TOOELE VALLEY
REGIONAL LONG RANGE TRANSPORTATION PLAN

OCTOBER 2006

Prepared by:

WASATCH FRONT REGIONAL COUNCIL

For the:
Tooele Valley Rural Planning Organization (RPO)

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I. INTRODUCTION

In October 2004, the Tooele Valley Rural Planning Organization (RPO) was formed to establish a process to assist the local jurisdictions in Tooele Valley in working cooperatively to plan the transportation system and prioritize transportation projects. This process is intended to smooth the transition between transportation planning and project development while ensuring that community transportation needs are recognized. One of the principal products of the RPO is a coordinated Long Range Transportation Plan.

Tooele Valley, situated as it is, close to the Salt Lake Urbanized Area, has been a fast-growing bedroom community. This trend is projected to continue into the future. The accessible areas along the SR-36 and SR-138 corridors will be the fastest growing locations for residential and service employment growth. Recent growth has been primarily residential, with nearly half of all workers commuting to the Salt Lake City area.

With the closing of the Tooele Army Depot and its conversion into the Utah Industrial Depot, and with the new Wal-Mart distribution center in Grantsville, employment growth has been able to increase. Even with more commercial development, Tooele Valley will continue to have a strong commuter community focus. The availability of affordable housing and the short commute to Salt Lake County facilitate this development pattern.

Given these trends, socioeconomic projections were prepared with the 2000 Census as the primary base and the Governor's Office of Planning and Budget (GOPB) most recent forecast for Tooele County as a control total. These projections are summarized in Figure I-1.

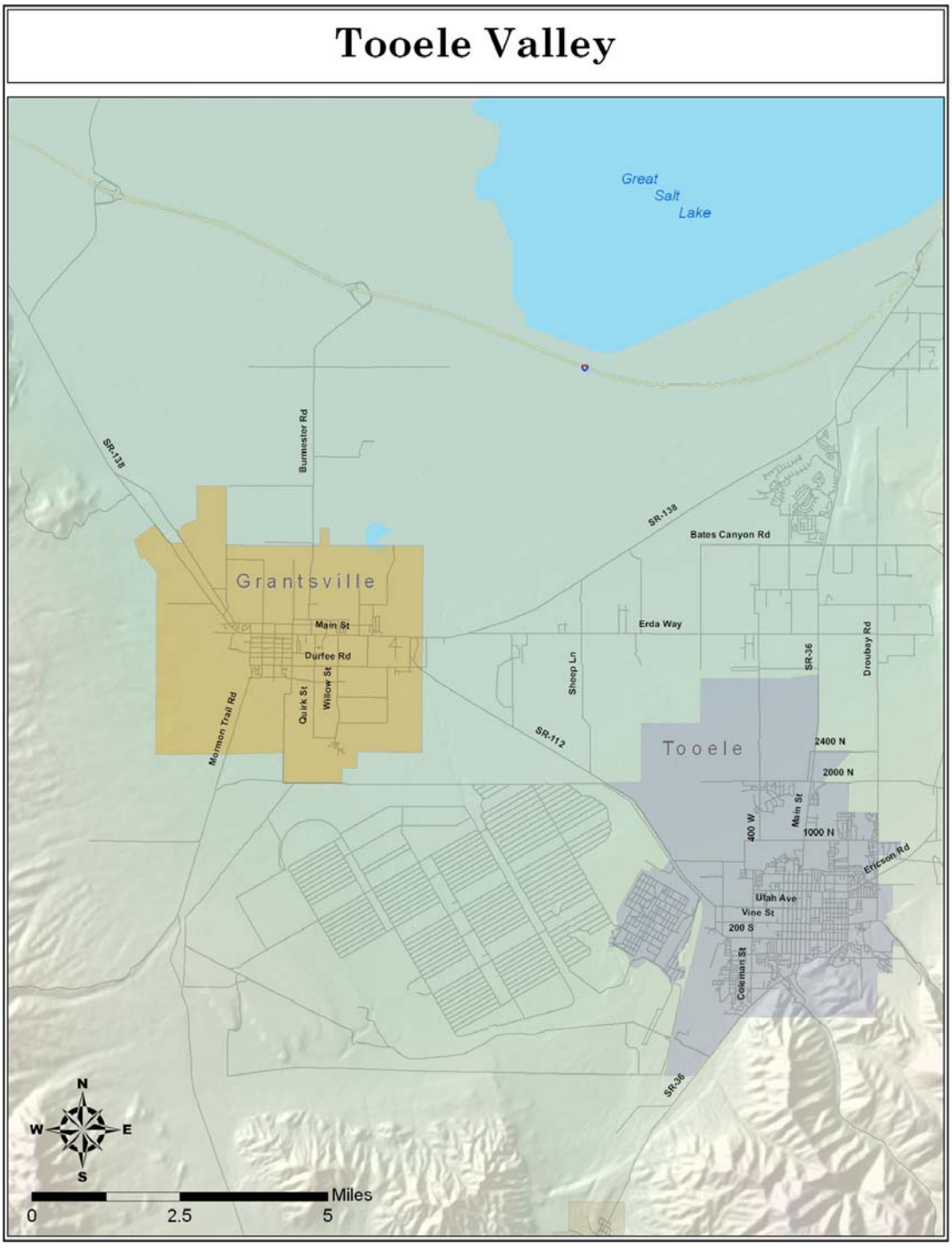
Figure I-1

TOOELE VALLEY SOCIOECONOMIC PROJECTIONS

	Population	Households	Total Employment*
2002	42,300	14,000	15,100
2020	87,900	30,400	23,000
2030	104,700	38,400	25,200

* Excludes construction and agricultural employment

Map I-1


Tooele Valley
Great Salt Lake
Grantsville
Tooele
Burmester Rd
SR-138
Bates Canyon Rd
Main St
Durfee Rd
Quirk St
Willow St
Mormon Trail Rd
Erda Way
Sheep Ln
SR-112
SR-36
Droubay Rd
2400 N
2000 N
400 W
Main St
1000 N
Ericson Rd
Utah Ave
Vine St
200 S
Coleman St
N
W
E
S
Miles
0
2.5
5

II. NEEDS

As the Tooele Valley continues to grow, improvements to the transportation system will be needed so that all travel modes will be able to operate as efficiently and effectively as possible. Experience across the country has demonstrated that relying only on highway improvements does not reduce congestion levels over the long term. While the majority of travel occurs in personal vehicles, it is critical to invest in all modes of transportation so that the public is afforded viable choices. The accumulation of seemingly small improvements across multiple modes adds up to significant differences in the overall performance of the transportation system.

These small improvements address two primary concerns: 1) reducing the number of vehicle trips made, and 2) maintaining the capacity of the roadway system. Strategies to lower the number of trips include transit, ridesharing, bicycling, telecommuting, and growth management. To preserve the capacity of existing and planned roads, actions are needed to manage access control, improve intersection operation, coordinate signals spaced less than one mile apart, and utilize other intelligent transportation system (ITS) to manage traffic. Although the focus of this document is on capital improvements, local and state planners and engineers will be able to make substantial impacts to improve transportation system performance by advancing all of these congestion mitigation strategies.

Highway Capacity Needs

In order to determine highway capacity needs, a highway travel demand model encompassing the Tooele Valley was updated. The socioeconomic projections discussed in the previous section, along with characteristics of the road network such as free flow speed and vehicle capacities are the primary inputs to this model. Estimates of population, households and employment are prepared by geographic units of analysis called traffic analysis zones (TAZ). Based on these estimates for thirty-three TAZ in the Valley, the number of trips produced and attracted at each zone are generated using cross-classification and linear regression techniques. A gravity model is employed to predict which zones these trip productions will go to, and from which zones the trip attractions come. Finally, these trips between zones are assigned to road network links using volume-delay functions.

