Comprehensive Economic Impact Assessment of Utah Transit Authority's Service

Transportation Efficiency Analysis

May 2024

Prepared for:

UTA

Supported by:

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Prepared by:

METRO ANALYTICS

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EXECUTIVE SUMMARY

The Utah Transit Authority (UTA) moves millions of people to home, work, and experiences each year. UTA also generates jobs, spending, travel savings, and tax revenue that benefits individuals, businesses, and the entire state of Utah.

Key findings summary

Utah's Economic Return from UTA Services (2023)

Investing in UTA benefits Utah's economy.

The economic return of UTA services impacts spending, travel efficiencies, transportation savings, job creation, market access, workforce participation, and tax outcomes.

$1/$5.11 ROI (value of goods and services produced per dollar of transit outlay)[1]

For every $1 invested in UTA operations and capital, Utah's economy is able to produce a $5.11 in additional goods and services that could not have otherwise been possible.

$9.6B a year in goods and services enabled by time and mileage savings

Because of time and mileage savings, Utah generated $9.6 billion[2] in additional impact on goods and services that would not have otherwise been produced in 2023. This is the total value of goods and services generated due to time and mileage savings, market access, workforce participation, and UTA spending effects in 2023.

[1] ***Business Output Impacts Per Dollar (2023)***:
Impacts (Returns) Include: (1) Efficiency Savings: $1,889 million [*Yellow Report: Appendix I, Page xi*] + (2) Market Access Gains: $12 million [*Yellow Report: Appendix II, Page xvi*] + (3) Paratransit/MAAS/OnDemand: $43 million [*Green Report: Executive Summary, Page i, Table 1*] + (4) Transit Spending: $1,129 million [*Yellow Report: Appendix IV, Page xxiv*] = **$3,073 million**.
Dollars Spent (Investment) Include: $602 million of total UTA 2023 outlays (per UTA accounting, December 2023).
Impact Per Dollar Spent (Return on Investment): $3,075 million/$602 million = **5.10 per dollar of UTA outlay**

[2] ***Sum of Business Output Impacts of:***

(1) Efficiency Savings: $1,889 million [*Yellow Report: Appendix I, Page xi*] + (2) Market Access: $12 million [*Yellow Report: Appendix II, Page xvi*] + (3) Workforce Participation: $6,593 million [*Yellow Report: Appendix III, Page xx*] + (4) Spending Impacts: $1,129 million [*Yellow Report: Appendix IV, Page xxiv*] = **$9,623 million = $9.6 billion**

$377M in state, federal, and local tax revenue generated in Utah[3]

UTA's service benefits on travel, spending, and business conditions generate an additional $105 million in local taxes, $126 million in state taxes, and $146 million in federal taxes in Utah each year.

79,000 total jobs created[4]

UTA services were responsible for 79,000 direct, indirect, and induced jobs by saving money for drivers, connecting workforce to employers, providing workers access to higher earnings, and spending money on the economy.

10,000 jobs are created because of transportation money saved to Utah households and businesses as a result of UTA's activities

Because transit reduces congestion and other costs for cars and trucks, Utah firms could employ 10,000 more employees[5].

24,000 workers[6] depend on transit to access their jobs supporting an additional **31,500** workers[7] whose jobs otherwise rely on these transit users every day

UTA services connected 24,000 people to jobs. The daily work of these UTA riders supports an additional 31,500 jobs for employees who depend on these transit users.

13,500 jobs[8] created for UTA employees, suppliers, and other related businesses, earning **$334M**[9] and stimulating another **$1.1B** in sales[10] for other Utah businesses

As an employer, UTA operations, suppliers, contractors, and employees generate 13,500 jobs. These direct and indirect jobs resulting from UTA as an employer generate another $1.1 billion in total sales for other Utah businesses.

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[3] Yellow Report, Appendix V: Fiscal Impacts, Page xxvi

[4] ***Sum of Jobs Created by:***
(1) Efficiency Savings: 10,000 [*Yellow Report: Appendix I, Page viii*] + (2) Market Access 78 [*Yellow Report: Appendix II, Page xiii*] + (3) Transit enabled Jobs 24,000 [*Yellow Report: Jobs Supported by Transit, Page 40*] + (4) Workforce Participation 31,500 [*Yellow Report: Appendix III, Page xvii*] + (5) Spending Impacts 13,500 [*Yellow Report: Appendix IV, Page xxi*] = **79,078 Total Jobs**

[5] Yellow Report: Appendix I: Transportation Efficiency Benefits and Impacts, Page viii

[6] Yellow Report, Jobs Supported by Transit, Page 40

[7] Yellow Report, Appendix III: Workforce Participation, Page xvii

[8] Yellow Report: Appendix IV: Transit Spending Impacts, Page xxi

[9] Yellow Report, Appendix IV: Transit Spending Impacts, Page xxii

[10] Yellow Report, Appendix IV: Transit Spending Impacts, Page xxiv

UTA's economic impact benefits all Utahns, whether they ride transit or not.

UTA services reduce road traffic congestion on freeways and in town, benefitting everyone on the road through fewer miles traveled, fewer hours on the road, fewer car expenses, less tax dollars to road repairs, quicker travel times, less stress, access to more employers (and choice in employment), and cleaner air.

$1/$1.27 return in transportation savings.[11]

> Because of UTA's impact on reduced roadway travel including congestion, emissions, fuel use, and other cost of driving, Utah's economy (including drivers and others enjoying clean air and other effects) save $1.27 in transportation costs for every $1 spent.

$717M in travel efficiency savings.[12]

> The estimated time, travel, maintenance savings, and reduced air quality costs for Utah households and business travel totaled $717 million in 2023.

$595M in household income because of household and business travel savings combined.[13].

$2.9B in household income earned from all effects of transit including reduced travel costs, increased productivity, workforce participation and UTA spending.[14].

Economic impact is one part of transit decision-making.

Economic impact is not the only factor in choosing to invest in UTA public transit according to the 2023-2050 Utah Unified Plan. Factoring it in can help prioritize and plan future investment for maximum benefits to Utah's economy.

Data shows UTA has an economic benefit in improving roadway capacity, land value, business and employment opportunities, and investment in infrastructure. In the 2023-2050 Utah Unified Plan, transit services provided by UTA account for over one-third of the entire unified plan's projected economic benefits. Investing in UTA will yield increasing returns for Utah's future economy. If 2023-2050 Utah Unified Plan is fully built out, in 2050, each $1 invested in transit will enable Utah's businesses and workers to produce $6.08.[15] worth of goods and services.

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[11] Efficiency Benefits: $717.23 million [*Yellow Report: Appendix I, Page vi*] / $565 million in UTA's capital outlays (aside from Paratransit O&M Costs, per UTA accounting, December 2023) = **1.27 per dollar of UTA outlay**

[12] Yellow Report, Appendix I: Transportation Efficiency Benefits and Impacts, Page vi

[13] Yellow Report, Appendix I: Transportation Efficiency Benefits and Impacts, Page ix

[14] ***Sum of Household Income Impacts of:***
(1) Efficiency Savings: $596 million [*Yellow Report: Appendix I, Page ix*] + (2) Market Access: $4.2 million [*Yellow Report: Appendix II, Page xiv*] + (3) Workforce Participation: $1,986 million [*Yellow Report: Appendix III, Page xviii*] + (4) Spending Impacts: $334 million [*Yellow Report: Appendix IV, Page xxiv*] = **$9,623 million**

[15] ***Business Output Impacts Per Dollar (2050):*** *(continued in next page…)*

If the transit services in 2023-2050 Utah Unified Plan are fully funded, in 2050, the same $1 invested in UTA will save Utah's households and businesses $2.14[16] in transportation efficiency and market access, or double UTA's current rate of savings (2023).

Data and Methodology

The purpose of this report is to provide data to support early decision-making based on projected economic benefit, using data which otherwise would be available only after investment, or following project completion. To do this, the WFRC-MAG Travel Demand Model v.9.0.0 was used to analyze Wasatch Front's travel characteristics for various transit systems and projects at different investment levels outlined in Utah's Unified Plan 2023-2050. These characteristics include the total number of trips, travel time and distance, congestion levels, and modes of travel, among others. The analysis revealed:

- With higher investments in transit, the model is expected to show decreases in congestion, overall travel time, and emissions, leading to a more efficient transportation system in the Wasatch Front region. Reduced congestion, travel time, and emissions lower travel-related costs for Utah's households and businesses that rely on the transportation system for commuting, obtaining, and delivering goods.
- This efficiency translates into monetary savings, as specified by the US Department of Transportation's Benefit-Cost Analysis Guidance for Discretionary Grant Programs, 2023[17]. These savings benefit Utah's households and businesses due to the more efficient transportation system.
- Households are likely to spend their savings in the local economy on sectors such as entertainment, and groceries, thereby supporting jobs, GDP, and the production of goods and services in the Wasatch Front and, by extension, Utah's economy. Businesses will use their savings from reduced trucking and delivery costs to enhance productivity, generating additional goods and services, which in turn contribute to increased employment, household income, and GDP in both the Wasatch Front and Utah's economies.
- On the other hand, increased transportation system efficiency results in businesses in the region having access to larger labor pool and supplier/customer market, resulting in productivity gains. This again translates to additional production of goods and services, employment opportunities, and value added to the regional economy.

(...continued from previous page)
Impacts (Returns) Include: (1) Efficiency Savings: $7,335 million [*Yellow Report: Appendix I, Page xi*] + (2) Market Access Gains: $2,250 million [*Yellow Report: Appendix II, Page xvi*] = **$9,585 million** at RTP-Priority Needs investment level.
Dollars Spent (Investment) Include: **$1,576 million** of total UTA 2050 outlays at RTP-Priority Needs investment level (as per UTA accounting, December 2023).
Impacts per Dollar Spent (Return on Investment): $9,585 million/$1,576 million = **6.08 per dollar of UTA outlay**

[16] ***Benefits Per Dollar (2050):***
Savings (Benefits) Include: (1) Efficiency Savings $2,268 million [*Yellow Report: Appendix I, Page vi*] + (2) Market Access Gains $1,097 million [*Yellow Report: Appendix I, Page xv*] = **$3,365 million**
Dollars Spent (Investment) Include: **$1,576 million** of total UTA 2050 outlays at RTP-Priority Needs investment level (as per UTA accounting, December 2023).
Benefits per Dollar Spent: $3,365 million/$1,576 million = **2.14 per dollar of UTA outlay**

[17] https://www.transportation.gov/mission/office-secretary/office-policy/transportation-policy/benefit-cost-analysis-guidance

- These direct, indirect, and induced impacts of transportation savings and market access improvements have been estimated using the IMPLAN[18] economic impact model.
- Please refer to Page 3 for further information on the data and methodology employed for this economic impact study.

[18] https://implan.com/white-papers/

Report Summary

Utah's Unified Plan 2023-2050 envisions a robust transportation system that caters for the transportation needs of Utah's households and businesses at two investment levels: Priority Needs and Total Needs. The Priority Needs represents the investment level supported by current revenue streams to accommodate future demand with respect to transportation projects of priority as identified by the stakeholders. The Total Needs scenario represents the investment level required to fulfill all the unmet demands identified by the Unified Plan. While there are costs associated with each of these investment levels, the economic benefits and impacts of such investments are not limited to the dollar amount directly spent but diffuse and disseminate throughout the regional economy because of multiplier effects.

Utah Transit Authority (UTA)'s transit system that includes the bus, light rail, commuter rail, On Demand and paratransit services is an integral part of this plan to make the transportation system meet the increasing travel demand of the future. Similar to the entirety of the Unified Plan, the investment made by the UTA over the period of the Unified Plan on the operation, maintenance, and capital projects of its transit system is not limited to the money directly paid by UTA, but also impacts on employment, labor income, and value added (GDP) created. This study analyzes the impacts of UTA's investment as a tool to both meet the transportation demand of the region, as well as bolster its economic growth. Table 1 presents a summary finding of the total economic benefits and fiscal impacts of the transit investments at different investment levels and transit scenarios.

Table 1: Comparative Economic and Fiscal Impact Outcomes of UTA's Transit Investment at Different Investment Levels

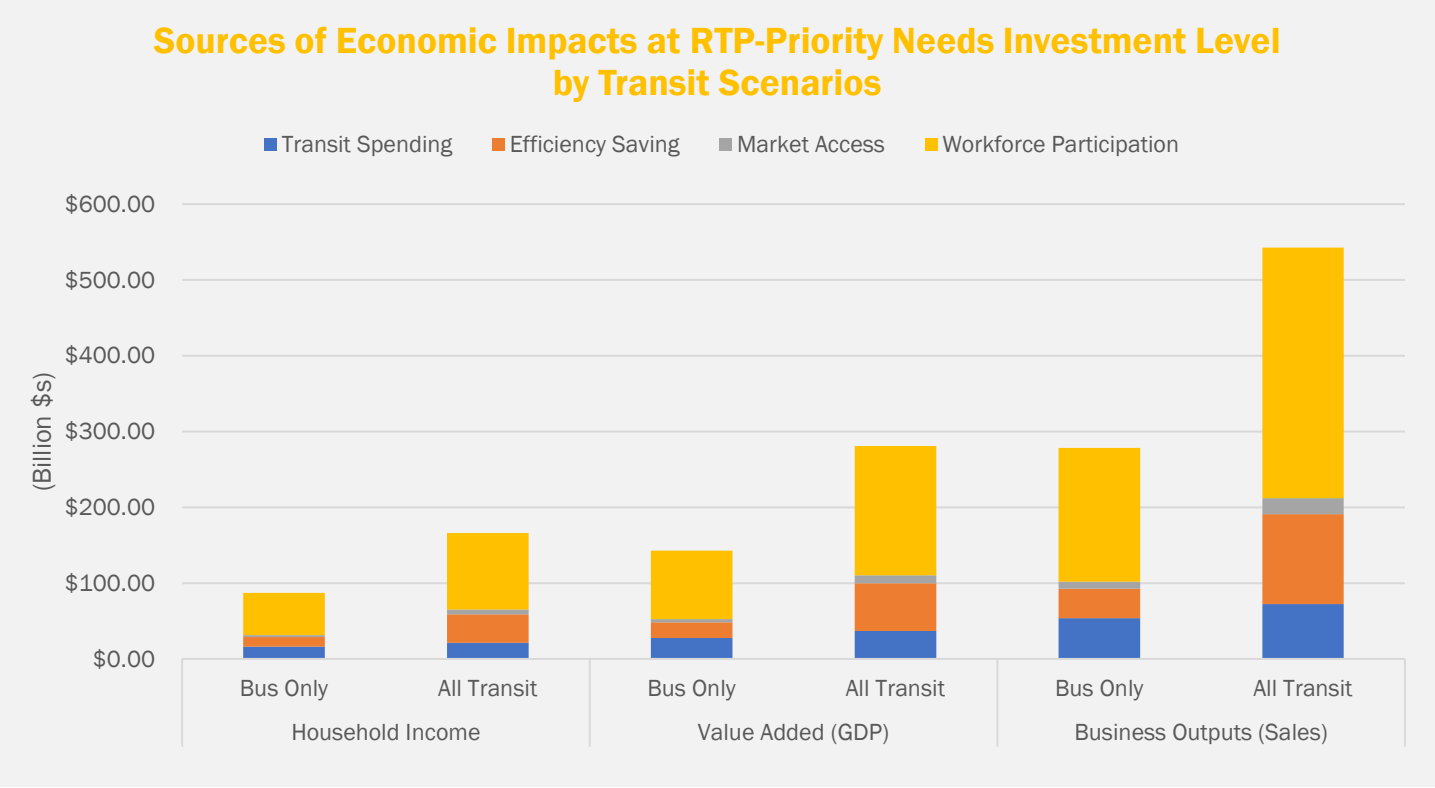
Benefit Scenarios:	**Bus-Only Scenario**				**All-Transit Scenario**			
Investment Levels:	Maintain-Existing-System	Business-As-Usual	RTP-Priority Needs	RTP-Total Needs	Maintain-Existing-System	Business-As-Usual	RTP-Priority Needs	RTP-Total Needs
Transit Spending (Billion $s)	$16.14	$17.45	$26.71	$29.29	$22.22	$24.07	$36.19	$47.01
Efficiency Benefits (Billion $s)	$6.91	$8.42	$12.84	$12.87	$24.42	$24.91	$41.28	$38.37
Economic Impacts								
Employment (# of Jobs)	55,453	65,404	119,212	123,442	120,884	128,895	202,221	212,064
Labor Income (Billion $s)	$57.34	$68.62	$86.99	$79.93	$118.94	$127.85	$166.11	$167.99
Value Added/GDP (Billion $s)	$97.07	$112.80	$142.79	$133.78	$201.33	$216.29	$280.87	$284.36
Business Output (Billion $s)	$188.28	$219.79	$278.47	$261.82	$389.67	$419.18	$542.63	$548.99
Fiscal Impacts	**$7.95**	**$8.96**	**$13.31**	**$13.76**	**$16.98**	**$17.96**	**$26.08**	**$28.01**
Local Taxes (Billion $s)	$2.59	$2.71	$4.01	$4.16	$4.93	$5.00	$7.21	$7.75
State Taxes (Billion $s)	$2.92	$3.14	$4.66	$4.82	$5.82	$6.00	$8.69	$9.34
Federal Taxes (Billion $s)	$2.45	$3.10	$4.64	$4.78	$6.23	$6.96	$10.17	$10.91

Transportation Efficiency

Having a robust transit system will enable Utah's overall transportation system to be more efficient, resulting in travel cost savings for Utah's households and businesses. These savings can be used to invest in productivity in other sectors, creating positive indirect and induced impacts on Utah's economy. These impacts are discussed below and shown in Figure 1 and Figure 2.

According to the Unified Plan: Priority Needs scenario, investing $26.71 billion in Utah Transit Authority's (UTA) bus system would yield $12.84 billion in transportation efficiency benefits, create 12,000 jobs, and contribute $12.32 billion to household income, $20.65 billion to GDP, and $38.97 billion to total business output in Utah versus a baseline scenario without any transit services (No-Transit). Allocating a total of $36.19 billion for both bus and rail transit systems at the Priority Needs level would result in $41.28 billion in transportation cost savings, generating an additional 39,000 jobs, $37.53 billion in household income, $63.20 billion in GDP, and $118.83 billion in business output over the No-Transit scenario. Similarly, allocating $29.29 billion to UTA's bus system under the Unified Plan: Total Needs would generate $12.87 billion in user efficiency benefits, create 10,000 jobs, and contribute $11.23 billion to household income, $18.88 billion to GDP, and $35.56 billion to total business output over a No-Transit scenario. Extending the investment to encompass both bus and rail transit systems, with a total allocation of $47.01 billion, would result in $38.37 billion in transportation cost savings, generating an additional 34,000 jobs, $34.55 billion in household income, $58.39 billion in GDP, and $109.54 billion in business output over a No-Transit scenario. Figure 1 and Figure 2 below provide a breakdown of the economic impacts by sources at the RTP-Priority Needs Investment Level for both Bus-Only and All-Transit scenarios.

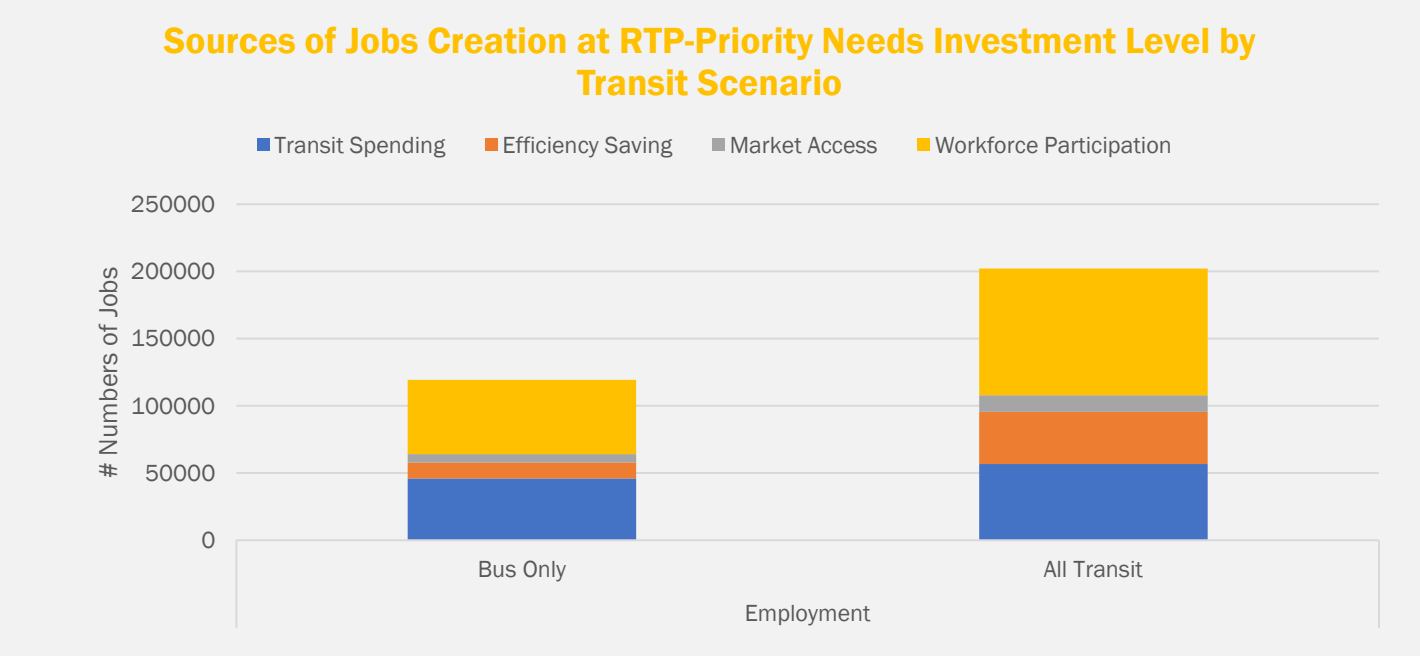
Figure 1: Sources of Economic Impacts at RTP-Priority Needs Investment Level by Transit Scenarios



The apparent decrease in benefits and impacts in the Total Needs scenario compared to the Priority Needs scenario can be attributed to the substantial investment in Utah's roadway system in the Total Needs scenario, which diminishes the extent of Vehicle Miles Traveled (VMT) reduction achieved by UTA's transit system. This is because the increase in funding for UTA's transit system in the Total Needs scenario is not proportionate to the funding increment in the roadway system compared to the Priority Needs scenario. Consequently, the heightened investment in UTA's transit system may not result in higher benefits, as the VMT reduced by the transit system

investment might be offset by the demands on the highway system in the Total Needs scenario. A more in-depth comparison of the economic benefits and impacts of UTA's transit system in the Unified Plan totals reveals that the transit system not only contributes significantly to the Unified Plan's benefits but also enhances the return on investment in roadways compared to a scenario without any transit services.

Figure 2: Sources of Job Creation at RTP-Priority Needs Investment Level by Transit Scenarios



Market Access

The increase in labor accessibility from investment only in UTA's bus system at the Unified Plan's Priority Needs level would generate an additional 6,000 jobs, $2.85 billion in household income, $4.34 billion in GDP, and $9.36 billion in business output over a No-Transit scenario. On the other hand, investment in both the bus and rail system would generate an additional 12,600 jobs, $6.47 billion in household income, $10.25 billion in GDP, and $21.02 billion in business outputs compared to a scenario without transit. Similarly, the labor access increases due to investment only in the bus system at the level of Unified Plan's Total Needs would generate an additional 5,500 jobs, $2.67 billion in household income, $3.95 billion in GDP, and $8.30 billion in business output over a No-Transit scenario. On the other hand, investment in both the bus and rail system would generate an additional 9,000 jobs, $5.01 billion in household income, $7.69 billion in GDP, and $15.27 billion in business outputs.

Workforce Participation

Investing solely in UTA's bus system at the Priority Needs level of the Unified Plan is projected to boost workforce participation in the economy, resulting in an extra 55,000 jobs, $55.73 billion in household income, $90.31 billion in GDP, and $176.51 billion in business output compared to a scenario with no transit. Conversely, allocating resources to both the bus and rail systems would yield even more substantial gains, with an additional 94,214 jobs, $100.72 billion in household income, $170.73 billion in GDP, and $330.48 billion in business outputs, in comparison to a transit-absent scenario. Similarly, focusing on the Total Needs level of the Unified Plan, investing

exclusively in the bus system is anticipated to result in an extra 47,350 jobs, $48.06 billion in household income, $80.80 billion in GDP, and $159.17 billion in business output when compared to a No-Transit scenario. Conversely, simultaneous investment in both the bus and rail systems is expected to generate an additional 94,080 jobs, $100.66 billion in household income, $170.63 billion in GDP, and $330.28 billion in business outputs, showcasing the considerable benefits associated with a comprehensive transit strategy.

Transit Spending

The data in Figure 1 and Figure 2 above show that at the Unified Plan's Priority Needs level, direct spending on UTA's bus system operations, maintenance, and capital outlays alone would result in 46,000 additional jobs, $16.38 billion in household income, $27.49 billion in GDP, and $53.62 billion in business output compared to no transit investment. Conversely, investing in both the bus and rail systems would generate even greater impacts, including 57,000 additional jobs, $21.39 billion in household income, $47.65 billion in GDP, and $72.30 billion in business output versus a No-Transit scenario. Directing UTA's operation, maintenance, and capital outlays to the bus system at the Unified Plan's Total Needs level would yield an additional 60,500 jobs, $17.97 billion in household income, $30.15 billion in GDP, and $58.79 billion in business output over no transit investment. Meanwhile, opting for investment in both the bus and rail systems at this level would generate an additional 75,000 jobs, $27.78 billion in household income, $47.65 billion in GDP, and $93.90 billion in business outputs versus a No-Transit scenario.

Fiscal Impacts

At the Unified Plan's Priority Needs level, UTA's transit investment in operation, maintenance, and capital projects is estimated to generate a cumulative amount of $13.31 billion and $26.08 billion in local, state, and federal taxes (at current tax rates) in the Bus-Only and All-Transit scenarios respectively as a result of direct spending, transportation efficiency, and market access gains. Similarly, the transit investment at the level of Unified Plan's Total Needs, the transit investment is expected to generate $13.76 billion and $28.00 billion in local, state, and federal taxes (at current tax rates) in the Bus-Only and All-Transit scenario.

Land Value Sensitivity

Land value, especially for single-family and non-residential plots, exhibits a gradual correlation with investments in the transit system. The positive effects of transit investments on land value extend beyond the parcels directly adjacent to transit lines. In the region where land parcels face heightened accessibility challenges due to traffic congestion and a lack of transit options, the impact of transit investment is most significant, leading to congestion relief and consequent increases in land value. The value of multi-family parcels, however, is not as responsive to the enhanced accessibility resulting from transit investment, as these values are more sensitive to other factors. However, the rental rates of multi-family residential units may exhibit greater sensitivity to transit investments, although a more thorough investigation is needed for definitive conclusions.

1. INTRODUCTION

Overview

Utah's Unified Plan 2023-2050 encompasses a twenty-eight-year outlook for state transportation facilities across multiple modes of transportation. Within this framework, the Utah Department of Transportation (UDOT) takes the lead in preparing the Long-Range Transportation Plan (LRP) for rural areas, while in urban regions with populations exceeding 50,000 residents, the Metropolitan Planning Organizations of greater Logan (CACHE) and Salt Lake City (WFRC), and the counties of Summit, Utah, and Wasatch together (MAG), and Washington County (DMPO) craft their respective Regional Transportation Plans (RTPs). These plans collectively chart a course for transportation improvement projects, guided by federal regulations and refreshed every four years to meet the evolving transportation needs of the state.

Utah's transit system, particularly the ones managed by the Utah Transit Authority (UTA), stands as a linchpin in this comprehensive transportation strategy, catering to the diverse travel demands of the urbanized areas within the state. In 2022 alone, UTA's transit system facilitated over 31.5 million unlinked passenger trips with 11,244 vehicles operated in maximum service, covering an extensive 37.6 million vehicle revenue miles of travel and clocking in over 2.2 million vehicle revenue hours of travel in Wasatch Front region[19], the largest metropolitan region within Utah. By all measures, UTA's transit system is a pivotal asset for the state, particularly as the state expects tremendous future economic growth.

This report delves into the economic repercussions of three distinct investment levels and two distinct transit service scenarios for UTA's transit system, each described below:

Investment Levels

- ***Maintain-Existing-System:*** This scenario outlines the investment required to maintain the current transit system status, focusing on basic preservation, amounting to $17.42 billion for operation and maintenance, with additional $4.80 billion allocated for preserving system at the State of Good Repair (SGR).
- ***Business-As-Usual:*** This scenario outlines the investment required to maintain the current transit system status, amounting to $17.42 billion, with additional funds of $6.65 billion that have already been secured for system expansion projects.
- ***RTP-Priority Needs*** *(also referred to as* ***Constrained Funding****):* This scenario aligns investments with current revenue streams to cater to future demand. It encompasses $22.79 billion for basic preservation and an additional $13.40 billion for crucial system expansion, aligning with the Utah's Unified Plan: Priority Needs.

[19] National Transit Database (NTD) https://www.transit.dot.gov/ntd/ntd-data

- ***RTP-Total Needs*** *(also referred to as* ***Unconstrained Funding****):* This investment scenario represents the investment level recommended by the Unified Plan at the Total Needs level. It emphasizes not only basic preservation with an investment of $24.76 billion but also substantial system expansion investment of $22.25 billion. This visionary approach aims to meet the comprehensive and evolving needs of Utah's dynamic transit landscape.

Transit Service Scenarios

- ***No-Transit Service:*** This scenario imagines a Utah without any transit services, providing a baseline for assessing the pivotal role of transit in the state's mobility and economic landscape.
- ***Bus-Only Service:*** This scenario highlights the economic and mobility benefits of bus transit, showcasing their significance in Utah's transportation network.
- ***All-Transit Service:*** This scenario represents a comprehensive vision, encompassing bus and rail options, exemplifying the transformative potential of a diversified transit system in enhancing Utah's economic prosperity and mobility.

Objective and Scope

The objective of the Economic Impact Analysis of UTA's Transit Investment report is to comprehensively assess the economic contributions of UTA transit services to the economy of the Wasatch Front region and, in broader context, Utah. This analysis aims to isolate and quantify the monetary, fiscal, and broader impacts that transit systems have in the regional economy. It specifically focuses on the role of transit in improving overall efficiency of the transportation system, increased workforce participation in the economy, and expanded labor force pool for the businesses, and property value sensitivities, providing valuable insights for informed decision-making.

The economic impact analysis encompasses the following elements, elucidating the significance of transit investments and their multifaceted impact on Utah's economy:

- **Transit Contribution and Efficiency:** Analyze and showcase the economic and fiscal benefits of transit in Utah, comparing scenarios with and without transit to highlight its contributions and efficiency in reducing costs and boosting the state's economy through federal funding, cost savings, and tax revenue.
- **Business Market Access:** Investigate how transit increases the labor pool for Utah's employment locations and expands job opportunities for households, and assess its impact on productivity, industry outputs, household earnings, and broader economic metrics.
- **Workforce Participation:** Investigate the number of work trips enabled by the availability of transit which would not have been possible without transit. Also analyze the impacts of this increased workforce participation within the economy.
- **Impacts of Direct Spending:** Analyze the broader economic impacts of the direct spending on UTA's transit system through the purchase of goods and services for operation and maintenance, as well as for execution of capital projects.

- **Property Value Sensitivity Analysis:** Examine how transit affects property values by considering access to labor and consumer markets. Estimate the impact of changes in transit access on property values for various property types and density levels, and provide profiles of scenarios where transit significantly influences property values and associated tax revenues.

While this report focuses only on the efficiency benefits and related economic impacts, future reports will discuss the role of transit for business attraction, the role of paratransit and ACES (Autonomous, Connected, Electric and Shared services) will be analyzed further in the subsequent reports.

Methodology

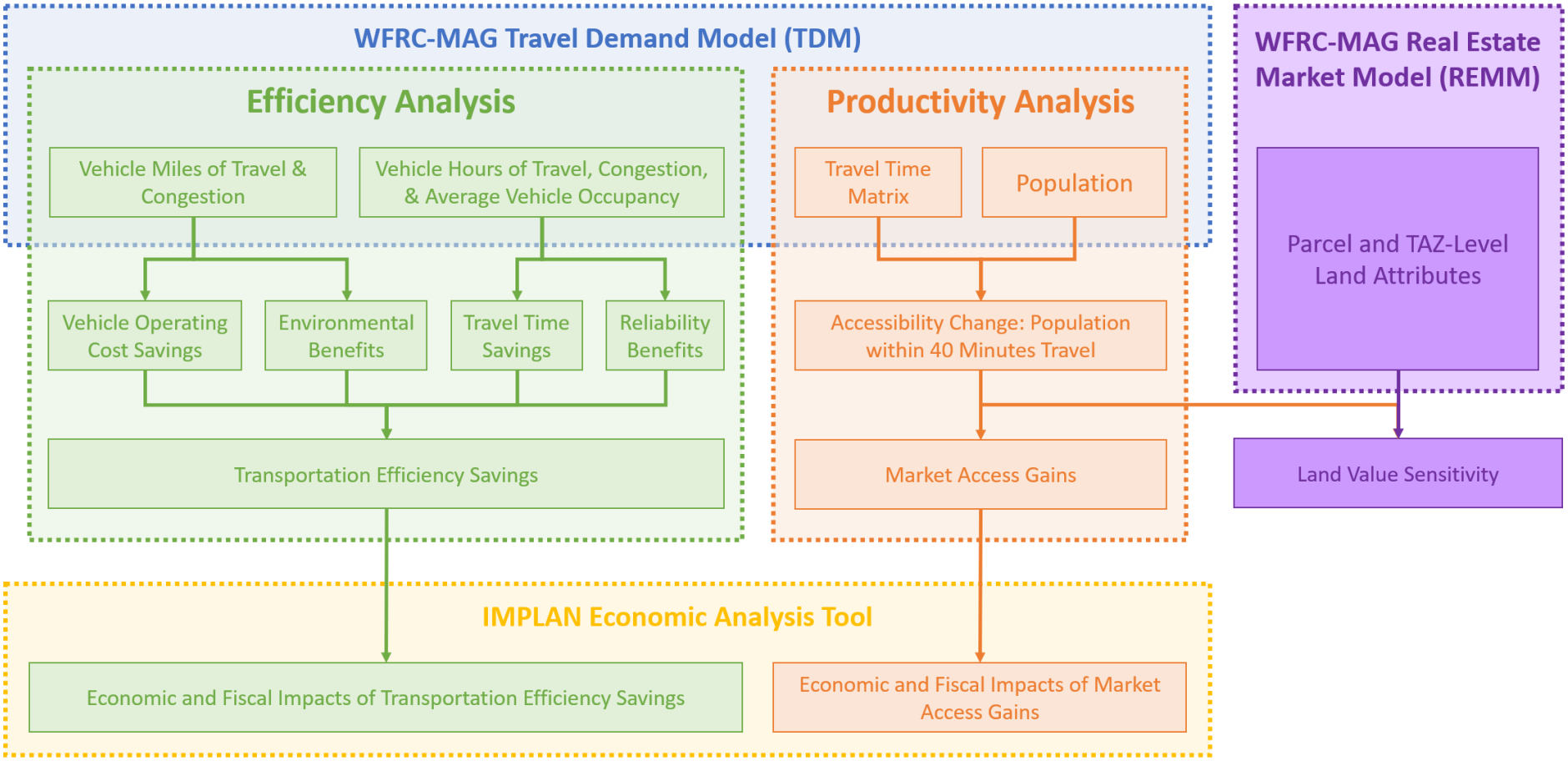
The methodology employed in this analysis is displayed in Figure 3 below. It is systematic and rigorous, offering a structured approach to evaluate transportation benefits and the direct, indirect and the induced economic impacts of those benefits. Central to this methodology is the calculation of user costs, which represent the monetary equivalent of travel demand characteristics. For instance, the user vehicle operating cost would be calculated based on the total vehicle miles of travel and the per-mile vehicle operating cost by modes of travel, the user value of time cost would be calculated based on the total vehicle hours of travel and the per-hour value of time of the riders, etc. This computation incorporates fixed factors such as the per-mile vehicle operating costs and per-hour value of time. These are derived from authoritative sources, including the *Benefit-Cost Analysis Guidance for Discretionary Grant Programs 2023*[20] and other relevant references, effectively capturing the financial burdens experienced by individuals and businesses in their transportation activities.

Furthermore, the user or societal benefits of various transit scenarios are assessed by comparing user costs across different investment levels in the Bus-Only and All-Transit scenarios with respect to the No-Transit scenario. This calculation enables us to discern the cost savings and efficiency enhancements associated with transit investments, facilitating an evaluation of potential returns on these investments. Our methodology also extends to the evaluation of expected benefits for Utah's businesses and households. Specifically, we anticipate that Utah's businesses will experience direct, indirect, and induced benefits from savings associated with truck transportation, while the state's households are expected to benefit from the savings in auto commute trips.

Additionally, a comprehensive assessment of Market Access gains for each scenario is conducted by examining variations in accessibility, particularly the number of populations within a 40-minute congested commuting distance from each Traffic Analysis Zone (TAZ) compared to the No-Transit scenario. This perspective provides valuable insights into the impact of transit improvements on regional accessibility.

[20] Benefit-Cost Analysis Guidance for Discretionary Grant Programs, 2023 https://www.transportation.gov/mission/office-secretary/office-policy/transportation-policy/benefit-cost-analysis-guidance

Figure 3: Schematic Economic Impact Analysis Methodology



To estimate the broader economic impacts of transportation benefits, the analysis utilizes the IMPLAN[21] economic modeling tool. This modeling approach accounts for the direct, indirect, and induced effects of transportation enhancements on various economic indicators, including jobs, labor income, value added, outputs, and revenue collection. Employing this approach provides a comprehensive understanding of the potential economic implications of transit investments on Utah's economy, aiding informed decision-making in transportation planning and infrastructure investment.

Data

This analysis relies on an extensive travel demand output summary dataset encompassing multiple transportation system use characteristics from the WFRC-MAG Travel Demand Model v9.0.0 made available by the Wasatch Front Regional Council (WFRC). These essential metrics include vehicle and person trips, vehicle and person miles of travel, vehicle and person hours of travel, and average vehicle occupancy. The dataset is meticulously categorized to provide insights across various dimensions of travel in the region. Time of day is a key dimension, with data segmented into morning, midday, afternoon/evening, and night, allowing for a comprehensive understanding of diurnal travel patterns. The dataset also covers diverse transportation modes, including auto (for work and non-work purposes), truck (categorized by weight as light, medium, and heavy), public transit (bus and rail), and non-motorized transportation. This segmentation facilitates a hyper-detailed examination of the movement of individuals and goods in the region. Furthermore, the dataset considers different investment levels, encompassing scenarios with maintaining existing system (Absolute No Build), business as usual (No Build), RTP-Priority Needs (aligned with Unified Plan: Priority Needs), and RTP-Total Needs (following Unified Plan: Total Needs). This diverse dataset forms the foundation for the analysis, providing the necessary information to assess the financial and operational implications across various investment scenarios and transportation modes.

The financial quantification of the user benefits has been carried out using the per-unit cost of travel (fixed factors) provided in Appendix A of the Benefit-Cost Analysis Guidance for Discretionary Grant Programs 2023.

[21] Economic Impact Analysis for Planning https://implan.com/

2. TRANSPORTATION EFFICIENCY

Investments in transit infrastructure yield a wide range of transportation efficiency benefits and can fundamentally transform the way people and goods move within a region. These investments enhance transit system capacity, alleviating traffic congestion and resulting in reduced travel times, fuel consumption, and emissions. Improved fuel efficiency and reduced vehicle wear and tear lead to significant cost savings for transit operators and users alike. Notably, time savings resulting from efficient transit options enhance productivity and elevate quality of life by minimizing time spent commuting. Additionally, reliable and predictable transit systems contribute to reliability savings by minimizing delays and disruptions. Safety improvements, active transportation benefits, and environmental sustainability further highlight the comprehensive benefits of investing in transit infrastructure.

Transportation Efficiency Savings

This section analyses the societal benefits of transit investments in Utah's transit system, considering different investment levels and transit scenarios. Figure 4 illustrates a clear trend where societal benefits increase with higher investment levels. The Bus-Only scenario delivers substantial benefits, but the All-Transit scenario offers even greater contributions. Additionally, a subtle reduction in efficiency benefits and savings becomes evident as investment levels progress from RTP-Priority Needs to RTP-Total Needs. This reduction is attributed to the law of diminishing returns, as the unconstrained investment in roadway projects would attract more vehicle users back to the roads, increasing total vehicle miles of travel. This influx of road users would partially offset the transit ridership increase and the resulting societal benefits.

Additionally, Table 2 illustrates the increase in total user savings with higher investment levels and an expanded range of transit options. Notably, the majority of these benefits are realized by non-transit users, as transit eases traffic congestion and shortens travel times by reducing vehicle miles traveled on roadways. This would then result in less fuel consumption, reduced travel time, reduced time spent stuck on traffic, and less tailpipe emissions resulting in vehicle operating cost savings, travel time and reliability savings, and environmental benefits enjoyed by the entire region.

Figure 4: Comparison of Total User Benefits of Transit Investment in All Scenarios

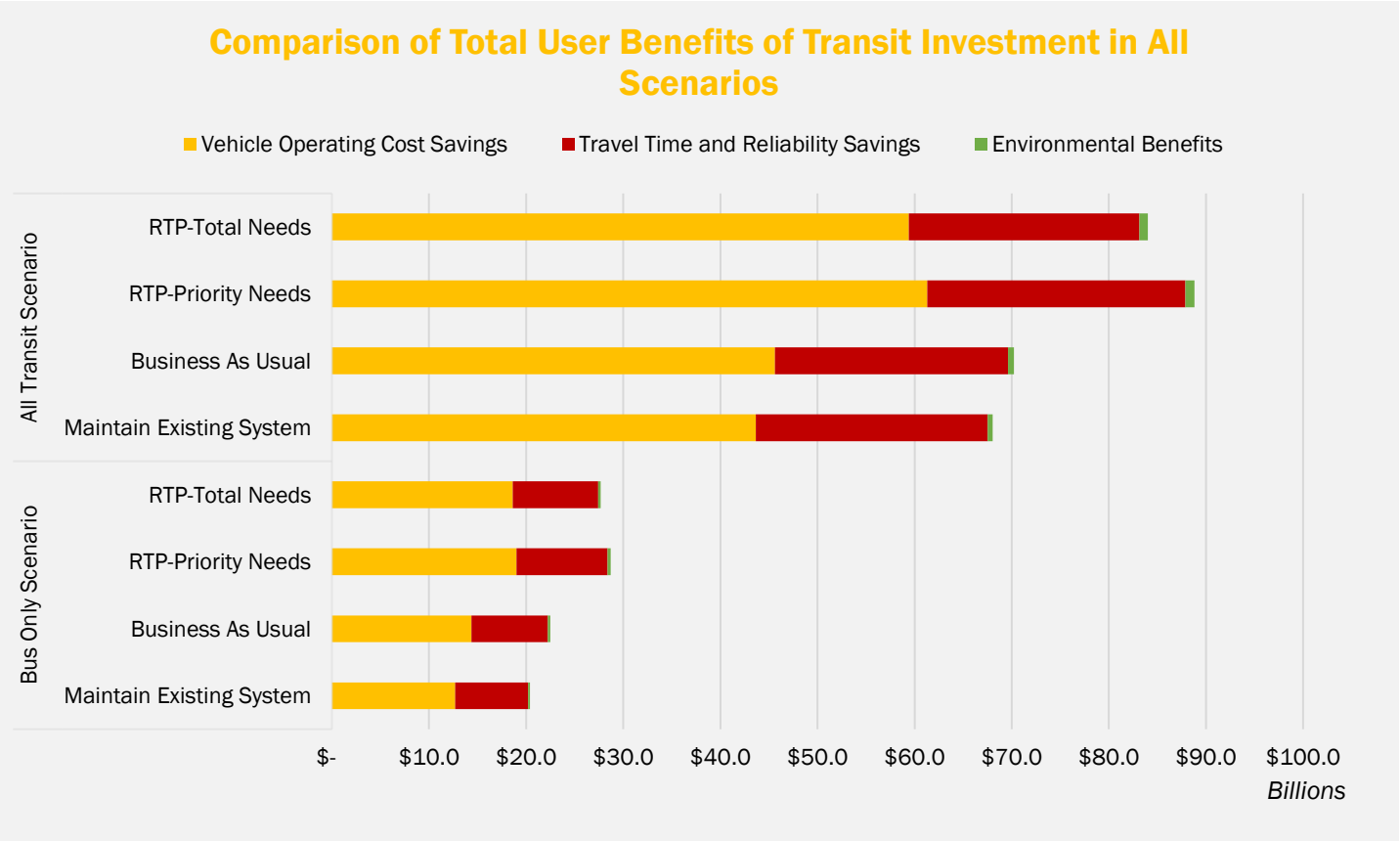


Table 2: Transportation Efficiency Savings for Non-Transit Users in the UTA Service Region

Benefit Scenarios:	Bus-Only Scenario (in Million $s)				All-Transit Scenario (in Million $s)			
Investment Levels:	Maintain-Existing-System	Business-As-Usual	RTP-Priority Needs	RTP-Total Needs	Maintain-Existing-System	Business-As-Usual	RTP-Priority Needs	RTP-Total Needs
Total Efficiency Savings (Undiscounted)	**$20,395.0**	**$22,477.5**	**$28,712.0**	**$27,672.2**	**$68,111.8**	**$70,227.6**	**$88,807.2**	**$84,005.7**
Vehicle Operating Cost Savings	**$12,694.9**	**$14,354.4**	**$18,992.7**	**$18,612.9**	**$43,663.4**	**$45,607.4**	**$61,290.4**	**$59,392.8**
Auto Work	$5,522.2	$6,034.3	$8,488.4	$8,484.4	$20,595.4	$21,008.8	$29,564.4	$29,423.0
Auto Non-Work	$5,101.8	$5,791.0	$7,127.7	$7,124.1	$17,092.6	$18,034.8	$22,159.9	$21,269.0
Truck	$2,070.9	$2,529.1	$3,376.6	$3,004.4	$5,975.4	$6,563.8	$9,566.1	$8,700.8
Travel Time and Reliability Savings	**$7,502.9**	**$7,885.3**	**$9,402.8**	**$8,787.2**	**$23,868.0**	**$23,991.6**	**$26,592.0**	**$23,763.3**
Auto Work	$2,308.0	$2,315.0	$3,161.3	$2,970.2	$8,764.8	$8,650.7	$10,166.5	$9,183.1
Auto Non-Work	$3,539.6	$3,704.0	$4,257.4	$4,089.8	$9,729.6	$9,857.4	$10,536.5	$9,631.6
Truck	$1,655.3	$1,866.3	$1,984.1	$1,727.2	$5,373.6	$5,483.5	$5,889.0	$4,948.6
Environmental Benefits	**$197.2**	**$237.8**	**$316.5**	**$272.1**	**$580.4**	**$628.6**	**$924.8**	**$849.6**
Auto	$120.4	$130.0	$185.1	$183.1	$406.8	$422.9	$574.2	$570.9
Truck	$76.8	$107.8	$131.4	$89.0	$173.6	$205.7	$350.6	$278.7

The above table only compares the transportation efficiency savings of the non-transit users that are existing in the system regardless of presence of the transit. However, when the addition of transit users is considered in the two transit scenarios, an apparent reduction in benefits occurs when introducing new transit modes, such as bus transit

in the Bus-Only scenario and rail transit in the All-Transit scenario. This is because some trips that would not have taken place in the No-Transit scenario without the presence of transit now occur, imposing additional travel time and emissions costs on the system. The efficiency cost of having transit services in the regional transportation system for all scenarios and investment levels is presented in Table 3.

Table 3: Transportation Efficiency Costs for Non-Transit Users in the UTA Service Region

Benefit Scenarios:	**Bus-Only Scenario**				**All-Transit Scenario**			
Investment Levels:	Maintain-Existing-System	Business-As-Usual	RTP-Priority Needs	RTP-Total Needs	Maintain-Existing-System	Business-As-Usual	RTP-Priority Needs	RTP-Total Needs
Total Transit Efficiency Costs	**$13,483.00**	**$14,057.80**	**$15,868.60**	**$14,804.90**	**$43,693.80**	**$45,314.10**	**$47,527.00**	**$45,634.20**
Vehicle Operating Cost	$4,050.0	$4,412.2	$4,887.8	$4,680.9	$4,541.8	$4,891.8	$5,421.2	$5,251.9
Travel Time and Reliability Costs	$9,172.2	$9,354.9	$10,614.2	$9,759.5	$38,839.7	$40,080.1	$41,675.8	$39,950.9
Environmental Costs	$260.8	$290.7	$366.6	$364.5	$312.3	$342.2	$430.0	$431.4

While this apparent disbenefit offsets the gains of non-transit users across all future scenarios, with a notable impact on travel time, reliability, and environmental benefits, the overall benefits in both the Bus-Only and All-Transit scenarios remain positive across all investment levels. Importantly, the All-Transit scenario outperforms the Bus-Only scenario due to the efficiency of rail transit.

The net effect of transportation efficiency savings and cost of all modes are presented in Table 4. Under RTP-Priority Needs, the Bus-Only scenario is expected to yield a net benefit of $12.8 billion, illustrating the positive effects of bus transit projects planned at the RTP-Priority Needs investment level. However, the All-Transit scenario demonstrates significantly higher net benefits at $41.3 billion, showcasing the significant positive impact of substantial funding for rail transit system on societal benefits. Finally, at the RTP-Total Needs level, having bus transit as the only transit scenario would yield a net benefit of $12.9 billion, while in the All-Transit scenario, there is a substantial net benefit of $38.4 billion. This, however, is a slight decline from the benefits of the RTP-Priority Needs investment level as a result of diminishing returns.

Table 4: Net Transportation Efficiency Benefits at All Scenarios and Investment Levels

Benefit Scenarios:	**Bus-Only Scenario**				**All-Transit Scenario**			
Investment Levels:	Maintain-Existing-System	Business-As-Usual	RTP-Priority Needs	RTP-Total Needs	Maintain-Existing-System	Business-As-Usual	RTP-Priority Needs	RTP-Total Needs
Net Efficiency Benefits (Undiscounted)	**$6,912.0**	**$8,419.6**	**$12,843.3**	**$12,867.3**	**$24,417.9**	**$24,913.4**	**$41,280.1**	**$38,371.4**
Discounted @ 3.5%	$4,530.9	$5,299.4	$7,655.9	$7,669.6	$15,596.9	$15,861.7	$24,604.2	$23,104.1
Vehicle Operating Cost Savings	$8,644.9	$9,942.2	$14,104.9	$13,931.9	$39,121.6	$40,715.6	$55,869.2	$54,140.8
Travel Time and Reliability Savings	$(1,669.4)	$(1,469.7)	$(1,211.5)	$(972.2)	$(14,971.7)	$(16,088.5)	$(15,083.8)	$(16,187.5)
Environmental Benefits	$(63.5)	$(52.9)	$(50.1)	$(92.5)	$268.0	$286.3	$494.7	$418.1

The following sections provide a breakdown of the transportation efficiency benefits by the different categories of efficiency savings. Refer to Appendix I: Transportation Efficiency Benefits and Impacts for the year-by-year breakdown of transportation efficiency savings and its economic impacts to Utah's households and businesses.

Understanding the Efficiency Impacts of Transit

At the RTP-Priority Needs investment level, the Unified Plan spanning from 2023 to 2050 foresees a staggering total of approximately 124.94 billion person trips and 95.13 billion vehicle trips (comprising auto and truck trips) within the transportation network in the Wasatch Front region, assuming a world without transit. However, implementing transit options demonstrates substantial cost savings and increased efficiency. Specifically, opting for a Bus-Only scenario results in a noteworthy reduction of $19.00 billion in the costs associated with moving these vehicle trips, while the All-Transit scenario achieves an even more impressive $61.29 billion in vehicle operating costs savings. Moreover, the presence of transit enables an additional 1.09 billion transit trips in the Bus-Only scenario and 1.81 billion transit trips in the All-Transit scenario. These include 414 million work-related trips and 765 million trips supporting jobs in the Bus-Only and All-Transit scenarios, respectively. Although the cost of moving these transit trips amounts to $4.89 billion and $5.42 billion in the Bus-Only and All-Transit scenarios, the overall result is a substantial $14.10 billion and $55.87 billion reduction in vehicle operating costs for the Wasatch Front's transportation system, showcasing the significant benefits of incorporating transit solutions.

Vehicle Operating Cost Savings

One of the immediate and tangible advantages stemming from investments in transportation infrastructure, including transit, is the cost savings associated with vehicle operation. These savings are primarily achieved through the alleviation of congestion, leading to reduced idling, smoother traffic flow, and fewer stops and starts. Vehicles spend less time trapped in traffic, subsequently enhancing fuel efficiency, and resulting in diminished fuel consumption and reduced operational costs for both individual commuters and freight operators. Furthermore, the wear and tear on vehicles is significantly reduced, which not only extends their lifespan but also leads to lower maintenance and repair expenses. These savings not only benefit individuals by putting more money in their pockets but also contribute to the overall cost-effectiveness and sustainability of transportation systems. The federal BCA guidance[22] provides an estimate for the vehicle operating cost per mile by mode and purpose.

[22] Benefit-Cost Analysis Guidance for Discretionary Grant Programs, Page 39, Table A-5.

Figure 5: Comparison of Vehicle Operating Cost Savings of Transit Investment in All Scenarios

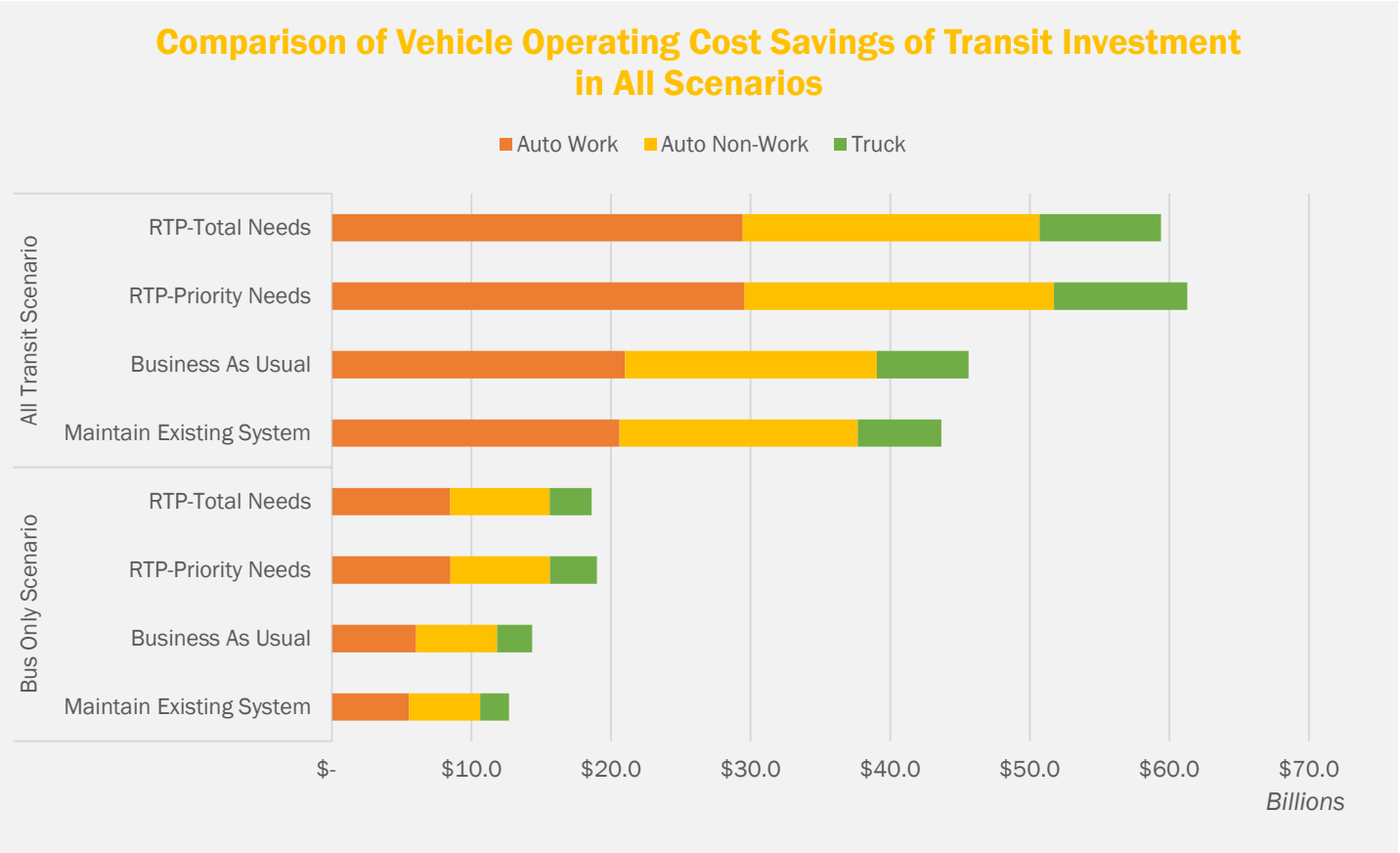


Figure 5 shows that by maintaining the existing bus service, substantial savings in reduced vehicle operating and travel costs can be anticipated for both households and businesses, amounting to $12.69 billion. Furthermore, if all current transit options including bus and rail are sustained, Utah stands to gain even more, with estimated vehicle operating cost savings increasing to an impressive $43.6 billion. However, this would come at a cost of $4.05 billion and $4.54 billion for operating transit vehicles in the respective scenarios. Upon completing the projects currently in progress, which have secured funding, Utah can expect additional travel cost benefits. In the Bus-Only scenario, this would equate to $14.35 billion in operating cost savings, and in the All-Transit scenario, the vehicle operating cost savings would rise to $45.61 billion. This again would come at the transit operating cost of $4.41 billion and $4.89 billion in the Bus-Only and All-Transit scenarios respectively.

