Chapter One: Purpose and Need

1.1 INTRODUCTION

1.1.1 PROPOSED ACTION

The Federal Highway Administration (FHWA) and the Utah Department of Transportation (UDOT) propose to make transportation improvements to meet the 2040 travel demand on Interstate 15 (I-15) between mileposts (MP) 0 and 16, a distance of approximately 16 miles. The study area is located within Washington County, Utah and runs through the cities of St. George, Washington, and Hurricane (see Figure 1-1 Study Area on next page).

The I-15 corridor is the only main north-south interstate corridor that serves Washington County, the State of Utah, and the western United States. Washington County is one of the fastest growing counties in Utah and the nation, growing from 90,354 residents in 2000 (U.S. Census) to an estimated 472,355 residents in 2040 (Five County Association of Governments). Several communities in Nevada, Utah, and Idaho (St. George, Utah, Las Vegas and Mesquite, Nevada, and Idaho Falls, Idaho) were some of the fastest growing cities in the nation between 2000 and 2009.

As a result of this regional population growth, interstate travel, including freight travel, on I-15 is increasing. Existing traffic volumes on I-15, between MP 0 and MP 16, range from 17,200 vehicles per day (vpd) to 41,000 vpd. In 2040, traffic volumes are projected to range from 41,000 vpd to 123,000 vpd. These increasing traffic and freight volumes are expected to cause severe congestion on I-15 between MP 0 and MP 16 if no improvements are made to I-15 to increase the capacity of the system.

The purpose of the project is to address the projected 2040 travel demand on the I-15 corridor between MP 0 and MP 16.

Project Termini

The termini for this Environmental Assessment (EA) shall be MP 0 and MP 16 (see Figure 1-1 Study Area). This area covers the portions of I-15 most affected by the projected population and traffic growth. The 16 mile I-15 study area begins at the Utah/Arizona State line on the south and terminates at the State Route 9 (SR-9) Interchange on the north, where traffic volumes reduce by about 50 percent. SR-9 is a major highway that provides access to Hurricane, Zion National Park, and to northern Arizona, via SR-59.

1.1.2 EXISTING FACILITY

The I-15 mainline generally includes two lanes in each direction from the state line to the SR-9 Interchange. A one-way collector/distributor road system is under construction between the Dixie Drive Interchange and the Bluff Street Interchange, and a northbound truck climbing lane was constructed in 2009 between the Washington Parkway Interchange and the SR-9 Interchange. The I-15 study area includes the following existing features:

- **Port-of-Entry**
- **Southern Parkway Interchange** - Single Point Interchange (SPI) (Exit 2)
- **Brigham Road Interchange** - Diamond Interchange with roundabouts at ramp termini (Exit 4)
- **Dixie Drive Interchange** - SPI (Exit 5) (currently under construction)
- **Bluff Street Interchange** - Tight Diamond Interchange (Exit 6)
- **St. George Boulevard Interchange** - Diamond Interchange (Exit 8)
- **Green Springs Drive Interchange** - SPI (Exit 10)
- **Washington Parkway Interchange** - Diamond Interchange (Exit 13)
- **SR-9 Interchange** - Trumpet Interchange (Exit 15)

