STATE STREET CORRIDOR
TRANSIT ORIENTED DEVELOPMENT

White Paper: Bus Rapid Transit Corridors

Transit oriented development (TOD) can be defined as "compact development within easy walking distance of transit stations […] that contains a mix of uses such as housing, jobs, shops, restaurants and entertainment."[1] Targeted investments in mass transit can spur these types of growth in specific locations or corridors. This memo explores one such investment option – bus rapid transit (BRT). The first section describes BRT, its basic elements and its general economic impacts. The second section describes case studies of existing or planned BRT systems. The third section is an overview of BRT's economic benefits in various North America communities. Finally, the last section identifies questions and points of emphasis that Valley Regional Transit will need to consider for a BRT system.

Bus Rapid Transit

Development of BRT is occurring worldwide at various scales. Though it has no single definition, it is understood as "an integrated system of facilities, services, and amenities that collectively improves the speed, reliability, and identity of bus transit."[2] In practice, this describes bus service that is faster than regular bus operations and usually relies on separate or priority transit lanes. Especially compared to rail transit, BRT can be a cost-effective means to improve mobility and guide transit-oriented development. Faced with budget constraints and a need to improve transit, cities around the country are increasingly turning to BRT to meet their needs, with Albuquerque, NM the most recent community to launch a new system.

ELEMENTS OF BRT SYSTEMS

The most recognized standard for evaluating BRT, developed by the Institute for Transportation and Development Policy (ITDP), classifies and evaluates the performance of BRT corridors rather than entire BRT systems.[3] Known as the BRT Standard, this comprehensive scoring system is the highest standard

[1] Reconnecting America. "Why Transit-Oriented Development and Why Now?" 2007. Retrieved from http://reconnectingamerica.org/resource-center/books-and-reports/2007/tod-101-transit-oriented-development-and-why-now/.

[2] Transit Cooperative Research Program. "TCRP Report 90: Bus Rapid Transit: Volume 1: Case Studies in Bus Rapid Transit." Transportation Research Board, 2003.

[3] Institute for Transportation and Development Policy. "The BRT Standard: 2016 Edition." Retrieved from https://www.itdp.org/the-brt-standard/.

for BRT systems. To differentiate BRT from typical bus service, ITDP identifies five essential elements for defining a corridor as BRT.

- **Dedicated Right-of-Way:** Separate roadways or lanes are considered vital to ensuring that buses are not impeded by vehicular congestion. Dedicated lanes can be segregated with painting or color differentiation, but ITDP's scoring prioritizes physical separation such as fences, curbs and bus stations.
- **Busway Alignment:** BRT is most effective when conflicts between buses and other traffic can be minimized. According to ITDP, this is especially true of turning movements and curbside access. Scoring for this element prioritizes busways in the center lanes of the road.
- **Off-Board Fare Collection:** Off-board fare collection is a major factor in maintaining speed and quality of service. ITDP identifies three approaches to off-board fare collection, in order of priority:
    - *Barrier-Controlled:* after entering the transit station, passengers pass through a gate, turnstile, or checkpoint where their ticket is verified or a fare is deducted.
    - *Proof-of-Payment:* passengers pay at a kiosk and collect paper tickets or a pass with the payment marked, which is occasionally checked by an inspector on-board the vehicle.
    - *Onboard Fare Validation:* passengers purchase tickets/fares before boarding and validate them on the vehicle via electronic readers at all bus doors.
- **Intersection Treatments:** The purpose of intersection treatments is to reduce bus delays. IDTP allocates the most points for corridors that prohibit vehicle turns across busways, but also recognizes that signal priority (i.e. where the BRT can activate a signal during approach) is useful on lower-frequency corridors.
- **Platform-level Boarding:** Aligning bus station platforms with the bus floor (i.e., eliminating the vertical gap) reduces the time passengers spend entering and exiting the bus. Similarly, reducing the bus-to-platform gap (i.e. the horizontal gap) is a key to improved safety and comfort. According to IDTP, ideal vertical gap is under five-eighths of an inch and ideal horizontal gap is less than four inches.