Level of service (LOS) is a performance measure often used to assess congestion levels on roadways. Especially for freeways, LOS values are closely tied to volume to capacity ratios (V/C). LOS values range from A, representing a roadway less than a quarter full of cars with free-flow conditions (V/C < = 0.27), to LOS F, representing a roadway so full of vehicles that flow can barely proceed (V/C > = 1.0). The UDOT has established a goal of LOS “D” (V/C = 0.65 – 0.85) in urban areas. Volume to capacity numbers associated with each LOS vary somewhat by design speed of the facility. In this document, V/C numbers are based on a 55 mph design speed and are used to estimate LOS for arterials

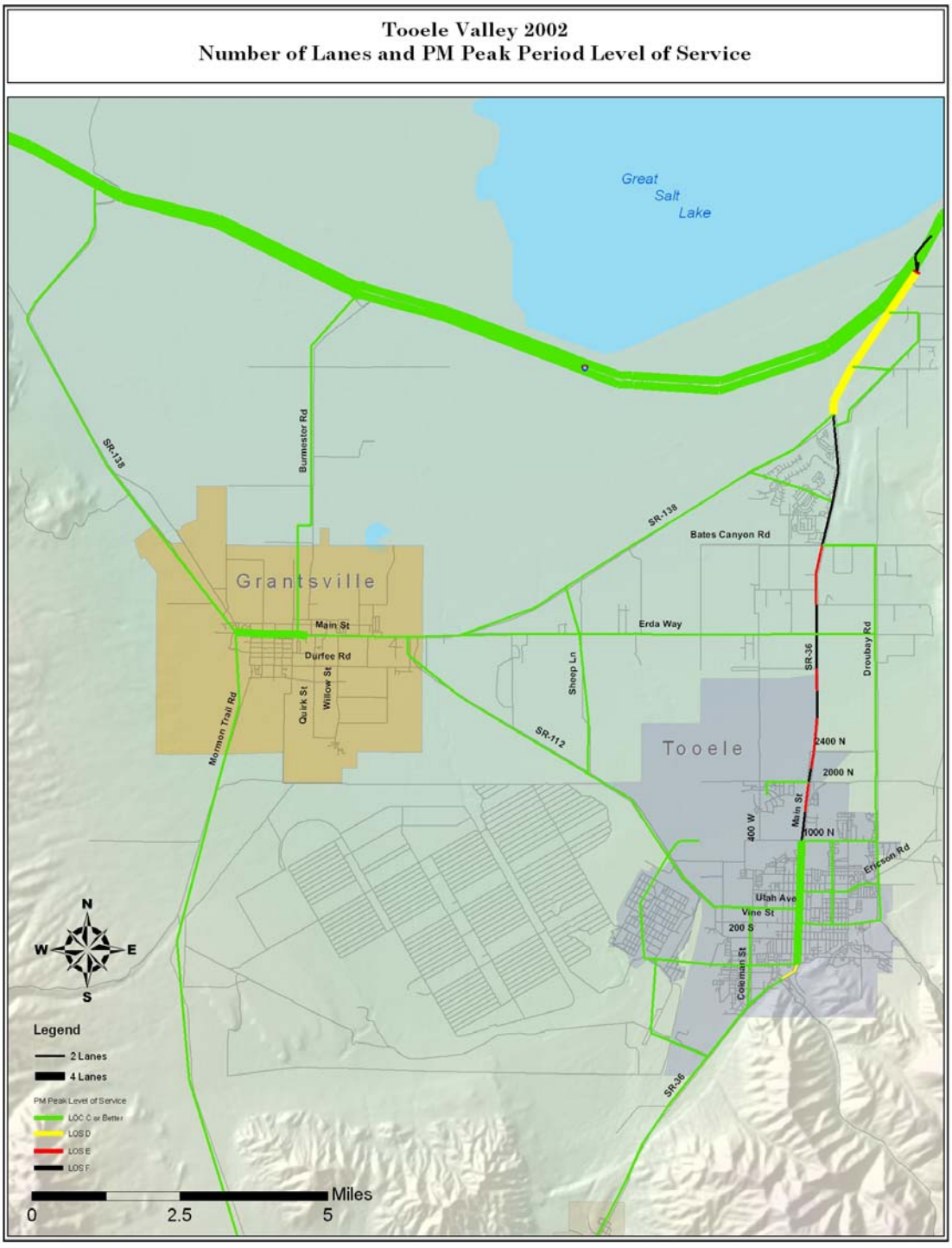
as well. While not as precise for arterials, the LOS portrayed in the maps should assess relative congestion levels reasonably well.

As illustrated in Map II-1, pm peak period LOS in 2002 was worse than LOS "D" along much of SR-36. Congestion levels have been reduced significantly by widening SR-36 to four through lanes. However, by 2030, and even sooner than that, travel demand will have exceeded the capacity of the four lanes on SR-36. Map II-2 shows that SR-36 and other facilities would have serious congestion levels if no additional improvements were made beyond those for which funds have been programmed. From 2002 to 2030, total delay during the pm peak period would increase from about 1,200 vehicle hours to 6,400 vehicle hours.

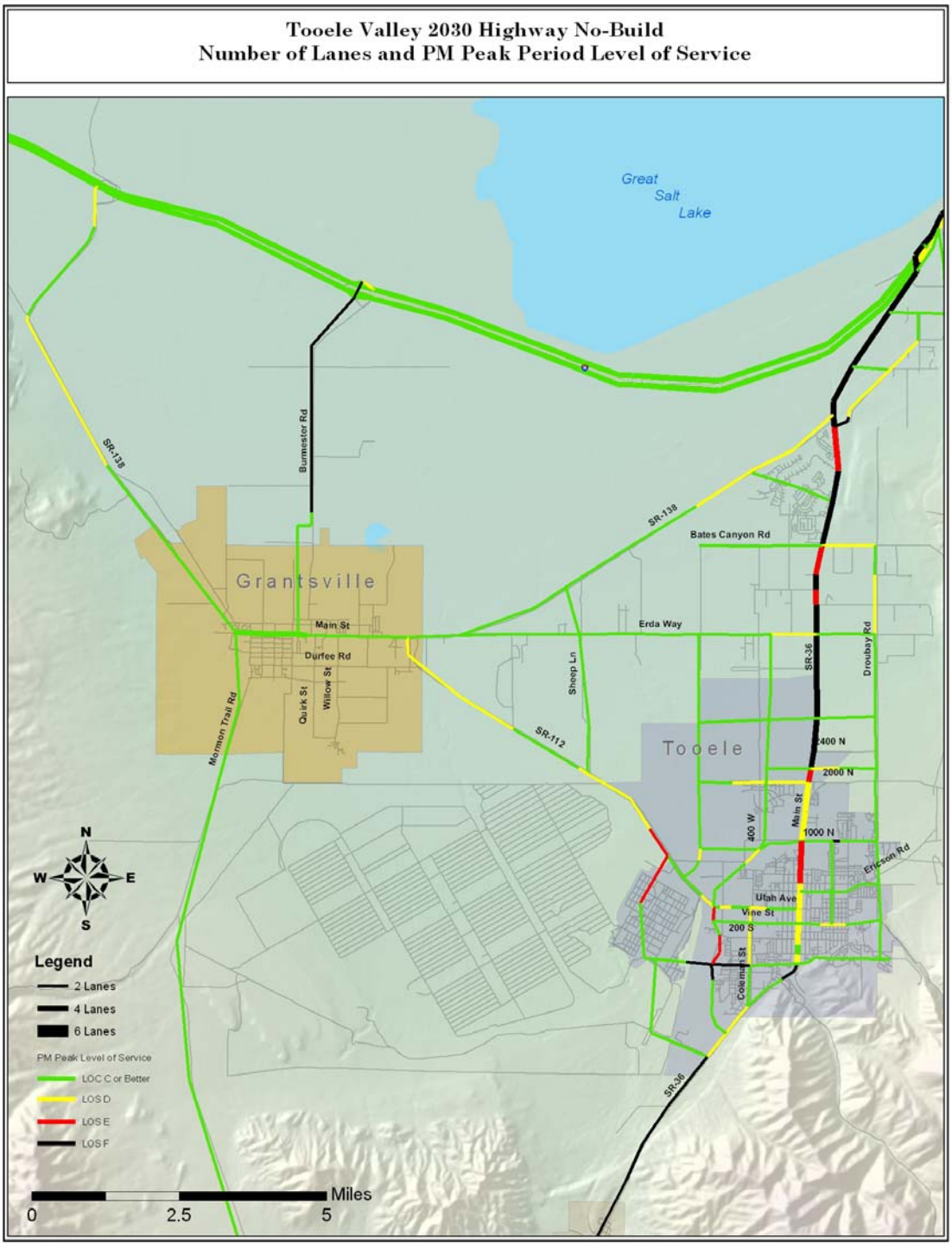
Such large increases in congestion warrant investment in additional roadway capacity. The primary need identified from Map II-2 is travel between 1) the southern and western portions of the Valley and 2) the northeastern portion of the Valley and Salt Lake County. East-west and north-south capacity improvements to facilitate adequate circulation within the Valley will be needed as well. The traffic forecasts also indicate the need for more capacity between the Stockton area and Tooele Valley.

The Tooele Valley travel model does not presently include special event traffic. This is also the case for the regional travel model covering the Wasatch Front. As additional study is conducted on transportation projects identified in this Plan, the impacts of traffic generated by the Deseret Peak Complex will need to be evaluated. More critically, traffic management plans need to be developed to mitigate the impacts of events. The focus of this document is to address travel demand occurring on a typical weekday. Even though traffic associated with activities at the Deseret Peak Complex is likely to recur on a somewhat regular basis, detailed evaluation of the effects of special events is beyond the scope of this document.

