UTAH'S UNIFIED TRANSPORTATION PLAN 2019 - 2050

CMPO Dixie Metropolitan Planning Organization

Unified Transportation Planning — Dixie Metropolitan Planning Organization

MAG Expert Decisions Enriching Lives

UDOT Keeping Utah Moving

UTA

Wasatch Front Regional Council

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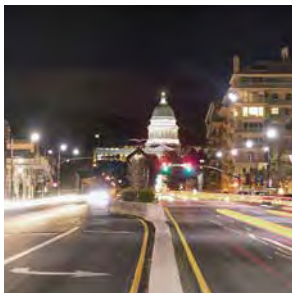
Utah's Unified Transportation Plan

Transportation in Utah is more than just a way to get from one place to another; in our state, transportation is an integral part of our quality of life. Because of past investments in transportation, because of how we work together to plan and build the system, and because we are able to move freely both within and across our communities, transportation helps to deliver Utah's promise of life elevated.

View the Interactive Map



Transportation & Quality of Life

Growth & Change in Utah

Collaboration: Utah's Secret Sauce for Success

Benefits of the Unified Plan

Planning Our Transportation Future

Funding Our Transportation Future

Different Paths to Our Transportation Future

Change is Upon Us

Utah is growing…fast. In just a few short decades, we expect our population statewide to double. That works out to nearly 45,000 new people per year well into the future. Our valleys and open spaces, on the other hand, will not double, so where will we put all these people? How will we continue to get around with ease? We're not just growing, either; we're diversifying. We are expecting to see large increases in both older and younger segments of our population. How can we meet the variety of transportation needs we'll face as our population changes and grows?

These are critical questions, but growth and diversity aren't the only changes coming.

The transportation industry itself is at an inflection point. Technology and innovation are changing the transportation options available, as well as the ways we'll build, maintain, and operate the system. This evolution presents a whole host of questions as well, and possible answers are just emerging.

As Utah changes while the industry also evolves, so too must policy makers and transportation officials take different actions now to create a system that can serve us well in the future. That future begins today as we answer questions around where and how to transport people, find different ways to fund and operate the system, and think beyond just the transportation modes to the context within which they operate.

In the future, we must take a more holistic look at transportation as an integrated system. This includes the connection between modes – driving, taking transit, walking and biking, not to mention connected and autonomous vehicles and drone deliveries – as well as the context around those modes such as land use, economy, housing, wellness, and needs of diverse populations.

The good news: Utah is prepared. We have a proven approach to identifying questions like these, working together to create solutions, and implementing those solutions together. Some have even called it our "secret sauce." Perhaps nowhere is that secret sauce more generously applied than in this plan: Utah's Unified Transportation Plan.

Partners in the transportation industry, together with stakeholders from the public, business communities, and policy makers at all levels, have come together again to answer Utah's big transportation questions. The answers in this plan – both identified and proposed – strive to keep Utah moving while maintaining and even enhancing that quality of life we all prize.

So while change is very much upon us, together we can meet the needs of a changing Utah with big solutions that move us forward, together. Let's get started.

> Utah is one of the fastest growing states in the nation and as we look into the future we see great potential for 'growing pains' in the realm of transportation. That is why we are proactively addressing these obstacles by investing in transportation infrastructure, and forward-looking transit options. Utah will remain the 'Crossroads of the West' far into the future.
> **– Governor Gary R. Herbert**

Purpose of the Unified Transportation Plan

Utah is among the fastest growing states in the country. The way we grow and plan for the state's future will determine the quality of life residents experience. Utah's transportation agencies and local communities work together to ensure an excellent quality of life that includes good air quality, a vibrant economy, and affordable transportation choices for all Utahns.

Investing in major capital projects requires decades of planning and thoughtful consideration regarding how to pay for them. Preserving the existing transportation systems means ensuring roads, buses, rail lines, bicycle facilities, trails and sidewalks are properly maintained. This requires a coordinated statewide effort.

Utah's Unified Transportation Plan is a collaborative effort between transportation agencies across the state of Utah including the Utah Department of Transportation (UDOT), Wasatch Front Regional Council (WFRC), the Mountainland Association of Governments (MAG), Dixie Metropolitan Planning Organization, Cache Metropolitan Planning Organization and Utah Transit Authority (UTA). Utah's Unified Plan partners work together to develop common goals, planning time horizons, performance measures and financial assumptions so that their plans are consistent across the state while meeting local needs. Then UDOT, UTA and the Metropolitan Planning Organizations all agree on which projects and needs to include in the Unified Plan, as well as timing, funding and how to measure their effectiveness in meeting shared objectives.

Transportation and Quality of Life

Utah's transportation agencies have been working together, in collaboration with state and local government, businesses and community stakeholders, for many years to jointly plan and invest for the future and this collaboration has contributed significantly to our quality of life. This was enhanced when lawmakers passed a comprehensive transportation bill (SB 136) that addressed funding mechanisms and transportation oversight to continue integrated, long-term planning.

Good Health

Better Mobility

Strong Economy

Connected Communities

In the 2018 legislative session, lawmakers passed a comprehensive transportation bill that addressed funding mechanisms and transportation oversight to continue integrated, long-term planning. SB 136 directed the Utah Department of Transportation (UDOT) to develop statewide strategic initiatives across all modes of transportation.

Recognizing that Utah's transportation system is owned, maintained, and operated by many different entities, UDOT convened a committee of stakeholders at the executive and staff levels to develop the statewide vision for transportation. The Stakeholder Committee of executives provided direction for the vision and statewide initiatives. The Technical Committee of staff further developed the statewide initiatives and discussed potential actions for how to achieve the vision.

Based on agreement of Quality of Life as the vision, the committees identified four areas that comprise quality of life to guide transportation policies, planning, and decision-making. Known as the Quality of Life Framework, the four areas are:

Good Health: Encompasses the health of individuals and communities, recognizing the role of active transportation in mental and physical health as well as environmental conditions contributing to health such as air quality and water quality.

Strong Economy: Recognizes the vital role of transportation in business and commerce. Not just at the intra-state and inter-state level, but also how transportation can help inter-city and intra-city economies.

Better Mobility: Addresses traditional transportation objectives to reduce delay. It's thinking that goes beyond just moving cars to moving people. Public transit, walking and biking need to become real options for more Utahns.

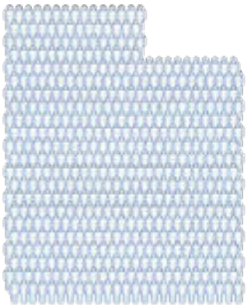
Connected Communities: Points to the intersection of transportation and land use as well as the need for intermodal connections between walking, biking, transit, and vehicle travel.

Growth & Change In Utah

We cannot plan transportation in a vacuum. It affects and is effected by a variety of external factors, and those factors are changing around us.

Rapid Population Growth

From 2010 to 2019, Utah is the fastest growing state in the nation according to the Census Bureau. Utah is also highly urbanized: the state's population is projected to increase from approximately 3 million people in 2015 to 5 million in 2050, and much of that growth is expected to occur in urbanized areas of the Wasatch Front.



Rapid Growth is Equal to Dropping in the Population of

Logan or Bountiful or Draper or Spanish Fork

Every Year for the Next 30 Years

Kem C. Gardner Policy Instutute estimates that Utah will add another 2 million people by 2050 — nearly doubling the current population.

A Need to Grow Smarter

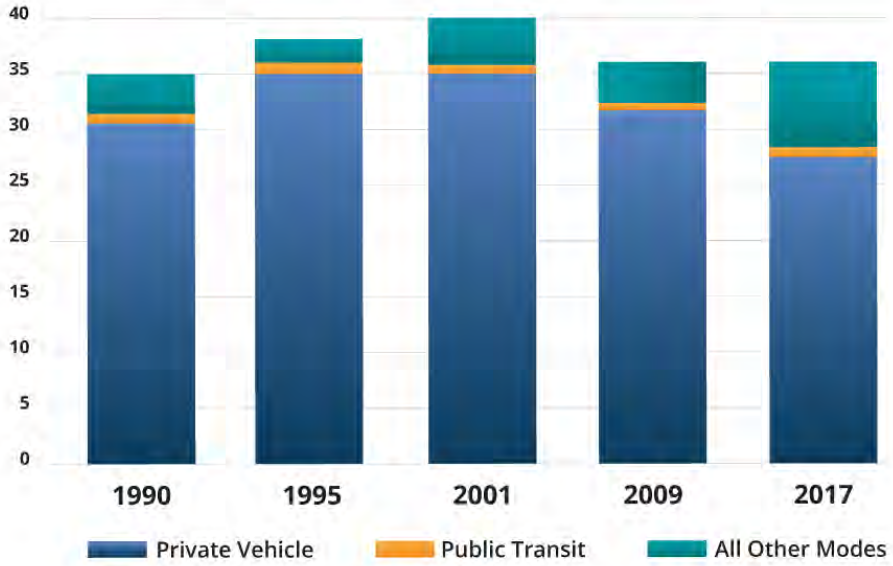
The Wasatch Front is physically constrained by mountains and lakes. In addition, many of the region's remaining open areas are rapidly being developed. These constraints mean that it is essential to use innovative thinking about where and how we build in order to accommodate the additional growth coming to the region.

