

2015-2040

Regional Transportation Plan

Dixie Metropolitan Planning Organization

June 17, 2015



Prepared by:

The Dixie Transportation Planning Office
Five County Association of Governments
1070 West 1600 South, Building B
St. George, UT 84770



TABLE OF CONTENTS

CHAPTER 1 – EXECUTIVE SUMMARY	2
CHAPTER 2 –NEED AND PURPOSE	3
CHAPTER 3 – VISION AND MISSION	4
CHAPTER 4 – PROJECTED TRANSPORTATION DEMAND.....	7
CHAPTER 5 – FINANCIAL PLAN	11
CHAPTER 6 – EXISTING AND PROPOSED TRANSPORTATION FACILITIES	14
CHAPTER 7 – SAFETY MANAGEMENT	21
CHAPTER 8 – SECURITY	27
CHAPTER 9 – CONGESTION MANAGEMENT	30
CHAPTER 10 – CORRIDOR PRESERVATION	31
CHAPTER 11 – ENVIRONMENTAL MITIGATION	34
CHAPTER 12 – ACTIVE TRANSPORTATION	44
CHAPTER 13 – TRANSIT SERVICE	45
CHAPTER 14 – PUBLIC INVOLVEMENT.....	48
CHAPTER 15 – FREIGHT	50
APPENDIX A – MAPS	53
Map 1. 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 Crashes (2010-2014)	
Map 6. Traffic Congestion 2040 No-Build	
Map 7. Traffic Congestion 2040 Build	
Map 8. Active Transportation Master Plan	
Map 9. Transit Services	
Map 10. Functional Classification	
Map 11. Primary Freight Corridors	
APPENDIX B – POTENTIAL FUNDING SOURCES	54
APPENDIX C – SORCES OF NOX / MAJOR EMPLOYERS (WASHINGTON COUNTY)	57
APPENDIX D – PUBLIC COMMENTS AND MPO RESPONSE	59

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 Bureau's 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 environmental constraints.

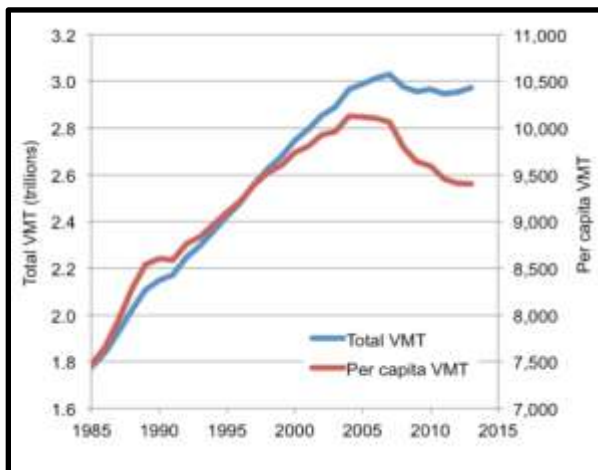


The plan is updated every four years in coordination with the Utah Department of Transportation, three other MPOs in Utah, Washington County, and the cities within the urban areas noted above. Transportation planning in Washington County follows local visioning goals in collaboration with other planning 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 A.

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 25 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 25 years is noted in

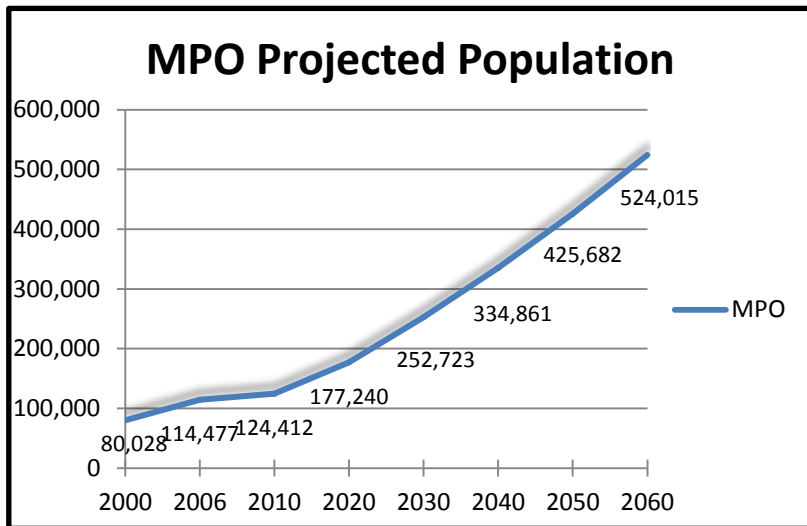
Chapter 6 and depicted on Map 1 in Appendix A. Exceptional evidence also points to the need for expanded bicycle facilities, pedestrian facilities, and regional transit systems throughout the Urbanized Area as outlined in Chapters 12 and 13.

Special attention must also be given to safety, congestion, and corridor preservation over the next 25 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 2013 estimated population of Washington County, Utah is 147,800 people. According to the Utah Governor’s Office of Economic Development (GOED), the Dixie Metropolitan Planning Organization (Dixie MPO) population is expected to grow to over 177,000 by 2020; to over 252,700 by 2030; and to 334,800 by 2040.



This 2015-2040 Regional Long-Range Transportation Plan outlines how various jurisdictions within the Dixie MPO intend to meet the area’s transportation demands and needs over the next 25 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 25 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 A.

The Dixie MPO was designated by the Governor 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 July 6, 2012, the President of the United States signed P.L. 112-141, the Moving Ahead for Progress in the 21st Century Act (MAP-21).. The \$105 billion law reauthorized federal surface transportation programs through (FY) 2013 and 2014. The reauthorization has persisted through May 2015 through continuing resolutions. Reauthorization of a similar transportation bill is anticipated soon, but not in time for consideration in this plan.

MAP-21 Transforms the framework for investments to guide the growth and development of the country's vital transportation infrastructure. MAP-21 continues to focus on safety and security, and requirements for public participation. The law also includes key transit and environmental requirements with an emphasis toward developing transportation alternatives ranging from passenger rail and transit to bicycle and pedestrian paths.

Common to MAP-21 and previous Acts, is the consideration in the planning process of broad based requirements or issues. MAP-21 identifies the following goals:

1. Leverage \$1.75 billion of the Transportation Infrastructure Finance and Innovation Act (TIFIA) loan program funds into \$34 billion in private sector and other investments for transportation projects.
2. Develop a new transit safety program to assure safety on buses, subways, streetcar, and light-rail systems.
3. Step up safety efforts, including the fight against distracted driving, and to improve truck and motor coach safety.
4. Consolidate highway and transit programs, eliminating duplicate or outdated programs.

Chapter 3 – Vision and Mission

The ‘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 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.

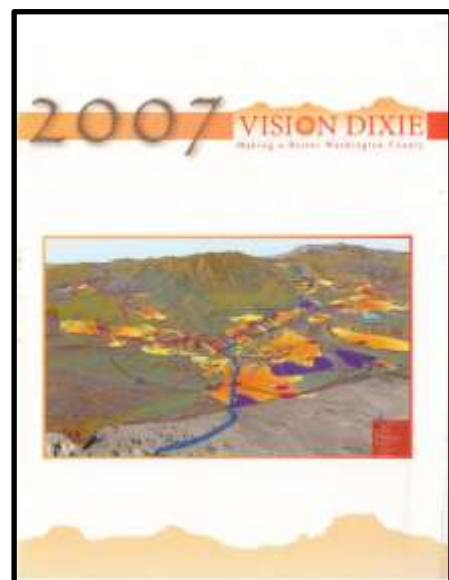
Principle 7: Direct Growth Inward.

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, roads in Dixie have to accommodate more traffic and are 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 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, DMPO, 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.

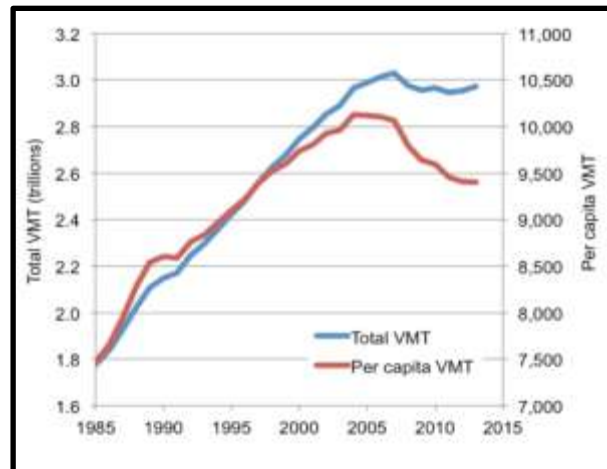
These recommendations are supported by the 2015-2040 Regional Transportation Plan.

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.”

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Chapter 4 – Projected Transportation Demand

Prior to the MPO designation, the City of St. George put in place a regional traffic model using the QRS II platform. In 2002, the MPO supported a contract to re-calibrate the model to Census 2000 data and subsequently in 2004 another MPO contract generated year 2015 and 2035 traffic projections based on updated population and employment data from the Governor’s Office of Economic Development. During 2005 and 2006, several corridor studies were undertaken using the model, including SR-9 in Hurricane where a new model was created.



Because of new land use information and population assumption changes identified, these corridor “models’ influenced the need to expand the regional model and to re-calibrate. The model structure added the cities of Hurricane/LaVerkin Urban Cluster, Toquerville, Leeds Town, and the four cities in the Dixie MPO Planning Boundary, Ivins, Santa Clara, St. George and Washington along with Washington County areas adjacent to the cities/towns.

A change in model platform (software) was undertaken in 2010. This change came about as a result of discussions addressing the effectiveness of the expanded QRS II Dixie Model beginning as far back as 2007-2008. The QRS II model was migrated to the CUBE model in late 2010. The change also included all of Washington County to better predict traffic movements on a county-wide basis. A rigorous effort to update socio-economic data was completed as a part of the process with input from Washington County and each of the cities/towns in the County. The CUBE model is the platform used for the State Travel Demand Model; supported by UDOT and other MPO's.

In 2013, the four Eastern communities of Hurricane, LaVerkin, Toquerville and Leeds became a part of the Dixie MPO. These communities now each have representation on both the Transportation Advisory

Committee and the Transportation Executive Council. As noted above, the four communities had already been added to the Travel Demand Model (TDM).

Also in the summer of 2013 the DMPO again commissioned an update of the Travel Demand Model. This update was to incorporate the results of the 2012 Household Travel Survey and the 2010 Census and to make the model current with updates being made to the other travel demand models throughout Utah. Socioeconomic forecasts were also refreshed based on the Governor's Office of Planning and Budget (GOPB) 2012 forecasts. Completed in October of 2013, it became Version 2 of the DMPO Travel Demand Model.

Model Structure

Travel demand models are computer-based mathematical models that use socioeconomic and roadway network 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.

The 2010 DMPO US census defined population was estimated at 105,336. With a 2010 county population of 138,115 over 76 percent of the county population lives within the DMPO urbanized census boundaries. The 2010 US census population estimate for the Hurricane Urban Cluster was 16,336.

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

The characteristics of population distribution in the MPO area are vital to the development and degree of transportation infrastructure that should be planned for over the life of the plan. Information gained from work done over the last few years helps to paint a picture of current and projected population growth. With the merging of the Hurricane Urban Cluster (population 16,336) with the DMPO Urbanized Area, the combined urban area population, based on the 2010 Census is 121,672 which means that over 88% of the county population now lives within the DMPO census defined "Urban" boundaries. Other 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.

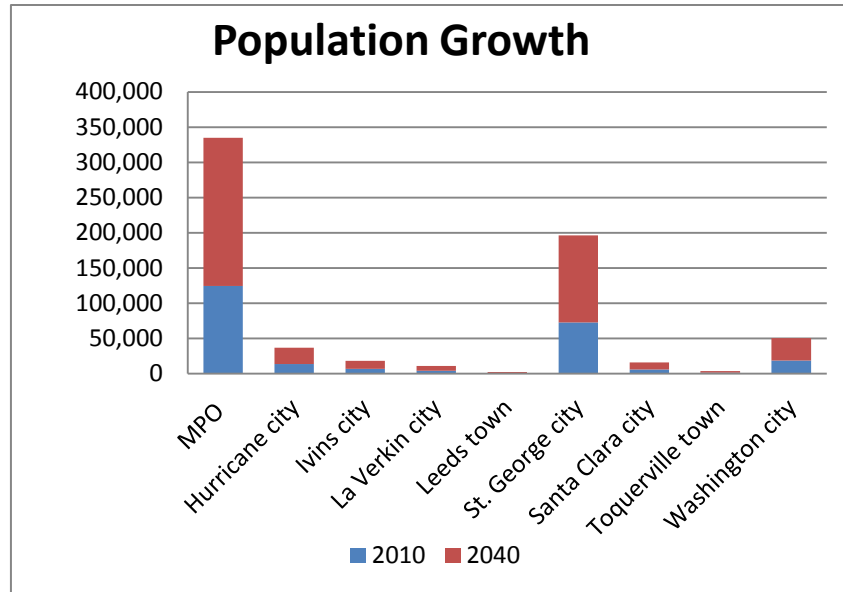


Figure 1 Population Growth - MPO Cities and Towns

The following figures include population depictions for towns/cities within the "Planning Boundary" of the DMPO. Note that 100% of the member cities populations (124,412) live within the DMPO "Planning Boundary. The County-wide population is expected to increase from 138,115 in 2010 to 371,743 in 2040 with over 90% of the county population living within the cities of the DMPO Planning Boundary.

Note that the populations shown in Figures 1 & 2 represent the population for each of the cities that are members of the MPO. Since portions of the cities are not within the current census defined MPO urban boundary the populations shown are slightly higher than those of the urbanized area as detailed above. However, all cities represented are within the planning boundary as noted. Figure 3 represents historical population growth in Washington County.

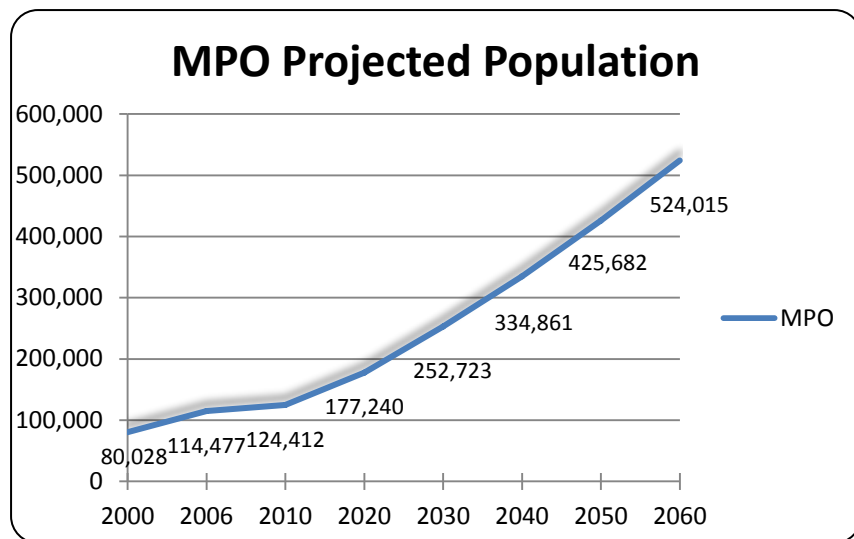


Figure 2 MPO Projected Population - MPO Cities and Towns

The distribution of the current population and projected growth are illustrated on Map 3, the “Population Change Map” in Appendix A. The mapping includes a 2014 population distribution as well as identifies projected areas of growth out to 2040.

Employment and Commuting

According to the Utah Department of Workforce Services there were approximately 4,648 employment establishments operating in Washington County in 2013 (see Appendix C for table of major employers). It should be realized that companies come and go. In 2013, the number of employment centers in Washington County with more than 100 employees was 52. As is the case with many businesses, there are seasonal peaks in employment, such as the Christmas holiday season at retail establishments. The largest employer in the urbanized area is

the Washington County School District. Their employees, however, and their work destinations, are spread throughout the urbanized area.

As of 2014 Washington County has experienced two full years of strong employment expansion. It is anticipated that additions to the county's employment base should continue to strengthen Washington County's numbers in the months ahead. According to the Department of Workforce Services; "in December 2013 the County's year-to-year employment gain clocked in at 5 percent, representing a net increase of roughly 2500 jobs." Leisure/hospitality services and construction were very close for the top honors with retail trade, government (including public education) and healthcare/social services all adding good numbers of new positions. As growth continues, so too will the need for adequate transportation facilities. The distribution of current employment and projected employment growth are illustrated on Map 4, the "Employment Change Map" in Appendix A.