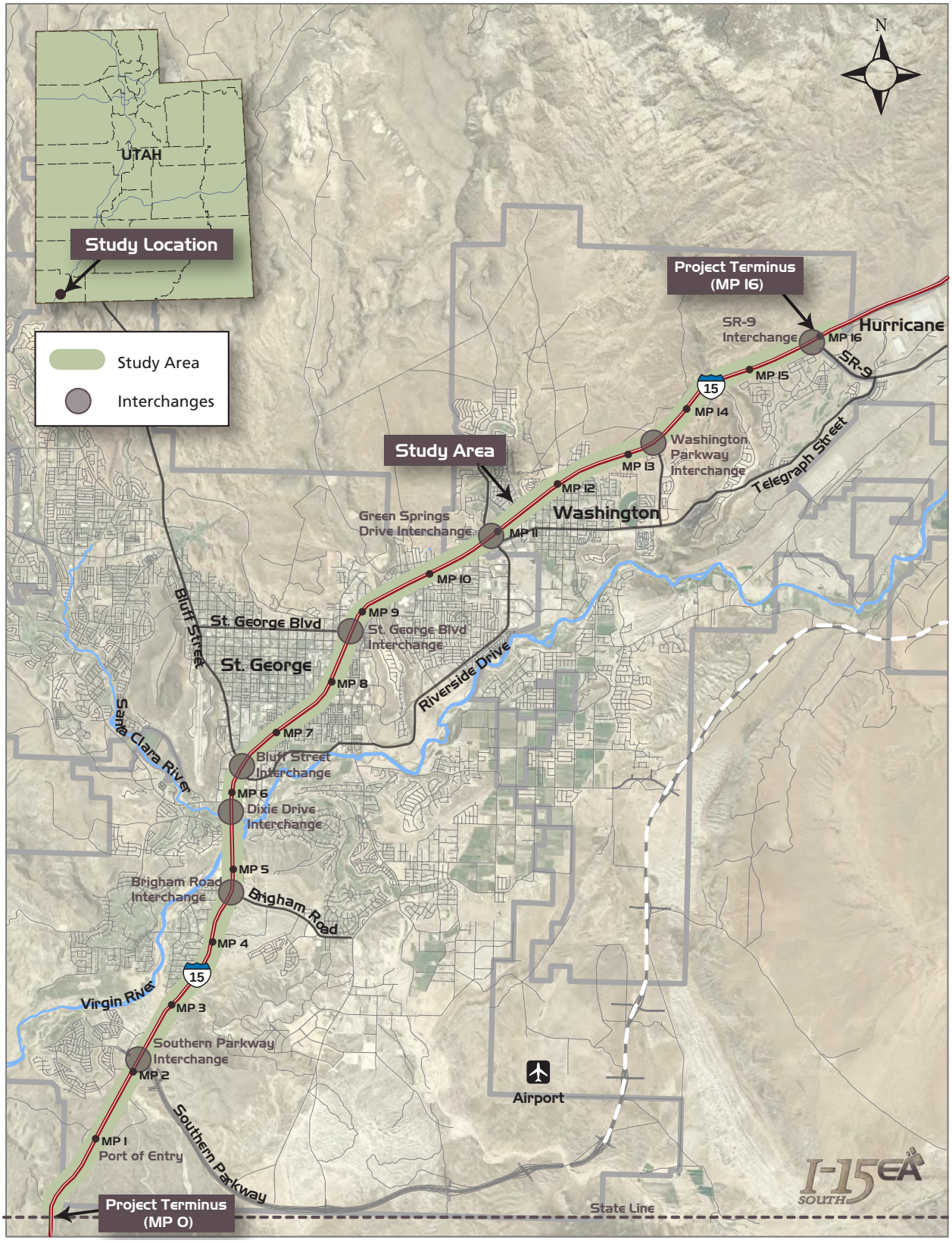


Figure 1-1 Study Area

1.1.3 PROJECT STATUS

Project History and Transportation Planning

I-15 Study, Washington County (MP 0 to 42) Corridor Study

The *I-15 Study, Washington County (MP 0 to 42) Corridor Study* (November 2008), prepared by UDOT, the Dixie Metropolitan Planning Organization (DMPO), and local municipalities, identified transportation needs on the I-15 corridor in Washington County between MP 0 and MP 42. The study concluded that I-15 would need capacity improvements between MP 0 and MP 16. Suggested improvements included the addition of general purpose lanes and improving ramp capacity. As a result of the corridor study, UDOT initiated the I-15 South EA.

UDOT Statewide Transportation Improvement Program

UDOT's Statewide Transportation Improvement Program (STIP) is a five-year plan of highway and transit projects for the state of Utah. The STIP is UDOT's official work plan for the development of projects through concept, environmental studies, right-of-way acquisition, planning and advertising for construction for all sources of funds. The I-15 MP 0 -- MP 16 EA is listed on UDOT's 2010-2015 STIP.

DMPO 2011-2040 Regional Transportation Plan (June 2011)

The DMPO 2011-2040 Regional Transportation Plan (RTP), a fiscally constrained plan, includes planning and construction for highway improvements, bicycle routes, and transit facilities. I-15 is listed for widening from MP 0 to MP 13 in Phase 1 (2011 to 2020) and from MP 13 to MP 16 in Phase 2 (2021-2030) of the DMPO RTP.

UDOT, the DMPO, and other metropolitan planning organizations in Utah have created Utah's Unified Transportation Plan 2007-2030. The Unified Plan is an executive summary of five individual agency plans, including the DMPO, and contains a comprehensive project list including all major capacity projects anticipated through 2030. Therefore, any project that is listed in the DMPO RTP is also listed in the Unified Plan, and is officially recognized as a planned project by UDOT.

Dixie Regional Intelligent Transportation System (ITS) Architecture Report (September 2006)

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 report recommends expanding the use of ITS on I-15 in the study area.

St. George Master Traffic and Transportation Study

St. George's Transportation Improvement Plan (2008) recognizes the need for capacity improvements to I-15 in the study area as part of their mid-term (6 to 10 years) transportation plan.

What is the Dixie Metropolitan Planning Organization?

The Dixie Metropolitan Planning Organization (DMPO), is the designated agency, as established by the state of Utah, responsible for comprehensive transportation planning in the urbanized and urbanizing areas in Utah's Washington County, also known as "Utah's Dixie". The Dixie MPO area includes St. George City, Washington City, Santa Clara City, Ivins City and portions of unincorporated Washington County located within the MPO boundaries. Member jurisdictions which comprise the Dixie MPO include Washington County, St. George City, Washington City, Santa Clara City and Ivins City.

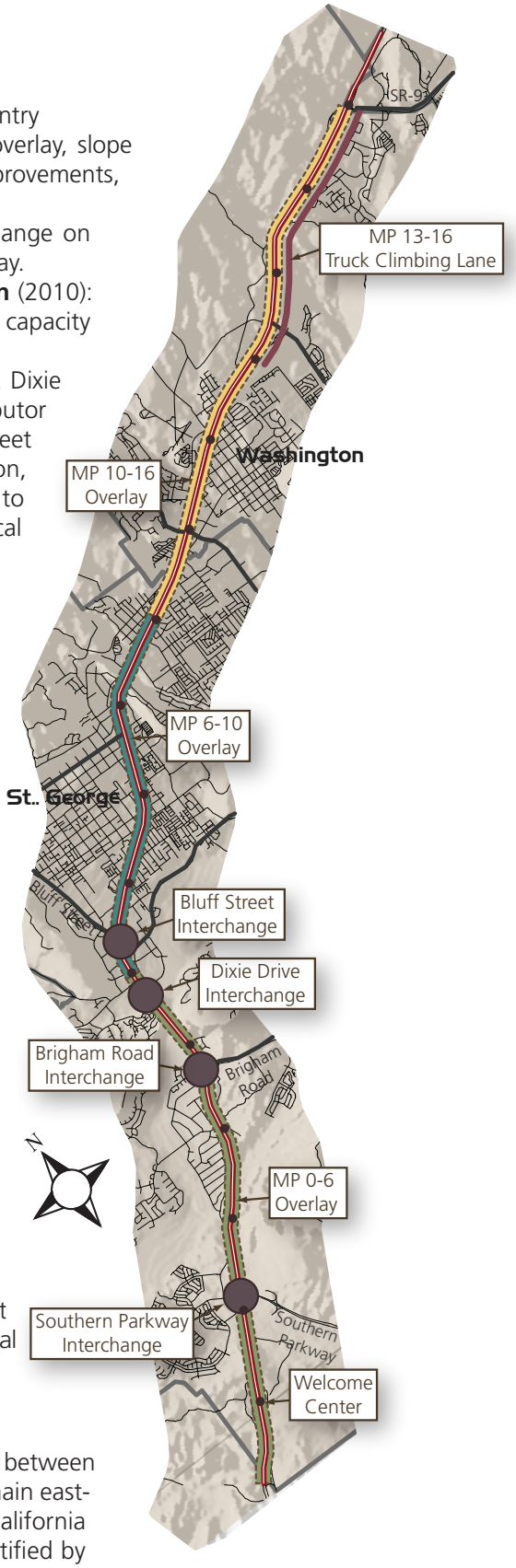
What are Intelligent Transportation Systems (ITS)?

