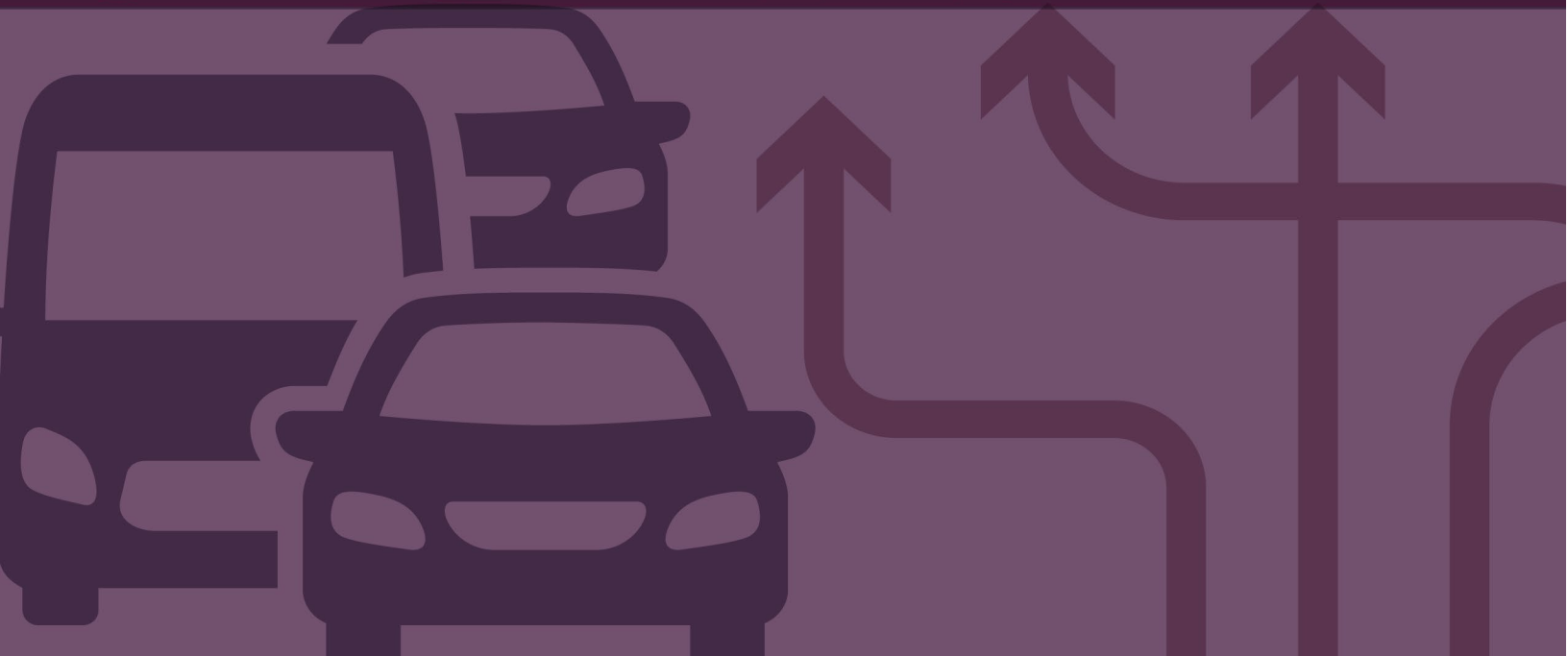


Appendix K: Equity and Environmental Justice Analysis



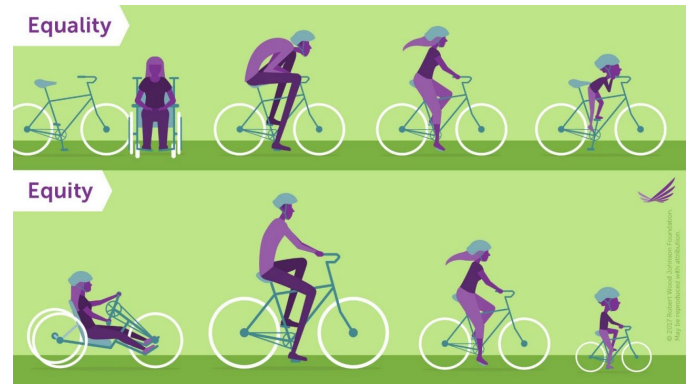
Introduction

The Let's Go 2050 Regional Transportation Plan (RTP) serves as a framework for addressing the long-term transportation needs and goals in Southern Nevada. As the region plans for a sustainable and inclusive transportation system, it is essential to recognize the principles of equity and environmental justice. Studies by RTC, described later in Appendix K, have determined that the highest burden of traffic fatalities, bicycle and pedestrian fatalities, extreme heat, and adverse health outcomes, are concentrated in areas with lower incomes and greater racial and ethnic diversity. Based on the rigorous data analysis conducted through previous studies, RTC has designated these areas as communities of concern. RTC seeks to meet the needs of these historically underserved communities, strengthen transportation services for the region, and meet federal requirements for equity and environmental justice through the program of investments in the Let's Go 2050 RTP.

Equity and Environmental Justice

Equity and environmental justice play pivotal roles in shaping transportation planning within the Regional Transportation Commission of Southern Nevada (RTC). Equity involves considering the diverse needs of various communities and ensuring that no group is disproportionately burdened or excluded. It goes beyond equality by recognizing that different populations may require different levels of support to achieve equitable outcomes.

Environmental justice focuses on ensuring that no group bears a disproportionate share of negative impacts. The RTC actively engages stakeholders, assesses disparities, and tailors solutions to address the unique challenges faced by communities of concern. By integrating equity principles, the RTC aims to create a transportation system that benefits every resident.



Source: Robert Wood Johnson Foundation

Legal Framework

The RTC serves as the Metropolitan Planning Organization (MPO) for the Southern Nevada region and is a recipient of federal funds for regional transportation projects. The RTC is subject to the laws and regulations related to environmental justice, including Title VI of the Civil Rights Act of 1964, Environmental Justice Executive Order 12898, Federal Transit Administration (FTA) Title VI Program (Title 23 Code of Federal Regulations [CFR] 200), and the Justice40 Initiative of Executive Order 14008. Table 1 summarizes a description of each regulation and its connection to the RTP.

Table 1: Legal Framework for Environmental Justice and Equity

Regulation	Description
Title VI of the Civil Rights Act of 1964	Prohibits discrimination on the basis of race, color, and national origin in programs and activities receiving federal financial assistance.
Environmental Justice Executive Order 12898	Requires federal agencies to consider the environmental and human health effects of their actions on minority and low-income communities.
FTA Title VI Program (23 CFR 200)	Requires MPOs to demonstrate that their planning processes consider the needs of certain populations based on race, color, national



Regulation	Description
	origin, sex, age, disability, income, and English proficiency status.
Americans with Disabilities Act	Prohibits discrimination against individuals with disabilities and ensures that people with disabilities have the same rights and opportunities as everyone else.
Executive Order 13166	Ensures that individuals whose first language is not English and who have a limited capacity to read, write, or understand English are provided meaningful access to programs, information, and services by any entity receiving federal funding.
Executive Order 13985	Advances equity and support for underserved communities through the federal government
Justice40 Initiative of Executive Order 14008	Addresses gaps in transportation infrastructure and public services by requiring that 40% of federal funding be allocated to equity-focused communities.

The first DOT Equity Action Plan, in response to Executive Order 13985, was finalized in January 2022 and updated in 2023. The DOT Equity Action Plan includes five key focus areas:

- ▶ **Wealth Creation:** Upgrade skills, grow entrepreneurs, increase incomes, expand net asset ownership, and foster social well-being for underserved communities through direct procurement, infrastructure projects, community wealth building, and industry at large.
- ▶ **Power of Community:** Ensure individuals and communities have a greater voice in transportation decisions affecting them.
- ▶ **Proactive Intervention, Planning, and Capacity Building:** Ensure historically overburdened and underserved communities in urban and rural areas benefit from access to generational investment in the nation’s infrastructure

through direct, hands-on technical support for transportation projects with local impact.

- ▶ **Expanding Access:** Increase social and economic opportunity for disadvantaged and underserved communities from the provision of affordable multimodal transportation options close to affordable housing and the development of a transportation cost burden measure.
- ▶ **Institutionalizing Equity:** Continuously provide resources to embed equity, civil rights, and social justice initiatives into the Department’s decision-making processes – including meaningful public involvement – and ensure that equity is a core part of the Department’s mission and culture.