Notably, by enhancing transit services, such as the FrontRunner system, through increased investment up to the RTP-Priority Needs level, Utah could significantly boost its projected vehicle operating cost savings. This enhancement is projected to raise the overall vehicle operating cost benefits to $18.99 billion in the Bus-Only scenario and $61.29 billion in the All-Transit scenario, at the cost of operating transit at $4.89 billion and $5.82 billion respectively. These savings are a result of a reduction in the overall vehicle miles of travel in the system as users transition from using the roadways to using transit. However, it's important to note that, with an RTP-Total Needs level, the anticipated vehicle operating cost savings are expected to decrease slightly, reaching $18.61 billion in the Bus-Only scenario and $59.39 billion in the All-Transit scenario, which comes at the societal cost of $4.68

billion and $5.25 billion respectively on transit operations. A detailed breakdown of Vehicle Operating Cost savings by mode of transportation is shown earlier in Table 2.

Congestion Relief

The infusion of transit investment yields substantial benefits in terms of congestion relief within the transportation network. By offering alternative modes of transportation such as bus and rail services, transit provides users with choices beyond relying solely on private automobiles. In a hypothetical scenario without transit options, individuals would be compelled to use existing modes of travel, predominantly private vehicles, to fulfill their transportation needs. However, the availability of transit modes encourages users to opt for public transportation, displacing a significant number of individual automobile trips from highways. This results in a decrease of vehicles on the road and vehicle miles traveled, leading to improved highway system efficiency characterized by reduced congestion, shorter travel times, increased reliability, and lower tailpipe emissions. The ability of a single transit vehicle trip to accommodate the trips of multiple people to multiple destinations further contributes to these positive outcomes. This not only enables individuals to reach their destinations faster but also allows for expanded travel distances within the same time frame. Additionally, businesses in Utah benefit from more efficient delivery of imports and products, translating into significant cost savings that can be redirected toward enhancing productivity.

Figure 6 through Figure 9 demonstrate the reduction in congestion, measured by the percent change in volume-to-capacity ratio, across Bus-Only scenarios compared to the No-Transit scenario at the respective investment levels.

Figure 6: Congestion Relief in 'Bus-Only' Scenario at 'Maintain-Existing-System' Investment Level

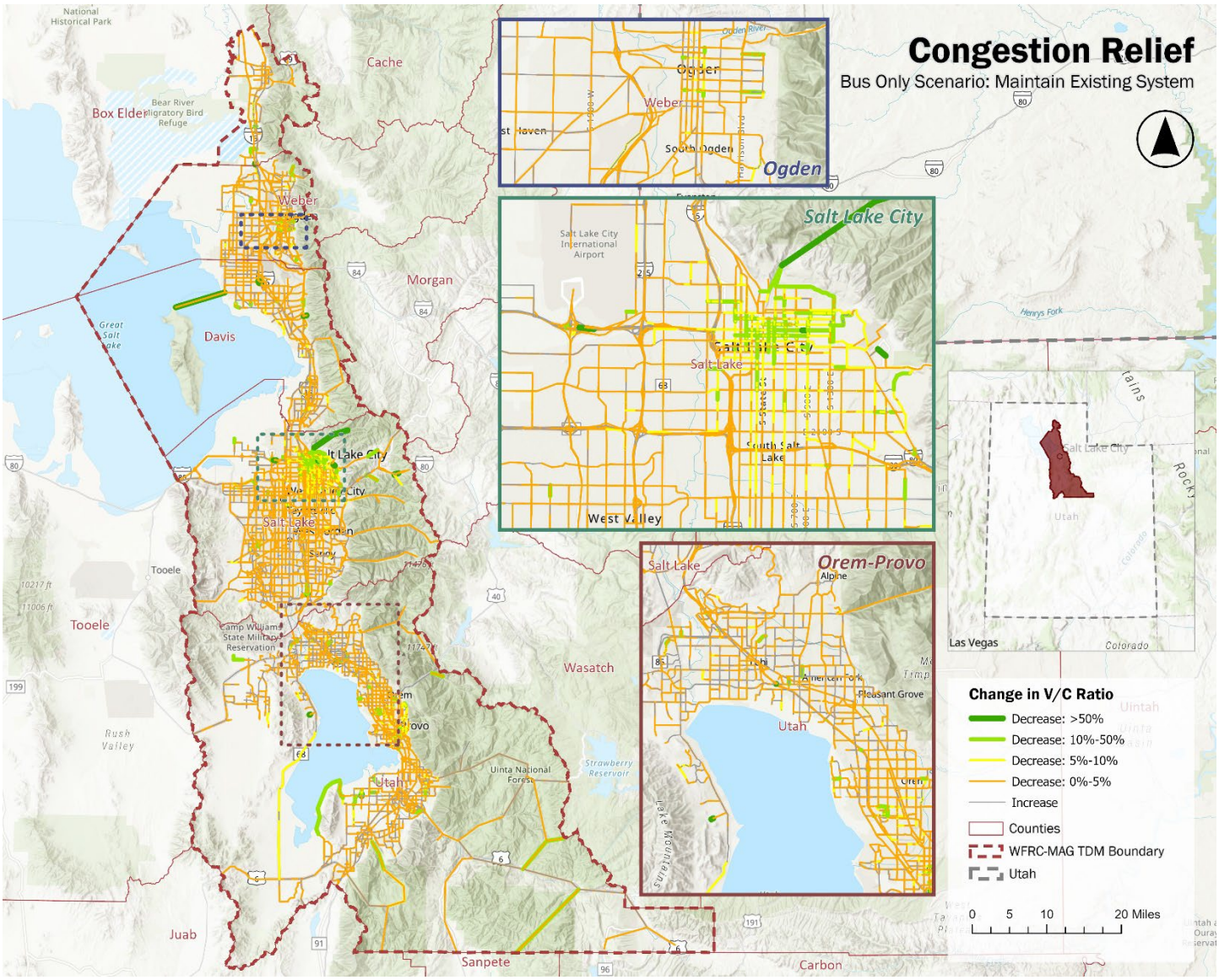


Figure 7: Congestion Relief in 'Bus-Only' Scenario at 'Business-As-Usual' Investment Level

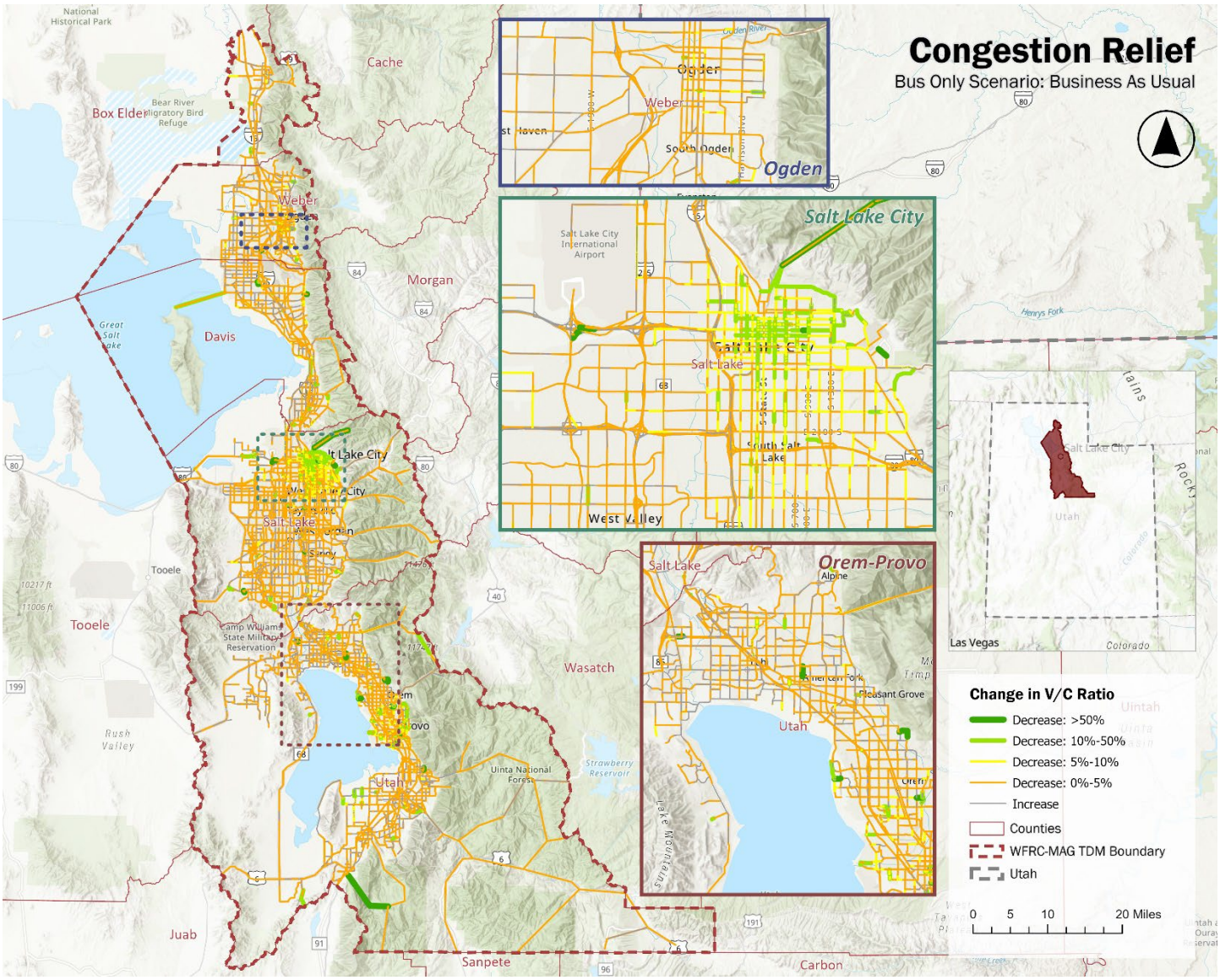


Figure 8: Congestion Relief in 'Bus-Only' Scenario at 'RTP-Priority Needs' Investment Level

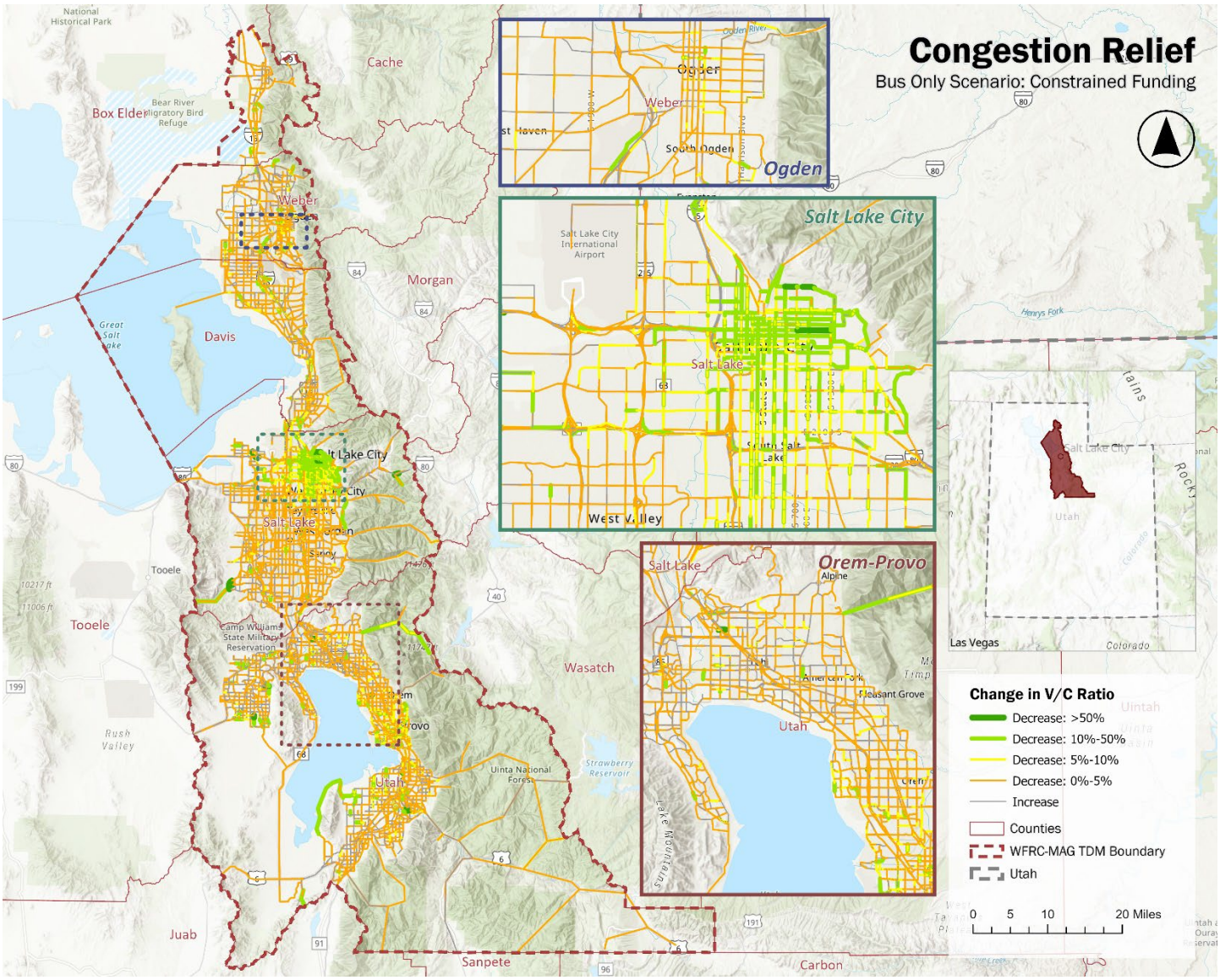
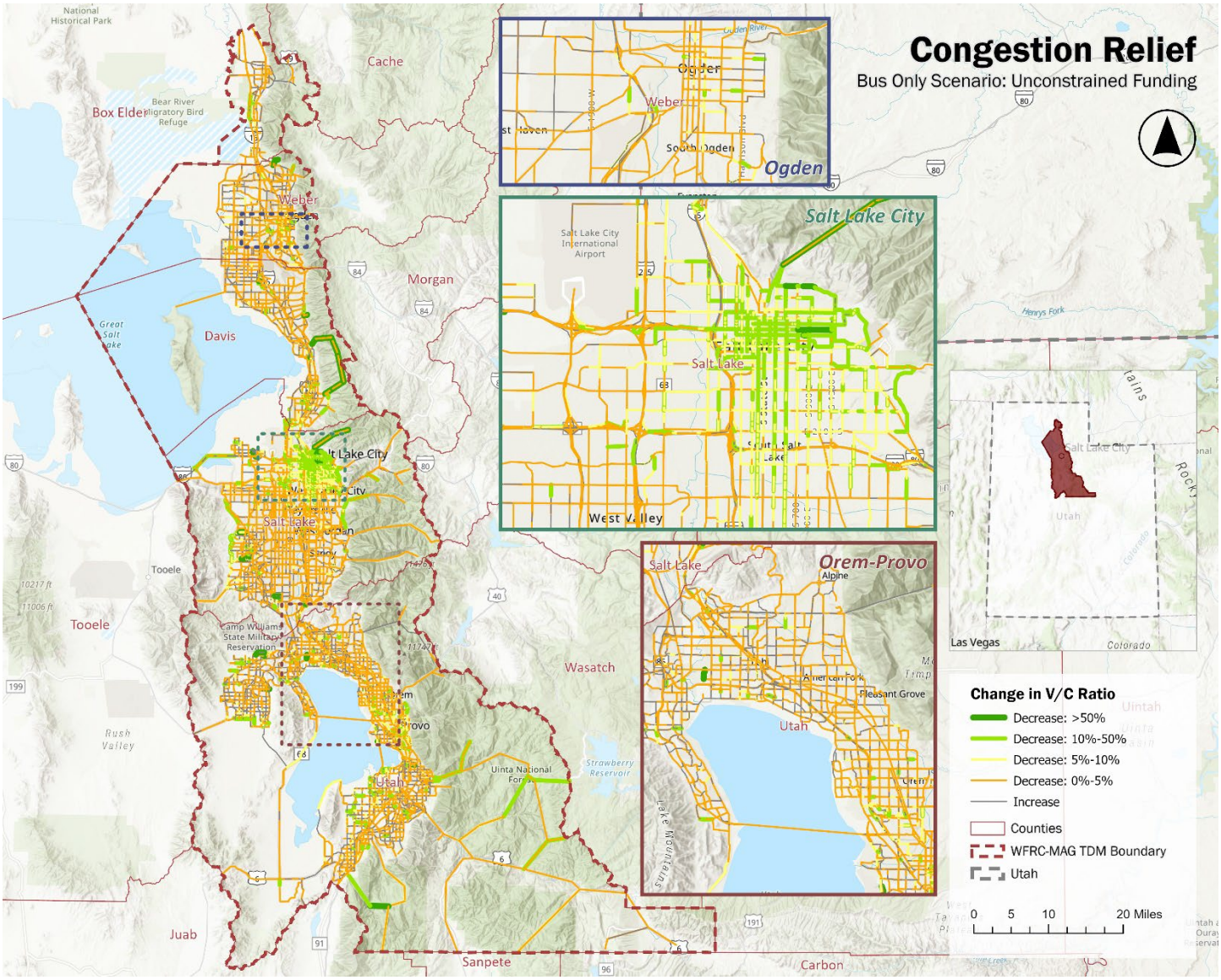


Figure 9: Congestion Relief in 'Bus-Only' Scenario at 'RTP-Total Needs' Investment Level



The maps demonstrate that major urban centers, such as Downtown Salt Lake City and Provo, experience the most significant congestion relief. Importantly, the positive impact extends beyond transit-served areas, benefiting the entire Wasatch Front region. The maps clearly show that as investment levels increase, there is a corresponding improvement in the V-C ratio at each step. This signifies a gradual alleviation of congestion in urban road links with each incremental investment, with the most significant enhancements observed in the RTP-Priority Needs and RTP-Total Needs scenarios. However, it is noteworthy that the congestion mitigation achieved in this context is surpassed by the significant improvements observed in scenarios incorporating all transit options.

Figure 10 through Figure 13 demonstrate the reduction in congestion, measured by the percent change in volume-to-capacity ratio, across All-Transit scenarios compared to the No-Transit scenario at the respective investment levels.

Figure 10: Congestion Relief in 'All-Transit' Scenario at 'Maintain-Existing-System' Investment Level

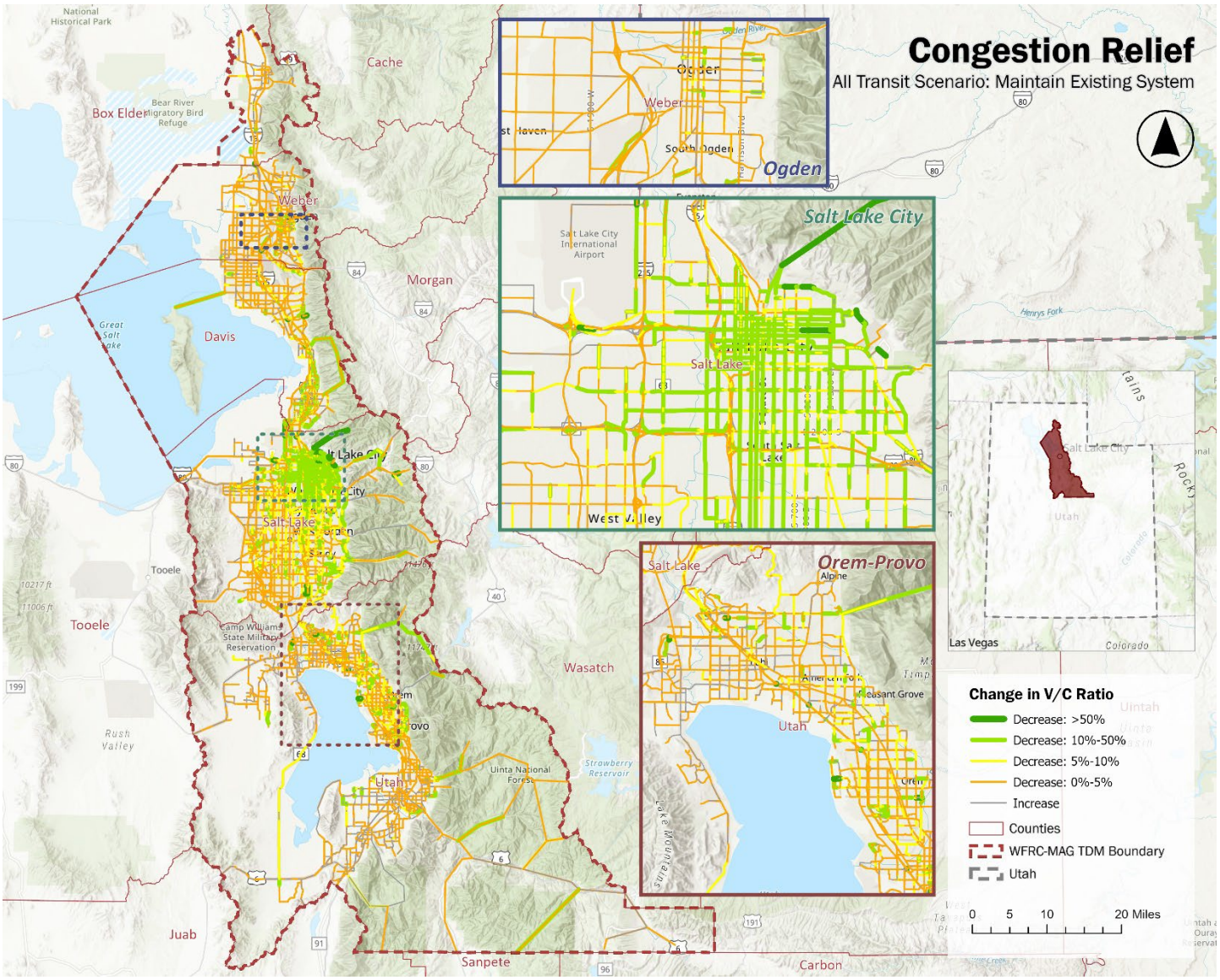


Figure 11: Congestion Relief in 'All-Transit' Scenario at 'Business-As-Usual' Investment Level

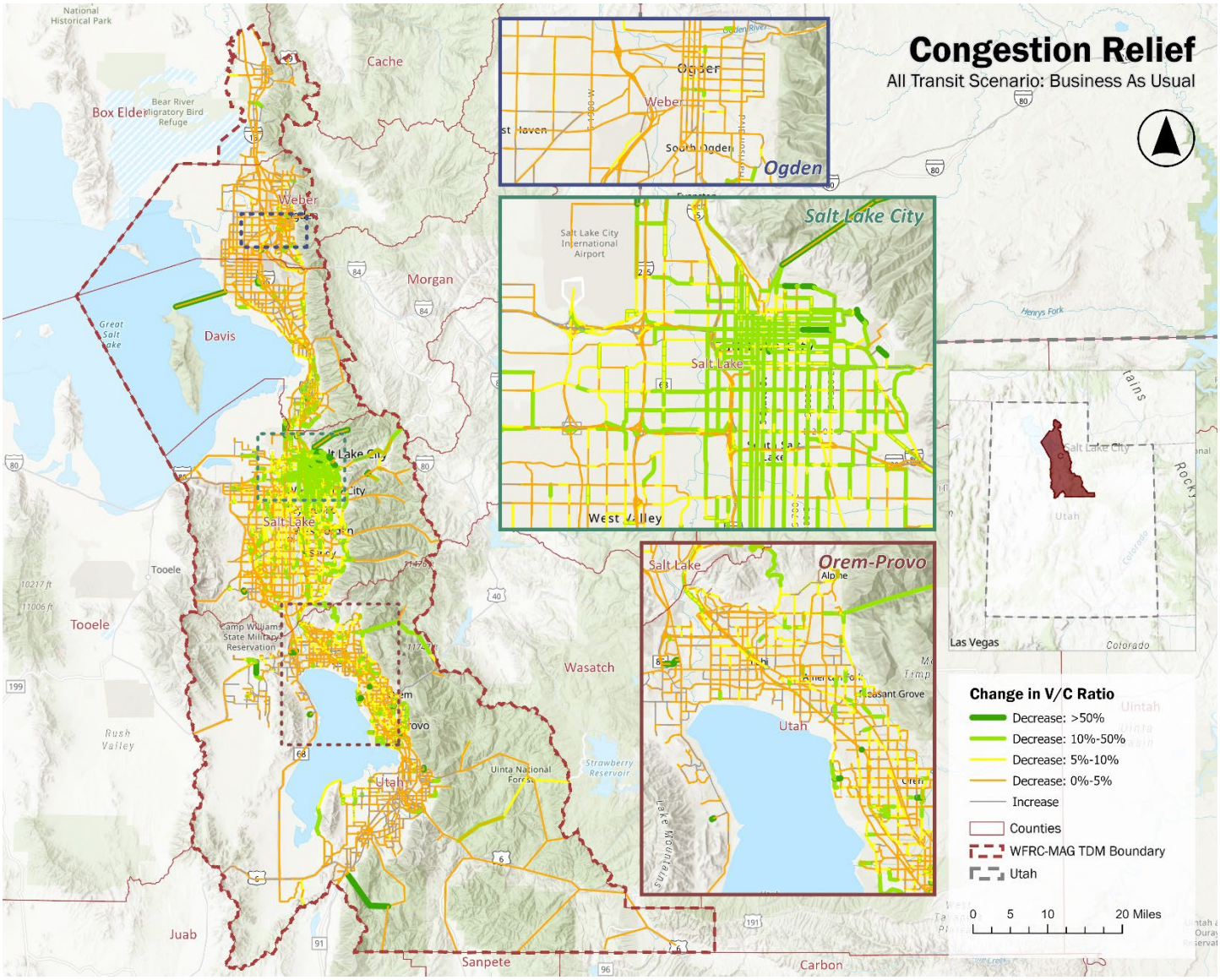


Figure 12: Congestion Relief in 'All-Transit' Scenario at 'RTP-Priority Needs' Investment Level

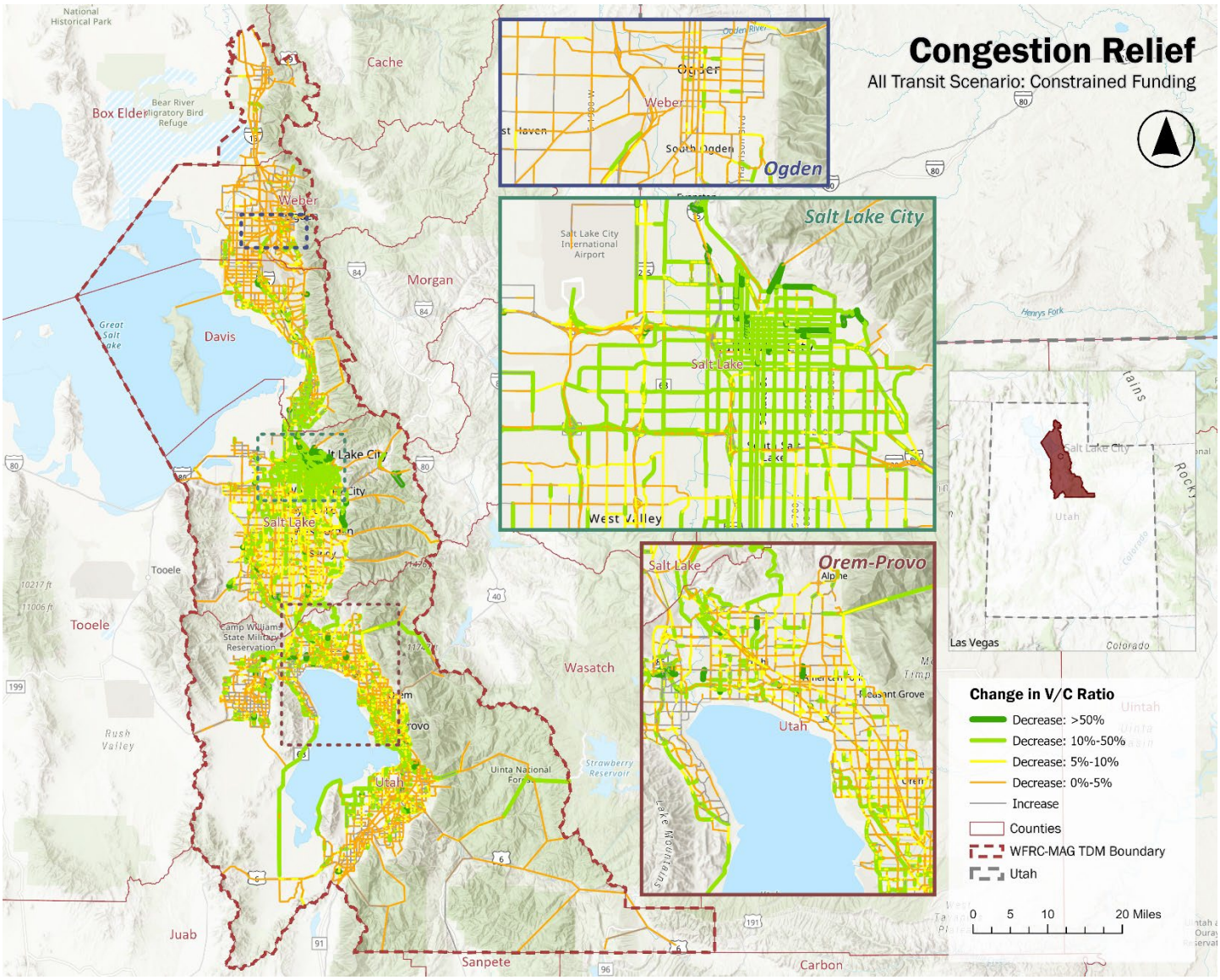
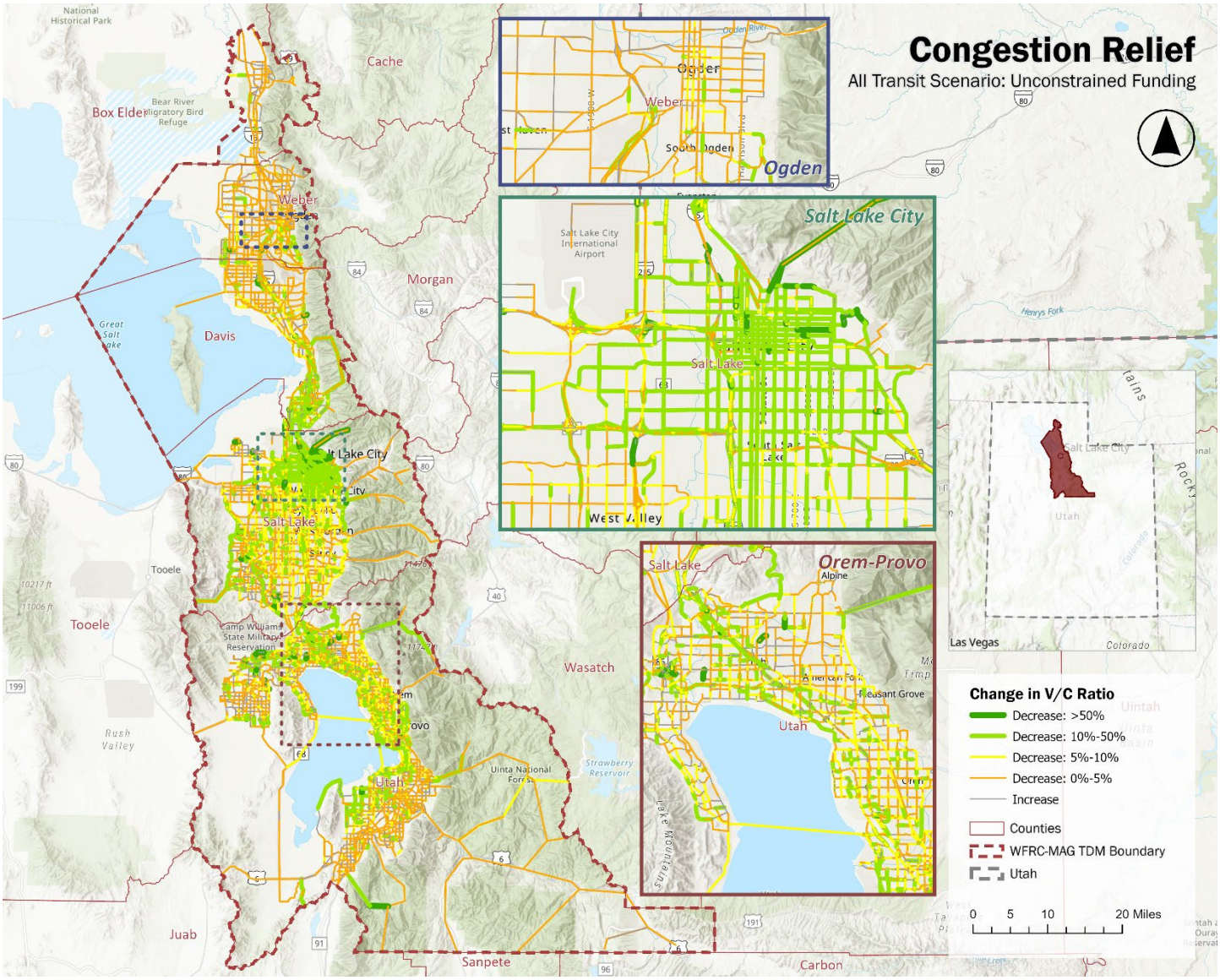


Figure 13: Congestion Relief in 'All-Transit' Scenario at 'RTP-Total Needs' Investment Level



The maps demonstrate that major urban centers, such as Downtown Salt Lake City and Provo, experience the most significant congestion relief. Importantly, the positive impact extends beyond transit-served areas, benefiting the entire Wasatch Front region. Similar to the Bus-Only scenario, the enhancements in congestion observed in the All-Transit scenario are directly proportional to the level of investments made in the transit system. The most substantial congestion relief is witnessed in the RTP-Priority Needs and RTP-Total Needs Scenarios. The minimal disparity between these two scenarios arises from the fact that the transit projects outlined in the Unified Plan's two scenarios exhibit limited differences.

Among the transit scenarios, a higher reduction in congestion can be observed in the scenario with both bus and rail services (All-Transit) than the scenario with just the bus services (Bus-Only). The reduction in congestion and improvement in highway system efficiency also correspond to the level of investment in each transit scenario, suggesting that increased transit funding would enhance Utah's overall transportation efficiency. This relief

enhances market access and contributes to increased land value sensitivity throughout the region, factors that will be elaborated upon in subsequent sections of this report.

Emission Reduction Benefits

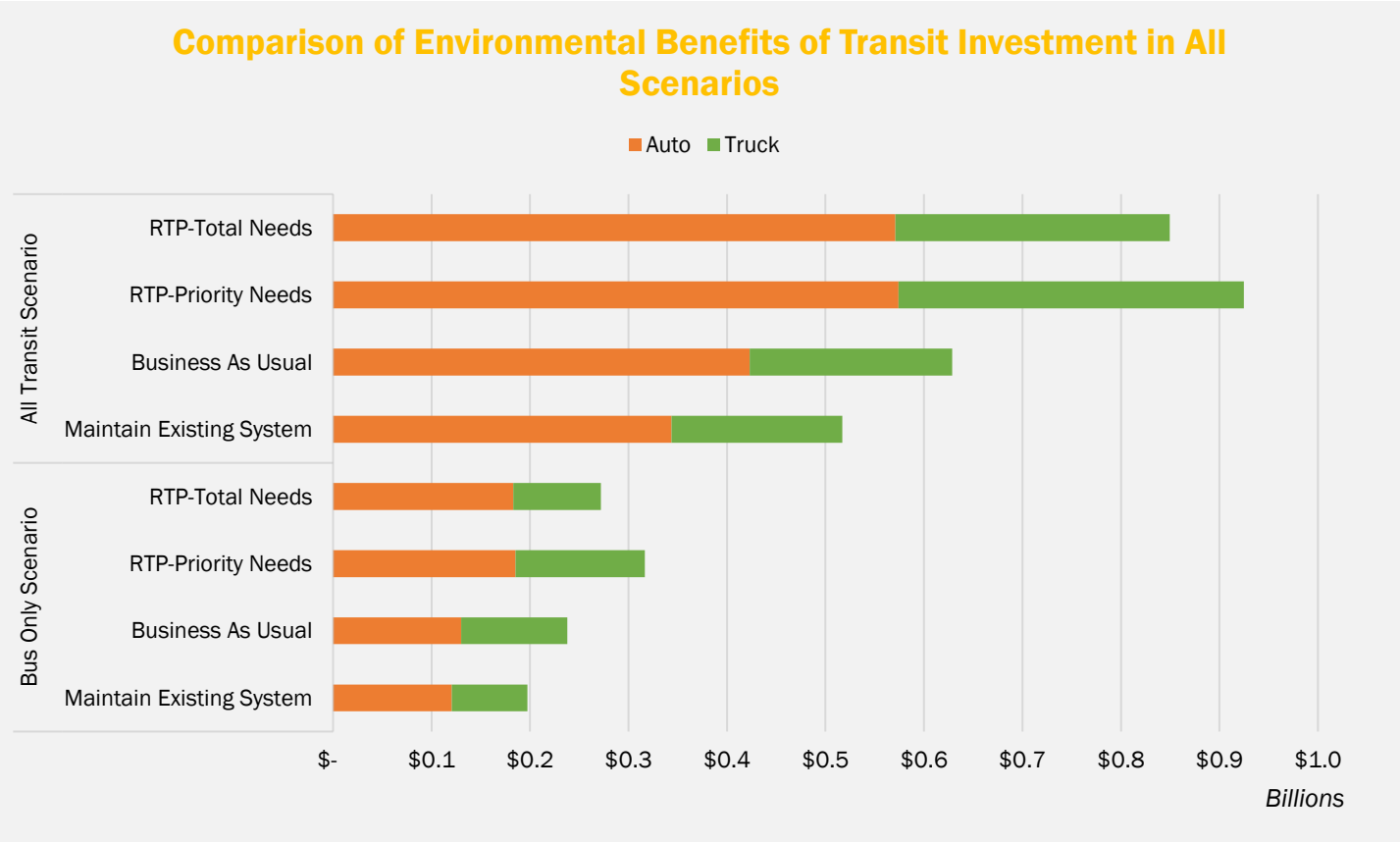
Another vital outcome of capacity enhancement through transit investments is the reduction in emissions. Less trips and miles traveled by vehicles mean less emissions. Additionally, a reduction is achieved through the mitigation of congestion, resulting in less time spent idling and improved operational efficiency of vehicles. This, in turn, leads to reduced emissions of greenhouse gases and pollutants. These environmental benefits are vast and include improved local air quality, diminished occurrences of respiratory illnesses, and mitigation of greenhouse gases that contribute to global climate change. Furthermore, investments that encourage the adoption of alternative and sustainable transportation modes, such as public transit and electric vehicles, contribute to diversifying the economic base within the transportation sector.

The data regarding criteria pollutant emissions, specifically Volatile Organic Compounds (VOCs), Nitrogen Oxides (NO_x), Sulphur Oxides (SO_x), Particulate Matters of 2.5 micrometers or less in diameter ($PM_{2.5}$), and Carbon dioxide (CO_2) emissions, are derived on a per-mile basis from passenger cars[23] (both business and personal) and trucks[24] and sourced from the U.S. EPA Office of Transportation and Air Quality. The costs and savings associated with these emission reductions are then evaluated by multiplying them by the cost per metric ton[25] of pollutant emissions saved to quantify the emissions reduction benefits.

Figure 14 provides an overview of the environmental costs/benefits of transit investments at all transit scenarios and investment levels. A detailed breakdown of this by the modes of transportation is provided earlier in Table 2.

[23] Average Annual Emissions and Fuel Consumption for Gasoline-Fueled Passenger Cars and Light Trucks, Page 4. https://nepis.epa.gov/Exe/ZyPDF.cgi/P100EVXP.PDF?Dockey=P100EVXP.PDF
[24] Average In-Use Emissions from Heavy-Duty Trucks, Page 4, Table 1. https://nepis.epa.gov/Exe/ZyPDF.cgi/P100EVY6.PDF?Dockey=P100EVY6.PDF
[25] Benefit-Cost Analysis Guidance for Discretionary Grant Programs, Page 40, Table A-6.

Figure 14: Comparison of Environmental Benefits of Transit Investment in All Scenarios



Just maintaining the existing bus service would lead to emissions savings to the system, totaling $197.2 million from the trips that would have resulted from the lack of transit. If Utah continues to support its current transit options encompassing bus and rail, the impact on emissions is expected to result in a gross benefit of $518.2 million to the riders. This is due to the added efficiency of rail transit resulting in positive net emission benefits from its higher carrying capacity and lower per-user, per-mile emissions. While operating transit would also add societal costs of the emissions, amounting to $260.8 million and $312.3 million respectively in the two transit scenarios at this investment level, it would produce a net benefit of - $63.5 million and $204.9 million respectively in these two scenarios. At the Maintain Existing System investment level, the bus only scenario does not offset enough vehicle miles of travel to create a positive emissions benefit. However, with the availability of light rail and commuter rail options in All Transit scenario at this level, enough auto trips are captured by transit services to obtain a net societal benefit to the households and businesses in Utah.

Utah can anticipate additional emission costs and savings at the Business-As-Usual investment level. In the Bus-Only scenario, this translates to $237.8 million in user savings, and in the All-Transit scenario, the savings increases to $628.6 million in benefits savings. However, these savings would come at the emission cost of $290.7 million and $342.2 million in the respective scenarios. By enhancing transit services through increased investments up to the RTP-Priority Needs level, UTA's transit has the potential to reduce its estimated cost in emissions in the Bus-Only Scenario and boost the emissions benefits in the All-Transit scenario. This enhancement is projected to save $316.5 million in the Bus-Only scenario and substantially increase savings to $924.8 million in the All-Transit scenario while

transit would result in emission cost of $366.6 million and $430.0 million respectively. The RTP-Total Needs investments would result in the overall emissions costs of $272.10 million in the Bus-Only scenario and convert it to $849.60 million emissions benefits in the All-Transit scenario. This would come at the transit emission costs of $364.5 million and $431.4 million in the two transit scenarios respectively at the RTP-Total Needs investment level. The substantial increase in emissions cost of Bus transit in Unconstrained Investment is the result of increases in transit usage being outgained by increases in driving from the more substantial investments into the roadway system.

Notably, in scenarios focusing on Bus-Only transit services, the net environmental benefits are negative, indicating an increase in emissions, due to new transit trips inducing additional emissions which would not have existed in a scenario without any transit services. However, the All-Transit scenario shows positive emissions benefits, suggesting that the integration of buses and railways enhances overall transit efficiency, leading to reduced emissions. It is critical to recognize that by inducing additional emissions to the system through transit uses, it is possible to reduce the overall emission of the transportation system as a result of eliminating a substantial amount of automobile trips in addition to a relief in system congestion to other roadway users such as trucks. The positive emissions reductions in the All-Transit scenario underscore the environmental advantages of a comprehensive and integrated transit network.

Travel Time Savings and Reliability Benefits

An essential dimension of transportation efficiency benefits is the value of time savings. When investments enhance transportation infrastructure, both commuters and businesses benefit from spending less time in transit, yielding far-reaching implications. For individuals, this translates into additional hours for productive activities, quality family time, and leisure, thereby elevating their overall quality of life. Businesses enjoy increased worker productivity, with employees spending less time commuting and more time engaged in their professional roles. Additionally, the value of time savings extends to reduced stress related to congestion. Transportation investments that reduce travel times deliver positive impacts on economic productivity, as well as overall physical and mental well-being. The per-person-hour values of time and freight time costs utilized for the analysis adhere to the recommendations provided by the Benefit-Cost Analysis Guidance for Discretionary Grant Programs in 2023[26].

Reliability savings constitute a crucial aspect of capacity enhancement benefits resulting from investments in transportation. These savings are realized as transportation systems become more dependable and less prone to delays and disruptions. By mitigating congestion and optimizing traffic flow, transportation investments enhance the reliability of the entire system. This benefits commuters, who can plan their journeys with greater confidence, businesses that experience fewer disruptions to their supply chains, and emergency services that can respond more effectively. The methodology used for reliability savings employs the Travel Time Index[27] calculation, estimating the buffer time required to account for congestion alleviation, as developed by the Texas A&M Transportation

[26] Benefit-Cost Analysis Guidance for Discretionary Grant Programs, Page 38, Table A-3
[27] Travel Time Index https://www.bts.gov/content/travel-time-index

Institute[28]. Buffer time is the additional time a transportation system user would allocate for the trip in unreliable systems, which is distinct from the time spent driving or in congestion. This buffer time is then multiplied by the value of travel time to quantify the reliability benefits resulting from transportation investments.

Figure 15 illustrates the Total Travel Time and Reliability Benefits, expressed in billions of dollars, for different transit service scenarios at various investment levels. It is important to consider that the inclusion of additional transit modes in the Bus-Only and All-Transit scenarios comes with a trade-off. While these additions may offer benefits such as reduced congestion and enhanced travel time and reliability for transit users, they simultaneously introduce new trips, which impose additional travel time and reliability costs on the system. Consequently, the net effect of these changes results in added systemwide travel time and reliability costs. A detailed breakdown of the travel time and reliability savings is provided in Table 2.

Figure 15: Comparison of Travel Time and Reliability Savings of Transit Investment in All Scenarios

In the Bus-Only scenarios, we observe a negative though relatively small impact on travel time and reliability savings. Existing non-transit system users would still benefit from the decrease in travel time and increase in reliability, but this benefit is offset by the additional travel time cost to the transit users which did not exist in the No-Transit scenario. Similarly, in the All-Transit scenarios, we see further negative values, reflecting the increase in transit ridership with the integration of both bus and rail transit modes. This analysis underscores the intricate dynamics of

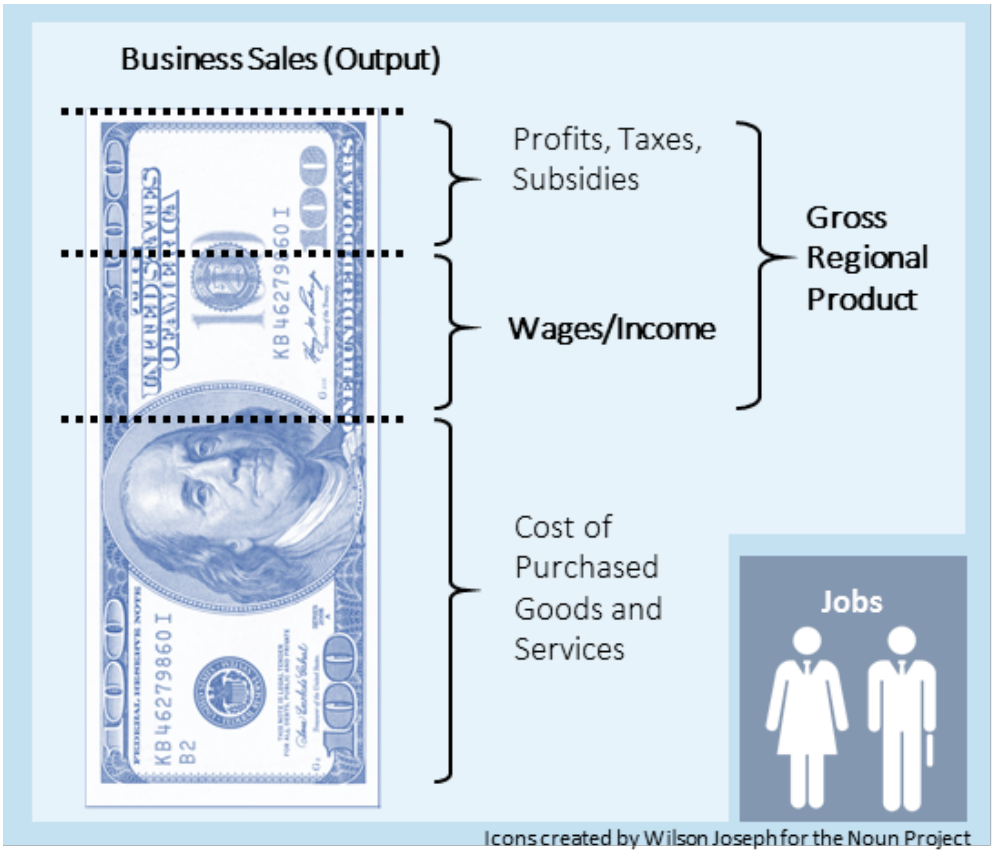
[28] Traffic Congestion and Reliability: Trends and Advanced Strategies for Congestion Mitigation https://ops.fhwa.dot.gov/congestion_report/

transit service scenarios, where the travel time and reliability benefits of congestion relief for non-transit users can get offset by the complexities of accommodating and managing additional transit trips in the system. However, it should also be noted that this net travel time and reliability costs to the system is again compensated by a substantial vehicle operating cost savings to the users and generate net positive user benefits of transit investment in Utah's transportation system.

Economic Impacts

The advantages of transit investments extend beyond businesses and household savings and deeply impact the economic landscape. Utah's economy reaps benefits through enhanced productivity, increased competitiveness, and the creation of new opportunities. The economic impacts of transit investments are measured by the generation of jobs, income, business output, and the overall state GDP resulting from a more efficient transit system. The transportation efficiency savings would enable Utah's business and households to have higher purchasing power, resulting in a more vibrant economy and fueling further economic growth. Figure 16 demonstrates the composition of indicators of broader economic impact of transit investments.

Figure 16: Economic Impact Measures



The vehicle operating costs, travel time and reliability savings (or benefits) can be expected to have greater economic impact due to the multiplier effect where the savings are used by businesses and families to buy more from firms. To meet this increasing demand, the firms then hire workers and suppliers, and workers and suppliers buy more goods from other firms, and increased economic activity permeates throughout the region. Household

travel cost savings results in shifts to spending habits that influence a broader spectrum of economic activities beyond transportation. Businesses, with reduced operating costs and increased reliability, experience significant savings which can be reinvested to expand operations, generate more jobs, and ultimately augment their output. Indirectly, as businesses expand and demand more from their suppliers, these suppliers experience growth. The induced effects of this transformation manifest as businesses hire more workers, creating a larger payroll that, in turn, circulates back into the economy through consumer purchases.

For example: if a transit-dependent business saves $20,000 over a period due to improved transit services, those savings may be reinvested into technological upgrades. These upgrades could boost the firm's productivity, resulting in an additional annual output worth $100,000, considerably more than what was originally saved. Consequently, the firm might take this new dividend and use it to employ new workers, thereby creating job opportunities and boosting the state's economy. Moreover, this increased output contributes to the state's GDP, illustrating how the initial transportation savings translate into broader economic impacts.

Table 5 summarizes the broader economic impact of transit investment in terms of employment, cumulative labor income, cumulative value added (GDP), and cumulative business output in all future scenarios. The following sections discuss each economic impact in detail.

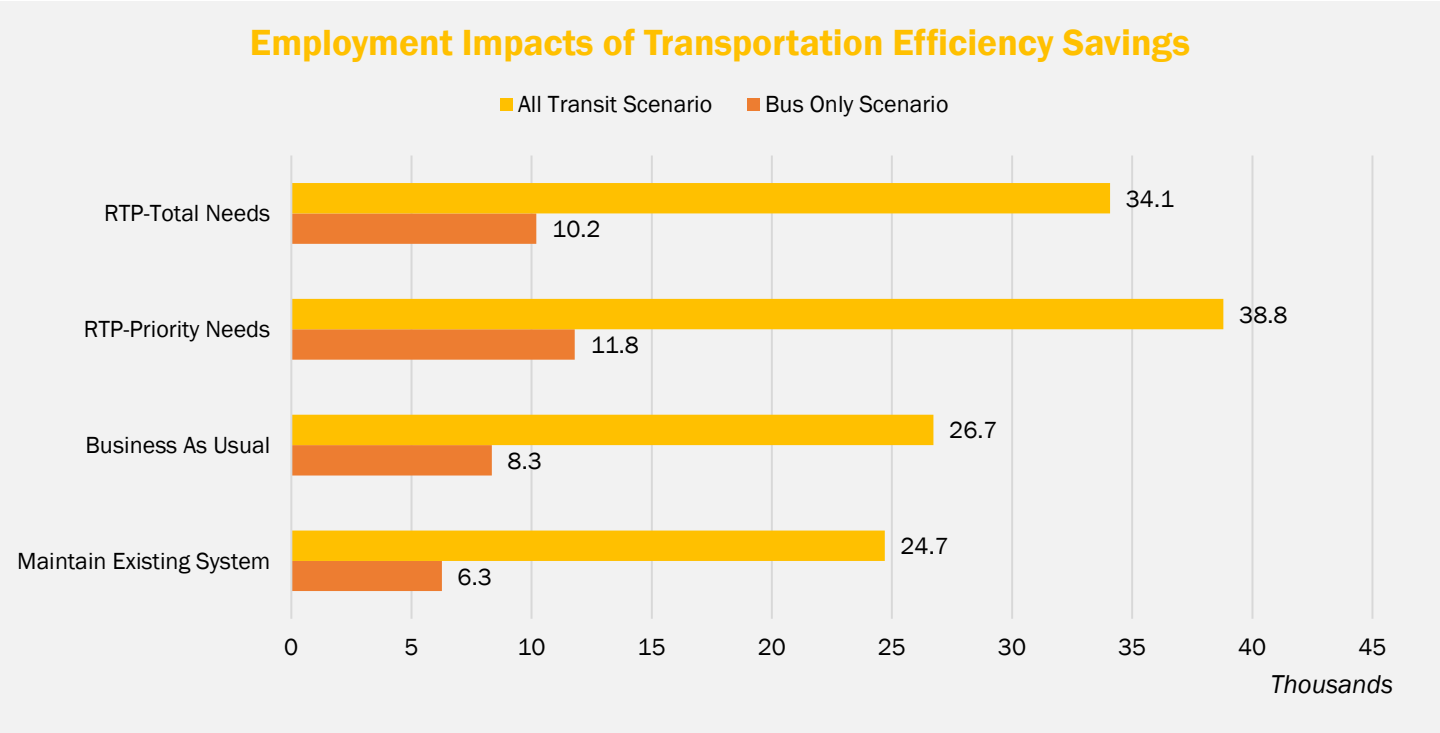
Table 5: Summary of Economic Impacts of Transportation Efficiency Benefits for All Future Scenarios

Benefit Scenarios:	**Bus-Only Scenario**				**All-Transit Scenario**			
Investment Levels:	Maintain-Existing-System	Business-As-Usual	RTP-Priority Needs	RTP-Total Needs	Maintain-Existing-System	Business-As-Usual	RTP-Priority Needs	RTP-Total Needs
Total Efficiency Benefits (Undiscounted in Billion $s)	**$6.91**	**$8.42**	**$12.84**	**$12.87**	**$24.42**	**$24.91**	**$41.28**	**$38.37**
Discounted @ 3.5% (Billion $s)	$4.53	$5.30	$7.66	$7.67	$15.60	$15.86	$24.60	$23.10
Economic Impacts								
Employment (# of Jobs)	6,264	8,343	11,801	10,202	24,699	26,729	38,798	34,079
Labor Income (Billion $s)	$8.43	$9.77	$12.32	$11.23	$27.15	$28.52	$37.53	$34.55
Value Added/GDP (Billion $s)	$14.10	$16.31	$20.65	$18.88	$45.66	$47.90	$63.20	$58.39
Business Output (Billion $s)	$26.65	$30.87	$38.97	$35.56	$85.94	$90.23	$118.83	$109.54

Employment

Figure 17 presents an overview of the impacts of transit investment on employment across various investment levels and transit service scenarios, with benefits increasing as funding levels rise and transit services diversify, ultimately contributing to community prosperity and opportunity over the course of 28 years of the Unified Plan.