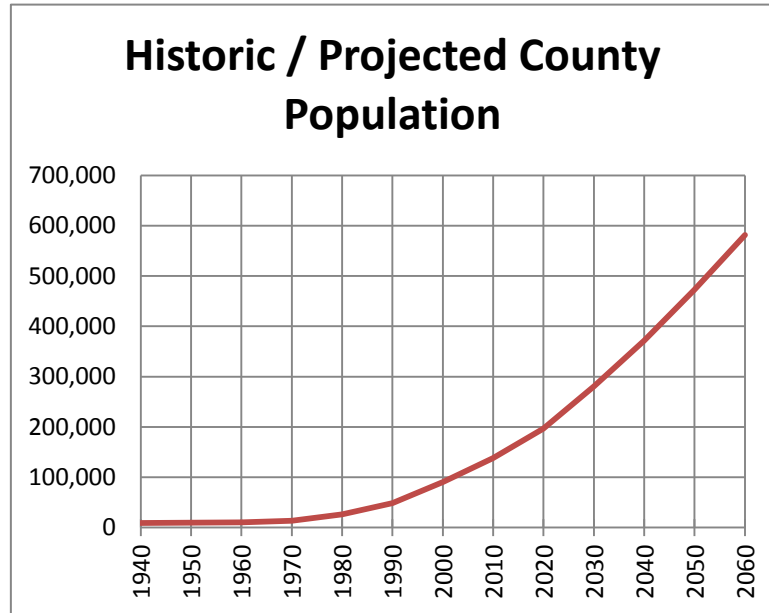


Figure 3 Historic / Projected Population - Washington County

Objectives and Goals

To plan for future transportation demands upon the transportation network, the DMPO 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 DMPO 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 improvements.

Federal Funds:

The current federal highway and transit bill (Moving Ahead for Progress in the 21st Century Act or MAP-21) continues to fund federal transportation programs under continuing resolutions while a new federal highway bill is anticipated within the next several months.

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 percent of these funds are kept by the UDOT for their construction and maintenance program. 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 a quarter of a percent sales tax for transportation, development impact fees, general funds (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 DMPO 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) Urbanized Area Formula Grants
- (5309) Fixed Guideway Capital Investment Grants
- (5310) Services for elderly and disabled
- (5311) Formula Grants for Rural Areas
- (5340) High Density States 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

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 others in 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 on the following *state wide* revenue assumptions:

- 100% Auto Related Sales Tax- 16.6% total by FY 2017
- 75% Auto Related Sales Tax- 12.5% total by FY 2015
- \$0.05 SW Fuel Tax or Equivalent, every 10 yrs starting in FY 2014 (30% to B & C Fund)
- State Wide Vehicle Registration Fee- \$10 increase in FY 2018

Local (Future) Funding Assumptions

The Dixie MPO Executive Committee agreed on the following *local* revenue assumptions:

- ¼ percent Local Option Sales Tax or equivalent by 2015
- An additional \$0.05 Local Option Fuel Tax or equivalent every 7 years starting in 2016
- An additional \$5 Local Option Vehicle Registration Fee (or equivalent) every 10 years starting in 2018
- ¼ percent Sales Tax or equivalent for public transit

Fiscal constraints through 25-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 group projected a 4.5 percent to 5 percent annual inflation rate (a conservatively high estimate based on past experience) on all cost projections. A conservatively low 1.96 percent inflation rate was projected on revenue sources. Utah’s shifting population was also figured into these assumptions based on projections by the Governors’ Office of Planning and Budget. Currently the Dixie MPO is home to 6.67 percent of the state’s population. GOPB projects the Dixie MPO population will reach 8.6 percent of state population by 2021 and 10.2 percent in 2030.

Federal formula funds, which represent only a small portion of an MPOs annual budget, assist MPO planning, environmental assessments and construction seed money for projects that move from the Plan to the Transportation Improvement Program. 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 following table shows the total revenues assumed for projects in each of the three phases of the long range plan. Total expenditures are detailed in the “Project & Phasing List” in Chapter 6.

2015-2040 Long-Range Plan Total	
Total Assumptions	\$1,871,919,869
Total Needs	\$1,883,635,000
Total Difference	(\$11,715,131)

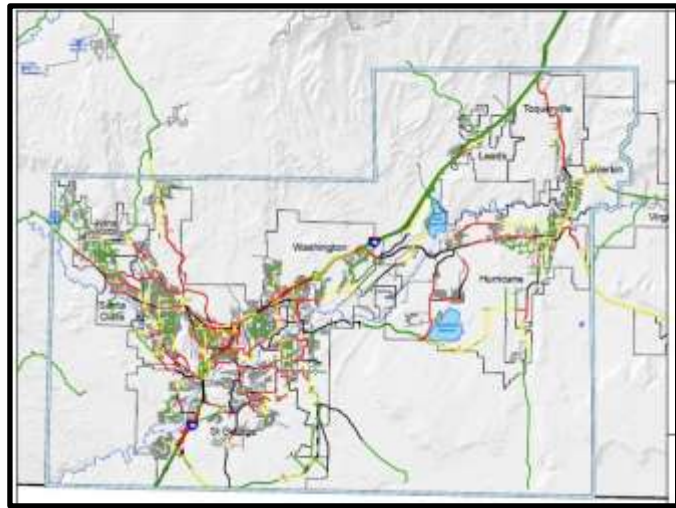
When compared with the needs list and anticipated costs in Chapter 6, these funding assumptions seem adequate in Phase 1 of the RTP. However, a re-evaluation of revenue needs may be appropriate in Phases II and III – beyond year 2025.

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 2015-2024. The associated project list was created to relieve the traffic demands of 2024. Phase Two includes 2025-2034 with a similar project list to relieve congestion under 2034 forecasts, and Phase Three includes the projects needed in 2035-2040.



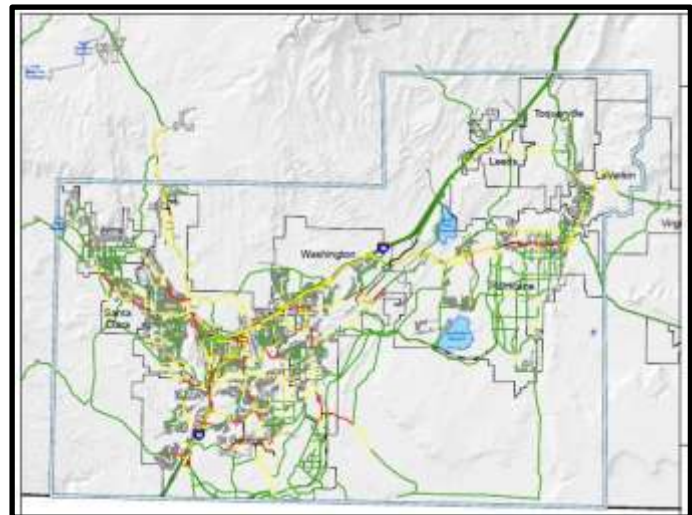
2040 Traffic Congestion No-Build Map (See Appendix A)

Current Network

An inventory of the current MPO road network is best noted through use of the Traffic Congestion 2040 - No-Build map (Map 6 in Appendix A). The roads illustrated in red and black indicate areas of concern for traffic congestion in 2040. If no additional projects are built, the traffic demand in 2040 would exceed current roadway capacities on roads depicted in black. And similarly traffic demand on roads depicted in red would be at full capacity.

Future Network

The Traffic Congestion 2040 - Build map (Map 7 in Appendix A) shows areas concern for traffic congestion in the year 2040 assuming that the projects in this plan are all built at that time. Similarly the traffic demand in 2040 would exceed current roadway capacities on roads depicted in black. And similarly traffic demand on roads depicted in red would be at full capacity.



2040 Traffic Congestion Build Map (See Appendix A)

Projects and Phasing

The next several pages list a variety of transportation projects identified using the methodology outlined in chapters 2-5 above. Projects range from highway widening to bridge and overpass construction, as well as proposed new corridors. Additionally listed are UDOT projects of interest that may lie outside the MPO boundaries, but are vital connections in serving the overall traffic demand of the area (See Map 1 Projects and Phasing Map in Appendix A).

Regional Transportation Plan -- Projects & Phasing -- 2015 - 2040

Project #	Route	Category	City	Length	Project Description	Project Concept	Estimated Cost in 2015 dollars
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Phase One (2015-2024)							
1	3184	Regional	I	3	Old Highway 91 , Kayenta Parkway to Pioneer Parkway (3-Lane Section)	Reconstruction	\$2,900,000
2		Regional	I	1.5	Red Mountain Blvd. (200 East) , Old Highway 91 to Center Street	Reconstruction	\$2,300,000
3		Regional	SC	0.7	Red Mountain Drive , Pioneer Parkway to Western Corridor	New Construction	\$1,843,000
4		Regional	I	0.9	Snow Canyon State Park Access Road	Reconstruction	\$400,000
5	Old 91	Regional	I	1.0	Santa Clara Drive , Swiss Village to 200 E	Reconstruction	\$4,200,000
6		Regional	SG	3.0	Plantations Drive , construct from Sunbrook Drive to Dixie Drive	New Construction	\$10,000,000
7	SR-8	State	UD OT	1.5	Sunset Blvd , widen to 6-lanes past Valley View Dr	Minor Widen/Striping	\$500,000
8		Regional	SG	2.3	Indian Hills Drive widen to 3 lanes	Widen/Reconstruct	\$3,476,000
9	SR-18	State	UD OT	0.5	Bluff Street & Sunset Grade Separated Intersection	New Construction	\$20,000,000
10	SR-18	State	UD OT	1.2	Bluff Street & St. George Blvd Intersection Improvements & SR-18 Widening	Widen/Reconstruct	\$38,300,000
11		Regional	SG	0.3	Airport Road from old airport to Black ridge Drive	New Construction	\$1,250,000
12	SR-18	State	UD OT	2.0	SR-18 , St. George Blvd. to Main Street	Widen/Reconstruct	\$16,800,000
13		Regional	SG	2.8	Astragalus Dr from So. Pkwy Exit 1 to So. Pkwy Exit 3	New Construction	\$10,080,000
14	I-15	State	UD OT	1.0	I-15 Brigham Road to Dixie Drive, Southbound Widening	Widening	\$25,000,000
15		Regional	SG		100 South , Widen from 700 East to Bluff St	Re-Striping	\$250,000
16		Regional	SG		700 South , Widen from 700 East to Bluff St	Re-Striping	\$250,000
17	SR-34	State	UD OT	0.3	St. George Blvd. Widening from 900 East to 1000 East	Widening	\$2,500,000
18		Regional	SG	0.5	400 South Trail & Underpass , DSC 700 East to DSC Health Science Building	New Construction	\$2,500,000
19		Regional	SG	4.5	River Road , Widening/intersection improvements, Blvd. to 700 S	Widening	\$5,000,000

20		Regional	SG		River Road , Widening/intersection improvements, Riverside Dr to Bundy Ln	Widening	\$5,000,000
21		Regional	SG	1.3	River Road , widen to 5-lane section from Ft. Pierce Drive to Brigham Road	Widen/Reconstruct	\$3,500,000
22	I-15	State	UD OT	2.3	I-15 MP8-10 Aux lanes and Mall Drive Underpass	Widen/Reconstruct	\$57,000,000
23		Regional	SG	0.58	Commerce Drive - extend road from 1630 East to Price City Hills Road	New Construction	\$4,176,000
24		Regional	SG	1.71	Horseman Park Road - extend road from River Road to Price City Hills Road	Widen/Reconstruct	\$7,000,000
25		Regional	SG	0.5	Red Hills Parkway (SG, W), 2000 East to Green Springs	Widen/Reconstruct	\$3,600,000
26		Regional	SG	1.81	Little Valley Road , extend road to Price City Hills Road and widen	New Construction	\$3,000,000
27		Regional	SG	2.7	Price City Hills Road Phase 1 - construct new road from 2450 South to River Road	New Construction	\$19,440,000
28		Regional	SG	0.3	450 N from 2450 E to 2860 E	New Construction	\$1,080,000
29	I-15	State	UD OT	1.0	I-15 MP 10 Thru Turns at Green Springs	Reconstruction	\$2,700,000
30		Regional	W	1.0	Green Springs and Telegraph Intersection Improvements	Widen/Reconstruct	\$2,200,000
31		Regional	SG	2.0	3000 East from 700 South to 2450 South - 5 Lane Road	Widen/Reconstruct	\$300,000
32		Regional	W	0.2	Wal-Mart / Home Depot Connection between Washington & St. George	New Construction	\$922,000
33		Regional	SG	2.24	2450 South - extend & improve road to Crimson Ridge Dr	New Construction	\$3,000,000
34		Regional	SG, W	2.3	3650 South from 3000 East (SG) to Southern Corridor	New Construction	\$5,353,000
35		Regional	W	1.3	Merrill Road Extend to Washington Fields Rd	Widen/Reconstruct	\$2,433,000
36	I-15	State	UD OT	1.0	I-15 Milepost 11 Interchange	New Construction	\$30,000,000
37		Regional	W	0.9	Washington Fields Road , 2000 South to 3650 South (Phase IV A & B)	Widen/Reconstruct	\$5,960,000
38		Regional	SG	1.5	Airport Parkway from North Airport Access to Airport Loop Road	New Construction	\$5,400,000
39		Regional	W	1	Washington Fields Road , Warner Valley Road to Airport Rd (Phase VII)	New Construction	\$4,005,000
40	SR-7	State	UD OT	4.0	So. Parkway Segment IIIb, Warner Valley Road to Washington Dam Road (1st Barrel)	New Construction	\$22,000,000
41		Regional	H		Purgatory Road - Environmental Study	Environmental	\$540,000
42		Regional	H	1.5	Purgatory Road , Extend to Washington Dam Rd	New Construction	\$11,664,000
43	SR-9	State	UD OT	2.0	So. Parkway Segment VI , Interchange at Telegraph & SR-9	Interchange	\$12,390,000
44	SR-9	State	UD OT		SR-9 I-15 to Southern Parkway, Environmental Document	Environmental	\$2,000,000
45	SR-9	State	UD OT		So. Parkway Segment VI, I-15 to 5300 W - Widen and Improve to Freeway Standards	New Construction	\$16,600,000
46		Regional	H	3.6	Turf Sod Road from 4300 West to Southern Parkway	New Construction	\$7,200,000
47	SR-7	State	UD OT		So. Parkway Segment IVb, Sand Hollow to 3000 S (1st Barrel)	New Construction	\$30,000,000
48		Regional	H	2.24	2770 West (SR-9 to 600 North)	New Construction	\$3,500,000

49	SR-7	State	UD OT		So. Parkway Segment V, 3000 S to SR-9 (1st Barrel)	New Construction	\$50,770,000
50		Regional	H	0.6	2300 South from 700 West to 4800 West (Phase I-III)	New Construction	\$30,700,000
51		Regional	H	2.5	3000 South from 1150 West to 3400 West	New Construction	\$4,000,000
52		Regional	H	2.3	1300 West Street from 600 North to 1500 South	New Construction	\$11,943,000
53		Regional	H	0.1	1150 West Street , from 600 North to 100 South	Widen/Reconstruct	\$1,954,000
54		Regional	H	2.2	700 West from 600 North to Airport Road	Widen/Reconstruct	\$12,263,000
55		Regional	SG		Traffic Control Center ITS	ITS	\$500,000
56		TBD	TB D	8.0	Northern Washington Parkway Corridor , Red Hills Parkway to MP 13 - Environmental	Environmental	\$5,000,000
57		Regional	MP O	1.5	Active Transportation Improvements - Phase I	New Construction	\$3,000,000
58		Regional	H	2.46	3400 West from Sand Hollow Reservoir to SR-9	New Construction	\$4,200,000

Phase One (2015 to 2024)							Total Funding Needs:	\$543,842,000
							Funding Assumptions:	\$530,651,455
							Remainder / (Overage)	(\$13,190,545)

Project #	Route	Category	City	Length	Project Description	Project Concept	Estimated Cost in 2015 dollars
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Phase Two (2025-2034)							
1	3184	Regional	I	3.0	Old Highway 91 , 200 E to Shivwits Reservation 5-Lane	Reconstruction	\$5,000,000
2		Regional	I	3.0	Western Corridor North , Old Highway 91 to Snow Canyon Parkway	New Construction	\$29,400,000
3		Regional	SC	1.5	Santa Clara Dr to Western Corridor Connector Road	New Construction	\$2,000,000
4		Regional	SC	1.5	South Hills Collector A from Clary Hills Dr to Plantations Dr	New Construction	\$2,500,000
5		Regional	SG	1.5	Plantation Drive/Western Corridor - Old Hwy 91 to Sunbrook	New Construction	\$40,944,000
6	SR-18	State	UD OT	6.0	SR-18 , Red Hills Parkway to Winchester Hills	Widen/Reconstruct	\$58,800,000
7		Regional	SG	0.5	Temple Trail Drive Phase 2 - Construct new road from Indian Hills Drive to Dixie Drive	New Construction	\$2,700,000
8		Regional	SG	1.1	Temple Trail Drive, Phase I from Old Airport to Indian Hills Drive	New Construction	\$5,250,000

