complaints regarding highway traffic noise throughout the State and the Legislature began to fund individual noise wall projects, largely based on politics and where they could get the most “bang for the buck”. As more and more of these projects were funded through the Legislature, it was recognized that there was not enough money to go around for every project and that some type of program for noise mitigation on existing highways was needed.

In 1995, the Minnesota Legislature directed Mn/DOT to conduct a statewide noise abatement study to:
- Survey highway noise conditions along freeways and expressways inside incorporated areas in Minnesota.
- Identify areas where state and federal noise standards are exceeded.
- Assess the feasibility, reasonableness and cost effectiveness of implementing noise mitigation measures.
- Report back to the Minnesota Legislature on measures taken and planned to reduce and minimize the effects of highway noise along freeways and expressways in incorporated areas of Minnesota.

The study was completed in 1997 and updated for the Metro area in 2002 to focus the state program on the Twin Cities and to further prioritize the projects eligible for funding in those eight counties.

<table>
<thead>
<tr>
<th>How long did it take for this concept to become reality?</th>
<th>The current noise wall program has been in existence since the completion of the 1995 Noise Study. However, attempts at noise mitigation began in the 1970’s.</th>
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</thead>
<tbody>
<tr>
<td>Was this initiative developed through a process or a Champion?</td>
<td>Although there was not a specific champion, the state clearly believes that mitigating noise is important and should be done as funding allows. This is supported by various state and federal legislation and is backed by state funds.</td>
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<tr>
<td>Controversy or struggles this concept faced or is facing?</td>
<td>Mn/DOT has received some complaints about the program from individuals unhappy with having their tax dollars spent to improve the quality of life for residents that “come to the nuisance”. More importantly, Mn/DOT is concerned that meeting the state standards for noise is becoming increasingly difficult due to the elongated morning commute pattern. (The stricter standard is in place until 7 AM.)</td>
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<tr>
<td>Current status/public attitude toward this initiative?</td>
<td>The program is ongoing and has been well received by the general public. Mn/DOT views it as a good public relations program. When the next location on the prioritized list is up for the funding opportunity, the municipality is contacted and public hearings are held. The municipality does have the opportunity to turn down the noise wall offer. That has occurred in roughly 10 to 15 percent of the locations thus far.</td>
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<td>What were the expectations of this concept?</td>
<td>The primary expectation was to create a program that would allow for incremental construction of noise walls based on their priority and community desires to improve the quality of life for local residents. The process is automated and projects are selected based on who is next on the list.</td>
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<tr>
<td>What agency implemented this concept?</td>
<td>Due to the State Legislature’s actions, the Minnesota DOT is the primary implementation agency for the noise abatement program.</td>
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**Name:** Transitway  
**Location:** Ottawa, Ontario  
**Description:**
The Transitway first opened in 1983, linking five stations:
- Hurdman and Lees in the east end, and
- Baseline, Queensway and Lincoln Fields Stations in the west.

Today, the Ottawa Transitway consists of three routes (Routes 95, 96, and 97) that serve stations along a right-of-way that consists primarily of grade separated lanes. Its design allows for use by any bus and for overtaking of buses at critical bottlenecks (stations and junctions), which enables the system to accommodate a significant amount of regular transit service in addition to the three primary express routes. The Transitway guideway serves as the trunk line branch for the various express bus services, which expedites travel to downtown Ottawa and to all the major activity centers located at Transitway stations.

The Transitway system has been expanded since its completion in 1996 through new stations, park and ride lots, and freeway and arterial bus-only lanes. The City operates a fleet of over 900 standard and articulated buses on more than 140 individual bus routes.

**Cost:** The total cost of the initial Transitway system including stations, the right-of-way and the exclusive bus lanes was $420 million Canadian in 1996. Over 75% of the funding came from the provincial government as Canada did not and continues to not have a national urban transit investment fund.

