

## **Bus Rapid Transit and Transit Oriented Development:**

### **Case Studies on Transit Oriented Development Around Bus Rapid Transit Systems in North America and Australia**



**April 2008**

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# 1 Acknowledgements

This report was written by William Vincent and Lisa Callaghan Jerram of the Breakthrough Technologies Institute (BTI). BTI is an independent, educational organization that strives to identify and promote sustainable environmental and energy technologies and strategies, including Bus Rapid Transit.

This project was funded by the Hennepin County Department of Housing, Community Works & Transit in Minneapolis, Minnesota and the blue moon fund of Charlottesville, Virginia. The project was designed to complement a project by the National Bus Rapid Transit Institute at the University of South Florida's Center for Urban Transportation Research to develop a quantitative analysis of the economic impacts of bus rapid transit. We would like to thank Larry Blakstad and Dennis Hinebaugh for their contribution to developing the scope and direction of this report.

The authors would like to thank the many individuals who contributed personal interviews, tours, images and other resources, and completed our surveys. We would especially like to thank Joseph Calabrese, Greater Cleveland Regional Transit Authority; David Clark, York Region Rapid Transit Corporation; Ian Cross, City of Ottawa; and Barry Gyte, GCI, of Queensland Australia for their extensive guidance and assistance. In addition, we are grateful for the generous provision of time, insight and expertise from:

Susan Allen	The Drew Company
Chris Bongorno	University Circle Inc.
Barbara Boylan	Gale International
John Boyle III	Cleveland State University
Andrew Brennan	Massachusetts Area Transportation Authority
Robert N. Brown	Cleveland City Planning Commission
Margaret Carney	Case Western Reserve University
Lisa Dalla Rosa	Richcraft Group of Companies
Stewart Dalzell	Massachusetts Port Authority
Joseph Del Re	Zaremba Homes
John Doran	Domicile Developments Inc.
Maribeth Feke	Greater Cleveland Regional Transit Authority
Bryan Furze	Crosspoint Associates
Fraser Gemmell	Phoenix Homes
Sheila Grove	Former executive director, Washington Gateway
Andrew Hargens	Massachusetts Port Authority
James Haviland	MidTown Cleveland, Inc
Ryan Huelin	GCI
David Lamond	Anthony John Group
Marilyn Lebon	Greater Cleveland Regional Transit Authority
Rev Tracey Lind	Trinity Cathedral

Joseph Marinucci	Downtown Cleveland Alliance
Ari Maron	MRN Ltd
John Marshall	The Westfield Group
Richard McGuinness	Boston Redevelopment Authority
Eugene Moy	City of El Monte Community Redevelopment Agency
John O'Hara	FKP Property Group
Randy Peddigrew	The Remington Group
Gordon Priemer	Heartland Developers
Mark Schildhouse	The K&D Group
Barry Sedlik	Titan Group
Glen Warner	GCI
Jonathan Westeinde	Windmill Developments
Danielle Willis	Greater Cleveland Regional Transit Authority
David Wohlwill	Port Authority of Allegheny County

## 2 Executive Summary

Many cities are promoting “transit-oriented development” (TOD) as a sustainable growth management strategy. At the same time, Bus Rapid Transit (BRT) is becoming increasingly popular as a flexible, cost-effective rapid transit mode.

The purpose of this report is to provide examples of BRT-based TOD as a resource for policymakers, public agencies, and the development community. The report uses a case-based research methodology, examining four developed country cities characterized by high private car usage and significant TOD around their BRT corridors:

- Brisbane, Australia
- Cleveland, Ohio
- Boston, Massachusetts
- Ottawa, Ontario

In addition, we examined individual TOD projects in the York Region, Ontario and in El Monte, California. We also conducted written surveys and personal interviews with local developers and public agencies to assess their attitudes on BRT and development.

We found that the type and level of investment occurring near BRT stations appears comparable to the experience with TOD near rail transit. We also found that planning agencies generally made no distinction between BRT and rail in terms of its ability to attract TOD. Indeed, the public agencies and private developers we interviewed generally were enthusiastic about the potential of BRT to attract TOD, with many developers reporting that BRT has a “very positive” impact on their property values. Finally, there did not appear to be a direct correlation between the level of public investment in the BRT system and the level of private TOD investment. For example, one of the most significant TOD’s we observed is located on the York Region’s VIVA BRT, which was the least infrastructure-intensive BRT analyzed.

**Brisbane:** Brisbane is developing a network of fully separated busways that has helped reverse a regional decline in public transit usage. The BRT is characterized by substantial running way and station infrastructure that is served by a conventional bus routes and trunk corridor operations.

The TOD around the Brisbane BRT network can be classified in three categories. First, the busways are serving existing areas that had many TOD characteristics, but lacked a dedicated transit connection. Second, the busways are serving as a catalyst for new, green field development near stations. Finally, the busways are catalyzing urban infill, including significant air rights development.

Most of this TOD activity has been market-driven, with little encouragement by the government. Recently, however, the government has begun actively promoting TOD in the busway station areas.

**Cleveland:** Cleveland is using a single BRT line to help revitalize a blighted downtown corridor. The Euclid Corridor Transportation Project (ECTP) consists of a 9.4 mile BRT line along Euclid Avenue, the main downtown thoroughfare, and a complete streetscape renovation. City officials, the transit agency and local community development groups are promoting the ECTP as a way to revitalize this corridor. Because Cleveland is a weak real estate market, a host of financing incentives are available for developers.

Even though the BRT is not yet complete, the corridor has experienced significant investment over roughly the last decade. While this is not all due to the BRT project, the BRT is supporting intensification by providing a much-needed connection among disparate areas along the corridor. The streetscape renovation has also helped create a more attractive environment and is supporting local efforts to turn Euclid into a lively, pedestrian- and transit-friendly urban community.

**Boston:** Boston has a long history of transit oriented development. It is using its most recent rapid transit investment, the Silver Line BRT, to support major public-private revitalization initiatives in two neighborhoods. In both cases, the BRT was considered a necessary precondition for a successful corridor redevelopment.

The Washington Street corridor is a historical downtown thoroughfare in Boston's South End neighborhood. The Silver Line Washington Corridor BRT was a key feature of a public and private initiative to revive the corridor's vibrant, mixed-use character. Since the Silver Line BRT was introduced, there has been over \$571 million in investment along this corridor, and the tax base grew by 247%, compared to a city average of 146%.

Boston's Seaport District currently is the focus of significant public and private investments to develop high-density commercial, retail and residential uses. The Silver Line Waterfront BRT is this area's first rapid transit line and is providing the service necessary to support these new high-density projects and transform the district into a pedestrian- and transit-oriented urban community. Moreover, much of the Seaport's available land is owned by the state port authority, which has developed a Master Plan emphasizing transit- and pedestrian-oriented development. The authority, along with the local transit agency, works closely with developers to ensure properties are well integrated with the Silver Line.

**Ottawa:** Starting in the 1980s, Ottawa began building an extensive network of exclusive busways that are the region's primary transit mode. Although Ottawa has experienced suburban sprawl, the government has successfully used the busways to concentrate growth around areas served by rapid transit. In particular, Ottawa implemented land use policies that led to several major retail centers being integrated with the Transitway.

Ottawa currently is emphasizing high-density residential and mixed-use TOD around the busways. In particular, the city has designated certain “mixed-use centres” with transit access as targets for land use intensification. We found that these mixed-use centres are attracting major new TOD investments, and that proximity to the busway network is being used as a selling point for prospective tenants, particularly for residential properties.

**York Region:** The York Region of Ottawa is dominated by the low-density development that is typical in suburban areas where land is plentiful and private car travel is the primary transportation mode. The Viva BRT is an arterial rapid bus service that employs relatively low cost improvements to local bus service. It was built as part of a regional strategy to manage growth by encouraging intensification along corridors served by rapid transit.

Because Viva has been in service only three years, few TOD projects have moved beyond the early planning stages. However, there is one important project underway that was the focus of our research: Downtown Markham, a 243-acre master planned community in the center of the city of Markham. The heart of Downtown Markham will be a shared-use civic mall that runs east-west for the entire length of the development, lined with shops, restaurants, offices and residences that will be open only to pedestrians and the VIVA BRT. Downtown markham currently is under construction.

**El Monte:** The El Monte Busway is an 11.8-mile service that operates along a major highway linking the San Gabriel Valley with downtown Los Angeles. The El Monte Transit Station is the busway’s eastern terminus and primary hub, serving roughly 1,100 bus trips per day.

The city of El Monte, state and local transit agencies and a developer are collaborating to transform a 60-acre site around the busway into the El Monte Transit Village. The goal is to create a mixed-use site with multi-family housing, retail, restaurants and recreational facilities, all within walking distance of the transit station. The project team also hopes to increase use of the busway, to support enhancements to the service. This project is still in the early stages, with the developer seeking grants to support the initial infrastructure changes.

**Survey results:** Formal surveys were received from 12 developers and seven government agencies. In addition, we interviewed numerous developers and government officials in each of the case study cities.

The developers were generally positive about investing near BRT and characterized BRT as having a very positive impact on their property values. Most government respondents indicated that they actively promoted TOD around BRT corridors and that the level of development activity appeared similar to what they would expect in a rail corridor. The following are some key themes we noted from the survey results regarding successful BRT-related development:

- Cooperation among key stakeholders, including public agencies, non-profit development organizations, property owners, and private developers, is critical to success.
- For developers, permanence of the BRT is an important factor. However, this perception can be created even with relatively low infrastructure investment, if there is a clear, long-term public agency commitment.
- Frequency, speed and convenience of the service were important to many developers and property owners. These features differentiated BRT from conventional bus service, which was generally not considered appealing for TOD.
- In downscale corridors, streetscape improvements that accompany the BRT may be at least as important as the transit service for attracting new investment.
- In some cities, developers and properties owners cited the value of a prominent visual profile for the BRT and aesthetically appealing infrastructure.
- It does not appear to be necessary to provide financial incentives for BRT-related TOD. Developers appeared much more interested in an expedited permitting or rezoning process, as time is a critical factor in making development projects financially viable.



### **3 Introduction**

Urban sprawl and poor land use planning contribute substantially to traffic congestion, air pollution, and greenhouse gas emissions. Public transport helps reduce sprawl by attracting development around transit stations, and this development supports public transport by encouraging ridership. Compact, mixed-use development in a walkable environment near transit stations typically is referred to as “transit-oriented development” (TOD).

Bus Rapid Transit (BRT) is a general term that refers to improvements in infrastructure, operating structure, and supporting technologies designed to enhance service quality over ordinary bus service. BRT is a flexible mode, able to operate in general traffic or on dedicated or priority lanes. BRT systems have been implemented in cities around the world, and BRT is beginning to make a significant mark in the United States.

Although the potential of BRT as a cost-effective mobility option is well-established, its ability to catalyze economic activity and transit-oriented development has not been well studied. This project was designed to fill this gap by examining the experiences of cities in developed countries with significant BRT-related TOD.

#### **3.1 Purpose and Scope**

The purpose of this paper is to provide examples of TOD that is directly related to BRT systems in developed country cities characterized by high rates of private car usage and relatively low public transport usage. A significant level of TOD also has occurred around BRT systems in developing countries, but these examples are outside the scope of this project. A secondary purpose of this report is to assess attitudes of public agencies, real estate developers, and property owners regarding the potential of BRT to attract development.

#### **3.2 Methodology**

The project began with a literature review on transit-oriented development, particularly as it relates to BRT. The results of this review are described in Section 1.3. Next, a set of candidate case study sites was developed. The factors used to develop the case study locations included the extent of BRT development in the region, the nature and extent of the transit-oriented development associated with the BRT, the applicability of the BRT system and associated TOD to cities in the United States, and the availability of information.

Based upon these criteria, six cities were selected:

- Boston, Massachusetts
- Brisbane, Australia
- Cleveland, Ohio
- El Monte, California

- Ottawa, Ontario
- York Region, Ontario

These six cities represent a range of BRT systems, from on-street rapid bus service to full-featured exclusive busway networks. They also represent a range of city contexts, from densely-populated urban centers to sprawling suburban communities.

In order to assess attitudes on BRT and development, two written surveys were developed: one for the local transit agency or planning agency and one for real estate developers. The surveys explored the role of BRT in catalyzing economic development along the service corridors; developers' perceptions of the BRT; the presence of TOD-related policies that influenced investment decisions; and characteristics of the BRT that were important to prospective investors. (Copies of the surveys can be found in Appendix A.) An extensive list of developers was compiled for each city, and the surveys were distributed.

Based upon survey results and initial background research, site visits were scheduled for cities with the best information. Detailed site visits were conducted in Brisbane, Cleveland, and Ottawa, along with follow-up phone interviews as needed. A brief site visit was conducted in the York Region, followed up by telephone conversations. No site visit was conducted in Boston, because of the researchers' familiarity with the BRT corridors, or in El Monte, largely because the focus there is on a single project that has not yet begun construction. Instead, phone interviews were conducted with relevant public agencies and developers.

Our findings on each city's TOD are based on locally supplied information from the transit agency, planning agencies, and the development community, as well as publicly available information sources and our own observations. The case studies describe specific TOD projects in each city and are meant to be illustrative of the types and level of TOD activity that communities are experiencing.

### **3.3 Literature Review**

As already noted, there has been little research into TOD effects of bus rapid transit systems in developed countries. However, the few studies that have examined BRT and transit oriented development have indicated that BRT can have significant and positive land use impact.

Most BRT-related TOD research has focused on Boston, Ottawa, and, to a lesser extent, Pittsburgh. Ottawa's BRT was the subject of an in-depth case study review, published in 1996. This study, a Transit Cooperative Research Program (TCRP) report entitled "Public Policy and Transit Oriented Development: Six International Case Studies" found that Ottawa had experienced a significant level of development activity around its busway stations. It includes a detailed review of the land use and transportation policies that supported this development pattern from 1974 through 1995. The report concludes that the busway investments had been used to guide employment and commercial growth in the region.

Another valuable resource is the “Bus Rapid Transit Practitioners’ Guide” published by TCRP in 2007. This guide concludes that BRT, like rail, can increase density around transit nodes and serve both existing and future development markets. It also includes guidelines for cities interested in supporting TOD around BRT.

These guidelines include passing transit-supportive policies, especially regarding parking; locating BRT stations and routes in areas with available affordable land; creating a strong sense of permanence and a clear identity with the BRT corridor; ensuring convenient access to the BRT stations from surrounding sites; and utilizing public-private partnerships to expedite TOD projects.

A 2004 TCRP report, “Transit-Oriented Development in the United States,” explored Boston’s TOD history, including a brief review of TOD prospects around the planned Silver Line Waterfront BRT service. The report found that the Waterfront had good potential for TOD dependent on the quality and organization of the new transit service, which had not yet begun operations. The report detailed the city’s commitment to making the Waterfront a TOD corridor, with supportive parking policies and public investments.

A 2005 paper in the Transportation Research Record examined the prospects for TOD around an urban arterial rapid bus service in the San Francisco Bay Area. The report found that implementing limited BRT features, such as skip-stop service and signal priority, may not be sufficient to attract developers, at least in the absence of complementary TOD-supportive policies.

Finally, Professor Graham Currie of Melbourne, Australia’s Monash University analyzed the strengths and weaknesses of bus-based TOD. The study, published in the Journal of Public Transportation in 2006, found among other things that the key factors determining the ability of bus-based transit to spur development were permanence; rider demographics; parking availability and parking restraints; transit agency TOD capabilities; urban density; noise and pollution; frequency and speed; and bus stigmatization.

Our literature review indicated that, although research on BRT-related TOD is limited, evidence suggests that it can have a positive impact. The literature review confirmed the need for additional research into the impact of BRT on development activity in cities with bus rapid transit services.

## 4 Brisbane, Australia

Southeast Queensland is the fastest growing region in Australia. By 2026, the region will grow from 2.6 million inhabitants to 3.7 million, with most of the growth occurring in metropolitan Brisbane. In 2004, Brisbane had a population of roughly one million, or 36 percent of the regional population.

Like other cities in developed countries, Brisbane experienced a rapid decline in public transportation usage in the post war period. Despite an extensive rail network, the proportion of public transport trips in the city declined from roughly 40 percent in the 1960's to less than 7 percent by 2000.<sup>1</sup> According to the Lord Mayor, the introduction of the busway system arrested the decline of public transport usage in the city.<sup>2</sup> In 2002, 77% of trips in Brisbane were by car, 16% by walking and cycling, and 7% by public transport.<sup>3</sup> As the busway network expands, the proportion of public transport trips is beginning to increase.<sup>4</sup>

The regional busway network currently is composed of four distinct segments. The first segment, the South East Busway, opened in 2000 and extends from the Queen Street Mall, a pedestrian-only mixed use area in the heart of downtown Brisbane, to Eight Mile Plains, a suburban community roughly 8 miles southeast of the city center. The downtown portion of the busway is underground, with multiple connections to the service through the Myer Centre, a six-level shopping mall located on the Queen Street Mall.



The South East Busway runs parallel to the Pacific Motorway, a six-lane limited access highway that connects Brisbane with the Gold Coast and other communities to the South. In the late 1990s, the Pacific Motorway was planned to be widened from six lanes to eight. It was determined, however, that the two additional lanes of Motorway would carry far more people if they were configured as a busway. Thus, the South East Busway, which contains two lanes (one in each direction) plus passing lanes at each station was constructed instead of widening the Motorway.<sup>5</sup>

Currently, the peak hour, peak direction performance of the South East Busway is 18,000 passengers in nearly 300 buses, or one vehicle every 12 seconds.<sup>6</sup> By contrast, each lane of the adjacent Pacific Motorway carries roughly 2,000 passengers per peak hour in the peak direction. Thus, one lane of busway is carrying the equivalent number of people per hour as nine lanes of Motorway.

Moreover, despite the high volumes on the busway, there is excess capacity, and the busway is open for use by emergency vehicles, such as police, fire, and ambulance. For example, the Queensland Children's Hospital is planned at a site adjacent to the existing Mater Hill station on the South East Busway, and a special access ramp will be constructed to enable ambulances to access the hospital directly from the busway.<sup>7</sup>

The second segment, the Inner Northern Busway, opened in 2004. It begins in downtown Brisbane roughly a half-mile north of the South East Busway and extends approximately two miles to the north. As of this writing, the Inner Northern Busway and the South East Busway are being connected through a bus tunnel that runs under the Queen Street Mall and King George Square, a park located in front of the Brisbane City Hall. The total cost of this new connection is \$330 million and includes two new stations at King George Square and Roma Street.

A 20-km extension of the Inner Northern Busway, called the Northern Busway, currently is in planning. The extension will serve the fast growing suburbs north of the central business district (CBD). Construction on the first segment of the Northern Busway is expected to begin in 2008.

The third segment, the Eastern Busway, will be constructed beginning slightly west of the South East Busway's Buranda station and extending east to Capalaba for a total of 17.7 km. Generally, it will follow the Old Cleveland Road, a major arterial. The first station will be located at Princess Alexandra Hospital and, like the Mater Hill Station, the busway will provide direct access to the hospital. Twelve additional stations are planned to the east of Princess Alexandra Hospital, including the existing Buranda station. Construction is expected to begin in mid 2008.



The Green Bridge

Finally, the Boggo Road Busway serves a short stretch across the Brisbane River on the Eleanor Schonell Bridge, also known as the “Green Bridge” because it is open only to buses, bicycles, and pedestrians. The bridge also contains a solar power station that offsets all of the electricity used by the bridge by feeding electricity into the grid during the day. The bridge opened in 2007 and connects Dutton Park with the St. Lucia campus of the University of Queensland.

Construction is underway to extend the Boggo Road Busway from the Green Bridge east to the Buranda station, where it will connect to the Southeast and Eastern Busways. The Boggo Road Busway is scheduled for completion in mid-2009.

All busway infrastructure and services are controlled by TransLink (formerly Queensland Transport), an agency of the Queensland Government. TransLink contracts with various bus operators to provide service on the busways.

The TOD around the Brisbane busway network can be characterized into three general types. First, because the busways are relatively new, they are being used to serve existing structures and communities that previously exhibited many TOD characteristics, but lacked a dedicated transit connection. This is apparent at a number of stations, such as the Cultural Centre, Upper Mt. Gravatt, and the Queensland University, St. Lucia campus stations. Second, the busways are serving as a catalyst for new, green field development near stations. Finally, the busways are catalyzing urban infill.

The busways also are showing some success with air rights development, most notably at the Mater Hill station. We also interviewed a developer planning an air rights development at the South Bank station. According to this developer, a floor area ratio of at least eight generally is required to make an air rights development economically viable in the Brisbane context.<sup>8</sup>

The developer also noted that air rights development over a busway is easier than air rights development over rail transit, and that his company generally avoids air rights opportunities above rail. A number of reasons were given, including that rail service cannot be diverted during construction, and that various issues associated with rail technology, such as clearances, safety, and access required for rail maintenance, make air rights development above rail prohibitively expensive.<sup>9</sup>

It should be noted that the busway network, and the South East Busway in particular, also present some challenges for TOD. For example, the location of the South East Busway along

the Pacific Motorway limits the amount of space available for TOD around busway stations and creates other obstacles, such as a limited ability to walk across the motorway to access the busway stations and high noise levels from traffic. Moreover, busway stations are often located in a trench below grade.

#### **4.1 Land Use Planning in Southeast Queensland**

Under the Integrated Planning Act of 1997, land use planning in Southeast Queensland is governed by the Queensland State Government, not local governments, and is based upon a performance-based planning methodology. Pursuant to the Planning Act, the Queensland Government published the Southeast Queensland Regional Plan 2005 - 2026.

The Regional Plan sets forth various categories of permissible land uses throughout Southeast Queensland. It establishes a policy of accommodating a higher proportion of growth within existing urban areas and identifies regional activity centers where future growth is to be concentrated.

The Plan also seeks to promote integrated transport and land use planning, stating that “transit-oriented development principles should be applied in the detailed planning of all regional activity centres in close proximity to high-capacity public transport nodes and corridors.”<sup>10</sup> Transit-oriented development is defined as:

*“mixed-use residential and employment areas designed to maximize the efficient use of land through high levels of access to public transport. A transit-oriented development has a walking and cycling-friendly core with a rail or bus station surrounded by relatively high density residential development, employment, or a range of mixed uses.”<sup>11</sup>*

Thus, no distinction is made between rail services and bus services in terms of their appropriateness as an anchor for TOD.

To complement the Plan, the Queensland Government prepares an Infrastructure Plan and Program. The Infrastructure Plan outlines the Queensland Government’s infrastructure priorities to support the Regional Plan. It covers a wide range of areas, including transport, freight, water, health care, and energy.

Local governments must prepare Local Growth Management Strategies (LGMS) to implement the Regional Plan. The LGMS must, among other things, nominate potential TOD sites for inclusion in the Plan. Brisbane has released a draft LGMS that is awaiting approval from the Queensland Government.

In addition, the Queensland State Government, through the Department of Infrastructure, can identify state development zones. In these zones, the state government, not the local government, is responsible for site planning and development. Five state development zones have been designated in Queensland, including the Boggo Road Gaol site, discussed below, and

the redevelopment of a government printing facility adjacent to the Woolloongabba station on the South East Busway.

Several planners we interviewed expressed concern that the planning regime established by the Integrated Planning Act creates ambiguities regarding process, responsibilities and outcomes. Multiple levels of government are involved in the planning process, making it difficult for developers to obtain proposals for new TOD sites. Moreover, the performance-based methodology is based upon permissive language, such as “should,” rather than upon prescriptive requirements. This has led to unfortunate outcomes, such as a big box shopping center located on a designated TOD site next to a rail station.

Regarding the busway network, both the Queensland government and the Brisbane City Council did not, until recently, actively promote TOD around busway stations. Thus, much of the TOD that has occurred around busway stations has been largely the result of market forces, with little or no encouragement by government. More recently, the government has begun to actively promote TOD at busway stations, with the most notable example being the Boggo Road Urban Village.

Based upon our interviews, there appear to be at least three reasons why TOD was not actively promoted around busway stations. First, TOD is a relatively new concept in Queensland, and governments at all levels have been struggling to define TOD and to understand how to implement it.

Second, an early attempt to create higher densities at the Holland Park West station on the South East Busway was rejected by local residents, who preferred to retain the lower density character of their neighborhood. This experience apparently made government very cautious about promoting infill TOD around both rail and busway stations.<sup>12</sup>

Finally, there is a general belief that, unlike rail transit, busways enable TOD to be successful without locating the TOD within the walking catchment area of the station, generally considered to be 600-800 meters in Brisbane. This is because vehicles can leave the busway to serve nearby activity centers and return to the busway as needed, thus avoiding the need to locate higher densities at busway stations while still providing passengers with a one-seat ride to their destination. One example of this is the Rochedale Urban Village, a new master planned community to be located near the Eight Mile Plains station but out of the traditional walking catchment of the station.

The advent of the Regional Plan and LGMS appears to be leading toward more active government encouragement of, and participation in, TOD at busway stations. For example, as discussed below, TransLink is actively pursuing significant TOD at two proposed stations on the Eastern Busway. These will be on state-owned property and are expected to result in significant value capture.