Map II-1


Tooele Valley 2002
Number of Lanes and PM Peak Period Level of Service
Great Salt Lake
Grantsville
Tooele
SR-138
Burmester Rd
Bates Canyon Rd
Main St
Durfee Rd
Erda Way
Sheep Ln
SR-112
Mormon Trail Rd
Quirk St
Willow St
SR-36
Droubay Rd
2400 N
2000 N
1000 N
400 W
Main St
Ericson Rd
Utah Ave
Vine St
200 S
Coleman St
N
W
E
S
Legend
2 Lanes
4 Lanes
PM Peak Level of Service
LOS C or Better
LOS D
LOS E
LOS F
Miles
0
2.5
5

Map II-2


Tooele Valley 2030 Highway No-Build
Number of Lanes and PM Peak Period Level of Service
Great Salt Lake
Grantsville
Tooele
SR-138
Burmester Rd
Bates Canyon Rd
Main St
Durfee Rd
Quirk St
Willow St
Mormon Trail Rd
Erda Way
Sheep Ln
SR-112
SR-36
Droubay Rd
2400 N
2000 N
400 W
Main St
1000 N
Ericson Rd
Utah Ave
Vine St
200 S
Coleman St
N
W
E
S
Legend
2 Lanes
4 Lanes
6 Lanes
PM Peak Level of Service
LOS C or Better
LOS D
LOS E
LOS F
Miles
0
2.5
5

Transit Needs

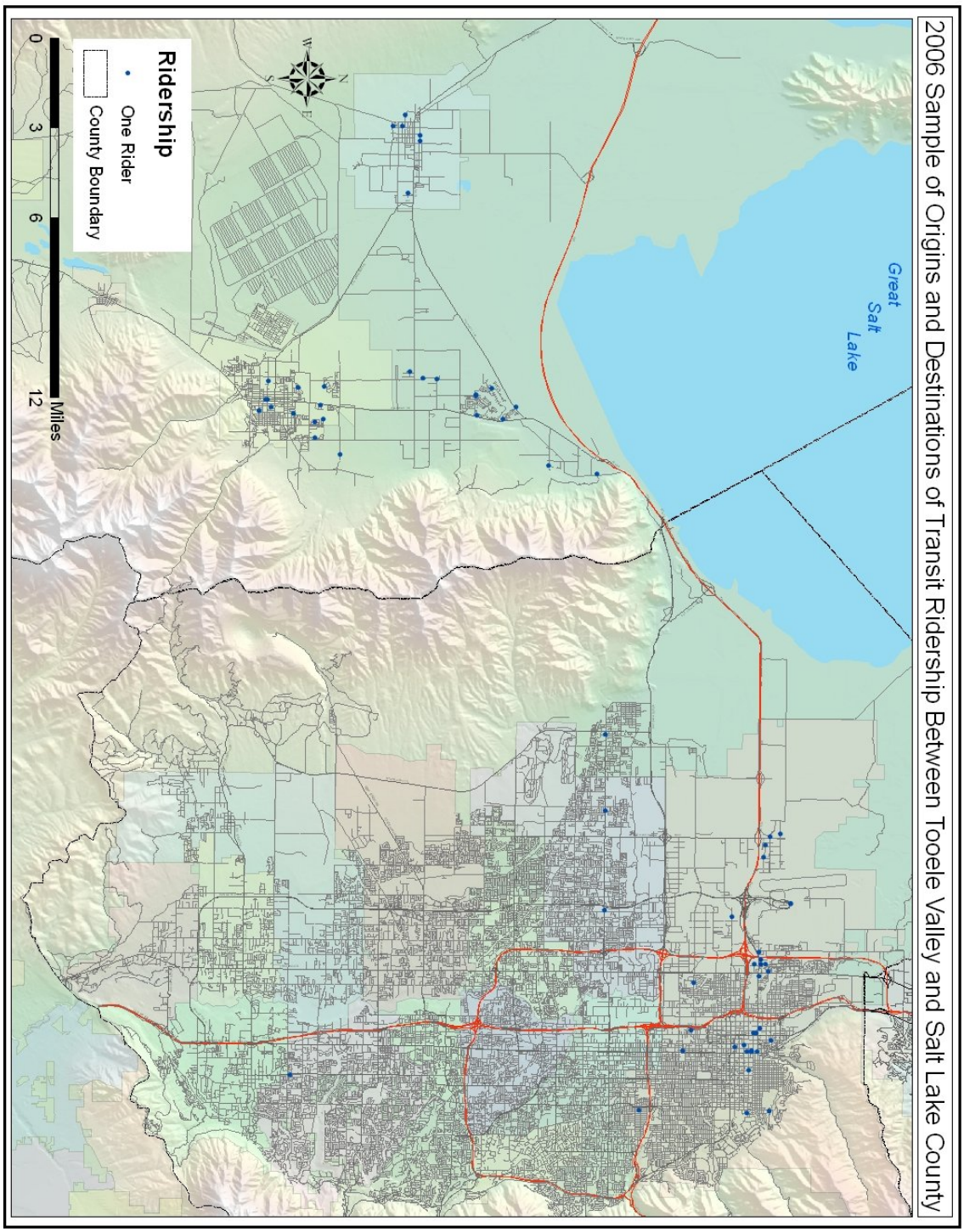
On a typical workday during 2005, about 500 people boarded buses providing service to or from Tooele Valley. Map II-3 shows a sample of where these riders are coming from and going to, based on a 2006 transit on-board survey. For the majority of trips, the buses run every one-half hour in the peak direction during both the am and pm peak periods.

Probably less than 50 people board a bus on a typical weekday to travel from one part of the Valley to another. With the relatively low densities and long travel distances in the Valley, providing cost-effective transit service is difficult. As the area continues to grow and as the distances between population and employment nodes lessen, transit service within the Valley will become more feasible.

In order to forecast future transit needs, the current transit ridership in north Davis County was examined. The population of north Davis County is presently about the same number as is forecast for Tooele Valley in 2030 (approximately 100,000 people). As for Grantsville, Tooele City, and nearby unincorporated Tooele County, the pull for north Davis County residents to employment in Salt Lake County is quite strong. Applying the 2000 Census 6.8 percent transit share of North Davis work trips into Salt Lake County to the estimated 2030 work trips between Tooele Valley and Salt Lake County, would result in about 2,400 transit trips. This translates approximately to a fivefold increase in transit riders between the Valley and Salt Lake County.

By 2030, Tooele Valley internal travel patterns could also be similar to those currently in north Davis County. Work trips are usually the largest market for transit service. Using the 2000 Census 0.7 percent transit share of internal North Davis work trips, about 320 boardings can be estimated in 2030 for internal transit travel in Tooele Valley.

Map II-3


2006 Sample of Origins and Destinations of Transit Ridership Between Tooele Valley and Salt Lake County
Great Salt Lake
Ridership
One Rider
County Boundary
0
3
6
12
Miles

Bicycle Needs

The Bicycle Compatibility Index (BCI) was initially used to help evaluate existing facilities and determine where improvements could be made or routes that should be included or excluded from the bicycle plan. The BCI evaluates the capability of urban and suburban roadway sections to accommodate both motorists and bicyclists. The BCI takes into consideration the number of traffic lanes in one direction, curb lane width, bicycle lane width, paved shoulder width, type of adjacent development, traffic speed, Average Annual Daily Traffic (AADT), large truck percentage, mid-block right turn percentage, on-street parking, parking occupancy percentage, and parking time limit to determine how compatible bicycles are on a certain segment of roadway. The BCI calculates the level of service (LOS) for each segment and gives a score between an "A" and "F". These scores are converted to an "Extremely High" compatibility to an "Extremely Low" compatibility for bicyclists riding on a particular roadway. It is important to note that these scores are representative of current conditions, and any improvements or changes to a roadway section will affect scores. Map II-4 shows the BCI LOS for most of the regionally significant roads in the Tooele Valley RPO study area.

