West Broadway Transit Study

Economic Development Impacts of Transit Alternatives

11/11/2015

Prepared by the
SRF Consulting Group Team

for

Metro Transit

Table of Contents

I. Introduction

Metro Transit, in collaboration with Hennepin County and the Cities of Minneapolis, Robbinsdale, and Golden Valley, is seeking guidance on the economic development impacts of proposed streetcar and bus rapid transit (BRT) alternatives along the West Broadway corridor. As documented in the April 1, 2015 methodology statement, transit can support economic development by enhancing mobility and providing a placemaking amenity for the corridor. The Team developed a financial model in order to evaluate the impact of streetcar and BRT alternatives on the value and pace of development as well as job creation in the corridor compared with a baseline, no-build scenario. The Team's findings regarding the economic development impacts of the scenarios is described in this report, which is organized as follows:

- **Section II: Baseline Development Scenario** – a projection of corridor economic development outcomes under baseline conditions, based on findings and policy guidance reported in the "Market Conditions and Planning Context Review" and developer feedback. The development outcomes projected by the baseline analysis are predicated upon changes in the *value* of existing and new properties; *pace* of new development; and *quantity* of new development. This scenario assumes no additional transit improvements.
- **Section III: Literature Review and Case Study Findings** – a review of academic literature and comparable precedents to assess the potential impact of streetcar and BRT improvements on economic development. The literature review focuses on the observed impacts of similar rail and BRT investments, and includes variation in impacts between single-family residential, multifamily residential, office, and retail uses. The case studies demonstrate salient factors in development outcomes, and also document the importance of other public policies and investments, in addition to transit, that helped to catalyze development outcomes. Detailed case studies are included in an appendix.
- **Section IV: Developer Interview Findings** – a summary of feedback from the local real estate development community and their perception of corridor development conditions and the value of streetcar versus BRT service for new development. These interviews were used to refine the findings of the literature review and case study findings to the local context.
- **Section V**: **BRT and Streetcar Development Scenarios** – a projection of corridor economic development outcomes over 25 years, reflecting the impact of streetcar and BRT service on baseline development conditions. The mobility and amenity benefits catalyzed by transit investments will in turn affect three primary reported outcomes – property value, new development, and jobs supported.

II. Baseline Development Scenario

A baseline development scenario was generated based on the market findings and feedback from the local real estate community. The baseline development scenario represents a projection of corridor build-out over 25 years, between 2016 and 2040, assuming there is no additional transit investment. The scenario considers the amount of residential, office, and retail development projected to be delivered by the market. As the Golden Valley Road spur is no longer under consideration, the baseline

scenario only considers development in the North Loop, North Washington, West Broadway and Central Robbinsdale. Specifically, the baseline measures three primary economic development outcomes:

1. ***Property value*** of existing and new development;
2. ***New development*** including the quantity and pace of build-out; and
3. ***Jobs supported*** as a result of new office and retail uses.

These outcomes vary depending on each submarket's land capacity and market potential.

Land Capacity

In order to determine land capacity along the corridor for future development, the study utilized a detail level review of all properties within a quarter mile of the transit corridor. Property was evaluated objectively for its development potential through mapping the following parameters.

- Property value per square foot
- Ratio of the value of building to total property value
- Percent of land covered by a building
- Public ownership
- Distances to the transit line and likely transit stations

Based on these parameters, the Team identified properties that have the greatest potential for new development, including currently vacant and underutilized property.

Physical observations of all properties revealed additional information about site and building conditions, and the height and character of buildings. Based on this information draft maps were created of candidate sites for new development. Future development density was also estimated for all candidate development sites, based on zoning codes, approved plans for the area, and the density of recent and proposed developments near the candidate sites. The same inputs also supported an estimate of how much of each prospective new development might be devoted to residential, retail or office space. For this analysis, new retail development is assumed to occur as a ground-floor use as part of a mixed-use residential or office development.

The maps, methodologies and primary assumptions about land use and density were shared with City of Minneapolis planning staff. They made some important modifications to the assumptions, and to the menu of prospective development sites.

The preceding process yielded a table of approximately 125 single- and multi-parcel development opportunity sites where development is judged most likely to occur in each section of the corridor. Each development opportunity site is associated with an estimated number of dwelling units, and the estimated commercial floor area that would be produced if the site is redeveloped. Based on this assessment, if and when all of the identified sites are redeveloped, the maximum build-out of the corridor as a whole is approximately 10,700 residential units, 253,000 square feet of retail space, and 3.1 million square of office space. This land development capacity is spread across the four submarkets as follows:

North Loop. The North Loop is currently home to 2,765 residential units and contains the capacity for approximately additional 7,500 residential units (70% of corridor capacity). It also has capacity for 138,000 square feet of retail, largely envisioned as ground floor retail as part of mixed-use developments. The submarket also harbors capacity to accommodate nearly 1.2 million square feet of office space, second only to the office capacity in North Washington.

North Washington Jobs Park. The North Washington Jobs Park is envisioned to maintain its current zoning for commercial uses and has capacity for approximately 1.3 million square feet of office and 70,000 square feet of ancillary retail. Local plans do not anticipate residential development in this area.

West Broadway. West Broadway is currently home to 5,279 residential units. It is envisioned to be a mixed-use corridor and contains capacity for approximately 2,500 additional residential units, 24,000 square feet of ancillary ground floor retail, and 386,000 square of office space.

Central Robbinsdale. The Robbinsdale portion of the corridor is currently home to 4,323 residential units. The area is envisioned as a mixed-use neighborhood with capacity for approximately 700 additional residential units, 21,000 square feet of ground floor retail, and 208,000 square feet of office space.

Table 1: Development Envelope Available for Build-Out

Submarket	Residential Build-Out (Units)	Retail Build-Out (Square Feet)	Office Build-Out (Square Feet)
North Loop	7,500	138,000	1,184,000
North Washington	-	70,000	1,318,000
West Broadway	2,500	24,000	386,000
Central Robbinsdale	700	21,000	208,000
Total	**10,700**	**253,000**	**3,096,000**

Source: Tangible Consulting, City of Minneapolis, City of Robbinsdale

Market Potential

Real estate development economics and public policy decisions about development subsidies will be the primary factors that determine the portion of the development envelope that is ultimately developed under the baseline and transit development scenarios.

As of 2015, the corridor contains approximately $1.4 billion in real estate property value based on the current assessed value of all property within one quarter mile of the potential alignments. Previous real property value appreciation over the 20 years from 1996 to 2015 informs the study's estimates of how much the value of existing properties will grow over the study's time horizon of 25 years.[1] This study assumes that property value will continue to grow over the next 25 years at a similar rate under baseline conditions. The North Loop alone contains over $797 million in assessed property value and has

[1] This 2016-2040 baseline property value appreciation assumption is based on historical home value data obtained from Zillow and consumer price index data obtained from the Bureau of Labor Statistics. The real growth rate is defined as the percentage growth in property value less the inflation rate.

historically outpaced other neighborhoods in property value growth. Other submarkets have historically appreciated at a slower rate.

Table 2: Current Corridor Assessed Value and Real Growth in Value

Submarket	Existing Property Value	Real Annual Growth, 1996-2015
North Loop	$797,543,000	1.45%
North Washington	$22,817,000	1.05%
West Broadway	$294,185,000	0.98%
Central Robbinsdale	$318,799,000	1.04%

Source: Zillow, Bureau of Labor Statistics, City of Minneapolis, City of Robbinsdale, Hennepin County

In order for new, market-rate development to occur, market rents must be sufficiently high to justify the cost of new construction, given reasonable developer return expectations. To determine the quantity and pace of development over a 25-year horizon, the study relied on a conceptual financial model that compared the projected capitalized value of new development versus development costs over time to determine if and when unsubsidized new development becomes financially feasible in each submarket. Inputs were primarily drawn from market findings in the previously completed market analysis report and from conversations with active developers along the corridor.

Whereas new market-rate development may require public sector gap financing, public financial support is assumed to continue at current levels. Recently completed mid-rise transit-oriented development projects have generally received gap financing, equivalent to 10-15% of project costs. The most commonly utilized sources are two Metropolitan Council programs – the Livable Communities Demonstration Account (LCDA-TOD) and Tax Base Revitalization Account (TBRA-TOD). Other recent developments have also received funding from the City of Minneapolis' tax increment financing program, the Hennepin County TOD program, the Met Council land assembly fund, and State Department of Employment and Economic Development programs for contamination clean up, demolition, and other redevelopment activities.

For affordable housing development, the model assumed developers will have access to a range of Federal, State, and local subsidies and that new affordable housing deliveries will occur at a pace similar to historical levels within each submarket. Typical sources of affordable housing funding include the City of Minneapolis' Affordable Housing Trust Fund, Hennepin County's Affordable Housing Incentive Fund, and the Minnesota Housing Finance Agency's Housing Trust Fund and Low Income Housing Tax Credit Program. In addition, many affordable housing projects are eligible for the gap financing described above in addition to affordable housing subsidies.

Under baseline conditions, the corridor is expected to capture 8,050 new residential units over 25 years, or 76% of its total projected capacity. The North Loop is projected to accommodate 6,350 units, representing 85% of that submarket's development capacity. The West Broadway submarket is expected to accommodate 1,250 new residential units (50% of its capacity) while Central Robbinsdale is

expected to achieve build-out of 450 residential units (70% of its capacity). Given that current market rents in West Broadway are approximately $1.40 per square foot, lower than the level required to support market rate development, it anticipated that the majority of new residential delivery in West Broadway will continue to be regulated affordable housing products.

Table 3: Projected New Residential Development within 25 Years Under Baseline Conditions

Submarket	Percent of Build-Out Achieved	Residential Build-Out (Units)
North Loop	85%	6,350
North Washington	N/A	N/A
West Broadway	50%	1,250
Central Robbinsdale	70%	450
Total	**76%**	**8,050**

Note: Under current zoning, North Washington is not anticipated to accommodate any residential growth.
Source: HR&A

In addition to residential development, the model estimates the build-out of unsubsidized, market-rate office uses based on historical absorption and feedback from local developers.

Under baseline conditions, the corridor is expected to achieve build-out of 939,000 square feet of office space (or 30% of its capacity). Most office development is anticipated to occur in the North Loop and North Washington while West Broadway and Central Robbinsdale are anticipated to attract minimal market-rate office development under baseline conditions. This development includes build-to-suit opportunities characteristic of the recent private investment in the North Washington Jobs Park. The projected delivery of 395,000 square feet of office space in North Washington is roughly equivalent to two additional deliveries of buildings on the scale of the Coloplast Corporation headquarters, the most significant private office investment along the corridor in the past decade.

Public agencies or mission-driven developers may also choose to construct new offices along the corridor. For example, the Minneapolis School District recently completed a new headquarters in the West Broadway submarket. However, the baseline development scenario only accounts for market-rate office developments and cannot speculate on future policy- or mission-driven locational decisions, which could accelerate the pace of office development and potentially exceed these market-driven projections.

Table 4: Projected New Office Development within 25 Years

Submarket	Percent of Build-Out Achieved	Office Build-Out (Square Feet)
North Loop	29%	342,000
North Washington	30%	395,000
West Broadway	26%	101,000
Central Robbinsdale	48%	101,000
Total	**30%**	**939,000**

Source: HR&A

The corridor is also expected to support 153,000 square of retail development over 25 years, equivalent to 80% build-out of its retail capacity. Build-out is similar to residential as retail development is assumed to be delivered primarily as ground floor space in residential developments. The majority of build-out will occur in the North Loop, which is expected to attract 124,000 square feet of new retail, equivalent to 90% of its retail development envelope. West Broadway is anticipated to attract 12,000 square feet of new retail, and Central Robbinsdale is anticipated to attract 17,000 square feet of new retail. The model assumes that new development in North Washington will be limited to office use and no ancillary retail will be built.

Table 5: Projected New Retail Development within 25 Years

Submarket	Percent of Build-Out Achieved	Retail Build-Out (Square Feet)
North Loop	90%	124,000
West Broadway	50%	12,000
Central Robbinsdale	80%	17,000
Total	**80%**	**153,000**

Note: North Washington is not anticipated to accommodate any retail growth.

Source: HR&A

This study examines the anticipated build-out of new residential, retail, and office anticipated to occur over the next 25 years. Table 6 illustrates the pace of delivery assumed in each submarket under baseline conditions without the provision of BRT or streetcar improvements. Assumptions were developed based on physical and market conditions in each submarket and feedback from the local development community. In the North Loop, the model assumes that pace of delivery will be fastest in the medium-term, given the significant development activity already underway in the submarket.