Changing Demographics

As our demographics continue to change, our transportation system will need to change with the preferences of our more diverse population. For example, the amount of driving declined by 24 percent between 2001 and 2017 in urban areas, compared to 19 percent in rural areas. Young people (25-34) in urban areas showed the greatest decline. We are also graying, and older adults need different options to get around. Transit supports a more accessible and inclusive city for older adults, along with ride-hailing services.

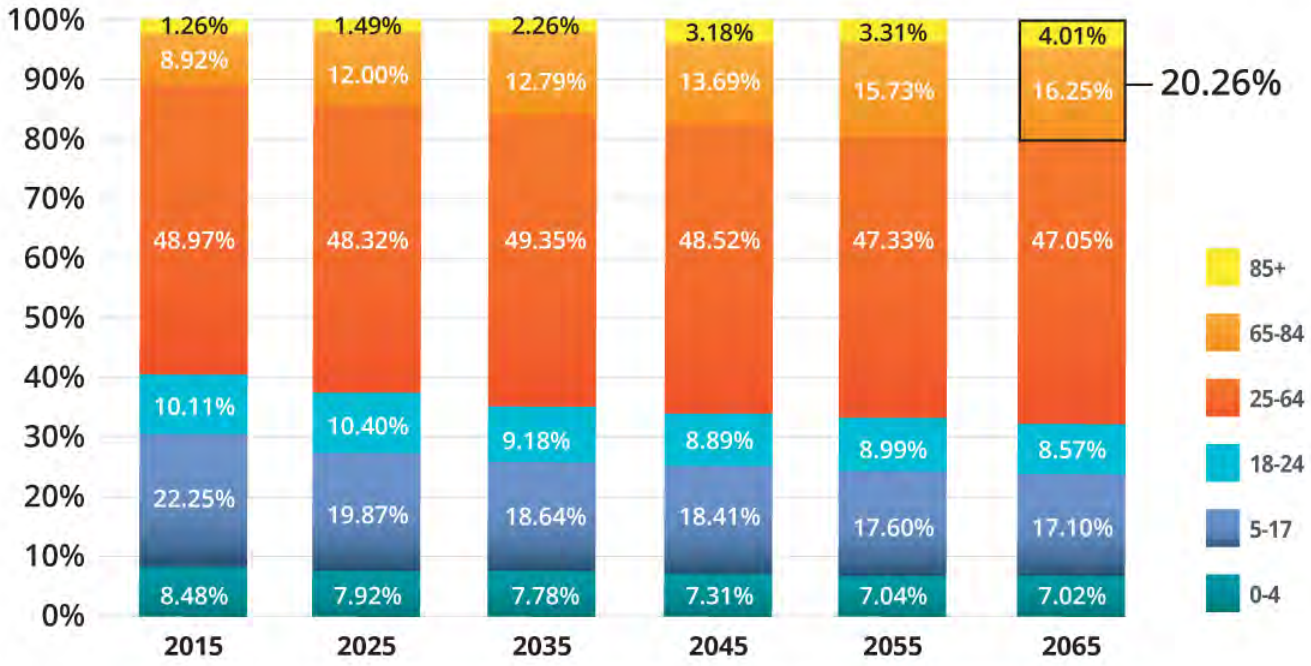
Daily Person-Miles of Travel by Mode

1990, 1995 NPTS; 2001, 2009, and 2017 NHTS



Source: U.S. Department of Transportation, Federal Highway Administration, National Household Travel Surveys (multiple years), available as of October 2018

Selected Age Groups as a Percent of Total Population: 2015-2065



Source: Kem C. Gardner Policy Institute 2015-2065 State and County Projections

Sustained Economic Opportunity

Jobs are plentiful in Utah with an annual job growth of 3% or higher. According to the Utah Governor's Office of Economic Development, Utah has the most diverse economy in the country. It is also one of the fastest-growing. This translates to an economic environment that is expected to have long-term stability and sustainability. However, this growth places additional demands on the transportation system, and we need to plan to accommodate and help sustain this growth.

Dynamic Transportation Industry Trends

The transportation industry and the way we all get around is evolving rapidly. Emerging and disruptive technologies such as mobility as a service (MaaS), connected and autonomous vehicles (CAVs) and the sharing economy are challenging the ways we plan, build and operate our system. This has implications for many of our foundational measurements of transportation performance that we need to include in planning considerations:

- **Vehicle miles traveled (VMT)** – How will new mobility options, such as ride sharing and the potential for connected and autonomous vehicles, impact VMT and how should we plan for it?
- **Vehicle ownership** – As the sharing economy and subscription services rise, will owning your own vehicle remain the default?
- **Safety** – As technology takes a greater role in operating our vehicles, what steps need to be taken to ensure the safety of all road users?

It is difficult to predict future travel demand due to the potential changes in transportation technologies and services. For instance,

- **Transit ridership** – What role will new technologies play in the efficiency, safety, and convenience of transit? With autonomous vehicles and doorstep to doorstep transportation services, will transit ridership increase or decrease?
- C**hanges in retail markets and delivery services** – Will warehouse and delivery services replace current retail space? How should these impacts to the transportation network figure into future planning?

Collaboration: Utah's Secret Sauce For Success

Every good plan starts with a vision. Establishing a vision based on community values and public input is integral to the transportation planning process and is part of Utah's Secret Sauce.

Utah's approach to planning and delivering its transportation system provides a solid foundation for future decision-making. This approach has been referred to as Utah's "Secret Sauce." Simply put:

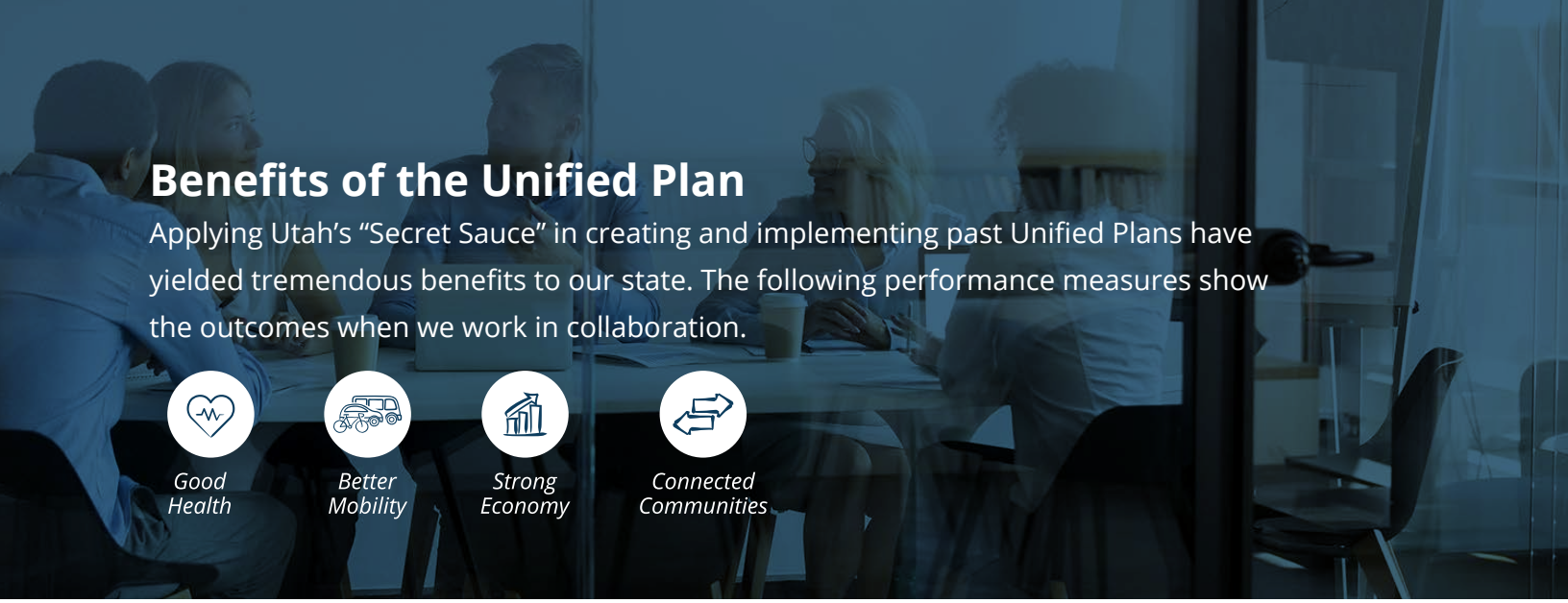
- We look ahead to assess challenges and identify opportunities
- We make a plan, including policy makers, transportation agencies, local communities, the public and other major stakeholders
- We take action on our plans, assisting one another as needed

Utah's Unified Transportation Plan is a strong representation of the Utah Way:

- We look 30-years down the road
- We bring everyone in the industry to the same table and work with shared financial and growth assumptions to create a shared definition of need and resources to meet the needs
- We work with Utah's elected and other leaders to make good decisions and deliver a system that supports communities, commerce and overall quality of life

One of the ways transportation providers in Utah work together is regular meetings of the Joint Policy Advisory Committee, or JPAC.

