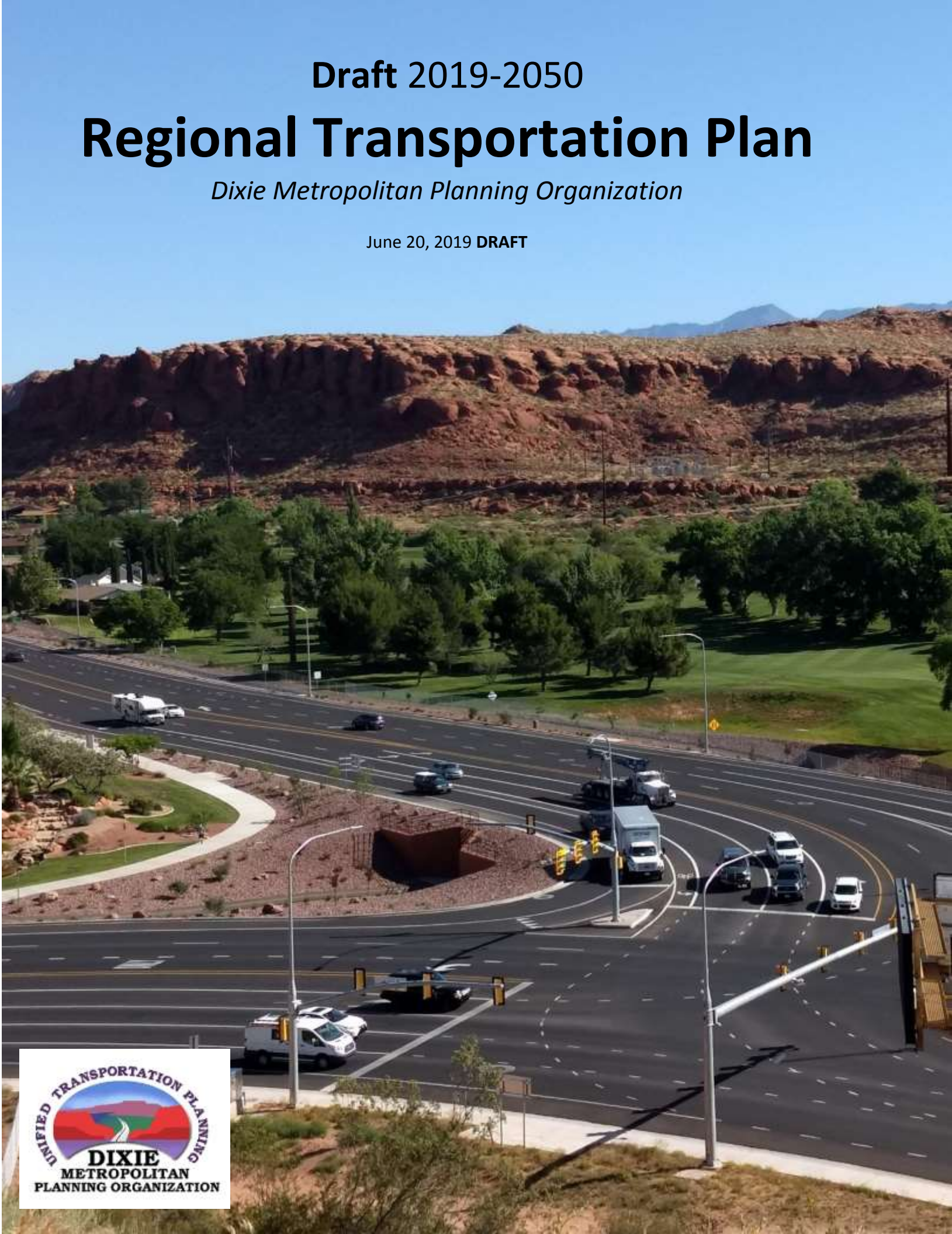
Draft 2019-2050

Regional Transportation Plan

Dixie Metropolitan Planning Organization

June 20, 2019 **DRAFT**



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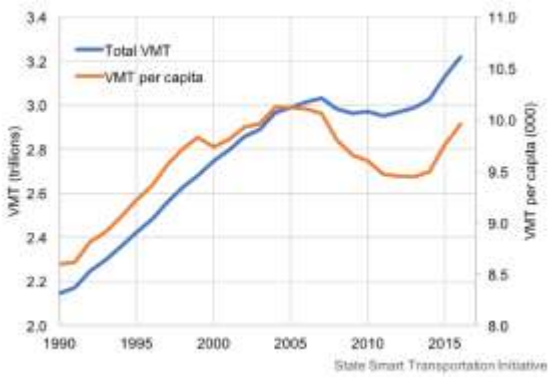
Chapter 1 – **Executive Summary**

This Regional Transportation Plan (RTP) is the culmination of planning efforts undertaken by Dixie Metropolitan Planning Organization (MPO) for the Census Bureaus' designated urban areas in Washington County, Utah – including the St. George Urbanized Area and the Hurricane Urban Cluster. The RTP objective is to foster coordination of community leaders, the public, and stakeholders to plan for the transportation of people, goods, and services through goals centered on safety, air quality, congestion management, corridor preservation, public transit, pedestrian movement, and respect for the environment.

The plan is updated every four years in coordination with the Utah Department of Transportation, three other MPOs in Utah, Washington County, and the cities within the urban areas noted above. Transportation planning in Washington County follows local visioning goals in collaboration with other planning efforts such as Utah's Unified Transportation Plan, Vision Dixie, the Utah Strategic Highway Safety Plan, Homeland Security plans, etc.

The cities of Ivins, Hurricane, LaVerkin, Leeds, St. George, Santa Clara, Toquerville, and Washington, are included in the Planning Boundary Map #2 in Appendix B.



This plan relies on principals defined in Vision Dixie, a visioning effort undertaken in 2006-08 to document the vision of Dixie's desired future development as defined by the public, elected officials, public service agencies, business interests, and other socioeconomic forces. From a transportation perspective, Vision Dixie calls for a variety of roads, transit, and pedestrian facilities, community connectivity and access to a greater variety of human services, businesses, and residential units.

Projected transportation demand in the St. George area was modeled using state-approved computer programs and verifies the Vision Dixie call for a variety of future transportation facilities.

Washington County's estimated population growth over the next 30 years combined with limited amounts of federal, state, and local funds available to accommodate their needs indicate that revenue streams will need to be incrementally increased and changed over time to generate sufficient resources to accommodate anticipated needs. The funding sources and future funding assumptions are explained in Chapter 5.

A summary of proposed transportation facilities, including a comprehensive list of road improvements over the next 30 years is noted in Chapter 6 and depicted on Map 1 in Appendix B. Exceptional evidence also points to the need for expanded bicycle facilities, pedestrian facilities, and regional transit systems throughout the Urbanized Area as outlined in Chapters 12 and 13.

Special attention must also be given to safety, congestion, and corridor preservation over the next 30 years. And of utmost importance is affording appropriate environmental protections of and respect for the varied "threatened and endangered species" (plant and animal) present in southwestern Utah as discussed in Chapter 11.

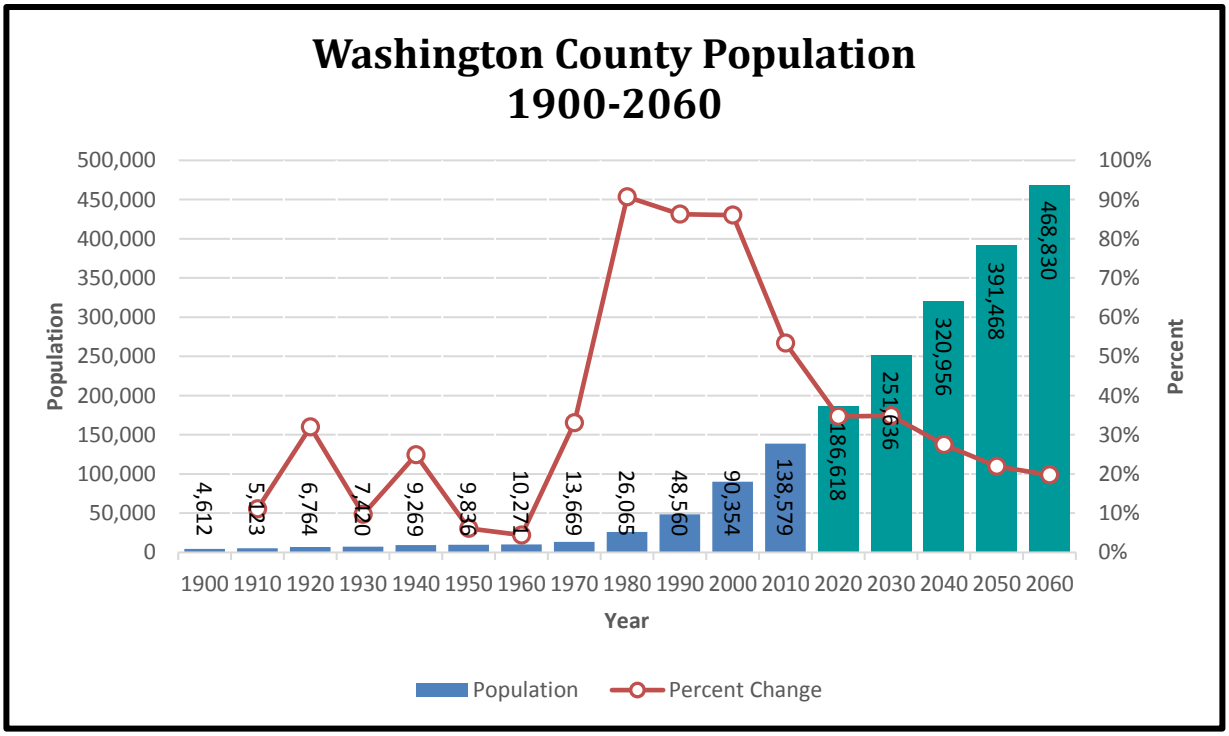
Taken together the chapters within the Regional Transportation Plan identify needs, issues, and potential solutions to facilitate transportation planning excellence.

Chapter 2 **–Need and Purpose**

According to the U.S. Census, the 2018 estimated population of Washington County, Utah is 171,600 people. That population is expected to grow to 251,600 by 2030; and to 321,000 by 2040 and to 391,500 by 2050 according to the Kem C. Gardner Policy Institute and the Utah State Governors' Office of Management and Budget.

As the population continues to grow, so too will the demand for transportation facilities and services.

This 2019-2050 Regional Transportation Plan outlines how various jurisdictions within the Dixie MPO intend to meet the area's transportation demands and needs over the next 30 years. The area has many geographical features (hills, bluffs, and rivers) that challenge the circulation of people and freight and



the creation of various transportation systems. The area is also habitat to threatened and endangered plant and wildlife species and is governed by county, state, and federal regulations.

The expected population growth, coupled with the community's desire to retain mobility for people, goods, and services defines the need for this plan. This plan's purpose is to outline how these needs could be addressed over the next 30 years with consideration of geography, environment, socioeconomic trends, and anticipated transportation demand (needs).

The Dixie MPO encompasses the U.S. Census Bureau defined "St. George Urbanized Area" and the "Hurricane Urbanizing Area." The Dixie MPO planning boundary includes the cities of Hurricane, Ivins, LaVerkin, Leeds, Santa Clara, St. George, Toquerville, and Washington and immediately adjacent sections of unincorporated Washington County in southwestern Utah as illustrated in the planning boundary Map #2 in Appendix B.

The Dixie MPO was designated by the Governor of Utah on September 20, 2002. In compliance with federal guidelines the Dixie MPO develops and approves processes and procedures for conducting long range planning, identifying proposed transportation projects for consideration in the Transportation Improvement Program (TIP) and social, economic and environmental implications of the regional transportation system and the traffic growth being experienced and anticipated in the future.

On December 4, 2015, President Obama signed Public Law 114-94, the Fixing America's Surface Transportation Act (FAST Act). The FAST Act funds surface transportation programs—including, but not limited to, Federal-aid highways—at over $305 billion for fiscal years (FY) 2016 through 2020. It is the first long-term surface transportation authorization enacted in a decade that provides long-term funding certainty for surface transportation.

Setting the course for transportation investment in highways, the FAST Act establishes and funds new programs to support critical transportation projects to ease congestion and facilitate the movement of freight on the Interstate System and other major roads. Examples include developing a new National Multimodal Freight Policy, apportioning funding through a new National Highway Freight Program, and authorizing a new discretionary grant program for Nationally Significant Freight and Highway Projects (FASTLANE Grants).

The FAST Act authorizes $226.3 billion in Federal funding for FY 2016 through 2020 for road, bridge, bicycling, and walking improvements. In addition, the FAST Act includes provisions designed to improve freight movement in support of national goals.

Building on the reforms of MAP-21 and FHWA's Every Day Counts initiative, the FAST Act incorporates changes aimed at ensuring the timely delivery of transportation projects. These changes will improve innovation and efficiency in the development of projects, through the planning and environmental review process, to project delivery.

Chapter 3 **– Vision and Mission**

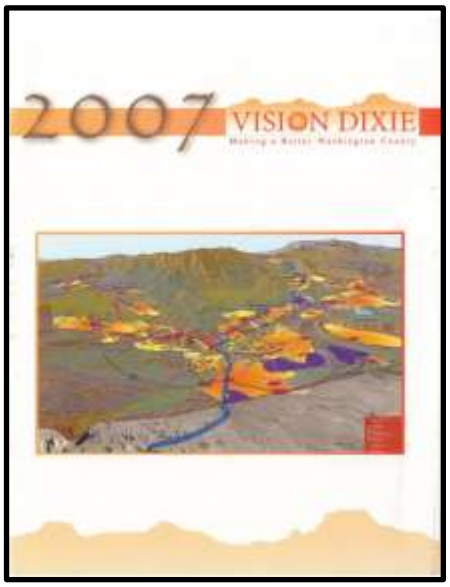
"Vision" is the guidepost for all efforts of the organization. At the Dixie MPO foundation are several ideologies designed to create the future of our transportation planning.

Though simply stated the "Vision" is rooted in sound planning practice: to achieve transportation planning excellence.

"Achieve Transportation Planning Excellence"

Through "Vision Dixie", over three thousand residents created a framework in which future development and transportation can work together to create communities, and a region that preserves Southern Utah's quality of life. The "Vision" looks forward to an affordable, sustainable, and livable future.

The public preferences are summarized in a series of Vision Dixie Principles that illustrate how growth might occur as cooperative efforts are made to implement the principles identified through the process. The Vision Dixie Principles provide a framework for voluntary local implementation. Local officials have committed to work with residents to determine how these principles fit with local plans for the future.



The process was kicked off on October 18, 2006 when nearly 400 residents joined the Washington County Commission in a county wide process of workshops, technical research and analysis.

Over 1,200 residents attended workshops in the fall of 2006 to voice their preferences for how the county should grow. This input coupled with technical guidance from local planners, led to the creation of four scenarios that were unveiled at nine "Dixie Dialogue" meetings in May and June 2007. More than 500 residents attended these meetings to identify which ideas, contained in the scenarios, they favor. An additional 800 residents evaluated these scenarios on-line. Also in June 2007, an independent polling firm contacted 400 representative county residents to ask their opinions on growth issues and strategies.

Based on these citizen input initiatives, a steering committee made up of mayors from throughout the urbanizing area, established ten Vision Dixie Principles.

The Vision Dixie Principles:

Principle 1: Plan Regionally, Implement Locally

Principle 2: Maintain Air and Water Quality and Conserve Water

Principle 3: Guard our 'Signature' Scenic Landscapes

Principle 4: Provide Rich, Connected Natural Recreation and Open Space

Principle 5: Build balanced Transportation that includes a System of Public Transportation, Connected Roads, and Meaningful Opportunities to Bike and Walk.