ITDP ranks high-scoring corridors as Gold, Silver and Bronze. Consideration for these rankings is preconditioned on meeting or exceeding a minimum score for the five essential elements. Since the highest ranked BRT corridors far exceed these elements, it may not be useful for Valley Regional Transit (VRT) to consider them as models to emulate. Additionally, as noted, The Standard is only one of several methods of evaluating BRT corridors or systems. The elements are presented here to highlight important considerations for BRT and provide a means for assessing comparable BRT systems.

STATE STREET TRANSIT AND TRAFFIC OPERATIONS PLAN

The State Street Transit and Traffic Operations Plan (TTOP) provides the foundation of the current State Street TOD implementation process. The TTOP process developed and analyzed multiple roadway configurations for automobile and transit facilities throughout the corridor, including a number of transit and high occupancy vehicle (HOV) lane configurations, including median, side running and mixed-traffic options. The result of the analysis was a recommendation to develop a curbside running BRT system within a HOV lane that would also permit carpools and business access along the corridor. The cross-section improvements include seven travel lanes with the HOV lane located in curbside lanes, bike lanes, sidewalks, and a raised median.

Existing Conditions on State Street

Current ridership along State Street is approximately 900 riders per day, with about two-thirds on the 9 (State Street) route. Table 1 provides a summary of transit service in 2016.

Table 1: State Street Transit Service Summary, 2016

Route	Frequency	Span	Stops	Annual Ridership
9 (State Street)	30/30/30	5am-10pm M-F; 8am-6:30pm Sat.	5	214,000
9X (State Street Express)	30/-/30	6:30am-8:30am M-F; 3pm-5:30pm M-F	6	16,000
10 (Downtown Hill Rd)	60/60/60	6am-7:30pm M-F	6	91,000
12 (Towne Square Mall to Maple Grove)	60/60/60	5:30am-7:30pm M-F	5	N/A
44 (Highway 44 Express)	2 trips daily	6:30am and 5pm M-F	6	6,000

Source: Valley Regional Transit

Relative to other cities in North America, this is very low ridership for a major corridor. Low ridership is cause for careful consideration of BRT implementation in Boise, to ensure accommodation of existing riders while substantially increasing daily ridership. Table 2 compares BRT ridership in 14 communities to VRT's service on State Street. Two of these communities are described in more details in the case studies that follow.

Table 2: Daily Ridership of Select North America BRT Systems and Boise State Street

City	Average Weekday Riders (BRT only)	Average Weekday (All Bus Transit)	Year	BRT Corridors	Metro Population
New York City	245,566	2,527,900	2015	7	19,949,502 (2013)
Ottawa	220,000	514,200	2013	5	1,318,100 (2015)
Winnipeg	166,000	NA	2012	1	730,018 (2011)
Pittsburgh	41,861	177,300	2013	3	2,356,000 (2010)
Las Vegas	34,189	NA	2013	3	2,062,254 (2013)
Los Angeles	26,179	896,400	2017	1	13,131,431 (2010)
Miami	23,000	292,000	2008	1	6,061,000 (2011)
Cleveland	15,800	NA	2013	1	2,077,000 (2010)
Eugene-Springfield	13,751	37,000	2018	3	352,000 (2010)
Hartford	9,674	85,300	2016	1	895,841 (2015)
Orlando	4,475	85,200	2007	1	1,485,000 (2011)
Fort Collins	3,000	NA	2014	1	333,577 (2015)
Alexandria-Arlington	1,412	23,400	2015	1	6,032,744 (2014)
Boise State Street	900 (Bus only)	5,000	2017	-	676,909 (2015)

This data reflects average weekday passenger boardings in the BRT system. Linked trips (i.e. if a passenger transfers) are counted once. Source for all but Boise and Eugene: BRTData.org. Average weekday boardings (bus only): http://www.apta.com/resources/statistics/Pages/RidershipArchives.aspx
Eugene (Lane Transit District) ridership: http://www.lcog.org/903/Transit-Ridership-Data (accessed May 2018)

Case Studies: Comparable BRT Corridors

This section provides a snapshot of three BRT systems in the United States. Two are existing systems – Fort Collins, CO and Eugene-Springfield, OR – and are in comparably sized cities and represent valuable models for Boise. The third case study – Indianapolis, IN – is a BRT system in its planning stages. Each community offers insights to consider in Boise's planning process.