9		Regional	SG	2.7	Hidden Valley Drive Frontage Road - new road on east side of I-15 from MP 2 to MP 4	New Construction	\$19,440,000
10	I-15	State	UD OT	12.0	I-15 SPUI at MP 4, and Lane Widening from MP 4 to MP 5	Widen	\$69,400,000
11		Regional	SG	0.5	Man O War I-15 Crossing between Pioneer Rd to Hidden Valley Dr	New Construction	\$30,000,000
12		Regional	SG	1.8	Quality Drive from Commerce Dr to Hidden Valley Rd	New Construction	\$6,480,000
13		Regional	SG	3.0	400 East I-15 Ped Tunnel Crossing	New Construction	\$4,000,000
14		Regional	SG	0.5	1450 South Extension over the Virgin River to Riverside Drive	New Construction	\$20,000,000
15		Regional	SG	2.7	White Dome Frontage Road - new road from Southern Parkway to airport	New Construction	\$5,832,000
16		TBD	TB D		Northern Washington Parkway Corridor , Red Hills Parkway to MP 13 - Phase I	New Construction	\$47,000,000
17		Regional	SG	1.9	River Road , Widen to 5-lane section from Enterprise Dr to So. Pkwy	Widening	\$6,840,000
18		Regional	SG	3.0	Cottonwood Springs Dr from Red Hills Pkwy to Washington Parkway	New Construction	\$7,200,000
19		Regional	SG		1630 East, Extend from Commerce Dr to Southern Parkway	New Construction	\$5,000,000
20		Regional	SG	1.0	Horseman Park Road - extend road from Price City Hills Road to West Airport Rd	New Construction	\$3,600,000
21		Regional	SG	2.6	South Frontage Rd from White Dome Frontage Rd to Desert Canyon Dr	New Construction	\$9,360,000
22		Regional	SG	4.3	Airport Loop Road from Washington Fields Rd to 1630 E	New Construction	\$18,056,000
23		Regional	W	0.6	Main Street from I-15 Frontage Road to Washington Parkway	New Construction	\$1,752,000
24		Regional	W	0.7	Extend Main Street to 100 East, south of 400 South	New Construction	\$1,925,000
25		Regional	SG/ W	0.9	Crimson Ridge Dr (SG/W) from 3000 East to Washington Fields Road	New Construction	\$3,136,000
26		Regional	W	0.8	Washington Fields Road from 3650 South to Stucki Farms (Phase VB)	Widen	\$2,269,000
27		Regional	W	1.1	Washington Fields Road from Stucki Farms to Warner Valley Road (Phase VIB)	Widen	\$3,068,000
28	SR-7	State	UD OT	4.0	So. Parkway Segment IIIa (SG & W), Airport to Warner Valley Road (2nd Barrel)	New Construction	\$22,420,000
29		Regional	SG	1.5	So. Pkwy East Frontage Road from Deseret Canyon Dr to So. Pkwy Interchange 9	New Construction	\$5,400,000
30	I-15	State	UD OT	3.0	I-15 Corridor Lane Widening, MP 4 to MP 16	Widen/Reconstruct	\$112,900,000
31		Regional	W	0.9	Washington Dam Road , 1900 East to East City Limits	Widen/Reconstruct	\$3,244,000
32	SR-7	State	UD OT	4.0	So. Parkway Segment IIIb, Warner Valley Rd. to Washington Dam Rd. (2nd Barrel)	New Construction	\$27,330,000
33		Regional	W	3.0	Long Valley Road , construct road from SR-7 Interchange 11 to Interchange 12	New Construction	\$8,884,000
34	I-15	State	UD OT	1.7	Initial SR-9 Interchange Modifications	Reconstruction	\$23,400,000
35		Regional	W	1.5	Warner Valley Road from Purgatory to the road through Warner Valley	New Construction	\$10,447,000
36	SR-7	State	UD OT		So. Parkway Segment IVa, Wash. Dam Rd to Sand Hallow (2nd barrel)	New Construction	\$14,750,000

37		Regional	H	1.2	4300 West from SR-9 to Southern Parkway	New Construction	\$24,863,000
38	SR-9	State	UD OT		So. Parkway Segment VI, 5300 W to So. Pkwy - Widen/Improve to Freeway Standards	New Construction	\$21,700,000
39		Regional	H	0.4	130 North from 3400 West to 3700 West	New Construction	\$500,000
40		Regional	H	1.3	200 North from 2260 West to 3400 West	New Construction	\$5,000,000
41		Regional	H	5.5	3000 West from 150 South to Rlington Parkway	New Construction	\$13,900,000
42	SR-7	State	UD OT		So. Parkway Segment IVb, Sand Hallow to 3000 S (2nd Barrel)	New Construction	\$20,060,000
43	SR-7	State	UD OT		So. Parkway Segment V, 3000 S to SR-9 (2nd Barrel)	New Construction	\$18,880,000
44		Regional	H	4.6	2750 West from 150 South to 3000 West	New Construction	\$10,800,000
45		Regional	H	2.7	1300 South from 200 West to 3000 West	New Construction	\$5,800,000
46		Regional	H	6.8	Rlington Parkway from 400 South to 4700 South	New Construction	\$17,800,000
47		Regional	H	1.3	1150 West from 100 South to 1500 South (Phase II)	Reconstruction	\$5,000,000
48, 49		TBD	TB D	3.3	Construct Toquerville Bypass or Widen/Reconstruct SR-17 from MP 1.1 to I-15	Add Capacity/Safety	\$30,300,000
50		Regional	SG		Traffic Control Center ITS	ITS	\$500,000
51		Regional	MP O	1.5	Active Transportation Improvements - Phase II	New Construction	\$3,000,000

Phase Two (2025-2034)						Funding Needs:	\$817,830,000
						Funding Assumptions:	\$826,089,633
						Remainder / (Overage)	\$8,259,633

Project #	Route	Category	City	Length	Project Description	Project Concept	Estimated Cost in 2015 dollars
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Phase Three (2035-2040)							
1		Regional	I	1.1	Kwavasa Drive in Kayenta	New Construction	\$6,254,000
2		Regional	SG	10.0	Western Corridor, MP 2, Sun River to Plantation Drive (1st Barrel)	New Construction	\$83,000,000
3		Regional	SG	2.6	Green Valley Drive - extend road to Western Corridor	New Construction	\$18,720,000
4		Regional	SC	1.5	Pioneer Parkway , Lava Flow Drive to Red Mountain Drive	Widen/Reconstruct	\$10,800,000
5		Regional	SG	1.9	Navajo Drive - extend road to Western Corridor	New Construction	\$9,450,000
6		Regional	SG	1.9	Dixie Dr - Widen to 7-lane section from Plantations Dr to Blackridge	New Construction	\$8,000,000

7		Regional	SG	1.2	Red Hills Parkway - Increase capacity between SR-18 and Northern Corridor	Widen/Reconstruct	\$10,080,000	
8		TBD	TB D		Northern Washington Parkway Corridor , Red Hills Parkway to MP 13 - Phase II	New Construction	\$47,000,000	
9		Regional	W		Washington Fields Dr - Widen from Warner Valley to 3650 S	Widening	\$5,000,000	
10	I-15	State	UD OT	3.0	I-15 Widening in Southbound direction from MP 16-13	Widen/Reconstruct	\$6,000,000	
11		Regional	W	5.1	Roadway through Warner Valley from Warner Valley Road to Southern Parkway	New Construction	\$14,859,000	
12	I-15	State	UD OT		Leeds North Interchange @ MP 23.7	Interchange Upgrade	\$25,000,000	
13	I-15	State	UD OT		I-15 MP Exit 16 to Exit 27 Widening	Widening	\$159,600,000	
14		Regional	H, L	5.6	Babylon Road	New Construction	\$36,900,000	
15		Regional	H	2.7	3300 South from Rlington Parkway to 3000 West	New Construction	\$6,700,000	
16		Regional	H	2.6	1500 South from 700 West to 3000 West	New Construction	\$6,600,000	
17	SR-9	State	UD OT		SR-9 , increase capacity from SR-59 to Southern Parkway	Widen/Reconstruct	\$20,000,000	
18		Regional	T, L	2.5	Toquerville to Leeds Connector Road	New Construction	\$12,000,000	
19		Regional	H	2.0	1500 West from 1300 South to 3000 South	New Construction	\$6,000,000	
20		Regional	H	7.0	1150 West from 1500 South to 4700 South (Phase III)	New Construction	\$11,000,000	
21	SR-9	State	UD OT		SR-9 (LV), Widen from SR-17 to La Verkin eastern city limit	New Construction	\$10,500,000	
22	SR-59	State	UD OT		SR-59 from MP 20.9 to 22.10, from Big Plain Junction to SR-9	Widening	\$5,000,000	
23		Regional	SG		Traffic Control Center ITS	ITS	\$500,000	
24		Regional	MP O	1.5	Active Transportation Improvements - Phase III	New Construction	\$3,000,000	
Phase Three (2035-2040)							Funding Needs:	\$521,963,000
							Funding Assumptions:	\$515,178,781
							Remainder	(\$6,784,219)

**2015-2040 Long-Range Plan
Totals**

Total Assumptions	\$1,871,919,869
Total Needs	\$1,883,635,000
Total Difference	(\$11,715,131)

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 2015, the Federal Highway Administration is drafting a set of performance measures to aid MPOs in planning and goal setting activities as long-range plans are drafted. The generally agreed upon 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 Utah Unified Transportation Planning Group and the Utah Department of Transportation agree with this general guidance.

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, 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

As the fast growing area in and around the Dixie MPO develops, the number and frequency of traffic accidents will likely increase. Information available to the MPO identifies location and the major contributing factor to the accident as well as the severity of the accident and what injury resulted. Serious and fatal crash information is displayed in Map 5 - Traffic Crashes (Appendix A).

The UDOT has provided crash data by county which includes severity and contributing characteristics of the crashes. The chart below illustrates the incidence of severe injury and fatal crashes in Washington County between 2010 and 2014 (Note: an accident can have multiple contributing factors for example a single vehicle accident can have a DUI, Younger Driver, Overturn, Aggressive Driving and Night Dark Conditions all in a single accident). Additionally, severe and fatal crashes and locations are illustrated on Map 5 "Traffic Crashes" of Appendix A.

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

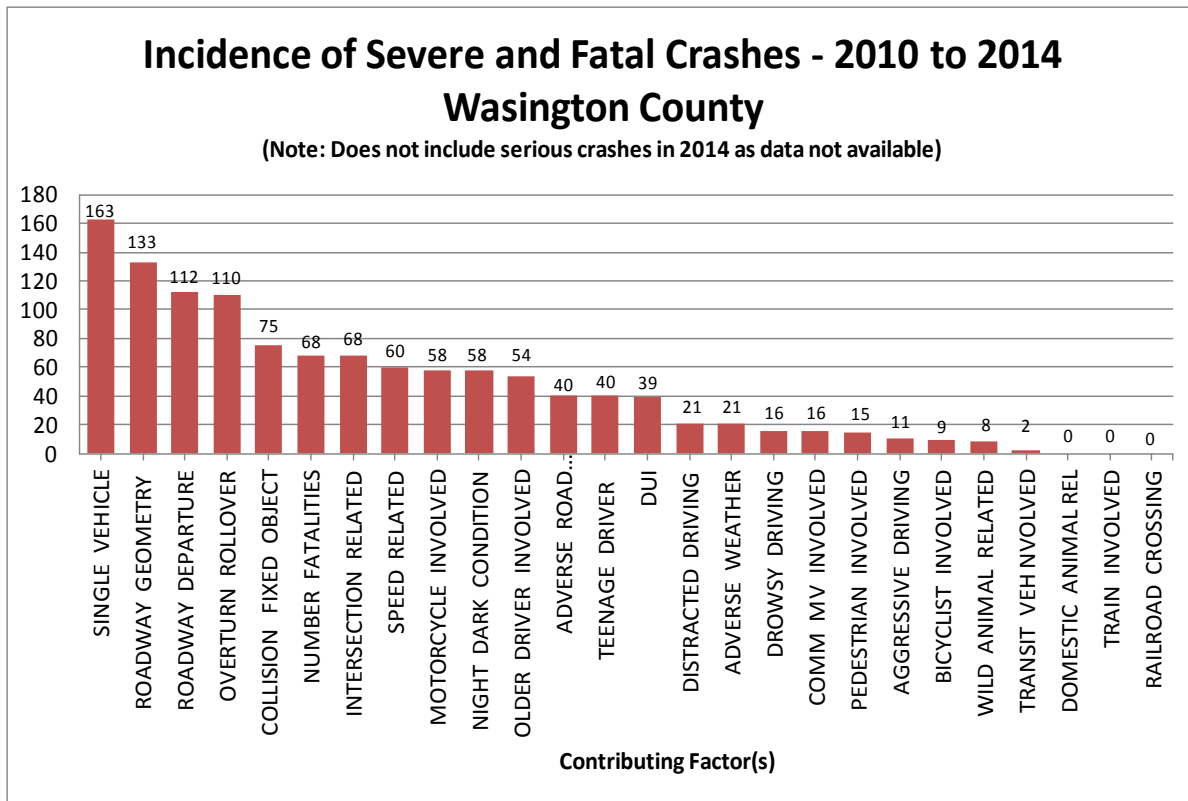


Figure 4 - Incidence of Severe and Fatal Crashes - 2010 - 2014 - Source: UDOT, protected under 23 USC 409

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

Intersections constitute only a small part of the overall highway system, yet intersection-related crashes constitute a higher percent of all crashes within urban areas (Kuciemba and Cirillo, 1992). Crashes are concentrated at intersections primarily because this is the point where traffic movements most frequently conflict with one another as illustrated in Figure 5. Good geometric design combined with good traffic control can result in an intersection that operates efficiently and safely.

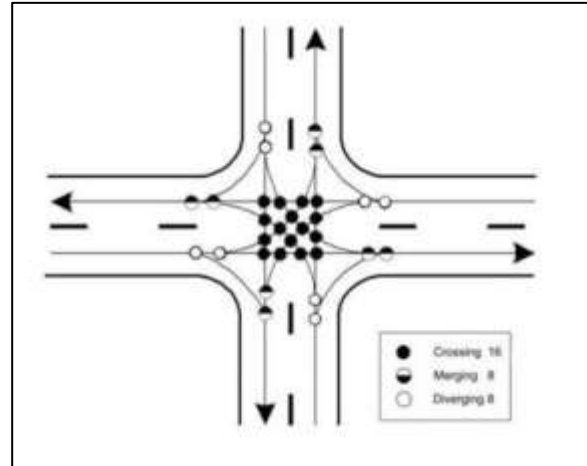


Figure 5 Intersection Conflict Point Diagram

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 its 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. residents 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 objects or overturning if vehicles travel 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.3 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.4 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 stop bars on minor road approaches
 - Install larger regulatory and warning signs at intersections
- I.5 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.6 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.7 Reduce operating speeds on specific intersection approaches
- Post appropriate speed limit on intersection approaches
- I.8 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 essential services as a staff member of the Emergency Operation Center 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 DMPO 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

The DMPO recognizes the value in understanding how project development impacts congestion/delay time. This brief analysis identifies some of the impacts associated with congestion.

There are many ways to describe congestion on a transportation network. For this plan, the total vehicle hours were compared on the entire transportation system in the model year 2040 in both the build (meaning all potential projects have been constructed) and no-build (meaning no potential projects have been constructed) scenarios. A reduction in congestion is realized by building the projects shown in the ‘Projects & Phasing list’ in Chapter 6 and illustrated in the “Network Travel Time” chart.