Table 6: Development Pace (Annual Portion of Total Development)

Submarket	Years 1-5	Years 6-10	Years 11-15	Years 16-20	Years 21-25
North Loop	3.0%	3.5%	4.0%	5.0%	4.5%
North Washington	2.0%	2.5%	3.5%	5.5%	6.5%
West Broadway	2.0%	2.5%	3.5%	5.5%	6.5%
Central Robbinsdale	2.0%	2.5%	3.5%	5.5%	6.5%

Source: HR&A

Employment Supported

By Year 25, new office and retail development is expected to support nearly 4,500 jobs along the corridor. Employment is estimated based on industry-standard ratios of square feet per employee for office and retail tenants. Employment growth is concentrated in the North Loop and North Washington, reflecting the significantly larger build-out of these submarkets' office and retail development envelope.

Table 7: Jobs Supported, Year 25

Submarket	Retail Jobs Supported	Office Jobs Supported
North Loop	220	1,520
North Washington	-	1,760
West Broadway	20	440
Central Robbinsdale	20	440
Total	**260**	**4,160**

Source: HR&A

III. Literature Review & Case Study Findings

In order to evaluate the impact of a mixed-lane streetcar or BRT along the West Broadway corridor, a literature review was undertaken to examine the economic development impact of similar transit improvements. The review focused on three primary economic development outcomes:

- Property value;
- New development; and
- Jobs supported.

Specific results vary across studies and depend on the economic and physical context of each corridor. However, the impacts of streetcar and BRT investment in West Broadway would likely fall within the range of results demonstrated elsewhere. For streetcar literature, due to the limited number of streetcars in North America, the review also included light rail systems that operate in an urban context similar to streetcars. Due to the relative newness of BRT in North America and the timespan required to observe potential impacts, the majority of existing literature on BRT focuses on BRT systems abroad. For the purpose of estimating potential impacts in the corridor, the review was limited to studies of North American BRT systems, which provide a more comparable policy and development context.

Property Value

There is a range of academic literature and other studies examining the impact of rail and bus transit investment on property values. Existing literature has generally analyzed the impact of transit on property value in two ways:

- Measuring **one-time property value premiums** – the relative value of transit-accessible properties versus comparable, less transit-accessible properties – at a point in time; and

- Measuring the growth of this **property value premium over time** – the appreciation of transit-accessible properties relative to comparable, less transit-accessible properties over a period of years.

These two effects are interrelated facets of a dynamic process. Once a transit improvement is announced, a one-time premium is realized over baseline property values. Later, as homebuyers, renters, employers, and customers benefit from the mobility and amenity effects of transit, market demand increases and property values will continue to grow over time as the corridor becomes more established.

Light rail systems operating in an urban context similar to West Broadway have generated significant premiums for multifamily properties. Precedents suggest a similarly positive impact for commercial uses and mixed results for single family homes.

Multifamily Housing and Condominiums

- In San Diego, properties with proximity to light rail benefitted from significant value premiums, which for a point in time ranged from 2.2-6.4% for condominiums to 3.8-17.3% for multifamily housing.[2]
- Along the Minneapolis Blue Line, a University of Minnesota study found that multifamily properties in station areas command a 9% one-time premium over the median sales price in the Southeast Minneapolis submarket.[3]
- In Seattle South Lake Union, a Brookings Institute study found that streetcar-adjacent multi-family properties experienced appreciation of 51% between 2003 and 2008, compared to 48% for multi-family in the City as a whole.[4] This is equivalent to differential appreciation of 0.4% each year.
- In Downtown Portland, similar impacts were observed along the Portland Streetcar line. Between 1997 and 2008, multifamily home values increased by 205% compared to 118% for the city as a whole, equivalent to differential annual rate of appreciation of 3.3%.[5]

Single-Family Homes

- Along the Hudson-Bergen Light Rail in New Jersey, a study of multi- and single-family properties found that properties near the southern end of the line achieved an annual rate of price appreciation that was 17-20% higher than comparable, less transit-accessible properties. However, growth premiums are negligible around stations that are already well-served by transit.[6] In both cases, price premiums were limited a 0.25 mile radius.

[2] Cervero and Duncan. *Land Value Impacts of Rail Transit Services in San Diego County*, 2002.
[3] Edward G. Goetz, et al. *The Hiawatha Line: Impacts on Land Use and Residential Housing Value.* 2010.
[4] Brookings Institution, HDR, Reconnecting America, RCLCO. *Value Capture and Tax-Increment Financing Options for Streetcar Construction*. 2009.
[5] Ibid.
[6] Kim and Lahr. *The Impact of Hudson-Bergen Light Rail on Residential Property Appreciation*. 2013.

- A University of Minnesota study of the Minneapolis Blue Line identified a 3% premium for single-family homes in station areas relative to Southeast Minneapolis.[7] However, another study found a higher premium of 12% by utilizing a narrower dataset limited to repeat-sales single family homes and using the City as a whole as the control group.[8]
- Similarly in San Diego, light rail was seen as a disamenity or minimal benefit (-4.2-0.6%), suggesting that residents of single family homes value transit proximity less than those in higher density multifamily housing.[9]
- In St. Louis County, a Federal Reserve study found that single-family homes immediately adjacent to a light rail station commanded a premium of 31.3-32.7% compared to others within 1 mile, with effects completely diminished after 0.28 miles.[10]

Commercial

- A study on Santa Clara County found that office and R&D space within a quarter-mile of light rail commanded premiums of up to 14.6% relative to other properties in the County. However, the premium of transit-accessible properties was found to narrow to 5.2% in subsequent years, near the peak of the office market. The author suggested that as demand increases and supply remains generally constrained, less transit-accessible properties become more attractive to office users and the premium for transit-accessible properties decreases.[11]
- In Minneapolis, a recent study found that commercial and industrial properties benefitted from proximity to the Blue Line and that value premium is strongest within 0.25 miles, but may extend up to 0.875 miles away.[12] The study found a premium of approximately $6,000 for a property located 0.25 miles away, decreasing to $4,000 at 0.5 miles before fully disappearing at 0.875 miles.
- In Seattle South Lake Union, streetcar-adjacent office properties experienced appreciation of 58% and retail properties experienced 61% between 2003 and 208. This rate of appreciation was greater than office and retail properties in Seattle as a whole, which grew by 44% and 46% respectively. This is equivalent to an annual differential growth rate premium of 2% for office and 2.1% for retail properties.[13]
- In Downtown Portland, commercial property assessments grew by 231%, outpacing the rest of the city where commercial property value grew by 130%. This is equivalent to an annual differential growth premium of 3.6%.[14]

[7] Ibid.
[8] Kent, A., & Parilla, J.. *Did the Hiawatha Light Rail Line Increase Single-Family Residential Property Values?* 2008.
[9] Cervero and Duncan. Ibid.
[10] Garrett, Thomas. *Light-Rail Transit in America Policy Issues and Prospects for Economic Development*. 2004.
[11] Weinberger, Rachel. *Commercial Property Value and Proximity to Light Rail: A Hedonic Price Application.* 2001.
[12] Kate Ko and Xinyu Cao. *The Impact of Hiawatha Light Rail on Commercial and Industrial Property Values in Minneapolis.* 2013.
[13] Brookings Institution, HDR, Reconnecting America, RCLCO. *Value Capture and Tax-Increment Financing Options for Streetcar Construction*. 2009.
[14] Ibid.

A best-practice BRT, with dedicated lanes and other key features, can provide value premiums comparable to fixed rail, though the evidence suggests these impacts are experienced in a more confined radius around the transit corridor. Research suggests, however, that a mixed-traffic BRT similar to the one considered for West Broadway will be less impactful.

Single-family Homes

- Along the MLK East Busway in Pittsburgh, a fully dedicated-lane system, a study found an 11% premium for homes within 0.02 miles of stations versus those located more than 0.19 miles away.[15] The value premium declines with distance until it fully disappears at 0.19 miles.
- In Eugene and Springfield, Oregon, a 2012 study found that single-family homes directly adjacent to the Franklin EmX corridor, a system with dedicated lanes in parts of the corridor, sold for 10.2% higher than homes three miles away, with all other characteristics being equal.[16]

Condominiums

- Along Boston's Silver Line Washington Street corridor, a mixed-traffic service similar to the improvements under consideration for West Broadway, condos premiums were limited to a quarter mile and are the strongest within 0.16 miles of Washington Street, where condos sold for 7.6% more per square foot than those located further away.[17] This is a smaller radius compared to comparable light rail systems, whose impact may extend up to a half-mile. Between 2000 and 2009, property values grew by 52%, slightly lower than the 54% appreciation experienced by condominiums citywide, suggesting that a mixed-traffic service did not significantly enhance the corridor's attractiveness compared to the rest of the city.

Commercial

- Literature for non-residential uses are very limited but a preliminary study of commercial properties along the Eugene EmX BRT suggest positive impacts similar to residential use.[18]

[15] Federal Transit Administration and National Bus Rapid Transit Institute (Victoria A. Perk and Martin Catala). *Land Use Impacts of Bus Rapid Transit: Effects of BRT Station Proximity on Property Values along the Pittsburgh Martin Luther King, Jr. East Busway.* December 2009.
[16] Peter Hodel & Megen Ickler (University of Oregon). *The Value of Bus Rapid Transit: Hedonic Price Analysis of the EmX in Eugene, Oregon.* 2012.
[17] Federal Transit Administration and National Bus Rapid Transit Institute (Victoria A. Perk, Martin Catala, and Steven Reader). *Land Use Impacts of Bus Rapid Transit: Phase II—Effects of BRT Station Proximity on Property Values along the Boston Silver Line Washington Street Corridor.* July 2012.
[18] Eli Goodwin and Zack Snyder (University of Oregon). *Hedonic Evaluation of the Effects of EmX Routes on the Value of Commercial and Mixed Use Properties.* June 2013.

Table 8: Property Value, One-Time Premiums

System	Mode	Product Type	Value Premium
Minneapolis Blue Line	Light Rail	Multifamily	9%
Minneapolis Blue Line	Light Rail	Single Family	0-12%
San Diego Trolley Blue & Orange Line	Light Rail	Multifamily	4-17%
San Diego Trolley Blue & Orange Line	Light Rail	Condominium	2-6%
San Diego Trolley Blue & Orange Line	Light Rail	Single Family	-4-1%
Santa Clara County	Light Rail	Commercial	5-15%
St. Louis MetroLink Red Line	Light Rail	Single-family	31-33%
Boston Silver Line (Washington Street)	BRT (Mixed-traffic)	Condominium	8%
Eugene EmX (Franklin Corridor)	BRT (Semi-dedicated)	Single-family	10%
Pittsburgh East MLK Busway	BRT (Dedicated)	Single-family	11%

Source: HR&A analysis of transportation literature; Boston Silver Line impact refers premium of properties immediately adjacent to station compared to those 0.18 miles away.

Table 9: Property Value, Annualized Growth Premiums

System	Mode	Product Type	Annualized Premium	Years	End-Year Value Premium
Portland Streetcar	Streetcar	Multifamily	3.3%	11	40%
Portland Streetcar	Streetcar	Commercial	3.6%	11	44%
Seattle South Lake Union	Streetcar	Multifamily	0.4%	5	2%
Seattle South Lake Union	Streetcar	Office	2.0%	5	10%
Seattle South Lake Union	Streetcar	Retail	2.1%	5	10%
Boston Washington St. Silver Line	BRT (Mixed-traffic)	Condo	-0.2%	9	-2%

Source: HR&A analysis of transportation literature; Boston Silver Line impact refers premium of properties within 0.25 mile radius compared to the City of Boston.

New Development

Transit investment is most likely to catalyze new real estate development when coordinated with supportive public policy and in corridors with favorable market and physical conditions.