**How and why did this come to be?** A key factor that led to the development of the Transitway was the Canadian government structure at the time in the Ottawa region. The Canadian constitution gives provinces the responsibility for land regulation. As Ontario has no province-wide planning process, Ottawa’s localities requested the creation of the Regional Municipality of Ottawa-Carleton (RMOC) in 1969. It was led by a council of local elected officials and was given authority for land use, infrastructure, transit, and health and welfare services. The creation of the regional entity led to a four-tiered government structure for Ottawa (national, provincial, regional and local). Throughout the 1970’s, the power of the RMOC was quite strong regarding planning and was comparable to state planning entities in Oregon and Florida.

Soon after the RMOC was formed, it began to set broad goals for transportation, land use and infrastructure in the region. At the same time, there was a general negative reaction to freeway building in the Ottawa region and only one small section of freeway was ever built in the City. More importantly, since Canada has no national freeway system, the RMOC took over inter-jurisdictional transportation planning functions from the province. Provincial law required that the RMOC produce an overall planning document, called the Official Plan, which looked 20 years out into the future and was approved in 1974. All municipalities in the region were required to conform to the plan. Essentially, the plan restricted the number of new roads to be built, told the municipalities what the land use pattern would be and also set mode split objectives for a transit system. One of the key findings of the planning process was that an auto based solution for transportation in the Ottawa-Carleton region was not viable and that a transit system needed to be introduced in the region.

In 1974, the RMOC produced the *Rapid Transit Appraisal Study* which looked at light rail and bus options using a corridor approach. The study recommended that buses be pursued and it envisioned the Transitway (busway) system. The study also identified the future direction and priorities for transit development in the region to accommodate population growth to 750,000 and anticipated an investment of $300 million Canadian in 1973 dollars (or approximately $1.27 billion in 2002 dollars) over a period of 20 years. The City had a population of 472,000 with an employment base of 214,000 jobs, most of which were located in the downtown area. Government was the primary employer.

The initial concept for the Transitway envisioned a system of bus only roads radiating out from downtown Ottawa along five corridors. The job center was planned to remain in the downtown core for the region but several additional nodes of jobs and services would be distributed in the suburbs served by Transitway buses. A total of...
nine primary employment centers were designated and were defined as having 5,000 or more jobs within walking
distance of Transitway stations. Additional secondary employment centers were also envisioned as having 2,000
to 5,000 jobs combined with a bus station. Interestingly, the plan did allow the marketplace to guide the infill
residential development between the transit corridors, a great deal of which was high density residential units. In
short, the Transitway in many ways was used to guide growth in Ottawa’s suburbs.

The Rapid Transit Appraisal Study led to the conceptual planning and design of the Transitway beginning in
1978. This step was approved by the Ministry of Transport in 1981. The Ministry of Transport also committed
itself to funding 75 percent of the Transitway’s costs. Ground was broken for the first phase of the Transitway in
1981 with the first section opening in 1983. Construction was completed for the entire 19 mile project in 1996.
The Transitway system consists of exclusive busways, HOV lanes and preferential treatment for buses in mixed
traffic and today carries roughly 200,000 passengers per day. The most distinct feature is the extensive system
of exclusive busways. There was also success on the land use side as by 1990, over 73% of suburban
commercial and office space was in the vicinity of Transitway stations.

Some of the key reasons for the successful development of the Transitway are that it was cheaper to build and
operate than rail and could be built in stages as funding became available. In addition, using buses allowed for
flexibility in routing and schedules and the Transitway corridor system eliminated the need for transfers for most
trips, enhancing the appeal of the system to riders. BRT also could be delivered by the government faster than
rail. The flexibility of the Transitway system, the pro-active land use planning, higher gas taxes and aggressive
parking policies in downtown Ottawa have all supported the Transitway allowing Ottawa to have the highest bus
ridership of any mid-sized city in North America.

How long did it take for this concept to become reality? The Rapid Transit Appraisal Study began in the early
1970’s and was completed in 1974. Planning and design for the Transitway began in 1978 and groundbreaking
on the first line occurred in 1981. The initial line was opened in 1983 and the entire 19 mile system was
completed in 1996, over twenty years since the initial study was completed.