Regional Equity Studies

Let’s Go 2050 builds on several previous RTC studies that address equity in transportation planning. These plans are summarized below.

[Southern Nevada Transportation Impacts on Health \(2022\)](#)

Southern Nevada Transportation Impacts on Health estimated costs of the regional transportation network’s impacts on health. The study included the development of a tool set that would aid the RTC in measuring transportation-related health impacts and proposed performance measures. Engagement efforts highlighted the links between transportation, health, and equity.

According to the RTC health study, the total estimated number of physical disease cases impacted by Southern Nevada’s regional transportation is 1.3 million. The total direct annual current health care cost of these diseases is estimated to be \$2.9 billion. In addition, there is an estimated loss of life value of \$1.9 billion due to 186 deaths resulting from traffic crashes in 2019. The top three physical health conditions by the number of cases are hypertension without heart disease, COPD and asthma, and diabetes.

Changes to the transportation system and neighborhood environment which achieve the following can help improve health conditions:

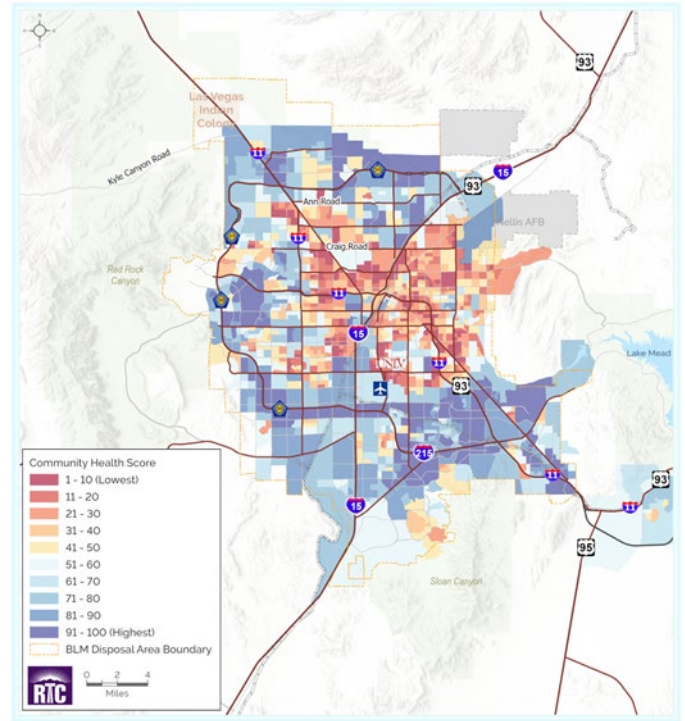
- ▶ Improve traffic safety,
- ▶ Increase physical activity,
- ▶ Improve accessibility, connectivity, proximity,
- ▶ Increase social connections, and
- ▶ Reduce pollution

As part of the plan, the community health score (CHS) was created. It combines 11 metrics to categorize populations within census block groups, considering factors related to vulnerability, risk, and accessibility (Figure 1). This index-based approach is used by the RTC to identify communities of concern and to evaluate projects from the RTP and Transit Improvement Plan (TIP). Lower CHSs indicate areas with higher health-related risks (Figure 1).

Figure 1 shows the geospatial variation of the Community Health Score. Lower scores (with the lowest indicated by shades of red) highlight areas that have been identified as having poorer health (greater health risk) on average. These areas are concentrated in the region's center and east. They include sections of North Las Vegas, eastern Las Vegas, and several other clusters. The most at-risk areas include older parts of town that are typically working class and have seen lower investment than other parts of the region with rapid population and spatial expansion.

The communities of concern established through this study were incorporated into scoring projects for the Let's Go 2050 Plan. An equity factor was included in the project benefits calculation by identifying whether all or part of a project is located in a community of concern.

Figure 1: Community Health Score



Title VI MPO Report (2022)

As a transit provider and designated MPO, the RTC is subject to Title VI of the Civil Rights Act of 1964, which mandates that agencies receiving federal funds must provide services without discrimination. The Title VI MPO Report documents RTC's compliance with Title VI and documents how the agency considers environmental justice for project planning, facility siting, and public involvement.

Title VI of the Civil Rights Act of 1964

No person in the US shall, on the grounds of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance.

The report affirms the RTC’s commitment to complying with the requirements of Title VI in all federally funded programs and activities. It describes the ways a person could file a Title VI complaint with the RTC if they believe they have been aggrieved by unlawful discrimination under Title VI. This report is submitted to the Nevada Department of Transportation (NDOT) for inclusion in their Title VI report to the FTA.

Public Participation Plan (2022)

The Public Participation Plan (PPP) outlines RTC policies and processes to involve stakeholder groups and citizens in regional transportation and transit planning. Federal regulations require MPOs to develop PPPs to define the public participation and amendment process for the RTP and TIP. The PPP outlines the required RTP public comment periods and meetings for the RTC Board, committees, and public review. The PPP uses the CHS from the Southern Nevada Transportation Impacts on Health to define disadvantaged communities within the RTP.

Robust community engagement in overburdened areas is a key component of an equitable outreach process. As described in Appendix N, RTP Engagement Summary, the Let’s Go 2050 process held grassroots public participation events across the region, ensuring that there was ample opportunity to participate in historically underserved communities. Using a go-to-them approach, the Let’s Go 2050 engagement team was available at festivals and other community gatherings to maximize the reach of outreach opportunities and allow residents to participate in a way that is accessible and convenient.

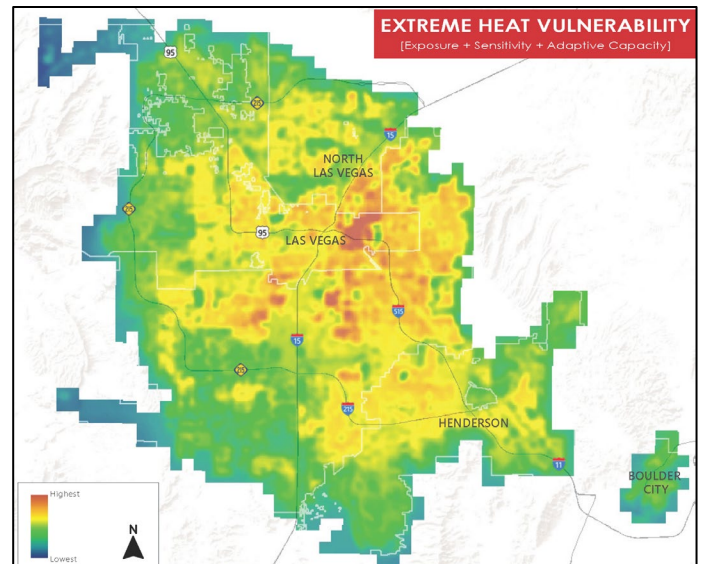
Extreme Heat Vulnerability Study (2022)

The Extreme Heat Vulnerability Study outlined the impacts of extreme heat on health in the region. Some impacts of increasing temperature were related to transportation, such as poor air quality and additional wear and tear on infrastructure. The study aimed to identify areas in the region where populations are most vulnerable to extreme heat. Factors considered in assessing heat vulnerability include:

- ▶ **Exposure to extreme heat** - Weather patterns, as well as both the natural and built environments can influence levels of exposure to extreme heat.
- ▶ **Sensitivity to extreme heat** - Demographic, physiological, and health factors may predispose individuals to greater risk from exposure during extreme heat events.
- ▶ **Adaptive capacity** - The ability to prepare for or cope with extreme heat impacts, whether through economic, political, or social resources.

Concentrations of vulnerable communities are identified in Figure 2.

