access 2050

Enhancing Mobility for Southern Nevada Residents

REGIONAL TRANSPORTATION PLAN
for
SOUTHERN NEVADA
2021 - 2050

RTC

JANUARY 2021

Access 2050 is the federally-required Regional Transportation Plan for Southern Nevada and the state-required Regional Plan for Transportation. It was developed by the Regional Transportation Commission of Southern Nevada, which serves as the metropolitan planning organization (MPO) for Southern Nevada. The MPO is a federally-mandated and federally-funded transportation policy-making organization that is made up of representatives from local governments.

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C	On Board Mobility Plan	Included
D	Regional Forecasts (Planning Variables)	Included
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F	Fiscal Plan and Funding Assumptions	Included
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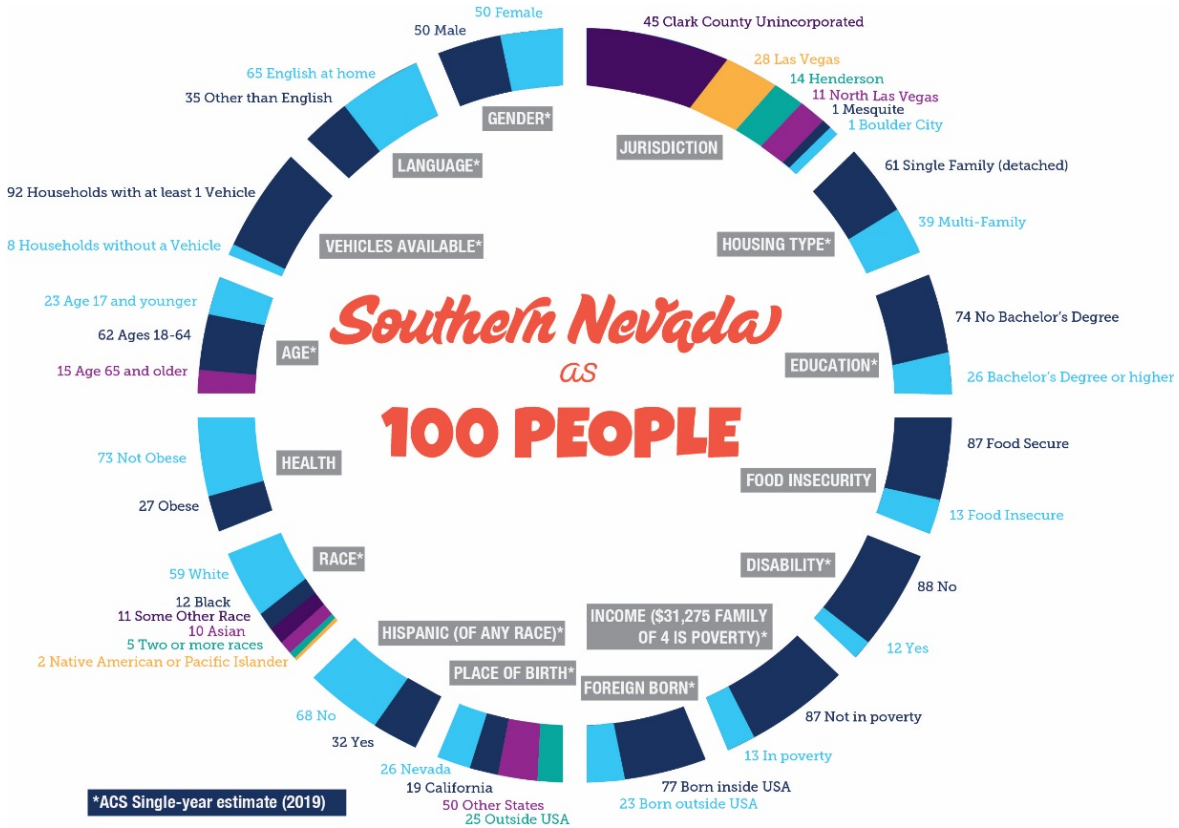
P	Master Plan of Streets and Highways	Included
Q	RTC Crash Report 2013-2017	Included
R	Southern Nevada Transportation Safety Plan	Included
S	Southern Nevada Regional Goods Movement Master Plan	Included
T	FY 2020-2021 Unified Planning Work Program – Amendment Two	Included
U	[Reserved]System Indicators Report	[Reserved]
V	[Reserved]	[Reserved]
W	[Reserved]	[Reserved]
X	[Reserved]	[Reserved]
Y	[Reserved]	[Reserved]

INTRODUCTION AND PROCESS

In spring 2020, during development of Access 2050, Southern Nevada, like the rest of the United States, faced an unprecedented challenge with the COVID-19 pandemic. “Stay home for Nevada” orders were imposed to control the spread of the virus, effectively putting a hold on local, regional, and international travel, and closing entertainment and hospitality industries. The impacts on Southern Nevada’s economy are expected to be severe, at least in the short term. Nevada had the nation's highest headline unemployment rate in the nation at 13.2 percent in August 2020, and Southern Nevada’s rate is much higher than other parts of Nevada. An estimated 15.5 percent of Southern Nevada’s workforce was unemployed in August, down from 16.6 percent in July, which was further down from a severe high of 34 percent in April 2020. The outcome of this has been a loss of approximately 127,600 jobs from a year ago in August 2019.



Despite changes in the region’s immediate economic forecasts, Access 2050 remains relevant. The RTP includes investments and strategies designed to diversify and expand regional travel opportunities and make it easier for people to get to work and moving forward with these strategies is critical to the region’s recovery. As the immediate impacts of COVID-19 subside, Access 2050 provides a roadmap for mobility improvements and a flexible and adaptable strategy that responds to short- and longer-term regional transportation needs. There is a strong body of research showing investment in transportation generates local jobs during periods of construction and operations. Access 2050 provides an investment schedule that will both stimulate the local economy and support workers and employers as residents return to work and as the region begins to recover.

Access 2050 is the primary vehicle through which the RTC’s planning process is implemented. Inputs to Access 2050 came from a large number of sources, including results from the RTC’s Transportation Vision Survey, priorities expressed by the RTC’s Boards and Committees, Federal and state planning requirements, current regional practices, and best practices from professional transportation planning. Underlying Access 2050 is an assessment of the current transportation system, its impacts on Southern Nevadans, and identifying transportation infrastructure projects that will improve quality-of-life for residents and visitors to Southern Nevada.

About Southern Nevada

Despite the recent economic downturn, rapid growth in population and tourism is forecast to continue in Southern Nevada; historically one of the fastest growing regions in the country. This growth can strain the region's transportation system and make travel for residents and visitors more difficult.

Southern Nevada currently attracts more than 42 million visitors each year, and is home to more than 2.3 million residents. By 2050 the region will surpass 3 million residents. Forecasts estimate that Southern Nevada continues to experience rapid growth with population increases of almost 1% annually, averaging over 20,000 new residents each year. Approximately half of whom are moving to the region from other parts of the nation and world. As a consequence, the region displays tremendous ethnic and cultural diversity.

The mobility needs of Southern Nevada are similarly varied, and the goals, strategies, and investment program documented within ACCESS 2050 reflect a continuous, comprehensive and coordinated approach to transportation planning.

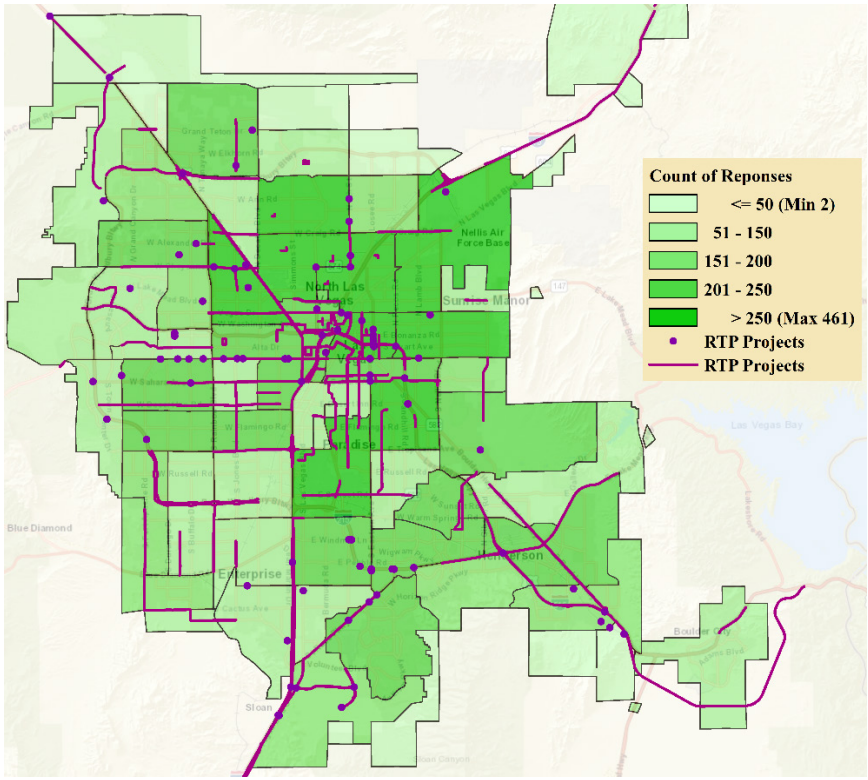
Regional Transportation Vision Survey

Central to developing Access 2050 is ensuring that it reflects the vision of Southern Nevada residents. To gain insight into the public's priorities for regional mobility, the RTC conducted a Transportation Vision Survey. The survey was offered in English and in Spanish, both online and on paper, and was promoted online and at numerous in-person outreach events. Launched at the beginning of RTP development, the Vision Survey was designed to understand the public's attitudes towards transportation investment priorities, and to understand preferences for prioritizing investments.

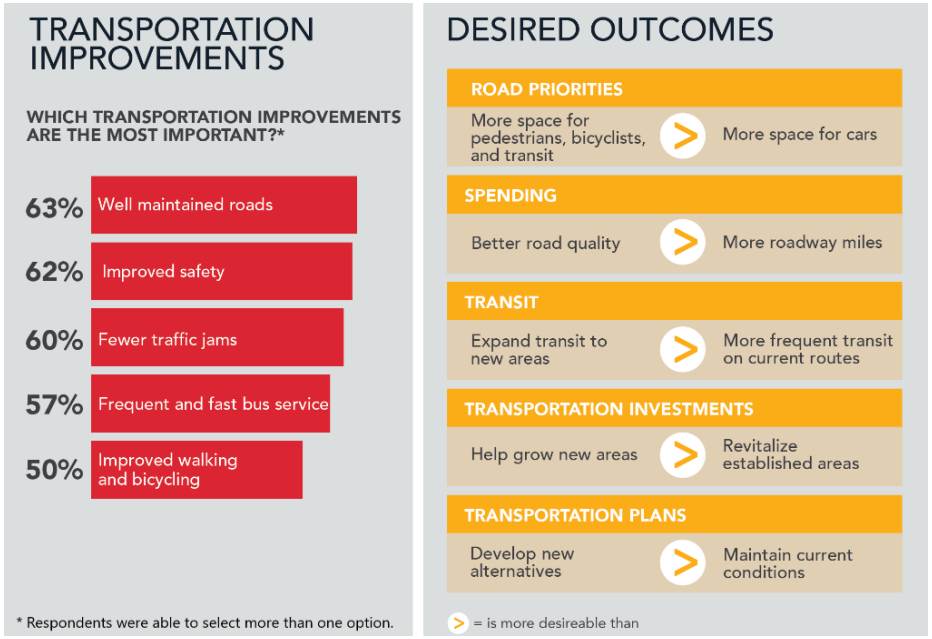
Source: RTC. Transportation Vision Survey outreach event.

The Vision Survey gathered over 12,200 responses, making the survey one of the largest reviews ever conducted of Southern Nevadans' attitudes about transportation. The survey was launched on October 10, 2018 and closed on December 31, 2018. The demographic composition of respondents was representative of Clark County residents in terms of age, race and ethnicity, and income level. This was achieved by monitoring survey results throughout the survey period, and conducting additional digital and in-person outreach to communities that were underrepresented. While all of Southern Nevada was heard from, the respondents tended to represent the average resident who is aged 18-39, drives alone, and has an income of $20,000 -$50,000.

Survey Responses by ZIP Code and RTP Projects



Source: RTC. Transportation Vision Survey summary results.



Source: RTC. Transportation Vision Survey summary results.

Survey results show that Southern Nevadans want a transportation system that allows them to safely and efficiently access the places they need or want to go while also providing choices for how they travel. Safety and congestion emerged as the top priorities, but all issues received significant support. With the majority of respondents being car owners, many residents described a desire for more improvements in road maintenance, fewer traffic jams and improved safety.

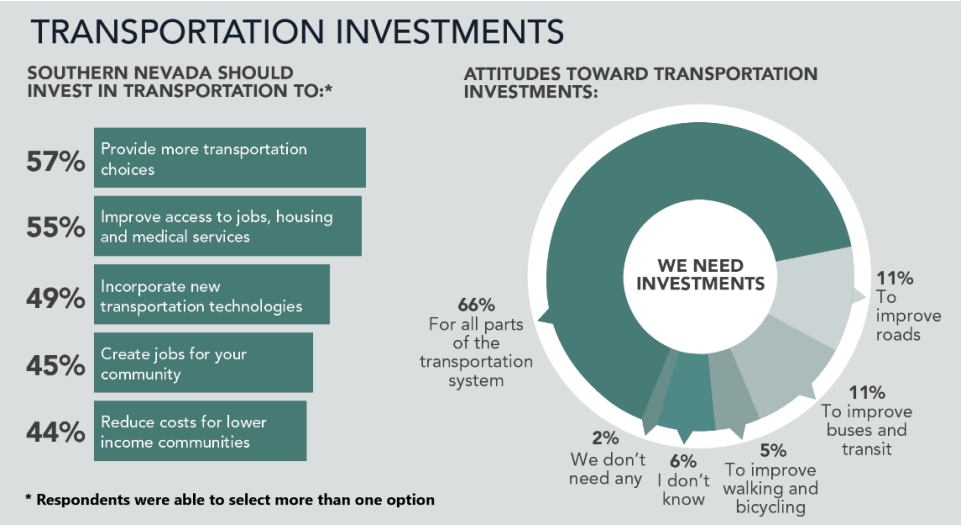
Significantly, a majority of survey respondents were willing to try out high capacity transit, with many having a positive attitude towards a regional Light Rail system. Respondents also described a preference for giving more space for pedestrians, bicyclists, and transit, and expanding the current transit system to serve more areas and connect them to their jobs better.

A majority of Southern Nevadans support investments in transit and walking infrastructure, even people who drive daily. Survey respondents reflected the region's travel habits in that a majority drive to work, but there is a region-wide desire for more investment in infrastructure to speed transit, build high capacity transit, and devote more space to transit.

Respondents prioritize spending on existing programs. A majority of respondents think that investments need to continue to be made in maintaining roads, improving safety and decreasing traffic jams.

Transit investments received broad support. Respondents reported that more transportation choices are preferred, and that transit needs to expand in new areas. They also believe in increased access to jobs and amenities, and dedicating road space to pedestrians/bicyclists instead of automobiles.

Residents want more investment in all forms of transportation. Responses in multiple questions showcase the need for transportation investments for all parts of the transportation system, which includes roads and mass transit.

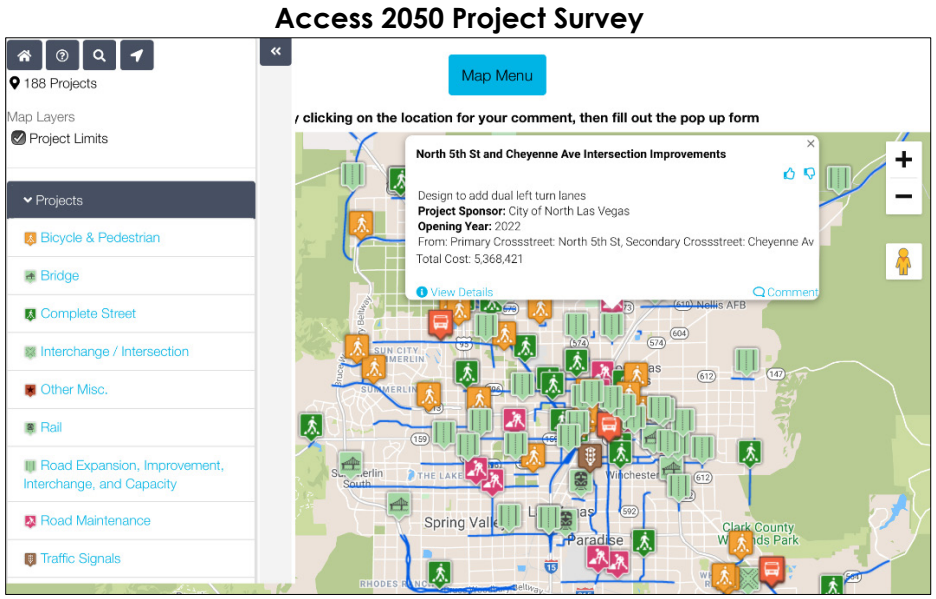


Source: RTC. Transportation Vision Survey summary results.

In terms of engagement, the Transportation Vision Survey was a success because the RTC went directly to where people are (large events, festivals) and had an engaging hook and survey to connect with the community. The survey was also designed to be easily measurable and provide the necessary data to enable actionable recommendations to be made.

Access 2050 Project Survey

During final development of Access 2050, The RTC sought project-level input on the identified projects that comprise Access 2050. Users could view the 188 RTP projects that were able to be mapped, view project details, rate the project by clicking the thumbs up or down icon, and leave feedback on each project. The survey also sought to understand if the comprehensive set of projects would help respondents get to where they need to go.



Source: RTC. Access 2050 Project Survey

The Access 2050 project survey was live for 30-days from October 26 to November 25, and ran concurrent with the publicly noticed comment period for the Draft Regional Transportation Plan. The survey was imbedded on the Access 2050 project website, and was promoted via e-blasts, social media, and in-person outreach events located throughout Southern Nevada. Additionally, the RTC held three publicly noticed public meetings to review the RTP, and invite comments from the public on the Access 2050 Project Survey.

Source: RTC. Aerial photo of Southern Nevada.

Source: RTC. Downtown City of Las Vegas.

ACCESS 2050: VISION, GOALS AND STRATEGIES

Access 2050 Vision

The transportation system of Southern Nevada will enhance and balance our defining regional characteristics:

- *Strong and Vibrant Economy,*
- *Diverse and Welcoming Quality of Life, and*
- *Valuable Natural and Infrastructure Resources.*

These three regional motivators describe the basic elements that allow Southern Nevada to function and grow. All three elements support and reinforce each other; one or another may be more important at any point in time, but the transportation system must support all three. This vision defines an approach to transportation planning that acknowledges the importance of a considered and well-developed transportation system for the Southern Nevada region.

Economy provides opportunity for jobs and attractiveness for businesses.
Quality of Life ensures that people can live safely and equitably and have access to what they need or want.
Resources provide the environment, infrastructure, and materials needed to support the economy and quality of life.

This Vision Statement and the regional system described above suggest the following three Access 2050 Goals that will support the growing needs of our region and move our regional vision forward.

ACCESS 2050 GOAL	ACTION
Strengthen Regional Economic Competitiveness	Strategically develop the transportation system to provide equitable and efficient access to jobs and enhance the region's attractiveness for business and enterprise.
Maintain and Enhance Quality of Life for Southern Nevadans	Use improvements and enhancements to the transportation system to ensure that Southern Nevadans can live safely and equitably with access to services and goods they need or want.
Ensure Sustainable Use of Infrastructure and Resources	Maintain the high quality of existing infrastructure and protect future opportunities by sustainably managing resources and environmental quality.

The Access 2050 Plan also presents indicators from the transportation system that will allow the RTC and the region to track progress in implementing the Plan. The strategies and indicators will help direct the Regional Transportation Commission in advancing the vision revealed by the RTC's Vision Survey and making the goals of Access 2050 a reality.