Was this initiative developed through a process or a Champion? The regional planning under the RMOC is
a very important part of the successful development of the transit system in Ottawa. The system was tied to the
land use policies of the region and was well adapted to the vision of the region at the time. Without the strong
regional government system, which had jurisdiction over both land use and transportation, the outcome of the
system could have been much different.

That said, the leadership skills of John Bonsall were also critical to the selection of bus rapid transit as the future
transportation system in Ottawa. He worked for the RMOC as Director of Transportation Planning and later was
general manager of OC Transpo and oversaw the construction and operation of the Transitway. He now serves
as an international consultant on BRT projects around the world.

Controversy or struggles this concept faced or is facing? The only documented controversy surrounding the
Transitway during its development came from the pro-rail community. Many felt, and some still feel, that buses
are not a permanent or attractive mass transit method. That said, recent attitudinal surveys conducted by OC
Transpo regarding the Transitway have been overwhelmingly positive and users generally like the system. The
other critique of the Transitway was not so much about the system itself but was more related to the heavy
handed nature of the regional government at the time. This was of particular concern to outer municipalities in
the region who threatened to secede from the regional union.

With the amalgamation of the regional government and its municipalities into the new City of Ottawa in 2000, bus
rapid transit is facing increased funding competition from rail projects. The politics of the 1990s also saw the
provincial government abandon its traditional role of investing in public transportation in order to meet some
shorter-term political goals. In addition, the current Mayor of the City is championing rail projects and the first line
was recently completed, ironically paralleling an existing Transitway route. That said, the City is not planning to
abandon the Transitway system and a new transit plan actually recommends extending the system.

Current status/public attitude toward this initiative? Public attitude toward the Transitway remains very
positive and many people like and enjoy the system as it is. Plans for expansion may help to generate new
riders. However, as the region begins to pursue rail initiatives, the increased competition may at some point
draw some riders away from the Transitway. The O-Train line currently in use has been critiqued by many as the
train to nowhere as it serves only a few very specific destinations at great distances.

What were the expectations of this concept? The expectations of the Transitway were to create a lower cost
transportation system with the flexibility to grow and change as population and other development conditions
changed in the Ottawa area. The high ridership numbers, despite recent declines, demonstrate the overall
success of the system and it carried its one billionth passenger in 2002. This success has resulted in no major
increases to road capacity in the central areas since 1971 and the number of cars leaving the central area in the PM peak hour has actually declined, although employment and total person-trips have continued to increase. Door-to-door travel time on the Transitway is competitive with auto door-to-door travel time.

What agency implemented this concept? The Regional Municipality of Ottawa-Carleton handled much of the preliminary work on the Transitway concept and assigned the responsibility to construct and operate the system to the Ottawa-Carleton Regional Transit Commission (OC Transpo).
Name: Regional Transit Plan/Regional Rail Project
Location: Three-County Triangle Region (Wake, Durham, and Orange Counties), North Carolina

Description:
The Regional Rail Project is a three phase project that will link Wake, Durham, and Orange counties. The following is a brief description of the three phases of the project:

- Phase 1:
  - Connects Durham, Research Triangle Park, Cary, Raleigh, and North Raleigh using diesel multiple unit (DMU) rail vehicles to serve the 16 anticipated stations.
  - Service will be provided on new tracks that are added to existing railroad corridors.
  - Includes the addition of express bus service to existing routes and new service in the region's smaller communities.
  - Will provide feeder bus systems to future rail stations.
  - Existing local bus services will be coordinated to serve the rail stations.

- Phase 2:
  - Connects Phase 1 to the RDU Airport and Chapel Hill. This will be more complex, because there are not any existing rail corridors that directly link these areas.

- Phase 3:
  - Existing rail corridors could be extended. This is contingent on ridership, available funding, and negotiated operating agreements with railroads.