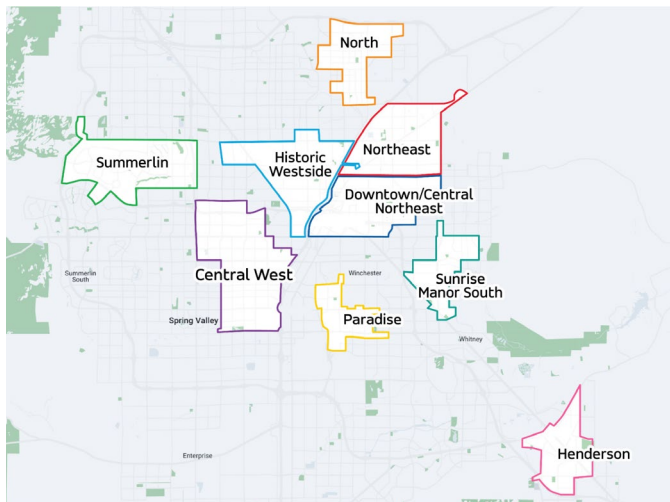
Figure 2: Extreme Heat Vulnerability Study - Regional Results



HOPE Grant Study (2022)

Funded by the FTA's Helping Obtain Prosperity for Everyone (HOPE) program, the RTC's *HOPE Grant Study* examined how on-demand microtransit can improve public transit services in low-income areas. On-demand microtransit is public transit service with flexible routing and scheduling of vehicles. The study identified nine potential on-demand microtransit zones that cover the majority of the federally designated areas of persistent poverty in the region. While the RTC may not have sufficient funding to launch service to all nine zones in the near term, each zone has been designed so that it can operate independently of any other zones (Figure 3). Report recommendations outline implementation steps for each zone, including accessibility, booking, vehicles, service hours, fares, bus stop model parameters, and multimodal integration.

Figure 3: HOPE Grant Study: Proposed On-Demand Microtransit Zones



Coordinated Human Services Transportation Plan (CTP)

RTC developed an update to the CTP concurrent with the Let's Go 2050 process. The CTP helps understand and solve access and mobility needs of people with low incomes, older adults, and people with different abilities. The draft plan has 13 recommended actions:

- Create a formal group of transportation agencies from across the state.
- Create programs to help people use Rideshare more easily.
- Share information about the Community Mobility Project more widely.
- Look for ways to make it easier for people to get a bus pass.
- Support recommendations of the HOPE Study to bring more microtransit service.
- Work with teachers, parents, and students to better understand obstacles.
- Study types of technology that can help people with different abilities get around.
- Set up new ways to report sidewalk and bus conditions and are not safe.
- Keep and grow funds for specialized transportation services.
- Bring more RTC staff to bus stops to help answer questions from riders.

Regional Demographic Analysis

This section documents the demographic characteristics of the region. Census data was used to understand the geographic distribution of the following socioeconomic factors: income, race, limited English proficiency, youth, seniors, and people with disabilities. This section also presents summary data related to equity, including CEJST, RTC-designated communities of concern, and health risks.

Title VI and environmental justice regulations require population analysis based on five demographic indicators, as shown in Table 2. They require analysis of any disproportionate and adverse impacts to disadvantaged communities. In contrast, Justice40 aims to rectify underinvestment in equity-focused communities by directing 40% of federal investment to underserved communities. Federal agencies encourage the use of the CEJST tool to identify underserved areas. Communities of concern are designated by the RTC to identify areas of need based on the community health score. Table 2 summarizes these three approaches, with additional maps and discussion in the following sections.

Table 2: Equity and Environmental Justice Analyses

	Title VI/ Environmental Justice Required Populations	Justice40 Disadvantaged Communities	RTC of Southern Nevada Communities of Concern
Dataset Source	American Community Survey	Executive Order 14008	<i>Southern Nevada Transportation Impacts on Health (RTC)</i>
Description	Demographic characteristics required by Title VI and Environmental Justice	Disadvantaged populations by census tract	Community health index score by census blocks
Data Types	<ul style="list-style-type: none"> - Low income - Minority populations - Limited English proficiency - Vulnerable ages - People with disabilities 	<ul style="list-style-type: none"> - Climate change - Energy - Health - Housing - Legacy pollution - Transportation - Water and wastewater - Workforce development 	<ul style="list-style-type: none"> - Vulnerability - Transportation-related health risks - Health-related accessibility

Title VI/Environmental Justice Analysis

Title VI and environmental justice requirements include analysis of low-income populations, minority populations, those with limited English proficiency, those in a vulnerable age group, and people with disabilities. Table 3 outlines the description and source for each dataset, and includes the national and Clark County average. Figures 4 through 8 provide an overview of census tracts in the urban area with populations above the Clark County average for each indicator, followed by a summary of the population analysis.

Table 3: Identifying Required Population Groups

Indicator	American Community Survey (ACS) Description	National Average	Clark County Average	Data Source and Year
Low Income	Percentage of population whose income in the last 12 months is below the federal poverty level	13.9%	13.7%	ACS 5-year data, 2018-2022
Minority	Percentage of population that is not white alone and includes Hispanic and Latino	41.0%	59.4%	ACS 5-year data, 2018-2022
Limited English Proficiency	Percentage of population aged 5+ who have limited English ability	8.5%	13.1%	ACS 5-year data, 2018-2022
Vulnerable Ages	Percentage of population in dependent age group (under 18 and 65+)	38.7%	38.2%	ACS 5-year data, 2018-2022
People with Disabilities	Percentage of population with a disability	13.7%	13.1%	ACS 5-year data, 2018-2022

On average, 13.7% of people in Clark County had an annual income that was below the federal poverty line. Tracts with higher concentrations of low-income residents were dispersed across the region, with higher concentrations in central and eastern Las Vegas and North Las Vegas.