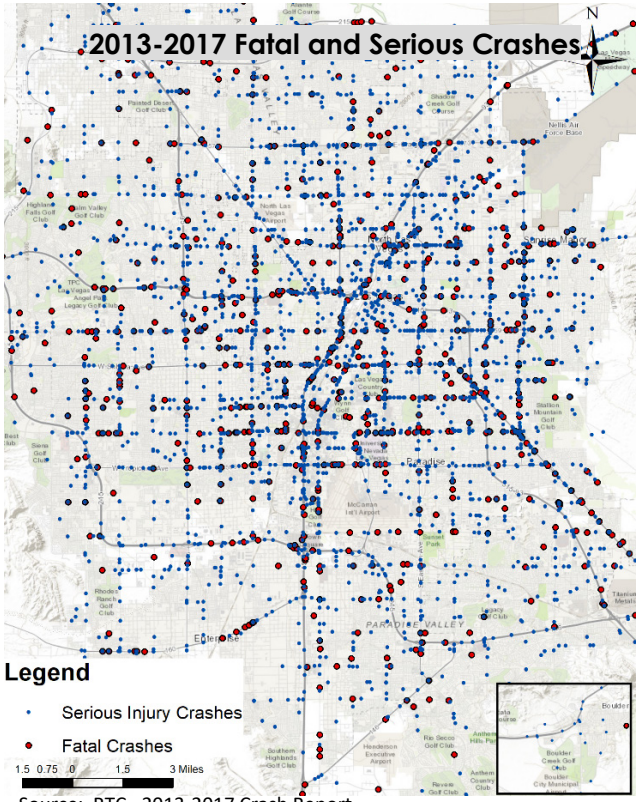
ACCESS 2050 GOAL	TRANSPORTATION INDICATORS
Strengthen Regional Economic Competitiveness	• Transportation-Related Share of Regional Economic Activity • Average Highway Traffic Volume
Maintain and Enhance Quality of Life for Southern Nevadans	• Average Household Transportation Costs • Annual Per-Capita Vehicle Hours Traveled (VHT)
Ensure Sustainable Use of Infrastructure and Resources	• Per-Capita Transportation Revenue and Spending • Per-Capita Fuel Consumption

Five Primary Strategies

ACCESS 2050 establishes strategies that will implement the plan's goals. This section presents the four primary strategies, and a set of six secondary strategies are outlined in the next section. Indicators are also established for each strategy.

1. **Improve Safety**

   The ability to safely travel throughout the region is a top priority for Southern Nevada. All users of the transportation system can be at risk, including motorists, pedestrians, and cyclists. Safety has long been a focus of the transportation profession, yet transportation users continue to suffer fatalities, injuries, and other losses at unacceptable rates. To improve safety beyond what current design and engineering practices provide, they will be supplemented with innovations that can reduce high-risk travel behavior and enhance features of the region that tend to increase safety for all users. Addressing transportation safety will not only benefit our health, but the community's quality of life, and economic competitiveness.

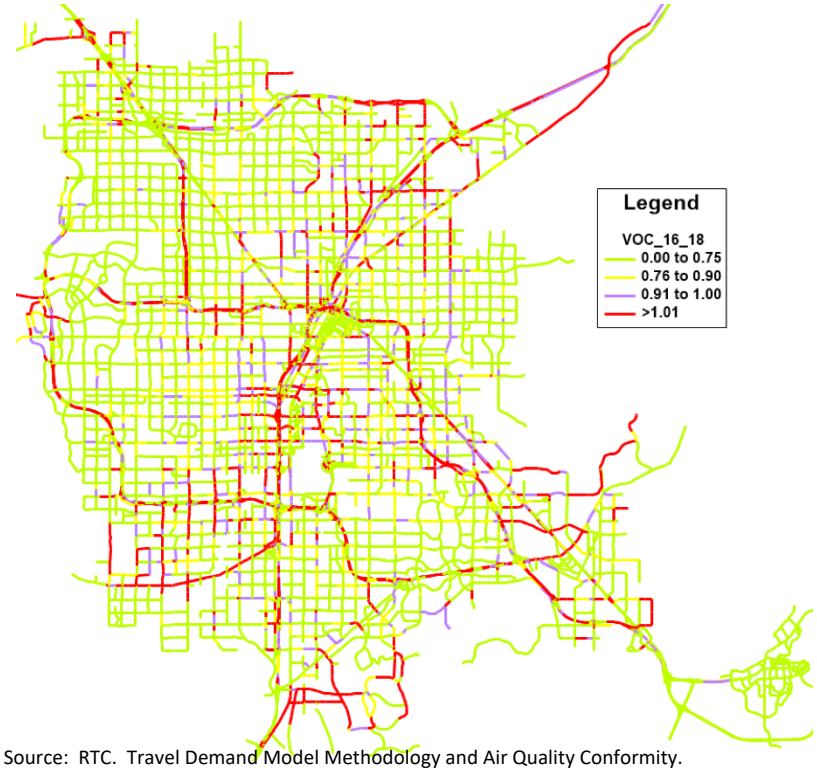


Source: RTC. 2013-2017 Crash Report.

2. **Manage Congestion**

   The ability to manage congestion will help sustain the Southern Nevada economy – and better position us to maintain our status in the future as an attractive place to live and visit. Successful implementation of this strategy will ensure that residents will be able to travel and work efficiently and reliably using whichever mode of transportation they desire.

Peak Hour Congestion in 2050 with Current



Source: RTC. Travel Demand Model Methodology and Air Quality Conformity.

3. **Enhance Multimodal Connectivity**
Providing multimodal transportation connections to basic needs and quality-of-life amenities for Southern Nevadans enhances their health and wellness, and makes the region more inviting and appealing for visitors and new commerce. A connected multimodal transportation system of highways, roads, buses, sidewalks, and bicycle facilities can increase access to jobs, housing, schools and amenities locally and regionally, and ensures that the transportation system allows people or goods to get where they want and need.

4. **Maintain Current Infrastructure**
Maintaining a safe and reliable transportation system helps ensure optimal system performance for people and goods. With limited resources available for transportation infrastructure confronting the growing region, we must maintain an acceptable state of repair for system assets, and consider replacement costs for aging facilities.

5. **Promote Economic Development**
Investments to the transportation network have a direct positive impact on the economy through the creation of jobs. Transportation projects can also generate long-term positive economic growth through the types of activities they facilitate by increasing accessibility and mobility, and reducing transportation-related costs by increasing safety and reducing emissions. Additionally, targeted investments can oftentimes have benefits beyond mobility impacts. Quality public transit can shape land use and development patterns, generate jobs, and enable economic growth.

PRIMARY STRATEGIES	QUALITY OF LIFE GOAL	ECONOMIC COMPETIVENESS GOAL	SUSTAINABILITY GOAL	TRANSPORTATION SYSTEM INDICATORS
Improve Safety	■	■	□	• Fatality Rates • Serious Injury Rates • Non-motorized Fatalities/Injuries
Manage Congestion	■	■	■	• System Reliability • Average Commute Delay • Bus On-Time Performance • Incident Clearance Time
Enhance Multimodal Connectivity	■	■	■	• Commute Mode Split • Job Accessibility by Mode • Miles of Active Transportation Facilities
Maintain Current Infrastructure	■	■	■	• Regional Pavement/Bridge Condition Index • Household Transportation Expenditures • Transit System State of Good Repair
Promote Economic Development	■	■	■	• Transportation-Related Share of Regional Economic Activity • Direct, Indirect, and Induced Jobs Created by Transportation Spending
■ Directly Related □ Indirectly Related				Indicators that need development by RTC

Six Secondary Strategies

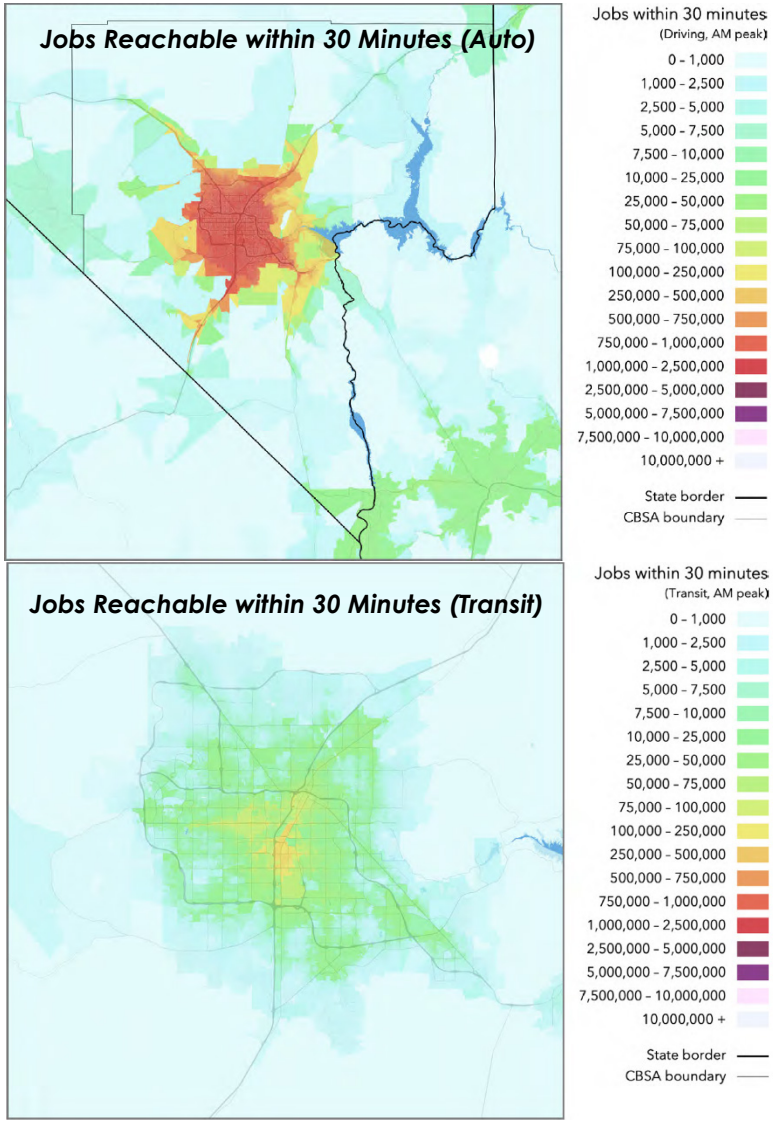
1. **Improve Access to Essential Services**
   The Southern Nevada region prospers when all residents and visitors have access to the employment, housing, education, medical, shopping, cultural, and recreational opportunities they need. Our region's transportation system is critical to enabling this movement and providing access to these basic needs and quality-of-life amenities that allow Southern Nevadans to succeed and invites visitors to return.

2. **Provide an Accountable and Transparent Planning Process**
   Southern Nevadans need to know that the resources available for transportation projects and programs are well-spent. A transparent planning and project selection process will help ensure that the goals and strategies of Access2040 are followed, so that residents are provided with a transportation system that meets their needs.

3. **Enhance Freight Movement**
   Facilitating freight mobility and delivery accessibility within the region helps ensure that Southern Nevada continues to remain an inviting place for businesses to thrive and that residents have the goods and materials they need and want. Keeping the region well-connected to neighboring and national markets helps maintain economic competitiveness.

4. **Improve Public Health Related to Transportation**
   A deliberate focus on the transportation system's influence on mobility choices, air quality, physical activity, access to healthy food, and the natural environment supports the opportunity for Southern Nevadans to lead healthy and active lifestyles throughout the region, both as part of how they travel, but also through how they live. In addition, ensuring that the transportation system's impact on air quality is not detrimental to Southern Nevadans is an important part of providing that system.

Accessibility Comparison by Auto and Transit



Source: University of Minnesota, 2020. "Accessibility Across America, Auto 2018" and "Accessibility Across America, Transit 2018".

5. **Conserve and Protect Natural Resources**
Significant impacts to natural resources are often a consequence of economic growth and increasing travel demand such as those experienced in our region. Identifying these potential impacts and supporting the conservation and enhancement of natural resources will promote a higher quality of life and help ensure long-term economic opportunity. Protecting natural resources helps residents to lead healthy lifestyles, and enjoy clean air and water by promoting opportunities for active transportation.

Use Innovative Planning to Address Emerging Technologies & Trends

Emerging technologies and their growing use will disrupt traditional transportation planning practices. To respond proactively, the RTC will develop innovative planning approaches to address these trends that change how priorities are identified and how decisions are made.

SECONDARY STRATEGIES	QUALITY OF LIFE GOAL	ECONOMIC COMPETITVENESS GOAL	SUSTINABILITY GOAL	TRANSPORTATION SYSTEM INDICATORS
Improve Access to Essential Services	■	■	□	• Job Accessibility by Mode • Accessibility to Essential Services
Provide Accountable & Transparent Planning Process	■	□	■	• Planning Process Measures • Project Delivery Time • Performance Measures Attainment
Improve Freight Movement	□	■	□	• Truck Travel Time Reliability Index • Truck Delay Costs
Improve Public Health Related to Transportation	■	■	□	• Active Transportation Mode Share • Health Incidents Related to AQ
Conserve & Protect Natural Resources	■	■	■	• Air Quality Conformity Status • People per Lane-Mile • Infill Development Ratio
Use Innovative Planning to Address Emerging Technologies & Trends	■	■	■	• Autonomous Vehicle Travel Share • Technology Impact Tracking • Transportation Network Company Travel Share
■ Directly Related □ Indirectly Related				Indicators that need development by RTC

Reinforcing Existing Local Comprehensive Plans

The table below shows how the ACCESS 2050 Plan reinforces similar goals developed and included in comprehensive plans and/or transportation elements from each of the local governments in Southern Nevada, as well as the Southern Nevada Strong Regional Plan. Additionally, local agency plans include key policies that are in alignment with Access 2050, as shown by the following tables.

ACCESS 2050 Goals	Clark County*	Las Vegas*	Henderson	North Las Vegas	Boulder City	Mesquite	Southern Nevada Strong
Strengthen Regional Economic Competitiveness	■	■	■	■	■	■	■
Maintain and Enhance Quality-of-Life for Southern Nevadans	■	■	■	■	■	■	■
Ensure Sustainable Use of Infrastructure and Resources	■	■	■	■	■	■	■
ACCESS 2050: Primary Strategies							
Improve Safety	■	■	■	■	■	■	■
Manage Congestion	■	■	■	■	■	■	■
Expand Multimodal Network	■	■	■	■	■	■	■
Maintain Current Infrastructure	■	■	■	■	■	■	■
Promote Economic Development	■	■	■	■	■	■	■
ACCESS 2050: Secondary Strategies							
Improve Access to Essential Services	■	■	■	■	■	■	■
Provide Accountable & Transparent Planning Process	■	■	■	□	□	□	■
Improve Freight Movement	■	■	■	■	■	■	■
Improve Public Health Related to Transportation	■	■	■	■	■	■	■
Conserve & Protect Natural Resources	■	■	■	■	■	□	■
Use Innovative Planning to Address Emerging Technologies and Trends	□	■	■	□	□	□	□

Legend: ■ **Directly Related** ■ Indirectly Related □ Not Mentioned ■ Contradicts *(none identified)*

**Due to Comprehensive Master Plan updates currently underway, plan review focused on drafts provided during September 2020.*

Plan Reviewed	Transportation Highlights	Related Transportation Plans
Clark County Transform Clark County Preliminary Plan Framework Draft (2020)	✓ **Multimodal**: Promote expansion of multimodal transportation infrastructure; sidewalks, bike lanes, trails, and transit form a seamless, integrated network. ✓ **Air Quality**: Reduce transportation and development-related carbon emissions.	- Comprehensive Plan, Transportation Element (2019) - Parks, Trails and Open Space Report (2009)
City of Las Vegas 2050 Master Plan Draft (2020)	✓ **Bike and Pedestrian Infrastructure**: Connect and enhance accessible bike and pedestrian infrastructure. ✓ **Transit**: Make transit options more convenient and better integrated with vibrant neighborhood and employment centers. ✓ **Smart Transportation**: Strengthen smart transportation systems and infrastructure to foster economic development efforts.	- Master Plan 2020 (2000) - Vision 2045 Downtown Master Plan (2016) - Neighborhood Walkable Community Plans (2012-2014)
City of Henderson Henderson Strong Comprehensive Plan (2017)	✓ **Comprehensive Transportation Systems**: Support the RTC's efforts to plan and fund the expansion, operation, and maintenance of transit systems and routes. ✓ **TOD**: Integrate land use planning with future transportation improvements. ✓ **Accessible Transit Systems**: Improve transportation services and facilities for the underserved, people with disabilities, and seniors.	- Open Space and Trails Plan (2005) - Master Bicycle and Trail Plan (2014) - Complete Streets Evaluation Process (2014) - ADA Planning Study (2018)
City of North Las Vegas Comprehensive Master Plan (2006, 2020 Policy revision)	✓ **Multimodal**: Create an integrated multi-modal transportation system providing residents a variety options for daily travel, including transit, car, bike, and walking. ✓ **Transit Corridors**: Employ transit-oriented design in transit corridors.	- Downtown Master Plan (2009) - Citywide Pedestrian & Bicycle Plan (2019) - Deer Springs Livable Center (2020)
Boulder City Master Plan (2015)	✓ **Balanced Transportation System**: Provide safe and efficient facilities for pedestrians, bicycles, and autos in addition to regional transit connections. Address current and future mobility needs through land use decisions.	- River Mountains Loop Trail Study (2019)
Mesquite Master Plan, Transportation Element (2017)	✓ **Maintenance & Safety**: Maintain a transportation system that provides safe routes for people, goods, and services and is consistent with area character. ✓ **Biking**: Provide bikeways that are suitable, convenient, and efficient for bicycling.	- Master Plan, Parks, Trails and Open Space Element (2019)
Southern Nevada Regional Planning Coalition Southern Nevada Strong Regional Plan (2015)	✓ **Modern Transit System**: Develop a modern transit system integrated with vibrant neighborhood and employment centers, better connecting people to their destinations. ✓ **Active Transportation System**: Connect and enhance bike and pedestrian facilities throughout the region. ✓ **Streets for All**: Develop a safe, efficient road network that supports all modes.	- Regional Open Space Plan (2006) - Land Use, Transportation, and Air Quality Report (2006)

PRIMARY STRATEGY: *Improve Safety*

The ability to safely travel throughout the region is a top priority for Southern Nevadans. All users of the transportation system can be at risk, and the region will benefit from fewer traffic crashes, fatalities, and injuries. In 2015, the RTC adopted the Southern Nevada Transportation Safety Plan with the goal of zero fatalities. This goal is consistent with the national strategy of Toward Zero Deaths and supports the Nevada Strategic Highway Safety Plan (SHSP) goal of zero fatalities.

Safety has long been a focus of the transportation profession and this attention has reduced fatalities and injuries, yet transportation users continue to suffer fatalities, injuries, and other losses at unacceptable rates. Addressing transportation safety will not only benefit our health, but the community's quality of life, and economic competitiveness.

Planning Factor	Traditional Paradigm	New Considerations
Overall Goal	Make **driving** safer	Make **travel** safer
How risks are measured	Travel volume-based crash rates	Per-capita crash rates
Modes considered	Focused on motor-vehicle travel; considers pedestrians, cyclists, and transit riders to be high-risk groups	Considers impacts on all modes and road users; recognizes that shifts from automobiles to alternate modes can help increase overall safety
Consideration of other impacts	Tends to consider traffic safety impacts in isolation of other community factors	Uses comprehensive analysis which recognizes indirect impacts and non-safety benefits
Types of projects	Engineering improvements focused on vehicle occupants and interactions with vulnerable users	Enhancements for all modes

Traditional approaches to transportation safety concentrate on engineering solutions that create an environment with less potential risk from vehicle crashes by removing obstacles and barriers from where vehicles travel. Those same improvements, however, can result in higher vehicle speeds that in turn may decrease the ability of a driver to regain control of a vehicle, and that substantially increases the risks for vulnerable users like pedestrians, cyclists, or transit users. Indeed, although motorists are the largest group of users injured in crashes, pedestrians and cyclists experience higher injury rates.

Recent engineering advancements in safety have included "Complete Streets" standards, road diets, mid-block crossings, and improved infrastructure for pedestrians, cyclists, and transit users which slow vehicle speeds and reduce risks to vulnerable users without dramatically impacting system efficiency.

Source: RTC. High-intensity Activated CrossWalK (HAWK) mid-block crossing.