Evidence from literature

- An Institute for Transportation and Development Policy (ITDP) report comparing the real estate impact of BRT, light rail, and streetcars concluded that the strongest predictor of success for transit-oriented development is favorable local government policy, followed by the strength of the local real estate market.[19] Transit improvements, while highly visible, was a tertiary factor and serves as a catalyst for changes in public policy and private markets.
- A 2005 study commissioned by Portland Streetcar Inc. found that the blocks adjacent to the streetcar captured 55% of new development in Downtown Portland, compared to only 19% prior to the announcement of the line in 1997. However, it does not definitively assert that development would not occur "but for" the streetcar.[20] A subsequent study prepared by the City and Portland Street Inc. provides anecdotal evidence of streetcar's role in attracting private

[19] Hook, Lotshaw, and Weinstock. *More Development for your Transit Dollar: An Analysis of 21 North American Transit Corridors.* Institute for Transportation Development and Transportation Policy.
[20] Jordan and Hovee. *Portland Streetcar Development Impacts*. ED Hovee and Company, 2005.

investment, but also cites concurrent changes in zoning, parking ratios, development incentives, and the creation of public-private partnerships, as vital to facilitating reinvestment.[21]

- Past studies on North American BRT systems have also affirmed BRT's ability to encourage TOD but did not find a direct correlation to the amount of investment as it varied widely depending on public support and developer interest.[22,23,24]

Evidence from case studies

- Along Portland's Yellow Line, TriMet, Metro, Portland Housing Bureau, and Portland Development Commission coordinated policy efforts and successfully spurred market-rate and affordable development along the new line. Public actions included the provision of improved streetscapes, development incentives, and disposition of key publicly-owned sites.
- In Boston, transit was part of a broader effort to revitalize the Washington Street corridor and complemented public and private efforts to reverse disinvestment. New development primarily occurred in parts of the corridor where market demand and policy context were both favorable.

While fixed rail systems have generally been more impactful than BRT, market strength and public intervention are the strongest predictors of development regardless of transit mode.

Evidence from literature

- The Institute for Transportation and Development Policy (ITDP), as part of the report described above, assessed the amount of new development spurred by 12 BRT corridors, seven light rail corridors, and two streetcar corridors in North America. Based on this sample, ITDP found that rail investment was associated with an average of $2.2 billion in TOD, compared to only $1.4 billion of TOD for BRT. In addition, streetcars are more consistently associated with transformational real estate impacts than BRT, with both streetcar systems studied exhibiting "strong" TOD impacts, compared to only 1 out of 7 for light rail and 2 out of 12 for BRT systems studied.[25]
- ITDP found that the strongest predictor of success was not the transit mode but the degree of public policy support and market potential in the corridor. The amount of TOD and return on investment (defined as the value of TOD investment compared to the capital cost of the new transit service) ranged widely for both rail and bus modes and were primarily driven by the most successful precedents (e.g. Portland Streetcar and Seattle South Lake Union Streetcar for rail; Cleveland HealthLine and Kansas City Main Street MAX for BRT).[26]

---

[21] City of Portland Office of Transportation and Portland Streetcar Inc.. *Portland Streetcar: Development Oriented Transit*. 2008.
[22] Breakthrough Technologies Institute. *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.
[23] Transportation Research Board. *Bus Rapid Transit Volume 1: Case Studies in Bus Rapid Transit*. 2003.
[24] Federal Transit Administration and National Bus Rapid Transit Institute (Cheryl Thole and Joseph Samus). *Bus Rapid Transit and Development: Policies and Practices that Affect Development Around Transit.* December 2009.
[25] Hook, Lotshaw, and Weinstock. Ibid.
[26] Ibid.

Evidence from case studies

- In Denver, very limited development occurred along the D Line until the City and the Five Points community created a supportive policy environment, which included a new zoning code, business improvement district, financial incentives, and provision of publicly-owned land for public-private development. Policy changes also coincided with growing market demand and successfully spurred new development in the Five Points neighborhood.

In corridors where market demand is weak or untested, institutional and philanthropic commitments can provide a powerful catalyst for redevelopment.

Evidence from literature

- Per ITDP's analysis of the Cleveland HealthLine BRT, the vast majority of development along the corridor is located in Downtown and University Circle, with at least half of the projects built for major institutions such as Cleveland State University, Case Western University, or the Cleveland Clinic. Local foundations, including the Cleveland Foundation, George Gund Foundation, Ford Foundation, and Mandel Foundation, have also facilitated redevelopment through their funding of locally active community development corporations.[27]
- Similarly in Seattle, the Brookings Institute noted that prior to the streetcar's opening, South Lake Union was perceived as too distant from Downtown and an untested market for development. The planned relocation of Amazon was a major driver of streetcar-adjacent development as it provided an employment anchor in the new district and created significant spillover demand for office and residential use.[28] The area also benefitted from major investments from the University of Washington, which developed a new medical and biotech campus, and Paul Allen, a philanthropist and major landowner in the area, who provided funds for new medical research facilities and led fundraising efforts for a new signature lakefront park.

Evidence from case studies

- In Kansas City, development along the Troost MAX BRT was primarily driven by major institutions such as UMKC, Rockhurst University, and major hospitals in Hospital Hill. These institutions also served as key partners for providing community services aligned with their institutional missions (e.g. healthcare, education). In parts of the corridor where market demand and institutional presence is weak, new developments were smaller and not oriented towards transit.

[27] Hook, Lotshaw, and Weinstock. Ibid.
[28] Brookings Institution, HDR, Reconnecting America, RCLCO. Ibid.

Jobs Supported

Transit can enhance the attractiveness of a corridor to potential employers, but rarely catalyze significant employment growth outside of Downtown and existing employment centers.

Evidence from literature

- Recent literature from the Metropolitan Policy Program at Brookings Institute and the Center for Transit-Oriented Development have identified growing employer demand for transit-accessible locations, particularly from firms in knowledge-based industries.[29,30]
- This trend is confirmed by a Public Policy Institute of California study, which found a correlation between the construction of new transit stations situated in high density, transit under-served areas and faster employment growth.[31]
- Employers in the Twin Cities region have affirmed this preference, citing transit access as beneficial for recruiting new talent, particularly highly-skilled young professionals.[32]

Evidence from case studies

- Along Portland's Yellow Line and Denver's D Line light rail corridors, new development has primarily focused on residential and locally-serving commercial uses (e.g. medical office, small retail businesses).
- Similar effects were observed along the Boston Silver Line BRT, where new transit provided improved access to existing employment centers but did catalyze significant employment growth in other parts of the line.
- Along the Kansas City Troost MAX, employment growth outside of Downtown is largely driven by major institutional presence in Brush Creek and Hospital Hill. However, existing businesses reported positive impacts on foot traffic and access to employees.

Twin Cities firms consider a wide range of criteria when locating or expanding. Transit is one of many criteria but can enhance a location's long-term competitiveness.

Evidence from literature

- Twin Cities business leaders, as part of a series of interviews conducted by the University of Minnesota Center for Transportation Studies, cited transit as an attractive amenity and a crucial tiebreaker between two similar sites. However, firms generally do not select a location solely or primarily because of transit access. Location criteria are industry-specific and driven by preexisting preferences, which may be influenced by existing business ties and the location of current and potential employees. However, transit will become increasingly important for a location's long-term competitiveness, as the transit network continues to expand and as Millennial workers become a larger percentage of the workforce.[33]

[29] "Where the Jobs Are: Employer Access to Labor by Transit." Metropolitan Policy Program at Brookings, 2012.
[30] "Transit and Regional Economic Development." Center for Transit-Oriented Development, 2012.
[31] "Making the Most of Transit: Density, Employment Growth and Ridership around New Stations." Public Policy Institute of America, 2012.
[32] Corridors of Opportunity. *Research on How to Achieve System-Level, Transit Oriented Jobs-Housing Balance.* May 2013.
[33] Center for Transportation Studies, University of Minnesota. *Spurring Private-Sector Development Transit Corridors*. 2013.

IV. Developer Interview Findings

In order to gain insights from the development community, this study included interviews with nine local real estate developers. These interviews provided an opportunity to understand developer perceptions of the value to real estate development along the corridor of a streetcar or BRT investment. Recruitment for these interviews focused on developers with prior experience working along the corridor or elsewhere in North Minneapolis, or working in submarkets elsewhere in the Twin Cities with comparable socioeconomic characteristics. Developers were asked a standard set of questions to provide a structure to these interviews and allow for the understanding of patterns of responses.

Absent an investment in transit, developers perceive substantially different future development trajectories for the North Loop versus other submarkets along the corridor.

- **North Loop:** Developers note that the North Loop has been amongst the most successful submarkets in Minneapolis in recent years, and expect development to continue assuming favorable macroeconomic conditions. Two developers active in the submarket noted they expect the North Loop to be largely built-out within 15 years regardless of transit investment.
- **North Washington Jobs Park:** Developers familiar with the area note that there is moderate interest in future office development for the area. The area's development potential is significantly constrained by environmental remediation needs and legacy industrial property ownership.
- **West Broadway:** Developers note that the West Broadway submarket does not currently support market rate development, and will likely require significant interventions (such as the introduction of major employment anchors or streetscaping improvements) to change perceptions of the area and encourage redevelopment. One developer noted that even regulated affordable development is becoming saturated in this submarket and may not be likely to continue at the same pace as in recent years.
- **Central Robbinsdale:** Relatively few of the developers were familiar with Robbinsdale in comparison to the other submarkets. Developers active in the submarket note that development currently requires a moderate subsidy in order to be financially feasible. With a positive submarket trajectory and some larger redevelopment opportunities remaining, the pace of redevelopment is likely to quicken and feature more mid-rise development.

While developers generally believe both streetcar and BRT could positively affect the corridor's development trajectory, 6 out of 9 developers interviewed believe a streetcar would be more transformative. The other 3 developers believed the modes would have an equal positive impact. No developers believed a BRT would lead to stronger development outcomes than a streetcar investment.

- **Impact on Absorption and Rents:** Developers believe transit investment would serve to increase market demand, increasing potential rents and driving a faster pace and quantity of development. Although most developers had difficulty predicting the comparative extent of this outcome for a BRT versus a streetcar investment, one developer believed streetcar would drive

twice the impact of BRT in terms of a real estate value premium and the quantity of new development encouraged; another believed streetcar would drive a 40% premium over the impact of the BRT; two believed that in contrast to streetcar, BRT would have no impact on development value, quantity, or pace.

- **Permanence of Infrastructure:** Developers that believed streetcar would have a larger impact on corridor real estate development consistently cited the permanence of the infrastructure as a driving factor in their assessment. The magnitude and permanence of investment gives confidence to developers and lenders in the longevity of the infrastructure. Some developers perceived the streetcar as a more "upscale" investment that will add value to the corridor's place-making. The 3 developers that perceived an equal impact of streetcar and BRT all emphasized that they assume the quality of the BRT stations and other infrastructure would be identical to what would be offered for a streetcar.

Developers perceive transit would impact the development trajectories of each submarket differently, with West Broadway standing to benefit but cautioning that transit is not a "silver bullet."

- **North Loop:** Developers active in the North Loop believe that streetcar would offer a strong amenity that could drive higher rents and more density as the submarket builds out, but were divided about the effect of BRT; two developers believed the BRT would not have an impact on the submarket's development trajectory. Given the existing amenities in the North Loop, current bus service, and proximity to Downtown, the addition of BRT service was not considered a significant value add by these developers.
- **North Washington Jobs Park:** Developers familiar with the area note that streetcar could be an important contributor to the build-out of office uses in the submarket. While BRT would also benefit the submarket, it is perceived to have less of an ability to catalyze fundamental changes in the industrial land use patterns of the submarket because it would not be as attractive to end-users.
- **West Broadway:** Developers note that transit could provide a meaningful amenity to submarket residents, but it must be paired with other interventions to change neighborhood conditions. One developer summed up this sentiment by noting that "transit is one of the top 10 factors that could change West Broadway, but not one of the top 5." Pairing a transit investment with other place-making amenities and targeting soft sites and assembling land in the submarket for anchor employment uses could be part of a broader intervention to help improve neighborhood conditions. While transit would inspire some developers not active in the West Broadway market to more closely consider development opportunities there, most would wait on other development to occur before being confident enough to develop in the area.
- **Central Robbinsdale:** Developers familiar with Central Robbinsdale believe the BRT will be a valuable transit amenity that enables good access to important employment hubs like North Memorial Medical Center. It would serve to complement the Blue Line in enhancing Robbinsdale's attractiveness to development within the metropolitan area.

V. BRT and Streetcar Development Scenarios

Transit investment can be an important factor in facilitating new development because it improves the ***mobility*** of residents and workers in the area and provides a place-making ***amenity*** by improving the public realm and branding of a corridor. These mobility and place-making benefits will in turn attract new residents and businesses, thereby boosting demand for real estate and increasing rents/sales prices of residential, office, and retail properties. This increasing market interest in turn drives development as developers perceive that the income produced by new market rate property will justify the costs associated with new development.