Figure 17: Employment Impacts of Transportation Efficiency Savings

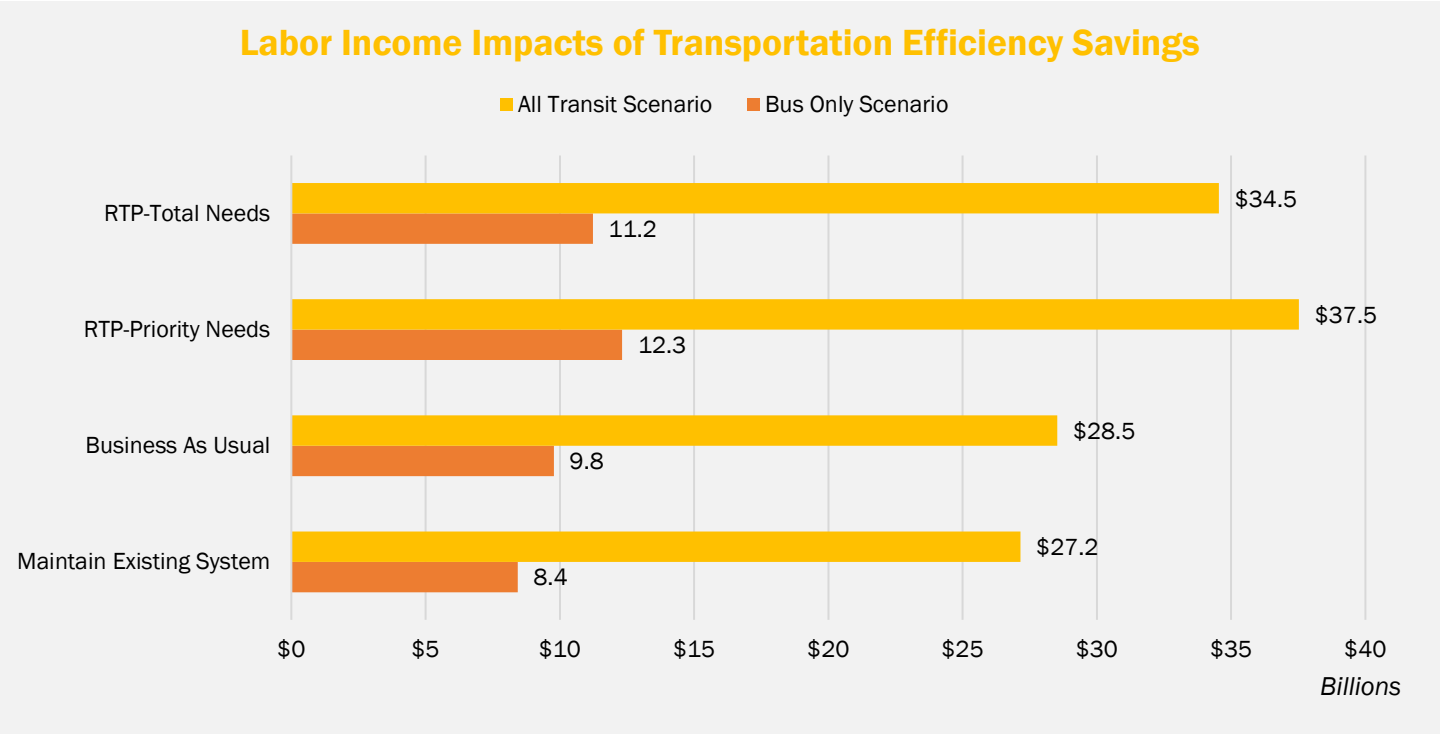


The No-Transit scenario, with no employment impact of (no) transit investment serves as a baseline for analyzing the employment impact of the transit scenarios. By just maintaining the system until 2050, an additional 6,200 jobs are expected to be generated over the years in the Bus-Only scenario while 25,000 jobs will be created by maintaining the existing transit system. At the Business-As-Usual level, Utah's transit system is expected to generate an additional 2,100 jobs over the Maintain-Existing-System investment level in both Bus-Only and All-Transit scenarios. Increasing the investment to the level of RTP-Priority Needs, a significant boost in employment generation is expected, to 11,800 additional jobs for the Bus-Only scenario and 38,800 for the All-Transit scenario. Further investment at the level of RTP-Total Needs will result in a slight diminishing return as the Bus-Only scenario is estimated to generate 10,200 jobs and the All-Transit scenario is estimated to generate 34,000 jobs.

Labor Income

Figure 18 offers an insight into the effects of transit investment on household income, encompassing different investment tiers and transit service scenarios. As with the employment, it highlights the growing advantages in household income that come with higher funding levels and the expansion of transit services, ultimately playing a role in fostering community prosperity and opportunities from 2023 to 2050.

Figure 18: Labor Income Impacts of Transportation Efficiency Savings



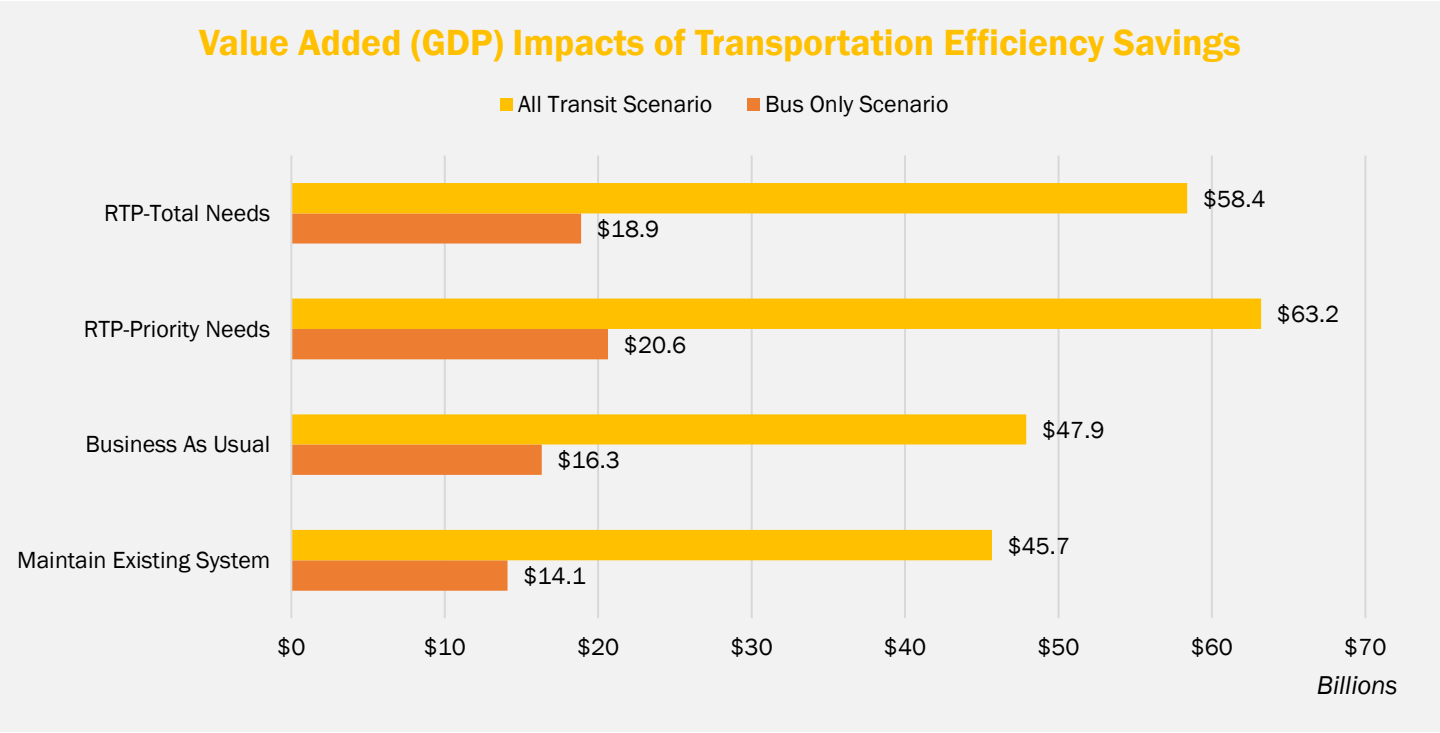
Again, the No-Transit scenario without any household income impact serves as a baseline with the lack of household income benefits due to transit. Maintaining operation of only the bus system until 2050 is expected to generate an additional $8.4 billion in household income over the years, while maintain the entirety of UTA's transit system is projected to contribute cumulative $27.2 billion in household income. Investing at the Business-As-Usual investment level is estimated to result in an additional $1.3 billion in household income over just maintaining the existing system in both the Bus-Only and All-Transit scenarios.

When the investment level is increased to the RTP-Priority Needs, a substantial increase in household income is anticipated, with an additional $12.3 billion from the Bus-Only scenario and an additional $37.5 billion from the All-Transit scenario. However, further investment at the RTP-Total Needs level is expected to yield diminishing returns, with the Bus-Only scenario estimated to generate $11.2 billion and the All-Transit scenario estimated to generate $34.5 billion in household income.

Value Added (GDP)

Figure 19 offers a summary of the impacts on Value Added (GDP) associated with transit investment at varying funding levels and under different transit service scenarios. It highlights how value-added benefits grow with higher funding and greater diversity in transit services, ultimately leading to improved community prosperity and increased opportunities throughout the 28-year duration of the Unified Plan.

Figure 19: Value Added (GDP) Impacts of Transportation Efficiency Savings

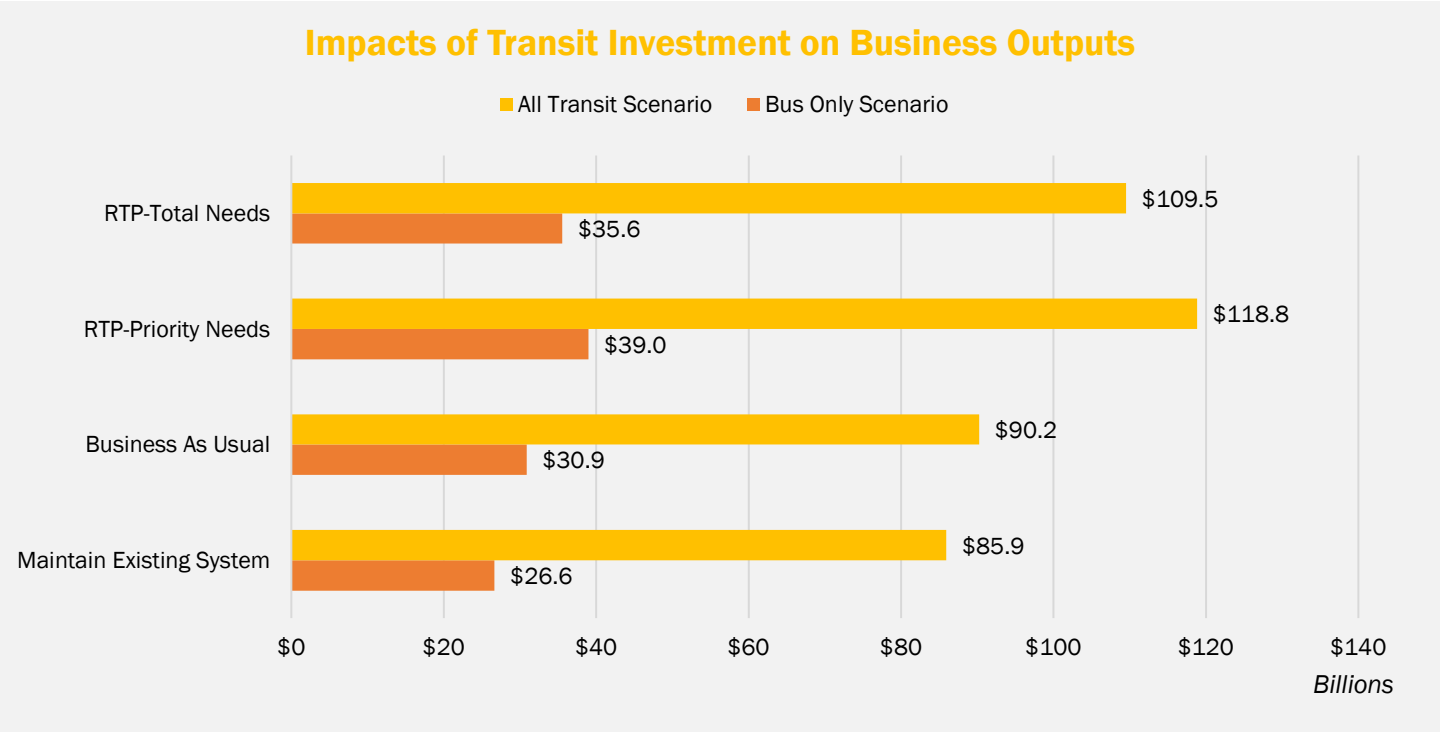


Once more, the No-Transit scenario serves as a baseline for comparison of any value-added (GDP) benefits in the two transit scenarios: Bus-Only and All-Transit. Simply operating buses at existing level until 2050 is projected to create an $14.1 billion in value-added benefits. Maintaining the existing both train and bus system in Utah's transit system is expected to generate $45.7 billion in value-added benefits. Investing at the Business-As-Usual level, Utah's transit system is anticipated to produce an additional $2.3 billion and $2.2 billion value-added impacts beyond the Maintain-Existing-System investment level in the Bus-Only and All-Transit scenarios, respectively. Increasing investment to the RTP-Priority Needs level is expected to substantially boost value-added benefits, with estimates of $20.6 billion for the Bus-Only scenario and $63.2 billion for the All-Transit scenario. Further investment at the RTP-Total Needs level shows a slight diminishing return, with the Bus-Only scenario estimated to generate $18.9 billion and the All-Transit scenario estimated to generate $58.4 billion in value-added benefits.

Business Outputs

Figure 20 offers an insight into the business output effects of transit investment at different funding levels and under various transit service scenarios. It demonstrates that as funding levels increase and transit services become more diverse, the resulting business output benefits grow, ultimately playing a significant role in enhancing community prosperity and creating opportunities from 2023 to 2050.

Figure 20: Business Outputs Impacts of Transportation Efficiency Savings



The absence of transit services in the No-Transit scenario without any business output impacts due to transit provides baseline scenario for any Business Output benefits from transit services in the two transit scenarios. Running buses alone at existing system level until 2050 is expected to generate $26.6 billion in business outputs over the years, while running both trains and buses at the level of Utah's existing transit system is projected to create $85.9 billion in business outputs.

When investing at the Business-As-Usual investment level, UTA's transit system is forecasted to produce an additional $4.2 billion and $4.3 billion of business output benefits over the Maintain-Existing-System in the Bus-Only and All-Transit scenarios, respectively. Increasing the investment to the RTP-Priority Needs level is anticipated to result in a significant boost in business output generation, with projections of $39.0 billion for the Bus-Only scenario and $118.8 billion for the All-Transit scenario. However, further increasing investment to the RTP-Total Needs level again yields diminishing returns. In this scenario, the Bus-Only scenario is estimated to generate $35.6 billion, while the All-Transit scenario is projected to create $109.5 billion in business outputs.

Role of Transit in Utah's Unified Plan

In the Unified Plan, the role of transit emerges as a pivotal element in achieving the overarching goals of enhancing transportation efficiency while operating within RTP-Priority Needs scenario, and significantly impacting various economic facets throughout Utah. The Economic Impacts Comparison of Transportation Benefits outlined in Table 6 sheds light on the pivotal role that transit investments play within the broader framework of Utah's Unified Plan. By emphasizing transit investment, Utah is not only addressing its transportation needs but also nurturing a climate of

economic growth, higher incomes, and increased business productivity—a testament to the integral role transit plays in the overall prosperity and development of the state.

Table 6: Economic Impacts Comparison of Efficiency Benefits of Transit to Total Unified Plan

Investment Levels	Economic Impacts of Transportation Efficiency at RTP-Priority Needs		
	Transit Investment	Unified Plan Total	Percent from Transit
Employment Impacts (Number of Jobs)	38,798	100,326	38.7%
Efficiency Benefits (Million $s)	$41,280.1	$121,830.1	33.9%
Labor Income Impacts (Million $s)	$37,525.8	$60,450.2	62.1%
Value Added Impacts (Million $s)	$63,201.8	$99,461.5	63.5%
Business Output Impacts (Million $s)	$118,832.8	$191,251.6	62.1%

Beyond the raw numbers, a deeper analysis reveals that these investments play a critical role in supporting employment, labor income, value-added activities, and overall business output, thereby contributing significantly to Utah's economic prosperity. Notably, these investments account for 38.7% of the employment generated by the plan, offering critical job opportunities and supporting labor income that make up 62.1% of the total. The value-added activities from transit constitute 63.5% of the total in the plan, highlighting transit's positive influence on a range of economic sectors. Moreover, transit investments foster business output, representing 62.1% of the total, showing the interdependence between public transportation and commercial growth. These figures underline the essential role of transit in shaping Utah's economic prosperity, fostering job creation, enhancing income, promoting value-added activities, and driving business output while advancing the state's vision for a more connected and resilient future.

3. MARKET ACCESS

Economic benefits are closely tied to access to the transportation network. The benefits related to increased business output because of network expansion are referred to as market access benefits. This analysis looks at labor access benefits as the primary driver of the economic impact of market access. Labor access benefits are technically defined as the changes in output as a product of the population having greater access to employers and businesses, specified here as those living within a 40-minute drive time radius.

Replica data was used to create a profile of the employment distribution among industries of transit users, as well as industries that were found to be sensitive to labor access as a variable with business impact. Education, healthcare, financial and professional services, and executive management are the industries with a sizable commuter demographic based in transit that are directly impacted by the phenomenon of market access.

Below are several maps that display the percent change in accessibility across the four scenarios. Figure 21 through Figure 24 show the growth in accessibility as investment level grows, as measured by the change in accessibility radius of those within 40-minute drive times.

Figure 21: Percent Accessibility Change in 'Bus-Only' Scenario at 'Maintain-Existing-System' Investment Level

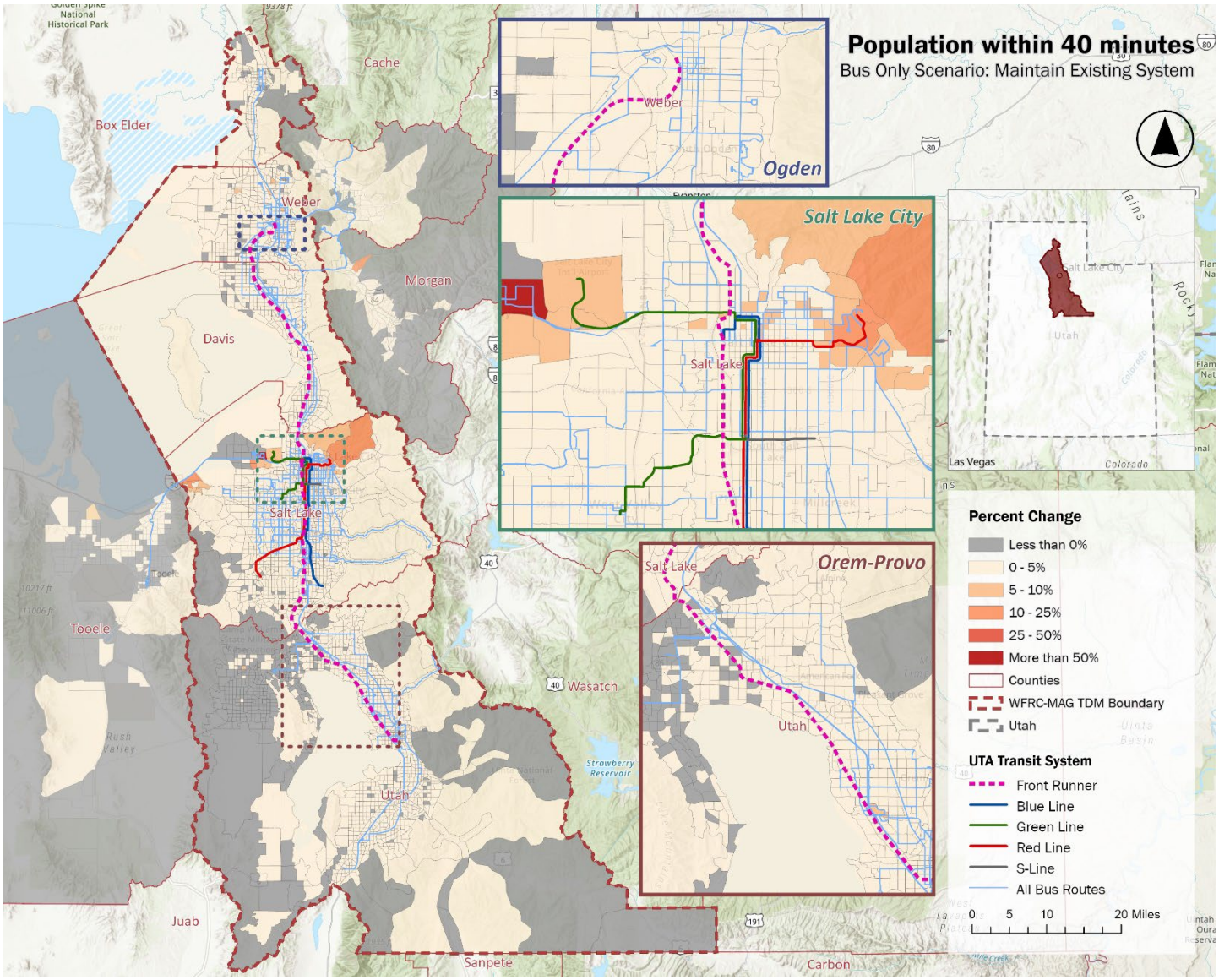


Figure 22: Percent Accessibility Change in 'Bus-Only' Scenario at 'Business-As-Usual' Investment Level

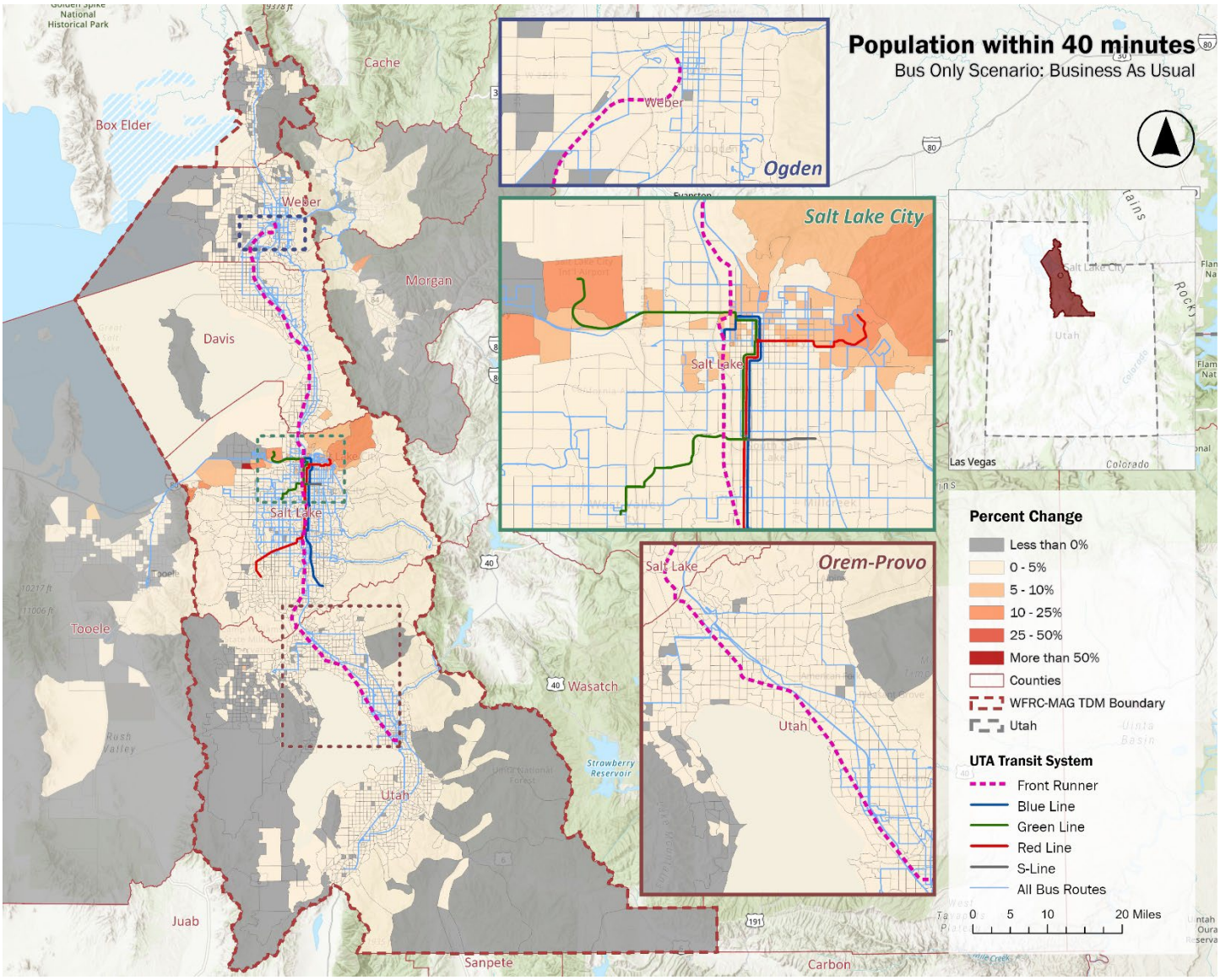


Figure 23: Percent Accessibility Change in 'Bus-Only' Scenario at 'RTP-Priority Needs' Investment Level

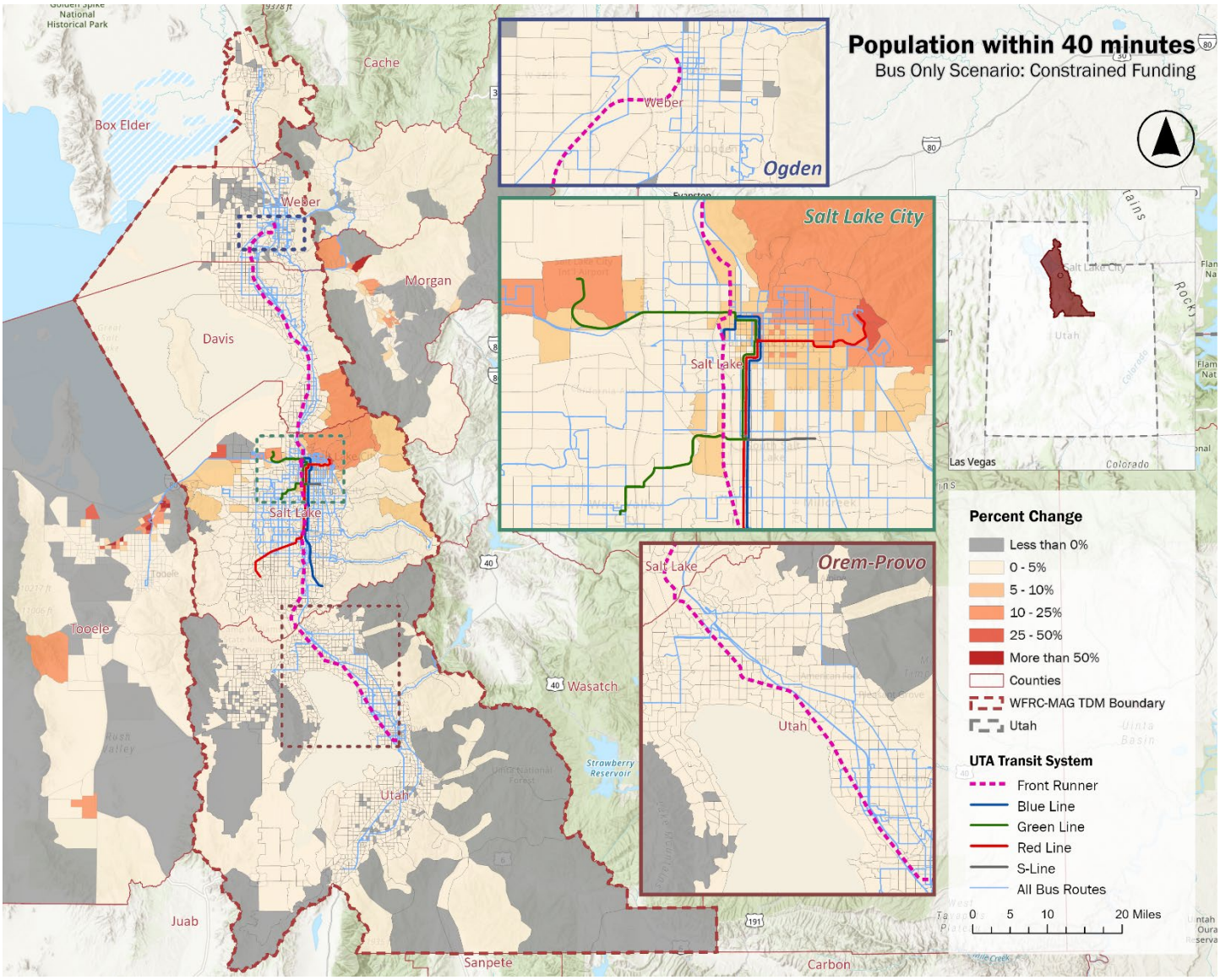
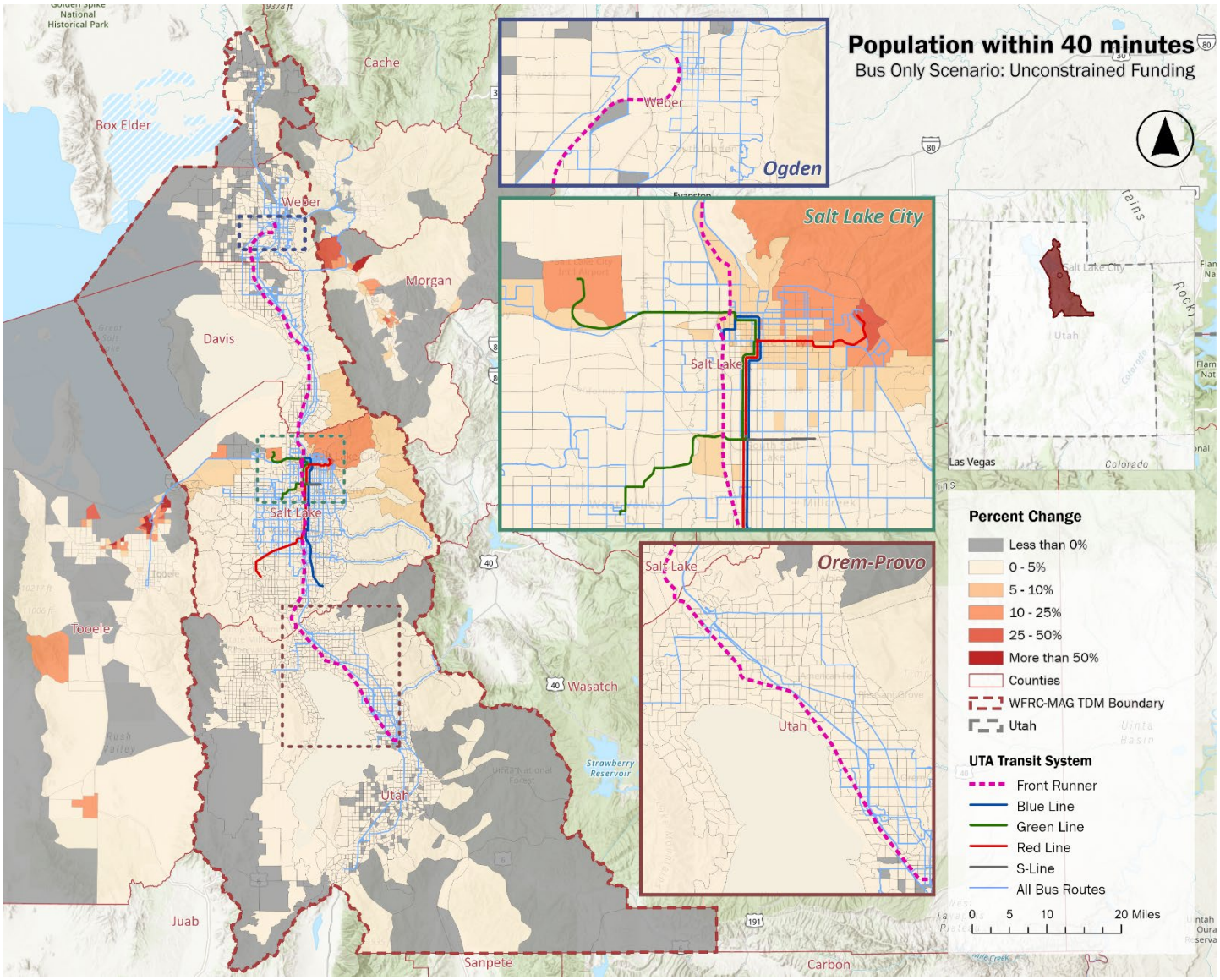


Figure 24: Percent Accessibility Change in 'Bus-Only' Scenario at 'RTP-Total Needs' Investment Level



Accessibility most notably grows between the Business-As-Usual and Priority Needs investment levels, with portions of Salt Lake City becoming more accessible, as well as outer areas of the UTA service areas such as those in Tooele. However, while the Bus-Only network accessibility improves with investment level, evaluating investment with respect to the All-Transit network reveals substantially higher market accessibility. Figure 25 through 28 demonstrate the change in accessibility within a 40-minute drive radius across investment levels.

Figure 25: Percent Accessibility Change in 'All-Transit' Scenario at 'Maintain-Existing-System' Investment Level

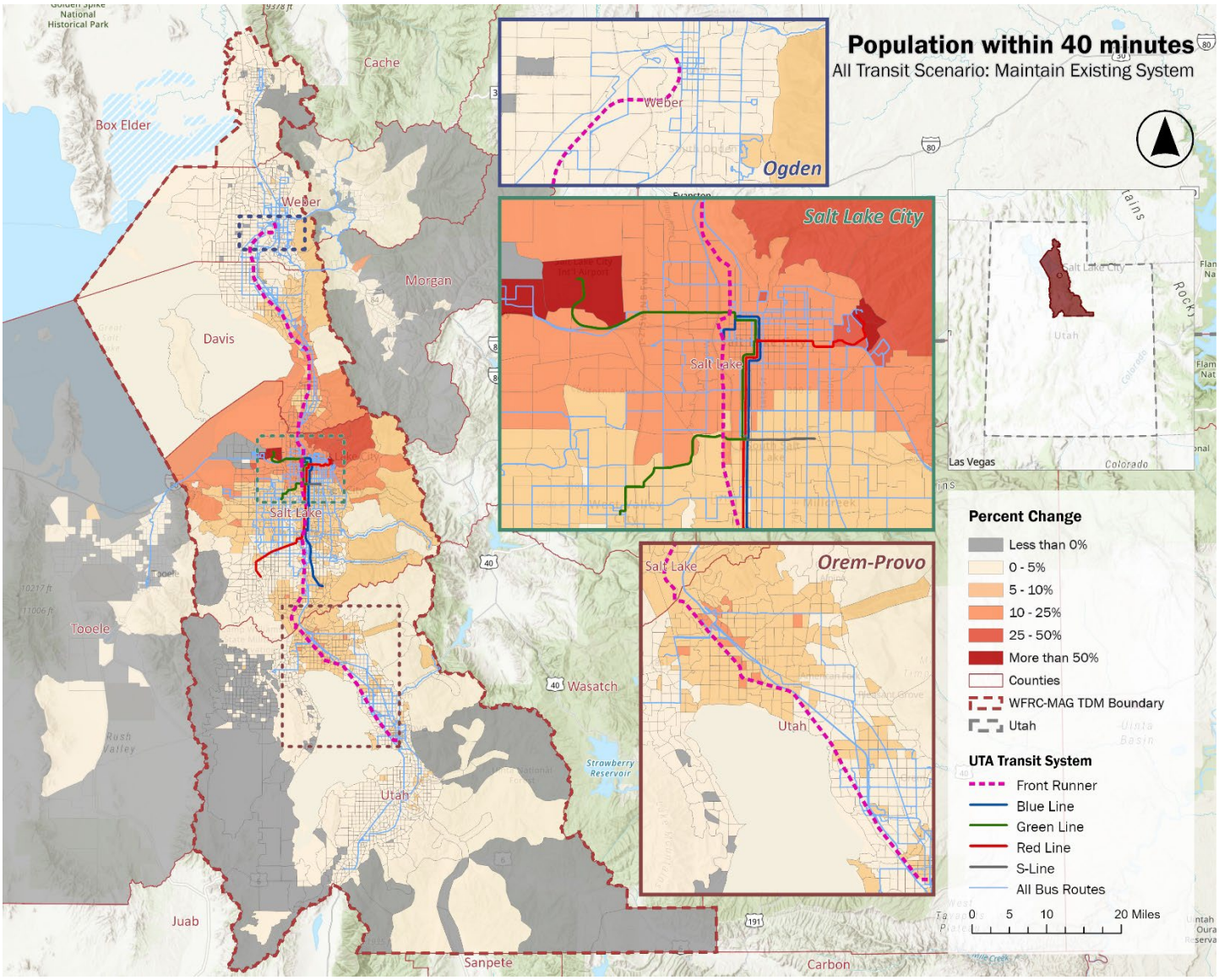


Figure 26: Percent Accessibility Change in 'All-Transit' Scenario at 'Business-As-Usual' Investment Level

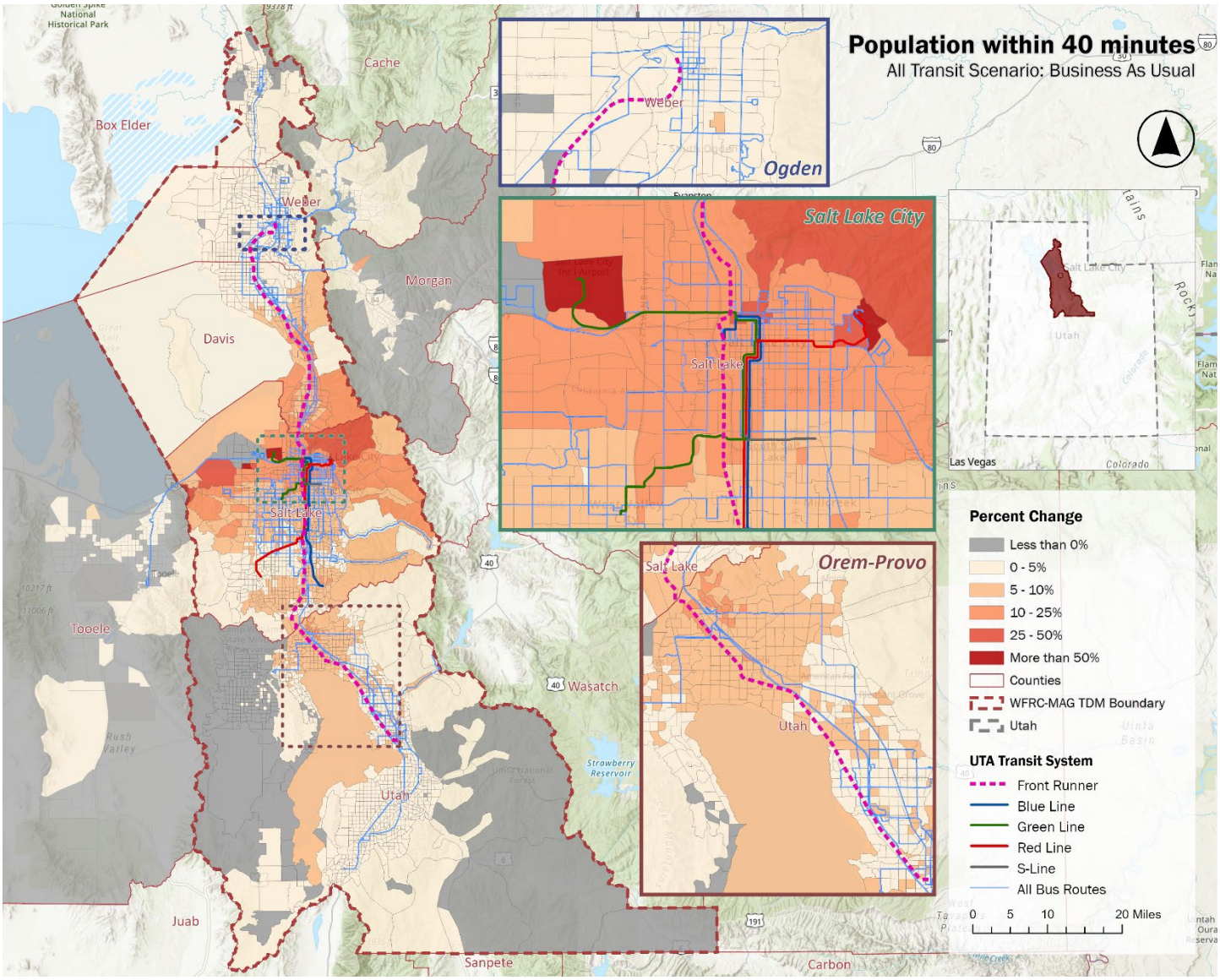


Figure 27: Percent Accessibility Change in 'All-Transit' Scenario at 'RTP-Priority Needs' Investment Level

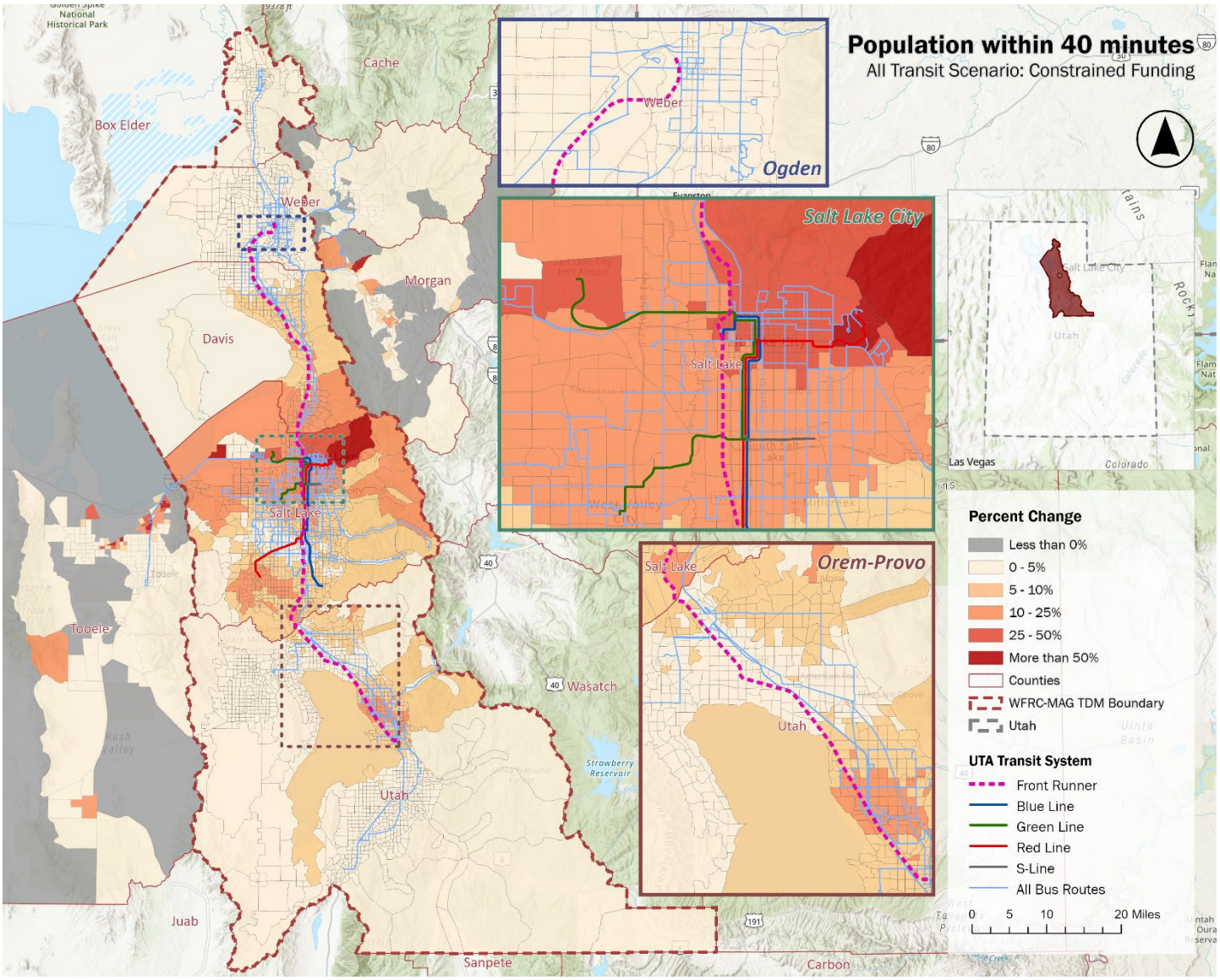
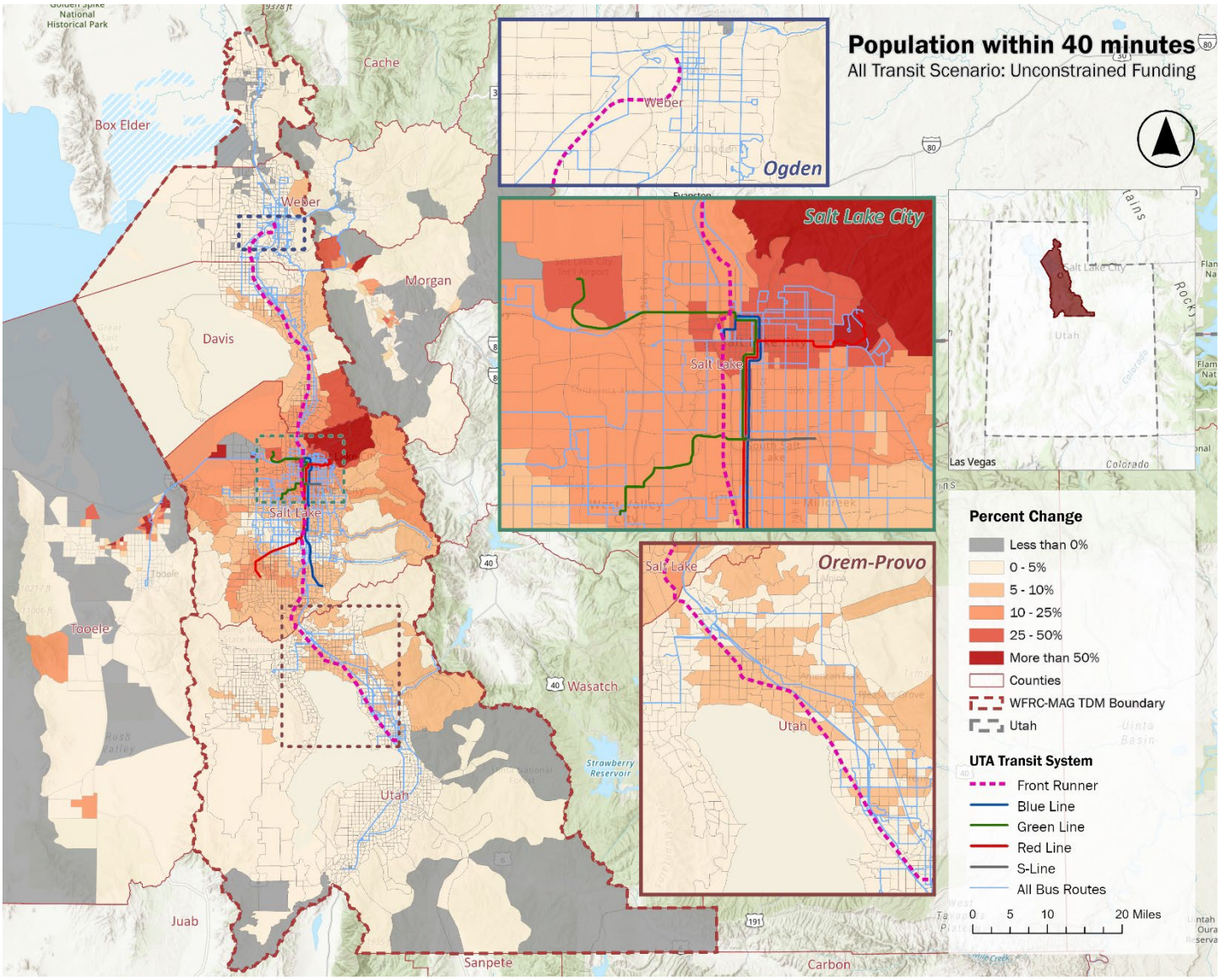


Figure 28: Percent Accessibility Change in 'All-Transit' Scenario at 'RTP-Total Needs' Investment Level



Under the All-Transit scenario, investment makes the outer regions of Salt Lake City as well as portions of western Tooele more accessible. Parts of the northeastern portion of the region also becomes more accessible with western parts of Morgan County growing in drive-time radius with investment as well. As investment and transit scenario ascend in funding level and capability between Bus-Only and All-Transit, regions previously more distant become more accessible, suggesting greater access that businesses will have to potential labor pools, and thus, will see increases in productivity. While accessibility grows with investment, most dramatic shifts in accessibility are visible when comparing investing in all transit as opposed to only the buses being present.

Methodology

The market access impact with respect to transit is based on an increased size of the accessible labor pool, which is understood as the increase in accessibility to population within a 40-minute drive radius that has access to transit.

The impacts on market access are summarized in Table 5 below; the full methodology is described in Appendix II: Market Access Impacts.

Market Access Benefits

Table 7: Summary of Economic Impacts of Market Access for all Transit Scenarios

Benefit Scenarios:	Bus-Only Scenario				All-Transit Scenario			
Investment Levels:	Maintain-Existing-System	Business-As-Usual	RTP-Priority Needs	RTP-Total Needs	Maintain-Existing-System	Business-As-Usual	RTP-Priority Needs	RTP-Total Needs
Economic Impacts								
Employment (# of Jobs)	0	3,103	6,167	5,471	2,738	7,896	12,608	9,101
Labor Income (Billion $s)	$0.00	$1.57	$2.85	$2.67	$1.74	$4.12	$6.47	$5.01
Value Added/GDP (Billion $s)	$0.00	$2.24	$4.34	$3.95	$3.53	$5.71	$10.25	$7.69
Business Output (Billion $s)	$0.00	$5.02	$9.36	$8.30	$5.75	$11.96	$21.02	$15.27

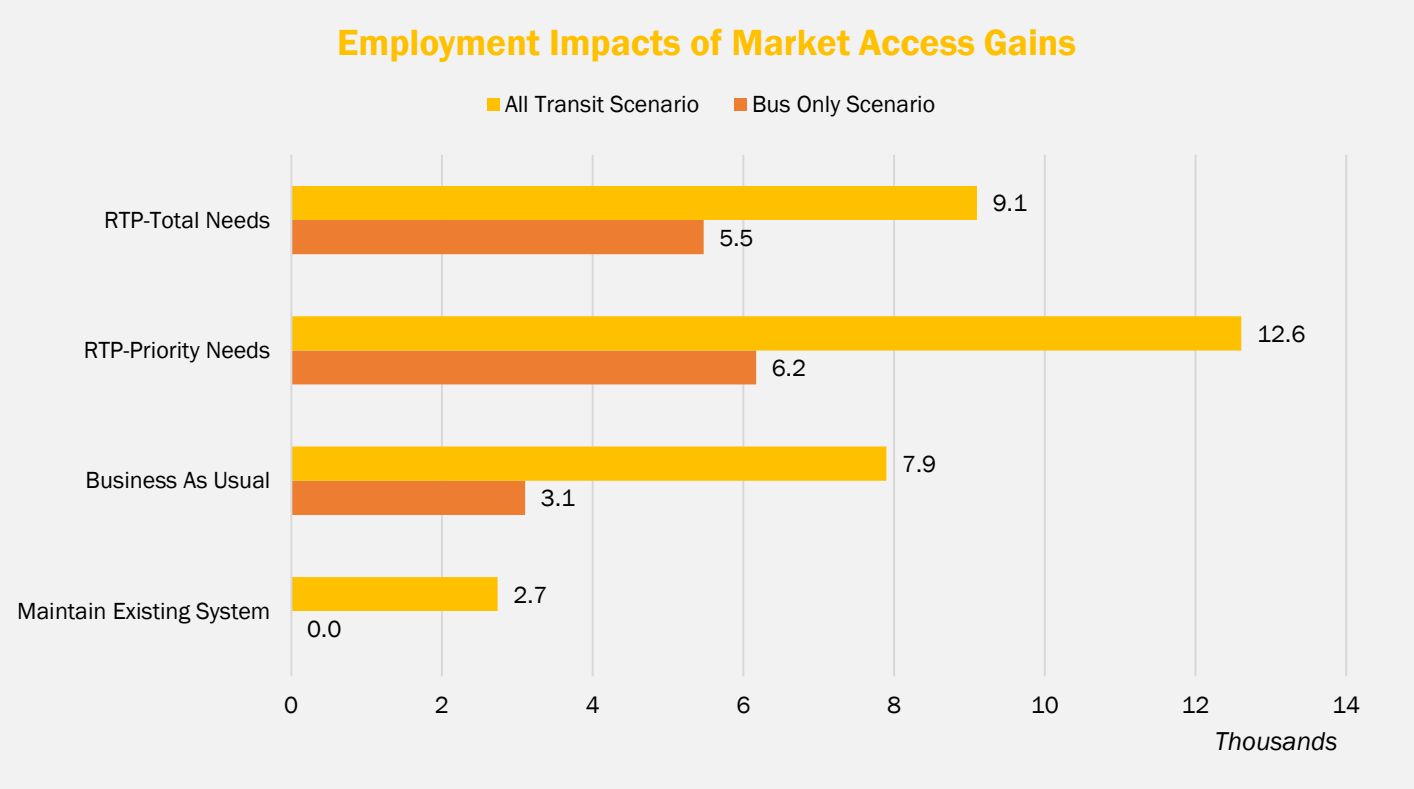
Economic Impacts

The employment profile of industries related to transit market access impacts includes professional service sectors, such as financial services and insurance, as well as health care and educational fields. Due to alleviated congestion and expanded connectivity to the transit system, businesses are provided with expanded labor potential. It is also noteworthy that while transit is the driver of benefit in this analysis, those who experience these benefits are not limited to transit riders. Market access impacts would be experienced by those who experience the congestion that occurs because of transit not being present under the scenarios as well as business and households who would experience increased congestion without transit. Thus, transit creates an increase in economic output with an increase in employment, GDP, business output and labor income from increasing market access and decreasing congestion that would occur without it. Under the All-Transit scenario, by 2050 Utah's transportation investments will have led to the creation of over 12,600 jobs, $6.5 billion in labor income, $10.2 billion in GDP, and $21 billion in business output.

Please refer to Appendix II: Market Access Impacts for year-by-year breakdown of economic impacts of Market Access as a result of UTA's investments.

