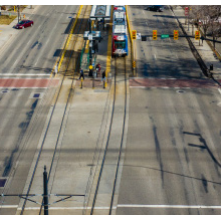
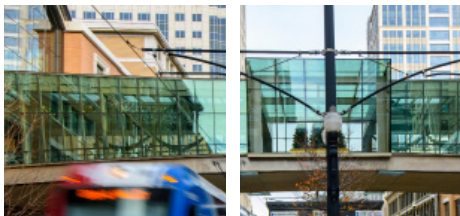
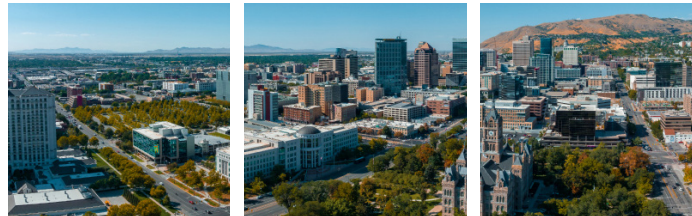
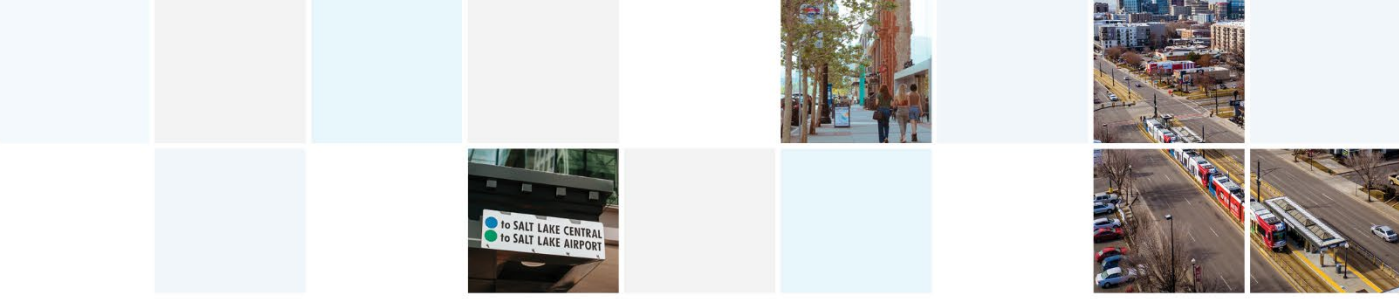




APPENDIX B: EXISTING AND FUTURE CONDITIONS REPORT





TechLink TRAX Study

Existing and Future Conditions Report August 2023

Prepared for

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Table of Contents

- 1 Introduction1**
- 1.1 Overview 1
- 1.2 Report’s Purpose 2
- 1.3 Study Area 3
- 1.4 Planning Context 4
- 2 Transportation Conditions12**
- 2.1 Travel Demand Findings 13
 - 2.1.1 Origins and Destinations 13
 - 2.1.2 Corridor Congestion 19
 - 2.1.3 Mode Split Analysis 21
- 2.2 Existing and Future Roadway Conditions 22
 - 2.2.1 Roadway Classifications 22
 - 2.2.2 RTP Planned Roadway Improvements 23
 - 2.2.3 Salt Lake City’s Livable Streets Program 24
- 2.3 Existing and Future Transit Conditions 25
 - 2.3.1 Existing Transit Conditions 25
 - 2.3.2 Planned Transit Conditions 29
- 2.4 Transit Ridership 31
- 2.5 Active Transportation Existing and Future Conditions 35
- 2.6 Freight Rail 38
- 2.7 Parking 38
 - 2.7.1 Salt Lake City 38
 - 2.7.2 University of Utah 40
- 2.8 Safety 40



2.8.1 Pedestrian-Involved Crashes.....	41
2.8.2 Bicycle-Involved Crashes.....	42
2.8.3 Transit-Related Crashes.....	43
3 Land Use and Socioeconomic Conditions.....	44
3.1 Existing and Future Land Use.....	45
3.1.1 Existing Land Use.....	45
3.1.2 Future Land Use.....	46
3.1.3 The Granary District.....	47
3.1.4 The University of Utah and Research Park.....	47
3.1.5 North Temple Corridor.....	48
3.1.6 400 South Corridor.....	48
3.2 Affordable Housing.....	48
3.3 Planning for Transit-Oriented Developments.....	51
3.4 Socioeconomic Analysis.....	53
3.4.1 Population and Employment Growth.....	54
4 Equity and Environmental Justice.....	58
4.1 Definitions.....	58
4.2 TechLink TRAX Study Equity Focus Areas.....	59
4.3 Access to Opportunities.....	60
4.4 Environmental Justice Populations.....	61
4.4.1 Minority Populations.....	63
4.4.2 Low-income Populations.....	64
4.5 Other Notable Socioeconomic Indications.....	65
4.5.1 Unhoused Populations.....	66
4.5.2 Limited English-Speaking Populations.....	66
4.5.3 Zero Car Households.....	67
4.5.4 Populations with Disabilities.....	68



4.6 Gentrification and Displacement Risks Specific to the TechLink TRAX Study Area	69
4.6.1 Potential Unintended Consequences of Investing in Transit-Rich Corridors.....	70
4.6.2 Approach for Measuring Displacement and Gentrification	71
4.6.3 High-Risk Neighborhoods in the Study Area.....	71
4.6.4 Anti-displacement Policy Best Practices	72
4.7 Nexus of Equity and Climate Change	73
4.7.1 Inversions and Air Quality	74
4.7.2 Noise Pollution	74
4.7.3 The Urban Heat Island Effect	75
4.7.4 Floodplains.....	75
4.7.5 Parks and Greenspace.....	76
5 Environmental Considerations	78
5.1 Water and Natural Resources	78
5.2 The Human Environment	79
5.3 Community and Cultural Resources.....	81



List of Tables

Table 1. Relevant Plans and Studies	8
Table 2. Mode Split for Trips Between the Granary District and the University of Utah, 2023 and 2050	21
Table 3. Roadway Classifications for Relevant Corridors in the Study Area	22
Table 4. Livable Streets by Zone Type and Study Area Proximity	25
Table 5. RTP Transit Project Definitions and Phase	30
Table 6. 2023 Poverty Guidelines for the 48 Contiguous States and the District of Columbia	62
Table 7. Unintended and Intended Consequences of Transit Investment	70
Table 8. Anti-displacement Strategies	73

List of Figures

Figure 1. Steps and Timeline for the TechLink TRAX Study	2
Figure 2. TechLink TRAX Study Area	3
Figure 3. Proposed Transit Improvements for the University of Utah from The Research Park Strategic Vision	5
Figure 4. FOLR Recommendations for Future Network (System Expansions in Yellow)	7
Figure 5. Destination Patterns for Trips that Originate in the Granary District	14
Figure 6. Destination Patterns for Trips Originating from the Airport	16
Figure 7. Destination Patterns for Trips Originating from the University of Utah	18
Figure 8. Volume Over Capacity: 2023 and 2050	20
Figure 9. RTP Planned Roadway Improvements (2023-2050)	24
Figure 10. Existing UTA Transit Routes	26
Figure 11. UTA Free Fare Zone in Salt Lake City	27
Figure 12. Campus Shuttle Services from the University of Utah Commuter Services	28
Figure 13. WFRC RTP Transit Projects	29
Figure 14. UTA Light Rail Average Weekday Boardings	33



Figure 15. UTA TRAX Average Weekday Boardings	34
Figure 16. Existing and Planned Active Transportation Facilities	36
Figure 17. Pedestrian Potential Demand, WFRC	37
Figure 18. UPRR at 600 West in the Granary District	38
Figure 19. Surface Parking Lots	39
Figure 20. University of Utah Transportation and Parking Strategic Plan Recommendations	40
Figure 21. Pedestrian and Bicycle-Involved Crashes, Source: Numetric	41
Figure 22. Transit-Related Crashes	44
Figure 23. Existing Land Use	45
Figure 24. Future Land Use	46
Figure 25. Rent-Burdened Populations by Census Tract	50
Figure 26. Station Area and HTRZ Plan Map	53
Figure 27. Existing 2023 Population and Projected 2050 Population	56
Figure 28. Existing 2023 Jobs and Projected 2050 Jobs	57
Figure 29. 2023 WFRC Equity Focus Areas	60
Figure 30. Access to Opportunity Map	61
Figure 31. Minority Populations by Census Block Group	64
Figure 32. Low Income Populations by Census Block Group	65
Figure 33. Limited English-Speaking Populations	67
Figure 34. Zero Vehicle Households	68
Figure 35. Populations with a Disability	69
Figure 36. Population Over 65 Years Old	72
Figure 37. Availability of Community Greenspace	77
Figure 38. Water Resources	79
Figure 39. Cultural and Historic Resources	82



List of Acronyms

AADT	Average Annual Daily Traffic
ATO	Access to Opportunities
BUILD	Better Utilizing Investments to Leverage Development
CBD	Central Business District
CO	Carbon Monoxide
EO	Executive Order
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FOLR	Future of Light Rail
FTN	Frequent Transit Network
FUD	Formerly Used Defense
HB	House Bill
HCT	High-Capacity Transit
HRTZ	Housing and Transit Reinvestment Zone
LOS	Level of Service
LRT	Light Rail Transit
LWCF	Land and Water Conservation Funds
MaaS	Mobility as a Service
MAG	Mountainland Association of Governments
MMRP	Military Munitions Response Program
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NOAA	National Oceanic and Atmospheric Administration



NRHP	National Register of Historic Places
PEL	Planning and Environmental Linkages
PM10	Particulate Matter with inhalable particles with diameters that are generally 10 micrometers and smaller
RAISE	Rebuilding American Infrastructure with Sustainability and Equity
RTP	Regional Transportation Plan
SLCRDA	Salt Lake City Redevelopment Agency
TAZ	Transportation Analysis Zone
TDM	Transportation Demand Management
TOD	Transit-Oriented Development
UC3	University Climate Change Coalition
UDOT	Utah Department of Transportation
UGRC	Utah Geospatial Resource Center
UPRR	Union Pacific Railroad
UTA	Utah Transit Authority
WFRC	Wasatch Front Regional Council
WOTUS	Waters of the United States



1 Introduction

1.1 Overview

The Utah Transit Authority (UTA) in collaboration with the Redevelopment Agency of Salt Lake City (RDA), Salt Lake City, the University of Utah, and the Utah Department of Transportation (UDOT) has initiated the TechLink TRAX Study to analyze an additional light rail (TRAX) service between the Salt Lake City International Airport and the University of Utah, including a spur into Research Park and a spur south into the Granary District that connects into the Ballpark Station. This study will utilize previous planning efforts, new data, technical analysis, and stakeholder and public engagement to develop study Purpose and Need statements and refine alternatives to a Locally Preferred Alternative or suite of alternatives that can be advanced into the federal National Environmental Policy Act (NEPA) process. This study will follow a transparent and collaborative process that includes the following steps (also shown in Figure 1 below).

- **Establish Project and Community Context** – collecting data and documenting existing and future conditions within the study area, with a pointed emphasis on understanding past and current inequities for disadvantaged populations and opportunities to promote sustainability.
- **Determine Study Goals and Purpose and Need** – investigating and documenting the Purpose and Need for the proposed project to define why the project is being considered, particularly for those diverse populations with varying transit needs.
- **Identify Project Alternatives** – developing different ways the Purpose and Need for the project can be achieved.
- **Perform Screening and Preliminary Environmental Analysis** – Qualitatively and quantitatively evaluating factors to understand how the alternatives meet the Purpose and Need. This step will also include a preliminary environmental analysis of built and natural resources within the study area.
- **Prepare Final Report and National Environmental Policy Act (NEPA) Initiation** – Documenting the rest of the process above in a Final Report and preparing materials for NEPA initiation.

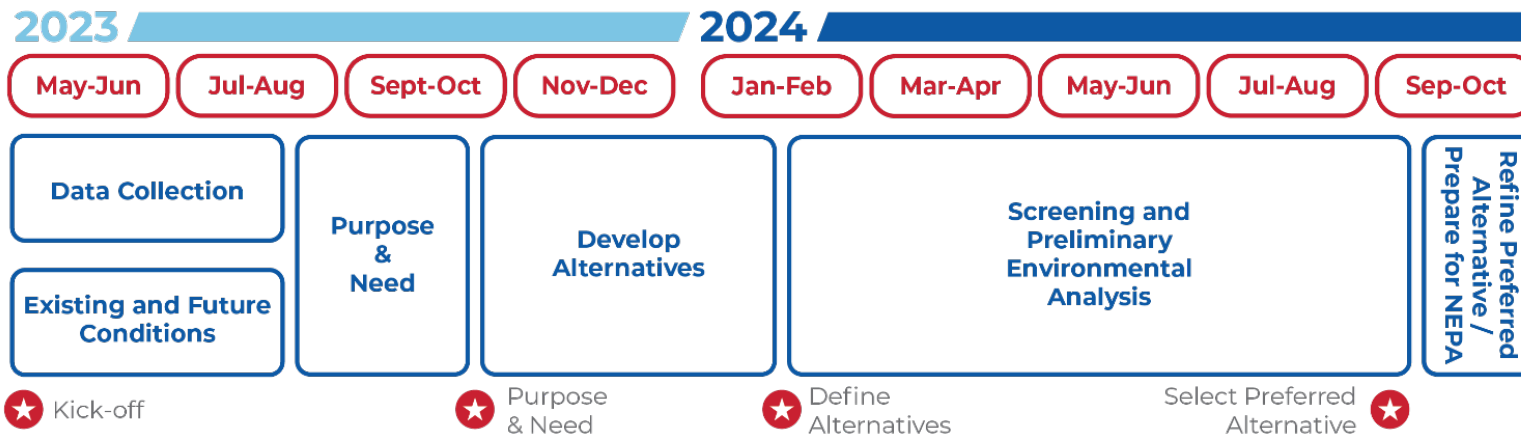


Figure 1. Steps and Timeline for the TechLink TRAX Study

1.2 Report’s Purpose

The purpose of this Existing and Future Conditions Report is to document the findings that describe the existing and future conditions in the study area. The findings are not intended to document conditions in detail; however, they will emphasize describing conditions that directly support the development of the Purpose and Need and yield information specific to defining and evaluating alternatives in future steps of this study. The intent is that data collection will be ongoing as the study evolves and is warranted, and this report may be updated as needed.

Section 1 includes an overview of [past and ongoing plans relevant to this study](#), as noted above.

Section 2 includes [transportation conditions](#) for transit, traffic, and active transportation.

Section 3 provides an overview of [existing and future land uses](#) in the study area.

Section 4 offers an analysis of [equity and environmental justice](#) considerations.

Section 5 provides an overview of [relevant environmental conditions](#) in the study area.



1.3 Study Area

The TechLink study area extends from the Salt Lake City International Airport on the west side of Salt Lake City through the downtown area and east into the University of Utah and Research Park campuses (approximately 7.75 miles in direct point-to-point distance). This east-west section of the study area has existing TRAX service with several lines in operation. This study will focus on the implementation of additional LRT service utilizing existing infrastructure, providing a more direct connection between these two destinations. The study will also evaluate a new rail extension south into the Granary District area of Salt Lake City and eventually connecting to the Ballpark Station (Figure 2). Much of this report will focus in on highlighting specific areas (e.g., the Granary District, the University of Utah, or the North Temple corridor) to report out on key information that is unique to the study area and that will better inform study Purpose and Need.

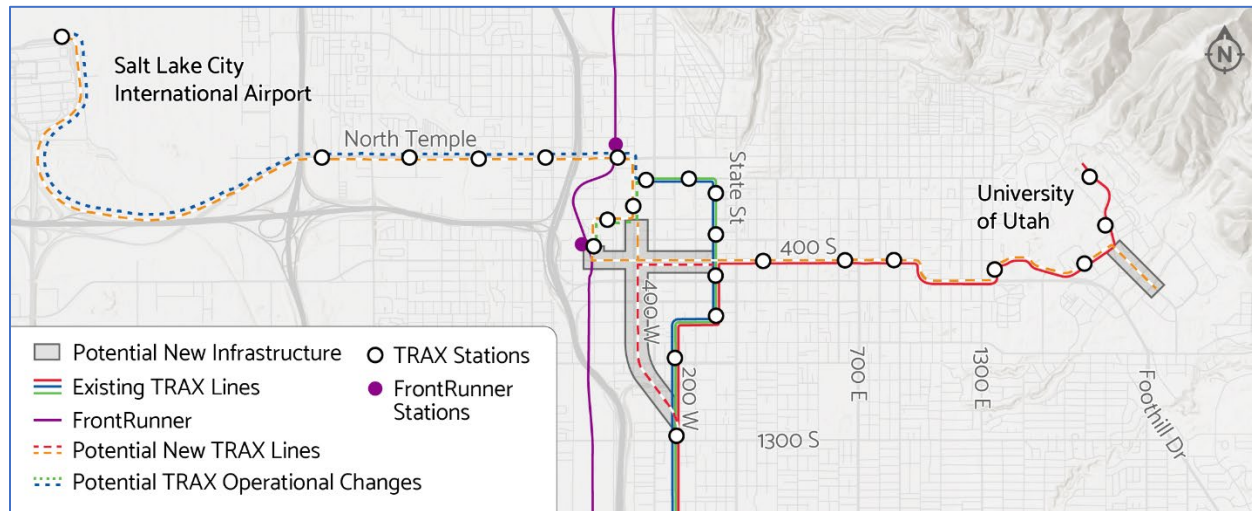


Figure 2. TechLink TRAX Study Area



1.4 Planning Context

The TechLink Study builds on several past transit and transportation planning efforts conducted by UTA, Salt Lake City, the University of Utah, and other key partnering agencies. This study, possible through recently awarded federal RAISE grant funds, will focus on advancing and refining initial findings from three key plans that have been completed in the past several years.

Downtown Salt Lake City Rail Extensions and Connections Feasibility Study: Completed in 2021 by UTA, this study identified three scenarios for transit routing that included a new TRAX Orange Line between the Salt Lake City International Airport and Research Park utilizing existing rail or rerouting the green or Red Lines through the Granary District along 400 West to the Ball Park Station. This study also explored new pedestrian connections to the Salt Lake Central Station from the Granary District. The scenarios explored in this study served as initial inputs to the Future of Light Rail Study described below.

Research Park Strategic Vision: Finalized in 2021 by the University of Utah, this plan focused on new land use patterns for the campus including adding density, a better-connected transportation network, added bicycle and pedestrian infrastructure, the creation of new mobility hubs, and a general commitment to developing more transportation fluidity between the University of Utah and Research Park Campuses and west to the Salt Lake Central Station area where a new education and technology district is developing. As part of this plan, a High-Capacity Transit (HCT) Mode Share Technical Memo (Figure 3) was prepared that included a proposed 2030 and 2040 transit network improvements. By 2040, this proposed vision includes a TRAX extension along a future Arapeen Drive Connector, extending from the existing South Campus Drive and Mario Capecchi Drive intersection to the southeast into Research Park and terminating at a new mobility hub.

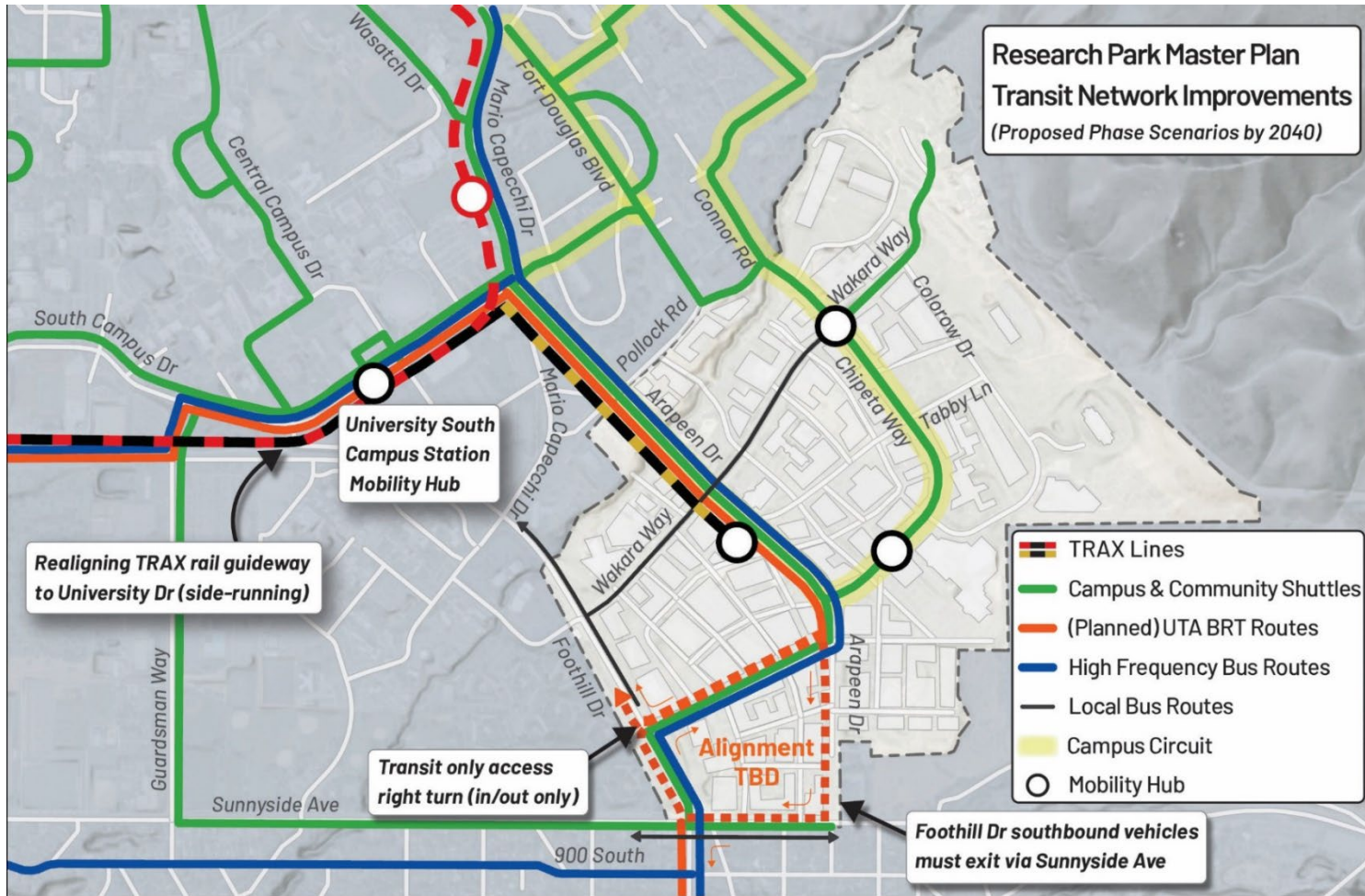


Figure 3. Proposed Transit Improvements for the University of Utah from The Research Park Strategic Vision



Future of Light Rail Study: Finalized in 2023, the Future of Light Rail (FOLR) study evaluated a range of short- and long-term improvements related to TRAX fleet modifications, headways and span of service, alignments of track extensions, planned and potential station locations with consideration to projects identified in regional transportation plans, and other potential enhancements. The study was the initial phase of addressing key needs for UTA TRAX service including:

- Addressing service flexibility and introducing redundancies in the system to become more operationally resilient
- Defining considerations for future fleet replacements
- Understanding challenges related to providing more reliable service
- Determining operating changes and capital investments to be pursued in the future

A range of TRAX system alternative were generated and evaluated based on impacts to the system at large, including travel time, capacity, reliability, ridership, and cost. Final recommendations were incorporated into the Light Rail Strategic Plan which included specific capital improvements that increase capacity to accommodate future growth and improve operational efficiencies; a phased approach for implementation; and other recommendations around fleet, transit signal priority, and span of service.

Specific to TRAX recommendations in the TechLink study area, FOLR utilized findings from the [Downtown Salt Lake City Rail Extensions and Connections Feasibility Study](#) and the [Research Park Strategic Vision](#) described above. The FOLR plan included the following recommendations to be explored during this study: 1) a new TRAX orange line that provides direct connection between the Salt Lake City International Airport and the University of Utah, with new track to be provided along 400 South between Salt Lake Central Station and Main Street and an extension to Research Park and, 2) realignment of the existing TRAX Redline to connect to 400 West and the Ballpark Spur (Figure 4).

Additional related recommendations from the FOLR include:

- A 400 West (Pioneer Park) non-revenue connector
- Transit signal priority at intersections
- Enhancements to span of service
- TRAX Blue Line operations to the airport instead of to Salt Lake Central
- TRAX Green Line operations to Salt Lake Central instead of to the Salt Lake City International Airport



Additional plans were reviewed, and information was captured as it applies to the TechLink corridor(s). The following plans are relevant in-progress plans that will be incorporated:

The Granary District Area Plan: Currently underway, this plan is capturing development plans in the district and developing context-sensitive walking and biking recommendations by refining the adopted Street Typologies plan and highlighting new opportunities for midblock crossings, transit access, and overall mobility that respond to existing and future land uses.

The Green Loop Plan: This effort is in the process of developing plans for the urban greenways identified by Salt Lake City. Currently, the 9-Line trail along 900 South is part of the Green Loop and nearing construction completion. Additional corridors in the plan include 200 East, South Temple, 500 West, and 700 East and will provide 60 acres of forest across 5.5 miles of the city in the next decade.

Main Street Pedestrian Mall Plan: Initiated by Salt Lake City summer 2023, this plan will investigate the feasibility of transforming Main Street into a permanent pedestrian mall between South Temple and 400 South, which would close off the street to most vehicle traffic.

University of Utah Master Plan Update: The University will be starting a Master Plan update fall 2023 with anticipated completion in late 2024.