Analyzing the impact of BRT and streetcar service requires developing assumptions for each mode's impact on existing property value, the quantity and pace of new development, and the number of new jobs supported. Assumptions were developed initially based on findings from the national literature review and case study analysis. To translate these findings to the local context, the assumptions were refined by engaging the local development community and assessing their perceptions of BRT and streetcar impacts.

Property Value Impacts

As discussed in the literature review, transit improvements generate a property value premium that frequently grows in magnitude over time in a virtuous cycle as the transit amenity attracts new development and enhances the quality of the public realm. Past precedents suggest that streetcars generally provide a higher value premium and growth over time than BRT. Specifically for multifamily housing, streetcars and comparable light rail systems in San Diego and Minneapolis have generated value premiums ranging from 2.2% to 17.3%. BRT systems in Boston, Eugene, and Pittsburgh have generated value premiums ranging from 7.6% to 11%, but in each case these premiums were observed for properties within a narrow radius of the alignment. Studies that examined the maturation of transit premiums over a longer time period found more significant benefits from streetcar than BRT, with multifamily and commercial properties near streetcar achieving a 40% premium over other properties in Portland, and retail and office properties adjacent to streetcar in Seattle achieving a 10% premium over other properties in Seattle. By contrast, condominiums along the Boston Washington Street Silver Line did not achieve a value premium relative to other condominiums in the city nine years after the line's implementation.

Amongst developers interviewed for this study, 6 out of 9 believed streetcar would offer a stronger value premium than BRT, in large part due to the permanence of the infrastructure and attractiveness of the rail mode to consumers. Amongst those that attempted to quantify the relative difference between the two, one developer believed streetcar would drive twice the impact of BRT; another believed streetcar would drive a 40% premium over the impact of the BRT; and two believed that BRT would have no impact on development value.

Based the results of the literature review and developer feedback, the Team's model assumes that BRT-accessible properties would achieve an initial 2.5% premium over the baseline condition at implementation, growing to a 4.0% premium ten years after implementation. The model assumes that

streetcar-accessible properties would achieve a 5.0% premium over the baseline condition at implementation, growing to an 8.0% premium ten years after implementation, with the exception of Central Robbinsdale since the streetcar would not extend north of North Memorial Medical Center. These premiums are assumed to be constant across uses given the lack of conclusive evidence that differential value premiums should be expected for residential, office, and retail properties. These value premiums are in addition to the baseline appreciation described in Table 2.

Table 10: Estimated Property Value Premiums (Above Baseline), Year 1 and Year 10

	BRT			Streetcar		
	Residential	Retail	Office	Residential	Retail	Office
Year 1	2.5%	2.5%	2.5%	5.0%	5.0%	5.0%
Year 10	4.0%	4.0%	4.0%	8.0%	8.0%	8.0%

Source: HR&A

New Development Impacts

Property value premiums that accrue from the transit investment will enhance development feasibility and accelerate the build-out of the development envelope described in Table 1. Under baseline conditions, the corridor is expected to support 8,050 residential units over 25 years.

Evidence from the case studies suggests streetcar will drive a larger impact than BRT, although both modes could impact development outcomes. For instance, the Boston Silver Line and Kansas City Troost MAX are two comparable BRT systems in terms of their market context and quality of service (e.g. generally mixed-traffic, lower service frequencies). In both cases, observed economic development impacts concentrated in nodes already primed for redevelopment, versus the more dispersed impacts observed for the fixed rail precedents in Portland and Denver.

As noted above, the majority of local developers interviewed for this study believe that both streetcar and BRT will serve to increase the pace and quantity of development along the corridor. However, most of these developers do expect that streetcar would be more influential in attracting development given the attractiveness of the more permanent streetcar infrastructure to developers and investors. Developers active in the North Loop in particular are more uniform in their expectation that streetcar implementation will lead to greater development build-out; some developers active in the submarket expect BRT would have a minimal impact on the North Loop.

This study projects that either BRT or streetcar would accelerate development along the corridor compared with the baseline scenario. This occurs because value premiums serve to (1) accelerate the financial feasibility of market-rate development in submarkets where it is not yet feasible (West Broadway) or marginally feasible (Central Robbinsdale), and (2) provide developers greater confidence in delivering denser products in submarkets where market-rate development is already feasible (North Loop). Under the BRT scenario, the corridor is anticipated to achieve a build-out of 8,550 residential units, an increased 25-year build-out of 6%. For the streetcar scenario, the corridor is anticipated to achieve build-out of 9,300 residential units, an increase of 16% over the build-out anticipated in the baseline scenario. The West Broadway submarket is anticipated to achieve a 16% greater residential

build-out over baseline conditions with BRT and 40% greater residential build-out over baseline conditions with streetcar.

Table 11: Projected New Residential Development within 25 Years (With Transit Improvements)

	Baseline		BRT		Streetcar	
Submarket	Percent Achieved	Build-Out (Units)	Percent Achieved	Build-Out (Units)	Percent Achieved	Build-Out (Units)
North Loop	85%	6,350	88%	6,550	95%	7,100
West Broadway	50%	1,250	58%	1,450	70%	1,750
Central Robbinsdale	70%	450	80%	550	70%	450
Total	**75%**	**8,050**	**80%**	**8,550**	**88%**	**9,300**

Note: Under current zoning, North Washington is not anticipated to accommodate any residential growth.

Source: HR&A

BRT and streetcar would both increase office build-out along the corridor. Under baseline conditions, the corridor is projected to achieve build-out of 939,000 square feet of office space. The introduction of BRT or streetcar would improve business access and help attract market-rate development. Under the BRT scenario, the corridor is expected to achieve a build-out of 1.18 million square feet, 25% higher versus the baseline. With the provision of streetcar, 1.52 million square feet of build-out is anticipated, 62% higher compared to the baseline.

Table 12: Projected New Office Development within 25 Years (With Transit Improvements)

	Baseline		BRT		Streetcar	
Submarket	Percent Achieved	Build-Out (SF)	Percent Achieved	Build-Out (SF)	Percent Achieved	Build-Out (SF)
North Loop	29%	342,000	37%	432,000	49%	581,000
North Washington	30%	395,000	38%	494,000	50%	659,000
West Broadway	26%	101,000	34%	130,000	46%	178,000
Central Robbinsdale	48%	101,000	58%	121,000	48%	101,000
Total	**30%**	**939,000**	**38%**	**1,177,000**	**49%**	**1,519,000**

Source: HR&A

Retail development is assumed to be delivered primarily as ground floor space in residential developments. Under the baseline scenario, the corridor is expected to support 144,000 square of retail development over 25 years. Due the accelerated pace of residential build-out with the provision of transit, the corridor is anticipated to support 151,000 square feet of retail with BRT improvements and 164,000 square feet of retail with streetcar improvements. This represents an increased build-out over the baseline of 5% and 14%, respectively, over 25 years. Similar to residential use, the majority of retail build-out will occur in the North Loop, whereas West Broadway and Central Robbinsdale have much smaller retail capacity.

Table 13: Projected New Retail Development within 25 Years (With Transit Improvements)

	Baseline		BRT		Streetcar	
Submarket	Percent Achieved	Build-Out (SF)	Percent Achieved	Build-Out (SF)	Percent Achieved	Build-Out (SF)
North Loop	85%	117,000	88%	120,000	95%	131,000
West Broadway	50%	12,000	57%	14,000	70%	17,000
Central Robbinsdale	70%	15,000	80%	17,000	70%	15,000
Total	**57%**	**144,000**	**60%**	**151,000**	**64%**	**164,000**

Note: North Washington is not anticipated to accommodate any retail growth.

Source: HR&A

The build-out of new residential, retail, and office uses described above will occur over 25 years. Reflecting findings from the case studies and developer engagement, the model assumes a faster pace of build-out under streetcar, with the exception of Central Robbinsdale since the streetcar would not extend north of North Memorial Medical Center.

Table 14: North Loop Development Pace (Annual Portion of 25-Year Build-out)

Mode	Years 1-5	Years 6-10	Years 11-15	Years 16-20	Years 21-25
BRT	3.5%	4.0%	4.5%	4.5%	3.5%
Streetcar	4.0%	4.5%	5.0%	3.5%	3.0%

Source: HR&A

Table 15: North Washington and West Broadway Development Pace (Annual Portion of 25-Year Build-out)

Mode	Years 1-5	Years 6-10	Years 11-15	Years 16-20	Years 21-25
BRT	2.5%	3.0%	4.5%	5.0%	5.0%
Streetcar	3.0%	3.5%	5.0%	4.5%	4.0%

Source: HR&A

Table 16: Central Robbinsdale Development Pace (Annual Portion of 25-Year Build-out)

Mode	Years 1-5	Years 6-10	Years 11-15	Years 16-20	Years 21-25
BRT	2.5%	3.0%	4.5%	5.0%	5.0%
Streetcar (Baseline)	2.0%	2.5%	3.5%	5.5%	6.5%

Source: HR&A

Economic Development Benefits Findings

Over 25 years, a BRT service will generate approximately $220-300 million in incremental real estate value for the West Broadway corridor over baseline conditions. A streetcar is expected to generate $480-640 million in real estate value over and above baseline conditions. It is important to note that property value serves as a proxy for larger economic development benefits as changes in neighborhood desirability, quality of the public realm, local environmental benefits, place-making features, and connectivity are all ultimately capitalized into the value of surrounding real estate.

Table 17: Incremental Real Estate Value Created by BRT and Streetcar ($M)

	BRT	Streetcar
Incremental Value	$220-300	$480-640

Notes: Assumes 7% discount rate for lower end and 3% discount rate for higher end of future incremental benefits
Source: HR&A

By Year 25 (2040), a BRT will support 1,075 new jobs along the West Broadway corridor, over and above the number of jobs under baseline conditions. A streetcar is expected to generate 2,600 incremental jobs over baseline conditions. In addition to the real estate value generated, new transit investment is also expected to support incremental job creation because it allows the corridor to attract more new office and retail development than would have occurred under baseline conditions. The majority of incremental employment generated will be within office-using industries, which generally provide higher wages and benefits than retail employment. Employment impacts will be concentrated within the North Loop and North Washington Jobs Park, the submarkets with the strongest policy and market support for commercial uses.

Table 18: Incremental Jobs Supported by BRT and Streetcar (Year 25)

Submarket	BRT	Streetcar
Office Jobs Supported	1,050	2,575
Retail Jobs Supported	25	25
Total	**1,075**	**2,600**

Source: HR&A

Table 19: Incremental Jobs Supported by BRT and Streetcar, by Neighborhood (Year 25)

Submarket	BRT	Streetcar
North Loop	400	1,075
North Washington	450	1,175
West Broadway	125	350
Central Robbinsdale	100	-
Total	**1,075**	**2,600**

Note: Central Robbinsdale is not anticipated to experience any incremental employment growth under the streetcar scenario as the streetcar will not extend north of North Memorial Medical Center.
Source: HR&A

Appendix: Transit Economic Development Impacts Case Studies

Case Study: Portland Yellow Line

Transit and Neighborhood Characteristics

The Yellow Line is part of TriMet's Metropolitan Area Express (MAX) system, Portland's light rail system. The Yellow Line project was originally planned in the 1990s to create a north-south rail connection between Portland and Vancouver, Washington, but voters in Washington rejected the proposal, so only the portion of the line in Portland was implemented.[2] While a bus route already served the corridor within Portland, as is the case in North Minneapolis, the north-south rail project eventually gained traction.

	System Overview
Year Completed	2004
Length of Route	5.8 miles
Right of Way	Operates in Dedicated Lane
Headway Time	15 minutes
Station Spacing	0.5 mile (average outside of downtown)
Average Weekday Trips	15,100[1]
Cost	$442M (2015$)

Construction began in 2000 and the Yellow Line opened in 2004. The Yellow Line is a light rail system that runs in a dedicated right-of-way, largely along Interstate Avenue. Tickets for the system are purchased off-board, with TriMet staff conducting periodic checks for tickets on-board. Its peak headway times is 15 minutes; off-peak headways are as long as 35 minutes. A key goal of the transit line was to spur business and real estate development, while minimizing displacement.