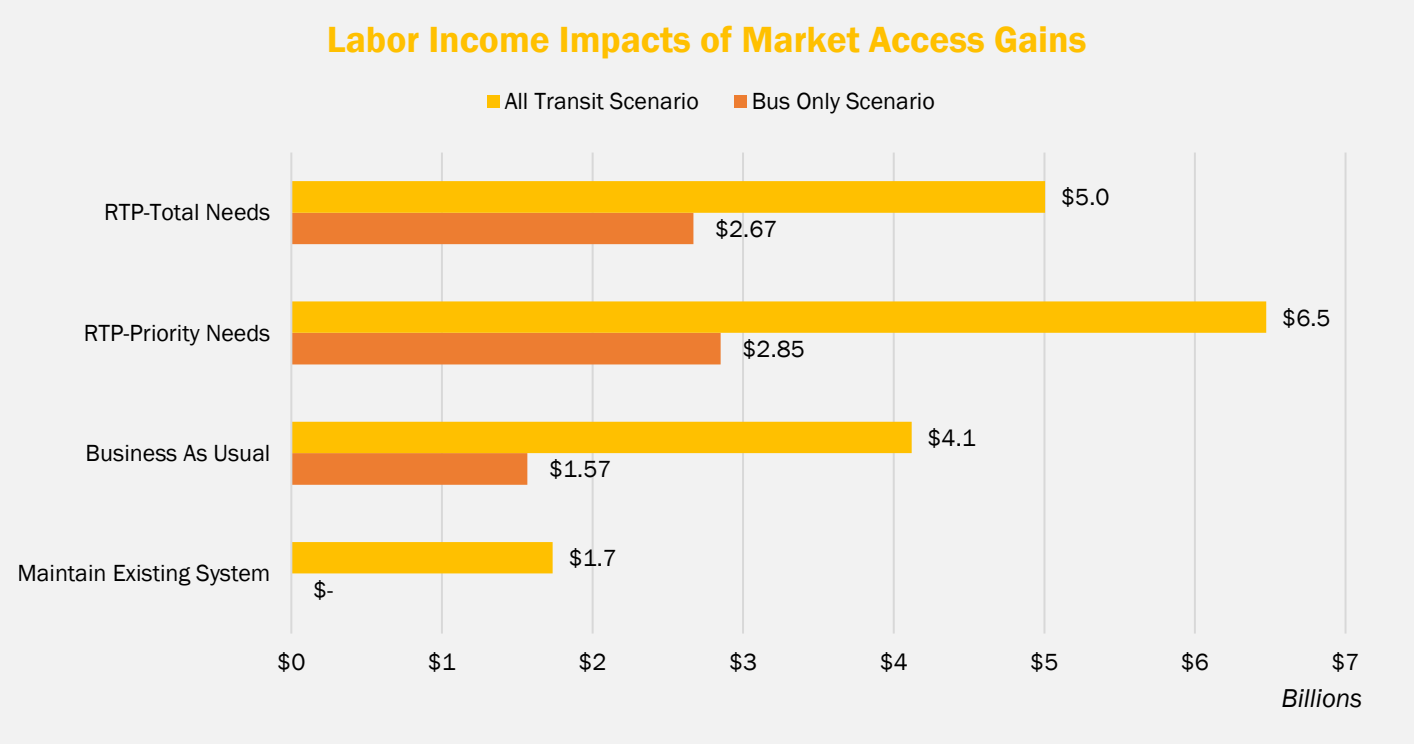
Employment

Figure 29: Employment Impacts of Market Access Gains



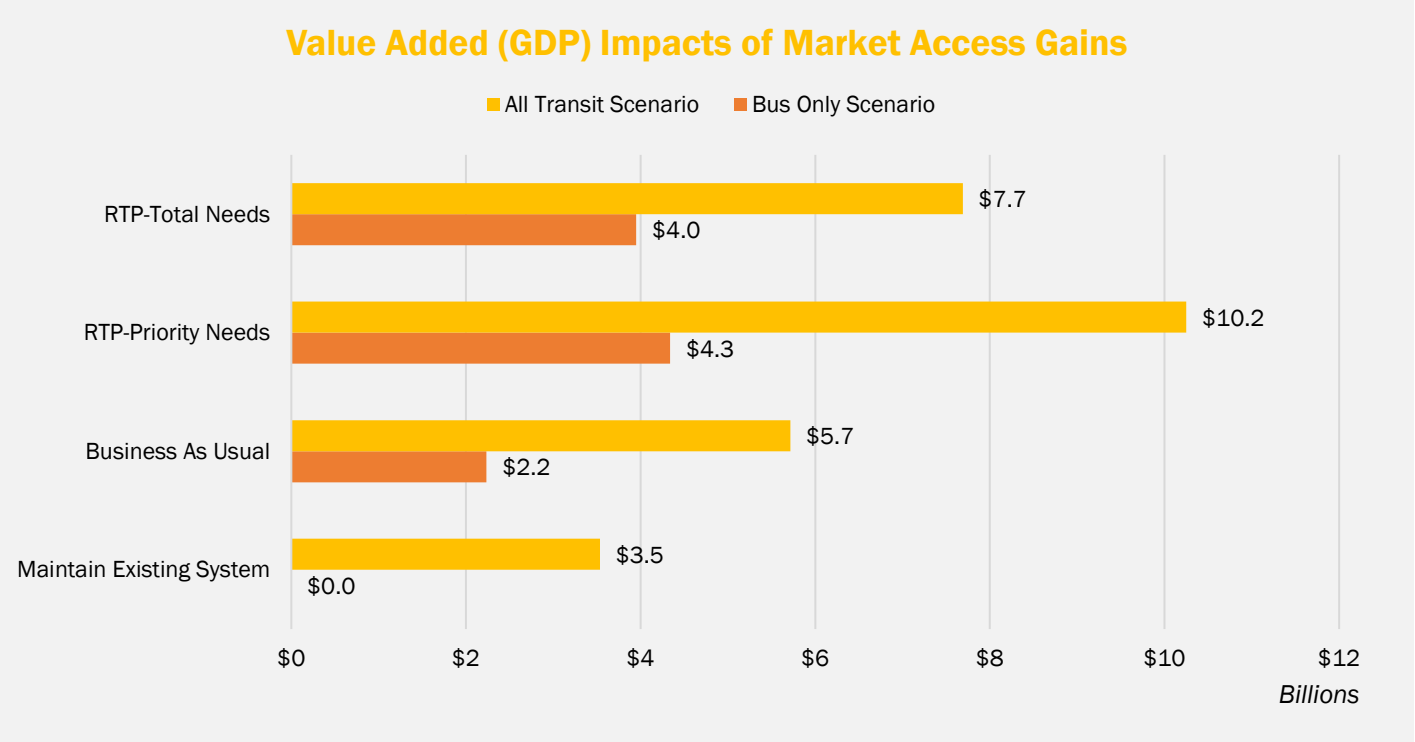
Labor Income

Figure 30: Labor Income Impacts of Market Access Gains



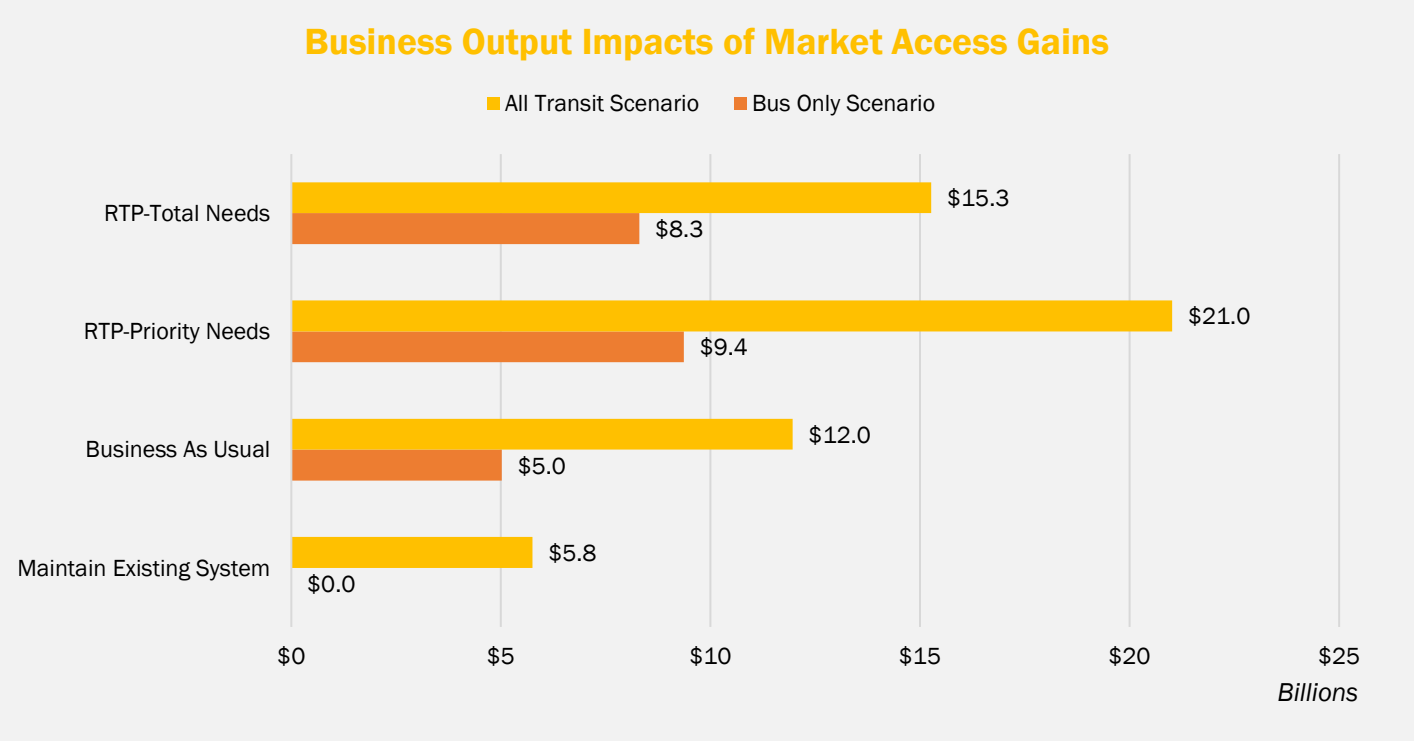
Value Added (GDP)

Figure 31: Value Added (GDP) Impacts of Market Access Gains



Business Output

Figure 32: Business Output Impacts of Market Access Gains



Notably, these impacts decrease when investment level goes from the Unified Plan to the RTP-Total Needs levels under both the All-Transit and Bus-Only scenarios. This results from lower base congestion levels under RTP-Total Needs circumstances and thus the benefit being lower, as highway investments start to work opposite to transit benefits. Figure 29 through Figure 32 below display the economic impact categories, Employment, Labor Income, GDP, and Business Output, and respective outcomes by investment level and transit scenario.

4. WORKFORCE PARTICIPATION

Jobs Supported by Transit

UTA's transit services play a pivotal role in enhancing the efficiency of the overall transportation system within the Wasatch Front region. Beyond catering to the needs of existing users, these services facilitate an expanded user base, enabling individuals to fulfill their transportation requirements through UTA's transit system. Notably, a significant proportion of these transit trips are dedicated to commuting to and from work locations. The number of transit work trips for each scenario has been derived from the Wasatch Front Travel Demand Model. The identification of these work-related trips serves as a key metric for evaluating the impact of transit services on employment dynamics in the region. By discerning the total employments or jobs directly supported by the availability of transit services, it becomes evident that such opportunities would be unattainable in the absence of robust transit infrastructure.

Table 8 shows the estimated annual employment supported by transit trips for varying investment levels and transit scenarios over the years 2023-2050. These results underscore the indispensable workforce participation benefits attributed to UTA's transit services in the Wasatch Front region, thereby emphasizing the broader economic implications of a well-functioning public transportation system.

Table 8: Number of Employees directly supported by UTA's Transit System

Benefit Scenarios:	**Bus-Only Scenario**				**All-Transit Scenario**			
Investment Levels:	Maintain-Existing-System	Business-As-Usual	RTP-Priority Needs	RTP-Total Needs	Maintain-Existing-System	Business-As-Usual	RTP-Priority Needs	RTP-Total Needs
2023	13,035	13,035	13,035	13,035	24,384	24,384	24,384	24,384
2024	13,235	13,295	13,583	13,579	25,000	25,060	25,386	25,386
2025	13,438	13,561	14,155	14,146	25,635	25,757	26,430	26,430
2026	13,644	13,832	14,751	14,737	26,290	26,476	27,517	27,517
2027	13,853	14,108	15,373	15,353	26,965	27,218	28,649	28,649
2028	14,066	14,390	16,020	15,995	27,662	27,984	29,829	29,828
2029	14,282	14,678	16,695	16,663	28,381	28,775	31,058	31,057
2030	14,501	14,971	17,398	17,360	29,122	29,590	32,339	32,337
2031	14,724	15,271	18,131	18,086	29,887	30,432	33,673	33,670
2032	14,950	15,576	18,895	18,842	30,676	31,301	35,063	35,059
2033	15,179	15,888	19,692	19,630	31,490	32,198	36,512	36,506
2034	15,412	16,205	20,521	20,450	32,330	33,124	38,021	38,013
2035	15,649	16,530	21,386	21,306	33,198	34,081	39,593	39,583
2036	15,889	16,860	22,288	22,197	34,092	35,068	41,231	41,219
2037	16,133	17,197	23,227	23,125	35,016	36,087	42,938	42,923

Benefit Scenarios:	**Bus-Only Scenario**				**All-Transit Scenario**			
Investment Levels:	Maintain-Existing-System	Business-As-Usual	RTP-Priority Needs	RTP-Total Needs	Maintain-Existing-System	Business-As-Usual	RTP-Priority Needs	RTP-Total Needs
2038	16,381	17,541	24,207	24,092	35,970	37,140	44,717	44,698
2039	16,633	17,892	25,227	25,100	36,954	38,227	46,570	46,548
2040	16,888	18,250	26,291	26,150	37,970	39,350	48,501	48,475
2041	17,147	18,616	27,399	27,245	39,019	40,510	50,514	50,483
2042	17,411	18,988	28,555	28,385	40,102	41,707	52,611	52,575
2043	17,678	19,368	29,759	29,573	41,220	42,945	54,796	54,755
2044	17,950	19,756	31,015	30,811	42,375	44,223	57,074	57,026
2045	18,226	20,151	32,323	32,100	43,568	45,544	59,447	59,392
2046	18,506	20,554	33,687	33,444	44,800	46,908	61,920	61,857
2047	18,790	20,966	35,108	34,844	46,072	48,318	64,498	64,426
2048	19,079	21,386	36,589	36,303	47,386	49,775	67,184	67,103
2049	19,372	21,814	38,134	37,823	48,743	51,281	69,984	69,892
2050	19,670	22,251	39,743	39,408	50,146	52,837	72,902	72,799
Maximum Jobs	**19,670**	**22,251**	**39,743**	**39,408**	**50,146**	**52,837**	**72,902**	**72,799**

Economic Impacts

The economic impact of workforce participation is not confined to the direct jobs supported by transit alone. Enabling additional employment in the economy that would have otherwise not been possible, UTA's transit system initiates a ripple effect, generating additional employment, labor income, value added (GDP), and business output (sales) due to the multiplier effect. Table 7 provides a summary of the economic impacts of workforce participation in the economy across all the investment levels and transit scenarios over the duration of the Unified Plan.

Table 9: Summary of Economic Impacts of Workforce Participation for all Transit Scenarios

Benefit Scenarios:	**Bus-Only Scenario**				**All-Transit Scenario**			
Investment Levels:	Maintain-Existing-System	Business-As-Usual	RTP-Priority Needs	RTP-Total Needs	Maintain-Existing-System	Business-As-Usual	RTP-Priority Needs	RTP-Total Needs
Economic Impacts								
Employment (# of Jobs)	27,610	34,584	55,224	47,350	63,062	66,290	94,214	94,080
Labor Income (Billion $s)	$39.69	$46.57	$55.73	$48.06	$77.70	$80.98	$100.72	$100.66
Value Added/GDP (Billion $s)	$66.46	$76.29	$90.31	$80.80	$129.67	$138.28	$170.73	$170.63
Business Output (Billion $s)	$129.47	$148.85	$176.51	$159.17	$253.83	$268.90	$330.48	$330.28

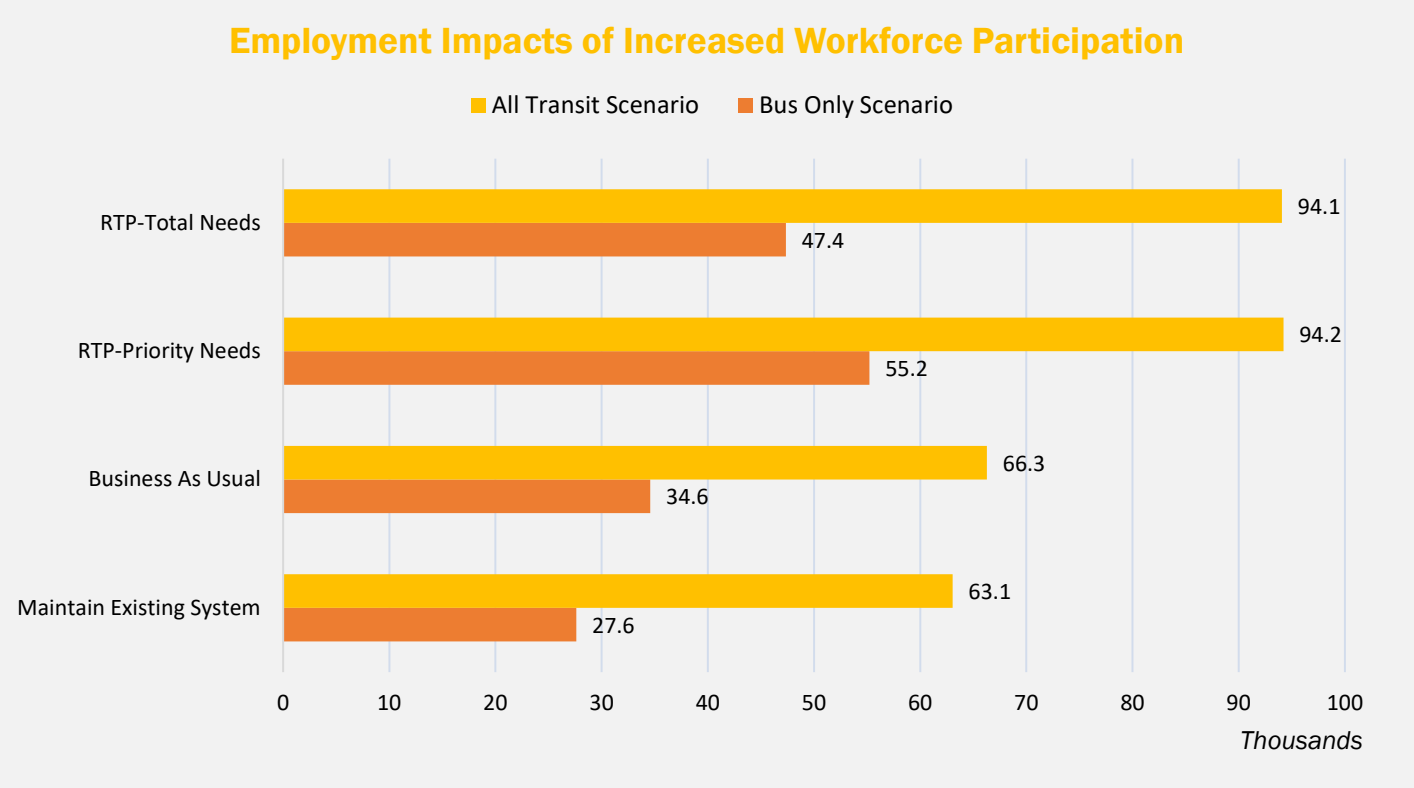
As the investment levels increase from Maintaining Existing System through funding the RTP-Total Needs of the Unified Plan, there is a consistent uptrend in the economic indicators across all categories, demonstrating the positive correlation between transit investment and economic outcomes. Notably, the highest impact is estimated at RTP-Priority Needs investment level, where the Bus-Only transit scenario supports 55,224 jobs, contributing $55.73 billion in labor income, $90.31 billion in value added/GDP, and generating $176.51 billion in business output as a result of increased workforce participation. Transitioning to the All-Transit Scenario yields even more substantial

benefits, with 94,214 jobs, $100.72 billion in labor income, $170.73 billion in value added/GDP, and $330.48 billion in business output under the RTP-Priority Needs investment level. The RTP-Total Needs scenario sees a slightly less impact than the RTP-Total Needs because funding total highway needs would reduce the efficiency of the transit system in displacing the automobile trips at the RTP-Total Needs level. These figures highlight the significant potential for economic growth and prosperity associated with increased workforce participation from investment in a comprehensive transit system, particularly when aligned with regional transportation priorities. A year-by-year breakdown of economic impacts of workforce participation as a result of UTA's investment in Utah's economy is provided in Appendix III: Workforce Participation Impacts.

Figure 33 through Figure 36 visually compares the four different economic impact indicators of Workforce participation at different investment and transit scenarios.

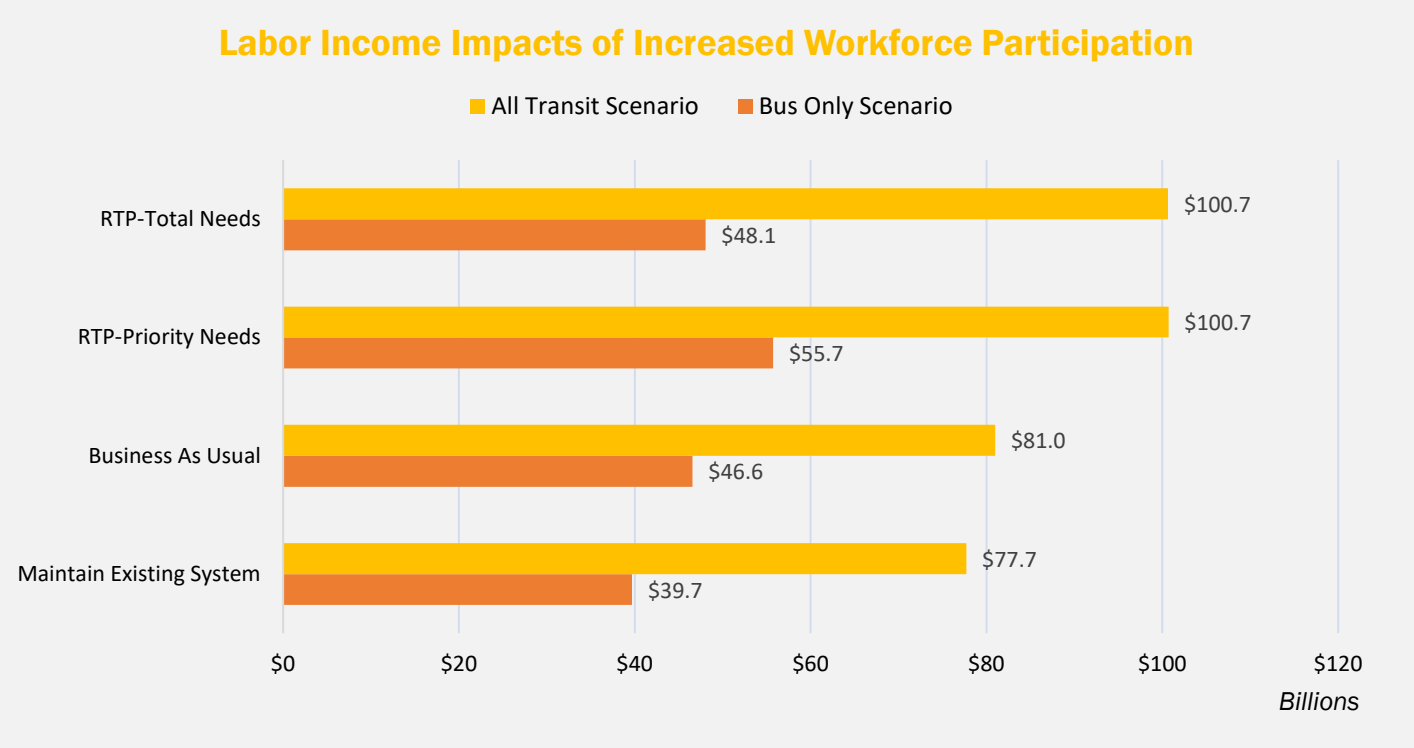
Employment

Figure 33: Employment Impacts of Increased Workforce Participation



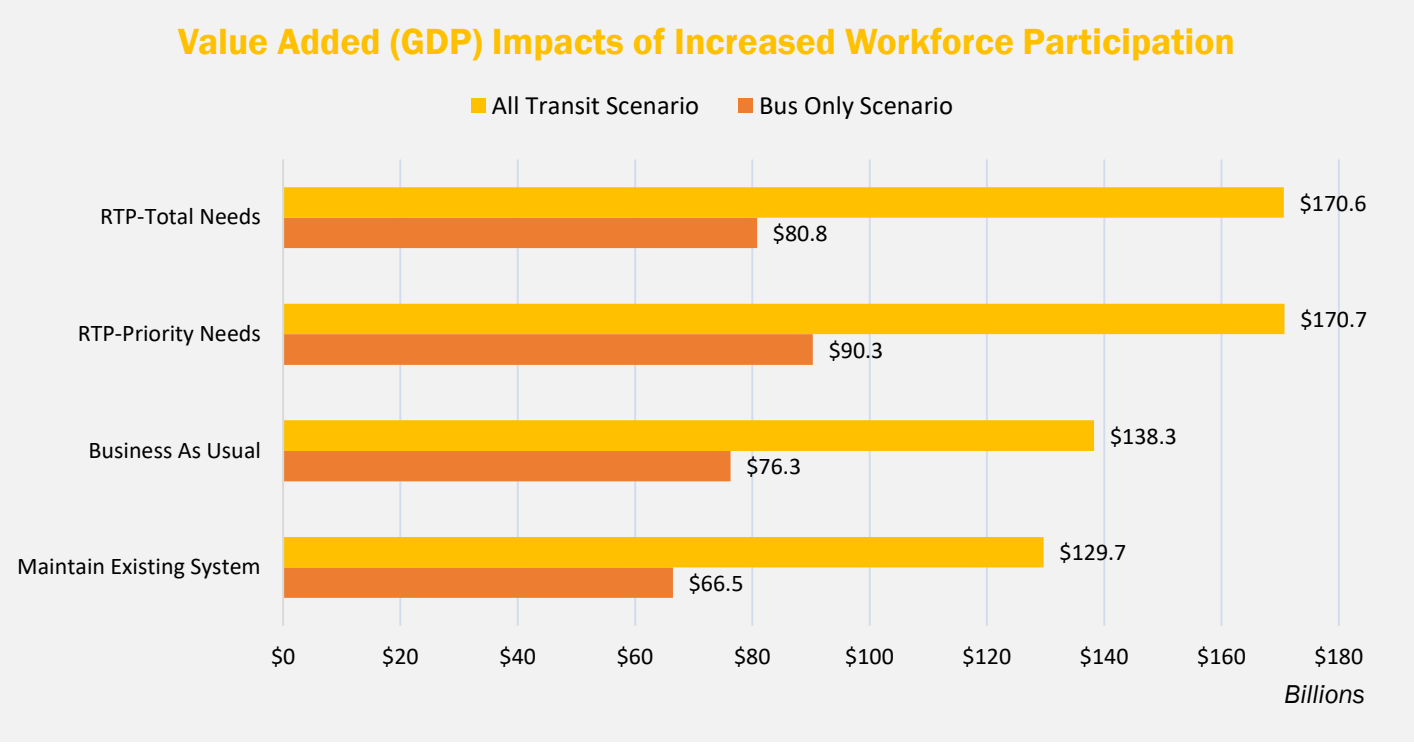
Labor Income

Figure 34: Labor Income Impacts of Increased Workforce Participation



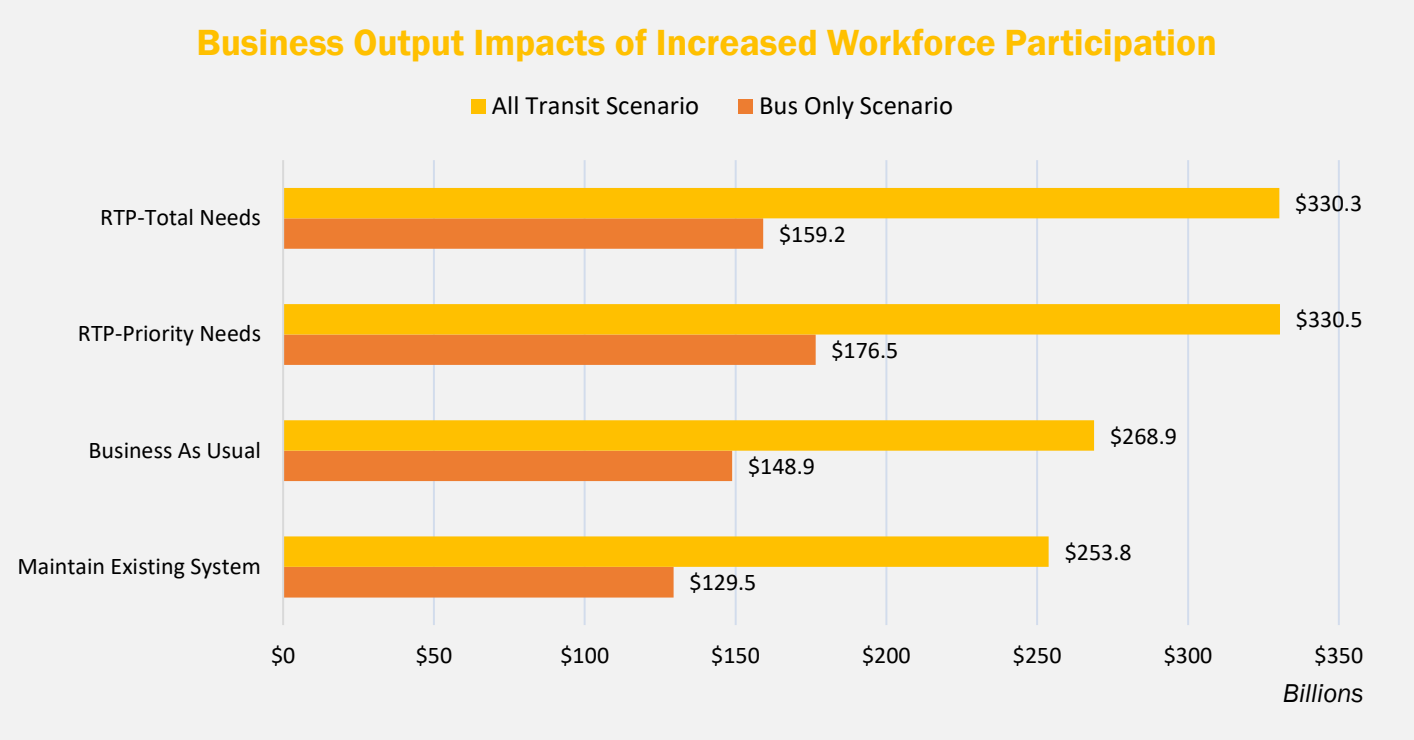
Value Added (GDP)

Figure 35: Value Added (GDP) Impacts of Increased Workforce Participation



Business Output

Figure 36: Business Output Impacts of Increased Workforce Participation



These findings underscore a clear correlation between increased investment in the transit system and heightened workforce participation in the regional economy. This correlation is reflected in elevated levels of employment, household income, value added (GDP), and business outputs. Notably, the economic impacts are most pronounced in the RTP-Priority Needs scenario, primarily because the transit projects outlined in both the RTP-Priority Needs and RTP-Total Needs scenarios are relatively similar within the Unified Plan. Conversely, greater disparities exist in highway projects between these two investment levels, resulting in a notable shift of trips back to the highway system as investment progresses from RTP-Priority Needs to RTP-Total Needs. This trend is more evident in the Bus-Only scenario compared to the All-Transit scenario, highlighting that bus users are more inclined to revert to driving under favorable conditions, unlike rail users. This underscores the importance of proportionally greater funding in the transit system compared to the highway system for fully maximizing the workforce participation benefits of transit.

5. TRANSIT SPENDING

Transit Spending

The direct investments in a transit system play a pivotal role in shaping Utah's economic landscape through its multifaceted impacts from UTA's operation, maintenance, and capital investments. The injection of funds into capital projects, such as the construction of transit infrastructure, initiates a ripple effect throughout the state's economy. This catalyzes employment opportunities across sectors involved in project construction such as construction, engineering, and other related fields, leading to a boost in wages, overall output, and GDP. The significance of this economic stimulation is further underscored by the indirect and induced impacts that follow. The workforce employed in transit-related projects subsequently channels their earnings to the local economy, initiating a multiplier effect and downstream to businesses and services across Utah. This interconnected web of economic activity strengthens local industries and contributes to the overall vibrancy of the state's economy.

Moreover, the operation and maintenance costs associated with UTA's transit system contribute to the economic ecosystem. These expenditures are redirected to industries within the region that provide the necessary support for the continued functionality and upkeep of the transit infrastructure. As the financial flow permeates various sectors, it amplifies economic vitality, supporting businesses and sustaining jobs. The direct economic impact of transit investment, therefore, serves as a catalyst for broader economic development, fostering a cycle of growth that extends beyond the initial capital investments.

Table 10: Summary of Economic Impacts of Transit Spending for all Transit Scenarios

Benefit Scenarios:	**Bus-Only Scenario**				**All-Transit Scenario**			
Investment Levels:	Maintain-Existing-System	Business-As-Usual	RTP-Priority Needs	RTP-Total Needs	Maintain-Existing-System	Business-As-Usual	RTP-Priority Needs	RTP-Total Needs
Total Transit Spending (Billion $s)	**$16.14**	**$17.45**	**$26.71**	**$29.29**	**$22.22**	**$24.07**	**$36.19**	**$47.01**
Operation and Maintenance Costs (Billion $s)	$12.79	$12.79	$16.68	$17.01	$17.42	$17.42	$22.79	$24.76
Capital Outlays (Billion $s)	$3.35	$4.66	$10.02	$12.27	$4.80	$6.65	$13.40	$22.25
Economic Impacts								
Employment (# of Jobs)	21,579	19,374	46,020	60,420	30,385	27,979	56,602	74,804
Labor Income (Billion $s)	$9.22	$10.71	$16.38	$17.97	$12.34	$14.22	$21.39	$27.78
Value Added/GDP (Billion $s)	$16.52	$17.97	$27.49	$30.15	$22.47	$24.40	$36.69	$47.65
Business Output (Billion $s)	$32.16	$35.04	$53.62	$58.79	$44.14	$48.08	$72.30	$93.90

Table 10 provides an overview of the estimated outlays for each transit and investment level scenario, coupled with the subsequent economic impacts on employment, labor income, value added, and business outputs. These

economic impacts are discussed further with Figure 37 to Figure 40 below. Please refer to Appendix IV: Transit Spending Impacts for year-by-year breakdown of economic impacts of UTA's transit spending.

Economic Impacts

Employment

The Utah Transit Authority's transit investment and expenditure play a crucial role in shaping the employment landscape within Utah's economy across different scenarios, as shown in Figure 33 below. In the Maintain-Existing-System category, the employment impact varies between the Bus-Only and All-Transit scenarios. For Bus-Only, the employment generated is estimated at 21,579 jobs, while the All-Transit scenario contributes to 30,385 jobs. The operation and maintenance costs and state of good repair outlays associated with these scenarios, standing at $16.14 billion and $22.22 billion, respectively, underscore the significant employment opportunities tied to sustaining and expanding transit services.

Figure 37: Employment Impacts of Transit Spending

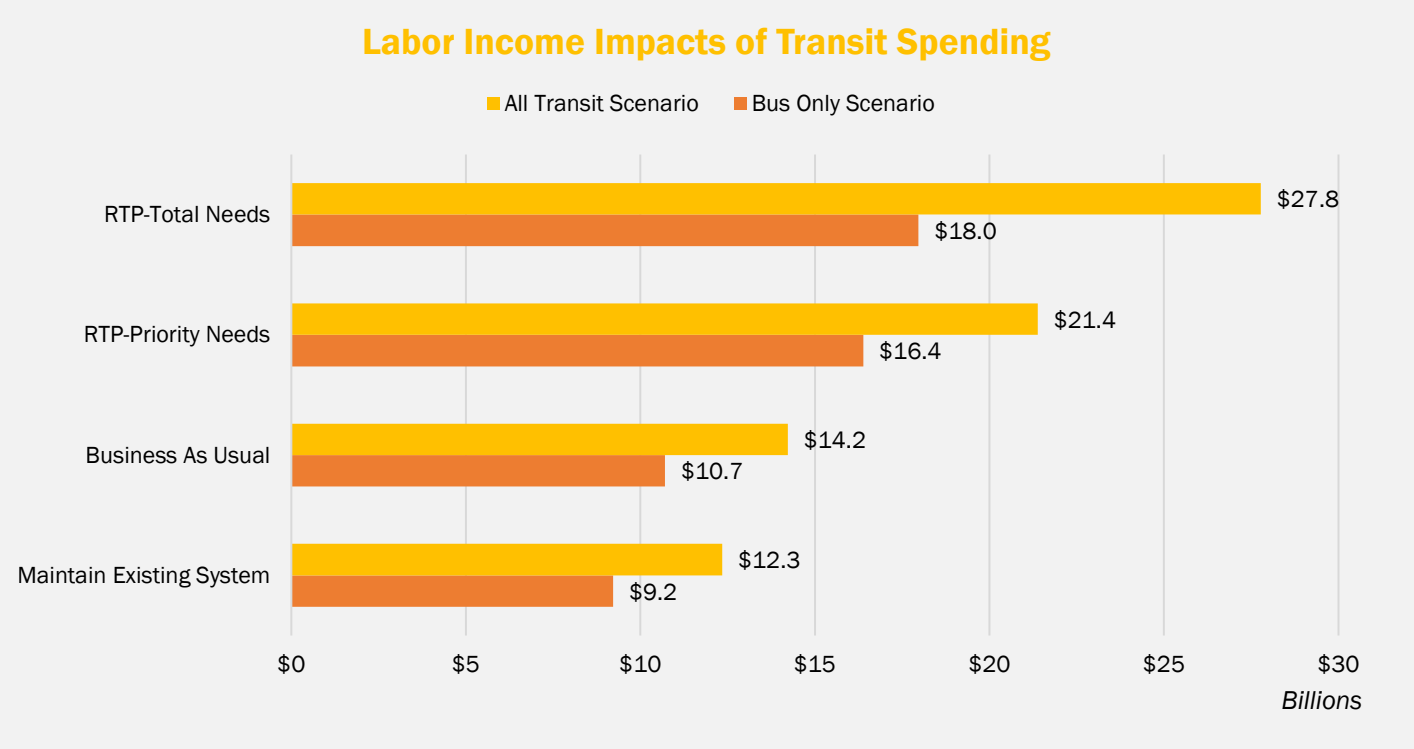
Under the Business-As-Usual scenario, where both operation and maintenance costs and capital outlays are considered, the employment impact remains substantial. The Bus-Only scenario is anticipated to create 19,374 jobs, while the All-Transit option is projected to result in 27,979 jobs. Moving into the realm of RTP-Priority Needs, employment opportunities escalate further, reaching 46,020 jobs for Bus-Only and 56,602 jobs for All-Transit. Lastly, the RTP-Total Needs scenario demonstrates the highest employment impact, with 60,420 jobs for Bus-Only and an impressive 74,804 jobs for All-Transit. These employment figures underscore the far-reaching economic

consequences and job creation potential associated with different levels of transit investment by the Utah Transit Authority.

Labor Income

The Utah Transit Authority's transit investment strategies from 2023 to 2050 exhibit varying impacts on labor income across different scenarios. In the Maintain-Existing-System category, the labor income impact is $9.2 billion, while the All-Transit scenario forecasts a higher labor income of $12.3 billion. These figures reflect the significant role of maintaining and expanding transit services in generating labor income within Utah's economy.

Figure 38: Labor Income Impacts of Transit Spending



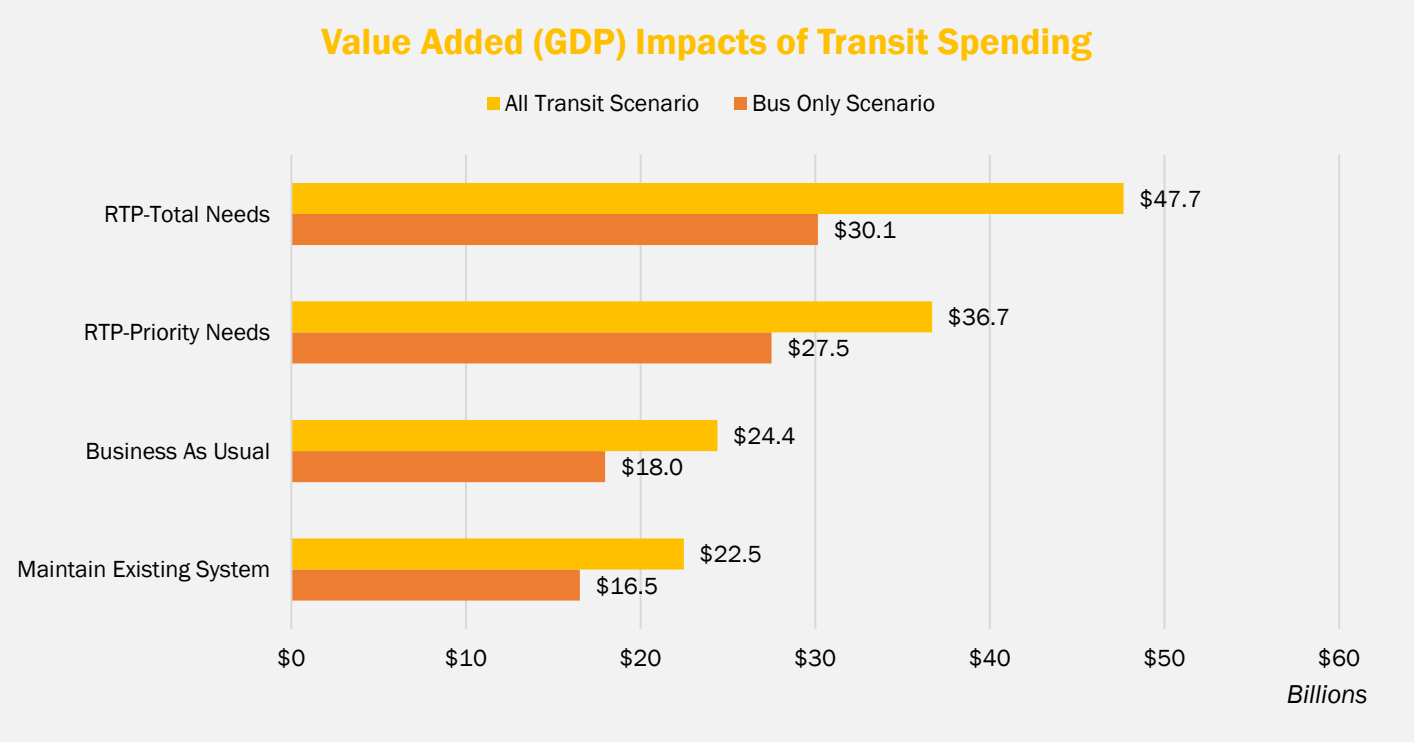
Under the Business-As-Usual scenario, where both operation and maintenance costs and capital outlays are considered, the labor income impact increases. The Bus-Only scenario is anticipated to generate $10.7 billion in labor income, while the All-Transit option is projected to result in a higher figure of $14.2 billion. As the investment scenario shifts to "RTP-Priority Needs," the labor income impact rises even further, reaching $16.4 billion for Bus-Only and $21.4 billion for All-Transit. Finally, in the RTP-Total Needs scenario, the labor income impact peaks at $18 billion for Bus-Only and an impressive $27.8 billion for All-Transit. These labor income figures underscore the income generation potential associated with different levels of transit investment by the Utah Transit Authority.

Value Added (GDP)

The Utah Transit Authority's transit investment and expenditure from 2023 to 2050 wields substantial influence on the value added (GDP) within Utah's economy across the scenarios. In the Maintain-Existing-System category, the GDP impact for Bus-Only is estimated at $16.5 billion, while the All-Transit scenario forecasts a higher GDP impact

of $22.5 billion. These figures underscore the importance of the necessity of transit services for the overall economic output of the state.

Figure 39: Value Added (GDP) Impacts of Transit Spending

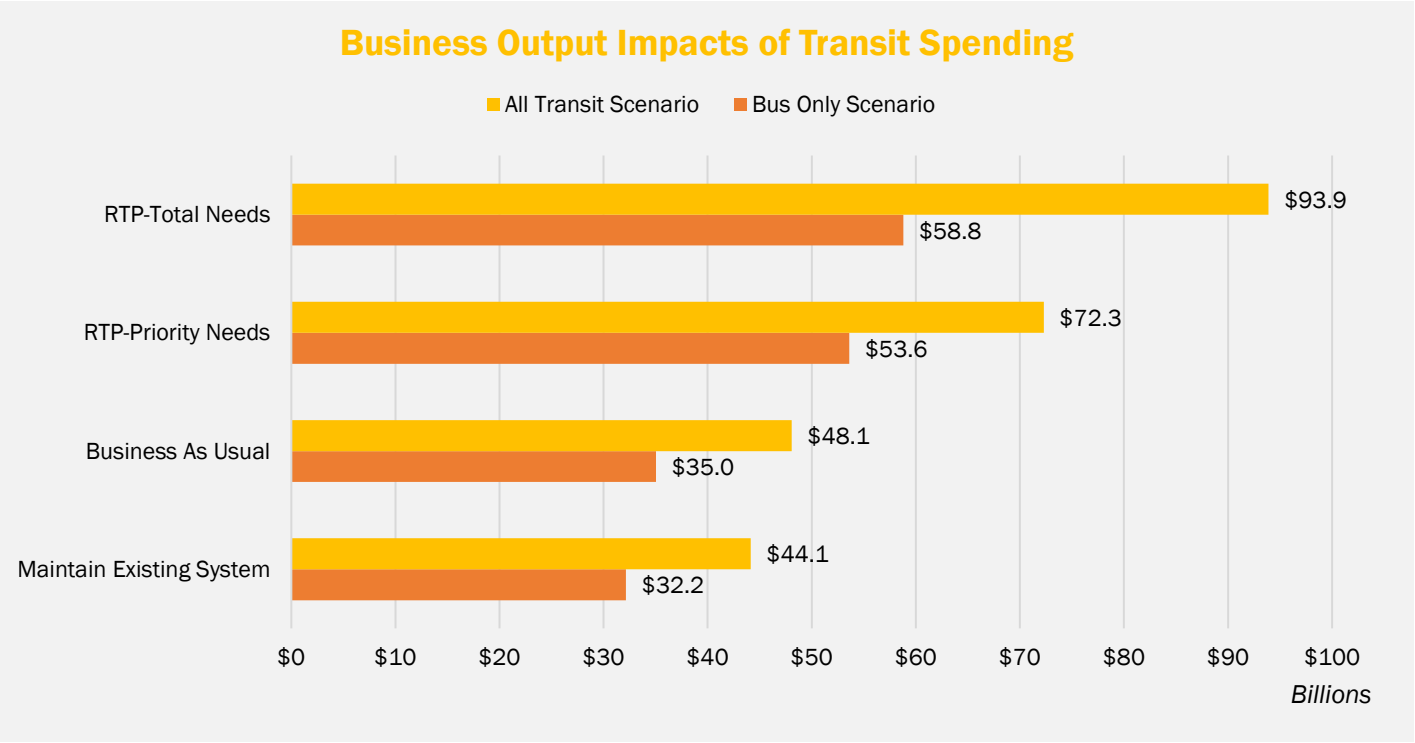


Under the Business-As-Usual scenario, encompassing both operation and maintenance costs and capital outlays, the GDP impact escalates. The Bus-Only scenario is projected to generate $18 billion in GDP impact, while the All-Transit option is anticipated to result in $24.4 billion. As the investment scenario shifts to "RTP-Priority Needs," the GDP impact rises even further, reaching $27.5 billion for Bus-Only and $36.7 billion for All-Transit. Finally, in the RTP-Total Needs scenario, the GDP impact peaks at $30.1 billion for Bus-Only and an impressive $47.7 billion for All-Transit. These GDP impact figures highlight the value-added potential for the economy in the region that are associated with different levels of transit investment by the Utah Transit Authority.

Business Output

The Utah Transit Authority's transit investment and expenditure strategies from 2023 to 2050 yield substantial impacts on business outputs within Utah's economy across diverse scenarios. In the Maintain-Existing-System category the estimated business output impact is $32.2 billion for Bus-Only, while the All-Transit scenario forecasts a higher business output impact of $44.1 billion. These figures highlight the pivotal role of the presence of transit services in contributing to the overall business outputs of the state.

Figure 40: Business Output Impacts of Transit Spending

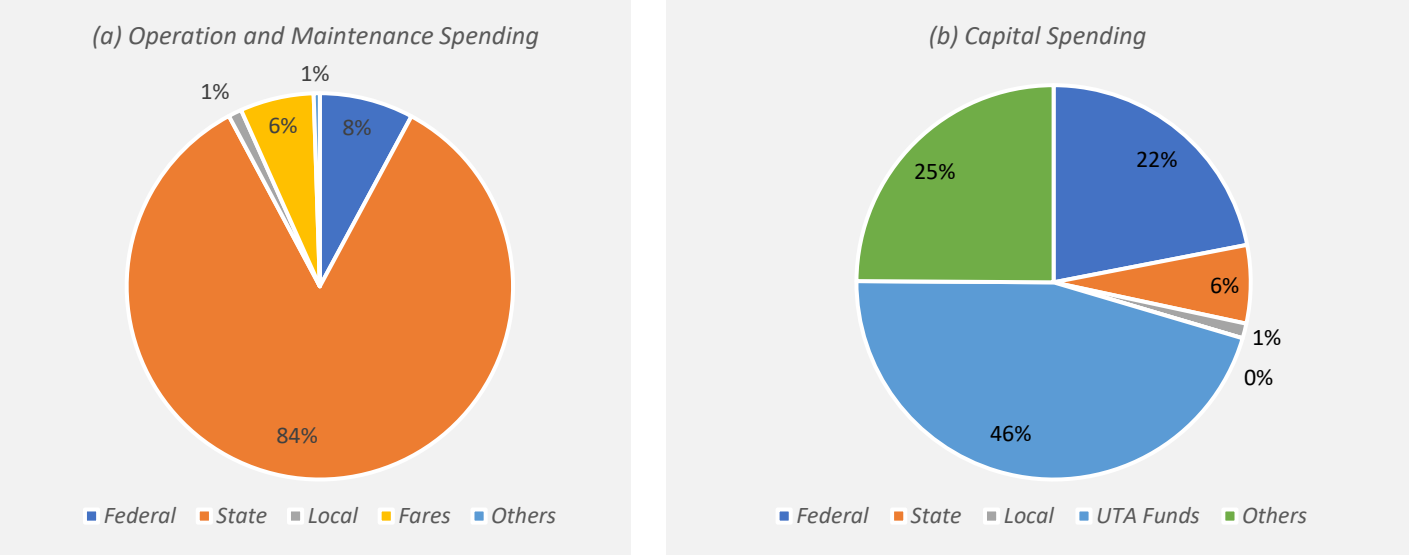


Under the Business-As-Usual scenario, encompassing both operation and maintenance costs and capital outlays, the business output impact escalates. The Bus-Only scenario is projected to generate $35 billion in business output impact, while the All-Transit option is anticipated to result in a higher figure of $48.1 billion. As the investment scenario escalates to RTP-Priority Needs, the business output impact rises further to $53.6 billion for Bus-Only and $72.3 billion for All-Transit. Finally, in the RTP-Total Needs scenario, the business output impact peaks at $58.8 billion for Bus-Only and $93.9 billion for All-Transit. These business output impact figures emphasize the output-generation potential for the economy that are associated with different levels of transit investment by the Utah Transit Authority.

Sources of Transit Spending

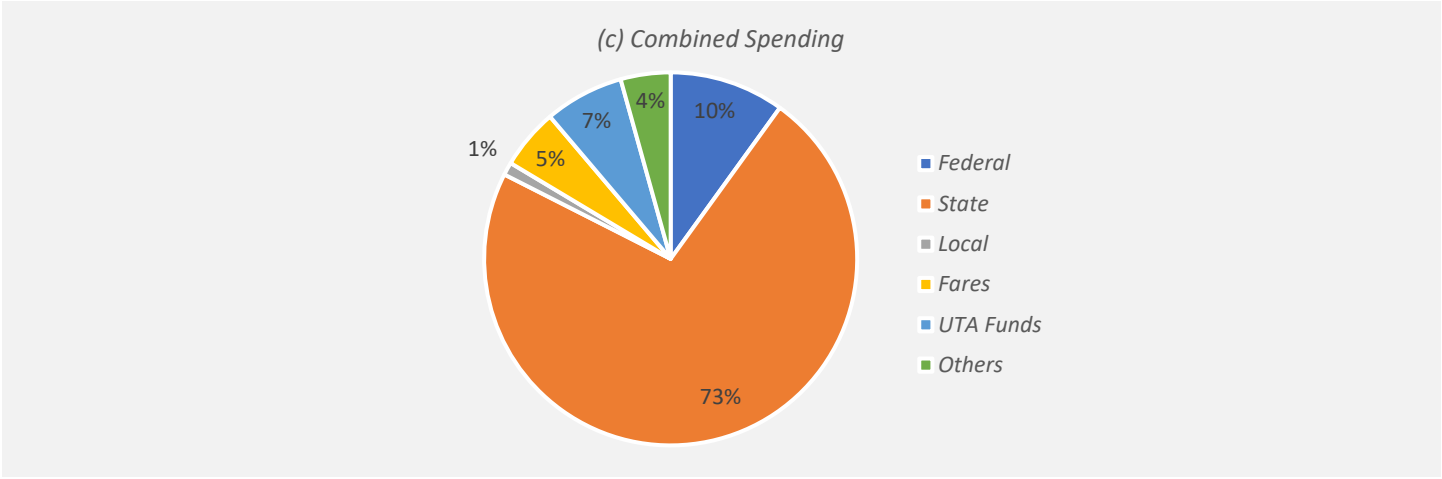
During the Unified Plan spanning from 2023 to 2050, the vast majority of the operation and maintenance (O&M) spending – roughly 84% - is estimated to be covered by State funding. Federal contributions and farebox collection each account for 8% and 6% of the estimated O&M spending, respectively. In contrast, the capital spending primarily relies on UTA Funds at approximately 46%, followed by Federal and State sources at 22% and 6%, respectively. Other sources, including bonding and leasing, make up 25% of capital spending during this period. As an example for discussion, Figure 41 illustrates a generalized distribution of these spending types based on funding sources for the All-Transit scenario at both the RTP-Priority Needs and RTP-Total Needs investment levels.

Figure 41: Generalized Distribution of Spending by Funding Source in RTP: All-Transit Scenario (2023-2050)



Collectively, for both the Bus-Only and All-Transit scenarios, it is estimated that around 72% of UTA spending during the Unified Plan period is sourced from the State, with approximately 10% from Federal sources and an average of 1.1% from Local sources (see Figure 42). Additionally, UTA Funds, Ridership fares, and other funding sources contribute 7%, 5.2%, and 4.3%, respectively. While about 90% of the spending originates within Utah, the 10% sourced from Federal funding represents new money injected into Utah's economy due to UTA's transit investments in operations, maintenance, and capital projects. Bringing this investment directly into Utah results in an additional stimulus to the state's economy.

Figure 42: Generalized Distribution of Total UTA Spending at RTP Scenario (2023-2050)



If the relationships described in the above analysis are indicative of federal funding, it suggests that UTA's attraction of federal investment in Utah could result in approximately 4,600 jobs, $1.64 billion in labor income, $2.75 billion in GDP, and $5.36 billion in additional business output in the Bus-Only scenario at the investment level of the Unified Plan's Priority needs. In the All-Transit scenario of the same investment level, it could lead to 5,700 jobs, $2.14 billion in labor income, $3.67 billion in GDP, and $7.23 billion in additional business output.

6. FISCAL IMPACTS

Investing in the Utah Transit Authority's transit system holds the potential to generate significant fiscal impacts across various levels of government. This investment is poised to stimulate economic activities, with the promise of more jobs, increased labor income, expanded business outputs, and added value to the local economy. The fiscal impacts of this initiative can be attributed to a combination of direct, indirect, and induced effects, driven by spending on construction, the establishment of more efficient transportation systems, and the broadened market access they facilitate. Consequently, all levels of government, including federal, state, and local authorities, are expected to benefit from enhanced fiscal revenues resulting from this growth. This section highlights the multi-dimensional potential of the Utah Transit Authority's system investment and its substantial influence on government revenues in Utah, contingent on different scenarios and investment levels.

Across various transit scenarios in the Cumulative Fiscal Impacts of Transportation Funding, distinct patterns emerge in total taxes. In the Bus-Only Scenario, total taxes amount to $7.95 billion under the Maintain-Existing-System, rising to $8.96 billion in the Business-As-Usual scenario. Both RTP-Priority Needs and RTP-Total Needs scenarios witness a notable further increase, reaching $13.31 billion and $13.76 billion, respectively. The All-Transit Scenario exhibits an even higher magnitude of fiscal impacts. Starting at $16.98 billion under the Maintain-Existing-System, total taxes escalated to $17.96 billion in the Business-As-Usual scenario. The subsequent RTP-Priority Needs and RTP-Total Needs scenarios depict a substantial surge, reaching $26.08 billion and $28.00 billion, respectively. Thus, while both scenarios show an upward trajectory, the All-Transit Scenario consistently demonstrates significantly higher cumulative fiscal impacts compared to the Bus-Only Scenario across the different funding levels.

Appendix V: Fiscal Impacts provides a year-by-year breakdown of total anticipated fiscal impacts at local, state, and federal levels due to UTA's investment in Utah's market. Appendix VI: Cumulative Fiscal Impacts (2023-2050) further dives into the breakdown of these cumulative fiscal impacts.

Bus-Only Scenario

The cumulative fiscal impacts of transportation funding under the Bus-Only Scenario for the Utah Transit Authority, as outlined in Table 11, reveal distinct trends across various tax categories and funding scenarios. The analysis encompasses local, state, and federal taxes, shedding light on the financial implications associated with maintaining the existing transit system, adopting a business-as-usual approach, facing RTP-Priority Needs, or benefiting from RTP-Total Needs.

Table 11: Cumulative Fiscal Impacts of Transportation Funding in the Bus-Only Scenario

Description	Maintain-Existing-System	Business-As-Usual	RTP-Priority Needs	RTP-Total Needs
ALL LOCAL TAXES				
Social Insurance Tax- Employee Contribution	$-	$-	$-	$-
Social Insurance Tax- Employer Contribution	$-	$-	$-	$-
TOPI: Sales Tax	$808,128,853	$845,462,221	$1,251,824,669	$1,296,190,552
TOPI: Property Tax	$1,688,447,953	$1,766,449,683	$2,615,474,983	$2,708,169,957
TOPI: Motor Vehicle License	$102,547	$107,284	$158,849	$164,479
TOPI: Severance Tax	$-	$-	$-	$-
TOPI: Other Taxes	$72,325,334	$75,666,569	$112,034,902	$116,005,529
TOPI: Special Assessments	$17,589,212	$18,401,786	$27,246,409	$28,212,049
OPI: Corporate Profits Tax	$-	$-	$-	$-
Personal Tax: Income Tax	$-	$-	$-	$-
Personal Tax: Motor Vehicle License	$25,721	$31,024	$46,225	$47,753
Personal Tax: Property Taxes	$3,957,091	$4,764,396	$7,098,304	$7,333,122
Personal Tax: Other Tax (Fish/Hunt)	$-	$-	$-	$-
Total Local Taxes	**$2,590,576,710**	**$2,710,882,965**	**$4,013,884,346**	**$4,156,123,441**
STATE TAXES				
Social Insurance Tax- Employee Contribution	$551,608	$673,911	$1,004,688	$1,037,698
Social Insurance Tax- Employer Contribution	$644,888	$787,871	$1,174,585	$1,213,176
TOPI: Sales Tax	$2,212,189,379	$2,314,386,549	$3,426,771,892	$3,548,220,015
TOPI: Property Tax	$-	$-	$-	$-
TOPI: Motor Vehicle License	$40,970,096	$42,862,804	$63,464,356	$65,713,595
TOPI: Severance Tax	$18,884,076	$19,756,469	$29,252,207	$30,288,934
TOPI: Other Taxes	$29,103,708	$30,448,220	$45,082,834	$46,680,613
TOPI: Special Assessments	$-	$-	$-	$-
OPI: Corporate Profits Tax	$77,651,991	$89,036,116	$133,046,865	$137,356,314
Personal Tax: Income Tax	$512,604,418	$616,092,874	$917,821,941	$948,209,596
Personal Tax: Motor Vehicle License	$12,363,622	$14,905,495	$22,208,472	$22,942,695
Personal Tax: Property Taxes	$-	$-	$-	$-
Personal Tax: Other Tax (Fish/Hunt)	$10,164,392	$12,207,765	$18,185,887	$18,788,195
Total State Taxes	**$2,915,128,179**	**$3,141,158,075**	**$4,658,013,728**	**$4,820,450,832**
FEDERAL TAXES				
Social Insurance Tax- Employee Contribution	$986,980,497	$1,194,063,338	$1,779,375,317	$1,838,105,826
Social Insurance Tax- Employer Contribution	$778,445,394	$951,041,624	$1,417,844,766	$1,464,428,599
TOPI: Excise Taxes	$(493,586,683)	$(516,389,054)	$(764,585,974)	$(791,683,643)
TOPI: Custom Duty	$(514,489,384)	$(538,257,403)	$(796,965,113)	$(825,210,330)
OPI: Corporate Profits Tax	$316,412,612	$362,800,101	$542,132,992	$559,692,930
Personal Tax: Income Tax	$1,374,803,811	$1,650,152,572	$2,458,160,460	$2,539,597,617
Personal Tax: Estate and Gift Tax	$-	$-	$-	$-
Total Federal Taxes	**$2,448,566,248**	**$3,103,411,179**	**$4,635,962,447**	**$4,784,930,998**
TOTAL TAXES	**$7,954,271,137**	**$8,955,452,219**	**$13,307,860,520**	**$13,761,505,270**

In terms of local taxes, the total local tax revenue under the Bus-Only Scenario ranges from $2.59 billion in the Maintain-Existing-System scenario to $4.16 billion in the RTP-Total Needs scenario. Comparatively, RTP-Priority Needs shows a slightly reduced total of $4.01 billion. This indicates that increased funding directly correlates with higher local tax revenues, emphasizing the importance of financial support for sustaining and expanding transit operations at the local level. A similar pattern emerges when looking at state taxes. The cumulative state tax revenue varies from $2.92 billion in the Maintain-Existing-System scenario to $4.82 billion in the RTP-Total Needs scenario. RTP-Priority Needs registers a total of $4.66 billion. Again, these data underscore a positive relationship between higher investment levels and increased state tax revenues, suggesting that greater financial commitments lead to broader economic benefits at the state level.