It should be noted that some economic policies may encourage TOD. For example, like the United States, there are tax advantages to investing in rental property. We observed that a significant number of new residential units near busway stations are reported to be investor-owned.

More recently, the Australia's relatively new Labor government announced a National Rental Affordability Scheme, under which investors can claim a tax credit of up to \$6,000 (Australian) per year for ten years on properties that are rented at 20 percent below market rate. State governments have agreed to provide an additional \$2,000 per unit.<sup>13</sup> This program may encourage additional investor-owned residential units near busway stations.

## 4.2 South East Busway Development

### *Queen Street Mall and the Myer Centre*

The Queen Street Mall is a pedestrian-only street that runs for three blocks along Queen Street. It is lined with street-level shops and restaurants with commercial spaces located on the upper floors.



The Myer Centre is a six-level shopping mall on the Queen Street Mall in downtown Brisbane. The Centre was built in 1988 with a bus interchange integrated into the bottom floor of the building.

Although the Myer Centre and the underground bus station were built prior to the South East Busway, they now serve as the terminus for the busway in the CBD. Vehicles enter a tunnel under the mall where they serve bus platforms, turn around, and depart for return runs to the south.

The Queen Street station is one of the most heavily used stations on the busway network. The 111-bus service, which operates as the trunk service on the South East Busway terminating at

the Queen Street station, is the most heavily used service on the busway. Moreover, for trips where the main purpose is shopping, the Queen Street station is the most popular destination.<sup>14</sup> The Myer Centre includes prominent signage directing customers to the location of the Queen Street station.

### ***Mater Hill Hospital***

One of the most interesting TODs in Brisbane is located at the Mater Hill Hospital, where the air rights above the Mater Hill station were sold to accommodate the expansion of the hospital. This transaction enabled the construction of a new hospital building as well as an elevated link between the new building and an existing building. The link structure contains the hospital's surgical wing, with operating theaters located on the lowest level closest to the busway.



Left: Mater Hill busway station and Mater Hill hospital. Right: Coffee shop adjacent to Mater Hill busway station

Initially, the hospital strongly opposed the busway, arguing among other things that hospital workers and visitors would not use the busway but rather would access the facility by car.<sup>15</sup> The hospital also proposed installing columns in the busway station to support the elevated link and allowing only minimal clearance between the bottom of the structure and the top of the busway station.

TransLink insisted that columns would harm the function and aesthetic of the station. To support the link structure without impeding station flow, a column was instead placed in the retaining wall adjacent to the existing hospital building.

TransLink also insisted that there should be at least three stories of clearance between the link structure and the busway station to allow sunlight to filter into the busway station. The link structure ultimately was built with this clearance, providing the station with an open feel even though it is located beneath the hospital surgical wing.

Today, the Mater Hill station is one of the most heavily used stations on the South East Busway. Over 70 percent of station users either walk or cycle to the station while 17 percent change

from another bus service.<sup>16</sup> The station is used extensively by school children commuting to two private schools located within walking distance. The station also includes a specialty coffee shop, where busway users can relax prior to boarding busway services.

### **Woolloongabba**

Woolloongabba is an older neighborhood located south of the downtown on the southern side of the Brisbane River. It was once a thriving area characterized by extensive street-level shops and a stadium used for cricket matches.

In the 1970s, the Pacific Motorway was constructed and economic activity bypassed Woolloongabba, locating further south along the Motorway. Large shopping malls became new centers of retail activity, and the Woolloongabba shopping district declined significantly. Similarly, residential activity left the Woolloongabba area and located further south in new suburbs along the Motorway.<sup>17</sup>



Woolloongabba station area

In 2000, Sydney hosted the summer Olympic Games, and the cricket ground at Woolloongabba was selected as a venue for some of the soccer matches. The old cricket ground was substantially upgraded and modernized, roughly doubling in size to 40,000 seats.<sup>18</sup> At the same time, construction on the South East Busway was accelerated to provide a public transport connection to the sports venue.<sup>19</sup>

The combination of the new cricket ground and the extension of the South East Busway to Woolloongabba has triggered the beginning of a revitalization of Woolloongabba. The first major redevelopment is “gabba central,” a mixed used community with ground level retail and residential condominiums on the upper floors.<sup>20</sup>



View of gabba central from the Woolloongabba busway station entrance

The site previously contained an old hotel, pub, run-down shops and car dealers, storage facilities, and other structures. The developer purchased these buildings for an estimated \$20 million (Australian) and razed them for the new gabba central development.<sup>21</sup> Gabba central was built in two stages, with stage 1 containing 121 residential units and stage 2 containing 150 residential units. Stage 1 is completely sold out and stage 2 is roughly two-thirds sold out, with a significant number of owner-investors in each stage. A Coles supermarket, pharmacy, and other retail shops are located on the ground level.

Gabba central is located immediately across a one-way, three lane arterial street from the Woolloongabba busway station. Residents cross this street and have direct access to the busway station and downtown Brisbane.

### ***Eight Mile Plains***

Eight Mile Plains is the southern terminus of the South East Busway. It is characterized by two park-and-ride facilities of approximately 400 spaces each and a significant amount of green space to the east of the busway station. Immediately west of the busway station is the Pacific Motorway.

Centrus is a new, master-planned community under construction directly across Miles Platting Road from the Eight Mile Plains busway station.<sup>22</sup> When complete, Centrus will include:

- 86 energy efficient townhomes, each with a 3,000 liter rainwater tank;
- A retail center with a café and convenience store;
- A child care facility;
- A recreation facility with a lap pool, gym, and barbecue area;
- Two condominium buildings; and



Centrus construction site with the Eight Mile Plains busway station and park and ride in the background

- A recreational park with natural vegetation.<sup>23</sup>

Stage 1 of Centrus is sold out and under construction. Stage 2 currently is being sold at a rate of roughly one to two units per week. Roughly half of the purchasers are investors seeking to take advantage of the tax credit available for investors in new residential properties.<sup>24</sup>

Centrus is promoting its proximity to the Eight Mile Plains busway station as a major selling point of the development. For example, the brochure for stage 1 asks *“What could be smarter than a lifestyle where fast, efficient public transport is so close...?”*

### **Upper Mt. Gravatt**

The Upper Mt. Gravatt station is located at a major regional shopping mall, the Westfield Garden City mall, which contains 366 stores. The mall also includes a lively “town center” with restaurants, open air seating, and a large public square.

The mall is several decades old, predating the busway. It also is one of the suburban malls credited with the decline of older shopping districts, such as Woolloongabba.<sup>25</sup>

The station is located in a trench between the Pacific Motorway and the mall. Upon exiting the station, passengers emerge at the entrance to the mall. This entrance also is adjacent to a major bus interchange facility, where numerous suburban arterial bus routes terminate, providing access to the mall and to the South East Busway at the Upper Mt. Gravatt station.



Left: Upper Mt. Gravatt station with mall in background. Right: Mall entrance from busway station.

Access to the bus interchange station and the Upper Mt. Gravatt station are clearly marked in the mall. Among busway passengers who cite shopping as the main purpose of their trip, the Westfield Garden City mall is second only to the Queen Street Mall as the most popular destination.<sup>26</sup>

The busway station does not include a park-and-ride facility. This is because TransLink prefers to locate park and ride at stations near the end of the line, thus discouraging car trips to

stations closer to the CBD. Westfield expressed concern, however, that the lack of a park-and-ride facility results in busway commuters using the mall lots for commuter parking, thus reducing the number of spaces available for shoppers.<sup>27</sup>

### ***Buranda***

The Buranda station is at a unique location on the South East Busway. It serves as a transfer station between the busway and one of the city's rail lines. It also is the point where the Eastern Busway will intersect with the South East Busway and continue east along the Old Cleveland Road corridor.

The Anthony John Group, a major developer in Brisbane, has purchased roughly 1.5 hectares of property adjacent to the busway station. Most of the properties in this parcel are older, single family homes or small commercial structures.

The developer is planning a complete redevelopment of the site to include roughly 80,000 square meters of residential, 35,000 square meters of commercial, and 15,000 square meters of retail. Current plans call for buildings as high as 30 stories, which would constitute significantly higher density than anything in the vicinity.<sup>28</sup> The proposed development is pending approval from the Brisbane City Council.



Left: Buranda station area (the structures to the east of the busway station are planned for redevelopment). Right: Street-level entrance to Buranda station, including structures to be redeveloped.

## **4.3 Inner Northern Busway Development**

### ***King George Square and Roma Street Stations***

The King George Square and Roma Street stations are infill stations located on the new section that connects the South East Busway with the existing Inner Northern Busway. Both are located in the heart of the CBD near City Hall and are surrounded by existing high-rise development. The stations are under construction and expected to open in May 2008.

Given their location in an existing, high density CBD, neither station is likely to attract significant new TOD. However, each serves existing high-density development and contains interesting features that are worth noting.

The King George Square station is located underground directly in front of City Hall. It was created by removing over 400 spaces from an existing underground parking garage, thus substituting busway capacity for car access to the City Hall area.

Moreover, the station includes an indoor bicycle parking facility, with racks for 420 bicycles, shower facilities, and lockers.



Entrance to King George Square Busway Station

The Roma Street station is several hundred meters northwest of the King George Square station. It serves as a major transfer station for the Brisbane rail network, with the busway and rail serving opposite sides of a shared platform.

### ***Kelvin Grove Urban Village***

The Kelvin Grove Urban Village is an infill development mixing residential, commercial, retail, educational, and community uses. It is located two km from the CBD on a 15.37-hectare site that formerly served as an army barracks for the federal government. The Village is adjacent to the Queensland University of Technology and is served by both the Kelvin Grove station on the Inner Northern Busway and by high frequency arterial bus routes. There also are plans to operate a bus service on the village's main street.

The village includes more than 1,000 residential units, ranging from premium apartments and townhomes to affordable units and accommodations for students and seniors. The village also includes restaurants, bars, and shops, commercial space for small and medium-sized businesses, and parks, pedestrian paths, and bikeways. The village was designed to demonstrate best practices in sustainability, including solar water heating, cross-ventilation to reduce air conditioning needs, and energy efficient appliances. It has won 11 state and national awards for its sustainable design.

The Kelvin Grove Urban Village and the Inner Northern Busway were developed roughly simultaneously. However, the Kelvin Grove busway station is not located in the village, but rather several hundred meters away on the Queensland University of Technology campus. The walk from the station to the urban village was fast and pleasant and therefore did not appear to pose much of a deterrent regarding use of the busway to access the village. This is particularly true given Brisbane's climate, which is generally warm and subtropical throughout the year.

## 4.4 Boggo Road Busway Development

### ***Queensland University, St. Lucia Campus***

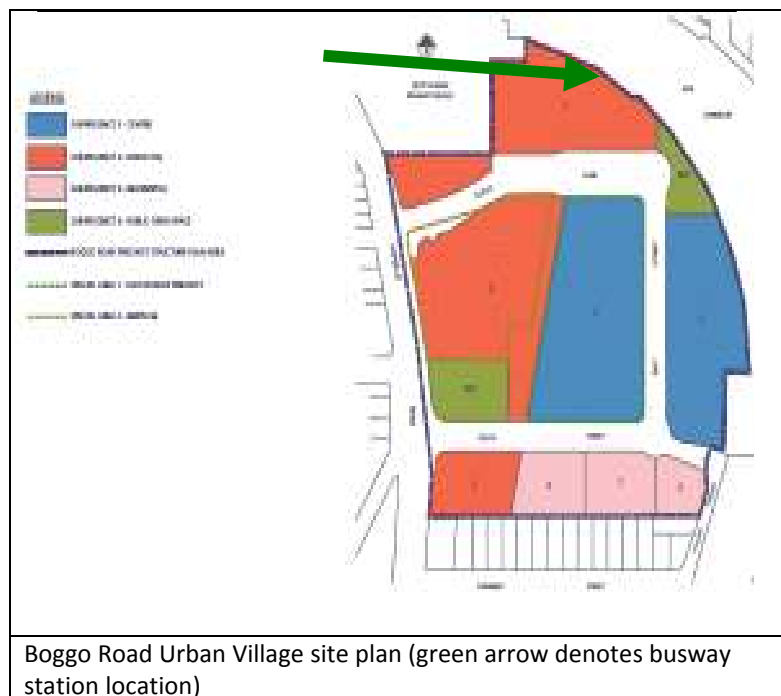
The St. Lucia Campus of Queensland University is an existing campus on the west bank of the Brisbane River. It serves as the western terminus of the Boggo Road Busway. The busway station is located on the east side of the campus near the banks of the Brisbane River.

TransLink built the busway in conjunction with the Green Bridge, which is the only access point to the station. Vehicles service the station and then turn around for the return trip, crossing the Green Bridge and exiting the busway at an arterial street. When the Boggo Road Busway is completed in 2009, some vehicles will continue using the arterial route, while others will remain on the busway, connecting directly to either the South East Busway or the Eastern Busway. This will provide the campus with one seat service directly to the CBD.

### ***Boggo Road Urban Village***

The Boggo Road Urban Village is a new, master planned community located at the site of the historic Brisbane Gaol. The village is one of five state development zones identified by the Queensland government. It is located on the Boggo Road Busway one stop east of the St. Lucia campus of Queensland University and a short walk or bicycle ride from the Green Bridge. The site is roughly 9.52 hectares and currently is under construction. The Boggo Road Busway also is under construction, and the busway station will be located on the edge of the village and adjacent to the Park Road rail station.

The village will be anchored by a major ecosciences center that will conduct research on climate change, the environment, balanced growth, sustainable industries, mineral resources, and information technology. The Queensland Government has invested over \$200 million in the center, which is expected to employ over 1,000 research staff. The village also will incorporate a mix of residential, retail, and commercial uses. Part of the heritage Brisbane Gaol complex will be adapted for reuse as a cultural, community, and education facility.



In the site plan, reprinted above, the centre subprecinct, shown in blue, will be the ecosciences center, composed of several commercial buildings ranging in height from five to eight stories. It will be developed mainly on lot 3, outlined as Special Area 1. A pedestrian boulevard will



separate lot 3 from the adjacent heritage area. The ground level will be developed as a Main Street environment on the pedestrian boulevard and Boggo Road frontages.

The mixed-use areas, shown in red, will contain commercial, residential, and educational facilities in buildings ranging from one to nine stories. The residential areas, shown in pink, will be multi-unit dwellings ranging in height from two to four stories and will include both affordable and premium units. Finally, the green areas will be public open space, consisting mainly of parkland fronting both the pedestrian boulevard and Boggo Road.

The Boggo Road Urban Village has the potential to be one of the best TODs on the busway network. It is just a few kilometers from the CBD and is located on a small hill, providing good views of the Brisbane skyline. The Boggo Road Busway will provide direct, one-seat rides to the CBD via the South East Busway, which it intersects approximately 1.5 km to the east.



Boggo Road Pedestrian Boulevard

Although the service plan for the Boggo Road Busway has not been finalized, it is anticipated that services frequencies will be very high, likely exceeding 100 vehicles per hour in the near future. The Brisbane City Council has established a goal that 50 percent of trips to the CBD from a screenline near the Boggo Road Urban Village will be by public transport by 2016.<sup>29</sup>

### ***Princess Alexandra Hospital***

The next station east of the Boggo Road station will be Princess Alexandra Hospital. The Princess Alexandra Hospital is located on the south side of the Boggo Road Busway.



Rendering of Princess Alexandra Hospital Busway Station

The hospital recently built a new, multi-story parking garage with a child care facility located on the lowest level. Because of the slope of the site, the roof of the parking garage is roughly on the same level as the ground floor of the hospital.

TransLink worked with the hospital during construction of the garage to install an enclosed walkway on top of the garage that connects directly into a walkway extending from the Princess Alexandra Hospital station, as well as an elevated bicycle path

will run beneath the walkway between the station and the parking garage.

Currently, there is undeveloped land on the north side of the station opposite of the parking garage. A substantial development is planned for this site, consisting of multi-story commercial buildings. Planning for this development is in the early stages and details were not available.

#### **4.5 Eastern Busway Development**

The Eastern Busway is poised to be the testing ground for the integrated transport and land use principles set forth in the Regional Plan and LGMS. In addition to the Buranda station, which will be on both the Southeast and the Eastern Busways, major TODs are planned at the Coorparoo Junction and Carindale stations. Smaller TOD projects also are planned at some of the other stations.

##### ***Coorparoo Junction***

Coorparoo Junction is located in an older neighborhood characterized by post war architecture, including the original Myer department store building. Currently, TransLink plans to acquire at least one square block along the Old Cleveland Road, including the Myer building. The Myer building will be replaced with the busway station, and the remaining properties will be developed in accordance with a plan developed by the Brisbane City Council.

##### ***Carindale***

The Carindale station will be located adjacent to the Westfield Carindale shopping center, one of the largest shopping malls in the region. The shopping center contains hundreds of shops, restaurants, a small town center area with outdoor dining, and a public library.



Left: Satellite view of the proposed Carindale station area with parking lot for redevelopment in the northwest corner. Right: photo of parking lot with shopping center in the background.

Westfield is working with the Brisbane City Council to build a major addition to the shopping mall. The developer plans to add roughly 35,000 square meters of new commercial, retail and public space. Included in the public space will be a “community hub,” essentially an expanded

library with community rooms, meeting facilities, and other services for the community.<sup>30</sup> The addition is expected to be completed by 2010.

To serve the mall and the addition, TransLink is planning a busway station at the mall. The busway station will link directly into the commercial, retail, and public space via an aerial walkway.

Moreover, there is a large parking lot adjacent to the proposed station site that is owned by the Queensland Government. TransLink is working with the Brisbane City Council to redevelop this parking lot, most likely with high rise commercial office buildings and an integrated station. Westfield has expressed an interest in using some of this land for a park-and-ride facility for the busway station.

## Notes

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<sup>1</sup> Interview with Barry Gyte, Managing Director, GCI, March 5 2008.

<sup>2</sup> Interview with Brisbane Lord Mayor Campbell Newman, August 2004.

<sup>3</sup> Brisbane draft Local Growth Management Strategy (May 2007)

<sup>4</sup> Interview with Barry Gyte, March 5 2008.

<sup>5</sup> Interview with Barry Gyte, March 3 2008.

<sup>6</sup> Interview with Barry Gyte, March 3 2008.

<sup>7</sup> Interview with Barry Gyte, March 3 2008.

<sup>8</sup> Interview with David LaMond, Chief Executive Officer, the Anthony John Group, March 4, 2008.

<sup>9</sup> Interview with David LaMond, March 4, 2008.

<sup>10</sup> Southeast Queensland Regional Plan 2005-2026, at 77.

<sup>11</sup> Southeast Queensland Regional Plan 2005-2026, at 77 (emphasis added).

<sup>12</sup> Interview with Barry Gyte, March 3 2008.

<sup>13</sup> See The Daily Telegraph, March 3 2008, accessed at [http://www.news.com.au/dailytelegraph/story/0,22049,23311027-5001021,00.html?from=public\\_rss](http://www.news.com.au/dailytelegraph/story/0,22049,23311027-5001021,00.html?from=public_rss)

<sup>14</sup> TransLink Busway Satisfaction Survey (2005).

<sup>15</sup> Interview with Barry Gyte, March 5 2008.

<sup>16</sup> TransLink Busway Satisfaction Survey (2005).

<sup>17</sup> Interview with Graham Heslop, Manager, gabbacentral, March 3 2008.

<sup>18</sup> Interview with Graham Heslop, gabbacentral, March 3 2008.

<sup>19</sup> Interview with Barry Gyte, March 3 2008.

<sup>20</sup> [www.gabbacentral.com.au](http://www.gabbacentral.com.au)

<sup>21</sup> Interview with Graham Heslop, gabbacentral, March 3 2008.

<sup>22</sup> [www.centrus.com.au](http://www.centrus.com.au)

<sup>23</sup> According to the developer, the Brisbane City Council requires that 10 percent new developments be set aside for greenspace.

<sup>24</sup> Interview with John Lewis, Sales Manager, Centrus

<sup>25</sup> Interview with Glen Warner, March 4 2008.

<sup>26</sup> TransLink Busway Satisfaction Survey (2005).

<sup>27</sup> Interview with John Marshall, Development Executive, Westfield Limited, March 7, 2008.

<sup>28</sup> Interview with David LaMond, March 4, 2008.

<sup>29</sup> Transport Plan for Brisbane, 2002-2016.

<sup>30</sup> Interview with John Marshall, Westfield Limited, March 7, 2008.

## 5 Cleveland, Ohio

Cleveland is Ohio's second largest city, with around 480,000 residents.<sup>1</sup> Since the 1950s, Cleveland's population has been in steady decline. The city has also lost more than half of its jobs in manufacturing, historically the city's main employment sector. Moreover, as in many US cities, new development has been characterized by low-density sprawl. The effect of these changes has been the decline of the central city's real estate market. In recent decades, downtown Cleveland has been the site of many vacant properties, limited employment opportunities, and few retail and entertainment amenities to attract new residents.<sup>2</sup>

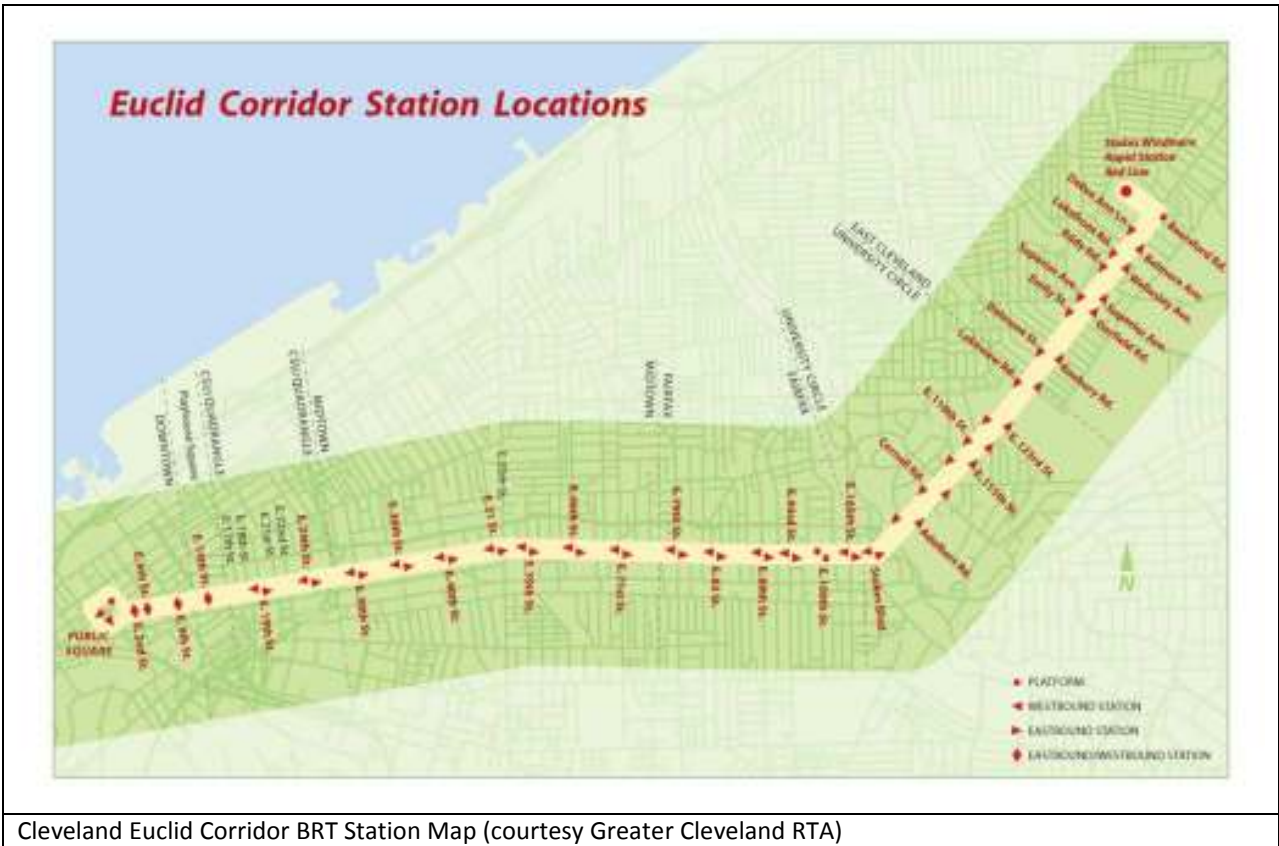
The Euclid Corridor Transportation Project is a key initiative in Cleveland's strategy to revitalize its urban core. The project is a complete reconstruction of Euclid Avenue, the main thoroughfare that runs through downtown Cleveland. Historically considered Cleveland's "front door" and main street, Euclid Avenue in its heyday was known for its mansions and, later, for its retail and institutional density. As businesses and residents migrated from the city, Euclid Avenue became a blighted corridor.

The potential for a revival of this street lay in the presence of many major academic, medical and cultural institutions such as Cleveland State University, the Cleveland Clinic and the cluster of museums and music venues in the Case Western Reserve University area. Moreover, the historic significance and architecture of many buildings along the corridor provide an opportunity to preserve the structures while taking advantage of federal and state historic tax credits.