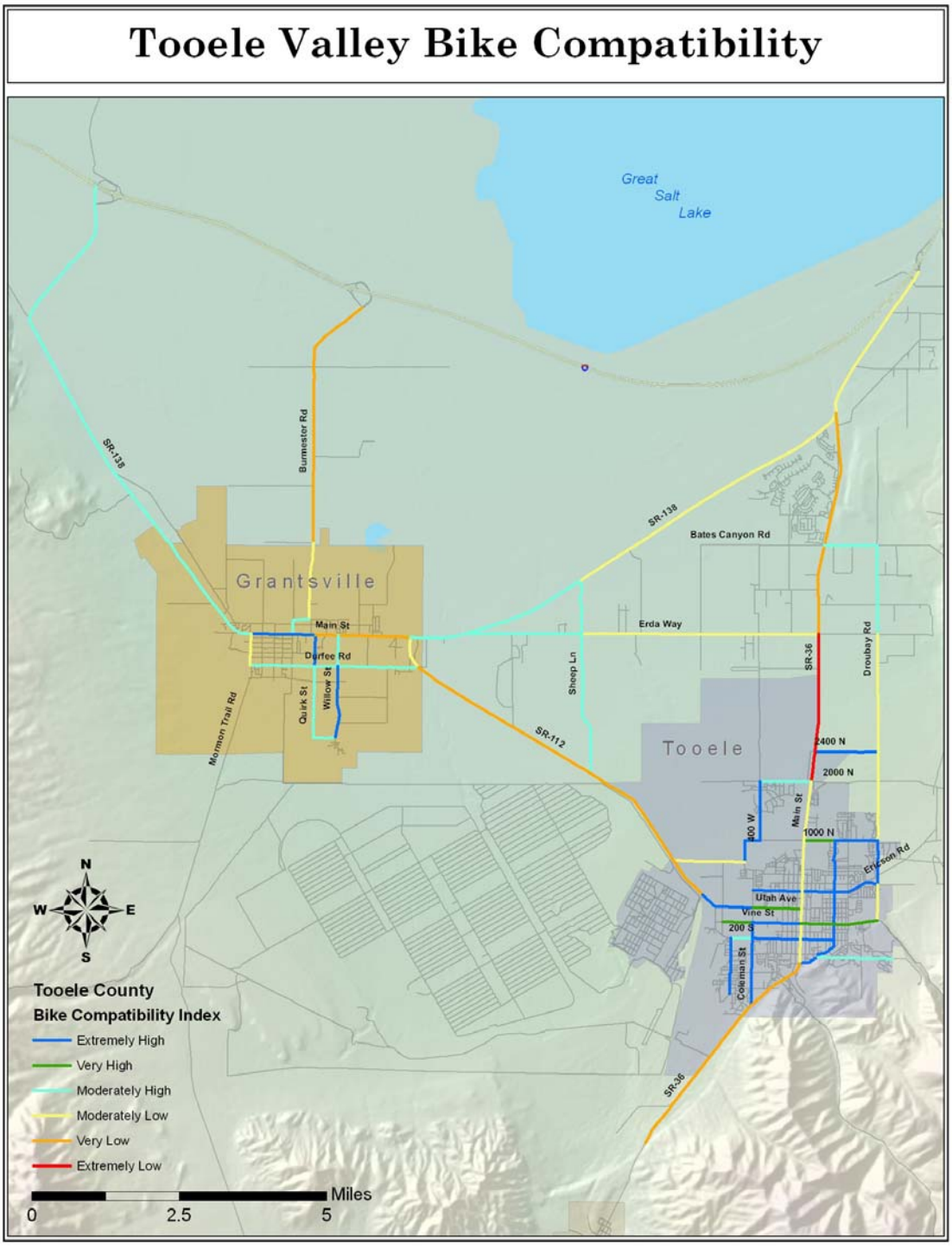
The primary consideration in meeting the needs of pedestrians and bicycles must be safety. Safety considerations for pedestrians include adequate sidewalks and street crossing opportunities. For bicyclists, a system of separated bikeways and designated routes on safe streets which allows free movement throughout the Tooele Valley is needed. School children represent a special class of pedestrians and bicyclists who require unique facilities to ensure their safety. SAFETEA-LU requires that states set up a Safe Routes to School program. UDOT is currently undergoing this process.

To help in reducing bicycle accidents, a three foot law was passed by State Legislature in the 2005 Session. The law in Utah code 41-6a-706.5 - Operation of Motor Vehicle Near Bicycle Prohibited reads as follows: An operator of a motor vehicle may not knowingly, intentionally, or recklessly operate a motor vehicle within three feet of a moving bicycle, unless the operator of the motor vehicle operates the motor vehicle within a reasonable and safe distance of the bicycle. The existing law which gives bicycles the same rights that vehicles have on a roadway is 41-6a-1105 - Operation of bicycle or moped on and use of roadway -- Duties, prohibitions. This law states that: (1) A person operating a bicycle or a moped on a roadway at less than the normal speed of traffic at the time and place and under the conditions then existing shall ride as near as practicable to the right-hand edge of the roadway except when: (a) overtaking and passing another bicycle or vehicle proceeding in the same direction; (b) preparing to make a left turn at an intersection or into a private road or driveway; (c) traveling straight through an intersection that has a right-turn only lane that is in conflict with the straight through movement; or (d) reasonably necessary to avoid conditions that make it unsafe to continue along the right-hand edge of the roadway including: (i) fixed or moving objects; (ii) parked or moving vehicles; (iii) bicycles; (iv) pedestrians; (v) animals; (vi) surface hazards; or (vii) a lane that is too narrow for a bicycle and a vehicle to travel safely side by side within the lane. (2) A person operating a bicycle or moped on a highway shall

operate in the designated direction of traffic. (3) (a) A person riding a bicycle or moped on a roadway may not ride more than two abreast with another person except on paths or parts of roadways set aside for the exclusive use of bicycles. (b) If allowed under Subsection (3)(a), a person riding two abreast with another person may not impede the normal and reasonable movement of traffic and shall ride within a single lane. (4) If a usable path for bicycles has been provided adjacent to a roadway, a bicycle rider may be directed by a traffic-control device to use the path and not the roadway.

After the roads were identified as compatible or not, the next step was to determine what the local municipalities had planned for future bicycle routes. The most recent Tooele City, Tooele County, and Grantsville bicycle and trails maps and plans were used as the base for the Tooele Valley RPO Planned Bike Routes Map. Routes were identified and selected from these maps and plans that were appropriate for a regional map. Destinations within the study area were identified to help determine the need and locations of bicycle routes. The last tool used to determine the need was to identify where routes need to be interconnected or extended.

Map II-4


Tooele Valley Bike Compatibility
Great Salt Lake
Grantsville
Tooele
Burmester Rd
SR-138
Bates Canyon Rd
Erda Way
Main St
Durfee Rd
Quirk St
Willow St
Mormon Trail Rd
Sheep Ln
SR-112
SR-36
Droubay Rd
2400 N
2000 N
1000 N
400 W
Main St
Ericson Rd
Utah Ave
Vine St
200 S
Coleman St
N
W
E
S
Tooele County
Bike Compatibility Index
Extremely High
Very High
Moderately High
Moderately Low
Very Low
Extremely Low
Miles
0
2.5
5

Safety Needs

To help identify where safety improvements are needed the Safety Index has been used. The Safety Index was developed by the UDOT, and currently has only been applied to state roads. The Safety Index is a value ranging from one to ten, which represents the degree of risk to the driver, in terms of both crash rate and severity for a three year period. It is a strategic performance measure that can be used for the asset management system, planning corridor studies and transportation master plans, prioritizing areas for further investigation, traffic and safety analysis, and prioritizing of projects in Long Range Plans and Transportation Improvement Programs.

To calculate the Safety Index score for each segment, the crash rate score and the severity score must be calculated first. The crash rate (crashes per million vehicle miles traveled) is equal to the number of crashes multiplied by 1 million and divided by the average annual daily traffic (AADT) multiplied by 365 and multiplied by the length of the segment (crash rate = (crashes*1,000,000) /(AADT*365*length)). All crash rates per segment are then sorted from lowest to highest and divided equally into three groups based on the crash rate, and given a score of one, two, or three. The severity score is based on the number of high severity crashes per segment, sorted and divided the same way crash scores are and given a score between one and three. A high severity crash is a class 4 or 5, with a class 4 having broken bones and bleeding and a class 5 being a fatal accident. The severity score is weighted three times higher than the crash rate score when the Safety Index is calculated. The Safety Index is then calculated by adding the crash score to three times the severity score minus two. This calculation gives a score between two and ten, with segments with no crashes given a score of one. The Safety Index Map below, Map II-5, Safety Index 2001-2003, currently only includes state roads, due to inconsistency in accidents location reporting between state routes and local roads. Local roads will be included in the future.