The federal tax perspective also reflects this trend. Cumulative federal tax revenue ranges from $2.45 billion in the Maintain-Existing-System scenario to $4.78 billion in the RTP-Total Needs scenario. RTP-Priority Needs results in a slightly lower total of $4.64 billion. This consistent pattern across all tax categories demonstrates that increased transportation funding positively correlates with higher tax revenues at the local, state, and federal levels, thereby reinforcing the significance of the economic impact of robust transit investment.

All-Transit Scenario

The cumulative fiscal impacts of transportation funding for the Utah Transit Authority (UTA) in the All-Transit Scenario are detailed in Table 12, contrasting the four funding scenarios: Maintain-Existing-System, Business-As-Usual, RTP-Priority Needs, and RTP-Total Needs.

Within the domain of local taxes, the Maintain-Existing-System registers a total of $4.93 billion, escalating to $5.00 billion under Business-As-Usual. Subsequently, the RTP-Priority Needs and RTP-Total Needs scenarios reveal substantial increases, reaching $7.21 billion and $7.75 billion, respectively. The TOPI: Property Tax and TOPI: Sales Tax emerge as pivotal contributors, indicating pronounced fiscal influences. Examining state taxes, a parallel trend unfolds. The Maintain-Existing-System and Business-As-Usual scenarios record amounts of $5.82 billion and $6.00 billion, respectively. Both RTP-Priority Needs and RTP-Total Needs projections exhibit a remarkable surge to $8.69 billion and $9.34 billion, highlighting TOPI: Sales Tax, Personal Tax: Income Tax, and OPI: Corporate Profits Tax as significant contributors.

In the federal tax domain, the cumulative fiscal impacts reflect a similar pattern. Total federal taxes rise from $6.23 billion (Maintain-Existing-System) and $6.96 billion (Business-As-Usual) to $10.17 billion (RTP-Priority Needs) and $10.91 billion (RTP-Total Needs). Notably, Social Insurance Tax and Personal Tax: Income Tax significantly shape the cumulative fiscal landscape. In summary, the All-Transit Scenario underscores substantial fiscal influences, with escalating impacts across funding scenarios, mirroring the evolution from maintaining the existing system to adopting RTP-Total Needs.

Table 12: Cumulative Fiscal Impacts of Transportation Funding in the All-Transit Scenario

Description	Maintain-Existing-System	Business-As-Usual	RTP-Priority Needs	RTP-Total Needs
ALL LOCAL TAXES				
Social Insurance Tax- Employee Contribution	$-	$-	$-	$-
Social Insurance Tax- Employer Contribution	$-	$-	$-	$-
TOPI: Sales Tax	$1,538,105,350	$1,557,593,715	$2,248,924,989	$2,417,269,435
TOPI: Property Tax	$3,213,609,832	$3,254,327,461	$4,698,746,715	$5,050,473,838
TOPI: Motor Vehicle License	$195,176	$197,649	$285,375	$306,737
TOPI: Severance Tax	$-	$-	$-	$-
TOPI: Other Taxes	$137,656,245	$139,400,400	$201,272,670	$216,339,039
TOPI: Special Assessments	$33,477,411	$33,901,582	$48,948,652	$52,612,730
OPI: Corporate Profits Tax	$-	$-	$-	$-
Personal Tax: Income Tax	$-	$-	$-	$-
Personal Tax: Motor Vehicle License	$60,102	$65,811	$95,935	$102,964
Personal Tax: Property Taxes	$9,224,620	$10,092,773	$14,710,981	$15,789,522
Personal Tax: Other Tax (Fish/Hunt)	$-	$-	$-	$-
Total Local Taxes	**$4,932,328,735**	**$4,995,579,392**	**$7,212,985,316**	**$7,752,894,266**
STATE TAXES				
Social Insurance Tax- Employee Contribution	$1,310,700	$1,443,299	$2,105,383	$2,259,068
Social Insurance Tax- Employer Contribution	$1,532,345	$1,687,366	$2,461,412	$2,641,085
TOPI: Sales Tax	$4,210,442,809	$4,263,790,682	$6,156,255,847	$6,617,085,573
TOPI: Property Tax	$-	$-	$-	$-
TOPI: Motor Vehicle License	$77,978,065	$78,966,076	$114,014,829	$122,549,468
TOPI: Severance Tax	$35,941,915	$36,397,313	$52,552,104	$56,485,920
TOPI: Other Taxes	$55,392,859	$56,094,707	$80,992,102	$87,054,808
TOPI: Special Assessments	$-	$-	$-	$-
OPI: Corporate Profits Tax	$194,146,301	$205,144,484	$300,340,682	$322,254,085
Personal Tax: Income Tax	$1,192,193,448	$1,303,361,510	$1,899,562,036	$2,038,904,232
Personal Tax: Motor Vehicle License	$28,871,177	$31,606,787	$46,072,615	$49,449,105
Personal Tax: Property Taxes	$-	$-	$-	$-
Personal Tax: Other Tax (Fish/Hunt)	$23,617,826	$25,811,862	$37,617,572	$40,377,606
Total State Taxes	**$5,821,427,445**	**$6,004,304,086**	**$8,691,974,582**	**$9,339,060,947**
FEDERAL TAXES				
Social Insurance Tax- Employee Contribution	$2,315,354,674	$2,538,677,497	$3,701,291,425	$3,972,259,188
Social Insurance Tax- Employer Contribution	$1,849,697,420	$2,036,823,976	$2,971,176,804	$3,188,061,433
TOPI: Excise Taxes	$(939,439,688)	$(951,342,737)	$(1,373,592,121)	$(1,476,413,072)
TOPI: Custom Duty	$(979,223,636)	$(991,630,763)	$(1,431,761,815)	$(1,538,937,088)
OPI: Corporate Profits Tax	$791,098,047	$835,912,914	$1,223,813,823	$1,313,105,506
Personal Tax: Income Tax	$3,191,852,606	$3,487,388,034	$5,082,256,536	$5,455,217,354
Personal Tax: Estate and Gift Tax	$-	$-	$-	$-
Total Federal Taxes	**$6,229,339,424**	**$6,955,828,921**	**$10,173,184,654**	**$10,913,293,321**
TOTAL TAXES	**$16,983,095,604**	**$17,955,712,399**	**$26,078,144,552**	**$28,005,248,534**

7. LAND VALUE SENSITIVITY

Although several theories and methodologies delve into understanding and modeling the land value, two of the most prominent are bid-rent theory and the hedonic price model. Proximity to central business district is a critical predictor of land values according to bid rent theory, whereas the hedonic price model considers a more holistic approach by assigning the land value to a combination of factors including the attributes of a property as well as characteristics of neighborhood and location. Whether living in a CBD or near a suburban area, the choice of buying a property is largely influenced by accessibility (i.e. how easy is it to reach workplace or other amenities such as grocery, shopping, school, etc.). This study builds upon the well-documented relationship between accessibility and land value. It is based on the premise that transit infrastructure has the capacity to enhance access to employment/amenities, and this improved accessibility can augment the value of land. The primary objectives of the land value sensitivity analysis are (1) develop a methodology to estimate the marginal effects of accessibility on different property types (single-family, multi-family and non-residential), and (2) classify land value parcels across the UTA service area according to anticipated change in land value in the future year.

Data and Methods

Three primary data sources were utilized for this study.

1. **WFRC REMM (Real Estate Market Model):** The WFRC REMM documentation contains models for estimating the property value of different property types. The models were used to identify critical variables that impact property values.
2. **WFRC Travel Demand Model (WFRC TDM):** The WFRC Travel Demand Model was used to quantify the accessibility for a particular TAZ (Travel Analysis Zone).
3. **Parcel data:** Parcel level information was collected for the year 2019 which included information such as assessed property values, employment, population, availability of transit stations and other relevant variables.

A methodology to assess the property value sensitivity is described in the steps below (also shown in Figure 43):

i. **Regression Models:** Three regression models for assessed land value (per sq. ft.) according to the property type (single family, multifamily, and non-residential) were developed using parcel level information. Marginal coefficient for population and jobs within 15 minutes were calculated, controlling for the exogenous variables that are known to impact the property values. The control variables included measures like distance to the transit station, distance to the nearest freeway exit, total parcel volume, average age of building, area per unit, etc., each slightly varying for the models pertaining to single-family, multi-family and non-residential. Regression models from REMM were used to ascertain variables for input to the regression model. The best fit

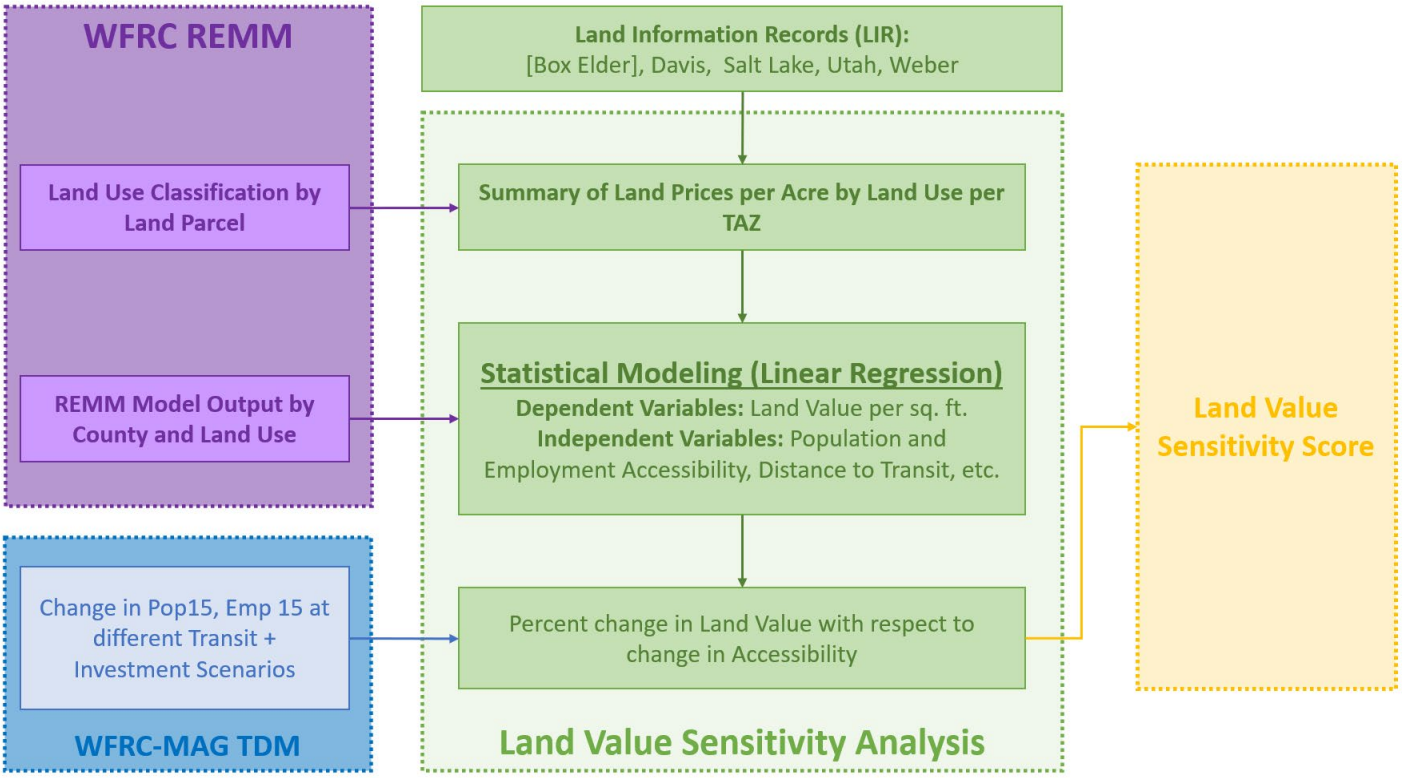
regression models for each property type were identified by their prediction power (R-squared and AIC), and the final model predicted the log of assessed property values (as dependent variable) as a function of accessibility and other control variables.

ii. **Accessibility Variables (Pop-15 and Emp-15):** Population and employment within a 15-minute range of a TAZ centroid can be obtained for each scenario. Changes in these values reflect changes in accessibility, which in turn can impact property values.

iii. **Scaling:** While the parcel level information is used in developing the models, accessibility measures are available only at the level of TAZs from the WFRC travel demand model outputs. An inherent assumption is made that the models developed from the parcels also work well at the TAZ level. Despite the team's attempt to consolidate parcel-level information into TAZs the challenge arose from numerous parcels spanning across multiple TAZs, compromising the robustness of the aggregation for the analysis.

iv. **Land Value Sensitivity Score:** Once the accessibility variables are calculated from the WFRC TDM outputs, they are multiplied by the marginal coefficients obtained from the (parcel) regression models, to obtain change in land value between different scenarios. For each scenario (all transit and bus only) and their subsequent investment levels, the change is calculated on the basis of the subsequent investment levels at no- transit scenario. For all the three property types, these values are then indexed appropriately in four categories (high, moderate, low, and no change). The scores for TAZs outside of the WFRC-MAG Travel Demand Model boundary were imputed based on generalized measures such as the location and land uses. Finally, maps showing property value sensitivity are displayed.

Figure 43: Schematic Land Value Sensitivity Methodology



Results

Land value sensitivity scores for each scenario and investment levels, compared to the no-transit scenario of the respective investment levels were developed and then visualized. For each property type, eight maps are developed to elucidate differences between each investment level (4 investment levels) of each transit scenario (Bus-Only and All-Transit).

Single-Family

The greatest change in land value for single family properties was observed at All-Transit scenario at the RTP-Total Needs investment level. Additionally, All-Transit scenario had greater changes in land value compared to the Bus-Only scenario at all investment levels. From a spatial perspective, the land value changes do not only occur in the areas near the transit lines or transit stations, but they also occur in areas that are not proximate to transit services. This might occur due to congestion relief, and hence the accessibility gain in those areas. These changes are visualized in Figure 44 through Figure 51 below.

Figure 44: Maintain-Existing-System Bus-Only Single-Family

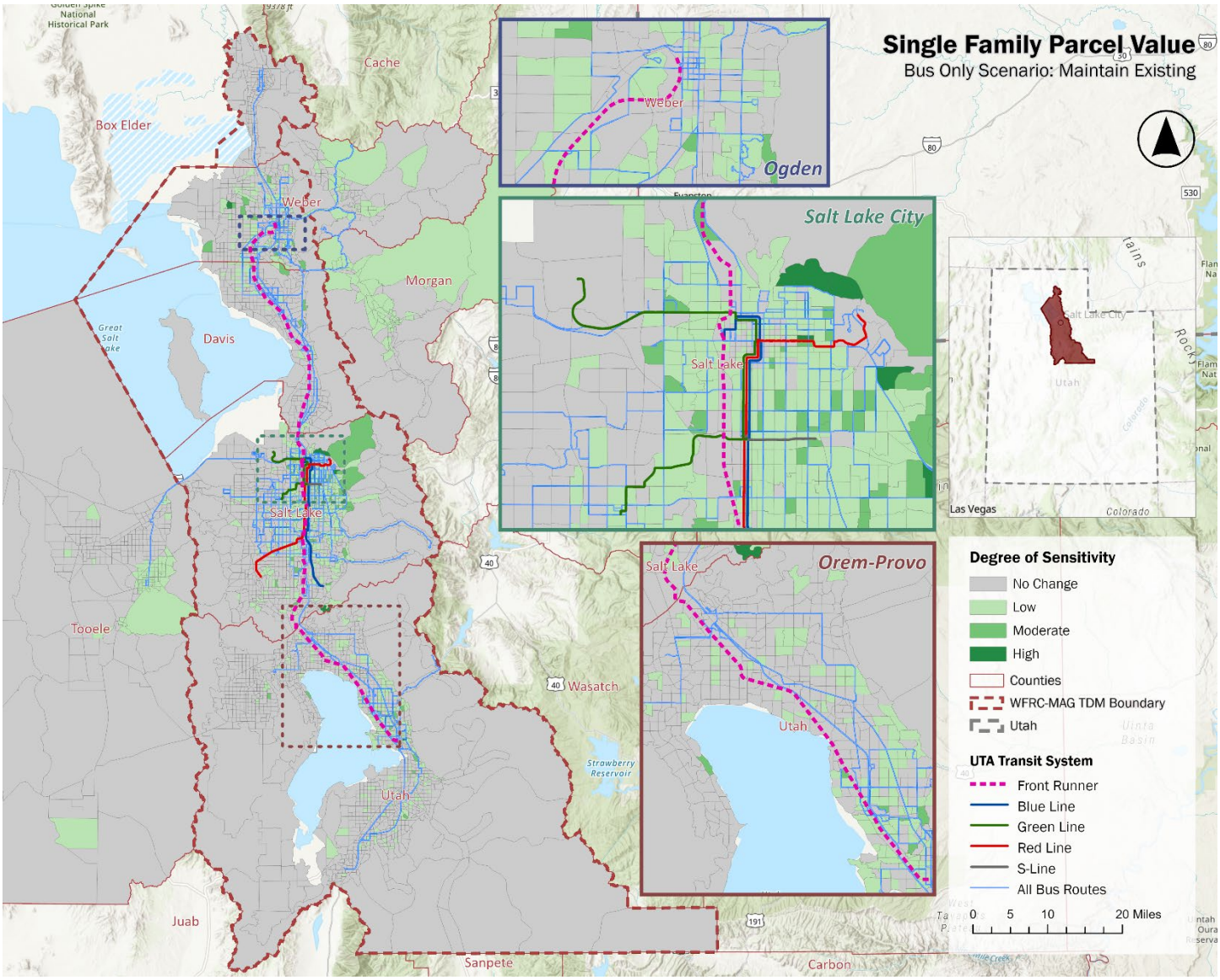


Figure 45: Business-As-Usual Bus-Only Single-Family

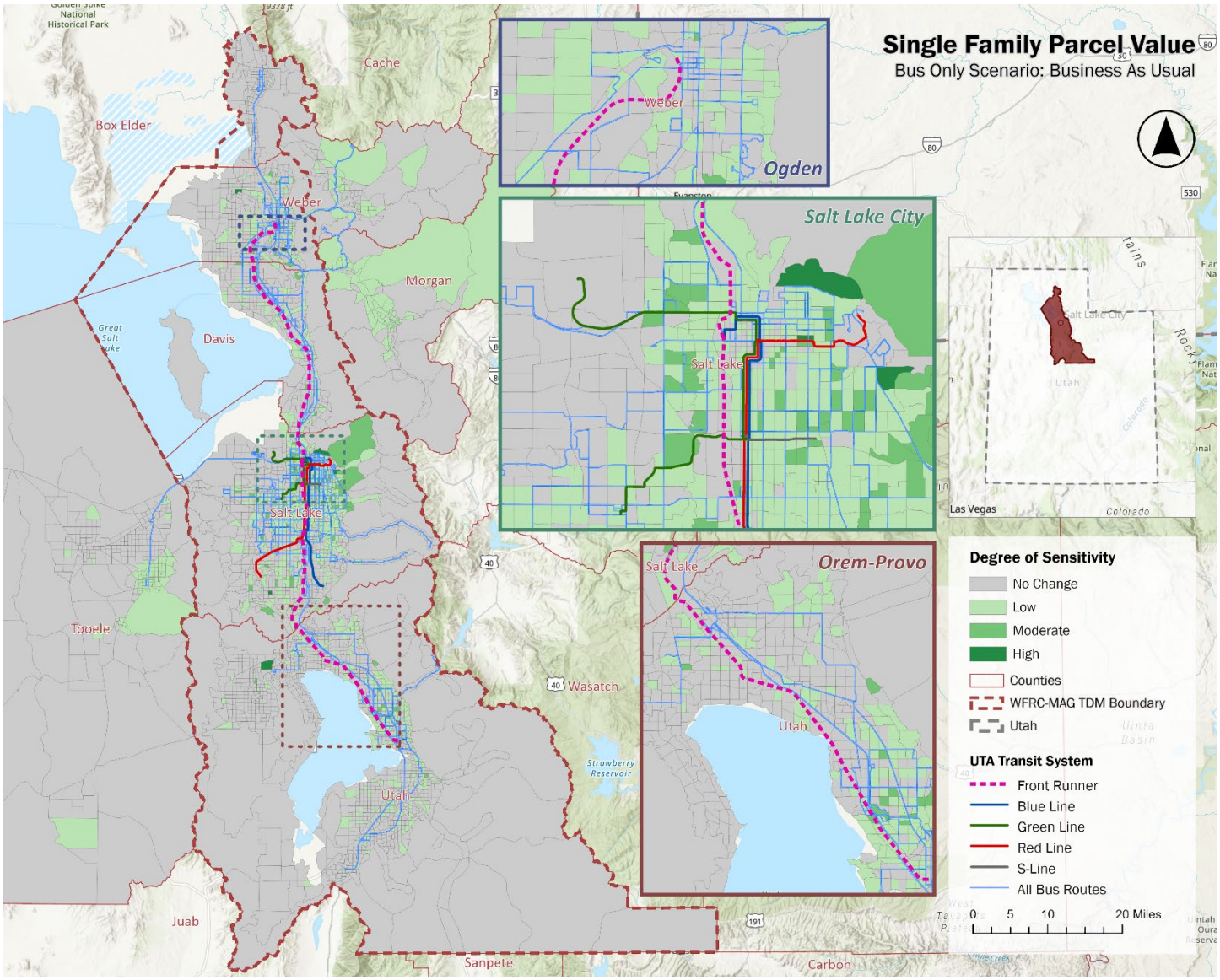


Figure 46: RTP-Priority Needs Bus-Only Single-Family

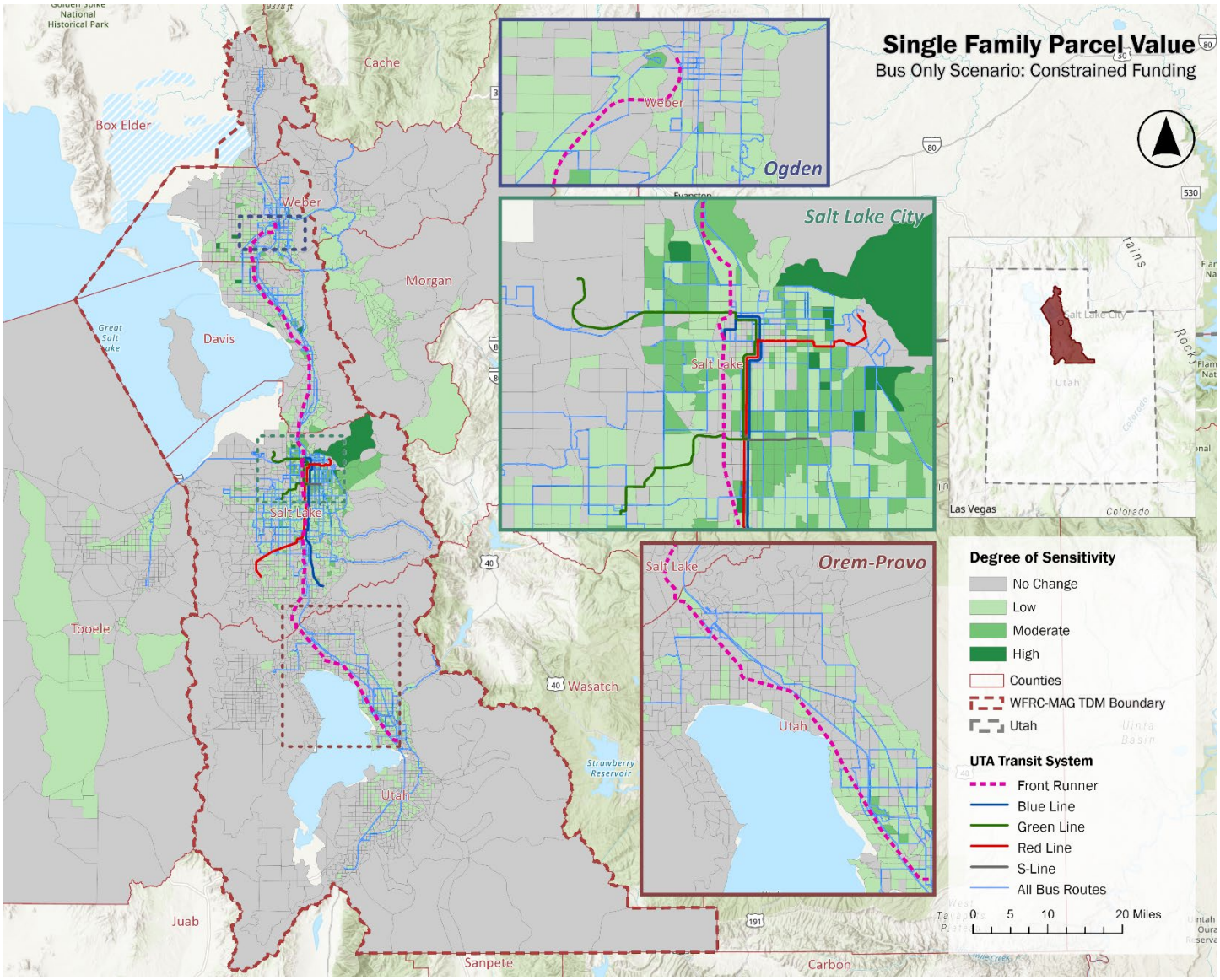


Figure 47: RTP-Total Needs Bus-Only Single-Family

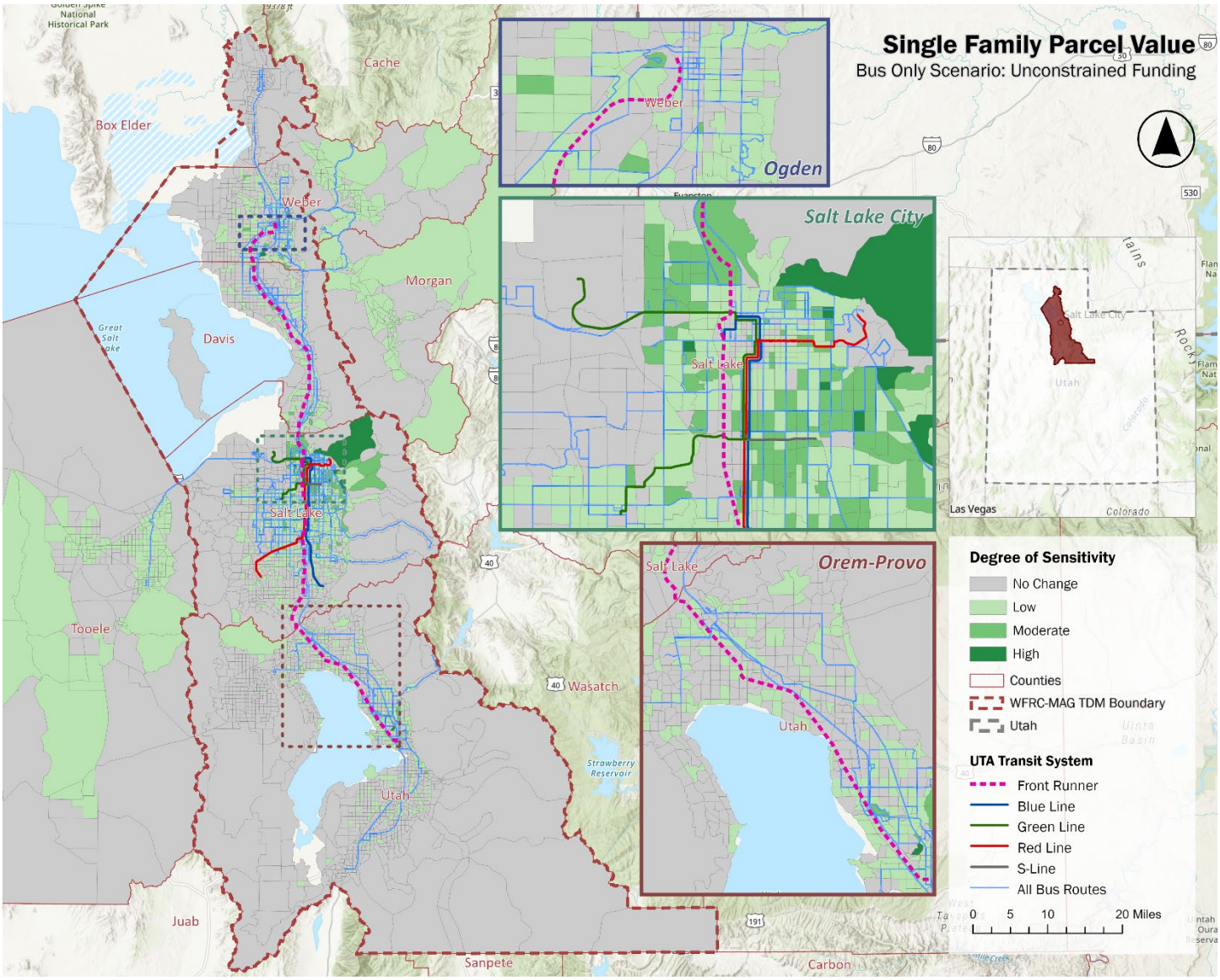


Figure 48: Maintain-Existing-System All-Transit Single-Family

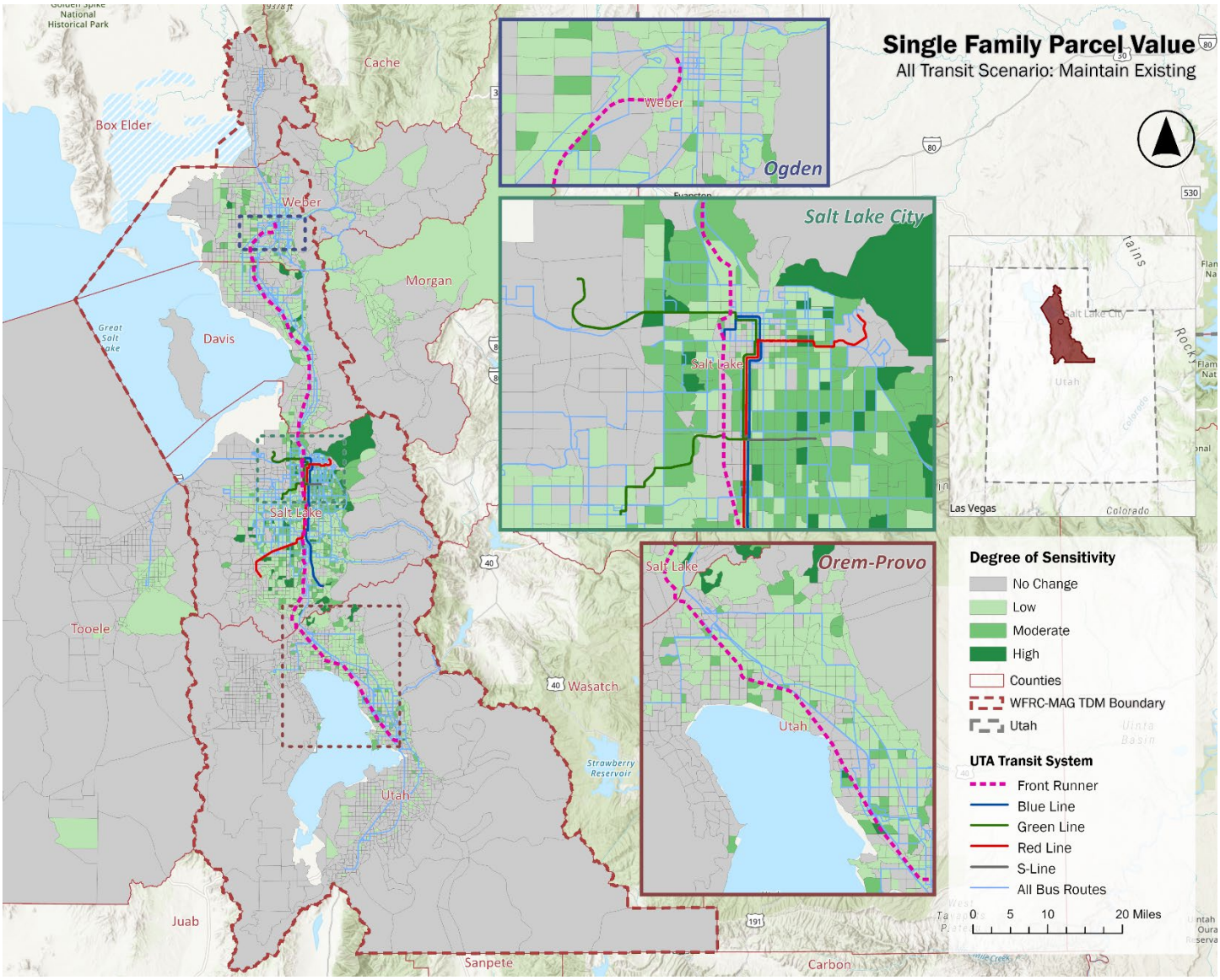


Figure 49: Business-As-Usual All-Transit Single-Family

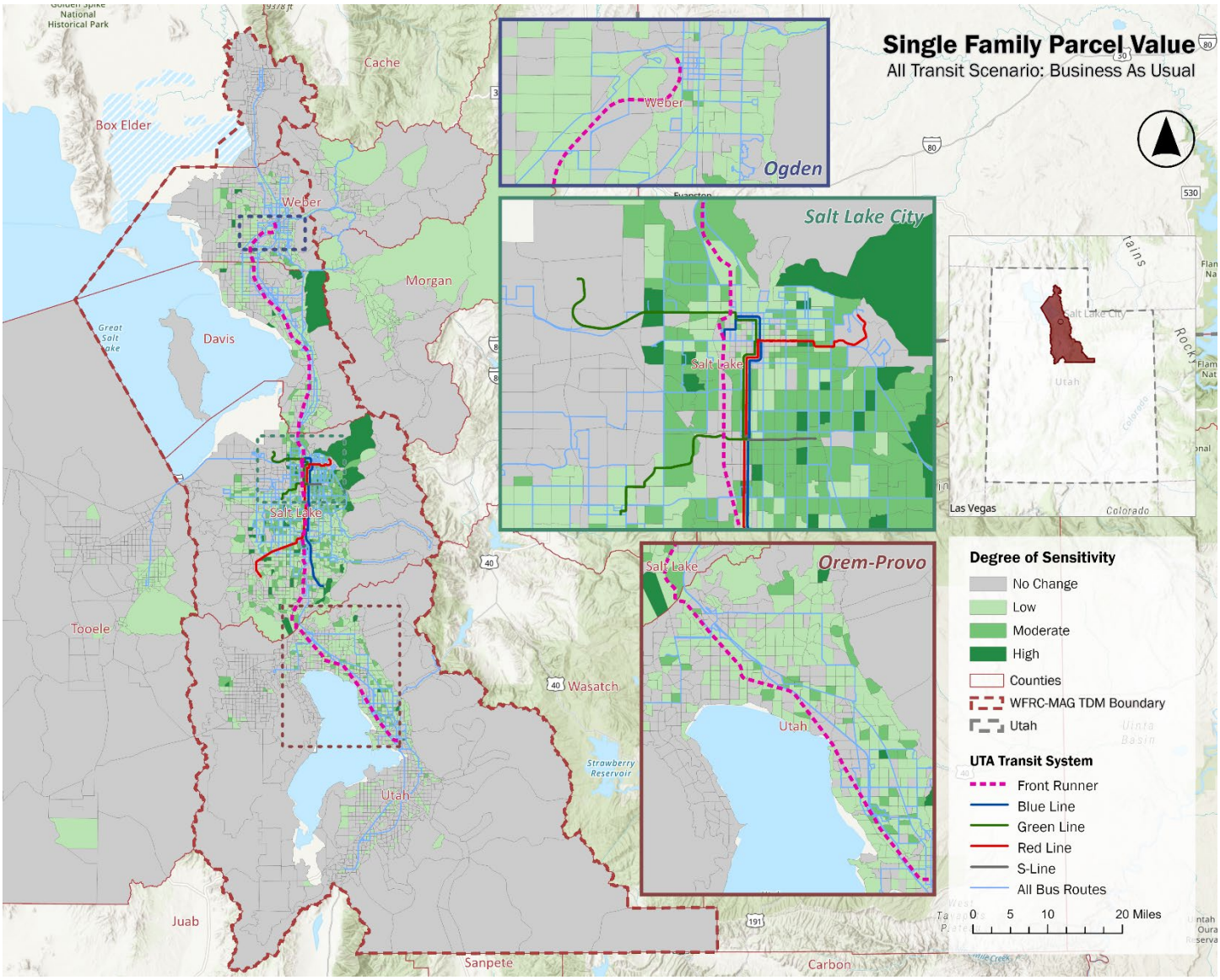


Figure 50: RTP-Priority Needs All-Transit Single-Family

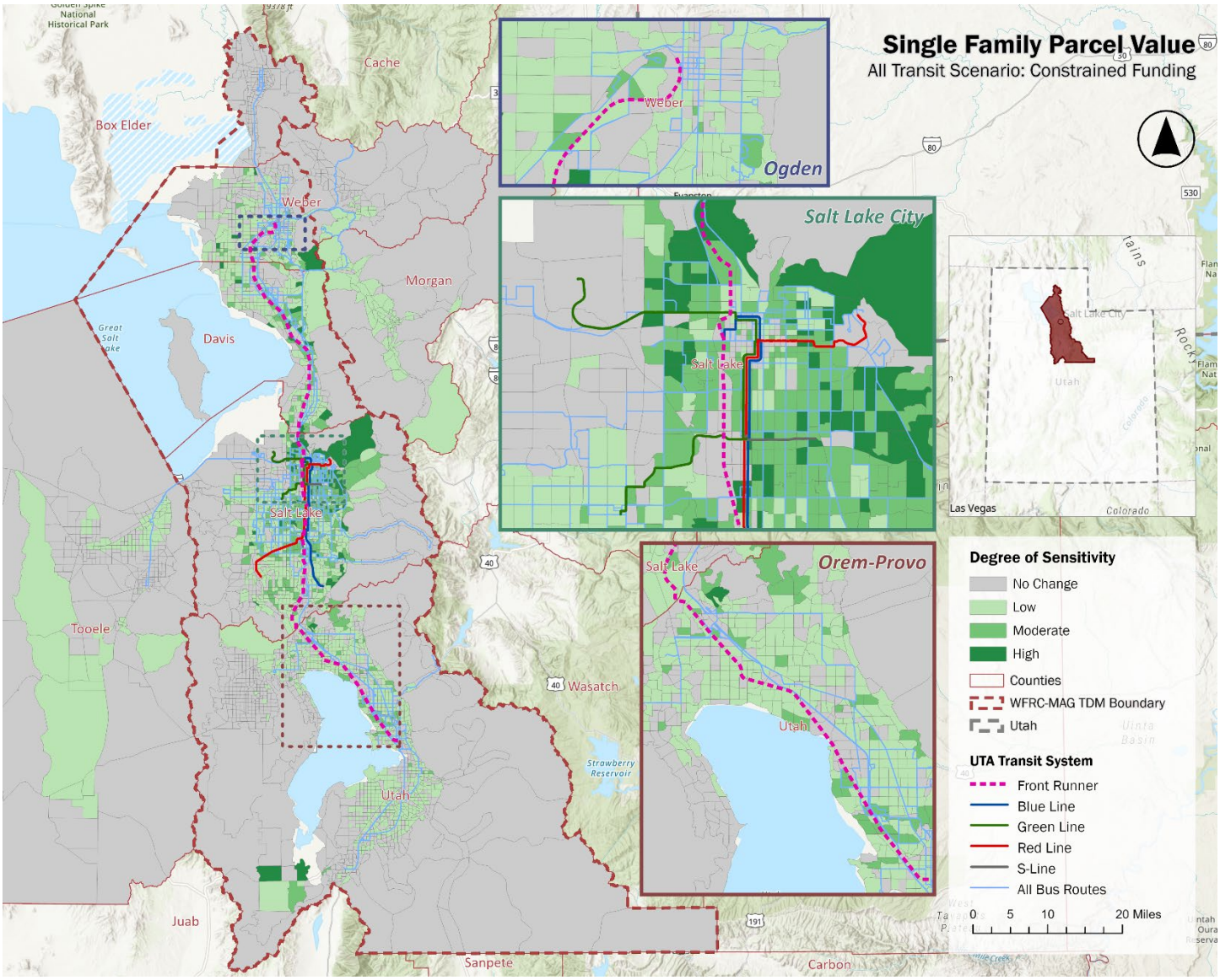
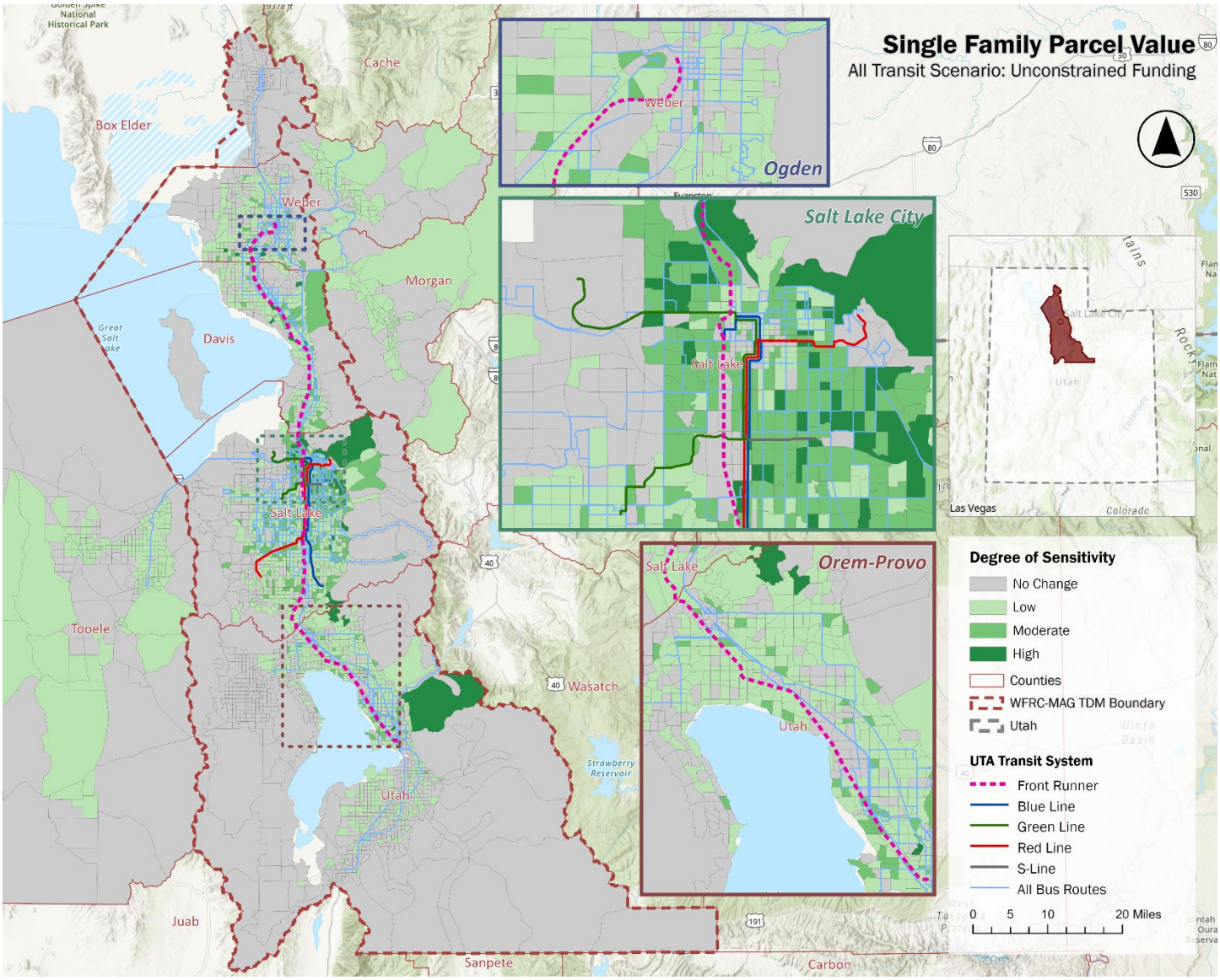


Figure 51: RTP-Total Needs All-Transit Single-Family



Multi-Family

Land values associated with multi-family properties showed only a minor change from No-Transit scenario to Bus-Only and All transit scenarios at all investment levels. Previous literature and findings from real estate market analysis suggest that multi-family land values are relatively stable, and do not fluctuate greatly due to location characteristics or the market economy (such as interest rates). Perhaps, the rent price could be a more appropriate indicator than the property values, as the rent prices may be more closely tied to accessibility, however, further analysis is required to be conclusive. Furthermore, other control variables could be more influential in determining the values for multi-family residences than accessibility. These contrasts are detailed in Figure 52 through Figure 59 on the following pages.