Intelligent transportation systems (ITS) encompass a broad range of wireless and wire line communications-based information and electronics technologies. When integrated into the transportation system's infrastructure, and in vehicles themselves, these technologies relieve congestion, improve safety and enhance productivity.

Recent and Ongoing I-15 Improvements

There are several recent and ongoing projects on the I-15 corridor:

- **Welcome Center**: Planned for construction at the Port-of-Entry
- **MP 0 to 6** (2007): Pavement rehabilitation, rotomill and overlay, slope flattening, median cable barrier installation, guardrail improvements, and miscellaneous drainage improvements.
- **Southern Parkway Interchange** (2008): New SPI interchange on I-15 to provide access to and from I-15 and Southern Parkway.
- **Brigham Road Interchange roundabouts reconstruction** (2010): Roundabout modifications at both ramp termini to increase capacity and improve traffic flow.
- **Dixie Drive Interchange** (ongoing): New SPI over I-15 at Dixie Drive (approximately MP 5) and a one-way Collector/Distributor road system to tie the Dixie Drive Interchange and Bluff Street Interchange together as a dual-interchange system. In addition, the project is constructing a new alignment for Dixie Drive to connect the Dixie Drive Interchange to the surrounding local road network.
- **Bluff Street Interchange reconstruction** (2009): Conversion of the diamond interchange to a tight diamond interchange, bridge widening, signal and ITS improvements.
- **MP 6 to 10** (2008): Pavement rehabilitation, rotomill and overlay, slope flattening, median cable barrier installation, guardrail improvements, and miscellaneous drainage improvements
- **MP 10 to 16** (2009): Pavement rehabilitation, rotomill and overlay, slope flattening, median cable barrier installation, guardrail improvements, miscellaneous drainage improvements, and construction of a northbound truck climbing lane between MP 13 and MP 16.



1.1.4 SYSTEM LINKAGE

The I-15 corridor provides an essential transportation and economic link for Washington County, the State of Utah, and the western United States.

Local System Linkage

I-15 is used for local, cross-town access, is used as an additional route to cross the cities of St. George and Washington, and provides access to the St. George Airport via Southern Parkway.

State System Linkage

I-15 is the main north-south route in the State of Utah, is used to get back and forth between cities in Utah, and provides access to several state routes.

National System Linkage

I-15 serves as both the primary NAFTA-related "Can-A-Mex" Corridor between Canada and Mexico via the Mountain West, as well as a link to the main east-west freight routes (I-10, I-40, I-70, and I-80) that connect southern California with the Midwest and East Coast. Furthermore, I-15 has been identified by the U.S. Department of Transportation as one of the six "Corridors of the Future" within the United States that are vital to the long term health and stability of our national economy.

1.2 PURPOSE OF THE PROJECT

The purpose of the Proposed Action is to address the projected 2040 travel demand on the I-15 corridor between MP 0 and MP 16.

1.3 NEED FOR THE PROJECT

The project is needed because the I-15 corridor between MP 0 and MP 16 lacks the capacity for 2040 future travel demand. The projected travel demand will increase congestion on I-15 between MP 0 and MP 16. The increasing congestion will be a result of:

- Population growth
- Traffic volume growth
- High volumes of freight traffic

1.3.1 LACK OF CAPACITY IN 2040

Population Growth

Washington County

According to the U.S. Census Bureau, Washington County was the fastest growing county in Utah between 2000 and 2009, and was 26th in the nation between 2000 and 2009. Washington County grew from 90,354 residents in 2000 (U.S. Census) to an estimated 162,544 in 2010 (Five County Association of Governments). Projections forecast that by 2040, Washington County will have 472,355 residents (Five County Association of Governments).

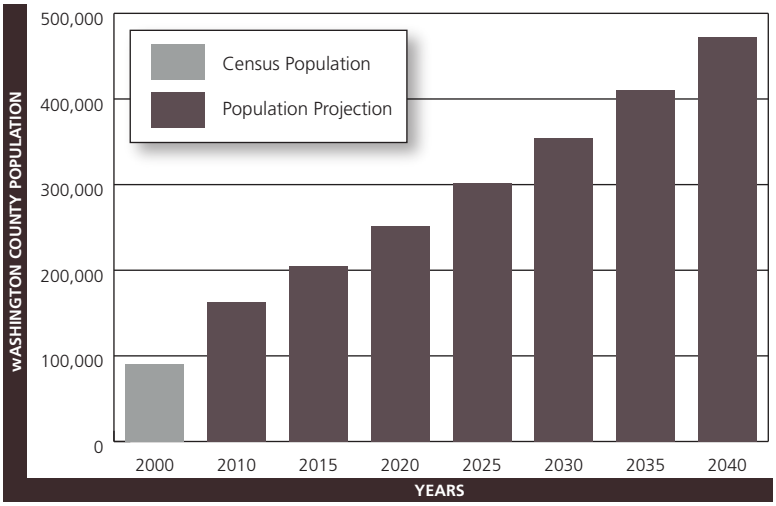


Table 1-1 Population Growth

City	2000 Census Population	2010 Population Projection	2020 Population Projection	2030 Population Projection	2040 Population Projection	Annual % Growth Rate (2010 to 2040)
Washington County	**90,354**	**162,544**	**251,896**	**353,922**	**472,355**	**4.2%**
Apple Valley	---	861	1,335	1,876	2,503	3.6%
Enterprise	1,285	1,983	3,048	4,282	5,715	3.8%
Hildale	1,895	2,975	4,585	6,441	8,597	3.9%
Hurricane	8,250	14,385	22,268	31,216	41,614	4.1%
Ivins	4,450	9,184	14,207	19,926	26,546	4.6%
La Verkin	3,392	5,657	8,741	12,281	16,391	4.0%
St. George	49,663	85,644	132,497	185,809	247,703	4.1%
Santa Clara	4,630	8,143	12,595	17,661	23,571	4.2%
Washington	8,186	19,960	30,882	43,320	57,722	5.0%
County Balance	8,603	13,752	21,739	31,109	41,993	4.0%