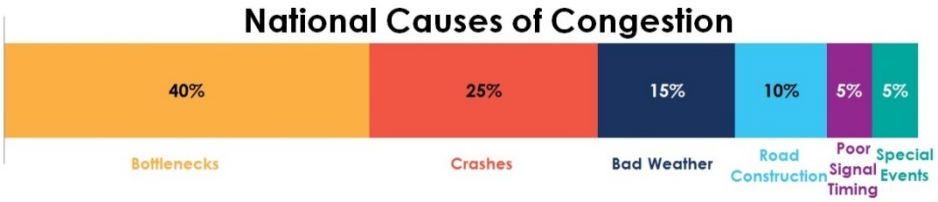
The RTC and has partnered to improve safety through the development and implementation of the SHSP. The SHSP identifies six critical emphasis areas: impaired driving, intersections, lane departures, motorcycles, occupant protection, and pedestrian safety to reduce injuries for all users. Safety improvements are implemented through crash data analysis and solutions in the form of engineering, enforcement, education, and emergency response.

Access 2050 Example Safety Projects	Estimated Cost
Clark County School District Safe Routes to School Program	$6.2 million
Clark County Beltway Trail Bridges East: Windmill, Eastern	$2 million
Regional Transit System Security Systems	$19 million
City of Las Vegas Pedestrian Safety Improvements	$6 million
I-15 northbound Emergency Truck Escape Ramp	$2 million

PRIMARY STRATEGY: *Manage Congestion*

The ability to manage congestion will help sustain the Southern Nevada economy – and better position the region to maintain our status in the future as an attractive place to live and visit. Successful implementation of this strategy will ensure that residents will be able to travel and work efficiently and reliably using whichever mode of transportation they desire. This strategy focuses on reducing traffic congestion through traffic management and system operations, relieving traffic bottlenecks, and completing the transportation network.

One important element of Managing Congestion is improving system management and operations. The RTC funds and operates the Freeway and Arterial System of Transportation (FAST) program for Southern Nevada, which helps monitor and control traffic on major roads and highways. System management helps make the best use of existing facilities at lower short- and long-term costs than adding roadway capacity.



A major outcome of managing congestion is a reduction in vehicle delays, usage, and emissions that are detrimental to air quality and health. Congestion management needs are assessed through the RTC's federally-required Congestion Management Process (provided in Appendix G), which identifies the most effective tools available. Managing congestion may sometimes include adding new capacity to existing roads, but this should usually be a last resort because of the high costs and a large body of evidence that new capacity generates additional traffic that wipes out congestion-relief benefits of new capacity within 4-7 years. There are instances, however, where additional capacity or roadway redesign that relieves a particular recurring bottleneck can make a sustainable contribution to congestion management.

This congestion management effort will increase travel reliability by utilizing existing infrastructure as efficiently as possible with projects such as signal timing improvements, dynamic traffic alerts, smartphone transit rider assistance apps, providing information about and reducing delays related to roadway construction, and improved communication about pedestrian and bicycle travel options. Other strategies can include increasing opportunities for travelers to use transit, bicycles, or walking. Managing congestion can also reduce traffic crashes by enabling the optimal number of vehicles to travel reliably on Southern Nevada's roads, and communicating crash information to minimize secondary crashes and additional delays. Less congestion and more reliable travel will limit damage and degradation of existing infrastructure, extending its useful life.

Access 2050 Example Congestion Projects	Estimated Cost
RTC's Freeway and Arterial System of Transportation ("FAST")	$5.75 million/year
RTC Club Ride Program (Transportation Demand Management)	$1.3 million/year
North Las Vegas North 5th Street Signal Coordination	$2.8 million
Wagonwheel and I-11 Interchange Modifications	$75 million
I-15 South - Construct/Widen Pkg 2 (Sloan Rd. To Blue Diamond)	$167 million
City of Las Vegas Citywide ITS Master Plan Upgrades	$24 million
Rainbow Boulevard Widening	$6 million
Install new bridge over CC-215 at Peace Way	$22 million
I-15 Reconstruct Sloan/Via Inspirada Interchange	$101 million
Construct Sahara Interchange at I-515	$245 million

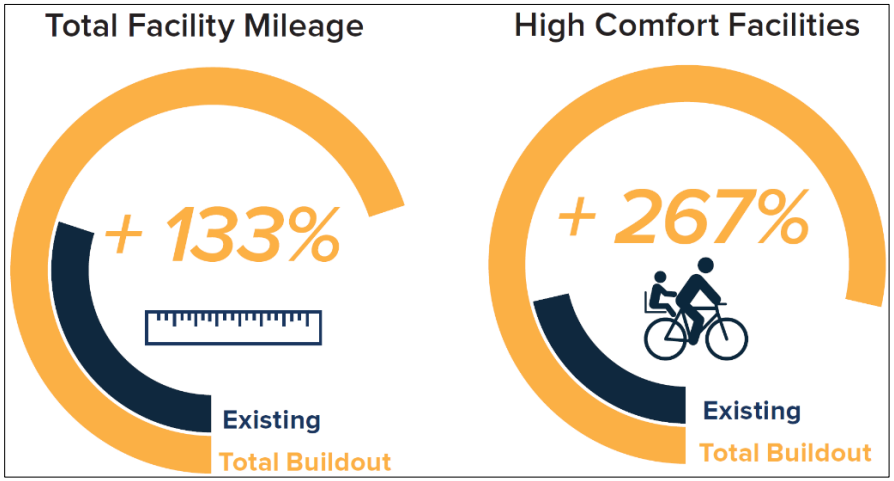
PRIMARY STRATEGY: *Enhance Multimodal Connectivity*

Providing multimodal transportation connections to basic needs and quality-of-life amenities for Southern Nevadans enhances their health and wellness, and makes the region more inviting and appealing for visitors and new commerce. A connected multimodal transportation system of highways, roads, buses, sidewalks, and bicycle facilities can increase access to jobs, housing, schools and amenities locally and regionally, and ensures that the transportation system allows people or goods to get where they need and want to go, how they need or want to go.

Future transit system enhancements will increase frequent service on busy routes, and expand the transit system to new areas (conditioned on funding availability). New service may take the form of extending current bus service, express/commuter routes, rideshare partnerships, or microtransit zones, all depending on underlying levels of demand for new mobility services. The RTC has done substantial planning and preparation to advance regional high capacity transit through development of the On Board Mobility Plan, and will continue to examine regional needs and develop standards for future implementation of premium services such as Bus Rapid Transit and Light Rail. Bicycle and Pedestrian needs have been examined in the RTC's Regional Bicycle and Pedestrian Plan, which identified future routes and facilities that serve all areas of the region and provide safe and high comfort alternatives to driving. Both the On Board Mobility Plan and the Regional Bicycle and Pedestrian Plan are incorporated into ACCESS 2050 as they represent the long-rage multimodal vision.

Network Type	Multimodal Connectivity Actions
	Complete currently planned roadway system and emphasize roadway designs that accommodate all potential users and all modes. Avoid roadway designs and projects that limit connectivity of other modes.
	Maintain current system and focus on adding connections to the roadway network that enhance accessibility and efficiency.
	Expand networks and overall connectivity in accordance with Regional Bicycle and Pedestrian Plan.
	Expand service to new areas and increase service frequency on some routes; explore feasibility of high-capacity connections throughout Southern Nevada.
	Enhance overall connectivity by ensuring that transportation system users can move between modes safely without delays.

Comparison of Current and Proposed Bicycle Network



Source: RTC. Regional Bicycle and Pedestrian Plan, 2017.

Enhancing multimodal connectivity can involve increasing the extent of the network of streets and highways funded at the request of RTC's member jurisdictions, and new neighborhood roads are typically provided by private developers. A map of the future roadway network is provided in Appendix P.

Ensuring that transportation system users can move between modes safely and without significant delay is crucial for improving multimodal connectivity. Multimodal network expansion can reduce traffic crashes and improve incident response by providing travel alternatives when roads and highways are delayed or congested. A multimodal connected transportation system improves quality of life for Southern Nevadans, improves health outcomes, and enhances the region's attractiveness for economic development.

Access 2050 Example Multimodal Projects	Estimated Cost
Pioneer Trail Signage and Markers (City of Las Vegas)	$863 thousand
Vegas Valley Rim Trail Connections (Clark County)	$27 million
Spencer Greenway Trail (Clark County)	$38 million
Bruce Street Complete Streets Improvements Segment A	$6 million
Boulder Highway Transit (City of Henderson)	$45 million

PRIMARY STRATEGY: *Maintain Current Infrastructure*

Maintaining a safe and reliable transportation system helps ensure optimal system performance for people and goods. With insufficient resources available for transportation infrastructure in the growing region, Southern Nevada must maintain an acceptable state of repair for existing transportation infrastructure, and apply the best maintenance or replacement strategies for aging infrastructure and facilities.

Maintaining infrastructure in a timely manner with regular minor or preventative repairs saves substantial money compared to waiting until extensive reconstruction is required. This frees up funds for other transportation priorities and reduces travel delays and interruptions from more extensive long-term projects.

Maintenance improvements are often made as part of other projects on the same facility. The RTC works with local jurisdictions and stakeholders, such as utility providers and property developers, to coordinate road construction and reconstruction activities, so that the public can be informed about these projects, travel delays are minimized, and roadway and other facilities are maintained in a good state of repair. In addition to minimizing disruptions, coordinating activities between different parties also reduces construction costs and benefits Southern Nevada's economic appeal and quality of life.

Category	Types of Maintenance Activities
"Seeing Orange"	Coordinate road construction and repair projects to minimize delays and costs
Roadway Network	Reconstruction, rehabilitation, or repaving of roads, highways, and access facilities
Pedestrian & Bicycle Facilities	Upgrade to current design guidelines and ADA requirements
Transit Facilities and Vehicles	Improve bus stops and transit centers for continued use; Vehicle repair, replacement or modernization, and retirements
Future Autonomous Vehicle Infrastructure	Maximize pavement quality, make lanes narrower, and provide clear and obvious lane markings and navigation aids

The RTC's effort, called "Seeing Orange" is an ongoing priority of the RTC and will be supported as ACCESS 2050 is implemented.

Maintaining high quality and updated transportation facilities (roads, highways, sidewalks, bicycle facilities, transit facilities, and transit vehicles) ensures the basic safety needs of the traveling public. Deploying the most current maintenance practices and technology will minimize costs and inefficiencies. Transportation facilities in a state of good repair increase reliability and safety by, for example, presenting fewer maintenance irregularities that force drivers, pedestrians, or bicyclists to unexpectedly switch lanes to avoid potholes, cross busy roads in darkened conditions, or enter vehicle travel lanes because bike facilities are covered with gravel or glass.

One way to measure the impact on people and economic activity of a good state of repair for a transportation system is maintenance costs above and beyond normal wear-and-tear. Because Southern Nevada has a relatively new transportation system, roads and highways in the region are generally considered to be in a good state of repair, and vehicle maintenance costs for Southern Nevadans due to poor roads are lower than the national average. But transportation infrastructure maintenance is inevitable and inexorable. Addressing the region's maintenance needs will continue to help save residents unnecessary costs and enhance Southern Nevada's economic vitality.

Access 2050 Example Maintenance Projects	Estimated Cost
RTC Transit Bus Replacement Program	$147 million
I-515 Viaduct Rehabilitation	$30 million
City of Las Vegas Citywide Arterial/Collector Rehabilitation	$19 million
Jones Boulevard Reconstruction, Rehabilitation, Resurfacing	$12 million
Needles Hwy Reconstruction, Rehabilitation, Resurfacing	$36 million
Bonanza Road Undercrossing	$30 million

PRIMARY STRATEGY: *Promote Economic Development*

Investments to the transportation network have a direct positive impact on the Southern Nevada economy through the creation of jobs and taxable expenses during the project design, construction, and long-term maintenance and operation. However, transportation projects can also generate long-term positive economic growth through the types of activities they facilitate by increasing accessibility and mobility, and reducing transportation-related costs by increasing safety and reducing emissions. When people and goods move more efficiently, both individuals and businesses benefit by saving time and money that can then be put to better use; benefitting drivers and non-drivers.

Source: RTC. Illustration of a neighborhood anchored by Transit Oriented Development.

However, targeted investments can oftentimes have regional economic benefits beyond their mobility impacts. Quality public transit can shape land use and development patterns, generate jobs, and enable economic growth. Developing a High Capacity Transit (HCT) network as identified by the On Board Mobility Plan can have transformative impacts, changing the nature of activities in a neighborhood by impacting a broader effort to develop and revitalize an area. This can lead to larger total impacts on property values and land development. An integrated HCT network brings more travelers, jobs, and housing units, and concentrates them at transit stations. This produces enough new people to provide a "critical mass" of market support for added commercial activities through agglomeration.

This can be further leveraged by creating a regional Transit-Oriented Development (TOD) Joint Development agreement process with local agencies, jurisdictions, non-profits, developers and community leaders. This effort would encourage infill redevelopment and property rehabilitation, increase taxable revenue, meet the needs of a diversified economy, match land use and transportation plans with regional economic development plans, and help create mixed-income TOD that will preserve affordable housing while encouraging transit use.

One specific project that has the ability to grow the regional economy through increased tourist capacity is the XpressWest high-speed rail project. XpressWest is planning service connecting Southern California and Clark County along the I-15 corridor beginning as soon as 2024. It will use steel wheel on steel rail technology with electrical propulsion operating at speeds of up to 180 mph to make the trip from the Victor Valley in approximately 90 minutes. The tracks will largely be within I-15's right-of-way with no intermediate stops or at-grade crossings. XpressWest is planning daily service with initial service every 45 minutes and potentially increasing to service every 22 minutes as ridership and demand grows.

Selectively targeting a portion of transportation investments with the intent to help sustain and grow the regional economy improves quality of life for Southern Nevadans, and integrates land-use planning with transportation investments.

Access 2050 Example Economic Development Projects	Estimated Cost
Transit Oriented Development Joint Development (Projects TBD)	$52.5 million
Sheep Mountain Pkwy	$16.5 million
Frank Sinatra Drive (From St. Rose Pkwy to Silverado Ranch)	$5.6 million
Las Vegas Boulevard (From Jean to St. Rose Pkwy)	$35 million
XpressWest High-Speed Rail	$5 billion

SECONDARY STRATEGY: *Improve Access to Essential Services*

The Southern Nevada region prospers when all residents and visitors have access to the employment, housing, education, cultural, and recreational opportunities they need. Our region's transportation system is critical to enabling this movement and providing access to these basic needs and quality-of-life amenities that allow the region's residents to succeed and invites visitors to return.

Providing a transportation system that meets these needs has long been a core activity for the RTC and local governments in Southern Nevada. Even so, parts of the region have poor accessibility to job centers or key needs such as healthy food, schools, or medical and social services. Increasing access to these essential needs will improve quality-of-life for those residents and the region as a whole.

Improving access to essential services also serves to formalize that the RTC consider the impacts of transportation projects on disadvantaged Southern Nevadans and attempt to use transportation projects and programs to provide benefits to them. Providing this "Environmental Justice" is a federal requirement for planning agencies such as the RTC; in the past it has primarily meant ensuring that no harm is done to these populations and has been demonstrated weakly by mapping transportation project locations with where disadvantaged populations live. The terms "access" and "accessibility" also refer to improving conditions for people with disabilities, and this strategy includes addressing their concerns and needs. As ACCESS 2050 is implemented, the RTC will seek to identify gaps, barriers, and needs for disabled, low income and minority populations, so that transportation projects and programs can specifically benefit them.

In addition, because economic and land use development and transportation infrastructure have a symbiotic relationship, the RTC and Southern Nevada communities will expand work to coordinate transportation decisions with economic and community development decisions. With the RTC's role in leading implementation of the Southern Nevada Strong Regional Plan, coordinating these activities helps advance that effort. Transportation investments can alter patterns of development, attracting new construction or encouraging efficient infill for under-utilized land areas already surrounded by built-up areas.

SECONDARY STRATEGY: *Enhance Freight Movement*

Addressing freight mobility needs and enhancing Southern Nevada's attractiveness to a high-skill workforce will ensure that the region continues to remain an inviting place for businesses to thrive. Because of the large tourism industry, Southern Nevada relies on freight; the region also receives benefits from freight-related assets and infrastructure. Most freight-related planning will be based on the RTC's Southern Nevada Regional Goods Movement Master Plan (Appendix S) and an update to that plan currently underway.

Safe freight movement is usually provided by design and construction standards that ensure roads and highways can handle freight vehicles. But accessibility for freight – the ability for freight vehicles and goods in general to reach the places they need – is not usually an obvious factor in transportation decision-making. Because freight plays a major role in sustaining the Southern Nevada economy, ensuring these traditionally under-addressed accessibility concerns are part of regional transportation and land use planning will help provide an efficiently-operating transportation system that benefits all users. This may become especially important to other users of the transportation system as the on-demand economy, e-commerce services and goods delivered directly to consumers may increase delivery truck use on roads and local streets. This trend has become even more pronounced during the COVID-19 pandemic as online shopping proliferated.

In addition to freight from trucks, Southern Nevada is also served by a major railroad that runs through the core of the region, providing freight connections to and from key markets. As manufacturing in Southern Nevada increases and economic diversification continues, ensuring that rail provides economically beneficial connections without overly interfering in mobility and accessibility of other non-freight modes will be a priority.

Differences between freight and traveler needs have historically presented challenges to planners and engineers, and could continue to make the best investments difficult to determine. A more modern paradigm would prioritize investments by how well they address both sets of needs. The RTC will seek to balance freight movement and quality of life with transportation investments that consider impacts on both types of system users.

SECONDARY STRATEGY: *Provide an Accountable and Transparent Planning Process*

Southern Nevadans need to know that the resources available for transportation projects and programs are well-spent. A transparent planning and project selection process will help ensure that the goals and strategies of Access 2050 are followed, so that residents are provided with a transportation system that meets their needs.

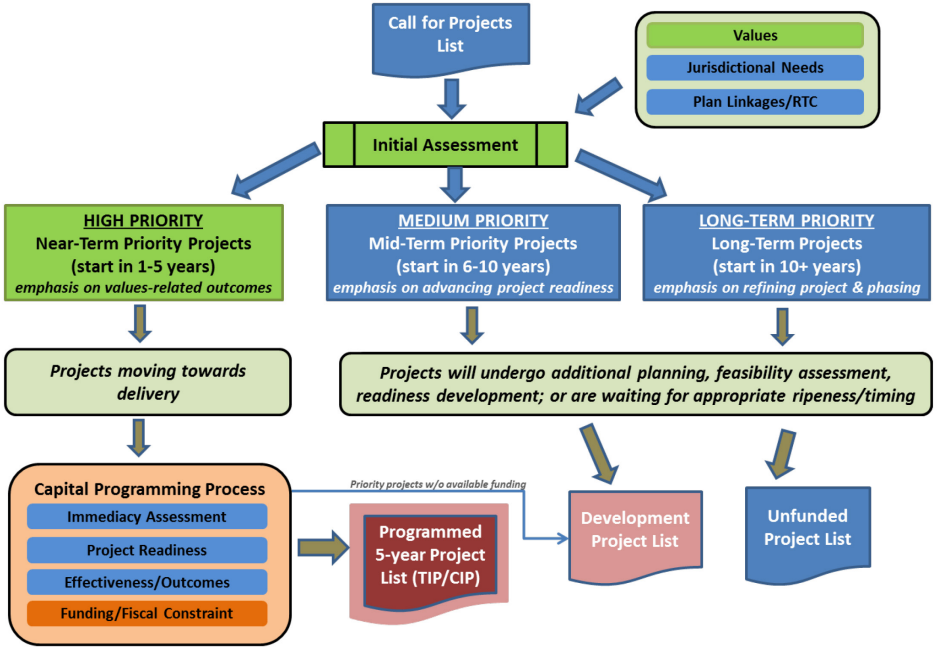
The RTC and local planning and public works departments will coordinate project selection and planning activities so that projects can be selected based on what they are intended to accomplish and how that aligns with Southern Nevada's transportation vision, priorities, and needs. This process provides effective stewardship and efficient allocation of public funds. Project identification and selection follows an RTC-implemented process designed to meet the following goals:

- **Value-based:** Selected projects align with Southern Nevada's transportation priorities, identified through the Access 2050 Vision, Goals, and Strategies;
- **Transparent and Fair:** Process is clearly described and unbiased, and is applied consistently to all potential projects and all jurisdictions;
- **Efficient and Equitable distribution of funds:** Anticipated spending is distributed across the region based on multiple factors like public needs, population, social equity, tax base, etc.