Principle 6: Get 'Centered' by Focusing Growth on Walkable, Mixed-Use Centers.

Principle 7: Direct Growth Inward.

Principle 8: Provide a Broad Range of Housing Types to Meet the Needs of All Income Levels, Family Types, and Stages of Life.

Principle 9: Reserve Key Areas for Industry to Grow the "Economic Pie".

Principle 10: Focused Public Land Conversion Should Sustain Community Goals And Preserve Critical Lands.

Because of (unique) geography, transportation corridors in Dixie must accommodate more traffic than in a typical grid-system making them more susceptible to congestion. Thus, while auto use will continue to be dominant, roads will not be able to meet all our mobility needs decades into the future. Public transportation is especially important to keep us from being overwhelmed by gridlock. Putting in place a transit backbone will help our downtowns, major centers, and Dixie State University flourish, keep our air clean, and help reduce household expenses associated with day-to-day travel. (Vision Dixie 2035: Land-Use & Transportation Vision, p. 26)

A vibrant "center" includes multiple ingredients: a mix of uses, pedestrian-oriented buildings, focused density, connected streets, and context sensitive streets. (Vision Dixie 2035: Land-Use & Transportation Vision, p. 31)

Vision Dixie calls for corridor preservation for roads and transit, street connectivity, and the creation of community-friendly collector and arterial roads to reduce congestion and accommodate a growing population with the following long-term recommendations:

- Work together to identify and preserve transit corridors and potential station locations.
- Explore the creation of a transit district and a local option sales tax for transit.
- Adopt the road corridors of Utah Department of Transportation, Dixie MPO, and Five County Association of Governments into local general plan updates. Corridor preservation should address road needs, transit needs, utilities, bicycle facilities and trails. Formalize local government ordinances and negotiation procedures to preserve corridors as development happens.
- Revise street connectivity standards in updated subdivision ordinances.
- Coordinate local street plans in sub-area plans to assure optimum connectivity.
- Coordinate local street plans between jurisdictions.

- Amend local policies and construction standards to comply with “complete streets” criteria (that include provision for pedestrians, bicycles and parking) consistent with street segments mapped in the general plan.

Vision Dixie principles 6-8 encourage “Walk-able, Mixed-Use Centers”, “Directing Growth Inward,” and “Enabling the Housing Market to Meet Housing Wants and Needs,” with the following long-term recommendations:

1. Approximate areas for future mixed-use centers, remove zoning and subdivision barriers to mixed-use centers, and update community general plans to include these centers.
2. Include mapped priority land re-use areas in general plans to signify to developers and nearby land owners that development in those areas helps fulfill city-wide goals (of inward growth first).
3. Modify edge-of-town standards and annexation policies to encourage contiguous development and discourage leap-frog development through market-based mechanisms that charge leap-frog development consistent with its higher level of impacts (e.g., longer streets per home).
4. Amend the zoning map and ordinances to allow a greater range of (housing) densities.

These recommendations are supported by the 2019-2050 Regional Transportation Plan.

This Vision can be realized through a strong day-by-day effort to attain goals and objectives, as stated in the Regional Transportation Plan with the mission to: “Foster coordination of community leaders, the public, and stakeholders to reach transportation goals centered around safety, air quality, congestion management, freight movement, corridor preservation, public transit, pedestrian movement, and respect for environmental constraints.”

Chapter 4 **– Projected Transportation Demand**

The Dixie MPO Travel Demand Model was created in 2010 using the CITILABS CUBE Model platform to forecast future traffic demands throughout Washington County. The computer-based planning platform allows the MPO to better predict traffic movements based on our unique terrain, environment, and land-uses. A rigorous effort to calibrate and validate the model and update socio-economic data has followed since 2010 to assure the model includes the best information available. The CUBE model is the platform also used by the Utah Department of Transportation and other MPO’s within Utah.

In 2013 and again in 2018-2019 the Dixie MPO commissioned an update of the Dixie MPO Travel Demand Model. This update incorporated the results of the 2012 Household Travel Survey, the 2010 Census, and the 2018 population estimates. Socioeconomic data and forecasts were also refreshed based on information from the Utah Department of Workforce Services. Version 3 of the Dixie MPO Travel Demand Model was completed in March 2019.

Model Structure

Travel demand models are computer-based mathematical models that use socioeconomic and roadway network, local geometry, and land use data to forecast traffic under various scenarios. To forecast traffic the Dixie Travel Demand Model uses the traditional 4-step process. The four basic phases are:

1. Trip Generation – Trip generation determines how many trips are made in a region. To simplify the process, large geographical areas are broken up into smaller areas called traffic analysis zones (TAZ). Using information from sources like the Census Bureau and city land use plans, each TAZ is given certain attributes such as the number of households, employees, and average income levels. These attributes are then used to calculate the number of trip productions and attractions for each TAZ.

2. Trip Distribution –Trip distribution determines where the trips are going. Trip productions and attractions from different TAZ's are linked together using a gravity model to form origin-destination patterns. The gravity model states that the trip attraction between two zones is proportional to the size of the zones (number of households/employees) and the distance between them.

3. Mode Choice –What modal method of reaching a trip's destination is determined in step 3. Looking at factors such as cost, convenience and travel time it is determined if the trip will be made by walking, transit or vehicle.

4. Trip Assignment – The route the trip will take to reach its destination is then determined. Link attributes contained in the highway network such as capacity and travel speed are used to determine the shortest travel path to a destination. The trips are then assigned to the roadway network.

Each step of the process is calibrated to observed travel behavior. Base model forecasts are checked against observed traffic counts to ensure reasonable accuracy. Once the model is developed so that it replicates existing travel behavior, it is then used to evaluate future scenarios and alternatives.

Socio-Economic Characteristics

In addition to population growth, the characteristics of population distribution within the MPO are vital considerations in the development of a viable transportation network. More than 88% of the Washington County population resides within the Dixie MPO census defined "Urban" boundaries. Other, more rural, cities and towns within the County include Apple Valley Town, Enterprise City, Hildale City, New Harmony Town, Rockville Town, Springdale Town, and Virgin Town as well as unincorporated County.

The distribution of the current population and projected growth are illustrated on Map 4 "Population Change Map" in Appendix B at the back of this plan. The mapping includes a 2018 population distribution and the future population of projected growth areas through 2050.

Employment and Commuting

Nearly 6,000 employment establishments were operating in Washington County in 2018 (see Appendix B for table of major employers). More than 76 of these establishments had over 100 employees, according to the Utah Division of Workforce Services. The highest demand for transportation facilities and services comes during the morning and evening commutes as people travel from home to work and

back. Companies come and go, and seasonal peaks in tourism and retail activity affect the number of commuters.

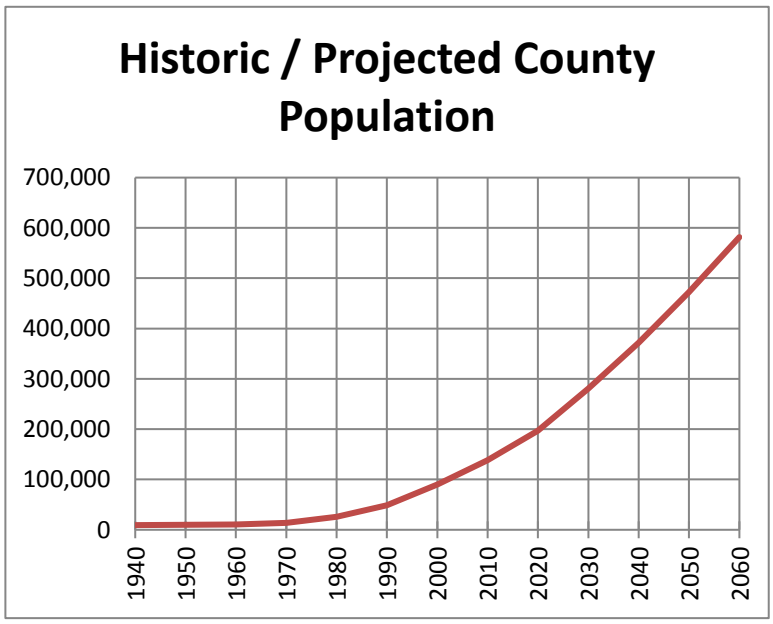
As of 2018 Washington County has experienced six full years of strong employment expansion. It is anticipated that additions to the county's employment base will continue to strengthen Washington County's economic and growth numbers in the months ahead. As growth continues, so too will the need for adequate transportation facilities.

Objectives and Goals

To plan for future transportation demands, the Dixie MPO will strive to meet necessary goals and objectives to recognize the impacts of the area growth on transportation.

Objective

To recognize population growth and land uses as the key drivers of future transportation demand.



Goals

1. Stay abreast of changes in population growth and projections in the area.
2. Be aware of changes in land development patterns and how those changes affect population growth and transportation demand.
3. Stay current on socio-economic factors and changes that may affect the demand for transportation.
4. Provide for regular updates of the Transportation Demand Model and look for opportunities to update the model within localized studies.
5. Keep up with Model platform updates and changes in technology that can improve the accuracy of the Transportation Demand Model.
6. Become more educated and efficient in the execution and use of the Transportation Demand Model in keeping the model current and useful to the Dixie MPO and its partners.

Chapter 5 – **Financial Plan**

Current Funding Sources, Gas Taxes, Fees

Currently in the Washington County area, federal, state, and local governments as well as private developers provide funds to pay for transportation improvements.

Federal Funds:
The current federal highway and transit bill (Fixing America's Surface Transportation Act or the FAST Act) continues to fund federal transportation programs. As the FAST Act matures in 2020, future infrastructure and transportation bills are expected to continue federal funding for these programs.

State Funds:
The Utah Department of Transportation receives state highway user revenues as well as state general funds for highway construction and maintenance projects. The highway user revenues sources include motor fuel taxes, special fuel taxes, vehicle registration fees, driver license fees, and other fees. General fund revenues are also used for transportation and the state has the authority to issue bonds for specific highway projects.

A portion of the state highway user funds are made available to local governments for highway construction. Seventy (70) percent of these funds are kept by the UDOT for their construction and maintenance programs. The remaining 30 percent of funds are made available to the cities and counties in the state through the Class B and C Program for road maintenance or construction.

Local Funds:
In addition to B&C funds, local governments use a variety of funding sources for transportation improvements including four to five "quarter of a percent" sales tax options, development impact fees, general fund contributions (sales and property taxes), bonding arrangements, the Local Corridor Preservation Fund (vehicle registration fees), and special service district fees.

Private Sources
Private interests may also provide transportation improvements. As developers construct the local streets within their own subdivisions, they may also be required to dedicate rights-of-way for the construction of collector and arterial streets adjacent to their developments. Developers are also considered as possible sources of funding for projects needed because of the impacts of the development, such as the need for traffic signals or arterial street widening.

Private sources may also be considered for public transit improvements which could provide benefits to their particular interests. For example, businesses or developers may be willing to or required to support capital expenses or operating costs for transit services that provide special benefits to their development such as a reduced need for parking or increased accessibility.

Following is a brief list of programs used to fund transportation projects within the Dixie MPO:

FEDERAL HIGHWAY ADMINISTRATION
- Surface Transportation Program (STP)
    - Dixie MPO cities
- Congestion Mitigation / Air Quality (CMAQ) (Available only after Dixie MPO reaches non-attainment status)
- Interstate Maintenance (IM)
- National Highway System (NHS)
- Surface Transportation Program
- Urbanized Area
- Small Urban
- Flexible (Any-Area)
- Transportation Enhancements
- Highway Safety Improvement Program (HSIP)
- Hazard Elimination

- Railroad Crossings
- Safe Routes to School (SR2S)
- Bridge Replacement
- Off System - Local
- Off System - Optional
- Federal Lands Programs
- High Priority Projects (HPP)
- Transportation Improvement Projects (TI)
- Recreational Trails
- Transportation Alternatives Program (TAP)

FEDERAL TRANSIT ADMINISTRATION

- (5307) Block Grant Funds
- (5309) Discretionary Funds
- (5310) Services for elderly and disabled
- (5311) Grants for Outside Urban Area
- (5340) High Density States Program
- (5316) Job Access and Reverse Commute
- (5317) New Freedom Program

STATE OF UTAH

- State Construction
- State General Funds
- State Traffic
- Corridor Preservation Funds

LOCAL

- County (B Funds)
- City (C Funds)
- General Funds
- Transit Sales Tax
- Corridor Preservation Fund
- Local Option Sales Taxes for Transportation

PRIVATE

- Donations / User Fee
- Developer Funded Projects
- Public/Private Partnerships

Unified Plan Process

To create a fiscally constrained long-range transportation plan, the Dixie MPO joined with the Utah Department of Transportation and other MPOs to create the Utah Unified Plan Financial Working group to make common assumptions regarding current and future funding sources available for transportation. This effort projected revenues, inflation rates, estimated construction costs, and the cost of future rights-of-way. The Dixie MPO Executive Committee also examined local funding options and adopted a series of additional future funding assumptions associated with transportation. Below is a discussion of these assumptions, an outline of current funding sources, and a policy document supporting acquisition of future federal, state, and local funding for transportation projects.

State (Future) Funding Assumptions

The Unified Plan Financial Working Group agreed that in addition to current funding sources, the following *state-wide* revenues would become available for transportation facilities in the future:

- The equivalent of a state-wide increase on the per-gallon fuel tax. Currently the fuel tax ceiling is $0.27 per gallon. The assumption is that rate (tied to inflation) will rise by up to $0.50 by 2030, and up to $0.60 by 2040.
- The equivalent of state-wide vehicle registration fee increases of $10 each in years 2021, 2031, 2041

Local (Future) Funding Assumptions

The Dixie MPO Executive Committee agreed that in addition to current funding sources, it was reasonable to expect the following *local* revenues to become available for transportation in the future:

- The equivalent of a county-wide sales tax increase of "one quarter of one percent" implemented some time in 2019
- The equivalent of an additional county-wide sales tax increase of "one quarter of one percent" implemented by the end of 2029

Constraints through 30-year planning phases

These future funding assumptions, taken together with existing funding sources were calculated and documented in a "Regional Transportation Plan Financial Report" as agreed upon through the Unified Plan Financial Working Group and endorsed by the Dixie MPO Transportation Executive Council.

The Financial Report projected an annual inflation rate of 3.49 percent to 5 percent on all cost projections (a conservatively high estimate based on past experience). Future revenues were also forecast using a conservatively low estimate. Utah's shifting population was also figured into these assumptions based on projections by the Governors' Office of Management and Budget (GOMB). Currently the Dixie MPO is home to 6 percent of the state's population. The Governor's Office projects the Dixie MPO population will reach 7.8 percent of state the population by 2050. This plan presumes that state revenue will flow to Washington County proportionate to population growth.

Federal formula funds also provide subsidies to the Dixie MPO for planning, environmental assessments and project seed money. These federal dollars come from FHWA's Surface Transportation Program and FTA's Transit Programs with an approved 2% inflation rate.

Projected Transportation Revenues

The table at the right shows the total revenues assumed for projects in all three phases of the long-range plan. Total expenditures are detailed in the "Project & Phasing List" in Chapter 6.

When compared with the needs list and anticipated costs in Chapter 6, these funding assumptions seem adequate in Phase 1 of the RTP. However, a re-evaluation of revenue needs may be appropriate in 2023 when this plan is updated.

All Phases (2019-2050)	
Total Needs	**2,068,748,000**
Total Funds Available	**2,084,211,490**
Total Difference	**15,463,490**

State Roads	
Total Funding Assumption	1,359,192,938
Total Needs	1,256,338,000
Total Difference	102,854,938

Local Roads of Regional Significance	
Total Funding Assumption	725,018,552
Total Needs	812,410,000
Total Difference	(87,391,448)

Chapter 6 – **Existing and Proposed Transportation Facilities**

Methodology

As discussed in Chapter 4, the Dixie MPO's CUBE modeling platform was used to analyze future traffic demand. The CUBE Model applied mathematical forecasting formulas to population, land use, socio-economic, trip generation, trip distribution, and mode choice data.