Source: Five County Association of Governments

I-15 Corridor

I-15 is an important travel corridor, serving communities in Nevada, Utah, and Idaho. Several cities in this area were the fastest growing (based on percentage growth) in the nation between 2000 and 2009 (U.S. Census Bureau). These included:

- St. George, Utah (ranked 2)
- Provo-Orem, Utah (ranked 3)
- Las Vegas, Nevada (ranked 6)
- Idaho Falls, Idaho (ranked 35)
- Ogden-Clearfield, Utah (ranked 38)
- Salt Lake City, Utah (ranked 73)

Western United States

According to the U.S. Census Bureau, the western region of the United States was the fastest growing region between 2000 and 2009, growing 13.2 percent. Utah was the third fastest growing state in the country between 2000 and 2009 (24.7 percent), with Arizona second (28.6 percent), and Nevada first (32.3 percent).

The I-15 corridor is the only main north-south interstate corridor that serves Washington County, the State of Utah, and the western United States. As the population in these areas continues to increase, traffic demand on the I-15 corridor (including between MP 0 and MP 16) will increase as well.

Traffic Volume Growth

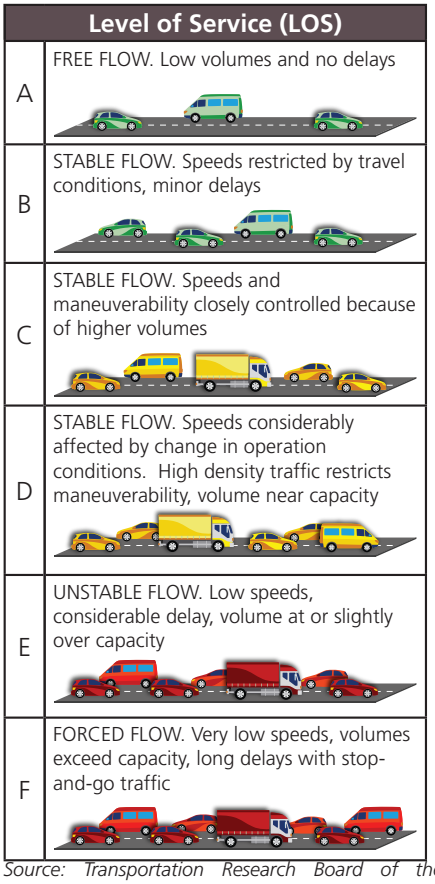
Traffic in the study area is increasing, as would be expected in an area that has substantial population growth. Before the year 2040, traffic demand will exceed current capacity of the I-15 corridor between MP 0 and MP 16.

Capacity and Level-of-Service

Transportation agencies use a qualitative measurement known as "level-of-service" (LOS) to measure the quality of the traffic flow rate. LOS characterizes the traffic operations of a facility in factors such as speed, average travel delay, travel times, freedom to maneuver, and driver comfort and convenience. LOS ranges from A to F, with LOS A representing the best operating conditions (little or no congestion or delay) and LOS F representing the worst-operating conditions (extreme congestion and delay with long traffic queues and stop-and-go traffic).

The Highway Capacity Manual defines a service flow rate for the LOS grades A through E for each class of roadway, such as arterials, collectors, or other types of roadways. This service flow rate defines an upper boundary for each LOS grade, which provides a convenient way to quantitatively measure LOS for the different roadway types.

When planning for future improvements, a roadway must have adequate capacity to handle the anticipated flow rate, and must provide for a minimum acceptable LOS. According to the American Association of State Highway and Transportation Officials (AASHTO), LOS C (at peak hours) is generally acceptable for rural areas, and LOS D (at peak hours) is acceptable for urbanized areas. The proposed project is within an urbanized area and therefore streets should operate at LOS D or better, if possible, during peak hours.



Source: Transportation Research Board of the National Academy of Science.

I-15 Mainline

LOS for freeways is determined by the density of vehicles in a freeway section.

Level of Service	Density Range (pc/mi/ln)*
A	<11
B	>11-18
C	>18-26
D	>26-35
E	>35-45
F	>45

**Passenger Cars per Mile per Lane*

Existing Conditions (2010)

The existing (2010) LOS during peak hours for the I-15 mainline is shown in Table 1-2 and Figure 1-2. The I-15 mainline is currently operating at an acceptable LOS.

Projected No-action (2040) Conditions

The projected No-action (2040) condition assumes that no roadway improvements on I-15, other than routine maintenance and safety type projects, would be constructed. Some of these routine maintenance projects would include re-striping the southbound to eastbound movement on the Southern Parkway Interchange for three left-turn lanes and re-striping the Washington Parkway Interchange to add dual left-turn lanes and additional right-turn lanes on the ramp terminals. Traffic projections for 2040 were obtained from the DMPO regional travel demand model (see traffic analysis in Appendix A). In 2040, if no roadway improvements (other than routine maintenance) are constructed, traffic volumes will range from 41,000 vpd to 123,000 vpd. The majority of the I-15 corridor between MP 0 and MP 16 will be severely congested and operate at LOS F (see Table 1-2 and Figure 1-2).

