

TRANSIT **RI** FORWARD 2040

Rhode Island Transit Master Plan Program Benefits

Draft: January 29, 2021

BETTER TRANSIT     **BETTER RHODE ISLAND**



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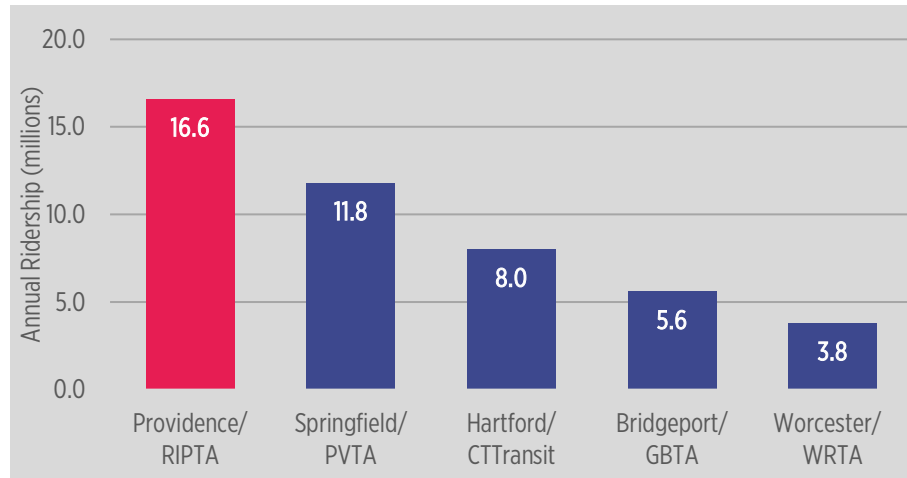
1. Introduction

Introduction

Transit is the second most widely-used way for people to travel in Rhode Island and to and from Boston. Transit is engrained in Rhode Island's history and its future. It connects us to jobs and life's activities, and it connects employers to us. It has enabled the development patterns that have made Providence one of the best small cities in the United States. It provides connections to Greater Boston that strengthen our local economy. Transit helps people get around. It also helps support existing businesses and stimulates new development. creates new jobs and helps clean the environment and reduce traffic.

The importance of transit in Rhode Island is evidenced by how widely it is used. Pre-pandemic, Rhode Island residents, workers, and visitors made approximately 18 million trips per year on transit. In New England, Providence is the third largest city and broadly similar to Worcester, Hartford, Springfield, and Bridgeport, but far more people here use transit – up to four times as many. Looking beyond New England, more people ride transit in the Providence area and Rhode Island than Kansas City, MO, Nashville, TN, and Indianapolis, IN.

Comparative Ridership



Rhode Island's transit riders represent the spectrum of our state, from long-time residents to those who have just arrived, from the state's wealthiest residents to those who are struggling to establish themselves and get ahead. When we use transit, we do so for many

reasons, but a common denominator is that it is often the best option. This can be the case for many different reasons – it beats sitting in traffic to Boston, it saves money that can be used on other things, it provides the ability to use travel times more productively, and some of us can't drive.

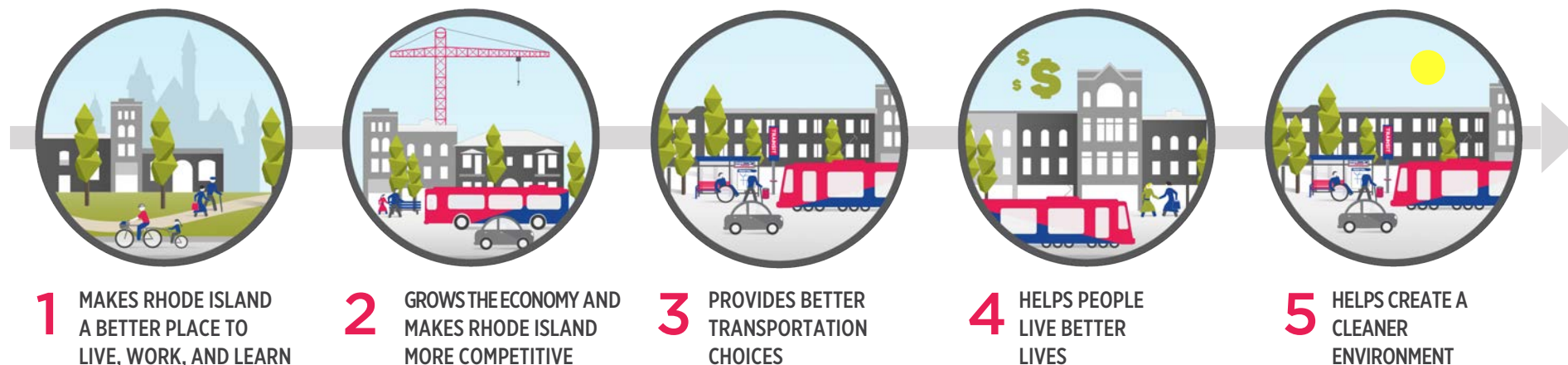
For every trip we make, we decide which option will be best. Most often the best option is to drive, and our current transportation system is oriented toward making automobile travel easy. In a similar manner, Transit Forward RI is designed to make travel by transit easier. This will make transit the best option for many more people and trips, and in the process, help build a stronger, more competitive, cleaner, and more livable Rhode Island.

RIPTA Riders



2. Summary of Benefits

Summary of Benefits



Transit, and transit improvements, provide a wide range of benefits. First, the benefits to those who use it are clearest. For people who use and rely on transit, improvements make it easier and more convenient to get where they are going.

Those who don't use transit benefit from the economic returns driven by transit in terms of increased economic activity and more jobs, less traffic, cleaner air, and a more livable and attractive state.