The RTC will work closely with its member agencies to continue using a ***transparent and fair process*** for selecting transportation projects:

1. Jurisdictions provide descriptions and Access 2050-related information for all potential projects;
2. RTC assesses projects on technical basis, looking at relationship to strategies, previous planning efforts, etc.;
3. Jurisdictions provide additional prioritization information to RTC based on specific local needs;
4. RTC merges technical and jurisdiction's results to assign projects to categories that determine when projects would start:
    a. "High Priority" projects start in 1 to 5 years;
    b. "Medium Priority" projects start in 5 to 20 years or 5 to 10 years, depending on funding source; and
    c. "Unfunded" projects that need additional planning and development before funding can be assigned.

Transparent & Accountable Project Selection Process



The five Access 2050 Primary Strategies closely link the regional transportation vision to projects that are included in the **"High Priority" Program list, also called the Transportation Improvement Program**. The High Priority Program staggers the region's transportation projects in a short-term 5-year window for construction. It is updated every two years, and the 2021 version contains about $8.6 billion in estimated expenditures. By incorporating Access 2050 strategies into this short-range programming, the RTC achieves a strong coordination between Southern Nevadans' vision for the future and investments being made today.

SECONDARY STRATEGY: *Improve Public Health Related to Transportation*

The region's transportation system and suburban development are predominantly auto-oriented. However, mixed-use development, higher residential density, and people-oriented street networks are associated with more daily activity and exercise, better air quality, fewer pedestrian and bicycle crashes, and less chronic disease. Considering health impacts and equity during transportation planning may result in more livable communities and improved health.

The RTC will have a deliberate focus on the transportation system's influence on the health-related impacts, costs, and benefits in the Southern Nevada Transportation Impacts on Health Study. This study, combined with the RTC's Regional Bicycle and Pedestrian Plan and Complete Streets Policy and Design Guidelines, can help identify where active transportation infrastructure is appropriate and how it should be designed.

In addition, the RTC will consider the public health impacts of transportation projects and programs, and eventually include those impacts directly in the project selection process. The RTC is also accountable for maintaining air quality standards in Southern Nevada by assessing the air quality impacts of transportation projects, and rejecting or adjusting projects that would result in worsening compliance with air quality standards. Because those standards are established in large part to maintain or improve public health, meeting those standards helps improve public health.

RTC will also identify gaps in access to needs that relate to public health. For example, the RTC regularly identifies food deserts, which are defined by the U.S. Department of Agriculture as areas with a high concentration of low income populations, devoid of full-service grocery stores, and having little access to transit, walking and bicycling facilities. Once identified, plans can be developed to eliminate food deserts and indirectly improve public health.

By achieving improved public health outcomes resulting from the RTC's transportation planning and projects, this strategy will improve Southern Nevadans' quality of life, reduce unnecessary consumption of resources, and enhance the region's economic competitiveness.

SECONDARY STRATEGY: *Conserve and Protect Natural Resources*

Significant impacts to natural resources are often a consequence of economic growth and increasing travel demand such as those experienced in our region. Identifying these potential impacts and supporting the conservation and enhancement of natural resources will promote a higher quality of life and help ensure long-term economic opportunity. Protecting natural resources helps residents to lead healthy lifestyles, and enjoy clean air and water by promoting opportunities for active transportation.

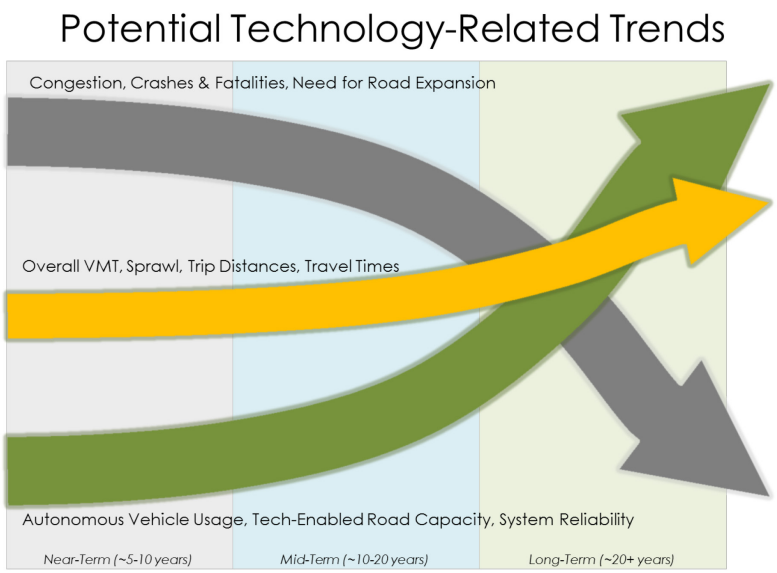
Natural resources in Southern Nevada include undeveloped land, which may eventually be developed, but that also provides areas for recreation, natural habitat for wildlife, and scenic vistas. The provision of roads is necessary to serve newly developed or developing areas, but is also capital cost intensive and increases long-term maintenance needs. Undeveloped infill areas provide opportunities to develop land that usually requires only minimal costs for new transportation infrastructure and its maintenance.

Source: RTC. I-11 Boulder City Bypass wildlife overcrossing.

As travel demand in Southern Nevada continues to grow with economic activity, the need to conserve and protect natural resources needs to be balanced with efforts to prepare and adapt for further economic expansion. With the regional framework described in the ACCESS 2050 Vision, the RTC will support efforts to achieve both outcomes in balance, and fully mitigate the negative impacts of transportation projects rather than focusing on whether to pursue one objective over another.

SECONDARY STRATEGY: *Use Innovative Planning to Address Emerging Technologies & Trends*

Emerging technologies and their growing use will disrupt traditional transportation planning practices. To respond proactively, the RTC will develop innovative planning approaches that change how priorities are identified and how decisions are made. These new planning methods – which may take years to identify – will allow the RTC to develop effective, predictive, and timely responses to these disruptions.



Potential impacts are numerous. Engineering research indicates that connected and autonomous vehicles could nearly double effective road capacity, virtually eliminating traffic congestion and challenging the need for more capacity. At a certain threshold across the entire fleet, self-driving cars are expected to substantially reduce overall transportation crashes and fatalities. Transportation Network Companies and autonomous vehicles could drive down public transit operating costs and lead to changes in how transit is provided. RTC analysis of available data already shows that TNC ridership at McCarran International Airport was over 8 million in 2019. New ways of travel and vehicle ownership could change land use patterns, transportation revenue, and public transit preferences. With the actual impacts still unknown, the appropriate actions by the RTC (*to avoid inefficient uses of resources for projects that may become unnecessary, avoid putting drivers, pedestrians, and bicyclists at risk, and accommodate these new trends and technologies*) are difficult to determine until these technologies are more extensively adopted. To make smart decisions, some emerging planning-related questions may become:

- What infrastructure changes may be needed?
- When (or if) it will be appropriate to start changing how or what types of infrastructure or capacity are provided?
- How will these trends influence how and how much people travel, and how freight and household goods move?

The RTC is initiating a study called Planning and Infrastructure Needs for Emerging Transportation Technologies that will help identify and develop these innovative planning methods to manage this transition. The study will look to maximize the positive benefits of emerging technologies for Southern Nevadans including an evaluation of road capacity needs, financial implications, and identify trigger points for longer-term actions.

Source: LVCVA. Construction of the Las Vegas Convention Center People Mover.

Currently under construction in Southern Nevada, the Las Vegas Convention and Visitors Authority is partnering with The Boring Company to operate an underground people mover. The system has the potential to expand throughout Southern Nevada, such as Downtown Las Vegas, Las Vegas Strip, McCarran International Airport and Allegiant Stadium. The RTC will monitor the benefits of this first project and work to integrate the impact of its operations into future planning recommendations.

Access 2050 Transportation System Indicators

Primary Strategy	Indicator	Current Measure (Year)	Prior RTP Measure	Target (Year)
Improve Safety	Fatality Rate (per 100m VMT)*	1.029 (2019)	1.45	1.00 (2021)
	Serious Injury Rate (per 100m VMT)*	4.24 (2019)	5.0	3.97 (2021)
	Number of Fatalities*	195 (2019)	N/A	190 (2021)
	Number of Serious Injuries*	815 (2019)	N/A	792 (2021)
	Number of Non-motorized Fatalities/ Serious Injuries*	66/171 (2019)	N/A	65/165 (2021)
Manage Congestion	Interstate Person-Miles Traveled That are Reliable (%)*	MPA 78.2 (2019)	N/A	Statewide 87.0 (2022)
	Non-interstate NHS Person-Miles Traveled That are Reliable (%)*	MPA 84.8 (2019)	N/A	Statewide 87.0 (2022)
	Annual Hours of Peak Hour Excessive Delay Per Capita*	UZA 7.8 (2019)	N/A	Statewide 10 (2022)
	Bus On-Time Performance (% meeting 5 minute standard)	85.7 (2019)	87.6	90
	Incident Clearance Time (% meeting 30/60/120 min. standards)	44.7 (2019)	N/A	
Enhance Multimodal Connectivity	Non-Single-Occupancy Urbanized Area Commute Share (%)*	21.2 (2018)	N/A	21.6 (2022)
	Annual Rides Taken using RTC Bike Share	31,203 (2019)	N/A	
	Directional Miles of Active Transportation Facilities	868 (2017)	N/A	
	Complete Streets Infrastructure	RTC will Develop		
Maintain Current Infrastructure	Regional Pavement/Bridge Condition Index	RTC will Develop		
	Household Income Spent on Transportation (%)	24 (2015)	N/A	
	Average Fleet Age in Years (Bus)	6.2 (2018)	7	
Promote Economic Development	Transportation-Related Share of Regional Economic Activity	RTC will Develop		
	Direct, Indirect, and Induced Jobs Created by Transportation Spending	RTC will Develop		
Secondary Strategy	**Indicator**	**Current Measure (YY)**	**Prior RTP Measure**	**Target (YY)**
Improve Access to Essential Services	Number of Jobs Accessible by Auto in 30 minutes	794,203 (2018)	N/A	
	Number of Jobs Reachable by Transit in 30 minutes	8,940 (2018)	N/A	
	Accessibility to Essential Services	RTC will Develop		
Provide Accountable & Transparent Planning Process	Performance Measures Attainment	RTC will Develop		
	Planning Process Measures	RTC will Develop		
	Project Delivery Time	RTC will Develop		
Improve Freight Movement	Interstate Truck Travel Time Reliability Index* (lower is better)	MPA 1.53 (2019)	N/A	Statewide 1.26 (2022)
	Truck Delay Costs when speeds < free-flow–20 mph ($ per VMT)	0.06 (2019)	N/A	
Improve Public Health Related to Transportation	Active Transportation Commute Share (%)	1.8 (2018)	2.1	
	Completed Bicycle Network that is High Comfort (%)	46 (2017)	N/A	
	Health Incidents Related to Air Quality	RTC will Develop		
Conserve & Protect Natural Resources	Air Quality Conformity Status (RTP 2021-2050)	Satisfied	Satisfied	Satisfied
	CMAQ 2/4-year Cumulative Total Emission Reduction (KG/Day)*	1,532 (2020)	N/A	2,292 (2022)
	Infill Development Ratio	RTC will Develop		
	People per Lane-Mile	313 (2020)	295	
Use Innovative Planning to Address Emerging Technologies & Trends	Technology Impact Tracking	RTC will Develop		
	TNC Drop-off and Pick-up Count at McCarran Int'l Airport	7,728,076 (2019)	N/A	
	Autonomous Vehicle Travel Share	RTC will Develop		

* Performance measure required by Map-21 surface transportation authorization

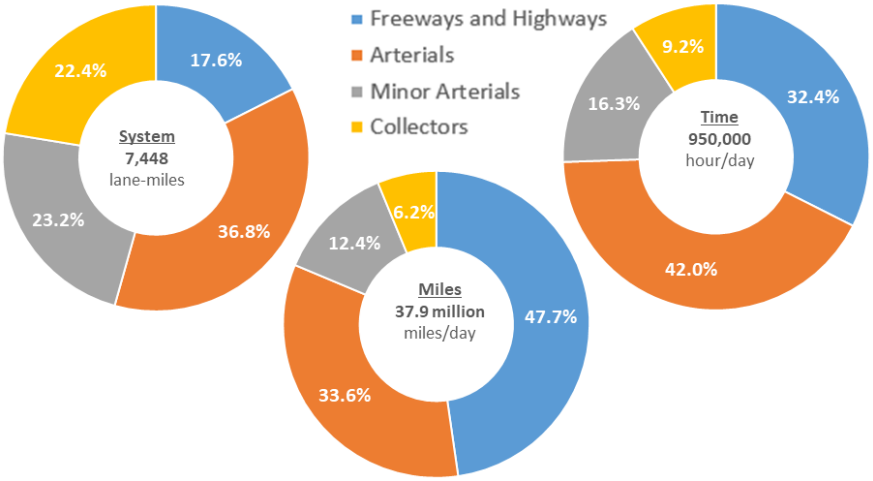
THE CURRENT TRANSPORTATION SYSTEM

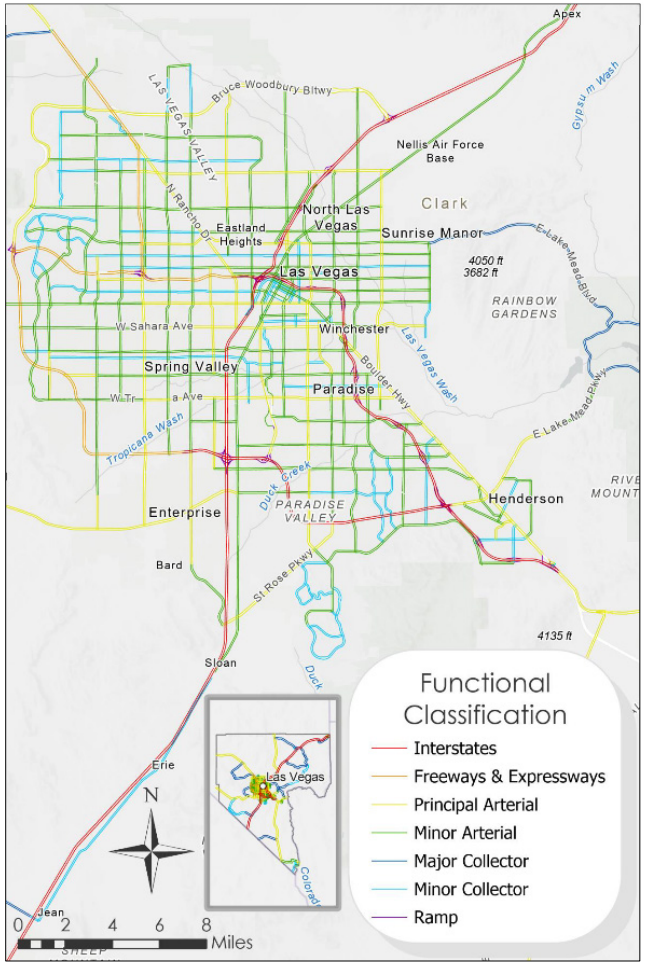
The regional transportation system is composed of roadways, transit, pedestrian/bicycle facilities, and freight-related facilities – with multiple facility types in each group and numerous functions per type. This section will present only a brief overview of the current system in order to orient the reader and set the stage for the recommended improvements that follow. The description of each component is accompanied by relevant challenges ACCESS 2050 took into consideration.

Regional Roadway System

The current regional transportation system includes more than seven thousand lane-miles of roadway, with nearly a million hours a day spent traveling and 37.9 million miles driven daily in 2020. The majority of the major roadway system is arterial streets – those bringing local traffic to more regional destinations or freeways. People spend more than 32% of their driving time and drive 47% of their miles on highways, including Interstates and other limited-access roads such as US-95 and Summerlin Parkway, which make up only around 17% of the roadway system. Conversely, local roads known as "collectors" comprise almost a quarter of the system, but serve only 9% of travel time and 6% of daily traffic.

Regional Roadway System and Travel Activity (Time and Miles)





Source: RTC. Congestion Management Process, 2019.

To reduce traffic delays by promoting the use of mass transit and high occupancy vehicles, High Occupancy Vehicle (HOV) lanes – are restricted to vehicles with multiple occupants during peak travel times. In 2019, Project Neon provided the final link for implementing an expanded HOV network with over 20 miles of contiguous lanes.

Regional Roadway Challenges

Safety ranked as the second-highest priority in the Transportation Vision Survey (just behind well maintained roads), and is a grave concern for roadway travel in the region. Between 2013 and 2017 (the most recent data available), the region experienced a significant increase of 16% in transportation fatalities, including a 73% increase in pedestrian and bicyclist fatalities. Addressing these concerns is reflected not only in ACCESS 2050's goals and strategies, discussed earlier, but also in future projects identified in the Transportation Improvement Program and future RTP projects.

Congestion-related concerns ranked as the third priority in the Transportation Vision Survey. Recently, miles traveled on regional roadways have grown much faster than population growth and the growth of road lane mileage over the same time. This trend is forecasted to continue, as VMT is projected to grow more than 37% by 2050, with total population only growing by approximately 27% and major road lane mileage growing by about 16%.

Perhaps a stronger challenge for drivers than congestion is commute times and delays, which can be compounded by land use development patterns. Daily traveling times are projected to grow over the next 30 years from 31.9 minutes/day in 2020 to 36.2 minutes/day (13.5% increase) in 2050. These are both an increase from the 25.3 minutes/day traveled as recently as 2015.

In the 2019 Urban Mobility Report produced by the Texas A&M Transportation Institute, Southern Nevada ranked 34th in travel delay per commuter among the nation's large regions, 41st in excess commuter costs, and a high of 23rd in Travel Time Index (ratio of the travel time during the peak period to the time required to make the same trip at free-flow speeds). High-growth suburban areas are forecast to experience significant population, employment, and traffic increases, while the dominant form of transportation for households continues to be the automobile. The RTC addresses congestion by implementing a regional Congestion Management Process (CMP) that identifies areas with recurring travel delays and tries to solve them with a series of traffic operations and efficiency improvements before building new roadway capacity.

Regional Transit System

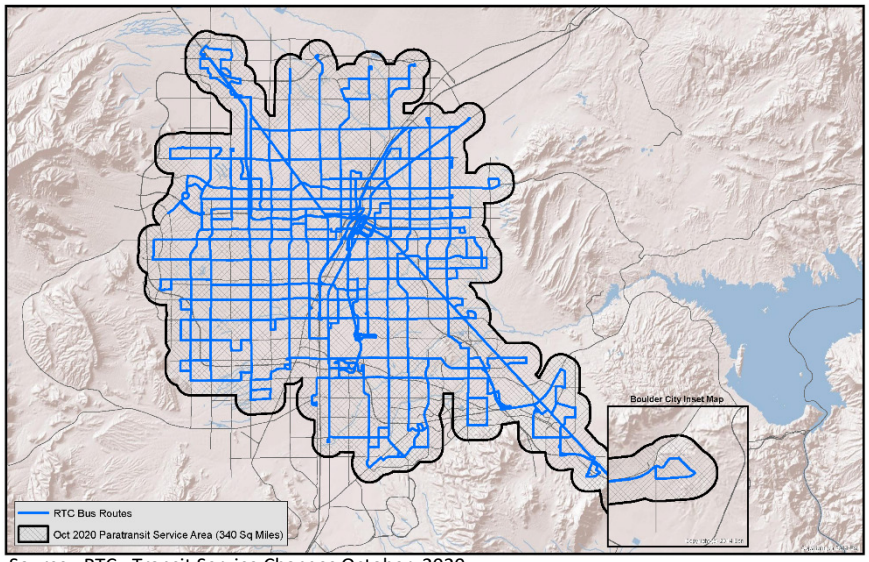
The Regional Transportation Commission operates public transit for Southern Nevada. The primary forms of service provided are residential bus routes, Strip & Downtown Routes, Express Routes, Silver Star Routes, game day/event express routes, and demand response paratransit.

RTC Transit Service	Route Miles	Annual Trips	Annual Passenger Miles
Bus Routes	71.2 miles	64.4 million	244.4 million
Demand Response/Paratransit	N/A	1.3 million	14.5 million
Total	**71.2 miles**	**65.7 million**	**258.9 million**

(Source: 2018 National Transit Database)

The RTC operates 31 residential bus routes that provide the majority of regional transit ridership, especially during the COVID-19 pandemic which dramatically reduced ridership in the tourist Resort Corridor. Residential bus service utilizes different sizes of vehicle (40-foot or 60-foot) depending on the route, and accesses HOV lanes/direct connection interchanges, and bus-

RTC Transit Routes and Paratransit Service Area



Source: RTC. Transit Service Changes October, 2020.

priority technology where available. The RTC has express routes serving Henderson, Boulder City, and the Veterans Medical Center.