In 2002, WFRC, MAG, UDOT and UTA, in close coordination with FHWA, established the Joint Policy Advisory Committee (JPAC). The role of the committee has evolved over the years to include Cache Metropolitan Planning Organization and Dixie Metropolitan Planning Organization. Comprised of elected officials and senior transportation agency staff from across the state, JPAC provides oversight and guidance to the unified planning process.



Benefits of the Unified Plan

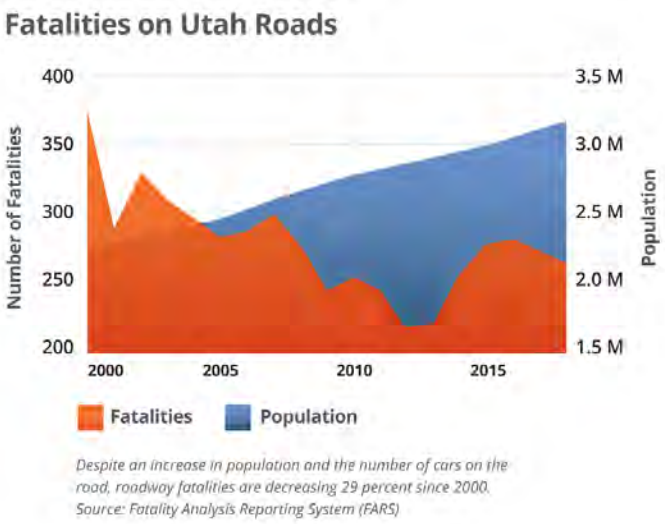
Applying Utah's "Secret Sauce" in creating and implementing past Unified Plans have yielded tremendous benefits to our state. The following performance measures show the outcomes when we work in collaboration.

Good Health *Better Mobility* *Strong Economy* *Connected Communities*

Safety

Fatalities on Utah roads have decreased substantially even with significant population growth. The Unified Plan partners support the goal of Zero Fatalities. One life lost is one too many. Planning for improvements to the transportation system can improve safety for drivers, cyclists and pedestrians.

Goal: Reduce fatal and serious injuries on the transportation network. Data shows that since the year 2000, there has been a 29% reduction in traffic fatalities.



Despite an increase in population and the number of cars on the road, roadway fatalities are decreasing 29 percent since 2000. Source: Fatality Analysis Reporting System (FARS)

Economic Vitality

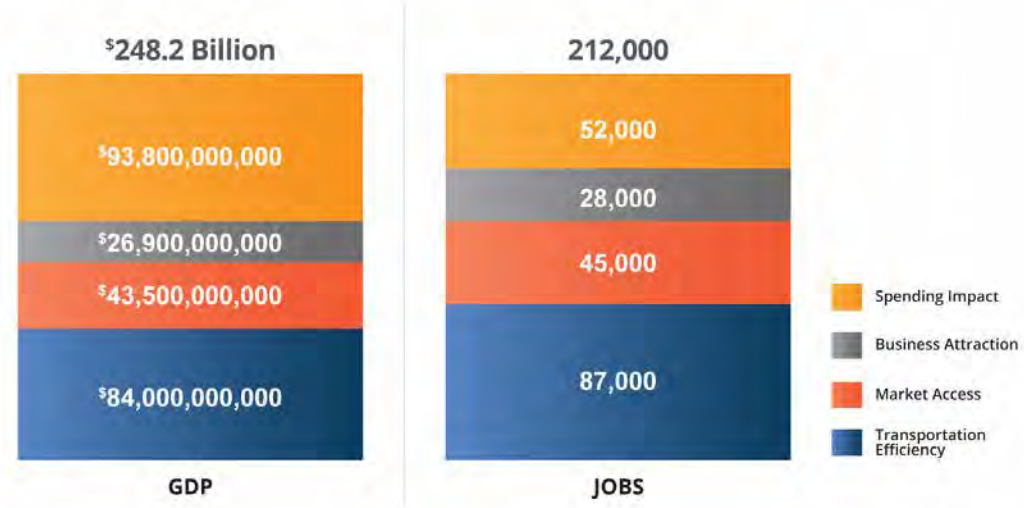
A well-functioning transportation system is the backbone of a robust economy. It connects people to jobs and other destinations and facilitates the efficient movement of goods and services within communities and across the state.

An economic analysis commissioned by WFRC, MAG, UDOT, and UTA in 2019 found that investing in the 2019-2050 Unified Plan would more than double the return on investment for every dollar spent.

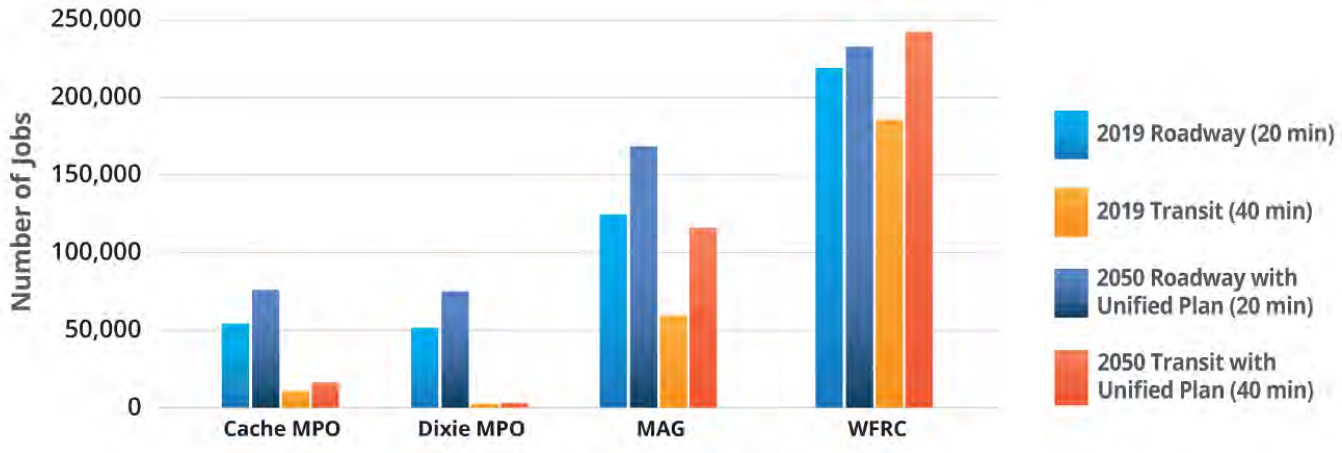
The analysis found that implementing the Unified Plan will result in nearly $248.2B in total GDP increases in Utah's economy in 2050. This number includes nearly $93.8B from the construction sector, and over $84B created by efficiencies in the transportation system. Over $43.5B can be attributed to enhanced access to markets for Utah companies, and $26.9B from new businesses relocating to Utah.

The analysis also found that implementing the Unified Plan will result in nearly 212,000 new jobs in Utah's economy in 2050. This number includes nearly 52,000 construction jobs, and over 87,000 jobs created by efficiencies in the transportation system. Over 45,000 jobs are attributed to enhanced access to markets for Utah companies, and 28,000 jobs from new businesses relocating to Utah, in part because of a well-functioning transportation system.