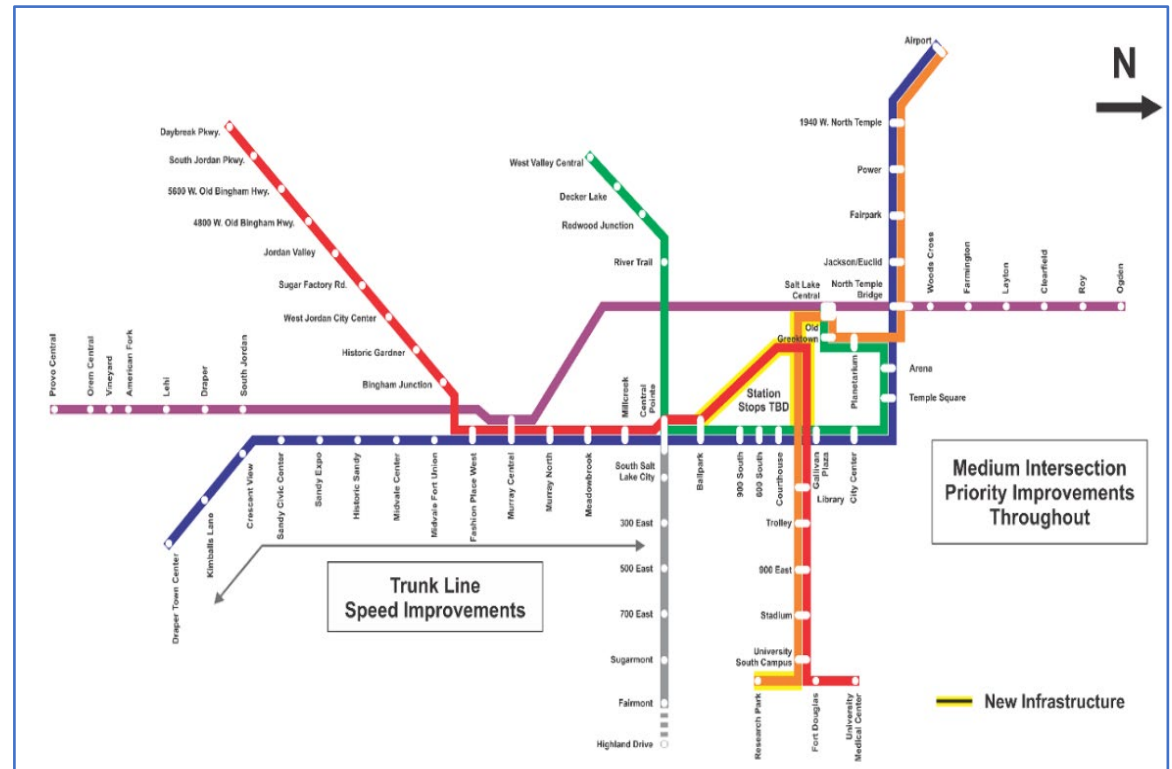


Figure 4. FOLR Recommendations for Future Network (System Expansions in Yellow)



Table 1 below describes additional completed or near completed plans and studies reviewed.

Table 1. Relevant Plans and Studies

Plan Name Date	Overview	Relevance to the TechLink Study
University of Utah Climate Action Plan – 2010 (with a renewed commitment in 2019)	The plan sets a goal to reach carbon neutrality by 2050, and in 2019 the University of Utah joined the University Climate Change Coalition (UC3) to commit to mobilizing resources and expertise to accelerate local and regional climate action in partnership with other agencies.	<p>The University of Utah is tracking several metrics related to sustainability around academic offerings, energy, emissions, transportation, waste and recycling, funding, equity, and water. For transit and active transportation strategies, the plan points to the Campus Master Plan’s transformative projects which will be incorporated into the TechLink recommendations and include:</p> <ul style="list-style-type: none"> • Improving transit nodes and creating campus gateways • Clarifying circulation and sense of place, with a focus on the east-west Health, Physical Education, and Recreation Department (known as HPER) pedestrian mall • Developing transit-first initiatives for new buildings • Improving connectivity and visibility to TRAX, especially at the South Campus TRAX station, creating a transit and safe pedestrian gateway into campus • Capturing and reusing stormwater and adding permeable paving • Reducing lawn areas
Salt Lake City Downtown Parking Study – 2013	The study analyzed parking usage in downtown Salt Lake City.	<p>The study found that the following:</p> <ul style="list-style-type: none"> • Downtown had a large amount of underutilized parking • Downtown could sustain new growth and simultaneously reduce the amount of parking • The City would benefit from working with private parking operators to make existing parking more accessible
Utah Transit Authority Sustainability Plan – 2014 (currently undergoing a 2023 update that will be available later this year)	The plan provides an overview of regions serviced, ridership, and types of transit service including bus, rail, and paratransit. It outlines three pillars of	<p>The TechLink study team acknowledges and will assist in advancing the objectives outlined for UTA to advance the three pillars including:</p> <ul style="list-style-type: none"> • Increasing ridership • Planning for accessible and safe systems



Plan Name Date	Overview	Relevance to the TechLink Study
	sustainability, environmental, social, and economic, and strategies for enhancing them.	<ul style="list-style-type: none"> • Reducing energy consumption for transit services • Continuing to find opportunities to partner with GREENbike • Continuing to operate and enhance services that are eligible for federal funding
Salt Lake City's Climate Positive 2040 – 2016	Salt Lake City's plan to protect the public health and safety of residents, including ensuring access to clean air, clean water, and a livable environment. The Mayor-Council Joint Resolution commits to achieving net-100% clean electricity for the community by 2030.	The transportation section of the plan includes a commitment to reducing carbon pollution associated with travel. The Salt Lake City Transit Master Plan was developed on the heels of this plan in collaboration with UTA and is serving as a catalyst for new transit services in the study area. The City is also committed to developing additional infrastructure and programs to enhance the active transportation network and ridership. Additional strategies include accelerating electric vehicle charging infrastructure and reducing emissions from air travel.
The Downtown Plan: Downtown's Story from Tomorrow – 2016	This plan is a vision and implementation plan that is intended to be coordinated with other local and regional plans and be used by the private sector as a guiding document.	This document identifies TRAX and streetcar expansion as central elements to the plan. This includes recommending TRAX and streetcar expansion into the Granary and Central 9th Districts.
300 West Zions Bank Market Analysis – 2019	A land use and market analysis were conducted for a Better Utilizing Investments to Leverage Development (BUILD) Grant application. <i>The BUILD funding program is now called RAISE (Rebuilding American Infrastructure with Sustainability and Equity).</i>	<ul style="list-style-type: none"> • The analysis determined minimal growth or redevelopment would occur without infrastructure improvements and greatly improving the pedestrian experience • Existing, outdated improvements are deemed dilapidated • Existing development is low density, with large areas of surface parking, and are not maximizing land use and cannot support higher densities
Salt Lake Central Station Area Plan – 2019	This area is located generally within the boundaries of 300 North, 300 West, 400 South, and I-15. An implementation plan was created to update the area in coordination with the Salt Lake City	<ul style="list-style-type: none"> • This plan involves infrastructure updates that could integrate the addition of the TRAX Orange Line • This plan is in coordination with the University of Utah and recommends developing this area a Transit-Oriented Development (TOD)-based research and innovation hub



Plan Name Date	Overview	Relevance to the TechLink Study
	Redevelopment Agency (SLCRDA) and the University of Utah. This includes the current Central Station/Intermodal Hub as well as the North Temple Station.	<ul style="list-style-type: none"> This is discussed further in Section 3.2
Downtown Salt Lake City Rail Extensions and Connections Feasibility Study – 2021	This study identified and evaluated opportunities and improvements to regional connectivity and looked specifically at growing areas on the westside.	<p>Described in detail above, the study identified three potential routing scenarios:</p> <ul style="list-style-type: none"> Each scenario included a new TRAX Orange Line that would run from Research Park to the airport Scenarios also included new infrastructure that could potentially reroute either the Green Line or Red Line through the Granary District to the Ballpark Station
University of Utah Research Park Strategic Vision – 2021	The vision for Research Park incorporates mixed-use design, transit, a shared-use path, and community gathering places as well as sustainable infrastructure and greenspaces.	<ul style="list-style-type: none"> Described in detail above, this vision incorporates a TRAX line and two stations and mobility hubs that are also intended to be activated as pedestrian spaces A shared-use path located adjacent to one of the mobility hubs and bikeshare stations is also part of the vision Parking analysis conducted at peak utilization showed that the utilization rate was approximately 69% throughout the study area
Ballpark Station Area Plan – 2022	This study focuses on the area around the Ballpark Station and recommends rezone areas to assist and guide sustainable and mixed-use growth around the transit station.	<p>The study area was divided into three main locations were identified for rezoning:</p> <ul style="list-style-type: none"> Heart of the Neighborhood: This includes the Ballpark Station and goes to 400 West Main Street Area: This includes land adjacent to Main Street from just north of Kelsey Avenue to Cleveland Avenue Jefferson Park Mixed Use Area: This area is north of the Ballpark Station and directly south of the I-15 West Temple exit <p>This plan is discussed further in Section 3.2</p>
Salt Lake City’s Urban Street Typologies Plan – 2022	This plan shows the desired future corridor allocations to better	Desired street typologies in the study area are defined in Section 2.2.3.



Plan Name Date	Overview	Relevance to the TechLink Study
	accommodate multimodal traffic, greening of the corridors, and general repurposing of right-of-way.	
UTA Future of Light Rail Study – 2023	The study analyzed, evaluated, and recommended service, operational, and infrastructure improvements to the light rail network. This included frequency of service, new rail lines, and new station locations.	<ul style="list-style-type: none"> • Described in greater detail above, this is a foundational study that recommended a new TRAX Orange line, which connects Research Park to the airport and includes new infrastructure between the Salt Lake Central Station and the Ballpark Station • A portion of the TRAX Red Line is proposed to be realigned with part of the new infrastructure • The S-Line is also recommended to have an additional stop and infrastructure added east of its current terminus at Fairmont in Sugar House
University of Utah Transportation and Parking Infrastructure Study – 2023	The study presents a vision to enhance mobility and connectivity to, from, and within campus that is reliable and resilient, multimodal, sustainable, efficient, and convenient.	<p>The study includes specific performance targets to:</p> <ul style="list-style-type: none"> • Reduced single occupant vehicle trips • Increase trips made by sustainable transportation options (transit, active transportation, etc.) • Increase bicycle parking and storage • Optimize vehicle parking demands <p>Specific to Research Park, pedestrian/bicycle facilities were found to be the least connected, with prevalent sidewalk gaps and limited bicycle routes. UTA provides transit service throughout the University of Utah, with highest ridership occurring in proximity to existing TRAX stations.</p>
Connect Salt Lake City/Citywide Transportation Plan – draft expected in summer of 2023	This transportation plan is a long-term policy document that defines largescale goals and needs for Salt Lake City and provides guidance on smaller-scale projects and policies.	<p>The top five transportation values identified by residents were:</p> <ul style="list-style-type: none"> • Air quality and the environment • Reliability • Safety from harm • Affordability • Equitable access to opportunities



Plan Name Date	Overview	Relevance to the TechLink Study
Downtown Salt Lake City Traffic Study – 2023 (first draft summer 2023)	This study describes the performance of UDOT roadways and intersections due to the land use and development changes in downtown Salt Lake City anticipated to occur over the next five years.	This study provides key development information along a portion of 400 South and in the Granary District portion of the TechLink Study area, including planned projects with anticipated number of units and commercial square footage. It includes average annual daily traffic (AADT) and intersection capacity analysis for 2022 and 2027 based on these anticipated development changes. Of importance to the TechLink Study, the key intersections of 400 South/300 West, 500 South/400 West, and 600 South/400 West were analyzed with a projected excess capacity in 2027 forecasted to be 20%, 10%, and 30%, respectively.
Granary District Project Area - Ongoing	This is a redevelopment plan that is accompanied with The Granary District Adaptive Reuse Loan Program.	This plan/SLCRDA loan is allowing the Granary District to rapidly transition from an underused, dormant, mostly industrial neighborhood into one that is supporting mixed-use neighborhoods and commercial businesses, services, and non-profits.
Salt Lake City zoning ordinance updates pertaining to building heights and pedestrian engagement	Salt Lake City has proposed zoning code amendments to accommodate growth and development while improving the pedestrian experience in public spaces.	Zoning amendments require pedestrian oriented, human-scale design: <ul style="list-style-type: none"> • Building heights increases up to 200 feet in many areas • A design review approval for buildings proposed over 200 feet or other new height standards • New standards for midblock walkways • Size and location restrictions on surface parking lots

2 Transportation Conditions

This section provides an overview of existing (2023) and planned (out to 2050) transit and transportation conditions and high-level analysis of forecasted travel demand in the TechLink Study area. Information captured reflects major transit, roadway, freight rail, and multimodal conditions. Readily available data was collected and reviewed; however, more detailed information will be analyzed to support Purpose and Need development and again during the alternative evaluation and refinement processes. This report does not include any field surveys, extensive future conditions modeling, or otherwise extensive data collection methods.



The study area hosts a diversity of travel behavior and needs, from short multimodal local trips to grocery stores and entertainment and from regional commuter trips outside Salt Lake County into downtown core and to the University of Utah. Salt Lake City has robust multimodal options for travelers including light rail service (TRAX), commuter rail (FrontRunner), local and regional bus services by UTA, bicycle infrastructure including the GREENbike bike share program, micro-transit service provided by UTA, rideshare, and Mobility as a Service (MaaS) options like e-scooters. This section covers existing and planned conditions for some of the relevant multimodal systems including transit, roadway, walking and bicycling.

2.1 Travel Demand Findings

The Wasatch Front Regional Council (WFRC) Travel Demand Model (version 9) was used to summarize travel behavior for trips originating or leaving key study area nodes, including the University of Utah Campus, the Granary District, and the Salt Lake City International Airport. Roadway capacity was also analyzed in the study area to identify existing and forecasted areas where congestion is likely to occur.

2.1.1 Origins and Destinations

Origin and destination patterns were analyzed for all trips (i.e., trips taken by all modes of transportation). Geographic areas on the maps provided in this section represent the pre-defined “small districts” established in the model, and the color intensity correlates to how many of the trips end in each district. The darker color represents a higher number of trips that end in the small district.

Granary District Origin-Destination Patterns

Figure 5 shows trips that begin (origin) within the Granary District and end (destination) in surrounding areas for 2023 and 2050, respectively. The areas that have the largest number of daily trips that begin in the Granary District also end either within the Granary District or in adjacent districts in downtown Salt Lake City, which indicate that the largest portion of trips are local in nature. Other destination areas that see a large number of trips include districts along both sides of the I-15 core, indicating that there is a strong regional travel component from the Granary District as well. 2050 model forecasts show the same trend continuing in 2050, only intensified. Notable areas of increase between 2023 and 2050 include the following destinations:

- Granary District, trips increase 146%
- Research Park, trips increase 161%
- Trips west of the airport, increase 219% north of I-80 and 478% south of I-80

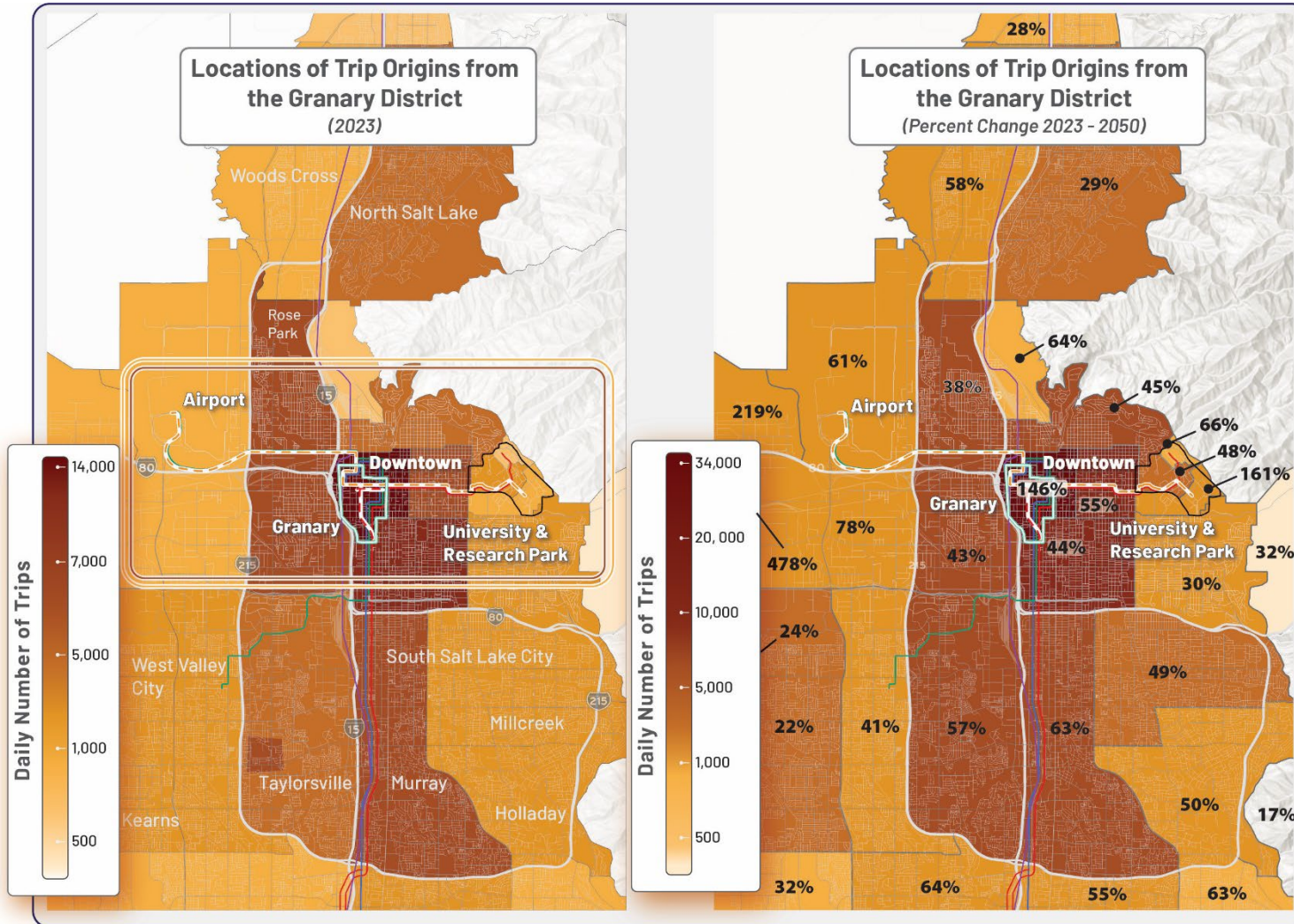


Figure 5. Destination Patterns for Trips that Originate in the Granary District



Airport Origin-Destination Patterns

Figure 6 shows trips starting at the airport and ending in surrounding zones for the years 2023 and 2050, respectively. The 2023 map shows that districts having larger number of trips starting at the airport are fairly widespread throughout central and north Salt Lake County and south Davis County, with less trips destined to the east bench of the Salt Lake Valley. This dispersed pattern likely reflects the airport as a more regional destination. The district with the highest number of trips is directly east of the airport and could indicate that district having a large number of airport employees residing there. This regional trend is also observed with the 2050 model forecasts. In addition, the small districts containing the airport, University of Utah, and Research Park show strong growth at 120%, 166%, and 88% respectively.

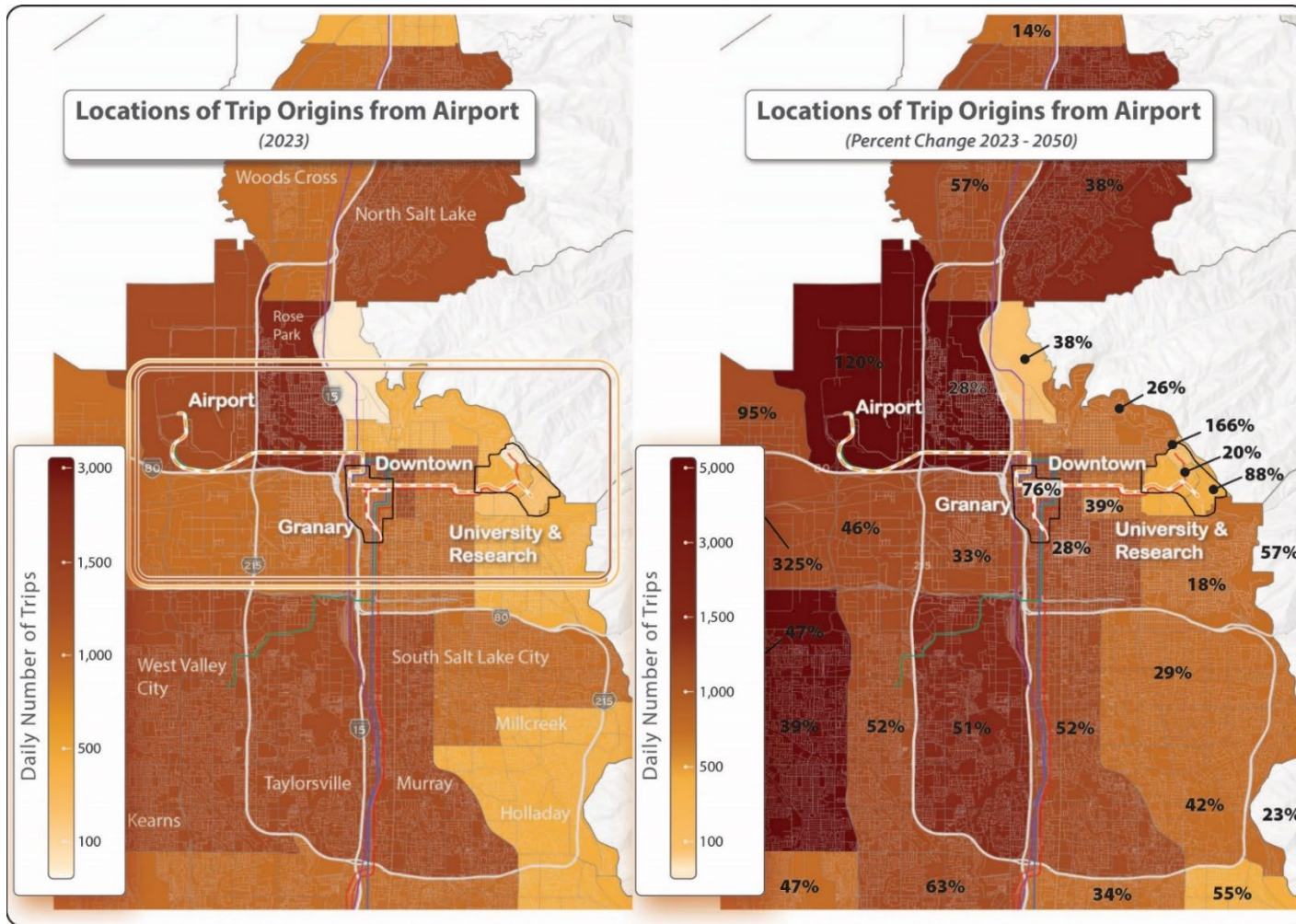


Figure 6. Destination Patterns for Trips Originating from the Airport



University Origin-Destination Patterns

Figure 7 shows trips starting at the University of Utah and Research Park and ending in surrounding zones for the years 2023 and 2050, respectively. The 2023 map reflects that districts having a higher number of trips starting from the University of Utah and Research Park are predominately found east of I-15, many of the trips staying within the vicinity of downtown Salt Lake City and the University of Utah and Research Park. Few of the areas on the map saw a decrease in trips, most of them minimal changes and residing west of I-15. The 2050 map indicates that trips made from the University of Utah and Research Park follow the 2023 map trends, with Research Park alone seeing a 209% increase in destinations and the Granary seeing a 43% increase. This is mostly likely due to the future residential and commercial developments planned in those areas as seen in Figure 24.



2.1.2 Corridor Congestion

To understand existing (2023) and future (2050) congestion conditions, corridor segments in the study area were analyzed for **volume over capacity (v/c)** ratios (Figure 8). A v/c ratio compares the volume of traffic to the theoretical capacity of the facility to accommodate traffic. A v/c ratio of less than 1.0 indicates the corridor is under capacity, a value of 1.0 indicates the corridor is operating at capacity, a v/c ratio over 1.0 indicates the corridor is operating over capacity and likely to experience substantial congestion. All values provided in this analysis are for v/c during PM peak hours.