Like some of the neighborhoods along West Broadway, the neighborhoods along the Yellow Line corridor have historically been lower income in comparison to the rest of Portland, with a large percentage of minority residents.[3] The Yellow Line originates at the Portland Transit Mall in Downtown Portland. Traveling north from the Transit Mall, the Yellow line crosses the Willamette River, passing through the neighborhoods of Eliot, Overlook, Arbor Lodge, and Kenton before ending at the Portland Expo Center. The portion of Eliot located along the corridor is a historic industrial district that today contains some industrials uses, but is also a thriving retail district, with gastropubs, bars, and independent retailers. The community in the Albina area has a history of being negatively impacted and

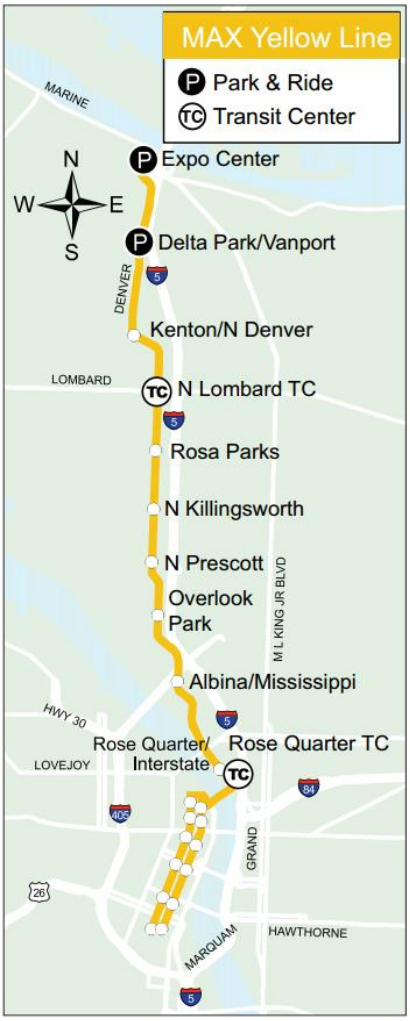
[1] 2014 Estimate. TriMet, "Nearly 46 Million Rides during 10 Years of MAX Yellow Line Service." May 1, 2014.
[2] TriMet, "Interstate MAX: Yellow Line Factsheet."
[3] The neighborhoods of Eliot, Overlook, Arbor Lodge, and Kenton are encompassed within the Albina Area, which has been an area of Portland that historically has had a large African American community.

displaced by urban renewal efforts.[4] Many of the businesses along the corridor are small, owner-operated businesses.[5]

Economic Development Impacts

Real Estate and Development Impacts

Multifamily development has accelerated along the corridor, including both rental and owner occupied. Prior to the Yellow Line, the housing stock along the corridor consisted primarily of single-family homes. The first mixed-use development along the corridor, the Overlook, was completed in 2007 and contains 30 market-rate condominiums.[6] Between 2004 and 2014, over 360 new housing units were developed throughout the corridor, the majority of which have been market-rate.[7] Like the rest of the nation, residential development stalled during the Great Recession.



The public sector has orchestrated the production of affordable housing along the corridor. Construction of the Yellow Line came in under budget. As a result, TriMet had funds left over that it dedicated towards affordable, transit-oriented development, specifically, planning and site acquisition.[8] A TriMet site, Patton Park, became the area's first affordable housing development in 2009. A second TriMet site has not yet been developed. An RFP was issued by the Portland Development Commission (PDC) in partnership with TriMet in the fall of 2014 for design and market feasibility analyses for affordable, mixed-use development for three sites along the corridor.[9]

Employment and Other Benefits

The corridor has seen increases in jobs and new business, as well as a decrease in crime. In the first five years of the line being open, 900 jobs were created along the corridor.[10] Between 2004 and 2014, despite the onset of the Great Recession, the total number of businesses along the Yellow Line increased by approximately 16%.[11] New commercial development includes a new grocery store, medical clinic and medical offices, and many small businesses.[12] Crime in the neighborhoods north of downtown,

[4] City of Portland Office of Transportation, "Interstate Corridor Community Involvement."
[5] TriMet, "Community Building Sourcebook, Portland, Oregon," December 2007.
[6] TriMet, "Interstate MAX: Yellow Line Factsheet."
[7] TriMet, "Nearly 46 Million Rides during 10 Years of MAX Yellow Line Service." May 1, 2014.
[8] TriMet, "Community Building Sourcebook, Portland, Oregon," December 2007. p. 1-6.
[9] Portland Development Commission, "Request of Proposals #14-06."
[10] Sherwood, Courtney, "Light Rail: Blight or Bliss?" *The Columbian*, June 10, 2013.
[11] TriMet, "10 Years of MAX Yellow Line," April 30, 2014.
[12] TriMet, "Interstate MAX: Yellow Line Factsheet."

as measured by calls to the police, decreased by approximately 25% over six years after the Yellow Line was developed, even as the population of the area grew by approximately 1,500 people.[13]

Supportive Public Policies

The City, through the Portland Development Commission, created the Interstate Corridor Urban Renewal Area that laid the framework for planning in the corridor, focusing on an inclusive community planning process that emphasized the needs of existing residents.

The Prescott, completed in 2014, is a market-rate multifamily development along the corridor.

As is a concern in Minneapolis, the community was very concerned that this transit line would spur displacement of existing residents. A variety of policy tools were implemented in an attempt to minimize displacement. For example, the Portland Housing Bureau's Down Payment Assistance Program, in partnership with the Minority Homeownership Assistance Collaborative, provide low to moderate-income, first-time homeowners with a low-interest loan for down payments on homes located in the Urban Renewal Area.[14] In 2006, the City of Portland adopted an ordinance that dedicates thirty percent of new property tax revenue in urban renewal areas, including the Interstate URA along the corridor, to the development of affordable housing.[15, 16] Despite policy efforts, the corridor has experienced gentrification and some displacement of existing residents.[17]

The business community was concerned that the construction of the Yellow Line would negatively affect businesses along the corridor. To mitigate this concern, TriMet created the Interstate MAX Business Support, which consisted of a marketing campaign to draw customers to the area during construction.[18] The urban renewal area also funded subsidized loan programs for local businesses.

Significant emphasis was placed on streetscape improvements, with the goal of making Interstate Avenue more pedestrian friendly. Moreover, a public art process was undertaken along the corridor allowing local artists to develop art elements for each of the stations reflecting nearby communities.[19]

Finally, Oregon's regional government Metro supports new development along the corridor through TOD incentives. For example, the Prescott received $400,000 in TOD funding.[20] In order to qualify,

[13] Sherwood, Courtney, "Light Rail: Blight or Bliss?" *The Columbian*, June 10, 2013.
[14] Portland Housing Bureau, "Down Payment Assistance Loan."
[15] TriMet, "10 Years of MAX Yellow Line," April 30, 2014.
[16] City of Portland, History of TIF Set-Aside Policy
[17] Jake Thomas, "Interstate and Beyond: Lessons of History Resonate," Street Roots News, July 5, 2011.
[18] TriMet, "Livable Portland: Land Use and Transportation Initiatives." November 2010. p. 89.
[19] TriMet, "Community Building Sourcebook, Portland, Oregon," December 2007. p. 4-15.

projects must not have sufficient funding from other sources in order for the development to be completed.[21]

Key Takeaways for West Broadway

- New rail transit investment that complements existing bus service has the potential to help significantly enhance development dynamics along the West Broadway corridor, and potentially accelerate the delivery of market-rate real estate development.
- The potential for market-rate development will depend on several factors including a supportive public policy regime and a favorable macroeconomic climate for development within the Twin Cities. TOD incentives and other public subsidies will likely still be required to incentivize new market-rate development along the corridor where it is not feasible today, including in Robbinsdale and the West Broadway neighborhoods.
- Rail transit investment that enhances the quality of the public realm can also facilitate the success of ground-floor retail and businesses along West Broadway that would benefit from improved neighborhood conditions. Complementary public policies put in place before construction of the new transit line in Minneapolis can help to mitigate construction disruption and business displacement along the corridor.

Sources

City of Portland Office of Transportation, "Interstate Corridor Community Involvement." <http://www.portlandoregon.gov/transportation/article/370305>.

City of Portland, History of TIF Set-Aside Policy. <https://www.portlandoregon.gov/phb/article/428250>.

Metro, "Transit-Oriented Development: Project Investment Criteria," August 2012. <http://www.oregonmetro.gov/sites/default/files/14071_tod_investment_criteria_aug2012.pdf>.

Portland Development Commission, "Request of Proposals #14-06." <http://vmw.pdc.us/pdf/rfps/2014/rfp-14-06.pdf>.

Portland Housing Bureau, "Down Payment Assistance Loan." <https://www.portlandoregon.gov/phb/61007>.

Sherwood, Courtney, "Light Rail: Blight or Bliss?" *The Columbian*, June 10, 2013. <http://www.columbian.com/news/2013/jun/10/light-rail-blight-or-bliss/>.

Simas, Molly, "Take Two: Prescott Apartments to Open Next Month after Project's Long Hiatus," *Metro News*, November 5, 2013. <http://www.oregonmetro.gov/news/take-two-prescott-apartments-to-open-next-month-after-project-s-long-hiatus>.

Thomas, Jake, "Interstate and Beyond: Lessons of History Resonate as the City Prepares to Expand Urban Renewal Area," Street Roots News, July 5, 2011. < http://news.streetroots.org/2011/07/05/interstate-and-beyond-lessons-history-resonate-city-prepares-expand-urban-renewal-area>.

TriMet, "10 Years of MAX Yellow Line," April 30, 2014. <http://news.trimet.org/wordpress/wp-content/uploads/2014/05/TRIMET-YellowLine_Combined_-sm.pdf>.

TriMet, "Community Building Sourcebook, Portland, Oregon," December 2007.

TriMet, "Interstate MAX: Yellow Line Factsheet." <http://trimet.org/pdfs/history/railfactsheet-interstate.pdf>.

TriMet, "Interstate MAX Yellow Line Project History." <http://trimet.org/about/history/yellowline.htm>.

TriMet, "Livable Portland: Land Use and Transportation Initiatives." November 2010.

TriMet, "Nearly 46 Million Rides during 10 Years of MAX Yellow Line Service." May 1, 2014. <http://news.trimet.org/2014/05/nearly-46-million-rides-during-10-years-of-max-yellow-line-service/>.

---

[20] Simas, Molly, "Take Two: Prescott Apartments to Open Next Month after Project's Long Hiatus," *Metro News*, Nov. 5, 2013.
[21] Metro, "Transit-Oriented Development: Project Investment Criteria," August 2012.

Case Study: Denver D Line

Transit and Neighborhood Characteristics

	System Overview
Year Completed	1994
Length of Route	5.3 miles
Right of Way	Operates in Dedicated Lane
Headway Time	15 minutes
Station Spacing	0.4 mile
Average Weekday Trips	26,800[22]
Cost	$188M (2015$)

The D Line on the Central Corridor is part of Denver's Regional Transportation District's (RTD) light rail network. The Central Corridor was Denver's first light rail line, creating a 5.3 mile "spine" of Denver's light rail system.[23] The project was funded by RTD through its existing sales tax and capital reserve.[24] The Central Corridor was developed after approximately 25 years of debate in the region about light rail, with the idea of starting small and building an effective transit line that sets a strong precedent for light rail investment in the future.[25] Other light rail lines have since been introduced to the region, including an extension of the D Line through the Southwest Corridor in 2000.

While the Central Corridor operates in a dedicated lane, its operational characteristics vary substantially in different parts of the alignment. In the area north of downtown that is the subject of this case study, the line is a single, dedicated track. Headways north of downtown and in Five Points are always fifteen minutes. Once in downtown, the line operates along the downtown streets, in its own dedicated lane. South of downtown, the line runs on a separated grade from the adjacent streets and is able to travel up to 55 mph. In Downtown Denver and the southern portion of the corridor, peak headways are as frequent as every three to four minutes.[26]

Like the neighborhoods along West Broadway in North Minneapolis, the Five Points neighborhood along the Central Corridor has historically had a significant African-American population. The Central Corridor connects the Five Points neighborhood to Downtown Denver and travels south to the Auraria campus, which is home to two different universities and a college, and ends at Interstate 25 and Broadway Station. Five Points is one of the oldest neighborhoods in Denver and is known for its cultural history with famous clubs at which nationally known jazz musicians would perform. After World War II,

[22] 2011 estimate that combines the D and C line. RTD, Southwest Corridor Light Rail.
[23] Although the D line has since been extended, this case study focuses on the 5.3 mile light rail line that was built in 1994 that runs from Five Points, through downtown Denver, and to Broadway Station and Interstate 25.
[24] RTD, Central Corridor Light Rail Line, System Overview.
[25] Transportation Research Board. "Seventh National Conference on Light Rail Transit: Baltimore, Maryland," November 12-15, 1995, Volume 1. p. 86.
[26] RTD, Central Corridor Light Rail Line, System Overview.

