DIXIE REGIONAL ITS ARCHITECTURE

EXECUTIVE SUMMARY

SUBMITTED TO:

and the Dixie Regional ITS Stakeholders

Draft Report August 14, 2006

SUBMITTED BY:

Table of Contents

1.0　INTRODUCTION

The primary purpose of the Dixie Regional Intelligent Transportation System (ITS) Architecture project is to establish a Regional ITS Architecture and Strategic ITS Implementation Plan for the Dixie Region in Southwestern Utah.

The Regional ITS Architecture is required for the orderly and consistent deployment of ITS throughout the Region. The planning process also aligns activities in the Region with those in other regions and at the state and national levels. The Plan will serve as a master plan for ITS deployment for ten years and beyond. It will define roles and responsibilities of the various ITS Stakeholders throughout the Region and establish other technical goals to avoid duplication of investments in infrastructure, provide the ability to share data among agencies, and bring the Dixie Region into compliance with nationally established ITS Architecture standards.

The Dixie Metropolitan Planning Organization (MPO) encompasses the urbanized area of Washington County, Utah. However, for the purpose of the Regional ITS Architecture project the Dixie Region encompasses a larger section of Washington County, including "urbanizing" areas that may be included in the MPO boundaries at a later time. Most of Zion National Park is within Washington County, however, its roadways and Park-specific issues are not included in the Regional ITS Architecture. The Park is included to the extent that its needs extend beyond the Park borders into the urbanizing areas.

This Executive Summary briefly describes the Architecture process and the resulting recommendations for ITS deployment.

1.1　What is ITS Architecture?

An ITS architecture guides the efficient integration of ITS. It reflects the contributions of a broad cross-section of the transportation community (transportation practitioners, systems engineers, system developers, technology specialists, consultants, etc.). The architecture defines:

- The functions to be performed by ITS;
- The physical entities where the functions will be performed;
- The information flows and data flows that connect the functions and physical subsystems together into an integrated system.
- The roles and responsibilities of the ITS stakeholders;
- Technical goals to avoid duplication of investments in infrastructure; and
- Opportunities for integration and data sharing.

The Architecture also provides a means for tracking the progress of ITS development in the region. The completion of this planning effort is not the end of the architecture development; the architecture is flexible and meant to continue to adapt to reflect the ITS deployments and plans in the Dixie Region.

1.2   Locale

The Study Region consists of the urbanized and urbanizing areas of Washington County. It is located in the southwestern part of Utah and contained within UDOT Region 4. The Dixie Region's population in 2005 was about 125,000, and is predicted to grow to as many as 610,000 residents by 2050. Washington is one of the fastest growing counties in Utah. The St. George metropolitan area nearly doubled in population between 1990 and 2000, and could become the largest city in Utah by 2035 if current projections are accurate. The region includes the cities listed in Table 1.

Table 1: Most Populous Cities in the Dixie Region

City	Estimated 2005 Population
Hurricane	9,750
Ivins	6,404
St. George	56,497
Santa Clara	5,864
Washington	11,521

1.3   Stakeholders

The success of a regional ITS architecture depends on participation by a diverse set of regional stakeholders. **Table 2** contains a list of agencies and the respective departments that have been invited to participate in this project.

Table 2: Stakeholder Candidates

Bureau of Land Management*	Shivwits Band, Paiute Tribe
Cedar City Corporation	St. George Area Chamber of Commerce
City of Santa Clara (Police & Fire)	St. George City Fire Department
City of St. George	St. George Municipal Airport*
Clark County Nevada*	St. George City Police Department
Clark County Public Works*	SunTran Bus System
Division of Emergency Services & Homeland Security*	**UDOT Region 4**
Dixie Ambulance Service	UDOT Cedar City District Office*
Dixie National Forest-Pine Valley Ranger District*	UDOT Southern Regional Office*
Dixie Regional Medical Center	**UDOT Traffic Operations Center**
Dixie Regional MPO	UDOT Transit Office*
Five Counties Association of Governments	Utah Highway Patrol
Federal Highway Administration	Utah State and Institutional Lands Administration*
Hurricane Valley Chamber of Commerce	Utah Transit Authority*
Iron County Circuit Rider Planner*	Utah Trucking Association