Cost:
Phase 1 capital costs are estimated to be $832 million. According to the Draft Environmental Impact Statement, the estimated 2025 annual system-wide operating and maintenance cost per passenger is about $1.85 for the No Build Alternative, $2.47 for the Transportation Systems Management (TSM) Alternative and $2.62 for the Regional Rail Project.

How and why did this come to be (what was the justification for this $800+M project investment)?
The Regional Rail Project began politically with the Mayors of Chapel Hill, Durham, and Raleigh forming a coalition to help initiate the development of a transit system for the region. This coalition and the need to address the growth, congestion and air quality problems facing the Triangle Region led to the creation of the Triangle Transit Authority (TTA) in 1989. It was to serve as a regional public transportation authority to plan, finance, organize, and operate a public transportation system for the Triangle Region. In 1991, a state law was passed that permitted regional public transportation authorities to levy a vehicle registration tax of up to $5 per registration, which formed the basic operating funding for the regional transit services in the Triangle. The TTA is governed by a thirteen member Board of Trustees, which includes County, City, Town and Secretary of Transportation officials.

To initiate the process of consensus-building, the TTA and the local government managers of the region developed the following vision and goals for the future regional transportation system:

Vision: To create a system that provides incentives for focusing future regional growth into transit oriented development.
Goals:
• Connect the 21st Century Triangle Community
• Reduce commuter travel time
• Enhance regional image and competitiveness
• Be an incentive for economic development
• Provide alternative means of transportation other than the automobile
• Contribute to improved air quality
• Protect the natural and built environment
• Improve highway system efficiency

The following major documents were prepared regarding the transportation network which serves the Triangle Region:
• Travel in the Triangle: Trends, Implementation, Choices
• Regional Transportation Service: Market Analysis and Service Plan
• Research Triangle Regional Transit/Land-Use Study

The Travel in the Triangle: Trends, Implementation, Choices document examined the population growth, job development, and inter-area commuting in the Triangle region that had boomed over the previous 25 years, resulting in severe traffic congestion that is projected to worsen in the future as the population grows. Nearly all highway corridors are anticipated to reach capacity even with additional lanes by 2010. Therefore, it recommends that area leaders move ahead with the planning and development of a public transportation system for the Triangle region.

The Regional Transportation Service: Market Analysis and Service Plan study was motivated by the concern that traffic congestion in the region had begun to impact the quality of life, and that continuing growth in employment and population would create increased congestion in the next two decades. The study concluded that, with adequate public and private resources, a public transit system oriented towards work trips with some midday service is feasible between the major nodes in the Triangle. However, it also stated that this will only be successful with higher density development, greater control of the price and supply of parking, transit-oriented site planning, and mixing land uses.

The Research Triangle Regional Transit/Land-Use Study was conducted to develop guidelines that would allow an early appraisal of the minimum land-use planning actions required to implement a fixed-guideway transit line. Four Triangle-area corridors were evaluated, and the study concluded that under the existing development patterns, none of these corridors would satisfy the minimum ridership for its entire length. However, if new forecasted development can be focused into the quarter-mile area, all corridors would have potential for a successful fixed-guideway transit system.

These studies resulted in the adoption of the “Land Use and Public Transportation Action Agenda” by the Joint Transportation Advisory Committee from the Greater Raleigh and Durham-Chapel Hill-Carrboro MPOs and led to the undertaking of the Triangle Fixed Guideway Study (TFGS). The TTA secured a $750,000 federal grant in 1992 to conduct the TFGS, which investigated long-range regional public transportation for Wake, Durham, and Orange Counties.