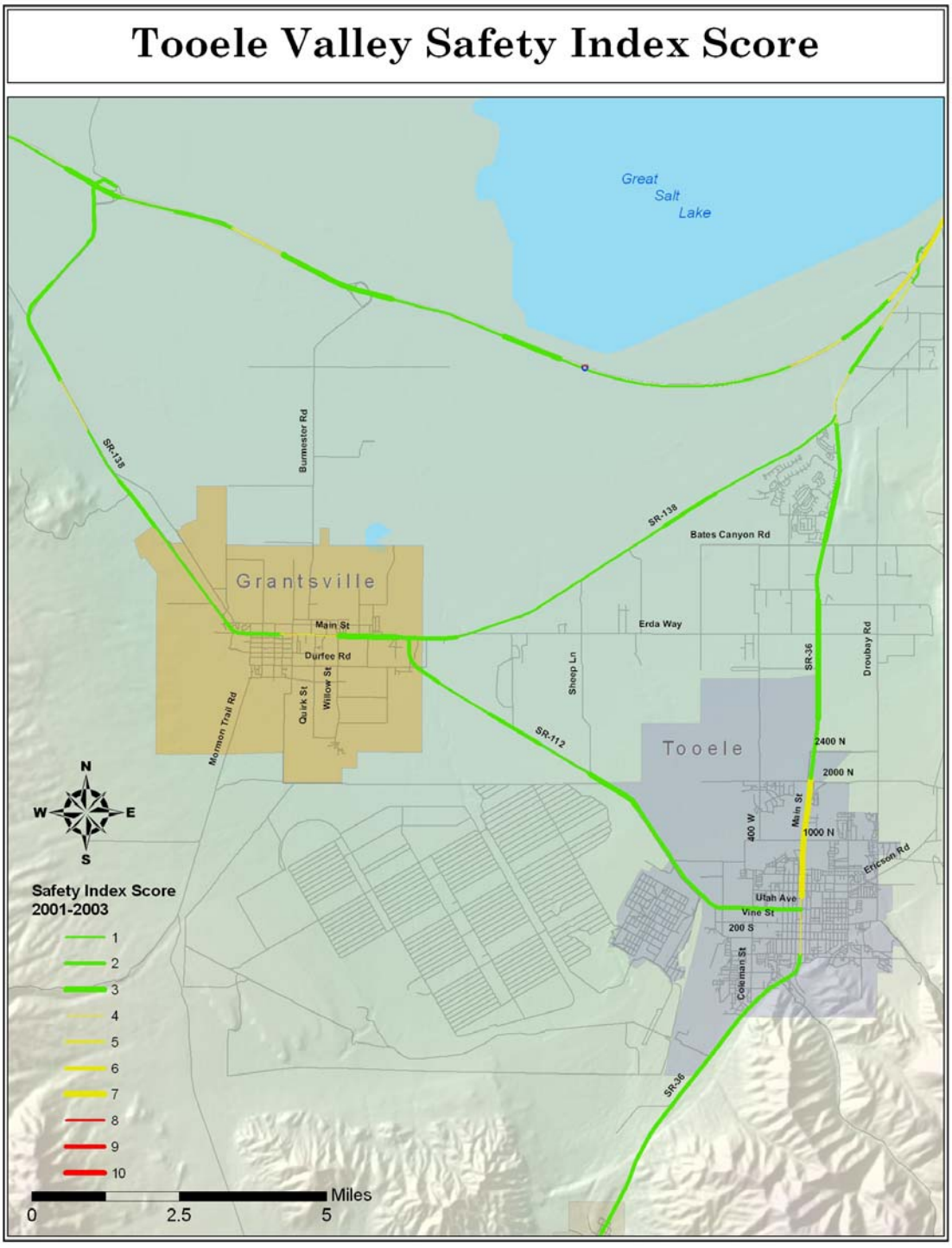
Accidents were analyzed in more detail on the state routes SR-112, SR-36, and SR-138 for the years between 2001 and 2003. Accidents were reported by location and grouped in one-mile segments. Crash severity, pedestrian and bicycle accidents, truck related crashes, wild animal hits, and intersection crashes by direction were taken into consideration while looking at the need. Local roadways were analyzed for the years 2002 and 2003. Accidents were reported by location, date, severity, surface condition, light condition, collision type, accident type, vehicle type, and prime contributor. Coleman Street, 400 South, Skyline Drive, 400 North, 900 West, 200 South, Vine Street, Droubay Road, Burmester Road, 600 North, and Sheep Lane were the local roads with accident data available.

UDOT data was available on State Routes for actual accident rates and expected accident rates. SR-36 at both the SR-112 intersection and SR-138 intersection were identified as having more accidents than expected. SR-138 in Grantsville and at the SR-112 intersection also had more accidents than expected.

A local field review with UDOT, WFRC, and the Tooele City Police Chief was performed on roads and intersections identified from the above data. The following high accident locations were reviewed on-site: Grantsville - Main street between Park and Bowry; Tooele City – Main Street (SR-36) between 2000 North and Canyon Road, Vine

Street between SR-112 and Main Street (SR-36), and SR-36 between Bates Canyon Road and 1220 South; and Intersections – 400 North and Main Street (SR-36), Broadway Street and 400 North, Vine Street and Main Street (SR-36), Coleman Street and Vine Street, Coleman Street and Utah Avenue (SR-112), Main Street (SR-36) and Utah Avenue (SR-112), and SR-138 and SR-36.

Map II-5


Tooele Valley Safety Index Score
Great Salt Lake
Grantsville
Tooele
Burmester Rd
SR-138
Bates Canyon Rd
Erda Way
Main St
Durfee Rd
Quirk St
Willow St
Mormon Trail Rd
Sheep Ln
SR-112
SR-36
Droubay Rd
2400 N
2000 N
1000 N
400 W
Main St
Ericson Rd
Utah Ave
Vine St
200 S
Coleman St
N
W
E
S
Safety Index Score
2001-2003
1
2
3
4
5
6
7
8
9
10
Miles
0
2.5
5

III. MAJOR HIGHWAY ALTERNATIVES

The WFRC and Tooele Valley RPO developed seven alternatives to help determine how to best address the increasing north/south traffic demand between I-80 and Tooele Valley. The increase in east/west traffic was also considered. Alternative 1 was designed to see if widening key existing facilities with some other minor network improvements would alleviate the congestion in 2030. Alternative 2 was built to analyze a new freeway along the Sheep Lane corridor with some other minor network improvements. Alternative 3 was the same as Alternative 2, except the freeway was moved to the 1200 West corridor. Alternative 4 is the same as Alternative 2, except instead of a freeway, an arterial would be built along the Sheep Lane corridor and the southern portion of Tooele Blvd. would also be increased to four lanes. Alternative 5 is the same as Alternative 3, except instead of a freeway, an arterial would be built along the 1200 West corridor and the southern portion of Tooele Blvd. would also be increased to four lanes. Alternative 6 was designed to widen Droubay Road with other minor network improvements. Alternative 7 is a combination of Alternatives 1 and 5. Listed below are the roadway projects that would be either constructed or widened in each alternative. All alternatives are also represented in map form on the following pages.

The reader should note that the travel demand model is not the only tool that should be used in determining the alignment of a particular roadway and whether a facility should be widened. Other factors need to be evaluated in making such decisions. These factors include considerations such as community impacts, construction costs, wetlands, and right of way issues.

Alternative 1 projects include widening SR-36 to six lanes from SR-138 to 500 South. Construction of the Adobe Interchange and the four lane Adobe Cutoff to SR-36 would also be included. 400 West and 1200 West would be constructed as two lane minor arterials from 1000 North to 3700 North. I-80 would be widened to six lanes from the Adobe Rock Interchange to SR-201. SR-36 would be widened to four lanes between Stockton and 500 South. SR-138 would be widened to four lanes between Willow Street, in Grantsville, and SR-36. 1000 North would be restriped to four lanes from SR-36 to Droubay Road and four new lanes would be constructed from SR-112 to SR-36. 2000 North would be constructed as two lanes from 1200 West to SR-36. 3700 North would be constructed as two lanes between Sheep Lane and SR-36. Tooele Blvd. would be constructed as two lanes from SR-36 to 1000 North/SR-36. SR-112 would be widened from two to four lanes from Sheep Lane to Tooele Blvd. Map III-1 provides the number of lanes and the 2030 PM Peak Level of Service (LOS) for Alternative 1.

Alternative 2 projects include constructing a four lane Mid-Valley Highway as a freeway from I-80 to SR-36 along the Sheep Lane corridor. Construction of the Adobe Interchange and the four lane Adobe Cutoff to SR-36 would also be included. 400 West and 1200 West would be constructed as two lane minor arterials from 1000 North to 3700 North. I-80 would be widened to six lanes from the Adobe Rock Interchange to SR-201. SR-36 would be widened to four lanes between Stockton and the South Depot Entrance.

SR-138 would be widened to four lanes between Willow Street, in Grantsville, and the Mid-Valley Highway. 1000 North would be restriped to four lanes from SR-36 to Droubay Road and four new lanes would be constructed from SR-112 to SR-36. 2000 North would be constructed as two lanes from SR-112 to SR-36. 3700 North would be constructed as two lanes between the Mid-Valley Highway and SR-36. Tooele Blvd. would be constructed as two lanes from SR-36 to 1000 North/SR-36. Map III-2 provides the number of lanes and the 2030 PM Peak Level of Service (LOS) for Alternative 2.