The centerpiece of the Euclid Corridor project is a 9.4-mile BRT line that runs along Euclid Avenue from downtown's Public Square to East Cleveland. The BRT will provide a rapid connection between the region's two largest employment centers – the central business district and the University Circle area -- as well as other institutions and cultural attractions along the corridor. It will replace RTA's busiest bus line, which serves over 15,000 riders per day or about 9.2% of RTA bus ridership. Portions of the corridor opened to regular bus service in 2007, and the full BRT service is scheduled to open in late 2008.

The project also features a full streetscape renovation including roadway reconstruction; reconstruction of concrete sidewalks, with brick inlay; new curbs; complete sewer and water system upgrades; and amenities such as new light fixtures, landscaping and sidewalk benches.

The Greater Cleveland Regional Transit Authority (RTA) began planning the Euclid Corridor Transportation Project in the mid 1990s. It was one of ten BRT demonstration projects selected by the U.S. Federal Transit Administration in 1999 to introduce BRT to the U.S. transit market and was one of the first BRTs to receive a full funding grant agreement under the federal New Starts program. Construction began in 2006. The GCRTA also operates three rail lines and a free downtown rubber-tired trolley.



Cleveland Euclid Corridor BRT Station Map (courtesy Greater Cleveland RTA)

The BRT vehicles will operate on a 5.7-mile exclusive, two-lane median busway running east out of the downtown. The remainder of the BRT service will be in curbside bus lanes or mixed-traffic curbside lanes. Several of RTA’s regular bus routes will also utilize portions of the busway. When the regular buses enter downtown, they will travel through a new 2.31-mile Transit Zone with exclusive bus lanes in roadways north of Euclid Avenue between Public Square and Cleveland State University. The Transit Zone is designed to improve RTA’s operational efficiency and customer travel time throughout RTA’s bus operations. RTA has purchased a dedicated fleet of 62-ft stylized hybrid-electric buses for the BRT service, with distinct branding.

The BRT route has 36 stations, with some designed for right-side boarding and some for left-side boarding. These stations are covered shelters made of stainless steel and glass and featuring raised platforms, fare vending machines, and real-time information displays. Fare collection will occur off board. A dedicated bike path in an exclusive lane is being installed that will link Cleveland State University and Case Western Reserve University.

Even though the BRT has not yet opened, the project has attracted investment along Euclid Avenue, largely clustered around the planned BRT stations in four distinct areas of the corridor: Downtown, Cleveland State University, MidTown, and University Circle. Our research suggests that the Euclid Corridor promotes development in a number of ways.

First, the BRT will provide long-awaited rapid transit service between the area’s two major employment hubs, Downtown and University Circle. Similarly, the BRT creates both a physical and a visual connection among the four distinct sections of the corridor. Developers noted that

the project was “opening up” the corridor and allowing potential tenants or workers to see the Euclid Avenue as a unified urban district.



BRT station in downtown Cleveland (Courtesy GCRTA)

Second, the project’s aesthetic and safety improvements have cleaned up what had been an unattractive and unsafe corridor. In addition to the streetscape renovation, several developers cited the importance of the BRT’s high-end look and branding. The stylized

vehicles and the stations design were most often cited as important to the BRT’s aesthetic appeal. The project also included a much-needed utility upgrade, which makes higher density development more viable.

Finally, the strong public sector commitment to the area gives investors confidence that they are not making a stranded investment. It also has a “snow ball” effect, because increased activity in the area attracts new investors.

It should be noted that the Euclid Corridor project construction has caused temporary disruptions to some businesses along the corridor. Because of the complexity of the project, there have been delays that have extended the construction process. There are also some areas that are not yet attracting developer interest. Most notably, investment has not yet come to the East Cleveland area, which is the most economically depressed city in the Cuyahoga County.<sup>3</sup>

## 5.1 Land Use Planning in Cleveland

The Euclid Corridor project enjoys strong support from city officials and the non-profit community development corporations (CDCs) that represent the Downtown, MidTown and University Circle areas. These public and private entities are very active in promoting development along Euclid Avenue. In addition, because Cleveland is considered a weak real

estate market, there are a host of financial incentives available for developers who invest in the city.

The 2020 Citywide Plan sets forth a vision for remaking Cleveland into a thriving urban center. The plan seeks to increase the stock of transit-oriented residential units in the city; attract businesses, especially knowledge-based industries; and provide residents with a plentiful retail and entertainment options. The city's "theme" for achieving this vision is connectivity, with an emphasis on transit, pedestrian and other alternatives to private car travel.<sup>4</sup> Specifically, the plan calls for targeting "high-density development in proximity to transit stations and major bus stops in order to support public transit" and support for "improved bus and rapid transit service". The plan does not differentiate between rail and bus service in encouraging TOD.

There are no special TOD zoning regulations for downtown or University Circle, as the city did not feel such policies were needed in these markets.<sup>5</sup> However, the city recently implemented transit-oriented zoning for MidTown, specifically to promote the Euclid Corridor BRT. The zoning overlay was developed by MidTown Cleveland Inc., the local CDC. Under the new zoning rules, Euclid Corridor area projects in MidTown must be multi-story mixed use structures with the majority of the building front facing Euclid Avenue. The ground floor must have at least 60% commercial or retail use and parking must be located at the rear or side of the building, not fronting Euclid Avenue.<sup>6</sup>

To encourage new residential, retail, and commercial development, the city offers financial incentives for developers and businesses that invest in Cleveland. These are not specific to the Euclid Corridor, but are being utilized by developers for Euclid Avenue projects. For example:

- there is a 15-year, 100% property tax abatement for all new housing or housing created through conversion of nonresidential space;
- developers may apply for tax abatement on improvements to commercial or industrial properties;
- the city offers economic loan programs targeted to underdeveloped areas, including the Euclid Corridor, as well as tax increment financing (TIF) mechanisms to support public infrastructure costs;
- for some projects along Euclid, the city issued bonds supporting the project that are then repaid by developer in lieu of property taxes; and
- the city sponsors a Storefront Renovation Program that offers rebates to developers for commercial building rehabilitation that meets city design standards.

Other financing mechanisms available to Cleveland developers include federal and state historic-preservation tax credits, awarded for qualifying rehabilitation expenditures incurred in restoring a historic building. The state program was created in 2006, and Euclid Avenue projects were the primary beneficiaries of the first round of tax credit awards.<sup>7</sup> Developers may also secure federal New Market tax credits, available for US census tracts designated as in need of development, and a variety of economic development loans from Cuyahoga County.

The three CDC's also are working to promote economic activity and have been strong supporters of the Euclid Corridor project. For example, representatives from the MidTown and Downtown CDCs participated in a tour of Curitiba, Brazil that helped spur RTA to implement BRT. As a result, the local CDCs are not only promoting development in their communities, but are advocates for the BRT and TOD around it.

The CDCs provide a range of services, including assisting developers in securing supportive financing and tax credits; administering the city's Storefront Renovation grant program; securing property for re-sale at market rates for developers and businesses; developing guidelines for pedestrian-friendly and transit-oriented property fronts; and acting as a liaison among property owners, potential developers, the city and the RTA regarding development along the corridor.

The Cleveland RTA also has an active TOD program. Throughout the Euclid Corridor project implementation, the RTA has conducted education and outreach with property owners, developers and the local CDCs. Among other things, the RTA published guidelines for transit-supportive development and developed an economic development plan for the Euclid corridor.

RTA recently published new TOD guidelines, with a particular emphasis on the potential for TOD around "rapid transit" stations, both BRT and rail. These guidelines highlight the Euclid Corridor Transportation Project as one of RTA's major TOD projects. The guidelines note that RTA supports community-based TOD initiatives by partnering or participating with local community revitalization efforts; working with local stakeholders on station and service design configurations; encouraging adoption of TOD-supportive zoning and offering technical assistance on development of such regulations; and seeking joint development opportunities.<sup>8</sup>

## **5.2 Total Development Along Euclid Corridor**

A February 10, 2008 Cleveland Plain Dealer article tallied projects occurring between downtown's Public Square and University Circle, 4.5 miles east of the downtown. They included projects completed since 2000, those underway as of February 2008, and those scheduled to start within the next six years. In total, the report estimated that over \$4.3 billion in economic investments have occurred or are planned along this corridor.<sup>9</sup>

The corridor is attracting a wide range of uses, with an emphasis on high-density development that can support transit. The projects described in this section are representative of existing and planned activity along the Corridor, and not a comprehensive list. A list of corridor investments compiled by the Cleveland RTA can be found in Appendix B.

## **5.3 Downtown Cleveland Development**

This stretch of the corridor begins at Public Square and ends at the edge of the Cleveland State University campus. Until recently, the area was primarily occupied by office buildings and



parking garages, with limited retail, entertainment or residential spaces and many vacant buildings.

Downtown has already been undergoing a development resurgence, with high-profile projects such as the \$60 million renovation of the historic Arcade mall into a Hyatt Regency and retail center, and the \$30 million renovation of the nearby Colonial Arcade retail and hotel complex.



The streetscape renovation in downtown (courtesy Cleveland RTA) in front of a typical building available for leasing,

This downtown revival was driven in part by the 1994 opening of the 28-acre Gateway Sports and Entertainment Complex just south of downtown, as well as supportive financing and other incentives. The BRT project supports this development activity by offering improved connectivity and a more attractive streetscape. Moreover, there are still many development opportunities along this corridor, and some new projects are being designed to capitalize on the BRT access.

### ***E. 4<sup>th</sup> Neighborhood***

This development exemplifies the rise, fall and revival of the Euclid Corridor. It is an entertainment, retail and residential district on E. 4<sup>th</sup> Street between Euclid and Prospect, within the Gateway Historic District neighborhood. The neighborhood had once been one of Cleveland's liveliest but, by the 1980s, it featured mainly low-budget retail shops.

The entire block is owned by MRN Developers, which began acquiring all properties in this block in the 1990s for the purpose of creating a vibrant, 24-hour downtown square. To preserve the architectural character of the area, the city granted the entire neighborhood historic preservation status, allowing investors to secure tax incentives for redevelopment. The opening of the Gateway Sports & Entertainment Complex just south of the neighborhood further spurred developer interest.

MRN has converted four buildings into apartment complexes, whose residents have easy access to a range of new restaurants, bars, and other nightlife spots located in the redeveloped properties. In all, MRN has invested over \$110 million in the project, which features 220,000 square feet of commercial, food, beverage, and entertainment spaces with 90% occupancy; and 322 apartments at 100% occupancy.<sup>10</sup>

In addition to historic preservation tax credits, the city contributed about \$1.5 million to streetscape renovation including brick pavers, ornamental lighting, and public art to the entire Gateway District.<sup>11</sup>



Overhead map of the E. 4<sup>th</sup> Street neighborhood which opens onto Euclid Avenue. The site is two blocks from a planned BRT stop. (Courtesy MRN Ltd)

The area will be served by the E. 6<sup>th</sup> St. HealthLine Stop. The developer noted that the streetscape renovation provided by the BRT project was initially of greater interest than the transit component. However, the developer feels that the BRT will serve the project by providing a sense of connectivity that is important to creating a livable urban neighborhood. The project not only links the downtown with other Euclid Corridor destination attractions, but it also visually connects blocks that had previously seemed like disparate areas of the city.<sup>12</sup>

MRN worked with the Cleveland RTA on the station alignment and design process. They urged RTA to move the stop from the originally-proposed 4<sup>th</sup> St. location because they felt it would create a physical barrier in front of the 4<sup>th</sup> St. businesses. They also worked with RTA on the station design, with a goal of ensuring it would not impede sightlines across the street or create a barrier to pedestrian traffic.

***Atrium Building and Dollar Bank Building<sup>13</sup>***

The K&D Group is under contract to purchase the Atrium building, an historic two-building cluster connected by a 73-foot atrium located at 668 Euclid. Built in 1907, the building was home to the William Taylor department store until the 1960s when it became an office building, reflecting the flight of downtown retail. In the 1980s, the building was badly in need of renovation and became vacant. K&D plans to convert the roughly 500,000 square foot property to 240 luxury apartments with 70,000 square feet of retail and commercial uses at the ground floor.

K&D is also purchasing the Dollar Bank building next door. This vacant 5-story building will be demolished and the site turned into a pedestrian plaza. The developer hopes to open up this area visually and encourage greater connectivity among the area's sites. The developer will also build an entry into a new underground parking structure beneath the Atrium building. In total, it is estimated this will be a \$70 million project.

The site is close to both the E. 6<sup>th</sup> and E. 9<sup>th</sup> Street BRT stops. The developer stressed the importance of the BRT to the company's vision for the site. The company sees this as a transit oriented residence, and a major selling point will be the rapid ride from downtown to Cleveland State University, the Cleveland Clinic and other employment centers in the University Circle area.



Dollar Bank Building

The developer has secured financing from conventional sources as well as multiple state, federal and city sources. The project has already been approved for state and federal historic tax credits. The developer also plans to finance the project with a low interest loan from the county; federal new market tax credits; and a tax increment financing package. The developer noted that the supportive financing is allowing them to build out the property to a higher amenity level than they would otherwise be able to justify on this site.

### ***Cleveland Athletic Building and the Ameritrust Complex***

Two additional development projects are in the works that demonstrate the continued resurgence of downtown's real estate market. A developer bought five mostly vacant buildings between East 9th and E. 12th streets, including the historic Cleveland Athletic Club building which had been financially suffering for many years. The buildings will be converted into retail, office space and apartments and building exterior restored to its original historic appearance. In all, the project is estimated at \$70 million. The Athletic Club building was the last piece of this site to become available, when the 100-year old Athletic Club declared bankruptcy. News reports suggested that the construction associated with the Euclid Corridor BRT had contributed to the club's demise. The club will remain as a building tenant.<sup>14</sup>

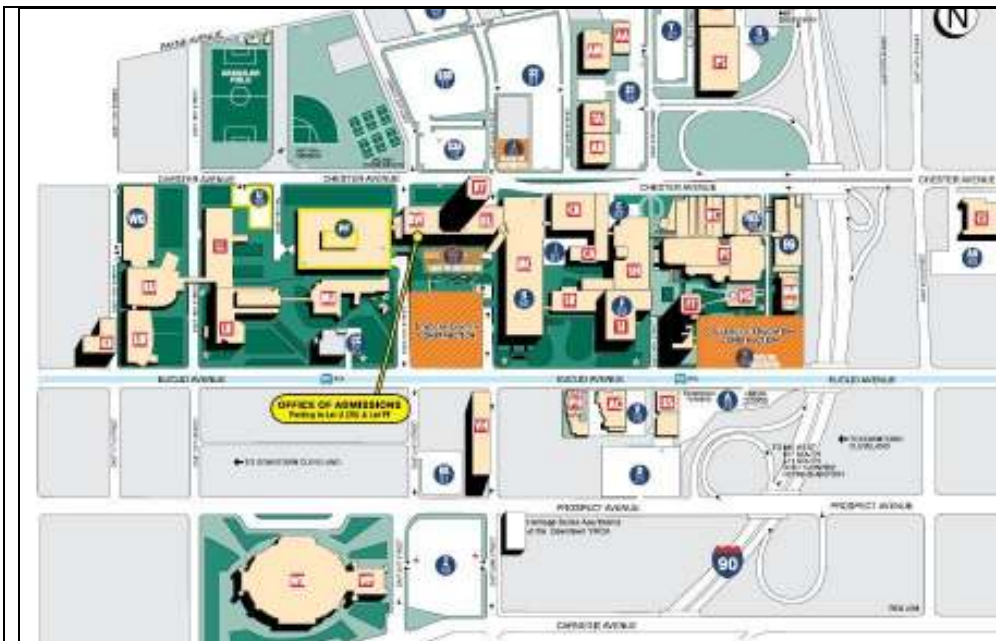
Another anticipated development opportunity is the Ameritrust Tower complex, located at the southeast corner of Euclid and E. 9<sup>th</sup>. Designed by famed Bauhaus architect Marcel Breuer, the tower has been vacant for about 20 years. Cuyahoga County acquired the site with the intention of consolidating its disparate offices into a single complex, but instead has decided to offer the \$35 million property to developers. The results of the bidding process are expected in April 2008. If there is no successful bid, the tower will be torn down.<sup>15</sup>

## 5.4 Cleveland State University Development

The Cleveland State University (CSU) campus dominates Euclid Avenue between E. 17th and Interstate 90 that cuts across Euclid near E. 30th Street. CSU is undergoing an expansion that includes multiple new buildings - an administrative complex, student center, College of Education building, arts complex, recreation center, and student housing -- as well as a law school renovation. By full build-out in 2010, the total investment will be around \$300 million.<sup>16</sup>

The original 1995 CSU Master Plan would have connected these projects to I-90. In 2003, as a result of the Euclid Corridor project, CSU revised its Master Plan to reorient the campus around the renovated avenue, with two BRT stops serving as the focal point for entry into a new, pedestrian-friendly campus. CSU's goal is to create a "unified" landscape along this stretch of Euclid Avenue, inspired by the Euclid Corridor project.

Most of the new or renovated buildings have been designed to support the transformation into a pedestrian-interactive thoroughfare. All will have front entrances onto Euclid, and the ground floor uses will be either retail or university-oriented services. In addition, the new buildings help Euclid Avenue by replacing either unattractive, uninviting existing buildings or surface parking with a more pedestrian-friendly streetscape.<sup>17</sup>



The CSU campus today has an east-west orientation. Most buildings are located between Euclid and Chester, with building fronts facing away from Euclid. There are few buildings on the opposite side of Euclid. (Courtesy CSU)



The CSU expansion Master Plan has a north-south orientation. The plan shows new private development along the opposite side of Euclid, creating a unified campus around Euclid. The Master Plan calls for using the BRT stops at E. 19<sup>th</sup> St. and E. 24<sup>th</sup> St. as transit anchors for two north-south spines through the expanded campus. (Courtesy CSU)

CSU worked with RTA on station placement and on some median busway alignment issues, such as placement of left turn lanes. CSU's Vice President for Business Affairs believes that the median busway helps create a more pedestrian friendly environment by making the street feel smaller and easier to cross. Also, because the station architecture is transparent, the stations feel safe and welcoming.<sup>18</sup>



E. 24<sup>th</sup> BRT station on Euclid Avenue in CSU neighborhood with typical low-density structures (Courtesy: Lorie Beabes)



CSU's vision for the future of Euclid Avenue, with high-density retail and university functions connected by the BRT (Cleveland State University)



E. 19<sup>th</sup> St. BRT stop, one of two stops that will serve as entry points into the new pedestrian-friendly CSU campus.



Renovation of the law school's Wolstein Hall façade presents transparent face to Euclid Avenue

## 5.5 MidTown Development

MidTown is the most underdeveloped section of the corridor. MidTown begins at E. 30<sup>th</sup>, just past the CSU campus area, and extends to E. 79<sup>th</sup> Street, just short of the Cleveland Clinic and University Circle area. Once a vibrant mixed-use neighborhood, the area declined when businesses began to vacate the corridor. Much of the building stock was decimated, either left vacant or allowed to deteriorate. The area was zoned for “general industrial” use which allowed many low-density, unconnected uses to situate side-by-side, from parking lots to churches to car dealerships.<sup>19</sup> One developer described the area as a “no man’s land” because of the poor building stock and lack of connectivity to downtown and University Circle. However, its location between the Avenue’s major activity centers also made the area promising for redevelopment. In addition, it offered an unusual quantity of available land for an urban environment.<sup>20</sup>

MidTown is now undergoing a transformation back to a mixed-use neighborhood, with new residential, retail and commercial space. The Cleveland Plain Dealer reported that property values in MidTown have doubled in the past five years, from \$200,000 per acre to \$400,000. By comparison, property values just south of the BRT corridor are around \$100,000 per acre.<sup>21</sup>

The MidTown CDC believes that the public investment in this corridor laid the groundwork for developer interest, but, going forward, market forces will be the primary driver for investment. For example, a suburban developer recently bought five acres on a spec basis, without seeking low interest loans, tax abatements or other government financial support.<sup>22</sup>

Many MidTown projects are still in early proposal stages, but the following is a sample of some recently completed projects:

***Baker Electric Motor Car Building***

The Baker Motor Car Building at 7100 Euclid Avenue was built in 1910 as a showroom for electric cars. In 2006, developers converted the historic structure into office and lab space for medical start-ups and technology firms. The building is directly across the street from the BRT stop at E. 71<sup>st</sup> Street.

The developers restored the building façade as well as the interior woodwork, tiling and exposed high ceilings. They also installed geothermal heating and other environmental features. They have several technology company tenants, and expect to reach full occupancy in 2008.



One of the developers said that he had been interested in this building for five years, but finally made the decision to purchase because of the Euclid Corridor project and nearby university and medical facility expansions.<sup>23</sup>

***MidTown Innovation Center (4415 Euclid) and 4600 Euclid Avenue***

The MidTown Innovation Center is located at 4415 Euclid. The original 4-story building had once been a storage facility for a nearby car dealership. It had lain vacant for several years when Heartland Developers purchased it in partnership with two technology companies. The building was gutted and converted into office space, including the addition of a fifth floor. It opened in 2005 and is about 90% occupied.

Total investment was about \$5 million. The developer secured financing support through grants from the city’s economic development agency to encourage investment in high-tech businesses; city tax abatements available for commercial property improvements; historic property tax credits; and the Storefront Renovation program.



The MidTown Innovation Center, a converted storage facility (courtesy Heartland Developers)

The Center is half a block north from the E. 40<sup>th</sup> St. BRT stop, pictured above (courtesy Lorie Beabes)

4600 Euclid Avenue is a four-story parking garage. Heartland Developers partnered with a Cleveland law firm to convert the facility into high-end office space. Total investment for this project is estimated at \$5 million and the project secured a Storefront Renovation loan, a county remediation and demolition loan, and a city tax abatement.

Both buildings are close to the E. 40<sup>th</sup> and E. 51<sup>st</sup> St. BRT stations. According to the developer, the BRT project is an important stimulus for its Euclid Avenue investments because it connects MidTown to the rest of the corridor and has made the street more attractive and inviting in appearance.<sup>24</sup> The developer noted that MidTown's revival was also jumpstarted by the city and local CDC's efforts to clean up the corridor and eliminate vacant buildings.

### ***2800 Euclid Avenue***

This is another Heartland Developers property, located on the border of downtown and MidTown. The building is home to multiple commercial tenants, most recently a call center that moved here specifically because of the BRT access. About 70% of the call center employees arrive via public transportation. Over the past several years, Heartland has invested about \$3 million in renovations on this building. The company noted that it would not have invested as heavily in this property without the corridor project.<sup>25</sup>

### ***6611 Euclid Avenue and 1950 E. 66<sup>th</sup> St.***

RTA owns several MidTown properties that have redevelopment potential. Currently the agency's main focus is the Food Industry Marketing Center building at 6611 Euclid. The agency's goal is to convert this building to a mixed-use property with commercial or office space along the street front. The property on E. 66<sup>th</sup> Street is next to Dunham Tavern Museum, a historic attraction on Euclid Avenue. RTA is marketing this property aggressively for transit oriented development uses which fit the area.



## 5.6 University Circle Development



On top, the parking garage that occupied the site of the new Cleveland Clinic Heart Center. Below, the state of construction as of July 2007. The promenade in front of the center will provide direct access to the BRT.

University Circle is home to a number of major academic, medical and cultural institutions. In contrast to citywide trends, University Circle's population is booming, growing 12% between 1990 and 2000. There are efforts underway to introduce more residential and retail options to this area and turn it into a thriving urban village. Because of the number of institutional buildings, there is not as much available land here as in MidTown. The area is also quite congested, increasing the interest in TOD projects.<sup>26</sup>

Several institutions in University Circle are undergoing major expansions. As the BRT project has progressed, some institutions have directed their new developments to be more transit oriented.

### ***Cleveland Clinic***

The Cleveland Clinic is a world-renowned medical facility located at the western edge of University Circle. It is the largest employer in the city and the second largest in Ohio. It occupies 140 acres and 37 buildings, including a hospital, an outpatient clinic, cancer center, eye institute, research institute and supporting labs and facilities. The Clinic is building a new home for the Cleveland Clinic Heart Center, a \$475 million investment and the largest project along the Euclid Corridor. The complex is adjacent to the planned E. 93<sup>rd</sup> St. stop.

When the Euclid Corridor BRT planning process began, the Clinic had little interest in the BRT and objected to siting a BRT station in front of the new Heart Center. After a change in Clinic leadership, the BRT was embraced and the promenade leading to the new heart center was redesigned to integrate with the BRT station.

Moreover, RTA developed an agreement with the Clinic that will make the area more pedestrian and transit friendly and the Clinic is contributing \$5 million to this effort. In another sign of the Clinic's dedication to the BRT, it partnered with nearby University Hospitals to acquire 25 year naming rights at a cost of \$6 million. The BRT will now be called the Healthline.