Economic Impact Created by Unified Plan Investment

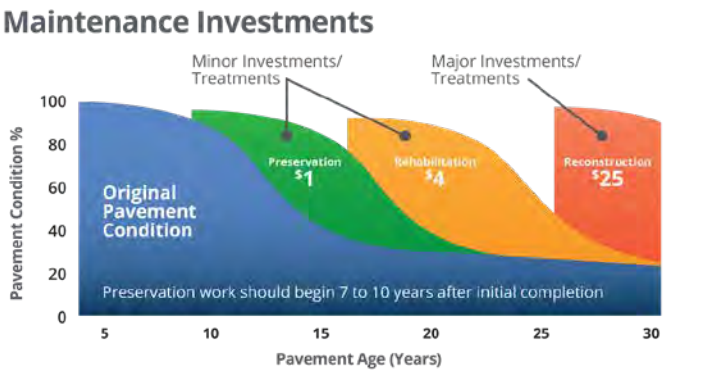


Job Access by Planning Jurisdiction



State of Good Repair

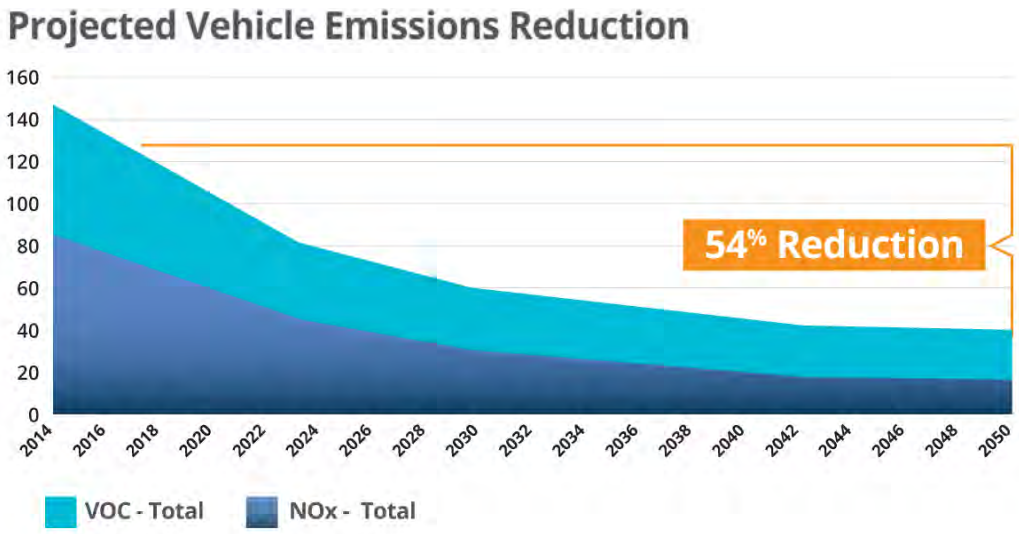
By keeping infrastructure in good condition and through consistent maintenance we can save investment dollars in the future.



Good infrastructure cost less. Proactively maintaining the existing transportation system saves billions of dollars in the future reconstruction costs. Source: 2015 Strategic Direction, Utah Department of Transportation

Air Quality & Environment

A transportation system that incorporates all modes of travel provides choices for how people get around. A balanced system reduces the number of vehicles on the road, consequently reducing emissions. In addition, advances in cleaner fuel and vehicle technology will significantly improve air quality.



Goal: Reduce emissions that adversely affect health, quality of life, and the economy.

Key mobile source ozone and PM2.5 emissions give us insight into the progress we are making. The goal is to attain a 54% reduction in mobile emissions statewide by 2050 as compared to today.

Planned New Miles of Active Transportation

Planning Area	New Miles of Active Transportation
Cache MPO	174
Dixie MPO	378
MAG	295
UDOT/Rural	226
WFRC	1,002
Total new miles planned between today and 2050	**2,100**

Source: MPO and Statewide Long-Range Transportation Plans

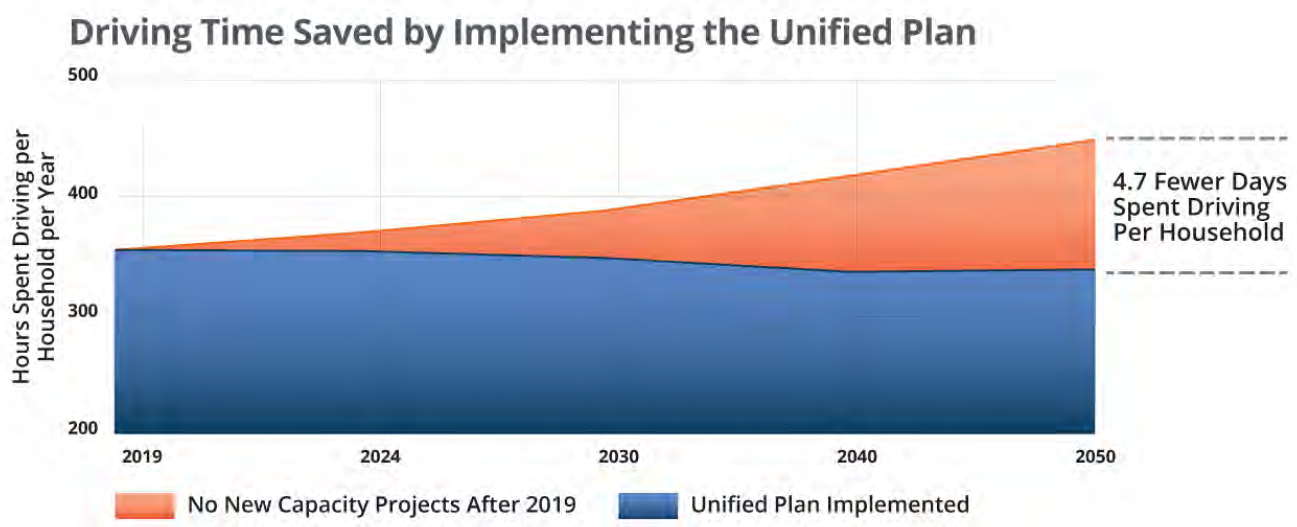
Mobility

The issue of mobility in Utah is a factor that is important to everyone. Our communities are spread out and the ability to move about is a critical concern. There are 3 areas of focus for Mobility.

1. Reduce vehicle hours of travel
2. Increase the share of trips using non-single occupant vehicle model
3. Improve reliability of system

Reduce vehicle hours of travel

By implementing the Unified Plan, the average Utah household will spend 4.7 fewer days driving each year. The savings from time spent driving is attributed to how the plan improves mobility with high efficiency road and transit projects and how it coordinates these transportation improvements closely with the land use surrounding them.



Increase in transit ridership

As part of the Unified Plan, we look at ridership as a measurement tool to help us reach the outcome of 123% increase in transit ridership from 2019 to 2050.

Here are some examples of how the Unified Plan has improved transportation options for Utahns:

S-Line Streetcar

In December 2013, UTA opened the state's first modern streetcar line. Called the S-Line, the streetcar runs along an historic rail corridor and its western terminus connects neighborhoods in South Salt Lake and Salt Lake City with the TRAX light rail system. The eastern portion of the line provides a connection to the heart of Salt Lake City's vibrant Sugar House neighborhood near 2100 South and Highland Drive.

The two-mile line features seven stops and was funded by a $26 million U.S. Department of Transportation grant from the Transportation Investment Generating Economic Recovery (TIGER) II program. As typical for many streetcar systems, the S-Line operates at a top speed of 25 mph.

In addition to the streetcar, the line features a pedestrian and biking trail, which connects with the Bonneville Shoreline Trail and the Jordan River Parkway.

Streetcars are designed to move pedestrians while promoting development characterized by a mix of uses, walkability, and a revitalization of underutilized properties. The S-Line has spurred $2 billion in new investment in the corridor resulting in new residential, commercial and cultural development around the line in Sugar House and South Salt Lake.

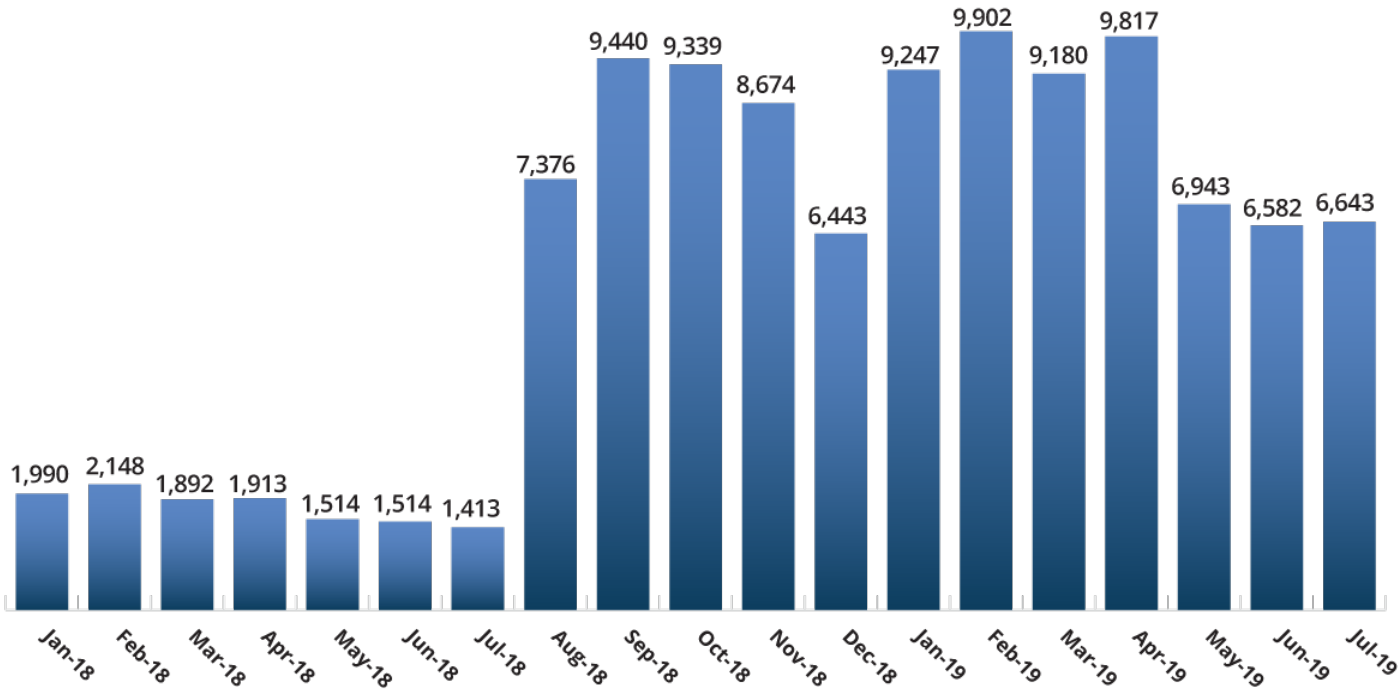
Utah Valley eXpress (UVX)

Often referred to as “light rail on rubber tires,” bus rapid transit (BRT) is an innovative, high-capacity public transit solution that can significantly improve urban mobility and increase travel choices in a community. This permanent, integrated system uses specialized articulated buses on roadways and dedicated lanes to quickly and efficiently transport passengers to their destinations.