Table 2: Stakeholder Candidates

Ivins City Public Safety (Police & Fire)	Washington City Chamber of Commerce
Mesquite City Nevada*	Washington City Fire Department
Mojave County Community Development*	Washington City Public Safety
Mojave County Planning & Zoning*	**Washington County**
Mohave County Public Works	Washington County Emergency Services
Nevada Dept. of Transportation District 1 – Las Vegas Office*	Zion National Park
Santa Clara City Economic Development Committee	

* = did not attend stakeholder meetings

2.0   ITS GOALS AND OBJECTIVES

The development of project goals and objectives is important for bringing focus and structure to the ITS planning process. The goals produce a picture of what the regional ITS program can become in the future. They also are important in communicating to agency management and staff, the public, and funding decision makers what the intent of the ITS plan is.

To help guide the ITS planning process, a mission statement and goals were developed with the Steering Committee. They reflect the work, input, and local knowledge of the group, and represent a common view of the role of ITS's in addressing the Dixie Region's transportation issues.

> *Draft Mission: The Dixie Regional ITS Plan will create a coordinated and consistent blueprint for deploying cost-effective and practical technology to enhance the safety, capacity, and operations of the area's roadways and public transportation systems.*

ITS Architecture Goals:

1. The Dixie Regional ITS Architecture project shall accomplish the following:

    a. Identify a series of ITS programs and projects for the near, medium and long-term

    b. Provide a framework for institutional relationships required to successfully deploy ITS.

    c. Create clear and easy-to-understand architecture documents to be used by decision makers and planners.

2. Identify and plan realistic ITS that addresses the stakeholders' needs and also understands regional budget, technical and institutional limitations.

3. Build consensus on how technology can effectively be deployed and operated in the region.

4. ITS Architecture will be used to capture and refine the needs of the region.

5. Ensure integration of ITS activities within the region and with outside entities.

6. Ensure that the region-wide ITS system will be operational across jurisdictional boundaries.

7. Develop a protocol on how to acquire/qualify for ITS FHWA funding.

8. Ensure architecture documents can be maintained and the update process is clear.

9. Ensure agencies in the region are aware of the architecture, and are able to use it as a resource for planning.

10. Ensure consistency among stakeholders.

11. Improve communication region-wide, statewide and nationwide.

12. Clearly define near, medium and long-term strategies.

13. Provide a basis to allow for federal funding of ITS projects.

3.0   ITS PROJECTS

Tables 3, 4 and 5 describe the ITS projects recommended for the Dixie Region in the short-, medium and long-term timeframes. Short-term is defined as recommended for deployment in the next zero to five years, and these projects generally address the highest priority needs in the Region. Medium-term is defined as five to ten years from the present. Long-term is defined as projects recommended for deployment in ten years and beyond.

The projects are the culmination of a process that considers how effectively they address regional transportation needs, technology maturity, and interdependence of projects.

Each project contains a cost estimate, and **Table 6** summarizes the estimated capital costs by timeframe.   The estimated budget is based on UDOT costs for devices and communications, estimates from similar projects in other regions, and existing costs for already implemented systems.   The medium- and long-term projects factor in an estimated three percent annual inflation rate, however are considered to be rougher estimates because of potential changes and potential unknowns. For example, the Transit Operation Upgrade project is highly dependent upon the number of transit vehicles used and types of services to be provided in ten years, and those are not known at present. Similarly, costs for the Regional Traffic Control Center and Emergency Operations Center should be viewed as estimates only, because the actual cost depends on the extent of involvement by multiple agencies.