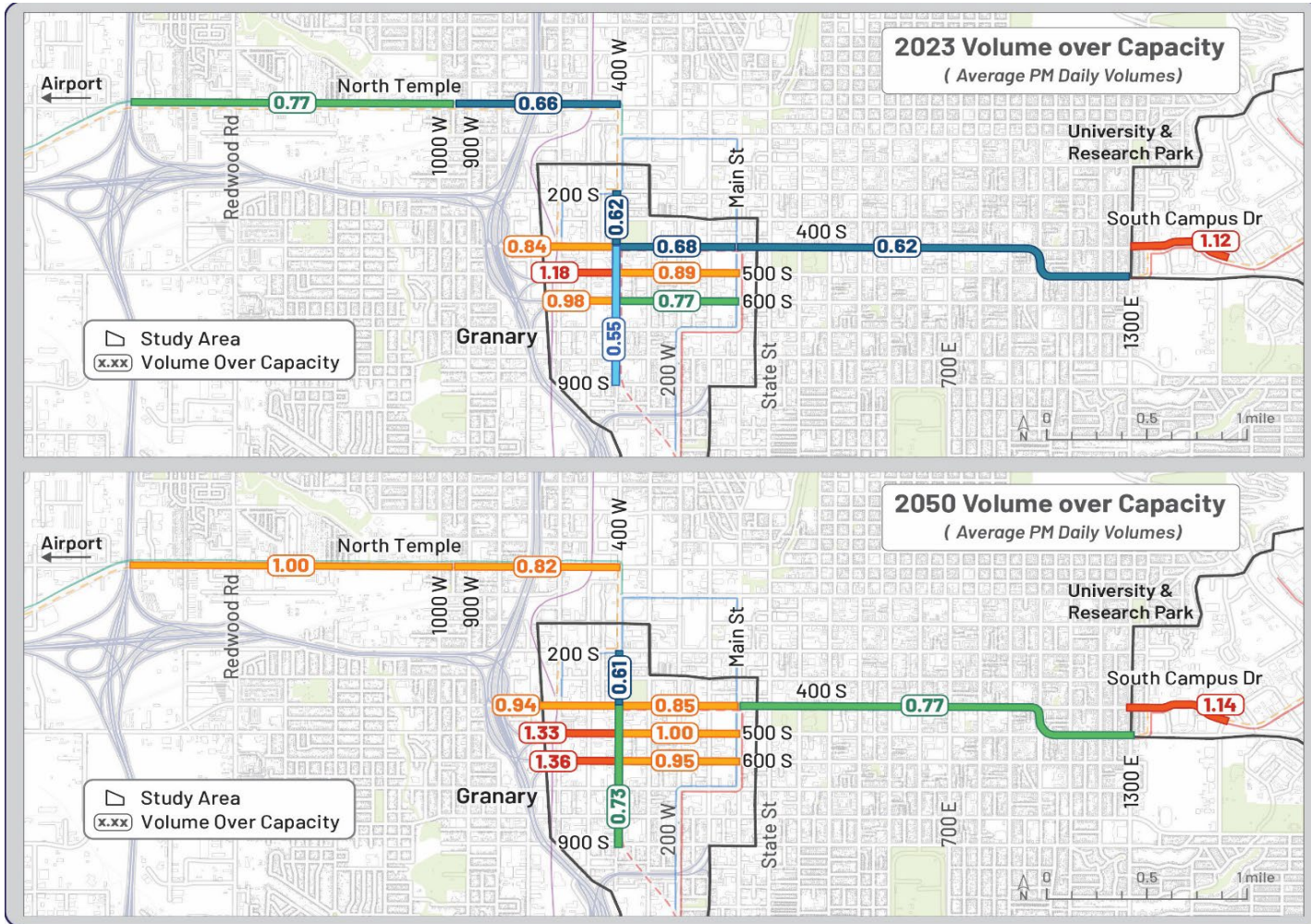


Figure 8. Volume Over Capacity: 2023 and 2050



In 2023:

- 500 South from I-15 to 400 West is over capacity ($v/c = 1.18$) and the segment from 400 West to Main Street is nearing capacity ($v/c = 0.89$)
- 600 South from I-15 to 400 West is almost at capacity ($v/c = 0.98$)
- South Campus Drive from 1300 East to Guardsman Way is over capacity ($v/c = 1.12$)

In 2050:

- 400 South from I-15 to 400 West is nearing capacity ($v/c = 0.94$)
- 500 South from I-15 to 400 West is over capacity ($v/c = 1.33$) and the segment from 400 West to Main Street is at capacity ($v/c = 1.00$)
- 600 South from I-15 to 400 West is over capacity ($v/c = 1.36$) and the segment from 400 West to Main Street is nearing capacity ($v/c = 0.95$)
- South Campus Drive from 1300 East to Guardsman Way is over capacity ($v/c = 1.14$)

Key Takeaway: With the FOLR study recommending a new TRAX spur into the Granary District using 400 West, careful considerations for how north-south TRAX service interacts with the heavy east-west commuter traffic movements on 500 South, 600 South, and South Campus Drive will need to be analyzed.

2.1.3 Mode Split Analysis

To understand how trips are likely to shift over time, a mode split analysis was performed for a representative trip within the study area – Granary District to the University of Utah. Table 2 summarizes trip types for forecasted for 2023 and 2050. Transit trips increase substantially from 19% to over 30% with a corresponding reduction in vehicle trips, which indicates a strong demand for transit over the coming decades. Non-motorized trips increase slightly but are likely limited due to the trip distance between the Granary and the University.

Table 2. Mode Split for Trips Between the Granary District and the University of Utah, 2023 and 2050

Trip Category	2023 (% of total trips)	2050 (% of total trips)
Transit	19.1%	32.6%
Vehicle	78.0%	64.0%
Non-motorized (walk or bike)	2.9%	3.4%



2.2 Existing and Future Roadway Conditions

2.2.1 Roadway Classifications

Existing major roadways in the study area are a combination of state-owned facilities (Table 3), and local roadways. In some instances, like 400 South, the corridor has segments of both state and local ownership. As this study progresses, UDOT and Salt Lake City will work in partnership to develop and support alternatives within the respective rights-of-way.

Table 3. Roadway Classifications for Relevant Corridors in the Study Area

Road	UDOT Classification	Salt Lake City Classification	Desired Street Typology
North Temple	Minor Arterial	City Street Arterial	Destination Thoroughfare
400 West (Central City)	Major Collector	City Street Arterial	Urban Village Main Street, Urban Green Street
200 South	Major Collector	City Street Arterial	Urban Village Street, Urban Green Street, and Destination Street
600 West	No Classification	No Classification	Urban Village Main Street, Urban Green Street, Urban Village Street, Industrial/Business
400 South	Principal Arterial	City Street Arterial (600 West to 300 West)	Destination Thoroughfare
500 South	Principal Arterial (Major Collector 700 East to 900 East)	State Route Arterial (I-15 to State Street) City Street Arterial (State Street to 900 East)	Grand Boulevard
600 South	Principal Arterial (Major Collector 700 East to 900 East)	State Route Arterial (I-15 to State Street) City Street Arterial (State Street to 900 East)	Grand Boulevard
400 West (Granary District)	No Classification	No Classification	Urban Green Street, Urban Village Street



Road	UDOT Classification	Salt Lake City Classification	Desired Street Typology
South Campus Drive	Major Collector	State Route Arterial	Urban Village Main Street
Mario Capecchi Drive	Minor Arterial	State Route Arterial	Destination Thoroughfare

2.2.2 RTP Planned Roadway Improvements

There are no new construction projects planned in the WFRC RTP for the study area, although there are several operational improvement projects identified. These improvements are smaller scale than new construction or road widening and include redesigning intersections, optimizing signal operations, and installing medians or other devices that augment access to and from the road. RTP projects in proximity to the study area (Figure 9) are primarily in Phase 1 (2023-2032) and Phase II (2023-2042), with two new overpasses identified in orange identified for Phase III (2043-2050).

Key Takeaway: The Salt Lake City area has an established roadway network that is heavily built out, offering limited opportunities or interest to build out additional roadway infrastructure in the future.

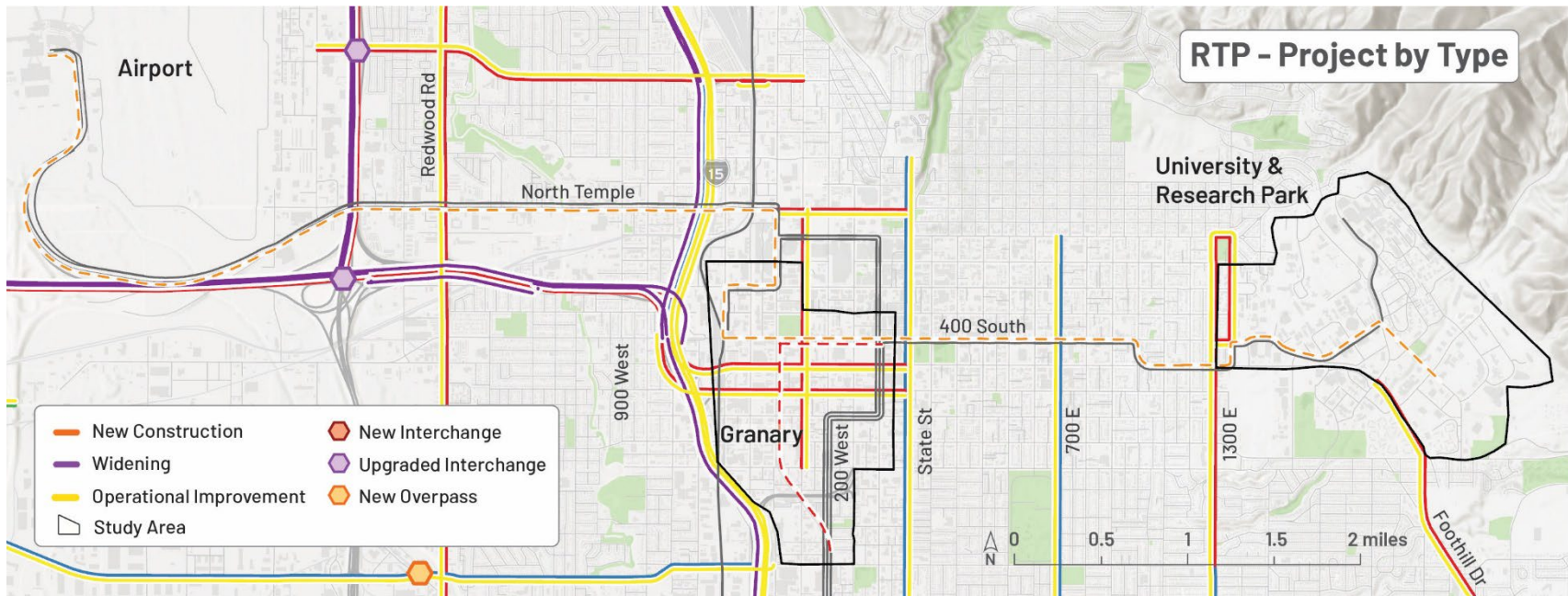


Figure 9. RTP Planned Roadway Improvements (2023-2050)

2.2.3 Salt Lake City's Livable Streets Program

Salt Lake City has adopted a citywide traffic calming initiative called Livable Streets. Over 400 miles divided into 113 zones of public streets were recognized as needing context-specific traffic calming strategies to improve safety and comfort. Each zone has received a ranking to help the City prioritize resources (high, high-medium, medium, medium-low, and low). The TechLink study area includes 27 of the 113 Livable Street Zones (Table 4), with half of all high priority zones located in the study area.



Table 4. Livable Streets by Zone Type and Study Area Proximity

Zone Type	Salt Lake City	TechLink Study Area	Percent in Study Area
High	10	5	50%
High-medium	15	6	40%
Medium	25	14	56%
Medium-low	24	2	8%
Low	38	0	0%

To Note: In keeping in line with Salt Lake City’s adopted transportation goals and strategies, the TechLink TRAX Study will prioritize where possible, the re-allocation of right-of-way within the existing roadway network, rather than widening. Unique strategies for moving people, calming traffic, adding trees, and enhancing the multimodal network will be considered.

2.3 Existing and Future Transit Conditions

2.3.1 Existing Transit Conditions

UTA System: UTA’s FrontRunner commuter rail, TRAX light rail, and various types of bus routes (regular, limited, and frequent) service the study area and strong multimodal networks exist in the downtown Salt Lake City core (Figure 10). The TRAX Red, Blue, and Green Lines will be most pertinent to this study as increased use of shared rail lines is explored. Currently, these three services share the same track from Courthouse Station to Central Pointe Station in downtown Salt Lake City, causing operational and reliability concerns that can strongly affect service systemwide if there is an issue on or near the track. In addition, the Blue Line and Green Line share track from Salt Lake Central Station to Gallivan Plaza in downtown Salt Lake City. TRAX lines operate 7 days a week between 5 a.m. and midnight with a peak weekday frequency of 15 minutes. FrontRunner operates Monday through Saturday from 5 a.m. to midnight, with 30-minute weekday service during peak travel times and 60-minute service during non-peak travel hours and Saturdays. Within the TechLink study area there are two FrontRunner stations at Salt Lake Central and North Temple. The Frequent Transit Network (FTN) is defined by 15-minute or better frequency on core bus routes Monday through Saturday, as well as late night service every 30 minutes, Sunday service. The FTN is focused on enhancing east-west transit connections for riders. Regular bus routes run every 30-60 minutes and limited bus routes provide limited service or run only during rush hour. In the study area, numerous FTN and regular bus routes exist, with the exception of the Granary District, south of 400 South, where currently transit service is very limited. Data for the maps was gathered from WFRC, UTA, and the Utah Geospatial Resource Center (UGRC).

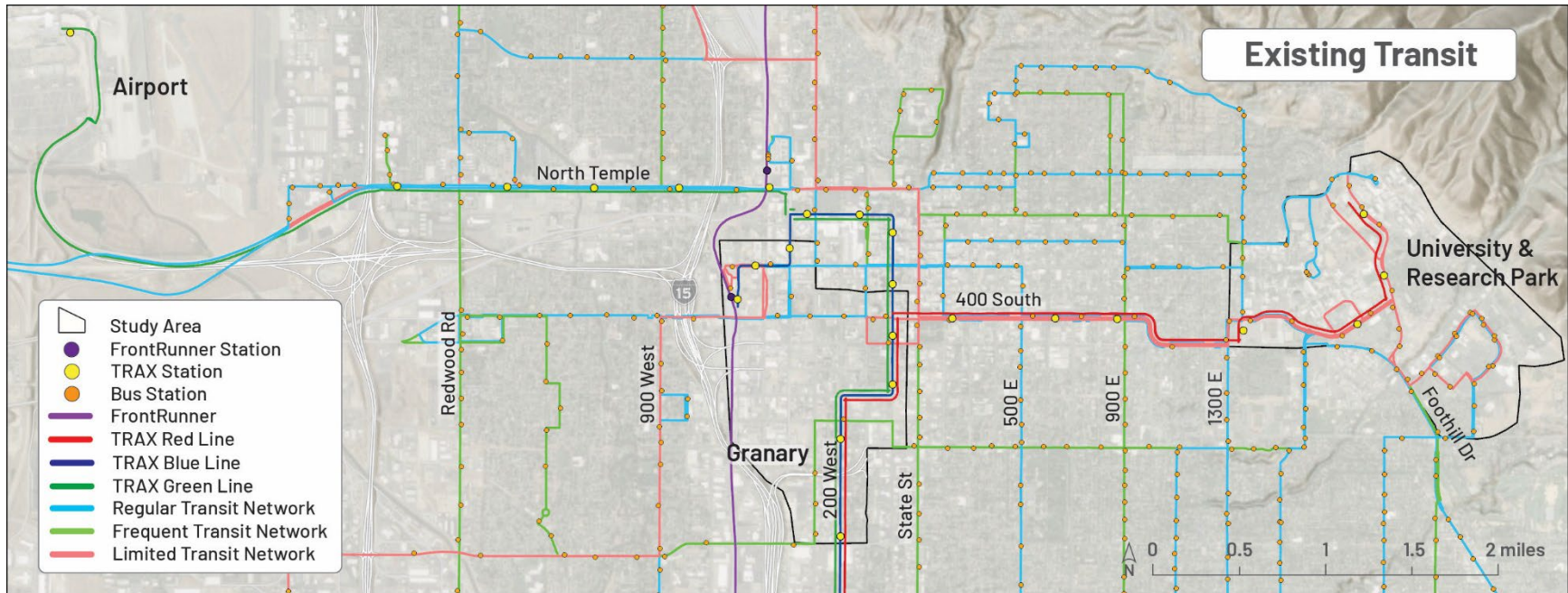


Figure 10. Existing UTA Transit Routes



The Free Fare Zone exists in the downtown Salt Lake City core, also called the Central Business District (CBD) to facilitate short trips by alternative modes, and all transit modes are fare free in this area (Figure 11). The Free Fare Zone has been in place since the inception of TRAX service and offers an incentive to people living, working, and visiting the downtown core to get around on transit.

University of Utah System: A gridded road network does not exist on campus, and buses are limited to circuitous routes and long travel times. The University of Utah also services a campus shuttle with five lines in addition to an on-demand shuttle (Figure 12). The Blue Detour, Orange, and Wasatch Express lines service the main campus area while the Circulator Route travels the entire campus, encompassing Research Park. Most of the routes run between 6 a.m. and 6 p.m. with the Wasatch Express and Orange line running until 10 p.m. and 7 p.m., respectively. The University of Utah also provides shuttles to specifically travel from the main campus area to the university hospitals. UTA also services the University of Utah and Research Park, with an emphasis on connecting people to and from campus, and to and from the University of Utah Medical Center.

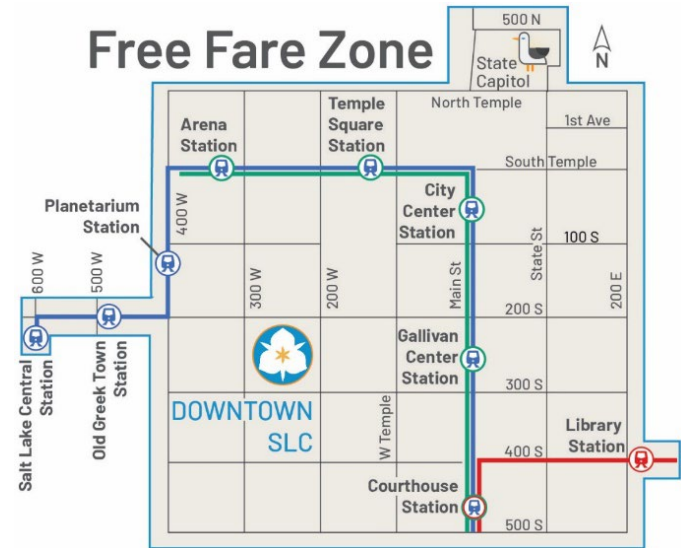


Figure 11. UTA Free Fare Zone in Salt Lake City

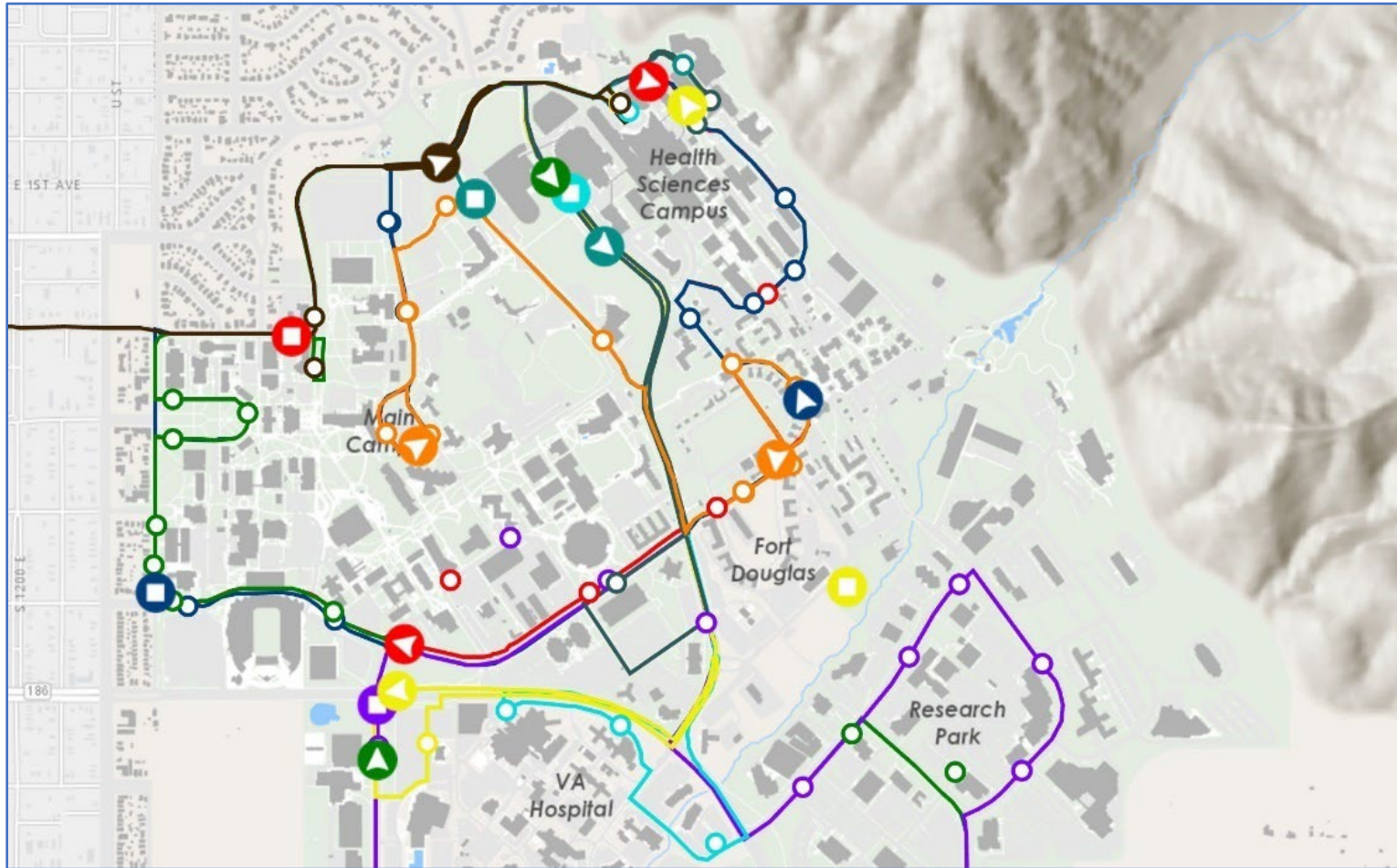


Figure 12. Campus Shuttle Services from the University of Utah Commuter Services

2.3.2 Planned Transit Conditions

UTA has a Five-Year Service Plan with projects identified to increase transit frequency and routes. The WFRC 2023-2050 Long-Range Plan also identifies transit projects within the Salt Lake County boundary (Figure 13). UTA is in the process of creating a 30-year Long-Range Transit Plan called Utah Moves 2050 that will focus on responding to future needs. The first draft of Utah Moves 2050 will be publicly available in the fall of 2023.

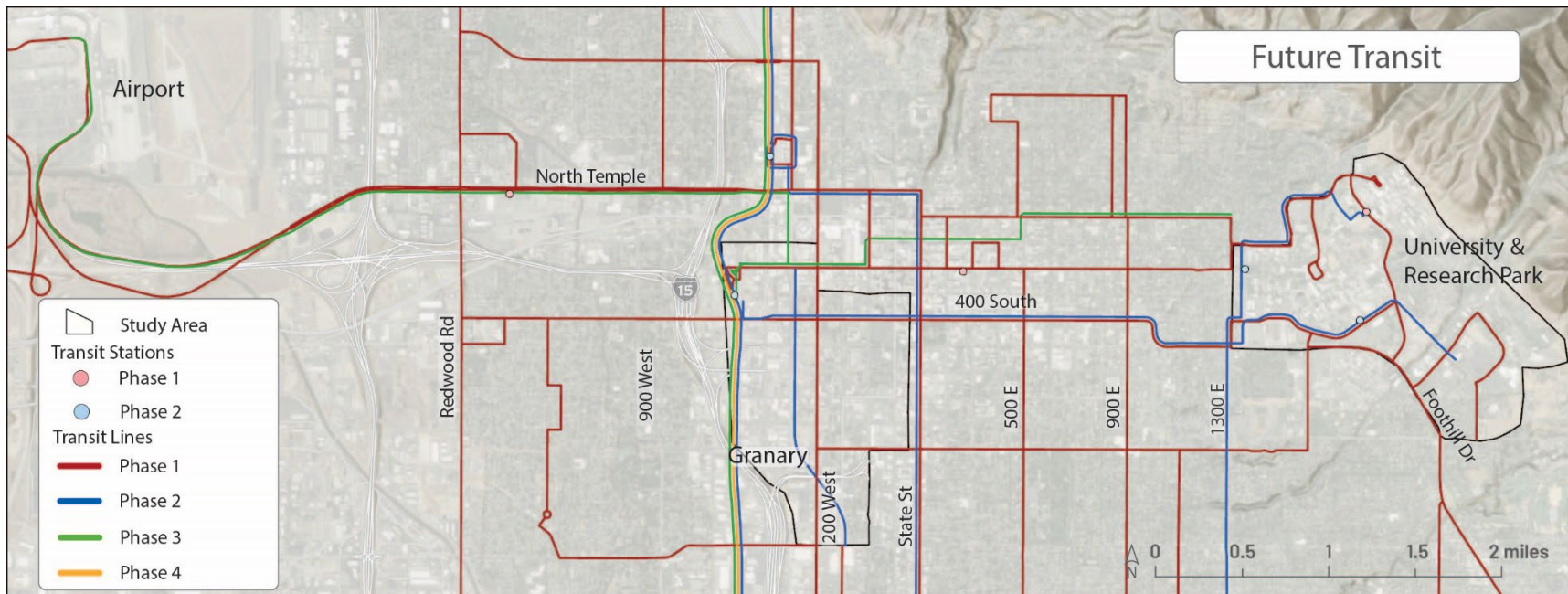


Figure 13. WFRC RTP Transit Projects



Table 5 provides additional detail about identified transit projects. Projects 5, 6, and 12 are the impetus for the TechLink Study.

Table 5. RTP Transit Project Definitions and Phase

Project #	PLAN	UPDATE	YEAR	PHASE
1	UTA Five Year Service Plan 2023	TRAX and S-Line increase to 15-minute service on Saturdays	August 2023	1
2	UTA Five Year Service Plan 2023	Route 205 frequency increase	August 2024	1
3	UTA Five Year Service Plan 2023	End route 220 at the University of Utah	August 2025	1
4	UTA Five Year Service Plan 2023	Routes 2A/2B will replace Route 2 with combined 6–9-minute service	August 2025	1
5	WFRC Long Range Plan 2023-2050	Orange Line TRAX reconfiguration from Salt Lake Central TRAX Station to Research Park	2033-2042	2
6	WFRC Long Range Plan 2023-2050	Orange Line TRAX reconfiguration from the Airport TRAX Station to the Salt Lake Central TRAX Station	2043-2050	3
7	WFRC Long Range Plan 2023-2050	200 South Bus Rapid Transit from the Salt Lake Central FrontRunner Station to the University Medical Center TRAX Station	2023-2032	1
8	WFRC Long Range Plan 2023-2050	Davis - SLC Community Connector Core Route (15-minute service) from Davis County Line to Research Park	2023-2032	1
9	WFRC Long Range Plan 2023-2050	400 South Corridor - Foothill Drive Core Route (10-minute service) from Redwood Road to 3900 South and Wasatch Boulevard	2023-2032	1
10	WFRC Long Range Plan 2023-2050	5600 West Corridor Core Route (15-minute service) from Downtown Salt Lake City to the 5600 West Old Bingham Highway TRAX Station	2023-2032	1
11	WFRC Long Range Plan 2023-2050	300 West Corridor Core Route (10-minute service) from the North Temple FrontRunner Station to the Central Pointe TRAX Station	2023-2032	1
12	WFRC Long Range Plan 2023-2050	400 West - American Spur TRAX Extension from 400 West and 200 South to 200 West and 1300 South	2033-2042	2



Project #	PLAN	UPDATE	YEAR	PHASE
13	WFRC Long Range Plan 2023-2050	900 East Corridor Core Route (10-minute service) from the Salt Lake Central FrontRunner Station to the Midvale Center TRAX Station	2023-2032	1
14	WFRC Long Range Plan 2023-2050	SLC Downtown Streetcar from the Salt Lake Central FrontRunner Station to the University of Utah	2043-2050	3
15	WFRC Long Range Plan 2023-2050	FrontRunner Forward Investment Package I (Salt Lake County) - FrontRunner Upgrade: Doubletracking	2023-2032	1
16	WFRC Long Range Plan 2023-2050	FrontRunner Fleet Upgrades I (Salt Lake County) - FrontRunner Upgrade: Electrification	2043-2050	3
17	WFRC Long Range Plan 2023-2050	500 East Corridor Core Route (10-minute service) from the Power Station TRAX Station to the Murray North TRAX Station	2023-2032	1
18	WFRC Long Range Plan 2023-2050	Redwood Road Corridor Core Route (10-minute service) from the North Temple FrontRunner Station to the West Jordan City Center TRAX Station	2023-2032	1
19	WFRC Long Range Plan 2023-2050	1300 East Corridor Core Route (15-minute service) from the University Medical TRAX Station to the Fort Union Boulevard TRAXI Station	2033-2042	2

2.4 Transit Ridership

UTA’s 2017-2023 ridership data for weekday service was collected and analyzed (Figure 14). Both pre- and post-Covid ridership was captured. UTA’s data shows that light rail average weekday boardings are trending towards pre-pandemic ridership levels in 2023.