Alternative 3 projects include constructing a four lane Mid-Valley Highway as a freeway from I-80 to SR-36 along the 1200 West corridor. Construction of the Adobe Interchange and the four lane Adobe Cutoff to SR-36 would also be included. 400 West would be constructed as a two lane minor arterial from 1000 North to 3700 North. I-80 would be widened to six lanes from the Adobe Rock Interchange to SR-201. SR-36 would be widened to four lanes between Stockton and the South Depot Entrance. SR-138 would be widened to four lanes between Willow Street, in Grantsville, and the Mid-Valley Highway. 1000 North would be restriped to four lanes from SR-36 to Droubay Road and four new lanes would be constructed from SR-112 to SR-36. 2000 North would be constructed as two lanes from SR-112 to SR-36. 3700 North would be constructed as two lanes between the Mid-Valley Highway and SR-36. Tooele Blvd. would be constructed as two lanes from SR-36 to 1000 North/SR-36. Map III-3 provides the number of lanes and the 2030 PM Peak Level of Service (LOS) for Alternative 3.

Alternative 4 projects include constructing a four lane Sheep Lane arterial extension from I-80 to SR-138 and widening Sheep Lane to four lanes south of SR-138. Construction of the Adobe Interchange and the four lane Adobe Cutoff to SR-36 would also be included. 400 West and 1200 West would be constructed as two lane minor arterials from 1000 North to 3700 North. I-80 would be widened to six lanes from the Adobe Rock Interchange to SR-201. SR-36 would be widened to four lanes between Stockton and Tooele Blvd. SR-138 would be widened to four lanes between Willow Street, in Grantsville, and Sheep Lane. 1000 North would be restriped to four lanes from SR-36 to Droubay Road and two new lanes would be constructed from 1200 West to SR-36. 2000 North would be constructed as two lanes from 1200 West to SR-36. 3700 North would be constructed as two lanes between Sheep Lane and SR-36. Tooele Blvd. would be constructed as two lanes from SR-36 to SR-112 and four lanes from SR-112 to SR-36. SR-112 would be widened from two to four lanes from Sheep Lane to Tooele Blvd. Map III-4 provides the number of lanes and the 2030 PM Peak Level of Service (LOS) for Alternative 4.

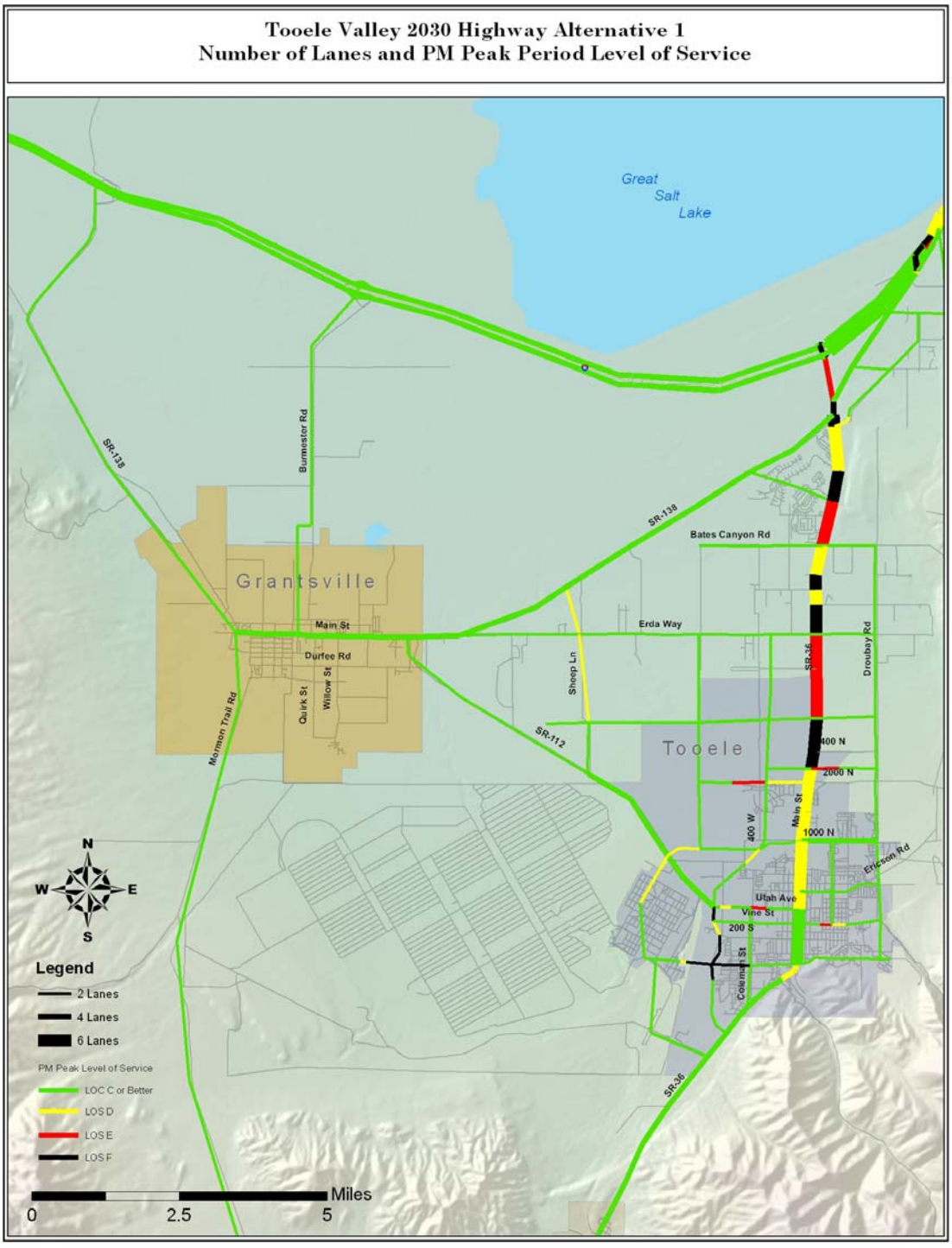
Alternative 5 projects include constructing 1200 West as a four lane arterial from I-80 to SR-112. Construction of the Adobe Interchange and the four lane Adobe Cutoff to SR-36 would also be included. 400 West would be constructed as a four lane minor arterial from 1000 North to 3700 North. I-80 would be widened to six lanes from the Adobe Rock Interchange to SR-201. SR-36 would be widened to four lanes between Stockton and Tooele Blvd. SR-138 would be widened to four lanes between Willow Street, in Grantsville, and 1200 West. 1000 North would be restriped to four lanes from SR-36 to Droubay Road and two new lanes would be constructed from 1200 West to SR-36. 2000

North would be constructed as two lanes from 1200 West to SR-36. 3700 North would be constructed as two lanes between Sheep Lane and SR-36. Tooele Blvd. would be constructed as two lanes from SR-36 to SR-112 and four lanes from SR-112 to SR-36. SR-112 would be widened from two to four lanes from Sheep Lane to Tooele Blvd. Map III-5 provides the number of lanes and the 2030 PM Peak Level of Service (LOS) for Alternative 5.