Figure 4: People with Low Income

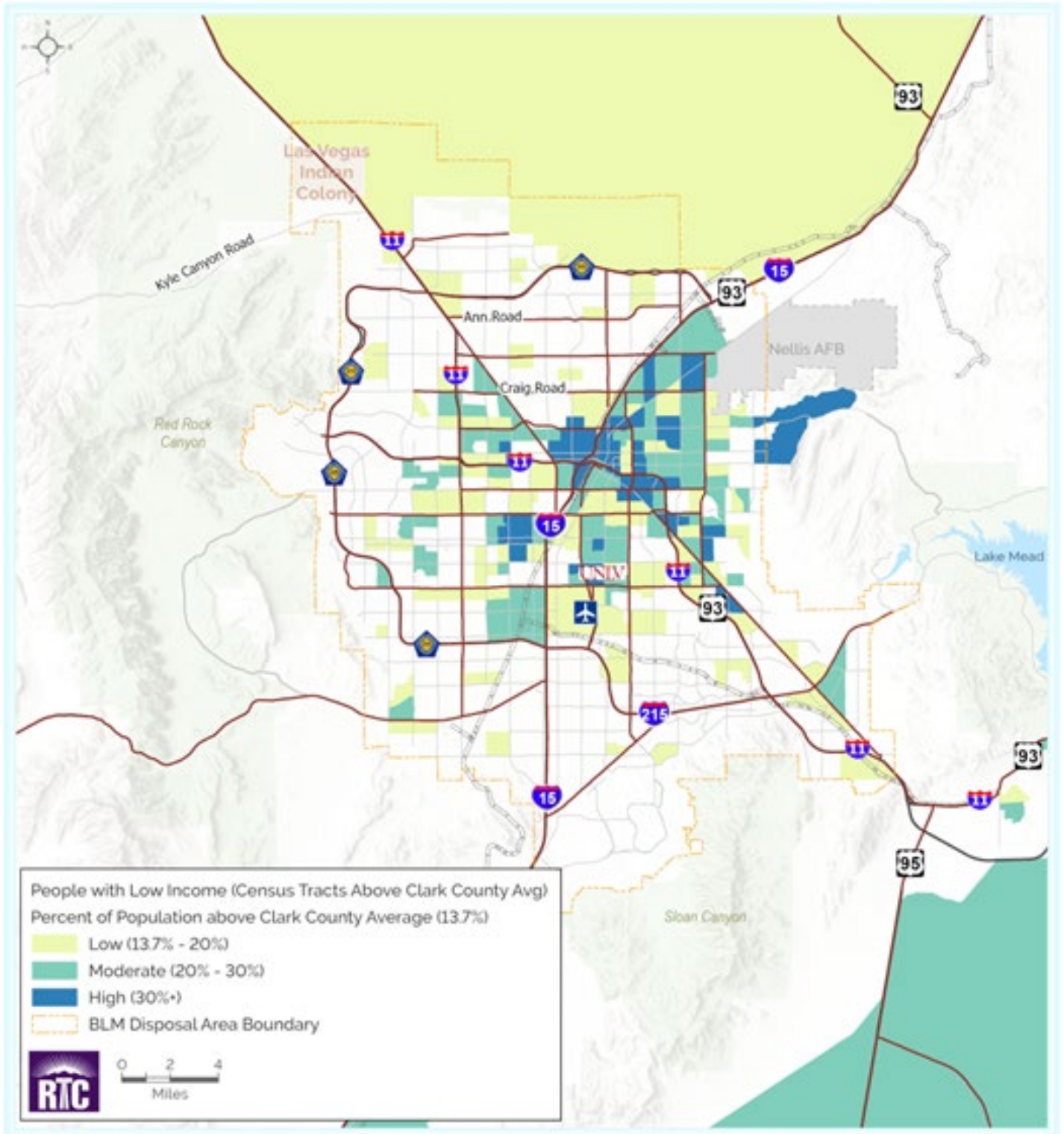
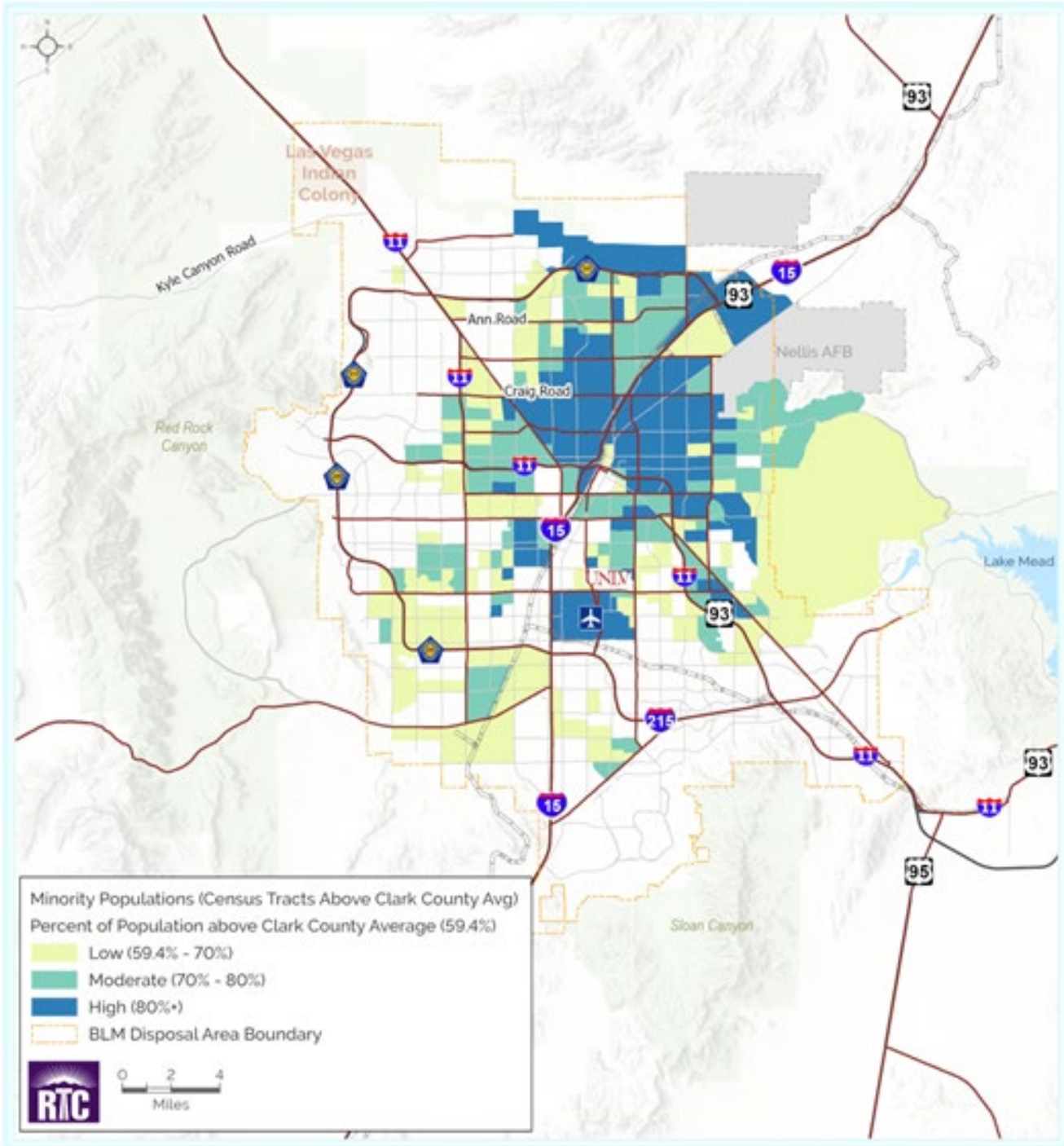


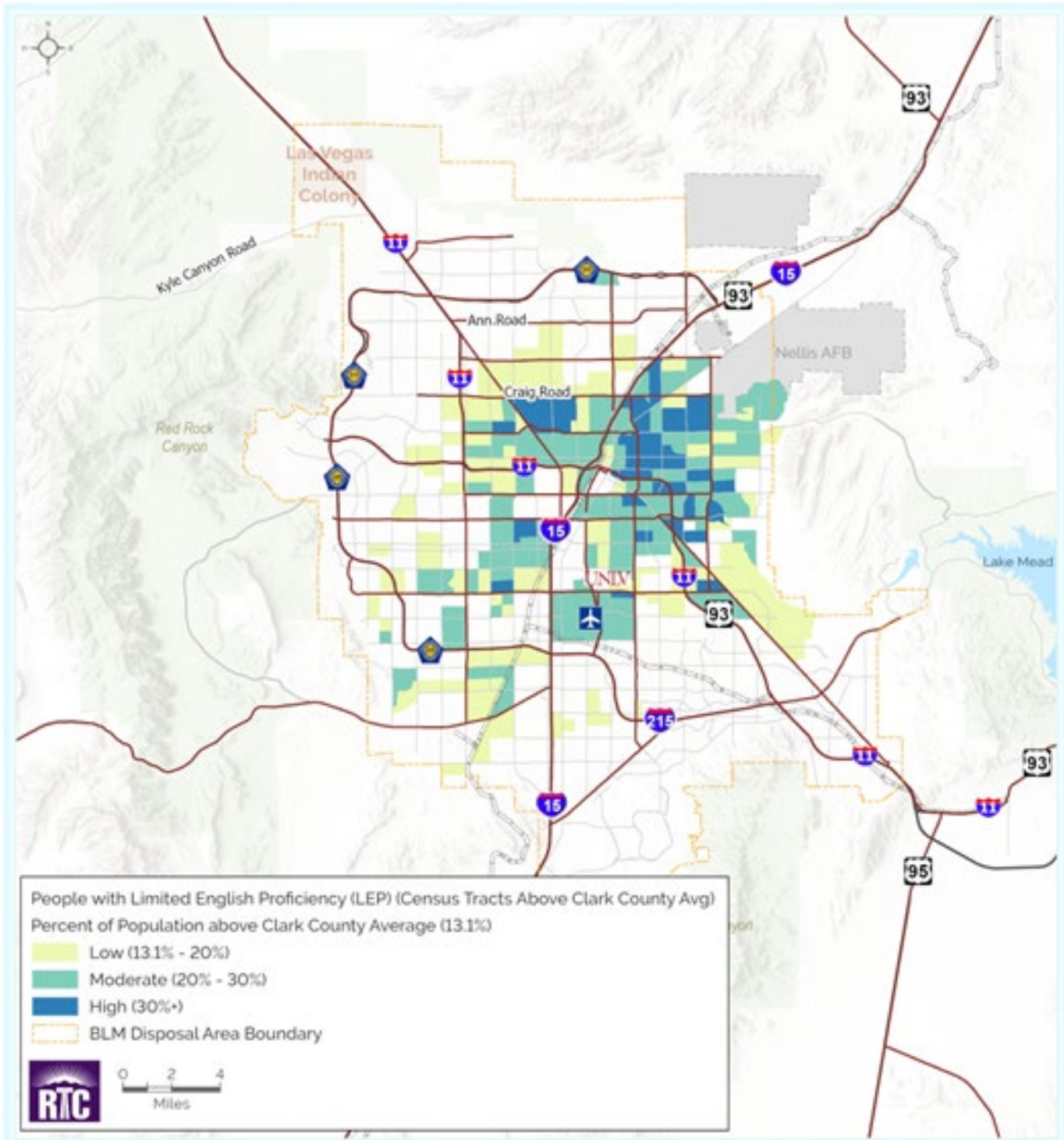
Figure 5: Minority Populations



In Clark County, 59.4% of the population is considered a minority population, which includes individuals of Hispanic or Latino descent. The majority of tracts with above-average minority populations are situated in the urban core and east side of the region. A concentration of tracts

with elevated percentages of minority populations is primarily north of I-15.