Table 1-2 Existing (2010) and Projected No-action (2040) Traffic Volumes and LOS for I-15

I-15 Mainline Segment	Existing (2010)			Projected No-action (2040)		
	ADT (vpd)	Density*	LOS	ADT (vpd)	Density*	LOS
State line to Southern Parkway (Exit 2) (NB)	17,200	8.7	A	41,000	17.1	C
Southern Parkway (Exit 2) to State line (SB)		9.3	A		22.1	C
Southern Parkway (Exit 2) to Brigham Road (Exit 4) (NB)	19,000	12.4	B	77,000	36.1	E
Brigham Road (Exit 4) to Southern Parkway (Exit 2) (SB)		10.3	A		41.4	E
Brigham Road (Exit 4) to Dixie Drive/Bluff Street (Exit 5 and 6) (NB)	36,000	16.7	B	114,000	>45	F
Dixie Drive/Bluff Street (Exit 5 and 6) to Brigham Road (Exit 4) (SB)		17.6	B		>45	F
Dixie Drive/Bluff Street (Exit 5 and 6) to St. George Boulevard (Exit 8) (NB)	33,000	17.7	B	94,000	>45	F
St. George Boulevard (Exit 8) to Dixie Drive/ Bluff Street (Exit 5 and 6) (SB)		16.4	B		>45	F
St. George Boulevard (Exit 8) to Green Springs Drive (Exit 10) (NB)	41,000	17.8	B	104,000	>45	F
Green Springs Drive (Exit 10) to St. George Boulevard (Exit 8) (SB)		20.4	C		>45	F
Green Springs Drive (Exit 10) to Washington Parkway (Exit 13) (NB)	34,000	16.0	B	110,000	>45	F
Washington Parkway (Exit 13) to Green Springs Drive (Exit 10) (SB)		16.3	B		>45	F
Washington Parkway (Exit 13) to SR-9 (Exit 16) (NB)	34,000	15.8	B	123,000	>45	F
SR-9 (Exit 16) to Washington Parkway (Exit 13) (SB)		16.2	B		>45	F

** Passenger Cars per Mile per Lane*

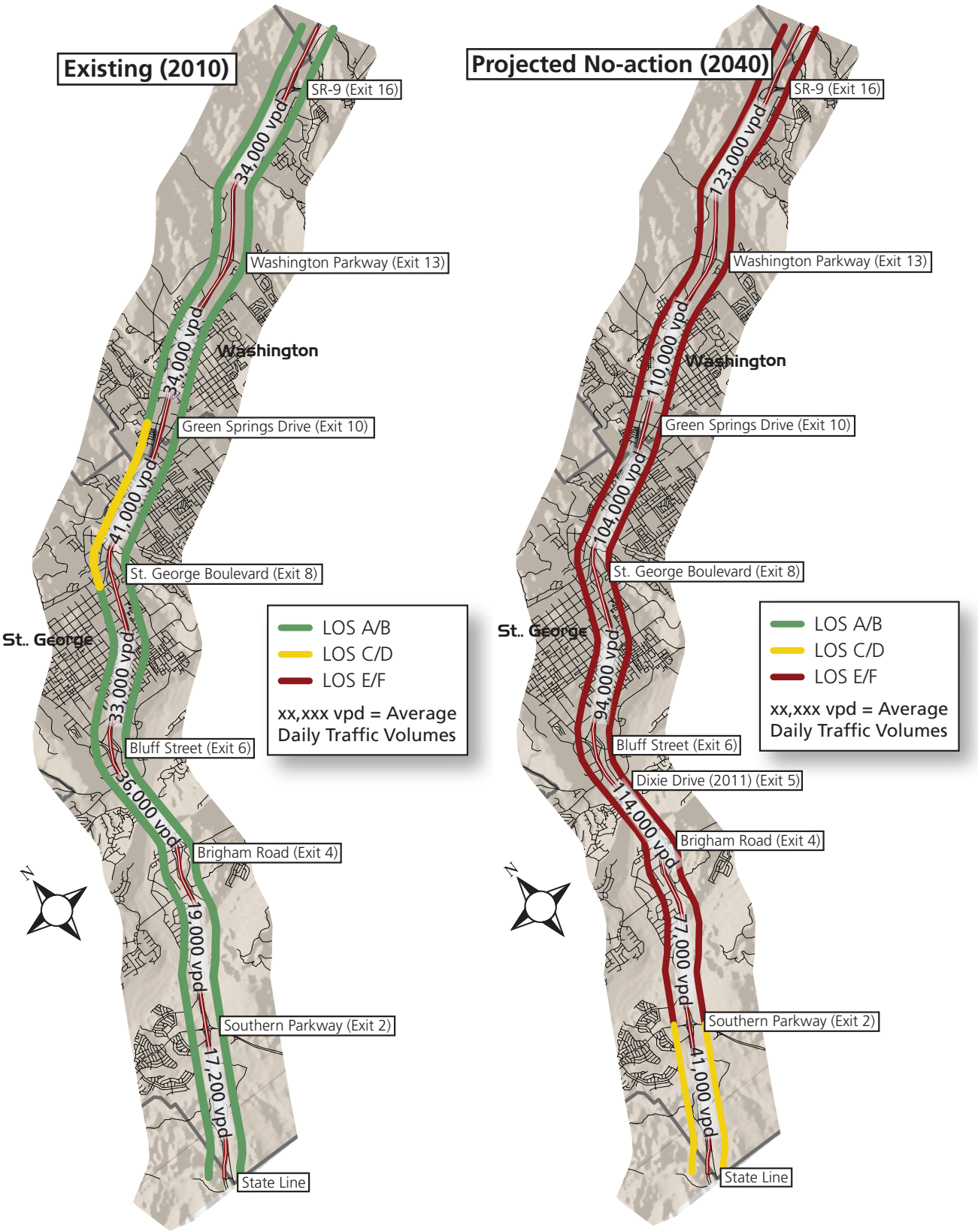


Figure 1-2 Existing (2010) and Projected No-action (2040) Traffic Volumes and LOS

I-15 Interchanges

LOS is also used to evaluate intersection congestion. Intersection LOS is determined by the amount of extra time it takes, or delay, to pass through an intersection as a result of starts and stops associated with the intersection control.