Figure 52: Maintain-Existing-System Bus-Only Multi-Family

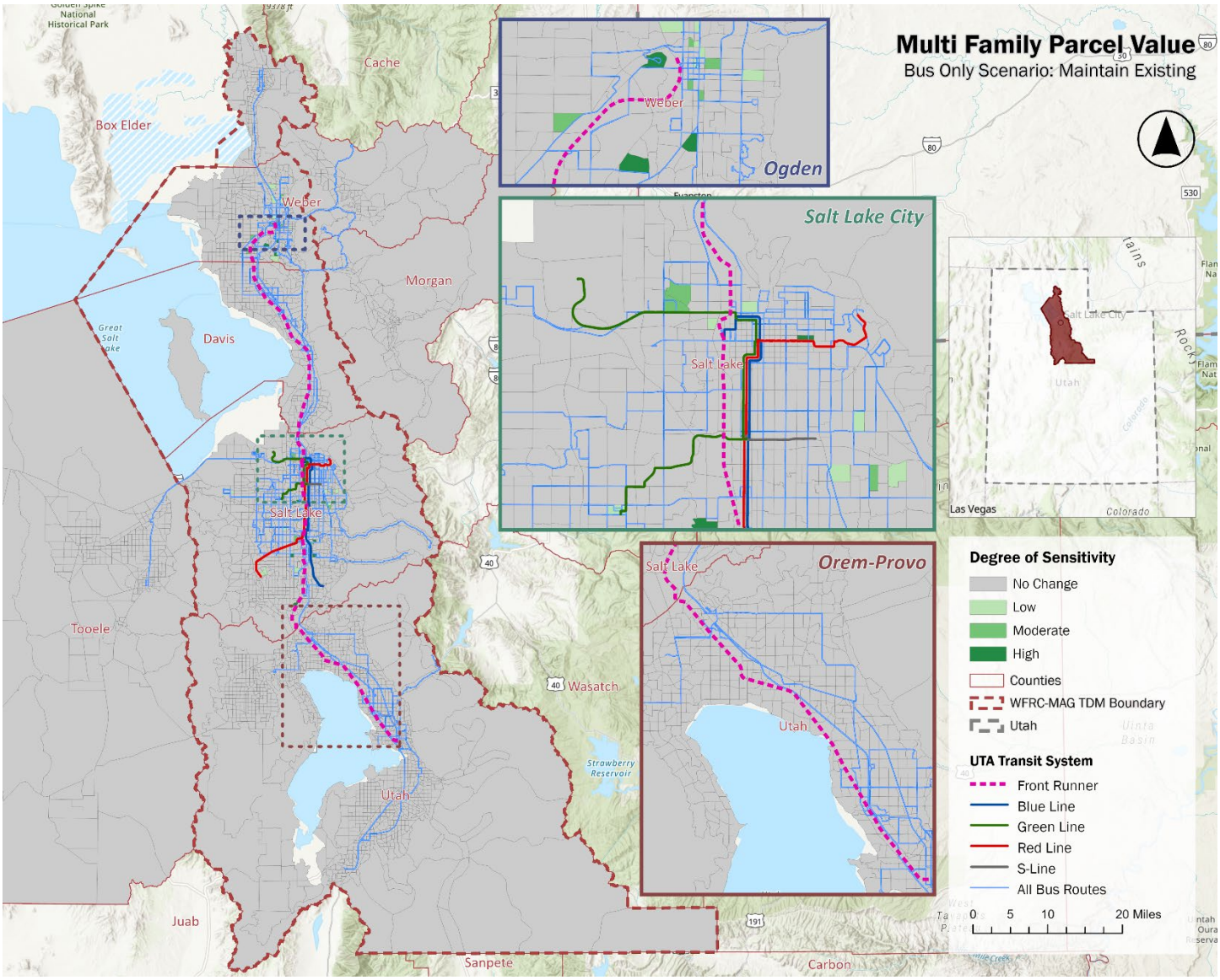


Figure 53: Business-As-Usual Bus-Only Multi-Family

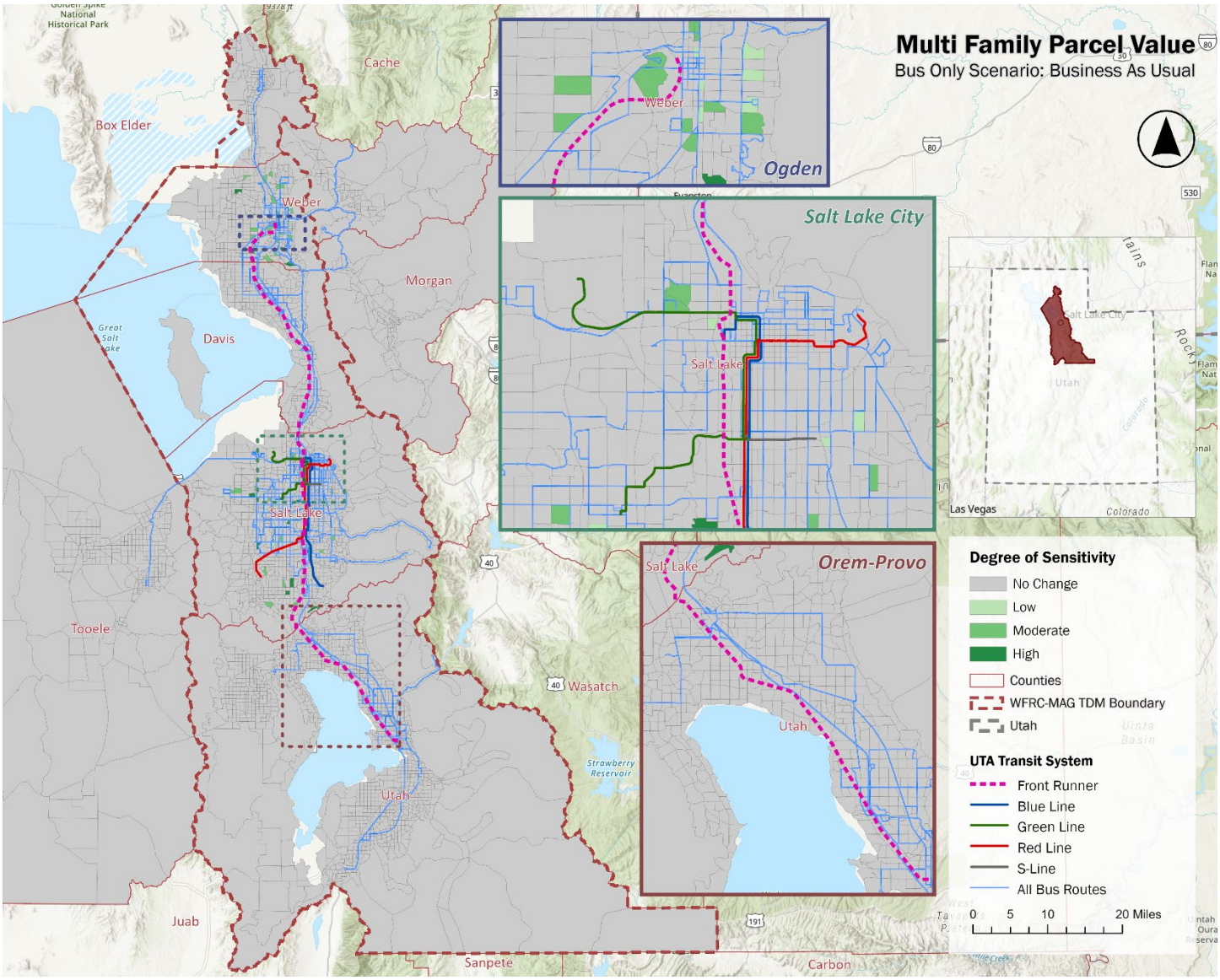


Figure 54: RTP-Priority Needs Bus-Only Multi-Family

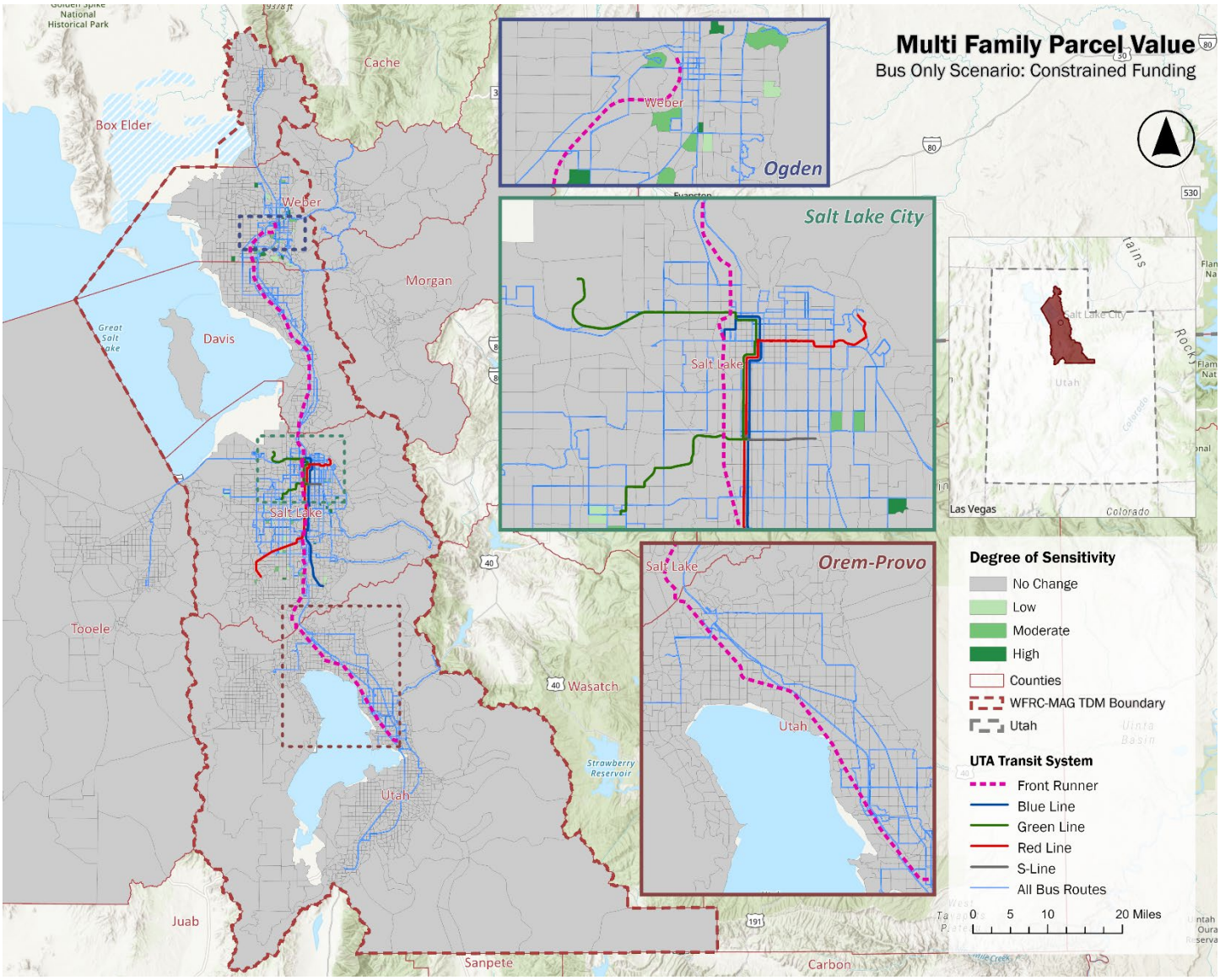


Figure 55: RTP-Total Needs Bus-Only Multi-Family

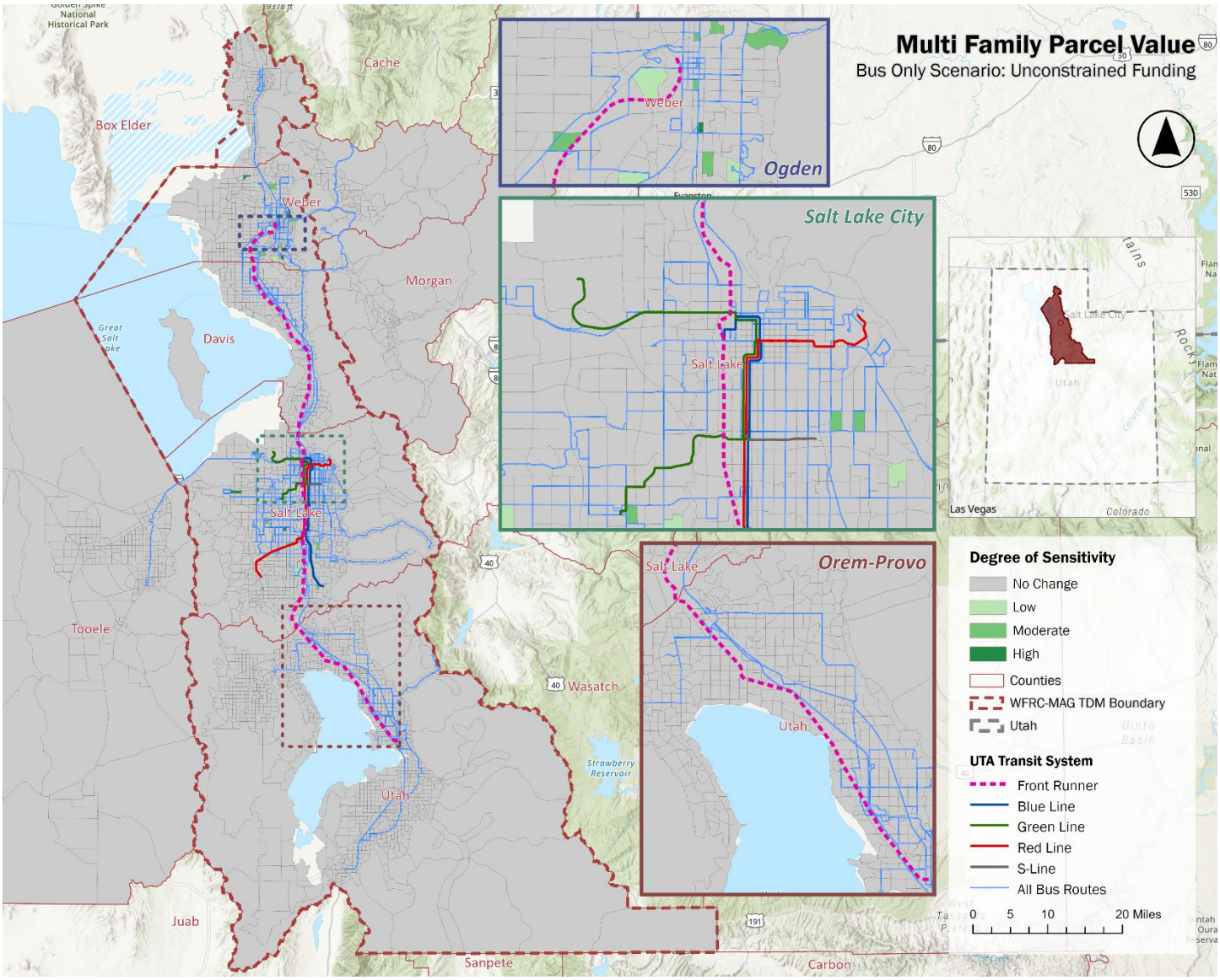


Figure 56: Maintain Existing All-Transit Multi-Family

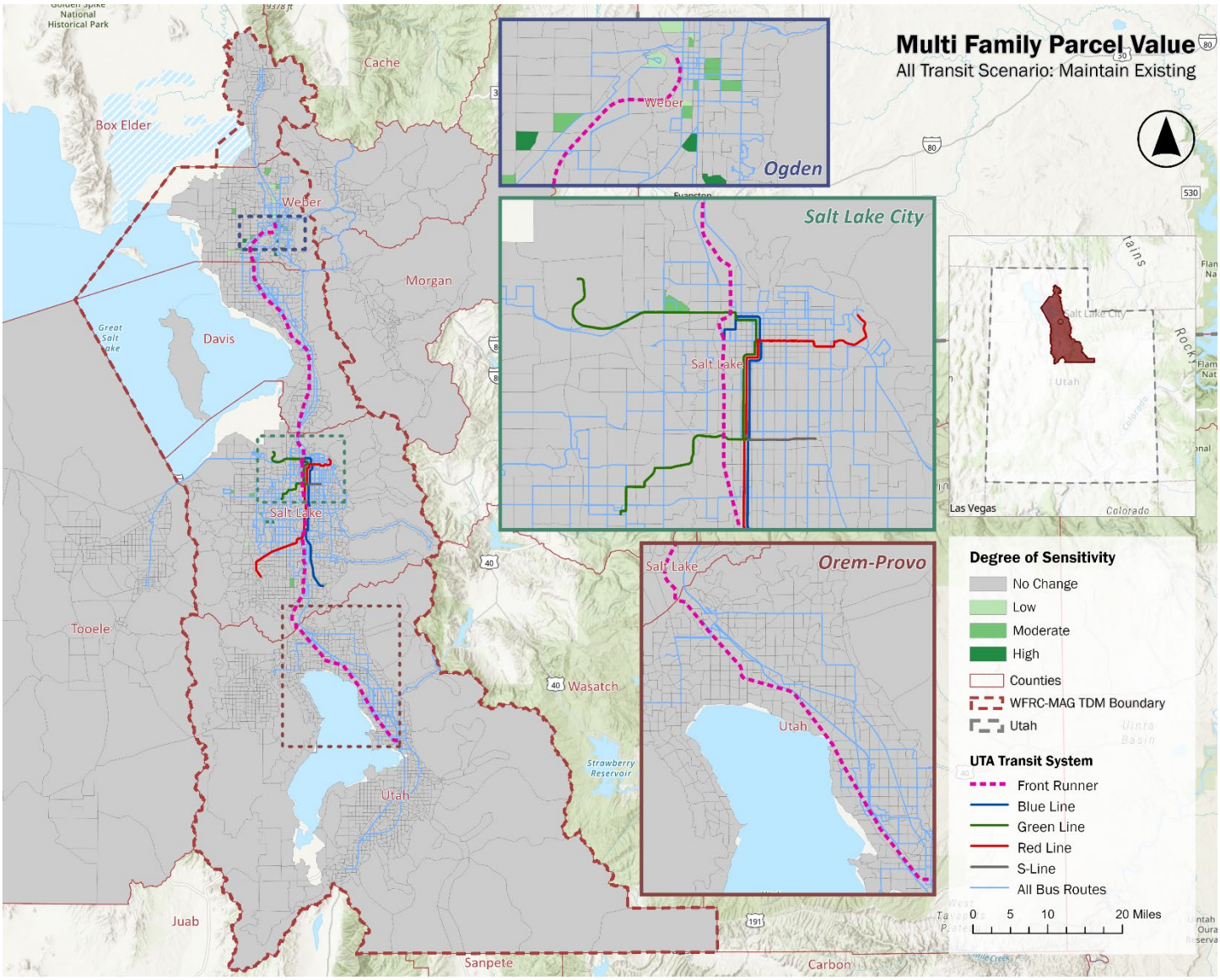


Figure 57: Business-As-Usual All-Transit Multi-Family

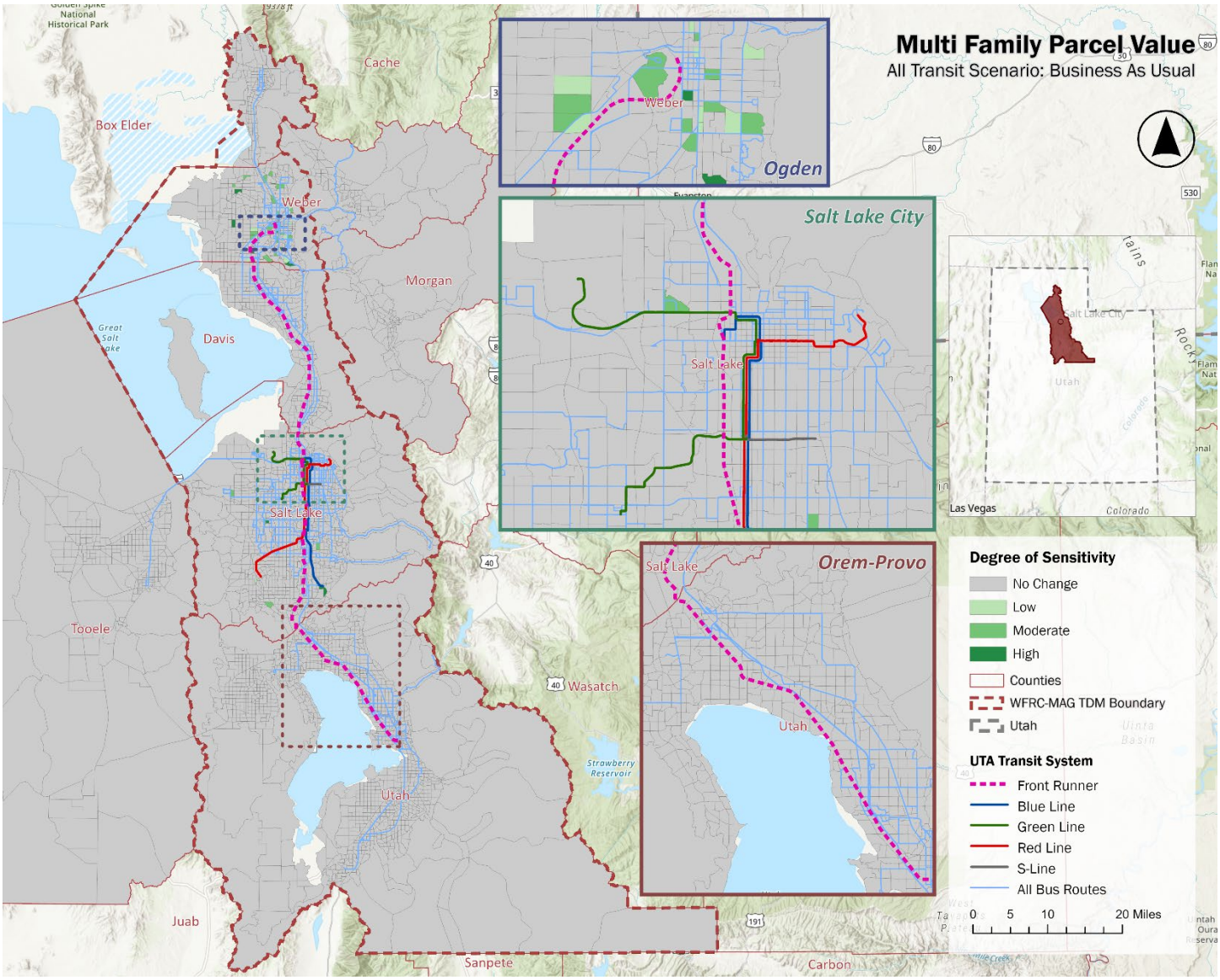


Figure 58: RTP-Priority Needs All-Transit Multi-Family

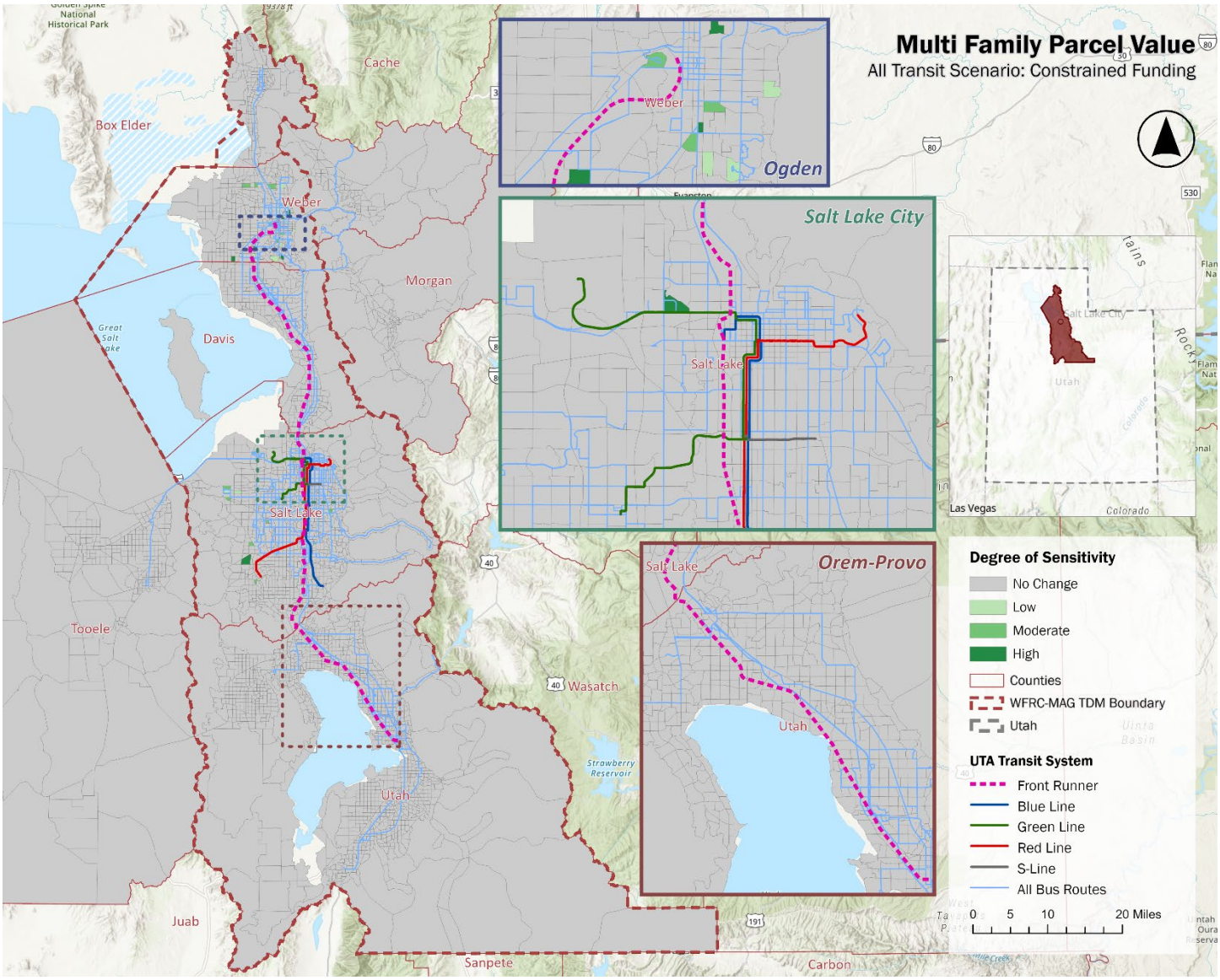
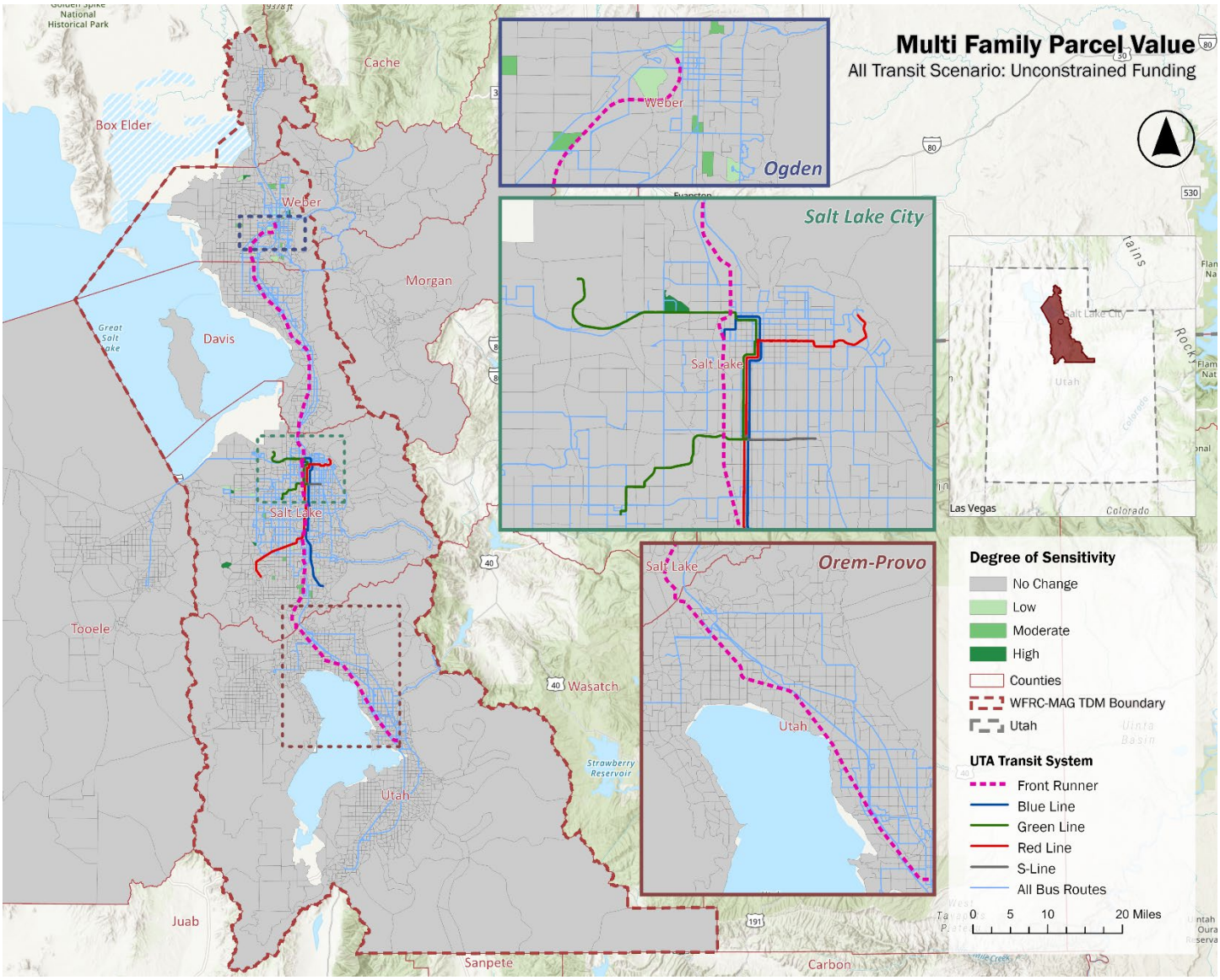


Figure 59: RTP-Total Needs All-Transit Multi-Family



Non-Residential

All the other property types (retail, commercial, office) are considered as non-residential for the analysis. Significant variations in the values of non-residential properties were noted in both unconstrained and constrained investment levels, for the bus only and all transit scenarios. Like single family properties, the inclusion of transit along with the bus provides a greater change of accessibility and thus property values. Considering spatial effects, property values near transit lines/stations as well as properties out of the buffer area were found to be impacted by transit investments, supporting the fact the accessibility gains of the transit are not only seen in areas served by transit, but also in areas where transit services provide congestion relief and improve in accessibility. These differences are seen in detail in Figure 60 through Figure 67 below.

Figure 60: Maintain-Existing-System Bus-Only Non-Residential

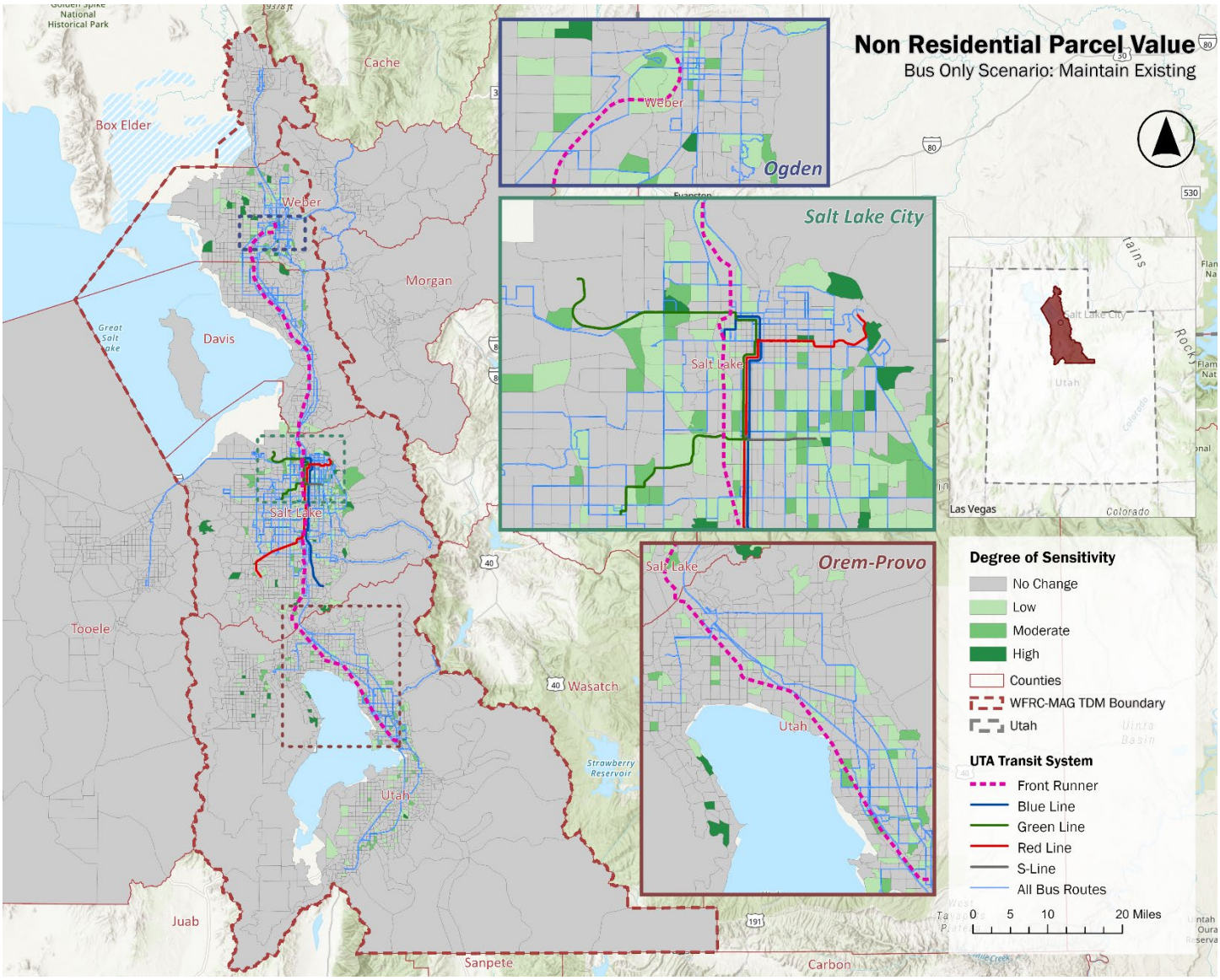


Figure 61: Business-As-Usual Bus-Only Non-Residential

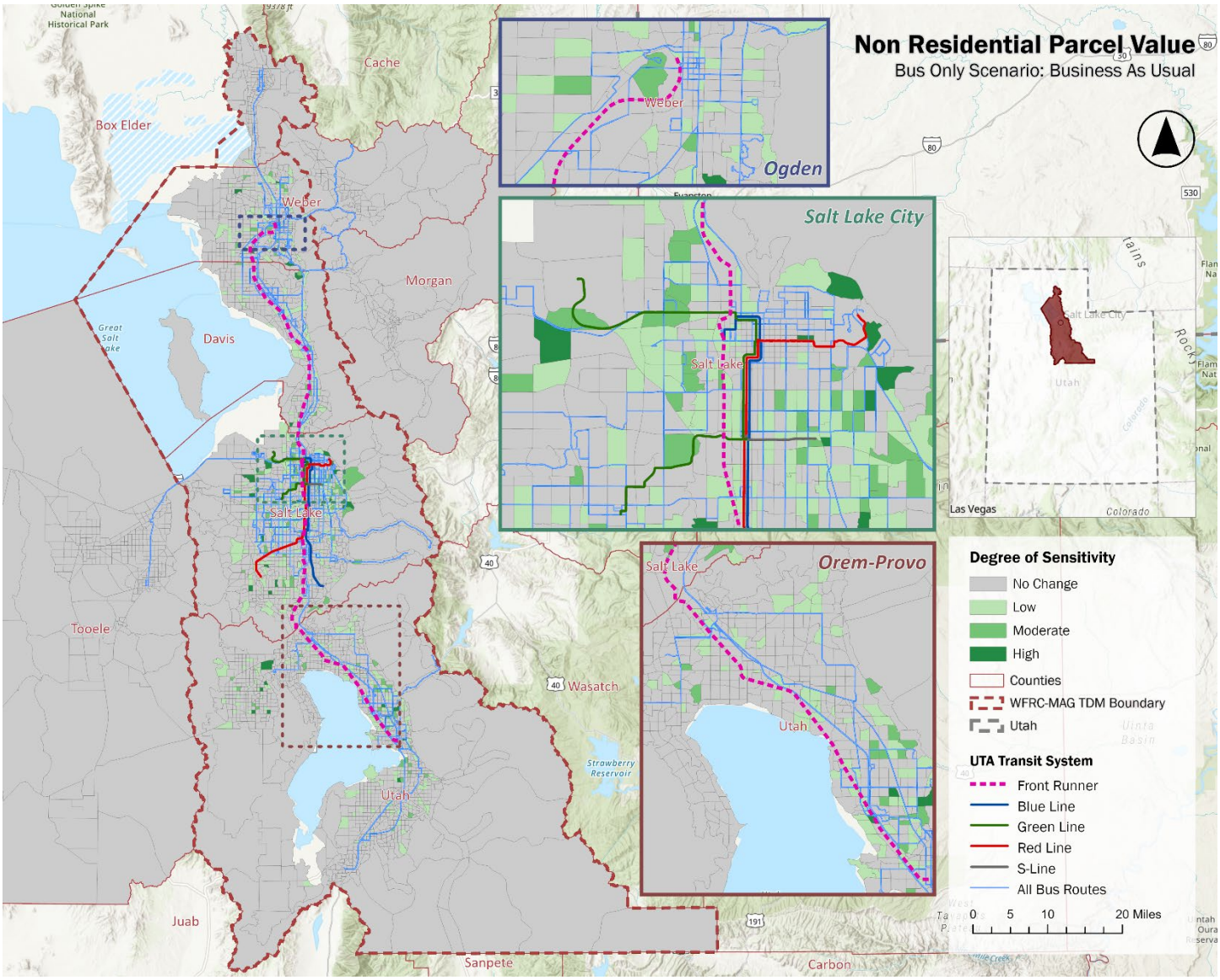


Figure 62: RTP-Priority Needs Bus-Only Non-Residential

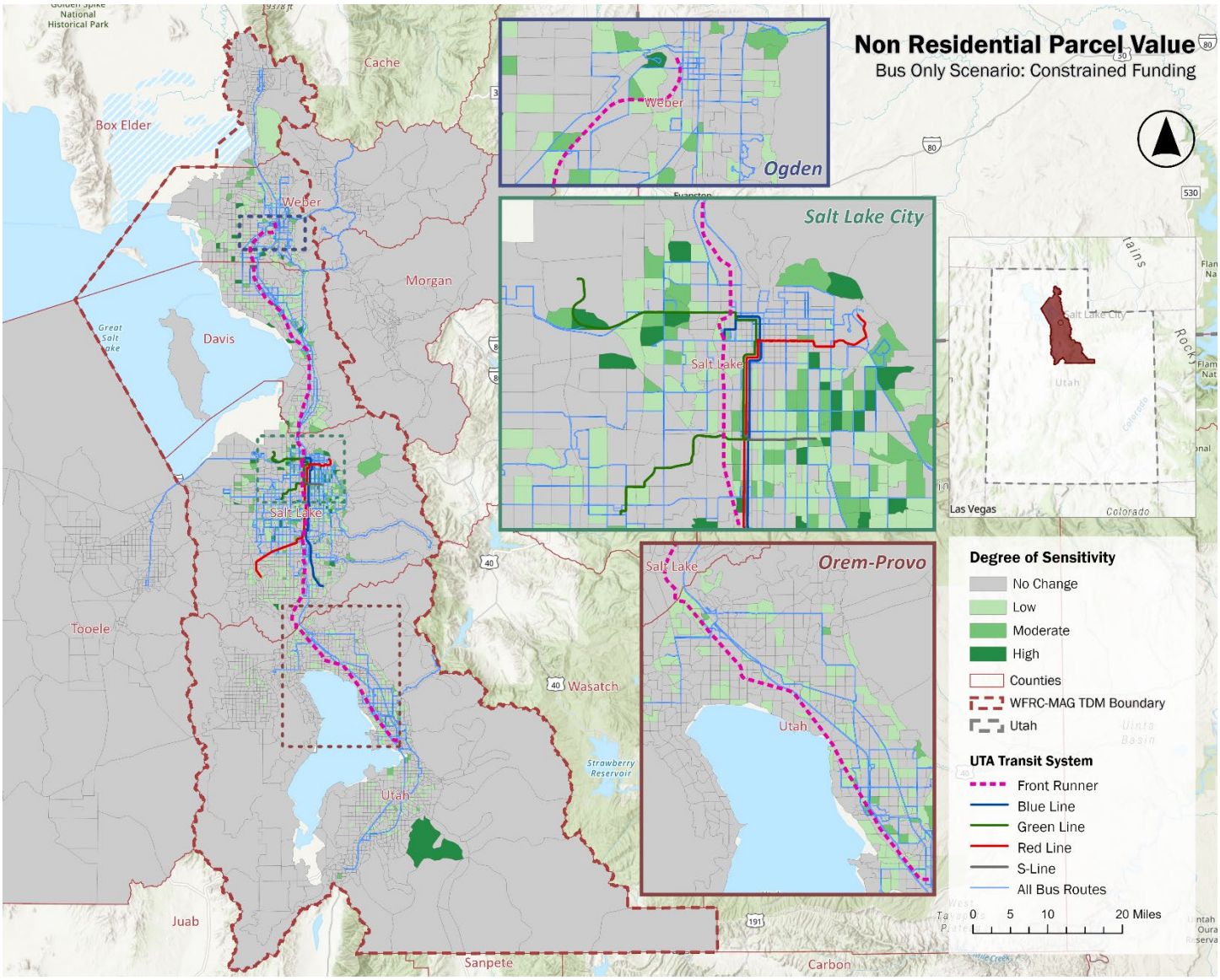


Figure 63: RTP-Total Needs Bus-Only Non-Residential

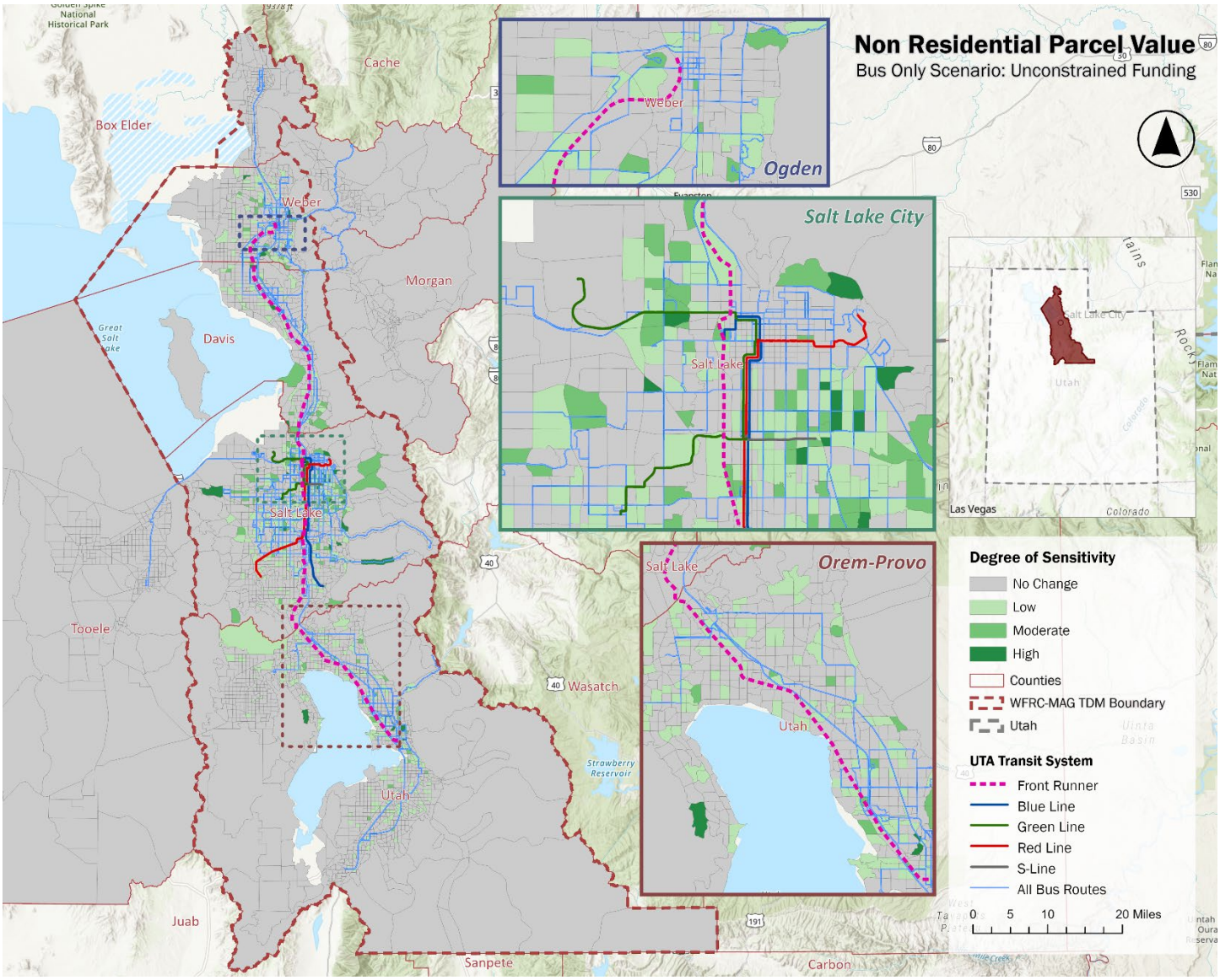


Figure 64: Maintain-Existing-System All-Transit Non-Residential

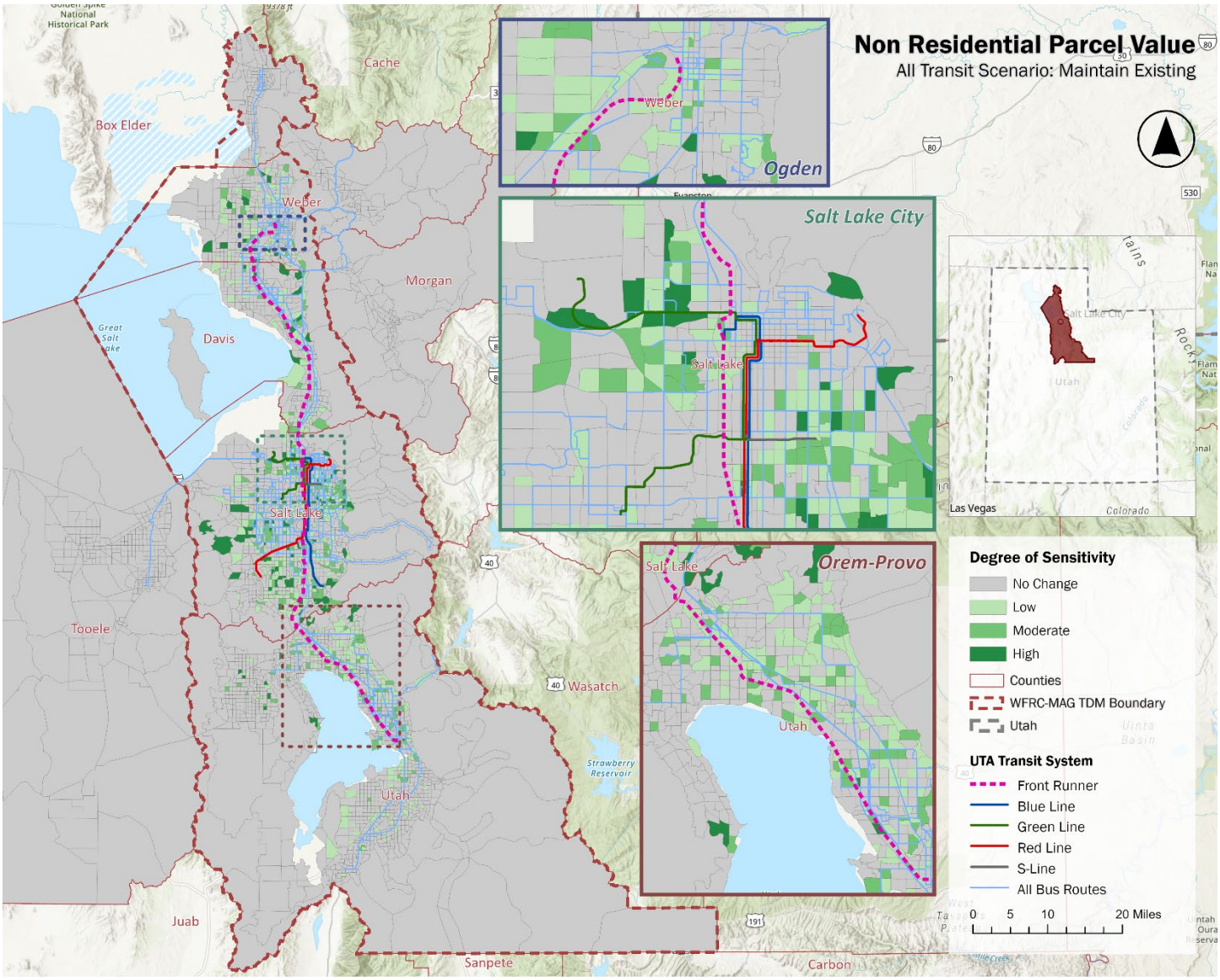


Figure 65: Business-As-Usual All-Transit Non-Residential

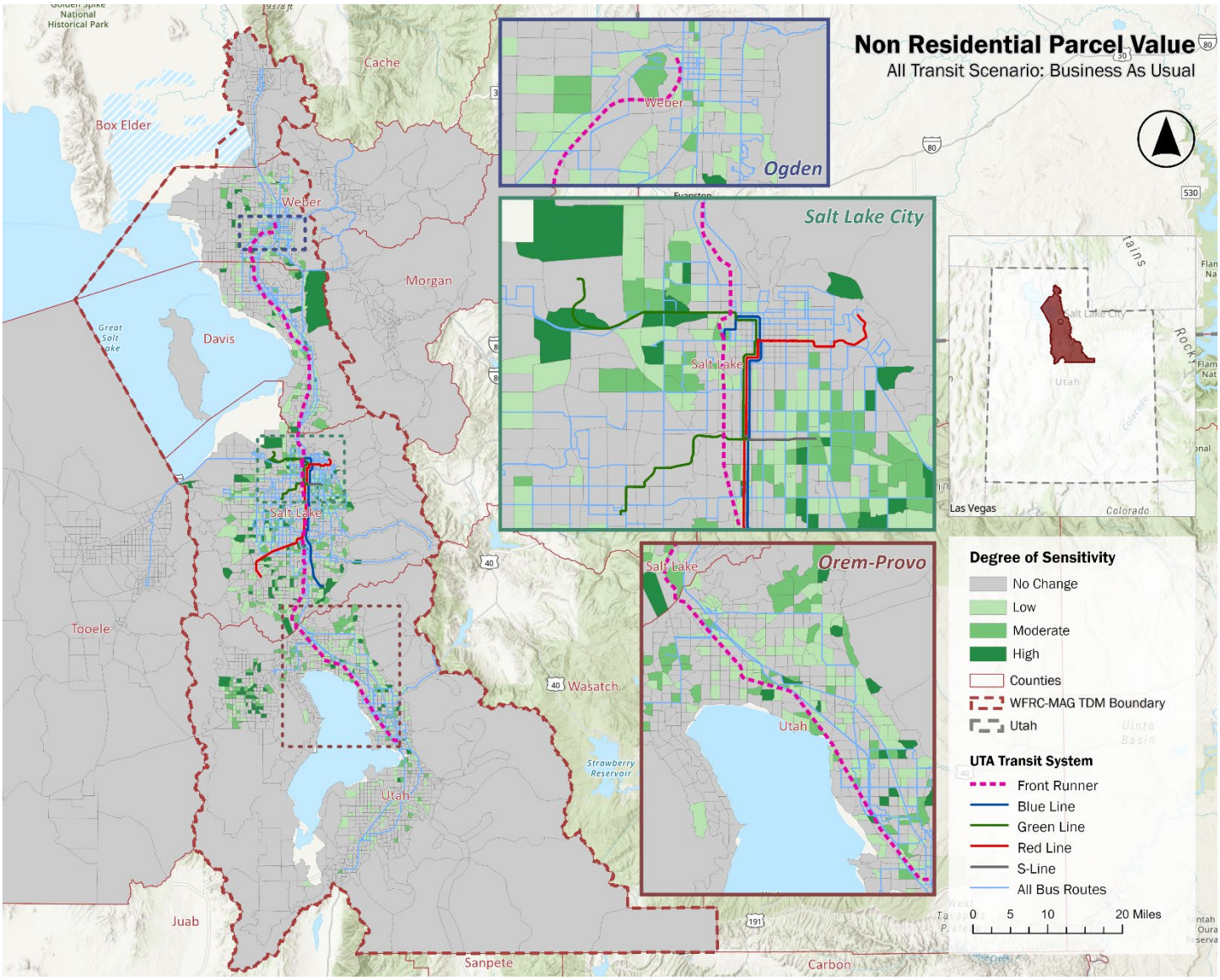


Figure 66: RTP-Priority Needs All-Transit Non-Residential

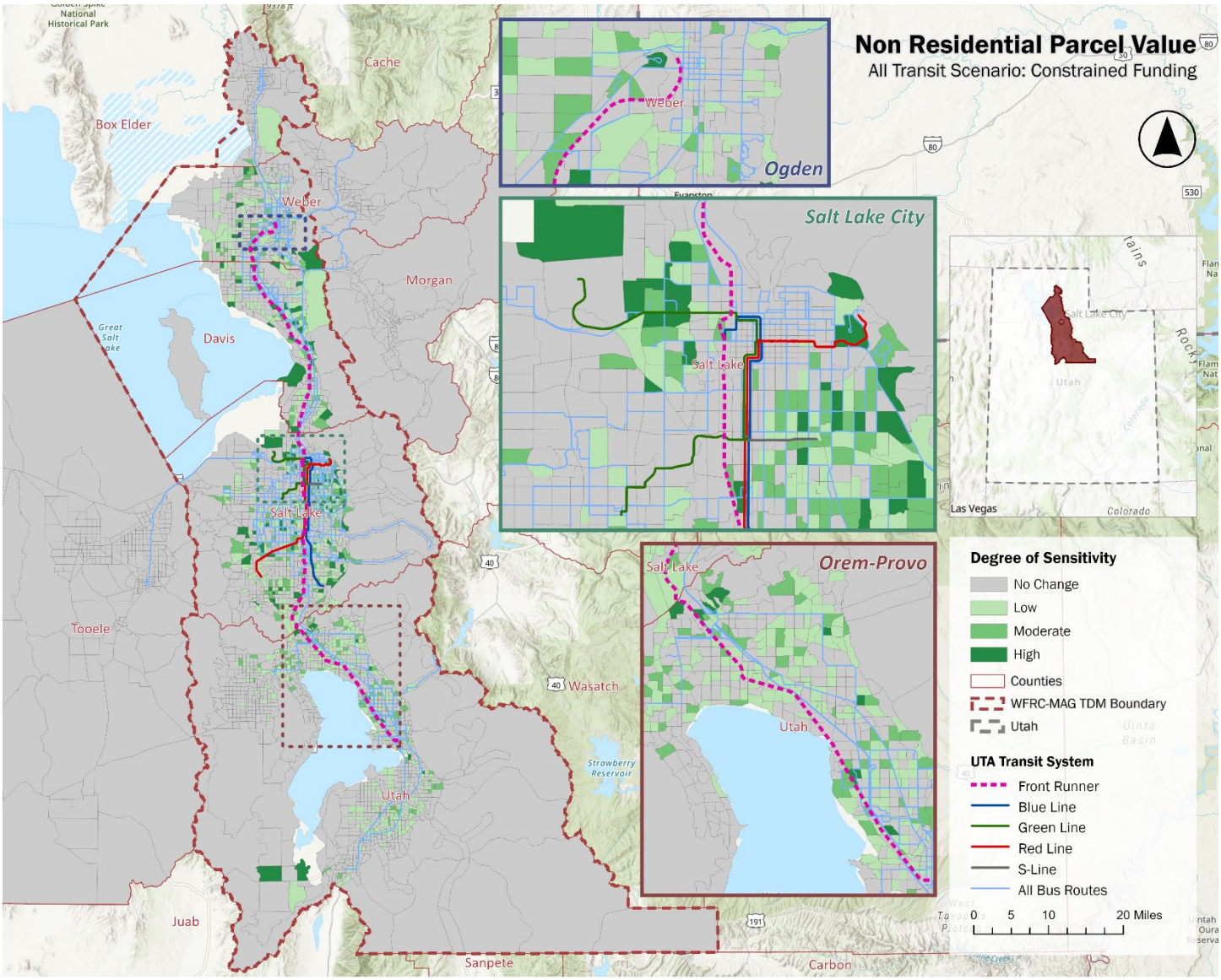
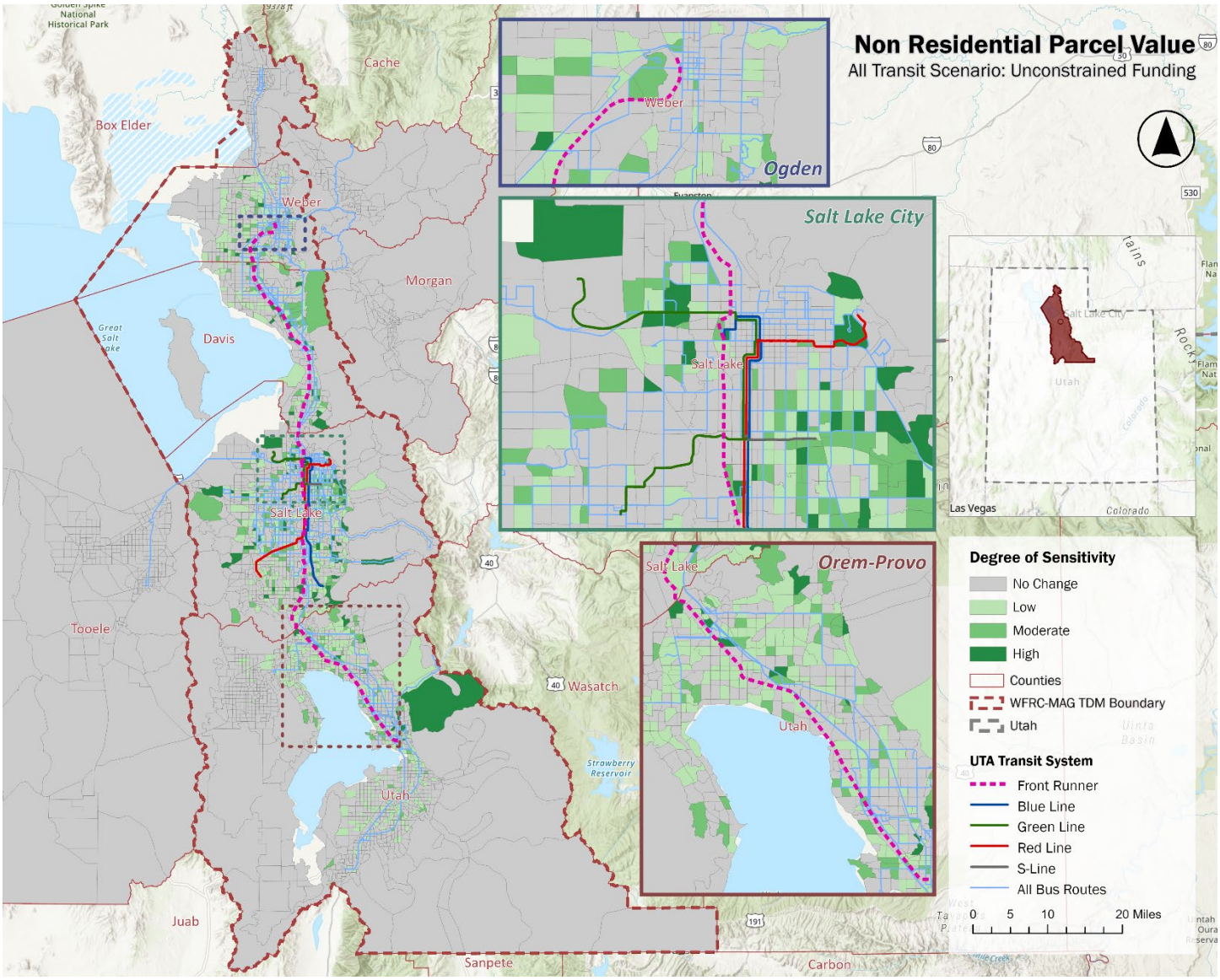


Figure 67: RTP-Total Needs All-Transit Non-Residential



CONCLUSION

The transit system of UTA addresses the diverse travel needs of the urbanized areas in the Wasatch Front region, facilitating over 31.5 million passenger trips, covering more than 37.6 million vehicle revenue miles, and operating for 2.2 million vehicle revenue hours in the year 2022 alone. Public transit plays a vital role in shaping the future outlined in Utah's Unified Plan 2023-2050, contributing to over a third of the projected economic benefits and impacts of the entire Unified Plan implementation. Furthermore, the congestion relief and improved accessibility resulting from increased investment in transit contribute to improved efficiency of the road and highway system, yielding a higher return on investment. This would not only benefit the existing transportation system users, but also facilitate the movement of additional transit users which results in even greater economic impact in the region.

A comprehensive overview of the costs, economic benefits, and impacts of UTA's transit system at different investment levels and transit scenarios is outlined in Table 13 below.

Table 13: Summary of Economic and Fiscal Impact Outcomes of UTA's Transit Investment

Benefit Scenarios:	**Bus-Only Scenario**				**All-Transit Scenario**			
Investment Levels:	Maintain-Existing-System	Business-As-Usual	RTP-Priority Needs	RTP-Total Needs	Maintain-Existing-System	Business-As-Usual	RTP-Priority Needs	RTP-Total Needs
Transit Spending (Billion $s)	**$16.14**	**$17.45**	**$26.71**	**$29.29**	**$22.22**	**$24.07**	**$36.19**	**$47.01**
Operation and Maintenance Costs (Billion $s)	$12.79	$12.79	$16.68	$17.01	$17.42	$17.42	$22.79	$24.76
Capital Outlays (Billion $s)	$3.35	$4.66	$10.02	$12.27	$4.80	$6.65	$13.40	$22.25
Economic Impacts of Spending								
Employment (# of Jobs)	21,579	19,374	46,020	60,420	30,385	27,979	56,602	74,804
Labor Income (Billion $s)	$9.22	$10.71	$16.38	$17.97	$12.34	$14.22	$21.39	$27.78
Value Added/GDP (Billion $s)	$16.52	$17.97	$27.49	$30.15	$22.47	$24.40	$36.69	$47.65
Business Output (Billion $s)	$32.16	$35.04	$53.62	$58.79	$44.14	$48.08	$72.30	$93.90
Efficiency Benefits ($Billion)	**$6.91**	**$8.42**	**$12.84**	**$12.87**	**$24.42**	**$24.91**	**$41.28**	**$38.37**
Discounted @ 3.5% (Billion $s)	$4.53	$5.30	$7.66	$7.67	$15.60	$15.86	$24.60	$23.10
Vehicle Operating Cost Savings	$8.64	$9.94	$14.10	$13.93	$39.12	$40.72	$55.87	$54.14
Travel Time and Reliability Savings	($1.67)	($1.47)	($1.21)	($0.97)	($14.97)	($16.09)	($15.08)	($16.19)
Environmental Benefits	($0.06)	($0.05)	($0.05)	($0.09)	$0.27	$0.09	$0.49	$0.42
Economic Impacts of Efficiency Savings								
Employment (# of Jobs)	6,264	8,343	11,801	10,202	24,699	26,729	38,798	34,079
Labor Income (Billion $s)	$8.43	$9.77	$12.32	$11.23	$27.15	$28.52	$37.53	$34.55
Value Added/GDP (Billion $s)	$14.10	$16.31	$20.65	$18.88	$45.66	$47.90	$63.20	$58.39
Business Output (Billion $s)	$26.65	$30.87	$38.97	$35.56	$85.94	$90.23	$118.83	$109.54
Economic Impacts of Market Access Gains								

Benefit Scenarios:	**Bus-Only Scenario**				**All-Transit Scenario**			
Investment Levels:	Maintain-Existing-System	Business-As-Usual	RTP-Priority Needs	RTP-Total Needs	Maintain-Existing-System	Business-As-Usual	RTP-Priority Needs	RTP-Total Needs
Employment (# of Jobs)	0	3,103	6,167	5,471	2,738	7,896	12,608	9,101
Labor Income (Billion $s)	$0.00	$1.57	$2.85	$2.67	$1.74	$4.12	$6.47	$5.01
Value Added/GDP (Billion $s)	$0.00	$2.24	$4.34	$3.95	$3.53	$5.71	$10.25	$7.69
Business Output (Billion $s)	$0.00	$5.02	$9.36	$8.30	$5.75	$11.96	$21.02	$15.27
Economic Impacts of Workforce Participation Increase								
Employment (# of Jobs)	27,610	34,584	55,224	47,350	63,062	66,290	94,214	94,080
Labor Income (Billion $s)	$39.69	$46.57	$55.73	$48.06	$77.70	$80.98	$100.72	$100.66
Value Added/GDP (Billion $s)	$66.46	$76.29	$90.31	$80.80	$129.67	$138.28	$170.73	$170.63
Business Output (Billion $s)	$129.47	$148.85	$176.51	$159.17	$253.83	$268.90	$330.48	$330.28
Cumulative Fiscal Impacts	**$7.95**	**$8.96**	**$13.31**	**$13.76**	**$16.98**	**$17.96**	**$26.08**	**$28.01**
Local Taxes (Billion $s)	$2.59	$2.71	$4.01	$4.16	$4.93	$5.00	$7.21	$7.75
State Taxes (Billion $s)	$2.92	$3.14	$4.66	$4.82	$5.82	$6.00	$8.69	$9.34
Federal Taxes (Billion $s)	$2.45	$3.10	$4.64	$4.74	$6.23	$6.96	$10.17	$10.91

Through a cumulative impact of direct spending in transit operations, maintenance, and capital projects, efficiency savings, market access gains, as well as workforce participation, the regional economy is expected to be significantly bolstered by the presence and services of UTA's transit system compared to not having transit. Sustaining the current level of bus services at a cost of $16.14 billion from 2023-2050 will not only save an additional $6.91 billion in transportation expenses for Utah's households and businesses but also foster the creation of 28,000 jobs, generate $17.65 billion in household income, and contribute $30.62 billion in value added (GDP) to the state's economy. Similarly, maintaining the existing transit services at a cost of $22.22 billion would result in $24.42 billion in transportation cost savings, along with the creation of 58,000 jobs, $41.23 billion in household income, and $71.66 billion in value added (GDP). Operating just the bus services at a Business-As-Usual cost $17.45 billion would yield $8.42 billion in transportation efficiency savings, create 31,000 jobs, generate $22.05 billion in household income, and contribute $36.51 billion in value added (GDP). At the Business-As-Usual investment level of $24.07 billion for operating all transit, about $24.91 billion in transportation cost savings is realized while fostering the creation of 62,500 jobs, generating $46.86 billion in household income, and contributing $78.01 billion in value added (GDP) to the economy.

However, the Unified Plan offers two investment levels that significantly expand the impact of transit to the economic well-being of the region. Allocating $26.71 billion to bus services only at the Unified Plan: Priority Needs level will result in an additional $12.84 billion in transportation cost savings for Utah's households and businesses, fostering the creation of 64,000 jobs and contributing $31.56 billion in household income, as well as $52.48 billion in value added (GDP) to the state's economy. Operating both bus and rail transit services at a cost of $36.19 billion under the Unified Plan: Priority Needs level would contribute $41.28 billion in transportation cost savings, along with a collective impact of 108,000 jobs, $65.39 billion in household income, and $110.14 billion in value added (GDP). Meanwhile, funding the bus system only at the Unified Plan: Total Needs level, with a cost of $29.29 billion, would

generate $12.87 billion in transportation efficiency savings, create 76,000 jobs, contribute $31.86 billion in household income, and add $52.98 billion in value to the state's economy. Investing $47.01 billion in both bus and rail transit systems at the Unified Plan: Total Needs level would result in $38.37 billion in transportation cost savings, while also fostering the creation of 118,000 jobs, generating $67.33 billion in household income, and contributing $113.72 billion in value added (GDP) to the economy.

Analysis of the transit profile with respect to market access found professional services-oriented service sectors to have the most direct relationship with economic gains stemming from accessibility. While these sectors may see most direct benefits with the expansion of labor access due to transit, those experiencing the economic benefits are not limited to solely transit users such as those within these industries. The synergistic effect of transit and auto ridership coexisting is optimized at the RTP-Priority Needs level, when these accessibility benefits peak at the creation of 12,608 jobs, $6.47 billion in labor income, $10.25 billion in GDP, and $21.02 billion in business output. Increased workforce participation would further contribute up to 94,200 jobs, $100.72 billion in labor income, $170.73 billion in GDP, and $330.48 billion in total business outputs.