**University Circle Visitor Center and Corridor Revitalization**

The local CDC, University Circle Inc. (UCI), recently opened a visitor and real estate center for this district on the corner of Euclid and Mayfield Road, between the planned Cornell Road and E. 115<sup>th</sup> Street BRT stops. The center is part of a \$7 million corridor revitalization initiative spearheaded by UCI to capitalize on the Euclid Corridor Transportation Project. UCI is funding new signage, prominent “gateways” to delineate distinct sections of the district; and pedestrian lighting. University Circle also is working with a local foundation to launch a multimillion dollar mortgage assistance program that will be designed to attract homeowners to the area.<sup>27</sup>

**Uptown at University Circle**

This is a \$100 million project to redevelop a site at the edge of Euclid Avenue and Mayfield Road. The area, informally known as the Triangle, is an underused retail district in the heart of the Case Western Reserve University (CWRU) campus. The surrounding area is being re-developed into the University Arts and Retail District, designed to give CWRU an urban center.<sup>28</sup> The site is bordered by the Cleveland Institute of Art, which is undergoing a \$53 million renovation, set to open in 2009. The new Museum of Contemporary Art will also be built on the site’s southern border.

CWRU and UCI own the site and are working with two developers to create a planned community that will provide a host of retail, entertainment and other amenities for residents, students, and visitors to University Circle. The site currently is occupied by a two-storey retail and office building, two apartment towers, a fast food restaurant, and a parking lot. The developers plan to tear down the two-story building and fast-food restaurant and build 100 market rate condominiums and 100 new student-orientated housing units. The towers will be rehabbed into 400 new apartments. There will also be 100,000 square feet of ground floor retail, including a Barnes & Noble.<sup>29</sup>



Uptown project site, fronting Euclid Avenue. Plans are to redevelop this into a mixed-use transit oriented community.



Site Plan for the Uptown project. (Courtesy Zaremba Homes)

Overall, the project will help bring greater density to this neighborhood, with projections of more than 20,000 people living within the University Circle area upon completion of the project.<sup>30</sup>

The site is approximately one block from the Cornell stop. The developer noted that this had long been considered a coveted spot for redevelopment, but that the BRT makes the project all the more compelling by providing a ten-minute ride downtown and seamless connections to the rest of the corridor.<sup>31</sup>

It should be noted that the site also will be served by an RTA light rail station, which will be located on the opposite side of University Circle from the BRT station. There has been some concern that the new rail station will not be adequately connected to the BRT station, with riders who wish to transfer having to walk through or around the community complex.<sup>32</sup>

**Notes:**

<sup>1</sup> Cleveland census data, from Cleveland Planning Commission website: <http://planning.city.cleveland.oh.us/>  
<sup>2</sup> Connecting Cleveland: 2020 Citywide Plan  
<sup>3</sup> Joseph Calabrese email, March 2008.  
<sup>4</sup> Connecting Cleveland: 2020 Citywide Plan  
<sup>5</sup> Interview with Robert Brown, City Planning Commission, February 2008.  
<sup>6</sup> Interview with James Haviland, MidTown Cleveland Inc., March 2008.  
<sup>7</sup> Cleveland Plain Dealer editorial of November 21, 2007.  
<sup>8</sup> GCRTA, *Draft Transit Oriented Development Guidelines*, February 2007.  
<sup>9</sup> Steven Litt, Cleveland Plain Dealer, "Euclid Corridor Project Driving Over \$4.3 Billion in Cleveland Development" Feb. 10, 2008.

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- <sup>10</sup> Interview with Ari Maron, MRN Developers, February 2008.
  - <sup>11</sup> Cleveland Plain Dealer article, June 19, 2007.
  - <sup>12</sup> Interview with Ari Maron, MRN Developers, February 2008.
  - <sup>13</sup> Interview with Mark Schildhouse, The K&D Group, March 2008.
  - <sup>14</sup> Cleveland.com news item dated December 28, 2007.
  - <sup>15</sup> Michelle Jarboe, Cleveland Plain Dealer article dated February 29, 2008.
  - <sup>16</sup> Cleveland RTA list of investments along the Euclid Corridor, as of Feb. 2008.
  - <sup>17</sup> Interview with John Boyle III, CSU, March 2008.
  - <sup>18</sup> Interview with John Boyle III, CSU, March 2008.
  - <sup>19</sup> Interview with James Haviland, MidTown Cleveland Inc., Feb. 2008.
  - <sup>20</sup> Interview with Gordon Premier, Heartland Developers, March 20, 2008.
  - <sup>21</sup> Interview with James Haviland, MidTown Cleveland Inc., Feb. 2008.
  - <sup>22</sup> Interview with James Haviland, MidTown Cleveland Inc., Feb. 2008.
  - <sup>23</sup> Information from MidTown Cleveland website: [www.MidTowncleveland.org](http://www.MidTowncleveland.org)
  - <sup>24</sup> All information from interview with Gordon Premier, Heartland Developers, March 2008.
  - <sup>25</sup> Interview with Gordon Premier, Heartland Developers, March 2008.
  - <sup>26</sup> University Circle Master Plan.
  - <sup>27</sup> Information from University Circle website: [www.universitycircle.org](http://www.universitycircle.org)
  - <sup>28</sup> Information from University Circle website: [www.universitycircle.org](http://www.universitycircle.org)
  - <sup>29</sup> Information on Uptown from interview with Joseph Del Re, Zaremba Homes, March 2008.
  - <sup>30</sup> Information from University Circle website: [www.universitycircle.org](http://www.universitycircle.org)
  - <sup>31</sup> Interview with Joseph Del Re, Zaremba Homes, March 2008.
  - <sup>32</sup> Interview with Chris Bongorno, University Circle Inc., Feb. 2008.

## 6 Boston, Massachusetts

Boston is a compact city, with almost 600,000 people living in just 48.4 sq. miles.<sup>1</sup> It is bounded on the east by the Boston Harbor and on the north by the Charles River. Densely populated suburbs surround the city to the west.

Boston also has the country's oldest and fourth largest public transit system.<sup>2</sup> Boston first introduced streetcar service in 1889 and, as the city grew, new business, retail and residential development was built around the transit lines. As a result, almost all parts of the city are within a quarter mile of a transit station.<sup>3</sup>

Boston's transit services are provided by the Massachusetts Bay Transportation Authority (MBTA). Roughly 55 percent of all work trips and 42 percent of all trips into downtown are by transit. In the greater Boston region, which has around 3 million residents, 6.8 percent of all trips are made by transit. That number is expected to increase to 7.47 percent by 2025.<sup>4</sup>

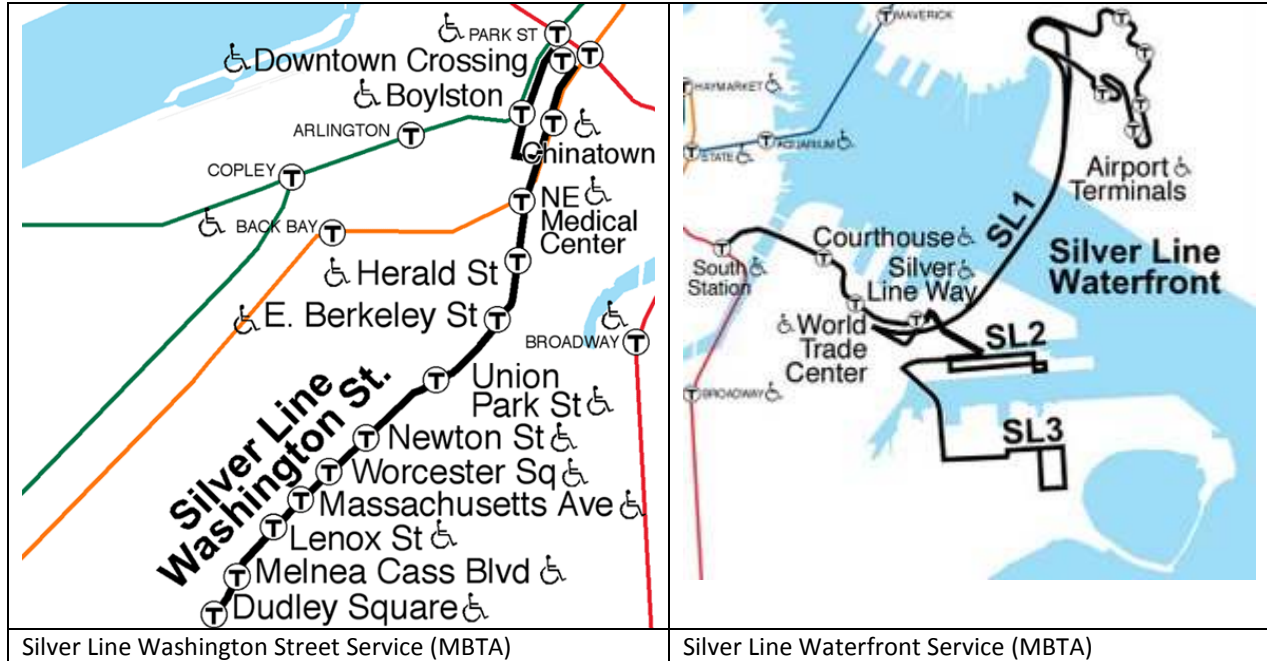
The Silver Line BRT is the first addition to the rapid transit system in 50 years and is fully integrated into the regional rail network. The MBTA is building the Silver Line in three phases. The first two phases – the Silver Line Washington Street and the Silver Line Waterfront -- are operational. Phase III will connect the two operating services via a one-mile tunnel.

Washington Street is a historical downtown thoroughfare that had become run down and crime-ridden by the 1990s. Implementation of the Silver Line Washington Street BRT was a key feature of a public and private initiative to revive this corridor.

The Silver Line Washington Street connects the Downtown Crossing rail station and Dudley Square, a major transfer point for bus service southwest of downtown. This is a 2.4-mile surface bus operation, largely in bus-only lanes with mixed street operations in a short downtown loop. The service features enhanced shelters with information kiosks and a bike rack; 60-ft stylized compressed natural gas buses with a silver livery distinct from other MBTA buses; on-board fare collection; and some transit signal priority. The project also included a complete reconstruction of Washington Street's roadway and sidewalks, including re-paving and diamond lane markings; sidewalks bricked and curbed with granite; widening of some sidewalks to encourage pedestrian traffic and outdoor activity; planting trees; and installing "period-style" lighting fixtures.

Ridership in the corridor has doubled since the service opened in 2002, reaching approximately 15,000 average weekday boardings. However, the service has experienced bus bunching and delays due to the lack of a truly dedicated bus lane and extended dwell times due to the on-board fare collection process.<sup>5</sup>

The Waterfront line runs from South Station, a major downtown rail transfer station, to Logan Airport via the South Boston Waterfront (also called the Seaport District). It has three underground stations: South Station, a multi-modal hub that was modified to accommodate the Silver Line tunnel, and two new stations, Courthouse and World Trade Center.



The Waterfront line is the Seaport District’s first rapid transit line and is providing the service necessary to support new, high-density development and to transform the area into a pedestrian- and transit-oriented urban community.<sup>6</sup> Transit ridership to the Waterfront has increased by nearly 100%. Roughly 40% of the riders are new to transit and, of these, more than 12% previously drove cars for their trip.<sup>7</sup>

The line also has been a significant boon to Logan Airport.<sup>8</sup> Ridership on the airport service has risen by 75% and, in 2007, Aviation magazine ranked Logan Airport the easiest US airport to reach, due substantially to the Silver Line.<sup>9</sup>

## 6.1 Land Use Planning in Boston

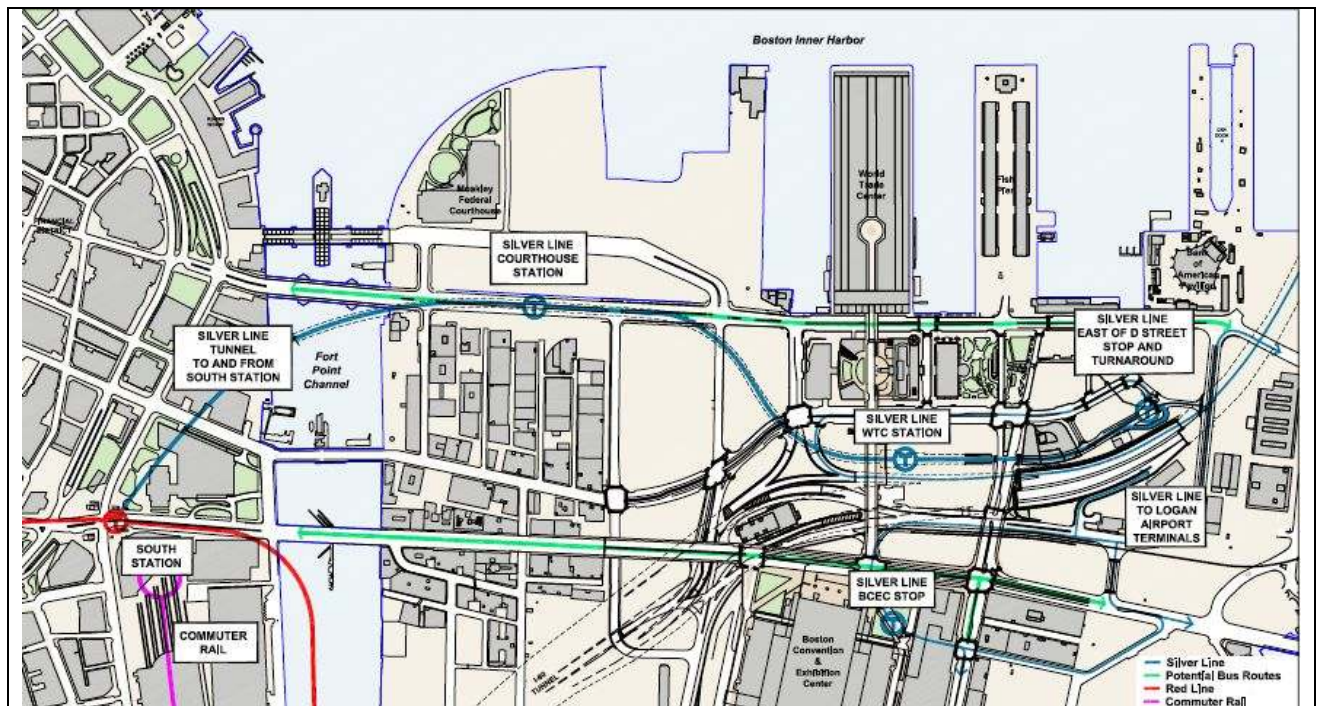
The primary agency overseeing Boston’s land use planning is the Boston Redevelopment Authority (BRA). Beginning in the 1980s, the BRA began an effort to update the city zoning code. The new code seeks to manage growth by allowing higher densities closer to transportation nodes. It also restricts building heights and densities in historic districts, protects open space, and provides design guidelines for new development. All large projects (defined as projects adding at least 50,000 square feet of gross floor area) must be approved by the BRA. The review examines the proposed project’s impacts on transportation, environment protection, urban design, historic resources and infrastructure system.

In addition, unique programs exist in both the Washington Street and Seaport District areas. For example, a 1997 Mayor’s task force report found that the first priority for reviving the Washington Street corridor was implementing the Silver Line rapid transit service and renovating the street.<sup>10</sup> The Washington Gateway program, a local non-profit community group, took the lead in ensuring that the report’s recommendations were implemented. Among other things, Washington Gateway reviewed proposed development projects to ensure transit and pedestrian accessibility and appropriate densities; helped establish new structured parking and metered street parking; worked with MBTA and others on station placement and design; and worked to rezone Washington Street as a “Neighborhood Development Area.”<sup>11</sup>

The BRA also owned a significant amount of property along Washington Street and sold parcels to developers, reducing the price in exchange for commitments to build affordable housing. The city also renovated two major public properties on Washington Street, which helped convince investors of the city’s long-term commitment to the corridor.<sup>12</sup>

The Seaport District contained roughly 1,000 acres of underutilized sites, consisting mostly of warehouses, industrial facilities, and parking lots. These destinations were not connected by rapid transit and distances between the sites were not amenable to pedestrian traffic.

In 1999, the BRA adopted the South Boston Waterfront Public Realm Plan, which was designed to turn the Waterfront into a walkable city neighborhood with a mix of industrial, residential, commercial, civic and retail uses.<sup>13</sup> The Public Realm Plan cites the Silver Line as a necessary precondition to transforming the Waterfront streetscape.



Massport’s map of Silver Line service for the harbor (Courtesy Massport)

The Massachusetts Port Authority (Massport) is one of several major property owners in the Waterfront. In 2000, Massport prepared a Strategic Plan for its land in Commonwealth Flats, a 65-acre area in the Waterfront. The plan calls for creation of a mixed-use community with residential, retail, entertainment and office facilities, as well as public transport through the Silver Line.<sup>14</sup> The Silver Line World Trade Center station and a surface stop on Silver Line Way are located on this Massport land.

Another important factor in the redevelopment of the Seaport District is the South Boston parking freeze, one of three such parking controls put in place in 1993 by the Massachusetts Department of Environmental Protection. The freeze caps the number of non-residential parking spaces in South Boston, thus encouraging developers to ensure easy access to transit from their properties. In light of the increased access offered by the Silver Line, the freeze was amended to reduce the number of public spaces available to drivers arriving in the Seaport District during before 9:30 a.m.<sup>15</sup>

## **6.2 Washington Street Corridor Development**

Washington Gateway estimates that, between 1997 (when planning for the Silver Line began) and 2006, over \$571 million was invested in the corridor. The tax base grew by 247%, compared to a city average of 146%. In May 2005, Washington Street won a Great American Main Street Award from the National Trust for Historic Preservation.<sup>16</sup>

A few of the notable projects in the corridor include:

- Minot Hall -- historic rehabilitation project with 45 condos, including new construction;
- Porter House – historic rehabilitation project resulting in 5 condos;
- South End Community Health Center, with ground level retail;
- Condominiums at Rollins Square (183 units), the Savoy (13 units), Wilkes Passage (155 units), and Dover Lofts (16 units) condominiums, also with ground-level retail
- Gateway Terrace, a three-building complex with 133 condominium lofts for a total project cost of \$60 million.<sup>17</sup>

The former executive director of Washington Gateway noted that the Silver Line attracted developers by upgrading the corridor's transit service, creating a faster connection to downtown Boston, and rehabbing the streets and sidewalks.<sup>18</sup>

## **6.3 Waterfront Corridor Development**

The Waterfront has experienced an explosion of growth, with many high-profile projects recently opened, planned, or under construction. The BRA estimates that between 2000 and 2008, more than eight million square feet was developed, and an additional 20 million was under construction, approved or proposed.<sup>19</sup>



The Silver Line is playing an important role by providing the necessary rapid transit connection to Logan Airport and to downtown Boston. The following is a description of some of the high-profile projects under development in the Courthouse, World Trade Center and Silver Line Way station areas.

### 6.3.1 Courthouse Station

Each station on the Waterfront line has its own design and layout. The Courthouse Station was the most costly and is also the most dramatic in appearance. The Boston Globe called it “one of the remarkable new spaces in Boston.”<sup>20</sup>

	
<p>Headhouse leading up from underground Courthouse Station. This structure will be altered to provide direct access to the Fan Pier project. (Courtesy MBTA)</p>	<p>Mezzanine of Courthouse Station (Courtesy MBTA)</p>

The station was designed to enable the creation of an exit directly from the mezzanine to the Fan Pier site (see below). The “headhouses” – the street-level glass cubes that cover the escalator and stairs down into the station – are intended as temporary fixtures, to be replaced by the developer when the Fan Pier project is built.<sup>21</sup>

### ***Fan Pier***

Fan Pier is one of the biggest developments in the Seaport District. It is on 21 acres near the Court House station and will cost an estimated \$3-billion. This land is considered some of the most desirable undeveloped property in Boston. The project developer, the Fallon Group, bought the land in 2005 for \$115 million.<sup>22</sup> When completed, the site will include:

- three office buildings
- luxury hotel
- more than a million square feet of luxury residences
- more than 300,000 square feet of street-level retail and restaurant space.

The buildings will feature 1,000,000 sq.ft of Class A office space with 18 floors of glass curtain and "lantern" walls and six-story bay windows. Outside, the site will create pedestrian



Fan Pier project site near Silver Line Courthouse Station

boulevards, a 1.5-acre park, and a six-acre marina. The site will be designed to meet LEED certification.<sup>23,24</sup>

Fallon Group broke ground on Fan Pier in 2007. The first building being constructed is One Fan Pier Boulevard, a 500,000-sq.ft, 18-story office building, which is expected to open in 2010. The full project build-out will occur over the next ten to twelve years.<sup>25</sup>

Unfortunately, the Fallon Group declined to be interviewed for this report. However, the Fallon Group's marketing materials

note that Fan Pier offers "unsurpassed access to local transportation," including the Silver Line to Logan Airport.

***John Joseph Moakley Courthouse and the Institute of Contemporary Art***

The Courthouse station is named for its proximity to the John Joseph Moakley U.S. Courthouse, located at the northeast rim of the Fan Pier and overlooking the Boston Harbor. The Courthouse opened in 1998, the first high-profile project along the Waterfront since the 1980s. The 4.6-acre site faces the Harbor, and the architect designed a curved-glass building front offering sweeping views of the Harbor from inside. The Courthouse is a short walk from the BRT station.

The Institute for Contemporary Art (ICA) opened a new, 65,000-square-foot museum on Fan Pier. In 2007, it was named Boston's "Most Beautiful Building" by the Boston Society of Architects.<sup>26</sup> The ICA is equally accessible from the Courthouse and World Trade Center Silver Line stops.

Neither the ICA nor the Courthouse has a visitor parking lot. As a federal project, the Moakley Courthouse was exempt from the parking freeze, but opted to build only 80 spaces to make the project consistent with the parking freeze.<sup>27</sup> Currently, there is plentiful inexpensive parking nearby, as this is the dominant use for much of the harbor front property. However, as the area develops, these surface lots will disappear, making transit accessibility critical.

***Seaport Square***<sup>28</sup>

Seaport Square is a 23-acre site adjacent to the South Boston Waterfront and the Court House station. Planning is underway to create a 6.5 million square-foot complex with retail, office,

residential, educational, entertainment and cultural uses. This site, which stretches over 20 city blocks, was formerly a rail yard and is currently occupied by parking lots. The proposed project is still in the permitting process and the city has accepted the Master Plan. It is estimated the completed project will have 11 buildings with the following uses:

- 2.3 million square feet of residential space, primarily high-end condominiums
- 1.4 million square feet of commercial space
- 1.2 million square feet of retail and entertainment
- 660,000 square feet designated for a hotel
- 700,000 square feet for education and/or cultural uses
- Underground parking
- Over one-third of the site to be open or green space.



Seaport Square directly abuts the site of the Fan Pier project. Transit riders will come up from the Court House station directly onto the Seaport Square site. The developer, Gale International, notes that the Silver Line airport connection is a particular selling point for potential hotel or other tourist-oriented uses. Gale International also is pursuing LEED certification for the entire site.

The project also includes improvements to Seaport Boulevard with a landscaped median and wider sidewalks, and the creation of Harbor Street which will give pedestrians an easy link from downtown Boston's Summer Street to Seaport Boulevard. The estimated price tag for the entire project is \$3 billion. Construction on two parcels is slated to begin in fall 2008; the complete build out is scheduled to be done in 2014.

### 6.3.2 World Trade Center Station

The property around the World Trade Center station is owned by Massport and considered part of its Commonwealth Flats development area. Massport awarded leases to the Drew Company for two major redevelopment projects: the World Trade Center Complex and Waterside Place.

#### *World Trade Center Complex*

The Drew Company, in partnership with Fidelity Investments, developed four properties on this site, directly across the street from the World Trade Center station. The complex was built over 16 years, from 1986, before the Silver Line was even planned, through 2002, when construction on the Waterfront line was underway. The complex includes:

- World Trade Center Boston: An 850,000 square-foot building with 601,000 square feet of office space, and 250,000 square feet of convention and meeting space, and some street-level retail offerings. Opened in 1986, this project cost approximately \$85 million and is 100% leased.
- The Seaport hotel: This is a 426-room hotel with 17,000 square feet of meeting space. Conventions held at the WTC Boston site often use the hotel rooms for attendees. This project cost \$120 million and opened in 1998.



World Trade Center station headhouse  
(Courtesy Paul Schimek)



World Trade Center East building, one of four in the complex across the street from the WTC stop. (Courtesy Drew Company)

- World Trade Center East: This 16-story building has 500,000 square feet of office space. It has two ground-floor restaurants and a lobby shop. It opened in 2000 at a cost of \$150 million.

- World Trade Center West: This 17-story building has about 570,000 square feet of office space. It cost approximately \$150 million and opened in 2002. Both the WTC East and West are close to 100% leased.<sup>29</sup>

Massport, the Drew Company, and the MBTA jointly funded the World Trade Center station. The station was designed to give riders direct pedestrian access into the World Trade Center complex and the waterfront to the north, as well as the Boston Convention and Exhibition Center (BCEC) to the south, along the elevated World Trade Center Avenue.<sup>30</sup>

Transit access was an important leasing issue for these properties. Prospective tenants were strongly interested in the ability of employees to commute by rapid transit. According to the developer, there was no concern expressed over the mode of the transit; rather, the tenants' primary concern was that there not be surface-level transit operations in front of the site, as this would impede traffic.<sup>31</sup>

***Waterside Place***

This eight-acre parcel lies just south of the World Trade Center Complex. In 2003, Massport selected the Drew Company to develop the site into a mixed-use retail complex, consistent with the vision of the Commonwealth Flats Strategic Plan. The project, which is still in design, will include a major “destination” retail component, designed to attract shoppers to the Waterfront. It will also have approximately 200 condominium units facing Congress Street and approximately 300 hotel rooms at the southeastern corner of the site near the BCEC.