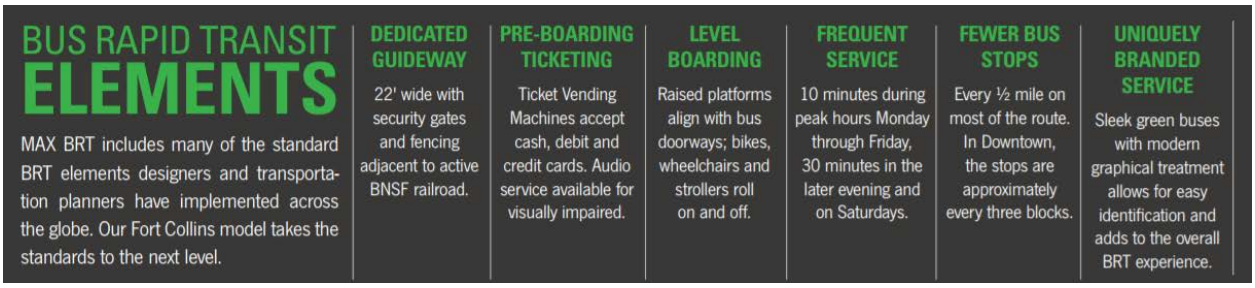
FORT COLLINS

Overview

Fort Collins is a city of approximately 160,000 residents in northern Colorado. In 2014, the local transit agency – Transfort – started operating a single BRT line on the Mason Corridor, adjacent to the city's primary byway. Called MAX, this line "serves major activity and employment centers throughout our community including Midtown, CSU and Downtown. MAX links with other Transfort bus routes, Park-n-Rides, the City's bicycle/pedestrian trail system, and other local and regional transit routes […]."[4] The five-mile line has six buses that run partially on their own road and partially on mixed-traffic streets. The buses are equipped with opticom cameras, which trigger traffic signals to stop east-west traffic. Safety

[4] MAX Bus Rapid Transit Service; retrieved from http://www.ridetransfort.com/max.

gates create a barrier between the busway and mixed-traffic streets. Tickets are purchased at stations and presented upon boarding. Buses have wifi, three entry points and can accommodate two wheelchairs and four bicycles. Early demand was estimated at 3,000 riders per day. Between 2015 and 2016, average daily ridership increased 40%, from 3,197 to 4,490 riders.[5] The line's 12 stations are spaced at approximately half-mile intervals.



Elements of the Transfort BRT system. Credit: MAX BRT Overview, retrieved from http://www.ridetransfort.com/img/site_specific/uploads/MAX_BRT_Overview.pdf.

Financing and Economic Impact

Initial financing for MAX came from multiple sources. The Federal Transit Administration contributed most of the funding, with a total $69 million of the $87 million project. The remaining $18 million dollars was contributed by the State of Colorado, City of Fort Collins, Downtown Development Authority and Colorado State University (CSU). Operations and maintenance cost a combined $1.35 million annually.

A 2007 report indicated that nearly 60% of the city's jobs were located within a mile of the Mason Corridor.[6] The same report estimated that corridor development would increase property tax revenues by an estimated $6.1 million, or by an annual average of $266,000 between 2006 and 2031, an increase of approximately two percent. Similarly, over the same period, retail development along the corridor was estimated to generate approximately $14.4 million in retail sales tax. Overall, the project was predicted to result in 2,800 new housing units and approximately 1,000 new jobs.

Between 2004 and 2012, several catalyst projects were undertaken along the corridor:[7]

- City and County Civic buildings

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[5] Transfort 2016 Year in Review, retrieved from http://www.ridetransfort.com/img/site_specific/uploads/2016_Year_In_Review_FINAL.pdf.

[6] Economic & Planning Systems, Inc. Mason Corridor Economic Analysis: Fort Collins, Colorado. 2007. Retrieved from https://www.fcgov.com/mason/pdf/mason-report.pdf?1343149680.