These forecasts were then imposed on the existing transportation networks. Then projects were conceptualized to relieve traffic congestion "hotspots" in each phase of the plan. Phase One includes the

years 2019-2030. The associated project list was created to relieve the traffic demands of 2030. Phase Two includes 2031-2004 with a similar project list to relieve congestion under 2040 forecasts, and Phase Three includes the projects needed to meet forecast demands in 2050.

Current Network

An inventory of the current MPO road network is best noted through use of the Traffic Congestion 2050 - No-Build map in Appendix B. The roads noted in red and black indicate areas of concern or traffic congestion in 2050 if no additional projects are built.

Future Network

The Traffic Congestion 2050 - Build map, also included in Appendix B illustrates areas of concern, or traffic congestion in the year 2050 assuming that the plan projects are all built and in use at that time. Again, roads noted in red and black indicate areas of concern or traffic congestion in 2050 after all planned projects are built.

Projects and Phasing

The next several pages list a variety of transportation projects identified using the methodology outlined in chapters 3, 4, and 5 above. Projects range from highway widening to bridge and overpass construction, as well as proposed new corridors. Additionally, some UDOT projects of interest are listed even though they may lie outside the MPO boundaries because those corridors provide vital transportation connections to Urban area residents.

The Projects and Phasing Map is also included in Appendix B:

Dixie MPO Regional Transportation Plan -- Projects & Phasing

Phase 1 (2019-2029)

Project #	Route	City	Length	Project Description	Project Concept	Estimated Cost in 2019 dollars
1	**3184**	**I**	**3**	**Old Highway 91 (I), 200 E to Shivwits Reservation**	**Reconstruction**	**6,000,000**
3		SC	0.7	Red Mountain Drive, Pioneer Parkway to Western Corridor	New Construction	2,212,000
5	I-15	UDOT	0.2	I-15 MP 4 Interchange phase II improvements w/sign bridge	Widen/Reconstruct	200,000
6		SG	3	Plantations Drive, construct from Sunbrook Drive to Dixie Drive	New Construction	5,000,000
7	SR-8	UDOT	1.48	Sunset Blvd. widen to 6-lanes from Valley View Dr to 1400 W	Minor Widen/Striping	600,000
8		SG	2.1	Little Valley Road, Widen from 2450 South to Commerce Drive	Widen/Reconstruct	1,500,000
9		SG	0.9	Southern Hills Parkway Phase I, 3580 South to Commerce Drive	New Construction	3,600,000
10		SG	1.6	Quarry Ridge Drive, River Road to Commerce Drive	New Construction	6,400,000
11		SG	0.25	Airport Road from old airport to Black ridge Drive	Developer New Const.	-
12	SR-18	UDOT	2	SR-18, St. George Blvd. to Main Street	Widen/Reconstruct	45,000,000
13		SG	2.8	Astragulus Dr. from So. Pkwy Exit 1 to So. Pkwy Exit 3	Developer New Const.	-
15		SG	1.4	100 South, Widen from 700 East to Bluff St	Re-Striping	300,000
17		SG	1	700 South, Widen from 700 East to Bluff St	Re-Striping	300,000
18		**SG**	**0.5**	**400 S, Ped Underpass, DSU 700 East to DSU Health Science Building**	**New Construction**	**2,800,000**
23		SG	0.9	Commerce Drive- extend road from 1630 East to Southern Hills Pkwy	Widen/Reconstruct	500,000
25		SG	0.5	Red Hills Parkway (SG, W), 2000 East to Green Springs	Widen/Reconstruct	4,320,000
30		W	1	Green Springs and Telegraph Intersection Improvements	Widen/Reconstruct	2,640,000
31		SG	2.02	3000 East from 900 South to 3580 South - 5 Lane Road	Developer New Const.	-
32		SG	0.2	Wal-Mart / Home Depot Connection between Washington & St. George	New Construction	1,107,000
34a		SG / W	1	3000 East (SG) connector to 3650 South (W)	New Construction	4,340,000
34b		W	1	3650 South from 240 West to Washington Fields Road	Developer New Const.	-
34c			1	3650 South from Camioreal Rd Southern Corridor	New Construction	4,500,000
35		**W**	**1.3**	**Merrill Road**	**Widen/Reconstruct**	**2,920,000**
36	I-15	UDOT	1	I-15 Milepost 11 Interchange **and** Corridor Lane Widening, MP 10 to MP 13	New Construction	36,000,000
37		W	0.9	Washington Fields Road, Lost Ridge Dr. to 3650 South (Phase IV A & B)	Widen/Reconstruct	7,152,000
39		SG/W	2.9	Washington Fields Road (SG/W), Warner Valley Road to Airport Parkway	Developer New Const.	-
42		H	1.5	Purgatory Road	New Construction	13,500,000
43	SR-9	UDOT	2	SR-9 Interchanges: Telegraph, Purgatory, Sand Hollow Road, 3400 W, 2800 W.	Interchanges	60,000,000

45	SR-9	UDOT	2.6	So. Parkway Segment VI, I-15 to 5300 W - Widen to Freeway Standards	New Construction	60,000,000
46		H	3.6	Turf Sod Road from 4300 West to Southern Parkway	New Construction	6,500,000
48		H	0.7	2800 West, SR-9 to 600 North	New Construction	1,300,000
49	**SR-7**	**UDOT**	**7.8**	**So. Parkway Segment IVb & V, Sand Hollow to SR-9 (1st Barrel)**	**New Construction**	**75,000,000**
50		H	0.6	2300 South from 3360 West to 700 West (Phase I-III)	New Construction	19,000,000
51		H	2.5	3000 South from 1150 West to 3000 West	New Construction	4,000,000
52		H	0.6	1400 West Street from SR-9 to 600 North	New Construction	6,500,000
53		H	0.5	1150 West Street, from 600 North to SR-9	Widen/Reconstruct	1,000,000
54		H	2.2	700 West from 600 North to Airport Road	Widen/Reconstruct	6,000,000
55		SG		Traffic Control Center ITS	ITS	600,000
58		H	2.46	3400 West from Dixie Springs Drive to SR-9	New Construction	2,500,000
59	**SR-9**	**UDOT**		**SR-9; I-15 to Southern Parkway Environmental Study**	**Environmental/ROW**	**2,000,000**
60		SG	0.5	100 South Underpass at I-15 in St. George	Widen/Reconstruct	2,500,000
61.a		I	0.5	Western Corridor North (I), Old Highway 91 to 400 East	New Construction	1,400,000
61.b		SC/I	0.9	Western Corridor North, 400 East City Boundary to City Boundary	New Construction	3,100,000
61.c		I	1.2	Western Corridor North (I), City Boundary to Snow Canyon Parkway	New Construction	3,300,000
62		SG/SC	1.52	Plantations Drive- Sunbrook to Western Corridor	New Construction	13,000,000
63		UDOT	1.52	Western Corridor - Old Hwy 91 to Plantations Drive	New Construction	46,000,000
64		SG	0.54	Temple Trail Drive Phase 2 - Indian Hills Drive to Dixie Drive	New Construction	3,240,000
65		SG	1.05	Temple Trail Drive, Phase I from Old Airport Road to Indian Hills Drive	Developer New Const.	-
66		SG	2.7	Hidden Valley Drive Frontage Road - east side of I-15 from MP 2 to MP 4	New Construction	9,000,000
67		SG	1.7	White Dome Frontage Road - River Road to Southern Hills Parkway	Developer New Const.	-
68		UDOT	4.6	Northern Corridor Phase 1 (First 2 Lanes)	New Construction	58,000,000
69		SG	4.5	River Road, Widening/intersection improvements, Blvd. to Brigham Road	Widening	12,000,000
72	**I-15**	**UDOT**	**1.7**	**SR-9 Phase I Interchange Modifications w/ SB I-15 Aux Lane to MP 13**	**Reconstruction**	**28,000,000**
73		**W**	**3**	**Washington Parkway (Green Springs to I-15 Exit 13)**	**Widening/New Const.**	**4,600,000**
74		**UDOT**	**5**	**Northern Corridor (BLM ROW Application Support)**	**Environmental/ROW**	**4,800,000**
75	SR-7	UDOT	1	So. Parkway Segment II, Desert Canyon Dr to Airport Access (2nd barrel)	New Construction	15,480,000
83	I-15	UDOT	12	Lane Widening from MP 6-8	Widen	40,000,000
90		SG	0.5	1450 South Extension to Dixie Drive	New Construction	24,000,000
111		W	0.9	Washington Dam Road, 1900 East to East City Limits	Developer New Const.	-
117		SG	1.5	Airport Parkway from North Airport Access to West Airport Rd	New Construction	6,480,000
127		TBD	3.3	Construct Toquerville Bypass or Widen/Reconstruct SR-17 from MP1.1 to I-15	New Construction	30,360,000
130		W	0.9	4750 South from Airport Parkway to Washington Fields Road	New Construction	3,092,000

154	I-15	UDOT	0.5	I-15 SPUI or Flyover at MP 4	Widen/Reconstruct	40,000,000
155		W	1.3	Country Way, Washington Dam Road to Landfill Road	New Construction	5,200,000
Phase One (2019 to 2030)					**Total Needs:**	**752,643,000**
					Total Funds Available:	**685,971,335**
					State Needs	**541,440,000**
					Regional Needs	**207,403,000**
					State Funding Available	**496,480,861**
					Reg. Funding Available	**189,490,474**
					Remainder / (Overage)	**(62,871,665)**

Phase 2 (2030-2040)

Project #	Route	City	Length	Project Description	Project Concept	Estimated Cost in 2019 dollars
2		I	1.5	Red Mountain Blvd. (200 East) (I), Old Highway 91 to Center Street	Reconstruction	2,000,000
27		SG	2.7	Southern Hills Pkwy - new road from Commerce Drive to Southern Parkway	New Construction	10,000,000
78		SC	1.5	Pioneer Parkway, Lava Flow Drive to Red Mountain Drive	Widen/Reconstruct	12,960,000
79	SR-18	UDOT	6.0	SR-18, Red Hills Parkway to Winchester Hills	Widen/Reconstruct	70,560,000
80		SG	1.9	Dixie Drive - Widen to 7-lane section from Plantations Dr to Blackridge	New Construction	9,600,000
81		SG	0.5	New Interchange at West end of Northern Corridor	Widen/Reconstruct	26,000,000
82		UDOT	7.2	Northern Corridor - Phase 2 (Second 2 Lanes)	New Construction	46,800,000
84	I-15	UDOT	3.0	I-15 Widening (4th Lane) in Southbound direction from MP 16-13	Widen/Reconstruct	7,200,000
88	I-15	UDOT	0.3	Leeds North Interchange @ MP 23.7	Interchange Upgrade	24,000,000
92		H	2.7	3300 South from Rlington Parkway to 3000 West	New Construction	8,040,000
93		H	2.6	1500 South from 700 West to 3000 West	New Construction	7,920,000
94		SG	1.9	River Road Widen to 5-lane section from Enterprise Dr to So. Pkwy	Widening	8,208,000
95	SR-9	UDOT	3.2	SR-9, increase capacity from SR-59 to Southern Parkway	Widen/Reconstruct	24,000,000
96		EWC	2.5	Toquerville to Leeds Connector Road	New Construction	14,400,000
97		SG	3.0	Cottonwood Springs Dr from Red Hills Pkwy to Washington Parkway	New Construction	8,640,000
98		H	2.0	1500 West from 1300 South to 3000 South	New Construction	7,200,000
100		SG	1.0	Quarry Ridge Drive - extend road from Commerce Drive to West Airport Rd	New Construction	4,320,000
101		H	7.0	1150 West from 2300 South to 4700 South (Phase III)	New Construction	13,200,000
102		SG	2.6	South Frontage Rd from White Dome Frontage Rd to Rim Runner Dr	Developer New Const.	-
103		SG	4.3	Airport Loop Road from Quarry Ridge Drive to Airport Parkway	New Construction	18,576,000
105		W	0.6	Main Street from I-15 Frontage Road to Washington Parkway	New Construction	2,103,000

106		**W**	**0.7**	**Extend Main Street to 100 East, south of 400 South**	**New Construction**	**2,310,000**
107		W	0.8	Washington Fields Rd. - 3650 So. to Stucki Farms widen to 5-lanes (Phase V.b)	Developer New Const.	-
108		W	1.1	Wash. Fields Road - Stucki Farms to Warner Valley Rd. 5-lane section (Phase VI.b)	Developer Widen	-
109	SR-7	UDOT	4.0	So. Parkway Segment IIIa (SG & W), Airport to Warner Valley Road (2nd Barrel)	New Construction	26,904,000
110		SG	1.5	So. Pkwy East Frontage Road from Deseret Canyon Dr to So. Pkwy Interchange 9	New Construction	6,480,000
112	SR-7	UDOT	4.0	So. Parkway Segment IIIb, Warner Valley Rd. to Washington Dam Rd. (2nd Barrel)	New Construction	32,796,000
113		W	3.0	Long Valley Road	Developer New Const.	-
115	SR-7	UDOT	3.2	So. Parkway Segment IVa, Wash. Dam Rd to Sand Hollow (2nd barrel)	New Construction	17,700,000
116		H	1.2	Sand Hollow Road from SR-9 to Southern Parkway	New Construction	5,836,000
118		H	0.4	130 North from 3400 West to 3700 West	New Construction	600,000
119		H	1.3	200 North from 2800 West to 3400 West	New Construction	6,000,000
120		H	4.9	3000 West from 150 South to Southern Parkway	New Construction	16,040,000
121	SR-9	UDOT	4.6	So. Parkway Segment IVb, Sand Hollow to 3000 S (2nd Barrel)	New Construction	24,072,000
122	SR-7	UDOT	3.3	So. Parkway Segment V, 3000 S to SR-9 (2nd Barrel)	New Construction	22,656,000
123		H	4.6	2750 West from 150 South to 3000 West	New Construction	12,960,000
124		H	2.7	1300 South from 200 West to 3000 West	New Construction	6,960,000
125		H	6.8	Rlington Parkway from 400 South to 4700 South/1100 West Intersection	New Construction	21,360,000
126		H	1.3	1150 West from 100 South to 2300 South (Phase II)	Reconstruction	6,000,000
128		SG		Traffic Control Center ITS	ITS	600,000
129		SG	0.5	700 South widening under I-15 in St. George	Widen/Reconstruct	10,920,000
131		W	1.3	Interchange 8 Road from Airport Parkway to SP East Frontage Road	New/Developer	4,000,000
145		SG	0.3	I-15 - Install interchange at 700 South	New Construction	25,000,000
150		SC	1.5	Santa Clara Dr to Western Corridor Connector Road	New Construction	2,000,000
151		SG/W	0.9	Crimson Ridge Dr (SG/W) from 3300 East to Washington Fields Road	New Construction	3,800,000
153	I-15	UDOT	2.0	I-15 Lane Widening from MP 2-4	Widen	33,400,000
157		H	1.6	SR-9 South Frontage Road, Southern Parkway to Sand Hollow Road	New Construction	6,400,000
158		H	0.7	3000 West, 200 North to 600 North	New Construction	2,800,000
160	I-15	SG	1.4	White Dome Rd. from River Road to Southern Hills Parkway	New Construction	5,600,000
167		H	0.5	2800 West, 600 North to North City Limits	New/Developer	4,000,000
168		L	1.0	North Babylon Road from Leeds Connector to Leeds Main Street	New Construction	4,000,000
Phase Two (2031-2040)					**Total Needs:**	**636,921,000**
					Total Funds Available:	**608,353,879**
					State Needs	**355,088,000**
					Regional Needs	**281,833,000**