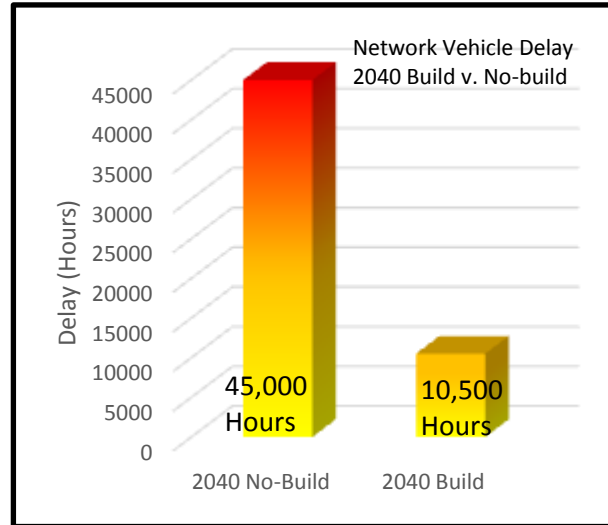


Figure 6: Network Travel time

The “Network Vehicle Delay” chart compares total network travel time per day in year 2040 for the build v. no-build alternatives. There will be 45,000 delay hours per day in the no-build scenario where current capacities are maintained but not expanded. This is compared to the 10,500 vehicle hours if all the projects are built. Thus the build scenario represents a total savings of 34,500 hours per day leading up to and beyond 2040.

The 2040 Daily Travel Times shown in Table 9, assumes a snapshot in time in 2040. It shows a No Build scenario resulting in 264,905 daily network travel time hours, or an 11% increase in hours above the Build scenario of 236,795 hours of daily travel time.

The “Cost Benefit Analysis” table, Table 11, shows the total time saved (in hours) of the build scenario, (building all projects in the long range plan) over the 25-year plan time period. It assumes two scenarios, hourly delay cost of \$20 and of \$30, with both showing a positive ratio over 1.0: 1.87 at \$20 and 2.80 at \$30

In summary, managing congestion on a network with limited capacity growth due to topography constraints puts heavy pressure on decision makers to make every attempt to implement the projects in this plan to serve the population and travel demand expected in year 2040. The mix of highway, public and private transit, and bicycle pedestrian facilities will help maintain the quality of life and economic growth of Utah’s Dixie.

Table 9 - Daily Travel Times

2040 Daily Network

<i>Condition</i>	<i>Travel Time (hours)</i>
No Build	264,905
Build	236,795

Table 11 – 25-Year Cost Benefit Analysis

Total Time Saved (hrs)	Cost Benefit (\$20/Hr)	Cost Benefit (\$30/Hr)	Total Estimated Roadway Improvement Cost	Cost to Benefit Ratio (\$20/hr)	Cost to Benefit Ratio (\$30/hr)
164,350,000	\$3,287,000,000	\$4,930,500,000	\$1,761,710,000	1.87	2.80

Objectives and Goals

With these factors in mind, 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 Bus Rapid Transit (BRT) line.
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 anticipated rights of way years ahead of planned transportation projects as an effort to reduce overall costs. 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.

The Dixie MPO encourages all municipalities to anticipate and address corridor preservation needs within their own boarders – and 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 which meets at least annually to review a list of priority projects and program funds from the Local Transportation Corridor Preservation Fund.

The Local Transportation Corridor Preservation Fund Act is accumulating about \$1.2 million of revenues annually for acquisition of rights-of-way. A portion of these corridor preservation funds are also available for transportation planning studies outside the MPO area.

In order for a project to receive funding, it must be on the COG project priority list. Currently, a number of projects have benefited from preservation funds including the 600 North project in Hurricane, the Bluff Street Widening project in St. George, and a future widening of State Route 9 in Hurricane.

The current list of prioritized projects is shown below.

NAME OF ROADWAY

2015 Alphabetical Listing

<i>1400 West - Between 1300 South & 600 North - Hurricane</i>
<i>3000 East Widening - St. George</i>
<i>3050 East / 850 North Home Depot / Walmart Connection - St. George City - (to be ADDED)</i>
<i>400 South & 200 East Intersection Roundabout - Ivins (to be REMOVED)</i>
<i>600 North Street - 200 West to SR-9 - Hurricane</i>
<i>900 East - Virgin River Crossing, also knowns as Heritage Bridge - St. George</i>
<i>Airport Bypass Road (700 West, 1500 South, 2060 South, & 1150 West) - Hurricane</i>
<i>Apple Valley Gateway - Apple Valley</i>
<i>Bluff Street - St. George</i>
<i>Bridge Road - Relocate/rebuild historic bridge - Rockville</i>
<i>Dixie Springs Drive & 300 South St. - Hurricane</i>
<i>Extension of Washington Dam Road to Southern Parkway - Washington City & Washington County</i>
<i>Hurricane Valley to Leeds Connection - Hurricane</i>
<i>Indian Hills Drive - St. George</i>

<i>Kwavasa Drive (600 West) - Ivins (to be ADDED)</i>
<i>Kolob Road Intersection with SR-9 - Relocation / rebuild - Virgin</i>
<i>Leeds North Interchange Feasibility Study - Leeds</i>
<i>Mall Drive - Bridge over Virgin River and Underpass at I-15 - St. George</i>
<i>Merrill Road - Washington City</i>
<i>Mile Post 11 New Freeway Interchange - Washington City (to be ADDED)</i>
<i>North Airport Loop Road - St. George and Washington City</i>
<i>Purgatory Road - From SR-9 to Washington Dam Road - Hurricane and Washington City</i>
<i>Southern Parkway - UDOT</i>
<i>SR-17 - LaVerkin through Toquerville - UDOT</i>
<i>SR-17 Bypass - Toquerville</i>
<i>SR-18 - I-15 along Bluff Street to Veyo - UDOT</i>
<i>SR-34 - St. George Boulevard - I-15 to Bluff Street - UDOT</i>
<i>SR-9 Shoulder Widening - I-15 to Southern Parkway - UDOT</i>
<i>SR-9 Southern Parkway Interchange to Zion - UDOT</i>
<i>SR-9 to SR-59 Connection - through Sheep Bridge Road or Rockville / Smithsonian Butte</i>
<i>Toquerville to Leeds Connection</i>
<i>Washington Parkway - through Red Cliffs Desert Reserve - Washington City, St. George, & County</i>
<i>Western Corridor - 100' Corridor from Snow Canyon Parkway through Ivins/Santa Clara</i>
<i>Western Corridor - Sun River to Santa Clara</i>

Objectives and Goals

It is of critical importance to preserve transportation corridors now and in the future; the DMPO will work towards meeting goals and objectives to assist this worthy cause.

Objective

Coordinate with the COG to edit its 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. Make DMPO members aware of, and provide reminders and assistance in making proper use of the Preservation Fund.
4. Become more aware of project needs and look for opportunities to preserve important transportation corridors through the use of the Fund.
5. Work with DMPO partners to identify opportunities for corridor preservation.

Chapter 11 – Environmental Mitigation

The Dixie MPO recognizes that transit, road, and trail projects all 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 require 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.

Fish and Wildlife Impacts

The following table presents federally threatened and endangered species, and 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	<i>Pediocactus sileri</i>	Threatened
Shivwits or Shem Milkvetch	<i>Astragalus ampullarioides</i>	Endangered
Holmgren Milkvetch	<i>Astragalus holmgreniorum</i>	Endangered
Gierisch Mallow	<i>Sphaeralcea gierischii</i>	Candidate
Dwarf Bearclaw-poppy	<i>Arctomecon humilis</i>	Endangered
Reptiles/Amphibians/Fish		
Virgin Chub	<i>Gila seminuda</i>	Endangered
Woundfin	<i>Plagopterus argentissimus</i>	Endangered Candidate
Relict Leopard Frog	<i>Rana onca</i>	Extirpated
Desert Tortoise	<i>Gopherus agassizii</i>	Threatened
Birds		
Greater Sage-grouse	<i>Centrocercus urophasianus</i>	Candidate
Yellow-billed Cuckoo	<i>Coccyzus americanus</i>	Candidate
Mexican Spotted Owl	<i>Strix occidentalis lucida</i>	Threatened
Southwestern Willow Flycatcher	<i>Empidonax traillii extimus</i>	Endangered
Mammals		
Utah Prairie-dog	<i>Cynomys parvidens</i>	Threatened
Gray Wolf	<i>Canis lupus</i>	Endangered Threatened
Brown (Grizzly) Bear	<i>Ursus arctos</i>	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 Dominguez 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, Dominguez 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 or if EPA regulations are tightened. 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 tendencies 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.

Ozone is the primary cause of summer air pollution. It is formed when volatile organic compounds (VOCs) and nitrogen oxides (NOx) mix with sunlight and heat. Ozone is a mix of chemicals emitted mainly from vehicle tailpipes, diesel engines and other smoke emitting plants. Often referred to as "smog" is a problem when temperatures are high and daylight hours are long. On hot summer days it can lead to shortness of breath, chest pains and lung inflammation.

The consequences of allowing air quality to deteriorate to the point of exceeding pollutant standards, is costly. Besides the human health impacts and costs that are well documented, once an area is labeled a 'non attainment' area for pollutants, meaning it cannot maintain air quality to acceptable standards, federally funded improvements to transportation systems are restricted. Additional state and federal regulatory actions are then placed over an area increasing the cost to do business, to plan, and to implement projects. Needed federal funding may also be curtailed or withheld if attainment measures are not met.

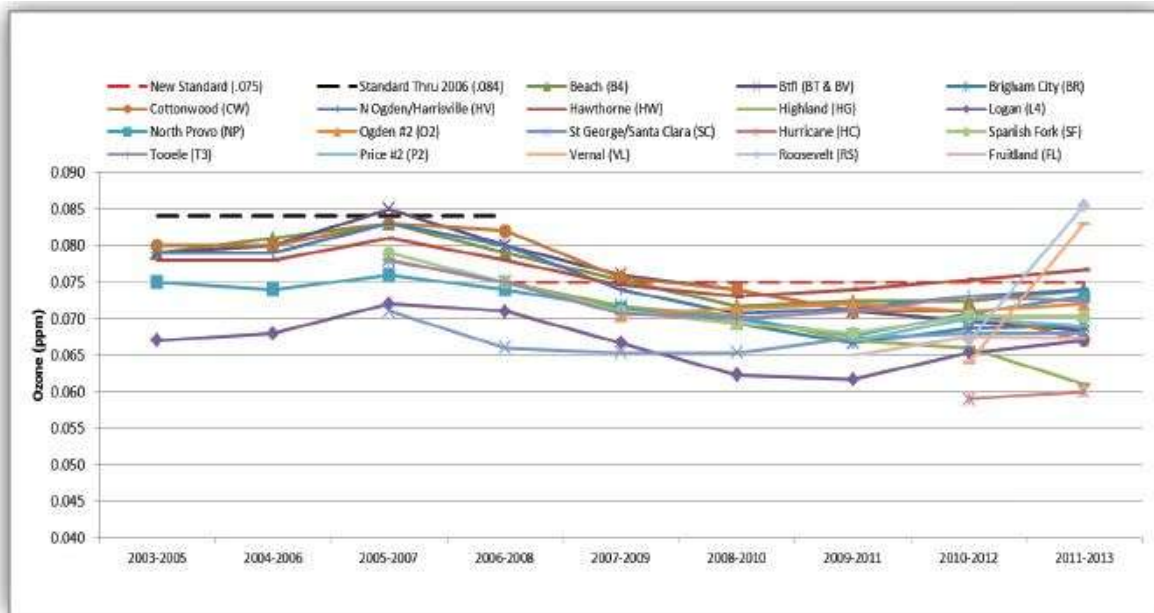
The DAQ has conducted a summer ozone study in 2012, titled "2012 Utah Ozone Study" and is involved in the Western Air Quality Studies in looking at ozone transport and background values. One of the conclusions in the 2012 study suggests that there is broad regional transport of ozone. The study noted that "high ozone concentrations in rural Utah were potentially influenced by regional transport of ozone, springtime emissions of biogenic volatile organic compounds, stratospheric ozone intrusion and wildfire smoke." For the full study visit the DAQ Division of Air Quality web site.

The Division of Air Quality and the Department of Environmental Quality have offered to help the Dixie area avoid this situation, or postpone it for as long as feasible, and will encourage Congress to deal more fairly with areas that are experiencing ambient Ozone from outside sources. DAQ strongly recommends that the Dixie area do all that it possibly can on a voluntary basis in taking reasonable and cost effective measures to protect the air shed.

The State Division of Air Quality (DAQ) reports the status of local air quality. DAQ staff reported that an air quality monitoring station was in place in St. George from July of 1995, through the end of 1997. According to data gathered during that period, although no pollutants exceeded the current standards

at that time, new Ozone standards that were being implemented by the EPA were approached during April/May of 1996 and 1997. In 2008, another air quality monitoring station was established in Santa Clara with similar results as illustrated in the graph below. Currently the Santa Clara monitoring station has been replaced with a station in Hurricane City as the DAQ continues to monitor air quality in the area. Much of the data is available on the DAQ website at: <http://www.airquality.utah.gov/news.htm>. The DAQ has also published its Annual Monitoring Plan for 2014 which includes the Hurricane monitoring station (HC) as part of the program. The State has future plans to start monitoring for ozone at a location in Iron County that is yet to be determined.

Figure 3-Year Average 4th Highest 8-Hour Ozone Concentration



DAQ staff made recommendations to the DTAC to consider developing a voluntary action plan to protect the air shed. Air shed protection is managed at the county level by DAQ.

To be proactive, the DTAC prepared a draft protection plan, and facilitated a locally funded short term Ozone study. SECOR, an air quality-engineering firm, was chosen from a number of submitted proposals and began monitoring from a station placed on Washington County Annex property near the location of the original DAQ monitoring site. Data from this six-month study, conducted from May 2002, through October 2002, did not exceed the then current Ozone standards. However, the Ozone levels were slightly higher when compared to the 1995 - 97 DAQ data. Also, data available from a permanent monitoring site in Mesquite, Nevada shows very similar Ozone concentrations to St. George, according to SECOR. These studies, together with other data from the southwestern region of the US, show that Ozone levels approaching .08 ppm are prevalent regardless of urbanized status. The results of the SECOR study is available for review at the Dixie Transportation Planning Office, Five County Association of Governments, 1070 W. 1600 S., St. George, UT 84770.

Ozone standards were changed in 2010, but subsequently stayed on appeal of a law suit.

In January 2010 EPA proposed stricter standards for smog. As part of EPA's extensive review of the science, the Clean Air Scientific Advisory Committee (CASAC) was asked for further interpretation of the epidemiological and clinical studies they used to make their recommendation. To ensure EPA's decision is grounded on the best science, EPA is said to have reviewed the input CASAC provided before the new standard is selected. Given this ongoing scientific review, EPA intended to set a final standard in the range recommended by the CASAC by the end of July, 2011.

EPA was under a court order to propose a new standard by Dec. 1, 2014. On December 17, 2014, a proposed rule for National Ambient Air Quality Standards for Ozone was published. As of this writing, EPA has held three public hearings and received comments until March 17, 2015. This proposed rule is scheduled to be finalized by Oct. 1, 2015. EPA is proposing to revise the primary standard level to within the range of 65 -70 ppb and the secondary standard to within the same range.

According to the rule, by October 1, 2016, the state will recommend the designation for all areas of the state. By June 1, 2017, EPA responds to the states' initial recommendations and identifies where the agency intends to modify the recommendations. By October 1, 2017 EPA will issue final area designations. By 2020 to 2021 the state is to complete development of implementation plans outlining how they will reduce pollution to meet the standards. Between 2020 to 2037, the state would be required to meet the primary standard, with deadlines depending on the severity of an area's ozone problem. The Clean Air Act does not specify a deadline for the state to meet secondary standards. The state and EPA determine that date through the implementation planning process.

The DAQ has commented that: "in a nutshell, any change to any level in the proposed range will likely result in the violation of the standards and a designation of a non-attainment status for the bulk of the state."

The standard levels of acceptable Ozone were .075 ppm prior to the 2010 proposal. The proposed rule change would bring that level down to .065 ppm to .070 ppm. At the lower levels, if approved, it is projected that the MPO and surrounding areas will likely become non-attainment. According to DAQ information, regional Ozone levels close to the new standard are being seen at monitoring sites throughout the southern Utah region, from Four Corners, into the Grand Canyon, Zion National Park, Dixie and southern Nevada. DAQ also suggests that a local condition is occurring in springtime such that when vegetation begins to green up and temperatures are rising, the combination of emissions of nitrogen oxides (N Ox) and volatile organic compounds (VOC) contribute to ozone formation, and should be included in the scope of emissions inventory and non regulatory monitoring efforts.

Action Plan

The DAQ will continue non regulatory air pollution monitoring in Dixie with the intent of determining local pollution levels for several pollutants, but to especially focus on Ozone. The geographic scope will be the entire County of Washington.