[7] Fort Collins: Sustainability and TOD [presentation]. 2012. Retrieved from https://www.cml.org/uploadedFiles/CML_Site_Map/_Global/2012/thurs_tods.pdf.

- CSU campus redevelopment (ongoing - includes housing, football stadium, medical center, parking and horticultural and greenhouses)
- Whole Foods shopping area (Whole Foods opened in 2004)
- Midtown Arts Center (second 200-seat auditorium added in 2011)
- Discovery Museum (opened in 2012)
- Mixed use housing and retail

In 2015, new residential construction around the corridor was valued at $30.98 million, and $7.66 million in commercial remodels or improvements were completed or underway.[8] By 2017, hundreds of millions of dollars in development were in progress along the corridor.[9] Foothills Mall, a block from the Swallow MAX stop, underwent a $300 million rehab. CSU's most recent projects are valued at $500 million, with much more expected to come. As of October of 2017, approximately 5,000 multifamily units were in some stage of development citywide and residential vacancy rates were below 2.5 percent. While it is not yet possible to determine the extent to which BRT is driving this development, it is undeniable that Fort Collins is currently undergoing a period of tremendous growth. According to annual forecasts in 2016, the city was expected to lead the state in key economic indicators, with metro GDP growth of 4 percent and job growth of 2.4 percent.[10] Nationally, this growth would rank 14th and 47th, respectively, among nearly 400 cities and metro areas tracked in the forecast.

System Lessons from Fort Collins

Transfort made several adjustments during the development and early operational period of the BRT system. Fine-tuning was needed to accommodate real conditions such as traffic, intersection crossings and concurrent freight train traffic. Other changes included:

- Additional training for operators to adjust to docking at the platform in the narrow busway;
- Additional maintenance on the sides of buses due to contact with the platform in the narrow busway;
- Additional dedicated buses due to changes in the operating plan and increased travel time in the corridor;
- Intersection improvements; and

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[8] Welcome to MAX [pdf]. Retrieved from http://www.ridetransfort.com/img/site_specific/uploads/MAX_BRT_Overview.pdf.

[9] Guernsey, Joshua. "Downtown Fort Collins is in a season of change." *BizWest*. October 30, 2017.

[10] Svaldi, Aldo. "Forecast: Fort Collins leading pack nationally in economic growth." *Denver Post*. Published January 25, 2016; updated: April 18, 2016. Retrieved from http://www.denverpost.com/2016/01/25/forecast-fort-collins-leading-pack-nationally-in-economic-growth/.

- Adjustments to safety gates and the opticom system.

EUGENE-SPRINGFIELD

Overview

Eugene is a city of approximately 166,000 residents and the seat of Lane County, Oregon. Springfield is an adjacent city of approximately 60,000 residents. In 2007, Lane Transit District (LTD) started operations of a BRT system along the city's Franklin Boulevard corridor, connecting the University of Oregon and surrounding neighborhoods.[11] A second line, primarily serving the adjacent city of Springfield, was added in 2011, and a third line, connecting both cities, the university and other communities, was added in 2017. The system, known as the Emerald Express (EmX), uses both dedicated transit-ways and transit-lanes and a synchronized signal system, and incorporates customer amenities such as stations, ticket kiosks, mobility ramps and bike racks. EmX encompasses 24 round-trip miles of service, operating seven days a week with headways of 10-30 minutes. Development of the newest corridor resulted in improvements to intersections, street lighting and sidewalks. Associated projects include pedestrian bridges, rain gardens and other stormwater features, covered bus shelters, public art by regional artists and the planting of 200 trees.

Some elements of EmX include dedicated lanes for buses, covered bus shelters with placemaking features and ticket kiosks. Photo credit: Wolfram Burner (flickr).

[11] Lane Transit District. "EmX System Brochure." Retrieved from https://www.ltd.org/emx-west/.

Financing and Economic Development

EmX was financed with federal, state and local sources. For the most recent development, the Federal Transit Administration's Small Starts program contributed the bulk of the funding, with $75 million, and federal Formula Funds provided $2 million. State sources included Oregon Lottery Bonds ($17.8 million) and ConnectOregon Grants ($1.6 million). Local sources contributed $3.4 million.