UTA's light rail system in Salt Lake City consists of three lines, Green, Blue, and Red, and has a total of 25 stations within the study area. Figure 15 shows each station's average weekday boarding for all TRAX lines. The Red Line, which serves the University of Utah as well as Research Park, was found to have the highest average weekday boarding out of all TRAX lines. Specifically, the Red Line Stations along 400 South have significantly high average weekday boardings in comparison to other stations within the study area, indicating a high demand for this transit service. UTA runs parallel bus routes along 400 South to accommodate the transit demand to the University of Utah and accommodate more localized service.

Compared to the rest of the city and the UTA transit system, the Granary District lacks transit options (Figure 10, above). An additional Orange Line and realignment of the Red Line would be able to accommodate the high demand the Red Line experiences, while preemptively serving the growing population of downtown Salt Lake City in the Granary District.

To Note: UTA Light Rail average weekday boardings were between 66,052 and 45,742 boardings pre-pandemic (2017-2019). During the 2020 Covid-19 pandemic, weekday boardings dropped from 56,176 boardings in February to 15,321 boardings in April. Throughout 2020, average weekday boardings remained below 21,866 boardings. Current ridership trends show average weekday boardings increasing towards pre-pandemic levels.

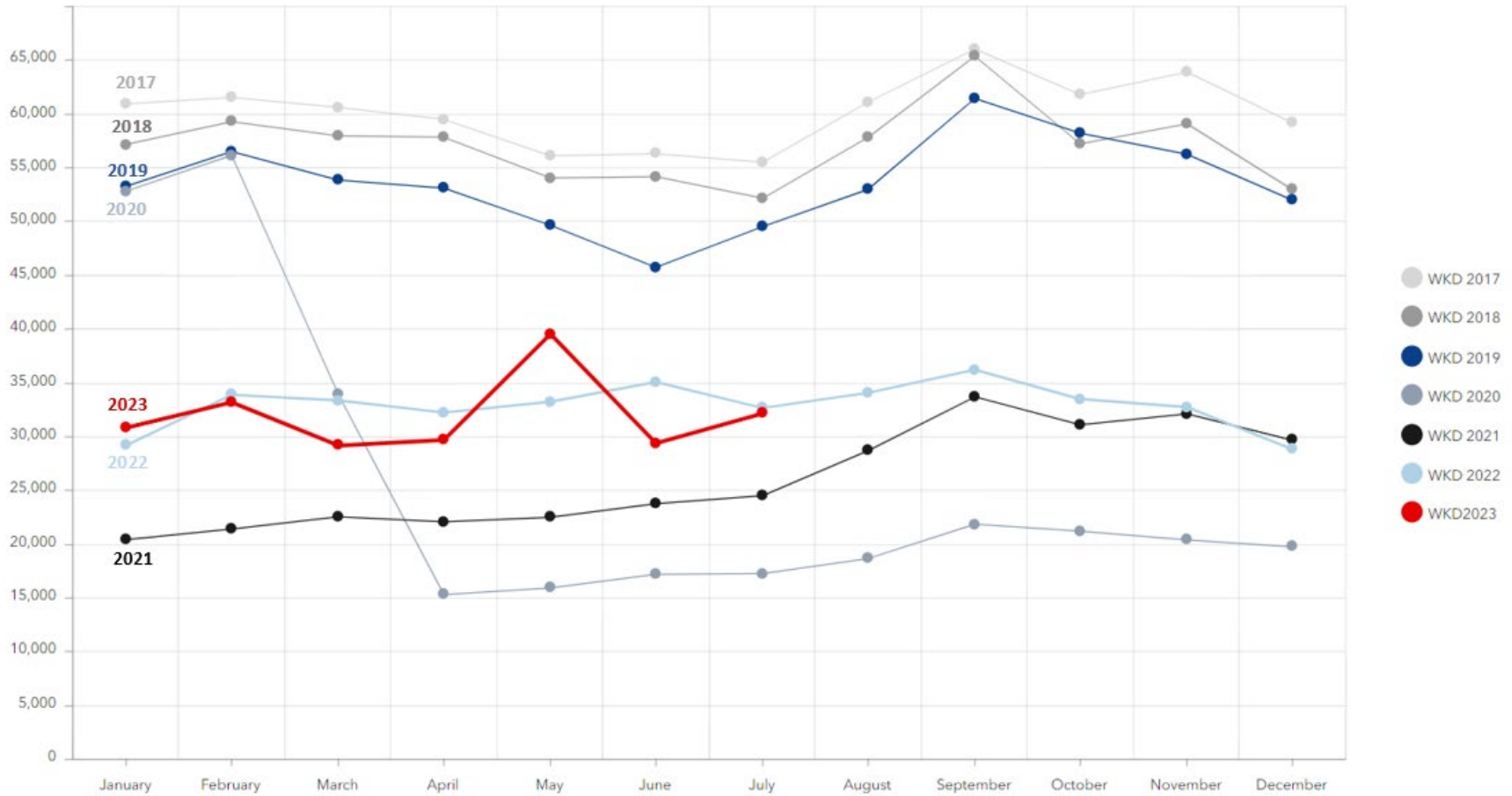


Figure 14. UTA Light Rail Average Weekday Boardings

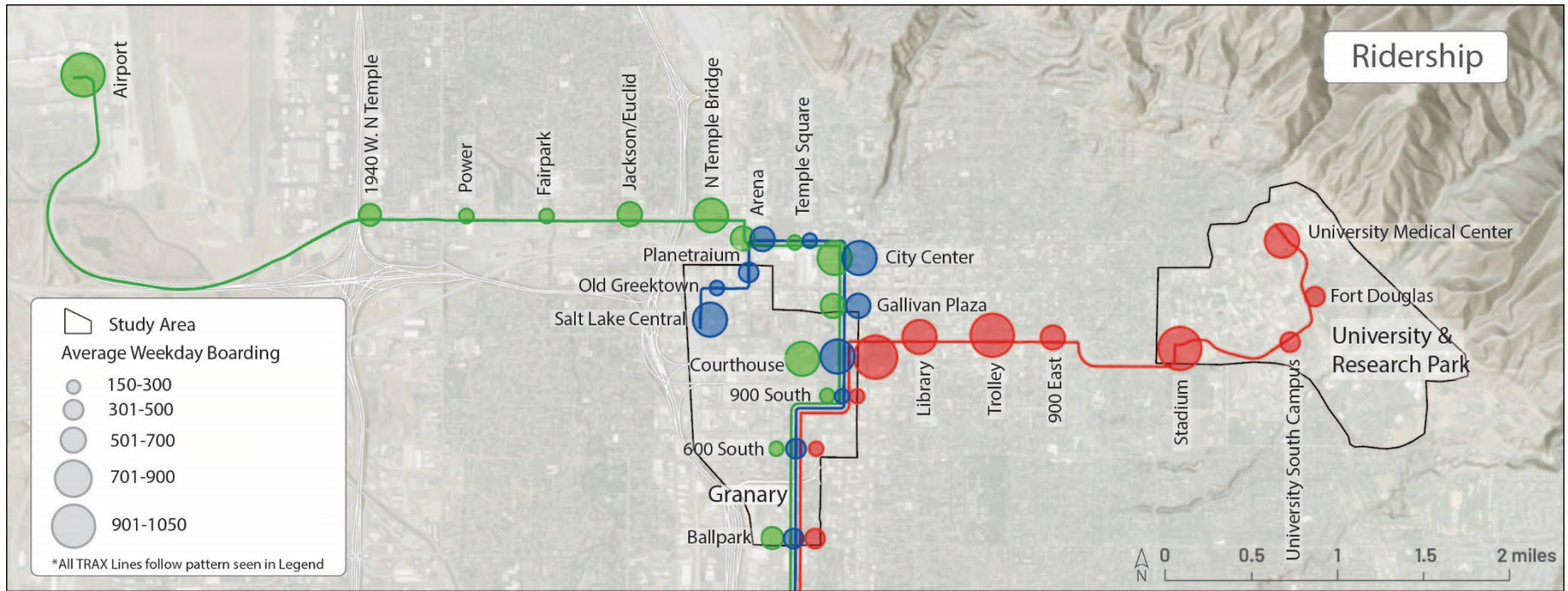


Figure 15. UTA TRAX Average Weekday Boardings



2.5 Active Transportation Existing and Future Conditions

Most of the study area in Salt Lake City has a gridded transportation network with wide streets and large city blocks. These urban features have provided opportunities to create contiguous on-street bike facilities that extend north and south and east and west across the city and provide connection into the transit system that also use the gridded network. Figure 16 shows the existing and planned active transportation facilities in Salt Lake City and within the TechLink Study corridor including regional multiuse facilities that bisect the study area on North Temple, Main Street, 300 South, and 200 South and on the Jordan River Trail and the 9-line Trail. A new multiuse pathway along the south side of 400 South across the viaduct is also in the planning and design phases with Salt Lake City.

There are 55 GREENbike bike share stations within Salt Lake City, 34 of which are within a quarter-mile radius of TRAX stations in the study area centered on the core of the city and into the Granary District. GREENbike is a resource for first/last mile connections and are often located near or at fixed transit stations. No bike share stations exist on the University of Utah campus (primarily due to significant grade changes on campus making bikes difficult to rebalance) or along the western extents of North Temple where dense land use mix decreases.

Key Message: Providing good first/last mile connections to transit and providing transit service that is accessible to the regional active transportation network is a benefit for existing riders and a draw for new ones. The pedestrian demand (Figure 17) indicates a need for better walking, biking, and transit connectivity.

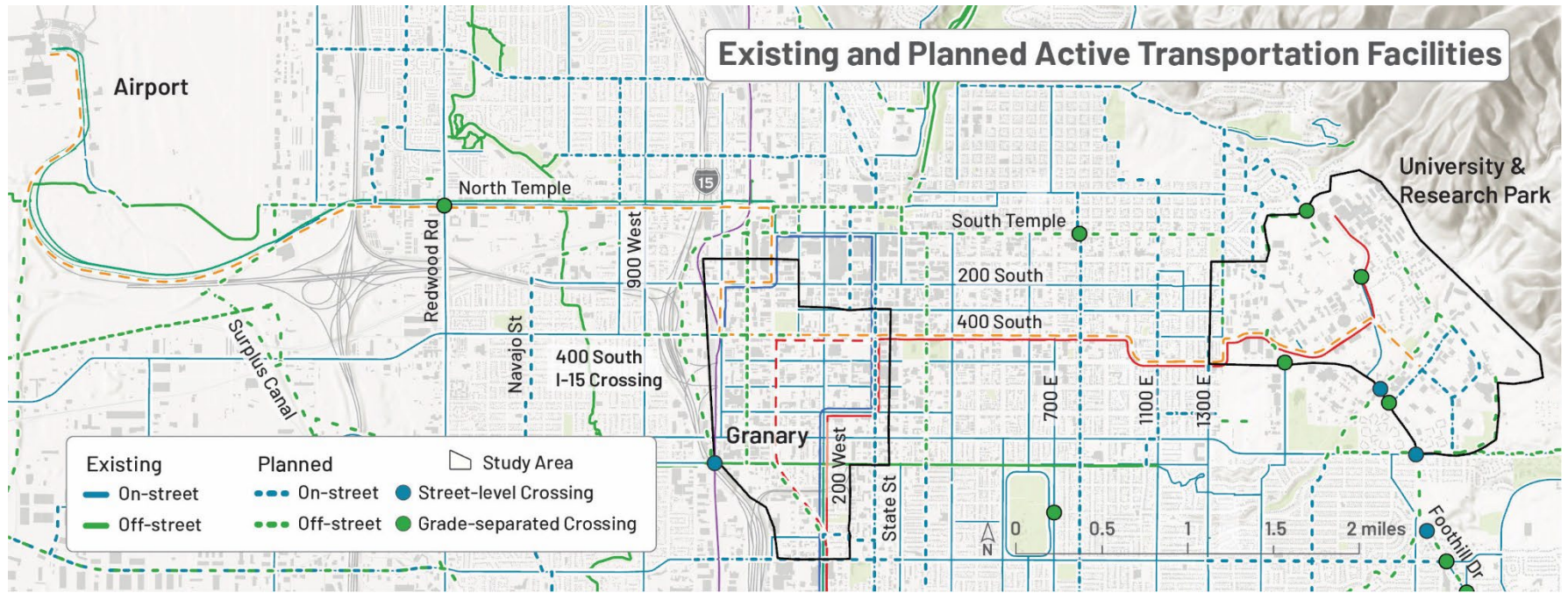


Figure 16. Existing and Planned Active Transportation Facilities

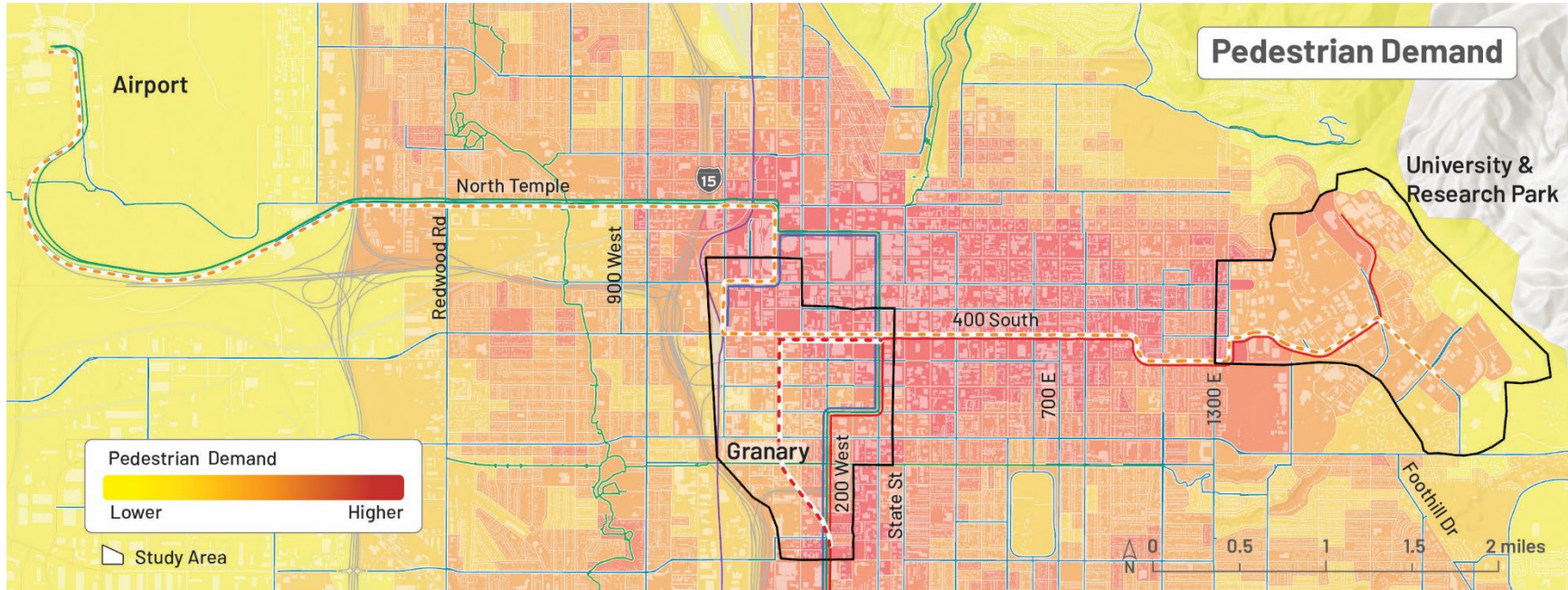


Figure 17. Pedestrian Potential Demand, WFRC

Pedestrian potential demand (Figure 17) is calculated by using methodology that captures population and employment density, land use mix, demographics, and proximity to destinations like schools, grocery stores, transit stops, and parks. The darker the color, the higher the demand for walking is based on the factors listed, requiring more focus on ensuring pedestrian (and bicycle networks) are connected and comfortable and provide access for users in these areas.



2.6 Freight Rail

The Union Pacific Railroad (UPRR) extends north-south along the Wasatch Front, transporting goods and materials locally and regionally. The UPRR rail corridor runs parallel and east of I-15 on the west side of the TechLink study area (Figure 18). UPRR operates on tracks in the same corridor as FrontRunner, with tracks immediately west of FrontRunner. This spine of north-south rail tracks is often a barrier to people who live on the west side of the corridor who need to access the east side for services, jobs, health care, and education.

2.7 Parking

2.7.1 Salt Lake City

There is a generous amount of land dedicated to parking in downtown Salt Lake City and throughout the study area (Figure 19). The Salt Lake City Parking Study developed between 2013 – 2015 identified 33,000 parking spaces downtown. These spaces were also deemed to be underutilized with a vehicle occupancy rate at approximately 60 percent. The study made the comparison between parking and population in Denver vs. Salt Lake City. In 2015 Denver had approximately 42,000 parking spaces and a population of 682,545 compared to Salt Lake City with 33,000 parking spaces and a population of only 191,180. If Salt Lake City were to align its parking to population ratio with that of Denver's, it would have less than 12,000 parking spaces in the downtown area. Figure 19 shows an aerial view of the general inventory of surface and structure parking facilities in the study area. Open Street Map (OSM) GIS data, which is an open-sourced mapping software used in all forms of GPS capable devices and apps globally, is the main data source of this figure.



Figure 18. UPRR at 600 West in the Granary District

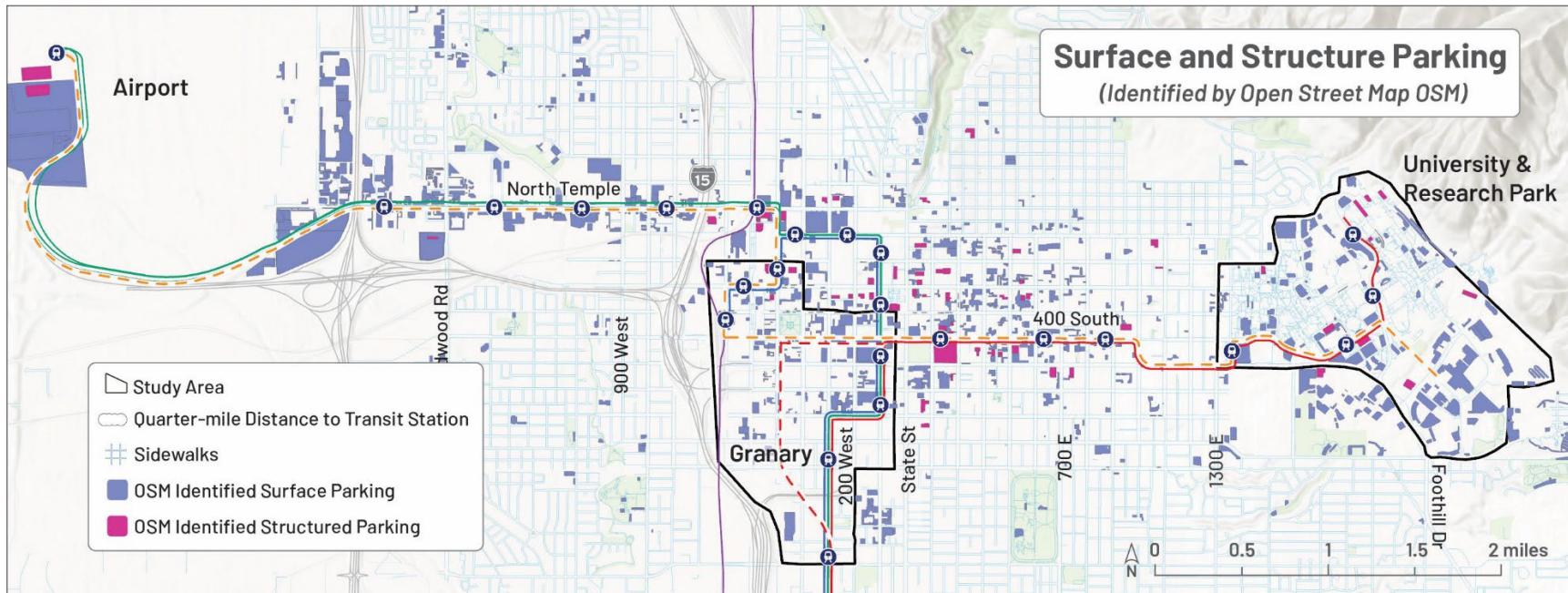


Figure 19. Surface Parking Lots

Salt Lake City also has 1,663 on-street metered parking spaces according to GIS data provided from Salt Lake City’s Transportation Division. By the University of Utah there are 63 around 200 South and 1300 East. The other 1,600 are located around downtown. Almost all of the metered parking is within walking distance of a TRAX station.



2.7.2 University of Utah

The University of Utah developed a Transportation and Parking Strategic Plan that recommended a balanced approach to parking on campus (Figure 20). This scenario provides a combination of new parking supply and significant investment in Transportation Demand Management (TDM) solutions to balance demand. The recommended scenario is designed to create a demand-responsive and data-driven system with achievable targets for mode split. New parking supply is focused in the main campus areas, but still only provides a limited supply increase for the future. No new parking supply is recommended in the Research Park area.

The strategy recommends progressive increases to parking permit costs, integrating the proposed mobility hubs, adding a car share program, adding bicycle parking, plus adding an ongoing monitoring and evaluation program.

The Strategic Plan distributes recommended strategies over short-term (less than two years), medium-term (two to five years), and long-term (6-10) years.

2.8 Safety

Crash data within one-half mile of TRAX and FrontRunner stations was captured for the past five years (2018-2023) for vulnerable roadway users (Figure 21). Vulnerable roadway users are people walking, biking, and accessing transit and are at a much higher risk for serious injuries or death when involved in a crash with a vehicle. Crash data attributes

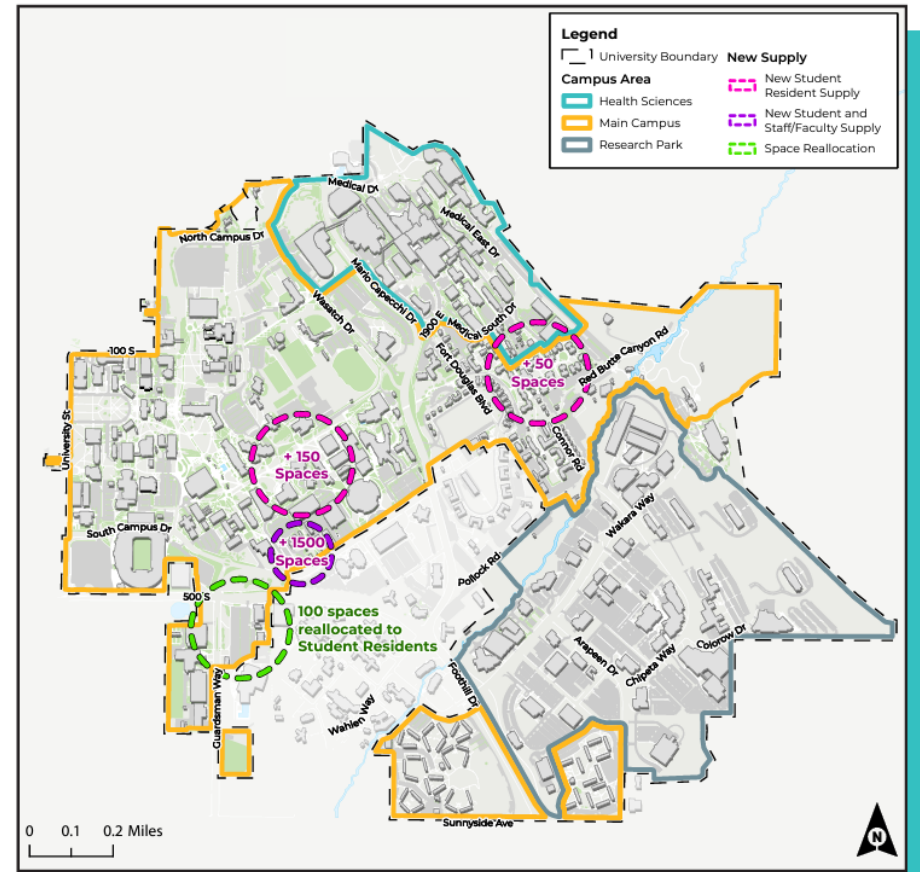


Figure 20. University of Utah Transportation and Parking Strategic Plan Recommendations

help determine deficiencies in the safety, visibility, and accessibility of the roadway network. Identifying and recommending improvements that reduce serious injuries and fatalities for people trying to access transit will be a key focus in future phases of this study.