Table 1: Short-term ITS Project Recommendations

Short-term Projects: 0-5 years			
Project Name	**Description**	**Stakeholders**	**Estimated Cost**
Dixie Regional Traffic Control Center (TCC)	A new, expanded Traffic Control Center is proposed to replace the existing interim TCC, currently located in St. George City Hall. It is envisioned that the Dixie Regional TCC will have space to accommodate media, meeting facilities and other agencies. Staff would be provided tools to manage the increasing number of traffic signals, increased complexity of traffic control, monitor more traffic cameras, manage incidents, disseminate traveler information and perform other traffic management functions.	• St. George Public Works • UDOT • Other Cities	$6,000,000
Communications Plan	A communications plan will be developed for the Dixie Region. The plan will identify the existing and planned communications that are available for ITS use, and also identify the future needs for communications that are not addressed by the current systems. The plan will provide a blueprint the ensures ITS can be fully utilized as it is deployed.	• Dixie Metropolitan Planning Organization • City of St. George	$50,000
Emergency Automated Vehicle Location	This project is already underway and in testing. It will equip the Region's emergency vehicles with global positioning system (GPS) equipment that allows them to be tracked and located at the St. George Dispatch Center. The dispatch center will view emergency vehicle locations through their computer-aided dispatch, and be able to use vehicle location as a criteria in selecting responding vehicles.	• City of St. George Police • City of St. George Fire • Washington County Sheriff • Local Public Safety • Dixie Ambulance	$1,200,000
Emergency Vehicle Preemption	In this project, emergency vehicles will be equipped with transmitters that allow for direct communication with traffic signal controllers to preempt signals and give approaching emergency vehicles priority. Traffic controllers will be modified or enhanced to allow for signal preemption, and selected intersections will be equipped with receivers to detect approaching emergency vehicles. Key locations for signal preemption are to be determined and a data collection system will be used to monitor usage.	• St. George Fire • Washington County Fire • Local Public Safety • Dixie Ambulance	$1,000,000

Short-term Projects: 0-5 years			
Project Name	**Description**	**Stakeholders**	**Estimated Cost**
Trailblazers	Trailblazer signs will be deployed at several I-15 interchanges and other key locations in the Region. The electronic LED signs would normally be blank and fixed messages will be displayed as needed to provide travelers with en-route detour instructions to avoid congestion or incidents.	• St. George Public Works • UDOT	$470,000
100 South Corridor	This project will enhance the 100 South Street Corridor with the addition of ITS applications to replace the current wireless traffic signal communications and provide additional tools to monitor and detect problems along this important alternate route to St. George Blvd. Fiber optic communications can be installed along the entire route between River Road and Bluff Street, or intersections can be connected to the fiber that has been installed along St. George Blvd. ITS devices may include: CCTV cameras at key intersections, emergency preemption, and trailblazer signs to direct traffic during detours. Cameras will be used for traffic monitoring, incident detection and to allow images to be disseminated to the traveling public.	• City of St. George Public Works	$380,000
Bluff Street Corridor - Phase 1	Landline communications will be installed along Bluff Street to fill in the communication gaps and provide capability to interconnect all traffic signals within the corridor. This project will enhance the Bluff Street Corridor, from I-15 to north of Snow Canyon Drive, with the addition of ITS applications similar to those described for *100 South Street*. The project includes Landline (fiber optic in conduit) communications, traffic signal interconnect, trailblazer signs, and CCTV surveillance cameras. In particular, ITS elements are needed at or near the Bluff Street/I-15 interchange.	• City of St. George Public Works • UDOT	$750,000

Short-term Projects: 0-5 years			
Project Name	**Description**	**Stakeholders**	**Estimated Cost**
Bluff Street Corridor - Phase 2	Communications and ITS devices will be extended north from the end point of Phase 1 and continue to approximately the north boundary of the Dixie Urbanized area. ITS devices expected are similar to those in *Bluff Street Corridor – Phase 1* with CCTV cameras, signal interconnect and, potentially, the addition of a DMS sign.	• City of St. George Public Works	$1,500,000
Southern Parkway Corridor – Phase 1	This project will enhance the planned Southern Parkway from Mile post 2 of I-15 to approximately 3 miles east. Fiber-optic communications will be installed to interconnect traffic signals and communicate with ITS devices. ITS devices could include interconnecting the existing traffic signals, a DMS at the I-15 intersection, and at least two CCTV cameras. Cameras could be used for traffic monitoring, incident detection and to provide images.	• St. George Public Works • UDOT	$1,260,000
Southern Parkway Corridor – Phase 2	This project will enhance the planned Southern Parkway from the eastern end of *Southern Parkway Corridor – Phase 1* northeast approximately 12 miles to the intersection with State Route 9. Fiber-optic communications will be installed to interconnect traffic signals and communicate with ITS devices. ITS devices could include interconnecting the existing traffic signals, trailblazer signs, and several CCTV cameras. Cameras could be used for traffic monitoring, incident detection and to provide images, which can be disseminated to the traveling public.	• St. George Public Works • UDOT	$3,710,000
State Route 9 Corridor	This project will enhance the SR9 Corridor Corridor with the addition of ITS applications. Fiber optic or other wireless communications will be installed along the route from the interchange at I-15 at Mile Post 16 to approximately twelve miles east. ITS devices may include: several CCTV cameras at key intersections, traffic sensors, and two DMS to provide travelers with traffic and tourist information. Cameras will be used for traffic monitoring, incident detection and to allow images to be disseminated to the traveling public.	• UDOT	$3,400,000