LTD estimates that $250 million in private investment occurred along the corridors of the first two EmX lines since 2007.[12] Independent studies on the economic impacts of BRT in Eugene-Springfield indicate several benefits. A study published in 2013 found that although the metropolitan area lost jobs between 2004 and 2010, jobs grew within 0.25 miles of BRT stations.[13] The same study found that some sectors appeared to be attracted to the area within 0.25 miles of the system's BRT stations, including Retail Trade, Transportation and Warehousing, Finance and Insurance, Real Estate and Rental & Leasing, and other services. This was consistent with previous findings.

A follow-up study provided more depth on economic indicators. For example, the authors found that during the recovery after the recent recession, the areas around Eugene-Springfield's BRT stations gained a larger share of jobs while other areas continued to lose jobs.[14] The authors suggested that this might be attributable to proactive development planning at or near BRT stations. Offices within a half-mile of the BRT corridor had a positive rent premium of $1.93 per square foot, or 12 percent of mean office rent. On the residential side, areas around BRT stations increased their share of total housing units relative to the metropolitan area, and vacancy rates fell dramatically compared to the metropolitan area. Two years later, another study found that proximity to EmX stations increased the actual market sale prices of single-family homes.[15] Furthermore, the study found that effects of the stations on the sale prices of single-family homes also increased over time – in each of the three periods studied, the average amount of the increase also increased. This suggests that the potential tax benefits of a BRT system are not limited to new residential developments.

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[12] Lane Transit District. "EmX System Brochure." Retrieved from https://www.ltd.org/emx-west/.

[13] Nelson, Arthur, Bruce Appleyard, Shyam Kannan et al., "Bus Rapid Transit and Economic Development: Case Study of the Eugene-Springfield BRT System," *Journal of Public Transportation* 16, no. 3 (2013). http://www.nctr.usf.edu/wp-content/uploads/2013/10/16.3_nelson.pdf.

[14] Nelson, Arthur and Joanna Ganning, "National Study of BRT Development Outcomes: Final Report," National Institute for Transportation and Communities, 2015. Retrieved from http://t4america.org/wp-content/uploads/2016/01/NATIONAL-STUDY-OF-BRT-DEVELOPMENT-OUTCOMES-11-30-15.pdf.

[15] Perk, Victoria, Martin Catala et al., "Impacts of Bus Rapid Transit (BRT) on Surrounding Residential Property Values," National Institute for Transportation and Communities, 2017. Retrieved from http://nitc.trec.pdx.edu/research/project/894.

System Lessons from Eugene-Springfield

Assessment of the system in Eugene-Springfield revealed key planning considerations:[16]

1. The success of projects relied heavily on a high level of cooperation among public, non-profit and private partners.
2. An active transit agency with a TOD program and/or an active community development organization can be critical.
3. Permanence is an important factor for building around a BRT system. Real estate developers and owners rely on permanence to maximize profits from high density investments over time. BRT can enhance perceptions of permanence with explicit long-term investments by transit agencies, including substantial capital investments.
4. Transit corridors must facilitate high-density development, so routes needs should be placed in areas with major employment or housing destinations.
5. Financial incentives for TOD at stations is less important to attracting developer interest than an expedited permitting or rezoning process.
6. For smaller urbanized areas, BRT can serve numerous job sectors with rail-like benefits, but without the cost of light rail, and with greater flexibility and adaptability.

INDIANAPOLIS

Overview

The Indianapolis public transit system – IndyGo – is in the process of implementing the BRT component of the Marion County Transit Plan to improve regional connectivity. In November 2016, local voters approved a 0.25 percent income tax increase to pay for expanded public transportation. The new system will include three lines – Red, Purple and Blue – with construction slated between 2017 and 2021. A fourth line (the Green Line) was recommended and planned, but the project is currently on hold. The effort aims to increase BRT service by 70 percent during this period.[17] Key connections will include downtown Indianapolis, the University of Indianapolis, Indianapolis International Airport and several suburban towns. In addition to the local tax increase, current funding includes $75 million from

[16] Nelson, Arthur, Bruce Appleyard, Shyam Kannan et al., "Bus Rapid Transit and Economic Development: Case Study of the Eugene-Springfield BRT System," *Journal of Public Transportation* 16, no. 3 (2013). http://www.nctr.usf.edu/wp-content/uploads/2013/10/16.3_nelson.pdf.