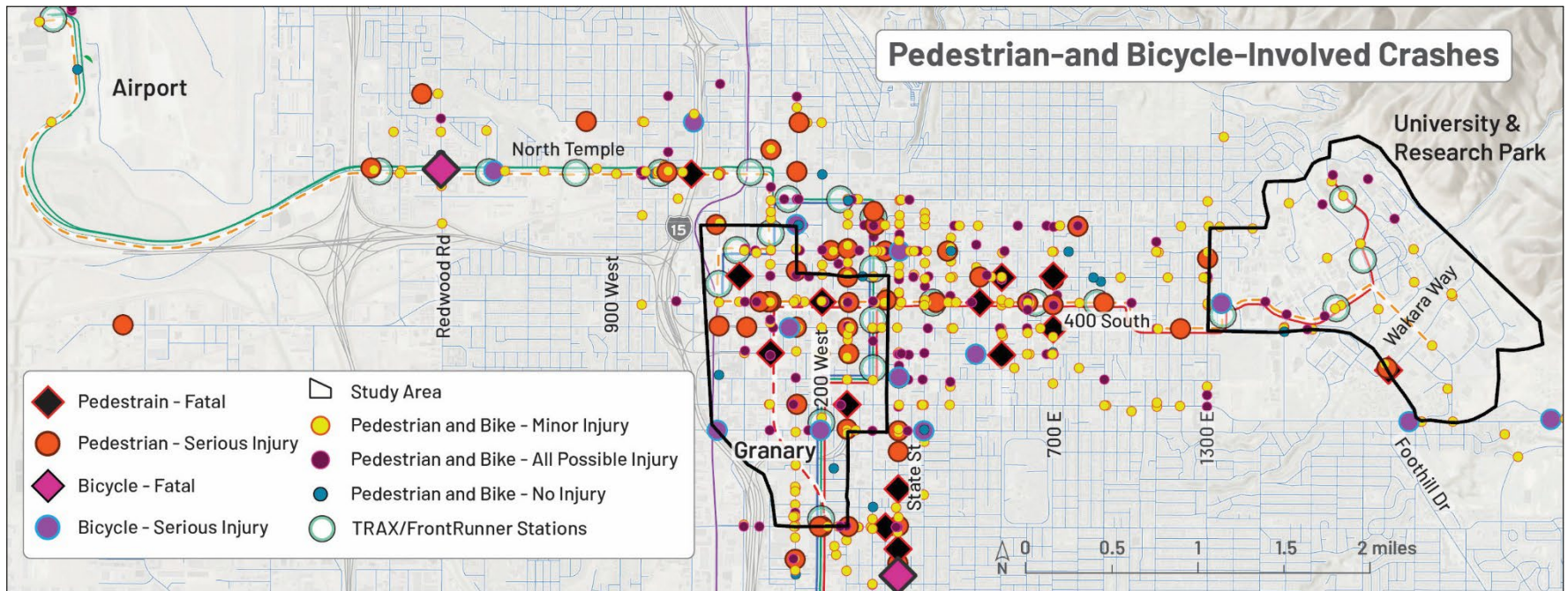


Figure 21. Pedestrian and Bicycle-Involved Crashes, Source: Numetric

2.8.1 Pedestrian-Involved Crashes

From the crash data, there were over twice as many pedestrian-involved crashes as there were bicycle-involved crashes, at 408. Fatal crashes accounted for 14. One was at the intersection of Wakara Way and Foothill Drive, and another was directly west of I-15 on North Temple at 700 West. Five occurred between 400 East and 700 East, and the other seven fatal crashes were located between I-15 and State Street. Half of the



crashes occurred at four-way intersections, and for 11 of all the fatal pedestrian crashes the vehicle was driving straight. Only two of the crashes occurred during daylight hours, and the other 12 crashes occurred at night at locations where there is street lighting.

Approximately 25% (52) of these crashes resulted in serious injury. One occurred during the day at the 1300 East railroad crossing at the Ballpark Station, seven occurred at three-way intersections, and 31 of the pedestrian-related crashes were at four-way intersections. There were 22 daylight crashes and at least 20 of the nighttime crashes were at locations with street lighting, accounting for 81% of all serious injury crashes.

Ten of the serious injury crashes occurred along 400 South and one more was located along the same corridor, at 500 South and 1200 East. Those 11 crashes combined created 21% of all resulting in serious injury. One fatal crash was also located at 200 West and 400 South. Another serious injury crash occurred at Foothill Drive and Wakara Way, the same location of a pedestrian fatality,

In regard to the total number of pedestrian-related crashes, the lighting conditions are unknown for several. However, there were at least 225 that occurred during daylight hours and approximately 140 that occurred at night at locations with street lighting. These estimated 365 crashes that occurred either during daytime or near street lighting account for 89% of all pedestrian crashes. Most occurred at some form of crossing, with five located at railroad crossings, at least five at midblock crossing, and by far the largest majority of crashes occurred at road intersections with an estimated minimum of 304 (75%) of the 408 pedestrian crashes. Figure 21 Figure 22 shows the location of pedestrian-involved crashes and the severity of each crash.

2.8.2 Bicycle-Involved Crashes

There have been 183 reported bicyclist-involved crashes in this time period. Two of these crashes were fatal. One occurred at North Temple and Redwood Road and the other occurred at Kensington Street and State Street. Both happened at four-way, signalized intersections and during daylight hours. In both instances the driver was reported as driving straight when the bicyclist was struck.

There were 14 crashes that resulted in serious injury. Ten of these occurred at intersections. Vehicles were driving straight for seven of the crashes, four were turning left, two were turning right, and one vehicle was making a U-turn. Eight of the crashes occurred during daylight hours, five occurred at night at locations where there was lighting, and one occurred at dawn.

Most bicycle-related accidents were reported as suspected minor injuries, at 111 (61%). The majority of all crashes, 136 (74%), occurred during the day, and 36 crashes occurred at night at locations that had lighting. Figure 21 shows the location of bicycle-involved crashes and the severity of each crash.



2.8.3 Transit-Related Crashes

There are 65 reported crashes that involved a train. More than half (36) were located at intersections. Only one crash occurred while it was dark out and there was no overhead lighting, although this was near Salt Lake Central Station along 600 West where the TRAX station has overhead lighting. The other 22 crashes happened at night and occurred at locations where there was overhead lighting.

Pedestrians were involved in four of these crashes, each resulted in minor or possible injury. There were no reported crashes involving a bicycle and a train. One fatality was reported that involved a single motor vehicle and a train. This occurred at the intersection of 700 West and West Temple. There was only one reported crash involving a train that resulted in serious injury. Crashes resulting in property damage only were the majority at 75%.

Crashes that occurred at railroad crossings totaled 49. Of these crashes, 18 are front-to-rear crashes other motor vehicles and 22 involve only a single motor vehicle. Serious injury resulted in three of the crashes, all of which occurred during the day. No fatalities were reported. Pedestrians were involved in four railroad crossing crashes, one of those resulted in serious injury. There were no reported bicycle-involved crashes. There is close to an equal number of crashes which occurred during the day (24) and crashes that occurred at night at locations where there is overhead lighting.

In addition to the crashes that specifically involving a train or a railroad crossing, there are 91 additional reported crashes that are reported as transit related and do not include a train or a railroad crossing. AS Most of these occur along UTA or University of Utah transit routes. A few of these crashes are not on these routes and are found 500 South, 600 South, and along 200 South, where UTA service does not currently run. Figure 22 shows the transit related crashes with a half-mile of the TRAX lines in the study area.

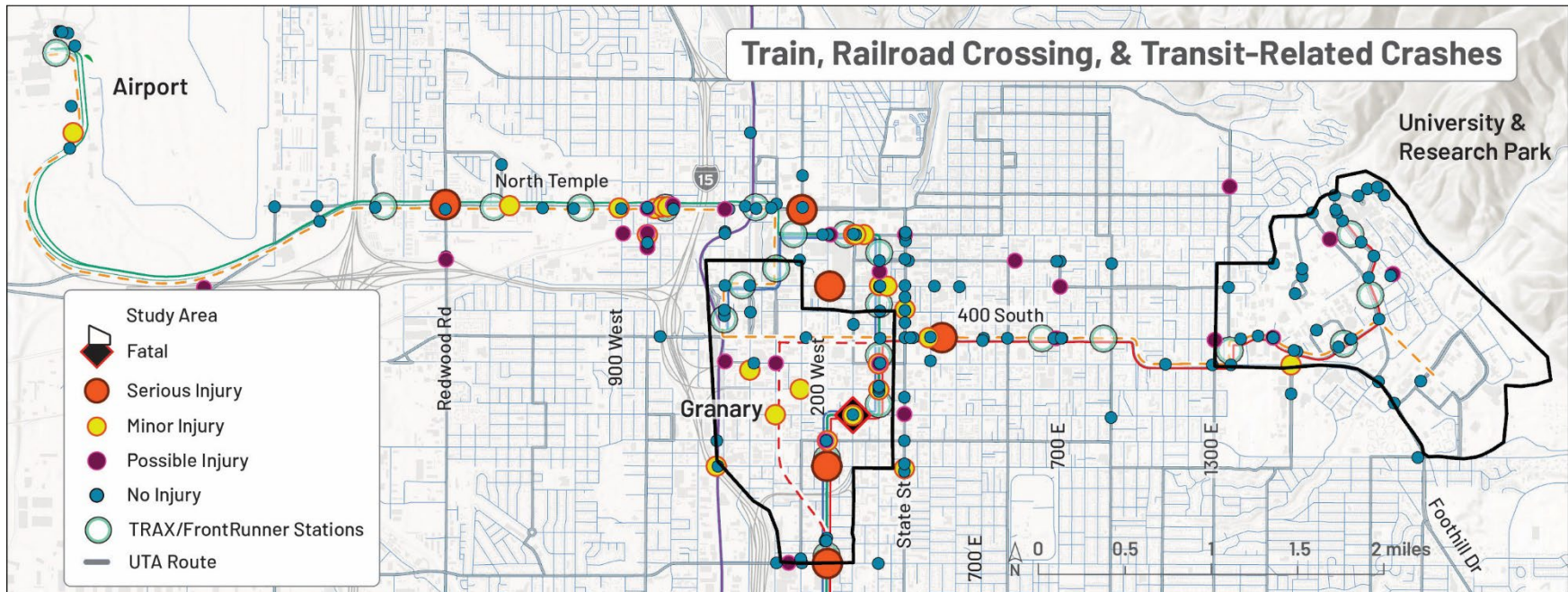


Figure 22. Transit-Related Crashes

3 Land Use and Socioeconomic Conditions

Understanding current and future land uses provides insight into the future growth patterns and opportunities in the study area. Having a knowledge of how cities and regions regulate their land use is crucial to addressing housing affordability, ensuring transportation equity, and creating new transit connections that best serve the population. This section provides a high-level overview of existing and planned land uses within the study area and describes socioeconomic conditions. Additional and more detailed land use analysis will accompany future tasks of the study.

3.1 Existing and Future Land Use

3.1.1 Existing Land Use

Salt Lake City is the largest and densest city in Utah, with a diversity of land use (Figure 23). The downtown core area is zoned predominantly for business parks and commercial uses with few residential and mixed-use zones throughout. Residential zoning surrounds the downtown core. Business parks and commercial uses with few residential and mixed-use zones throughout. Residential zoning surrounds the downtown core.

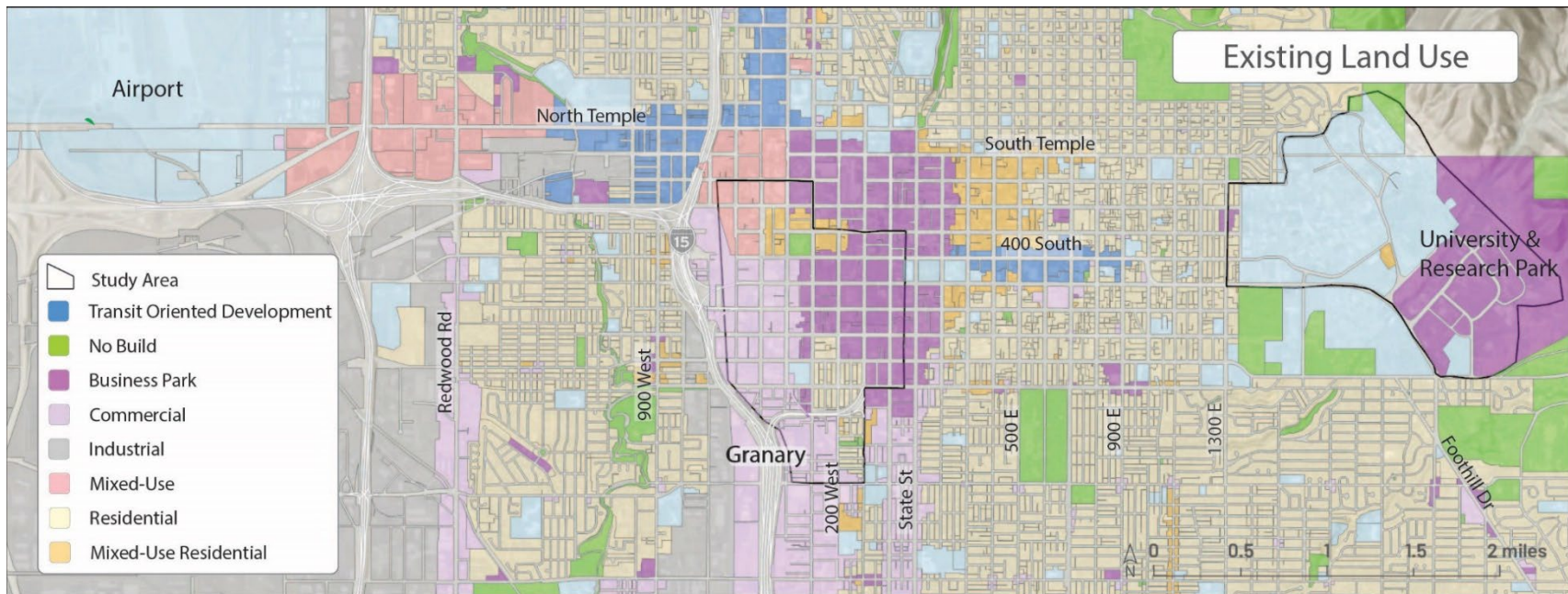


Figure 23. Existing Land Use

However, a variety of land use other than residential can be found along the major corridors such as North Temple, 400 South, and 200 West. These corridors follow the TRAX lines and are bordered by mixed-use and transit-oriented development zones. Most of the land west of I-215 is zoned as industrial. Greenspace can be found in all parts of the city but is more common east of I-15.

3.1.2 Future Land Use

Future land use in the study area includes a densification of mixed-use housing along the two interstate alignments, also mirroring the TRAX rail alignments: east of the I-15 corridor in the downtown, Granary and Ballpark neighborhoods, and north of the I-80 corridor extending east-west along North Temple between the airport and downtown (Figure 24). While some of these land uses exist today, as the local population continues to increase and needs housing, the patterns seen will be intensified.

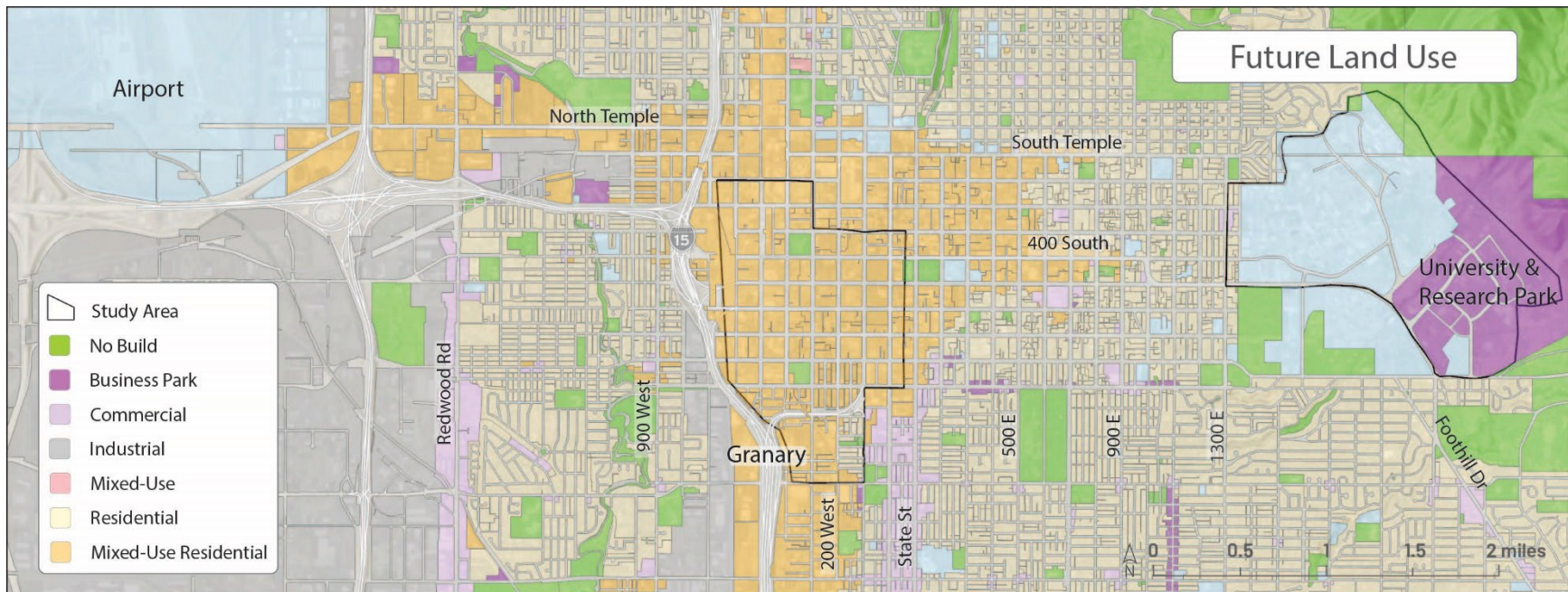


Figure 24. Future Land Use



3.1.3 The Granary District

The Granary District is one of Salt Lake City’s oldest neighborhoods. Future mixed-use zoning allows this previously industrialized-business district to become one of Salt Lake City’s most vibrant neighborhoods. The SLCRDA is currently working on a project in the Granary District to implement additional housing and service-oriented commercial developments. The redevelopment aims to create mixed-use neighborhoods that support commercial businesses and services by improving public infrastructure, addressing deterioration, preserving historic structures, financially supporting adaptive reuse development, and creating open space. The TRAX 900 South Station is the center point for a proposed Housing and Transit Reinvestment Zone (HTRZ) that would extend one-half mile outward from the station. If approved, the zone will open opportunities for using local tax revenue to support development and investments adjacent to the station area. More on this HTRZ opportunity is provided in Section 3.3.

3.1.4 The University of Utah and Research Park

Research Park recently adopted the Research Park Strategic Vision that identifies strategies to break up large swaths of land using a more gridded roadway and multiuse pathway network, while also identifying key mobility hubs that can serve students and staff with bus, TRAX, and other mobility options. Most buildings in Research Park are commercial lab spaces, office buildings, academic buildings, clinical facilities, and a hotel. The design of the campus is starkly dated from the 1970s and 1980s and is very car-centric. It includes large buildings widely spaced with ample surface parking lots. Land use goals from the Strategic Vision include:

- Adding high-density multifamily housing concentrated to the southern end of campus
- Expanding types of employment spaces, including mixed-use spaces and spaces designed for anything from startup incubators to Fortune 500 companies concentrated towards the middle of Research Park and expanding outwards
- Develop a pop-up space along a major street to host community events and lease small workspaces for University-affiliated needs
- Creating a Convergence Hall at the center of campus to connect industry and academia that may include an event hall, restaurants, co-working spaces, and wet labs

Mobility hubs have been identified for:

- Arapeen Drive and south of Wakara Way
- Chipeta Way and Wakara Way
- TRAX South Campus Station on South Campus Drive



- The southern leg of Chipeta Way near the ARUP Laboratories

Mobility hubs will be instrumental in the success of a more interconnected campus between the University of Utah and Research Park. The University of Utah is continuing to densify the campus, adding new buildings, research facilities, and housing opportunities. This is done by repurposing existing surface parking lots to raise new buildings, limiting the availability of on-campus parking for single occupancy vehicles. The University is focused on deploying TDM strategies to incentivize campus access by walking, biking, or taking transit instead of driving, therefore reducing demand on parking spaces.

3.1.5 North Temple Corridor

North Temple serves as the major surface street connection in downtown Salt Lake City to the neighborhoods and businesses in the northwest portion of the city. With the addition of the TRAX Green Line, North Temple has also become a major piece of the region's transit system, connecting the entire system to the airport. The area north of North Temple has been developed as a mix of industrial, office, commercial, institutional, and residential zones. It should also be noted that west of 1000 West, few cross streets, bike lanes, and sidewalks exist due to the auto-oriented nature of the corridor. The SLCRDA is currently working to make the North Temple corridor a more vibrant, walkable, and transit-oriented corridor. The SLCRDA has recently purchased an unsafe and dilapidated motel property and prepared it for mixed-use development, contributing to redeveloping the neighborhood for a variety of users.

3.1.6 400 South Corridor

400 South is a main corridor that serves much of Salt Lake City's population. Much of the land around the corridor is planned to become mixed-use zoning, providing opportunity for the addition of housing to support Salt Lake City's rapid growth. The SLCRDA, in partnership with UTA, has developed the Central Station Area Plan which includes providing multifamily and mixed-use development within the study area of 300 North, 400 South, Interstate 15, and 300 West. SLCRDA also has a current project focusing on the CBD. The project is bounded by 400 West to 300 East and 500 South to North Temple. SLCRDA is providing new commercial and housing development, as well as rehabilitation of existing downtown buildings throughout the project area. The CBD Project Area Plan also recommends installation of public improvements, including transportation enhancements and cultural facilities.

3.2 Affordable Housing

Salt Lake City has aggressive affordable housing initiatives and adopted the Housing SLC: A Five Year Housing Plan, in 2023. The plan reports that with Salt Lake City's rapid growth rate (over 7% the last decade) primarily from in-migration. Thus, housing demand, and therefore costs, have



skyrocketed. Current housing stock in the city does not meet the needs of community; it is primarily luxury rentals with a deficit in middle-income and family-friendly housing options.

Rent burden, the percentage of income spent on housing costs, is a significant contributing factor to financial hardship for many individuals and families. Salt Lake City is a majority-renter city, and half of all renters are rent-burdened – spending more than 30% of their income on rent (Figure 25). When a significant portion of a person’s income is dedicated to rent, it leaves less money available for other essential expenses, such as transportation.

Historical patterns of discriminatory housing policies, such as redlining and urban renewal, have also contributed to the concentration of minority and low-income populations in certain neighborhoods with limited access to transportation options. These communities may be located far from economic centers and job opportunities, leading to a greater dependence on public transit to commute to work or access essential services.

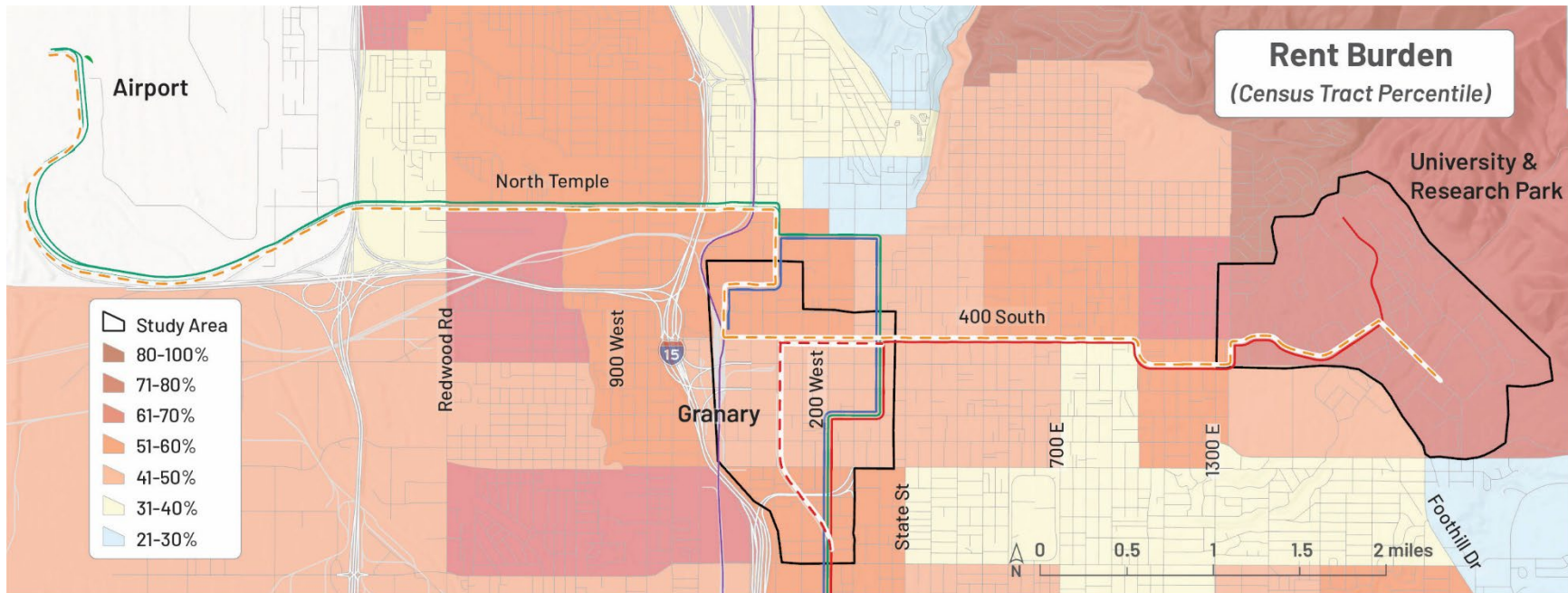


Figure 25. Rent-Burdened Populations by Census Tract

The TechLink TRAX Study has identified varying levels of rent burden across different neighborhoods, highlighting the potential disparities in transportation access and choices among residents. The University of Utah and Research Park is located within an area that show residents are in the 51-60% and 61-70% percentile range for rent burden, likely an indicator of dense student housing on or near campus. However, it is important to note that no housing currently exists within Research Park.