Short-term Projects: 0-5 years			
Project Name	**Description**	**Stakeholders**	**Estimated Cost**
Sunset Boulevard Corridor	This project will enhance the Sunset Boulevard Corridor with the addition of ITS applications. Fiber-optic communications is needed between Valley View Drive, near SR-18 and Canyon View Drive (Santa Clara City) to interconnect traffic signals and communicate with ITS devices. ITS along this corridor could include: interconnect of existing traffic signals, trailblazer signs, and CCTV cameras at key intersections. Cameras will be used for traffic monitoring, incident detection, traffic signal monitoring and to generate images of road and travel images that can be disseminated to the public.	• St. George Public Works • UDOT	$520,000

Table 4: Medium-term Project Recommendations

Medium-term Projects: 5-10 years			
Project Name	**Description**	**Stakeholders**	**Estimated Cost**
CommuterLink Marketing	This project will provide marketing and outreach resources to assist UDOT and Dixie MPO to inform and educate the public, agencies and media on the availability of ITS tools and traveler information. A key component of this project will be ensuring that Dixie-Region traveler information is available through Commuterlink.	• Media • St. George Public Works • SunTran • UDOT	$30,000
Computer Aided Dispatch Integration with CommuterLink	This project will provide capabilities for the St. George Dispatch Center to exchange traffic data and incident information with Commuterlink for the Dixie Region. A communication link and software integration will be required for the Dispatch Center to exchange incident data.	• City of St. George Police • UDOT	$85,000

Medium-term Projects: 5-10 years			
Project Name	**Description**	**Stakeholders**	**Estimated Cost**
Dixie Regional Emergency Operations Center (EOC)	A new, expanded Emergency Operations Center will serve the existing function of call-taking and dispatching and tracking regional emergency vehicles. The facility will provide space to adapt to the Region's anticipated population growth. That growth is expected to increase the types and complexity of response for incidents, threats and disasters. This project will also provide enhancements to the computer-aided dispatch (CAD) system to enable better incident response through improved information collection and exchange. The new facility would have increased space for meetings, media and co-location by other entities.	• City of St. George Police • City of St. George Fire • Washington County Sheriff • Local Public Safety • Utah Highway Patrol • Media	$6,000,000
Incident Management Strategies	This project will improve the ability of local agencies to respond to incidents and emergencies through a series of ITS strategies. The strategies include improved information sharing among agencies to plan incident response and coordinate resources. Response plans include managing emergencies, evacuation and emergency information dissemination. This project will benefit from the deployment of the *Dixie Regional Traffic Control Center* and the *Dixie Regional Emergency Operations Center* and should be planned for deployment in conjunction with the latter.	• St. George Public Works • St. George Police • St. George Fire • St. George Maintenance • Local Maintenance • Local Emergency Services • Suntran • UDOT • Utah Highway Patrol • Washington County Maintenance • Washington County Sheriff	$320,000
Incident Response Vehicles	This project will deploy mobile units that are able to quickly respond to incidents on the roadways. Typically, the vehicles are equipped to quickly help stranded motorists and move them off roadways so that normal traffic flow can resume. Vehicles may also be equipped with virtual traffic control systems.	• UDOT	$250,000