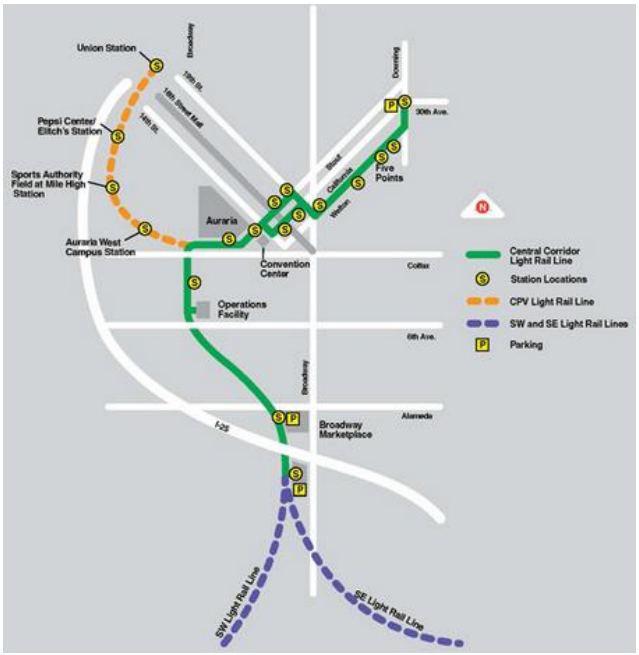
the area was a prosperous, predominantly black community that some refer to as the "Harlem of the West."[27] In the 1970s, the area began to decline as people began to move out, businesses closed, and crime increased.[28]

Economic Development Impacts

Real Estate and Development Impacts

Between 1994, when the line opened, and 2000, there was almost no change to development in Five Points and very limited development activity along the Central Corridor, in particular, Five Points. When the Line opened in 1994, there was little focus on *incentivizing* transit-oriented development. In 1995, the City created the Light Rail Station Area Development Program. Through this, the City worked with stakeholders in the Five Points area to develop a concept and implementation plan for development around the station areas. However, implementation did not include typical TOD incentives or support, such as rezoning, land assembly, or expedited permitting.[29] Prior to 2010, RTD's focus on TOD focused on marketing TOD as a preferred form of development rather than supporting or incentivizing its implementation. The limited market-driven policy approaches could be seen in Five Points, with little new development occurring.

Development along the corridor has been mixed-use, following the patterns of development in the broader Denver area. One of the first major developments was the Point, which was completed in 2002 and features both for-sale market-rate units and affordable rental units, as well as ground floor retail.[30]

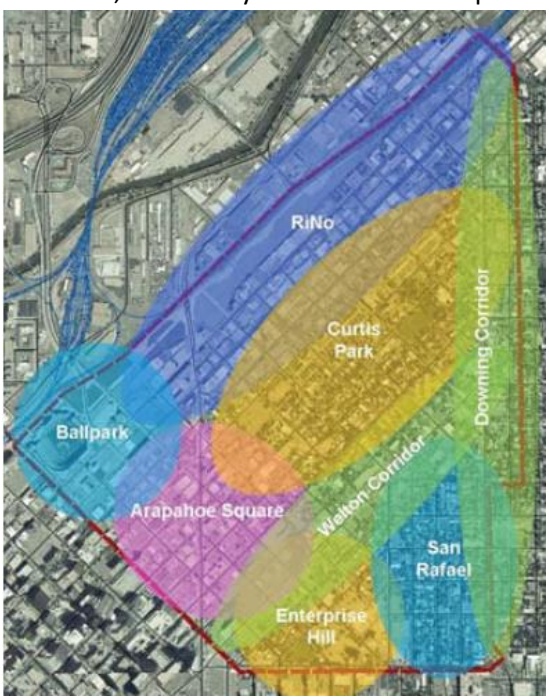


While development in Five Points began in the early 2000s with some subsidized housing, market-rate development has taken off since 2010. As of October of 2014, the total value of planned and projects under construction was $150 million.[31] This development along the corridor is attributed to planning efforts and zoning changes made between 2010 and 2013, as well as the nationwide trend of favorable development dynamics in urban neighborhoods. These dynamics are especially prevalent in Denver, which was the second fastest growing large U.S. city between 2010 and 2013.[32] As of 2013, Five Points was the fourth fastest growing

[27] Visit Denver, "Five Points."
[28] Grow Denver, "Five Points District Development Plan," October 2009.
[29] City of Seattle, Department of Transportation. TOD Case Studies, Denver. p. 34. (1998).
[30] Grow Denver, "Five Points District Development Plan," October 2009.
[31] Raabe, Steve. "Rossonian Hotel Team Plans 26 Brownstone Units in Denver's Five Points," The Denver Post.
[32] Balk, Gene, "Seattle no longer America's fastest-growing big city." Seattle Times, May 21, 2015.

neighborhood in Denver.[33] However, the majority of this growth was outside of the light rail corridor. Because of Five Points' location in close proximity to Downtown Denver, it was poised to be a popular district for urban growth.

Recent development in the area includes affordable and mixed-income housing. The Wheatley, which will be located adjacent to the light rail station at 25th and Welton, is a luxury mixed-use development with 82 apartments, 18 of which will be affordable at 80% AMI, and 14 townhomes and ground floor retail. This development received a local design grant created to incentivize development along the Welton Corridor, as well as a loan from the Denver Office of Economic Development.[34] 2300 Welton recently broke ground and will contain 223 units with rents set at 60% of AMI.[35]



The Rossonian Hotel, adjacent to the D Line, is a historic hotel with a famous jazz club in the Five Points neighborhood that has been described as "a place that brought the black community together."[36] The hotel has not been active since the 1970s. Today, developers have proposed converting the building into a 26-unit townhome complex.

Employment and Other Benefits

The light rail has not yet catalyzed significant job creation in Five Points. Development along the corridor has been primarily residential, although there has recently been some small, proposed office components of mixed-use projects. Furthermore, because of long headway times in Five Points and relatively low ridership in the Northern portion of the corridor, it is unclear if the system as improved access to jobs in downtown Denver.

Supportive Public Policies

By 2010, concerted efforts began to incentivize TOD. The City and Five Points community developed a community vision plan, a neighborhood plan, and new TOD-focused zoning code that places higher density development along the light rail corridor. [37] The Five Points business improvement district was created in 2009 and promotes business development,

The Wheatley, a luxury, mixed-use, mixed income development under construction at the 25th and Welton Station.

[33] Five Points Business District, "Vision Plan Implementation & Revitalization Strategy," May 2013. p. 112.
[34] Edelen, Amy. "Groundbreaking announced for new mixed-use development in Five Points" The Denver Post, June 26, 2015.
[35] Armbrister, Molly, "$43 million affordable-housing project breaks ground in Five Points." June, 2, 2015.
[36] Siebrase, Jamie. "With Developers Jazzed about Five Points, the Rossonian Hotel Could Soon be Hopping Again," January 7, 2015.
[37] Five Points Business District, "Vision Plan Implementation & Revitalization Strategy," May 2013. p. 15.

culture, and preservation of the neighborhood.[38] Despite an improved market, it is still difficult to finance market-rate development along the corridor without some form of gap financing or public-private partnership because there are few precedents of high rents.[39]

Today, many financial incentives for development in the area come from non-TOD sources. For example, the Denver Office of Economic Development grants low-interest loans to small business start-ups and expansion. Within the past five years, the Five Points neighborhood was designated as an urban renewal area, allowing new development to benefit from tax increment financing. Furthermore, projects have benefited from affordable housing and historic preservation financial incentives.

In 2011, RTD created its TOD Pilot Program, which supports public-private partnerships for TOD development on RTD-owned land. This program reduces parking requirements for development and allows developers to use RTD's land as equity.[40] Under this program, RTD conducted the Welton Corridor Pilot Project where it explored the potential of development at two existing parking lots that it owns at 26th and 29th on Welton Street.[41] One of these sites contains a proposed mixed-use development that will include over 15,000 square feet of office space, as well as residential and ground floor retail.[42]

Key Takeaways for West Broadway

- Five Points offers a precedent of inner-urban neighborhood revitalization driven primarily by macro trends towards urban living; while the ability of the West Broadway neighborhoods to benefit from similar trends will depend on macroeconomic conditions within the Twin Cities, it is relatively further away from Downtown Minneapolis than Five Points is from Downtown Denver.
- There is little evidence rail transit investment alone has been a driving impetus for development in Five Points, and a similar transit investment along West Broadway would also likely require both sustained policy support and time in order for market-rate development to reach the point of feasibility. However, the Five Points neighborhood is, at its furthest, about 1.5 miles from Downtown Denver while the furthest portion of the West Broadway submarket is 4 miles along the corridor from Downtown Minneapolis, making the transit accessibility improvements relatively more important to the West Broadway corridor.
- New development along the West Broadway corridor is most likely to result from a combination of initiatives: the focused application of financial incentives (which the Twin Cities already has in place), long-range community visioning and planning, and transit investment.

Sources

Armbrister, Molly, "$43 million affordable-housing project breaks ground in Five Points." June, 2, 2015. <http://www.bizjournals.com/denver/blog/real_deals/2015/06/43-million-affordable-housing-project-breaks.html>.Balk, Gene, "Seattle no longer America's fastest-growing big city." Seattle Times, May 21, 2015. <http://www.seattletimes.com/seattle-news/data/seattle-no-longer-americas-fastest-growing-big-city/>.

City of Seattle, Department of Transportation. TOD Case Studies, Denver RTD. p. 34. (1998). <http://www.seattle.gov/transportation/ppmp_sap_todstudies.htm>.

[38] Five Points Business District.
[39] Five Points Business District, "Vision Plan Implementation & Revitalization Strategy," May 2013. p. 113.
[40] RTD, "TOD Pilot Program Recommendations." 2012.
[41] RTD, "Transit-Oriented Development Status Report 2012." March 2013. <http://www.rtd-fastracks.com/media/uploads/main/RTD_2012_Annual_TOD_Status_Report.pdf>.
[42] Dravitz, Ryan, "New Five Points-Curtis Park Project: 2560 Welton Street," DenverInfill, June 19, 2015.

Dravitz, Ryan, "New Five Points-Curtis Park Project: 2560 Welton Street," DenverInfill, June 19, 2015. <http://denverinfill.com/blog/2015/06/new-five-points-curtis-park-project-2560-welton-street.html>.

Edelen, Amy. "Groundbreaking announced for new mixed-use development in Five Points" The Denver Post, June 26, 2015. <http://www.denverpost.com/business/ci_28384607/groundbreaking-announced-new-mixed-use-development-five-points>.

Five Points Business District, "Vision Plan Implementation & Revitalization Strategy," May 2013.

Five Points Business District. <http://www.fivepointsbiz.org/about-fpbd>.

Grow Denver, "Five Points District Development Plan," October 2009. <https://www.denvergov.org/Portals/690/documents/DNMI-5PointsDistrictDevPlan_LoRes.pdf>.

Raabe, Steve. "Rossonian Hotel Team Plans 26 Brownstone Units in Denver's Five Points," The Denver Post, October 24, 2014. <http://www.denverpost.com/business/ci_26792385/rossonian-hotel-team-plans-26-brownstone-units-denvers>.

RTD, Central Corridor Light Rail Line, System Overview. <http://www.rtd-denver.com/FF-CentralCorridorLRT.shtml>

RTD, Southwest Corridor Light Rail, System Overview. <http://www.rtd-denver.com/FF-SouthwestCorridorLRT.shtml>.

RTD, "TOD Pilot Program Recommendations," 2012. <http://www.rtd-fastracks.com/media/uploads/main/TOD_Policy_Pilot_Program_Board_Presentation_12-7_FINAL_2.pdf>.

RTD, "Transit-Oriented Development Status Report 2012." March 2013. <http://www.rtd-fastracks.com/media/uploads/main/RTD_2012_Annual_TOD_Status_Report.pdf>.

Siebrase, Jamie. "With Developers Jazzed about Five Points, the Rossonian Hotel Could Soon be Hopping Again," January 7, 2015, <http://www.westword.com/news/with-developers-jazzed-about-five-points-the-rossonian-hotel-could-soon-be-hopping-again-6279485>.

Transportation Research Board. "Seventh National Conference on Light Rail Transit: Baltimore, Maryland," November 12-15, 1995, Volume 1. p. 86.

Visit Denver, "Five Points." <http://www.denver.org/about-denver/denver-neighborhoods/five-points/>.