Site Plan for the proposed Waterside development. The Silver Line WTC station is in the northwest corner of the site. (Courtesy The Drew Company)

Construction is expected to start on the project in late 2009. One of the goals of this project is to attract additional retail desired by neighborhood residents and workers.<sup>32</sup>

The Silver Line World Trade Center station is located at the northwest corner of the site. The project will be built in the air rights above the station, incorporating an entryway from the station directly into the retail mall entrance. Massport's RFP for the site strongly encouraged creating such direct access.<sup>33</sup> To accomplish this, the Drew Company will have to make significant alterations to the station, such as lowering the Silver Line catenary supports to accommodate the building floors above and breaking through a wall to make the entrance into the lobby. The Drew Company will pay for all proposed changes to the station.<sup>34</sup> In addition, the project is being designed not to preclude a possible future extension of the Silver Line in a tunnel beneath D Street to the east.<sup>35</sup>

### ***Boston Convention and Exhibit Center***

The new Boston convention center opened in 2004 and was another important signal to private investors of the city's commitment to this area. This is the largest convention facility in the Northeast, with 526,000 square feet of contiguous exhibit space; 160,000 square feet of meeting space; 300,000 square feet of function areas; and a 42,020 square feet ballroom. The convention center has spurred hotel investment, with over 2000 hotel rooms opened or planned for the Waterfront. The convention center is a short walk from the World Trade Center station.

### **6.3.3 Silver Line Way Station**

Massport owns several parcels east of D Street in the vicinity of Silver Line Way stop, including the stop itself. One parcel along D Street is the site of the John Hancock office building, a 14-story structure which serves as the company's US headquarters.<sup>36</sup> The Silver Line runs at-grade directly under the building, a portion of which was built in the air rights above Silver Line Way. The original design of the building was altered to accommodate the Silver Line operations. Silver Line Way also crosses a Massport development parcel to the east which is planned for mixed-use. A portion of future development of this parcel may be built in air rights over Silver Line Way and the station in this area. This parcel will have direct access to the Silver Line Way station.

Massport funded the design and construction of Silver Line Way, the surface road that the buses enter when leaving the underground portion of the Transitway route. This project included constructing the station and a bus turn-around for vehicles to return to South Station. The MBTA plans had originally called for the vehicles simply to turn onto D Street en route to and from the WTC Station. The Silver Line Way project allows buses to make a straight crossing of D Street, providing a dedicated turn-around area and a surface stop serving the Massport parcels and the waterfront area east of D Street.<sup>37</sup>

Just north of the Silver Line Way station, another Massport parcel has been developed into a Marriott Renaissance hotel. The four-star hotel includes 471 rooms and 20,000 square feet of meeting space, as well as some retail and restaurant amenities. The hotel opened in 2008.

North of the hotel are the Park Lane Seaport Apartments, a luxury apartment complex on two parcels facing Northern Avenue. The building front looks out over the harbor. There are 465 residential units as well as on-site restaurants and retail amenities. The Fallon Company developed the complex, which opened in 2005 and 2006. The Park Lane website uses the Silver Line access as a selling point, noting that:



Parklane Apartments website picture of Silver Line Way Station (<http://parklaneseaport.com/floorplans>)

*“Park Lane Seaport is adjacent to the new MBTA Silver Line Waterfront, with the Silver Line Way Station less than a block away. The Silver Line Waterfront connects the Seaport District with South Station and with all Logan International Airport Terminals.”<sup>38</sup>*

## Notes

<sup>1</sup> Boston Redevelopment Authority press release, “Boston Population is Growing,” Oct. 27, 2006.

<sup>2</sup> MBTA website, About the MBTA: History: [www.mbta.com/about\\_the\\_mbta/history/](http://www.mbta.com/about_the_mbta/history/)

<sup>3</sup> Cervero, Robert et al. *TCRP Report 102: Transit-Oriented Development in the United States: Experiences, Challenges, and Prospects*. TRB, Washington, D.C. 2004, p. 186.

<sup>4</sup> Massachusetts Bay Transportation Authority, *Program for Mass Transportation*, May 2003, rev. Jan. 2004, p. 2-1.

<sup>5</sup> Booz Allen Hamilton Inc.

<sup>6</sup> Ibid. (Booz)

<sup>7</sup> Booz Allen Hamilton Inc.

<sup>8</sup> Interview with Stewart Dalzell, Massport, March 2008.

<sup>9</sup> [http://www.aviation.com/travel/top10\\_best\\_transport-1.html](http://www.aviation.com/travel/top10_best_transport-1.html)

<sup>10</sup> “A New Washington Street: Final Report and Recommendations.” May 1997.

<sup>11</sup> “Main Street News”, article on Washington Gateway, May/June 2005.

<sup>12</sup> Interview with Sheila Grove, former executive director of Washington Gateway, Feb. 2008.

<sup>13</sup> South Boston Waterfront Public Realm Plan

<sup>14</sup> Massport Commonwealth Flats Strategic Plan.

<sup>15</sup> City of Boston, South Boston Parking Freeze FAQ.

<sup>16</sup> Washington Gateway Streets program: [www.gatewaymainstreet.org](http://www.gatewaymainstreet.org)

<sup>17</sup> Booz Allen Hamilton Inc.

<sup>18</sup> Interview with Sheila Grove, former executive director of Washington Gateway, Feb. 2008.

<sup>19</sup> Boston Redevelopment Authority, as cited in New York Times article, “From Empty Lots to Bustling Waterfront” Oct. 7, 2007.

<sup>20</sup> Campbell, Robert, “On the waterfront, not your average bus stop,” Boston Globe, March 13, 2005

<sup>21</sup> Interview with Andrew Brennan, MBTA, March 13, 2008.

<sup>22</sup> Cortese, Amy. “From Empty Lots to Bustling Waterfront”, New York Times, October 7, 2007.

<sup>23</sup> Palmer, Thomas. “Fan Pier Finally Rises”, Boston Globe, September 26, 2007.

<sup>24</sup> Fallon Company website: [www.falloncompany.com](http://www.falloncompany.com)

<sup>25</sup> Cortese, Amy. “From Empty Lots to Bustling Waterfront”, New York Times, October 7, 2007.

<sup>26</sup> <http://www.icaboston.org/about/pressreleases/harleston/>

<sup>27</sup> Interview with Andrew Brennan, MBTA, March 13, 2008.

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<sup>28</sup> All Seaport Square information provided by Barbara Boylan of Gale International.

<sup>29</sup> All information from Susan Allen, Drew Company.

<sup>30</sup> Interview with Andrew Brennan, MBTA, March 13, 2008.

<sup>31</sup> Interview with Susan Allen, Drew Company, March 13, 2008.

<sup>32</sup> Interview with Andrew Hargens, Massport, March 2008.

<sup>33</sup> Interview with Andrew Hargens, Massport, March 13, 2008.

<sup>34</sup> Interview with Andrew Brennan, MBTA, March 13, 2008.

<sup>35</sup> Interview with Andrew Hargens, Massport, March 13, 2008.

<sup>36</sup> Booz Allen Hamilton Inc.

<sup>37</sup> Interview with Andrew Hargens, Massport, March 13, 2008.

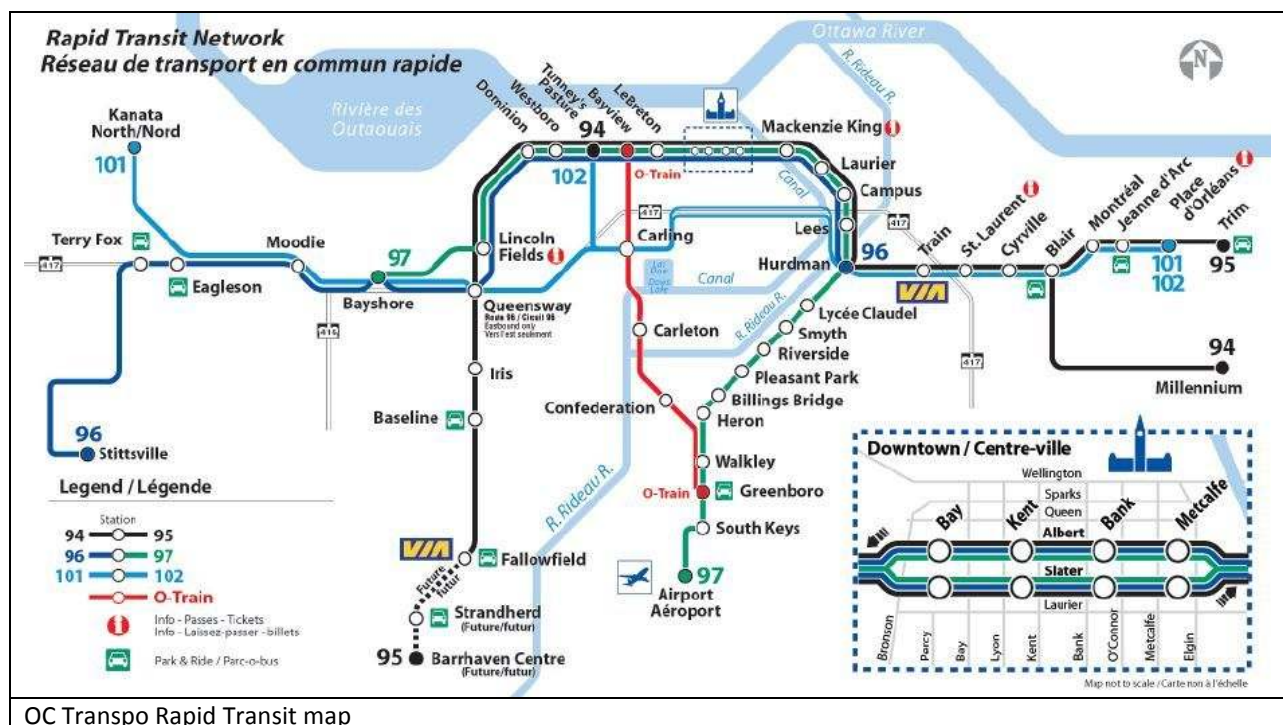
<sup>38</sup> From Parkland website: <http://parklaneseaport.com/>



## 7 Ottawa, Ontario

Ottawa lies on the border of Ontario and Quebec on the south bank of the Ottawa River. With about 850,000 residents, Ottawa is Canada's fourth largest city.<sup>1</sup> Its population increased about 5% between 2001 and 2006; in the previous five years, its growth was 7%.<sup>2</sup>

The central part of Ottawa is surrounded by a "greenbelt," a 50,000-acre swath of protected land purchased by the federal government in the late 1950s. As of 2006, the area inside the greenbelt housed 60% of Ottawa's population and roughly 75% of office space is within the greenbelt.<sup>3</sup>



Ottawa's main transit service is the Transitway, a 29-mile network of exclusive busways and bus lanes operated by OC Transpo. The first segment opened in 1983 and the original 19-mile service was completed in 1996.<sup>4</sup> Ten miles have since been added by implementing reserved bus lane service on freeways and arterial roads.

The exclusive busway is similar to the Brisbane busways and served as a model for Brisbane. About nine kilometers of busway lies in an open cut and is fully grade-separated, with underpasses for crossing below the surrounding roadways. Paved shoulders are provided for snow storage and to accommodate broken-down buses. At stations, the busway widens to four lanes to allow express buses to pass those stopped for passenger boarding. Other busway sections that are not close to residential areas, and therefore do not require noise mitigation, are at-grade.

Most Transitway stations include heated waiting areas, lighting, seating, real-time arrival information, ticket vending machines, and information displays. The stations are designed in a distinctive curved-glass, red steel frame architecture and include a pedestrian bridge or underpass that connect the platforms. A small number of stations are enhanced shelters.

All Ottawa bus routes travel at some point along the Transitway or connect to a Transitway station. There are six routes that provide all-stop service, including three trunk lines that travel through the downtown core out to the east, west or south corridors. The standard bus routes that use the busway may operate as all-stop, express or trunk feeders. Buses are operated by OC Transpo, a city agency. There is no special fleet for the busways; they are served by standard 40- and 60-ft buses.

Peak headways for the three trunk lines are three to six minutes. The combined local and trunk service provides about one bus per minute in outlying areas and over 200 buses per hour per direction in the central business district.

Approximately 87 million trips were provided on Transitway buses in 2002, with a maximum capacity of roughly 10,000 passengers per peak hour, peak direction. Ridership has increased by 25% over the past six years and more than 50% of all people entering downtown do so by bus. Among Canadian cities, Ottawa ranks third in the percentage of commuters who use transit to get to work.

Since being planned in the 1970s, the busway has served as the transit anchor for the city's land use intensification strategies. While Ottawa, like many North American cities, has experienced its share of sprawling development, our research found that the Transitway has been successfully used by the government to manage new growth by concentrating it around already-developed areas served by rapid transit.

The 1996 Parsons Brinckerhoff study on Ottawa's TOD estimated that, as of 1991, there had been over \$1 billion (Canadian) in new or planned development around the BRT stations. Much of this activity was commercial or retail, reflecting the government's policy to direct these types of projects near transit. The Parsons Brinckerhoff report documents much of this early activity and is referenced in our review of TOD projects.

Recently, the transitway-oriented development has included more high-density residential or mixed-use projects, in keeping with the region's current land use policies. We researched several major residential and mixed-use projects newly opened or being built around Transitway stations. The Transitway is a significant selling point for these properties, because it provides frequent service into downtown Ottawa and is unaffected by traffic congestion.

The developers of these properties indicated that the Transitway enables higher density projects and that proximity to the Transitway makes it more likely that the city will approve higher density. They also indicated that the approval process for projects near the Transitway

tends to take less time than the process for projects further away from the Transitway, a major benefit from the developers' perspective. Finally, the developers noted that, while the Transitway access was a necessary condition in selecting a site, the most important criteria is a vibrant, walkable streetscape with attractive amenities.

## **7.1 Land Use Planning in the Ottawa Region**

Since 2001, Ottawa has been governed as a single regional municipality that encompasses the former city of Ottawa and surrounding urban and rural communities. The municipality is 1,800 square miles, 80% of which is rural land.

Growth is guided by a vision of multiple urban and suburban development nodes, with downtown Ottawa as the primary urban center, all served by an extensive rapid transit system. This vision has been supported in successive regional Official Plans, which establish the region's growth management strategy and transportation priorities.

The 1988 Official Plan called for downtown Ottawa to be the primary employment center and designated nine additional centers within 400 meters of existing or planned Transitway stations: Orleans, Kanata, Baseline, Tunney's Pasture, St. Laurent, Cyrville, Blair and South Keys and Vanier<sup>5</sup>. The plan sought to focus commercial and retail development in these centers. For example, shopping centers larger than 375,000 square feet of gross leasable space were required to be sited near Transitway stations.

The region also established a transportation strategy that made transit investments the region's top priority.<sup>6</sup> This strategy called for extending the Transitway up to and through the greenbelt, constructing stations in new town centers beyond the greenbelt. This strategy has guided the continued build-out of the Transitway.<sup>7</sup>

The region also used supportive parking policies to help promote TOD. For example, when the Transitway opened in 1983, the federal government began eliminating free parking for its employees. A reduction of 25 parking stalls for every one bus stall was allowed at downtown retail centers. Park-and-ride lots were limited to outlying stations along the Transitway, to encourage both the use of feeder buses and development around the inner stations.<sup>8</sup>

In 2003, a new Official Plan was adopted. It continues to encourage TOD and expands the focus to promote high density residential, not just commercial and retail, near transit stations. It also sets ambitious targets for transit usage, calling for the percentage of motorized trips taken on transit to increase from 17% to 30% by 2021.

The Official Plan seeks to encourage high-density TOD primarily by the designation of Mixed-Use Centers. These are areas along the rapid transit network with high potential to achieve compact and mixed-use development.<sup>9</sup> The plan makes no distinction between the Transitway and rail regarding the siting of Mixed-Use Centers.

Within Mixed-Use Centers, the city will encourage transit-supportive land uses such as high and medium density residences, offices, community services and entertainment uses. Mixed-Use Centers include Tunneys Pasture, Baseline, Hurdman-Lees, Cyrville, Kanata, Orleans, South Nepean – all served by the Transitway. Two O-Train station areas are also Mixed-Use Centers. Ottawa is currently working on a new zoning by-law that will provide site specific zoning for the designated Mixed-Use areas.<sup>10</sup>

Ottawa historically has offered few direct incentives for TOD. The primary incentives for developers building near a rapid transit station are the ability to reduce parking requirements and secure approval for increased density over existing levels. The City of Ottawa provides pre-consultation design assistance and encourages all developers to have pre-consultation meetings with City staff. Although the City is willing to explore joint development opportunities on city-owned lands, it has not typically engaged in such private sector partnerships.<sup>11</sup>

## 7.2 Total Development along the Transitway

The Ottawa government has been monitoring development near Transitway stations since 1987. Using building permit information, the city identifies major developments within an 800-meter walking distance of a rapid transit station. The most recent report summarizing this data is from June 2003, covering development along the Transitway from 1988 through 2002. It also documents activity near the five O-Train light rail stations, which opened in 2001. The following table summarizes the data from the report:

<b>Development Activity Within 800 Meters of Rapid Transit Stations From 1988 - 2002</b>				
	Residential (# of units)	Non-Residential (Gross Square Footage)		
		Institutional	Retail/Office	Industrial
29 Transitway Stations	5,336	227,794	522,893	11,889
5 O-Train Stations (2001 – 2002 only)	156	3,699	12,056	0
From City of Ottawa "Land Development Activity in the Vicinity of Transitway Stations: 1997 – 2002 Update", June 2003.				

According to the city, the share of all new residential units located within 800 meters of a rapid transit stations (both Transitway and O-Train) increased from almost 6% in 1998 to almost 14% in 2002. Overall during this time, new residential construction near rapid transit stations increased almost fivefold, from 229 units in 1998 to 1,083 in 2002, compared to citywide residential construction which only doubled in this period.

In addition, Ottawa saw increased high-density residential construction over this period, supporting the city's vision for intensification. The share of new units that were single detached dwellings dropped from 54% to under 43%.

The share of nonresidential construction in the vicinity of rapid transit increased from 5% in 1998 to 38% in 2002. In all, about 23% of all nonresidential construction occurred near rapid transit stations over the five year period. By sector, 13% of retail, 12% of industrial, 33% of institutional, and 27% of office construction occurred near rapid transit stations. The high share of office construction near the Transitway is largely due to construction in the downtown area, where the Transitway service offers extensive coverage.<sup>12</sup>

### 7.3 Development Projects in Ottawa

As already noted, much of Ottawa’s past TOD was commercial or retail oriented. This section provides a few examples of these projects. This section also describes five planned or recently completed projects at five Transitway stations: Westboro and Dominion, which serve a newly-gentrifying area, and stations at Tunney’s Pasture, Cyrville and LeBreton Flats, which are designated as Mixed-Use Centres in the Official Plan. These projects are representative of the city’s new emphasis on high-density mixed-use or residential TOD.

#### 7.3.1 Eastern Transitway Development

##### *The Rideau Centre at MacKenzie King Station*

The Rideau Centre is an indoor mall in downtown Ottawa. The Parsons study reported that about 60 percent of shoppers reach Rideau Centre by transit. The Center was designed to provide direct access to local bus routes on one side of the mall, and to the Transitway’s Mackenzie King station on the opposite side. As a result, the Rideau Centre is served by every downtown bus route, and thousands of passengers use the Centre each day to transfer between buses.<sup>13</sup> There is also an OC Transpo ticket center inside the building.

##### *St. Laurent Center*

The St. Laurent Center is one of Ottawa’s largest shopping centers. It is integrated with the St. Laurent Transitway Station, located about five miles east of downtown. When the



Rideau Center: OC Transpo office and signs for Transitway station

station was built in 1987, the shopping mall was undergoing a major expansion, enabling the mall to be physically integrated with the three-level station. Local bus routes use the top level; the mezzanine connects directly to the shopping center via weather-protected walkways; and the Transitway platforms are in the downstairs level. Parsons Brinckerhoff reported that about a third of the Center’s customers arrive via the Transitway.



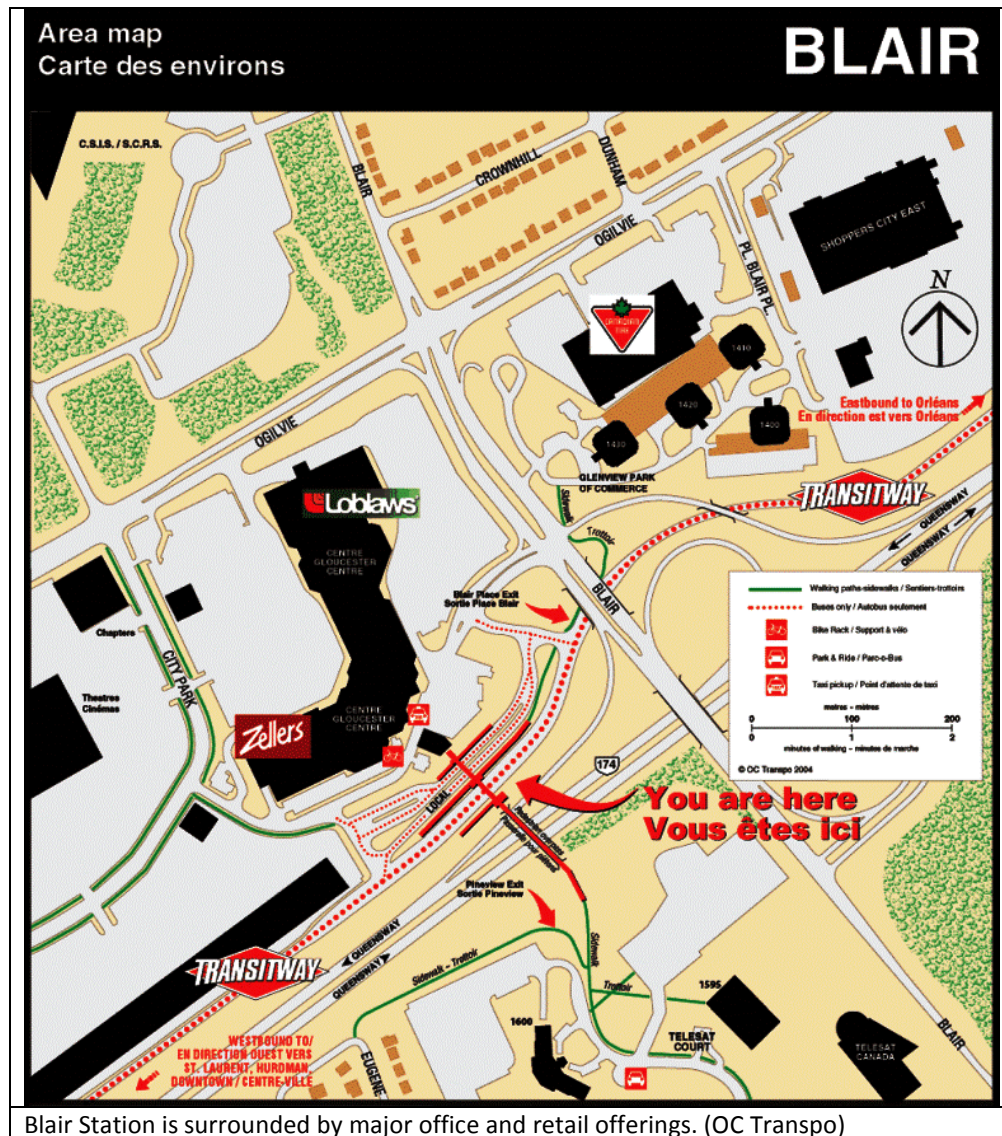
Map of St. Laurent station area shows shopping center with direct access (OC Transpo)

The station cost \$15 million to build -- the most expensive on the system -- but some of the cost was absorbed by the shopping center developer, who donated the land for the station and built the connecting passageways. The developer also expanded the mall in the direction of the station to put stores near the station portal, creating an enclosed pedestrian environment. Owners felt integrated development would not only attract more shoppers but would also save on parking costs. As an incentive, the city allowed them to reduce on-site parking by 25 spaces

for each transit bay in the station. <sup>14</sup>

### Blair Station Area

Blair Station is a major employment center east of downtown. Four mid-rise office towers were built within a five-minute walk of the station. A pedestrian skybridge links offices south of the Queensway freeway to the Transitway. Overall, within five years of the Blair Station's 1989 opening, there was an estimated \$90 million in commercial-office development in this area.



OC Transpo worked with the developer of the Gloucester Centre shopping mall, directly north of the station, to ensure that it provided easy access to the Blair station. Original plans had called for the Gloucester Centre to face away from the Transitway station, which would have forced customers to walk through the parking lots to reach the mall. OC Transpo planners convinced the developers to revise the site plan to reorient Gloucester Centre toward the station. The developers were convinced when it was pointed out that more people pass

through the Blair Station on buses than on the adjacent Queensway freeway during shopping hours. Because three-quarters of OC Transpo passengers use monthly passes, most can stop and shop on the way home to the eastern suburbs without having to pay an additional fare.