Overall, Transit Forward RI will:

1. Make Rhode Island a Better Place to Work, Learn, and Live

Transit Forward RI will:

- *Keep and attract talented residents and workers*
- *Help Rhode Island compete better economically with other states by keeping and attracting companies*
- *Provide better connections to jobs, including frequent service to 59% of jobs*
- *Provide better service to all of Rhode Island's universities and colleges, which will benefit 80,000 students*

- *Provide better and more service to nearly all of the state's developed areas to better connect residents with life's activities*

Jobs



90%
of all jobs
accessible by transit
350,000
accessible by
frequent transit

Education



80,000
college students
with better transit
service

Everything



59%
of trips are for non-
work purposes such as
shopping, social visits,
and doctor's appointments—
these trips will be much
better served

2. Grow the Economy

Transit Forward RI can help accelerate Rhode Island's economic resurgence by creating:

- *19,000 to 33,100 construction, manufacturing, and supplier jobs related to construction and equipment purchases (with the higher number if light rail is pursued)*
- *Up to 3,800 permanent jobs due to related to ongoing operations*
- *\$3.9 to \$6.8 billion in increased business output*
- *\$1.2 to \$2.1 billion in increased labor income*

- *\$23 million in additional state and local tax revenue that could potentially be used to help fund the program*

3. Provide Better Transportation Choices

Transit Forward RI will make transit more attractive and help Rhode Island develop a more balanced transportation system. Improvements and benefits will include:

- *Higher quality services: 2 new light rail and/or Bus Rapid Transit lines and seven Rapid Bus lines that will serve 41% of residents and 52% of jobs*
- *A Frequent Transit Network consisting of 19 routes that will serve 49% of residents and 59% of jobs*
- *Service that runs twice as frequently during peak periods and more frequently during the rest of the day as well*
- *More hours of service, with most routes operating two hours later at night*
- *Four Regional Rapid Bus routes that will provide strong ties between Providence, Woonsocket, Newport, and South County*
- *Faster and more frequent Providence – Boston commuter rail service, with travel times reduced from as much as 75 minutes to less than 60*

4. Help People Live Better Lives

Transit Forward RI will provide:

- *Frequent service to 49% of all residents*
- *Frequent service to 72% of low income residents*
- *Frequent service to 86% of minority residents*
- *60% more midday service and 100% more evening service to make the commutes of shift workers easier*
- *Service after 9 PM on 23 additional routes to better serve shift workers*
- *Better service to 96,000 seniors and new service to 12,000 more to make it easier to age in place*
- *Better service to persons with disabilities to make it easier to live independent lives*

5. Create a Cleaner Environment

Transit Forward RI will be an important component of Rhode Island's efforts to reduce greenhouse gas emissions. It will:

- *Increase transit ridership by over 60%*
- *Increase transit mode share for work trips from 3.1% to 5%*
- *Reduce VMT by 8%, which is 80% of Rhode Island's goal for 2050.*
- *Reduce greenhouse gas emission by 231,300 metric tons per year. This is the equivalent to removing over 50,000 cars from Rhode Island's roads.*

3. A Better Place to Work, Live, and Learn

3. A Better Place to Work, Learn, and Live

Transit Forward RI will provide better travel options for Rhode Island's residents and workers. This will make Rhode Island a better place to work, live, and learn. It will do this by:

- *Keeping and attracting talented residents and workers*
- *Competing better economically with other states by keeping and attracting companies*
- *Providing better connections to jobs, including frequent service to 59% of jobs*
- *Providing better service to all of Rhode Island's universities and colleges, which will benefit 80,000 students*
- *Better and more service to nearly all of the state's developed areas to better connect residents with life's activities*

Keeping and Attracting Talent

As Baby Boomer retire, Millennials are increasingly driving economic development, and Millennials want to live and work in places with strong transit services. For example, a 2014 Transportation for America/Rockefeller Foundation survey found that four of five millennials want to live in places where they have a variety of options to get to jobs, school or daily needs. Other key takeaways of the survey included:

- *54% would consider moving if another city had more and better transit options*
- *Cities that don't invest in effective transit solutions today stand to lose out in the long-run*

Generation Z, which is following Millennials into the workplace, have similar sentiments. A study last year by the Wisconsin Public Interest Research Group¹ found that 75% of students surveyed said it was either "very important" or "somewhat important" to live in a place with non-driving transportation options. In addition, 55% said they would either be "somewhat more likely" or "much more likely" to stay after

¹ Millennials on the Move, Wisconsin Public Interest Group, 2019

graduation if they could live in a place where trips for work, recreation, and errands did not require a car.

People with options choose where they want to live and work, and Rhode Island must compete with the rest of the United States. As other states undertake similar efforts, Rhode Island needs to keep pace to just to avoid falling behind. The transit improvements in Transit Forward RI will help the state jump ahead.

Keeping and Attracting Companies

Transit is also an important consideration when companies decide where they want to be. This is because they want to be where they can attract talented employees, and as described above, these people want to live in places where there is good transit. Transit also increases the size of the labor pool available to employers.

The availability of good transit has become increasingly important over the past decade. This was highlighted by Amazon's search for a second headquarters (HQ2). As part of the search, it cited four "core preferences," one of which was access to mass transit. Comments made by Michael Flynn, the CEO of the Economic Development Corporation of Utah, provide a second example:

*"Companies have lists of wants and needs. Transit has shifted from a want to a need."*²

Just as Rhode Island needs to compete to keep and retain talented workers, it also needs to compete to keep and retain companies. Transit Forward RI is one important way to do this.

Better Access to Jobs

Improving access to jobs is important in two ways. For residents, it improves economic opportunities by providing access to a more jobs. For employers, it provides access to a larger and broader pool of labor.

² Comments made as part of a Transit-Oriented Development presentation made to representatives of the Regional Transportation Commission of Southern Nevada in 2018.

Today, 86% of Rhode Island's jobs are within ½ mile of some form of transit. However, most of the service to jobs operates infrequently and for relatively short hours. Only 20% of jobs are within ½ mile of frequent service that operates for long hours.

With the program improvements, the percent of jobs that will be served by some form of transit will increase to 90%. However, more importantly, **the jobs served by frequent transit will increase to 53%, from 97,500 to 310,100.**

The percent of jobs served by frequent transit will increase to 59%



Better Access to Education

Higher education is one of the pillars of Rhode Island's economy, with institutions ranging from some of the most prestigious in the United States to a large and effective community college system. Transit Forward RI will improve service to all of Rhode Island's colleges and universities, which will make them more attractive to students and better connect them the other knowledge sectors activities. **These improvements will benefit the state's 80,000 university and college students and the employees who work there.**