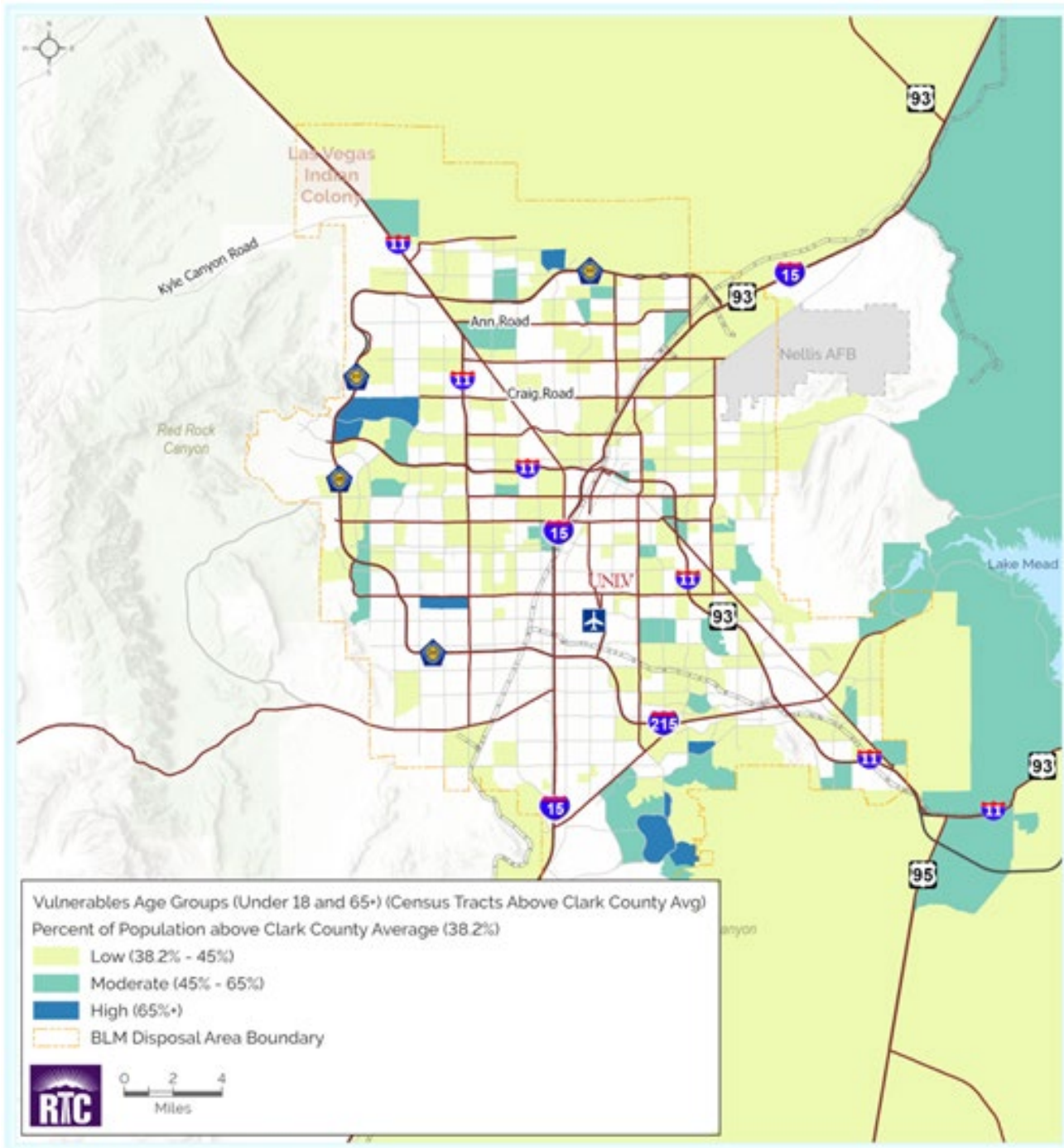
Figure 6: People with Limited English Proficiency



Approximately 13.1% of Clark County's population experiences limited English proficiency (LEP) and self-identifies as "speaks English less than well." Most tracts with above-average LEP populations

are concentrated in the urban core of the region. Notably, a cluster of tracts with elevated percentages of LEP populations are on the east side of the urban area.

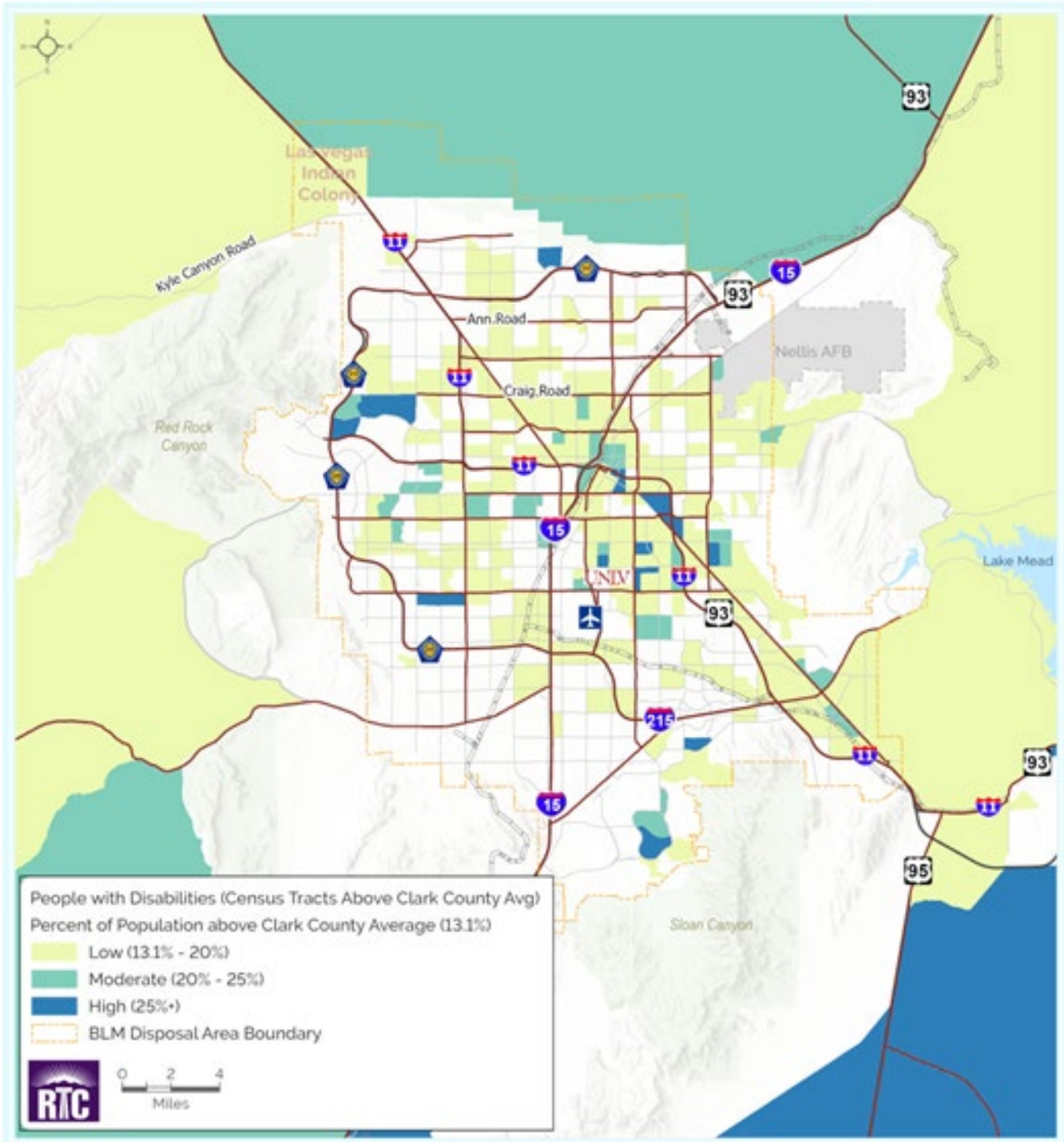
Figure 7: Vulnerable Age Groups



On average, approximately 38.2% of the population in Clark County falls within a vulnerable age group, which includes children under 18 and adults aged 65 and older. The distribution of tracts with above-average populations is widespread

across the region, with many tracts including populations with vulnerable ages just above the average.