**Cyrville Station**

The 19.4-acre Place de Gouverneurs mixed-use project offers convenient access to the Cyrville station. The Cyrville station is about six miles east of downtown, and is within walking distance of the St. Laurent shopping center. This area is surrounded by empty lands and is one of the Official Plan’s designated Mixed-Use Centers.



Place de Gouverneurs site with the first three buildings and the full Site Plan showing site access to the Transitway (courtesy Richcraft)



According to Richcraft, the developer of the site, Place de Gouverneurs will be Ottawa's first master planned condominium community. When completed, it will encompass 15 buildings ranging in height from five to 13 stories and featuring 1,300 residential units and 7,300 square feet of commercial space. Richcraft located the commercial space closest to the Transitway to attract potential tenants, which it anticipates will be "convenience store type" retail, office space, or medical offices seeking transit-accessible space to serve elderly patients.

Richcraft has built a pathway from the complex to the Cyrville station. The project website prominently highlights the Transitway and marketing materials report that the site is well served by "*a rapid transitway station which offers residents a fast and convenient commuting alternative, allowing them to leave their cars behind and reach the downtown core in minutes.*" It should be noted that the marketing also highlights the site's convenient highway access. Richcraft is building an underground parking lot for the site and received a reduction in required parking spaces from the city due to the transit access.<sup>15</sup>

### **7.3.2 Western Transitway Development**

#### ***Tunney's Pasture Station***

The Tunney's Pasture area is dominated by a federal complex employing around 10,000 civil servants. This federal complex was built before the Tunney Pasture station, and most of the buildings do not have transit-supportive designs or are more than a five-minute walk to the station. After the station opened, a mixed-use project, Holland Cross, was built featuring 18,200 square meters of ground-floor retail and upper-level offices and nearby residential towers with 638 units. The developers requested and received approval to lower the project's parking requirements because of its proximity to transit.<sup>16</sup>

This region is now experiencing more residential build-out. For example, in 2007, Windmill Developers opened *The Currents*, a mixed-use building with residential and commercial uses at the corner of Wellington and Holland Avenue. This intersection is roughly 500 meters south of the Tunney's Pasture station. The Currents has 39 luxury condominiums on the top eight floors and 23,000 square feet of commercial space, including the Great Canadian Theatre Company, on the first three floors.



## A Prime Location...

1. Ottawa River Parkway
2. Tunney's Pasture
3. Ottawa Carleton Transitway
4. Wellington Street West
5. The Currents
6. Westboro Village
7. The Queensway
8. Ottawa Civic Hospital
9. To Parliament Buildings



*In the Ottawa River, only a short walk from the Currents, sit these whimsical balancing rock sculptures by local artists.*

## A View from Here... looking to the North...

Urban tranquility with all the amenities.

The scenic Gabeau Hills are only minutes drive away.

Tunney's Pasture and the Parkway pathways are just at the end of Holland Avenue.



NOTE: These photos were taken from our neighbouring building's rooftop and approximate the views from the 7th floor units in The Currents.

just minutes to the convenient Ottawa Carleton transit way.

The Currents' marketing materials highlight access to the Transitway. (Courtesy Windmill)

Windmill markets itself as an environmental developer and all its buildings are LEED certified. The Currents features:

- An estimated 45% less energy use
- An estimated 45% less water use
- Renewable power
- Innovative water, air, energy and waste management systems
- "Smart" building technologies

Since opening in 2007, the building has completely sold out.

Windmill notes that the neighborhood is an attractive investment site primarily because of its walkability and access to urban amenities. The Currents marketing materials – which are only available online as an environmental measure -- highlight the Currents' proximity to the Transitway. Windmill received a 50% reduction in residential parking requirements from the city based on transitway access and instituted a car-sharing service for residents to reduce demand for spaces. To date, the developer is not sure whether the transit access and car share program have significantly dampened demand for parking.<sup>17</sup>

### ***Westboro and Dominion Stations***

These two Transitway stops serve Westboro Village, a rapidly-gentrifying neighborhood west of downtown Ottawa. It has a lively, walkable streetscape, with many restaurants, cafes and shops. It is under-served by high-density residential options, making it an attractive market for urban developers interested in infill redevelopment. The busway runs about two blocks south of Westboro's main commercial thoroughfare, Richmond Road.

*The Exchange at Westboro* is a nine-story condominium complex that opened in 2007. Located on a corner lot facing Richmond Street, The Exchange has 98 residential units and ground-floor retail. It was built by Domicile, an urban developer with several projects in the Westboro neighborhood. Since opening in 2007, the building has been at full occupancy. The units are high-end lofts, condo apartments and townhomes.



The Exchange at Westboro, on Richmond Road near the Dominion Transitway Station

The Dominion station is easily accessed by a short walk around the back of the site and across a

short pathway. A sign on the street corner across from the Exchange directs pedestrians to the Transitway. In their marketing materials for the Exchange, Domicile highlights that “... a convenient transit station [is] just minutes away.” The site also includes structured parking lots for residents, however, and parking along Richmond Street is unmetered. Although the BRT is not a central factor in Domicile's investment decisions, the company views the rapid transit access as one of a suite of features needed to attract buyers to an urban area, including walkability and a vibrant streetscape.

Although Domicile does not receive government incentives for its TOD projects, the company reports that the Official Plan does make it easier to add density to sites in close proximity to the Transitway. Domicile has expressed concerns over the future of high-density development in the Westboro neighborhood, largely because of neighborhood opposition to increased densities.<sup>18</sup>



Westboro Station area, with recent residential projects.

*Stonework Lofts* is an infill development project located on Scott Street, one block south of Richmond Road. Scheduled to open in 2009, the four-storey building is an exclusively residential property with 37 high-end loft-style condos. The building will feature an opulent lobby, a fitness center, and a rooftop garden. The developer advertises a range of green features, although it will not be a LEED-certified building. The building will have underground parking,

with one space per suite available for purchase at \$27,500 (Canadian).

Unlike Richmond Road, Scott Street is an under-developed avenue that has historically been the site of warehouses, light manufacturing and other low-density commercial uses. The Stoneworks Lofts will be one of the first upscale, high-density residential properties in the area.

The site is a five-minute walk to the Westboro station. Westboro has two below-ground platforms, with an elevator and stairway to the ground level platforms which are served by local bus routes. The two sides are connected by an enclosed pedestrian bridge.

The Stoneworks Lofts marketing materials advertise the proximity to the Westboro stop. The

developer website notes that residents will be able to reach the downtown in approximately twelve minutes on the Express Bus. Also, as with the Exchange, the property sales office notes that Transitway access is used as a selling point with potential buyers.

## HIGHLIGHT FEATURES



WESTBORO VILLAGE  
LOFTS

Located less than five minutes walk from the  
**HEART OF WESTBORO VILLAGE**

BONUS!

**6 appliances for a limited time only**  
 Including 4 stainless steel Frigidaire kitchen appliances  
 (fridge, stove, dishwasher and micro/hood fan), plus  
 white stackable washer and dryer

WWW.STONEWORKLOFTS.COM

- Located less than five minutes walk from the heart of Westboro Village
- Private outdoor, rooftop garden complete with landscaping and gas barbeque
- A fully equipped fitness center
- Party room located on the first floor
- Opulent lobby with granite tile flooring and fireplace designed in a art deco contemporary style
- Less than a five minute walk to the OC Transpo station
- Less than a ten minute drive from Downtown Ottawa, via the scenic Scott/Albert Street connection
- 4 storey building to meld into the fabric of the existing community
- Stone and brick exterior
- Stunning upgraded cabinetry – extra high cabinets, complete with lower valance, mission style cabinetry with choice of stain color
- Full Granite countertops in kitchen and bathroom(s)
- Undermount sinks in kitchen and bathrooms
- Rain head styled shower head in bathroom
- Ceramic flooring in kitchen and bathroom(s)
- Real hardwood flooring, 3/4 inch thick Exotic Brazilian Sucupira with extra wide 4 inch width tongue and groove planks
- Smooth ceilings (no stipple)
- Lever style door handles in contemporary chrome finish on interior passage doors
- Extra high ceilings - up to nearly 18 feet on some plans
- Decora switches and plugs
- One and two storey loft plans
- Underground parking available
- Individual lockers for all lofts

Stoneworks Lofts marketing materials reference short walking distance to Transitway (Courtesy Phoenix)

### ***LeBreton Flats Station***

The LeBreton Flats is just south of downtown Ottawa. The site is owned by the National Capital Commission (NCC), which governs the greenbelt and other protected lands in Ottawa. Although the site is connected to downtown and the outlying suburbs via the Transitway and the Ottawa River Parkway, it is currently not developed and feels isolated from the rest of the city. The NCC has created a plan to develop this under-utilized parcel into an urban residential village, with easy access to the Transitway via the LeBreton station, located within walking distance. The LeBreton Flats stop is one of the few on the Transitway to feature an “enhanced shelter” instead of a fully built-out station. This area is also a designated Mixed Use Centre in Ottawa’s Official Plan because of the site’s development potential and rapid transit access.



LeBreton Flats stop with LeBreton project construction site in background

Developer Claridge Homes won the right to develop the site, which will be built in stages. The first phase calls for a six-story apartment tower, currently under construction. At full build out, the site will have two apartment tower blocks and several blocks of one or two-story townhouses, laid out on a grid street pattern. More than one-third of the 850 residential units will be affordable housing, as required under the Official Plan. The residences will be connected by courtyards, landscaped walkways, and bicycle paths throughout the site.



Planned residential complex at LeBreton Flats. Transitway station is adjacent to site. (Courtesy Claridge Homes)

The developer plans to pursue Canada's LEED Silver rating for the site. Environmental features will include vegetated roof systems to reduce stormwater run-off and solar heat build up; water use reduction strategies such as high-efficiency washing machines and low-flow lavatories and showers; and low emission materials. The site plans include an underground parking structure.

The LeBreton Flats marketing materials highlight the site as "within an easy walk of the Transitway." It should be noted that there had also been plans to build a new rail line through this area, although these plans have been shelved.

## Notes

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<sup>1</sup> Email from Ian Cross, City of Ottawa, March 2008.

<sup>2</sup> Statistics Canada website, 2006 Census Data, [www12.statcan.ca/english/census06/data/profiles/community/Details/Page.cfm?Lang=E&Geo1=CSD&Code1=3506008&Geo2=PR&Code2=35&Data=Count&SearchText=ottawa&SearchType=Begins&SearchPR=01&B1=All&Custom=](http://www12.statcan.ca/english/census06/data/profiles/community/Details/Page.cfm?Lang=E&Geo1=CSD&Code1=3506008&Geo2=PR&Code2=35&Data=Count&SearchText=ottawa&SearchType=Begins&SearchPR=01&B1=All&Custom=)

<sup>3</sup> City of Ottawa, *Ottawa Counts: The Use of Land in the City of Ottawa*, Vol. 3, 2005.

<sup>4</sup> OC Transpo website, [www.octranspo.com/about\\_index.asp?lang=E&page=AHIST\\_MILESTONES](http://www.octranspo.com/about_index.asp?lang=E&page=AHIST_MILESTONES)

<sup>5</sup> No rapid transit was actually ever built at Vanier.

<sup>6</sup> Ibid.

<sup>7</sup> Parsons Brinckerhoff Quade & Douglas, Inc. et al

<sup>8</sup> Parsons Brinckerhoff Quade & Douglas, Inc. et al

<sup>9</sup> Official Plan Consolidation for the City of Ottawa, January 2007.

<sup>10</sup> Email from Ian Cross, City of Ottawa, March 2008.

<sup>11</sup> Interview with Ian Cross, City of Ottawa, January 2008.

<sup>12</sup> All data from City of Ottawa "Land Development Activity in the Vicinity of Transitway Stations: 1997 – 2002 Update", June 2003

<sup>13</sup> Parsons Brinckerhoff Quade & Douglas, Inc. et al

<sup>14</sup> Ibid.

<sup>15</sup> Interview with Lisa Dalla Rosa, Richcraft, January 2008.

<sup>16</sup> Parsons Brinckerhoff Quade & Douglas, Inc. et al

<sup>17</sup> Interview with Jonathan Westeinde, Windmill, January 2008.

<sup>18</sup> Interview with John Doran, Domicile, January 2008.

## 8 York Region, Ontario

The York Region is in the province of Ontario, directly north of Ontario's biggest city, Toronto. It is one of the fastest growing areas in Canada. From 1971 to 2007, the population increased almost six fold, from 169,000 to 965,000. Regional planners expect the population to reach 1.3 million by 2026.<sup>1</sup>



Suburban sprawl in York: Leslie Street looking south toward intersection with Highway 7

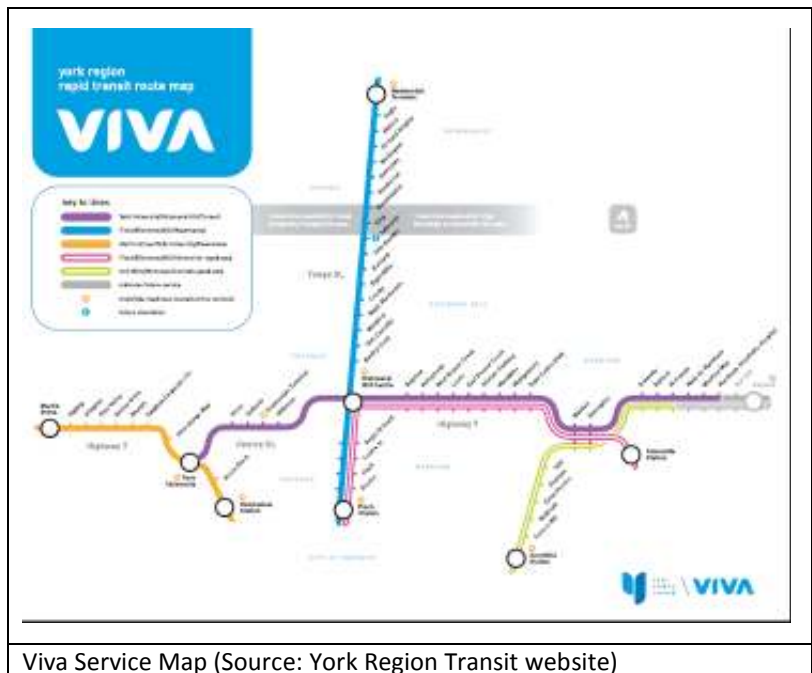
York is dominated by the low-density development that is typical in suburban areas where land is plentiful and private car travel is the dominant transportation mode. The vast majority of housing is single-family dwellings. Over 50% of households have two or more cars, and fewer than 8% of work trips are on public transit.<sup>2</sup>

With the rapid population expansion, the “suburban sprawl” development model has become increasingly untenable. Transportation has become a major issue facing regional and municipal governments.

Governments are also concerned about the disappearance of green space and agricultural lands, and have recently created a protected area that limits land available for new development.

The Viva BRT is an arterial rapid bus service that uses enhanced shelters, signal priority, and other improvements to local bus service. It operates in four suburban corridors that roughly align with Highway 7 and Yonge Street. Highway 7 runs east-west along the southern portion of York, adjacent to greater Toronto; Yonge Street runs north-south from the border of Toronto to York's northernmost edge.

VIVA was implemented using a phased strategy. Phase I, known as *Quick Start*, instituted low-cost and



Viva Service Map (Source: York Region Transit website)





Viva's Richmond Hill Centre transit station

relatively easy-to-implement BRT features. In addition to the enhanced shelters and signal priority, these include new high-capacity buses, off-board fare collection, queue jumper lanes, and a distinct branding scheme. Phase I opened in 2005, just three years after planning began, at a cost of \$150 million (CAD). Phase II will introduce dedicated transit lanes and currently is under construction.

## 8.1 Land Use Planning in the York Region

The Ontario government sets overall provincial targets and parameters for permissible development, providing the framework for regional and local official plans. In its 2005 Places to Grow Act, the province stipulates that, by 2015, 40% of all new municipal residential development must be within already built-up areas. The Act also identifies 25 urban growth centres which are to become mixed-use, transit-supportive communities and the focal point for growth. Municipalities are to develop intensification strategies allowing them to meet minimum density targets by 2031.<sup>3</sup>

Moreover, in 2005, the province established a 1.8-million acre swath of protected land surrounding the greater Toronto area.<sup>4</sup> This significantly reduced the amount of available land, concentrating new growth south of the protected greenbelt.<sup>5</sup> This had the effect of increasing land values, thereby making low-density projects less economically viable.

The York Region's land use policies are aligned with provincial goals and policies. York's Official Plan calls for the creation of compact, well designed communities that can serve as centers for new development and are connected by rapid transit corridors.<sup>6</sup> The plans sets a ambitious transit mode share targets for 2021: 33% transit modal split during peak periods and 90% of urban households within 500 meters (5-10 minute walk) of public transit.<sup>7</sup>

To support the goals of the Official Plan, York developed a *Centres and Corridors* strategy, which calls for intensification in four suburban "regional centres" to be served by rapid transit: Markham, Richmond Hill, Newmarket and Vaughn. These are the four largest communities in York and are aligned along the Highway 7 and Yonge Street axis. Centres and Corridors promotes the creation of transit villages within the designated regional centres. These are to be communities with a mix of high-density housing and retail, office and commercial space, all oriented toward pedestrian and transit access.

York's Transportation Master Plan and Rapid Transit Plan prioritize transit improvements needed to support the transit targets. Phase I of the Viva was a high priority initiative. The Viva alignments were selected to serve the four communities designated as regional centres.

According to York Region Rapid Transit Corporation's Chief Architect, the suburban intensification strategy will require a significant shift in local planners' relationship with the development community. In a suburban environment, planners typically see their role as "managing" proposed development activities, while letting the market drive the type of projects. By contrast, the provincial and regional intensification targets require local officials to take a more active role and inducing developers to propose high-density, mixed-use projects that support greater transit usage. This poses some challenges, as developers may be wary of the marketability of high-density housing and pedestrian-oriented retail in a suburban community accustomed to a car-oriented lifestyle.<sup>8</sup>

In 2006, the York Regional Council published TOD guidelines to help make this transition. This document describes TOD-friendly practices regarding building height, massing and density; parking; pedestrian safety and comfort; street and sidewalk layout; and transit-to-building connections. The York planning office also is developing workshops to guide communities on how to work with developers to reach higher density goals.

The Town of Markham was an "early adopter" of the mixed-use regional centre philosophy. Markham is one of the four regional centres and is the largest municipality in York. As early as 1997, the town set the goal of creating a "vibrant, intensive mixed-use town centre" as part of its vision for future development in the form of mixed-use communities with high-density residences surrounded by pedestrian and transit friendly public spaces.<sup>9</sup> The city is currently working with a local developer, The Remington Group, to realize this vision with a project to create "Downtown Markham," a transit-oriented village in the city center.

To support greater density throughout the city center, minimum density levels were written into Markham Centre's by-laws.<sup>10</sup> Markham also changed city parking standards from minimum to maximum allowable ratios for buildings within the Markham city center. This is an unusual approach for any suburban community, which historically tended to focus on ensuring adequate parking availability for peak period usage. According to the developer, Markham's minimum parking ratios are about half what would typically be found in a suburban municipality.<sup>11</sup>

To address concerns that parking supply will not be sufficient to meet demand, the city is working on a phased reduction of parking spaces. Under this plan, parking allowances will drop as the community meets its transit mode share goals. Moreover, developers are encouraged to de-couple parking from the land lease, so that parking levels are not tied into the long-term property leases.<sup>12</sup>

Markham is working towards the creation of a parking authority to manage public parking availability, another unusual step for a suburban government. The town is in the early phases of converting free on-street parking to metered spaces, in order to induce local residents and workers to use transit, while allowing for high turnover desired by street-level retailers. This requires changing public perceptions that parking is a right to the idea that parking is a public

good controlled by the city. The city will also create public parking lots as needed to meet demand while the downtown transitions to a transit- and pedestrian-oriented space.<sup>13</sup>

## 8.2 Downtown Markham

The Viva BRT has been in service only three years, so there are few TOD projects that have moved beyond very early planning stages. The Downtown Markham project has progressed the furthest and is an ambitious effort to put York's suburban intensification concept into practice.



Rendering of Simcoe Promenade, currently under construction in Downtown Markham (courtesy The Remington Group)

Downtown Markham is a 243-acre master planned community in the Markham city center. It is served by the Warden Viva station at its western border, and the Unionville Viva and GO train station at the eastern end. The heart of Downtown Markham will be Simcoe Promenade, a shared-use civic mall that runs east-west for the entire length of the development, lined with shops, restaurants, offices and residences that will be open only to pedestrians and the VIVA BRT.

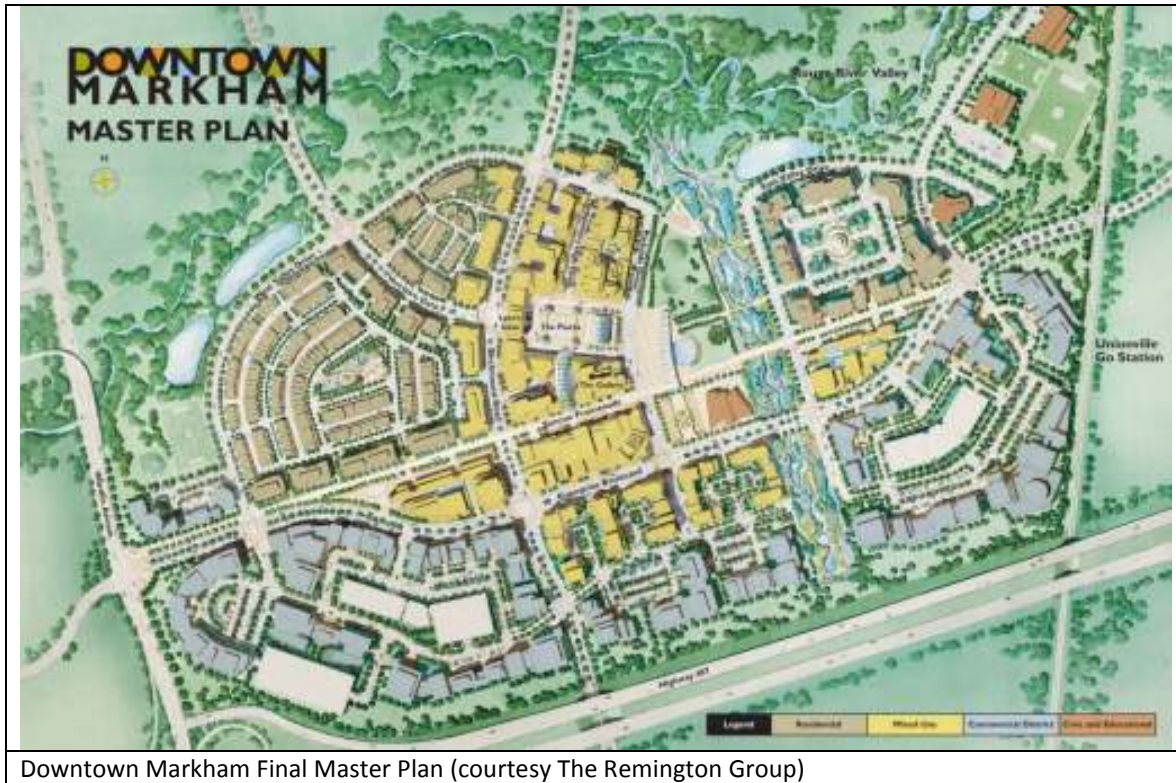
When completed, the project will include:

- 175 freehold townhouses
- 4,000 mid- to high-rise condominiums
- 455,000 square feet of commercial GFA
- 460,000 square feet of retail GFA, modeled after European-style pedestrian centers
- 3,697,000 square feet business park, including Canada's first LEED Gold certified building
- 27.5 acres of parks
- 44.6 acres of open spaces

According to the project developer, the Remington Group, Downtown Markham will be the largest mixed-use development of its kind in North America, and the residential and business space may increase further if there is demand. Total investment will be at least \$3 billion (Canadian).

Remington has also planned Downtown Markham as a model for sustainable building, with all projects designed to the LEED rating system. The marketing materials promote the overall

environmental character of the community, emphasizing the sustainable building practices, extensive greenspace (over 72 acres), and pedestrian friendly atmosphere.



The build-out is happening in stages, as local infrastructure is upgraded to accommodate the project's high-density occupancy. To date, 175 luxury townhouses and 700 condominiums have been made available for sale and are under construction. Parking for the townhouses is accommodated by garages in back of the units, with the front face open to the street to give the units a more urban look while keeping parking hidden from public view.