[17] Ober, Andy. "Bus Rapid Transit Progressing in Indy." *Inside Indiana Business*. Published July 10, 2017; updated July 11, 2017. Retrieved from http://www.insideindianabusiness.com/story/35848518/bus-rapid-transit-progressing-in-indy.

the Federal Transit Administration's Small Starts program, plus more than $40 million in other federal funds since 2012.[18]

Table 3: Proposed BRT System in Indianapolis

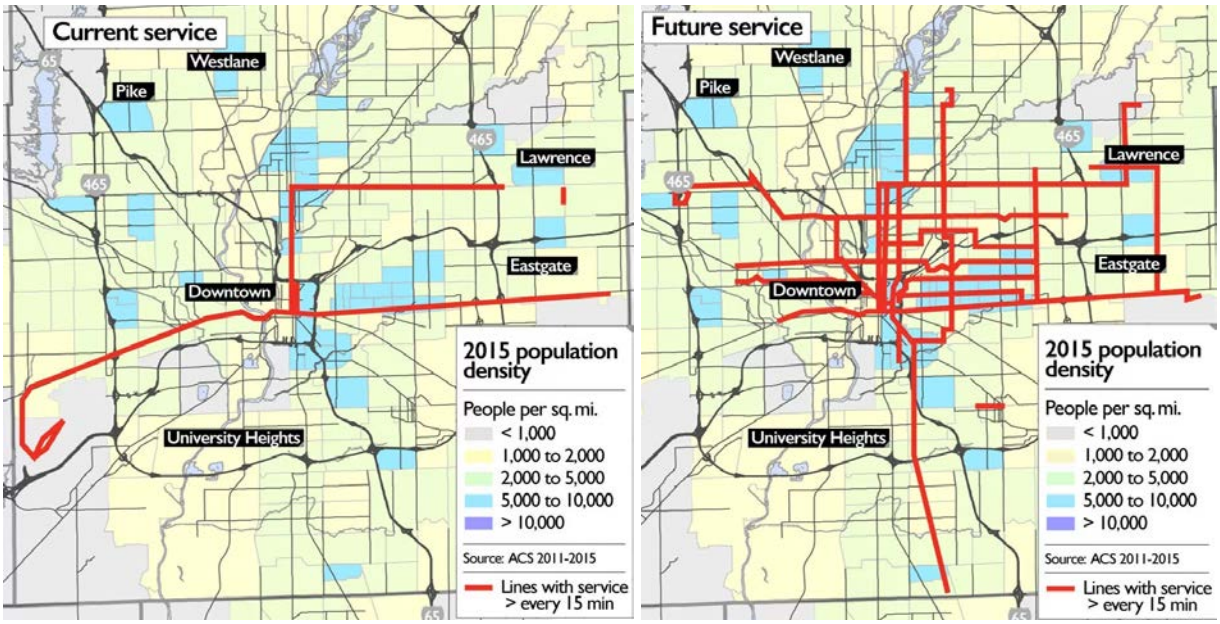
Line	Corridor Length	Station Spacing	Dedicated Lanes	Station Type	Station Amenities	Frequency
Red	35 miles	0.33 - 1.0 miles	greater than 50 percent of corridor	raised platform	Purchase tickets at station; real time arrival info; seating; shelter; waste receptacles; security	Weekday: 10 min. Weekend: 15 min.
Purple	17 miles	0.33 - 1.0 miles	up to 75 percent of corridor			
Blue	28 miles	0.5 - 1.0 miles	none			

Source: Indy Connect Service Maps & Studies

The Red Line, currently in the bid process, is scheduled for construction in 2018 and will be the first all-electric BRT service in the country, as well as the first BRT service in the state. IndyGo projects 11,000 daily rides when the line begins operations, a significant number considering the entire transit system currently averages 33,000 daily trips.[19] The first phase of the Red Line is estimated at $100 million and will incorporate bus-only and mixed-traffic lanes along a corridor with 28 stops. Portions of the Purple and Blue lines running through Indianapolis are anticipated for construction in subsequent years, with extensions to neighboring communities contingent on support and funding from those towns and counties.