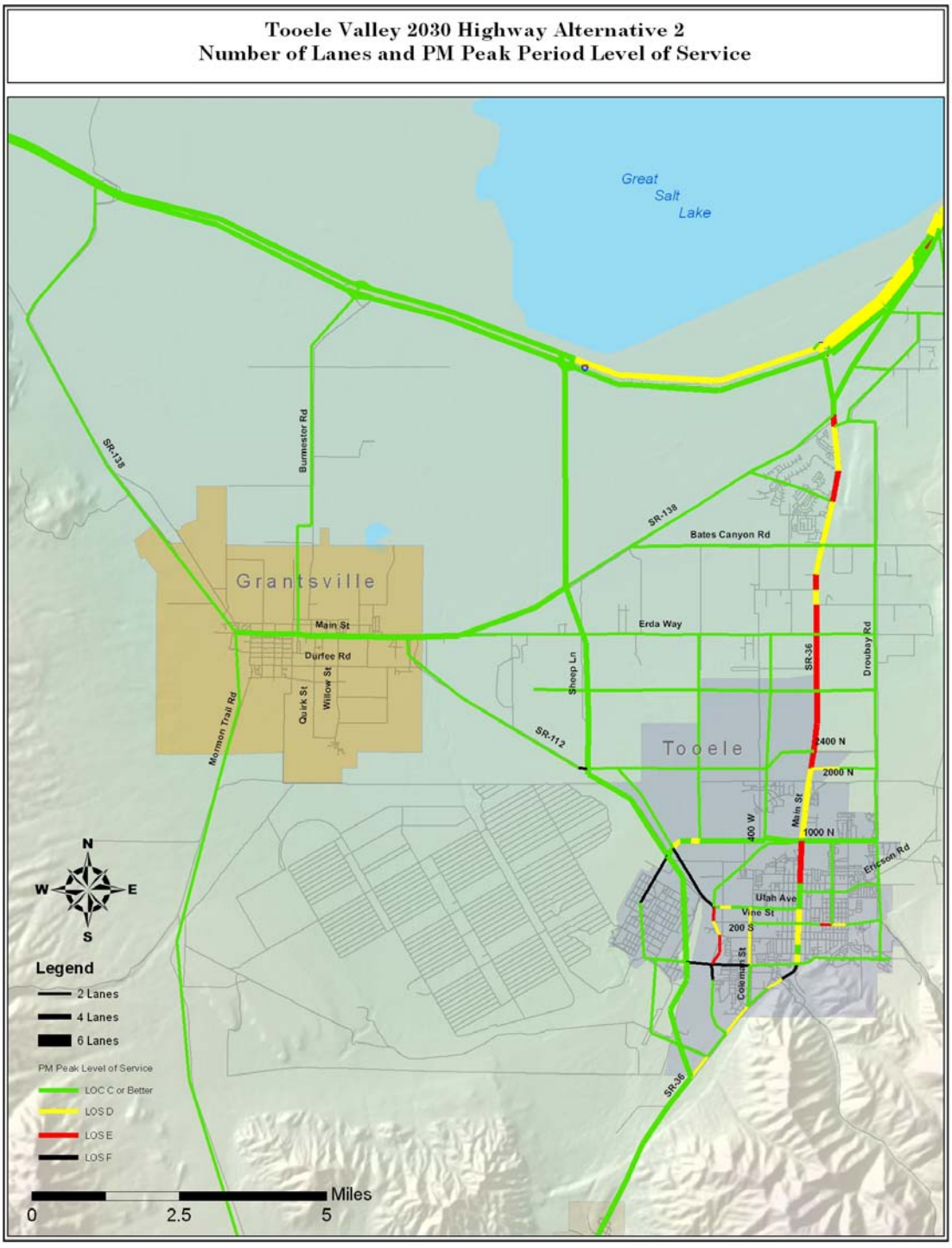
Alternative 6 projects include widening and extension of Droubay Road from Skyline Drive to SR-36 as a four lane arterial. Construction of the Adobe Interchange and the four lane Adobe Cutoff to SR-36 would also be included. 400 West and 1200 West would be constructed as two lane minor arterials from 1000 North to 3700 North. I-80 would be widened to six lanes from the Adobe Rock Interchange to SR-201. SR-36 would be widened to four lanes between Stockton and 500 South. SR-138 would be widened to four lanes between Willow Street, in Grantsville, and SR-36. 1000 North would be restriped to four lanes from SR-36 to Droubay Road and two new lanes would be constructed from 1200 West to SR-36. 2000 North would be constructed to two lanes from 1200 West to SR-36. 3700 North would be constructed as two lanes between Sheep Lane and SR-36. Tooele Blvd. would be constructed as two lanes from SR-36 to 1000 North/SR-36. SR-112 would be widened from two to four lanes from Sheep Lane to Tooele Blvd. Map III-6 provides the number of lanes and the 2030 PM Peak Level of Service (LOS) for Alternative 6.

Alternative 7 projects include constructing 1200 West as a four lane arterial from I-80 to SR-112. SR-36 would be widened to six lanes from SR-138 to 500 South. Construction of the Adobe Interchange and the four lane Adobe Cutoff to SR-36 would also be included. 400 West would be constructed as a two lane minor arterial from 1000 North to 3700 North. I-80 would be widened to six lanes from the Adobe Rock Interchange to SR-201. SR-36 would be widened to four lanes between Stockton and Tooele Blvd. SR-138 would be widened to four lanes between Willow Street, in Grantsville, and 1200 West. 1000 North would be restriped to four lanes from SR-36 to Droubay Road and two new lanes would be constructed from 1200 West to SR-36. 2000 North would be constructed as two lanes from 1200 West to SR-36. 3700 North would be constructed as two lanes between Sheep Lane and SR-36. Tooele Blvd. would be constructed as two lanes from SR-36 to SR-112 and four lanes from SR-112 to SR-36. SR-112 would be widened from two to four lanes from Sheep Lane to Tooele Blvd. Map III-7 provides the number of lanes and the 2030 PM Peak Level of Service (LOS) for Alternative 7.

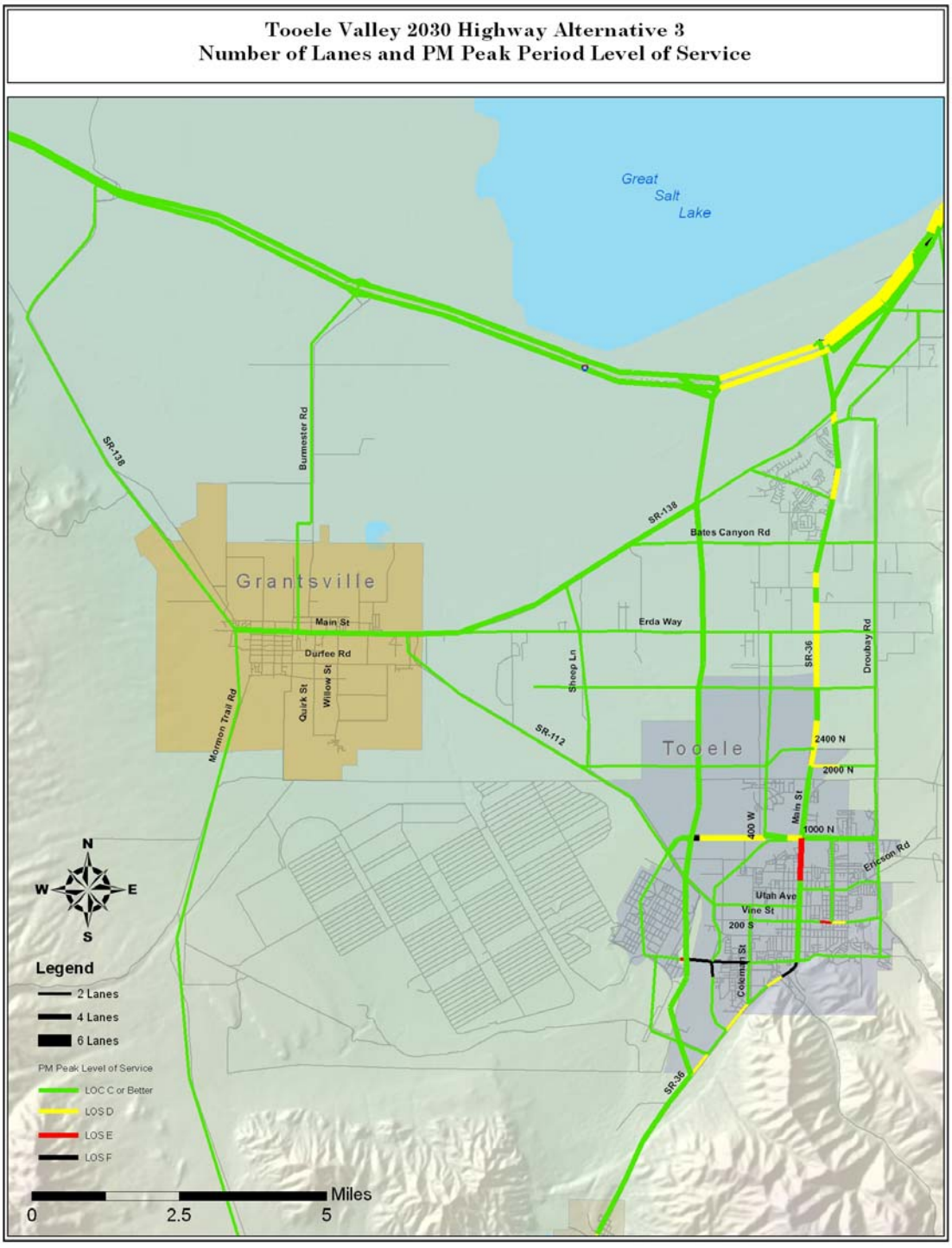
Map III-1


Tooele Valley 2030 Highway Alternative 1
Number of Lanes and PM Peak Period Level of Service
Great Salt Lake
Grantsville
Tooele
Bates Canyon Rd
Erda Way
Main St
Durfee Rd
Burmester Rd
Mormon Trail Rd
Quirk St
Willow St
Sheep Ln
Droubay Rd
400 N
2000 N
1000 N
400 W
Main St
Ericson Rd
Utah Ave
Vine St
200 S
Coleman St
SR-138
SR-112
SR-36
N
S
E
W
Legend
2 Lanes
4 Lanes
6 Lanes
PM Peak Level of Service
LOS C or Better
LOS D
LOS E
LOS F
Miles
0
2.5
5