Case Study: Boston Silver Line – Washington Street

Transit and Neighborhood Characteristics

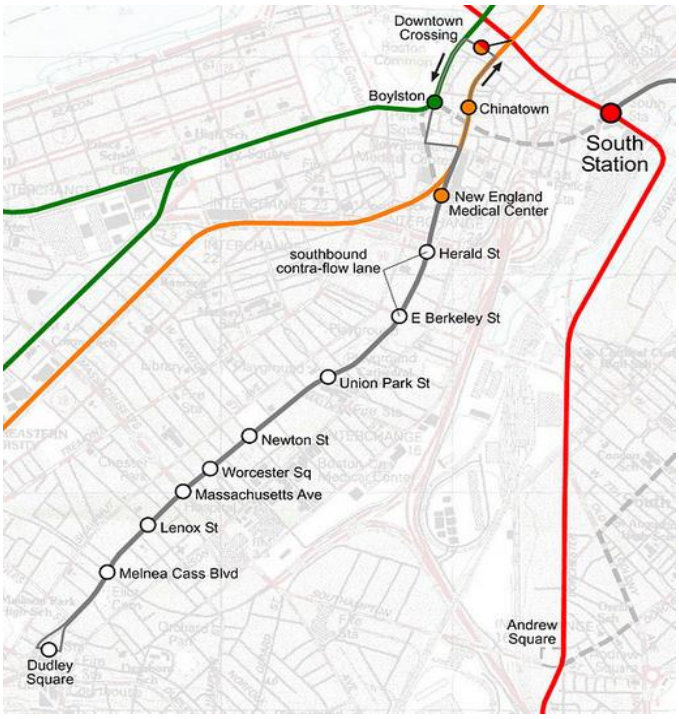
	System Overview
Year Completed	2002
Length of Route	2.2 miles
Right of Way	Operates in Mixed Traffic
Headway Time	8-15 minutes
Station Spacing	0.17 miles
Average Weekday Trips	21,000
Cost	$37M ($2015)

The Washington Street Silver Line operates along the route of the former Orange Line, an elevated train which operated until 1987. The Massachusetts Bay Transportation Authority (MBTA) Orange Line originally operated along Washington Street, providing transit service from Downtown Boston to the South End and Roxbury. However, it also blighted the corridor due to its noise and dominating presence and was relocated and replaced by a temporary local bus in 1987. In spite of heavy community support for a replacement light rail service, the Federal Transit Administration (FTA) rejected a 1992 light rail proposal due to its cost.[43]

In 2002, the MBTA launched the Washington Street Silver Line enhanced bus service, which provides some BRT features. Although the Washington Street Silver Line has a dedicated lane outside of Downtown, it effectively operates in mixed-traffic as the lane doubles as a bike lane and right-turn lane and has limited physical separation between regular and bus traffic. The service, does, however, provide key BRT features that distinguish it from regular bus service, including low-floor boarding, limited stops, signal prioritization, specialized buses, and prominent bus stops.

[43] Federal Transit Administration (Perk, Catala, and Reader). *Land Use Impacts of Bus Rapid Transit: Phase II - Effects of BRT Station Proximity on Property Values along the Boston Silver Line Washington Street Corridor*. 2012.

As is the case in North Minneapolis, the corridor is home to a high concentration of low-income and minority residents. The South End is a diverse neighborhood home to a mix of brownstones, new market-rate mid-rises, and public housing built during the urban renewal era. Roxbury, a center of Boston's African-American community to the south, has historically suffered from widespread vacancy and absentee landlords, stemming from the neighborhood's instability and high crime rates during the 1960s and 70s. Beginning the 1990s, public and community leaders led efforts to attract reinvestment to the two neighborhoods, contributing to the corridor's ongoing revitalization.[44]



The Silver Line Washington Street line connects Downtown Boston to the South End and Roxbury.
Source: SPUI, Wikimedia

Economic Development Impacts

Real Estate and Development Impacts

New real estate development is concentrated in Downtown and the South End, both of which had relatively strong market potential and are most comparable to the North Loop in Minneapolis. Since 2002, over $650 million of real estate investment has occurred along the line.[45] A FTA-sponsored evaluation of the line found that 61 percent of development by value took place in downtown or nearby Chinatown, both areas with existing subway service. In contrast, 34 percent of investment occurred in the South End and less than five percent took place in Dudley Square, the terminus of the line in Roxbury.[46] New developments in the South End and Roxbury generally occurred on smaller parcels and many are not oriented towards the line.[47]

The Silver Line added value to properties immediately adjacent to the corridor. In 2001, condominiums adjacent to Washington Street sold for 22 percent less compared to homes further away, suggesting that proximity to the corridor was considered to be a disamenity. In 2008, six years after the introduction of the enhanced bus and other street improvements, condominiums adjacent to stations sold for 7.6 percent more compared to similar homes further away, reversing the prior trend and

[44] Shannon, Hope. "South End History, Part III: Urban Renewal." *The South End Historian*. 2012.
[45] Institute for Transportation and Development Policy. *More Development for your Transit Dollar: An Analysis of 21 North American Transit Corridors*. 2013.
[46] Federal Transit Administration (Schimek, Darido, and Schneck.). Boston Silver Line Washington Street Bus Rapid Transit (BRT) Demonstration Project Evaluation. 2005.
[47] Federal Transit Administration (Perk, Catala, and Reader). *Land Use Impacts of Bus Rapid Transit: Phase II - Effects of BRT Station Proximity on Property Values along the Boston Silver Line Washington Street Corridor*. 2012.

suggesting that homebuyers were willing to pay a premium for proximity to transit.[48] While the Silver Line had a positive impact on property values, its impact is largely limited to a quarter-mile and is most significant within 0.16 miles. Appreciation in the corridor was also similar to and did not outpace condominium price appreciation in the greater Boston region.[49]

Employment and Other Benefits

The Silver Line did not catalyze significant employment growth in the South End or Roxbury, but residents benefit from an enhanced service to Downtown and other employment centers. New development along the corridor is primarily residential, often with ground floor retail, with limited new office or commercial use, reflecting the market demand during this time and the desirability of other locations for employers.[50] However, residents benefit from improved access to existing employment along the corridor (e.g. Boston Medical Center, BU School of Medicine) and Downtown, where they could access transit to other regional employment centers. Despite marginal improvements in travel times, less than two minutes during peak hours compared to the discontinued local bus, ridership increased significantly because of improved reliability and enhanced bus features.

The South End features new market-rate development (above) in addition to public housing and community services (below). Source: FrannBilus, Infinite Boston

Supportive Public Policies

Transit investment was part of broader effort by public and community leaders to reverse disinvestment. The City, through the Boston Redevelopment Authority, sold public parcels for development and rezoned the corridor to encourage transit-friendly development. In 1997, five years prior to opening of the new Silver Line, community leaders launched the Washington Gateway Main Streets program, which provides financial assistance to small businesses and physical improvements such as sidewalks, signage, and facade improvements.[51]

Public and private initiatives have provided funding and tools for maintaining affordable housing as the corridor attracts higher-income households. The South End has emerged as an attractive neighborhood given the combination of its historic brownstone Victorian housing stock, improved transit, and significant public and private investments. The Dudley Street Neighborhood Initiative, a grassroots non-profit, supports the area by constructing and rehabilitating affordable homes, activating vacant parcels, and supporting

[48] Ibid.
[49] Ibid.
[50] Federal Transit Administration (Perk, Catala, and Reader). *Land Use Impacts of Bus Rapid Transit: Phase II - Effects of BRT Station Proximity on Property Values along the Boston Silver Line Washington Street Corridor*. 2012.
[51] Washington Gateway Main Street Program. *Washington Gateway Main Street: History*. 2014.

local, female, and minority-owned businesses in the construction sector.[52] At the same time, the City sought to prevent displacement by providing long-term leases for community services and, as part of the City's Inclusion Development Policy, selling discounted public land for affordable and mixed-income housing and. Demand for market-rate residential has also provided a new source of funding for affordable housing, as part of mixed-income developments, in addition to traditional federal and local subsidies.[53]

Key Takeaways for the West Broadway Transit Initiative

- Mixed-lane bus rapid transit has the potential to catalyze new development, but the most significant development outcomes should be expected in the North Loop, where market demand is already strong. Bus rapid transit can provide value to adjacent properties but its impact will likely be strongest in the immediate vicinity of stations.
- In order to maximize economic development potential, the public-sector should leverage the investments and capacities of local community and business organizations along West Broadway and coordinate their efforts with public investments in transit and the public realm.
- New market-rate development in the North Loop may provide an opportunity for value capture to help finance affordable housing development and preservation throughout the corridor.
- Transit investment can provide an enhanced service to Downtown Minneapolis, North Memorial Medical Center, and other employment centers but may not catalyze significant employment growth within the corridor without additional public intervention.

Sources

Boston Redevelopment Authority. "Development Fact Sheet: Compiled by the Boston Redevelopment Authority." August 2013.

Dudley Street Neighborhood Initiative. *Dudley Street Neighborhood Initiative: History*. 2014.

Federal Transit Administration (Perk, Catala, and Reader). *Land Use Impacts of Bus Rapid Transit: Phase II - Effects of BRT Station Proximity on Property Values along the Boston Silver Line Washington Street Corridor*. 2012.

Federal Transit Administration (Schimek, Darido, and Schneck.). Boston Silver Line Washington Street Bus Rapid Transit (BRT) Demonstration Project Evaluation. 2005.

Institute for Transportation and Development Policy. *More Development for your Transit Dollar: An Analysis of 21 North American Transit Corridors*. 2013.

Johnston, Katie. "South End Gentrification Makes for Variety of Residents." *Boston Globe.* May 10, 2015.

National Bus Rapid Transit Institute. "Boston Silver Line: Summary." 2011.

Shannon, Hope. "South End History, Part III: Urban Renewal." *The South End Historian*. 2012.

Washington Gateway Main Street Program. *Washington Gateway Main Street: History*. 2014.

[52] Dudley Street Neighborhood Initiative. *Dudley Street Neighborhood Initiative: History*. 2014.
[53] Johnston, Katie. "South End Gentrification Makes for Variety of Residents." Boston Globe. May 10, 2015.

Case Study: Kansas City Troost MAX (Green Line)

Transit and Neighborhood Characteristics

	System Overview
Year Completed	2011
Length of Route	13 miles
Right of Way	Operates in mixed-traffic
Headway Time	10 minutes (peak)
Station Spacing	0.25-0.5 miles
Average Weekday Trips	8,500+
Cost	$32.6M ($2015)

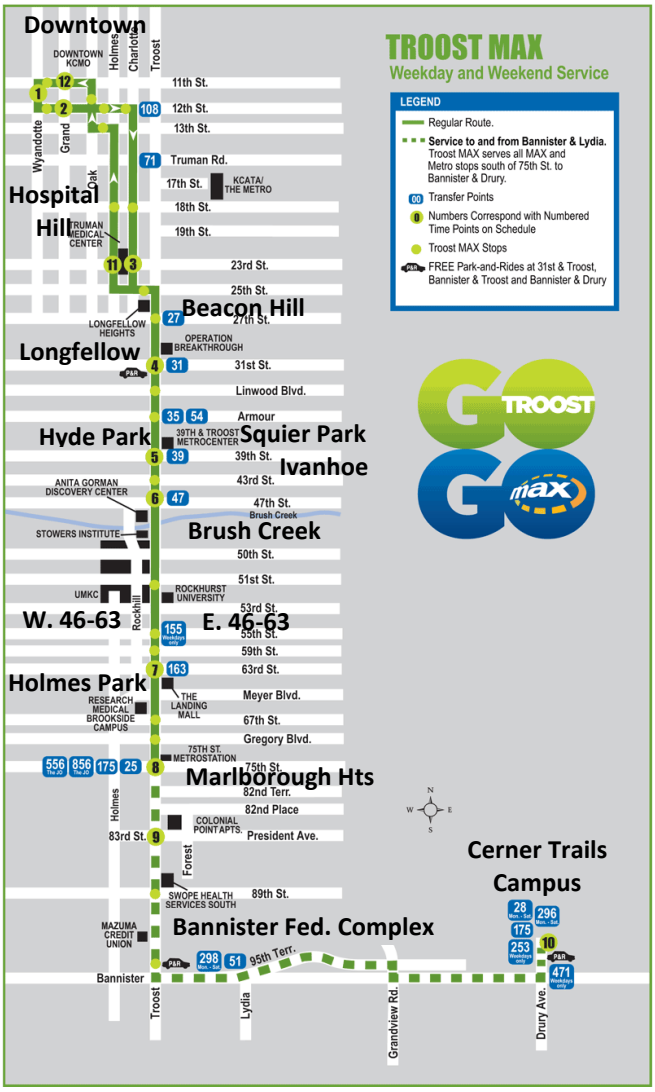
The City and KCATA implemented bus rapid transit for Troost Avenue after voters rejected a proposed light rail. As part of the Central Business Corridor Plan completed in 2001, the City of Kansas City, MO (City) and Kansas City Area Transportation Authority (KCATA) recommended a $793 million light rail system along Main Street and Troost Avenue. The proposal called for a half-cent sales tax increase to support capital investment but was rejected by ballot initiative in 2001.[54] At the same time, the region was in the midst of developing a regional transit plan known as Smart Moves, which proposed a regional system based primarily on bus rapid transit. The first MAX BRT line was implemented on Main Street in 2005, followed by Troost Avenue in 2011.[55]