In terms of the Fiscal Impacts of UTA's transit investments, the Bus-Only Scenario sees total taxes rise of $7.95 billion under Maintain-Existing-System, $8.96 billion under Business-As-Usual, reaching $13.31 billion and $13.76 billion in RTP-Priority Needs and RTP-Total Needs scenarios. The All-Transit Scenario, starting at $16.98 billion in Maintain-Existing-System, escalates to $17.96 billion under Business-As-Usual, surging to $26.08 billion and $28.01 billion in RTP-Priority Needs and RTP-Total Needs scenarios. Despite both scenarios trending upward, the All-Transit Scenario consistently outshines the Bus-Only Scenario in cumulative fiscal impacts at different funding levels as would be expected.

UTA's investment in enhancing its transit system is poised to yield substantial returns, surpassing the initial investment. The Unified Plan scenarios outline UTA's expenditures on infrastructure and services, projecting savings for Utah's private sector. However, the real impact extends beyond transportation efficiency gains. The primary contributors to the economy are anticipated through reduced costs associated with congestion and enhanced travel reliability. This, in turn, allows Utah businesses to generate additional output, fostering economic growth. The resulting job opportunities and increased wages contribute significantly to Utah's workforce, creating a larger and more robust economy than would be possible by maintaining the existing 2023 transit system level or continuing with business-as-usual levels of investment.

APPENDIX

Appendix I: Transportation Efficiency Benefits and Impacts

Efficiency Savings in Million Dollars by Year (Undiscounted)

Benefit Scenarios:	Bus-Only Scenario				All-Transit Scenario			
Investment Levels:	Maintain-Existing-System	Business-As-Usual	RTP-Priority Needs	RTP-Total Needs	Maintain-Existing-System	Business-As-Usual	RTP-Priority Needs	RTP-Total Needs
2023	$233.69	$233.69	$233.69	$233.69	$717.23	$717.23	$717.23	$717.23
2024	$237.08	$238.62	$247.20	$247.39	$732.75	$733.77	$766.74	$763.59
2025	$240.30	$243.57	$261.06	$261.41	$748.14	$750.24	$817.26	$810.51
2026	$243.35	$248.53	$275.26	$275.75	$763.34	$766.59	$868.79	$857.97
2027	$246.21	$253.51	$289.81	$290.41	$778.34	$782.80	$921.29	$905.94
2028	$248.87	$258.51	$304.73	$305.41	$793.07	$798.81	$974.73	$954.36
2029	$251.31	$263.52	$320.00	$320.74	$807.50	$814.58	$1,029.11	$1,003.21
2030	$253.52	$268.56	$335.65	$336.43	$821.64	$830.14	$1,084.47	$1,052.53
2031	$255.53	$273.66	$351.74	$352.54	$835.33	$845.28	$1,140.57	$1,102.07
2032	$257.26	$278.76	$368.19	$369.00	$848.53	$860.01	$1,197.46	$1,151.86
2033	$258.69	$283.85	$385.01	$385.81	$861.21	$874.25	$1,255.10	$1,201.85
2034	$259.78	$288.94	$402.19	$402.98	$873.28	$887.95	$1,313.43	$1,251.97
2035	$260.52	$294.00	$419.75	$420.51	$884.67	$901.03	$1,372.39	$1,302.13
2036	$260.89	$299.06	$437.69	$438.42	$895.39	$913.49	$1,432.05	$1,352.41
2037	$260.84	$304.08	$455.98	$456.68	$905.18	$925.07	$1,492.07	$1,402.45
2038	$260.35	$309.06	$474.64	$475.30	$914.05	$935.76	$1,552.49	$1,452.29
2039	$259.39	$314.01	$493.65	$494.30	$921.89	$945.46	$1,613.24	$1,501.84
2040	$257.92	$318.91	$513.03	$513.66	$928.59	$954.06	$1,674.20	$1,550.98
2041	$255.93	$323.78	$532.80	$533.42	$934.13	$961.55	$1,735.45	$1,599.77
2042	$253.36	$328.57	$552.88	$553.54	$938.22	$967.58	$1,796.53	$1,647.77
2043	$250.17	$333.31	$573.31	$574.03	$940.81	$972.12	$1,857.47	$1,695.00
2044	$246.35	$337.97	$594.09	$594.91	$941.77	$975.04	$1,918.14	$1,741.32
2045	$241.86	$342.57	$615.21	$616.17	$940.97	$976.16	$1,978.39	$1,786.59
2046	$236.70	$347.13	$636.71	$637.86	$938.35	$975.48	$2,038.29	$1,830.86
2047	$230.83	$351.62	$658.52	$659.93	$933.62	$972.55	$2,097.25	$1,873.58
2048	$224.31	$356.07	$680.71	$682.44	$926.74	$967.33	$2,155.32	$1,914.80
2049	$217.22	$360.55	$703.31	$705.45	$917.68	$959.66	$2,212.37	$1,954.37
2050	$209.76	$365.13	$726.44	$729.06	$912.33	$949.42	$2,268.27	$1,992.21
Cumulative Total	**$6,912.00**	**$8,419.56**	**$12,843.25**	**$12,867.27**	**$24,354.73**	**$24,913.40**	**$41,280.10**	**$38,371.43**

Efficiency Savings in Million Dollars by Year (Discounted at 3.5%)

Benefit Scenarios:	Bus-Only Scenario				All-Transit Scenario			
Investment Levels:	Maintain-Existing-System	Business-As-Usual	RTP-Priority Needs	RTP-Total Needs	Maintain-Existing-System	Business-As-Usual	RTP-Priority Needs	RTP-Total Needs
2023	$233.69	$233.69	$233.69	$233.69	$717.23	$717.23	$717.23	$717.23
2024	$229.06	$230.55	$238.84	$239.03	$707.97	$708.96	$740.81	$737.76
2025	$224.32	$227.37	$243.70	$244.03	$698.39	$700.36	$762.92	$756.62
2026	$219.49	$224.16	$248.27	$248.71	$688.49	$691.42	$783.59	$773.84
2027	$214.56	$220.92	$252.55	$253.07	$678.27	$682.17	$802.85	$789.47
2028	$209.54	$217.66	$256.57	$257.15	$667.74	$672.58	$820.70	$803.55
2029	$204.44	$214.38	$260.32	$260.92	$656.90	$662.66	$837.18	$816.11
2030	$199.26	$211.09	$263.82	$264.43	$645.80	$652.48	$852.38	$827.28
2031	$194.05	$207.82	$267.11	$267.72	$634.36	$641.91	$866.16	$836.92
2032	$188.76	$204.54	$270.15	$270.75	$622.60	$631.01	$878.62	$845.16
2033	$183.39	$201.23	$272.94	$273.51	$610.53	$619.77	$889.77	$852.02
2034	$177.94	$197.91	$275.48	$276.02	$598.15	$608.20	$899.63	$857.53
2035	$172.41	$194.57	$277.78	$278.29	$585.46	$596.28	$908.22	$861.73
2036	$166.82	$191.22	$279.86	$280.33	$572.51	$584.09	$915.66	$864.73
2037	$161.14	$187.85	$281.70	$282.13	$559.21	$571.49	$921.77	$866.41
2038	$155.40	$184.48	$283.31	$283.70	$545.59	$558.55	$926.67	$866.86
2039	$149.59	$181.09	$284.69	$285.06	$531.66	$545.25	$930.36	$866.12
2040	$143.72	$177.70	$285.86	$286.22	$517.41	$531.60	$932.87	$864.21
2041	$137.78	$174.31	$286.84	$287.18	$502.90	$517.66	$934.30	$861.25
2042	$131.78	$170.91	$287.58	$287.93	$488.02	$503.29	$934.47	$857.10
2043	$125.73	$167.51	$288.13	$288.49	$472.82	$488.56	$933.50	$851.85
2044	$119.62	$164.11	$288.47	$288.87	$457.30	$473.45	$931.39	$845.53
2045	$113.47	$160.72	$288.63	$289.08	$441.46	$457.97	$928.16	$838.18
2046	$107.29	$157.35	$288.61	$289.13	$425.34	$442.17	$923.93	$829.90
2047	$101.09	$153.99	$288.40	$289.02	$408.88	$425.93	$918.51	$820.55
2048	$94.92	$150.67	$288.04	$288.77	$392.15	$409.32	$912.02	$810.24
2049	$88.81	$147.40	$287.54	$288.42	$375.18	$392.35	$904.50	$799.02
2050	$82.86	$144.23	$286.95	$287.99	$360.38	$375.03	$896.00	$786.95
Cumulative Total	**$4,530.94**	**$5,299.43**	**$7,655.85**	**$7,669.63**	**$15,562.70**	**$15,861.75**	**$24,604.18**	**$23,104.11**

Impacts on Employment (Number of Jobs) by Year

Benefit Scenarios:	Bus-Only Scenario				All-Transit Scenario			
Investment Levels:	Maintain-Existing-System	Business-As-Usual	RTP-Priority Needs	RTP-Total Needs	Maintain-Existing-System	Business-As-Usual	RTP-Priority Needs	RTP-Total Needs
2023	3,956	3,957	3,957	3,957	10,003	10,004	10,006	10,072
2024	4,024	4,057	4,143	4,114	10,336	10,372	10,688	10,688
2025	4,093	4,161	4,335	4,276	10,679	10,754	11,392	11,321
2026	4,164	4,268	4,533	4,443	11,035	11,150	12,120	11,971
2027	4,235	4,378	4,738	4,614	11,404	11,561	12,873	12,640
2028	4,307	4,492	4,950	4,791	11,785	11,987	13,650	13,326
2029	4,381	4,609	5,168	4,972	12,179	12,428	14,454	14,032
2030	4,456	4,731	5,394	5,158	12,588	12,886	15,284	14,757
2031	4,532	4,857	5,628	5,350	13,011	13,361	16,141	15,501
2032	4,610	4,987	5,868	5,547	13,448	13,853	17,026	16,266
2033	4,688	5,121	6,117	5,750	13,902	14,364	17,940	17,051
2034	4,768	5,260	6,374	5,958	14,371	14,894	18,884	17,857
2035	4,849	5,404	6,639	6,172	14,858	15,444	19,859	18,685
2036	4,932	5,553	6,912	6,393	15,361	16,015	20,865	19,535
2037	5,016	5,707	7,194	6,619	15,883	16,607	21,903	20,408
2038	5,101	5,867	7,486	6,851	16,424	17,221	22,974	21,304
2039	5,187	6,033	7,786	7,090	16,984	17,859	24,080	22,224
2040	5,275	6,204	8,097	7,336	17,564	18,521	25,221	23,167
2041	5,365	6,383	8,417	7,589	18,166	19,209	26,397	24,136
2042	5,456	6,568	8,747	7,848	18,789	19,922	27,611	25,130
2043	5,548	6,760	9,088	8,115	19,435	20,664	28,863	26,151
2044	5,642	6,960	9,439	8,389	20,105	21,433	30,155	27,197
2045	5,738	7,167	9,802	8,670	20,799	22,233	31,487	28,272
2046	5,836	7,383	10,176	8,960	21,520	23,064	32,860	29,374
2047	5,936	7,608	10,563	9,257	22,268	23,927	34,276	30,505
2048	6,040	7,842	10,962	9,563	23,046	24,825	35,737	31,665
2049	6,149	8,087	11,374	9,878	23,855	25,758	37,244	32,856
2050	6,264	8,343	11,801	10,202	24,699	26,729	38,798	34,079
Maximum	**6,264**	**8,343**	**11,801**	**10,202**	**24,699**	**26,729**	**38,798**	**34,079**

Impacts on Household Income in Million Dollars by Year

Benefit Scenarios:	Bus-Only Scenario				All-Transit Scenario			
Investment Levels:	Maintain-Existing-System	Business-As-Usual	RTP-Priority Needs	RTP-Total Needs	Maintain-Existing-System	Business-As-Usual	RTP-Priority Needs	RTP-Total Needs
2023	$235.94	$235.95	$235.97	$235.96	$595.58	$595.60	$595.75	$599.81
2024	$240.07	$242.05	$247.15	$245.40	$615.50	$617.73	$636.50	$636.50
2025	$244.26	$248.34	$258.71	$255.11	$636.12	$640.67	$678.63	$674.20
2026	$248.53	$254.83	$270.66	$265.10	$657.46	$664.46	$722.17	$712.95
2027	$252.87	$261.54	$282.99	$275.38	$679.55	$689.13	$767.17	$752.76
2028	$257.29	$268.46	$295.74	$285.95	$702.42	$714.71	$813.67	$793.66
2029	$261.78	$275.62	$308.91	$296.82	$726.10	$741.24	$861.71	$835.68
2030	$266.35	$283.02	$322.50	$307.99	$750.62	$768.75	$911.34	$878.84
2031	$271.00	$290.67	$336.55	$319.48	$776.01	$797.30	$962.60	$923.17
2032	$275.73	$298.58	$351.05	$331.30	$802.30	$826.91	$1,015.54	$968.70
2033	$280.54	$306.77	$366.02	$343.44	$829.53	$857.63	$1,070.21	$1,015.45
2034	$285.44	$315.25	$381.48	$355.93	$857.74	$889.50	$1,126.65	$1,063.46
2035	$290.42	$324.02	$397.44	$368.77	$886.96	$922.58	$1,184.92	$1,112.75
2036	$295.48	$333.11	$413.91	$381.96	$917.23	$956.91	$1,245.06	$1,163.36
2037	$300.64	$342.53	$430.91	$395.53	$948.59	$992.54	$1,307.13	$1,215.31
2038	$305.88	$352.30	$448.46	$409.47	$981.09	$1,029.53	$1,371.19	$1,268.64
2039	$311.21	$362.42	$466.57	$423.80	$1,014.76	$1,067.92	$1,437.29	$1,323.39
2040	$316.63	$372.92	$485.25	$438.52	$1,049.66	$1,107.79	$1,505.49	$1,379.57
2041	$322.15	$383.83	$504.54	$453.66	$1,085.84	$1,149.19	$1,575.84	$1,437.23
2042	$327.77	$395.15	$524.43	$469.21	$1,123.33	$1,192.18	$1,648.42	$1,496.40
2043	$333.49	$406.90	$544.96	$485.19	$1,162.21	$1,236.83	$1,723.27	$1,557.12
2044	$339.32	$419.13	$566.14	$501.61	$1,202.52	$1,283.22	$1,800.47	$1,619.43
2045	$345.27	$431.84	$588.00	$518.49	$1,244.34	$1,331.41	$1,880.09	$1,683.36
2046	$351.36	$445.06	$610.55	$535.83	$1,287.72	$1,381.48	$1,962.19	$1,748.95
2047	$357.61	$458.84	$633.83	$553.66	$1,332.78	$1,433.53	$2,046.86	$1,816.25
2048	$364.08	$473.21	$657.87	$571.99	$1,379.60	$1,487.64	$2,134.18	$1,885.31
2049	$370.84	$488.22	$682.72	$590.85	$1,428.34	$1,543.92	$2,224.25	$1,956.18
2050	$378.02	$503.93	$708.44	$610.28	$1,479.19	$1,602.48	$2,317.18	$2,028.93
Cumulative Total	**$8,429.96**	**$9,774.48**	**$12,321.75**	**$11,226.70**	**$27,153.08**	**$28,522.77**	**$37,525.79**	**$34,547.36**

Impacts on Value Added (GDP) in Million Dollars by Year

Benefit Scenarios:	Bus-Only Scenario				All-Transit Scenario			
Investment Levels:	Maintain-Existing-System	Business-As-Usual	RTP-Priority Needs	RTP-Total Needs	Maintain-Existing-System	Business-As-Usual	RTP-Priority Needs	RTP-Total Needs
2023	$398.18	$398.19	$398.21	$398.20	$1,006.93	$1,006.96	$1,007.18	$1,013.60
2024	$404.95	$408.20	$416.82	$414.01	$1,040.24	$1,043.89	$1,075.58	$1,075.58
2025	$411.82	$418.52	$436.04	$430.27	$1,074.71	$1,082.16	$1,146.30	$1,139.29
2026	$418.80	$429.16	$455.90	$446.99	$1,110.37	$1,121.82	$1,219.40	$1,204.75
2027	$425.90	$440.14	$476.41	$464.19	$1,147.27	$1,162.94	$1,294.94	$1,272.02
2028	$433.11	$451.48	$497.60	$481.88	$1,185.46	$1,205.56	$1,373.01	$1,341.14
2029	$440.43	$463.19	$519.49	$500.08	$1,224.99	$1,249.75	$1,453.67	$1,412.15
2030	$447.87	$475.28	$542.09	$518.78	$1,265.90	$1,295.57	$1,536.99	$1,485.10
2031	$455.42	$487.77	$565.43	$538.02	$1,308.26	$1,343.09	$1,623.06	$1,560.03
2032	$463.10	$500.68	$589.53	$557.80	$1,352.11	$1,392.37	$1,711.95	$1,636.99
2033	$470.89	$514.03	$614.41	$578.13	$1,397.51	$1,443.48	$1,803.73	$1,716.02
2034	$478.80	$527.83	$640.10	$599.04	$1,444.53	$1,496.50	$1,898.50	$1,797.19
2035	$486.84	$542.12	$666.61	$620.53	$1,493.21	$1,551.51	$1,996.34	$1,880.53
2036	$495.00	$556.91	$693.98	$642.62	$1,543.63	$1,608.57	$2,097.33	$1,966.09
2037	$503.29	$572.22	$722.22	$665.32	$1,595.86	$1,667.79	$2,201.57	$2,053.94
2038	$511.70	$588.08	$751.37	$688.66	$1,649.96	$1,729.24	$2,309.14	$2,144.13
2039	$520.25	$604.52	$781.45	$712.65	$1,706.00	$1,793.02	$2,420.15	$2,236.70
2040	$528.92	$621.56	$812.49	$737.30	$1,764.07	$1,859.22	$2,534.68	$2,331.72
2041	$537.73	$639.23	$844.51	$762.64	$1,824.24	$1,927.94	$2,652.83	$2,429.24
2042	$546.68	$657.57	$877.56	$788.67	$1,886.59	$1,999.29	$2,774.72	$2,529.33
2043	$555.77	$676.61	$911.64	$815.43	$1,951.21	$2,073.38	$2,900.44	$2,632.04
2044	$565.02	$696.39	$946.82	$842.92	$2,018.20	$2,150.32	$3,030.11	$2,737.44
2045	$574.44	$716.95	$983.10	$871.18	$2,087.67	$2,230.24	$3,163.83	$2,845.59
2046	$584.06	$738.33	$1,020.55	$900.22	$2,159.74	$2,313.26	$3,301.74	$2,956.56
2047	$593.92	$760.59	$1,059.20	$930.07	$2,234.54	$2,399.53	$3,443.96	$3,070.43
2048	$604.11	$783.80	$1,099.11	$960.76	$2,312.27	$2,489.20	$3,590.64	$3,187.29
2049	$614.74	$808.02	$1,140.37	$992.35	$2,393.15	$2,582.44	$3,741.94	$3,307.22
2050	$626.04	$833.38	$1,183.07	$1,024.88	$2,477.52	$2,679.45	$3,898.05	$3,430.34
Cumulative Total	**$14,097.78**	**$16,310.72**	**$20,646.09**	**$18,883.58**	**$45,656.14**	**$47,898.50**	**$63,201.79**	**$58,392.45**

Impacts on Business Outputs in Million Dollars by Year

Benefit Scenarios:	Bus-Only Scenario				All-Transit Scenario			
Investment Levels:	Maintain-Existing-System	Business-As-Usual	RTP-Priority Needs	RTP-Total Needs	Maintain-Existing-System	Business-As-Usual	RTP-Priority Needs	RTP-Total Needs
2023	$748.15	$748.17	$748.22	$748.20	$1,888.60	$1,888.66	$1,889.06	$1,901.64
2024	$761.10	$767.32	$783.51	$778.05	$1,951.53	$1,958.51	$2,017.95	$2,017.95
2025	$774.27	$787.07	$819.98	$808.76	$2,016.65	$2,030.93	$2,151.19	$2,137.48
2026	$787.66	$807.46	$857.65	$840.35	$2,084.05	$2,106.00	$2,288.92	$2,260.31
2027	$801.28	$828.51	$896.58	$872.84	$2,153.82	$2,183.83	$2,431.27	$2,386.52
2028	$815.12	$850.25	$936.79	$906.26	$2,226.03	$2,264.54	$2,578.35	$2,516.19
2029	$829.20	$872.70	$978.32	$940.63	$2,300.78	$2,348.23	$2,730.32	$2,649.41
2030	$843.52	$895.91	$1,021.22	$975.96	$2,378.18	$2,435.02	$2,887.31	$2,786.25
2031	$858.07	$919.89	$1,065.51	$1,012.30	$2,458.31	$2,525.05	$3,049.46	$2,926.81
2032	$872.87	$944.70	$1,111.25	$1,049.66	$2,541.29	$2,618.43	$3,216.93	$3,071.16
2033	$887.92	$970.36	$1,158.47	$1,088.07	$2,627.23	$2,715.30	$3,389.85	$3,219.41
2034	$903.22	$996.91	$1,207.23	$1,127.56	$2,716.23	$2,815.81	$3,568.40	$3,371.64
2035	$918.77	$1,024.40	$1,257.56	$1,168.15	$2,808.42	$2,920.10	$3,752.72	$3,527.95
2036	$934.58	$1,052.87	$1,309.51	$1,209.88	$2,903.91	$3,028.32	$3,942.97	$3,688.43
2037	$950.66	$1,082.36	$1,363.14	$1,252.77	$3,002.84	$3,140.63	$4,139.34	$3,853.17
2038	$967.00	$1,112.92	$1,418.48	$1,296.85	$3,105.34	$3,257.21	$4,341.99	$4,022.29
2039	$983.61	$1,144.60	$1,475.59	$1,342.16	$3,211.54	$3,378.22	$4,551.09	$4,195.89
2040	$1,000.51	$1,177.47	$1,534.52	$1,388.73	$3,321.59	$3,503.85	$4,766.83	$4,374.06
2041	$1,017.68	$1,211.57	$1,595.33	$1,436.58	$3,435.65	$3,634.30	$4,989.40	$4,556.93
2042	$1,035.15	$1,246.97	$1,658.07	$1,485.76	$3,553.87	$3,769.75	$5,218.99	$4,744.59
2043	$1,052.93	$1,283.74	$1,722.81	$1,536.29	$3,676.42	$3,910.42	$5,455.81	$4,937.16
2044	$1,071.03	$1,321.94	$1,789.60	$1,588.22	$3,803.49	$4,056.54	$5,700.05	$5,134.77
2045	$1,089.50	$1,361.67	$1,858.51	$1,641.59	$3,935.29	$4,208.33	$5,951.93	$5,337.52
2046	$1,108.38	$1,403.01	$1,929.63	$1,696.44	$4,072.03	$4,366.05	$6,211.68	$5,545.57
2047	$1,127.76	$1,446.06	$2,003.04	$1,752.81	$4,214.00	$4,529.96	$6,479.56	$5,759.03
2048	$1,147.80	$1,490.94	$2,078.84	$1,810.79	$4,361.53	$4,700.35	$6,755.82	$5,978.07
2049	$1,168.73	$1,537.82	$2,157.20	$1,870.43	$4,515.09	$4,877.56	$7,040.77	$6,202.87
2050	$1,190.98	$1,586.88	$2,238.30	$1,931.87	$4,675.29	$5,061.96	$7,334.80	$6,433.65
Cumulative Total	**$26,647.46**	**$30,874.47**	**$38,974.84**	**$35,557.95**	**$85,938.99**	**$90,233.83**	**$118,832.75**	**$109,536.71**

Appendix II: Market Access Impacts

Market Access Methodology

Data from the economic analysis software IMPLAN are analyzed to assess the impacts on business location and output of four different scenarios for the transportation network for each zip code in Utah. These include variables for employment and output figures for each subsector, as well as figures for population within a 40-minute radius ("Pop40") for each scenario: Maintain-Existing-System, Business as Usual, RTP-Priority Needs, and RTP-Total Needs.

Zip codes are assigned a bin number for "base" labor access bin of 1 through 5, based on the quintiles of the "No-Transit" population within a 40-minute drive radius. The zip codes were then given "build" labor access and business access bin numbers, based on where the analyzed scenario's pop40 fell according to the bin thresholds of the respective No-Transit scenario figures.

Once the base and build bins have been assigned, productivity numbers for every industry found from the transit profile were calculated for each bin. This was calculated by taking all zip codes within a bin assignment, finding the total output of each industry, and dividing that by the total number of workers in each industry. To ensure that findings were sensible, only industries whose productivity figures were ascending with increase in access (i.e., productivity for an industry was consistently increasing as labor accessibility was increasing) were considered for further analysis. As another measure of ensuring sensible results, the remaining industries were also assessed such that only industries that had gains in productivity were left to be considered.

As a result of the binning differentials, the industries that are found to benefit from improved market access are evaluated to determine how much more each industry would produce because of improved access to labor and employment in each zip code, producing a final estimate of the increase in business output due to the different scenarios of market access.

Once these figures are calculated, a 28-year benefit stream is outlined to portray the change in economic benefits due to market access over time. The percentage growth is sourced from capital outlay progression as well as year over year economic growth figures. The sum of this stream of 28 year over year benefits is the cumulative market access benefit figure for each scenario. Each figure is subsequently run through IMPLAN's economic modeling system to produce output figures with additional indirect and induced benefit figures added to the cumulative figure, producing a final market access benefit output number for each scenario.

Impacts on Employment (Number of Jobs) by Year

Benefit Scenarios:	Bus-Only Scenario				All-Transit Scenario			
Investment Levels:	Maintain-Existing-System	Business-As-Usual	RTP-Priority Needs	RTP-Total Needs	Maintain-Existing-System	Business-As-Usual	RTP-Priority Needs	RTP-Total Needs
2023	-	33	44	37	23	78	84	47
2024	-	39	53	44	28	92	101	57
2025	-	81	110	92	60	197	215	121
2026	-	133	180	149	95	327	357	201
2027	-	184	250	207	134	458	499	281
2028	-	235	319	265	177	588	641	360
2029	-	294	398	331	225	741	808	454
2030	-	348	477	397	276	876	997	574
2031	-	406	563	469	332	1,021	1,224	733
2032	-	470	656	547	393	1,184	1,479	911
2033	-	542	763	639	458	1,368	1,747	1,083
2034	-	618	915	768	528	1,558	2,070	1,270
2035	-	707	1,113	935	603	1,777	2,452	1,492
2036	-	799	1,333	1,116	684	2,008	2,893	1,807
2037	-	898	1,577	1,319	771	2,255	3,421	2,265
2038	-	1,012	1,793	1,494	864	2,562	3,949	2,764
2039	-	1,134	2,035	1,696	964	2,883	4,486	3,202
2040	-	1,273	2,296	1,885	1,070	3,254	4,996	3,574
2041	-	1,411	2,583	2,113	1,184	3,623	5,555	4,001
2042	-	1,548	2,868	2,337	1,306	3,981	6,113	4,383
2043	-	1,687	3,128	2,563	1,435	4,336	6,640	4,754
2044	-	1,831	3,436	2,864	1,572	4,696	7,240	5,177
2045	-	1,987	3,814	3,199	1,717	5,084	7,988	5,688
2046	-	2,166	4,139	3,473	1,871	5,538	8,647	6,179
2047	-	2,346	4,516	3,864	2,035	5,995	9,381	6,822
2048	-	2,537	4,891	4,201	2,210	6,479	10,110	7,356
2049	-	2,740	5,415	4,748	2,396	6,990	11,147	8,118
2050	-	3,103	6,167	5,471	2,738	7,896	12,608	9,101
Maximum	**-**	**3,103**	**6,167**	**5,471**	**2,738**	**7,896**	**12,608**	**9,101**

Impacts on Household Income in Million Dollars by Year

Benefit Scenarios:	**Bus-Only Scenario**				**All-Transit Scenario**			
Investment Levels:	Maintain-Existing-System	Business-As-Usual	RTP-Priority Needs	RTP-Total Needs	Maintain-Existing-System	Business-As-Usual	RTP-Priority Needs	RTP-Total Needs
2023	$-	$1.70	$2.26	$2.08	$1.55	$4.12	$4.59	$2.82
2024	$-	$2.01	$2.71	$2.50	$1.85	$4.89	$5.53	$3.43
2025	$-	$4.18	$5.64	$5.19	$3.97	$10.44	$11.81	$7.31
2026	$-	$6.81	$9.19	$8.45	$6.32	$17.34	$19.62	$12.15
2027	$-	$9.46	$12.76	$11.73	$8.91	$24.25	$27.44	$16.99
2028	$-	$12.08	$16.29	$14.99	$11.75	$31.13	$35.21	$21.80
2029	$-	$15.08	$20.35	$18.71	$14.93	$39.25	$44.41	$27.50
2030	$-	$17.84	$24.40	$22.47	$18.36	$46.37	$54.79	$34.71
2031	$-	$20.83	$28.77	$26.54	$22.08	$54.05	$67.31	$44.37
2032	$-	$24.14	$33.51	$30.94	$26.09	$62.71	$81.30	$55.12
2033	$-	$27.82	$38.97	$36.13	$30.42	$72.47	$96.05	$65.52
2034	$-	$31.73	$46.78	$43.45	$35.08	$82.50	$113.78	$76.84
2035	$-	$36.29	$56.86	$52.90	$40.09	$94.11	$134.80	$90.26
2036	$-	$41.02	$68.12	$63.14	$45.47	$106.35	$159.06	$109.32
2037	$-	$46.10	$80.62	$74.61	$51.24	$119.44	$188.07	$137.06
2038	$-	$51.93	$91.64	$84.53	$57.42	$135.68	$217.08	$167.24
2039	$-	$58.19	$104.00	$95.96	$64.03	$152.70	$246.61	$193.76
2040	$-	$65.34	$117.34	$106.65	$71.11	$172.31	$274.67	$216.25
2041	$-	$72.43	$131.99	$119.55	$78.68	$191.85	$305.38	$242.13
2042	$-	$79.43	$146.60	$132.18	$86.75	$210.85	$336.04	$265.25
2043	$-	$86.58	$159.84	$144.96	$95.37	$229.61	$365.03	$287.71
2044	$-	$93.99	$175.59	$162.00	$104.41	$248.69	$398.04	$313.27
2045	$-	$101.97	$194.92	$180.96	$114.05	$269.23	$439.16	$344.22
2046	$-	$111.15	$211.53	$196.47	$124.31	$293.28	$475.39	$373.89
2047	$-	$120.41	$230.81	$218.58	$135.22	$317.49	$515.72	$412.80
2048	$-	$130.23	$249.97	$237.67	$146.83	$343.10	$555.80	$445.15
2049	$-	$140.62	$276.77	$268.60	$159.16	$370.18	$612.84	$491.24
2050	$-	$159.24	$315.19	$309.47	$181.91	$418.15	$693.11	$550.71
Cumulative Total	**$-**	**$1,566.92**	**$2,851.16**	**$2,669.33**	**$1,735.81**	**$4,118.45**	**$6,474.06**	**$5,005.99**

Impacts on Value Added (GDP) in Million Dollars by Year

Benefit Scenarios:	Bus-Only Scenario				All-Transit Scenario			
Investment Levels:	Maintain-Existing-System	Business-As-Usual	RTP-Priority Needs	RTP-Total Needs	Maintain-Existing-System	Business-As-Usual	RTP-Priority Needs	RTP-Total Needs
2023	$-	$2.43	$3.44	$3.07	$3.15	$5.71	$7.27	$4.33
2024	$-	$2.87	$4.13	$3.70	$3.76	$6.78	$8.76	$5.26
2025	$-	$5.97	$8.59	$7.68	$8.08	$14.49	$18.70	$11.23
2026	$-	$9.72	$13.98	$12.51	$12.87	$24.06	$31.06	$18.66
2027	$-	$13.49	$19.41	$17.37	$18.13	$33.65	$43.44	$26.09
2028	$-	$17.23	$24.79	$22.18	$23.92	$43.19	$55.75	$33.49
2029	$-	$21.51	$30.96	$27.69	$30.38	$54.46	$70.30	$42.23
2030	$-	$25.46	$37.12	$33.26	$37.38	$64.33	$86.74	$53.31
2031	$-	$29.71	$43.78	$39.27	$44.95	$74.99	$106.56	$68.15
2032	$-	$34.44	$50.99	$45.78	$53.12	$87.01	$128.72	$84.67
2033	$-	$39.69	$59.30	$53.48	$61.92	$100.55	$152.07	$100.64
2034	$-	$45.26	$71.18	$64.31	$71.40	$114.47	$180.13	$118.03
2035	$-	$51.77	$86.52	$78.29	$81.60	$130.57	$213.40	$138.63
2036	$-	$58.52	$103.65	$93.45	$92.55	$147.55	$251.82	$167.92
2037	$-	$65.77	$122.66	$110.42	$104.29	$165.72	$297.75	$210.52
2038	$-	$74.09	$139.43	$125.10	$116.87	$188.25	$343.67	$256.88
2039	$-	$83.02	$158.24	$142.01	$130.34	$211.85	$390.42	$297.62
2040	$-	$93.21	$178.54	$157.84	$144.75	$239.07	$434.84	$332.16
2041	$-	$103.33	$200.83	$176.93	$160.14	$266.18	$483.47	$371.90
2042	$-	$113.32	$223.06	$195.62	$176.58	$292.54	$532.01	$407.42
2043	$-	$123.52	$243.21	$214.54	$194.12	$318.57	$577.90	$441.91
2044	$-	$134.09	$267.16	$239.77	$212.53	$345.04	$630.17	$481.17
2045	$-	$145.47	$296.59	$267.81	$232.15	$373.54	$695.26	$528.71
2046	$-	$158.57	$321.85	$290.77	$253.03	$406.91	$752.62	$574.29
2047	$-	$171.78	$351.20	$323.50	$275.24	$440.50	$816.47	$634.06
2048	$-	$185.78	$380.34	$351.74	$298.87	$476.03	$879.92	$683.75
2049	$-	$200.61	$421.12	$397.53	$323.98	$513.61	$970.22	$754.54
2050	$-	$227.18	$479.57	$458.01	$370.27	$580.15	$1,097.31	$845.89
Cumulative Total	**$-**	**$2,235.37**	**$4,338.20**	**$3,950.59**	**$3,533.21**	**$5,714.06**	**$10,249.49**	**$7,689.14**

Impacts on Business Outputs in Million Dollars by Year

Benefit Scenarios:	Bus-Only Scenario				All-Transit Scenario			
Investment Levels:	Maintain-Existing-System	Business-As-Usual	RTP-Priority Needs	RTP-Total Needs	Maintain-Existing-System	Business-As-Usual	RTP-Priority Needs	RTP-Total Needs
2023	$-	$5.45	$7.43	$6.46	$5.13	$11.97	$14.91	$8.60
2024	$-	$6.45	$8.92	$7.77	$6.12	$14.20	$17.96	$10.45
2025	$-	$13.40	$18.53	$16.14	$13.16	$30.33	$38.35	$22.31
2026	$-	$21.83	$30.18	$26.28	$20.96	$50.38	$63.69	$37.05
2027	$-	$30.31	$41.90	$36.50	$29.52	$70.45	$89.07	$51.82
2028	$-	$38.71	$53.52	$46.61	$38.97	$90.42	$114.31	$66.50
2029	$-	$48.33	$66.82	$58.19	$49.49	$114.03	$144.16	$83.86
2030	$-	$57.19	$80.13	$69.89	$60.88	$134.70	$177.86	$105.86
2031	$-	$66.75	$94.49	$82.53	$73.21	$157.01	$218.52	$135.33
2032	$-	$77.36	$110.05	$96.21	$86.51	$182.18	$263.94	$168.13
2033	$-	$89.17	$128.00	$112.38	$100.86	$210.52	$311.82	$199.84
2034	$-	$101.68	$153.64	$135.14	$116.30	$239.66	$369.37	$234.37
2035	$-	$116.31	$186.75	$164.53	$132.91	$273.38	$437.60	$275.28
2036	$-	$131.46	$223.74	$196.37	$150.74	$308.94	$516.37	$333.45
2037	$-	$147.74	$264.77	$232.04	$169.86	$346.98	$610.55	$418.04
2038	$-	$166.43	$300.96	$262.89	$190.36	$394.15	$704.71	$510.10
2039	$-	$186.50	$341.56	$298.43	$212.30	$443.57	$800.59	$590.99
2040	$-	$209.39	$385.39	$331.69	$235.76	$500.56	$891.66	$659.58
2041	$-	$232.13	$433.49	$371.81	$260.84	$557.31	$991.39	$738.50
2042	$-	$254.57	$481.48	$411.08	$287.61	$612.51	$1,090.91	$809.02
2043	$-	$277.47	$524.97	$450.85	$316.18	$667.02	$1,185.01	$877.52
2044	$-	$301.23	$576.67	$503.85	$346.17	$722.42	$1,292.19	$955.48
2045	$-	$326.79	$640.18	$562.78	$378.11	$782.10	$1,425.67	$1,049.88
2046	$-	$356.21	$694.71	$611.04	$412.12	$851.97	$1,543.28	$1,140.39
2047	$-	$385.90	$758.06	$679.81	$448.31	$922.30	$1,674.22	$1,259.08
2048	$-	$417.35	$820.96	$739.16	$486.79	$996.70	$1,804.32	$1,357.75
2049	$-	$450.65	$908.98	$835.38	$527.69	$1,075.37	$1,989.48	$1,498.33
2050	$-	$510.34	$1,035.16	$962.47	$603.08	$1,214.71	$2,250.09	$1,679.72
Cumulative Total	**$-**	**$5,021.66**	**$9,364.00**	**$8,301.81**	**$5,754.80**	**$11,963.90**	**$21,017.11**	**$15,268.63**

Appendix III: Workforce Participation Impacts

Impacts on Employment (Number of Jobs) by Year

Benefit Scenarios:	Bus-Only Scenario				All-Transit Scenario			
Investment Levels:	Maintain-Existing-System	Business-As-Usual	RTP-Priority Needs	RTP-Total Needs	Maintain-Existing-System	Business-As-Usual	RTP-Priority Needs	RTP-Total Needs
2023	18,296	20,259	18,112	15,662	29,103	32,235	31,512	31,512
2024	18,577	20,664	18,874	16,316	29,909	33,049	32,807	32,807
2025	18,862	21,077	19,669	16,998	30,741	33,888	34,156	34,156
2026	19,151	21,499	20,498	17,708	31,600	34,754	35,561	35,561
2027	19,445	21,928	21,361	18,448	32,486	35,647	37,025	37,024
2028	19,744	22,367	22,261	19,219	33,400	36,568	38,550	38,548
2029	20,047	22,814	23,198	20,022	34,343	37,518	40,138	40,136
2030	20,354	23,270	24,176	20,859	35,317	38,498	41,793	41,790
2031	20,667	23,735	25,194	21,731	36,321	39,509	43,518	43,513
2032	20,984	24,210	26,256	22,639	37,359	40,552	45,314	45,308
2033	21,306	24,694	27,362	23,586	38,429	41,629	47,186	47,178
2034	21,633	25,188	28,515	24,572	39,535	42,740	49,136	49,126
2035	21,966	25,692	29,717	25,600	40,676	43,886	51,168	51,155
2036	22,303	26,206	30,970	26,670	41,854	45,069	53,285	53,269
2037	22,645	26,730	32,275	27,786	43,071	46,290	55,491	55,471
2038	22,993	27,265	33,636	28,948	44,327	47,550	57,790	57,766
2039	23,346	27,810	35,054	30,159	45,625	48,851	60,185	60,156
2040	23,705	28,366	36,532	31,421	46,965	50,195	62,680	62,646
2041	24,069	28,934	38,072	32,736	48,349	51,581	65,281	65,241
2042	24,439	29,513	39,678	34,106	49,778	53,013	67,991	67,945
2043	24,814	30,104	41,352	35,533	51,255	54,492	70,816	70,761
2044	25,196	30,706	43,096	37,020	52,781	56,018	73,759	73,696
2045	25,583	31,321	44,914	38,570	54,357	57,595	76,826	76,754
2046	25,976	31,948	46,809	40,185	55,986	59,223	80,022	79,940
2047	26,375	32,587	48,784	41,867	57,669	60,905	83,353	83,260
2048	26,780	33,240	50,842	43,620	59,408	62,642	86,825	86,720
2049	27,192	33,905	52,988	45,447	61,205	64,437	90,443	90,324
2050	27,610	34,584	55,224	47,350	63,062	66,290	94,214	94,080
Maximum	**27,610**	**34,584**	**55,224**	**47,350**	**63,062**	**66,290**	**94,214**	**94,080**

Impacts on Household Income by in Million Dollars Year

Benefit Scenarios:	Bus-Only Scenario				All-Transit Scenario			
Investment Levels:	Maintain-Existing-System	Business-As-Usual	RTP-Priority Needs	RTP-Total Needs	Maintain-Existing-System	Business-As-Usual	RTP-Priority Needs	RTP-Total Needs
2023	$1,145.36	$1,256.92	$1,073.30	$935.35	$1,846.18	$1,985.67	$1,975.35	$1,975.34
2024	$1,162.93	$1,282.04	$1,118.49	$974.42	$1,897.35	$2,035.83	$2,056.51	$2,056.51
2025	$1,180.78	$1,307.67	$1,165.59	$1,015.13	$1,950.13	$2,087.54	$2,141.05	$2,141.05
2026	$1,198.90	$1,333.81	$1,214.68	$1,057.55	$2,004.59	$2,140.88	$2,229.13	$2,229.11
2027	$1,217.30	$1,360.47	$1,265.84	$1,101.74	$2,060.78	$2,195.88	$2,320.88	$2,320.84
2028	$1,235.98	$1,387.66	$1,319.15	$1,147.78	$2,118.77	$2,252.62	$2,416.46	$2,416.39
2029	$1,254.95	$1,415.41	$1,374.72	$1,195.75	$2,178.61	$2,311.14	$2,516.04	$2,515.92
2030	$1,274.22	$1,443.71	$1,432.64	$1,245.74	$2,240.37	$2,371.51	$2,619.79	$2,619.60
2031	$1,293.78	$1,472.57	$1,492.99	$1,297.81	$2,304.11	$2,433.79	$2,727.88	$2,727.60
2032	$1,313.64	$1,502.02	$1,555.90	$1,352.07	$2,369.91	$2,498.05	$2,840.49	$2,840.11
2033	$1,333.81	$1,532.06	$1,621.47	$1,408.60	$2,437.83	$2,564.36	$2,957.81	$2,957.32
2034	$1,354.29	$1,562.70	$1,689.80	$1,467.50	$2,507.94	$2,632.78	$3,080.06	$3,079.42
2035	$1,375.09	$1,593.95	$1,761.02	$1,528.87	$2,580.34	$2,703.39	$3,207.43	$3,206.61
2036	$1,396.20	$1,625.83	$1,835.25	$1,592.81	$2,655.08	$2,776.27	$3,340.14	$3,339.13
2037	$1,417.64	$1,658.36	$1,912.61	$1,659.44	$2,732.27	$2,851.48	$3,478.42	$3,477.18
2038	$1,439.42	$1,691.53	$1,993.24	$1,728.85	$2,811.97	$2,929.12	$3,622.51	$3,621.01
2039	$1,461.52	$1,725.37	$2,077.28	$1,801.18	$2,894.28	$3,009.27	$3,772.65	$3,770.85
2040	$1,483.97	$1,759.89	$2,164.87	$1,876.54	$2,979.29	$3,092.01	$3,929.09	$3,926.96
2041	$1,506.77	$1,795.11	$2,256.16	$1,955.06	$3,067.09	$3,177.44	$4,092.12	$4,089.62
2042	$1,529.92	$1,831.03	$2,351.31	$2,036.87	$3,157.79	$3,265.64	$4,262.01	$4,259.08
2043	$1,553.42	$1,867.67	$2,450.49	$2,122.12	$3,251.48	$3,356.72	$4,439.04	$4,435.65
2044	$1,577.29	$1,905.05	$2,553.85	$2,210.94	$3,348.26	$3,450.76	$4,623.53	$4,619.62
2045	$1,601.52	$1,943.18	$2,661.58	$2,303.49	$3,448.26	$3,547.89	$4,815.78	$4,811.30
2046	$1,626.13	$1,982.08	$2,773.87	$2,399.92	$3,551.57	$3,648.19	$5,016.15	$5,011.02
2047	$1,651.12	$2,021.75	$2,890.91	$2,500.40	$3,658.33	$3,751.79	$5,224.95	$5,219.13
2048	$1,676.50	$2,062.23	$3,012.90	$2,605.10	$3,768.64	$3,858.80	$5,442.57	$5,435.97
2049	$1,702.27	$2,103.51	$3,140.04	$2,714.19	$3,882.63	$3,969.33	$5,669.37	$5,661.93
2050	$1,728.43	$2,145.63	$3,272.57	$2,827.86	$4,000.44	$4,083.52	$5,905.74	$5,897.37
Cumulative Total	**$39,693.16**	**$46,569.22**	**$55,432.53**	**$48,063.10**	**$77,704.27**	**$80,981.68**	**$100,722.93**	**$100,661.63**

Impacts on Value Added (GDP) by in Million Dollars Year

Benefit Scenarios:	Bus-Only Scenario				All-Transit Scenario			
Investment Levels:	Maintain-Existing-System	Business-As-Usual	RTP-Priority Needs	RTP-Total Needs	Maintain-Existing-System	Business-As-Usual	RTP-Priority Needs	RTP-Total Needs
2023	$1,917.69	$2,059.10	$1,748.60	$1,572.44	$3,080.76	$3,390.54	$3,348.34	$3,348.33
2024	$1,947.11	$2,100.26	$1,822.22	$1,638.13	$3,166.14	$3,476.17	$3,485.92	$3,485.92
2025	$1,976.99	$2,142.23	$1,898.95	$1,706.57	$3,254.23	$3,564.48	$3,629.23	$3,629.23
2026	$2,007.33	$2,185.05	$1,978.92	$1,777.88	$3,345.10	$3,655.55	$3,778.52	$3,778.50
2027	$2,038.14	$2,228.73	$2,062.27	$1,852.17	$3,438.87	$3,749.47	$3,934.05	$3,933.98
2028	$2,069.42	$2,273.28	$2,149.13	$1,929.57	$3,535.64	$3,846.34	$4,096.07	$4,095.95
2029	$2,101.18	$2,318.73	$2,239.66	$2,010.22	$3,635.49	$3,946.27	$4,264.87	$4,264.66
2030	$2,133.44	$2,365.09	$2,334.01	$2,094.25	$3,738.55	$4,049.35	$4,440.72	$4,440.40
2031	$2,166.19	$2,412.38	$2,432.35	$2,181.79	$3,844.92	$4,155.70	$4,623.93	$4,623.47
2032	$2,199.44	$2,460.62	$2,534.83	$2,273.01	$3,954.71	$4,265.42	$4,814.82	$4,814.18
2033	$2,233.21	$2,509.83	$2,641.65	$2,368.04	$4,068.05	$4,378.64	$5,013.70	$5,012.85
2034	$2,267.50	$2,560.02	$2,752.97	$2,467.06	$4,185.06	$4,495.47	$5,220.91	$5,219.82
2035	$2,302.32	$2,611.23	$2,869.00	$2,570.24	$4,305.86	$4,616.04	$5,436.81	$5,435.43
2036	$2,337.67	$2,663.46	$2,989.93	$2,677.73	$4,430.59	$4,740.47	$5,661.76	$5,660.05
2037	$2,373.57	$2,716.73	$3,115.97	$2,789.73	$4,559.39	$4,868.91	$5,896.16	$5,894.05
2038	$2,410.03	$2,771.08	$3,247.34	$2,906.43	$4,692.39	$5,001.48	$6,140.40	$6,137.85
2039	$2,447.04	$2,826.52	$3,384.25	$3,028.02	$4,829.74	$5,138.33	$6,394.89	$6,391.84
2040	$2,484.63	$2,883.07	$3,526.95	$3,154.71	$4,971.60	$5,279.61	$6,660.08	$6,656.47
2041	$2,522.80	$2,940.76	$3,675.68	$3,286.71	$5,118.12	$5,425.48	$6,936.42	$6,932.18
2042	$2,561.55	$2,999.61	$3,830.70	$3,424.25	$5,269.47	$5,576.08	$7,224.39	$7,219.43
2043	$2,600.91	$3,059.64	$3,992.26	$3,567.56	$5,425.81	$5,731.59	$7,524.47	$7,518.72
2044	$2,640.87	$3,120.87	$4,160.66	$3,716.88	$5,587.32	$5,892.18	$7,837.19	$7,830.56
2045	$2,681.45	$3,183.33	$4,336.18	$3,872.47	$5,754.18	$6,058.01	$8,163.08	$8,155.48
2046	$2,722.65	$3,247.05	$4,519.12	$4,034.59	$5,926.59	$6,229.29	$8,502.71	$8,494.02
2047	$2,764.49	$3,312.05	$4,709.79	$4,203.50	$6,104.73	$6,406.18	$8,856.65	$8,846.78
2048	$2,806.98	$3,378.35	$4,908.53	$4,379.51	$6,288.81	$6,588.90	$9,225.52	$9,214.35
2049	$2,850.12	$3,445.99	$5,115.67	$4,562.91	$6,479.03	$6,777.64	$9,609.96	$9,597.35
2050	$2,893.93	$3,514.99	$5,331.58	$4,754.00	$6,675.62	$6,972.61	$10,010.63	$9,996.45
Cumulative Total	**$66,458.65**	**$76,290.08**	**$90,309.17**	**$80,800.40**	**$129,666.79**	**$138,276.19**	**$170,732.20**	**$170,628.30**

Impacts on Business Outputs by in Million Dollars Year

Benefit Scenarios:	Bus-Only Scenario				All-Transit Scenario			
Investment Levels:	Maintain-Existing-System	Business-As-Usual	RTP-Priority Needs	RTP-Total Needs	Maintain-Existing-System	Business-As-Usual	RTP-Priority Needs	RTP-Total Needs
2023	$3,736.00	$4,017.61	$3,417.73	$3,097.51	$6,030.84	$6,593.48	$6,481.33	$6,481.30
2024	$3,793.33	$4,097.91	$3,561.64	$3,226.91	$6,197.97	$6,760.02	$6,747.63	$6,747.63
2025	$3,851.53	$4,179.81	$3,711.61	$3,361.73	$6,370.40	$6,931.75	$7,025.03	$7,025.03
2026	$3,910.64	$4,263.36	$3,867.92	$3,502.19	$6,548.30	$7,108.85	$7,314.01	$7,313.97
2027	$3,970.66	$4,348.58	$4,030.82	$3,648.54	$6,731.86	$7,291.49	$7,615.06	$7,614.94
2028	$4,031.60	$4,435.51	$4,200.60	$3,801.02	$6,921.28	$7,479.88	$7,928.69	$7,928.45
2029	$4,093.48	$4,524.19	$4,377.55	$3,959.88	$7,116.76	$7,674.20	$8,255.43	$8,255.02
2030	$4,156.32	$4,614.64	$4,561.96	$4,125.40	$7,318.50	$7,874.66	$8,595.83	$8,595.21
2031	$4,220.12	$4,706.91	$4,754.16	$4,297.85	$7,526.72	$8,081.47	$8,950.47	$8,949.58
2032	$4,284.91	$4,801.04	$4,954.48	$4,477.54	$7,741.66	$8,294.85	$9,319.96	$9,318.73
2033	$4,350.70	$4,897.05	$5,163.26	$4,664.75	$7,963.53	$8,515.02	$9,704.92	$9,703.29
2034	$4,417.50	$4,994.98	$5,380.85	$4,859.80	$8,192.58	$8,742.22	$10,106.02	$10,103.91
2035	$4,485.33	$5,094.89	$5,607.64	$5,063.04	$8,429.06	$8,976.68	$10,523.93	$10,521.26
2036	$4,554.21	$5,196.79	$5,844.00	$5,274.79	$8,673.23	$9,218.67	$10,959.38	$10,956.05
2037	$4,624.15	$5,300.75	$6,090.35	$5,495.42	$8,925.36	$9,468.43	$11,413.09	$11,409.02
2038	$4,695.17	$5,406.79	$6,347.11	$5,725.30	$9,185.72	$9,726.24	$11,885.86	$11,880.93
2039	$4,767.28	$5,514.96	$6,614.72	$5,964.82	$9,454.60	$9,992.37	$12,378.48	$12,372.58
2040	$4,840.51	$5,625.30	$6,893.63	$6,214.38	$9,732.29	$10,267.12	$12,891.80	$12,884.81
2041	$4,914.87	$5,737.86	$7,184.33	$6,474.41	$10,019.12	$10,550.78	$13,426.71	$13,418.49
2042	$4,990.37	$5,852.68	$7,487.32	$6,745.34	$10,315.39	$10,843.65	$13,984.12	$13,974.53
2043	$5,067.04	$5,969.80	$7,803.12	$7,027.65	$10,621.44	$11,146.07	$14,564.99	$14,553.86
2044	$5,144.89	$6,089.28	$8,132.26	$7,321.79	$10,937.61	$11,458.35	$15,170.31	$15,157.48
2045	$5,223.94	$6,211.15	$8,475.32	$7,628.27	$11,264.26	$11,780.85	$15,801.13	$15,786.41
2046	$5,304.22	$6,335.48	$8,832.89	$7,947.62	$11,601.75	$12,113.92	$16,458.54	$16,441.73
2047	$5,385.73	$6,462.30	$9,205.57	$8,280.37	$11,950.48	$12,457.93	$17,143.66	$17,124.56
2048	$5,468.50	$6,591.67	$9,594.02	$8,627.08	$12,310.82	$12,813.25	$17,857.68	$17,836.05
2049	$5,552.55	$6,723.63	$9,998.89	$8,988.34	$12,683.21	$13,180.29	$18,601.84	$18,577.42
2050	$5,637.89	$6,858.25	$10,420.88	$9,364.77	$13,068.05	$13,559.44	$19,377.41	$19,349.95
Cumulative Total	**$129,473.42**	**$148,853.17**	**$176,514.64**	**$159,166.48**	**$253,832.79**	**$268,901.94**	**$330,483.31**	**$330,282.20**

Appendix IV: Transit Spending Impacts

Impacts on Employment (Number of Jobs) by Year

Benefit Scenarios:	Bus-Only Scenario				All-Transit Scenario			
Investment Levels:	Maintain-Existing-System	Business-As-Usual	RTP-Priority Needs	RTP-Total Needs	Maintain-Existing-System	Business-As-Usual	RTP-Priority Needs	RTP-Total Needs
2023	7,474	10,826	10,826	10,826	9,664	13,506	13,506	13,506
2024	9,753	10,871	10,871	10,871	13,190	14,424	14,424	14,424
2025	10,892	12,923	12,923	12,923	15,106	17,223	17,223	17,223
2026	10,886	11,949	11,949	11,949	15,090	16,123	16,123	16,123
2027	11,506	10,741	10,741	10,741	15,982	14,964	14,964	14,964
2028	12,895	11,813	11,813	11,813	18,648	17,179	17,179	17,179
2029	10,037	9,339	11,025	11,086	14,124	13,547	18,669	21,446
2030	10,392	9,654	11,395	11,458	14,629	14,007	22,042	28,538
2031	11,369	10,506	12,304	12,369	16,172	15,378	23,715	30,470
2032	12,517	11,505	14,538	14,860	17,840	16,859	23,768	27,460
2033	12,582	11,571	19,963	20,076	17,280	16,385	28,153	28,717
2034	15,225	13,861	26,401	26,633	19,931	18,730	32,744	33,443
2035	14,681	13,442	28,547	28,660	20,026	18,873	36,855	48,469
2036	15,211	13,947	31,555	32,086	20,598	19,431	43,307	71,088
2037	17,849	16,235	24,940	26,510	26,341	24,494	40,815	74,157
2038	18,747	16,842	27,181	28,069	26,550	24,514	39,375	59,891
2039	21,579	19,374	24,190	24,616	30,385	27,979	34,610	45,609
2040	19,505	17,603	26,400	30,320	28,284	26,162	36,930	51,921
2041	17,303	15,707	24,721	25,175	25,385	23,630	34,677	41,876
2042	16,337	14,906	21,152	22,958	23,205	21,758	30,025	37,756
2043	16,603	15,007	26,194	32,100	22,489	20,929	34,324	43,114
2044	17,613	15,879	35,627	38,116	23,779	22,071	44,307	53,507
2045	21,343	19,109	25,189	25,770	28,725	26,435	34,719	47,510
2046	19,855	17,831	28,805	43,186	27,179	25,091	38,462	65,870
2047	20,388	18,303	26,041	30,088	27,899	25,746	35,866	47,646
2048	20,938	18,790	46,020	60,420	28,643	26,422	56,602	74,804
2049	21,506	19,294	33,407	33,978	29,411	27,119	43,921	48,054
2050	21,057	18,919	27,684	34,835	28,412	26,266	37,659	48,656
Maximum	**21,579**	**19,374**	**46,020**	**60,420**	**30,385**	**27,979**	**56,602**	**74,804**