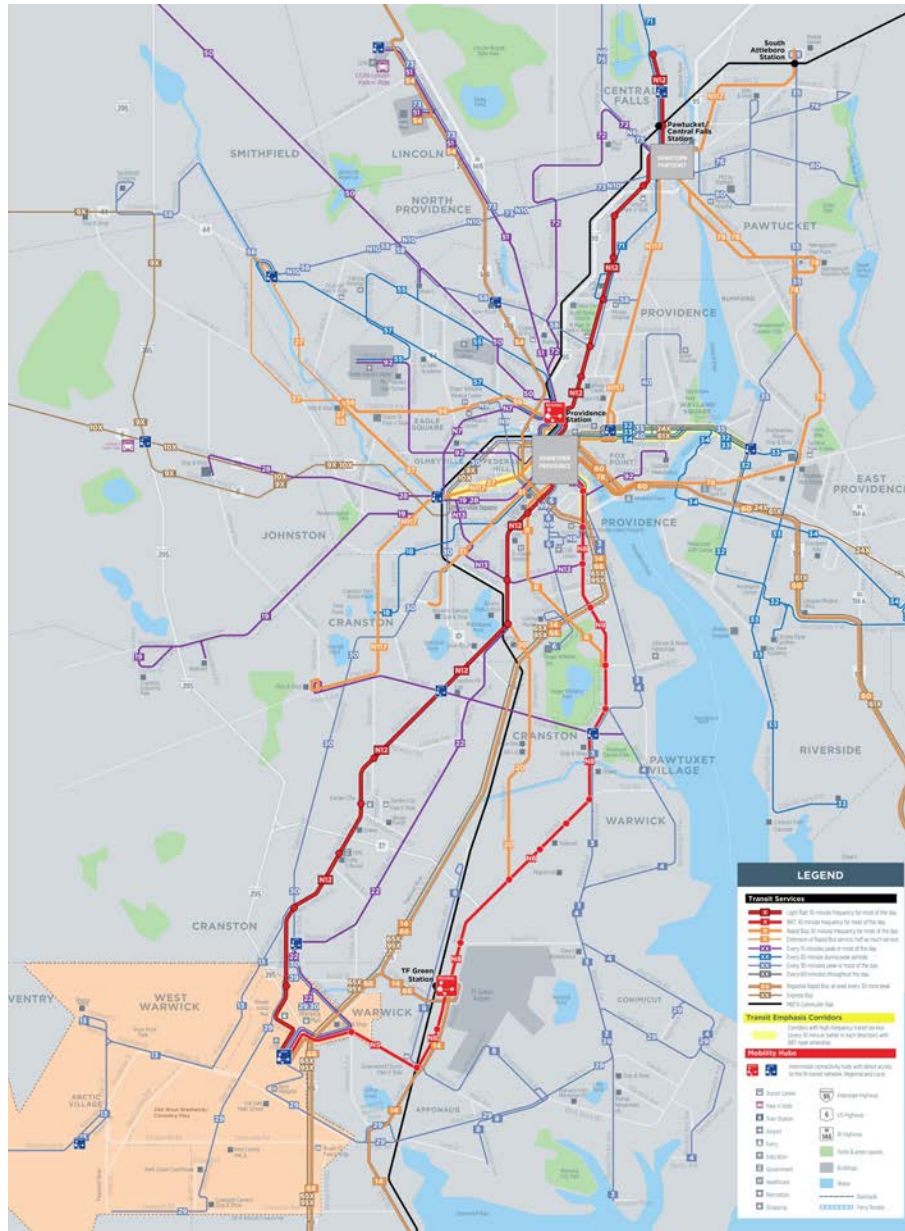
Better Access to Life's Activities

Travel to and from work and school comprises approximately 41% of all RIPTA ridership. The remaining trips are made for a wide variety of reasons, including shopping (14%), recreation and social trips (9%), medical appointments (8%), and many other reasons. **Transit Forward RI will provide better service for these types of trips by providing comprehensive service to nearly all developed areas.**

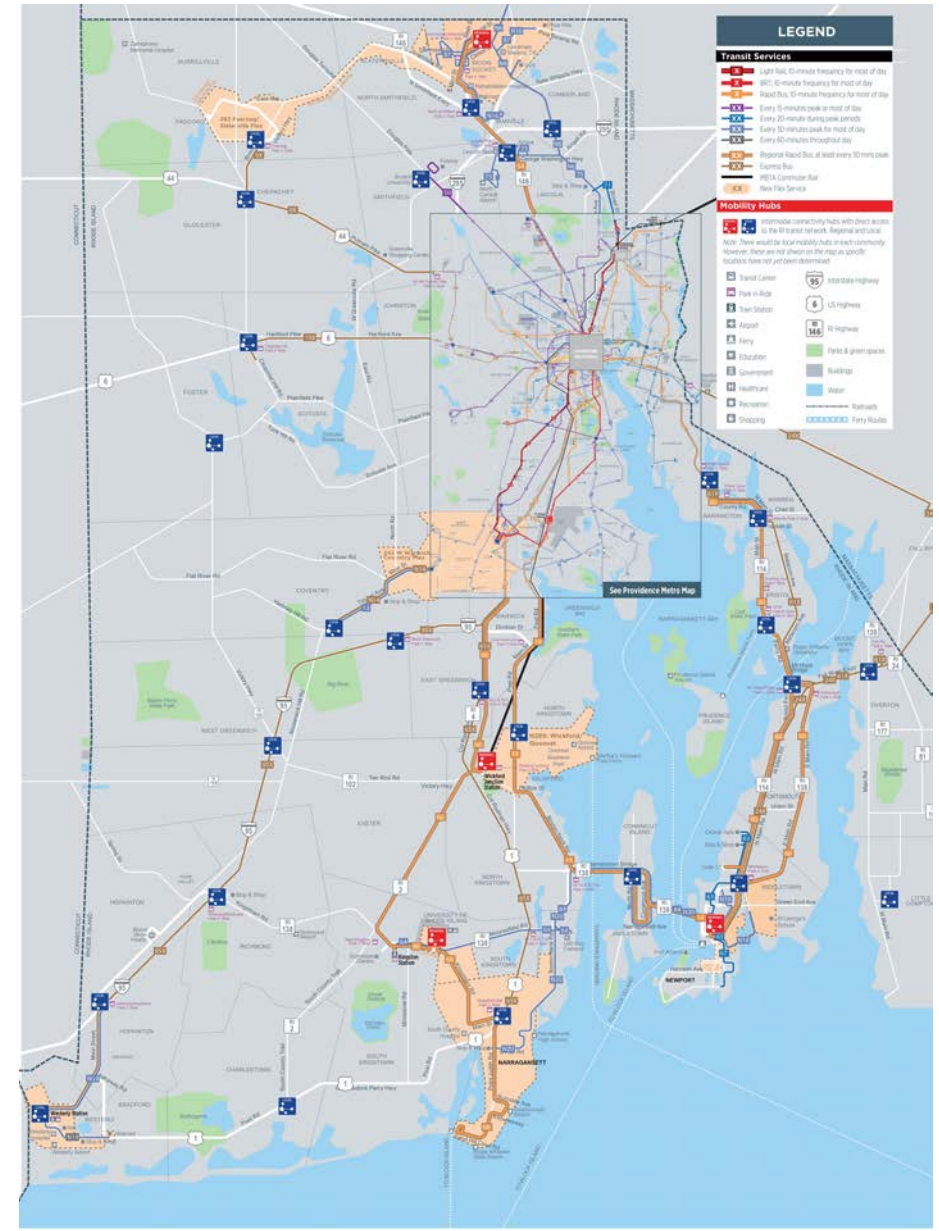
Better service will be provided to all of Rhode Island's universities and colleges