UTA opened the Utah Valley Express (UVX) BRT line in August 2018. This line connects two FrontRunner commuter rail stations with major Utah Valley destinations such as universities, employment centers, shopping malls, and downtown Provo. With six-minute headways, riders have minimal wait time at stations, and can depend on the bus being available to get them to their destinations on time. It hit its two millionth rider in 2019, just months after the opening of the service.

UVX averages weekday ridership of over 14,000 . This enormous increase of ridership demonstrates a changing atmosphere of transportation across Utah Valley and throughout the Wasatch Front.

UVX Alignment Average Monthly Weekday Boardings



-Jan 2018 to Jul 2018 include routes 830 and 838
-Aug 2018 to July 2019, UVX

Total UVX ridership Aug 2018 to Current is 2,213,368

> UVX makes transportation in Utah Valley so much less frustrating. It goes everywhere I need to go and takes only a few minutes more than driving, while helping my health, my safety, my wallet and the environment. As a full-time student, UVX makes it possible for me to attend BYU while living in Salt Lake County. **– Parker Seegmiller, Senior at BYU**

Golden Spoke

Following 30 plus years of development, the 100-mile Golden Spoke Trail, a network of walking, biking, and running trails extending from Ogden to Provo, is now complete and officially open.

Interesting Facts About the Golden Spoke

Longest,
connected, paved trail west of the Mississippi River

Second longest,
connected, paved trail in the United States

16.5%
(492,284 people) of Utah's population lives within one mile of the Golden Spoke network.

42%
(1,260,157 people) of Utah's population lives within three miles of the Golden Spoke network.

Spans four counties
Weber, Davis, Salt Lake, and Utah.

Covers 33 cities
Clinton, West Bountiful, Farmington, Woods Cross, North Salt Lake, Centerville, Kaysville, Clearfield, West Valley City, South Salt Lake, Roy, Ogden, West Haven, Marriott-Slaterville, Sandy, South Jordan, Highland, Cedar Hills, Pleasant Grove, Orem, Salt Lake City, American Fork, Layton, Lindon, Provo, Murray, Midvale, West Jordan, Taylorsville, Bluffdale, Riverton, Draper, and Lehi.

101.4 miles
Ogden River Parkway: **10.4 miles**

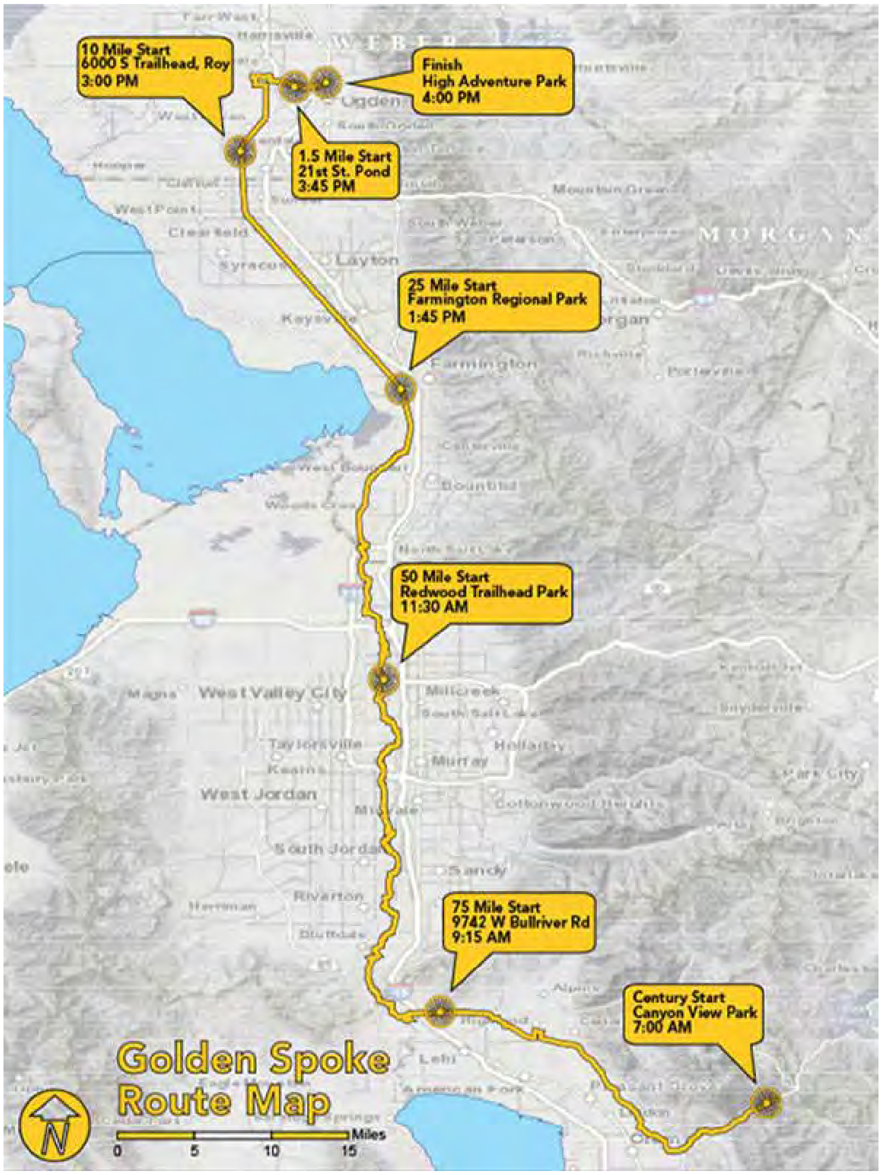
Denver and Rio Grande Western Rail Trail: **22.5 miles**

Legacy Trail: **7.2 miles**

Jordan River Trail: **37.5 miles**

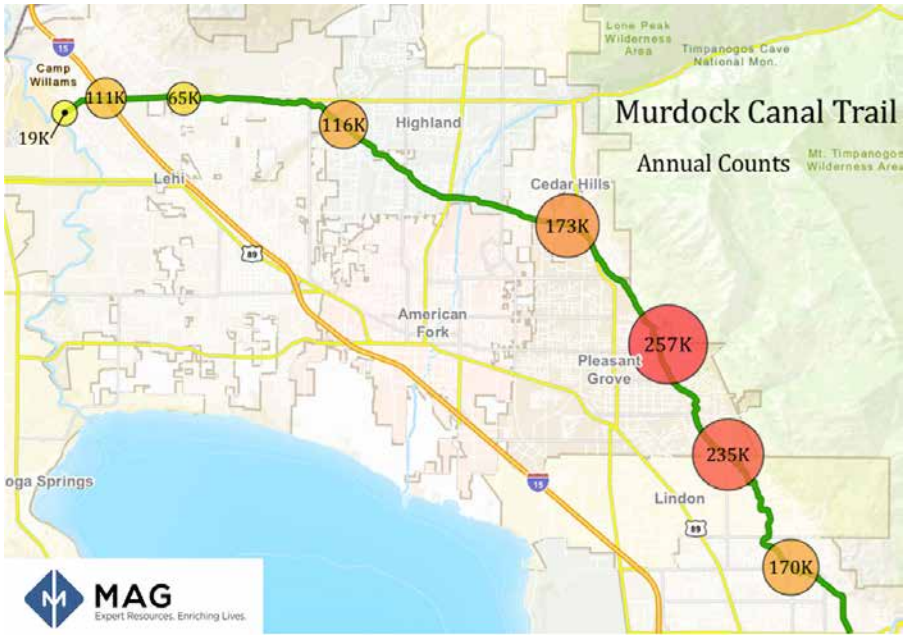
Murdock Canal Trail: **20 miles**

Provo River Parkway: **4.7 miles**


10 Mile Start
6000 S Trailhead, Roy
3:00 PM
Finish
High Adventure Park
4:00 PM
1.5 Mile Start
21st St. Pond
3:45 PM
25 Mile Start
Farmington Regional Park
1:45 PM
50 Mile Start
Redwood Trailhead Park
11:30 AM
75 Mile Start
9742 W Bullriver Rd
9:15 AM
Century Start
Canyon View Park
7:00 AM
Golden Spoke
Route Map
N
0
5
10
15
Miles
Ogden
Layton
Farmington
West Valley City
West Jordan
Sandy
Lehi

Murdock Canal Trail System

About 15 years ago Utah County mayors asked Mountainland Association of Governments (MAG) to put some muscle into completing the Bonneville Shoreline Trail. They also wanted a trail system in and between their communities. In 2000, as MAG developed its area-wide 30-year transportation plan (Utah, Summit, and Wasatch Counties), with great vision, they also planned trails and lanes for bicycles and pedestrians. A large accomplishment of this plan includes the Murdock Canal Trail System which connects with a dozen other trails.