Medium-term Projects: 5-10 years			
Project Name	**Description**	**Stakeholders**	**Estimated Cost**
ITS Architecture Update	Due to the rapid growth of the Dixie Region, it is likely that needs and priorities will change in the medium-term. The ITS Architecture Update will reasses the needs of the Region and the progress made in deploying the ITS projects identified in this Plan. It will add, delete and modify the project list and Architecture to reflect the current priorities of the Region.	• Dixie Metropolitan Planning Organization • UDOT	$75,000
Maintenance Coordination	This project will improve the coordination of maintenance activities among stakeholders by creating a system for sharing maintenance and operation schedules. The purpose will be to help each stakeholder better understand the activities in other areas of the Region, and to have the opportunity to coordinate or comment on the schedules of other agencies. It will also provide a coordinated maintenance and construction schedule for transit and travelers.	• St. George Maintenance • UDOT • Local Maintenance • Washington County Maintenance • Media • Suntran	$120,000
700 South Corridor	This project will enhance the 700 South Street Corridor with the addition of ITS applications similar to those described for *100 South Corridor*. The 700 South project, between Bluff Street and River Road, would include fiber-optics to replace the wireless infrastructure and improve reliability and performance of communications to existing traffic signals. Wireline communication would provide additional bandwidth to allow real-time traffic signal monitoring, deployment of CCTV cameras, trailblazer signs, and traffic monitoring sensors.	• City of St. George Public Works	$450,000

Medium-term Projects: 5-10 years			
Project Name	**Description**	**Stakeholders**	**Estimated Cost**
I-15 ITS – Phase 1	This project will expand the use of ITS on I-15, primarily between Exits 4 and 10, but could include expansion of ITS beyond these limits. ITS along I-15 would provide tools to monitor traffic conditions, manage incidents and provide timely traveler information to drivers. To accomplish this, fiber optic communications would need to be installed along I-15 in the St. George Metropolitan area and beyond as needed. South of Bluff Street, fiber optic cable will be installed to allow for signal interconnect at the interchanges. ITS devices that can be installed, may consist of DMS, CCTV surveillance cameras and traffic monitoring sensors.	• St. George Public Works • UDOT	$3,560,000
I-15 ITS – Phase 2	This project will expand ITS deployment beyond the Corridor of Exit 4 to 10 as described in Phase 1. as in Phase 1, fiber optic communications will need to be installed along I-15 as needed. ITS devices planned for the second phase include CCTV cameras and DMS, potentially including one north of the St. George area, and one near the Arizona border. Other devices may include traffic monitoring sensors and highway advisory radio.	• St. George Public Works • UDOT	$5,050,000
Northern Parkway Corridor – Phase 1	This project will enhance the planned Northern Parkway from Mile post 16 of I-15 to approximately 3 miles west. Fiber-optic communications will be installed to interconnect traffic signals and communicate with ITS devices. ITS devices could include interconnecting the existing traffic signals, a DMS at the I-15 intersection, and at least two CCTV cameras. Cameras could be used for traffic monitoring, incident detection and to provide images, which can be disseminated to the traveling public via CommuterLink web.	• St. George Public Works	$1,500,000

Medium-term Projects: 5-10 years			
Project Name	**Description**	**Stakeholders**	**Estimated Cost**
Red Hills Parkway	This project will provide ITS devices along this important alternate route from SR-18 to Green Spring Drive (near I-15 Exit 10) Fiber optic will be installed in the Corridor. CCTV camera surveillance, a DMS and traffic sensing equipment will be deployed as this route is expanded and as drivers utilize it to avoid congestion in other corridors. Red Hills Parkway is now the primary route to destinations east of St. George for many residents located west of the City.	• St. George • UDOT	$1,630,000
Red Cliffs Drive Corridor	This project will incorporate ITS for the approximately two-mile section of Red Cliffs Drive, parallel to I-15 between Exits 8 & 10. ITS elements would be extended from St. George Blvd to Telegraph Street. Traffic signal interconnect, CCTV, traffic sensors, trail blazer signs and pre-emption equipment may be deployed along this route. Potentially, communications along I-15 could be used to link ITS elements on Red Cliffs Drive, since they are located in close proximity to each other.	• St. George • UDOT	$660,000
River Road Corridor	This project will enhance the River Road Corridor with the addition of ITS applications between Riverside Drive and St. George Blvd. Fiber-optic communications should be installed to interconnect traffic signals and communicate with ITS devices. ITS devices could include interconnecting the existing traffic signals, trailblazer signs to direct traffic during detours, and CCTV cameras at key intersections. Cameras could be used for traffic monitoring, incident detection and to provide images, which can be disseminated to the traveling public.	• St. George Public Works	$450,000