The first two condominium complexes, the Rouge Bijou and Rouge Terraces, sold units between \$185,900 and \$486,900 (Canadian), with the first building selling out in just five hours. At the time of this report, all but 14 of the condominium suites had been sold, as had almost all the townhomes. The developer expects to reach 100% occupancy of these buildings by 2009.<sup>14</sup>

Two other developers, Liberty Development and Tridel Corporation, have also had successful condominium launches in the greater city center surrounding the Downtown Markham project.<sup>15</sup>

Construction of the first office building in Downtown Markham is underway, and Remington has lined up Honeywell as the first tenant. Motorola already has office space in the business district. According to developer, the limited parking availability has been a concern for prospective business tenants, but interest in the office space has picked up significantly in the early part of 2008 as prospective tenants start to embrace the idea of a corporate environmental responsibility related to encouraging alternative transportation methods.<sup>16</sup>

When the dedicated transitway is built during Phase 2 of the Viva, the current curbside stop at Warden will shift north to the Simcoe Promenade. As Simcoe Promenade is constructed eastward, York Region Transit will install a new Viva station at the downtown park in the centre of the retail precinct. YRT will also build a new Viva Unionville stop below grade immediately north of the current GO rail station.<sup>17</sup>

The Remington Group is working closely with York Region Transit to incorporate the Viva with Downtown Markham. Remington has reserved the necessary right-of-way and is coordinating with the agency to ensure that the transit-to-building interface is as seamless as possible.<sup>18,19</sup>



Rendering of Downtown Markham townhome streetscape (Courtesy The Remington Group)

In its marketing materials, The Remington Group highlights Viva, noting that the company “support[s] transit use” and that residents will be able to “enjoy York Region’s progressive Viva Rapid Transit System...” The website for Downtown Markham devotes a page to Viva service, describing Viva’s “roomy, comfortable” rapid transit vehicles and its fast, frequent and convenient service. The marketing materials also highlight the site’s access to the GO train, which travels into downtown Toronto and some outlying suburbs. The developer believes that the availability of an extensive and interconnected transit network is critical for

this new suburban village concept to succeed. It is also important that Viva offers a modern and comfortable transit experience to appeal to prospective riders. One of the goals of the Downtown Markham project is to provide a sufficient ridership pool to support continued expansion of the service.<sup>20</sup>

Downtown Markham’s early success in achieving the Centres & Corridors vision appears to be linked to several factors. First, creation of the greenbelt restricted available land for development, increasing land values and creating the market rationalization for higher density development in the region. Moreover, in Markham, there appears to have been untapped

demand for high-rise housing and pedestrian-accessible community amenities, due largely to a rapidly increasing population and influx of immigrants accustomed to high-rise living.<sup>21</sup>

Second, there have been strong advocates for the project at the municipal and regional level. The mayor of Markham was an early advocate of creating a mixed-use urban village in the city center. Both municipal and regional planning staff have been engaged with Remington

throughout the project, working to guide the project and resolve any issues or problems. The developer stressed the value of an actively-engaged planning staff, especially since time is crucial in making such a complex and expensive project financially viable.

Finally, the availability of an extensive, high-quality rapid transit network is a precondition for making the urban village concept succeed. Indeed, a June 2007 Globe and Mail article found that *“one thing developers and planners do agree on is that York Region’s VIVA rapid transit system...has been essential in making more intensive developments attractive in the region.”*<sup>22</sup>

*This is the right place, at the right time*

The critics and pundits, competitors, and politicians have all weighed in – Downtown Markham is exactly the kind of development the people and environment of Southern Ontario need and want.

The Verdale Luxury Condominium Residences are beautifully situated within this 343-acre mixed-use development dubbed “The Heart of Markham.” And Markham? By virtue of the number of software and hi-tech corporations that call Markham “home”, it’s been designated the “hi-tech capital of Canada.”

“How do I get there from here?” The Verdale is, like Downtown Markham itself, strategically located with easy access to the entire Greater Toronto Area and all regional amenities and services, education and places of worship. Major highways are nearby, as is the GO Train, and Markham’s low-emission VIVA Rapid Transit will be the only vehicular traffic on Simcoe Promenade.

**PARKS AND RECREATION**

1. Markham Civic Centre Public Library, Jean Hall, Heads of Fisheries Art
2. Biddart Historical House
3. Future National Research Council of Canada

**COMMUNITY SERVICES**

4. Markham Family YMCA and Rudy Shafiq Centre
5. Coody Community Centre
6. Waste House

**RETAIL**

7. Grocery Store
8. Grocery Store
9. Grocery Store
10. Grocery Store
11. Grocery Store
12. Grocery Store
13. Grocery Store
14. Grocery Store

Remington Group marketing materials for Downtown Markham residences

## Notes

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- <sup>1</sup> York Region Official Plan, consolidation version dated Sept. 1, 2007
- <sup>2</sup> DMJM Harris powerpoint on York Viva, dated Feb. 3, 2005.
- <sup>3</sup> Ontario Places to Grow website: <http://www.placestogrow.ca>
- <sup>4</sup> Ontario Ministry of Municipal Affairs and Housing website: <http://www.mah.gov.on.ca/Page195.aspx>
- <sup>5</sup> Interview with Randy Peddigrew, The Remington Group, March 2008.
- <sup>6</sup> York Region Official Plan, consolidation version dated Sept. 1, 2007.
- <sup>7</sup> York Region Official Plan, consolidation version dated Sept. 1, 2007.
- <sup>8</sup> Interview with David Clark, York Region Rapid Transit, March 2008.
- <sup>9</sup> Downtown Markham fact sheet from [www.city.markham.on.ca](http://www.city.markham.on.ca)
- <sup>10</sup> Interview with David Clark, York Region Rapid Transit, March 2008.
- <sup>11</sup> Interview with Randy Peddigrew, The Remington Group, March 2008.
- <sup>12</sup> Interview with David Clark, York Region Rapid Transit, March 2008.
- <sup>13</sup> Interview with David Clark, York Region Rapid Transit, March 2008.
- <sup>14</sup> Interview with Randy Peddigrew, The Remington Group, March 2008.
- <sup>15</sup> Derek Raymaker, *"After years of resistance, developers embrace a new suburban vision,"* The Globe and Mail, June 1, 2007.
- <sup>16</sup> Interview with Randy Peddigrew, The Remington Group, March 2007,
- <sup>17</sup> Interviews with David Clark, York Region Rapid Transit, March 2008.
- <sup>18</sup> Interview with Randy Peddigrew, The Remington Group, March 2008.
- <sup>19</sup> Interviews with David Clark, York Region Rapid Transit, March 2008.
- <sup>20</sup> Interview with Randy Peddigrew, The Remington Group, March 2008.
- <sup>21</sup> Interview with David Clark, York Region Rapid Transit, March 2008.
- <sup>22</sup> Derek Raymaker, *"After years of resistance, developers embrace a new suburban vision,"* The Globe and Mail, June 1, 2007.

## **9 El Monte, California**

The city of El Monte is located 12 miles east of downtown Los Angeles, in the San Gabriel Valley of southern California. The southern California region is home to 18 million people and is the second largest metropolitan area in the U.S.<sup>1</sup> El Monte is a relatively small community, with approximately 126,000 people living within the ten square mile area of the city. Historically a suburban bedroom community, with low density residential and some retail, industrial and office uses, the area is beginning to see more urban development as its population expands. In response to the city's increasingly urban nature, and in order to manage long-term growth, city officials plan to create a greater balance of low, medium, and high-density districts.<sup>2</sup>

The El Monte Busway is an 11.8-mile service that operates along Interstate 10, a major highway linking the San Gabriel Valley with downtown Los Angeles. Buses travel in a median busway along I-10, separated from freeway traffic. When the busway opened in 1971, it was exclusive to bus service, but in 1976 the busway was opened to HOV traffic.

The busway's main function is to provide express service into downtown Los Angeles. Between the El Monte Transit Station, the busway's main terminal, and Gateway Plaza, the bus terminal located adjacent to rail operations at Union Station in Downtown Los Angeles, there are just two intermediate busway stops: the campus of Cal State Los Angeles and the County USC Medical Center. Service is mainly provided by the Los Angeles County Metropolitan Transportation Authority (Metro) and Foothill Transit, the transit agency for the San Gabriel Valley. Multiple arterial bus routes serve the station, and in 2005 Metro introduced a new express service that runs in HOV lanes on Highway 605 south to Long Beach.<sup>3</sup> The busway carries around 40,000 passengers per day.

The El Monte Transit Station is the busway's eastern terminus and primary hub. It is a two-level, 23,430-square foot bus terminal with a circular island platform with multiple bus berths.<sup>4</sup> There are 2,000 free parking spaces at the station. When it opened in 1973, it was first bus terminal in the U.S. built exclusively for mass rapid transit operations.<sup>5</sup> Overall, the El Monte station is thought to be the busiest bus station west of Chicago, hosting roughly 1,100 daily bus trips. The land around the station is being redeveloped to create the El Monte Transit Village, a new mixed use community.

### **9.1 Land Use Policies in El Monte**

In 1994, California enacted the Transit Village Development Planning Act which calls for increased public transit usage and for development to occur on lands near transit stations. This legislation permits cities and counties to establish transit village plans to guide development within a specified area. Under this law, a transit village specific plan must set requirements for land uses, public and private transportation, and infrastructure within the village area. It must



also establish how development will proceed and any regulations, financing measures and public works projects needed to carry out the project.<sup>6</sup>

El Monte is also subject to the Southern California Association of Governments (SCAG) “Compass Blueprint”, a vision for regional growth management. Compass Blueprint presents a strategy to accommodate this growth sustainably. Called the “Two Percent Strategy,” the plan calls for two percent of area land to be devoted to high-density development around transit services, including rail and bus rapid transit.<sup>7</sup> The strategy identifies key “opportunity areas” where this intensification should occur, including El Monte.<sup>8</sup>

Consistent with these state and regional goals, the El Monte city council adopted the El Monte Transit Village Specific Plan. This plan established a new zoning overlay for the project site. Under this new zoning scheme, all developments within the parcel must support the Specific Plan’s guiding principles of reconnecting disparate sections of El Monte; generating new economic activity; increasing the supply of housing and jobs; expanding retail and dining options for the community; and enhancing pedestrian and mass transit usage. This zoning overlay is also consistent the city’s 1991 General Plan.<sup>9</sup>

Another policy driving the city’s interest in the transit village is the state mandated Regional Housing Needs Assessment. This measure requires cities to ensure sufficient housing stock to accommodate their own population growth. SCAG develops population assessments and determines how many housing units each municipality must provide and state funding exclusions and other penalties are imposed on cities that fail to comply.<sup>10</sup> According to the El Monte project developer, the transit village’s 1,850 proposed residential units will play an important role in meeting the city’s housing requirements.

The developer is pursuing state funding made available through a California bond measure approved by voters in November 2006. Under this measure, TOD or infill developers are eligible to receive support for a project’s infrastructure costs. The funding is secured through a competitive process and, in order to be eligible, a proposed project must demonstrate compliance with the housing requirement. The Titan Group also is working with major banks to secure New Market Tax Credits for the retail components of the project as well as available housing credits for the residential elements.<sup>11</sup>

The city has secured state and federal funding to support some of the project’s open space and bikepath features. The city is considering a variety of supportive financing options including creating a redevelopment tax increment financing zone.<sup>12</sup>

## **9.2 El Monte Transit Village**

The El Monte Transit Village site consists of 60 acres with the Transit Station at its center. The land consists of separate parcels owned by Metro, Caltrans (the state transportation department), the city of El Monte and developer The Titan Group.

The public agency owners have been interested in the site's TOD potential since the mid-80s. In its current configuration, the Transit Center is not well connected with the surrounding residential and commercial areas. Moreover, the land surrounding the transit station is underutilized. The El Monte Transit Village plan adopted by the city calls for creation of a mixed-use site with multi-family housing, retail, restaurants and recreational facilities, all within walking distance of the transit station. The city's goal is to create an activity center around the transit station and connect the site to the city's downtown and the regional open space network.<sup>13</sup>

In addition to the station, the site is also host to a Metro maintenance facility, a City of El Monte Public Works yard, a Los Angeles County Fire Station, and public parkland.<sup>14</sup> The roughly triangular site is bounded by the I-10 freeway on the south; Santa Anita Boulevard on the east; and the Rio Hondo River, an "urban river" that is typically dry, on the west.

According to the developer, it is virtually unprecedented in Southern California to have a parcel of this size with no privately-owned housing – and consequently no eminent domain issues. However, the site does have a complicated ownership structure that requires cooperation among multiple public agencies.

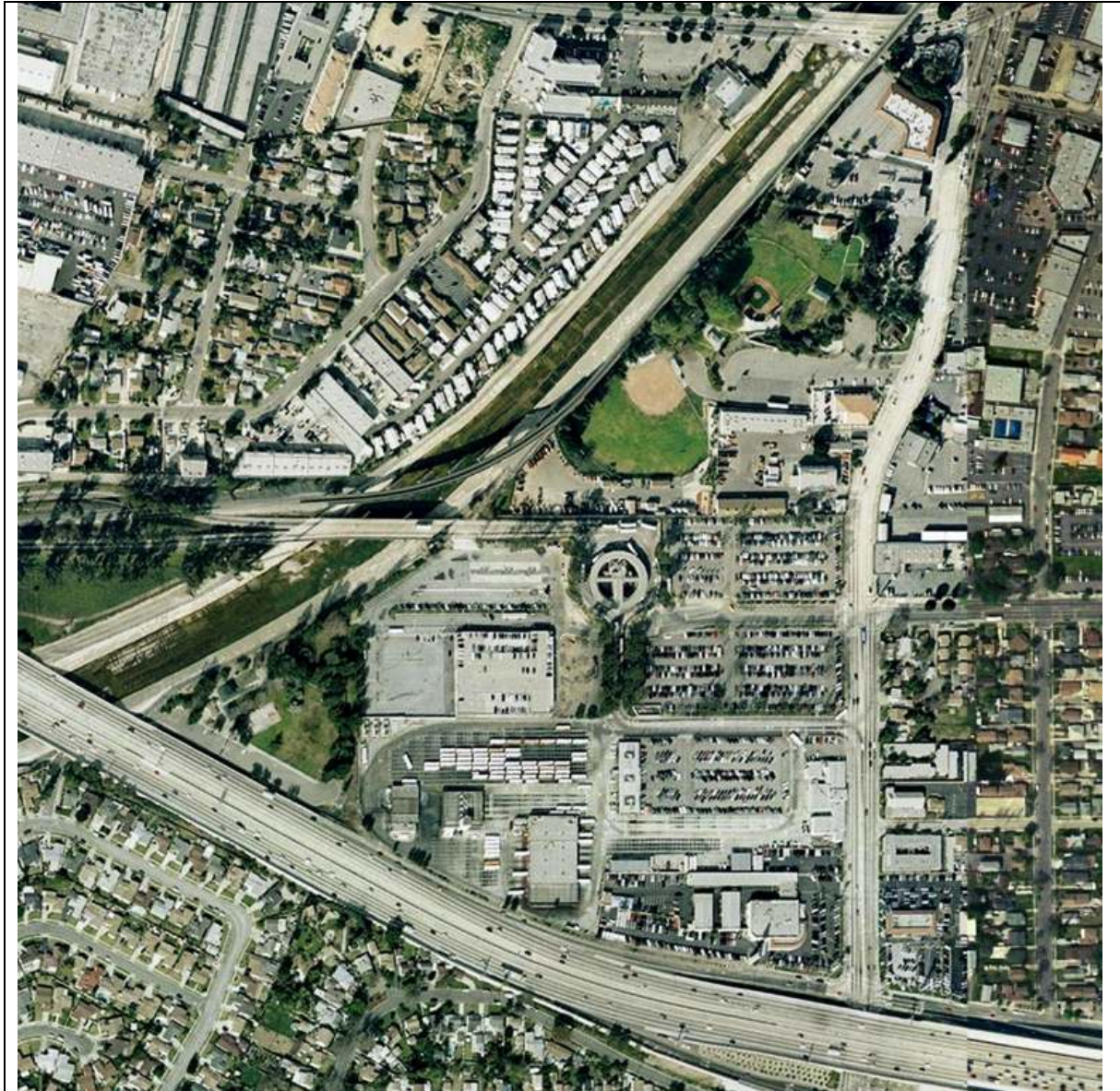
This multi-level ownership structure was one reason that TOD visions did not come to fruition earlier. In the last five years, as interest in developing this site grew, the city's Community Redevelopment Agency took the lead in creating a public-private initiative to transform the property.<sup>15</sup> The city will sell its parcel to the Titan Group, which won the right to develop the property. The city is also negotiating Caltrans and Metro to transfer their property for development.<sup>16</sup> Titan Group has taken the lead in proposing the project elements and securing financing.<sup>17</sup>

The site's Specific Plan divides the parcel into separate districts defined by land uses for transit, mixed-use development or parks and open space. At full build out, the 3.6 million square foot district will contain:

- 1,850 residential units; 591,000 square feet of retail
- 600,000 square feet of office space
- 70,000 square feet of entertainment uses
- 42,000 square feet for a conference center
- a 200-room hotel
- 20,000 square feet for a child development center

About 85% of the residential units will be condominiums; the other 15% will be apartments, mainly senior residences. A minimum of 15% of the condominiums are required to be affordable housing units.

The developer plans a mix of retail and restaurant options, with some traditional national chains as well as smaller, local vendors. Their goal is not only to serve the transit village community, but also to create a regional retail attraction.<sup>18</sup>



El Monte Transit Station and surrounding lands make up the triangular Transit Village parcel, bounded by the I-10 freeway, Santa Anita Avenue and Rio Hondo River (courtesy The Titan Group)

The city has secured a grant to build a bikepath that will run from the Rio Hondo through the site and out to the city's historic district. The city hopes to encourage Transit Village residents to bike or walk to local amenities instead of driving. The city also hopes to create a river environment around the Rio Hondo and connecting to a network of trails and bikeways throughout the region. This network of green urban space will be called The Emerald Necklace and is being supported with federal and state funding.



El Monte Transit Village Site Plan, centered around the busway station. (Courtesy Titan Group)

The Specific Plan stipulates that the mixed-use functions be well integrated with the transit services. Metro will work with the project partners to ensure that its operations can meet the site's long-term needs. Moreover, Metro plans to expand the bus service and to upgrade the terminal to accommodate the increased bus operations.

The Specific Plan also calls for much of the surface parking to be relocated into underground lots, with convenient access to the transit station. The Titan Group is

exploring a number of measures to encourage alternatives to private car travel and reducing parking demand, including working with a national car sharing company, developing "shared parking models" of parking

demand, incorporating bicycle paths, exploring design features that encourage walking, and providing transit passes for the residential units.<sup>19</sup>



Rendering of the proposed El Monte Transit Village (The Titan Group)

The project will be accomplished in phases over approximately ten years. The initial build-out will be a mixed-use section in the northern plot, to be called Rio Paseo Village, and will take three to four years to complete. However, the initial work is on hold until the developer learns whether it has been awarded the state infrastructure bonds.<sup>20</sup>

The Titan Group cites its close interaction with the city as critical to the project's success. City staff meet with the developer every week to review all issues that arise. This has allowed the project to move forward much more quickly than it would normally, especially given the project's complexity.

The busway access is central to the developer's marketing of the project. The El Monte Transit Village website notes that the project will:

*"provide multi-family housing within walking distance of a major transit station, shops, services, restaurants, and recreational facilities."*

The website also touts the project's green credentials:

*"The TOD approach stimulates transit usage, utilizes green building concepts, and reduces traffic generation. The ultimate effects of these strategies are reduced traffic congestion, reduced energy consumption, and reduced air pollution."*

The website also notes that the site will provide access to the El Monte Metrolink Commuter Rail Station. As the project team develops the potential bus terminal expansion designs, it is in talks with Metrolink about relocating the commuter rail platform to allow easier access between the rail and bus station. One of the potential busway expansion designs would also move the bus station further west. Connectivity between the two stations would then be accomplished through a moving sidewalk or similar conveyance. However, the potential design options are still being generated.<sup>21</sup>

## Notes

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<sup>1</sup> City of El Monte: [www.ci.el-monte.ca.us/aboutem/citydesc.html](http://www.ci.el-monte.ca.us/aboutem/citydesc.html)

<sup>2</sup> Interview with Eugene Moy, City of El Monte's Community Redevelopment Agency

<sup>3</sup> Los Angeles Metropolitan Transportation Authority press release dated December 8, 2005.

<sup>4</sup> Los Angeles Metropolitan Transportation Authority Quarterly Newsletter, Spring 2007.

<sup>5</sup> Los Angeles Metropolitan Transportation Authority Metro press release dated April 26, 2006.

<sup>6</sup> El Monte Transit Village Specific Plan

<sup>7</sup> Interview with Barry Sedlik, Titan Group, March 2008.

<sup>8</sup> Interview with Barry Sedlik, Titan Group and SCAG website.

<sup>9</sup> El Monte Transit Village Specific Plan

<sup>10</sup> Interview with Barry Sedlik, Titan Group, March 2008.

<sup>11</sup> Interview with Barry Sedlik, Titan Group, March 2008.

<sup>12</sup> Interview with Eugene Moy, City of El Monte, March 2008.

<sup>13</sup> From interviews with Barry Sedlik, Titan Group and Eugene Moy, City of El Monte, March 2008.

<sup>14</sup> Titan Group marketing materials on the El Monte Transit Village website: [www.elmontetransitvillage.com](http://www.elmontetransitvillage.com)

<sup>15</sup> Interview with Barry Sedlik, Titan Group, March 2008.

<sup>16</sup> Interview with Eugene Moy, City of El Monte, March 2008.

<sup>17</sup> Interview with Barry Sedlik, Titan Group, March 2008.

<sup>18</sup> Interview with Barry Sedlik, Titan Group, March 2008.

<sup>19</sup> Interview with Barry Sedlik, Titan Group, March 2008.

<sup>20</sup> Interview with Barry Sedlik, Titan Group, March 2008.

<sup>21</sup> Interview with Barry Sedlik, Titan Group, March 2008g

## 10 Summary of Survey Results

Formal surveys were received back from twelve developers and seven government agencies. In addition, several developers and government agencies were interviewed in detail about the issues covered in the survey.

### 10.1 Developer surveys

Of the 12 formal developer surveys received, ten were from private real estate development companies, one from a non-profit economic development corporation, and one was from a church that operates a cathedral and diocesan campus adjacent to a BRT line. The surveys were designed to assess developer attitudes toward BRT and the various attributes that developers deem important.

Questions were divided into two categories: questions related to the decision to build along the BRT corridor, and questions related to the impact of the BRT line on the property and future investment decisions. Respondents also were asked to rate a number of issues on a scale of 1 to 5, with 1 being the strongest or most positive impact and five being the weakest or no impact.

Respondents were generally positive about investing near BRT. For example, when asked the extent to which BRT impacted their view of the market potential of the development site, most developers provided a rating of either 1 or 2. Developers also indicated a similarly positive view of the impact of BRT on the ability to attract financing or additional investors.

The survey asked several questions related to perceived “permanence” of BRT and its impact on investment decisions. Developers agreed that perceived permanence is a very important factor in making a decision to invest in a transit corridor. Most developers also characterized the permanence of BRT in their city as very high or high.

Developers next were asked to characterize particular BRT elements for their impact on permanence. Exclusive running ways and dedicated lanes, as well as the size and quality of stations, generally were characterized as making very important contributions to perceived permanence. Other elements, such as streetscape improvements and park-and-ride lots, generally were recognized as also making contributions, but to a lesser extent. When asked whether the perceived permanence would change if the BRT were based upon rail infrastructure, the responses were mixed. Four developers responded either “don’t know” or “not at all,” while three indicated that perceived permanence would be greater with rail.

Almost every developer characterized proximity to BRT as having a “very positive” impact on their property. Roughly half of the developers indicated that proximity to BRT increased property value by 3-5% as compared with similar properties not in proximity to BRT, while the other half indicated “don’t know” in response to this question.

Moreover, most developers indicated that proximity to BRT had at least some positive impact on reducing parking demand, increasing customer traffic, reducing vacancy rates, and enhancing image and appeal to customers. Developers were mixed as to whether the positive impact would change if rail were substituted for BRT. Four developers indicated that rail would enhance the positive impact, one indicated that rail would make no difference on the degree of impact, and one indicated that rail would have a negative impact because it is perceived as louder and dirtier.

Finally, most developers indicated that they use images of BRT or otherwise refer to BRT in their marketing materials. Most also expressed high enthusiasm for developing future projects in close proximity to BRT.

## **10.2 Government agency surveys**

These surveys were designed to assess the experience with transit-oriented development and BRT from the perspective of a government agency. Among other things, respondents were asked to characterize the development that has occurred around BRT stations and to describe the attributes that are most likely to attract development. Surveys were received from four transit agencies, one redevelopment authority, and two city planning agencies.

Most agencies viewed development around BRT stations as a way to promote smart growth, catalyze development, increase transit ridership, and increase property values. Most agencies also indicated that they actively promote development in the BRT corridor, using a range of techniques such as financial incentives, joint development, planning and zoning assistance, and public education. Generally, these agencies characterized development as comparable to what they would expect to see around a rail corridor.

Most agencies indicated that developers had expressed some level of interest in investing near the BRT or busway prior to its construction. After its construction, most agencies indicated developer interest had increased and was high or very high.

Like the developers, most agencies characterized the importance of perceived permanence of the transit investment as high or very high. They also characterized the perceived permanence of BRT as high or very high and most indicated that substituting rail for BRT would have little impact on perceived permanence. Like developers, exclusive running ways and dedicated lanes, as well as the size and quality of stations, generally were characterized as making very important contributions to perceived permanence. Other elements, such as streetscape improvements and park-and-ride lots, generally were recognized as also making contributions, but to a lesser extent.