Guidelines are available under EPA's 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. The Ozone Flex Air Program is a voluntary approach to maintain attainment of the NAAQS for ground-level Ozone. Implementation of voluntary control measures in the Flex plans may help areas to avoid violating the 8-hour ozone air quality standard,

improve air quality, and provide public health benefits. More work and investigation will be needed here to determine if this program would be appropriate for the MPO area.

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', 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. Lack of empirical results may limit the ability to change community health standards by affecting public policy. The DMPO 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 C for typical pollution source list)

Traffic Congestion is a contributing factor to the level of air quality due to an 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 (non-prioritized) transportation 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, (non-prioritized), 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 non polluting 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
- Investigate the possibility of providing free vehicle emissions testing to help concerned citizens reduce vehicle emissions

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 DMPO understands the need to 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 DMPO 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 the need for better planning, the Dixie MPO Commissioned a *Dixie MPO Active Transportation Master Plan* to identify projects and policies in the region that will create a transportation network conducive to cycling and walking. With the assistance of Alta Planning and Design, the Dixie MPO developed a master plan and formed a Steering Committee comprised of the following entities to guide the process in developing the plan:

- St George City
- Hurricane City
- Washington City
- Ivins City
- Santa Clara City
- UDOT
- Southern Utah Bicycle Alliance
- Southwest Utah Public Health Department
- Dixie State University
- Washington County School District



The Bicycle/Pedestrian Plan recommends a network of connected bikeways and improved sidewalk connections, with estimated costs and potential funding sources for each project. Facility types include sidewalks, bike lanes, shared roadways, and shared use paths, and various crossing improvements. Map 8 in Appendix A shows existing facilities and potential projects listed in the DMPO Active Transportation Master Plan as adopted by the DMPO Transportation Executive Commission in the spring of 2015. In addition to projects, the plan includes a description of potential policies and programs that can be

implemented to improve active transportation conditions in the region. Potential programs and policies include: education and awareness campaigns, sidewalk infill programs, bicycle parking policy and development regulations, among others.

The Dixie MPO will recommend incorporating the MPO Active Transportation Master Plan into each municipality's transportation plan, including coordinating with municipalities in the region to ensure the Active Transportation Master Plan is in accordance with existing transportation plans. The Dixie MPO will continue to utilize the Active Transportation Steering Committee to coordinate the implementation of bicycle and pedestrian activities throughout the region.

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 College, the Dixie Center, the Dixie Downs area, Bloomington and Ivins City. Map 9 in Appendix A 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 recent 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.

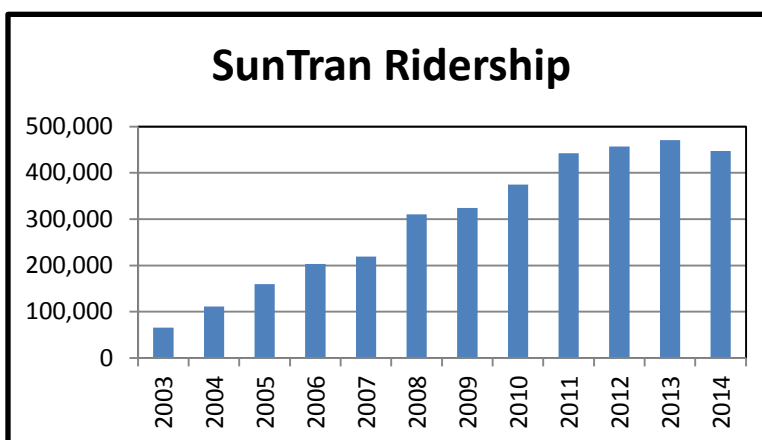
Potential Transit Expansion Areas

In January 2015 transit service was expanded to Ivins and Bloomington. This expansion was accomplished through an inter-local agreement with Ivins and St George City, operator of SunTran. Studies have identified the following additional areas/corridors in the region to be in need of transit service.

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 9 (Appendix A) displays 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. SunTran management is currently working with Washington City to determine which route would best serve the community. A potential route is displayed on Map 9 (Appendix A). The Dixie MPO recently provided assistance to the stakeholders in the process by utilizing the Regional Travel Demand Model to estimate ridership of two route alternatives to inform the process. Similar to Ivins City, initial service to Washington City is likely to be provided through an inter-local agreement with St George City.

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 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 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.

Other Transit Improvements

The *St George Urbanized Area Short Range and Long Range Transit Plan*, completed in 2006 identifies a service plan, which includes providing service to Middleton and Bloomington Hills, while modifying other routes. St. George City and the Dixie MPO will partner in 2015 to update the 2006 plan to reflect current needs for the system and recommend improvements that would improve transit level of service, while offering a plan to sustain the service. In addition to servicing new areas, consideration should be given to provide more frequent and direct service to reduce travel time. In addition to a service plan that recommends specific routes, the plan should include a capital, institutional and financial plan. Some of these elements can draw upon the findings of the *Dixie MPO Regional Transit Study*. The plan should take into account the financial assumptions of the Dixie MPO for additional transit funding, including ¼% sales tax by 2020.

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

Public Transportation cannot be provided without adequate financing. Additional funding is necessary to implement any expansion of the current transit system, including those listed above. 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

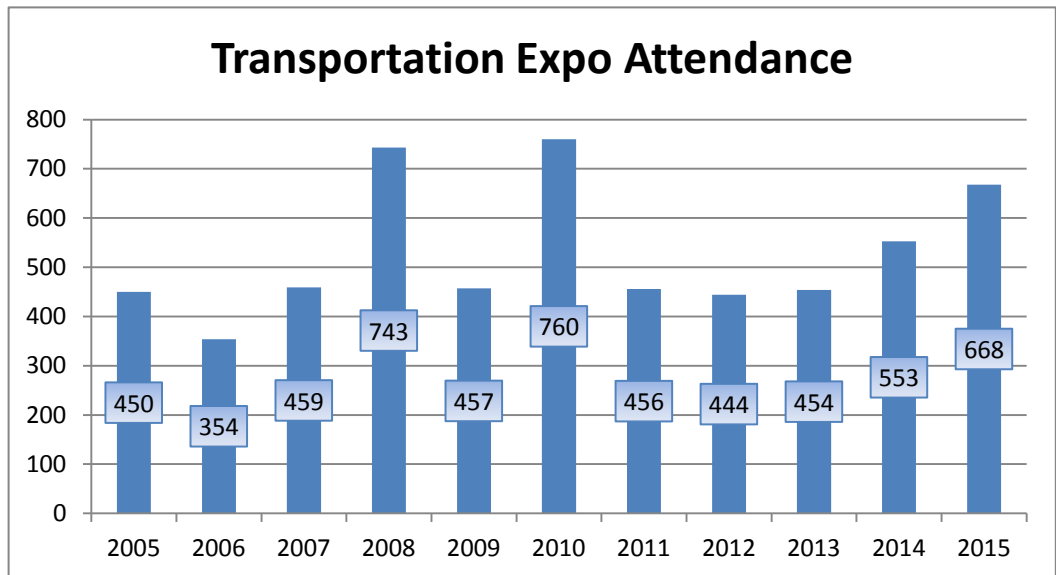
Commitment to Public Involvement

The International Association of Public Participation defines five levels of public involvement in the International Association of Public Participation 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 500 to 700 people attend the “Expo” annually 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 from the 2015 Transportation Expo and in the advertised public comment phase of this plan are noted in Appendix D of this plan.

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 A). 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	Average
	36,387	\$64,236

Source: Utah Department of Workforce Services, 2015.

Trucking

According to FHWA’s Highway Statistics 2008, 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 MAP-21 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

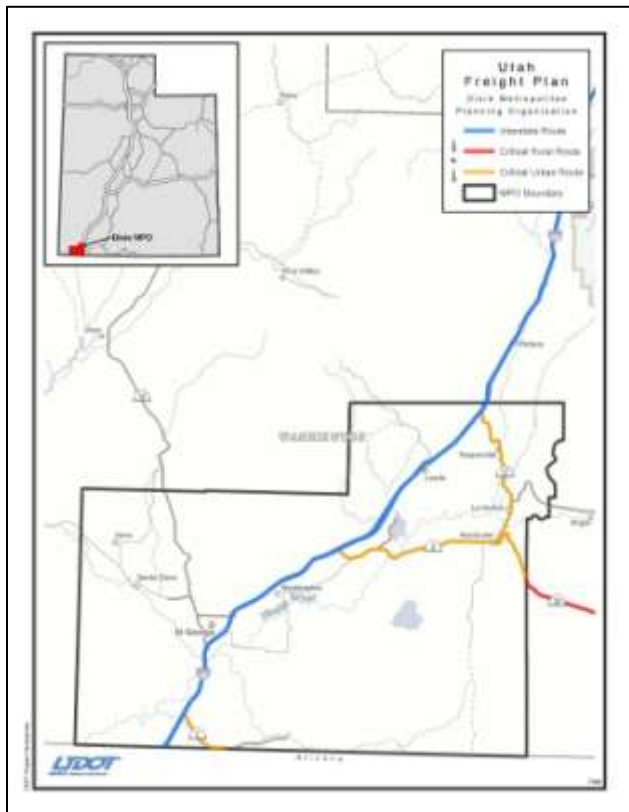
Critical Rural Freight Routes	710.7
Critical Urban Freight Routes	89.2
Energy Routes	255.2
Total	1,991.9

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 5 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-136 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 96.7, SR-36	NA	Interchange Upgrade	\$38
Utah	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 – Maps – Maps Included at Back of Printed Document

- Map 1. 2015-2040 Projects and Phasing
 - Map A. 2015-2040 Projects and Phasing 1a
 - Map B. 2015-2040 Projects and Phasing 1b
 - Map C. 2015-2040 Projects and Phasing 1c
 - Map D. 2015-2040 Projects and Phasing 1d
- Map 2. MPO Planning Boundary
- Map 3. 2015-2040 Dot Density Population Change
- Map 4. 2015-2040 Dot Density Employment Change
- Map 5. Traffic Crashes (2010-2014)
- Map 6. Traffic Congestion 2040 No-Build
- Map 7. Traffic Congestion 2040 Build
- Map 8. Active Transportation Master Plan
- Map 9. Transit Services
- Map 10. Functional Classification
- Map 11. Primary Freight Corridors

Appendix B

POTENTIAL FUNDING SOURCES

Funding sources for transportation improvement projects are needed if the recommended projects of the Transportation Plan are to be built. In the Washington County area, federal, state, and local governments as well as private developers provide funds to pay for improvements.

Federal Funds:

The prior federal highway and transit bill SAFETEA-LU (Safe, Accountable, Flexible, and Efficient Transportation Equity Act: A Legacy for Users) continues to fund federal transportation programs under continuing resolutions. And a new federal highway bill is anticipated within the next several months.

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 funds include sales taxes and other taxes. In addition, 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-five percent of these funds are kept by the UDOT for their construction and maintenance program. The remaining 25 percent are made available to the cities and counties in the state through the Class B and C Program.

Class B and C funds are allocated to each city and county by a formula based on population and road mileage. These funds can be used for either maintenance or construction of highways, although at least 30 percent of the funds must be used for construction projects or for maintenance projects that cost over \$40,000.

Safe Sidewalks Program has also been established by the legislature to fund the construction of sidewalks on roads on the state system. The money is distributed through a formula based partially on miles of state road in each UDOT Region. Each city and county located in the region submits projects to the UDOT Region office, which then prioritizes them. A statewide committee then makes the final project selection.

Local Funds:

Local government agencies have a variety of funding sources available to them for transportation improvements. The primary source is from the general fund of the cities and counties. These general funds can be used for construction of new roads or the upgrading or maintenance of existing ones. Transportation projects, however, must compete with the other needs of the city or county for the use of these funds.

Local governments have several other options for improving their transportation systems. Most of these options involve some kind of bonding arrangement, either through the creation of a redevelopment district, a more traditional special improvement district organized for a specific project benefiting an identifiable group of properties, or through general obligation bonding arrangements for projects felt to be beneficial to the entire entity issuing the bonds.

The Local Corridor Preservation Fund allows the Washington County AOG to collect vehicle registration fees of \$10 per vehicle for transportation corridor preservation. The Utah Department of Transportation has responsibility for seeing that the major requirements of the legislation are met, such as compliance with federal property acquisition procedures, and a locally adopted access management plan, or ordinance.

Private Sources

Private interests often provide sources of funding for transportation improvements. Developers construct the local streets within subdivisions and often dedicate right-of-way for and participate in the construction of collector and arterial streets adjacent to their developments. Developers should also be considered as a possible source of funds for projects needed because of the impacts of the development, such as the need for traffic signals or arterial street widening.

Private sources also need to be considered for transit improvements which will provide benefits to them. For example, businesses or developers may be willing to support either capital expenses or operating costs for transit services which provide them with special benefits, such as a reduced need for parking or increased accessibility to their development. Following is a brief list of programs used to fund transportation projects within the Dixie MPO:

FEDERAL HIGHWAY ADMINISTRATION

- Surface Transportation Program (STP)
- Congestion Mitigation / Air Quality (CMAQ)
- Available only after DMPO 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

FEDERAL TRANSIT ADMINISTRATION

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

PRIVATE

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

Appendix C

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 2014 - Washington County

Rank	Company	Industry	Size
1	Washington County School District	Public Education	3,000-3,999
2	Intermountain Healthcare	Health Care	2,000-2,999
3	Wal-Mart	Warehouse Clubs and Supercenters	1,000-1,999
4	Dixie State University	Higher Education	1,000-1,999
5	St. George City	Local Government	500-999
6	Skywest Airlines	Air Transportation	500-999
7	United States Government	Federal Government	500-999
8	Washington County	Local Government	250-499
9	Andrus Trucking	General Freight Trucking, Long Distance	250-499
10	City of Washington	Local Government	250-499
11	Caption Call	Interpretation Services	250-499

12	Costco	Warehouse Clubs and Supercenters	100-249
13	Red Rock Canyon School	Residential Care Facilities	100-249
14	Tuachan Center for the Arts	Entertainment Facilities	100-249
15	Lin's Supermarket	Grocery Stores	100-249
16	Red Mountain Spa	Accommodations	100-249
17	Allconnect	Telephone Call Centers	100-249
18	Home Depot	Home Improvement Centers	100-249
19	Stephen Wade Auto Center	Automobile Dealers	100-249
20	Red Lobster/Olive Garden	Full-Service Restaurants	100-249
21	Harmons	Grocery Stores	100-249
22	RAM Manufacturing	Fabricated Metal Product Manufacturing	100-249
23	Hurricane City	Local Government	100-249
24	Orgill	Hardware Wholesalers	100-249
25	State of Utah	State Government	100-249
26	Xanterra Parks and Resorts	Accommodations	100-249
27	Cinnamon Hills Youth Crisis Center	Residential Care Facilities	100-249
28	Diamond Ranch Academy	Residential Care Facilities	100-249
29	Sunroc Corp	Ready-Mix Concrete	100-249
30	Entrada at Snow Canyon	Golf Courses	100-249
31	Wendy's	Fast Food Restaurants	100-249
32	Wilson Electronics	Communications Equipment Manufacturing	100-249
33	Boulevard Furniture	Furniture Stores	100-249
34	Express Services	Temporary Help Services	100-249
35	Target	Discount Department Stores	100-249
36	Central Utah Medical Clinic	Health Care	100-249
37	Albertsons	Grocery Stores	100-249
38	Interstate Rock Products	Heavy Construction	100-249
39	Wittwer Management	Accommodations	100-249
40	Smith's Marketplace	Grocery Stores	100-249
41	Red Cliffs Health and Rehabilitation	Nursing Care Facilities	100-249
42	Subway	Fast Food Restaurants	100-249
43	Lowe's Home Improvement	Home Improvement Centers	100-249
44	Maverik Country Stores	Gasoline Stations and Convenience Stores	100-249
45	Southwest Center	Outpatient Care Centers	100-249
46	Deseret Laboratories	Pharmaceutical Manufacturing	100-249
47	Kolob Care and Rehabilitation	Nursing Care Facilities	100-249
48	Danville Services	Health Care	100-249
49	Wells Fargo Bank	Banking	100-249
50	Zions Bank	Banking	100-249
51	Megaplex Theatres	Theaters	100-249
52	Staheli Laundry Services	Linen Supply	100-249
53	Second Nature Entrada	Child and Youth Services	100-249

Source : Business Resource Center at Dixie State University; Updated July 2014 by BRC; Data Source UDWS

Appendix D

Public Comments On 2015-2040 Regional Transportation Plan (May 2015)

General Comments Received

Gary Zabriskie

The plan looks like it covers all facets of transportation in the MPO area.