The Troost MAX opened in 2011 and provides mixed-traffic service with some BRT features. The new MAX line complements Local Route 25, one of the busiest bus corridors in the region with 7,800 riders each weekday. Although MAX service operates in mixed-traffic for its entire 13-mile corridor, it provides limited stops, enhanced stations, and signal priority at key intersections. MAX also provides frequent service with 10 minute headways between Downtown and 75th Street. Compared to the existing service, MAX has decreased travel time by 20% and successfully boosted ridership to over 8,500 on weekdays.[56]

Similar to West Broadway, the MAX connects Downtown to a diverse mix of urban neighborhoods with significant minority and transit-dependent populations, in addition to major educational and medical institutions. The line begins in Downtown and connects to Hospital Hill to the south, home to the University of Missouri–Kansas City (UMKC) School of Medicine, Truman Medical Center, and Children's Mercy Hospital. Further south, Troost Avenue is characterized by low-rise commercial and low- and mid-rise residential areas, with generally higher-income, Caucasian neighborhoods west of

[54] Kansas City Area Transportation Authority (KCATA). Southtown-Troost Corridor Planning Study. August 2007.
[55] Ibid.
[56] Kansas City Area Transportation Authority (KCATA). MAX Bus Rapid Transit (presentation). 2013.

Troost (e.g. Hyde Park, Western 49-63, Holmes Park) and lower-income, predominately African-American neighborhoods east of Troost (e.g. Squier Park, Ivanhoe, Eastern 49-63, Marlborough Heights). This portion of the corridor contains a major concentration of institutions at Brush Creek, which is home to UMKC's Volker campus, Rockhurst University, the Kauffman Foundation, and the Stowers Institute for Medical Research. Further south, the MAX reaches the Bannister Federal Complex at Bannister Road, a former federal defense facility slated for redevelopment, and the defunct Bannister Mall at the line's terminus, which is being redeveloped into a major corporate campus.



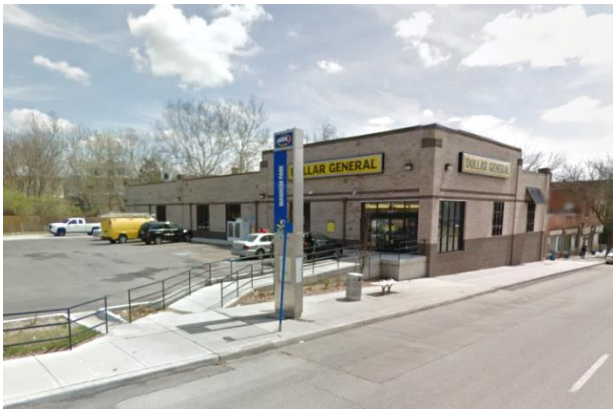
MAX only provides frequent service between Downtown and 75th Street but the line continues to Bannister Road in South Kansas City at lower frequencies.
Source: KCATA

Economic Development Impacts

Real Estate and Development Impacts

New development is limited and largely driven by institutions along the corridor. Although the City sought to leverage MAX investment to support corridor revitalization, there is limited market demand outside of major institutional areas. UMKC and Rockhurst University are both investing in housing and retail for students east of Troost. In 2014, UMKC opened a 123-unit student housing project at 25th and Troost and, as part of its 2014 master plan, called for new retail uses along Troost Avenue near its Volker campus.[57] Rockhurst, immediately to the east of the UMKC Volker campus, recently completed a garage with ground-floor retail in the same area.[58] Finally, Truman Medical Center, through its non-profit economic development arm, sought to develop a grocery store at Troost and 27th, an area which Truman has identified as a food desert. However, the proposal is currently on hold due to the challenge of acquiring tax credit and philanthropic financing and competition from a proposed grocery store further away.[59]

[57] Williams, Mara. "Make Room for New Dorms on College Campuses in Missouri and Kansas." *The Kansas City Star.* August 19, 2014.
[58] Kansas City Area Transportation Authority (KCATA). MAX Bus Rapid Transit (presentation). 2013.
[59] Horsley, Lynn. "Plans for Truman Medical Centers Grocery Concept at 27th and Troost Set Aside." *The Kansas City Star*. June 26, 2015.



Recent developments are largely driven by institutions (above, UMKC student housing at 25th and Troost). Private sector-led development has generally been limited to auto-oriented retail (below, Dollar General at 43rd and Troost).
Source: Kansas City Star, Google Maps

Private sector-led development is concentrated along Bannister Road, where MAX service is infrequent and likely tangential to development. Frequent MAX service, with 10 minute headways during peak hours, is available between Downtown and 75th Street. Along this part of the corridor, new developments include several auto-oriented chain retailers in South Hyde Park and Brush Creek, and Rockhill Greens, a 13-acre senior living community near Research Medical Center. [60] Large-scale development has largely occurred south of 75th Street, where MAX service is only available every 30 minutes and likely a negligible factor for new development. Major projects include the 300-acre Bannister Federal Complex, a former federal defense facility that will redeveloped by CenterPoint Properties, and Rockridge Quarry, whose owners have announced long-term, multi-phase plans for industrial, office, and retail development.[61] At the terminus of the MAX line, Cerner, a major healthcare technology company in Kansas City, is redeveloping the defunct Bannister Mall into a 273-acre campus with office, retail, and hotel uses. Once the multiphase plan is completed in 2025, it is expected to accommodate over 16,000 employees.[62]

Employment and Other Benefits

The MAX had a positive impact for local businesses. The introduction of MAX, along with streetscape improvements in key areas, have improved the corridor's image and signaled the City's commitment to the area. According to a May 2014 survey conducted by KCATA, over 84% of businesses along Troost Avenue believe that MAX had a positive impact on foot traffic, business access, and employee access.[63]

Employment growth continues to be driven by the presence of major institutions and large-scale development sites. New employment has been driven by institutional expansions in Hospital Hill and Brush Creek and the presence of major opportunity sites such as the Bannister Federal Complex, Rockridge Quarry, and Bannister mall site. While new office and retail development has been limited

[60] Kansas City Area Transportation Authority (KCATA). *MAX Bus Rapid Transit (presentation)*. 2013.
[61] Roberts, Rob. "NorthPoint Plans Project Next to Proposed $4B Cerner Campus." *Kansas City Business Journal.* July 30, 2014.
[62] Stafford, Diane. ""Cerner Breaks Ground for its Trails Campus in South Kansas City." *The Kansas City Star.* November 2014.
[63] Kansas City Area Transportation Authority (KCATA). *Troost MAX Bus Rapid Transit Economic Benefit Survey.* May 2014.

along Troost Avenue, the MAX does provide a more frequent and reliable service for corridor residents who work in Downtown, Brush Creek, and other existing employment centers in the corridor.

Supportive Public Policies

The public sector has facilitated and incentivized specific projects but, until recently, has not articulated a comprehensive land use and incentives policy for encouraging transit-oriented development. As a result, auto-oriented development continued to be prevalent along Troost. The City supported Truman Medical Center's grocery store initiative by providing City-owned land.[64] City and State incentives have also been instrumental in the new $4.45 billion Cerner Trails Campus, which will be partially financed by $1.75 billion in City and State tax increment financing.[65] Whereas the City has supported individual proposals, it has not articulated a clear policy for transit-oriented development throughout the corridor. Under existing zoning, auto-oriented commercial uses continue to be allowed as of right and require no additional approval or review by the City.[66] As of August 2015, the City is developing a citywide TOD policy, which is expected to provide coordinated zoning, design, development incentives, and infrastructure investment along major transit corridors, including the MAX Troost line.[67]

Community and business groups have provided grassroots leadership and served as key partners for corridor reinvestment. In 2012, the Greater Kansas City Chamber of Commerce and United Way formed the Urban Neighborhood Initiative, a non-profit focused on revitalizing Troost Avenue between 22nd and 52nd Streets. The group is providing key services such as housing development and rehabilitation, community gardens, career planning and job placement, early childhood education, etc. in partnership with nine neighborhood associations and two community service agencies in the area.[68] Similarly, the Southtown Council, a coalition of businesses, institutions, and neighborhood associations, was instrumental to the creation of the Troost Avenue Community Improvement District (CID), which provides streetscape maintenance, security services, trash removal, and marketing for Troost businesses between 46th and 75th Streets.[69]

Key Takeaways for the West Broadway Transit Initiative

- Similar to UMKC and Truman Medical Center, major institutions such as North Memorial Medical Center and Minneapolis Public Schools can be key partners in economic development, specifically in terms of supporting new real estate development and providing community services that align with their mission (e.g. healthcare clinics, early childhood education).
- In order to foster transit-oriented development, the City, County, and Met Council must be proactive in coordinating zoning, infrastructure investment, and financial incentives, prior to the

[64] Horsley, Lynn. "Plans for Truman Medical Centers Grocery Concept at 27th and Troost Set Aside." *The Kansas City Star.* June 26, 2015.
[65] Roberts, Rob. "TIF Commission Advances Subsidy for $4.45B Cerner Campus." *Kansas City Business Journal.* July 15, 2014.
[66] Mid-America Regional Council (MARC). *Troost Corridor Redevelopment Plan: A Plan for a Sustainable Troost Avenue*. September 2013.
[67] City of Kansas City Dept. of City Planning and Development. *Draft Transit Oriented Development Policy.* June 2015.
[68] Urban Neighborhood Initiative. *2014 Community Report.* August 2015.
[69] Southtown Council. *Troost CID.* Retrieved August 2015.

opening of the line. Coordinated policies provide certainty to developers and discourage "business as usual" auto-oriented developments as seen in parts of the Troost corridor.

- As evident by the limited amount of new development outside of Hospital Hill and Brush Creek, a mixed-lane BRT service may provide an amenity and improved transit service for West Broadway residents but is unlikely to be the primary catalyst for redevelopment. Development will require supportive public policy, infrastructure investment, and, in areas with limited market demand, financial incentives.
- Major development sites such as the Star Tribune facility in the North Loop can provide an opportunity to attract a major employer or corporate campus, provided macroeconomic conditions remain favorable.

Sources

City of Kansas City Dept. of City Planning and Development. *Draft Transit Oriented Development Policy.* June 2015.

Horsley, Lynn. "Plans for Truman Medical Centers Grocery Concept at 27th and Troost Set Aside." *The Kansas City Star*. June 26, 2015.

Kansas City Area Transportation Authority (KCATA). *MAX Bus Rapid Transit (presentation).* 2013.

Kansas City Area Transportation Authority (KCATA). Southtown-Troost Corridor Planning Study. August 2007.

Kansas City Area Transportation Authority (KCATA). *Troost MAX Bus Rapid Transit Economic Benefit Survey.* May 2014.

Mid-America Regional Council (MARC). *Troost Corridor Redevelopment Plan: A Plan for a Sustainable Troost Avenue*. September 2013.

Roberts, Rob. "NorthPoint Plans Project Next to Proposed $4B Cerner Campus." *Kansas City Business Journal.* July 30, 2014.

Roberts, Rob. "TIF Commission Advances Subsidy for $4.45B Cerner Campus." *Kansas City Business Journal.* July 15, 2014.

Southtown Council. *Troost CID.* Retrieved August 2015.

Stafford, Diane. "Cerner Breaks Ground for its Trails Campus in South Kansas City." *The Kansas City Star.* November 2014.

Urban Neighborhood Initiative. *2014 Community Report.* August 2015.

Williams, Mara. "Make Room for New Dorms on College Campuses in Missouri and Kansas." *The Kansas City Star.* August 19, 2014.