	LRT/ BRT	RAPID BUS	FREQUENT LOCAL	REGIONAL RAPID BUS	MOBILITY HUB	TRANSIT EMPHASIS CORRIDOR	MORE FREQUENT SERVICE
Brown University		✓	✓			✓	✓
Bryant University			✓		✓		
CCRI Lincoln, Flanagan Campus				✓			✓
CCRI Newport County Campus							✓
CCRI Providence, Liston Campus							✓
CCRI Warwick, Knight Campus	✓		✓	✓	✓		✓
CCRI Westerly Education Center							✓
Johnson & Wales University	✓		✓			✓	
NEIT Post Road Campus	✓			✓			
Providence College			✓				✓
Rhode Island College			✓				✓
Rhode Island School of Design						✓	
Roger Williams University				✓			✓
Salve Regina University							✓
University of Rhode Island				✓	✓		✓
U.S. Naval War College							✓

Comprehensive service will be provided throughout the Providence Metro Area to serve all types of trips



Comprehensive service will also be provided throughout the state to most developed areas to serve all types of trips



A number of improvements will make service more convenient for all kinds of trips. Particularly important improvements will include:

- Higher quality service such as light rail, Bus Rapid Transit, and regional and local Rapid Bus
- More frequent service
- Longer hours of service
- Faster service
- Service to new areas

These improvements are described in more detail in Chapter 5.

4. Grow the Economy

Grow the Economy

As described in Rhode Island Innovates 2.0,³ “After a decade adrift, Rhode Island’s faltering economy is on the mend and expanding anew. Following the Great Recession, Rhode Island’s economic recovery lagged behind the rest of New England, but recent progress indicates that the state’s economy has passed an inflection point. The Rhode Island economy is growing, unemployment levels are at historical lows, average productivity has reversed its decline although it remains below the 2010 level, and advanced industry sectors are expanding with positive, reverberating effects for small businesses across the state.”

Transit Forward RI can help accelerate this resurgence by creating:

- *19,000 to 33,100 construction, manufacturing, and supplier jobs related to construction and equipment purchases (with the higher number if light rail is pursued)*
- *Up to 3,800 permanent jobs*
- *\$3.9 to \$6.8 billion in increased business output*
- *\$1.2 to \$2.1 billion in increased labor income*
- *\$23 million in additional state and local tax revenue that could potentially be used to help fund the program*
- *\$2 to \$5 billion in new Transit-Oriented development*

New Jobs

Transit investments create new jobs – permanent jobs for people who provide the transit services and their suppliers, and construction jobs for those who build the new facilities, and manufacturing jobs for those who produce equipment and construction materials. These jobs are created through:⁴

Direct Spending on capital investments and operations. Capital investment in public transportation supports the construction of new facilities – for example, rail lines, busways, stations, and mobility hubs and purchases of transit vehicles and other

equipment. Operations create associated jobs for drivers, maintenance workers, administrative and other transit agency workers. It also creates jobs through purchases of supplies needed for continuing operations such as fuel, electric power, maintenance parts and materials.

Transit Forward RI will create new jobs:

19,000 to 33,100 jobs from capital spending to build the expanded system

3,700 to 3,800 new permanent jobs due to expanded operations

NEW JOBS	CAPITAL PROJECTS	ANNUAL OPERATIONS
With BRT as Highest Mode		
Direct Spending	6,655	1,624
Supplier Purchases	4,999	598
Employee Spending	7,349	1,502
Total	19,013	3,732
With LRT as Highest Mode		
Direct Spending	11,606	1,659
Supplier Purchases	8,719	611
Employee Spending	12,817	1,535
Total	33,142	3,804

3 January 2020, commissioned by the Rhode Island Commerce Corporation

4 The major source for the information in this chapter and basis for the estimates is the American Public Transportation Association’s

“Economic Impact of Public Transportation Investment, 2020 Update” report.

- **Supplier Purchase** effects on supporting industries that supply goods and services to enable the vehicle manufacturing and construction activities by providing engines, equipment parts, and the steel, concrete, wood and plastic materials needed for building vehicles, guideways and station facilities.
- **Employee Spending** as employees spend their income on consumer goods and services.

Depending upon the choices that will be made on whether to pursue light rail or BRT as the highest mode, capital expenditures will create 19,000 to 33,100 jobs, and operations will create 3,700 to 3,800 jobs (with growth over time between program implementation and 2040).⁵

Economic Benefits

The new jobs described above are the result of the increased spending that will flow through the economy in terms of:

- **Business Output**, which is the volume of business revenues and sales
- **Gross Domestic Product** (GDP), or the value added to products, which reflects business profit, personal income, and taxes
- **Total Labor Income** in terms of wages/payroll and benefits (and which is a subset of GDP)

Business Output

With BRT as the highest mode, the capital projects associated with Transit Forward RI would increase business output over the life of the program by \$3.9 billion, and with light rail as the highest mode, by \$6.8 billion. Business output associated with operations would be \$560 to \$570 million per year.

Gross Domestic Product and Worker Pay

GDP would increase by \$1.8 to \$3.2 billion for capital projects over the life of the project and \$360 million per year for operations. Most of the increase would be for worker pay, which would comprise \$1.2 to \$2.1

billion of the GDP growth for capital programs and \$240 to \$250 million per year of the growth per operations.