Level of Service	Average Control Delay (sec/veh)
A	0-10
B	>10-20
C	>20-35
D	>35-55
E	>55-80
F	>80

Existing Conditions (2010)

Currently, the intersections associated with the interchanges along the I-15 corridor between MP 0 and MP 16 are operating at an acceptable LOS (see Table 1-3 and Figure 1-3).

Projected No-action (2040) Conditions

The projected No-action (2040) condition assumes that no roadway improvements on I-15, other than routine maintenance and safety type projects, would be constructed. Some of these routine maintenance projects would include re-striping the southbound to eastbound movement on the Southern Parkway Interchange for three left-turn lanes and re-striping the Washington Parkway Interchange to add dual left-turn lanes and additional right-turn lanes on the ramp terminals. By the year 2040, if no improvements are constructed, three intersections along the I-15 corridor will operate at LOS E or F during the PM peak level traffic (see Table 1-3 and Figure 1-3). The PM peak level traffic represents the highest traffic volumes throughout the day.

Table 1-3 Existing (2010) and Projected No-action (2040) PM Peak Intersection LOS

Intersection	Existing (2010)		Projected No-action (2040)	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
Southern Parkway SPI	3.53	A	42.3	D
Brigham Road & SB Ramps	13.9	B	>100	F
Brigham Road & NB Ramps	12.1	B	25.6	D
Dixie Drive SPI	Not Available (currently under construction)	Not Available (currently under construction)	11	B
Bluff Street & NB Ramps	18.2	B	19.1	B
Bluff Street & SB Ramps	13.8	B	16.7	B
St. George Boulevard & NB Ramps	28.8	C	64.9	E
St. George Boulevard & SB Ramps	7.9	A	11.8	B
Green Springs Drive SPI	40	D	>100	F
Washington Parkway & NB Ramps	9.3	A	21.0	C
Washington Parkway & SB Ramps	11.4	B	14.5	B

The SR-9 Interchange was not included in the intersection analysis because the interchange is a free-flow interchange and has no intersections.

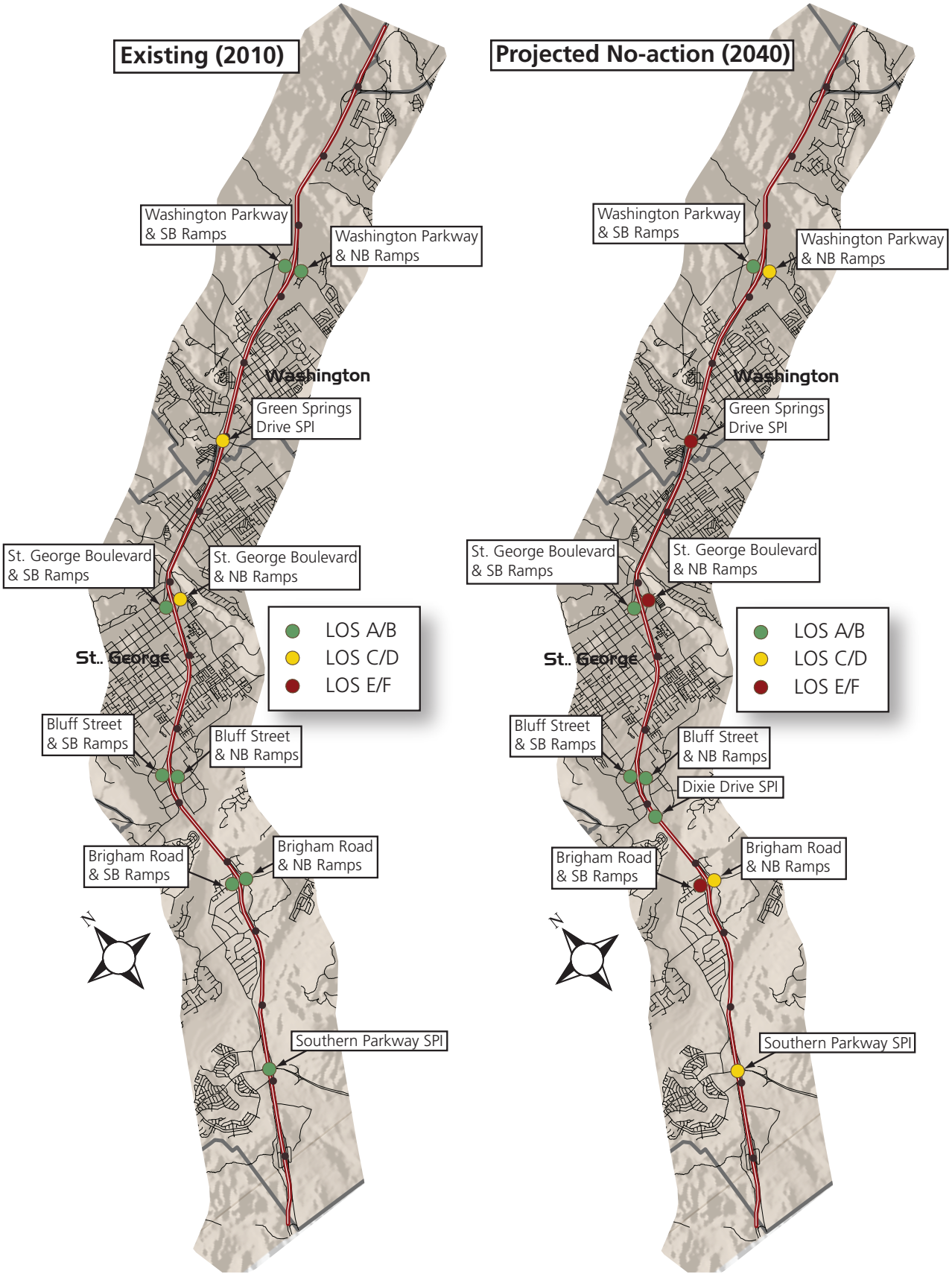


Figure 1-3 Existing (2010) and Projected No-action (2040) PM Peak Intersection LOS

Freight Volumes

The volume of trucks on a freeway affects the capacity of the roadway because trucks take up more available capacity than an equivalent number of cars. Large percentages of truck volumes on a freeway can cause congestion. Table 1-4 shows current and projected truck volumes.