The objective of the Triangle Fixed Guideway Study (TFGS) was to examine the regional economic opportunities and identify potential locations for growth, define corridors that can connect the growth locations, and propose changes in land use that must take place to support transit. It served as the principal background for the selection of the Regional Rail system and was completed in three phases:
• Phase I – Study Design
• Phase II – Regional Analysis and Current Trend Future in 2020
• Phase III – Land Use and Transportation Alternatives

The TFGS evaluated several modal alternatives including Light Rail, Regional Rail, and a Busway/High Occupancy Vehicle (HOV) Lane. The study concluded that fixed guideway transit could ease some future growth impacts by helping to mold future growth patterns and by providing an alternative form of mobility for residents of the Triangle Region. It also found that this system could influence future development decisions. However, major private investment in station areas would most likely not be realized until construction or even until service of the system is in operation. The final conclusion of the TFGS was that lower-volume commuter
rail service and the spacing of the stations of a Regional Rail system is best suited for DMU self-propelled vehicles. A DMU self-propelled vehicle was chosen by the TTA as the best technology for a lower-volume commuter rail service with a wider spacing of stations. A standard passenger locomotive and cars would be uneconomical in regard to the purchase of equipment, fuel consumption, and maintenance.

**How long did it take for this concept to become a reality?**
The Triangle Transit Authority (TTA) was formed in 1989. In 1991, the North Carolina Legislature authorized a vehicle registration fee for Wake, Durham, and Orange counties to fund the TTA. The Triangle Fixed Guideway Study (TFGS) was initiated in 1992 and completed in 1994. Phase 1 of the Regional Transit Plan was a direct outgrowth of the TFGS. The Draft EIS was completed and approved by the Federal Transit Authority (FTA) in 2001. The Final EIS and Preliminary Engineering were completed in 2002. In February 2003, the FTA approved TTA's request to enter Final Design. Construction is scheduled to begin in 2004. Rail service from Ninth Street in Durham to Government Center in Raleigh should be available in 2007, which includes 12 stations. Rail services along the remaining 8 miles and stations throughout North Raleigh and the Duke Medical Center station should be complete in 2011.

**Was this concept developed through a process or a Champion?**
This concept began with a political push from the Mayors of Chapel Hill, Durham, and Raleigh. This political push led to the creation of the TTA and helped to secure federal grant funds in order to conduct the TFGS. Once the TTA was formed the Regional Rail Project became a consensus building initiative throughout the Triangle region. The adoption of the project into the long-range Transportation Plans of the Durham, Chapel Hill, and Carrboro MPO in 1996, and the Capital Area MPO in 1997 kept the project moving forward in the planning and implementation process.

**What controversies or struggles did this concept face?**
I was unable to find any documentation regarding any struggles or controversies that this project faced. However, property acquisition and access to portions of the North Carolina and CSX Railroad corridors were most likely major obstacles that the project had to overcome.

**What is the public attitude toward this concept?**
The desirability of the Regional Rail Project was determined by extensive public involvement. Local governments, universities, major employers, chambers of commerce, and community groups have all sent resolutions or letters of support to the TTA. In addition, 8 focus groups were created in January 1996 and they all strongly supported the proposed Regional Rail Project. The focus group participants were consistently positive about the Regional Rail Project:

- 9 out of 10 of these focus group participants believed that there is a need for the project
- 96% indicated that they or their family would use the system during the course of a year, either occasionally or daily
- 9 out of 10 would tell their elected representative that they would support the proposed system with a tax increase, if necessary

**Why does the Triangle Region feel that they have the population to support a rail system?**
The Raleigh-Durham Metropolitan area has grown 39% between 1990 and 2000 to a population of 1.2 million, which makes it the sixth fastest growing area in the United States over the decade. Growth in the region is expected to continue with a projected increase in population of 110% between 1995 and 2025 based on the latest U.S. Census data. According to the Research Triangle Foundation, the Research Triangle Park (RTP) employed 38,500 people in 2002. Employment in the RTP is anticipated to exceed 58,000 within one mile of the rail corridor by 2025. Duke University and its medical center employ approximately 25,000 people. Data from the Downtown Raleigh Alliance also shows that 27,000 people work in downtown Raleigh. Based on these statistics, the Triangle region has concluded that it has the population to support the rail system.

**What are the expectations of this concept?**
Without the implementation of the planned highway improvements in the Triangle Region as reflected in the long-range transportation plan, congestion will still exist on most roadway systems in the corridor and transit travel times will remain non-competitive with the automobile. However, with the development of the Regional Rail in combination with the planned highway improvements, the capacity and mobility options necessary to accommodate future growth effectively can be achieved.