As with developers, most agencies indicated that proximity to BRT had at least some positive impact on reducing parking demand, increasing customer traffic, reducing vacancy rates, and enhancing image and appeal to customers. The agencies were mixed as to whether proximity to rail would achieve a different result. Two agencies indicated that BRT has a more positive impact than rail, two indicated that it makes no difference whether the transit technology is rail

or BRT, one indicated “don’t know,” and one indicated that rail would have a superior impact. The agencies were in universal agreement, however, that BRT has a more positive impact than traditional local bus routes.

The agencies were optimistic about the future potential of BRT to attract development. For example, all of the agencies characterized developers as “very interested” in future investments in close proximity to BRT.

## 11 Conclusions

Our case studies show that bus rapid transit can promote economic development and support high quality transit oriented development. Notably, these cities present a range of BRT service and infrastructure models, and are promoting TOD in a variety of contexts.

- Both Cleveland and Boston have used a single BRT line to help revitalize a blighted corridor. In contrast, Ottawa and Brisbane have built full busway networks that have helped to concentrate TOD for the each city. In the case of Ottawa, the BRT was the focal point of a long-term growth management policy, although much of the activity is still market-driven. In Brisbane, the TOD has been almost entirely market-oriented.
- The York Region is building a BRT network that is being used as part of an intensification strategy in an auto-oriented, suburban environment.
- Both El Monte and the York Region are demonstrating that BRT can provide the transit anchor for a large, mixed-use transit oriented village.
- Boston’s Silver Line Waterfront demonstrates that BRT can provide the high-capacity rapid transit needed to support high-density development in strong urban markets.

The case studies also show that a range of BRT implementation strategies can be used to attract development. The Silver Line Washington Street and York Viva service both use just a few, relatively inexpensive BRT treatments, including special vehicles and branding. Ottawa, Brisbane and El Monte built dedicated busways, but used conventional vehicles and on-board fare collection. The Cleveland HealthLine is employing the most BRT features, including highly stylized vehicles, near-level boarding and off board fare collection. The Boston Waterfront Line uses an infrastructure-intensive underground BRT service connecting the city of Boston with Logan Airport.

Our research points to some general findings about successfully using BRT to promote transit oriented development:



- The success of many projects was due in part to high level of cooperation among public agencies, non-profit development communities and private developers.
- In a city where the real estate market is not already strong, an active transit agency TOD program and/or active community development organization is critical.
- Developers view permanence as an important factor for building around a BRT system. Even in the cities with a relatively low level of infrastructure, the BRT was viewed as permanent due to a clear long-term commitment by the transit agency.
- Many developers report that the BRT must have a prominent visual profile and be aesthetically appealing – particularly the stations.
- Frequency, speed and convenience of the service also appeared to be important to many developers and property owners. These are features that the BRT service was able to offer over the local conventional bus service.
- For cities that are using BRT to revitalize a corridor, the accompanying streetscape improvements may be at least as important as the transit service.
- As with any transit, the transit corridor must be amenable to high-density development. Corridors placed in areas without major employment or housing destinations are not likely to attract development, regardless of mode.
- Overall, providing financial incentives for TOD does not appear to be important for attracting developer interest. Developers were much more interested in an expedited permitting or rezoning process, as time is a critical factor in making development projects financially viable.

### ***What's Next***

Overall, these case studies show that BRT can be used to promote transit-oriented development in a variety of settings. An outreach campaign on these successful projects among the transit community would be valuable, as the level of education about BRT's impact on TOD is relatively low. Moreover, continued study of the potential of BRT to foster TOD would be valuable. Although our case study sites are clearly leaders in using BRT as a growth management strategy, many other cities also are achieving success.

## 12 Literature Review Sources

Booz Allen Hamilton Inc. *Silver Line Washington Street Bus Rapid Transit Demonstration Project: Evaluation*. FTA. December, 2005.

Cervero, Robert et al. *TCRP Report 102: Transit-Oriented Development in the United States: Experiences, Challenges, and Prospects*. TRB, Washington, D.C. 2004.

Currie, Graham. *Strengths and Weaknesses of the Bus in Relation to Transit Oriented Development*. Journal of Public Transportation. 2006.

Kittelsohn & Associates, Inc, et al. *TCRP Report 118: Bus Rapid Transit Practitioners Guide*. Transportation Research Board, 2007.

Mejias, Luis and Elizabeth Deakin. *Redevelopment and Revitalization Along Urban Arterials: Case Study of San Pablo Avenue, California from the Developers' Perspective*. Transportation Research Record: Journal of the Transportation Research Board, 2005.

Parsons Brinckerhoff Quade & Douglas, Inc. et al, *Public Policy and Transit Oriented Development: Six International Case Studies*. Transit Cooperative Research Program, March 1996.

Washington Group International, Inc. *Silver Line Waterfront Bus Rapid Transit Project: 2007 Evaluation*. FTA. June 1, 2007.

# APPENDIX A: Government Agency and Developer Surveys

## Agency Survey

1. Please describe any land development that occurred either because it was planned in conjunction with the BRT/busway system, or because the BRT/busway helped attract such development. Please identify the type of development (e.g., residential, commercial, retail); the approximate size in square feet; which station is nearest the development; whether it is new construction or redevelopment; whether it is a joint development<sup>1</sup> project; and any other details that you believe are relevant. Please feel free to attach additional sheets, if desired.

*(Joint development is defined as a form of public-private partnership between a transit agency and private developers for development projects on, above, or adjacent to transit agency property.)*

2. To what extent is the development along the BRT/busway comparable to projects you would see along a rail corridor?

(more) 1 2 3 4 5 (less) OR (don't know)

3. Please characterize the ownership of station sites and the BRT/busway right-of-way prior to making the decision to build the busway/BRT (please check all that apply):

- Private
- Local government
- Transit agency
- Development authorities
- Other (please list below)

- 4a. What do you see as the benefits of development around the busway/BRT:

- increased revenues to public sector
- increased transit ridership
- promotion of smart growth
- catalyst to redevelopment
- enhanced property values
- improved urban design
- reduced emissions
- other (please list below)

- 4b. Would the importance of the factors listed above be different for development on rail-based transit?

YES  NO

- 5a. Does your agency actively promote development along the BRT/busway corridor?

YES  NO

- 5b. If NO, why not?

5c. If YES, please indicate what government agencies have done to promote development along the corridor:

- \_\_\_\_\_ Financial incentives
- \_\_\_\_\_ Joint development opportunities
- \_\_\_\_\_ Public outreach and education
- \_\_\_\_\_ Planning assistance
- \_\_\_\_\_ Rezoning assistance/support
- \_\_\_\_\_ Assistance with legal issues
- \_\_\_\_\_ Other (please list below)

5d. Are these incentives/activities different from incentives/activities used to promote development along rail corridors? If so, how?

5e. How would you judge the success of your efforts to promote development along the BRT/busway corridor?

(very successful) 1 2 3 4 5 (not at all successful)

6a. Please characterize the level of interest by developers in investing near the BRT/busway prior to construction of the system.

(high) 1 2 3 4 5 (low) OR (don't know)

6b. Please characterize the level of interest by developers in investing near the BRT/busway after the system began operating.

(high) 1 2 3 4 5 (low) OR (don't know)

7. In your opinion, how important a factor was the BRT/busway for those developers that have chosen to invest along the corridor?

(very important) 1 2 3 4 5 (not important) OR (don't know)

8a. In your opinion, how important are the following factors in influencing developers' decisions to invest near the BRT/busway corridor? Rate each factor from 1 to 5, with 1 being "very important" and 5 being "not important."

Proximity to BRT/busway corridor:	1	2	3	4	5	N/A
Frequency of BRT/busway service:	1	2	3	4	5	N/A
BRT/busway operating hours:	1	2	3	4	5	N/A
BRT/busway service image (e.g. premium, standard):	1	2	3	4	5	N/A
Quality of BRT/busway station (e.g. attractiveness, amenities):	1	2	3	4	5	N/A
BRT/busway vehicle type (e.g., conventional bus, stylized bus):	1	2	3	4	5	N/A
Running way (e.g., exclusive guideway, dedicated lanes):	1	2	3	4	5	N/A
Projected/actual BRT/busway ridership:	1	2	3	4	5	N/A

Demographics of the corridor served:	1	2	3	4	5	N/A
Pedestrian connections to transit:	1	2	3	4	5	N/A
Connection to other transit service:	1	2	3	4	5	N/A
Streetscape or roadway improvements:	1	2	3	4	5	N/A
Availability of parking:	1	2	3	4	5	N/A
Transit agency support/assistance:	1	2	3	4	5	N/A
Public agency support/assistance:	1	2	3	4	5	N/A
Supportive zoning/codes:	1	2	3	4	5	N/A
Comprehensive plan/station area master plan supporting project:	1	2	3	4	5	N/A
Streamlined development process:	1	2	3	4	5	N/A
Funding assistance/grants:	1	2	3	4	5	N/A
Reduced parking requirements:	1	2	3	4	5	N/A
Land availability/cost:	1	2	3	4	5	N/A
Community amenities:	1	2	3	4	5	N/A
Previous experience with transit-oriented development (TOD):	1	2	3	4	5	N/A
Public support for TOD project:	1	2	3	4	5	N/A
Existing or planned TOD projects nearby:	1	2	3	4	5	N/A
Existing or planned public investments nearby:	1	2	3	4	5	N/A
Existence of political champion for TOD:	1	2	3	4	5	N/A
Other (Please describe below):	1	2	3	4	5	N/A

8b. In your opinion, would the importance of the factors listed above be different for a development near rail-based transit?

YES  NO

9a. The extent to which infrastructure is viewed as “permanent” or unable to be readily moved or dismantled is sometimes viewed as attractive for real estate investment. In your view, how important is permanence to developers in making a decision to invest along a transit corridor?

(very important) 1 2 3 4 5 (not at all important) OR (don’t know)

9b. How would you characterize the perceived permanence of the BRT/busway infrastructure and service?

(very high) 1 2 3 4 5 (very low) OR (don’t know)

9c. Please rate the following elements for their contribution to the perceived permanence of the BRT/busway system, where 1 is “very important” and 5 is “not at all important.”

Dedicated lane or exclusive running way	1	2	3	4	5	Don't know
Quality of stations (size, passenger amenities...)	1	2	3	4	5	Don't know
Total number of daily riders	1	2	3	4	5	Don't know
Streetscape or roadway improvements	1	2	3	4	5	Don't know
Park & ride lots	1	2	3	4	5	Don't know
Other (please describe below)	1	2	3	4	5	Don't know

9d. In your opinion, to what extent would the perceived permanence of the system change if it were based upon rail technology rather than bus infrastructure?

(much more) 1 2 3 4 5 (not at all) OR (don't know)

10a. In your opinion, to what extent does the BRT/busway impact adjacent properties with regard to the following potential effects, with 1 being "strong positive effect," 3 being "no effect," and 5 being "strong negative effect":

Increased property value	1	2	3	4	5	Don't know
Lower parking demand	1	2	3	4	5	Don't know
Increased customer traffic	1	2	3	4	5	Don't know
Improved access to the property	1	2	3	4	5	Don't know
Reduced vacancy rates	1	2	3	4	5	Don't know
Appeal to tenants/purchasers	1	2	3	4	5	Don't know
Improved image	1	2	3	4	5	Don't know
Other (Please describe below):	1	2	3	4	5	Don't know

10b. Please rate the impact from, or value of, proximity to BRT/busway compared to rail:

(better) (no difference) (worse) (don't know)

10c. Please rate the impact from, or value of, proximity to BRT/busway compared to local bus routes:

(better) (no difference) (worse) (don't know)

11a. Based upon your experience to date with BRT/busways, please characterize the level of developer interest in future investments near the BRT/busway:

(very interested) 1 2 3 4 5 (not interested) OR (don't know)

11b. What do you think is the cause for this level of interest?

12. Are you planning any new joint development projects along the BRT/busway? Please describe.

# Developer Survey

## Background:

Please describe your company's development projects along the BRT corridor. Please identify the type of development (e.g., residential, commercial, retail); the approximate size in square feet; which station is nearest the development; whether it is new construction or redevelopment; whether it is a joint development<sup>1</sup> project; and any other details that you believe are relevant. Please feel free to attach additional sheets, if desired.

*(Joint development generally is defined as a public-private partnership between a transit agency and private developers for development projects on, above, or adjacent to transit agency property)*

## Survey Questions

### Part I. Decision to build along the BRT/busway corridor.

1. To what extent did the existence or promise of the BRT/busway positively impact:

-- your view of the market potential of the development site?

(strong positive impact) 1 2 3 4 5 (no impact)

-- your ability to attract investors or other financing?

(strong positive impact) 1 2 3 4 5 (no impact)

2a. Did you consider other sites for this project?

YES  NO

2b. If YES, how important a factor was the BRT/busway in choosing the site near the BRT/busway?

(very important) 1 2 3 4 5 (not important)

3a. How important were the following factors in your decision to develop a project near the BRT/busway corridor? Please rate each factor from 1 to 5, with 1 being "very important" and 5 being "not important."

Proximity to BRT/busway corridor:	1	2	3	4	5	N/A
Frequency of BRT/busway service:	1	2	3	4	5	N/A
BRT/busway operating hours:	1	2	3	4	5	N/A
BRT/busway service image (e.g. premium, standard):	1	2	3	4	5	N/A
Quality of BRT/busway station (e.g. attractiveness, amenities):	1	2	3	4	5	N/A
BRT/busway vehicle type (e.g., conventional bus, stylized bus):	1	2	3	4	5	N/A
Running way (e.g., exclusive guideway, dedicated lanes):	1	2	3	4	5	N/A
Projected/actual BRT/busway ridership:	1	2	3	4	5	N/A

Demographics of the corridor served:	1	2	3	4	5	N/A
Pedestrian connections to transit:	1	2	3	4	5	N/A
Connection to other transit service:	1	2	3	4	5	N/A
Streetscape or roadway improvements:	1	2	3	4	5	N/A
Availability of parking:	1	2	3	4	5	N/A
Transit agency support/assistance:	1	2	3	4	5	N/A
Public agency support/assistance:	1	2	3	4	5	N/A
Supportive zoning/codes:	1	2	3	4	5	N/A
Comprehensive plan/station area master plan supporting project:	1	2	3	4	5	N/A
Streamlined development process:	1	2	3	4	5	N/A
Funding assistance/grants:	1	2	3	4	5	N/A
Reduced parking requirements:	1	2	3	4	5	N/A
Land availability/cost:	1	2	3	4	5	N/A
Community amenities:	1	2	3	4	5	N/A
Previous experience with transit-oriented development (TOD):	1	2	3	4	5	N/A
Public support for TOD project:	1	2	3	4	5	N/A
Existing or planned TOD projects nearby:	1	2	3	4	5	N/A
Existing or planned public investments nearby:	1	2	3	4	5	N/A
Existence of political champion for TOD:	1	2	3	4	5	N/A
Other (Please describe below):	1	2	3	4	5	N/A

3b. Would the importance of the factors listed above be different for a development near rail-based transit?

YES  NO

4a. Did you participate in a TOD program sponsored by a transit agency or local government agency?

YES  NO

4b. If YES, how important was this program to the outcome and success of your project?

(strong positive impact) 1 2 3 4 5 (no impact)

5. Were you involved in the initial BRT/busway alignment and station location decision-making?

YES  NO



6. Please indicate whether the following physical or service changes would have affected your decision to invest in property near the BRT/busway corridor. (Indicate whether you would have been more likely to invest, less likely to invest, or not impacted.)

a. Walking distance between your project and the station is doubled

More Likely    Less Likely    No Impact            Don't Know

b. A traditional bus stop is used, not stations that provide shelter and passenger amenities.

More Likely    Less Likely    No Impact            Don't Know

c. A much bigger shelter is provided at the station.

More Likely    Less Likely    No Impact            Don't Know

d. The anticipated ridership on the BRT/busway is reduced by 50%.

More Likely    Less Likely    No Impact            Don't Know

e. Additional service is added, reducing the time between buses by half.

More Likely    Less Likely    No Impact            Don't Know

f. Buses do not use a dedicated lane.

More Likely    Less Likely    No Impact            Don't Know

g. The BRT/busway vehicles look the same as regular local buses.

More Likely    Less Likely    No Impact            Don't Know

h. Commuter parking is provided at the station.

More Likely    Less Likely    No Impact            Don't Know

i. Pedestrian and bicycle access to the station is significantly enhanced.

More Likely    Less Likely    No Impact            Don't Know

Other/Comments:

7a. The extent to which infrastructure is viewed as “permanent” or unable to be readily moved or dismantled is sometimes viewed as attractive for real estate investment. For you, how important is permanence in making a decision to invest along a transit corridor?

(very important)    1    2    3    4    5    (not at all important) OR (don't know)

7b. How would you characterize the permanence of the BRT/busway infrastructure and service?

(very high)    1    2    3    4    5    (very low) OR (don't know)

7c. Please rate the following elements for their contribution to the perceived permanence of the BRT/busway system, where 1 means “very important” and 5 means “not at all important”:

Dedicated lane or exclusive running way                            1    2    3    4    5    Don't know

Quality of stations (size, passenger amenities...)	1	2	3	4	5	Don't know
Total number of daily riders	1	2	3	4	5	Don't know
Streetscape or roadway improvements	1	2	3	4	5	Don't know
Park & ride lots	1	2	3	4	5	Don't know
Other (please describe below)	1	2	3	4	5	Don't know

7d. In your opinion, to what extent would the perceived permanence of the system change if it were based upon rail technology rather than bus infrastructure?

(much more) 1 2 3 4 5 (not at all) OR (don't know)

**Part II. Impact of the BRT/busway on your property and your future development decisions.**

8a. In general, how would you characterize the impact or effect of proximity to BRT/busway?

(very positive) (positive) (no impact) (negative) (very negative)

8b. Please characterize the following potential effects of proximity to the BRT/busway on your property, with 1 being "strong positive effect," 3 being "no effect," and 5 being "strong negative effect"

Increased property value	1	2	3	4	5	Don't know
Lower parking demand	1	2	3	4	5	Don't know
Increased customer traffic	1	2	3	4	5	Don't know
Improved access to the property	1	2	3	4	5	Don't know
Reduced vacancy rates	1	2	3	4	5	Don't know
Appeal to tenants/purchasers	1	2	3	4	5	Don't know
Improved image	1	2	3	4	5	Don't know
Other (Please describe below):	1	2	3	4	5	Don't know

8c. Would any of your answers to the previous question change for a rail system? Please explain.

9. In your opinion, to what extent does proximity to BRT/busway change property values compared to similar properties not close to the BRT/busway? Please circle one:

0%    1 – 3%    3 - 5%    5 - 8%    8 - 10%    >10% (Don't know)

10a. Does your project include fewer parking spaces or greater density as a result of your proximity to the BRT/busway corridor?

YES     NO

10b. Are there any special city zoning or parking requirements for the area around the BRT/busway stations?

YES  NO

11. Do you use images of, or otherwise refer to, the BRT/busway in your marketing materials?

YES  NO

12. How would you characterize the satisfaction of your tenants with the BRT/busway service (e.g. frequency of service, station amenities, location served, etc.)?

(very satisfied) 1 2 3 4 5 (not satisfied) OR (don't know)

13. Please characterize your enthusiasm for developing future projects in close proximity to this or any BRT/busway system.

(very interested) 1 2 3 4 5 (not interested) OR (don't know)

Please explain your answer:

## Appendix B: List of Cleveland Development Projects

The Greater Cleveland Regional Transit Authority tracks development along the Euclid project corridor. The following table provides information on completed and proposed projects as of February 2008, grouped by the corridor districts.

<b>EUCLID AVENUE DEVELOPMENTS – DOWNTOWN DISTRICT</b>					
<b>Project</b>	<b>District Location</b>	<b>Description</b>	<b>Square Footage</b>	<b>Investment in \$ millions</b>	<b>Type of Develop. (R) (NC)</b>
Windsor Block Apts	Downtown	54 Apts; retail	NA	5.2	(R)
City Club Building	Downtown	Renovation	NA	NA	(R)
Holiday Inn Expr.	Downtown	141 guestrooms	NA	13.0	(R)
The Park Building (current construction)	Downtown	27 Luxury condos	NA	NA	(R)
Colonial Marketplace	Downtown	Residence Inn Hotel/Retail	60,000	30.0	(R)
Hyatt Old Arcade	Downtown	296 guestrooms	64,000	10.0	(R)
Commercial Bldg.	Downtown	36 Apts.; retail	4000 sq. ft.	4.0	(R)
Pickwick & Frolic	Downtown	Restaurant; 400 seat theater; cabaret;	27,000	4.5	(R)
VIVO	Downtown	Restaurant	NA	1.5	(R)
Renaissance Hotel	Downtown	491 guestrooms	NA	5.5	(R)
Sincere Building	Downtown	14 live/work	NA	2.5	(R)
Frederick/Graves/McCrory Bldgs	Downtown	a) 36 Apts. b) 2 Retail	NA	a) 3.5 b) 2.1	(R)
Woolworth Building	Downtown	House of Blues Restaurant/concert hall	30,000	5.0	(R)
E. 6 <sup>th</sup> Street Garage	Downtown	Multi-level garage/retail	11,000	20	(R)
WT Grant Bldg.	Downtown	73 Lofts Apt//condo	51,000	11	(R)
668 Building/614 Dollar Bank Bldg.	Downtown	225 Apts./Retail; pedestrian plaza	NA	65	(R)
<b>EUCLID AVENUE DEVELOPMENTS – PLAYHOUSE SQUARE DISTRICT</b>					
Statler Building	PHS	295 Apts; restaurant; 2 retails	NA	58.0	(R)
Second City Theatre	PHS	300 seat	NA	2.0	(R)

		cabaret/theater			
Osborne Building	PHS	67 Apts./retail	NA	8.0	(R)
Ideastream	PHS	PBS/NPR; PHS Foundation; corporate tenants	100,000	30.0	(R)
<b>EUCLID AVENUE DEVELOPMENTS – QUADRANGLE/CLEVELAND STATE UNIVER.</b>					
Cleveland State University (CSU)	CSU/QD	Business School	NA	18.5	NC
CSU Student Recreational Ctr.	CSU/QD	Student Union	NA	42.0	(R)
CSU Fenn Tower	CSU	19- story renovation; 438 beds	179,500	30.0	(R)
Euclid Lofts	CSU/QD	80 Apts; 17 townhouses	NA	7.0	(R)
Trinity Commons	CSU/QD	Retail/ Conference Hall; piazza	67,000	9.8	(R) / (NC)
RTA East Side Transit Center	CSU/QD	Transit Center; 600 space parking garage	NA	NA	(NC)
CSU Master Plan	CSU	Graduate	NA	200	(R) (NC)
<b>EUCLID AVENUE DEVELOPMENTS – MIDTOWN</b>					
MidTown Technology Center/Ohio Knitting Mills	MT	Technology; research (Three phase project proposed)	7.5 acres; 400,000	62.0	(R)
4415 Euclid Bldg.	MT	Technology Ctr; research laboratories	60,000	5.7	(R)
Center for Families Children	MT	Social services	40,000	1.2	(R)
Center for Families Children	MT	Social services	30,000	.585,000	(R)
Agora Theatre	MT	Concert hall; restaurant	72,000	.800,000	(R)
NE Regional Sewer	MT	Public service	80,000	12.0	(NC)
E. 69 <sup>th</sup> Street Townhouses	MT	102 lofts; retail	3 acres	3.5	(R)
MPC Plating (E. 63 <sup>rd</sup> )	MT	Product Mfg.	24,000	1.2	(R)
Best Inn & Suites	MT	Hotel/restaurant		1.2	(R)
Broadway Int./Boram	MT	Health/Beauty Supply Distrib.	50,000	.620,000	(R)

Laborer's Int. Union Local 310	MT	Union	30,000	.200,000	(R)
<b>EUCLID AVENUE DEVELOPMENTS – FAIRFAX/CLEVELAND CLINIC</b>					
Cleveland Clinic Heart Center	FX/CC	Professional/ Medical	100,000	475	(NC)
Intercontinental Hotel	FX/CC	Hotel/ Conference Ctr	130,000	NA	(NC)
<b>EUCLID AVENUE DEVELOPMENTS – UNIVERSITY CIRCLE</b>					
University Hospital Research	UC	Medical/ Research	320,000	110	(NC)
Cleveland Botanical Gardens	UC	Glasshouse/ Expansion	18,000	37	(R)
Case Western Reserve University (CWRU)	UC	Peter Lewis Bldg – Business Mgt. School	149,000	61.7	(NC)
CWRU	UC	School of Medicine; Bldg. addition	85,700	22	(NC)
CWRU Science Education Research	UC	Renovation/ Expansion	198,000	32	(R) (NC)
University Hospitals Pediatrics ICU	UC	Renovation/ Expansion	5000	6.0	(R) (NC)
Famicos Foundation – Condominiums	UC	18 condominiums	NA	4.5	(NC)
Hawkins School	UC	School	NA	3.5	(NC)
<b>EUCLID AVENUE DEVELOPMENTS – CITY OF EAST CLEVELAND</b>					
East Cleveland Public Library	EC	Library Expansion	NA	4.0	(NC)