Figure 8: People with Disabilities



People with disabilities live throughout the urban area. Higher concentrations are located along Boulder Highway and Craig Road near CC -215.

Justice40

In 2021, Executive Order (EO) 14008 *Tackling the Climate Crisis at Home and Abroad* created the Justice40 initiative, which aims to address environmental and economic disparities in disadvantaged communities by ensuring that 40% of federal investments in climate and clean energy benefit these underserved areas. EO 14008 defines disadvantaged communities as those that are marginalized, underserved, and overburdened by pollution. These communities often experience negative outcomes, such as unemployment, poor health, and limited access to essential services. Disadvantaged communities may also experience additional transportation-related burdens that can impact access to jobs, health care, education, and other services.

Justice40 outlined an approach to define disadvantaged communities and develop a technical tool set to track the impacts and benefits of transportation investments on them. Future baseline metrics will allow federal agencies to calculate, monitor, and track federal transportation spending in disadvantaged communities to meet the 40% spending threshold. Local agencies are encouraged to utilize the Justice40 tool set and metrics when applying for federal funding to easily indicate federal spending going toward communities identified as disadvantaged. Agencies may use their own data and metrics to prioritize certain communities within the set of disadvantaged communities identified by the Justice40 tools.

The Council on Environmental Quality created the Climate and Economic Justice Screening Tool (CEJST), which identifies disadvantaged communities across the United States based on indicators of environmental, health, and economic burdens. CEJST burdens are grouped into categories that were informed by Justice40 investment focus areas, including climate change,

energy, health, housing, legacy pollution, transportation, water and wastewater, and workforce development. An interim CEJST guidance memo was released in 2021, followed by comprehensive guidance released in November 2022. The methodology described below and used in this analysis is CEJST Version 1.0. The U.S. Department of Transportation (USDOT) developed an additional equity tool under Justice40 that was not included in this analysis due to overlap with data already included in the CEJST tool.¹

CEJST highlights disadvantaged census tracts across all 50 states, the District of Columbia, and the U.S. territories. Communities are considered disadvantaged if they meet any of the following criteria:

- ▶ They are within census tracts that meet the thresholds for at least one of the tool's categories of burden.
- ▶ They are within the boundaries of federally recognized tribes. If a census tract does not meet the thresholds for any of the burden categories but is a part of the tract contains tribal land, it is considered "partially disadvantaged."
- ▶ They are within a tract that is completely surrounded by disadvantaged communities and are at or above the 50th percentile for low income.

Datasets for each burden category of the CEJST tool are summarized in Table 4. The map in Figure 9 identifies tracts identified by CEJST as disadvantaged communities.

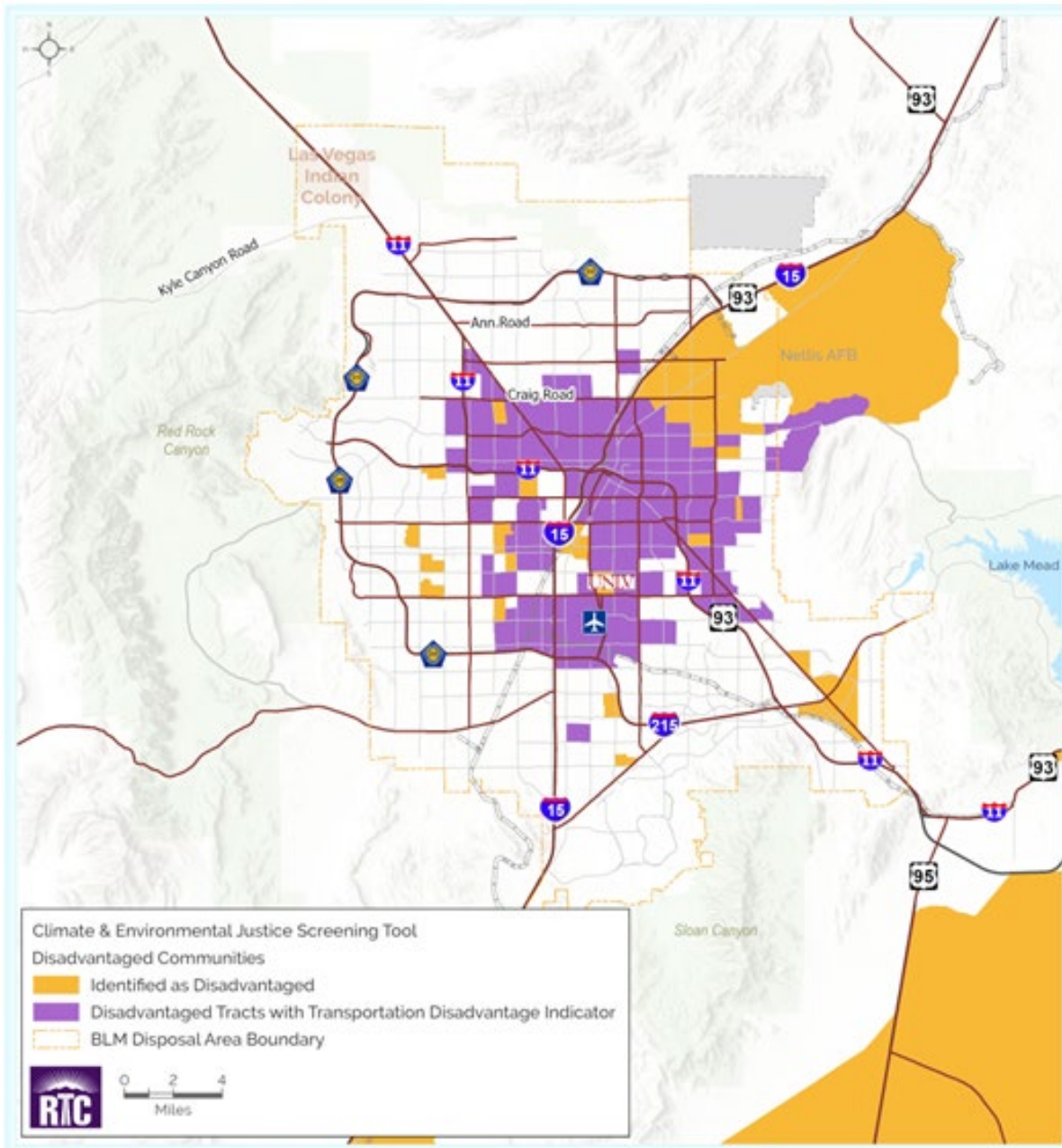
¹ The USDOT Equitable Transportation Community (ETC) Explorer tool provides additional details into the transportation disadvantage component of CEJST through an additional "transportation insecurity" measure. ETC Explorer allows users to understand how to mitigate or reverse transportation projects that may burden disadvantaged communities.

Table 4: Justice40 – CEJST Datasets

Burden Category	Datasets and Thresholds
Climate Change	Are at or above the 90th percentile for expected agriculture loss rate OR expected building loss rate OR expected population loss rate OR projected flood risk OR projected wildfire risk AND are at or above the 65th percentile for low income.
Energy	Are at or above the 90th percentile for energy cost OR particulate matter (2.5 microns or less in size [PM _{2.5}]) in the air AND are at or above the 65th percentile for low income.
Health	Are at or above the 90th percentile for asthma OR diabetes OR heart disease OR low life expectancy AND are at or above the 65th percentile for low income.
Housing	Experienced historic underinvestment OR are at or above the 90th percentile for housing cost OR lack of green space OR lack of indoor plumbing OR lead paint AND are at or above the 65th percentile for low income.

Burden Category	Datasets and Thresholds
Legacy Pollution	Have at least one abandoned mine land OR formerly used defense sites OR are at or above the 90th percentile for proximity to hazardous waste facilities OR proximity to Superfund sites (National Priorities List) OR proximity to Risk Management Plan facilities AND are at or above the 65th percentile for low income.
Transportation	Are at or above the 90th percentile for diesel particulate matter exposure OR transportation barriers OR traffic proximity and volume AND are at or above the 65th percentile for low income.
Water and Wastewater	Are at or above the 90th percentile for underground storage tanks and releases OR wastewater discharge AND are at or above the 65th percentile for low income.
Workforce Development	Are at or above the 90th percentile for linguistic isolation OR low median income OR poverty OR unemployment AND more than 10% of people aged 25 years or older whose high school education is less than a high school diploma.