Bryan Thiriot

Recommend that the MPO and St. George City consider an additional I-15 Freeway Interchange at 700 South in St. George. In addition to reducing traffic at Exit's 6 and 8 in St. George City and reducing traffic congestion on surface streets, the traffic feature would also create a quicker and more efficient emergency route to the Dixie Regional Medical Center on River Road and 700 South.

MPO Response to I-15 Interchange at 700 South, St. George

Traffic volumes on the planned transportation system through 2040 do not show a capacity need for an additional freeway interchange at 700 South in St. George within the current traffic demand model – which is based on forecasts of population growth and future land-use calculations. However, further analysis of this solution may be appropriate as the project “*700 South, Widen from 700 East to Bluff St.*” is considered during Phase I of this long-range plan. Further analysis may also be warranted as this Regional Transportation Plan is updated in 2019 to include growth forecasts through 2050.

Toquerville Bypass Comments Received

David Pope

The Toquerville bypass project needs to be moved up on the plan. There is safety issues with having tourist traffic and semi's going through the small main highway is dangerous. There have been several deadly accidents in the area between the post office and Diamond G Ranch. There are many blind areas on that stretch of road that make it dangerous for vehicles to pull out on the main highway. A bypass road would reduce traffic significantly through the town, and prevent many future accidents in the area. For emergency management concerns, having a bypass will give the town alternate evacuation routes that will prevent a bottleneck scenario.

Sandy Cordova

I am a resident of Toquerville and have been for 36 years. I live on the Toquerville blvd and feel the need to express to you the need for this bypass route. In the 16 years that I have lived on the boulevard there has been several things that have concerned me. There is a LOT of traffic that rolls through on this small city road. Because of the heavy amounts of traffic I have put up a fence to keep my children and animals safe. Diesels come barreling through town and shake my windows as they shift down to slow down, sometimes not even slowing down. People from out of town take their time coming up the twist from LaVerkin then speed through town to get to the highway. This is a regular occurrence... being slowed by the Zion traffic between LaVerkin and Toquerville then being left in their dust as they hit the boulevard and speed through town.

I know that there is a bypass route located #48 on Phase two of the plans, but would like to ask that it be moved forward to phase one. Last night was a great example of the dangers of having all of this traffic forced through our small neighborhood. The police were chasing a car, bumping him left and right with helicopter flying closely above. The car was all over the road and went up into someone's lot (two doors down) before the police rammed him into the side of the bridge. Had this bypass route been there this chase would've likely been taken down this route away from the residents keeping us and our children safe. There are a lot of questionable people that ride through SR-9, I'm sure you are aware. Keeping them off of our boulevard will not only keep us safe but it will help us to keep our home-town feel.

Scenic drivers are welcome! Come on in and see how beautiful Toquerville is, but please keep the diesels, excess Zion traffic, drug smugglers, and craziness out of town. Thank you for considering the urgency of this.

Sandy Cordova

Clarissa Chamberlain Nuckles

I'm writing to you concerning the Toquerville Bypass road. As someone who grew up in Toquerillve, on Toquer Blvd, and hopes to move back and raise my own family there someday, it is of the utmost importance to me and my family that the bypass be moved up to as soon as possible. I've always felt that way, but after last night's incident (the high-speed chase that ended on Toquerville Blvd), I felt the need to share my opinion. I really appreciate everything you do to keep our county looking and functioning so well. Please do what you can to move up this project and make it happen as soon as possible so that we can stop worrying about our children playing in the front yard so much because of fast cars, traffic, and so many strangers brought to town on the road.

Katrina Lantz

Please place a high priority on completing the Toquerville bypass road. Yesterday a high speed police chase that began in Kanab ended with a crash through our town. A bypass road would help the citizens so

much by cutting down the noise and danger to pedestrians of huge semi trucks, charter buses, and trailers that regularly zip through our main street. The sooner, the safer! Thank you!
Let's get the traffic off our little city road!

All my best,

Katrina Lantz
280 N. Hillside Dr.
Toquerville, UT 84774
805-279-8221

Jennifer

Dear Myron Lee, Dixie MPO:

Please place a high priority on completing the Toquerville bypass road. Yesterday a high speed police chase that began in Kanab ended with a crash through our town. A bypass road would help the citizens so much by cutting down the noise and danger to pedestrians of huge semi trucks, charter buses, and trailers that regularly zip through our main street. The sooner, the safer!

Thank you!

Let's get the traffic off our little city road!

Kay Chamberlain

The members of the community of Toquerville would like to see the SR-17--Toquerville Bypass project moved to a Phase one project. With the visitation to Zion Park increasing rapidly every year, the traffic through Toquerville is becoming more and hazardous, with most cars traveling 45-50 mph in a residential neighborhood. Even more annoying is the noise. Residents cannot even hear each other's speech, during summer months, while outside or with the windows open in our homes. The safety is a concern for not only children, but adults crossing the street. Please make it a priority!!

Karlene Young

We would sure like to see a bypass road in Toquerville sooner than 10-20 years. This is a small town and the steady stream of tourists and large trucks are unbearable. We had a high speed chase end here last night! Please help us get the main stream of traffic off of our Main Street.

Sincerely,

Karlene Young

Waren S. Wright

I expect you folk are doing the best job you can under the circumstances. Planning for transportation is always playing catch-up, and funding for such always a black hole. It is very difficult to do the sensible thing (especially here in Utah it seems), when the making of money and desire of prestige is always first and foremost with those of influence.

The only thing I have to suggest (and have been harping on for the past 15 years), is for the State of Utah, and particularly her in Washington County, is to stop priming the Growth/Promotion Pump and inviting the world to move here. A reduction in a 2% annual population increase would make a world of difference in dealing with these problems. I ask you, why do you want Utah and (where I live), the St. George Metro-area, to grow faster than it needs to? That always falls on deaf ears I know!

Renee Garner

Toquerville has planned and worked toward the construction of a by-pass road west of city center for more than ten years. The city has contracted easements from most or all of the property owners involved so the process will be as painless as possible. Five Counties did an independent study on the concept just a year or two ago and estimated the cost would be less than the planned road expansion of SR-17. It would be a matter of transferring the expenditure of funds from one Utah Department of Transportation entity to another rather than a large new cost to be managed.

Toquerville greatly needs this by-pass road sooner rather than later. The Water Conservancy District is making plans for a reservoir here. We are hoping for some possible commercial development and growth in conjunction with that. The by-pass road is the center piece of our commercial development plan.

Please consider the benefit this would have on the area as Toquerville is the northern gateway road to Zion Park.

Thank you,

Renee Garner

Jeanie

The Toquerville bypass is urgently needed. It's heavily trafficked and the cars just speed by. It's a real safety issue. There is no safe way to cross this street. It's a real danger for everyone, people and animals included. I've personally witnessed children nearly being run over. It's terrifying! We live on the blvd. and the noise level is deafening. We literally can not be in the front yard and hear each other talk because of all the traffic. Our windows rattle when the big trucks whiz by. We thought it was bad windows so we replaced them all and they still rattle! It's just not safe. I hope you consider building the bypass sooner than later.

Jeff and Shay Meyers

We are responding to the Toquerville bypass plan that is on the future agenda for the transportation needs of Washington County. As a resident of Toquerville I am in favor of moving the bypass plan along as

quickly as possible. We are owners of a historic pioneer home on the Boulevard in Toquerville where we reside. The heavy truck traffic and traffic flow in general takes a tremendous toll on the historic structures of our community. Our home, as well as many others, is built of adobe and rock. The vibration that occurs from the traffic erodes the mortar that holds these homes together. We have had to reface the outside of our home twice because of the cracks that occur. We are excited to know that there is a better option for traffic flow and home preservation. We hope that the bypass project will be considered for approval sooner than later to preserve these historic homes. It will also provide a safer environment for the children that walk to the bus stops along this busy highway.

Thank you for your consideration.

Sincerely,

Jeff and Shay Meyers

Randy and Jane Scott

Re: Toquerville Bypass

Toquerville residents have wanted a bypass for years, in fact, they've been talking about it for the past 45 years. As residents living just one house down the block off Toquer Blvd. for the past 27 years, we can attest to the traffic noise, and also to the concerns we have for people crossing the street- especially children and the elderly. Can you imagine cars, trucks and semi-trucks loaded up barreling down your neighborhood street at 40 mph? Even though the city fathers years ago made the decision to have the highway run through town, the times have definitely changed, with millions of cars traveling to and from Zion National Park and other destinations. We are a main road to Zion from the north via I-15. These travelers and other commuters and commercial vehicles would appreciate not having to slow down to go through town, and it would be much faster for them. We hope that you will choose to speed up the time frame for this project.

Thank you.
Randy and Jane Scott

David Pope

The Toquerville bypass project needs to be moved up on the plan. There is safety issues with having tourist traffic and semi's going through the small main highway is dangerous. There have been several deadly accidents in the area between the post office and Diamond G Ranch. There are many blind areas on that stretch of road that make it dangerous for vehicles to pull out on the main highway. A bypass road would reduce traffic significantly through the town, and prevent many future accidents in the area. For emergency management concerns, having a bypass will give the town alternate evacuation routes that will prevent a bottleneck scenario.

Phone Calls Received

The following individuals called during the public comment period of the Long-Range Plan to express their support for moving the Toquerville bypass project from Phase 2 to Phase 1 of the Plan:

- Marian Bates
- Leanne Bates
- Ester Dehart
- Ray McQuivy
- Alex Chamberlain
- Shea Meyers
- Tammy Young
- Linda Olves
- Lynn Olves
- Willis’
- Kay Chamberlin
- Heather Crochet
- Morgan Jensen
- Polk Family
- Kim Robins

MPO Response to Toquerville Bypass Comments

The Toquerville Bypass Road is currently listed on the Toquerville City Master Transportation Plan as an alternate route to the current State Route 17 that connects Interstate Highway 15 through Toquerville to LaVerkin City and eventually Zion National Park. Both Toquerville City and the Utah Department of Transportation (UDOT) are aware of the safety and economic development benefits of a bypass noted in the comments above. Toquerville City is actively acquiring rights-of-way to build the bypass. And UDOT has expressed a willingness to do a jurisdictional transfer (trade) of State Route 17 for a bypass road, once that road is built (directing traffic away from the rural section of Toquerville).

The Dixie MPO Long-Range Plan primarily examines transportation capacity issues. A capacity analysis based on the MPO’s Travel Demand Model indicates a current traffic volume of 5,700 vehicles per day on State Route 17, with an expected 14,700 vehicles per day by 2040 – indicating that a capacity project will be needed at some point in Phase 2 of the Long Range Plan.

As the need for maintenance or reconstruction/widening of SR-17 approaches, and as the City continues to obtain and preserve rights-of-way for the bypass, Toquerville City and UDOT are encouraged to closely coordinate their respective plans to find mutually beneficial solutions. Since neither entity has sufficient financial resources to accelerate the project from Phase 2 (2025-2034) of the Long Range Plan to Phase 1 (2015-2024) based solely on a “capacity” need, opportunities should also be sought to identify “safety” or “economic development” funds that may be available for that purpose. Those funding mechanisms are not identified in this plan.

Comments Received from Lisa Rutherford

Dixie MPO 2015-2040 Draft Regional Transportation Plan Public Comment Lisa Rutherford, Ivins, Utah

As a citizen who attempts to study transportation issues in our area, I have reviewed the extensive 70-page plan and offer the following comments for the public record. First, let me say that Dixie MPO has put together a lot of information and has provided a fairly comprehensive document with much for citizens to consider and digest. The draft plan seems to cover the relevant points of concern to a citizen such as myself but in some cases left me with more questions than answers. Here are my main concerns that I will provide more on in my comments:

- The plan does not put enough focus on public transportation although it references the importance of public transportation for a sustainable future several times.
- The plan lacks specifics on traffic accidents - specifics that citizens need to understand our current situation. Figures provided don't make sense.
- Network Vehicle Delay does not provide enough information to citizens to know what improvements have been achieved with the road work already done in our area.
- Population numbers used in this plan to justify future traffic projections do not jibe with population figures in other studies including the earlier Horrocks 2011 study.
- Washington County major growth areas south of I-15 make expensive highway projects to the north questionable, particularly when earlier studies (Washington Parkway Cost/Benefit Study) indicate they will not relieve congestion very much on main arteries.
- Cost/benefit information for the "build scenario" does not provide enough detail for citizens to understand if the process was objective.
- The plan lacks adequate details about possible funding options for public transportation - information that is readily available in other studies and could have been included in the current draft plan in greater detail for citizens' benefit.
- Not enough work is being done to deal with potential air quality issues (e.g., ozone) in our county.
- The plan fails to prove that planned road projects will achieve desired results.
- Public process may be flawed by transportation entities being more focused on achieving their plans than listening to citizens' concerns.

The 2015-2040 plan references the 2006-2008 Vision Dixie process – a countywide public planning process in which approximately 3,000 citizens participated. The plan even states clearly the Vision Dixie transportation principle: Build balanced transportation that includes a system of public transportation, connected roads, and meaningful opportunities to bike and walk. I applaud Dixie MPO's effort to highlight Vision Dixie, but as I read the plan I kept asking one question. If a system of public transportation is listed first in the Vision Dixie principle, why does it seem to end up last on the list of topics when it comes to getting real results and get little attention in the draft report? We see lots of road construction but not much with regard to public transportation other than Ivins recently coming on board with a SunTran route. Several studies have been done over the past five years, so you and others in the transportation field get credit for that. I think that Dixie MPO wants to do what's right by Vision Dixie for our future needs, but perhaps too much pressure is on them by local leaders and citizens to focus on the other transportation areas: roads, biking, walking. In fact, the plan clearly states: "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."

I plan to address the public transportation issue in some detail because I feel it's so very important for the

future of our area given the challenges we face in an area with geological beauty that draws visitors and new residents but also constrains roads. First, let's consider some of the information pertaining to our current traffic situation and the 2015-2040 plans for dealing with and, if not correcting, at least alleviating the problems.

"For this plan, the total vehicle hours were compared on the entire transportation system in the model year 2040 in both the build (meaning all potential projects have been constructed) and no-build (meaning no potential projects have been constructed) scenarios." DixieMPO's CUBE modeling platform, used to analyze future traffic demand to project future congestion based on "Network Vehicle Delay," compared the "...total network travel time per day in the no-build scenario where current capacities are maintained but not expanded. This is compared to the 10,500 vehicle hours if all the projects are built. Thus the build scenario represents a total savings of 34,500 hours per day leading up to and beyond 2040." The plan provides much more detail on this but this is it in a nutshell. It does not compare the vehicle hours prior to road work I've witnessed over my 15 years in Washington County, so we have no way of knowing what goals have been achieved in that regard. As taxpayers, it would be nice to know if we're getting some results from all the money we've poured into UDOT over the past. We should also remember that these are just models based on future population projections, which, by the way have been all over the place based on past population projections. The earlier Horrocks study utilized a population projection of approximately 550,000 by 2040. The 5 County Association of Governments' 2012 projection for Washington County's 2040 population is 371,743 (same as the 2015-2040 plan) – 178,257 less than the Horrocks study. How reliable are the study's traffic projections at this point? The Horrocks study and the draft transportation plan currently under review show the majority of the future growth – however much that might be – occurring south of I-15 not in the northern part of our county.

The draft plan references an analysis completed by Cambridge Systematics. That analysis shows contributing factors in severe and fatal crashes in Washington County which include "multiple vehicles." However, factors on a plan chart provided by UDOT (Figure 4) make no reference to "multiple vehicle" crashes but include such factors as single vehicle, roadway geometry, roadway departure, overturn rollover, intersection related, speed related, motorcycle involved, older driver involved, teenage driver involved, DUI, distracted driving, adverse weather, etc. Nowhere is a "total" number of crashes shown on Figure 4 or in the associated text. 163 "single vehicle" crashes is the highest figure. The UDOT chart makes no reference to "multiple vehicle" crashes. With no crash "total" provided, we cannot know the number of "multiple vehicle" crashes and are left to wonder what the number is. There's also no way to know how these different factors relate since that level of detail is not provided. When all the crashes on the chart are added together, the total number of crashes comes to 1139, but that total includes all "single vehicle" as well as other categories related to those incidents such as "single vehicle, DUI," I assume. As I reviewed the chart and the accompanying information which seemed lacking in necessary detail, I began to wonder:

How many of the single vehicle crashes involved older drivers?

How many of the roadway departures crashes involved impaired driving versus improper use of safety equipment?

How many of the single vehicle crashed involved young drivers?

The information provided not only omitted information (multiple vehicle crashes) but also left many unanswered questions.