					State Funding Available	**363,498,618**
					Reg. Funding Available	**244,855,261**
					Remainder / (Overage)	**(28,567,121)**

Phase 3 (2040-2050)

Project #	Route	City	Length	Project Description	Project Concept	Estimated Cost in 2019 dollars
76		I	1.1	Kwavasa Drive (I) in Kayenta	Widen/Reconstruct	2,500,000
77		UDOT	10.0	Western Corridor, Sun River Parkway to Plantations Drive (1st Barrel)	New Construction	117,600,000
85		SG	0.5	Man O WarI-15 Crossing between Pioneer Rd to Hidden Valley Dr	New Construction	36,000,000
86		W	5.1	Pecan Road through Warner Valley (Warner Valley Road to So. Parkway)	New Construction	17,831,000
87		SG	1.8	Quality Drive from Commerce Dr to Hidden Valley Rd	New Construction	7,776,000
89		SG	3.0	400 East I-15 Ped Tunnel Crossing	New Construction	4,800,000
104	SR-59	UDOT	1.2	SR-59 from MP 22 to Big Plain Junction	Widening	15,000,000
114		W	1.5	Warner Valley Road from Southern Parkway to the road through Warner Valley	New Construction	5,337,000
134	I-15	UDOT	11.5	I-15 MP Exit 16 to Exit 27 Widening	Widening	55,000,000
135	SR-9	UDOT	3.5	SR-9 (LV), Widen from SR-17 to La Verkin eastern city limit	New Construction	12,600,000
136		SG		Traffic Control Center ITS	ITS	600,000
137	SR-59	UDOT	3.7	SR-59 - Widen from Main St to Hurricane City limits	Widen/Reconstruct	25,000,000
138	SR-9	UDOT	6.4	SR-9 - Widen to 6-Lanes from I-15 to Southern Parkway	Widen/Reconstruct	31,200,000
139		H	24.2	Warner Valley Road - Extend from Pecan Road to Honeymoon Trail Road	New Construction	200,400,000
140		SG	1.3	Snow Canyon Parkway- Widen to 7-lane section from 2000 N to SR-18	Widen/Reconstruct	9,120,000
143	SR-34	SG	0.5	SG Blvd/Red Cliffs Dr - Intersection improvements	Widen/Reconstruct	1,200,000
144		SG	0.4	1000 East- Widen to 5-lanes from SG Blvd to Red Hills Parkway	Widen/Reconstruct	2,520,000
146		H	0.1	I-15 - Install interchange at 5500 West	New Construction	20,000,000
147		SG/W	3.2	1450 S - Widen to 7-lanes between River Road and Washington Fields Road	Widen/Reconstruct	17,640,000
149	SR-18	SG	0.3	SB Flyover at the Sunset/Bluff St intersection	Widen/Reconstruct	9,000,000
152		W	1.7	Washington Fields Road - Widen from Warner Valley to 3650 S to 7-lane section	Widening	6,000,000
156		H	1.3	Turf Sod Connector Road, Turf Sod Road to Purgatory Road	New Construction	5,200,000
159	I-15	UDOT	0.3	I-15 MP 8 Industrial Road direct connect	New Construction	500,000
161	I-15	UDOT	2.6	I-15 MP 13 to MP 16 NB (4th Lane) with 3-lane exit at MP 16	New Construction	21,710,000
162		SG	0.6	Sunset Blvd, widen to 7-lanes from 1400 West to Dixie Drive	Widening	150,000
166		I	3.0	Old Highway 91 (I), Pioneer Parkway to Shivwits	Widening	3,500,000
169	I-15	UDOT	3.0	Addition of Aux lanes from Port of Entry to Southern Parkway	Widening	21,000,000

170	I-15	UDOT	6.0	Addition of NB & SB Aux lanes from Exit 13 to Exit 16	Widening	30,000,000
Phase Three (2041-2050)					**Total Needs:**	**679,184,000**
					Total Funds Available:	**789,886,276**
					State Needs	359,810,000
					Regional Needs	319,374,000
					State Funding Available	499,213,459
					Reg. Funding Available	290,672,817
					Remainder / (Overage)	**110,702,276**

All Phases (2019-2050)	
Total Needs	**2,064,948,000**
Total Funds Available	**2,084,211,490**
Total Difference	**19,263,490**

State

Total Funding Available	1,359,192,938
Total Needs	1,256,338,000
Total Difference	102,854,938

Regional

Total Funding Available	725,018,552
Total Needs	808,610,000
Total Difference	(83,591,448)

Unfunded Needs

Project #	Route	City	Length	Project Description	Project Concept	Estimated Cost in 2019 dollars
132		SG	2.6	Green Valley Drive- extend road to Western Corridor	New Construction	22,464,000
133		SG	1.9	Navajo Drive- extend road to Western Corridor	New Construction	11,340,000
148		W	6.7	Honeymoon Trail Road from south end of Warner Valley and Southern Parkway	New Construction	52,800,000
91		EWC	4.0	Babylon Road	New Construction	40,000,000
					Total Unfunded Needs:	**(126,604,000)**

Chapter 7 – **Safety Management**

Introduction

The Dixie MPO is committed to excellence in transportation planning. One area of planning which has, is, and will be given a lot of attention is 'Safety Management'. On the pages to follow, data and information will be presented that illustrates issues related to 'Safety and Security' as well as 'Traffic Safety'. Some ways those issues can be mitigated through objective identification and specific strategies or projects intended to lessen their impact are also presented.

The UDOT has put significant efforts into safety related data and campaigns. That information is used as a part of the Dixie MPO planning effort. For more information on the UDOT campaign, please refer to the UDOT web site at http://www.udot.utah.gov/main/f?p=100:pg:0::::T,V:2956,

Safety Performance Measures

As of 2019, the Federal Highway Administration has released performance measures to aid MPOs in planning and goal setting activities as long-range plans are drafted. The performance measure for "Safety" involves a look at "Serious Injury and Fatal Crashes," combined with the goal of reducing the number and rate of these crashes over time. The Dixie MPO agrees with this guidance and has set goals accordingly.

Consideration of projects that increase safety or that may lead to the reduction of serious injury and fatal crashes is integrated into the Dixie MPO project selection process. Furthermore, the MPO annually reviews the Utah Safety Index Map to identify potential projects for the Highway Safety Improvement Program.

State Safety Leadership Team

UDOT's Office of Traffic and Safety is facilitating an on-going safety plan and strategy in cooperation with many local, regional, state, and federal partners. Each MPO in Utah is a member of this leadership team. One of the most visible projects has been the "ZERO Fatalities: A Goal We Can All Live With" program. Receiving national attention, this icon is fast becoming known throughout the entire state.

The primary program goals and objectives endorsed by the team and MPO boards will rely on education, outreach, and multi-agency partnering to accomplish them. Current Emphasis Areas include increasing use of safety restraints, improving intersection safety, and reducing aggressive driving, distracted driving, drowsy driving, truck safety, pedestrian and bicycle safety, and impaired driving. Various safety groups and governmental agencies have partnered on this statewide media campaign.

Continuing Safety Areas include enhancement of child safety, railroad crossing safety, older driver safety and transit system safety. Ongoing planning to improve pedestrian safety, bicycle safety, motorcycle safety, younger driver safety, and rural road safety will be coincided with increasing work zone safety and promoting safer truck travel. Special areas that may be visited and promoted periodically include enhancement of safety management systems, crash data systems, and emergency services capabilities.

UDOT, in conjunction with several road safety partners has created initiatives to promote road safety in Utah. One of those initiatives is the Utah Comprehensive Safety Plan. As noted on UDOT's website: "The Utah Comprehensive Safety Plan was developed by the Utah Safety Leadership Team, which consists of approximately 20 different private and governmental groups (including UDOT) interested in promoting roadway safety. The plan outlines a number of different roadway safety emphasis areas and notes what needs to be done from an engineering, education, and enforcement standpoint to achieve a reduction in fatalities for each emphasis area. Implementation and evaluation of the plan are also discussed." This plan can be accessed from the UDOT link noted above. Additionally, the State Freight Plan, addressed in Chapter 15 focuses on the safe movement of freight through the state.

Traffic Safety

The frequency and severity of traffic accidents is of major concern at transportation facilities are planned and developed. Crash data is now available to the MPO that identifies the location and contributing factors of traffic crashes throughout the area. Serious and fatal crash information is summarized on Map No. 6 - Traffic Crashes in Appendix B.

UDOT continues to provide crash data to the Dixie MPO for planning purposes. Map 6 in Appendix B and the chart below illustrate the incidence of severe injury and fatal crashes in Washington County between 2010 and 2014 categorized by severity and contributing factors.

Washington County – Serious Injury and Fatal Crashes by Contributing Factor, 2010-2014

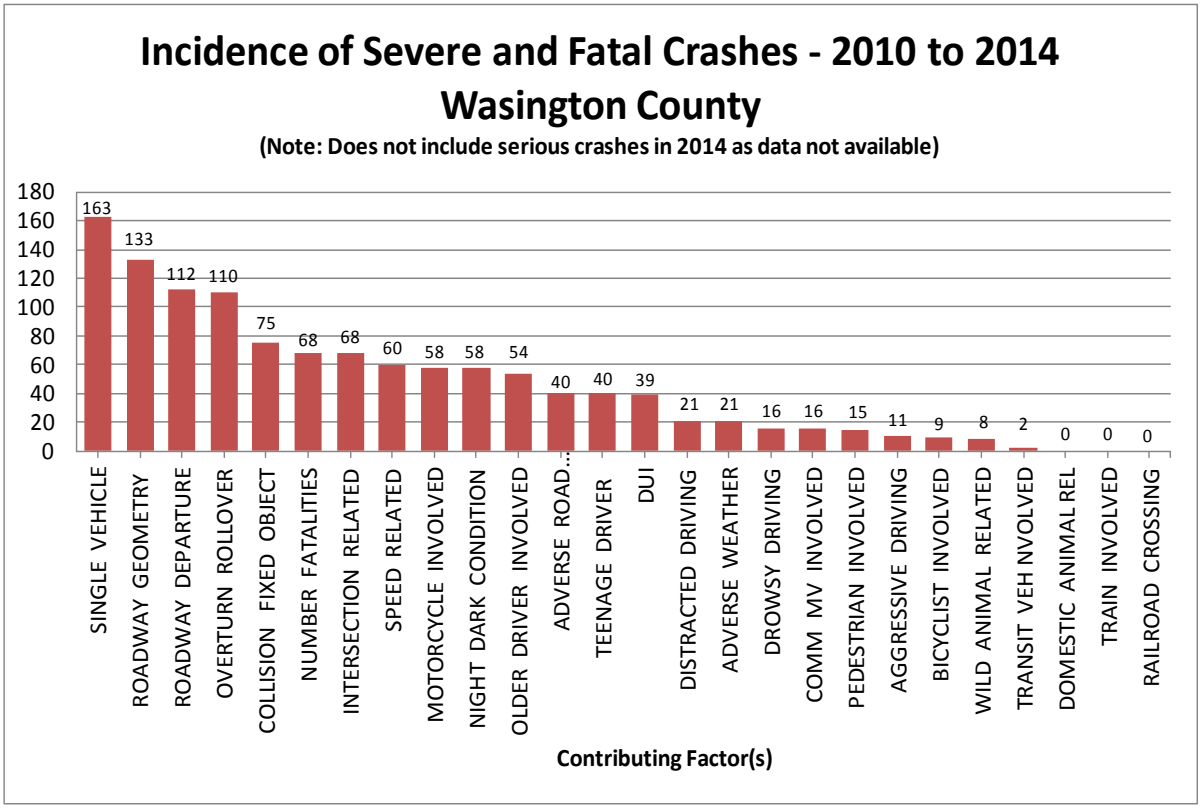


Figure 1 - Incidence of Severe and Fatal Crashes - 2010 - 2014 - Source: UDOT, protected under 23 USC 409

An analysis completed by Cambridge Systematics shows several contributing factors to crashes in Washington County. Common crash factors for our area include: multiple vehicles, intersection related crashes, aggressive driving/speeding, young drivers, single vehicle crashes, older drivers, roadway departure crashes, improper use of safety equipment, distracted driving, CMV involved crashes, overturn/rollover, crashes in work zones, and impaired driving.

From that analysis several possible focus areas were identified. The following are areas that will be given greater review:

Roadway Departures

The 2012 statistics from the Fatality Analysis Reporting System (FARS) show that nationally, there were 30,800 fatal crashes resulting in 33,561 fatalities. 54% of the fatalities were in rural areas while 46 % were in urban areas. The fatality rate per 100 million vehicle miles traveled was 2.4 times higher in rural areas than in urban areas (1.86 and 0.77, respectively).

Nearly 36 percent of the fatal crashes were single-vehicle Run-Off-the-Road (ROR) crashes on various road types.

For two-lane, undivided, non-interchange, non-junction roadways exclusively, there were 8,901 (24 percent) single-vehicle ROR crashes recorded. There are more than twice as many ROR fatal crashes on rural roads than on urban roads, partly due to the higher speeds on rural roads and the greater mileage and lack of additional lanes and median separation.

Some of the most prevalent contributing factors are listed below with a brief explanation of the problem. Objectives and strategies to address these factors also follow.

Restraint Use

More than half (52%)of the passenger vehicle occupants killed in traffic crashes in 2012 were unrestrained and 79% of passengers who were totally ejected were killed. NHTSA estimates that 12,174 lives were saved in 2012 by the use of seat belts.

Intersection Accidents

Un-signalized

Intersections constitute only a small part of the overall highway system, yet intersection-related crashes constitute more than 50 percent of all crashes within urban areas and over 30 percent in rural areas (Kuciemba and Cirillo, 1992). Fatal intersection crashes are a smaller portion of the total picture, suggesting that severity of crashes at intersections is lower than elsewhere.

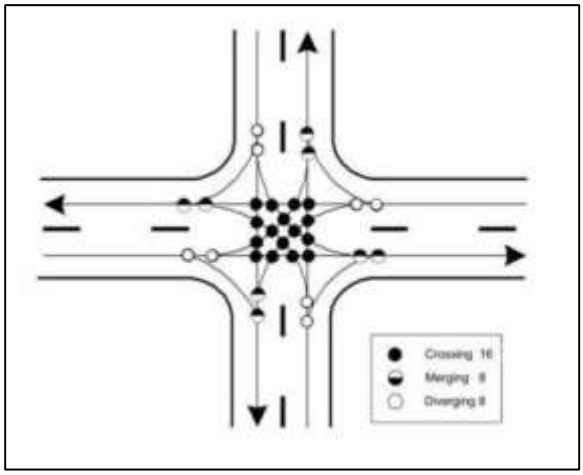


Figure 2 Intersection Conflict Point Diagram

Signalized

Intersections constitute only a small part of the overall highway system, yet intersection related crashes constitute more than 20 percent of fatal crashes. It is not unusual that crashes are concentrated at intersections, because intersections are the point on the

roadway system where traffic movements most frequently conflict with one another. Good geometric design combined with good traffic control can result in an intersection that operates efficiently and safely.

Aggressive Driving

While estimates of the problem vary, perceptions among both law enforcement and drivers are that aggressive driving is becoming more prevalent. According to a National Highway Transportation Safety Administration (NHTSA) survey about aggressive driving attitudes and behaviors, more than 60 percent of drivers see unsafe driving by others, including speeding, as a major personal threat to themselves and their families. More than half admitted to driving aggressively on occasion. The Surface Transportation Policy Project estimated that aggressive actions contributed to 56 percent of all fatal crashes. However, without a clear definition of aggressive driving, these broad assertions are difficult to support.