Impacts on Household Income by in Million Dollars Year

Benefit Scenarios:	Bus-Only Scenario				All-Transit Scenario			
Investment Levels:	Maintain-Existing-System	Business-As-Usual	RTP-Priority Needs	RTP-Total Needs	Maintain-Existing-System	Business-As-Usual	RTP-Priority Needs	RTP-Total Needs
2023	$157.99	$285.00	$285.00	$285.00	$197.16	$333.92	$333.92	$333.92
2024	$206.16	$286.19	$286.19	$286.19	$269.11	$356.62	$356.62	$356.62
2025	$230.24	$340.20	$340.20	$340.20	$308.19	$425.82	$425.82	$425.82
2026	$230.11	$314.56	$314.56	$314.56	$307.86	$398.63	$398.63	$398.63
2027	$243.22	$282.77	$282.77	$282.77	$326.06	$369.97	$369.97	$369.97
2028	$272.58	$310.98	$310.98	$310.98	$380.45	$424.74	$424.74	$424.74
2029	$212.18	$245.85	$290.24	$291.84	$288.16	$334.93	$461.58	$530.23
2030	$219.67	$254.14	$299.97	$301.62	$298.47	$346.30	$544.96	$705.58
2031	$240.33	$276.58	$323.90	$325.61	$329.96	$380.21	$586.33	$753.34
2032	$264.58	$302.88	$382.70	$391.19	$363.99	$416.83	$587.63	$678.92
2033	$265.96	$304.60	$525.52	$528.50	$352.56	$405.09	$696.05	$709.99
2034	$321.84	$364.90	$695.00	$701.10	$406.65	$463.07	$809.55	$826.85
2035	$310.33	$353.86	$751.49	$754.48	$408.58	$466.61	$911.20	$1,198.35
2036	$321.55	$367.15	$830.68	$844.66	$420.25	$480.41	$1,070.71	$1,757.57
2037	$377.30	$427.38	$656.55	$697.89	$537.43	$605.58	$1,009.12	$1,833.45
2038	$396.28	$443.36	$715.55	$738.90	$541.69	$606.07	$973.50	$1,480.74
2039	$456.16	$510.02	$636.81	$648.01	$619.93	$691.76	$855.69	$1,127.64
2040	$412.31	$463.39	$694.97	$798.18	$577.05	$646.82	$913.05	$1,283.70
2041	$365.77	$413.48	$650.78	$662.72	$517.92	$584.22	$857.35	$1,035.35
2042	$345.35	$392.41	$556.82	$604.37	$473.44	$537.95	$742.33	$933.48
2043	$350.97	$395.06	$689.57	$845.03	$458.83	$517.44	$848.62	$1,065.94
2044	$372.32	$418.01	$937.88	$1,003.40	$485.15	$545.68	$1,095.45	$1,322.90
2045	$451.16	$503.05	$663.10	$678.39	$586.06	$653.58	$858.40	$1,174.63
2046	$419.71	$469.39	$758.29	$1,136.87	$554.51	$620.35	$950.92	$1,628.58
2047	$430.98	$481.82	$685.52	$792.05	$569.21	$636.54	$886.74	$1,177.99
2048	$442.60	$494.66	$1,211.48	$1,590.55	$584.38	$653.25	$1,399.41	$1,849.45
2049	$454.61	$507.90	$879.44	$894.46	$600.05	$670.49	$1,085.91	$1,188.09
2050	$445.11	$498.05	$728.79	$917.04	$579.67	$649.40	$931.09	$1,202.96
Cumulative Total	**$9,217.36**	**$10,707.63**	**$16,384.75**	**$17,966.58**	**$12,342.76**	**$14,222.28**	**$21,385.30**	**$27,775.44**

Impacts on Value Added (GDP) by in Million Dollars Year

Benefit Scenarios:	Bus-Only Scenario				All-Transit Scenario			
Investment Levels:	Maintain-Existing-System	Business-As-Usual	RTP-Priority Needs	RTP-Total Needs	Maintain-Existing-System	Business-As-Usual	RTP-Priority Needs	RTP-Total Needs
2023	$283.13	$478.26	$478.26	$478.26	$358.97	$572.87	$572.87	$572.87
2024	$369.46	$480.24	$480.24	$480.24	$489.97	$611.83	$611.83	$611.83
2025	$412.61	$570.89	$570.89	$570.89	$561.12	$730.55	$730.55	$730.55
2026	$412.39	$527.85	$527.85	$527.85	$560.52	$683.91	$683.91	$683.91
2027	$435.87	$474.50	$474.50	$474.50	$593.65	$634.73	$634.73	$634.73
2028	$488.50	$521.86	$521.86	$521.86	$692.69	$728.69	$728.69	$728.69
2029	$380.24	$412.56	$487.05	$489.73	$524.64	$574.61	$791.91	$909.69
2030	$393.67	$426.46	$503.38	$506.15	$543.43	$594.13	$934.95	$1,210.51
2031	$430.70	$464.12	$543.53	$546.39	$600.75	$652.29	$1,005.93	$1,292.46
2032	$474.16	$508.25	$642.20	$656.46	$662.71	$715.13	$1,008.15	$1,164.78
2033	$476.63	$511.15	$881.86	$886.87	$641.90	$694.99	$1,194.17	$1,218.08
2034	$576.77	$612.32	$1,166.26	$1,176.51	$740.38	$794.46	$1,388.89	$1,418.57
2035	$556.14	$593.80	$1,261.06	$1,266.08	$743.90	$800.52	$1,563.28	$2,055.93
2036	$576.24	$616.10	$1,393.94	$1,417.40	$765.15	$824.20	$1,836.94	$3,015.33
2037	$676.17	$717.18	$1,101.74	$1,171.11	$978.48	$1,038.95	$1,731.27	$3,145.52
2038	$710.18	$744.00	$1,200.74	$1,239.94	$986.25	$1,039.80	$1,670.17	$2,540.39
2039	$817.48	$855.85	$1,068.62	$1,087.42	$1,128.70	$1,186.80	$1,468.06	$1,934.62
2040	$738.90	$777.60	$1,166.22	$1,339.41	$1,050.64	$1,109.71	$1,566.45	$2,202.36
2041	$655.49	$693.86	$1,092.06	$1,112.09	$942.96	$1,002.30	$1,470.89	$1,776.27
2042	$618.90	$658.49	$934.39	$1,014.19	$861.98	$922.92	$1,273.57	$1,601.51
2043	$628.98	$662.94	$1,157.15	$1,418.03	$835.38	$887.74	$1,455.92	$1,828.75
2044	$667.24	$701.46	$1,573.84	$1,683.79	$883.30	$936.18	$1,879.39	$2,269.60
2045	$808.52	$844.16	$1,112.74	$1,138.39	$1,067.04	$1,121.30	$1,472.69	$2,015.24
2046	$752.17	$787.67	$1,272.47	$1,907.75	$1,009.59	$1,064.30	$1,631.43	$2,794.03
2047	$772.35	$808.54	$1,150.36	$1,329.13	$1,036.35	$1,092.07	$1,521.32	$2,021.00
2048	$793.19	$830.08	$2,032.96	$2,669.06	$1,063.97	$1,120.73	$2,400.87	$3,172.98
2049	$814.70	$852.30	$1,475.78	$1,500.98	$1,092.49	$1,150.31	$1,863.02	$2,038.31
2050	$797.67	$835.76	$1,222.97	$1,538.86	$1,055.40	$1,114.13	$1,597.40	$2,063.83
Cumulative Total	**$16,518.43**	**$17,968.25**	**$27,494.91**	**$30,149.35**	**$22,472.30**	**$24,400.15**	**$36,689.24**	**$47,652.34**

Impacts on Business Outputs by in Million Dollars Year

Benefit Scenarios:	Bus-Only Scenario				All-Transit Scenario			
Investment Levels:	Maintain-Existing-System	Business-As-Usual	RTP-Priority Needs	RTP-Total Needs	Maintain-Existing-System	Business-As-Usual	RTP-Priority Needs	RTP-Total Needs
2023	$551.22	$932.64	$932.64	$932.64	$705.08	$1,128.86	$1,128.86	$1,128.86
2024	$719.29	$936.51	$936.51	$936.51	$962.38	$1,205.63	$1,205.63	$1,205.63
2025	$803.30	$1,113.27	$1,113.27	$1,113.27	$1,102.13	$1,439.58	$1,439.58	$1,439.58
2026	$802.87	$1,029.35	$1,029.35	$1,029.35	$1,100.96	$1,347.66	$1,347.66	$1,347.66
2027	$848.59	$925.32	$925.32	$925.32	$1,166.03	$1,250.75	$1,250.75	$1,250.75
2028	$951.04	$1,017.66	$1,017.66	$1,017.66	$1,360.55	$1,435.90	$1,435.90	$1,435.90
2029	$740.29	$804.51	$949.79	$955.02	$1,030.49	$1,132.28	$1,560.47	$1,792.56
2030	$766.43	$831.63	$981.62	$987.03	$1,067.38	$1,170.74	$1,842.34	$2,385.35
2031	$838.52	$905.06	$1,059.93	$1,065.51	$1,179.96	$1,285.36	$1,982.20	$2,546.82
2032	$923.13	$991.12	$1,252.35	$1,280.14	$1,301.67	$1,409.17	$1,986.59	$2,295.23
2033	$927.93	$996.77	$1,719.69	$1,729.47	$1,260.79	$1,369.50	$2,353.14	$2,400.26
2034	$1,122.89	$1,194.08	$2,274.29	$2,294.27	$1,454.22	$1,565.51	$2,736.84	$2,795.32
2035	$1,082.72	$1,157.96	$2,459.17	$2,468.96	$1,461.14	$1,577.45	$3,080.48	$4,051.26
2036	$1,121.87	$1,201.44	$2,718.29	$2,764.03	$1,502.88	$1,624.11	$3,619.74	$5,941.80
2037	$1,316.41	$1,398.56	$2,148.47	$2,283.75	$1,921.90	$2,047.29	$3,411.51	$6,198.33
2038	$1,382.62	$1,450.85	$2,341.54	$2,417.97	$1,937.15	$2,048.95	$3,291.12	$5,005.91
2039	$1,591.52	$1,668.98	$2,083.89	$2,120.54	$2,216.94	$2,338.62	$2,892.84	$3,812.22
2040	$1,438.54	$1,516.38	$2,274.21	$2,611.96	$2,063.62	$2,186.71	$3,086.73	$4,339.80
2041	$1,276.16	$1,353.07	$2,129.59	$2,168.67	$1,852.13	$1,975.06	$2,898.43	$3,500.18
2042	$1,204.92	$1,284.11	$1,822.12	$1,977.74	$1,693.07	$1,818.65	$2,509.60	$3,155.82
2043	$1,224.54	$1,292.78	$2,256.53	$2,765.26	$1,640.83	$1,749.31	$2,868.93	$3,603.61
2044	$1,299.03	$1,367.90	$3,069.11	$3,283.52	$1,734.95	$1,844.76	$3,703.38	$4,472.31
2045	$1,574.08	$1,646.17	$2,169.92	$2,219.95	$2,095.84	$2,209.54	$2,901.97	$3,971.08
2046	$1,464.37	$1,536.02	$2,481.42	$3,720.26	$1,982.99	$2,097.23	$3,214.77	$5,505.72
2047	$1,503.67	$1,576.71	$2,243.28	$2,591.90	$2,035.55	$2,151.96	$2,997.80	$3,982.43
2048	$1,544.24	$1,618.71	$3,964.42	$5,204.87	$2,089.82	$2,208.44	$4,730.98	$6,252.44
2049	$1,586.12	$1,662.06	$2,877.87	$2,927.01	$2,145.84	$2,266.72	$3,671.14	$4,016.55
2050	$1,552.97	$1,629.80	$2,384.87	$3,000.90	$2,072.98	$2,195.42	$3,147.72	$4,066.82
Cumulative Total	**$32,159.29**	**$35,039.41**	**$53,617.11**	**$58,793.45**	**$44,139.27**	**$48,081.15**	**$72,297.12**	**$93,900.20**

Appendix V: Fiscal Impacts

Fiscal Impacts at 'Maintain Existing System' Investment Level in Million Dollars by Year

Benefit Scenarios:	Bus-Only Scenario				All-Transit Scenario			
Levels:	Local	State	Federal	Total	Local	State	Federal	Total
2023	$57.53	$64.74	$54.38	$176.64	$94.39	$111.40	$119.21	$325.01
2024	$66.54	$74.88	$62.90	$204.32	$107.80	$127.23	$136.14	$371.17
2025	$71.22	$80.14	$67.32	$218.68	$116.17	$137.11	$146.72	$400.00
2026	$71.54	$80.51	$67.62	$219.68	$118.48	$139.84	$149.64	$407.96
2027	$74.24	$83.55	$70.17	$227.97	$123.79	$146.10	$156.34	$426.23
2028	$79.87	$89.87	$75.49	$245.23	$134.86	$159.16	$170.32	$464.34
2029	$69.34	$78.02	$65.54	$212.90	$123.12	$145.31	$155.50	$423.93
2030	$71.02	$79.92	$67.13	$218.06	$127.53	$150.52	$161.07	$439.11
2031	$75.06	$84.47	$70.95	$230.48	$135.36	$159.76	$170.96	$466.08
2032	$79.75	$89.74	$75.38	$244.87	$143.72	$169.62	$181.51	$494.84
2033	$80.32	$90.38	$75.92	$246.62	$145.09	$171.24	$183.24	$499.57
2034	$90.68	$102.05	$85.71	$278.44	$156.83	$185.10	$198.07	$540.01
2035	$88.92	$100.06	$84.05	$273.03	$160.57	$189.51	$202.79	$552.86
2036	$91.24	$102.67	$86.24	$280.15	$165.96	$195.88	$209.60	$571.44
2037	$101.57	$114.29	$96.00	$311.85	$187.99	$221.88	$237.43	$647.31
2038	$105.26	$118.45	$99.49	$323.21	$192.54	$227.25	$243.17	$662.96
2039	$116.31	$130.89	$109.94	$357.14	$208.81	$246.45	$263.72	$718.97
2040	$108.69	$122.31	$102.74	$333.74	$206.32	$243.51	$260.58	$710.41
2041	$100.58	$113.18	$95.07	$308.83	$201.47	$237.79	$254.45	$693.71
2042	$97.16	$109.33	$91.83	$298.31	$199.10	$234.99	$251.45	$685.54
2043	$98.40	$110.73	$93.01	$302.15	$201.59	$237.93	$254.60	$694.12
2044	$102.47	$115.31	$96.85	$314.63	$210.66	$248.63	$266.05	$725.33
2045	$116.87	$131.51	$110.46	$358.83	$231.59	$273.34	$292.49	$797.41
2046	$111.41	$125.37	$105.31	$342.09	$232.05	$273.87	$293.06	$798.98
2047	$113.63	$127.87	$107.40	$348.91	$239.96	$283.22	$303.07	$826.25
2048	$115.91	$130.44	$109.56	$355.91	$248.21	$292.95	$313.47	$854.63
2049	$118.26	$133.08	$111.78	$363.12	$256.79	$303.08	$324.32	$884.18
2050	$116.76	$131.38	$110.36	$358.50	$261.60	$308.75	$330.39	$900.73
Cumulative Total	**$2,590.58**	**$2,915.13**	**$2,448.57**	**$7,954.27**	**$4,932.33**	**$5,821.43**	**$6,229.34**	**$16,983.10**

Fiscal Impacts at 'Business As Usual' Investment Level in Million Dollars by Year

Benefit Scenarios:	Bus-Only Scenario				All-Transit Scenario			
Levels:	Local	State	Federal	Total	Local	State	Federal	Total
2023	$67.75	$78.50	$77.56	$223.81	$104.68	$125.82	$145.76	$376.26
2024	$68.64	$79.54	$78.58	$226.76	$110.17	$132.42	$153.41	$396.00
2025	$77.36	$89.64	$88.56	$255.57	$122.14	$146.81	$170.07	$439.02
2026	$74.39	$86.20	$85.16	$245.75	$121.16	$145.62	$168.70	$435.48
2027	$70.52	$81.72	$80.74	$232.98	$120.04	$144.28	$167.14	$431.46
2028	$75.52	$87.51	$86.46	$249.49	$130.37	$156.70	$181.53	$468.61
2029	$66.80	$77.40	$76.47	$220.66	$121.18	$145.64	$168.72	$435.54
2030	$68.89	$79.82	$78.87	$227.58	$125.76	$151.15	$175.10	$452.00
2031	$73.11	$84.72	$83.70	$241.53	$133.55	$160.51	$185.95	$480.01
2032	$77.96	$90.33	$89.25	$257.53	$141.89	$170.54	$197.57	$510.00
2033	$79.23	$91.81	$90.71	$261.75	$143.83	$172.87	$200.27	$516.97
2034	$89.20	$103.35	$102.11	$294.66	$155.40	$186.78	$216.38	$558.55
2035	$88.73	$102.81	$101.57	$293.11	$159.79	$192.06	$222.49	$574.34
2036	$91.88	$106.46	$105.19	$303.53	$165.74	$199.21	$230.78	$595.72
2037	$102.03	$118.22	$116.80	$337.05	$187.08	$224.86	$260.49	$672.43
2038	$105.75	$122.53	$121.06	$349.34	$191.83	$230.56	$267.10	$689.50
2039	$117.02	$135.60	$133.97	$386.58	$208.39	$250.47	$290.16	$749.03
2040	$111.70	$129.43	$127.87	$369.00	$207.50	$249.40	$288.93	$745.84
2041	$105.90	$122.71	$121.23	$349.84	$204.30	$245.56	$284.47	$734.34
2042	$104.36	$120.93	$119.48	$344.77	$203.39	$244.46	$283.20	$731.06
2043	$106.37	$123.25	$121.77	$351.38	$206.09	$247.70	$286.96	$740.75
2044	$111.42	$129.10	$127.55	$368.08	$215.60	$259.13	$300.20	$774.93
2045	$125.73	$145.69	$143.94	$415.36	$236.27	$283.97	$328.98	$849.21
2046	$122.69	$142.17	$140.46	$405.32	$238.17	$286.26	$331.63	$856.07
2047	$126.50	$146.58	$144.81	$417.89	$246.98	$296.85	$343.89	$887.73
2048	$130.46	$151.16	$149.35	$430.97	$256.15	$307.88	$356.67	$920.70
2049	$134.58	$155.94	$154.07	$444.59	$265.71	$319.36	$369.97	$955.05
2050	$136.39	$158.04	$156.14	$450.57	$272.41	$327.41	$379.30	$979.12
Cumulative Total	**$2,710.88**	**$3,141.16**	**$3,103.41**	**$8,955.45**	**$4,995.58**	**$6,004.30**	**$6,955.83**	**$17,955.71**

Fiscal Impacts at 'RTP-Priority Needs' Investment Level in Million Dollars by Year

Benefit Scenarios:	Bus-Only Scenario				All-Transit Scenario			
Levels:	Local	State	Federal	Total	Local	State	Federal	Total
2023	$67.41	$78.23	$77.86	$223.51	$103.86	$125.16	$146.48	$375.50
2024	$68.96	$80.03	$79.65	$228.64	$111.29	$134.11	$156.97	$402.38
2025	$78.33	$90.90	$90.47	$259.70	$125.24	$150.92	$176.64	$452.81
2026	$76.11	$88.33	$87.91	$252.35	$126.45	$152.38	$178.34	$457.17
2027	$73.03	$84.75	$84.35	$242.13	$127.59	$153.75	$179.95	$461.29
2028	$78.79	$91.44	$91.01	$261.24	$140.16	$168.90	$197.69	$506.75
2029	$77.47	$89.90	$89.48	$256.85	$150.62	$181.51	$212.44	$544.57
2030	$80.66	$93.60	$93.16	$267.43	$167.67	$202.05	$236.48	$606.21
2031	$86.02	$99.82	$99.35	$285.19	$179.44	$216.23	$253.08	$648.75
2032	$96.59	$112.09	$111.56	$320.23	$186.11	$224.27	$262.49	$672.87
2033	$119.64	$138.83	$138.18	$396.65	$207.54	$250.10	$292.71	$750.35
2034	$146.96	$170.54	$169.73	$487.23	$230.18	$277.38	$324.64	$832.20
2035	$158.03	$183.39	$182.52	$523.93	$251.78	$303.40	$355.10	$910.28
2036	$172.63	$200.34	$199.39	$572.36	$281.77	$339.55	$397.41	$1,018.74
2037	$150.24	$174.35	$173.52	$498.10	$282.57	$340.51	$398.54	$1,021.63
2038	$161.94	$187.92	$187.03	$536.89	$287.07	$345.94	$404.89	$1,037.90
2039	$153.63	$178.29	$177.44	$509.36	$280.69	$338.25	$395.89	$1,014.82
2040	$165.62	$192.20	$191.29	$549.10	$298.05	$359.16	$420.37	$1,077.58
2041	$162.79	$188.92	$188.02	$539.74	$300.62	$362.26	$423.99	$1,086.86
2042	$152.71	$177.21	$176.37	$506.29	$295.34	$355.90	$416.55	$1,067.80
2043	$175.80	$204.01	$203.04	$582.84	$320.06	$385.68	$451.41	$1,157.15
2044	$216.25	$250.96	$249.77	$716.98	$364.50	$439.24	$514.10	$1,317.85
2045	$180.40	$209.35	$208.36	$598.12	$344.61	$415.27	$486.04	$1,245.93
2046	$198.60	$230.47	$229.38	$658.44	$369.00	$444.66	$520.44	$1,334.10
2047	$192.54	$223.44	$222.38	$638.36	$372.90	$449.36	$525.93	$1,348.18
2048	$274.49	$318.54	$317.03	$910.06	$455.13	$548.46	$641.92	$1,645.51
2049	$231.49	$268.63	$267.36	$767.48	$427.77	$515.48	$603.33	$1,546.58
2050	$216.76	$251.54	$250.35	$718.66	$424.96	$512.09	$599.36	$1,536.41
Cumulative Total	**$4,013.88**	**$4,658.01**	**$4,635.96**	**$13,307.86**	**$7,212.99**	**$8,691.97**	**$10,173.18**	**$26,078.14**

Fiscal Impacts at 'RTP-Total Needs' Investment Level in Million Dollars by Year

Benefit Scenarios:	Bus-Only Scenario				All-Transit Scenario			
Levels:	Local	State	Federal	Total	Local	State	Federal	Total
2023	$67.44	$78.22	$77.64	$223.30	$104.15	$125.46	$146.61	$376.21
2024	$68.87	$79.87	$79.28	$228.02	$111.22	$133.98	$156.56	$401.76
2025	$78.11	$90.59	$89.93	$258.63	$124.76	$150.29	$175.62	$450.67
2026	$75.74	$87.85	$87.20	$250.80	$125.43	$151.09	$176.56	$453.08
2027	$72.51	$84.10	$83.48	$240.08	$126.00	$151.78	$177.37	$455.15
2028	$78.11	$90.60	$89.93	$258.65	$138.01	$166.25	$194.28	$498.54
2029	$76.85	$89.14	$88.48	$254.47	$157.13	$189.28	$221.19	$567.60
2030	$79.88	$92.64	$91.96	$264.48	$186.03	$224.09	$261.87	$671.99
2031	$85.06	$98.65	$97.92	$281.63	$198.01	$238.52	$278.72	$715.24
2032	$96.43	$111.84	$111.02	$319.28	$193.63	$233.25	$272.57	$699.45
2033	$118.47	$137.41	$136.40	$392.29	$203.67	$245.34	$286.70	$735.71
2034	$146.02	$169.36	$168.11	$483.48	$225.60	$271.75	$317.56	$814.91
2035	$156.35	$181.34	$180.00	$517.69	$282.49	$340.28	$397.64	$1,020.40
2036	$172.22	$199.75	$198.28	$570.26	$365.66	$440.48	$514.72	$1,320.86
2037	$153.47	$178.00	$176.69	$508.17	$384.35	$462.98	$541.02	$1,388.34
2038	$162.16	$188.08	$186.69	$536.92	$345.24	$415.87	$485.97	$1,247.09
2039	$151.69	$175.93	$174.64	$502.26	$305.80	$368.36	$430.45	$1,104.61
2040	$176.59	$204.82	$203.31	$584.72	$335.18	$403.76	$471.82	$1,210.76
2041	$159.84	$185.39	$184.03	$529.26	$310.19	$373.65	$436.63	$1,120.47
2042	$154.43	$179.12	$177.80	$511.35	$304.92	$367.30	$429.22	$1,101.44
2043	$193.03	$223.89	$222.24	$639.16	$331.56	$399.39	$466.71	$1,197.66
2044	$220.13	$255.32	$253.44	$728.89	$375.63	$452.48	$528.75	$1,356.87
2045	$176.48	$204.69	$203.18	$584.36	$365.46	$440.23	$514.44	$1,320.13
2046	$247.58	$287.15	$285.04	$819.77	$437.11	$526.53	$615.29	$1,578.93
2047	$201.53	$233.74	$232.02	$667.28	$387.15	$466.36	$544.97	$1,398.48
2048	$323.16	$374.81	$372.05	$1,070.02	$489.01	$589.06	$688.35	$1,766.41
2049	$226.72	$262.96	$261.03	$750.71	$411.63	$495.85	$579.43	$1,486.91
2050	$237.25	$275.18	$273.15	$785.58	$427.86	$515.40	$602.28	$1,545.54
Cumulative Total	**$4,156.12**	**$4,820.45**	**$4,784.93**	**$13,761.51**	**$7,752.89**	**$9,339.06**	**$10,913.29**	**$28,005.25**

Appendix VI: Cumulative Fiscal Impacts (2023-2050)

Bus-Only Scenario: Maintain-Existing-System

Description	Employee Compensation	Proprietor Income	Taxes on Production and Import Net of Subsidies	Households	Enterprises (Corporations)	Total
ALL LOCAL TAXES						
Social Insurance Tax-Employee Contribution	$-	$-	$-	$-	$-	$-
Social Insurance Tax-Employer Contribution	$-	$-	$-	$-	$-	$-
TOPI: Sales Tax	$-	$-	$808,128,853	$-	$-	$808,128,853
TOPI: Property Tax	$-	$-	$1,688,447,953	$-	$-	$1,688,447,953
TOPI: Motor Vehicle License	$-	$-	$102,547	$-	$-	$102,547
TOPI: Severance Tax	$-	$-	$-	$-	$-	$-
TOPI: Other Taxes	$-	$-	$72,325,334	$-	$-	$72,325,334
TOPI: Special Assessments	$-	$-	$17,589,212	$-	$-	$17,589,212
OPI: Corporate Profits Tax	$-	$-	$-	$-	$-	$-
Personal Tax: Income Tax	$-	$-	$-	$-	$-	$-
Personal Tax: Motor Vehicle License	$-	$-	$-	$25,720	$-	$25,721
Personal Tax: Property Taxes	$-	$-	$-	$3,957,092	$-	$3,957,091
Personal Tax: Other Tax (Fish/Hunt)	$-	$-	$-	$-	$-	$-
Total Local Taxes	**$-**	**$-**	**$2,586,593,898**	**$3,982,813**	**$-**	**$2,590,576,710**
STATE TAXES						
Social Insurance Tax-Employee Contribution	$551,608	$-	$-	$-	$-	$551,608
Social Insurance Tax-Employer Contribution	$644,888	$-	$-	$-	$-	$644,888
TOPI: Sales Tax	$-	$-	$2,212,189,379	$-	$-	$2,212,189,379
TOPI: Property Tax	$-	$-	$-	$-	$-	$-
TOPI: Motor Vehicle License	$-	$-	$40,970,096	$-	$-	$40,970,096
TOPI: Severance Tax	$-	$-	$18,884,076	$-	$-	$18,884,076
TOPI: Other Taxes	$-	$-	$29,103,708	$-	$-	$29,103,708
TOPI: Special Assessments	$-	$-	$-	$-	$-	$-
OPI: Corporate Profits Tax	$-	$-	$-	$-	$77,651,991	$77,651,991
Personal Tax: Income Tax	$-	$-	$-	$512,604,418	$-	$512,604,418
Personal Tax: Motor Vehicle License	$-	$-	$-	$12,363,621	$-	$12,363,622
Personal Tax: Property Taxes	$-	$-	$-	$-	$-	$-
Personal Tax: Other Tax (Fish/Hunt)	$-	$-	$-	$10,164,394	$-	$10,164,392
Total State Taxes	**$1,196,496**	**$-**	**$2,301,147,260**	**$535,132,433**	**$77,651,991**	**$2,915,128,179**
FEDERAL TAXES						
Social Insurance Tax-Employee Contribution	$862,230,145	$124,750,352	$-	$-	$-	$986,980,497

Description	Employee Compensation	Proprietor Income	Taxes on Production and Import Net of Subsidies	Households	Enterprises (Corporations)	Total
Social Insurance Tax-Employer Contribution	$778,445,394	$-	$-	$-	$-	$778,445,394
TOPI: Excise Taxes	$-	$-	$(493,586,683)	$-	$-	$(493,586,683)
TOPI: Custom Duty	$-	$-	$(514,489,384)	$-	$-	$(514,489,384)
OPI: Corporate Profits Tax	$-	$-	$-	$-	$316,412,612	$316,412,612
Personal Tax: Income Tax	$-	$-	$-	$1,374,803,812	$-	$1,374,803,811
Personal Tax: Estate and Gift Tax	$-	$-	$-	$-	$-	$-
Total Federal Taxes	**$1,640,675,538**	**$124,750,352**	**$(1,008,076,067)**	**$1,374,803,812**	**$316,412,612**	**$2,448,566,248**
TOTAL TAXES	**$1,641,872,034**	**$124,750,352**	**$3,879,665,091**	**$1,913,919,058**	**$394,064,603**	**$7,954,271,137**

Bus-Only Scenario: Business-As-Usual

Description	Employee Compensation	Proprietor Income	Taxes on Production and Import Net of Subsidies	Households	Enterprises (Corporations)	Total
ALL LOCAL TAXES						
Social Insurance Tax-Employee Contribution	$-	$-	$-	$-	$-	$-
Social Insurance Tax-Employer Contribution	$-	$-	$-	$-	$-	$-
TOPI: Sales Tax	$-	$-	$845,462,221	$-	$-	$845,462,221
TOPI: Property Tax	$-	$-	$1,766,449,683	$-	$-	$1,766,449,683
TOPI: Motor Vehicle License	$-	$-	$107,284	$-	$-	$107,284
TOPI: Severance Tax	$-	$-	$-	$-	$-	$-
TOPI: Other Taxes	$-	$-	$75,666,569	$-	$-	$75,666,569
TOPI: Special Assessments	$-	$-	$18,401,786	$-	$-	$18,401,786
OPI: Corporate Profits Tax	$-	$-	$-	$-	$-	$-
Personal Tax: Income Tax	$-	$-	$-	$-	$-	$-
Personal Tax: Motor Vehicle License	$-	$-	$-	$31,025	$-	$31,024
Personal Tax: Property Taxes	$-	$-	$-	$4,764,398	$-	$4,764,396
Personal Tax: Other Tax (Fish/Hunt)	$-	$-	$-	$-	$-	$-
Total Local Taxes	**$-**	**$-**	**$2,706,087,545**	**$4,795,422**	**$-**	**$2,710,882,965**
STATE TAXES						
Social Insurance Tax-Employee Contribution	$673,911	$-	$-	$-	$-	$673,911
Social Insurance Tax-Employer Contribution	$787,871	$-	$-	$-	$-	$787,871
TOPI: Sales Tax	$-	$-	$2,314,386,549	$-	$-	$2,314,386,549
TOPI: Property Tax	$-	$-	$-	$-	$-	$-
TOPI: Motor Vehicle License	$-	$-	$42,862,804	$-	$-	$42,862,804
TOPI: Severance Tax	$-	$-	$19,756,469	$-	$-	$19,756,469

Description	Employee Compensation	Proprietor Income	Taxes on Production and Import Net of Subsidies	Households	Enterprises (Corporations)	Total
TOPI: Other Taxes	$-	$-	$30,448,220	$-	$-	$30,448,220
TOPI: Special Assessments	$-	$-	$-	$-	$-	$-
OPI: Corporate Profits Tax	$-	$-	$-	$-	$89,036,116	$89,036,116
Personal Tax: Income Tax	$-	$-	$-	$616,092,875	$-	$616,092,874
Personal Tax: Motor Vehicle License	$-	$-	$-	$14,905,495	$-	$14,905,495
Personal Tax: Property Taxes	$-	$-	$-	$-	$-	$-
Personal Tax: Other Tax (Fish/Hunt)	$-	$-	$-	$12,207,764	$-	$12,207,765
Total State Taxes	**$1,461,782**	**$-**	**$2,407,454,043**	**$643,206,136**	**$89,036,116**	**$3,141,158,075**
FEDERAL TAXES						
Social Insurance Tax-Employee Contribution	$1,053,403,056	$140,660,283	$-	$-	$-	$1,194,063,338
Social Insurance Tax-Employer Contribution	$951,041,624	$-	$-	$-	$-	$951,041,624
TOPI: Excise Taxes	$-	$-	$(516,389,054)	$-	$-	$(516,389,054)
TOPI: Custom Duty	$-	$-	$(538,257,403)	$-	$-	$(538,257,403)
OPI: Corporate Profits Tax	$-	$-	$-	$-	$362,800,101	$362,800,101
Personal Tax: Income Tax	$-	$-	$-	$1,650,152,571	$-	$1,650,152,572
Personal Tax: Estate and Gift Tax	$-	$-	$-	$-	$-	$-
Total Federal Taxes	**$2,004,444,679**	**$140,660,283**	**$(1,054,646,456)**	**$1,650,152,571**	**$362,800,101**	**$3,103,411,179**
TOTAL TAXES	**$2,005,906,461**	**$140,660,283**	**$4,058,895,131**	**$2,298,154,129**	**$451,836,217**	**$8,955,452,219**

Bus-Only Scenario: RTP-Priority Needs

Description	Employee Compensation	Proprietor Income	Taxes on Production and Import Net of Subsidies	Households	Enterprises (Corporations)	Total
ALL LOCAL TAXES						
Social Insurance Tax-Employee Contribution	$-	$-	$-	$-	$-	$-
Social Insurance Tax-Employer Contribution	$-	$-	$-	$-	$-	$-
TOPI: Sales Tax	$-	$-	$1,251,824,669	$-	$-	$1,251,824,669
TOPI: Property Tax	$-	$-	$2,615,474,983	$-	$-	$2,615,474,983
TOPI: Motor Vehicle License	$-	$-	$158,849	$-	$-	$158,849
TOPI: Severance Tax	$-	$-	$-	$-	$-	$-
TOPI: Other Taxes	$-	$-	$112,034,902	$-	$-	$112,034,902
TOPI: Special Assessments	$-	$-	$27,246,409	$-	$-	$27,246,409
OPI: Corporate Profits Tax	$-	$-	$-	$-	$-	$-
Personal Tax: Income Tax	$-	$-	$-	$-	$-	$-

Description	Employee Compensation	Proprietor Income	Taxes on Production and Import Net of Subsidies	Households	Enterprises (Corporations)	Total
Personal Tax: Motor Vehicle License	$-	$-	$-	$46,225	$-	$46,225
Personal Tax: Property Taxes	$-	$-	$-	$7,098,303	$-	$7,098,304
Personal Tax: Other Tax (Fish/Hunt)	$-	$-	$-	$-	$-	$-
Total Local Taxes	**$-**	**$-**	**$4,006,739,816**	**$7,144,530**	**$-**	**$4,013,884,346**
STATE TAXES						
Social Insurance Tax-Employee Contribution	$1,004,688	$-	$-	$-	$-	$1,004,688
Social Insurance Tax-Employer Contribution	$1,174,585	$-	$-	$-	$-	$1,174,585
TOPI: Sales Tax	$-	$-	$3,426,771,892	$-	$-	$3,426,771,892
TOPI: Property Tax	$-	$-	$-	$-	$-	$-
TOPI: Motor Vehicle License	$-	$-	$63,464,356	$-	$-	$63,464,356
TOPI: Severance Tax	$-	$-	$29,252,207	$-	$-	$29,252,207
TOPI: Other Taxes	$-	$-	$45,082,834	$-	$-	$45,082,834
TOPI: Special Assessments	$-	$-	$-	$-	$-	$-
OPI: Corporate Profits Tax	$-	$-	$-	$-	$133,046,865	$133,046,865
Personal Tax: Income Tax	$-	$-	$-	$917,821,941	$-	$917,821,941
Personal Tax: Motor Vehicle License	$-	$-	$-	$22,208,472	$-	$22,208,472
Personal Tax: Property Taxes	$-	$-	$-	$-	$-	$-
Personal Tax: Other Tax (Fish/Hunt)	$-	$-	$-	$18,185,887	$-	$18,185,887
Total State Taxes	**$2,179,273**	**$-**	**$3,564,571,289**	**$958,216,300**	**$133,046,865**	**$4,658,013,728**
FEDERAL TAXES						
Social Insurance Tax-Employee Contribution	$1,570,448,623	$208,926,694	$-	$-	$-	$1,779,375,317
Social Insurance Tax-Employer Contribution	$1,417,844,766	$-	$-	$-	$-	$1,417,844,766
TOPI: Excise Taxes	$-	$-	$(764,585,974)	$-	$-	$(764,585,974)
TOPI: Custom Duty	$-	$-	$(796,965,113)	$-	$-	$(796,965,113)
OPI: Corporate Profits Tax	$-	$-	$-	$-	$542,132,992	$542,132,992
Personal Tax: Income Tax	$-	$-	$-	$2,458,160,457	$-	$2,458,160,460
Personal Tax: Estate and Gift Tax	$-	$-	$-	$-	$-	$-
Total Federal Taxes	**$2,988,293,388**	**$208,926,694**	**$(1,561,551,088)**	**$2,458,160,457**	**$542,132,992**	**$4,635,962,447**
TOTAL TAXES	**$2,990,472,662**	**$208,926,694**	**$6,009,760,018**	**$3,423,521,286**	**$675,179,858**	**$13,307,860,520**

Bus-Only Scenario: RTP-Total Needs

Description	Employee Compensation	Proprietor Income	Taxes on Production and Import Net of Subsidies	Households	Enterprises (Corporations)	Total
ALL LOCAL TAXES						
Social Insurance Tax-Employee Contribution	$-	$-	$-	$-	$-	$-
Social Insurance Tax-Employer Contribution	$-	$-	$-	$-	$-	$-
TOPI: Sales Tax	$-	$-	$1,296,190,552	$-	$-	$1,296,190,552
TOPI: Property Tax	$-	$-	$2,708,169,957	$-	$-	$2,708,169,957
TOPI: Motor Vehicle License	$-	$-	$164,479	$-	$-	$164,479
TOPI: Severance Tax	$-	$-	$-	$-	$-	$-
TOPI: Other Taxes	$-	$-	$116,005,529	$-	$-	$116,005,529
TOPI: Special Assessments	$-	$-	$28,212,049	$-	$-	$28,212,049
OPI: Corporate Profits Tax	$-	$-	$-	$-	$-	$-
Personal Tax: Income Tax	$-	$-	$-	$-	$-	$-
Personal Tax: Motor Vehicle License	$-	$-	$-	$47,755	$-	$47,753
Personal Tax: Property Taxes	$-	$-	$-	$7,333,121	$-	$7,333,122
Personal Tax: Other Tax (Fish/Hunt)	$-	$-	$-	$-	$-	$-
Total Local Taxes	$-	$-	$4,148,742,564	$7,380,877	$-	$4,156,123,441
STATE TAXES						
Social Insurance Tax-Employee Contribution	$1,037,698	$-	$-	$-	$-	$1,037,698
Social Insurance Tax-Employer Contribution	$1,213,176	$-	$-	$-	$-	$1,213,176
TOPI: Sales Tax	$-	$-	$3,548,220,015	$-	$-	$3,548,220,015
TOPI: Property Tax	$-	$-	$-	$-	$-	$-
TOPI: Motor Vehicle License	$-	$-	$65,713,595	$-	$-	$65,713,595
TOPI: Severance Tax	$-	$-	$30,288,934	$-	$-	$30,288,934
TOPI: Other Taxes	$-	$-	$46,680,613	$-	$-	$46,680,613
TOPI: Special Assessments	$-	$-	$-	$-	$-	$-
OPI: Corporate Profits Tax	$-	$-	$-	$-	$137,356,314	$137,356,314
Personal Tax: Income Tax	$-	$-	$-	$948,209,595	$-	$948,209,596
Personal Tax: Motor Vehicle License	$-	$-	$-	$22,942,695	$-	$22,942,695
Personal Tax: Property Taxes	$-	$-	$-	$-	$-	$-
Personal Tax: Other Tax (Fish/Hunt)	$-	$-	$-	$18,788,195	$-	$18,788,195
Total State Taxes	$2,250,875	$-	$3,690,903,156	$989,940,486	$137,356,314	$4,820,450,832
FEDERAL TAXES						
Social Insurance Tax-Employee Contribution	$1,622,046,316	$216,059,511	$-	$-	$-	$1,838,105,826
Social Insurance Tax-Employer Contribution	$1,464,428,599	$-	$-	$-	$-	$1,464,428,599

Description	Employee Compensation	Proprietor Income	Taxes on Production and Import Net of Subsidies	Households	Enterprises (Corporations)	Total
TOPI: Excise Taxes	$-	$-	$(791,683,643)	$-	$-	$(791,683,643)
TOPI: Custom Duty	$-	$-	$(825,210,330)	$-	$-	$(825,210,330)
OPI: Corporate Profits Tax	$-	$-	$-	$-	$559,692,930	$559,692,930
Personal Tax: Income Tax	$-	$-	$-	$2,539,597,614	$-	$2,539,597,617
Personal Tax: Estate and Gift Tax	$-	$-	$-	$-	$-	$-
Total Federal Taxes	$3,086,474,915	$216,059,511	$(1,616,893,974)	$2,539,597,614	$559,692,930	$4,784,930,998
TOTAL TAXES	$3,088,725,790	$216,059,511	$6,222,751,746	$3,536,918,977	$697,049,244	$13,761,505,270

All-Transit Scenario: Maintain-Existing-System

Description	Employee Compensation	Proprietor Income	Taxes on Production and Import Net of Subsidies	Households	Enterprises (Corporations)	Total
ALL LOCAL TAXES						
Social Insurance Tax-Employee Contribution	$-	$-	$-	$-	$-	$-
Social Insurance Tax-Employer Contribution	$-	$-	$-	$-	$-	$-
TOPI: Sales Tax	$-	$-	$1,538,105,350	$-	$-	$1,538,105,350
TOPI: Property Tax	$-	$-	$3,213,609,832	$-	$-	$3,213,609,832
TOPI: Motor Vehicle License	$-	$-	$195,176	$-	$-	$195,176
TOPI: Severance Tax	$-	$-	$-	$-	$-	$-
TOPI: Other Taxes	$-	$-	$137,656,245	$-	$-	$137,656,245
TOPI: Special Assessments	$-	$-	$33,477,411	$-	$-	$33,477,411
OPI: Corporate Profits Tax	$-	$-	$-	$-	$-	$-
Personal Tax: Income Tax	$-	$-	$-	$-	$-	$-
Personal Tax: Motor Vehicle License	$-	$-	$-	$60,102	$-	$60,102
Personal Tax: Property Taxes	$-	$-	$-	$9,224,618	$-	$9,224,620
Personal Tax: Other Tax (Fish/Hunt)	$-	$-	$-	$-	$-	$-
Total Local Taxes	**$-**	**$-**	**$4,923,044,014**	**$9,284,722**	**$-**	**$4,932,328,735**
STATE TAXES						
Social Insurance Tax-Employee Contribution	$1,310,700	$-	$-	$-	$-	$1,310,700
Social Insurance Tax-Employer Contribution	$1,532,345	$-	$-	$-	$-	$1,532,345
TOPI: Sales Tax	$-	$-	$4,210,442,809	$705,078,771	$-	$4,210,442,809
TOPI: Property Tax	$-	$-	$-	$553,665,209	$-	$-
TOPI: Motor Vehicle License	$-	$-	$77,978,065	$-	$-	$77,978,065
TOPI: Severance Tax	$-	$-	$35,941,915	$-	$-	$35,941,915
TOPI: Other Taxes	$-	$-	$55,392,859	$24,753,677	$-	$55,392,859

Description	Employee Compensation	Proprietor Income	Taxes on Production and Import Net of Subsidies	Households	Enterprises (Corporations)	Total
TOPI: Special Assessments	$-	$-	$-	$32,259	$-	$-
OPI: Corporate Profits Tax	$-	$-	$-	$-	$194,146,301	$194,146,301
Personal Tax: Income Tax	$-	$-	$-	$-	$-	$1,192,193,448
Personal Tax: Motor Vehicle License	$-	$-	$-	$-	$-	$28,871,177
Personal Tax: Property Taxes	$-	$-	$-	$-	$-	$-
Personal Tax: Other Tax (Fish/Hunt)	$-	$-	$-	$-	$-	$23,617,826
Total State Taxes	**$2,843,045**	**$-**	**$4,379,755,649**	**$1,283,529,915**	**$194,146,301**	**$5,821,427,445**
FEDERAL TAXES						
Social Insurance Tax-Employee Contribution	$2,048,781,951	$266,572,723	$-	$-	$-	$2,315,354,674
Social Insurance Tax-Employer Contribution	$1,849,697,420	$-	$-	$-	$-	$1,849,697,420
TOPI: Excise Taxes	$-	$-	$(939,439,688)	$-	$-	$(939,439,688)
TOPI: Custom Duty	$-	$-	$(979,223,636)	$-	$-	$(979,223,636)
OPI: Corporate Profits Tax	$-	$-	$-	$-	$791,098,047	$791,098,047
Personal Tax: Income Tax	$-	$-	$-	$3,191,852,606	$-	$3,191,852,606
Personal Tax: Estate and Gift Tax	$-	$-	$-	$-	$-	$-
Total Federal Taxes	**$3,898,479,370**	**$266,572,723**	**$(1,918,663,324)**	**$3,191,852,606**	**$791,098,047**	**$6,229,339,424**
TOTAL TAXES	**$3,901,322,416**	**$266,572,723**	**$7,384,136,339**	**$4,484,667,242**	**$985,244,348**	**$16,983,095,604**

All-Transit Scenario: Business-As-Usual

Description	Employee Compensation	Proprietor Income	Taxes on Production and Import Net of Subsidies	Households	Enterprises (Corporations)	Total
ALL LOCAL TAXES						
Social Insurance Tax-Employee Contribution	$-	$-	$-	$-	$-	$-
Social Insurance Tax-Employer Contribution	$-	$-	$-	$-	$-	$-
TOPI: Sales Tax	$-	$-	$1,557,593,715	$-	$-	$1,557,593,715
TOPI: Property Tax	$-	$-	$3,254,327,461	$-	$-	$3,254,327,461
TOPI: Motor Vehicle License	$-	$-	$197,649	$-	$-	$197,649
TOPI: Severance Tax	$-	$-	$-	$-	$-	$-
TOPI: Other Taxes	$-	$-	$139,400,400	$-	$-	$139,400,400
TOPI: Special Assessments	$-	$-	$33,901,582	$-	$-	$33,901,582
OPI: Corporate Profits Tax	$-	$-	$-	$-	$-	$-
Personal Tax: Income Tax	$-	$-	$-	$-	$-	$-
Personal Tax: Motor Vehicle License	$-	$-	$-	$65,811	$-	$65,811

Description	Employee Compensation	Proprietor Income	Taxes on Production and Import Net of Subsidies	Households	Enterprises (Corporations)	Total
Personal Tax: Property Taxes	$-	$-	$-	$10,092,772	$-	$10,092,773
Personal Tax: Other Tax (Fish/Hunt)	$-	$-	$-	$-	$-	$-
Total Local Taxes	**$-**	**$-**	**$4,985,420,808**	**$10,158,585**	**$-**	**$4,995,579,392**
STATE TAXES						
Social Insurance Tax-Employee Contribution	$1,443,299	$-	$-	$-	$-	$1,443,299
Social Insurance Tax-Employer Contribution	$1,687,366	$-	$-	$-	$-	$1,687,366
TOPI: Sales Tax	$-	$-	$4,263,790,682	$714,012,380	$-	$4,263,790,682
TOPI: Property Tax	$-	$-	$-	$560,680,352	$-	$-
TOPI: Motor Vehicle License	$-	$-	$78,966,076	$-	$-	$78,966,076
TOPI: Severance Tax	$-	$-	$36,397,313	$-	$-	$36,397,313
TOPI: Other Taxes	$-	$-	$56,094,707	$25,067,315	$-	$56,094,707
TOPI: Special Assessments	$-	$-	$-	$32,667	$-	$-
OPI: Corporate Profits Tax	$-	$-	$-	$-	$205,144,484	$205,144,484
Personal Tax: Income Tax	$-	$-	$-	$-	$-	$1,303,361,510
Personal Tax: Motor Vehicle License	$-	$-	$-	$-	$-	$31,606,787
Personal Tax: Property Taxes	$-	$-	$-	$-	$-	$-
Personal Tax: Other Tax (Fish/Hunt)	$-	$-	$-	$-	$-	$25,811,862
Total State Taxes	**$3,130,664**	**$-**	**$4,435,248,779**	**$1,299,792,714**	**$205,144,484**	**$6,004,304,086**
FEDERAL TAXES						
Social Insurance Tax-Employee Contribution	$2,256,049,101	$282,628,395	$-	$-	$-	$2,538,677,497
Social Insurance Tax-Employer Contribution	$2,036,823,976	$-	$-	$-	$-	$2,036,823,976
TOPI: Excise Taxes	$-	$-	$(951,342,737)	$-	$-	$(951,342,737)
TOPI: Custom Duty	$-	$-	$(991,630,763)	$-	$-	$(991,630,763)
OPI: Corporate Profits Tax	$-	$-	$-	$-	$835,912,914	$835,912,914
Personal Tax: Income Tax	$-	$-	$-	$3,487,388,034	$-	$3,487,388,034
Personal Tax: Estate and Gift Tax	$-	$-	$-	$-	$-	$-
Total Federal Taxes	**$4,292,873,078**	**$282,628,395**	**$(1,942,973,501)**	**$3,487,388,034**	**$835,912,914**	**$6,955,828,921**
TOTAL TAXES	**$4,296,003,742**	**$282,628,395**	**$7,477,696,086**	**$4,797,339,334**	**$1,041,057,398**	**$17,955,712,399**

All-Transit Scenario: RTP-Priority Needs

Description	Employee Compensation	Proprietor Income	Taxes on Production and Import Net of Subsidies	Households	Enterprises (Corporations)	Total
ALL LOCAL TAXES						

Description	Employee Compensation	Proprietor Income	Taxes on Production and Import Net of Subsidies	Households	Enterprises (Corporations)	Total
Social Insurance Tax-Employee Contribution	$-	$-	$-	$-	$-	$-
Social Insurance Tax-Employer Contribution	$-	$-	$-	$-	$-	$-
TOPI: Sales Tax	$-	$-	$2,248,924,989	$-	$-	$2,248,924,989
TOPI: Property Tax	$-	$-	$4,698,746,715	$-	$-	$4,698,746,715
TOPI: Motor Vehicle License	$-	$-	$285,375	$-	$-	$285,375
TOPI: Severance Tax	$-	$-	$-	$-	$-	$-
TOPI: Other Taxes	$-	$-	$201,272,670	$-	$-	$201,272,670
TOPI: Special Assessments	$-	$-	$48,948,652	$-	$-	$48,948,652
OPI: Corporate Profits Tax	$-	$-	$-	$-	$-	$-
Personal Tax: Income Tax	$-	$-	$-	$-	$-	$-
Personal Tax: Motor Vehicle License	$-	$-	$-	$95,935	$-	$95,935
Personal Tax: Property Taxes	$-	$-	$-	$14,710,982	$-	$14,710,981
Personal Tax: Other Tax (Fish/Hunt)	$-	$-	$-	$-	$-	$-
Total Local Taxes	**$-**	**$-**	**$7,198,178,403**	**$14,806,918**	**$-**	**$7,212,985,316**
STATE TAXES						
Social Insurance Tax-Employee Contribution	$2,105,383	$-	$-	$-	$-	$2,105,383
Social Insurance Tax-Employer Contribution	$2,461,412	$-	$-	$-	$-	$2,461,412
TOPI: Sales Tax	$-	$-	$6,156,255,847	$1,030,923,705	$-	$6,156,255,847
TOPI: Property Tax	$-	$-	$-	$809,535,916	$-	$-
TOPI: Motor Vehicle License	$-	$-	$114,014,829	$-	$-	$114,014,829
TOPI: Severance Tax	$-	$-	$52,552,104	$-	$-	$52,552,104
TOPI: Other Taxes	$-	$-	$80,992,102	$36,193,336	$-	$80,992,102
TOPI: Special Assessments	$-	$-	$-	$47,166	$-	$-
OPI: Corporate Profits Tax	$-	$-	$-	$-	$300,340,682	$300,340,682
Personal Tax: Income Tax	$-	$-	$-	$-	$-	$1,899,562,036
Personal Tax: Motor Vehicle License	$-	$-	$-	$-	$-	$46,072,615
Personal Tax: Property Taxes	$-	$-	$-	$-	$-	$-
Personal Tax: Other Tax (Fish/Hunt)	$-	$-	$-	$-	$-	$37,617,572
Total State Taxes	**$4,566,794**	**$-**	**$6,403,814,883**	**$1,876,700,124**	**$300,340,682**	**$8,691,974,582**
FEDERAL TAXES						
Social Insurance Tax-Employee Contribution	$3,290,967,131	$410,324,295	$-	$-	$-	$3,701,291,425
Social Insurance Tax-Employer Contribution	$2,971,176,804	$-	$-	$-	$-	$2,971,176,804
TOPI: Excise Taxes	$-	$-	$(1,373,592,121)	$-	$-	$(1,373,592,121)
TOPI: Custom Duty	$-	$-	$(1,431,761,815)	$-	$-	$(1,431,761,815)
OPI: Corporate Profits Tax	$-	$-	$-	$-	$1,223,813,823	$1,223,813,823

Description	Employee Compensation	Proprietor Income	Taxes on Production and Import Net of Subsidies	Households	Enterprises (Corporations)	Total
Personal Tax: Income Tax	$-	$-	$-	$5,082,256,536	$-	$5,082,256,536
Personal Tax: Estate and Gift Tax	$-	$-	$-	$-	$-	$-
Total Federal Taxes	**$6,262,143,936**	**$410,324,295**	**$(2,805,353,935)**	**$5,082,256,536**	**$1,223,813,823**	**$10,173,184,654**
TOTAL TAXES	**$6,266,710,730**	**$410,324,295**	**$10,796,639,350**	**$6,973,763,578**	**$1,524,154,506**	**$26,078,144,552**

All-Transit Scenario: RTP-Total Needs

Description	Employee Compensation	Proprietor Income	Taxes on Production and Import Net of Subsidies	Households	Enterprises (Corporations)	Total
ALL LOCAL TAXES						
Social Insurance Tax-Employee Contribution	$-	$-	$-	$-	$-	$-
Social Insurance Tax-Employer Contribution	$-	$-	$-	$-	$-	$-
TOPI: Sales Tax	$-	$-	$2,417,269,435	$-	$-	$2,417,269,435
TOPI: Property Tax	$-	$-	$5,050,473,838	$-	$-	$5,050,473,838
TOPI: Motor Vehicle License	$-	$-	$306,737	$-	$-	$306,737
TOPI: Severance Tax	$-	$-	$-	$-	$-	$-
TOPI: Other Taxes	$-	$-	$216,339,039	$-	$-	$216,339,039
TOPI: Special Assessments	$-	$-	$52,612,730	$-	$-	$52,612,730
OPI: Corporate Profits Tax	$-	$-	$-	$-	$-	$-
Personal Tax: Income Tax	$-	$-	$-	$-	$-	$-
Personal Tax: Motor Vehicle License	$-	$-	$-	$102,963	$-	$102,964
Personal Tax: Property Taxes	$-	$-	$-	$15,789,523	$-	$15,789,522
Personal Tax: Other Tax (Fish/Hunt)	$-	$-	$-	$-	$-	$-
Total Local Taxes	$-	$-	$7,737,001,781	$15,892,487	$-	$7,752,894,266
STATE TAXES						
Social Insurance Tax-Employee Contribution	$2,259,068	$-	$-	$-	$-	$2,259,068
Social Insurance Tax-Employer Contribution	$2,641,085	$-	$-	$-	$-	$2,641,085
TOPI: Sales Tax	$-	$-	$6,617,085,573	$1,108,094,034	$-	$6,617,085,573
TOPI: Property Tax	$-	$-	$-	$870,134,148	$-	$-
TOPI: Motor Vehicle License	$-	$-	$122,549,468	$-	$-	$122,549,468
TOPI: Severance Tax	$-	$-	$56,485,920	$-	$-	$56,485,920
TOPI: Other Taxes	$-	$-	$87,054,808	$38,902,606	$-	$87,054,808
TOPI: Special Assessments	$-	$-	$-	$50,697	$-	$-
OPI: Corporate Profits Tax	$-	$-	$-	$-	$322,254,085	$322,254,085

Description	Employee Compensation	Proprietor Income	Taxes on Production and Import Net of Subsidies	Households	Enterprises (Corporations)	Total
Personal Tax: Income Tax	$-	$-	$-	$-	$-	$2,038,904,232
Personal Tax: Motor Vehicle License	$-	$-	$-	$-	$-	$49,449,105
Personal Tax: Property Taxes	$-	$-	$-	$-	$-	$-
Personal Tax: Other Tax (Fish/Hunt)	$-	$-	$-	$-	$-	$40,377,606
Total State Taxes	$4,900,153	$-	$6,883,175,768	$2,017,181,485	$322,254,085	$9,339,060,947
FEDERAL TAXES						
Social Insurance Tax-Employee Contribution	$3,531,195,240	$441,063,949	$-	$-	$-	$3,972,259,188
Social Insurance Tax-Employer Contribution	$3,188,061,433	$-	$-	$-	$-	$3,188,061,433
TOPI: Excise Taxes	$-	$-	$(1,476,413,072)	$-	$-	$(1,476,413,072)
TOPI: Custom Duty	$-	$-	$(1,538,937,088)	$-	$-	$(1,538,937,088)
OPI: Corporate Profits Tax	$-	$-	$-	$-	$1,313,105,506	$1,313,105,506
Personal Tax: Income Tax	$-	$-	$-	$5,455,217,354	$-	$5,455,217,354
Personal Tax: Estate and Gift Tax	$-	$-	$-	$-	$-	$-
Total Federal Taxes	$6,719,256,673	$441,063,949	$(3,015,350,160)	$5,455,217,354	$1,313,105,506	$10,913,293,321
TOTAL TAXES	$6,724,156,826	$441,063,949	$11,604,827,390	$7,488,291,326	$1,635,359,591	$28,005,248,534