Additionally, the map that shows serious and fatal accidents does not provide enough detail to citizens to determine if the tax money used for new and completed road work has either helped or not helped with overall accident numbers. The crash chart covers 2010-2014 and a lot of work has been done during that time, but what were the crash patterns and numbers before then. Are we getting the bang for our buck that we should as taxpayers? It's true that with growth we will see an increase in overall numbers as the

plan notes, but there should be some improvement that can be clearly quantified.

Interestingly, although aggressive driving and speeding are seen as increasing problems by both drivers and law enforcement, only 60 speed-related crashes are shown on the chart. Since we don't know what the total number of crashes really is, it's difficult to evaluate this figure. It also makes me wonder because I see very few people ever driving the speed limit. If the posted speed is 40, then people drive 45 to 55 or more. So it's difficult to believe that more crashes are not speed related.

Aggressive driving crashes numbered 11 on the UDOT chart, which is interesting since the plan states that "The Surface Transportation Policy Project estimated that aggressive actions contributed to 56 percent of all fatal crashes." Given the 11 crashes noted, we are way below that 56 percent, but given what is being witnessed nationally, this warrants attention by law enforcement. Defining "aggressive driving" is part of the problem. If more people drive that way, it may not be considered aggressive in the future? Who knows?

There are some suggestions made about how to prevent accidents such as "keep vehicles from encroaching on the roadside" which makes me wonder about Red Hills Parkway which was expanded a few years ago but where people park alongside the road even with available nearby parking possibly because those who park in the south parking lots would risk their lives crossing the road where speeds reach 45-50 on the 40-mph posted road. There seems to be a disconnect between what Dixie MPO advises and what's actually being done.

The plan provides an extensive list of objectives and strategies for dealing with the causes of crashes. Most seem reasonable and are achievable "physical" fixes, but all will come with costs even on existing roads. Some, however, will be more challenging such as "Deter aggressive driving in specific populations, including those with a history of such behavior, and at specific locations." They have a few ideas listed to achieve the goal of stopping aggressive driving, but from what I've witnessed no matter how "convenient" they make streets for drivers, there are those who will feel it's just not fast or convenient enough.

As for dealing with aging drivers, several objectives and strategies are listed but public transportation is not on the list. As a person who will be 68 this year, I wonder how many more years I will want to drive and what my options will be then. If a good public transportation system were available that could get me from Ivins out to Springdale and Zion Park, what a better option that would be than trying to drive that hour-long drive. Many others may feel the same. Seniors are included in "transit dependent populations" according to the 2010 Hurricane to Zion Canyon Transit Study. Traditional fixed-route transit systems may need some additional paratransit service to get some more elderly or disabled citizens to pick up points, but our area already has paratransit services that may be able to support this effort. Again, public transportation could serve an important role in our community with a high number of aging citizens.

The plan includes a "Cost Benefit Analysis" table showing the total time saved in hours with the build scenario, assuming two scenarios which incorporate an hourly delay cost of \$20 and of \$30. According to their cost-benefit calculations, both show a positive ratio over 1.0 with - 1.87 and 2.80, respectively. Cost-benefit analysis has become the darling of project justification over many years, but according to easy-to-access online studies and articles the process can be flawed. One notes there is no algorithm to tell us what should count as a cost or a benefit making for a subjective process rather than objective. In fact, a study from San Jose State University Department of Economics notes that care must be taken to not double count the benefits. In an effort to support the need for these projects, has that been done?

In summary, given the vehicle load challenges facing Washington County with projected growth and the plan's earlier statement that road building will not solve our transportation problems, it's appropriate to look at the mass public transportation and work to understand how that might help relieve congestion and

provide options for drivers and those who are unable to drive to move around Washington County. Whether one uses it or not, public transportation would provide overall benefits for all in Washington County.

There have been efforts in the past few years to move along with better public transportation in Washington County, but it's been a slow, grinding process that seems to have lacked real public and political support. The Dixie MPO Regional Transit Study was done in 2012. Prior to 2012 the Hurricane to Zion Canyon Transit Study was completed in 2010 and the Coordinated Human Services Transit Plan followed in 2013. The current plan under review and out for public comment does address public transportation but not to the level of the other reports just noted. In fact, out of seventy pages, the plan allots a mere two pages to public transportation with some minor references scattered here and there.

The 2012 Dixie MPO Regional Transit Study states, "The purpose of this study was to evaluate the governance and funding options available to the Dixie region as it seeks to expand and diversify transit service." The study evaluated several funding options that might help to enlarge the current system provided by SunTran and operated by the City of St. George and, at that time, limited to its boundaries. As noted, the system was recently extended to include Ivins City this year. The 2012 study, notes an expansion will require additional funding but the plan states that "Existing federal formula funding is available and may go unused unless additional local match funding can be generated. Additional local funding could be contributed by outlying jurisdictions – such as Ivins, Santa Clara and Washington – as transit is extended into their respective communities." The plan now under review notes that, "...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." The 2012 study noted, "...with SunTran's existing governance these jurisdictions would have limited decision-making power over the level of transit service in their communities. Therefore, many officials and stakeholders have expressed interest in the consideration of a new governance and funding structure for operating regional public transportation." Although no specifics are provided, perhaps these new inter-local agreements will help to iron out some of the prior governance deficiencies and will make other cities more willing to participate since the governance structure did not facilitate shared decision making. If other jurisdictions provide funding for transit they should surely have some decision-making power concerning the level of service for their communities

Although not under review at this time, I reference the 2012 Dixie MPO Regional Transit because it is unfortunate that the information in that study seems to have been lost in this new plan under review. Dixie MPO's earlier study provided comparison information between six different areas that provide public transportation and much more detail concerning possible funding options. The current plan under review prefers to say "here's the problem" and "here are the roads we plan to build to deal with the problem" while admitting openly that more roads will not solve our problems.

To help identify possible funding, six areas were studied for the 2012 transit report and included California, Arizona, Idaho, Colorado, Montana and Utah's existing transit system. These were compared to the existing St. George SunTran system. The time period studied was 2000-2010. Many of the areas studied had smaller population growth over the study period than St. George, while spending more on their public transportation and moving more people on their existing roads. The urbanized area populations studied ranged from 57,000 to just over 200,000 compared to St. George's nearly 63,000 at that time. 8.11 to 24.07 annual riders per capita were moved by the various areas studied compared to SunTran's 5.46 annual riders per capita. Total riders ranged from 555,550 to 2,074,580 compared to SunTran's 342,154. 2010 budgets ranged from \$2.5-\$9.8 in the areas reviewed versus SunTran's \$1

million. Three of the studied systems for towns of similar size to St. George provided significant local dedicated funds.

In fact, Table 2-3 in the 2012 study shows that the transit systems studied were able to fully leverage their 5307 funds (http://www.fta.dot.gov/grants/13093_3561.html) doing so through various local, state and other sources while also leveraging additional federal funds. The earlier study notes that Utah has several dedicated taxing options to fund a regional transit service. Additionally, several options exist for local governments to raise revenue. Communities along the Wasatch Front have used several tax options to generate revenue for public transportation and transit systems. The average for all taxing entities in Washington County for the 2012 study was 6.16% with an average of 6.07% if Springdale is excluded due to their 1.60% Resort Community tax. The average sales and use taxes for all State of Utah taxing agencies was 6.4%. Communities that assess Mass Transit (MT) (Utah Code §59-12-2213) and Additional Mass Transit taxes (MA) (Utah Code §59-12-2214) had an average combined tax rate with both MT and MA of 6.8%. If at that time, Ivins, Santa Clara, St. George and Washington City had initiated similar taxes, their respective tax rates would have reached the 6.8% level.

The 2012 study recommends the MA tax as an option for St. George to help fund public transit and is the recommended option for long-term transit funding of a transit system, but the study clearly states:

“While the MA tax is also an option for St. George to assist in funding public transit, it is recommended that this funding mechanism be reserved for the future as a dedicated funding source to assist in funding projects or services related to the airport.”

Given the need for public transit and the heartburn that many citizens still have over the St. George Airport and money spent there, is it wise to dedicate money to the St. George Airport when that money could be used for more necessary public transit, which to date has been overlooked, given what many other communities have achieved?

The 2012 study does list several other funding options in addition to the Mass Transit and Additional Mass Transit taxes:

- Mass Transit Fixed Guideways Tax (MF)(§59-12-2216): County Option including cities and towns
- County Option Transportation (CT) (§59-12-2217): County Option including cities and towns
- County Airport, highway, Public Transit (HH) (§59-12-2218): A portion of this tax could be dedicated to fund a regional transit system. It is currently in place and does not require voter approval or an additional tax increase.

The 2012 study makes it clear that as “...transit service expands and becomes regional, a dedicated revenue and funding source is mandatory.” It is advised that of the options available a combined Mass Transit Tax and Additional Mass Transit Tax, authorized under Utah Code §59-12, seems the most viable option, but both taxes may not be necessary depending on the size and type of service. Apparently, the Highway Tax currently imposed by potential participating cities was, at the time, earmarked for other projects and, hence, not helpful.

There is more in the 2012 study regarding taxes that might be used and many of the potential participating entities already assess these taxes. It’s clear from the study that short-term, interim funding options will be essential to taking full advantage of federal funding and extending services. Many of the funding options presented in the 2012 report are already being assessed by the potential participating entities. Allocation of the tax money for public transit would be needed. In addition to the aforementioned taxes, a

long list of tourism taxes were presented. Many are existing taxes so there would be no tax increase, but a discussion of re-prioritizing public service needs would be required. Given the demands and benefits that tourism brings to our county and the need for low-income service workers tourism generates, it seems reasonable that some of these funds should be re-prioritized for this purpose. Additionally, other areas studied generate funding through contracts with local colleges and/or university and some minor funding through sponsorships and service agreements.

There is one source for funding capital improvements called the Permanent Community Impact Fund Board (CIB) program. This program provides low interest loans and/or grants to state agencies and state subdivisions for public facility funding. A Capital Improvements List at the county level is maintained and projects must be on the list to be eligible, unless there's a qualified emergency need. Regional transit system projects could be added each year.

The U.S. Department of Transportation, Federal Transit Administration (FTA) at the time of the report (2012) sponsored two types of grant programs: Formula Grant Programs and Discretionary Grant Programs (<http://www.fta.dot.gov/grants/13093.html>). It appears that these may have expired in 2012 and would not apply to new projects. It's unfortunate that advantage was not taken prior to 2012. Projects already in the system apparently still receive funds.

Alternative financing options for capital projects include: general obligation bonds, lease revenue bonds and sales tax revenue bonds. Tax Increment Financing (TIF) or Special Assessment Areas is also available for a regional transportation system.

Section 4.6 of the study "Most Promising Funding Sources" notes the following for short-term and long-term funding strategies.

For short-term funding the following are suggested:

- The Highway Tax (HT) §59-12-2215 can be used for the construction and maintenance of highways and to fund a system for public transit.
- Class B & C Road funds can be used for roadway improvements and appurtenances, which may include planning for public transit impacts.
- Interested Cities may fund transit services in the short-term through an appropriation of sales tax revenues from its general fund.
- Appropriation of Revenues Attributable to Growth: Another alternative to funding transit in the short-term consists of a combination of the above options with a contribution of a percentage of the funds only attributable to growth.

For long-term funding the study recommends a Dedicated Transit Oriented Tax.

It's clear from the 2012 study and others that much has been done to identify problems and solutions regarding the mass transit issue and much ground work has been established. What seems lacking is the real will to make it happen. The draft plan under review does citizens a disservice by not providing details of these earlier studies for citizens to consider.

While considering the costs of a public transportation system and funding options, it's important to recognize the real demand. The Southwest Utah Coordinated Human Service Public Transportation Plan of 2013 provides much information to support the need. The plan's purpose was to identify the target population and strategies to meet the needs and coordinate available and potential resources. The target population includes seniors, people with disabilities, and low income individuals, many with limited mobility and special transportation needs.

First on the plan's list of six options was a fixed-route transportation system. Currently a majority of mobility-limited individuals in our county rely on family or friends to meet nearly all their transportation needs. Some feel compelled to drive even if they feel it's unsafe to do so. Services do exist to assist with this mobility-limited population but the system is somewhat disjointed. Schedules and eligibility requirements for using services can be very confusing. Some operate during unpredictable times which creates difficulties for those planning a trip. Additionally, due to limited service area, systems are unable to meet transportation needs of the majority in the region. It's important to note that a Department of Workforce Service (DWS) representative has pointed out that many low income individuals cannot get to a job due to lack of transportation services. What cost to our community's economy results? Even if individuals can get to work via friends and family, low to moderate wages often make owning and operating a vehicle prohibitive.

Several surveys have been done to determine how to best serve this sub-set of our Washington County community. A SunTran on-board survey revealed that work was the most common destination. A significant number of respondents indicated that they were travelling to school, shopping, social, medical, and other destinations. The majority of SunTran survey respondents who utilize Dixie Care-and-Share services saw expansion of routes as the most important bus improvement for them. Expansion of the service area is seen as essential and the study recommended the development of inter-local agreements with adjacent communities before pursuing the establishment of a regional transit district or authority.

One particularly interesting and fairly consistent finding in the surveys is that current SunTran users would like transportation to expand to Walmart. This raises a question for me regarding funding. If "sponsorship" has been a source of funding in other areas studies, what opportunities are there for partnering with Walmart to help with system expansion? If, indeed, Walmart would stand to generate additional revenue by having more customers added, should they be approached about helping to make this expansion possible? The Walmart Foundation giving may exclude such arrangements but shouldn't they at least be approached (<http://foundation.walmart.com/>)? It seems we should leave no stone unturned.

The 2013 plan notes, as did the 2012 report, that leveraging federal funds is critical to doing more with less. Given that some of the federal money that was available then may not be available now, what have the roadblocks been to moving more quickly on getting some of this money? The 2013 plan also notes that more frequent communication with county commissioners and other local officials is needed. Has this been a big part of the hold up? I do know that Hurricane's Mayor Bramall is a huge proponent of public transportation and has been a force over the last year or so for stepping up the discussion. If others in our leadership community are not willing to get on board, however, Mayor Bramall cannot do it alone. Having been in the nursing home business, Mayor Bramall recognizes and has stated often, and I paraphrase: None of us knows when we may be disabled but we all know we will get old unless we face death early. Given that, how many of us may at some time in the future wish this area had planned better for effective mass transit?

AIR QUALITY

A good deal of the 2015-2040 Draft Regional Transportation Plan deals with air quality issues. This is a good thing, but points to the fact that as Washington County grows, if poor decisions are made, we will very likely be dealing with some very serious issues. Although the plan provides some focus on air quality, there seems to be quite a bit of contradiction between what the plan says and what DixieMPO really does.

Washington County is not regulated by the EPA or Utah Division of Air Quality (DAQ) because it's currently considered an attainment area under the Clean Air Act. However, already there are concerns by

the National Parks Conservation Association about air quality and haze affecting Zion Park and summer ozone is the primary cause of pollution in our area. Formed when volatile organic compounds (VOCs) and nitrogen oxides (NOx) mix with sunlight and heat, ozone can lead to shortness of breath, chest pains and lung inflammation. With the high numbers of retired seniors already here and still flocking to our area, what health challenges – and costs! – will they face if this is not resolved by proper transportation planning? With ozone being a mix of chemicals, many coming from tailpipes, increased numbers of cars, if emissions are not improved considerably, will exacerbate the problem. With St. George recently eliminated from AARP's list of "10 most affordable" retirement locations, perhaps the steady flow of seniors will abate, but our transportation planning should not rest on that assumption when it comes to air quality. Public transportation which would help serve the transportation needs of our seniors would also help their health by eliminating extra vehicles on our roads which cause ozone creation.

Health concerns are not the only problem we might face. If Washington County were to become a non-attainment area for pollutants, federally funded improvements to transportation systems might be restricted. Resulting additional regulatory actions would add to the cost of doing business and planning/implementing projects. The draft report indicates that the Division of Air Quality and the Department of Environmental Quality have offered help to avoid potential problems. The Dixie Transportation Advisory Committee or "DTAC" agreed to draft a protection plan and conduct a locally funded short term ozone study, but a review of many meeting minutes in 2011, 2012, 2013, 2014 and early 2015 shows no reference to such an activity. Minutes I've reviewed show that the focus continues to be on bike and walking trails and roads.

The transportation plan under review states that Dixie MPO's DTAC worked with SECOR, an air quality-engineering firm to monitor ozone levels. A study I was able to locate at http://www.airquality.utah.gov/Public-Interest/Current-Issues/Ozone/2012_Utah_Ozone_Study.pdf, dated January 2013, revealed eighteen monitoring sites; one named Badger Springs was located at the foothills of Beaver Dam Wash Mountains. Ozone exceeded 75 ppb at Badger Springs on ten days, making it one of the highest ozone sites in Utah despite its remote location. Interestingly but perhaps not surprising, the February 2013 DTAC meeting minutes made no note of this study or the results.