Some of the expected benefits of the regional rail system include:

- High-quality, time-competitive and reliable regional transit service
- Improved capacity, connectivity and mobility options to accommodate future growth in the region
- Incentive for more compact forms of development around transit stations
- Increase in the quantity and usage of transit service in the region’s most congested travel corridors
- Provide a travel choice in the region that is less stressful, less costly than driving a private automobile
and provides time for reading, working or relaxing during the trip

The TTA estimates that the rail system will carry about 18,500 riders a day between Durham and Raleigh when it opens, with an expected ridership projection of 25,000 a day by 2020. Phase 1 of the Regional Rail Project is estimated to reduce the overall vehicle miles traveled (VMT) in the Triangle by about one percent. This project is expected to provide a viable alternative to using highways in the region’s most congested corridors.

The Triangle Region is also expected to experience many economic benefits as a result of the regional rail system. Basile Baumann Prost Associates conducted an economic and market study for the region that concluded that transit-oriented development around the TTA rail stations has the potential to generate:

- $46 million in non-recurring tax revenue in 2002 dollars
- $2.1 billion in economic impact from station area development construction
- $399 million in new material purchases in the region
- 9,900 new construction-related jobs
- $229 million in annual tax revenues after construction
- 46,600 new jobs (direct and indirect) after construction

**What agency is implementing this concept?**
The Triangle Transit Authority is the agency responsible for seeing the project through the planning and implementation stages.
**Name:** Vancouver Greenways Program  
**Location:** Vancouver, British Columbia  

**Description:**  
The proposed City Greenway network of 14 routes is approximately 87 miles (140 km) long. The goals of the City Greenway are:  
- Make walking more interesting  
- Make cycling safer and more convenient  
- Reduce the impact of the car  
- Make the Greenway ‘greener’  
- Use public art to make the Greenway more interesting  

Street rights-of-way will comprise about 50% of the network. About 25% of the network is already in place as a result of the Seawall development and other greenways development since 1994. Greenways are generally evenly distributed throughout the City; however, routes are concentrated in areas with greater population density and a higher number of destinations, like the downtown peninsula. When the network is complete, a City Greenway will be no more than a 25-minute walk or a 10-minute bike ride from every residence in Vancouver.  

Neighborhood Greenways are distinguished from City Greenways by the following four criteria:  
- They are initiated by local residents.  
- They connect local community amenities such as parks, schools, libraries, community centers, shopping streets and places of special meaning (i.e. a group of heritage houses, an interesting street or a corner store).  
- They reflect local character and identity by providing opportunities to express the unique character of the area and by adding details and activities to the public landscape.  
- They consist of smaller projects and shorter routes and are maintained by the community once completed.  

Communities take the lead in creating or improving local connections in partnership with the City. City staff provides assistance in the design, development, and construction where and when support is needed.  

**Cost:**  
The 1994-1996 Capital Plan allocated $1.5 million toward greenway development, which included $1 million for City Greenways (primarily Ridgeway Pilot Project) and $500,000 for Neighborhood Greenways.  

**How and why did this come to be?**  
Vancouver’s mayor in the late 1980s was personally concerned that the natural areas of the city were in danger of being lost. Therefore, he appointed Moura Quayle, who was the head of the University of British Columbia’s Landscape Architecture Program at the time, to chair a task force to look into Vancouver’s natural areas. Moura Quayle expanded the scope of the project to include the whole urban landscape rather than just the natural areas. This led to the creation of the Urban Landscape Task Force in August 1991, which was appointed by the Vancouver City Council.  

The Urban Landscape Task Force was created to improve the understanding of the value of the urban landscape and to recommend how to manage, protect and enhance it. The focus of the Task Force is the interaction and connections of Vancouver’s built and natural environments. Their mission is to understand how people connect with nature and how the urban landscape works or does not work as an organizing and vital system in the City.  