[18] IndyGo. "IndyGo Red Line Selected for Federal Funding." February 9, 2016. Retrieved from https://www.indygo.net/press-releases/indygo-red-line-selected-for-federal-funding/.

[19] Tuohy, John. "Opposition to Red Line Bus Rapid Transit route accelerates." *IndyStar*. Published January 17, 2016; updated January 18, 2016. Retrieved from https://www.indystar.com/story/news/2016/01/17/opposition-red-line-bus-rapid-transit-route-accelerates/78307660/. For more details about the Red Line, see http://indyconnect.org/the-central-indiana-transit-plan/about-the-red-line/.



Current and proposed service in Indianapolis. Source: Streetsblog.

Potential Community Impacts

Analysis of the entire proposed system in 2016 found that the project is expected to support broad economic growth.[20]

Table 4: Summary of Anticipated Economic Benefits in Indianapolis Through 2040

Benefit	
New temporary jobs	430
New permanent jobs	1,153
Increase in gross regional product (millions)	$1,736
New real estate development (square feet)	3,998,000
Potential increase in residential property values (millions	$41 to $541

Source: Indy Connect Economic Impact Analysis: Final Report

The Red Line alone could initiate broad changes, connecting residents to downtown Indianapolis, multiple universities, hospitals and other destinations. If developed as planned, the demographic profile

[20] HDR Engineering, Inc. "Indy Connect Economic Impact Analysis: Final Report." 2016. Retrieved from http://indyconnect.s3.amazonaws.com/wp-content/uploads/2017/03/24141923/Indy-Connect-Economic-Impact-Analysis.pdf.

of the communities adjacent to the line show it could have a significant impact on a wide cross-section of the population, especially communities with transit needs:[21]

- 60,000 people live along Red Line (38.7 percent minorities)
- 27,000 households:
    - 21.8 percent poverty households
    - 20.3 percent of households have at least one person with a disability
    - 40 percent of families are single parent
- 136,000 employees/jobs
    - 10,500 jobs per square mile
    - Nearly one-fourth of all jobs in Marion County are along Red Line
- 133,000 university/college students along Red Line
- 328,000 hospital visits/year to hospitals along Red Line

System Lessons from Indianapolis

Streetsblog, an online advocate for transportation improvements nationwide, assessed the proposed changes in Indianapolis. Based on their analysis, strengths and weaknesses were identified:[22]

Strengths

- Relatively small investment;
- Proposed lines will dramatically improve frequency and reliability of the bus network, as well as connections to destinations and between transit lines;
- New network concentrates on most densely-populated neighborhoods, increasing access of current residents to good transit service; and
- BRT provides appropriate service for a low-density city at a reasonable cost.

Weaknesses

- Not enough dedicated bus lanes, could create timing and operational challenges; and
- Counties outside Indianapolis have not raised new revenue, so transit improvements to major suburban job clusters are not yet funded.

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[21] Indy Connect. "Red Line Stats." Retrieved from http://indyconnect.s3.amazonaws.com/wp-content/uploads/2016/08/01164211/Red-Line-Maps.pdf.

[22] Freemark, Yonah. "The Bus Network Redesign in Indianapolis Will Be Like Launching a Brand New Transit System." *Streetsblog USA*. July 11, 2017. Retrieved from https://usa.streetsblog.org/2017/07/11/the-bus-network-redesign-in-indianapolis-will-be-like-launching-a-brand-new-transit-system/.

Beyond the Case Studies: Other Economic Development Outcomes

Communities implementing BRT systems consistently report economic benefits in conjunction with their new bus service, similar to those experienced along rail transit lines but at a fraction of the cost of developing rail transit. This is seen not only in term of land development, bus also due to cost savings associated with increased efficiency and safety, and broader economic benefits associated with increased ridership, such as reduced car use and traffic. Table 5 provides examples of these broader benefits in Pittsburgh, Ottawa and Seattle.