Table 1-4 Existing (2010) and Projected No-action (2040) Truck Volumes

I-15 Mainline Segment	Existing (2010)		Projected No-action (2040)	
	PM Peak Truck Volumes (veh/hr)	Percentage of Total PM Traffic Volume	PM Peak Truck Volumes (veh/hr)	Percentage of Total PM Traffic Volume
State line to Southern Parkway (Exit 2) (NB)	200	26%	510	25%
Southern Parkway (Exit 2) to State line (SB)	200	25%	640	25%
Southern Parkway (Exit 2) to Brigham Road (Exit 4) (NB)	210	24%	520	15%
Brigham Road (Exit 4) to Southern Parkway (Exit 2) (SB)	210	23%	630	16%
Brigham Road (Exit 4) to Dixie Drive/Bluff Street (Exit 5 and 6) (NB)	240	15%	650	13%
Dixie Drive/Bluff Street (Exit 5 and 6) to Brigham Road (Exit 4) (SB)	240	14%	680	13%
Dixie Drive/Bluff Street (Exit 5 and 6) to St. George Boulevard (Exit 8) (NB)	240	16%	730	16%
St. George Boulevard (Exit 8) to Dixie Drive/ Bluff Street (Exit 5 and 6) (SB)	230	15%	600	14%
St. George Boulevard (Exit 8) to Green Springs Drive (Exit 10) (NB)	260	15%	760	15%
Green Springs Drive (Exit 10) to St. George Boulevard (Exit 8) (SB)	250	12%	740	15%
Green Springs Drive (Exit 10) to Washington Parkway (Exit 13) (NB)	240	16%	800	16%
Washington Parkway (Exit 13) to Green Springs Drive (Exit 10) (SB)	230	13%	730	15%
Washington Parkway (Exit 13) to SR-9 (Exit 16) (NB)	240	16%	870	15%
SR-9 (Exit 16) to Washington Parkway (Exit 13) (SB)	230	13%	820	15%

1.4 OBJECTIVES AND GOALS

1.4.1 PURPOSE AND NEED OBJECTIVES

Specific objectives were developed to determine if alternatives would meet the Purpose and Need, which is to address the projected 2040 travel demand by providing LOS D or better on the I-15 corridor between MP 0 and MP 16. These objectives, or measures of effectiveness, include:

- Provide LOS D or better for the I-15 mainline corridor between MP 0 and MP 16
- Provide LOS D or better for all movements on ramp intersections for interchanges on I-15 between MP 0 and MP 16

1.4.2 OTHER GOALS OF THE PROJECT

In addition to the Purpose and Need objectives listed above, a goal of the project is to provide a transportation facility on I-15 between MP 0 and MP 16 that will meet current design standards set by UDOT and AASHTO, using as much of the existing infrastructure as practicable. However, meeting this goal is not necessary for an alternative to meet the Purpose and Need.

Safety and Design Issues

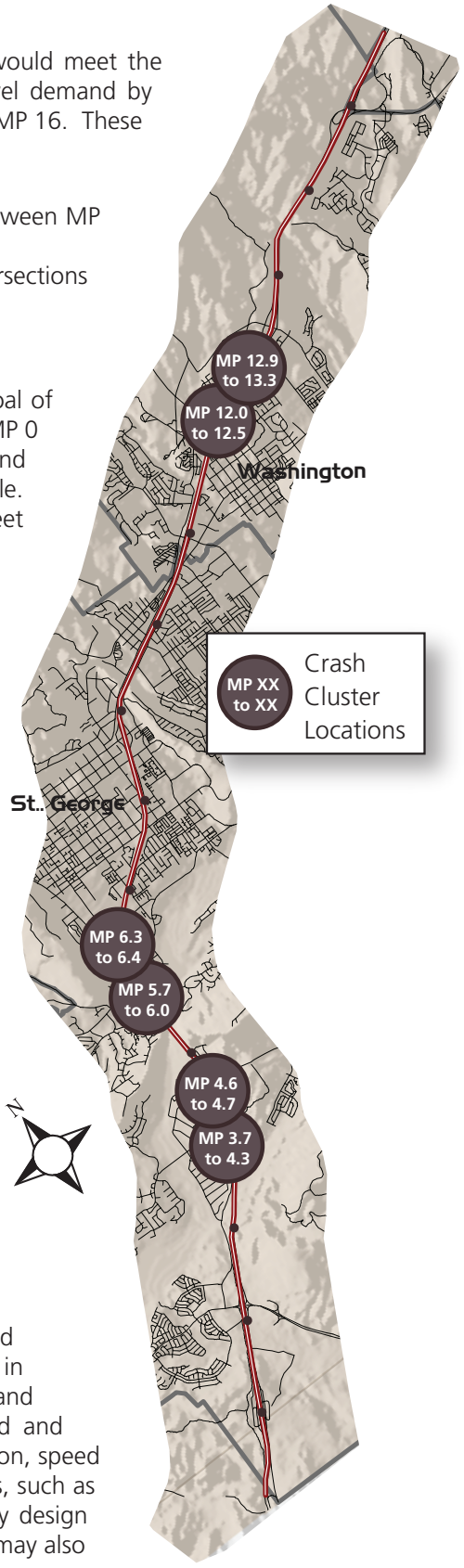
An analysis of the crash history on I-15 between MP 0 and MP 16 was performed to identify highway elements that may contribute to crashes. In addition, an analysis to identify substandard design elements on existing I-15 was also performed. Many of these design elements were built when I-15 was originally constructed, several decades ago. Since that time, there have been changes to design standards, vehicles, and travel speeds.