Older Drivers

Between 2012 and 2050, the United States will experience considerable growth in its older population. In 2050, the population aged 65 and over is projected to be 83.7 million, almost double it estimate population of 43.1 million in 2012, according to the US Census Bureau.
By 2030, one in five Americans will be age 65 or older. In 2012, there were 5560 people 65 and older killed and 214,000 injured in motor vehicle crashes. These older people made up 17 percent of all traffic fatalities during the year. As people age, a decline in sensory, cognitive, or physical functioning can make them less-safe drivers, as well as more vulnerable to injury once in a crash. Yet older Americans depend on automobiles for meeting their transportation needs.

The real safety concern for the older driver arises when one also takes into consideration their increased likelihood of being injured or killed in a crash. The older population traffic fatality rate per 100,000 U.S. resident was 12.9 in 2012 as compared to 18.7 in 2003.

Objectives & Strategies

The Dixie MPO is focusing on the above contributing factors because of the impacts they pose in our area. Although these factors pose significant concerns it is possible to help alleviate those concerns through the adoption and implementation of objectives and strategies addressing each area. The listing below includes strategies which if implemented will help the Dixie MPO to address each focus area:

Roadway Departures (RD)

RD1 Keep vehicles from encroaching on the roadside

- Install shoulder, edge-line, or mid-lane rumble strips where needed
- Provide improved highway geometry for horizontal curves
- Provide enhanced pavement markings
- Provide skid-resistant pavement surfaces

- Apply shoulder treatments
- Eliminate shoulder drop-offs
- Widen and/or pave shoulders
- Add medians or median separation where appropriate

RD2 Minimize the likelihood of crashing into an object or overturning if the vehicle travels off the shoulder

- Design safer slopes and ditches to prevent rollovers
- Provide appropriate clear zones
- Remove/relocate objects in hazardous locations
- Delineate trees or utility poles with retro-reflective tape

RD3 Reduce the severity of the crash

- Improve design of roadside hardware
- Improve design and application of barrier and attenuation

Intersections

Un-signalized

I.1 Management of access points near un-signalized intersections

- Implement driveway closures/relocations
- Implement driveway turn restrictions

I.2 Reduce the frequency and severity of intersection conflicts through geometric design improvements

- Provide left-turn lanes at intersections
- Provide bypass lanes at T-intersections (Hi-T designs)
- Provide deceleration lanes and right-turn lanes at intersections
- Provide right-turn acceleration lanes at intersections
- Provide full-width paved shoulders in intersection areas
- Restrict or eliminate turning maneuvers by use of medians
- Restrict or eliminate turning maneuvers by providing channelization or closing median openings
- Close or relocate “high-risk” intersections
- Reduce lane off-sets through intersections
- Improve pedestrian and bicycle facilities to reduce conflicts between motorists and non-motorists

I.2 Improve sight distance at un-signalized intersections

- Clear sight triangles on stop- or yield-controlled approaches to intersections
- Clear sight triangles in the medians of divided highways near intersections
- Eliminate parking that restricts sight distance

I.3 Improve driver awareness of intersections as viewed from the intersection approach for both daytime and night time driving

- Improve visibility of intersections by providing enhanced signing and delineation
- Improve visibility of the intersection by providing lighting
- Provide a stop bars on minor road approaches
- Install larger regulatory and warning signs at intersections

I.4 Choose appropriate intersection traffic control to minimize crash frequency and severity

- Provide all-way stop-control at appropriate intersections
- Eliminate all-way stop control where not warranted
- Provide roundabouts at appropriate locations

I.5 Improve driver compliance with traffic control devices and traffic laws at intersections
- Provide targeted public information and education on safety problems at specific intersections

I.6 Reduce operating speeds on specific intersection approaches
- Post appropriate speed limit on intersection approaches

I.7 Guide motorists more effectively through complex intersections
- Provide turn path markings
- Provide lane assignment signing or marking at complex intersections
- Meet or exceed MUTCD signing and striping requirements

Signalized intersection

I.8 Reduce frequency and severity of intersection conflicts through traffic control and operational improvements
- Restrict or eliminate turning maneuvers
- Employ signal coordination
- Improve operation of pedestrian and bicycle facilities at signalized intersections
- Remove unwarranted signals
- Provide advance intersection warnings where needed on higher speed road

I.9 Reduce frequency and severity of intersection conflicts through geometric improvements
- Provide/improve left-turn channelization
- Provide/improve right-turn channelization
- Improve geometry of pedestrian and bicycle facilities
- Reduce un-necessary delays
- Reduce lane off-sets through the intersection
- Improve night-time signing and visibility

I.10 Improve sight distance at signalized intersections
- Clear sight triangles
- Avoid curved approach roads
- Adjust median landscaping to allow for proper sight distance
- Add back plates to enhance contrast between signals and their surroundings
- Add supplemental signal heads to enhance signal visibility

Aggressive Driving

AD.1 Deter aggressive driving in specific populations, including those with a history of such behavior, and at specific locations
- Conduct educational and public information campaigns

AD.2 Improve the driving environment to eliminate or minimize the external triggers of aggressive drivers
- Change or mitigate the effects of identified elements in the environment
- Reduce nonrecurring delays and provide better information about these delays

Older Drivers

OD.1 Plan for an aging population
- Establish a broad-based coalition to plan to address older adults' transportation needs

OD.2 Improve the roadway and driving environment to better accommodate the special needs of older drivers
- Provide advance warning signs
- Provide advance-guide and street name signs
- Provide all-red clearance intervals at signalized intersections
- Provide more protected left turn signal phases at high-volume intersections
- Provide offset left-turn lanes at intersections
- Improve lighting at intersections, horizontal curves, and railroad grade crossings
- Increase overall sign size (letters and numbers)
- Use higher reflective sign sheeting to provide improved recognition
- Encourage compliance with new retro-reflectivity standards
- Improve roadway delineation
- Replace painted channelization with raised channelization
- Reduce intersection skew angle
- Improve traffic control at work zones

OD.3 Reduce the risk of injury and death to older drivers and passengers involved in crashes
- Increase seatbelt use by older drivers and passengers through public education campaigns
- Provide "mature driver" stickers for all drivers over 65

Chapter 8 – **Security**

The world has come to understand, since September 11, 2001, that our security is of utmost importance. We are fortunate to have a very active and comprehensive Emergency Management Office in Washington County

Washington County Emergency Management

The Washington County Emergency Management Office has developed an Emergency Management Plan and is currently working on an update of that plan. The plan includes a County response to a variety of emergency situations which may occur in and around our communities. An evacuation Annex portion of the plan identifies procedures to coordinate evacuation needs during times of a natural, man-made, technological, Homeland Security emergencies or disaster.

The portion of the Washington County Emergency Management Plan as it relates to transportation coordination and which is referred to as the Evacuation Annex is summarized below

Assumptions
Highway and roadway evacuation capacities may be reduced significantly because of overload, accidents, stalled vehicles, road construction, and weather conditions, or by the event itself, which may either directly or indirectly impact the integrity of our infrastructure.

Preparation
Evaluate and establish potential evacuation routes, identify congestion points (areas under construction and repair, etc.).

Response
Identify as closely as possible the specific number of people to be evacuated, and provide the means of transportation if necessary. In any event define the routes to be taken and identify shelter sites which are available.

Direction and Control
The ultimate authority for protective action decision-making in Washington County rests with the Board of County Commissions or their designated representative(s).

Responsibilities

Washington County Council on Aging
Provides a Transportation Branch Director to coordinate ESF #1 as a member of the EOC staff and supplies transportation resources needed.
Evacuation planning also will include consideration of:
1. The area to be evacuated.

2. Pick-up points where persons without private transportation will gather for evacuation by public transport.

3. Designated evacuation routes to be used by all vehicles during the evacuation.

4. Location of traffic control points.

5. Safe areas or buildings which provide some temporary measure of protection for evacuees from an actual or threatening disaster.

6. Location of reception centers where evacuees will be sent prior to moving to shelters or mass care shelters.

7. Designated mass care shelters that provide emergency sheltering and feeding of large numbers of evacuees.

8. Location of medical aid stations on evacuation routes, at temporary safe areas, and mass care shelters.

9. The time available for a reasonably risk-free evacuation.

10. Any personal belongings for the evacuated public.

Coordination with professional emergency managers

It is important to reach out to potential partners and develop a relationship in order to develop and foster a solid and lasting relationship. Building a network of professionals that work in the areas of security and emergency management that coordinates on a routine basis, regardless of whether a specific project is being developed, is critical to being able to smoothly incorporate these partners when beginning a new project.

The Washington County Emergency Management Office has worked diligently over the years to coordinate with all emergency management professionals.

Objective and Goals

To help to maintain a safe and secure environment the Dixie MPO will work towards meeting goals in cooperation with the Washington County Emergency Management Office and as stated below.

Objective

Work within existing networks to support the efforts of the Washington County Emergency Management Office.

Goals

1 Become more aware of the efforts of the Washington County Emergency Management Office.

2 Use the County Emergency Management contact list to begin a dialogue regarding evacuation planning for applicable projects.

3 Work with emergency managers to identify the best evacuation routes through the transportation network.

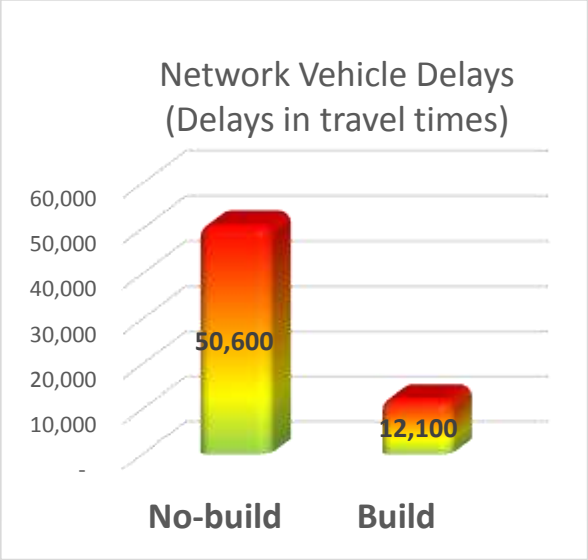
Chapter 9 – Congestion Management

A primary measure of a transportation system's success is that system's ability to accommodate traffic demands while minimizing traffic delay and congestion. The Dixie MPO Travel Demand Model forecasts

growth in future traffic demands due primarily to the area's expected population growth. Following is a brief analysis of impacts associated with traffic congestion:

For this 2019 plan update, the 2050 "Build" Scenario (meaning all planned projects are constructed by 2050) and the 2050 "No-Build" Scenario (meaning no additional projects are constructed) were compared to render two outputs:

- The "Network Vehicle Delay" comparing the number of vehicle hour delays in 2050 under the two scenarios (chart at the right).
- The "total travel time" or a collective measure of the hours people would spend traveling on an average day in 2050 under each of the two scenarios (chart below).



The build scenario shows an overall reduction in Network Vehicle Delays of 38,500 hours per day (less idling/delayed vehicles). The build scenario also shows a reduction 41,600 hours a day of in Network Travel Times (more efficient travel throughout the network).

Condition	**2040 Daily Network Hours Traveled** *Travel Time (hours)*
No Build	294,900
Build	253,300

The societal cost of travel time delays includes an increase of air pollution as vehicles sit idling in traffic, a loss of productivity as motorists spend more time on the road, an increase in fuel costs, decreased safety, and an increase in motorist stress levels.

Managing congestion on a constrained transportation network (while accommodating population growth) requires careful decision making and the addition of network connections. The proper mix of highways, surface roads, public and private transit, bicycle and pedestrian facilities must be found to help maintain the quality of life and economic vitality desired in Utah's Dixie.

Objectives and Goals

The Dixie MPO recognizes the potential for extreme traffic congestion and will strive to support congestion reducing efforts.

Objective

The Dixie MPO will encourage the reduction and management of traffic congestion through the implementation of useful transportation tools as well as construction of appropriate infrastructure.

Goals

1. Support the use of transportation tools including ITS Message Boards, the Traffic Control Center (TOC), Traffic Management efforts, Ramp Metering, Reversible Lanes, Cross-over left turn lanes and other state of the art tools.
2. Support the use of appropriate Transit Projects including the implementation of a Transit line from St. George to Springdale and possibly to from St. George to the local airport.
3. Support the funding and construction of Transportation infrastructure projects aimed at reducing congestion.
4. Encourage and recommend congestion reducing tools in each new project.
5. Use the Travel Demand Model to identify congestion delay and measure the reduction progress.

Chapter 10 – Corridor Preservation

Corridor preservation is the practice of purchasing future rights of way many years ahead of planned transportation projects as an effort to reduce overall costs to taxpayers. Some estimates indicate that the early and well-planned purchase of transportation corridors can result in cost savings of one-fifth or one-sixth of the amount that would be needed if the purchase were put off. The degree of importance for corridor preservation increases in areas like the Dixie MPO where high population growth is anticipated and where developers and homebuilders are not always cognizant of the impacts their actions could have on the overall community.

The Dixie MPO encourages all municipalities to anticipate and address corridor preservation needs within their own boarders – and to utilize the Washington County Corridor Preservation Fund: In 2009, the Washington County Board of Commissioners implemented a "$10 per vehicle" annual registration fee to endow a corridor preservation fund that is administered by the county-wide Council of Governments (COG).

The COG is made up of elected leaders from throughout Washington County. The Council meets at least annually to review a list of priority projects and program funds from the Local Transportation Corridor Preservation Fund. The Fund is accumulating about $1.3 million of revenues annually for acquisition of future rights-of-way. To receive funding, projects must be on the COG project priority list and be supported by a majority of Council members.

Objectives and Goals

Preservation of future transportation corridors is critical now and in the future; the Dixie MPO will work towards meeting goals and objectives to assist this worthy cause.

Objective

Coordinate with the COG to edit the list of priority projects and select right-of-way acquisitions that maximize the effective use of the Washington County Corridor Preservation Fund.

Goals

1. Encourage all municipalities to anticipate and address corridor preservation needs within their own boarders.
2. Assist with the efforts of Washington County Public Works in preparing the Annual Master Priority Corridor Preservation Project List.
3. Notify Dixie MPO members aware of opportunities to use the Preservation Fund.
4. Become more aware of project needs and look for opportunities to preserve important transportation corridors through use of the Fund.
5. Work with Dixie MPO partners to identify opportunities for corridor preservation.

Chapter 11 – **Environmental Mitigation**

The Dixie MPO recognizes that transit, road, and trail projects bring positive and negative impacts on natural and built environments. Therefore, the MPO strives to establish steering and stakeholder committees to guide early corridor planning studies. Committees are comprised of resource agencies, land managers, environmental groups, developers, and others who consider impacts to air quality, farmland, fish and wildlife, historical/archeological resources, geologic hazards, floodplains, water quality, and wetlands.

While corridor planning requires only a broad consideration of potential environmental impacts – a more detailed analysis is required as each project advances into the Environmental Assessment (EA) or Environmental Impact Statement (EIS) phase prior to project construction. Following is a discussion of potential environmental issues that would require further analysis of impact, concern, avoidance, or mitigation remedies:

Impacts

Farmland Impacts

Preservation of farmland is increasingly difficult in the Dixie Region. The shrinking availability of land, incentives to sell and give way to development, and the area's harsh desert environment are combining to reduce the supply of farmable land within the Dixie MPO planning boundary. Incentives for jurisdictions to protect and preserve farm environments may not be strong enough to overcome these market forces that are driving a growth in population and consuming once farmable land for commercial and residential use.

Geologic Hazards

The geologic diversity within the State of Utah is well known and much of that diversity and topographical constraint exists in Dixie. The region is not immune to earthquakes, rock fall, landslides or volcanoes. Due to recent area events, rock fall hazards have become an increasing concern for area planners and constructors. Rock fall information can be obtained by visiting the Utah Geological Survey website (http://www.geology.utah.gov/utahgeo/hazards/landslide/index.htm). The MPO encourages transportation solutions to take in to account the known geologic hazards in plans, designs, and construction to prevent, avoid, or mitigate as much as possible current, ongoing, and future geologic events.