Figure 9: CEJST Disadvantaged Communities



In Clark County, 41% of census tracts were identified as disadvantaged communities. A significant concentration of these communities are located within the urban core of the region. The majority of disadvantaged communities in the county are also affected by transportation burdens, with 76% of the disadvantaged tracts exhibiting this indicator, as shown by the purple shading on the map.

Communities of Concern

The CHS was developed by the RTC for the *Southern Nevada Transportation Impacts on Health* plan. CHS integrates population characteristics from three categories – vulnerability, transportation-related health risk, and health-related transportation access – and classifies populations by block group (Figure 10). Lower community health scores signify areas that may have health-related risks as they relate to transportation.

Figure 10: RTC Community Health Score Criteria Categories



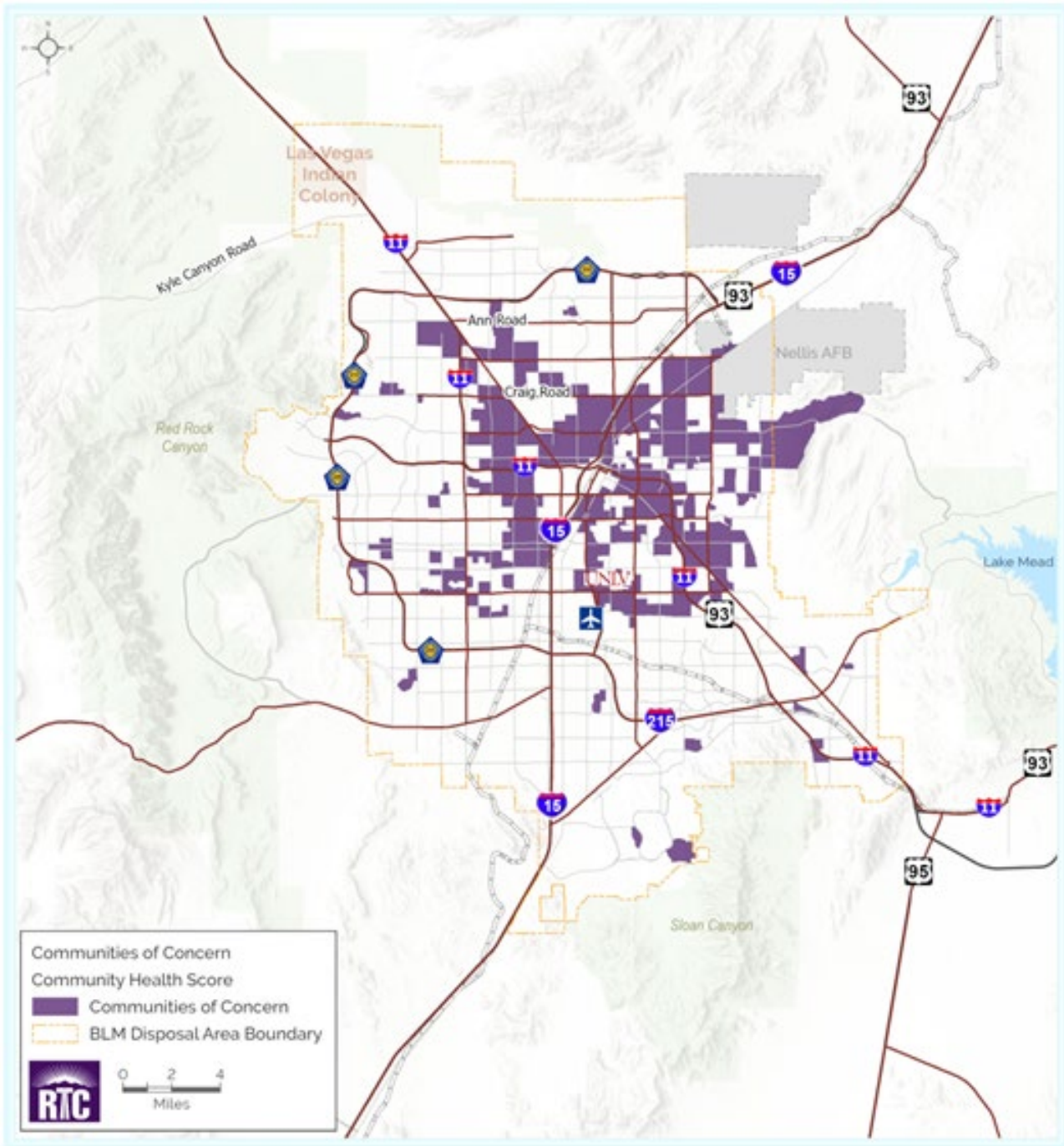
The RTC uses CHS to identify communities of concern and evaluate projects outlined in planning documents, including the RTP and the TIP. Communities of concern guide decision makers to ensure that appropriate resources are allocated toward vulnerable communities.

CHS scores are aggregated using all criteria from the three categories – vulnerability, transportation-related health risk, and health-related transportation access – and provide a score from 1 to 100 (Table 5). Each category is weighted equally. Communities of concern were classified as census block groups with a CHS scores of 36 or less. The map in Figure 11 identifies communities of concern.

Table 5: RTP – Communities of Concern Datasets

Index	Category	Datasets
Vulnerability Index	Chronic health condition prevalence	Estimated diabetes, high blood pressure, and coronary heart disease, asthma
	Social equity	Chronic illness
Transportation-Related Health Index	Traffic safety	Crashes by user type and most serious injury
	Environmental exposure	Ozone, PM _{2.5} , adaptive capacity (heat)
	Physical inactivity	Short trips, leisure walks
Health-Related Transportation Accessibility	Walkability	Walkability
	Bicycle network access	Miles of existing bike lanes and paths
	Transit access	Transit service value
	Health-related goods and services	Food access, medical access
	Job access	Auto-based job access, transit-based job access
	Greenspace access	Tree canopy, parks, shared-use paths

Figure 11: Communities of Concern



The communities of concern designation integrates multiple facets of transportation-related health risks. They are concentrated in the central Las Vegas Valley, including along Boulder Highway, North Las Vegas Boulevard, and west of downtown Las Vegas.

Project Analysis

CEJST and communities of concern play a crucial role in informing transportation planning efforts. By identifying communities experiencing environmental and socioeconomic burdens, it helps decision makers prioritize equitable and sustainable transportation solutions. For instance, when developing the RTP, understanding which areas are disproportionately affected allows for targeted investments in transit, infrastructure, and mobility options.

The project benefits calculator, which was used to evaluate proposed projects for Let's Go 2050, included an equity priority score. Projects were assigned an equity priority score based on whether they are located fully or partially within areas identified as communities of concern. Investments without a fixed location, such as purchasing new transit buses, were not included in this scoring process.

Based on the initial call for projects results, 42 of the projects submitted (33%) were located in RTC-identified communities of concern. These projects represent almost \$1.5 billion in investments, or 42% of all requested RTP funds, meeting the Justice40 criteria. Table 6 summarizes this overlap between projects receiving federal funds in the RTP and locations identified as communities of concern.

Let's Go 2050 includes projects that are not only located in communities of concern, but are designed specifically to improve safety, health, and mobility in these areas. In particular, projects that widen sidewalks, improve bicycle facilities, and expand quality transit service generate substantial benefits for residents in the project areas. Examples include the City of Las Vegas Vision Zero package of projects, Rancho Drive multimodal connectivity improvements, Civic Center Drive / Alexander Road safety improvements, and Desert Inn Road safety improvements.

Table 6: RTP – Proposed RTP Investment in Communities of Concern

	Number of Projects	Project Value (millions)
Communities of Concern	42	\$1,461
Other Areas	87	\$2,036
Percentage in Communities of Concern	33%	42%

Table 7 summarizes the mileage of planned projects in tracts by demographic characteristics. This analysis shows that over 80% of projects are serving low income and minority residents, as well as vulnerable ages and people with disabilities.

Table 7: Regionally Significant Projects in Tracts with Above-Average Percentages of Identified Populations

Indicator	Tracts with Above-Average Percentages of Identified Populations	
	Total Project Miles	Percentage of All Projects in Above-Average Tract
Low Income	128	81%
Minority	126	80%
Limited English Proficiency	106	73%
Vulnerable Ages	116	86%
People with Disabilities	130	87%

Figure 15 shows the planned Let's Go 2050 RTP projects and the communities of concern in years 2027-2029. The map includes both spot improvements, such as intersection safety improvements, and corridor improvements, such as Historic Westside Complete Streets.