A related RTC Transportation Demand Management program, Club Ride, provides employer-based incentives for transit use, carpooling, and walking or bicycling to work. Combined, these programs save regional congestion from an estimated 424,666 VMT in August 2020. In 2018, these alternatives resulted in 21.4% of commuters not driving to work alone in the region.

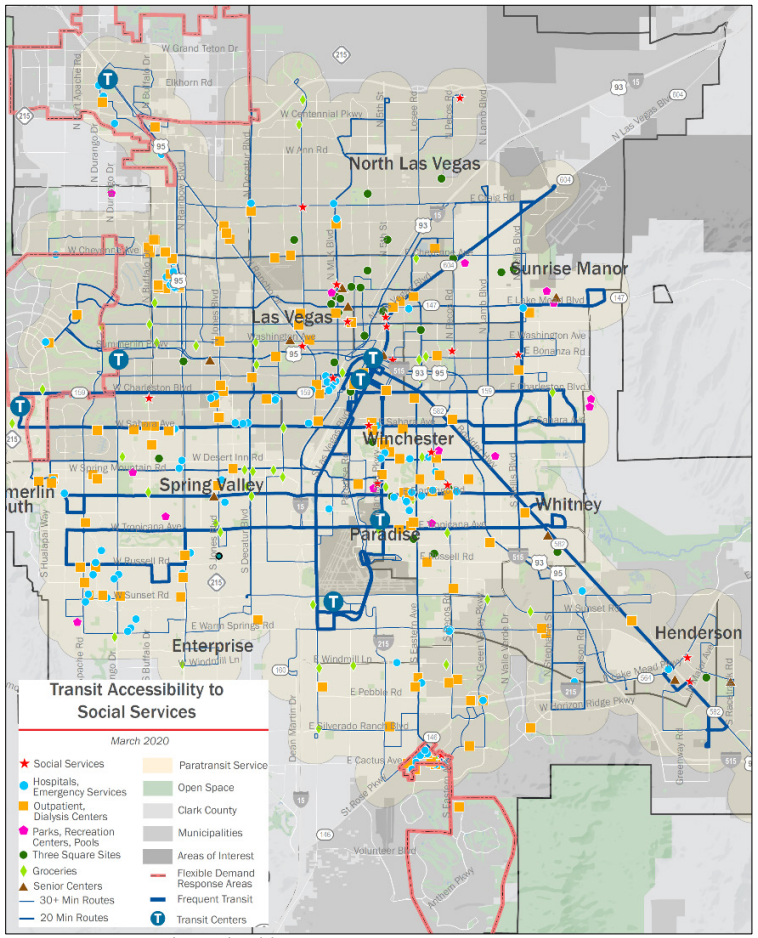
Regional Transit Challenges

Service area expansion, increased operating frequency, and sustaining high ridership are the prominent concerns among policy makers and RTC as the transit provider. Maintaining a cost-effective transit service that remains attractive to users is an important challenge for the region. Southern Nevada currently operates one of the most cost-effective transit systems in the country, with the fare box covering 48% percent of operating costs (before the COVID-19 pandemic). But, near-term challenges such as lower unemployment and sustaining an economic recovery, increased use of Transportation Network Companies (e.g., Uber and Lyft), and long-term challenges such as autonomous vehicles may change travel behavior.

Funding is a common challenge for transit operators that has become even more pronounced as fare box and sales tax revenues, both used to operate and maintain the transit system, have experienced a significant drop. Other than fare box revenue, the only dedicated local revenue source for transit is a one-quarter of 1 percent sales tax. This will likely continue to impact transit operations in Southern Nevada throughout the ACCESS 2050 timeframe. As Southern Nevada's population and tourism is forecast to grow as the economy recovers, the need for additional transit services of all kinds will be challenged by the lack of long-term dedicated local funding. Indeed, 84 percent of respondents in the Transportation Vison Survey supported more frequent transit and expanding it to new areas. However, while the On Board Mobility Plan represents the transportation vision for Southern Nevada, it is unfunded.

The recently adopted Southern Nevada Coordinated Public Transit-Human Services Transportation (Appendix M) identified gaps in that built environment does not easily support transit connectivity, inconsistent access to social services, and that would-be riders and existing riders are discouraged by the duration, frequency, safety, and reliability of the transit experience. The plan identified five goals to expand mobility options and resources: Increase awareness of transportation options, leverage emerging technologies, improve connections to transit facilities, and to expand regional collaboration among stakeholders. The RTC is currently convening stakeholder meetings and has organized focus groups to facilitate implementation of these goals, and to continue identifying partnership and funding opportunities.

Transit Accessibility to Social Services



Source: RTC. Coordinated Public Transit-Human Services Transportation, 2020.

Regional Bicycle and Pedestrian System

Bike and pedestrian facilities are an integral component of the regional transportation system and provide a multitude of benefits such as improved community public health, quality of life, access to transit and destinations (e.g. employment, school, healthcare, social activities, recreation), and safety. Southern Nevada currently has over 1,000 miles of bike facilities, including on-street bike lanes and off-street shared use paths. Major facilities include the River Mountains Loop Trail, the Las Vegas Wash Trail, the CC-215 Beltway Trail, and the planned Vegas Valley Rim Trail.

According to the 2019 U.S. Census American Community Survey, 2% of all trips to work included biking or walking. However, the opportunity for all residents to take better advantage of these travel modes increases as the active transportation network continues to be developed.

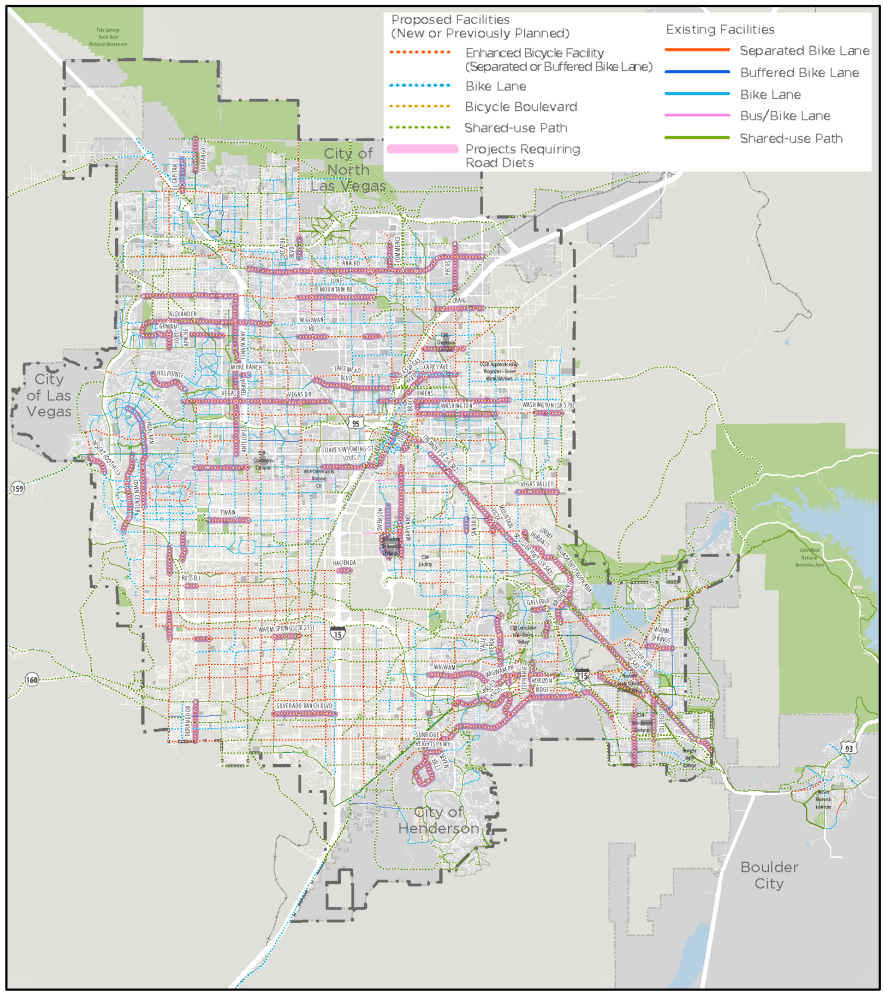
The 2017 Regional Bicycle and Pedestrian Plan sets out a vision for a "safe, connected, and convenient walking and bicycling system that serves as a viable transportation and recreation asset while advancing the region's economic, educational, health, and environmental goals." The plan also establishes goals to increase comfort and safety, access, education and encouragement, and health and equity. Additionally, recommended bicycle facilities and road diets, which are implemented through Regional Transportation Plan projects, are also identified.

Regional Bicycle and Pedestrian Challenges

Outside of urban downtowns and town centers, auto-oriented roadways and suburban land use patterns contribute to a challenging environment for pedestrians and cyclists. Sidewalks are often obstructed, end abruptly at the edge of undeveloped properties, lack shade and amenities, or do not meet universal design standards. Additionally, wide roadways, high speeds, and a lack of separation between modes contribute to low levels of biking and walking and safety conflicts between road users.

Bike/pedestrian facility funding is allocated through a set-aside amount or within larger roadway projects. Increasing the transparency of projects would help Southern Nevadans better understand how the RTC and partner agencies are working to build a more equitable transportation system.

Existing and Proposed Bicycle Facilities and Road Diets



Source: RTC. Regional Bicycle and Pedestrian Plan, 2017.

The Regional Bicycle and Pedestrian Plan identifies recommended road diets and a network of bicycle facilities including: protected bike lanes, unprotected bike lanes, bike boulevards, and shared use paths. After total build out, 46% of non-freeway, collector and above roadways will be comfortable enough for the typical adult or any child to ride a bike on (compared to 14-17% currently).

Regional Freight Movement System

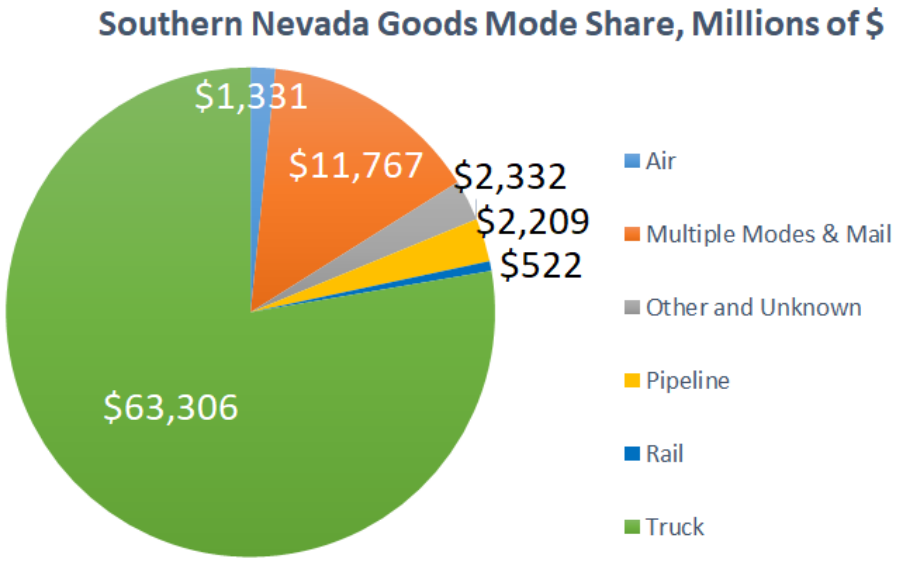
Another major function of the transportation system is to move goods and services for commercial purposes. The freight industry plays an important role in the economy of Southern Nevada, and is critical for most economic development activities. Trucks carry most goods to, from, and within Southern Nevada. Air cargo and rail carry fewer goods, but air cargo freight is proportionally higher value, while rail freight is proportionally lower value.

Freight trucks move 39 million tons of import and export goods annually in Southern Nevada, but trucks also distribute 40.5 million tons of goods within Southern Nevada. The region's roadway system provides facilities for this commercial activity. Most truck activity occurs on freeways, highways and arterials. The Interstate-15 corridor carries the most freight traffic, followed by I-515/US-93, CC-215/I-215, and US-95. Arterial traffic primarily provides connections to these more heavily traveled corridors. Improvements to these most freight intensive roadways and infrastructure have potential to benefit both commuters and trucking.

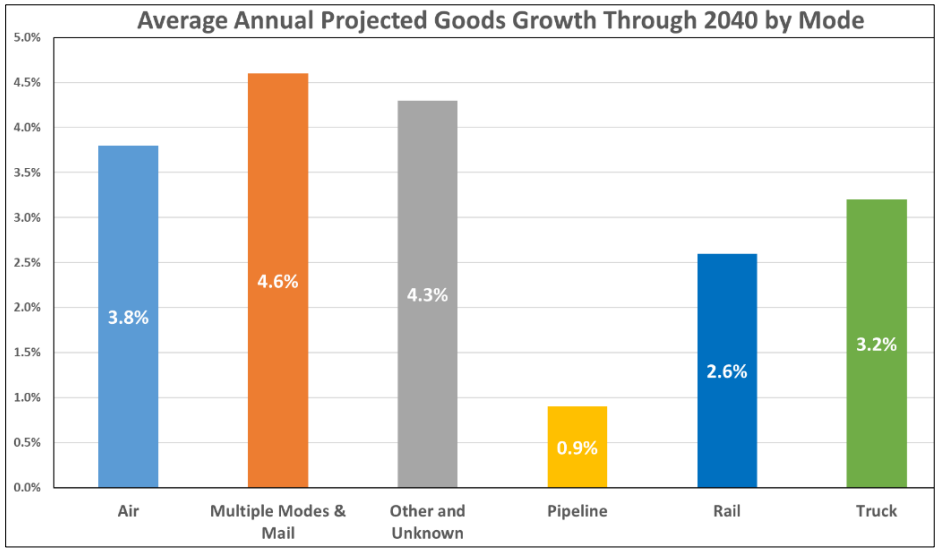
The main freight rail corridor in Southern Nevada is the Union Pacific Railroad (UPRR) that generally parallels I-15, and connects to Los Angeles-Long Beach and Salt Lake City. This route carries approximately 19 trains/day through the region, with 22 grade-separated crossings, three at-grade crossings, a rail yard, and an intermodal facility. Three branch/short lines connect to the UPRR in Southern Nevada.

McCarran Airport continues to expand air cargo, with 210,000 square feet of cargo and shipping facilities, serving about 100,000 tons of cargo per year. Several hundred trucks pick up or deliver goods to the Air Cargo Center at McCarran each day. This activity was in addition to the 42 million passengers McCarran serves annually.

Pipelines constitute another form of transportation of goods and carry about 5.3 million tons of petroleum, valued at about $2.4 billion annually, to holding tanks in the northwest part of the valley and at Apex Industrial Park. Tanker trucks then distribute petroleum to fueling stations throughout the region. Tanker trucks are on the road 24 hour/day because night shifts are more productive for local fuel station deliveries, and because traffic impacts can be minimized. A major natural gas pipeline is located along I-15, and is part of a system connecting southwest Wyoming to Southern California.



Source: FHWA. Freight Analysis Framework, 2013.



Source: FHWA. Freight Analysis Framework, 2013.

Regional Freight Movement Challenges

Increasing demand on the transportation freight network will contribute to increasing bottlenecks within the system. These bottlenecks are exacerbated by underlying traffic congestion currently experienced on Southern Nevada roadways. Sustaining access to transportation infrastructure and manufacturing sectors within and through Southern Nevada will be critical in ensuring economic competitiveness to attract new businesses, and enable the expansion of existing companies.

Similar to challenges confronting the roadway and transit systems, the increase of suburban employment centers will result in the rise of suburb-to-suburb commute patterns, compounding existing congestion, safety, and cost of delivery issues for freight providers. Various types of obstacles may constrain truck movements, including congestion, crash incidents, geometric concerns, and policy issues.

In 2015, the RTC completed the Southern Nevada Regional Goods Movement Master Plan (Appendix S). This plan provides a snapshot of Southern Nevada's freight transportation system, a forecast of future demand, freight-related performance measures, and recommendations to address regional freight deficiencies. The plan also provided detailed project-level obstacles locations, recommended infrastructure fixes, and performance measures that will allow the RTC to assess progress related to freight movement.

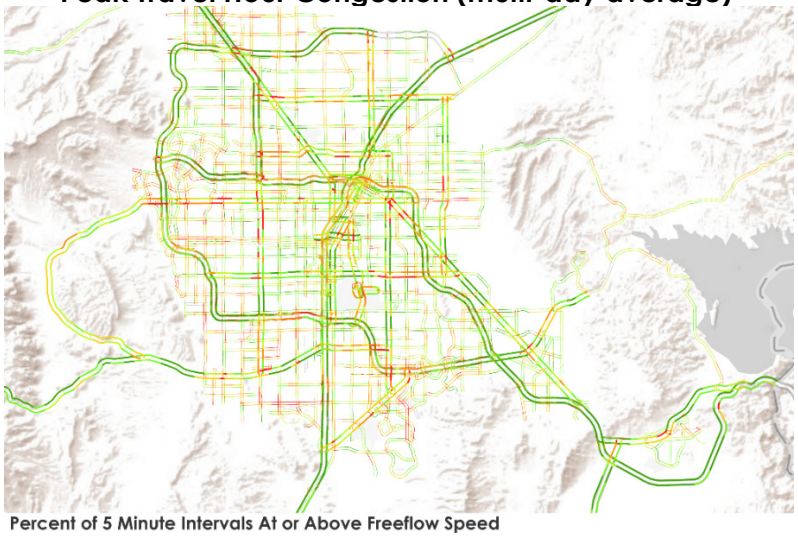
The RTC has recently initiated an update to this plan called the Southern Nevada Freight Plan that is anticipated to be complete in 2022. This plan will build on previously collected information and other studies to assess infrastructure capabilities to support and facilitate freight movement. It will leverage the recommendations and findings of the Nevada State Freight Plan, which laid a strategic framework for freight mobility and economic competitiveness for the State of Nevada. The RTC also recently completed freight-specific studies on various arterials in Southern Nevada, specifically Losee Road in the City of North Las Vegas and St. Rose Parkway in the City of Henderson. Projects identified in these studies are incorporated into Access 2050.

These efforts serve to fulfil federal requirements which require that planning processes provide for consideration of projects and strategies to increase freight mobility; and enhance the integration and connectivity of the transportation system, across and between modes, for freight.

A focus on addressing freight issues is a relatively new element of federal planning requirements, and effectively incorporating freight mobility with the other strategies of Access 2050 that are more concentrated on people-focused outcomes of safety, travel efficiency, equity, and health may be a challenge, although the RTC is committed to improving freight mobility and achieving the benefits that will come from better freight movement, including the key linkage between freight mobility and economic development.

These efforts will be facilitated by the FAST Act establishing both formula and discretionary grant programs to fund critical projects that will benefit freight movement, providing for the first time in history a dedicated source of federal funding for projects, including multimodal projects.