The draft report clearly states, "...the potential for air quality problems, especially for Ozone, is real for Utah's Dixie." If true, why is not more effort being put into this? Apparently a multi-agency team is apparently being established according to the draft plan to develop a scope of work for DAQ's monitoring in Dixie. According to the DAQ's website monitoring information: "PM2.5 and PM10 monitoring at Hurricane (HC) started on January 1, 2014, in order to establish a 3-year baseline record of particulate levels in the St. George MSA." Other than this reference, the DAQ Annual Monitoring Plan for 2014 made no reference to Washington County of any significance. However, I have to say that the website is not a user-friendly website where citizens can get information easily, and the information is cryptic, to say the least, with most of it being numbers that only a person in their field would be able to decipher so perhaps I missed something. (<http://www.airmonitoring.utah.gov/network/AnnualMonitoringPlan2014.pdf>).

The current standard is 75 parts per billion (one which the SECOR study reveals was already being surpassed in 2013 at the Badger Spring/Beaver Dam Wash monitoring site), which is too weak to protect public health according to many in medical and religious communities across the nation, while political and business leaders argue that the new proposed standard in the range of 65-70 ppb would put undue demands on business and hurt economies and is too stringent. But here's an interesting thing; on March 4, 2015, Robert V. Percival spoke at the University of Utah's College of Law. His presentation was titled "Why America's Century-Old Quest for Clean Air May Usher in a New Era of Global Environmental Cooperation." He's been the principal author of the leading U.S. environmental law casebook, *Environmental Regulation: Law, Science & Policy* for more than two decades, has worldwide experience

in the area of environmental law having lectured in 26 countries on six continents and currently works in China. One of Mr. Percival's main point was that although industry, trade groups and politicians argue that stricter enforcement of air standards will harm business' bottom line, past experience shows that "net benefits" result and economic growth continues. Example, cries of doom from the regulated auto industry were not realized; regulation was not the death knell for them.

Adding to the problem is that regional ozone levels found at several monitoring sites throughout the southern Utah region – from the Four Corners area, into the Grand Canyon, Zion National Park, Washington County and Southern Nevada – show levels close to the new standard. The draft study plan states, "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 DMPO partners." DixieMPO should keep this in mind as you do your planning and not let political pressures drive decisions.

The plan offers eleven strategies for local government consideration and action. One references public transportation (Improve transit operations to provide more opportunities to leave vehicles at home) but it's near the bottom of the list. The idea of auto emission checks is nowhere on the list.

SPECIFIC PROJECTS

There are many specific projects listed in the draft report, too many to deal with here, but I will address two. One project – Bluff Street – affects many people currently and the other – Northern Corridor (aka Washington Parkway) – is a future project fraught with many obstacles and for good reason. In fact, these two projects are connected by virtue of the fact that the Northern Corridor/WP is justified as a means of relieving congestion on other main roads such as Bluff. Will that really happen is the question.

BLUFF STREET

Bluff Street is a problem, but are the plans for dealing with it adequate or realistic? Are they based on good, sound information and data? A March 2012 letter to UDOT from local architect Richard Kohler (<http://www.kohler-architecture.com/Home.html>), also formerly involved in highway planning, challenged the idea that the Stakeholder Group meetings held to review this project for expanding the Bluff Street/Sunset Blvd intersection were useful but, rather, asserted that they were woefully inadequate. In fact, there's even accusation that the information recorded from those meetings was "willfully distorted" in UDOT's effort to argue their position most effectively. Three workgroup meetings were held with UDOT's own presentations occupying a majority of the time. Additionally, documents that should have been "public" – specifically a "traffic comparisons" tabulation table document – were not accurate and apparently contained engineering design and evaluation errors. According to Mr. Kohler's letter, this is an effort "to mislead the public by failing to disclose the ever-changing nature and uncertainly surrounding the moving target of the project's future traffic capacity projections."

Following 2012, Mr. Kohler and others, specifically a local businessman Gilbert Jennings who helped develop Sunset Corners, a business area at Bluff Street and Sunset Blvd, met with UDOT and others to further discuss the intersection options. Mr. Kohler, Mr. Jennings and business owners in the affected area have continued to work the issue with some good results. But, here is my concern. If UDOT, MPO and others are encouraging public involvement but perhaps don't really even want input from someone with Mr. Kohler's knowledgeable background, what does this say about their "public comment" efforts? As noted by Mr. Kohler, UDOT and others seem to choose to ignore traffic "fall off" that has occurred due to road projects that have already occurred and which make their earlier traffic projections suspect at this point. However, because UDOT is already so entrenched in these projects, they've been reluctant to pull back and re-evaluate at this point. Apparently, now, UDOT has put this project on hold for further discussion. Would this have happened had the people pushing for this change been Joe or Jane Blow rather than an influential businessman, Mr. Jennings, and Mr. Kohler, who is very persistent and

knowledgeable?

Mr. Kohler's letter and backup information support the idea of a roundabout at the Bluff Street/Sunset intersection as the most effective way of handling projected traffic at lower cost rather than the "fly over" and "jug handle" concepts proposed by UDOT. I do not specifically subscribe to his plan but have seen the effective use of roundabouts elsewhere, and if traffic can be moved at less cost, I am in favor.

Although the transportation plan under review talks about "hourly delay cost" and presents a 25-year cost benefit analysis to justify the plan's projects, no discussion about the costs to businesses such as those in the Sunset Corners area affected by proposed intersection changes is presented. Is it a fair analysis to exclude these concerns? Also, I've seen many transportation plans offered over my fifteen years in Washington County and Bluff Street has been a topic on most of those. Why was a business center such as Sunset Corners given the go ahead for development if traffic concerns would be a challenge for them and their business visibility in the future? Were the developers given adequate information pertaining to future transportation plans to help them make their decision to build?

If UDOT and the MPO plan for excessive traffic volumes on Bluff Street (65,000 cars), well over what good engineering practice would predict according to Mr. Kohler, it would likely have a very negative impact on Bluff Street's current businesses. The investment capital that would normally be used to update and improve individual businesses along Bluff Street would disappear because the projected 65,000 cars a day can only be carried on a freeway, and freeways do not allow ready access to businesses. There's the possibility that the freeway-size road could create blight in this area.

My point in presenting this information is to question the "citizen" process. In this particular instance, as in other citizen processes I've witnessed locally, the effort seems to be to "convince" citizens of the preferred plan by the entity conducting the meeting rather than actually wanting to engage the public in meaningful discourse and sharing of ideas for planning purposes.

According to the draft plan's map showing "Traffic Congestion 2040 No-Build" scenario, Bluff Street's traffic congestion gets a "between .9-1.2" rating from I-15 to St. George Blvd. and an "above 1.2" rating from St. George Blvd to Sunset Blvd. Traffic congestion ratings range from "below .6" (best) to "above 1.2" (worst) on the plan's range scale. So, Bluff Street's ratings are at the high end in the No-Build scenario, but even after planned improvements and much money spent, Bluff Street is still not at the lowest end.

In the plan's "Traffic Congestion 2040 Build" scenario, Bluff Street's traffic congestion is "between .9-1.2" and "between .6-.9" for the areas between I-15 and Sunset Blvd. Nowhere does Bluff Street get the best rating of "below .6" so even with all the money spent on road improvements, there will be delays, and after 2040, with population growth, will future citizens be back in the same predicament we are today?

NORTHERN CORRIDOR (aka Washington Parkway)

This is a contentious project that would go through the Red Cliffs Desert Reserve (aka tortoise reserve). The project appears on the Dixie MPO "Project & Phasing 2015-2040 Phase One (2015-2024)" costing \$5 million just for environmental work. It then appears on the Phase Two (2025-2034) list costing \$47 million. The Red Cliffs Desert Reserve was established in the mid 90s along with the Habitat Conservation Plan (HCP) (up for renewal in 2016) to preserve the prime Mojave desert tortoise habitat area and allow development in areas outside the reserve. In 2009, an Omnibus Bill was passed by Congress that established the Red Cliffs NCA and gave direction for management, including provisions for a road. For the last several years the BLM has been reviewing and rewriting their Resource Management Plan (RMP) which is supposed to include several options for a road. Of course, the county

really only desires one route, and that's the heart of the problem.

February 5, 2014 Five County Association of Governments meeting minutes provide some interesting details including information from a handout at the meeting from Utah's Senator Orrin Hatch dealing with the road. From the meeting minutes, the second paragraph in Senator Hatch's letter reads:

“Although the Law stated that there be at least one alternative and the current iteration of the draft does include one alternative, the law did not intend that the BLM include one alternative and then discard the idea of building the Northern Transportation Route (NTR). The law clearly intended that the NTR be built and should, therefore, be included in all of the alternatives, or, at least, the preferred alternative.”

While Senator Hatch may have his take on what the law “intended” here is what is clearly stated in Section 1974 of the Law. The purpose of the NCA is "to conserve, protect, and enhance for the benefit and enjoyment of present and future generations the ecological, scenic, wildlife, recreational, cultural, historical, natural, educational, and scientific resources of the National Conservation Area; and to protect each species that is located in the NCA and listed as a threatened or endangered species on the list of threatened species or the list of endangered species published under section 4(c)(1) of the ESP of 1973." It's difficult to understand how a road through the heart of the reserve could live up to this although UDOT and Dixie MPO had a study conducted several years ago to help bolster their position. It seems obvious that a road through the reserve would result in more noise, more people, more garbage and – worst of all – more fire potential to decimate the tortoise population. So far the desert tortoise has not been listed as “endangered” and is still listed as “threatened.” It's possible that the tortoise could be listed at “endangered” if someone or some group chose to do so, which might put additional restrictions on the area.

Section 1977 of the 2009 Omnibus Bill references the travel plan (part of the RMP) and the need to have the decision in "consultation with appropriate Federal agencies, State, tribal, and local government entities, and the public." According to the February 2014 meeting minutes, Dixie MPO and Washington County are very concerned about not being properly included in the BLM's Resource Management Plan process. I hope that consultation with local government entities and the public will be more than just conferring with those in positions of power in our area since they all seem to be more concerned with moving traffic than with honoring the agreement (HCP) that created the area to protect the tortoises and other threatened and/or endangered species. In fact, it's clearly stated in the February 2014 meeting minutes, “The County is working diligently to preserve the Northern Transportation Route to make sure that the road can be constructed sometime in the future.” However, average citizens may not be so taken with this idea.

A Spectrum poll conducted in 2009 asking citizens if a road should be built through the Reserve resulted in 30.9% voting yes, 64.4% voting no and 4.7% didn't care. Although 447 respondents may not be a huge group, a 64.4% vote against the road in what's viewed as a conservative paper in our area is meaningful. Most Spectrum polls don't seem to get more than a couple of hundred respondents.

As a citizen of Washington County and a believer that once an agreement is made it should be held to, I think it is very dishonorable of the county commissioners and other politicians to be pushing for a road that may essentially negate the Habitat Conservation Plan. Comments made by Washington County Commissioner Alan Gardner at the November 2009 HCAC meeting (<http://www.redcliffsdesertreserve.com/wp-content/uploads/2010/01/Minutes-HCAC-11-24-09-approved.pdf>) assert that St. George Mayor McArthur and Washington City's mayor insisted on the preferred road route being included in the Omnibus lands bill or they would oppose the bill. This was fourteen years after they apparently agreed to the creation of the HCP.

It's clear from the current Dixie MPO transportation plan's population growth projections, employment location projections and previous studies that the proposed contentious Northern Corridor will not provide the congestion relief that some hope it would. It will, however, cost taxpayers and result in costly lawsuits given the details surrounding this project.

A 2011 report, Washington Parkway Cost/Benefit Study, conducted by Horrocks Engineering for DixieMPO indicated that of the six options studied for a corridor, "Option #3 provided the highest benefit relative to its cost with respect to traffic congestion relief. None of the options reduced traffic on Bluff St., St. George Blvd. and Red Cliffs Dr. to the point that congestion on these corridors was eliminated. However, Option #3 did show the largest overall trip reductions that would make them more manageable." Option 3 is the preferred route that appears on the 2015-2040 draft transportation plan under review. This project appears on the draft plan's Phase Two (2025-2034) list costing \$47 million. However, the 2011 Washington Parkway Cost/Benefit Study shows the preferred Option 3 costing \$56 million. So, apparently over these four years, the cost of the project has gone down? I find that difficult to believe.

As mentioned on page 1 of these comments, 2040 population projections according to a 2012 study are down 178,257 from an earlier Horrocks study and growth/employment projections focus on areas south of I-15. How reliable are the study's traffic projections at this point that warrant this road?

Plan charts are provided to support the fact that population and employment numbers are driving transportation projects, but when reviewed, the charts show that by far the majority of population growth and employment areas will be in the St. George, Washington and Hurricane areas of Washington County, south of I-15, which is nothing new given the growth already witnessed. The employment chart shows even more dramatically how future employment growth will be concentrated in these areas. There is some population growth in the Ivins, Santa Clara and Ledges area projected, but much less than the high-growth areas identified, which makes spending our money on the contentious and questionable Northern Corridor even more suspect.

As noted in the earlier section about the Bluff Street improvements, the 2040 No-Build versus the 2040 Build maps show no significant improvement with or without the Northern Corridor. With Mr. Kohler's assertions that traffic "fall off" has already occurred due to earlier projects, what additional fall off will result from all the other projects on the Dixie MPO list and eliminate the need for this road? I guess the main question I have is: Who are we building this road for and why are all taxpayers being asked to assume this cost?"

PUBLIC PROCESS

From the draft plan: "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." I sincerely hope this is true. One thing kept recurring to me during my review of the draft plan: the need for increased attention to public transportation to help alleviate future congestion, maintain air quality and honor the promises made to protect our special areas while serving the needs of the most vulnerable and needy our community. In closing, here's something to think about:

Back in the early part of the 20th Century, GM managed to eradicate streetcars from the landscape in their never-ending promotion of the motor car. Perhaps now is the time to get back on board with public transportation and give it the money needed to make it work.

MPO Response to Lisa Rutherford Comments

- The plan does not put enough focus on public transportation although it references the importance of public transportation for a sustainable future several times.
 - **Chapter 13 references several stand-alone public transit studies still in effect and ongoing. References to a new study planned in 2015 were added to this chapter.**
- The plan lacks specifics on traffic accidents - specifics that citizens need to understand our current situation. Figures provided don't make sense.
 - **Chapter 7 recommends several "emphasis areas" where available data supports potential safety improvements as transportation projects advance from "plan" status to "design" status. Chart description in this chapter updated.**
- Network Vehicle Delay does not provide enough information to citizens to know what improvements have been achieved with the road work already done in our area.
 - **Chapter 9 uses "Network Vehicle Delay" charts to compare total network travel time per day in year 2040 for the build v. no-build alternatives. The no-build alternative includes all roadwork improvements completed through the spring of 2015.**
- Population numbers used in this plan to justify future traffic projections do not jibe with population figures in other studies including the earlier Horrocks 2011 study.
 - **Population projections from the Utah Governor's Office of Economic Development became available after the 2011 study. This plan uses the most recent projections available.**
- Washington County major growth areas south of I-15 make expensive highway projects to the north questionable, particularly when earlier studies (Washington Parkway Cost/Benefit Study) indicate they will not relieve congestion very much on main arteries.
 - **The Washington Parkway Cost/Benefit Study indicates the project will not "eliminate" congestion, but that "Option 3 did show the largest overall trip reductions that would make (congestion) more manageable."**
- Cost/benefit information for the "build scenario" does not provide enough detail for citizens to understand if the process was objective.
 - **No response**
- The plan lacks adequate details about possible funding options for public transportation - information that is readily available in other studies and could have been included in the current draft plan in greater detail for citizens' benefit.
 - **Chapter 13 references several stand-alone public transit studies still in effect and ongoing.**
- Not enough work is being done to deal with potential air quality issues (e.g., ozone) in our county.
 - **Chapter 11 of the Long-Range Plan has been updated to reflect newly available data from the Utah State Department of Air Quality.**
- The plan fails to prove that planned road projects will achieve desired results.
 - **No response.**
- Public process may be flawed by transportation entities being more focused on achieving their plans than listening to citizens' concerns.
 - **The 2015 Dixie Transportation Expo drew over 660 visitors. Over 270 participants filled out comment surveys as summarized in the "2015 Dixie Regional Project Survey Report" below. All public comments are welcomed and valued by the MPO staff. Public comments typically span a wide range of approach and thought.**