Highway Safety

An analysis of vehicle crashes for the section of I-15 between MP 0 and MP 16 showed there were 683 crashes that occurred in the 2006 to 2010 five-year period. The predominant crash type was single-vehicle (306 crashes - 45%), rear-end (170 crashes - 25%), and sideswipe (116 crashes - 17%). The crash rate (number of crashes per million vehicle miles traveled) was 0.74, which is less than 0.95, the expected rate for this type of highway.

The severity rating is another analysis tool that identifies the severity of injuries in a crash, ranging from "no injury" to "fatal". The average severity rating of 1.54 for the section of I-15 between MP 0 and MP 16 was about the same as the expected rate of 1.50.

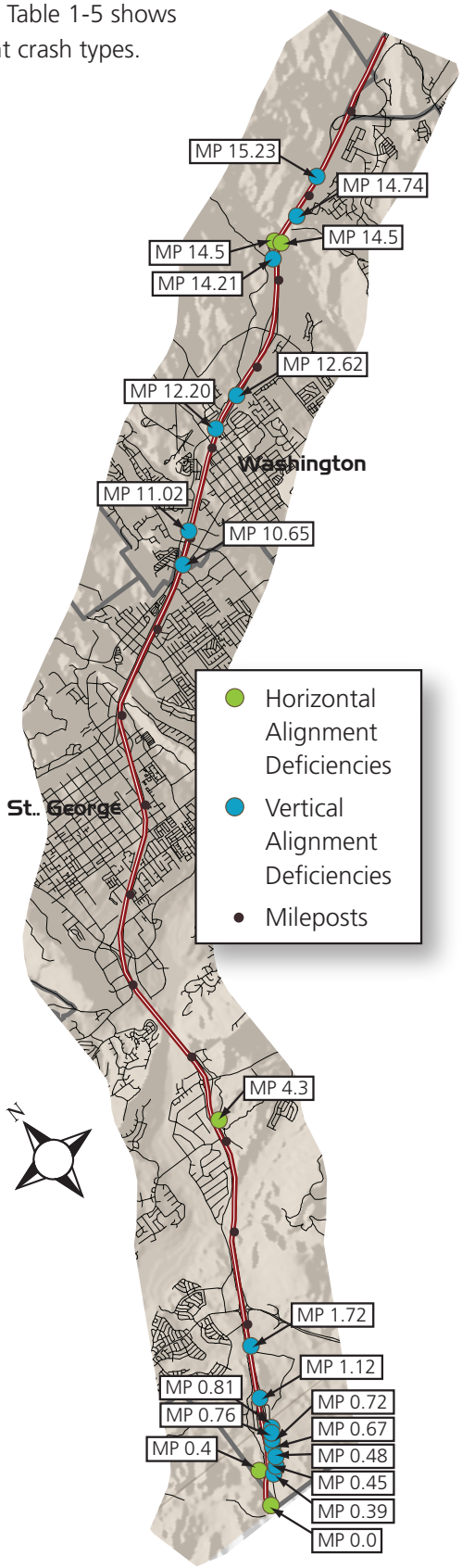
Human factors, such as distracted, fatigued, aggressive, or impaired driving, are the leading contributors for single-vehicle crashes in Utah. Roadway design elements such as horizontal curvature and shoulder width may also contribute to these crashes. Rear-end and sideswipe accidents on a freeway are generally related to congestion, speed differentials, and abrupt lane changes. The effects of driver errors, such as those caused by fatigue or distractions, are magnified. Roadway design elements such as inadequate acceleration or deceleration lengths may also be contributing factors.



Crashes sometimes occur in approximately the same locations over time. Table 1-5 shows six "crash clusters" on I-15 between MP 0 and MP 16 for the predominant crash types.

Table 1-5 Crash Clusters in the Study Area

Crash Cluster Location	Predominant Crash Type	Possible Causes
MP 3.7 to 4.3 (Near Brigham Road Interchange)	Rear-end, Sideswipe, and Single Vehicle	Vehicles slowing for congestion, lane changes, avoiding slower vehicles.
MP 4.6 to 4.7 (Near Brigham Road Interchange)	Sideswipe and Single Vehicle	
MP 5.7 to 6.0 (Near Bluff Street Interchange)	Single Vehicle and Sideswipe	Vehicles slowing for congestion and lane changes. Construction activities occurred during 2009 to 2010 so more construction zone accidents were reported.
MP 6.3 to 6.4 (Near Bluff Street Interchange)	Rear-end	
MP 12.0 to 12.5 (Near Washington Parkway Interchange)	Single Vehicle	May be related to beginning of urban congestion with drivers swerving off road to avoid slower vehicles and some construction zone activities.
MP 12.9 to 13.3 (Near Washington Parkway Interchange)	Single Vehicle	



The crashes occurring on I-15, from a highway design standpoint, generally relate to congestion; therefore, addressing the projected 2040 travel demand would be the best effort to reduce crashes. There is not a strong correlation with the identified crash clusters and the areas that do not meet the project design standards.

Highway Design Deficiencies

Highway design standards have evolved since I-15 was originally designed and constructed because of experience, changes in vehicles, etc. For this project, the 75-mph speed limit from MP 0 to approximately MP 4 and from MP 13 to MP 16 is somewhat higher than the 70-mph original design speed. Therefore, some horizontal and vertical curves do not meet the current 70-mph and 80-mph design standards that will be used for the project. Other elements that affect the freeway operation, including acceleration and deceleration lengths, merging areas, etc., need to be considered during the design.