Peak Travel Hour Congestion (multi-day average)



Source:
INRIX XD data for Clark County, Nevada for Tuesdays, Wednesdays, and Thursdays from Jul 07, 2020 through Sep 24, 2020 between 4:00 PM and 7:00 PM, averaged to every 5th minute

Population and Jobs Forecast

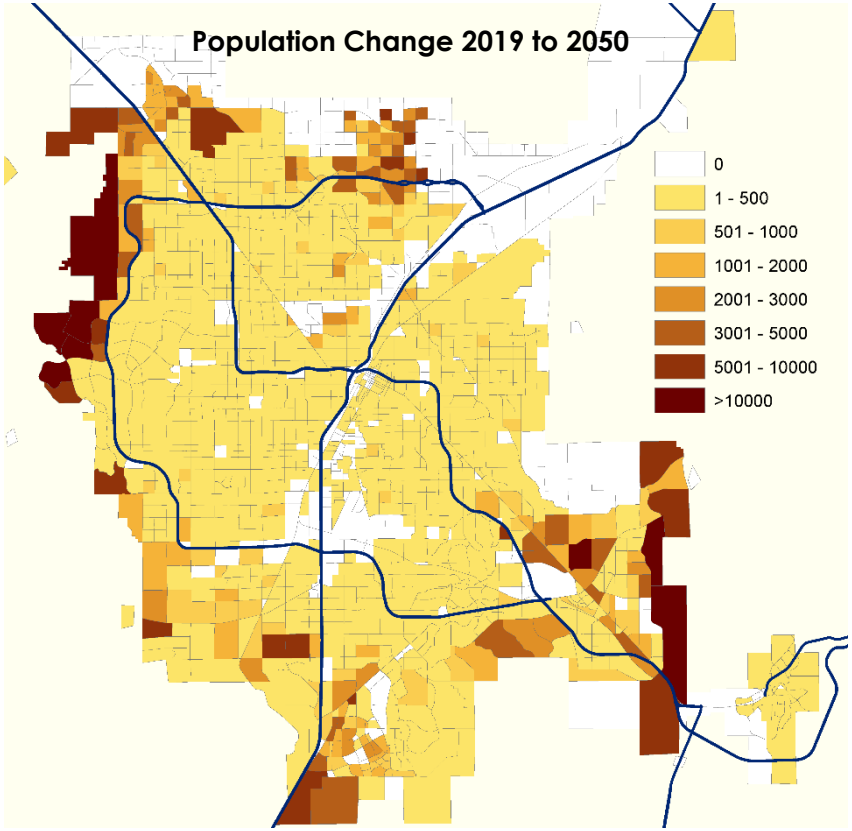
ACCESS 2050 updates regional planning assumptions regarding future population and jobs. This supplied the planning process with a fresh perspective on what to expect regarding future travel demand and service area location. The population and employment growth forecast for the Southern Nevada region is impressive. Population in households will grow from 2.3 million in 2020 to over 2.9 million by 2050, an increase of over 600,000 new-born, migrants and immigrants, or 27% population growth over the next 30 years. Employment will grow from over 1 million in 2020 to over 1.3 million by 2050, an increase of over 311,000 workers, or 30% total employment growth over the next 30 years.

This level of growth will generate challenges for local and state government planning, especially for transportation planning. One of the leading transportation challenges will be how to deal with population and employment decentralization (See maps on following page), as population growth occurs on the edges of the urbanized area and job growth is distributed across the region. Additional top anticipated transportation challenges are how to serve an aging population and how to minimize impacts of increasing school enrollment and associated drop-off/pick-up trips.

Measure	2020	2050	2020-2050	Projected Change
Total Population	2,315,301	2,939,222	623,921	26.95%
Number of Households	834,838	1,060,731	225,893	27.06%
Total Jobs	1,048,792	1,360,643	311,851	29.73%
K-12 School Enrollment	361,227	449,694	88,467	24.49%

Source: RTC. Planning Variable Development and Methodology, July 2020.

Merely knowing the size of the population does not adequately address the various travel needs a region has. Technical analysis of the status and nature of the population today and in 2050 gives a more full impression of future travel demand and current transportation system performance. Furthermore, federal regulations require analysis to determine the fair treatment of all segments of the relevant population, regardless of nature or degree of diversity. The Regional Transportation Commission's planning area is 32% Hispanic, and is represented by many races. Approximately 13% of Southern Nevada's population lives at or below the poverty level, and 74% of adults over age 25 have less than a Bachelor's Degree-level education. Regionally, an average of 8% of households does not have a car, which is overwhelmingly the primary mode of transportation to work in the region. Approximately 35% of Southern Nevada's households do not speak English at home, and 23% of the region's population is born outside the United States. These statistics reveal a widely diverse population, all with distinct transportation needs according to their life-situation. This reality has been considered in the drafting and implementation of ACCESS 2050. The plan demonstrates compliance with regulations regarding Title VI and Environmental Justice based on the analysis completed in Appendix K.



Travel Forecast

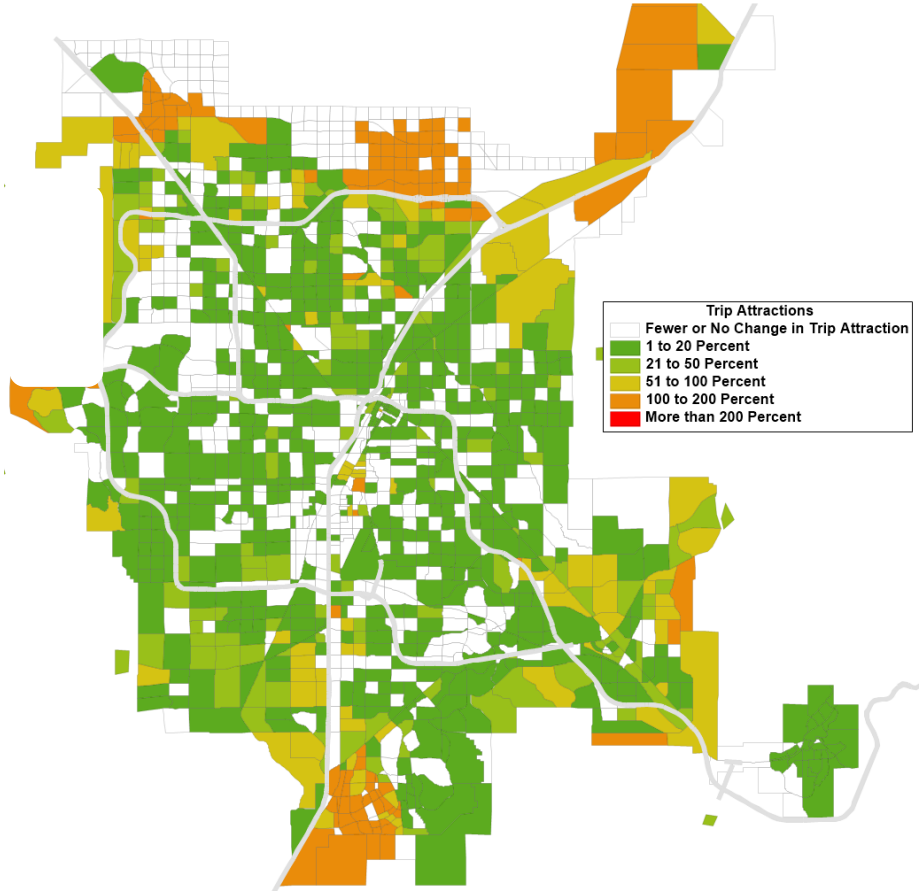
Forecasting travel patterns in the future reveals the adequacy of planned investments in confronting current trends and future needs. It is calculated based on the expected changes in geographic location, size, and mobility of population and employment. Also, it takes into account the diversity presented in the previous section. For example, if all the region's zero-car households were forecasted to locate in one specific area, plans directing relevant services should be adapted accordingly.

Measure	2020	2050	2020-2050	Change
Daily Trips	10.3 Million	13.0 Million	2.7 Million	26.6%
Daily Vehicle Hours Traveled	1.2 Million	1.8 Million	543,000	44.1%
Daily Vehicle Miles Traveled	42.4 Million	58.2 Million	15.8 Million	37.3%
Daily Transit Trips	164,246	211,287	47,041	28.6%
Total Population	2,315,301	2,939,222	623,921	26.9%
Per-Capita Daily Travel Time	31.9 Min	36.2 Min	4.3 Min	13.5%
Per-Capita Daily VMT	18.3 Miles	19.8 Miles	1.5 Miles	8.1%

(Source: RTC Travel Demand Model, October 2020)

Most areas of Southern Nevada will experience increased travel over the next 30 years. Driven by growth of housing, jobs, shopping, and schools, driving time will increase from 1.2 million hours on average weekdays to 1.8 million, an increase of 44 percent. Vehicular travel will increase from 42.4 million vehicle miles of travel on an average weekday to 58.2 million, an increase of 37 percent. Travel patterns will also continue to change during the ACCESS 2050 planning period. As growth in suburban and rural areas continues, travel to, from or within the area outside the Beltway (CC-215/I-215) will represent about 30% of all new vehicle miles travel. The largest concentrated increase in travel, however, will be additional trips occurring to, from, or within the Urban Core surrounding the Resort Corridor area, which will experience a 66% increase new travel distances.

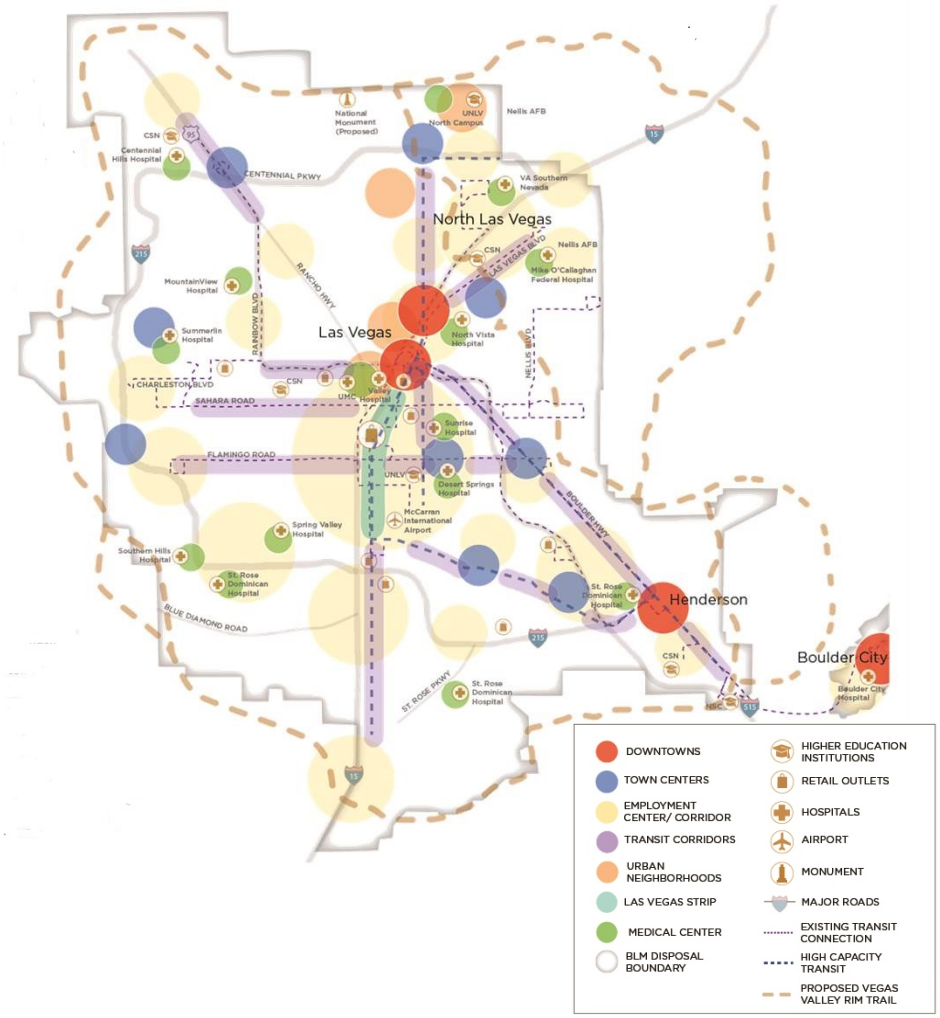
Although the Resort Core area constitutes the highest density of jobs in Southern Nevada, growth of employment outside of the Resort Core has led to additional commuting in traditionally non-peak directions on many of the regions highways and arterials. This trend is forecast to continue over the



next 25 years, and will impact reverse direction peak travel volumes on most major corridors in the region. Although the development of employment centers in formerly suburban (or rural) areas leads to effective use of major road capacity by balancing trip directions, it presents new challenges for efficiently serving suburban destined commuters with competitive transit and other multimodal alternatives.

SUPPORTING THE REGIONAL PLAN

One significant influence in developing Access 2050 was the Southern Nevada Strong Regional Plan, which was adopted by the local governments in the urbanized area of Southern Nevada, and has been administered by the RTC since 2015.



The purpose of Southern Nevada Strong is to develop regional support for long-term economic success and stronger communities by integrating reliable transportation, quality housing for all income levels, and job opportunities throughout Southern Nevada. The SNS regional vision statement is – In 2035, the Southern Nevada region has a strong entrepreneurial spirit sustaining its high quality of life.

One priority of the SNS Regional Plan is to Improve Economic Competitiveness. This priority has a range of goals to diversify the regional economy by creating communities with a variety of housing, transportation and amenity options – meeting the demands of a talented workforce.

	RESPONSIBLE ORGANIZATION Lead (L) Support (S)	FISCAL IMPACT 0, +, ++, +++	TIMEFRAME Short term (0-2 years) Mid term (3-6 years) Long term (7+ years)
GOAL 1: MATCH LAND USE AND TRANSPORTATION PLANS WITH REGIONAL ECONOMIC DEVELOPMENT PLANS.			
Objective 1.1 **Invest in and maintain infrastructure that meets the needs of a diversified economy.**			
1.1.1 - In coordination with organizations such as the Las Vegas Global Economic Alliance (LVGEA), develop a regional approach to 1) assess the need for and implement infrastructure that can support a diversified economy and 2) recommend updates to land-use plans to match land use and transportation plans and policies.	LVGEA = L Local Governments = S RTC = S	0	Mid term
1.1.2 - Provide tools such as scenario planning analyses to local governments and the Regional Transportation Commission (RTC) to develop land-use strategies that implement the Plan at the local level.	SNS Project Team = L Local Governments = S RTC = S	+	Complete
1.1.3 - Coordinate the RTC's Regional Transportation Plan and local government master plan updates with the Comprehensive Economic Development Strategy (CEDS).	LVGEA = L Local Governments = S RTC = S	0	Short term

Source: RTC. Southern Nevada Strong Regional Plan, 2015.

Access 2050 directly supports this vision for a vibrant and unique region that is characterized by integrated transportation networks through strategies and projects that enhance multimodal connectivity and promote economic development.

ACCESS 2050 INVESTMENT PROGRAM

While the regional vision represents an ideal level of investment, ACCESS 2050 applies today's fiscal reality. Federal law requires the planned transportation in the RTP be "fiscally constrained", or based on a reasonably foreseeable forecast of future revenues. Excise taxes on gasoline and diesel fuels are the basis of most federal and state transportation funding sources. Since these taxes are based on cents-per-gallon purchased, they depend on fuel consumption. Though changes in regional vehicle miles traveled will continue to play a role during the Plan period, increases in conventional fuel efficiency and the adoption of alternative fuel vehicles will reduce overall fuel consumption.

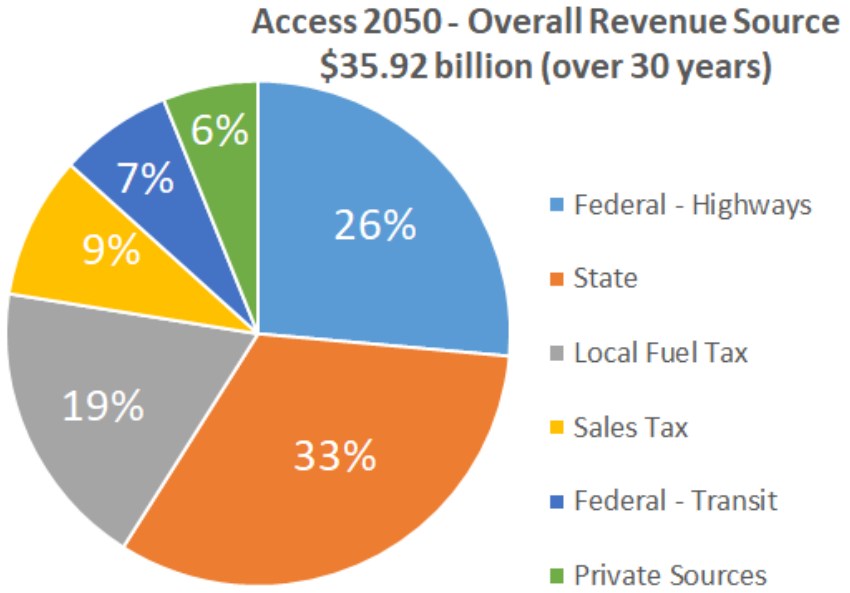
Most transportation revenue is generated based on the concept of "user fees," where taxes are collected from the users of the transportation system, roughly in proportion to how much they use the system. It is important to find new ways to make transportation funding more sustainable in the long-term, and efforts are underway to explore how our region can transition from our current system, based on fuel taxes, to a more direct system of user fees linked to how people travel. User fees can support our infrastructure needs and promote a more balanced transportation system by encouraging residents and visitors to consider their travel choices. User fees can be structured and implemented to advance environmental, economic and equity goals, including reducing congestion and vehicle miles traveled (VMT), while encouraging active transportation and transit ridership.

Reasonably Available Revenue

Reasonably available revenue is estimated by the US Department of Transportation, Nevada Department of Transportation, and annual financial reports from the RTC, as well as trends related to debt financing and regional revenues. The total estimated revenue over the course of the Access 2050 planning period is approximately $35.9 billion; a 30-year planning horizon.

Private sources include new neighborhood roads and off-site street improvements that are provided by private developers. Revenue from the XpressWest high-speed rail project is also included in private sources, as this project was approved for $200 million in private activity bonds from the Nevada State Board of Finance in 2020. This allocation will allow the company to sell up to four times the value of the award as tax-exempt bonds to private investors. This means that the project has the ability to raise an additional $800 million for private infrastructure investment in Southern Nevada.

Federal revenues are provided by the Highway Trust Fund, which is based primarily on the federal fuel tax of 18.4 cents per gallon of gasoline, and has not been adjusted since 1993. That tax is now worth just 10.2 cents after adjusting for inflation. In recent years the trust fund has needed significant transfers of general revenues to remain solvent. Since 2008, Congress has sustained highway spending by transferring over $140 billion of general revenues to the fund, including $70 billion in the current Fixing America's Surface Transportation Act. Federal Highway funds include state-programmed Federal funds.



State Highway Revenues refer to taxes assessed on the sale of gasoline at a fixed-rate of 18.455 cents on every gallon, and also associated vehicle fees and taxes. An analysis of revenue sources contained in the One Nevada Transportation Plan was performed, along with a conservative assumption that 44 percent of statewide revenue will be available for transportation

investments in Southern Nevada. This assumption is based on a review of NDOT projects programmed statewide in the 2019-2022 TIP.

Local fuel tax revenues in Southern Nevada, called the "Motor Vehicle Fuel Tax," (MVFT) have multiple components: a base amount of 15.35 cents per gallon, plus an amount indexed to inflation, which adds 14.8 cents per gallon as of July 2020. As Southern Nevada emerged from the recession of 2007-09, transportation infrastructure needs that were put on hold due to lack of funding demanded attention. To cover a growing gap in funding, in 2013 a funding program was initiated to tie MVFT to inflation for a three-year period to keep pace with material and labor costs. This resulted in a 10 cents per gallon increase through 2016.

During the November 2016 election, ballot Question 5 asked Clark County voters if they wanted to continue to tie fuel tax to the rate of inflation for an additional 10 years. Approved by a majority of voters, the program was extended through 2026. Annual increases are based on the 10-year rolling average of the Producer Price Index (PPI). Compared to the initial fuel tax indexing program that added an average of 3 cents per gallon annually, and reached the 10 cent per gallon cap, the extension has only averaged approximately 1 cent per gallon increases annually due to the lower observed PPI. Between 2017 and 2020, these annual increases have totaled 4.8 cents per gallon; resulting in the 14.8 cents per gallon total increase for the fuel revenue indexing program. Additionally, proceeds derived from the extension program are divided between the RTC, Clark County, and NDOT.

These taxes are dependent on fuel consumption and – with the exception of MVFT and State funds in Southern Nevada tied to the indexing program – have not been adjusted since 1991. Increases in vehicle fuel efficiency, a lower rate of VMT growth, and travel declines associated with the COVID-19 pandemic will impact revenues generated from this source during the planning horizon. The MVFT revenue forecast includes a reduction of over $41 million in fiscal year 2021 due to COVID-19 travel declines.

Corporate Average Fuel Economy (CAFE) standards regulate how far our vehicles must travel on a gallon of fuel. The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule, issued in 2020 sets fuel economy standards that increase 1.5 percent in stringency each year from model years 2021 through 2026; a decrease from the previous standard that called for about 5 percent annual increases during the same time period.