Fish and Wildlife Impacts

The following table presents federally threatened and endangered species, State sensitive species found throughout the Dixie Region. Although these species are identified for long range planning purposes and early corridor preservation studies, a more detailed investigation of impacts, avoidance, or mitigation is required at the Environmental Assessment or Environmental Impact Statement stages of environmental analysis.

Federally Listed Species in Washington County, Utah

Threatened(T), Endangered(E), and Candidate(C) Species

This list was compiled using known species occurrences and species observations from the Utah Natural Heritage Program's Biodiversity Tracking and Conservation System (BIOTICS); other federally listed species likely occur in Utah Counties. This list includes both current and historic records. (Last updated on January 12, 2012)**.

Common Name	Scientific Name	Status
Plants		
Siler Pincushion Cactus	Pediocactus sileri	Threatened
Shivwits or Shem Milkvetch	Astragalus ampullarioides	Endangered
Holmgren Milkvetch	Astragalus holmgreniorum	Endangered
Gierisch Mallow	Sphaeralcea gierischii	Candidate
Dwarf Bearclaw-poppy	Arctomecon humilis	Endangered
Reptiles/Amphibians/Fish		
Virgin Chub	Gila seminuda	Endangered
Woundfin	Plagopterus argentissimus	Endangered Candidate
Relict Leopard Frog	Rana onca	Extirpated
Desert Tortoise	Gopherus agassizii	Threatened
Birds		
Greater Sage-grouse	Centrocercus urophasianus	Candidate
Yellow-billed Cuckoo	Coccyzus americanus	Candidate
Mexican Spotted Owl	Strix occidentalis lucida	Threatened
Southwestern Willow Flycatcher	Empidonax traillii extimus	Endangered
Mammals		
Utah Prairie-dog	Cynomys parvidens	Threatened
Gray Wolf	Canis lupus	Endangered Threatened
Brown (Grizzly) Bear	Ursus arctos	Extirpated

** Created by the Utah Division of Wildlife Resources - January 12, , 2012

Note: Please contact the U.S. Fish and Wildlife Service (801-975-3330) for the purpose of consultation under the Endangered Species Act.

Historical/Archeological Impacts

Historical and archeological sites are other components that are not easily measured, but add character and quality of life in the Dixie Region. Avoidance, mitigation, and restorations are options to consider as planned solutions reach the environmental analysis phase.

Although the Dixie Region has not been completely surveyed for archaeological resources, the MPO boundary areas are likely to contain numerous archaeological sites.

The ancestral Southern Paiute are believed to have moved into this region sometime between AD 1000 and 1300. They were hunters and gatherers who practiced a seasonal round of resource collection and processing over a broad and diverse landscape. In southern Utah, however, some Southern Paiute groups became small-scale farmers and diverted water from the Virgin and Santa Clara Rivers and other smaller streams to cultivate garden plots. Euro-American explorers to this region, including Dominquez and Escalante in 1776 and Jedidiah Smith in the 1820s, reported seeing irrigation ditches and small check dams constructed by the Southern Paiute to divert water from the rivers and streams onto their fields of corn, beans, and squash. A Southern Paiute site, located on private land near the study area, was excavated by archaeologists from Brigham Young University in the 1980s. This site contained evidence of maize cultivation that dated to AD 1700 and 1830 (Allison 1988).

As part of the NEPA process, consultation will be required with Native American tribes that may have an interest in the study area. Final determination of tribes to include in the consultation process will be made during the NEPA process. The tribes with interest in the study area include the Hopi Tribe; the Navajo Nation; the Paiute Indian Tribe of Utah and its Shivwits, Cedar, Indian Peak, and Kanosh Bands; the Uintah/Ouray Ute; the Las Vegas Paiute; the Moapa Paiute; and the Kaibab Paiute.

Few surveys of historic resources have occurred within the study area. Historic resources in the study area relate to the 18th and 19th century Euro-American explorations. In 1776, two Franciscan priests from New Mexico, Dominquez and Escalante, traveled through southern Utah looking for an overland route to the Spanish colonies in California. This travel route came to be known as the Old Spanish Trail. The main branch of the Old Spanish Trail followed the Santa Clara River south from Mountain Meadows and then veered to the west over the low pass of Utah Hill (old Highway 91). In 2001, the Old Spanish Trail was designated as a National Historic Trail.

By the early 1850s, the first colonies were being established by members of the Church of Jesus Christ of Latter-day Saints (Mormons) in southern Utah. Some of the structures built by these colonies may be found in the study area; these structures include irrigation systems along the Santa Clara and Virgin Rivers and sites associated with stock animals.

Geologic Hazards

The geologic diversity within the State of Utah is well known and much of that diversity and topographical constraint exists in Dixie. The region is not immune to earthquakes, rock fall, landslides or volcanoes. Due to recent area events, rock fall hazards have become an increasing concern for area planners and constructors. Rock fall information can be obtained by visiting the Utah Geological

Survey website (http://www.geology.utah.gov/utahgeo/hazards/landslide/index.htm). The MPO encourages transportation solutions to take in to account the known geologic hazards in plans, designs, and construction to prevent, avoid, or mitigate as much as possible current, ongoing, and future geologic events.

Water-body and Floodplain Modification

Washington County in cooperation with FEMA and other agencies has produced an updated floodplain plan to deal with the aftermath of the January 2005 Flood in Dixie and to prevent and control floodwaters in future significant storm events. This plan is available at the offices of Washington County. Recently FEMA has developed new Digital Flood Insurance Maps that greatly assist planning around and through flood plain areas. These and other maps are available at the FEMA web site or through any of the Washington County City offices that participate in the Federal Flood Insurance Program. There is also the newly formed Washington County Flood Control Authority which is a intergovernmental body that now deals with regional flood control issues within the county. Transportation needs solutions/projects must be planned designed and built with these requirements and conditions in mind.

Water Quality Impacts

Water quality can be greatly impacted by the amount of hard surfaces (including roadways) in a region. Hard surfaces lead to polluted runoff instead of the water table's natural percolation cycle. Most of the larger communities within the MPO boundaries participate in the Utah Pollutant Discharge Elimination System (UPDES) programs. These programs administered through the Utah Department of Environmental Quality (DEQ) are designed to reduce or eliminate pollutants from surface runoff in conjunction with the EPA Clean Water Act.

Wetland Impacts

Wetlands provide an invaluable resource to our ecosystem. Section 404 of the Clean Water Act protects wetlands from development without a permit issued by the Army Corps of Engineers. Designing the roadways to protect the wetlands within the Dixie Region is in accordance with the requirements of the Clean Water Act and leads to a more sustainable community. A local office of the Army Corps of Engineers has been established and is available for further information.

Climate Change

While local discussions of climate change effects are minimal within the Dixie MPO more and more attention is being directed within the state concerning this issue. MPO executives and planners regularly discuss flood control plans and recognize the need to construct roads and bridges to accommodate heavy runoff volumes and to facilitate the local needs for drainage; however climate change may also have an effect on this and other aspects of transportation. Flooding events in 2005 and 2011 stimulated local awareness of potential hydrology concerns in a changing environment and validated the need to over-plan bridge facilities and other flood treatments within the flood plains and waterways of Southwestern Utah. Changes in temperature, precipitation and extreme weather events have the potential to negatively affect the populations throughout the MPO.

A document titled "Climate Change and Public Health in Utah" provides an accessible overview and description of the influence of environmental factors on climate change and health in Utah. Many identified indicators could have an effect on how transportation is looked at and planned in the future.

Air Quality

Washington County, Utah, is currently considered an attainment area as defined by the Clean Air Act and therefore is not regulated by the EPA or the Utah Division of Air Quality. However, proper planning will be required if the region reaches non-attainment status in the coming years. In non-attainment status, plans to reduce personal automobile dependency would become vital. Although there are many sources of air pollution, including ambient air moving in from other parts of the region, auto emissions, vapor gases, and dust are common contributors to air pollution locally. Mode/trip decisions, reducing single occupancy vehicles, improving traffic flow and recovering gaseous vapors are some of the ways to protect the quality of air. These and other strategies will be looked at and recommended to local governments for their consideration and adoption. The Dixie area has been growing rapidly for many years and will continue to grow to build-out conditions and must look seriously at protecting its air shed quality.

The MPO anticipates continued growth in vehicle miles of travel, and the associated congestion and traffic delays. Some societal trends are catching hold toward the use of energy efficient vehicles, and alternate modes of transportation such as bicycles, but the potential for air quality problems, especially for Ozone, is real for Utah's Dixie. The MPO will continue to endorse air-quality protection initiatives.

Action Plan

More stringent guidelines are available under EPA's new Ozone Flex Program for areas concerned about potential future non-attainment of either the 1 hour or 8 hour ozone standards, to achieve emission reductions, secure public health benefits, and accrue possible credits to future planning efforts, to the extent allowed by the Clean Air Act and EPA guidance or rules.

Prevailing Winds in Dixie tend to move from the southwest in a northeasterly direction, almost on a daily basis. This air movement helps to change the air, to `refresh it', in a word, on a regular basis. However, the same prevailing winds are likely to carry contaminated air from nearby urban areas like, Las Vegas, or even from the Los Angeles Basin, into and through Dixie. Truckers who drive the I-15 Corridor on a regular basis are convinced of this relationship. Of course, anyone may have an opinion, but empirical results would be needed to determine the relationship and to affect public policy. Efforts are being made by the DAQ and others to document these ozone transport relationships. Postponing empirical results may compromise community health standards and be against the operating values agreed to by Dixie MPO partners. The partners agree to:

- Cooperate and coordinate with DAQ and other local stakeholders in developing and Implementing a regional scope of work for non-regulatory monitoring in Utah's Dixie
- Encourage use of mobile monitoring equipment to help determine local and regional Ambient source contributions
- Participate in pollutant source inventorying and sharing other data, as needed
  (See Appendix B for typical pollution source list)

Traffic Congestion is a contributing factor to the level of air quality due to increase in pollutants, as vehicles progress slowly and are queued up at intersections for long cycle lengths. Vehicles that are idling emit more pollutants than when operating at optimum speed, which is around 30mph. Delay time at specific intersections as well as along routes is an indicator of Congestion. Another indicator may be average road link speeds that fall below 15 mph. If feasible, speed data may be available or determined that will be useful in making traffic flow impact decisions. The Dixie MPO and its partners recommend the following strategies for local government consideration and action:

- Encourage Intersection Flow improvements & Traffic Signal synchronization
- Consider one-way streets where feasible
- Maintain capacity, speed, and function of arterial /collector roads & corridors
- Encourage business and industry to establish Flexible employee work hours
- Encourage placement of fiber conduit in all new construction or rehabilitation projects for future ITS strategies
- Encourage municipal purchase of unused buried conduit
- Support mobility management efforts such as van pooling
- Plan appropriately to reduce overall delay hours
- Improve transit operations to provide more opportunities to leave vehicles at home
- Continue to maintain and update the Traffic Demand Model in providing useful data pertinent to air quality
- Encourage local governments to prepare corridor management plans and signal coordination plans to reduce delays and congestion.

Municipal Corporation Policy varies throughout Dixie as to visible efforts to improve air quality. St. George City for example, has executed resolutions such as tree planting, especially in parking lots, which reduces vapor emissions from automobile gas tanks; encourages non polluting industry; supports and operates public transit; and has had a goal of having a bicycle/pedestrian trail within 15 minutes of every home. Communities in the region are all actively supporting paths and trails and their connectivity. The Dixie MPO encourages the following strategies for local government support and action:

- Landscaping/tree planting strategies, especially for parking lots
- Fleet Vehicle fueling in cool hours of the day
- Covering all solvent tanks or open storage of vaporous gases/liquid
- Encourage nonpolluting industry
- Encourage any polluting industry to apply modern emissions technology
- Encourage Volatile Organic Compounds (VOC) recovery at all fueling stations
- Encourage fleet vehicle preventive care as recommended by manufacturers
- Encourage and support van and car-pooling of employees -
- Support regional Public Transit
- Encourage fleets that use alternative fuels (incentives available)
- Support Walk-able Communities and neighborhoods (land use, zoning, codes)
- Support MPO Long Range Plans, Policy, and Standards in local development decisions
- Encourage all municipalities to implement a "Complete Streets" plan and policy

Private/Public Partnerships can go a long way in encouraging business and citizen contributions to air quality protection. Encourage the Chambers of Commerce to partner with local business, colleges, and industry to support similar protection measures as listed above.

Dixie MPO Work Plan:

1. Participate with DAQ and local partners in non regulatory monitoring
2. Create Public/Private Education Program

   Distribute information to and through:

   - Chamber of Commerce members

- Municipalities
- Washington County
- Public Agencies
- Schools, College
- Neighborhood organizations
- Coverage in local newspapers
- Newsletters

3. Include Air Quality Protection strategies in the Long Range Transportation Plan
4. ITS technology should be reviewed and appropriate, effective tools implemented when feasible and affordable.
5. Assist DAQ in emissions inventory of sources of potential pollutants
6. Seek voluntary action consistent with prevention or control of related emissions
7. Seek funding for local action planning from the Environmental Protection Agency

Air Quality Task Force:

The Southern Utah Air Quality Task Force was formed in 1996. The first challenge was to address fugitive dust issues in the St. George area. Since its creation the Task Force has been encouraged to address many additional air quality matters such as air quality monitoring, agricultural and range fire smoke, motor vehicle emissions, and application of pesticides and herbicides. Many have been concerned about the potential for transfer of air pollution from the Los Angeles and Las Vegas areas.

The purpose of the Task Force is:

- To work together to prevent future non-compliance with air quality
- To support and conduct non-partisan research, education, and informational activities to increase public awareness of air quality concerns and solutions
- To achieve communication within industry, communities and government representatives; and to sustain air quality values

The goal of the Task Force has been to encourage community awareness and involvement. They currently meet monthly and hold an annual Air Quality Summit to educate the public and community leaders about air quality issues affecting this area. The group generally meets the third Wednesday of every month at 10:00 a.m. at the Association of General Contractors of Utah office in St. George.

Integration of NEPA into the Planning Process

While the above elements are important components of the natural and built environment in the Dixie Region, and each deserves their own thoughtful and comprehensive analysis. This plan does not attempt to perform a comprehensive Environmental Analysis or Environmental Impact Statement as regulated by National Environmental Policy Act (NEPA). At this point, projects included in this plan are for planning and modeling purposes only. Some projects amount to little more than a proposed line on a map. It is not intended to identify specific alignments for planned corridors. When a formal proposal is made, the NEPA process will follow.

Unified and Cooperative Planning Processes

In 2009, public and private planners throughout Utah began creating the unified planning tool "U-Plan" – a web-based information platform designed to allow road and utility planners to jointly access information on rights-of-way, infrastructure lines, environmental concern areas, habitat areas, and other built and natural resources. The Dixie MPO views U-Plan as an integral tool within the transportation planning process and encourages outside agencies to participate.

Objective and Goals

The Dixie MPO recognizes that there are many environmental challenges throughout its planning boundary that must be considered when planning and constructing regional transportation corridors. As a result, a number of strategies have been identified throughout this chapter.

Objective

The Dixie MPO understands the need consider these environmental challenges in the planning stages and will strive to incorporate environmental solutions into its planning process.

Goals

1. To support the environmental processes associated with requirements for federally funded projects.
2. To become more aware of the historical and geological issues of the area.
3. Commission necessary studies and investigations to support the planning process.
4. Stay abreast of changes in environmental requirements throughout the planning area and specifically those related to air quality with special emphasis on ozone.
5. Support the plans, strategies, and Task Force identified in this chapter.
6. Be committed to the Dixie MPO work plan as described above.