Business Output will increase by:

\$3.9 to \$6.8 billion from capital spending to build the expanded system

Up to **\$570 million** per year due to expanded operations

ECONOMIC BENEFITS	CAPITAL PROJECTS	ANNUAL OPERATIONS
With BRT as Highest Mode		
Business Output	\$3.9 billion	\$560 million
GDP (Value Added)	\$1.8 billion	\$355 million
Labor Income	\$1.2 billion	\$243 million
With LRT as Highest Mode		
Business Output	\$6.8 billion	\$572 million
GDP (Value Added)	\$3.2 billion	\$362 million
Labor Income	\$2.1 billion	\$248 million

Worker Pay will increase by:

\$1.2 to \$2.1 billion from capital spending to build the expanded system

Up to **\$250 million** per year due to expanded operations

⁵ Note that these jobs will be created where the money is spent. A large proportion would be new jobs in Rhode Island – for example, the construction jobs to build the expanded system and nearly all of the

jobs to operate the expanded system. Some, such as those to build new buses, would be created in the places where the buses would be manufactured.)

Tax Revenue

The additional economic activity will increase state and local tax revenues, which could offset part of the cost of the program. Most of the tax revenue increases are due to increases in sales and property values and increases in labor income.

State and local tax revenue will increase by:

\$190 to \$320 million from capital spending to build the expanded system

Up to **\$23 million** per year due to expanded operations

STATE AND LOCAL TAX REVENUE	CAPITAL PROJECTS	ANNUAL OPERATIONS
With BRT as Highest Mode		
Corporate Profits & Dividend Taxes	\$6.0 million	\$0.7 million
Personal Income Tax	\$34.7 million	\$4.3 million
Sales & Property Tax	\$123.8 million	\$15.3 million
Other Taxes & Fees	\$21.1 million	\$2.6 million
Total	\$185.6 million	\$23.0 million
With LRT as Highest Mode		
Corporate Profits & Dividend Taxes	\$10.5 million	\$0.7 million
Personal Income Tax	\$60.5 million	\$4.4 million
Sales & Property Tax	\$215.9 million	\$15.6 million
Other Taxes & Fees	\$36.9 million	\$2.7 million
Total	\$323.7 million	\$23.4 million

This additional economic activity generates approximately \$256-344 million in state and local tax revenues. In total, with BRT as the highest mode, capital projects would generate \$186 million in additional state

and local taxes and with LRT as the highest mode, capital projects would generate \$323 million. On an annual basis, capital projects would generate \$9.3 to \$16.2 million per year. State and local tax revenues for operations would increase as the system expands to an additional \$23 million in 2040.

More Attractive and Livable Development

Transit, and in particular, light rail, BRT, and commuter rail, can help concentrate development. In more traditionally developed places such much of Rhode Island, it can help reinforce and expand traditional patterns and reduce sprawl.

Many Rhode Island companies and organizations that focus on development and growth recognize this potential. Smart Growth RI, which advocates for actions that public and private interests seeking sustainable and equitable economic growth, has included adoption of Transit Forward RI as one of its top priorities.⁶ The Providence Foundation envisions Providence as “a city built to welcome new residents and businesses, and be positioned to succeed and adapt.” Its top priorities include transit-oriented developments at transportation hubs and along transit corridors and vibrant public spaces restore connections between the downtown, surrounding neighborhoods and the metropolitan region.⁷

New Development

High quality transit services such as light rail and Bus Rapid Transit Stimulate and attract Transit-Oriented Development, or TOD, which is dense mixed-use development oriented around transit and a walkable environment. The new development would increase the job, economic benefit, and tax revenue increases described above to even higher levels. TOD also helps create more attractive and livable city and neighborhood centers.

Transit Forward RI will stimulate \$2 to \$5 billion in new transit-oriented development

6 Grow Smart RI 2020 Briefing Book for Candidates and Voters

7 Providence Foundation’s “Our Vision for Providence,” <https://www.provfoundation.com/our-vision>

Transit Forward RI will stimulate new development along major transit lines and around stations

Providence Station Area in 2003



Providence Station Area in 2020



The best local example of the ability of transit to encourage more attractive and livable places is the recent development around Providence Station. In 2004, Providence Station was mostly surrounded by vacant lots. Most of the empty lots have since been developed and the area now consists of a mix of commercial uses and housing. The development of light rail and/or BRT lines, additional Transit Emphasis Corridors (like the Downtown Transit Connector) and commuter rail

improvements will encourage this type of new development throughout much of Rhode Island.

The amount and value of new development would vary greatly depending upon a number of factors, including the level of transit investment, municipal support and regulations, and the underlying strength of the real estate markets along the transit lines. Based on experiences

elsewhere, the impacts can range from nominal to nearly \$115 million in new development for every dollar to transit investment.⁸ Excluding lines with very high and nominal results, the average development impact is approximately \$2.50 of new development for each \$1 of transit capital cost.

Light rail lines attract similarly varying levels of development. They are also known to attract a significantly higher level of total investment; however, relative to cost, development impacts are similar. Using the average figure of \$2.50 of development for every dollar of transit investment, **Transit Forward RI would generate over \$2 billion in new investment with BRT as the highest mode and over \$5 billion in new investment with light rail as the highest mode.**

⁸ More Development for Your Transit Dollar, An Analysis of 21 North American Transit Corridors, Institute for Transportation & Development Policy (ITDP)

5. Better Transportation Choices

• **Public Transportation:** Encouraging the use of buses, trains, and subways to reduce traffic congestion and emissions.

• **Bike Lanes:** Creating dedicated lanes for cyclists to promote safe and healthy commuting options.

• **Carpooling:** Promoting carpooling programs to reduce the number of vehicles on the road.

• **Walking and Biking:** Encouraging walking and biking as sustainable modes of transportation.

• **Smart Infrastructure:** Investing in smart infrastructure like traffic lights and road sensors to optimize traffic flow.

• **Green Spaces:** Incorporating green spaces and parks into urban planning to encourage walking and biking.

• **Public Space:** Creating public spaces that encourage walking and biking, such as pedestrian-friendly streets.

• **Green Building:** Encouraging the use of green building materials and practices in construction.

• **Green Procurement:** Encouraging the use of green products and services in government procurement.

• **Green Finance:** Encouraging the use of green finance products and services.

• **Green Investment:** Encouraging the use of green investment products and services.

• **Green Insurance:** Encouraging the use of green insurance products and services.

• **Green Retirement:** Encouraging the use of green retirement products and services.

• **Green Social Security:** Encouraging the use of green social security products and services.

• **Green Medicare:** Encouraging the use of green Medicare products and services.

• **Green Medicaid:** Encouraging the use of green Medicaid products and services.

• **Green Veterans Affairs:** Encouraging the use of green Veterans Affairs products and services.

• **Green Social Security Administration:** Encouraging the use of green Social Security Administration products and services.