The impact of this will continue a trend observed in the RTC's previous two Regional Transportation Plans in 2013 and 2017: The proportion of revenues derived from federal sources is down significantly, while the local fuel tax share has increased. In in the 2013-2035 RTP, only 20 percent of revenues were derived from local sources compared to the 28 percent currently forecast. Additionally, approximately 18% of State funding is directly tied to the local fuel tax indexing program. This trend is consistent with the overall funding outlook nationally for transportation – that without new revenue sources, federal and state revenues are projected to decrease in relative terms in the future.

Summary of Investment Strategies

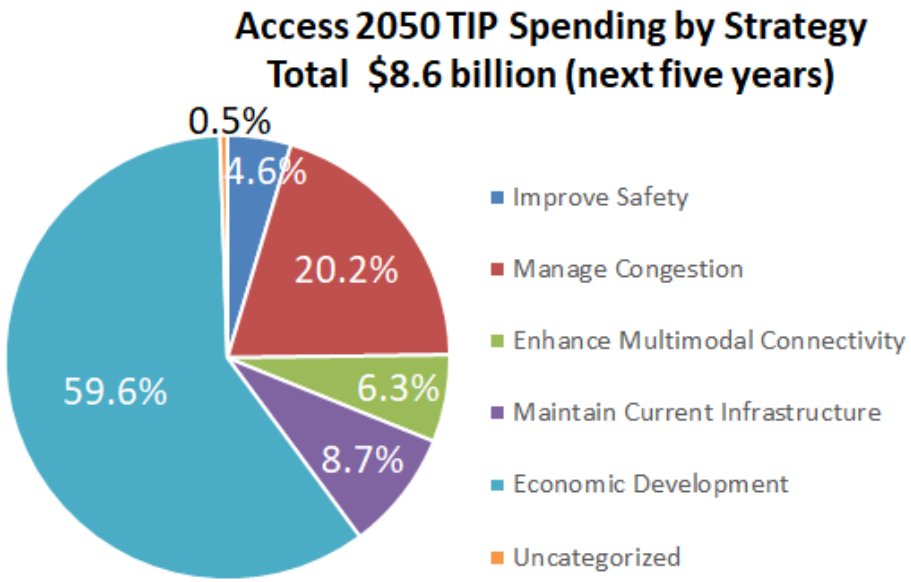
Access 2050 implements the five primary strategies (Improve Safety, Manage Congestion, Enhance Multimodal Connectivity, Maintain Current Infrastructure, and Promote Economic Development) by funding transportation projects that are intended to advance one or more of those strategies and achieve outcomes that improve conditions for Southern Nevadans, as expressed by the indicators described earlier and in Appendix N. In addition, investments are identified by how they address the overall Access 2050 Strategy and Accessibility Focus Areas. Remaining investments fit within the overall regional investment program, which may include projects from prior plans that remain funded in ACCESS 2050.

The primary strategy investment categories are listed first, followed by regional focus area investment programs. This presentation format allows Southern Nevadans to understand what the Access 2050 Investment Program is intended to accomplish, providing transparency and accountability.

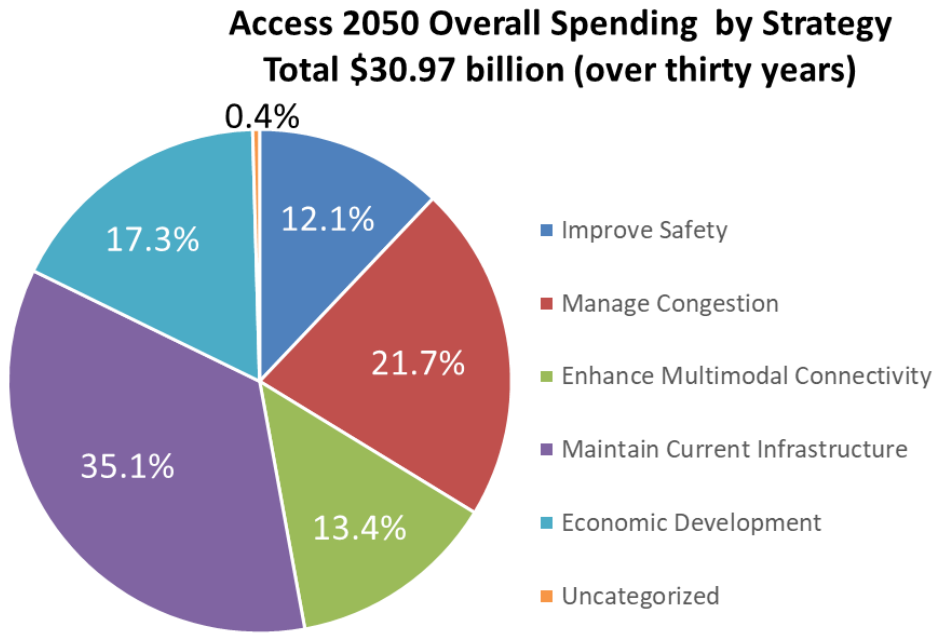
Because the goal of an outcome-based transportation plan, such as Access 2050, is to identify what the overall plan is intended to accomplish, rather than focus on specific project engineering decisions, this structure further allows project sponsors flexibility to adjust minor details of their project without compromising the representative integrity of ACCESS 2050. In many cases, especially for projects not planned for construction for 30 years, exact future conditions are not known, and it may be necessary to update certain aspects of the plan. By representing related investments as programs, and summarizing major investments by strategies and focus areas, the public can be aware of future changes, while local agencies can adapt to the unexpected; which will particularly important since this plan was finalized during the COVID-19 pandemic. The summarized costs shown have been estimated based on the ACCESS 2050 fiscal model, previous history, and total cost estimates submitted by project sponsors, with future year project costs adjusted for "year of expenditure".

Strategy-Based Investments

Access 2050's major investment approach is to select and fund projects that directly address one or more of the five primary strategies identified earlier.



The following chart shows how approximately $30 billion will be invested during the ACCESS 2050 30-year implementation period. Funding over the next five years – the Transportation Improvement Program – is shown separately, so that readers can see which strategies the RTC and local agencies are targeting for the most immediate planning period. It should be noted that the XpressWest high-speed rail project programmed for $5 billion in the Transportation Improvement Program and categorized as a project to Promote Economic Development exerts and outsized influence when analyzing project funding strategies for that time period.



Access 2050 Strategy and Accessibility Focus Area Investments

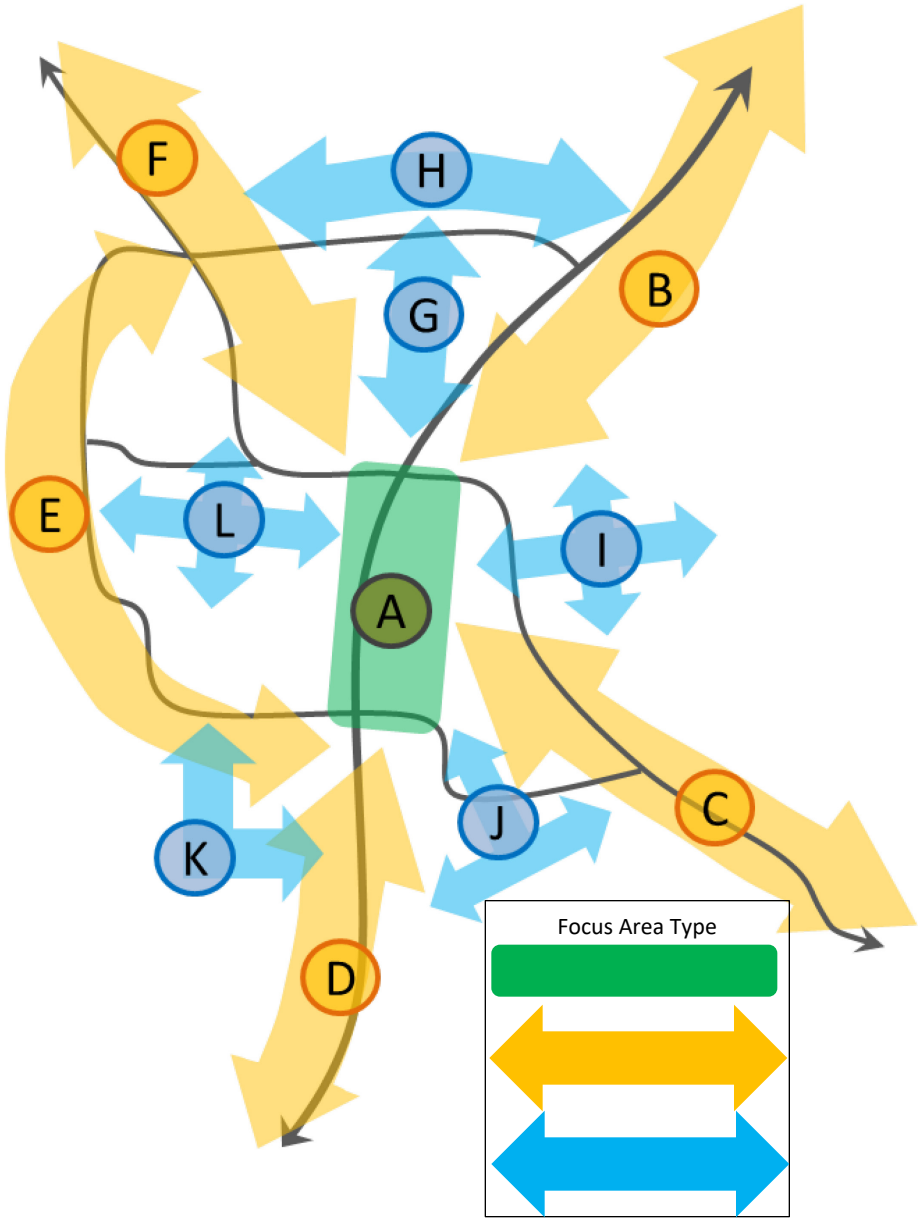
Access 2050 continues the process of categorizing projects by their respective Primary Strategy and Accessibility Focus Area; identified in the two tables below. Categorization of each project by their Access 2050 Primary Strategy helps provide an understanding of the basic purpose and need of each transportation investment. The Focus Area analysis helps provide an increased understanding of the accessibility benefits the investments create to help get people to the places they need or want to go (an Access 2050 Secondary Strategy) along or within those broad areas. These Focus Areas were developed based on existing local plans and from analysis of the Southern Nevada Strong Regional Plan. Appendix A provides project details for every project included in Access 2050, and identifies the Primary Strategy and Accessibility Focus Area addressed by each.

Label	Access 2050 Focus Area	Total
A	Access to/from/within core area	$3.4 billion
B	Northeast valley & UT access to core area	$348.5 million
C	Southeast valley & AZ access to core area	$601.4 million
D	Southern valley & CA access to core area	$5.2 billion
E	North-south access along western valley	$12.6 million
F	Northwest valley to core area	$536.0 million
G	North Las Vegas access to/from south & internal	$56.4 million
H	Northern valley east/west access	$40.7 million
I	Eastern valley access to/from core & internal	$282.2 million
J	West Henderson access to/from core & internal	$362.3 million
K	Access to/from southwest valley	$67.4 million
L	West side of valley east/west access & internal	$213.6 million
N/A	*Not Allocated to a Focus Area*	$18.2 billion
N/A	*Not Allocated – Debt Service*	$1.5 billion
	TOTAL	**$30.9 billion**

The primary rationale for the relatively large amount of revenue not allocated to a specific focus area is due to:

- Federally funded transit investments that benefit the entire region and are not specific to any one focus area;

Access 2050 Accessibility Focus Areas



- Local agency led projects that are at a regional scale and not specific to any one focus area: Safe Routes to Schools programs and infrastructure, pedestrian flashers at various locations, roundabouts at various locations, street sweepers, citywide Intelligent Transportation System (ITS) projects, electric vehicle programs, etc.;
- Future high-priority projects to be led by local agencies, but specific projects have not yet been identified or assigned to a focus area; and
- Bond repayments for a variety of projects that benefit the entire region but are not specific to any one focus area.

In comparison to the Accessibility Focus Areas, most Access 2050 projects are able to be categorized by Primary Strategy. While many projects are not specific to a location, they do have a primary purpose and need that the project intends to accomplish. The only projects that remain Uncategorized for a Primary Strategy are related to bond repayments for a variety of projects, and high-priority projects targeted for a specific area, but for which specific projects have not yet been identified to define a Primary Strategy.

The Strategy and Accessibility Focus Area analysis included projects that were previously included in an RTC plan or funded project list (the 2017 Regional Transportation Plan, the 2021-2024 Transportation Improvement Program, or the locally funded 2021 Capital Improvement Program) and new projects submitted to the RTC during development of Access 2050.

Analysis of the ACCESS 2050 Investment Program

Comparing the transportation impacts of implementing the ACCESS 2050 investment program to a future without the additional infrastructure Access 2050 would provide allows an initial assessment of the impacts of Access

Indicator	No-Build	Build	Difference	PCT
Per-Capita VHT/day (2050)	42.0 Min	36.4 Min	- 5.6 Min	-13.4%
Per-Capita VMT/day (2050)	20.1 Mile	19.9 Mile	- 0.21 Mile	-1.0%

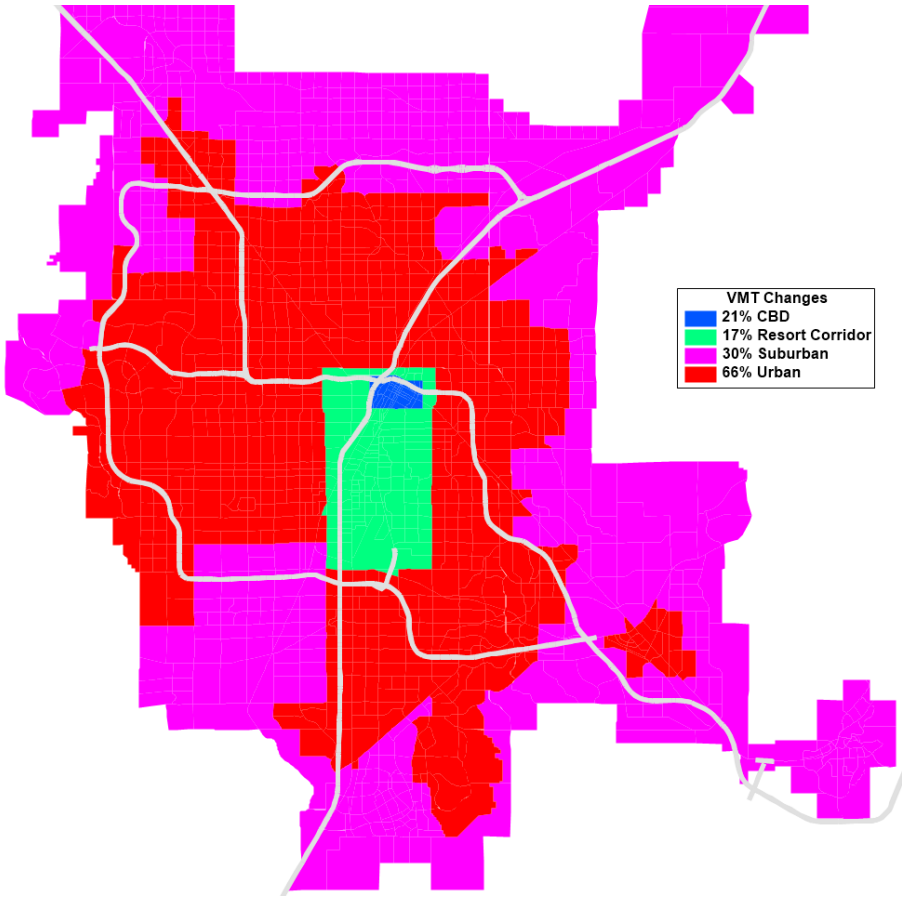
(Source: RTC Travel Demand Model, October 2020)

2050 on key travel indicators. The Build vs No-Build table provides critical measures for this comparison. Overall, making the set of investments identified in Access 2050 leads to 5 fewer minutes each person spends driving or riding on a typical weekday, and 0.21 fewer miles driven each day than if the investments weren't made. *Another way of looking at this, average time spent driving will increase from 32 minutes per day in 2020 to 36 minutes in 2050 with Access 2050 investments, but would increase to 42 minutes without them.* This time savings provides Southern Nevadans with more time available for activities that can be more enjoyable or productive than driving or commuting. Similarly, driving fewer miles generates additional benefits for residents, including less money spent on fuel, vehicle operating costs, and maintenance, as well as reduced exposure to risks of traffic crashes.

Project Type	Improve Safety	Manage Congestion	Enhance Multimodal Connectivity	Maintain Current Infrastructure	Promote Economic Development	Uncategorized	Total
High Priority Projects (1-5 years; Federal and Local Funds)	$388.9 million	$1.69 billion	$534 million	$733.9 million	$5.01 billion	$45.2 million *(+$171 million debt service)*	**$8.41 billion** *($8.6 billion w/debt service)*
Long-Term Projects (6-30 years, Federal and Local Funds)	$3.17 billion	$4.68 billion	$3.41 billion	$9.62 billion	$93.1 million	$86 million	**$21.08 billion**
TOTAL	**$3.56 billion**	**$6.38 billion**	**$3.95 billion**	**$10.35 billion**	**$5.11 billion**	**$131.29 million** *(+$1.5 billion debt service)*	**$29.49 billion** *($30.9 billion w/debt service)*

Overall, the RTC's analysis of future travel conditions projects a 13% increase in travel time and 8% increase in vehicle miles traveled between 2020 and 2050. These increases can be mapped across different geographical regions to provide a better picture of how Southern Nevada will change over the next 30 years. For this, Southern Nevada was divided into four geographic area types, which are presented on the following map. These zones comprise most of the region's travel activity, and capture travel statistics in a convenient way. The map's legend identifies the percent change in total travel (Vehicle Miles Traveled) in each of these area types.

Percent Change in Travel 2020 to 2050



Much of the growth in travel activity is forecast to occur further away from the historic regional core of the Resort Corridor area and downtown Las Vegas. This trend is supported by comparable data regarding the location of population growth and trip attractions to the year 2050. Analysis suggests much of the region's future growth will be concentrated outside the CC-215/I-215 Beltway, especially in relation to current population share.

The Access 2050 Investment Program will add approximately 1,100 new lane miles to the regional road system (highways, arterials, and collectors), an increase of 16%. At the same time, VMT per lane mile is projected to increase a total of 36%, meaning that roads will become more crowded, although with the targeting of improvements on the ACCESS 2050 strategies, roads should also function more efficiently with more alternative modes available.

Access 2050 Infrastructure Summary (lane-miles)

Lane-mile category	2020	2050	Change	PCT
Freeways and Highways	1,309 Miles	1,579 Miles	+267 Miles	21%
Arterials	4,470 Miles	5,485 Miles	+1,015 Miles	23%
Collectors	1,669 Miles	1,548 Miles	-121 Miles	-7%
Total	**7,448**	**8,612**	**1,164**	**16%**
Avg. daily VMT per lane-mile	5,732 VMT	6,800 VMT	+2,055 VMT	36%

Source: RTC Travel Demand Model, October 2020

The expected disparity between growth in travel activity and the amount of feasible road expansion, along with other reasonably-anticipated emerging technologies over the next 30 years may also play a role in negating the disparity between increasing travel activity and the need for additional capacity. Addressing this disparity, however, is at the core of the "Manage Congestion" ACCESS 2050 strategy and the Congestion Management Process, both of which the RTC and regional partners will work to implement over the next 30 years.

These challenges may lead to new solutions or ways of addressing the 5 primary strategies of Access 2050. For example, because high capacity transit has a significantly higher carrying capacity than highway lanes serving predominantly single occupant vehicles, it could help to alleviate future challenges. These shifts indicate a need for the RTC to continue evaluating the Access 2050 Plan and investments on a regular basis.