On the other hand, the Downtown area, which includes North Temple, falls within the 41-50% percentile of rent burden. Although slightly lower than the University of Utah and Research Park, this percentile still indicates a significant number of households facing rent burden challenges in



the Downtown area. As a result, residents in this region might also experience limitations in their transportation choices and mobility options, which could impact their ability to access employment centers, educational institutions, and other crucial amenities within the city.

3.3 Planning for Transit-Oriented Developments

TOD is a planning strategy that aims to concentrate jobs, housing, and services around fixed transit stations to reduce reliance on single occupancy vehicle trips.

In 2021, the State of Utah established the Housing and Transit Reinvestment Zone (HTRZ) Act. This legislation allows for municipalities to capture tax increment revenue around certain public transit facilities to promote TOD. HTRZ and TOD planning address the growth and needs of a city by performing gap analyses and creating implementation plans). Utah State requirements state that 51% of developable land in HTRZs must include residential uses; and 10% of that must be affordable housing. **The SLCRDA is planning to establish a HTRZ at the 900 South TRAX station.** An application for this HTRZ have been submitted to the Utah Governor’s Office of Economic Opportunity for consideration and are currently being evaluated. The proposed future land uses include small and large commercial spaces, spaces for artists and recreation, hotels, lab space, and dense office developments. About 54% of the developable acreage will incorporate residential uses.

Key Takeaway: Salt Lake City and partnering agencies have identified multiple TOD and HTRZ areas pertaining to the TechLink study area, specifically around the Salt Lake Central Station, North Temple Station, Ballpark Station, and 900 South Station.

In 2022, the Utah State Legislation passed H.B. (House Bill) 462, requiring a city that has a fixed-guideway public transit station (rail or Bus Rapid Transit) to develop a Station Area Plan for that station and update its general plan and zoning to implement the Station Area Plan. Cities can apply for technical assistance given by WFRC in partnership with the Governor’s Office of Economic Opportunity, UTA, and the Mountainland Association of Governments (MAG) to implement H.B. 462.

Salt Lake City completed the **Central Station Area Plan**, a TOD report for the Salt Lake Central and North Temple Frontrunner stations, in 2019. The study area of the plan reaches to Pioneer Park to the south and West High School to the north. The plan is to implement high-density residential area near North Temple, a mid-density, mixed-use neighborhood just west of the Gateway, and high-density office and residential space near Salt Lake Central (Figure 26). Advancing east-west bicycle and walking connections as well as constructing complete streets are major components within the TOD report. The plan further explains the implementation process and timeline.



Specific to the TechLink study area, the Central Station Area, west of 600 West between 200 South and 400 South, contains approximately 15 acres of UTA-owned property that is currently underutilized and is proposed to be redeveloped with high-density offices and residential. As noted in the Station Area Plan, “extension of TRAX line along 400 South to Central Station is important to increase level of transit service for this neighborhood” (p. 32). Other notable findings from this plan include:

- Dedicating 300 South between 600 West and 400 West as a future festival street
- Streetscape improvements to 500 West, north of 400 South
- Redevelopment of the “Station Center Blocks” (bounded by 200 South, 500 West, 300 South, and 600 West) is also an underutilized space which should be redeveloped to provide a critical connection between Salt Lake Central Station and downtown
- Street improvements (consistent on-street parking, increased street trees, wider sidewalks) along 600 West, south of 200 South

The **Ballpark Station Area Plan** also supports TOD and focuses on specific ways to have transit support zones. The plan covers from 900 South to 1700 South and I-15 to State Street (Figure 26). The plan highlights a variety of proposed future connections within this study area as well as long-range transportation recommendations such as a transit hub at 1700 South serving light rail and east-west bus service. This area includes several major transportation, transit, and emerging trail corridors that connect the area to downtown, the rest of the city, and the region.

Salt Lake City and UTA own large properties on the north side of 1300 South between Main Street and the TRAX line, which are currently being used for surface parking. The plan also identifies several underutilized land parcels in the immediate vicinity of the Ballpark Station. The Ballpark Station Area Plan suggests repurposing the identified land for higher density development and enhancement of the public realm. The State Street Project Area, created by the SLCRDA, has tools to help create the level of investment contemplated for the neighborhood. Other project recommendations from the Ballpark Station Area Plan pertaining to the TechLink study area include:

- Reconfigure the Ballpark TRAX Station (new pedestrian/transit rider connection from the platform to 200 West/Lucy Avenue on the north end of the platform and loading areas on both the east and west sides of the rail line, allowing for an opportunity to increase passenger access)
- Create a Transit Supportive Zone along 1300 South from Main Street to 300 West (pedestrian street lighting; street trees; and public ground level uses such as restaurants or grocery space, retail, or services)

To Note: UTA is in the process of developing a 10% design for the redevelopment of Salt Lake Central Station, anticipated to be complete at the end of 2024.

- Investment in community amenities and greenspace
- Street improvements (proposed crossings on 1300 South and proposed bike routes on Lucy Ave, 300 West, Paramount Ave, and Main Street)

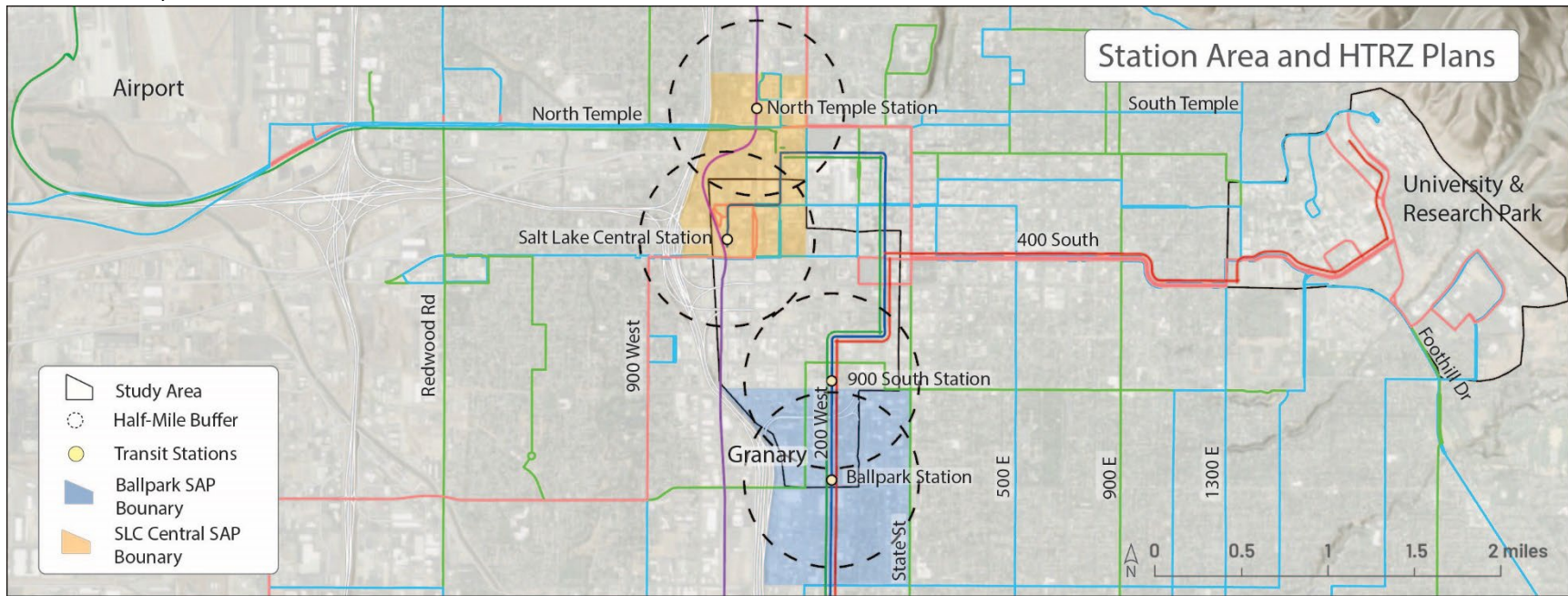


Figure 26. Station Area and HTRZ Plan Map

3.4 Socioeconomic Analysis

The following section describe a series of socioeconomic conditions to better understand the expected population and employment growth. Section 4 discusses potential transit-dependent populations based on community profiles. Additional detailed socioeconomic conditions will be performed during alternative evaluation and refinement.



3.4.1 Population and Employment Growth

Salt Lake City's urban environment is almost entirely built out. Growth will be seen in the forms of redevelopment and added density for both housing and employment. SLCRDA is exploring overlay zoning that will encourage science and technology companies to become tenants in the Granary District and near Salt Lake Central Station.

Population Growth: Housing SLC indicates that the population in Salt Lake City is expected to grow over the next few decades to over 211,000 people in 2030, and the WFRC travel demand model predicts the population will reach 266,748 in 2050, which is a 34% increase from the year 2020 when the population was 199,000. While the population is predicted to increase at a steady rate, it is also predicted to increase more slowly than neighboring communities along the Wasatch Front. This is due to several factors including an already built out environment, housing costs, and fewer attainable multi-bedroom rental units that can accommodate families.

According to the 2020 American Community Survey, the city's average growth rate is 0.60% with Salt Lake County and Utah at 1.62% and 3.15%, respectively. Denser areas today (2023) see a decrease in density in 2050, as populations spread out more broadly across the city, likely due to an increase in new housing unit availability outside of the downtown area from new construction of denser housing (Figure 27). The exception being the Granary District, the areas around Salt Lake Central Station, and Research Park. Currently, few people live in these areas, but with the planned housing and mixed-use developments a significant increase in populations residing here will occur.

Transportation Analysis Zones (TAZ) are units of geography that are used in the Transportation Demand Model and represent a variety of data points that influence travel demand. Data captured in TAZs include population and employment, and trip origin and destination patterns.

According to the 2020 American Community Survey, the city's average growth rate is 0.60% with Salt Lake County and Utah at 1.62% and 3.15%, respectively. Infill is expected to occur in the CBD, Granary District, and south into the Ballpark neighborhood (Figure 27).

According to workforce services Utah's unemployment rate is at 2.4 %, lower than the national unemployment rate of 3.5%. Salt Lake County's unemployment rate is 2.3%, one of the lowest in the state. In July of 2023 US Bureau of Labor Statistics data shows were 828,000 jobs in Salt Lake City. The majority of those jobs in are in the private sector at 87% and employing 719,000 people. These private sector jobs include retail and trade, financial and business, education and health services, leisure and hospitality, as well as construction, and manufacturing. Salt Lake City's jobs market is strong and growing. From July of 2022 to July of 2023 the city had a 3.2% positive change in the jobs market. Figure 28 shows the estimated amount of total jobs throughout the study area.



Employment Growth: According to workforce services Utah’s unemployment rate is at 2.4%, lower than the national unemployment rate of 3.5%. Salt Lake County’s unemployment rate is 2.3%, one of the lowest in the state. In July of 2023 US Bureau of Labor Statistics data shows were 828,000 jobs in Salt Lake City. The majority of those jobs in are in the private sector at 87% and employing 719,000 people. These private sector jobs include retail and trade, financial and business, education and health services, leisure and hospitality, as well as construction, and manufacturing. Salt Lake City’s jobs market is strong and growing. From July of 2022 to July of 2023 the city had a 3.2% positive change in the jobs market.

Figure 28 shows the estimated number of total jobs throughout the TechLink Study area broken down into WFRC’s TAZ segments. By far the University, Research Park, and the Airport collectively supply the most jobs in Salt Lake City. As this data is representing all jobs, remote workers employed from these locations or other satellite locations may also be picked up in the data. One location where the second largest tiers of employment are found is west of Redwood Road, where mid and large-scale industries operate on large land footprints. The central business district (CBD) is the other location, where density is much higher and existing buildings will top out at around 30 floors, allowing for many jobs to be located on a very small footprint of land. The intensity of jobs diffuses the further away from the CBD as land use also becomes less dense. The Granary’s land use, while rapidly turning over and developing, still is dominated by industrial, single or two floored structures and properties. Businesses are scattered around the mostly two-to-three-storied residential neighborhoods, but most jobs will be located along arterials and major collector roads outside of downtown.

The WFRC TAZ segments project steady and stable job growth in the study area. Most TAZ locations experiencing job growth will see increases in the 250 to 2,500 range. Locations close to downtown proper that have not been converted into residential and remain mostly industrial currently show symptoms of job sectors in decline. Land is underutilized for its economic value and many properties show exterior signs of disrepair and vacancy or partial use. Other properties are still active and functioning businesses and are intermingled with the more dormant properties. Many of these areas are the ones predicted to be redeveloped into locations that produce a high number of jobs. One specific location of note on the 2050 map is in the Granary. The TAZ south of 400 South and abutting the I-15 corridor. This location and the area surrounding it is predicted to continue to produce more jobs. As the Granary continues to develop, the areas producing less jobs shifts, but remains within the border of the district. This reflects the change anticipated in building types. As mixed-use structures are constructed housing and jobs begin to be located more often on the same footprint, creating a more housing with a higher density and dispersing jobs more evenly across neighborhoods than is experienced today.

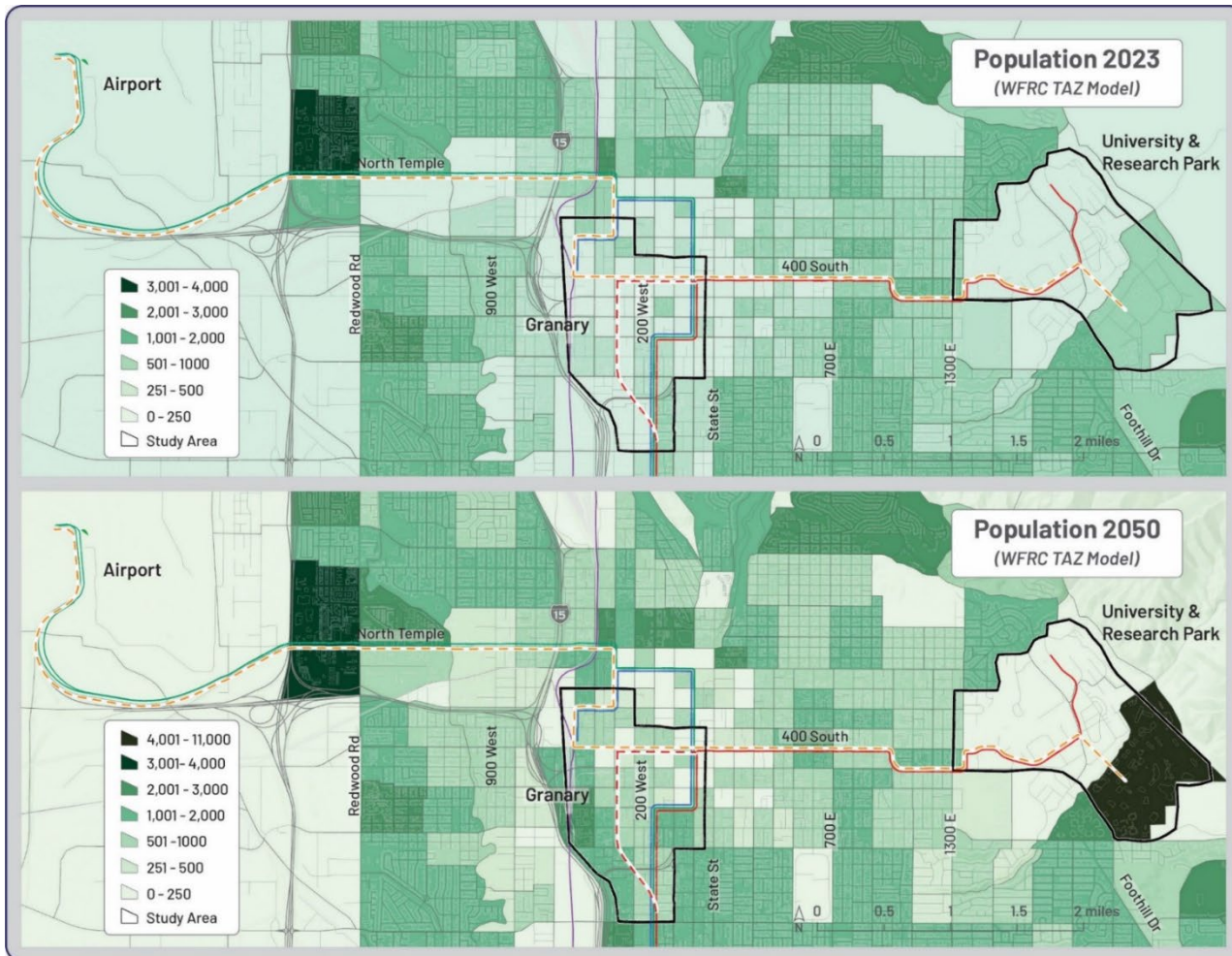


Figure 27. Existing 2023 Population and Projected 2050 Population



Figure 28. Existing 2023 Jobs and Projected 2050 Jobs



4 Equity and Environmental Justice

The Executive Order (EO) 12898 issued by President Clinton in 1994, entitled Federal Actions to Address Environmental Justice in Minority and Low-Income Populations, is the cornerstone of equitable practices at the federal level. The EO directed federal agencies to identify and begin to mitigate negative effects on the environmental and human health of minority and low-income populations caused by federal actions. The overarching goal of EO 12898 was to achieve environmental protection for all communities. In April 2023, President Biden issued an EO to reaffirm and expand the commitment to environmental justice. This EO acknowledges the disproportionate effects of human health on disadvantaged communities due to environmental burdens. The President’s revitalized EO provides specific direction on collecting data about underrepresented populations, ensuring community participation, utilizing science, and reporting out on progress annually. Although there is no specific guidance yet for implementation of this EO, it reflects the continued importance of environmental justice in the consideration of federal actions.

The TechLink TRAX Study work will focus closely on defining terms related to equity and environmental justice and ensuring that as communities are engaged, and alternatives are developed that impacts (both positive and negative) are quantified for disadvantaged communities.

The purpose of this section is to describe demographic conditions of the study area pursuant to environmental justice populations (minority and low-income) but also provide a deeper dive into additional demographic considerations to fully illustrate disadvantaged communities in the TechLink study area with the goal of advancing equitable solutions.

4.1 Definitions

How disparity is addressed hinges on how it is defined. This study is using and defining the following terms to aid in the development and analysis of alternatives:

“To fulfill our Nation’s promises of justice, liberty, and equality, every person must have clean air to breathe; clean water to drink; safe and healthy foods to eat; and an environment that is healthy, sustainable, climate-resilient, and free from harmful pollution and chemical exposure. Restoring and protecting a healthy environment — wherever people live, play, work, learn, grow, and worship — is a matter of justice and a fundamental duty that the Federal Government must uphold on behalf of all people.” – President Biden



Equity: providing consistent and systematic fair, just, and impartial treatment of all individuals, including individuals who belong to underserved communities that have historically been denied such treatment, such as Black, Latino, and Indigenous and Native American persons, Asian Americans and Pacific Islanders, and other persons of color; members of religious minorities; lesbian, gay, bisexual, transgender, and queer (LGBTQ+) persons; persons with disabilities; persons who live in rural areas; and persons otherwise adversely affected by persistent poverty or inequality.

Environmental Justice: the just treatment and meaningful involvement of all people, regardless of income, race, color, national origin, Tribal affiliation, or disability, in agency decision-making and other Federal activities that affect human health and the environment so that people are fully protected from disproportionate human health and environmental effects and have equitable access to a sustainable and resilient environment.

Underserved/Disadvantaged Communities: populations sharing a particular characteristic, as well as geographic communities, that have been systematically denied a full opportunity to participate in aspects of economic, social, and civic life, as exemplified by the list in the preceding definition of “equity.”

4.2 TechLink TRAX Study Equity Focus Areas

WFRC utilizes an Equity Focus Area framework as an important input to transportation planning efforts, and it is a framework that will also be utilized by this study. To be identified as an Equity Focus Area the following criteria must be met:

- Greater than 25 percent Low-Income
- Greater than 40 percent Persons of Color
- Greater than 10 percent Zero-Car Households

Figure 29 shows previously identified and present (2023) Equity Focus Areas in the Salt Lake City region. There are fewer Equity Focus Areas in 2023 than were identified by WFRC in previous years, including the downtown CBD. However, locations surrounding North Temple, the Ballpark Station, and a small portion of the southern end of the Granary District have remained. Equity Focus Areas have consistently bordered major TRAX lines within Salt Lake City.

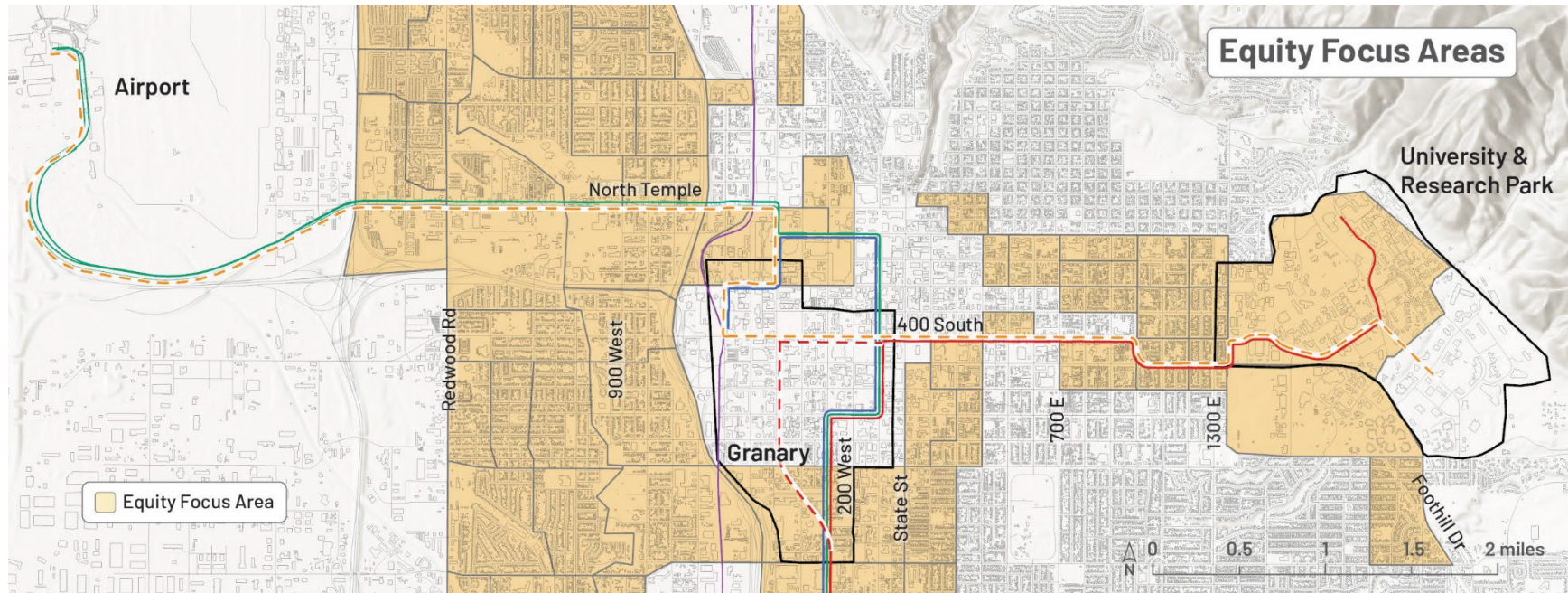


Figure 29. 2023 WFRC Equity Focus Areas

4.3 Access to Opportunities

WFRC and partner organizations use Access to Opportunities (ATO) to pursue the most effective transportation plans and land use decisions. ATO is a way to measure how well people can connect to basic needs and amenities including jobs, schools, healthcare centers, grocery and other retail, parks, community centers, recreation, and entertainment by transit. When ATO is used in partnership with Equity Focus Areas, agencies can effectively increase the quality of life for underserved populations that may benefit most from alternate forms of transportation to access key needs. Red areas indicate that demand is high, not necessarily that access is good.

ATO demand remains high in the downtown, Granary District, and east 400 South corridor areas. ATO demand remains low west of I-15 and along North Temple, which is indicative of a strong correlation of lacking ATO and high populations of disadvantaged communities (Figure 30).

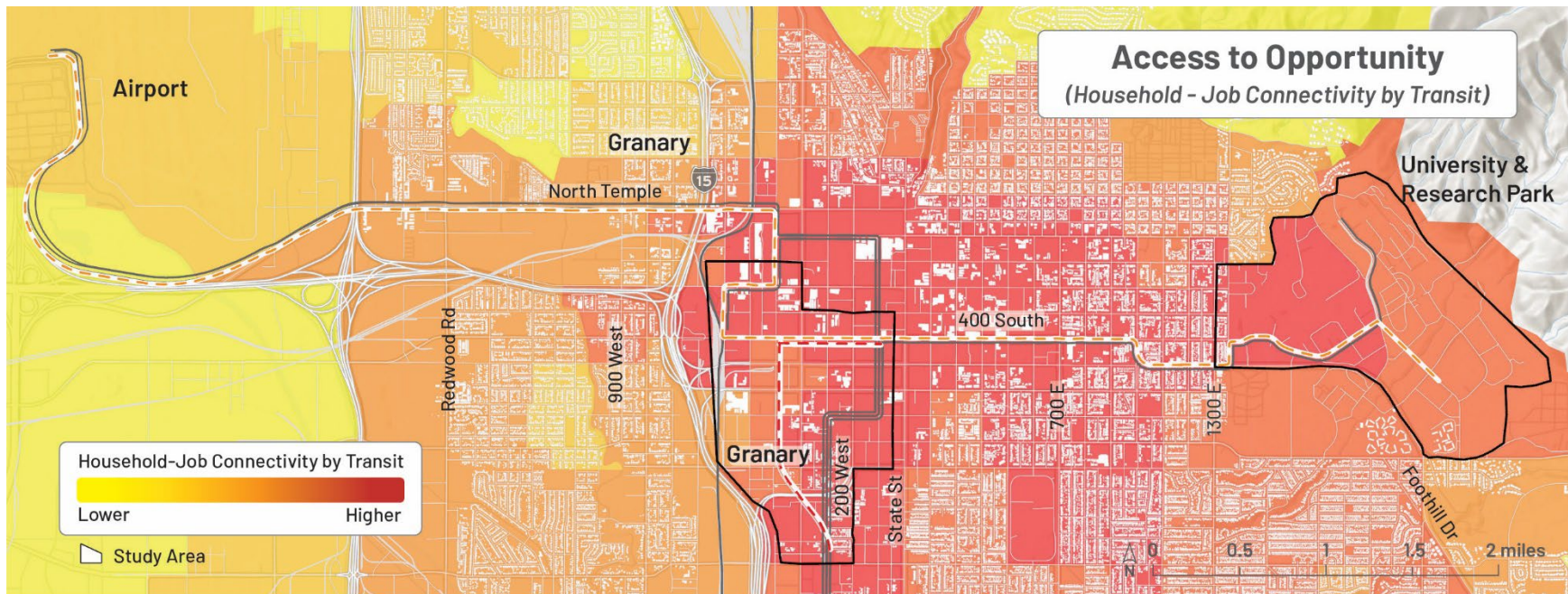


Figure 30. Access to Opportunity Map

4.4 Environmental Justice Populations

Certain demographic statistics are helpful to gain an understanding of the potential transit-dependent populations in the study area as well as to understand the potential impacts and benefits of expanded transit service. Using demographic data from the U.S. Census Bureau’s American Community Survey 5-year Estimates 2017-2021, the following finding can inform the alternative development and refinements moving forward.