Medium-term Projects: 5-10 years			
Project Name	**Description**	**Stakeholders**	**Estimated Cost**
Snow Canyon Parkway Corridor	This project will incorporate ITS along Snow Canyon Drive from Bluff Street (SR-18) to the City of Ivins. Some conduit is already in place and additional conduit is included in a current federally-funded project. Altogether, approx. 1.5 miles of conduit will be in place after current projects are completed. This corridor will require remaining conduit and fiber to be installed, installation of CCTV for surveillance, placement of DMS at strategic locations and traffic sensing equipment.	• Ivins • St. George • UDOT	$1,780,000
Western Parkway Corridor – Phase 1	This project will incorporate ITS for the short section of the Western Parkway between Snow Canyon Parkway and Sunset Boulevard. The project will include fiber optic connection of traffic signals, traffic sensors and at least one CCTV camera.	• St. George	$620,000
Western Parkway Corridor – Phase 2	This project will incorporate ITS for the section of the Western Parkway from Sunset Boulevard south to I-15 at Exit 2. The project will include fiber optic connection of traffic signals, traffic sensors, DMS at the I-15 interchange, and several CCTV cameras.	• St. George • UDOT	$940,000

Table 5: Long-term Project Recommendations

Long-term Projects: 10+ years			
Project Name	**Description**	**Stakeholders**	**Estimated Cost**
Weather Warning System	This project would enhance the communications and weather monitoring systems needed to provide early warning of road and bridge flooding to the *Dixie Regional Traffic Control Center*s and emergency response agencies. Enhanced flood monitoring and other meteorological sensors, such as precipitation gauges, wind speed and temperature can be strategically placed to provide accurate, real-time information for traffic operations, meteorologists and other emergency response personnel.	• St. George • UDOT • Local Emergency Services	$130,000
Northern Parkway Corridor – Phase 2	This project will expand ITS deployment on the planned Northern Parkway from the western endpoint of *Phase 1* approximately three miles to the intersection of Red Hills Parkway. Fiber-optic communications will be installed to interconnect traffic signals and communicate with ITS devices. ITS devices could include interconnecting the existing traffic signals and at least two CCTV cameras. Cameras could be used for traffic monitoring, incident detection and to provide images, which can be disseminated to the traveling public.	• St. George Public Works	$935,000
Regional Traveler Information	This project will improve the ability of the Region to disseminate traveler information to commuters and visitors about all available modes. It will improve information regional collection for both local and state roads, such as traffic congestion, delays, maintenance and construction plans, recreational facility availability transit schedules, traffic images and speeds. The project will identify means for consolidating the information and disseminating it through a variety of regional and statewide methods, including 511, web sites, DMS and kiosks.	• St. George Public Works • UDOT • Media • Suntran	$450,000

Long-term Projects: 10+ years			
Project Name	**Description**	**Stakeholders**	**Estimated Cost**
Telegraph Street Corridor	This project would incorporate ITS along Telegraph Street (SR-212) from I-15 to beyond 300 East. This is another corridor where traffic volumes are increasing, creating a need for improved signal coordination. An environmental assessment is currently being prepared for a section of Telegraph Street between 500 West and 300 East. This project includes traffic systems management strategies, such as ITS. Conduit, fiber-optic communications, CCTV surveillance, DMS, HAR and traffic sensing equipment are all ITS elements that are applicable for this project.	• Washington • St. George • UDOT	$450,000
Transit Operations Upgrade	This project provides the capability to track vehicle location and improve the ability to develop routes and schedules. For paratransit, upgraded software allows for more efficient scheduling that can reduce vehicle miles traveled and increase the number of trips provided. Upgrades may also include improved reporting functions that automate many accounting and national reporting requirements, which will reduce administrative staff efforts in those areas.	• SunTran	$1,200,000

The total estimated cost for ITS deployment in the Dixie Region is $46,925,000. **Table 6** summarizes the total cost by time period.

Table 6: Estimated ITS Project Costs by Time Period

Time Period	Estimated Total Budget	Number of Projects
Short- term (0-5 years)	$20,240,000	12
Medium-term (5-10 years)	$23,520,000	17
Long-term (10+ years)	$3,165,000	5

4.0　PROJECT FUNDING

ITS projects may be eligible for funding from a variety of sources, including some specifically for the deployment of advanced technologies. ITS projects should also compete for existing transportation funds with other transportation projects, such as road-widening and expansion. **Table 7** lists the ITS projects identified for the Dixie Region, and summarizes the funding resources they may qualify for. For each project, a black dot (●) indicates a funding source that may be available to fund at least a portion of the project. However, the available funding sources may be limited in their eligibility for a specific project.