Environmental Justice Analysis

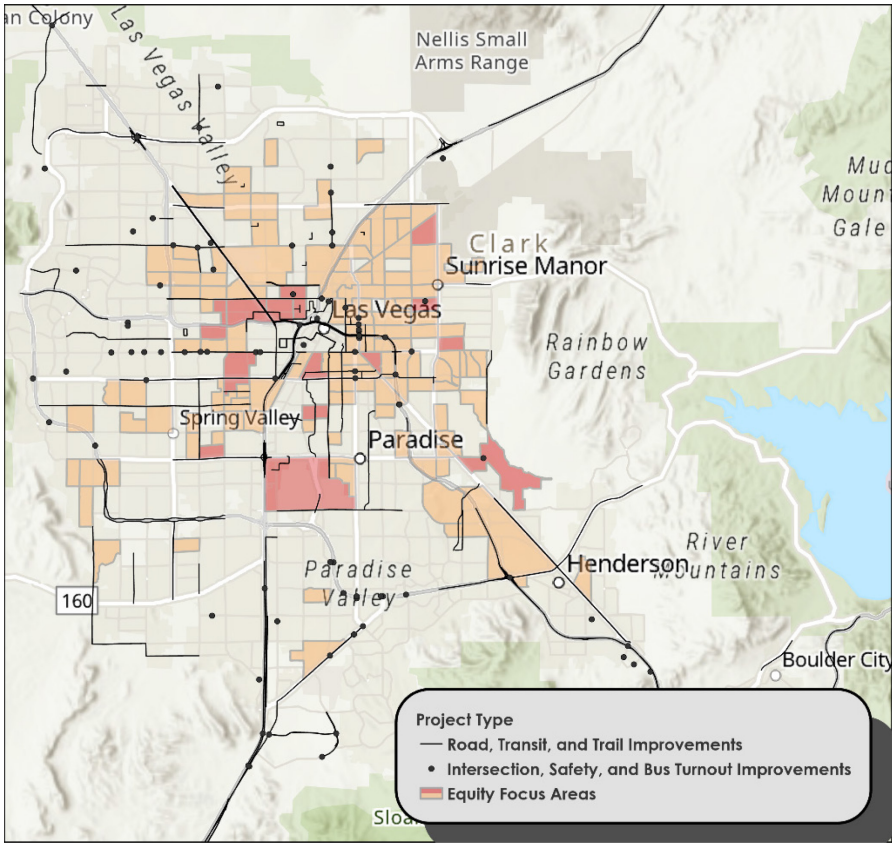
According to FHWA, "environmental justice principles and procedures improve all levels of transportation decision-making by enabling practitioners to make transportation decisions that meet the needs of all people." The MPO considers environmental justice and equity impacts in its transportation and regional plans and related outreach efforts and implements the following laws and regulations:

- **Title VI of the Civil Rights Act of 1964**, which prohibits discrimination on the basis of race, color, or national origin in programs receiving federal assistance;
- **Environmental Justice Executive Order 12898**, which aims to identify and address disproportionately high and adverse human health or environmental effects on minority populations and low-income populations; and
- **FHWA Title VI Program (23 CFR 200)**, which ensures that federal funding recipients comply with Title VI and related civil rights authorities. Additionally, FHWA is broader than Title VI and EJ requirements and protects populations based on race, color, national origin, sex, age, disability, low-income, and limited English proficiency.

Maps provided in *Appendix K: Environmental Justice Analysis* depict the geographic distribution of Regional Transportation Projects in relationship to:

1) **Title VI**: Census tracts that include an above average percentage of minority, senior, disabled, low-income, and limited English proficiency populations; and
2) **Equity Focus Areas**: Census tracts that have a low equity/high inequity composite score based on the factors shown above plus no vehicle households and youth.

Access 2050 Projects and Equity Focus Areas



Source: RTC. Access 2050 projects and equity focus areas.

In the map above, selected Regional Transportation Plan projects are shown in relationship with equity focus areas, which represent census tracts with a higher identified need and typically represent low-income, minority neighborhoods who rely more heavily on bicycling, walking, or transit as their primary form of transportation.

AIR QUALITY CONFORMITY DETERMINATION

Southern Nevada has historically been designated "nonattainment" for federal Carbon Monoxide (CO), Particulate matter 10 microns or smaller (PM10), and Ozone (defined for the two precursors of Ozone, Volatile Organic Compounds (VOC) and the Oxides of Nitrogen (NOx)) standards under the Clean Air Act. As a consequence, the State must develop a plan which demonstrates how these emissions will be reduced to achieve federal air quality standards. This plan is known as the State Implementation Plan, or "SIP." Transportation conformity is the process that links the SIP with ACCESS 2050 and the RTC's transportation planning and project funding.

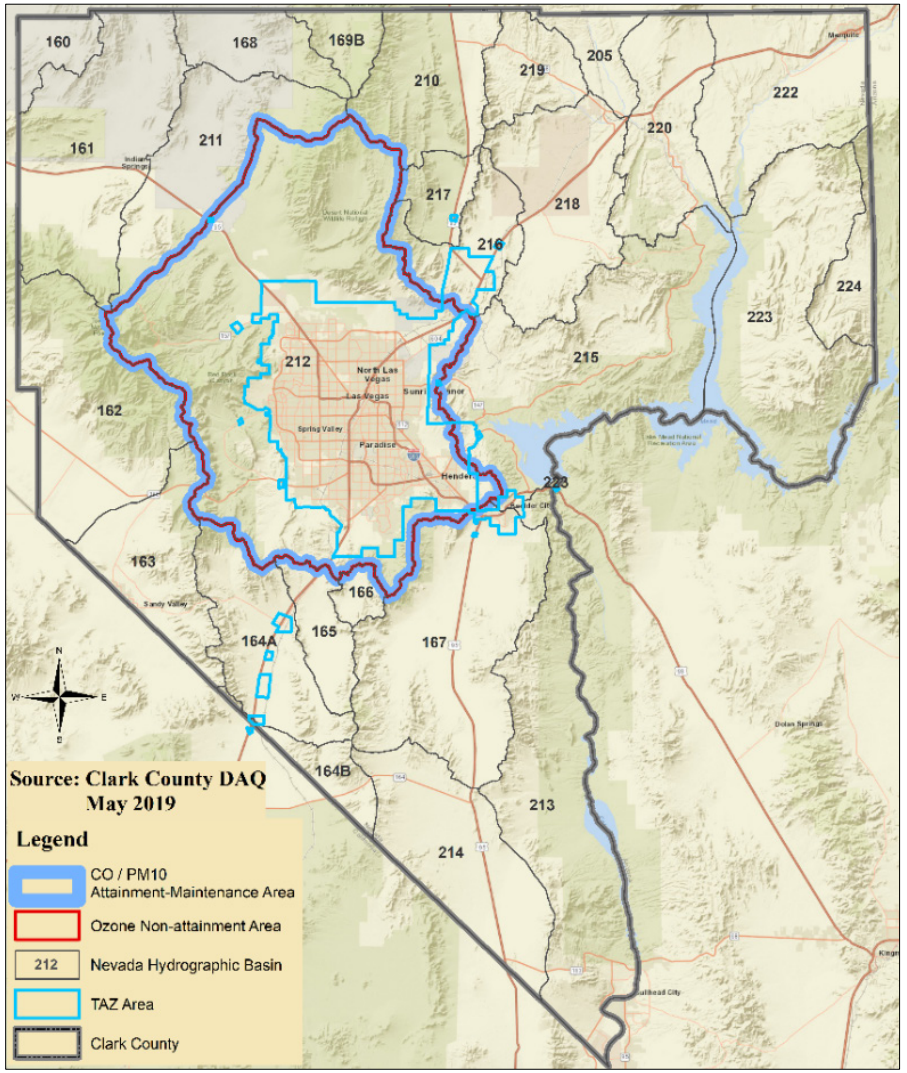
The conformity status of these emissions in Southern Nevada may be adjusted over time, and the current status of their respective SIPs and Maintenance Plans is summarized below:

CO – Southern Nevada is currently in attainment, with the area sharing the same geography as Hydrographic Basin 212, which coincides with the Las Vegas Valley. A SIP Maintenance Plan with updated emission budgets and a formal request for re-designation to attainment were submitted by the Clark County Department of Environment and Sustainability to EPA in 2008, and were approved on September 27, 2010.

PM10 – Southern Nevada is currently in attainment, with the area sharing the same geography as Hydrographic Basin 212. In 2010, EPA made a determination that the area is in attainment with National Ambient Air Quality Standards (NAAQS), and re-designated the area to attainment upon approval of the Clark County PM10 Maintenance Plan on Oct 3, 2014.

Ozone – Southern Nevada is currently in non-attainment, and in a re-designation status. The area shares the same geography as Hydrographic Basin 212. In 2018, EPA made non-attainment designations for the 2015 ozone NAAQS for many areas around the United States, including Southern Nevada. In July, 2019 the EPA approved the Clark County 2018 Ozone Maintenance Plan conditional on commitments from the Clark County Department of Environment and Sustainability and the Nevada Division of Environmental Protection (NDEP) to submit a SIP revision within one year of final conditional approval. On September 3, 2020 a revised SIP was submitted to NDEP for review and submission to the EPA. As of August 3, 2019, Southern Nevada must have an RTP and TIP in place that demonstrates conformity to the 2015 ozone NAAQS.

Air Quality Attainment and Non-Attainment Areas



Source: Clark County Department of Environment and Sustainability.

Conformity is demonstrated when the projected regional emissions from on-road vehicles are less than emissions budgets for on-road vehicles contained in the State Implementation Plan. In addition, ACCESS 2050 must support the timely implementation of specific transportation control measures designed to reduce on-road emissions.

Access 2050 Air Quality Conformity Results

Year	CO Budget	CO *(modeled)*	PM10 Budget	PM10 *(modeled)*
2020	704		141.41	
2023	--	--	141.41	
2030	704		141.41	
2040	704		141.41	
2050	704		141.41	

Source: RTC. Travel Demand Model Methodology and Air Quality Conformity.

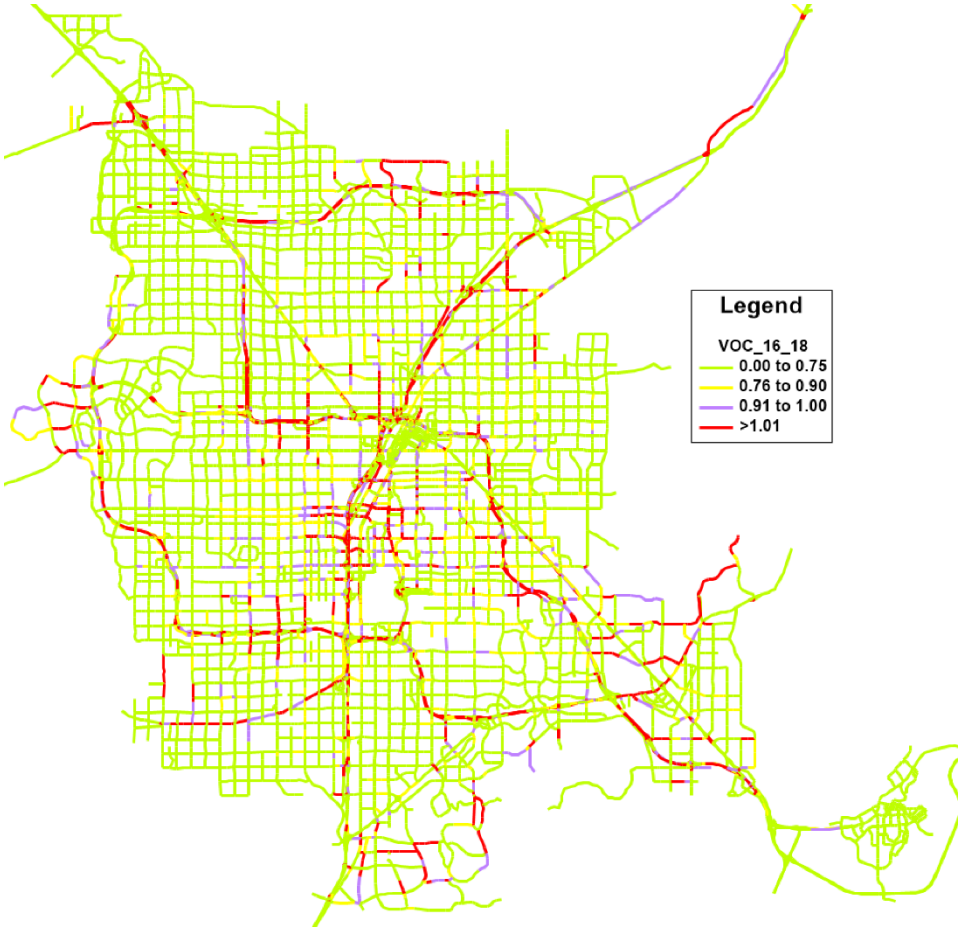
Year	NOX Budget	NOX *(modeled)*	VOC Budget	VOC *(modeled)*
2020	90.92		53.94	
2022	86.74		52.96	
2030	86.74		52.96	
2040	86.74		52.96	
2050	86.74		52.96	

A conformity determination demonstrates that implementation of ACCESS 2050 will not cause any new violations of the air quality standard, increase the frequency or severity of violations of the standard, or delay timely attainment of the federal standard interim goals.

For each horizon year calculation is required, the forecast measures for both CO, PM10, and O3 fall below the budgets set for the region. Both CO, PM10, and Ozone are known to be detrimental to general air quality and the health of the environment and Southern Nevada residents and visitors.

ACCESS 2050 has demonstrated conformity with the guidelines and limitations, as shown in the tables below. See Appendix E for more detail.

Peak Hour Congestion in 2050 with RTP Network (Build)



Source: RTC. Travel Demand Model Methodology and Air Quality Conformity.

Transportation Control Measures

A second component of conformity determination is an assessment of the progress in implementing Transportation Control Measures (TCMs). TCMs are intended to reduce emissions or concentrations of pollutants from transportation sources by reducing vehicle use or otherwise reducing vehicle emissions. These specific measures are identified and described in the State Implementation Plans for each pollutant. The emission benefits from the TCMs may be subtracted from the modeled vehicle emissions to produce a forecast of net mobile source emissions, however these benefits are not claimed for this Access 2050 air quality conformity determination.

As required by 23 CFR, Part 450.324, n(3), in non-attainment areas, the Transportation Improvement Program (2021-2025) must describe the progress in implementing any required TCMs, including any reasons for significant delays in the planned implementation and strategies for ensuring their advancement at the earliest possible time. TCMs are their current status is described in Appendix E - Travel Demand Model Methodology and Air Quality Conformity Analysis.

As part of this air quality conformity determination, the RTC certifies that TCMs identified in the SIPs are either programmed, or are being implemented on schedule, and that no Federal funds are being diverted from these projects in such a way as to delay their timely implementation.

FISCAL CONSTRAINT ANALYSIS

Fiscal constraint analysis is performed as part of the regional planning process to exercise prudence in planning for the transportation future of Southern Nevada. Revenues for future investment are not limitless, and proper governance requires a conservative fiscal approach when considering which improvements are necessary, and in what timeframe. Federal regulations establish this principle into an enforceable requirement of every update of the RTC's Regional Transportation Plan.

Practically, the analysis to demonstrate fiscal constraint limits the total investment by ACCESS 2050 to reasonably expected revenues from a combination of sources. The RTC estimated revenues and expenditures through the year 2050, including federal, state, local, and private revenue.

Access 2050 Fiscal Constraint Summary

Revenue Source	Anticipated Revenue
Federal – Highways*	$9.5 billion
Federal - Transit	$2.6 billion
State	$11.7 billion
Local Fuel Tax	$6.6 billion
Local Sales	$3.3 billion
Private Sources	$2.2 billion
TOTAL	**$35.9 billion**

** Federal Highway funds include state-programmed Federal funds*

Expenditure Category	Funding Level
Increase Safety	$3.5 billion
Manage Congestion	$6.4 billion
Multimodal Connectivity	$4.0 billion
Maintain Infrastructure	$10.3 billion
Economic Development	$5.1 billion
Uncategorized**	$0.1 billion
Debt Service	*$1.5 billion*
TOTAL	**$30.9 billion**

*** Uncategorized includes mostly bond repayments for a variety of projects and future local agency high-priority projects.*

As shown in the table above, ***ACCESS 2050 expenditures are less than anticipated revenue over the life of the plan to 2050***. The fiscal constraint analysis for the Transportation Improvement Program (2021-2025) is included in Appendix B. Estimates of reasonably available revenue for investment include Federal Highway Trust Fund revenues (including discretionary grant funds that are reasonably anticipated to be available), State-administered funds, locally-collected sales tax, locally-collected Motor Vehicle Fuel Tax (MVFT), which includes annual fuel tax indexing increases through 2026, and private sources related to new neighborhood roads and off-site street improvements that are provided by private developers and revenue related to the private XpressWest high-speed rail project.

Future year project costs are expressed in "year of expenditure". Based on the 10-year rolling average of the Producer Price Index for the material and supply inputs to highway and street construction, a 2.09% inflation rate was used for all costs beyond FY 2021. Since projects outside of the TIP period are not given a specific year for construction, a midpoint year was established to estimate inflation. Future years beyond FY 2025 were grouped into 5-year

bands, and costs were assumed to occur in the midpoint year for inflation purposes. For example, a project scheduled between FY 2031-2035 would assume a midpoint year of FY 2033 for the year of expenditure.

See Appendix F, "Fiscal Plan and Funding Assumptions," for more detail.

Future Vision and Unfunded Projects

While the extension of local Fuel Revenue Indexing that Southern Nevada voters approved on November 8, 2016 funded a large portion of identified unfunded needs, not all potential projects identified by stakeholders through the Access 2050 planning process are included. Many of the improvements with the most potential to change "transportation" and substantially affect performance measures as we know it today are outside the reach of available investment dollars – making them "unfunded" with respect to this plan.

These unfunded projects or programs come from studies and plans completed by the RTC, as well as local governments, and state and local transportation agencies. It also includes projects that were removed from previous plans due to fiscal constraint.

Examples of Access 2050 unfunded projects that support the long-term transportation future for Southern Nevada include:

- The On Board Mobility, which lays out a roadmap to modernize and transform the way people travel in Southern Nevada. The Plan is built around a proposed High Capacity Transit (HCT) network that will link residential areas with employment, education facilities, medical services, and major recreational destinations. On Board also recommends projects and programs that support HCT investments, including an expansion of local bus service with increased service frequency, hours of operations, and new transit service delivery models that bring flexible demand-responsive services to lower-density areas. In addition, On Board expands regional mobility through investments in regional streets, neighborhoods, and activity centers, making it safer and easier to walk and bike in Southern Nevada. The investments will be supported by changes in Southern Nevada's land use policies and development practices to increase transit-oriented design on HCT corridors and stations, plus creation of "complete streets" so that roadways continue to meet the needs of people who drive while, at the same time, providing a safer, more hospitable environment for bikers and walkers;
- Significant investment in major travel corridors serving both residents, visitors, and freight such as the completion of the Interstate-11 route through or around Southern Nevada and connecting to the Northwest;
- A robust, interconnected pedestrian/bicycle network identified in the Regional Bicycle and Pedestrian Plan, which if fully funded would result in 73% of the total 2,023 miles of bicycle facilities will be high comfort facilities, compared to about 46% currently. After total build out, 46% of non-freeway, collector and above roadways will be comfortable enough for the typical adult or any child to ride a bike on (compared to 14-17% currently).

Future updates to ACCESS 2050 will need to consider how to advance the regional system closer to this vision.

FUTURE & ONGOING ACCESS 2050 PLANNING PROCESS

Access 2050 represents a change for how the RTC conducts and presents planning activities. Although regional transportation plans such as Access 2050 are required to receive updates every four years, the RTC will treat it like a living document so that it is regularly updated as new studies or plans are completed. This will maximize the benefits to Southern Nevadans of the transparent and accountable planning process established by the RTC.

The latest version of Access 2050 will always reflect the latest recommendations, related plans, current project details, and planned investments for advancing the vision and goals for Southern Nevada's transportation system. The Access 2050 document will be updated at least annually, as the previous Access 2040 RTP was, with Air Quality updates whenever changes to the projects included trigger new air quality conformity analyses.

Appendix T contains the current Unified Planning Work Program (UPWP), which identifies the planning activities to be performed with federal, state and local transportation funds in Southern Nevada through June 2021. The following Studies or Plans, currently included in the UPWP, are anticipated to be amended into future Access 2050 updates or revisions:

- Land Use and Transportation Scenario Planning;
- Southern Nevada Freight Plan Update;
- City of North Las Vegas Comprehensive Master Transportation Study;
- Regional Bicycle and Pedestrian Plan Update;
- Regional Walkability Plan;
- Transportation Impacts on Health Study;
- Planning and Infrastructure Needs for Emerging Transportation Technologies;
- Regional Transit Oriented Development Implementation Study;
- Southern Nevada Strong Regional Plan Updates; and
- Other UPWP studies that will help further implement Access 2050.

RTC