The Task Force recommended the development of a system of greenways connecting all parts of the city in their final report. The proposed greenway system was then incorporated into the City Plan public review process. There was strong public support for this idea. Planning and engineering staff were then instructed to pursue developing greenways in Vancouver.  

This initiative included an extensive public process and consultation activities during its early development.
stages. From November 1991 to April of 1992, a variety of opportunities for public input and consultation with a variety of expert advisors and representatives of public agencies were held on greenways. The Urban Landscape Task Force also received questionnaire responses and submissions and listened to comments during the public meetings and open houses in order to understand and build a collective vision for the future of the City. The result of these workshops included additional greenways ideas and a number of potential projects. To facilitate the development of greenways, a coordinating committee made up of City staff and representatives of the Urban Landscape Task Force and Vancouver City Planning Commission was created.

An essential action that resulted from the Urban Landscape Task Force efforts was the creation of the Greenway Trust. The primary purposes of the trust are to promote and develop the Vancouver Urban Greenway and to act as an urban landscape conscience for Vancouver. The Trust will establish partnerships with existing organizations to facilitate public realm planning including an Urban Landscape Inventory, a Greenway Strategy, an Ecological Management Plan, and a Public Realm Programming Strategy. It can be a combination of private and public resources in the form of a single-purpose trust established by City Council. The mandate of the Greenway Trust includes planning, acquisition and implementation of the Vancouver Urban Greenway in partnership with various existing agencies in the public and private sector.

**How long did it take for this initiative to become a reality?**

This is an on-going effort that began about 13 years ago. The Ridgeway and Ontario Greenways have been completed. The Seaside and Parkway Greenways are also substantially complete since they were both popular recreational walking and cycling routes before the Greenways Plan was adopted.

The City of Vancouver is currently working on the Downtown Historic Greenway, which includes the Silk Road (Chinatown) and Gastown/Yaletown walking routes. The Carrall Greenway (downtown) and the Fraser River Trail are being completed incrementally as part of opportunities created by downtown and waterfront redevelopments. Smaller implementation items, like special street name signs and banners, are moving forward on the Carrall Greenway because of federal funding that became available this spring. The Central Valley Greenway has also been partially developed and will be completed as Vancouver’s rapid transit system expands.

**What are the expectations of this initiative?**

The objectives of the Greenway Plan are:

- Make the City “whole” by connecting existing parks and neighborhoods to each other.
- Reinforce people’s connections with nature by retaining natural ecological functions in the urban environment.
- Increase the amount of permeable surfaces in the City, to daylight as many streams as possible and as a result improve our water quality.
- Improve our general environment – vegetated greenways can reduce noise, smog, dust and heat.
- Complement the existing and future public open space system through introducing connections that accommodate more diverse public recreation.
- Provide alternatives to the automobile for commuter and recreational trips by developing safe passageways for bicycles, wheelchairs and pedestrians.
- Stimulate a more cost effective expenditure of public funds through the multiple use of public property.
- Encourage private realm development to respond to urban landscape opportunities by planning the Greenway as a network of City connectors.
- Make connections to the region’s Green Zones and encourage greenways to be planned and implemented through the region.

**What is the public attitude toward this initiative?**

In general, people are very supportive of the idea of a municipal and regional system of bikeways and greenways. However, when it comes down to actually building a bikeway or greenway it is sometimes a struggle to get residents who live on the street to “buy in” to the idea. There is a perception that city-wide amenities like this will encourage crime by highlighting certain streets. Placing benches can also be difficult in some residential neighborhoods since people tend to think they encourage loitering, prostitution and drug deals.

Once a greenway is completed, the City of Vancouver has found that the new sidewalks, landscaping, street trees, traffic calming, public art and even the benches are seen as welcome neighborhood amenities. The City’s research indicates that pedestrian/cyclist-friendly streets with appealing environments encourage positive uses and discourage negative ones.

**What agency is implemented this initiative?**
The Vancouver City Staff, City Planning Commission and Urban Landscape Task Force are cooperatively working together to implement the plan.