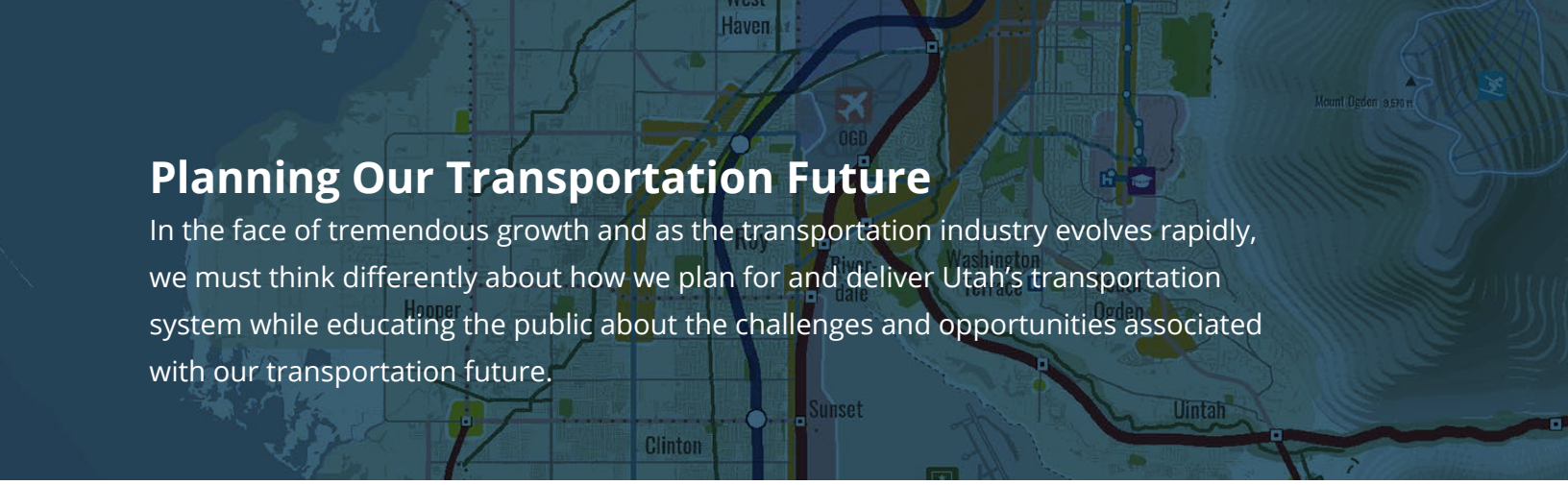
The Murdock Canal Trail System was completed in Spring of 2013. The Trail extends through seven cities including Orem, Lindon, Pleasant Grove, Cedar Hills, American Fork, Highland and Lehi and is 20 miles in length. The Trail took 18 years to complete from start to finish and has been embraced by users throughout Utah County with annual rider counts exceeding 257,000 in Pleasant Grove alone.

The trail is a priceless amenity that will benefit many generations. The trail not only connects the users physically but enhances the overall sense of community through each of these seven cities. Usage of the trail system has helped to decrease mobile emissions and improved health, not only due to air quality but by providing a means to get exercise while commuting to work. The trail system encourages people to get out and walk, bike or run while providing the opportunity to also meet and greet other users.

S.R. 9 Renewed Roadway

State Route 9 is the only route to the Town of Springdale and the main entrance to Zion National Park. This small state route facilitated traffic for over 4.2 million visitors in 2017, a number that is expected to continue growing. Through an incredible partnership with the Town of Springdale, Zion National Park, multiple utility companies and the community, UDOT was able to design a project that met the goals of all partners. Due to the seasonal influx of tourist traffic (over 4 million visitors in 2017), the project needed to be constructed in the winter months to avoid creating a total standstill on the roadway and a complete disruption of the residents and businesses in Town. By working together to Keep Utah Moving, the new road increased safety and mobility, invited tourism and maintained the existing character of the community. The project also provided new facilities to encourage active transportation between the Town and Park.

SR-9
RENEWED
Rockville to Zion National Park



Planning Our Transportation Future

In the face of tremendous growth and as the transportation industry evolves rapidly, we must think differently about how we plan for and deliver Utah's transportation system while educating the public about the challenges and opportunities associated with our transportation future.

More Holistic Planning

Improving mobility and accessibility by coordinating transportation and land use and opportunities

WASATCH CHOICE 2050

Where we place jobs, housing, recreation and educational facilities relative to transportation options makes a big difference in the type and cost of trips people make. In addition, people are more likely to walk, bike or to take a short trip to get to work or school when they live in a centered location. Further, including recreation opportunities in a central location near housing, jobs and schools encourages better health and reduces burden on the transportation system.

One example of this type of planning is the Wasatch Choice 2050. Wasatch Choice is a shared vision for transportation investments, development patterns, and economic opportunities along the Wasatch Front. The Vision map and key strategies show how advancing the Vision can enhance quality of life even as we grow. Wasatch Choice envisions transportation investments and inter-related land and economic development decisions that achieve desired local and regional outcomes.

A Balanced Approach

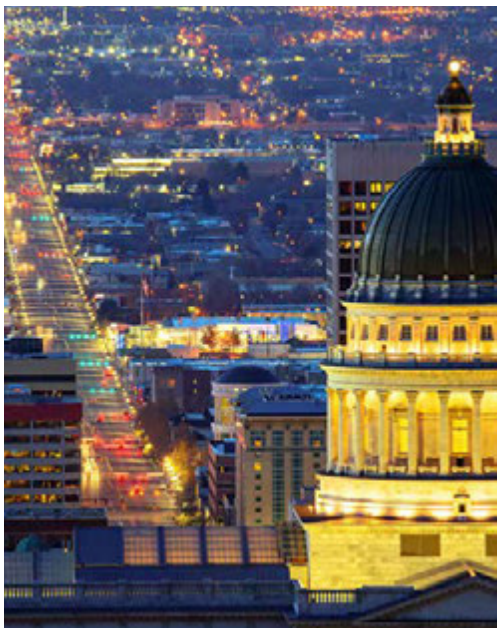
When planning for the future, we must look at a balanced approach that encompasses an expanded system capacity, enhanced operations and demand management.

- **Capacity** – To provide choices for our growing population we must continue to plan for expanded system capacity, which means expanding roads, transit and active transportation facilities
- **Operations** – We can get more out of the transportation system through enhanced operations, leveraging the use of innovative technologies such as integrated signal timing, freeway ramp metering, real-time transit information and system communications
- **Demand Management** – Utahns can become a part of the solution through demand management as we encourage individuals to travel differently and use all of our transportation capacity across modes

Funding Our Transportation Future

No one can predict with certainty how much funding will be available over the next few decades to address Utah's priority transportation needs. However, Utah's transportation agencies have worked together to develop a robust financial model based on sound technical analysis for current and future projected revenue that can reasonably be assumed to pay for these transportation needs.

Utah's transportation agencies have together projected that between 2019 and 2050, the total transportation need in Utah is estimated at $108.5 billion in today's dollars. This includes funding needed to operate our current transportation system, and to preserve and maintain the infrastructure in good condition. It also includes the funding needed to meet growing travel demands by increasing roadway capacity by building new roads, and widening and making operational enhancements to existing roads; increasing transit capacity by building new transit lines, upgrading existing lines and providing more frequent rail and bus service; and increasing options to bike or walk by constructing new bikeways and improving existing trails and walkways.