Light rail, BRT, or Rapid Bus will be provided to 41% of residents and 52% of jobs



More Frequent Service for Longer Hours

Two of the improvements that existing riders want most – and that would attract many new riders to transit – are more frequent service for longer hours. These improvements are particularly important to shift workers, many of whom are essential workers who travel to and from work when transit service operates infrequently or not at all.

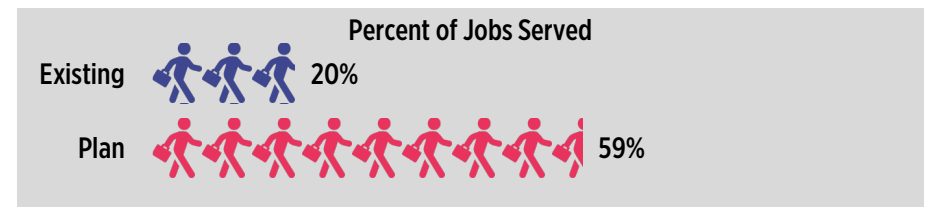
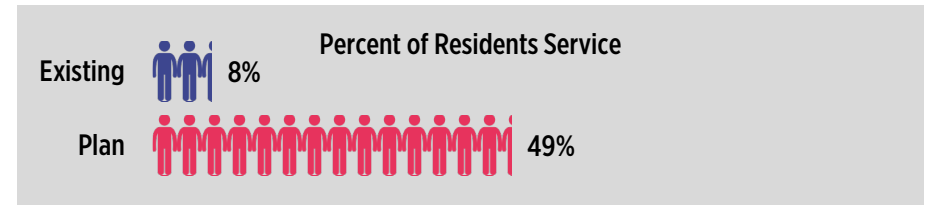
More Frequent Service

Most riders consider transit to be frequent when it operates every 15 minutes or better. Today, only three routes provide frequent service from early morning until late and one other provides frequent peak period service. Transit Forward RI will create a Frequent Transit Network Consisting of 19 routes that will operate every 15 minutes or better for most of the day. These routes will serve 49% of residents and 59% of jobs.

Service frequencies on other routes will also be improved. At present, the “average” RIPTA route operates only every 42 to 43 minutes for most of the day. Transit Forward RI will improve average service frequencies to 21 minutes during peak periods and 26 minutes during the midday and evening.

49% of residents and 59% of jobs will have access to frequent transit

	TODAY		PLAN
Frequent All Day Routes	3	→	19



More frequent service will be provided on nearly all routes

AVERAGE SERVICE FREQUENCIES (MINS)	TODAY		PLAN
Peak Periods	43	→	21
Midday	42	→	26
Evening	52	→	26

Longer Hours of Service

As has been highlighted by the pandemic, large numbers of people travel to and from work outside of “normal” commute hours. Today, only 10 routes operate before 6 AM, only seven operate past 9 PM, and only one operates past midnight. This is too short of a time span for many people.

With Transit Forward RI, evening and night service on most routes will be extended by about two hours. A total of 23 routes will operate past

Major services will be faster (travel time savings compared to local bus)

TRAVEL TIME SAVINGS	PERCENT SAVINGS
Light rail	25%
Bus Rapid Transit	15%
Rapid Bus	8%
Regional Rapid Bus	15%
Commuter Rail (Providence – Boston)	Up to 20%

Better Regional Connections

While Rhode Island is small, many distances are still long. The plan will develop four Regional Rapid Bus lines that will provide very high quality service to four regional markets:

- Woonsocket – Providence
- Newport – Providence via East Bay
- Newport – Providence via West Bay
- South County – Providence via URI

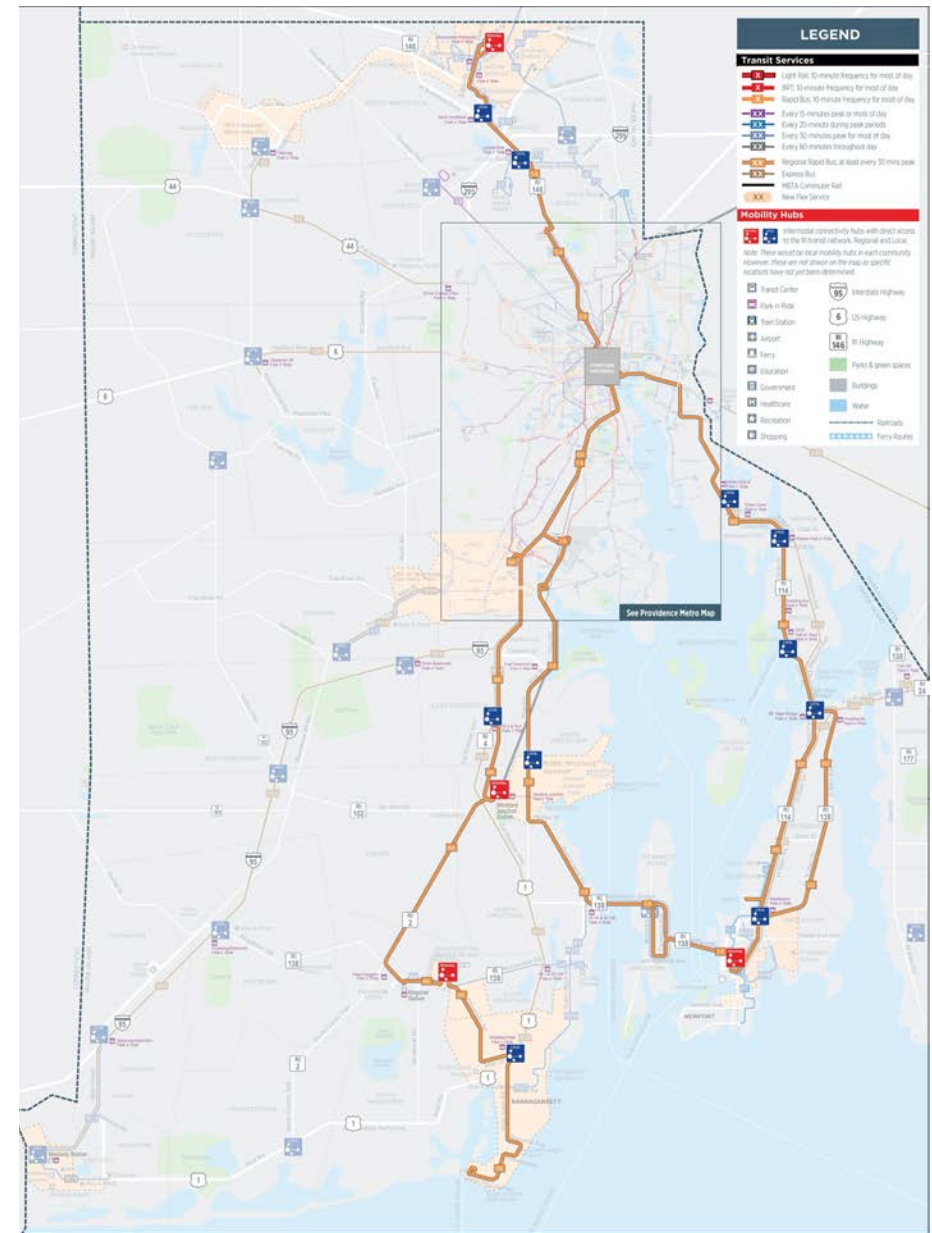
These routes will provide many of the same amenities as light rail, BRT, and Rapid Bus and greatly improve regional connections within Rhode Island.