Chapter 12 – **Active Transportation**

As stated in the Chapter 3 above, pedestrian and bicycle facilities are an integral part of the area's transportation system. Active transportation provides a myriad of economic, environmental and social benefits for the region. Vision Dixie calls for the implementation of "complete streets" criteria to ensure streets and roads accommodate all users including drivers, transit riders, pedestrians, and bicyclists, as well as for older people, children, and people with disabilities. Complete Street designs are also intended to improve motorist attitude and behavior toward other street users.

In Spring 2014, Dixie MPO Staff and the Technical Advisory Committee acknowledged that there was a need to develop a more safe, attractive, and better-connected system of pedestrian and bicycle infrastructure. The region already includes an extensive array of trails, and some shared roadways and bike lanes. However, walking and cycling for transportation purposes is often inconvenient and unsafe, as the current transportation system lacks meaningful connections to destinations.

Acknowledging this need, the Dixie MPO Commissioned a *Dixie MPO Bicycle/Pedestrian Master Plan* to identify projects and policies in the region that will create a transportation network conducive to cycling and walking.

The Bicycle/Pedestrian Plan recommends a network of connected bikeways and improved sidewalk connections. Facility types include sidewalks, bike lanes, shared roadways, and shared use paths, and various crossing improvements. Map 8 illustrates those projects.

The Dixie MPO Bicycle Pedestrian Plan has been introduced into each municipality's transportation plan, with some cities opting to improve or further develop a more localized Active Transportation Plan.

Objectives and Goals

Objective
Improve conditions to make cycling and walking for transportation more safe, attractive, and convenient

Goals

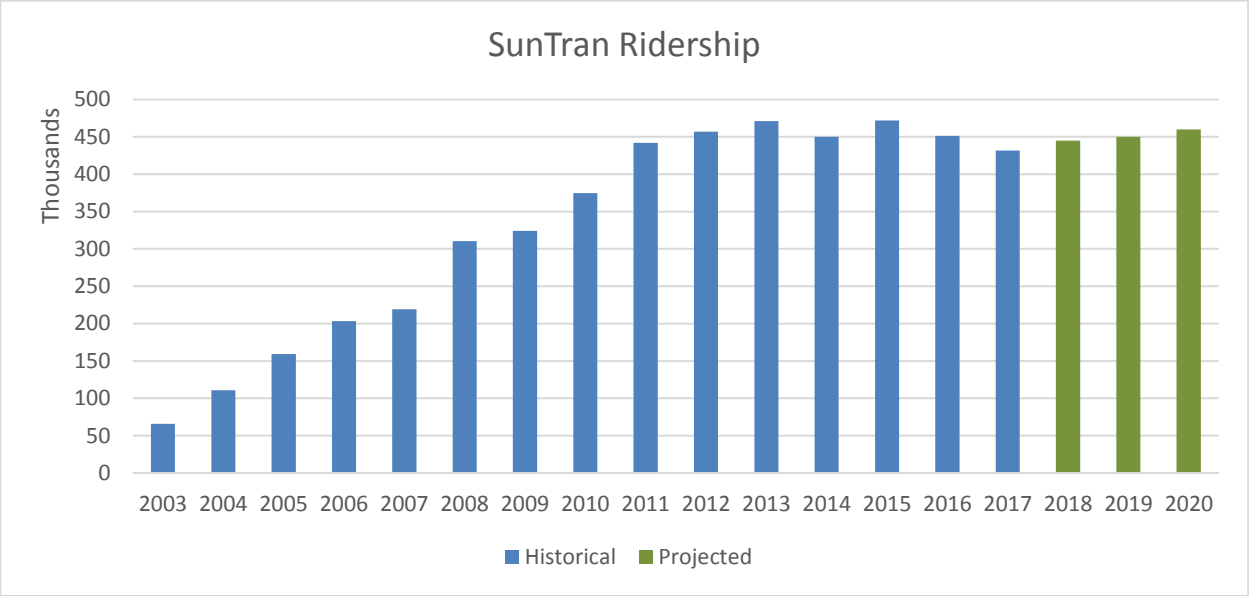
1. Facilitate the appropriate design, construction, and maintenance of bicycle and pedestrian facilities.
2. Support a multimodal transportation system for all new construction and reconstruction projects.
3. Encourage policies and programs that improve bicycle and pedestrian safety.

Chapter 13 – **Transit Service**

SunTran provides transit service for the City of St. George and Ivins, currently operating fixed bus routes and paratransit (ADA) service between 6:00 AM and 8:00 PM Monday through Saturday. There is no service on Sundays or major holidays. The system consists of six fixed bus routes, four of which operate on 40-minute headways with two operating on 80-minute headways. SunTran has experienced significant ridership growth since its inception in 2003 (See graph below). Areas being served by transit include: downtown St. George, Red Cliffs Mall, Dixie State University, the Dixie Center, the Dixie Downs area, Bloomington and Ivins City. Map 10 shows the six existing fixed SunTran routes, as well as potential routes for expansion.

SunTran continues to grow substantially in ridership and several studies and plans point to the need for expanded and improved transit service in the Dixie region to develop a more balanced transportation system and provide a greater range of transportation choices, particularly for those with limited mobility. In a past onboard transit survey, 90% of respondents stated it was important to expand SunTran service to new places in the area. This survey also indicated that the majority of SunTran riders rely on the service to meet their daily transportation needs, with 76% of respondents stating that they did not have another option (besides riding SunTran) for making their trip.

Subsequent studies have shown that additional transit lines to Washington City, Hurricane City and Zion National Park are feasible if public support, financing, and governance issues can be ironed out. In 2018 and 2019 Washington County and the Washington County Council of Governments have been actively working to resolved financing and governance issues in order to expand transit services from St. George to Springdale. Washington City elected officials have also sought funding to support local transit needs.



Potential Transit Expansion Areas

In 2015, the Utah State Legislature enacted laws to establish new funding options for transit services. Elected officials throughout Washington County are currently discussing how to respond to that opportunity and various ways to establish new transit routes. Planners and elected officials also recognize the value of public transit services to low-wage earners and are observing increased public support for transit services.

St. George to Springdale

In 2016 *The St. George to Springdale Public Transit Feasibility Study* recommended that a route between Springdale and St. George is viable and could attract an annual ridership of 272,000 trips. Zion National Park sees over four million visitors annually who, once inside the park, are required to use a transit services to reach their final trailhead destinations. The 2016 study suggested that these visitors are already competent and accepting of transit use and would likely embrace transit lines prior to reaching the Park if they were established. Service sector employees would also benefit from transit services between the two areas.

Hurricane and Zion National Park Corridor

The *Dixie Bus Rapid Transit Feasibility Study* (BRT study) and the *Hurricane to Zion Canyon Transit Study* both point to the potential short term and long-term viability of transit service in this corridor. The BRT study evaluated the potential for long-term feasibility of transit service between central St George City and Hurricane City and central St George City and the airport. The study suggests that when the service area reaches 252,000 people and 143,000 jobs, BRT service will be viable. However, conventional bus service should be implemented to serve existing demand. Map 10 displays the potential alignments for these routes.

The *Hurricane to Zion Canyon Transit Study* evaluates and recommends transit service between Hurricane and Zion National Park. After analyzing demand in the corridor, the study recommends implementing fixed-route transit service with 60 minute headways. The study emphasizes that transit

would only be viable in this corridor provided that a transit connection is also provided between St George and Hurricane.

The next step toward implementing transit in this corridor is to provide an implementation plan for transit service in the short term, which identifies service characteristics, fare structure, and funding, given resources that are available at the present time. This service is likely to be provided initially through an inter-local agreement with St George City, Hurricane, Springdale, and other communities in the corridor.

Washington City

A concept route to Washington City was presented in the *Dixie MPO Regional Transit Study*. In 2014, Washington City began the process of formulating an agreement with SunTran to institute a fixed route that connects to the existing bus system with complementary para-transit service. While those efforts eventually faded, the Washington City Council reaffirmed its interest in establishing transit services on June 12, 2019. A potential route is displayed on Map 9 in Appendix B.

Santa Clara City

Due to budget constraints, service to Ivins City was initially instituted without service to Santa Clara City, which the bus passes through "doors closed" on the route. However, service to this community would benefit a large population of residents, not currently being served. The Dixie MPO will support coordination efforts between Ivins, St George City, and Santa Clara City to provide public transit service to Santa Clara City, given adequate funding and public support.

St George Airport

As noted above, a bus rapid transit line, servicing St George Airport is a viable service in the long term. However, in the short-term interim bus service should be provided to begin phasing toward a BRT line. The *St George Urbanized Area Short Range and Long-Range Transit Plan* (2006) identifies an express route to the airport. To maximize efficiency, the route schedule should be coordinated with air service.

Coordination with other modes

As regional transit service is improved and expanded, coordination with other modes of transportation is essential to offering alternative transportation options. Every trip on fixed-route public transportation begins and ends with another mode, whether it be cycling, walking or driving. Due to additional demand, SunTran has recently purchased additional capacity on its bicycle racks. SunTran Management indicates that demand for wheel chair users on transit has also risen substantially in recent years. In addition, SunTran is working with a Bus Shelter work group to improve conditions for passengers at bus stops. The *Southwest Utah Coordinated Human Service Public Transportation Plan* identifies the need for a last mile study to identify needed improvements for transit users on roadways near transit. Furthermore, as transit expands to Hurricane, Zion National Park and the Airport, consideration for Park-and-ride locations should be given.

Improved connections to inter-city bus and shuttle services are necessary to connect residents with the greater region. Greyhound, St George Shuttle, Aztec Shuttle, and St George Express currently offer service to Salt Lake City, Las Vegas and other nearby cities. However, these services are not well-connected to SunTran. Coordination with each entity is needed to improve the experience of transit users.

Coordination among providers to match users to the appropriate transit service or services is the focus of the Five County AOG Mobility Management Program. The Five County Regional Mobility Council

guides this program, while coordinating human service and public transportation services throughout the region. The Dixie MPO will continue to support mobility management efforts to coordinate and expand services to meet the needs of seniors, persons with disabilities, and low income individuals, as well as the greater community. The *Southwest Utah Coordinated Human Service Public Transportation Plan* includes mobility management and other strategies to meet these needs.

Funding and Governance for expanded transit service

In 2012, a *Dixie MPO Regional Transit Study* was completed to evaluate the governance and funding options available to the Dixie region for expansion and diversification of transit service. The study includes a case study of six transit organizations of similar size to illustrate the variety of governance and funding options for public transportation.

The study recommends a phased approach toward developing a regional transit service, beginning with improved service in St George and initial service to adjacent cities through inter-local agreements, followed by the establishment of a Regional Transit District, which is supported with a dedicated multi-jurisdictional funding for transit. This is only possible through public support, which should be gauged throughout the process.

As noted above, the first phase is currently being implemented through inter-local agreements in Ivins, with the initial phases of such agreements occurring in Washington City and the Hurricane/Zion Corridor. The Dixie MPO Transportation Executive Committee (DTEC) has officially endorsed the financial assumption that ¼% sales tax will be implemented by 2020. This assumption is contingent upon public support. The Dixie MPO will support the region's communities as they plan for improved regional transit service.

Objectives and Goals

Objective

Enhance and expand public transportation to build a more balanced transportation system

Goals

1. Provide technical assistance to SunTran and cities in the region to plan for and implement expanded transit service
2. Support efforts to develop a regional transit district or authority
3. Identify sustainable funding sources for public transportation and assist with procuring funds
4. Support the mobility management program to coordinate transportation services and meet the needs of residents with limited mobility

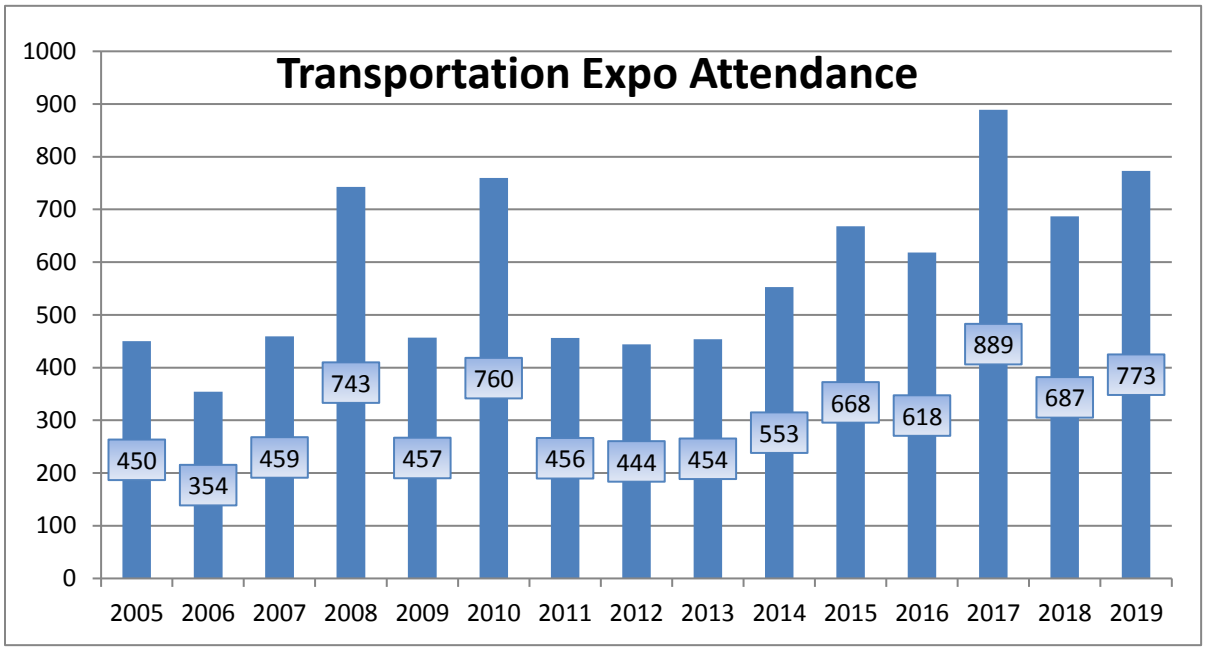
Chapter 14 **– Public Involvement**

Commitment to Public Involvement

The International Association of Public Participation defines five levels of public involvement in the IAP2 Spectrum of Public Participation. These five levels are 1) Inform, 2) Consult, 3) Involve, 4) Collaborate, and 5) Empower.

Public involvement is vital as the Dixie MPO plans transportation facilities through 2040. The MPO uses a web site, legal notices of meetings, news releases and a variety of news letters to **inform** constituents of meetings, studies, plans, and opportunities to become involved in the planning process.

The MPO also sponsors an annual "Dixie Transportation Expo" to gather public comments and respond to inquiries, consult with citizen groups, and collaborate with them to realize potential solutions. An estimated 600 to 800 people attend the "Expo" annually to ask questions and comment on individual projects, plans, studies, environmental issues, future initiatives, etc. as transportation plans are laid and as projects move forward through the process from concept to construction. The "Expo" is typically scheduled the second Tuesday of each February.



In some areas, the MPO has also found ways to empower citizen committees to directly influence plans for the future. The Vision Dixie process discussed earlier in this document was based on citizen input and attempts to capture the public's vision for the metropolitan area of the future – and then plan to that vision. The bicycle/pedestrian trail section of this plan was also reviewed and expanded through the efforts of a citizen's committee. In addition, the Southern Utah Truckers Association has given comments about roadway improvements that can be made to help freight move more smoothly through our communities.

Moving forward, the MPO is committed to include public involvement initiatives in its decision-making efforts, to communicate public concerns to MPO voting members, and to educate the public on MPO deliberation, options, strategies, and plans of regional significance.