Environmental justice populations, by federal definition, are comprised of 1) minority or 2) low-income populations. For the purposes of reviewing these data sets, the Environmental Protection Agency (EPA) Environmental Justice Screening and Mapping Tool (EJScreen) was utilized with data available at the Census Block Group level.

Minorities include the following populations:

- **Black or African American** – a person having origins in any of the black racial groups of Africa.
- **Hispanic or Latino** – a person of Cuban, Mexican, Puerto Rican, South or Central American, or other Spanish culture or origin, regardless of race.
- **Asian** – a person having origins in any of the original peoples of the Far East, Southeast Asia, or the Indian subcontinent, including for example, Cambodia, China, India, Japan, Korea, Malaysia, Pakistan, the Philippine Islands, Thailand, and Vietnam.
- **American Indian or Alaskan Native** – a person having origins in any of the original people of North and South America (including Central America), and who maintain tribal affiliation or community attachment.
- **Native Hawaiian or Other Pacific Islander** – a person having origins in any of the original peoples of Hawaii, Guam, Samoa, or other Pacific Islands.

Low-income populations are defined as:

- A person whose household income (or, in the case a community or group, whose median household income) is at or below the U.S. Department of Health and Human Services poverty guidelines. Table 6 provides a breakdown of poverty-level annual household income by household size.

Table 6. 2023 Poverty Guidelines for the 48 Contiguous States and the District of Columbia

Persons in Family/Household	Poverty Guideline
1	\$14,580
2	\$19,720
3	\$24,860
4	\$30,000



Persons in Family/Household	Poverty Guideline
5	\$35,140
6	\$40,280
7	\$45,420
8	\$50,560
For families/households with more than 8 persons, add \$5,140 for each additional person.	

4.4.1 Minority Populations

Figure 31 shows there are higher percentages of minority populations in this study area are located around:

- The North Temple corridor, west of I-15
- 400 South, east of downtown
- South Temple, west of 200 West
- Between the Granary District and the Ballpark neighborhoods
- Some concentrations on the University of Utah campus, likely due to diverse student populations

Specific to Hispanic/Latino populations, the area along I-15 on the west side near the Salt Lake City International Airport includes higher populations, accounting for 40% of residents, compared to the Granary District at 20%, University of Utah and Research Park at 10%, and downtown at 16%. Addressing the challenges of transportation access, affordability, and connectivity in this region becomes imperative to ensure equitable mobility solutions for all residents.

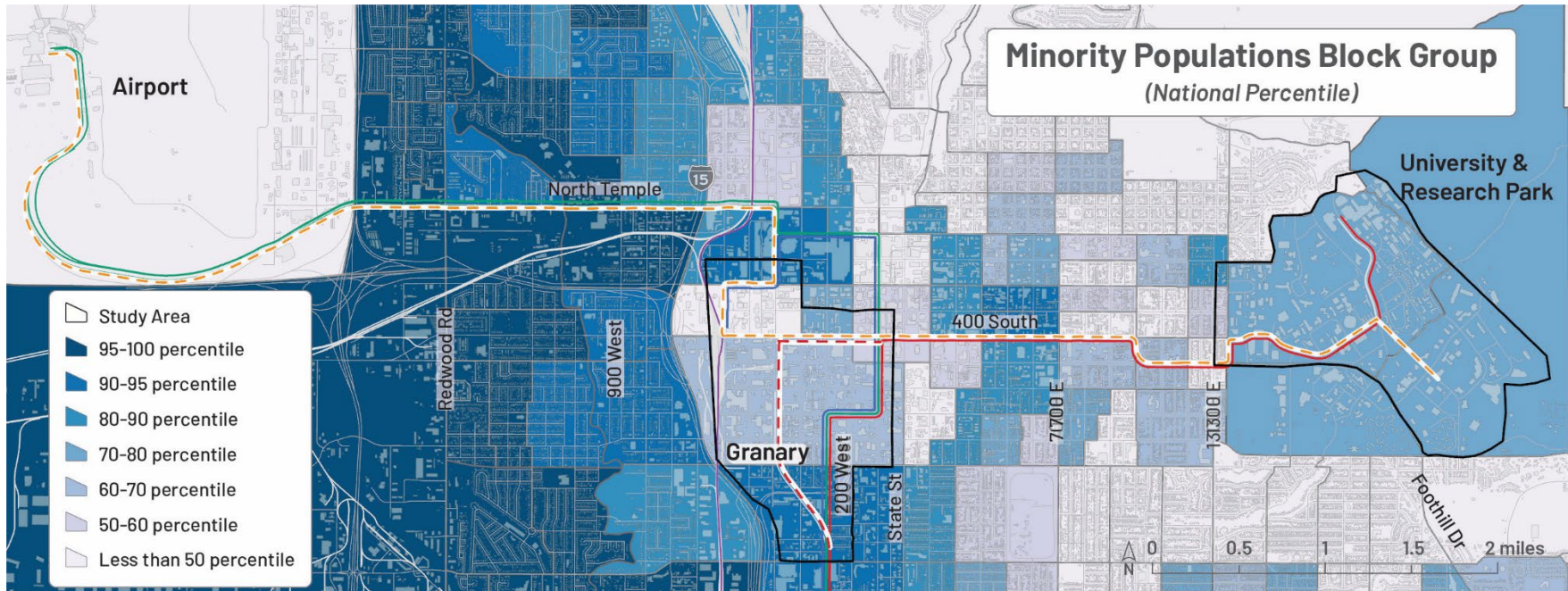


Figure 31. Minority Populations by Census Block Group

4.4.2 Low-income Populations

Low-income populations (Figure 32) identified in the study area are located in a geographically similar manner as minority populations above (Figure 31). Often, minority populations also have other socioeconomic indicators that indicate disadvantages including low income. However, it is important to note that the University of Utah area houses many student populations which are racially and culturally diverse and can fall under low-income categories in Census reporting. Data is available at the Census Block Group and indicates there are high concentrations of low-income populations located around:

- The North Temple Corridor, west of I-15
- The University of Utah campus and student housing

- Some of the southern Granary District and the Ballpark neighborhoods

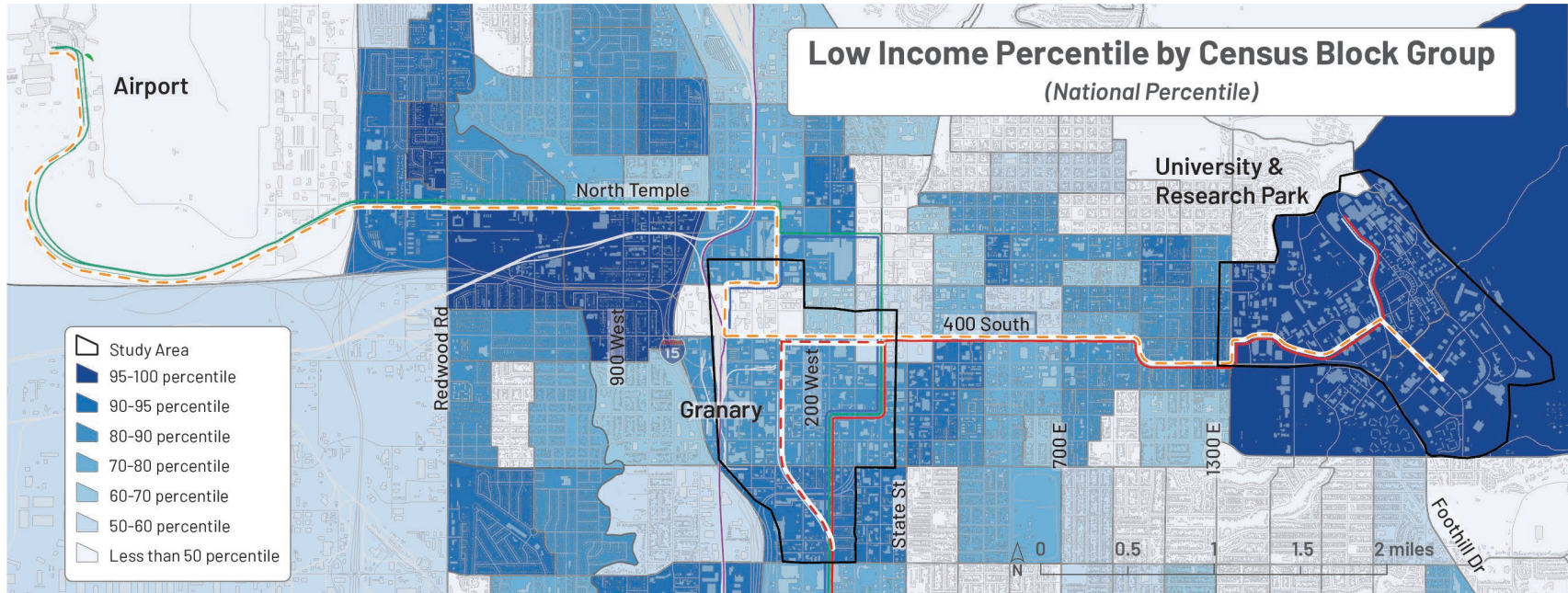


Figure 32. Low Income Populations by Census Block Group

4.5 Other Notable Socioeconomic Indications

Equity in transportation is a central component for the TechLink TRAX Study to aid in fair and just access to transportation services and infrastructure for all individuals, regardless of their socioeconomic status or geographical location. Identification of demographic conditions surrounding environmental justice populations is generally focused on minority or low-income populations; however, for the purposes of this study, a more comprehensive look at other socioeconomic indicators was conducted to better understand needs, challenges, and opportunities.



4.5.1 Unhoused Populations

Unhoused, or homeless, populations represent one of the most marginalized and vulnerable groups needing transportation access. These populations often face unique challenges that hinder the ability to utilize public transportation. One major obstacle is the inability to carry their belongings with them, making it difficult to navigate public transit systems effectively. Additionally, many unhoused individuals tend to stay close to resources such as shelters, food banks, and support services, limiting their need for long-distance travel. The lack of a fixed address and identification further complicates their ability to access subsidized transportation programs or discounted fares, exacerbating their already challenging situation. Addressing the transportation needs of unhoused populations requires a thoughtful and comprehensive approach that goes beyond traditional solutions, considering their specific circumstances and finding ways to provide them with safe, accessible, and affordable mobility options.

4.5.2 Limited English-Speaking Populations

Salt Lake City has a diverse population, and many languages are spoken including Spanish, Navajo, Tagalog, Chinese, Vietnamese, German, Samoan, and other Austronesian languages. Many of these populations live west of I-15, with higher concentrations along 400 South, in the Ballpark neighborhood, and a significant concentration abutting the North Temple corridor (Figure 33). Reaching these populations for meaningful engagement is key to the success of this study. Targeted outreach strategies and translation services will be utilized to better include these populations.

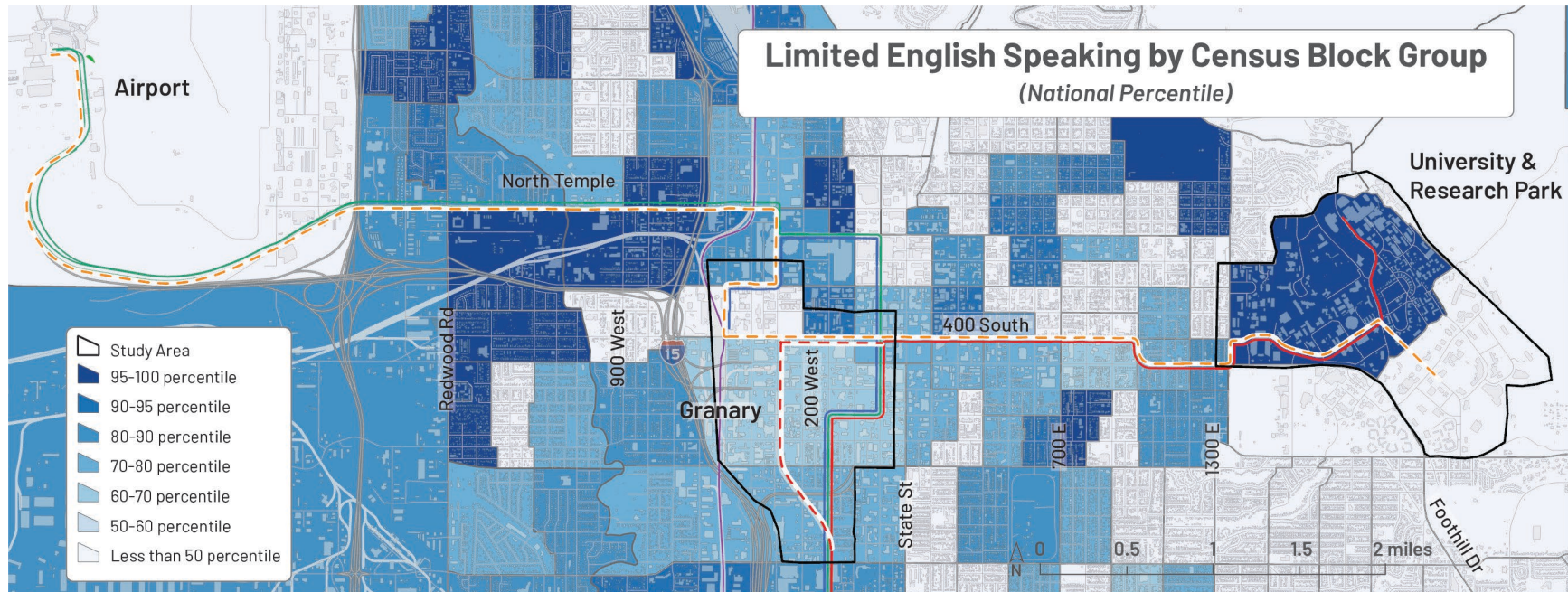


Figure 33. Limited English-Speaking Populations

4.5.3 Zero Car Households

The reliance on public transportation among minority and low-income populations can be attributed to various socioeconomic factors and historical patterns of urban development. Many minority communities, especially in urban areas, have limited access to personal vehicles due to financial constraints. Lower income levels often make owning and maintaining a car financially unfeasible, leaving public transportation as the primary means of affordable mobility. North Temple, east downtown, and the Ballpark neighborhood house high concentrations of zero car households (Figure 34). Capturing these likely transit-dependent populations will be important for further phases of this study.

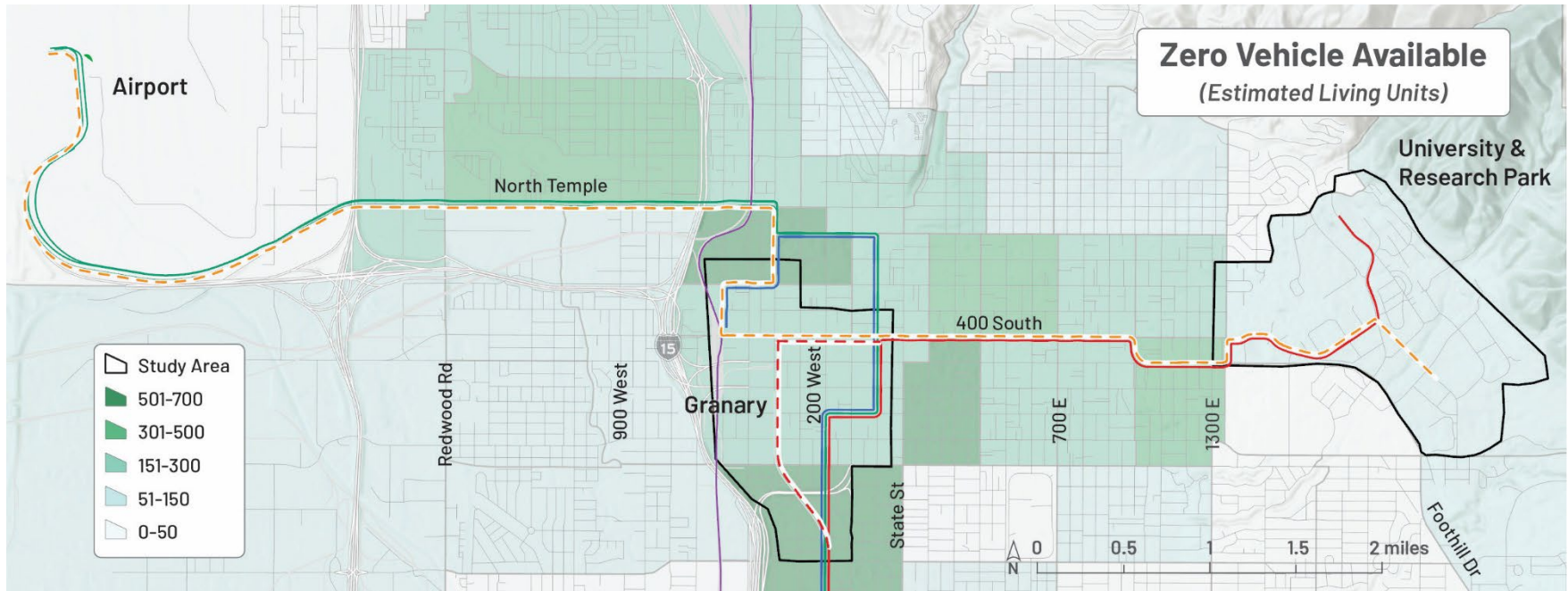


Figure 34. Zero Vehicle Households

4.5.4 Populations with Disabilities

People with disabilities are identified as persons with mobility limitations. Populations with disabilities are concentrated around east downtown, near Salt Lake Central Station, and the Ballpark/TRAX corridor along 200 West (Figure 35). This is similar to the zero car household geographies above, and there could be a correlation of these socioeconomic factors as disabilities can prevent the operation of motor vehicles.

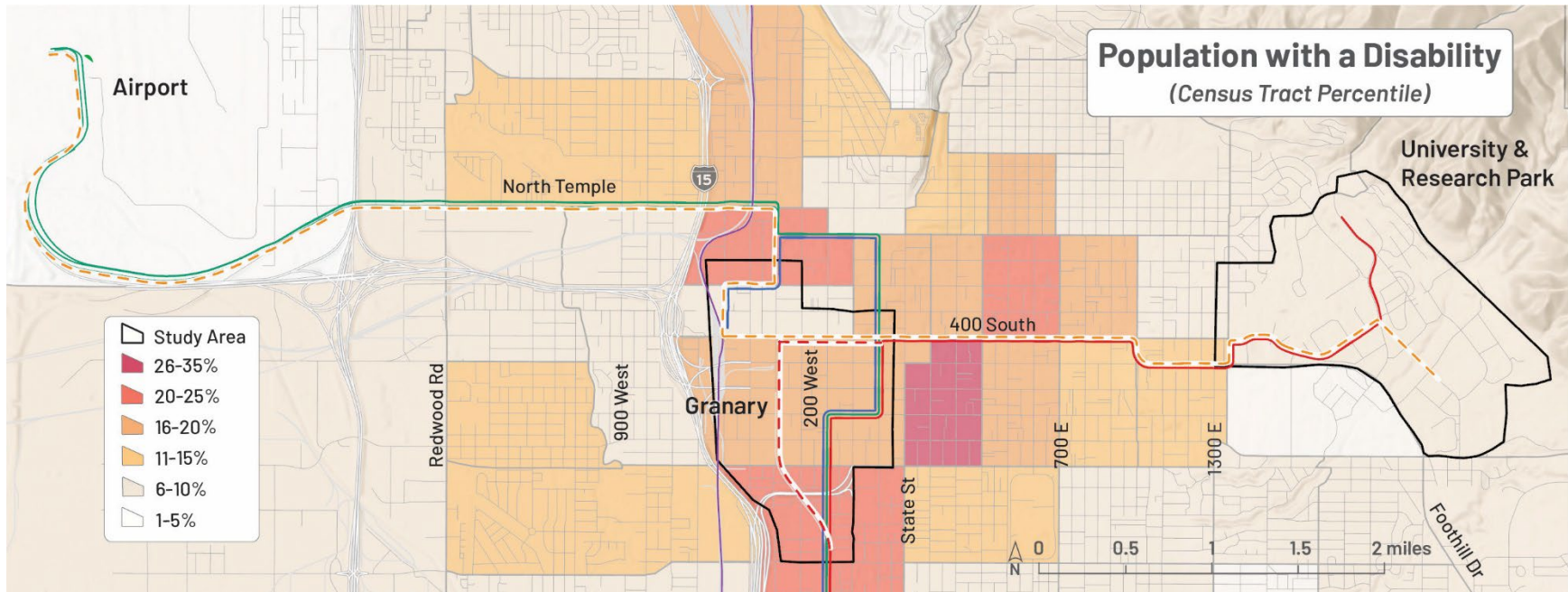


Figure 35. Populations with a Disability

4.6 Gentrification and Displacement Risks Specific to the TechLink TRAX Study Area

Transit corridor investments provide positive impacts to communities by spurring economic growth, mode choice, and sustainable transportation systems. Often, an increase in corridor investments draws concerns from communities, businesses, and local organizations over displacement that can occur as an unintended consequence of desirable improvements to the built environment. Identifying possible risks that come from transit investment is important to ensure strategies and policies are identified in future phases of this work to mitigate displacement and gentrification trends where feasible.



For the purposes of this study, displacement and gentrification have been defined in the following manner:

Displacement:
 People and businesses having to move involuntarily from their original location due to transit or built environment investments along a corridor or in a particular neighborhood.

Gentrification:
 Wealthier, younger, and whiter populations moving into an area with recent transit or built environment investments, bringing improved housing and new businesses but often displacing current businesses and residents in the process and changing the overall character of the neighborhood.

An important nuance to define is that *displacement* is often a result of *gentrification*. However, reasons for *displacement* may not be directly correlated with *gentrification* in all instances. Research suggests that gentrification is more closely linked to local policies than to transit-rich investments alone. Other market factors like unchecked inflation in rent costs in the area and property and sales tax increases are also responsible for displacing residents and businesses.

4.6.1 Potential Unintended Consequences of Investing in Transit-Rich Corridors

Community fears surrounding transit investments are valid; decades of displacement to disadvantaged neighborhoods in the name of transportation infrastructure (primarily roadway in recent history) is well documented. Rising costs of housing, food, and services in this country are again threatening high-risk communities with real displacement fears. Table 7 shows some of the measurable unintended and intended consequences of transit investment.

Table 7. Unintended and Intended Consequences of Transit Investment

Examples	
Rent increases	Loss of cultural significance of a place
Tax increases	Unaffordable housing



Examples	
Property acquisition	Cultural dissonance
Housing condemnation for new investment	NIMBYism (“not-in-my-backyard” attitudes)
Restrictive zoning policies (density and unit size)	Loss or lack of social networks

4.6.2 Approach for Measuring Displacement and Gentrification

Research is somewhat lacking on how transit investments, like light rail, are directly correlated to displacement. Most light rail and TOD studies use property value increases spurred by the investment to measure displacement potential and therefore assumed gentrification. To be responsive to the goals outlined by this study and the definition developed for gentrification above, socioeconomic indicators have also been collected as part of this report and will be used to set a baseline for measuring displacement potential. Indicators that should be used based on the defined at-risk populations above include:

- **Age:** older populations are at a higher risk for being displaced (Figure 36, below)
- **Race/Ethnicity:** non-white and Hispanic populations are at a higher risk for being displaced (Figure 31, above)
- **Low Income:** low-income households and individuals are at a higher risk for being displaced (Figure 32, above)

4.6.3 High-Risk Neighborhoods in the Study Area

Based on the Equity Areas of Focus and the ATO concentrations, several neighborhoods will require focused attention from local leaders and partner agencies to deploy in conjunction with the transit investments. Populations living within the Equity Focus Areas have limited access to frequent transit service; have fewer job opportunities within close proximity; and generally, lack land use diversity and convenient access to food, goods, and services.

Areas of considerable risk for gentrification and/or displacement as TechLink TRAX Study recommendations are executed include the North Temple corridor, with disproportionately high populations of low-income residents, minority populations, and transit-dependent populations reported as no-car households as well as the south side of 400 South and into the University of Utah and Research Park. The eastern section of the corridor near the University of Utah houses high numbers of students who generally show up in lower income and minority brackets and live in no-car households in Census reporting. Most of the Granary District, apart from the southern limits down into the Ballpark neighborhood, are not included in WFRC’s 2023 Equity Focus Areas dataset.