For example, The *Regional Traffic Control Center* project indicates a number of different funding sources. Local emergency funds may be used to the extent that the center assists in incident and emergency management by providing images, incident detection and is able to disseminate emergency traveler information. Local emergency funds are not expected to be a source of funds for functions that do not directly benefit the local emergency community.

Following **Table 7** is a brief description of each potential funding source.

Table 7: Potential Project Funding Sources

Project Name	Locally Administered			State Administered		Federally Administered		
	Local Transportation Funds	**MPO STP Funds**	**Local Emergency Funds**	**UDOT STIP Funds**	**ITS Earmark Funds**	**Homeland Security**	**Federal Highway Funds**	**Federal Transit Funds**
Dixie Regional Traffic Control Center (TCC)	●	●	●	●	●		●	
Emergency Automated Vehicle Location			●			●		
Emergency Vehicle Preemption	●		●					
Bluff Street Corridor - Phase 1	●	●			●			
Bluff Street Corridor - Phase 2	●	●			●			
100 South Corridor	●	●			●			
State Route 9 Corridor				●	●			
Sunset Boulevard Corridor	●	●		●	●			
Southern Parkway Corridor – Phase 1	●	●			●			
Trailblazers	●	●		●	●			
Southern Parkway Corridor – Phase 2	●	●			●			
Communications Plan	●	●	●		●			
Dixie Regional Emergency Operations Center (EOC)	●	●	●		●	●		
700 South Corridor	●	●			●			
I-15 ITS – Phase 1				●	●		●	
Red Hills Parkway	●	●			●			

Table 7: Potential Project Funding Sources

Project Name	Locally Administered			State Administered		Federally Administered		
	Local Transportation Funds	**MPO STP Funds**	**Local Emergency Funds**	**UDOT STIP Funds**	**ITS Earmark Funds**	**Homeland Security**	**Federal Highway Funds**	**Federal Transit Funds**
I-15 ITS – Phase 2				●	●		●	
Incident Management Strategies	●	●	●		●			
Incident Response Vehicles				●	●		●	
River Road Corridor	●	●			●			
Computer Aided Dispatch Integration with CommuterLink		●	●	●		●		
CommuterLink Marketing	●	●		●	●			●
Maintenance Coordination	●	●			●			
Northern Parkway Corridor – Phase 1	●	●			●			
Snow Canyon Parkway Corridor	●	●			●			
Western Parkway Corridor – Phase 1	●	●			●			
Red Cliffs Drive Corridor	●	●			●			
ITS Architecture Update	●	●		●	●		●	●
Northern Parkway Corridor – Phase 2	●	●			●			
Western Parkway Corridor – Phase 2	●	●			●			

Table 7: Potential Project Funding Sources

Project Name	Locally Administered			State Administered		Federally Administered		
	Local Transportation Funds	MPO STP Funds	Local Emergency Funds	UDOT STIP Funds	ITS Earmark Funds	Homeland Security	Federal Highway Funds	Federal Transit Funds
Regional Traveler Information	●	●	●	●	●	●	●	●
Transit Operations Upgrade	●	●						●
Telegraph Street Corridor	●	●			●			
Flood Warning	●	●	●		●			

5.0   SUMMARY

The ITS projects recommended in this plan are the result of the ITS Architecture process, which is needs based. Throughout the project, every project was vetted to ensure that it directly addressed and had the potential to resolve the Dixie Region's ITS needs. The entire process can be reviewed in the *Dixie Regional ITS Architecture Final Report.*

There are many considerations to be undertaken before designing and deploying ITS. They include:

- Identifying needed agreements among stakeholders
- Identifying funding for deployment and maintenance
- Maintaining the Architecture
- Ensuring capable staff and resources for maintaining the key technologies
- Involving stakeholders
- Incorporating ITS into the traditional planning process

While this Executive Summary focuses on describing the recommended ITS, the *Dixie Regional ITS Architecture Final Report* provides more discussion of the other issues.