Public Comments:

Public comments are currently being taken for this 2019-2050 Regional Transportation Plan and will be summarized in a separate document.

Chapter 15 – **Freight**

As a small MPO, the Dixie MPO has a seat on the State-wide Freight Mobility Group. The group is charged with the drafting of a State-wide Freight Plan including a Primary Freight Network Map. That plan is the backbone of this chapter and the map is found here as Map 11 (Appendix B). The state-wide plan is being drafted and currently includes the information below:

Purpose of Freight Planning

The primary purpose of the freight planning effort is to guide cost effective capital and operating investments in the state freight system to ensure maximum benefit and efficient movement of goods. This plan makes a case for the importance of investing federal and state funds in freight priority projects and programs through the following: an overview of the essential role of freight to our economy; a discussion on the condition and performance of Utah's transportation's assets and system; and a summary of the policies, strategies, and institutions that support freight.

This chapter incorporates key points, findings, and projects from Utah's Unified Transportation Plan 2015-2040, and the Dixie MPO Long-Range Plan. Please refer to Chapter Four of this plan and the State Freight Plan for demographic, population and other specific information

Utah's Freight Employment

There are a variety of jobs within the transportation industry here in Utah. Notice in the following table that the highest paying jobs are located in the pipeline industry, but it also has the fewest people employed. The highest numbers of jobs are in the trucking industry, but they also have the second lowest annual income.

Table 2.1 – 2013 Freight Employment and Salary by Transportation Industry

Industry	Number Employed		Average Annual Salary	
Aviation		6,066		$65,232
Railroad		1,582		$69,084
Pipeline		265		$107,016
Trucking		20,191		$41,808
Warehousing		8,283		$38,040
	Total	**36,387**	**Average**	**$64,236**

Source: Utah Department of Workforce Services, 2015.

Trucking

According to FHWA's Highway Statistics, Utah has the highest percentage of truck traffic in the U.S. at 23 percent, while the average is 12 percent nationwide. Utah businesses have quick access to competitive trucking services to meet any logistics needs across the continent.

Utah's Primary Freight Network (Highways)

Originally defined in 2005 as Utah Primary Freight Corridors, Utah has amended the name to be consistent with the FAST ACT and to distinguish between highway and railroad corridors. Utah's PFN highways consist of Interstate Routes, Critical Rural Freight Routes, Critical Urban Freight Routes, and Energy Routes. The following table shows the number of miles by route type in Utah.

Table 3.1 – Utah's Primary Freight Network Highway Mileage 2015

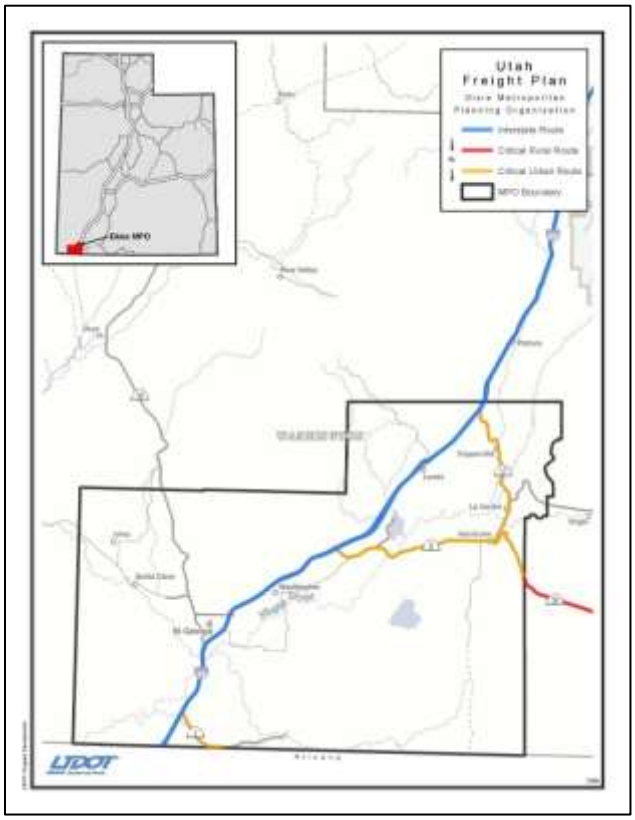
Route Type	Mileage
Interstate Routes	936.8
Critical Rural Freight Routes	710.7
Critical Urban Freight Routes	89.2
Energy Routes	255.2
Total	**1,991.9**

Map #11 shows Utah's PFN highways.

The PFN highways are statewide and include routes within the boundaries of the four MPOs, which include Cache MPO, Dixie MPO, Mountainland Association of Governments (MAG), and the Wasatch Front Regional Council (WFRC). Only 14 percent of Utah's PFN highways are located within the MPO areas. The following table shows the route types and number of miles by MPO.

Table 3.2 – Metropolitan Planning Organizations and PFN Highways

Route Type	Cache	Dixie	MAG	WFRC
Interstate Routes	0	28.1	44.3	113.8
Critical Rural Freight Routes	0	0	5.7	0
Critical Urban Freight Routes	30.0	25.9	6.6	27.3
Energy Routes	0	0	0	0
Total Route Miles	**30.0**	**54.0**	**56.6**	**141.1**



There are four main grants or loan programs that are available to Utah counties and incorporated municipalities for highway related infrastructure improvements. While these programs do not specifically identify the use of these funds for freight improvements, it does not prohibit them either. The four main programs include the following:

Class B & C Road Funds
State Infrastructure Bank Loan Fund
UDOT Flexible Match on Federal-Aid Projects
Off-System Bridge Soft Match Credit Program

Strengths & Needs

As one of the first states to identify its PFN highways way back in 2005, Utah early on focused its research and improvement funding on those routes with the highest truck traffic volumes. Over the last decade UDOT has conducted extensive outreach and research with the trucking industry including the Southern Utah Truckers Association (SUTA). Many of the system

improvement projects across the state and most of the projects in Washington County had direct input from SUBA and have been included on the State Freight Project List – excerpt shown below:

County	Jurisdiction	Route	Project Name and Location	Length	Improvement Type	Est. Cost in Millions*
Tooele	TRPO	I-80	I-80, Widen from 4 lanes to 6 lanes from SR-36 to SR-201	2.6	Widening	NA
Tooele	UDOT	SR-36	SR-36 MP 62.9 to MP 65.8, from SR-138 to I-80	2.9	Widening	$13
Tooele	UDOT	I-80	I-80 at MP 94.5, Midvalley Highway Interchange (refer to local plan)	NA	New Interchange	$38
Tooele	UDOT	I-80	I-80 at MP 98.7, SR-36	NA	Interchange Upgrade	$38
Uintah	UDOT	US-40	US-40 Widen EB and add center turn lane from MP 121.7 to MP 124.9, Gusher	3.2	Passing Lanes	$12
Utah	MAG	I-15	I-15 Draper 12300 S. to Lehi Main St. Reconstruct Freeway and Interchanges	11.7	Reconstruction	$429
Utah	MAG	SR-75	I-15 FWY to Springville Main St	1.9	Widening	$38
Utah	MAG	US-6	Powerhouse Rd to Diamond Fork Rd	0.5	Widening	$16
Wasatch	UDOT	US-40	US-40 Widen WB from MP 35.1 to MP 39.0, West of Strawberry Reservoir	3.9	Passing Lanes	$11
Wasatch	UDOT	US-189	US-189 MP 19.4 to MP 25.5, Wallsburg to Charleston	6.1	Widening	$27
Wasatch	WRPO	US-189	US-40 Widen to 5 lanes from US-189 (HUB) to Mill Road	1.5	Widening	$6
Wasatch	WRPO	US-40/189	US-40/189 Interchange at SR-32/River Road (Exit 13)	NA	New Interchange	$25
Washington	DMPO	SR-9	SR-9 Interchange at Telegraph, So. Parkway Segment VI	NA	New Interchange	$12
Washington	DMPO	I-15	I-15 Add Auxiliary Lanes from MP 8 to MP 10 and Mall Drive Underpass	2.3	Widening	$57
Washington	DMPO	I-15	I-15 Widen SB lanes from Brigham Road to Dixie Drive	1.1	Widening	$25
Washington	UDOT	SR-59	SR-59 Widen travel lane in each direction from MP 2.0 to MP 3.5	1.5	Passing Lanes	$4
Washington	UDOT	SR-59	SR-59 Widen travel lane in each direction from MP 8.2 to MP 9.1	0.9	Passing Lanes	$2
Washington	UDOT	SR-59	SR-59 Widen NB from MP 12.3 to MP 12.7	0.4	Widening	$2
Washington	UDOT	SR-59	SR-59 Widen travel lane in each direction from MP 13.0 to MP 14.1	1.1	Passing Lanes	$3
Washington	UDOT	SR-59	SR-59 Widen SB from 1 lane to 2 from MP 15.7 to MP 17.0	1.3	Passing Lanes	$3
Washington	UDOT	SR-59	SR-59 Widen SB from MP 17.3 to MP 17.8	0.5	Passing Lanes	$1
Weber	WFRC	Local	Pioneer Road (400 N), Restripe from 2 lanes to 4 lanes from I-15 to 1200 West	0.9	Corridor Improvements	$0
Weber	WFRC	I-15	I-15 Interchange at 24th Street	NA	Interchange Upgrade	$45

*Estimated Cost represents planning level costs in 2015 dollars

The PFN is generally in good shape but does have some roadway improvement needs. Please refer to the State of Utah Freight Plan for further detail.

Strategic Goals with Objectives

Dixie MPO's three strategic goals are as follows:

1. Zero Crashes, Injuries, and Fatalities
    - Dixie MPO is committed to safety, and we won't rest until we achieve zero crashes, zero injuries, and zero fatalities.
2. Preserve Infrastructure
    - We believe good roads cost less, and through proactive preservation we maximize the value of our infrastructure investment for today and the future.
3. Optimize Mobility
    - Dixie MPO optimizes traffic mobility by adding roadway capacity and incorporating innovative design and traffic management strategies.

Appendix A

Typical Sources of N Ox and VOC:

Aircraft Purge Systems
Chemical Milling
Cold Solvents
Construction Equipment
Boiler Systems
Dip Tanks
Fueled Engines, mobile and stationary
Engine Test Facilities
Fueling Stations
Fueling Equipment
Fuel Tanks, mobile and stationary
Generators
Landscaping Equipment, engines
Paint Strippers
Painting Operations
Wastewater Treatment Plants

Sources of Air Quality Programs, Regulations, and Information:

Department of Environmental Quality, State of Utah
Division of Air Quality, DEQ, State of Utah
Environmental Protection Agency
The Ozone Flex Program: Voluntary Strategies to Reduce Smog (June 21, 2001)

Major Employers 2014 - Washington County

Major Employers 2018 - Washington County

Rank	Company	Industry	Size
1	Intermountain Healthcare	Healthcare	3000-3999
2	Washington County School District	Public Education	3000-3999
3	Wal-Mart	Warehouse Clubs & Supercenters	1000-1999
4	Dixie State University	Higher Education	1000-1999
5	St. George City	Local Government	1000-1999
6	SkyWest Airlines	Air Transportation	500-999
7	United States Government	Federal Government	500-999
8	Andrus Trucking	General Freight Trucking, Long-Distance	250-499
9	Washington County	Local Government	250-499
10	Washington City	Local Government	250-499

11	Harmons	Grocery Store	250-499
12	Caption Call	Interpretation Services	250-499
13	Family Dollar	Warehousing/Retail Trade	250-499
14	Home Depot	Home Centers	250-499
15	Lin's Supermarket	Grocery Store	250-499
16	Costco	Retail Warehouse Club	250-499
17	Stephen Wade Auto Center	Automobile Dealer	250-499
18	Red Mountain Resort	Accommodations	250-499
19	RAM Manufacturing	Fabricated Metal Product Manufacturing	100-249
20	Sequel Youth Services of Red Rock Canyon	Residential Care	100-249
21	Allconnect	Telephone Call Center	100-249
22	Tuachan Center for the Arts	Entertainment Facility	100-249
23	Avalon Care Center - VA	Nursing Care Facility	100-249
24	Hurricane City	Local Government	100-249
25	Sunroc Corp	Ready-mix Concrete	100-249
26	Litehouse	Food Manufacturing	100-249
27	Boulevard Furniture	Furniture Store	100-249
28	Wilson Electronics	Communications Equipment Manufacturing	100-249
29	Cinnamon Hills Youth Crisis Center	Residential Care	100-249
30	Entrada at Snow Canyon	Golf Course	100-249
31	State of Utah	State Government	100-249
32	Orgill	Hardware Wholesaler	100-249
33	Paparazzi	Direct Sales Retailer	100-249
34	Albertsons	Grocery Store	100-249
35	Intermountain Employment Service	Employment Services	100-249
36	Smith's Marketplace	Grocery Store	100-249
37	Phaze Concrete	Concrete Contractor	100-249
38	Maverik Country Stores	Gas Station/Convenience Stores	100-249
39	Zitting Construction and Development	Construction	100-249
40	Costa Vita	Restaurant	100-249
41	Xanterra Parks and Resorts	Accommodations	100-249
42	Sunroc Building Materials	Building Materials	100-249
43	Lowe's Home Center	Home Centers	100-249
44	Southwest Community Health	Outpatient Care Centers	100-249
45	Deseret Industries	Employment Services	100-249
46	Diamond Ranch Academy	Residential Care	100-249
47	Deseret Laboratories	Pharmaceutical Manufacturing	100-249
48	Revere Health	Healthcare	100-249
49	Red Lobster/Olive Garden	Full-Service Restaurant	100-249
50	Jimmy Johns	Fast Food Restaurant	100-249
51	St George Skilled Nursing Facility	Nursing Care Facility	100-249
52	Safari Hospitality	Accommodations	100-249

53	Wittwer Management	Accommodations	100-249
54	Red Cliffs Healthcare	Nursing Care Facility	100-249
55	Target	Discount Department Store	100-249
56	Ensign Hospitality	Accommodations	100-249
57	Ivins City	Local Government	100-249
58	Sunrise	Residential Care	100-249
59	Red Rock Healthcare	Home Healthcare	100-249
60	Megaplex Theatres	Theaters	100-249
61	Wendy's	Fast Food Restaurant	100-249
62	Interstate Rock Products	Heavy Construction	100-249
63	CCSi	Telephone Call Center	100-249
64	St. George Ford	Automobile Dealer	100-249
65	Zions Bank	Banking	100-249
66	Dominos Pizza	Restaurant	100-249
67	Subway	Fast Food Restaurant	100-249
68	LDS Church Religious Agencies	Church	100-249
69	Parke Cox Trucking	Trucking	100-249
70	Summit Athletic Club	Fitness Facility	100-249
71	Black Bear Diner	Restaurant	100-249
72	United Parcel Service	Couriers	100-249
73	St George Executive Shuttle	Transportation	100-249
74	Texas Roadhouse	Restaurant	100-249
75	American Logistics Company	Transportation Management	100-249
76	Printerlogic	Computer Programming Services	100-249

Source : Business Resource Center at Dixie State University; Updated September 2017 by BRC; Data Source UDWS

APPENDIX B – Maps

Map 1. 2015-2040 Projects and Phasing

Map 1.A. 2015-2040 Projects and Phasing

Map 1.B. 2015-2040 Projects and Phasing

Map 1.C. 2015-2040 Projects and Phasing

Map 1.D. 2015-2040 Projects and Phasing

Map 2. MPO Planning Boundary

Map 3. 2015-2040 Dot Density Population Change

Map 4. 2015-2040 Dot Density Employment Change

Map 5. Traffic Crash Data (2010-2019)

Map 6. Traffic Congestion 2040 No-Build

Map 7. Traffic Congestion 2040 Build

Map 8. Active Transportation

Map 9. Transit Services

Map 10. Functional Classification

Map 11. Primary Freight Corridors