Figure 12: Proposed Project and Communities of Concern, 2027-2029

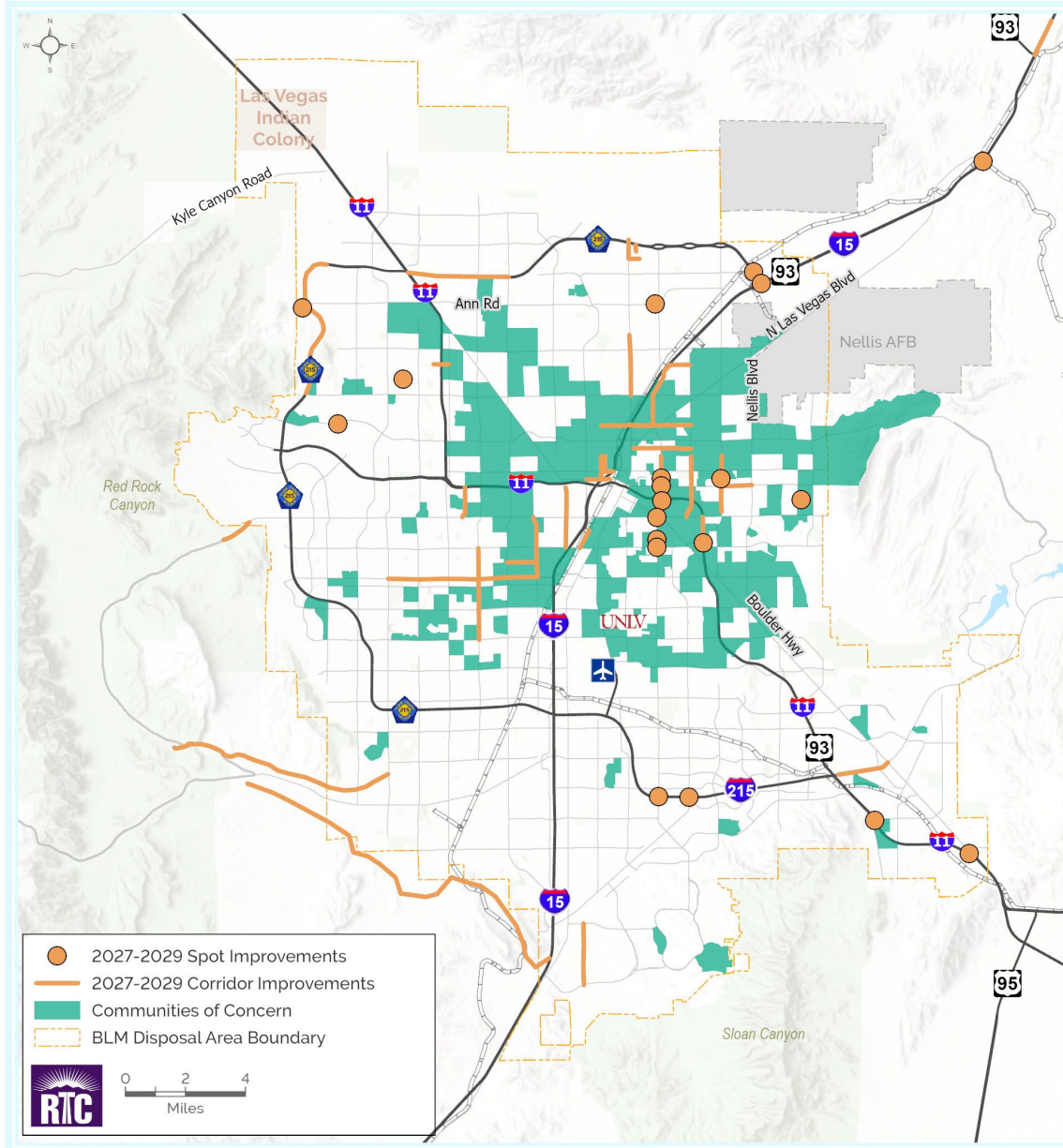


Figure 13: Proposed Project and Communities of Concern, 2030-2050

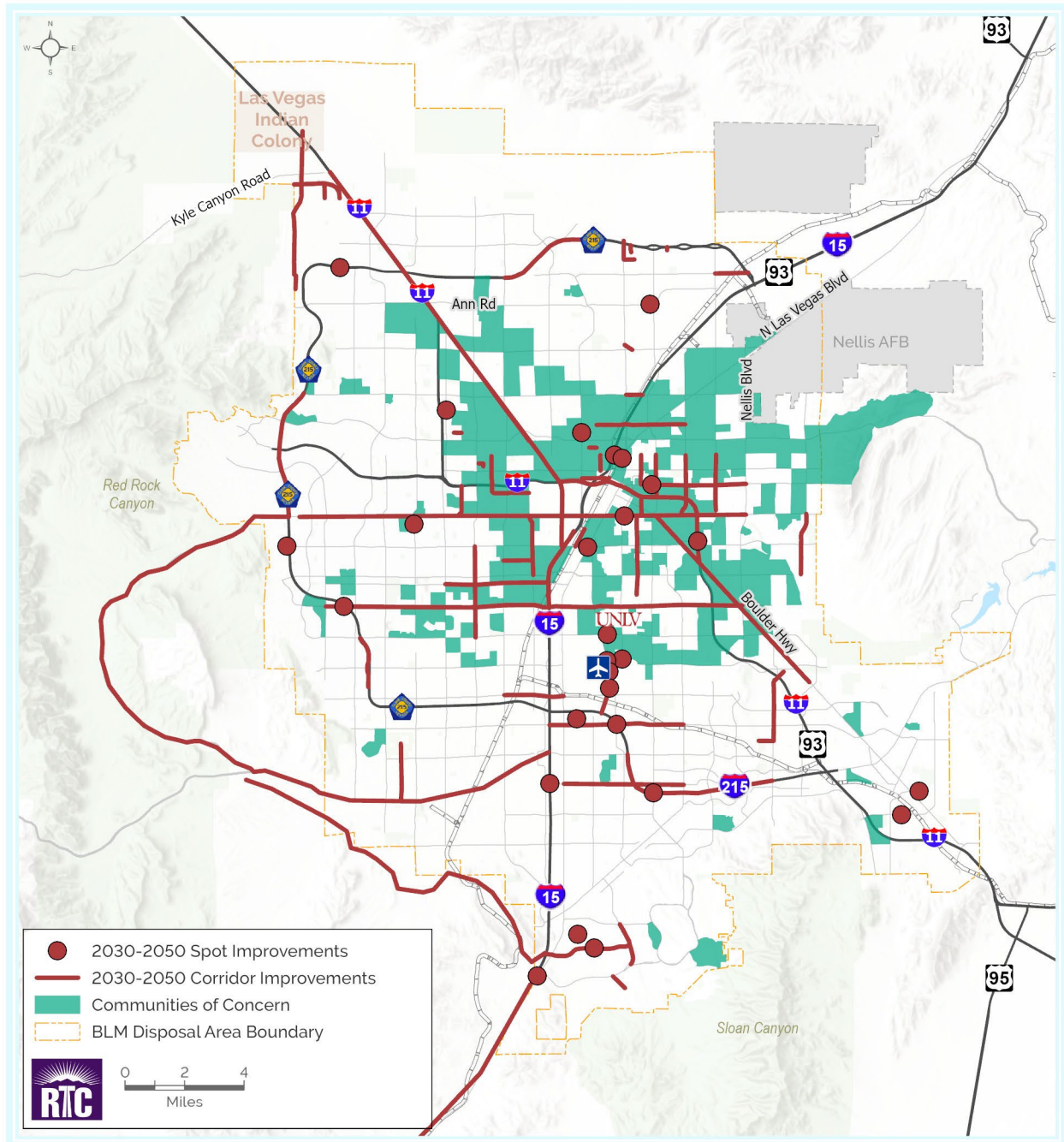


Figure 16 shows transportation investments planned for the 2030-2050 timeframe in relation to communities of concern. It includes major transit investments such as the Boulder Highway and Charleston Boulevard and Spencer Greenway Trail.