Stronger Ties with Boston

The plan includes three commuter rail improvements designed to strengthen ties with Boston:

- A reduction in Providence – Boston travel times from as long as 75 minutes to less than 60 minutes
- Service as frequent as every 30 minutes
- The ability to use MBTA passes on selected Amtrak trains.

Four Regional Rapid Bus routes will provide high quality service to major regional markets



6. Better Lives

Better Lives

We all spend much of our lives getting from one place to another. Transit Forward RI will it easier for Rhode Island's residents to get around, and importantly in ways that will improve people's lives. Transit Forward RI will provide:

- *Frequent service to 49% of all residents*
- *Frequent service to 72% of low income residents*
- *Frequent service to 86% of minority residents*
- *60% more midday service and 100% more evening service to make the commutes of shift workers easier*
- *Service after 9 PM on 23 additional routes to better serve shift workers*
- *Better service to 96,000 seniors and new service to 12,000 more to make it easier to age in place*
- *Better service to persons with disabilities to make it easier to live independent lives*

Provide Ladders of Opportunity

Transit Forward RI is designed to match transit services with demand to ensure that services will be well used and cost-effective. Demand is high in much of Rhode Island, but especially so in areas that are home to many disadvantaged residents – those with lower incomes and people of color. For these people, better transit will not only make travel easier, it will also provide ladders of opportunities to more prosperous lives.

The plan will dramatically improve service to lower income and minority residents. In total, 72% of low income residents and 86% of minority residents will served by frequent transit, compared to 18% and 22% today.

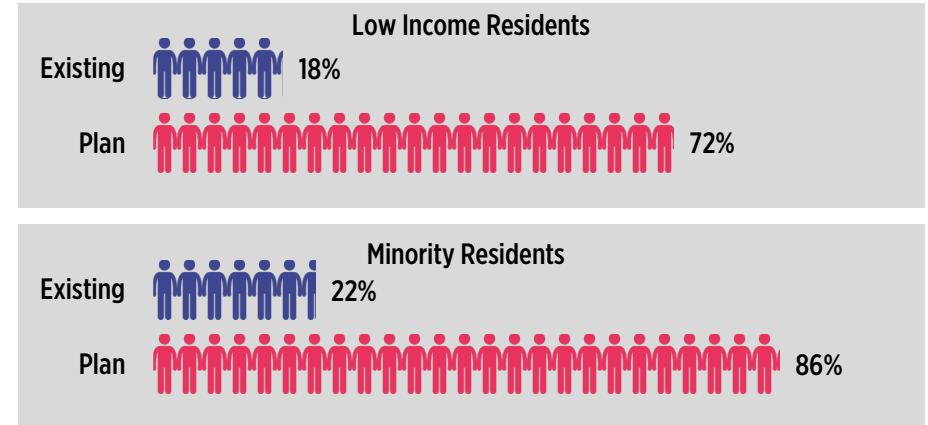
Improve Service for Shift Workers

RIPTA's services are currently designed with a strong focus on serving people who commute to and from work during traditional peak periods. The rationale is that more people travel during those times.

However, even before the COVID-19 pandemic, the number of people who work non-traditional hours has been steadily increasing, and

differences in demand by time of day have been shrinking (and with the pandemic, the differences have become quite small as essential

The large majority of low income and minority residents will have access to frequent transit



workers are frequently shift workers). Looking forward, long-term trends point to continued increasing demand during the midday and evening. To better serve these works, the plan will provide more frequent midday and evening service. It will also provide more evening and night service to better serve people who work late.

Midday and evening service enhancements will make it easier for shift workers to get to and from work

OFF-PEAK SERVICE	TODAY		PLAN
Avg Midday Service Frequencies (mins)	42	→	26
Avg Evening Service Frequencies (mins)	52	→	26
Routes that Operate After 9 PM	7	→	23
Routes that Operate After Midnight	1	→	19

Make Life More Affordable

Approximately 90% of Rhode Island households have at least one private vehicle and over half have two or more. In most cases this is by choice, but for many it is out of necessity.

Owning a private vehicle is expensive, and in Rhode Island, costs about \$8,000 per year. This imposes an economic burden on lower income residents, and to the extent that a household can live without a car, or one less car, they can save \$8,000 per year than can be used for other purposes. For example, \$8,000 per year equates to nearly \$600 a month to help pay for rent or almost two years of tuition at CCRI.

Substituting a car for transit can save over \$7,000 per year



Annual Auto Ownership Cost: \$8,000



Annual Transit Cost: \$840

Enable People to Age in Place and Live Independently

Most seniors and aging baby boomers want to stay in their homes and continue to lead independent lives. However, as people age, their ability to drive often diminishes, and when it does, an inability to get around forces a move away.

Transit Forward will increase the number of seniors who are within ¼ mile of transit from 60% to 67%. More importantly, it will provide more convenient service in terms of more frequent service to those who are already served.

Improved transit will make it easier for seniors to age in place

	PLAN
Seniors within ¼ mile of transit who will be better served	96,000
Additional seniors with service within ¼ mile	12,000

Transit is also an essential service for people with disabilities, many of whom cannot or choose not to drive. Similar to seniors, Transit Forward RI's expanded fixed-route and on-demand transit network will also expand access for people with disabilities.

For both seniors and persons with disabilities who use paratransit and Flex services, the improvements will be particularly attractive. For both types of service, the requirement to make advance reservations will be eliminated, and app-based reservations and fare payment and real-time vehicle tracking will be added.