The Unified Plan Financial Model assumes that current revenue sources for transportation will remain in place, or be replaced by equivalent sources. For example, the Unified Plan assumes that the revenues coming from transportation user fees such as the current motor fuel tax — or a replacement such as a road usage charge — will continue and grow gradually over time. The Unified Plan makes projections about the growth of those revenue sources, based on historical trends and economic analysis. The Unified Plan also makes projections about revenues that would be generated from new or increasing existing sources, such as additional local option transportation sales taxes. These projections are based on reasonable and prudent assumptions reflecting historical trends. Importantly the Unified Plan does not assume that revenues will be available to meet all transportation needs.

For planning purposes, Utah's Unified Transportation Plan assumes that all the **existing revenue** sources will generate $74.4B (in today's dollars) between 2019 and 2050. Existing revenues include the following sources, or options that would generate equivalent new revenues:

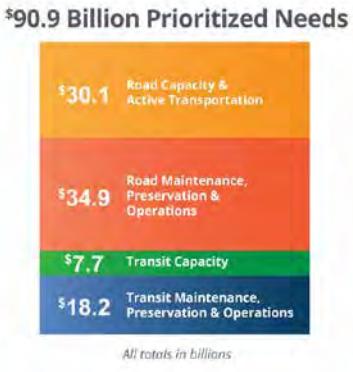
- State motor fuel and diesel taxes
- Vehicle registration fees
- Local option transportation sales taxes
- Federal funding
- State auto-related sales taxes
- General funds

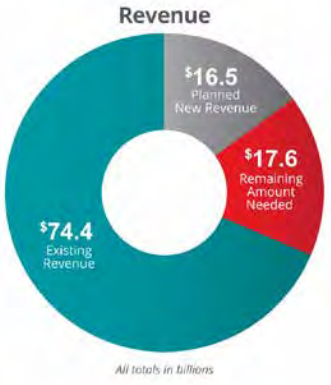
For planning purposes, Utah's Unified Transportation Plan assumes that all **new revenue sources** will generate $16.5B (in today's dollars) between 2019 and 2050. Assumed new revenues sources include the following sources, or options that would generate equivalent new revenues:

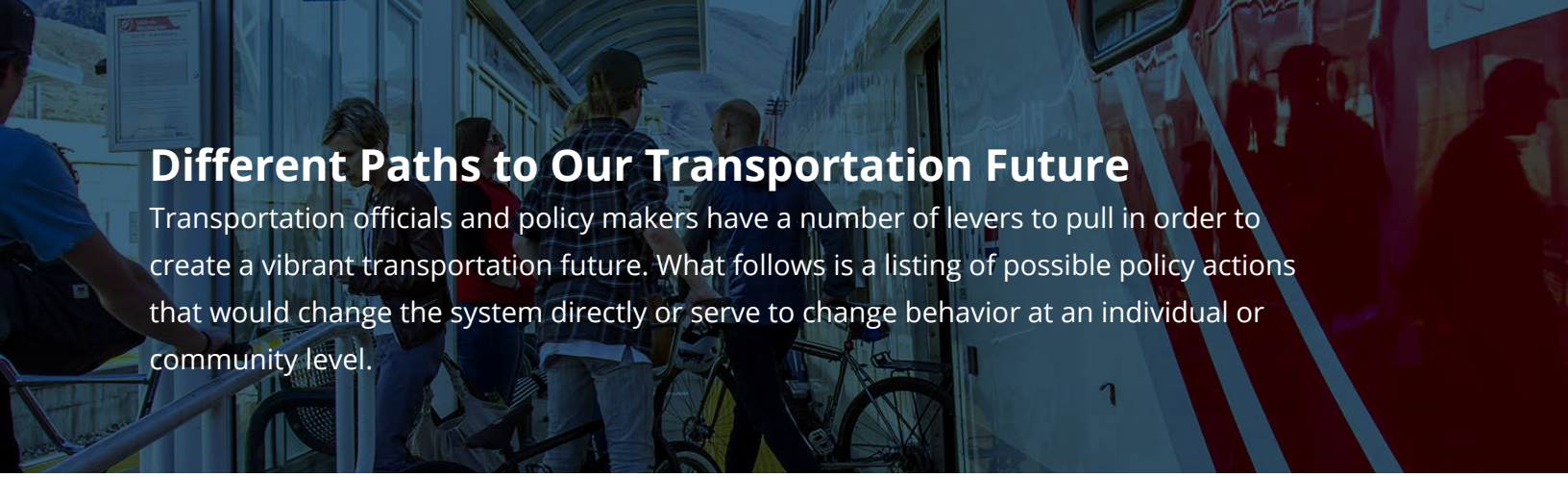
- Statewide motor fuel and diesel tax increases
- Statewide vehicle registration fee increase
- Local community vehicle registration fee increase
- Local community sales tax increase
- Private-sector funding building local roads

The specific funding mechanisms will depend on decisions by state and local elected officials. The Unified Plan — in an attempt to be prudently conservative in its assumptions — does not assume significant private contributions to transportation (other than developer-paid impact fees), nor does it assume the use of value capture techniques, such as Transportation Reinvestment Zones or tax increment financing. However, these are potential additional sources to generate revenue for infrastructure investment, among others.

Utah's transportation officials understand that not all of the $108.5B of transportation needs can be met. The agencies have identified a prioritized set (financially constrained) of the most critical needs that we can fund with our existing and assumed new funding at $90.8B billion. Therefore, in summary the current revenue sources will cover $74.4B in needs, the Plan assumes that an additional $16.5B will be generated, leaving $17.6 billion as the remaining amount needed in order to fund all of Utah's transportation needs by funding sources yet to be identified.







Different Paths to Our Transportation Future

Transportation officials and policy makers have a number of levers to pull in order to create a vibrant transportation future. What follows is a listing of possible policy actions that would change the system directly or serve to change behavior at an individual or community level.

Fast, Frequent and No-Fare Transit

No-fare transit means that the cost of transit is paid through revenue sources other than direct fares paid upon boarding the transit vehicle.

The air quality along the Wasatch Front and in other parts of the state has become a topic that can no longer be ignored. The frequency and intensity of bad air days are of great concern from a public health, economic development and environmental perspective. If quality of life is to be maintained as Utah continues its impressive population expansion, addressing the issue of air quality is not a question of if or when, but how.

Currently, emissions from vehicles account for 57% of criteria pollutants (PM10, NOx, CO, HC, what we commonly think of as "smog", these are those pollutants that directly affect public health), along the Wasatch Front. This puts public transit agencies in a unique position to be key partners in addressing air quality issues. Through a series of pilot "Free Fare Days," UTA, in partnership with the Utah Division of Air Quality, has demonstrated that increasing ridership on transit has an impact in reducing criteria air pollutants. The next question that the state must address is how much of an increase in ridership is a result of no fare days, and what is the potential impact of that increase on reducing criteria air pollutants.

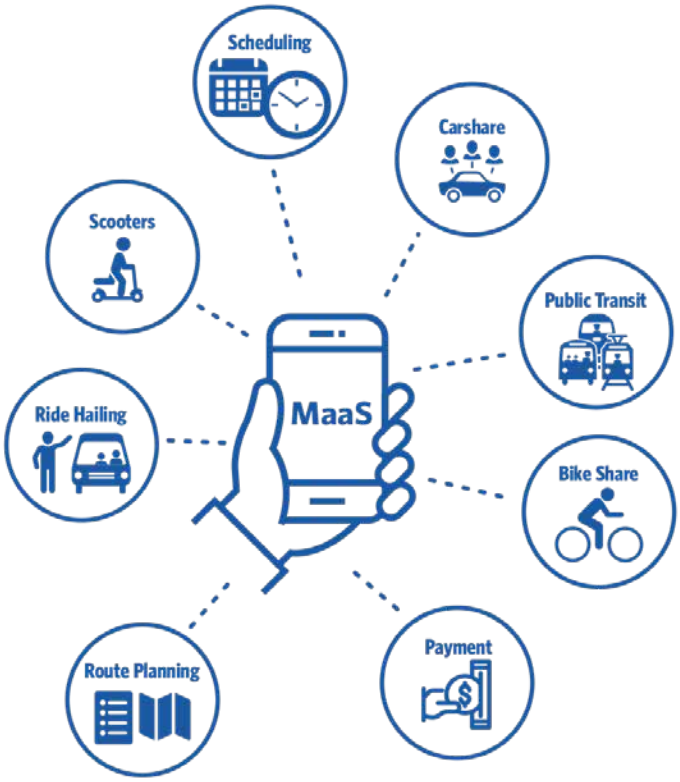
In addition to environmental impacts, no-fare transit expands access for many with limited income to new jobs, education, healthcare and daily errands. In Park City and Cache Valley, no-fare transit is a key component of supporting the tourism and the local economy. Furthermore, subsidized transit and increased service levels on the UVX line in Utah County has resulted in an increase from 1,800 boardings per day to over 14,000 boardings per day. Beyond air quality, some congestion relief has been shown to occur with no-fare transit.