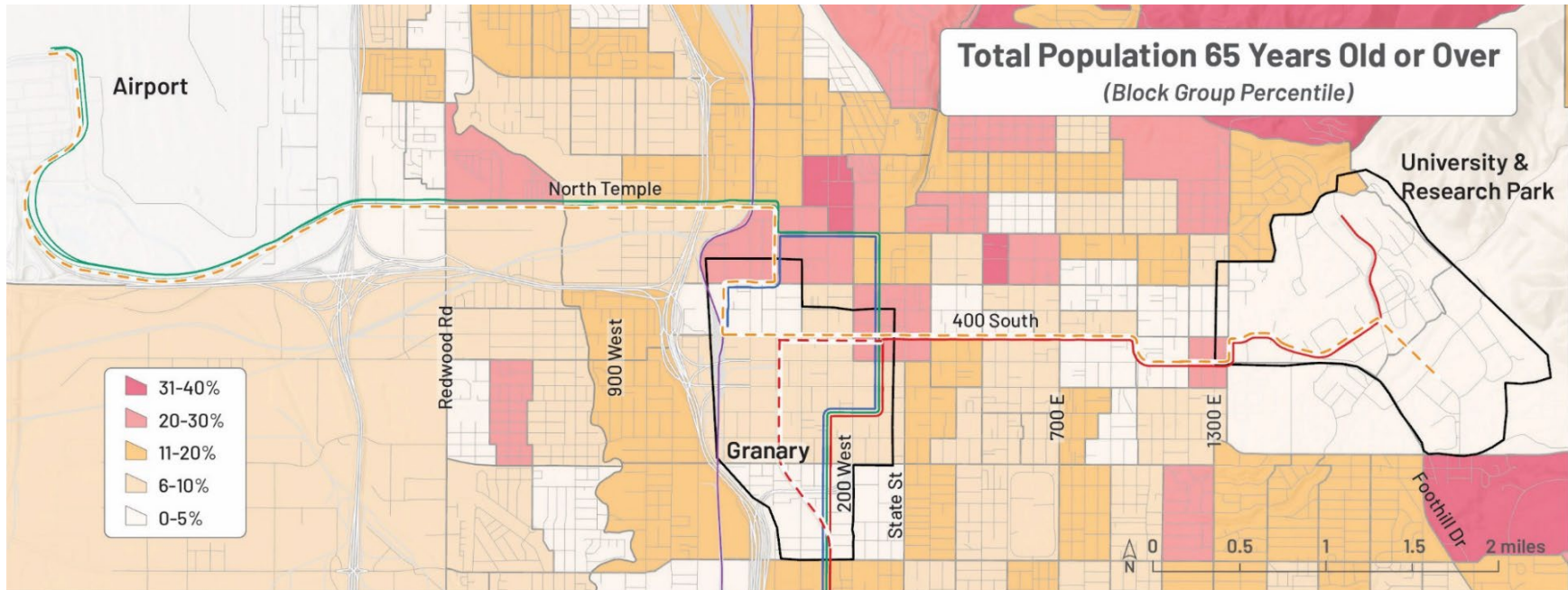


Figure 36. Population Over 65 Years Old

4.6.4 Anti-displacement Policy Best Practices

PolicyLink has worked with various U.S. cities to identify, measure, and address displacement and develop anti-displacement policies. The TechLink TRAX Study is championed by UTA, with partnership from Salt Lake City, SLCRDA, WFRC, UDOT, and the University of Utah. To truly quantify and address displacement and develop mitigation strategies, these study partners must commit to local changes. Table 8 provides a summary of some identified practices recommended for consideration for the TechLink TRAX Study partnering agencies. More detailed strategies for displacement mitigation will be described in future phases of this study.



Table 8. Anti-displacement Strategies

Strategy	Examples
Resident / tenant preservation	<ul style="list-style-type: none"> • Just cause notifications for evictions • Resident protections for public housing projects • Rent control at the state and local levels • Nondiscriminatory policies for income level • Right to counsel
Housing affordability	<ul style="list-style-type: none"> • Property tax limits • Home ownership assistance programs • Mobile home park preservation funds
Community empowerment	<ul style="list-style-type: none"> • Preservation funds • Opportunity to purchase • Community land trusts • Proactive/supportive code enforcement policies
Neighborhood stabilization	<ul style="list-style-type: none"> • Anti-displacement task forces • New or increased funds for grass roots organizations
Commercial tenant safeguarding	<ul style="list-style-type: none"> • “Buy your Building” assistance • Set asides for local businesses in commercial spaces • Business incubators • Community-owned cooperatives

4.7 Nexus of Equity and Climate Change

Numerous studies have shown that underserved communities face disproportionate impacts from climate change. Groups that are historically marginalized typically have fewer resources to prepare and respond to climate-related events. These groups frequently live in high-density areas that are often more exposed to poor air quality, noise pollution, extreme high temperatures, and less green space. As the frequency of climate-related events occur, impacts to these populations will become more frequent and intense. The following sections highlight potential climate-related considerations that are relevant in the study area, with a specific focus on disproportionate impacts that underserved communities in the



study area may face. The purpose is to potentially highlight areas that future phases of the TechLink TRAX Study could consider in the development of an equitable and sustainable infrastructure project.

4.7.1 Inversions and Air Quality

Salt Lake City, like many other communities in the West, is facing major environmental concerns, the most prevalent being related to air quality and its adverse effects. Salt Lake City has had a long history of having some of the worst recorded air quality in the nation. The mountainous topography surrounding the city keeps pollutants and harmful particles within the valley. In addition to the topography, Salt Lake City is prone to inversions, when cold air at the earth's surface gets trapped under a layer of warm air. The mountains increase the strength of inversions by trapping cold air in the valley and shielding it from stronger winds that would otherwise remove the inversion. The threat of the Great Salt Lake drying up would further deteriorate the current air pollution conditions by adding heavy metals to the air through dust particles.

The Great Salt Lake, with already depleted water levels, will completely dry up in 5 years if no action is taken. Such an event would leave high concentrations of heavy metals (e.g., arsenic and mercury) remaining in the lakebed and would be distributed throughout the Salt Lake Valley during windy conditions. These metals have been linked to negative health effects, specifically in sensitive environmental justice populations on the west side of Salt Lake City closest to the lake. Neighborhoods such as Glendale, Rose Park, Fairpark, and Poplar Grove which are already bordered by two freeways and the Salt Lake City International Airport may see higher concentrations of negative effects from the lakebed. These communities are also generally linked to higher rates of asthma and cardiovascular disease due to their proximity to refineries, open pit mines, vehicular pollution from I-15, and fewer public parks and greenspaces. The University of Utah has led numerous air quality studies and produced research showing a correlation between students' low test scores and low-quality air days, among other adverse effects.

4.7.2 Noise Pollution

Noise pollution is also an increasing factor in urban areas that can have severe effects on human health. Machines, construction, vehicles, music, and even human conversations create noise that surrounds urban communities and can affect sleep, focus, hearing, health, and overall quality of life. Often, construction projects, highways, train stations, etc. are directed towards and around low-income communities. These projects not only displace and further disenfranchise low-income communities, but also expose them to higher levels of noise pollution. Many of these communities tend to be predominantly minority or low-income populations. Although people of all races and incomes can be impacted by noise pollution, minority and low-income populations have less access to resources that combat the negative effects of it. In 2008, the Salt Lake City Health Department launched a noise regulation control document aimed at decreasing noise pollution within the city and promoting public health.



The areas pertaining to this study that would be affected most by noise pollution are those along the 400 South, 200 West, and North Temple corridors. The TRAX lines that serve Salt Lake City almost exclusively use these corridors for their routes. Figure 31 above shows that areas comprised mainly of minority populations are predominantly found along these identified corridors. It can also be seen that communities with majority people of color are more heavily located to the west of I-15, bordered by the airport and two highways. The same trends can be said for low-income communities (Figure 32 above).

4.7.3 The Urban Heat Island Effect

Another significant element aiding climate change is the urban heat island effect. This effect is when an urban area is significantly warmer than the surrounding rural area due to urban surfaces, urban geometry, anthropogenic heat, and the urban greenhouse effect. The EPA reports that peak temperatures of unshaded areas in a city can be up to 20-45°F hotter than shaded areas. Trees and vegetation lower surface and air temperatures by providing shade and through evapotranspiration. Evapotranspiration, alone or in combination with shading, can help reduce peak summer temperatures by 2–9°F. Strategically placed vegetation in a city is shown to reduce energy usage, lower greenhouse gas emissions, improve air quality, enhance stormwater management, reduce pavement maintenance, and improve quality of life.

4.7.4 Floodplains

Utah Flood Hazards and Floodplain Management report that of all the natural disasters occurring in Utah, floods consistently carry the highest price tag year after year. Flooding leads to loss of life, property damage and destruction, damage and disruption of communications transportation, utilities, agricultural losses, and interrupt businesses. Furthermore, flooding can release contaminants into water creating health and environmental hazards. 240 acres of the TechLink study area, located along I-15, is within the Federal Emergency Management Agency's 100-year floodplain (areas with a 1% annual chance of shallow flooding, usually in the form of a pond, with an average depth ranging from 1 to 3 feet) (Figure 38). Any areas located within the 100-year floodplain are considered to be high risk locations for flooding.

A large part of the floodplain, pertaining to the study area, travels directly through the Granary District and Ballpark neighborhood. The Scientific American Journal reports that on average, lower income residents are more likely to live in the lowest-lying land, exposing them to higher risks of flooding. Low-lying urban areas also experience increased stormwater infrastructure deterioration, reducing floodplain mitigation techniques that would normally support the area in the event of a natural disaster. The Utah Division of Emergency Management created the subagency Utah Flood Hazards and Floodplain Management to deliver floodplain mitigation techniques, provide locations of floodplains, and address community concerns.



4.7.5 Parks and Greenspace

Greenspace is often linked to increased mental and physical health. A University of Cambridge study found that individuals who live in urban areas with access to greenspace have less mental distress and a greater wellbeing than those who have less access to greenspace. Access to nature acts as a preventive mental health promotion intervention. Outside of the linear Jordan River Parkway space, little greenspace exists west of downtown and the I-15 corridor (Figure 37). In recent years, more simulations and analyses have been conducted with Salt Lake City's urban heat island effect as a focus. This has resulted in data that has influenced and guided policy as well as aided local organizations to make decisions to mitigate these effects. It has also increased public awareness about the seriousness of the issue. The National Oceanic and Atmospheric Administration (NOAA) reports that heat is the number one weather-related killer in the United States. Utah State University's Climate Center has completed research that shows that west Salt Lake City consistently experiences higher temperatures than the east side due to less tree canopy coverage and greenspaces. As shown in Figure 31 and Figure 32 above, the west side of Salt Lake City is mainly comprised of low-income communities and minority populations.

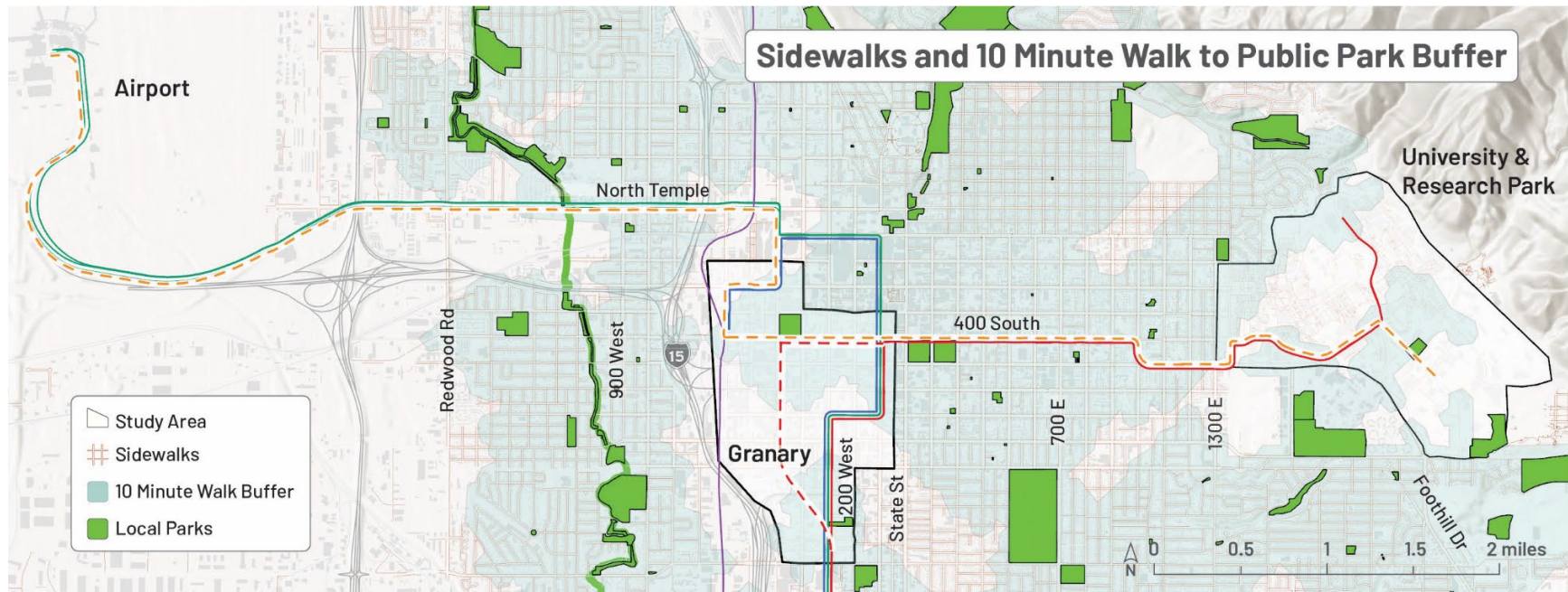


Figure 37. Availability of Community Greenspace

Though not unique, Salt Lake City as a whole is experiencing recorded proof of climate change, and the effects of it are disproportionately felt by disadvantaged communities. Salt Lake City is becoming more densely populated while the weather becomes more extreme. The disparity between communities will become more prevalent as time passes. It is crucial to support the entire Salt Lake City community to mitigate climate change and develop resiliency strategies.



5 Environmental Considerations

This section presents a high-level overview of relevant environmental considerations. The purpose of this summary is to use readily available data to identify environmental impacts that may constrain the project. A more detailed and comprehensive analysis of potential environmental impacts will be conducted during the NEPA document preparation phase of the project. Maps of the environmental overview are located in Appendix A: Environmental Overview.

5.1 Water and Natural Resources

The Jordan River, Red Butte Creek, and several man-made canals flow through the TechLink study area. These resources will likely be considered jurisdictional Waters of the United States (WOTUS) because they have a direct, downstream connection to either the Jordan River or the Great Salt Lake, which are both considered navigable waters. The Clean Water Act is intended to protect WOTUS and other regulated aquatic resources, such as wetlands. Although the greatest likelihood of encountering wetlands exists to the south of the Salt Lake City International Airport near the former Wingpointe Golf Course, they may occur in the vicinity of the Jordan River and other waterways as well. A more formal aquatic resources determination will be conducted to confirm the presence or absence of wetlands during the NEPA phase of the project. In addition to the previously mentioned canals, four wells and a large, covered water storage reservoir are located near the Rice-Eccles Stadium along 500 South.

According to the Federal Emergency Management Agency, a 240-acre portion of the TechLink study area along I-15 is located within the 100-year floodplain and therefore has a high risk of shallow (1 to 3 feet) flooding. The areas immediately adjacent to rivers, creeks, and canals also have a high flood hazard. Farther to the east from I-15, 270 acres are located between the 100- and 500-year floodplains and therefore have a moderate flood hazard. The remainder of the TechLink study area has a low flood hazard. Figure 37 shows the distribution of water resources and high- and moderate-risk floodplains.

The TechLink study area contains potential wetlands, which may provide suitable habitat for Ute ladies'-tresses, an Endangered Species Act (ESA)-threatened species. The TechLink TRAX Study area may also contain milkweed, which is required for monarch butterfly larval and pupal development. The monarch butterfly is currently a candidate for listing under the ESA. No critical habitats exist within the TechLink study area's vicinity.

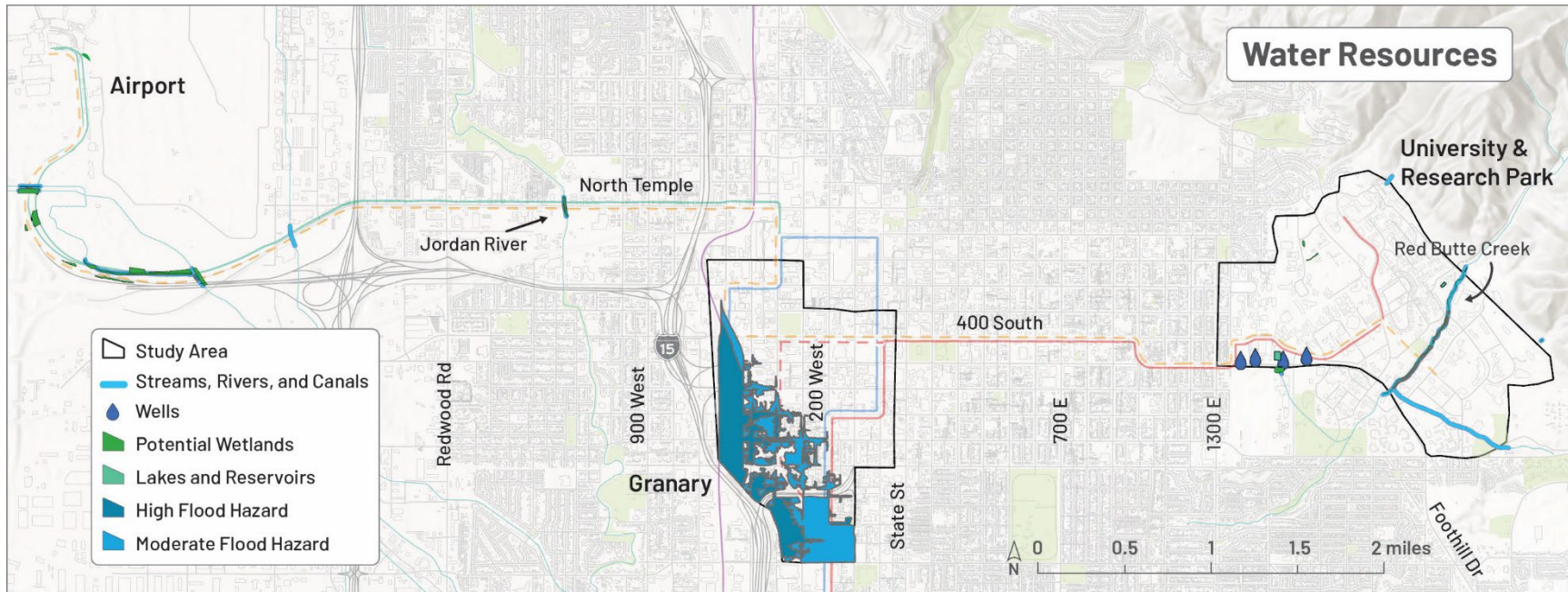


Figure 38. Water Resources

5.2 The Human Environment

The National Ambient Air Quality Standards (NAAQS) define limits for ambient concentrations of regulated air pollutants. Areas that exceed the NAAQS for a certain pollutant are considered nonattainment areas. If a nonattainment area begins to comply with NAAQS limits, it is redesignated as a maintenance area. The TechLink study area falls within the Northern Wasatch Front nonattainment area for the 8-hour average ozone standard. Listed as a marginal nonattainment area in 2018, the North Wasatch Front area was raised to moderate nonattainment status after failing to attain the 8-hour ozone NAAQS by 2021. If the nonattainment area does not meet the NAAQS limit by 2025, it will be raised again in 2025



to a serious nonattainment area. The TechLink study area is also located within maintenance areas for carbon monoxide (CO), Particulate Matter (PM10), and 1-hour ozone.

The TechLink study area encompasses a variety of viewsheds. The Research Park area abuts the foothills of the Wasatch Mountains, which offer an expansive view of the Salt Lake Valley and the Oquirrh Mountains to the east. Downtown is a metropolitan area with glimpses of the Wasatch Front in between buildings and other structures. To the western edge of the TechLink study area, near the Salt Lake City International Airport, the landscape is more open with flat topography and views of the Wasatch and Oquirrh Mountain ranges.

Hazardous material sites are located throughout the vicinity of the TechLink study area (Appendix A, Figure 4, and Figure 5). Most of these sites are petroleum storage tank facilities that are highly concentrated near downtown. Two National Priority List sites exist within 1 mile of the TechLink study area and 34 potential superfund sites have been identified. Fort Douglas, located near the University of Utah, is also registered as a Formerly Used Defense (FUD) site and is part of the Military Munitions Response Program (MMRP), which is responsible for addressing munitions-related concerns on nonoperational military installations.

A noise and vibration screening for the TechLink study area was conducted by Cross-Spectrum Acoustics to identify sensitive land uses in the study vicinity. The screening focused exclusively on proposed alignments where new TRAX service would be introduced. These areas include the University of Utah campus from Maro Capecchi Drive to Arapeen Drive, the downtown area from Main Street to 600 West along 400 South, and from 400 South to Ballpark Station along 300 West. The screening identified 60 noise-sensitive land uses and one Category 1, twelve Category 2, and seven Category 3 vibration-sensitive land uses within the screening area. Vibration land use categories are defined as:

- Category 1 – High sensitivity land use types, including research and manufacturing facilities with vibration sensitive equipment.
- Category 2 – Residential buildings, including hotels and hospitals.
- Category 3 – Institutions and offices, such as schools, churches, and doctor’s offices.

The Category 1 receiver is the Noorda Oral Health Sciences building on the University of Utah campus and is located 420 feet from the proposed future TRAX alignment along Arapeen Drive. A more formal and comprehensive noise and vibration analysis will be conducted during the NEPA phase to identify any noise or vibration impacts to the identified sensitive land-use areas.



5.3 Community and Cultural Resources

Several public parks, trails, and other recreational facilities exist within the TechLink study area. Pedestrian and bicycle pathways are abundant and there are also portions of eight public parks. Other community facilities, such as libraries, schools, cemeteries, grocery stores, museums, churches, entertainment, restaurants, public art pieces, cultural centers, and childcare facilities, are scattered throughout Salt Lake City. Several emergency response facilities are also located within the TechLink study area, including the University of Utah Hospital and the Salt Lake City Fire Department Station 10. Appendix A, Figure 6 through Figure 8 show the distribution of the various community and recreational resources.

Section 4(f) and 6(f) properties refer to important recreational and historic resources within a community. Section 4(f) properties include publicly owned parks, recreation areas, wildlife or waterfowl refuges, and historic sites eligible for the National Register of Historic Places (NRHP). Section 6(f) properties are lands that were acquired or developed using Land and Water Conservation Funds (LWCF) and which are therefore required to remain indefinitely as public recreation areas. No Section 6(f) properties are located within the TechLink study area.

Portions of eight public parks are located within the TechLink study area and would be likely protected under Section 4(f).

A desktop review of cultural and historic resources conducted by Certus Environmental Solutions identified 22 archaeological sites located within the TechLink study area. Of these sites, 14 are considered eligible for the NRHP, six are considered ineligible, one is already listed on the NRHP, and one has yet to be evaluated. Only the archaeological sites that warrant preservation in place would be protected under Section 4(f). In addition to archaeological sites, the review identified 509 NRHP-eligible historic structures and eight historic districts within the TechLink study area. The NRHP-eligible historic structures would be protected under Section 4(f). Figure 39 shows the distribution of historic structures and districts.

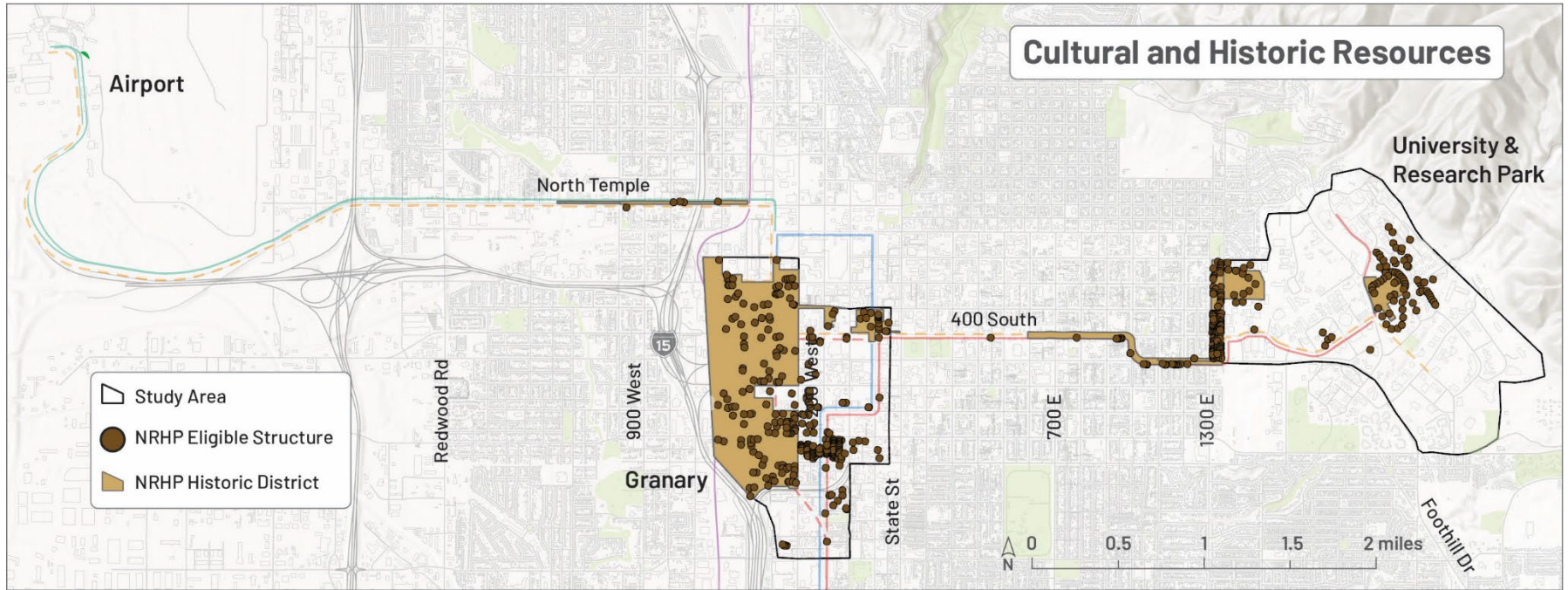


Figure 39. Cultural and Historic Resources



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