Table 5: Selected Economic Impact of BRT in Three North America Cities

System	Benefits
Pittsburgh East Busway	59 new developments with 1500-foot radius of station $275 million in new construction, with 80 percent clustered at station 38 percent gain in ridership Travel time savings up to five minutes per mile during peak hours
Ottawa Transitway	$1 billion (CDN) in new construction at Transitway stations 150 fewer buses, resulting in savings of $58 million in vehicle costs and $28 million in operating costs (CDN)
Seattle Bus Tunnel	20 percent reduction in surface street bus volumes 40 percent fewer accidents in tunnel bus routes 33 percent travel time savings

Source: Bus Rapid Transit, Volume 1: Case Studies in Bus Rapid Transit (TCRP Report 90), Transportation Research Board: 2003.

A study published by ITDP in 2013 assessed 21 BRT, light rail transit (LRT) and streetcar corridors in 13 cities across Canada and the United States.[23] The analysis showed that transit investments on their own are rarely sufficient to induce development. Instead, development primarily depends on three factors. First, the quality of the transit investment matters, but only marginally. Second, the level of private developer interest in the surrounding land is important, but the type of transit investment is not correlated to the level of investment. Third, the factor most directly linked to TOD impacts was the level of government intervention in the transit corridors – all corridors with weak government support for TOD had no TOD, while all corridors with strong government support had strong TOD investment. Table 6 summarizes these factors relative to five North America cities.

Table 6: BRT and TOD in Five North America Cities

Corridor	Land Potential	Government TOD Support	Total TOD Investment (millions)	Development per Transit Dollar (millions)
Cleveland HealthLine	Emerging	Strong	$5,800	$114.54

[23] Hook, Walter, Stephanie Lotshaw and Annie Weinstock. “More Development for Your Transit Dollar: An Analysis of 21 North American Transit Corridors.” Institute for Transportation and Development Policy, 2013.

Las Vegas Strip & Downtown Express (SDX)	Strong	Moderate	$2,000	$42.28
Eugene Emerald Express Green Line (EmX)	Emerging	Moderate	$100	$3.96
Ottawa Transitway	Emerging	Moderate	$1,000	$1.71
Pittsburgh Martin Luther King, Jr. East Busway	Emerging	Moderate	$903	$3.59
Pittsburgh West Busway	Limited	Weak	nominal	nominal
Pittsburgh South Busway	Limited	Weak	nominal	nominal

Source: Adapted from Hook, Walter, Stephanie Lotshaw and Annie Weinstock. "More Development for Your Transit Dollar: An Analysis of 21 North American Transit Corridors." Institute for Transportation and Development Policy, 2013.

Key Considerations for State Street

As Boise and VRT assess options for BRT, consider the following:[24]

- Investments in BRT should improve the quality of the transit experience for existing riders and attract significantly more new bus riders. As the project progresses, VRT will need to communicate the benefits of BRT to the community to build support for these investments and increase ridership.
- BRT on State Street would extend to Eagle, travelling through several jurisdictions. Each jurisdiction should consider incorporating land use and urban design guidelines around stations to promote a walkable, pedestrian oriented district. Supportive zoning and streamlined permitting can improve the likelihood of increasing developer interest.
- Consider immediate improvements to existing transit service to increase visibility and ridership and as funding is identified, improve station design and accessibility, including station platforms, shelters, and boarding experience.
- Consider funding expansions of existing transit through local funding increases. For station improvements, consider other funding sources such as urban renewal, which can also help fund infrastructure investments to stimulate development near the station. Larger investments may require changes to State regulations to permit local option taxes to pay for the BRT transit investment. While this is not an immediate solution, continued lobbying is essential to change this regulatory limitation.
- Partnerships are a key component of successful TOD. The State Street TOD Implementation Project brings together several of the key public agencies that will be needed to fully implement the plan. Public/private partnerships may also be appropriate where there is development potential near the future stations.

[24] Some of these considerations are derived from Nelson, Arthur and Joanna Ganning, "National Study of BRT Development Outcomes: Final Report," National Institute for Transportation and Communities, 2015. Retrieved from http://t4america.org/wp-content/uploads/2016/01/NATIONAL-STUDY-OF-BRT-DEVELOPMENT-OUTCOMES-11-30-15.pdf.