One-Stop-Shop Transportation

Mobility as a Service (MaaS) aims to consolidate all modes of transport – bike sharing, car sharing, taxis, public transit – into one unified mobile service within a single app. By means of a unified payment platform, users can easily weigh their transit options and make economically, and environmentally, conscious choices. The idea of MaaS is appealing due to the high cost of the average vehicle ($30,000) and the actual time the vehicle is used, in many situations only 5% of the time. MaaS could replace the need for a personal vehicle.

There are three major advantages to MaaS:

1. Reduction in traffic. With fewer car owners, there may be fewer cars on the road.
2. Investing in the local economy. Every time a car is purchased, the buyer's purchasing power is displaced from the local economy. Monies that went towards purchasing a car would be used for other goods and services.
3. Job creation. With a spike in car sharing, taxis, public transit and other mobility services, local jobs will be generated.



Connected and Autonomous Infrastructure

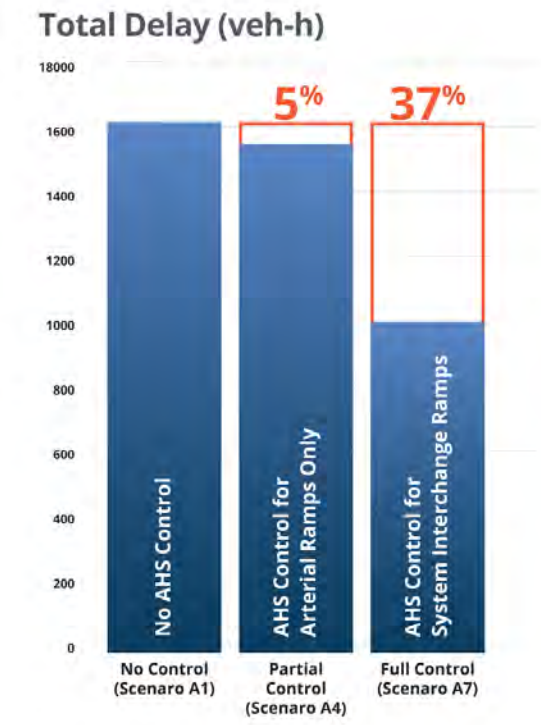
Transportation is in the midst of big changes from new transportation technologies, new institutions (shared mobility firms like Uber and Lyft), and changing attitudes (reduced car ownership as an example). Across the nation, the transportation industry is under pressure to take into account an increasingly complex transportation landscape.

In the process, we need to consider, but cannot yet accurately predict, the potential impact of Connected Vehicle (CV) and Autonomous Vehicle (AV) technologies on safety, vehicle ownership, road capacity, driving distances, land-use, and economic development.

Managed Motorways

Managed Motorways, or smart freeways, prevent congestion by continuously monitoring traffic flows and control access to the freeway with state-of-the-art ramp metering signal technologies that are more precise and sophisticated than applications currently in use. By applying contemporary and proven algorithms (i.e., ramp signal control formulas) that consider the system as a whole, traffic becomes more consistent and helps prevent congestion.

Managed Motorways prevent congestion by using more sophisticated ramp metering algorithms and more precise vehicle detection.



Managed Motorways prevents congestion in order to improve travel time reliability and safety. In a modeling simulation used to evaluate the potential effect of Managed Motorways on the evening peak period traffic conditions for southbound I-15 from the I-80 West interchange (eastbound I-80 to southbound I-15 ramp) to the 9000 South interchange, Managed Motorways reduced system delay 5% when applied only to arterial entry ramps. Implementing Managed Motorways for all entry ramps, including freeway-to-freeway interchange ramps, resulted in a total system delay reduction of 37%.

Another consideration for managed motorways is a decrease in breakdowns and accidents. The existing traffic flow breakdowns occurring on the freeway mainline result in lost throughput capacity, unreliable travel times, and hazardous congested conditions.

Road Usage Charge

Not only are transportation options changing, so is the way we fund the system. As cars become more fuel efficient and the fleet begins to change over from primarily gasoline-powered vehicles to electric, we must explore new and innovative funding mechanisms. The Road Usage Charge is one such method and is a potential replacement for the fuel tax. Instead of paying per gallon, drivers pay per mile. This per-mile fee is a fair and equitable way for drivers to pay for roadway operations and maintenance. In 2020, UDOT is implementing an initial Road Usage Charge program. 53,000 vehicle owners are eligible to participate in the new program out of the 2.6 million vehicles registered in Utah. This initial program will help us better understand the technology and customer experience so that Utah's policymakers can make an informed decision about potential program expansion in the future.

Major Active Transportation Investment - Trails And Bikeways

Active Transportation is occupying a more useful and attractive space in our transportation system. Leaders and residents throughout Utah have embraced Active Transportation as integral to improving air quality, reducing congestion, lowering travel costs, and improving health and the quality of life for individuals and communities. While great strides have been made to improve access and safety for pedestrians and bicyclists, we must accelerate our efforts to build out the planned system.

To that end, Utah's Unified Transportation Plan includes 823 Active Transportation projects – an approximately $800 million investment – which will add roughly 1,400 miles of new biking and walking facilities to our transportation system.

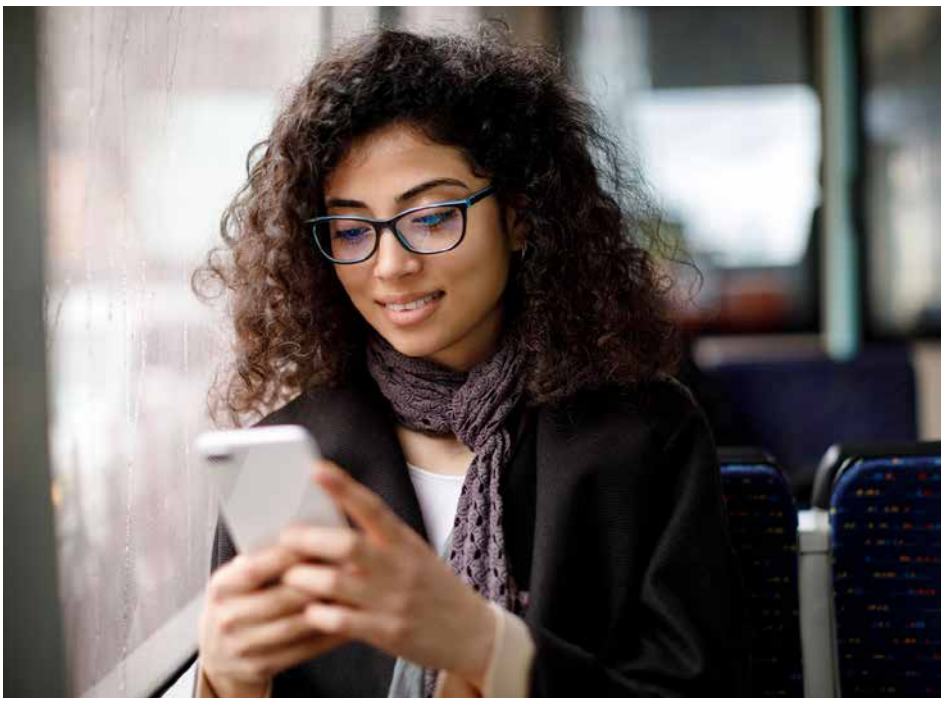
Active Transportation has great potential to serve not only those desiring a more active lifestyle, but also those who cannot drive or do not have access to a vehicle; in particular the young, the elderly, and lower-income residents whose transportation costs are quite high in relation to income.

More effective integration of Active Transportation with transit and roadways creates a balanced and more effective transportation system for all residents.

Community Planning: Growth, Infill Development

While many valleys in Utah run out of large pieces of vacant land, infill development and land reinvestment are important strategies to absorb the demands of growth. Communities leveraging infill development can benefit from manageable commuting times being closer to job centers and reduced costs due to the need for less new infrastructure. Infill development also holds potential to provide transit choices for residents, improving air quality.

The question of where and how growth unfolds is one primarily for local governments as they work with landowners. There is no one-size-fits-all. Each community has their own distinct vision for the future, for the places they want to create and how much or little they want to enable land reinvestment to occur. The transportation agencies of the Unified Transportation Plan have coordinated this plan with those local desires for how and where growth unfolds.



Congestion Pricing

What if by paying a little bit, you could save a lot? Nobody likes traffic congestion. The challenge with reducing congestion by adding lanes is that it usually entices people to travel more, which in turn hastens the return of congestion. Congestion pricing is the idea of charging a modest toll on certain lanes only at congested times of day. The toll is meant to be just enough to encourage just enough people to commute at another time of day, carpool or take transit so that the road stays free from congestion. While tolling has its critics, the benefit of congestion pricing is twofold.

1. Those who choose to pay benefit by saving time, which is often more valuable than the out-of-pocket price.
2. Those who choose not to pay have a broader set of choices that include travelling at less congested times of day, or utilizing bicycling or transit facilities that can be improved due to increased utilization.

Congestion pricing is generally established to improve life for the travelling public, and not as a tool to generate revenue.

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