Contribute to Healthy and Active Lifestyles

The US Department of Health and Human Services recommends getting 22 minutes of physical activity each day. Many transit riders can achieve this simply by walking to and from the bus stop. The American Heart Association has conducted research that found people who take public transit are 44% less likely to be overweight, 27% percent less likely to have high blood pressure, and 34% percent less likely to have diabetes, when compared to people who drive. Transit Forward's network is expected to draw significantly higher ridership, and many current Rhode Island drivers may find that taking transit to work is more convenient than driving alone. In this way, Transit Forward will contribute to ensuring that Rhode Islanders live healthy and active lifestyles.

Transit improves health

Americans who are overweight: 69%

Americans who are clinically obese: 35%

Americans who will develop diabetes: 33%



Obesity rates lower in areas with transit

CDC recommends at least 22 mins of moderate aerobic activity per day

This can be achieved just by walking to and from the bus

7. A Cleaner Environment

A Cleaner Environment and Healthier Lives

Transportation is one of the largest sources of greenhouse gas emissions, and according to the Rhode Island Greenhouse Gas Emissions Plan,⁹ produces 40% of greenhouse gas emissions in Rhode Island. Over half of these emissions come from private passenger vehicles and light trucks. One person driving a medium size car generates 404 grams of CO₂ per mile. That same person riding a bus carrying 20 people would generate 134 grams, or 67% less.

For this reason, an important goal of the Greenhouse Gas Emissions Reduction plan is to reduce Vehicle Miles of Travel (VMT) by:

1. *Decreasing the absolute number of single-occupancy vehicle trips by promoting and investing in alternative modes of transportation (e.g., rail, bus, ridesharing, biking, walking)*
2. *Reducing the absolute length of single-occupancy vehicle trips by encouraging higher-density patterns of development or changes in behavior*

Transit Forward RI would help accomplish both. It is based on investment in alternative modes that will decrease single-occupancy vehicle trips and more robust transit will promote more concentrated development. In total, the plan will:

- *Increase transit ridership by over 60%*
- *Increase transit mode share for work trips from 3.1% to 5%*
- *Reduce VMT by 4%*
- *Reduce greenhouse gas emission by 155,300 metric tons per year*

Encourage Use of Clean Forms of Transportation/ Increase Transit Ridership

Transit Forward RI will increase transit ridership by over 60% from 57,000 trips per weekday to over 92,000 trips. Most of this increase will be due to a shift from other modes, and importantly, from single occupancy vehicles.

Transit Ridership will increase by over 60%



Increase Transit Mode Share

The Emissions Reduction plan also references the State Guide Plan, which includes targets increasing the transit mode share of work trips from 2.5% in 2000 to 2.8% in 2010, 3.0% in 2020 and 3.2% in 2030.¹⁰ In 2019, 3.1% of Rhode Island residents commuted by public transit,¹¹ so the state is on track to meet that goal. Transit Forward RI would increase transit ridership by 60%, which would increase the transit mode share for work trips well beyond the 2030 target to close to 5%.

Transit mode share for work trips will increase to 5%

TRANSIT MODE SHARE	2019	2020	2030	2040
Actual	3.1%			
State Guide Plan Targets		3.0%	3.2%	--
Transit Forward RI				5%

Reduce VMT

The Emissions Reduction Plan also suggests that more aggressive targets be considered to reduce VMT by 2% by 2035 and 10% by 2050.

⁹ Rhode Island Greenhouse Gas Emission Reduction Plan, 2016

¹⁰ State Guide Plan, Land Use 2025.

¹¹ Source: U.S. Department of Transportation, Bureau of Transportation Statistics (<https://www.bts.gov/commute-mode>)

Detailed VMT reduction estimates were not produced as part of the TMP. However, application of a Transit Cooperative Research Board (TCRP) methodology¹² suggests that full implementation of the Transit Forward RI estimates would reduce VMT by 8%, which would greatly exceed the 2035 target and comprise 80% of the 2050 target.

Statewide VMT will be reduced by 8%

VMT	2035	2040	2050
RI VMT Reduction Target	-2%	--	-10%
Transit Forward RI		-8%	

Reduce Greenhouse Gas Emissions

Using the same TCRP methodology described above, **Transit Forward RI would reduce greenhouse gas emissions, in terms of CO₂e,¹³ which are the largest component of greenhouse gas emissions, by 231,500 metric tons per year.**

Finally, there has been some discussion on whether it is more cost-effective to reduce emissions through the replacement of diesel buses with electric buses or through service improvements. Based on the estimates presented above, the cost of electric buses, capital costs for Transit Forward RI, the comparative annual costs to eliminate a pound of CO₂e would range from 18¢ to 44¢. The lower cost would be for the Transit Forward RI program with BRT as the highest mode and the higher cost would be for the program with light rail as the highest mode. The costs for just replacing diesel buses with electric buses would be more expensive, at 40¢. Note that Transit Forward RI would reduce emissions and improve mobility while the replacement of diesel buses with electric buses would reduce emissions but not improve mobility.

Transit Forward RI will be a cost-effective way to reduce greenhouse gas emissions and improve mobility

COST-EFFECTIVENESS	Cost per Pound of CO ₂ e Eliminated
Transit Forward RI with BRT as the highest mode	18¢
Transit Forward RI with light rail as the highest mode	44¢
Replacement of Diesel Buses with Electric Buses	49¢

¹² TCRP Report 176 Quantifying Transit's Impact on GHG Emissions and Energy Use—The Land Use Component, 2015

¹³ Carbon dioxide equivalent (CO₂e) is a measure used to express the global warming potential of different greenhouse gases (e.g., carbon dioxide, methane, nitrous oxide) in a common unit.

8. Summary

Summary

Transit Forward RI is an ambitious program, but one that will make Rhode Island a better place to live, learn, and work, help grow the economy, and stimulate development. It will provide better service to existing riders, attract new riders, and provide ladders of opportunity for disadvantaged residents.

To be sure, Transit Forward RI will be expensive, but it will be an important investment in Rhode Island's future. It is also an investment that other places are making as well. Since 2000, transportation funding initiatives have been on the ballot in 41 states and 71% have succeeded.¹⁴ In this most recent election (November 3, 2020), Austin and San Antonio voters approved major transit initiatives and associated funding (Project Connect in Austin and Keep SA Moving in San Antonio). Transit Forward RI provides many benefits, but perhaps most importantly, it is a necessary investment for Rhode Island to make to strength the state's economy and compete more strongly in a nationwide marketplace.

¹⁴ Center for Transportation Excellence