Map III-2


Tooele Valley 2030 Highway Alternative 2
Number of Lanes and PM Peak Period Level of Service
Great Salt Lake
Grantsville
Tooele
SR-138
Burmester Rd
Bates Canyon Rd
Main St
Durfee Rd
Quirk St
Willow St
Mormon Trail Rd
Erda Way
Sheep Ln
SR-112
SR-36
Droubay Rd
2400 N
2000 N
400 W
Main St
1000 N
Ericson Rd
Utah Ave
Vine St
200 S
Coleman St
N
W
E
S
Legend
2 Lanes
4 Lanes
6 Lanes
PM Peak Level of Service
LOC C or Better
LOS D
LOS E
LOS F
Miles
0
2.5
5

Map III-3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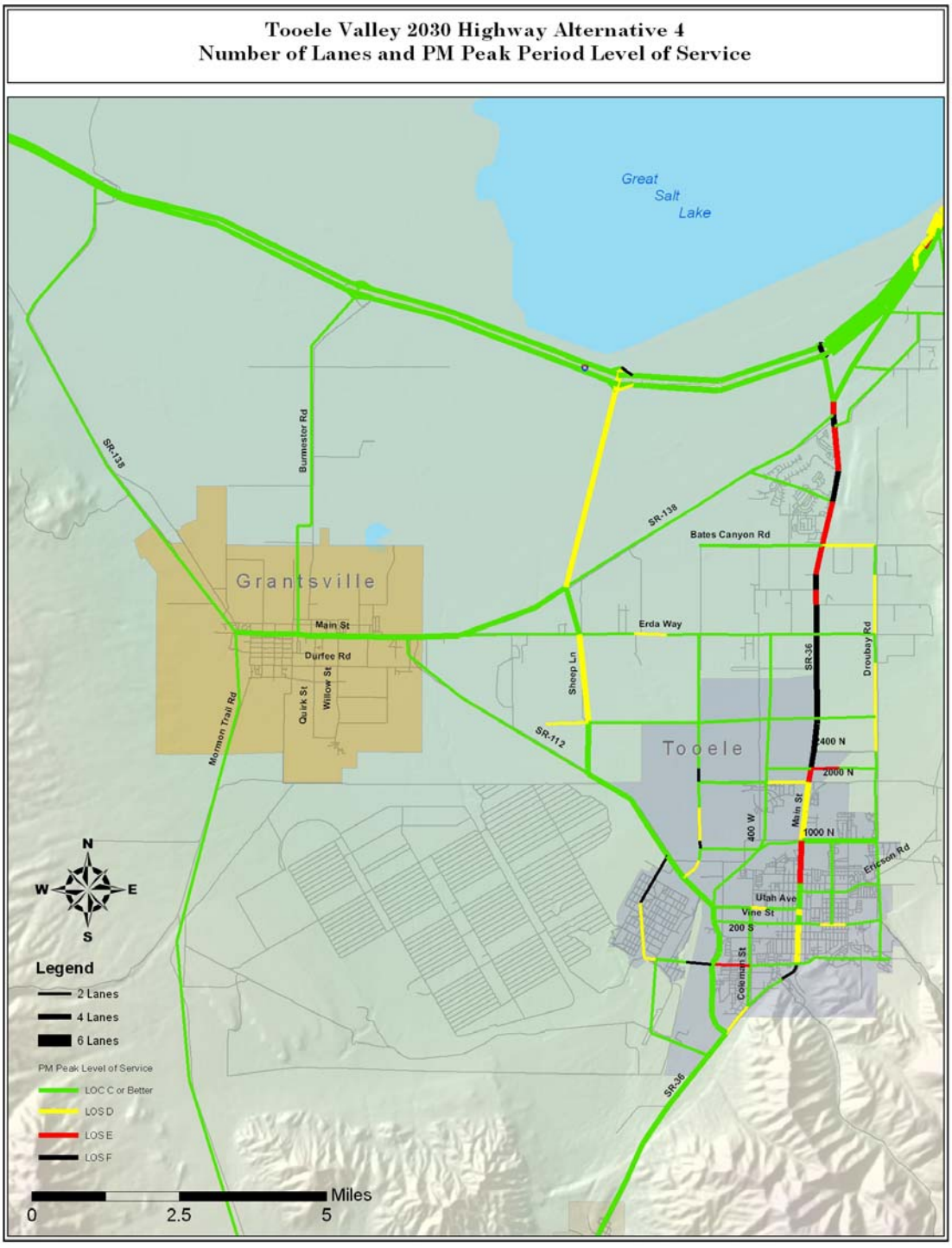
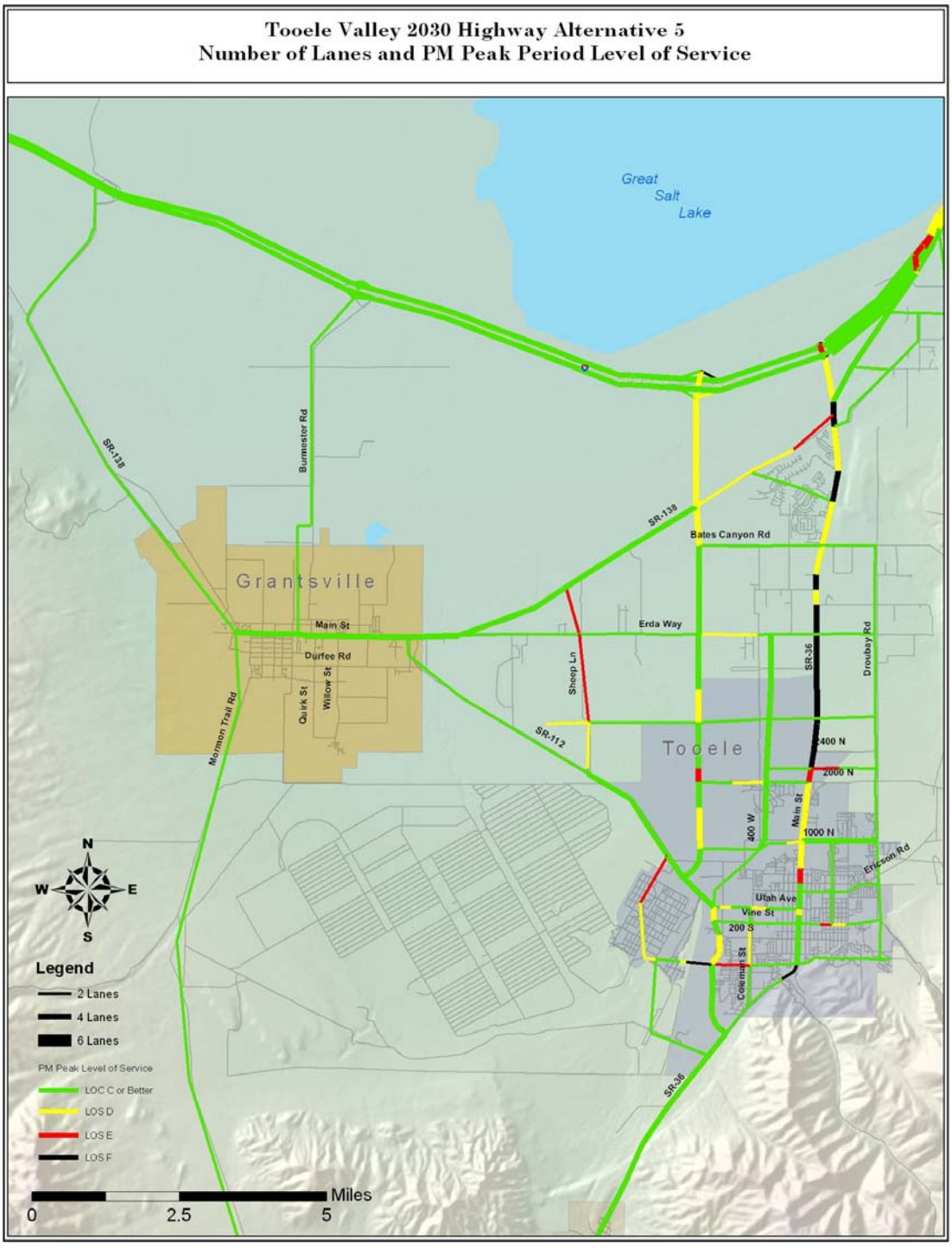
Number of Lanes and PM Peak Period Level of Service
Great Salt Lake
SR-138
Burmester Rd
Grantsville
Main St
Durfee Rd
Quirk St
Willow St
Mormon Trail Rd
SR-112
Bates Canyon Rd
Erda Way
Sheep Ln
SR-36
Droubay Rd
Tooele
2400 N
2000 N
400 W
Main St
1000 N
Ericson Rd
Utah Ave
Vine St
200 S
Coleman St
N
W
E
S
Legend
2 Lanes
4 Lanes
6 Lanes
PM Peak Level of Service
LOS C or Better
LOS D
LOS E
LOS F
Miles
0
2.5
5

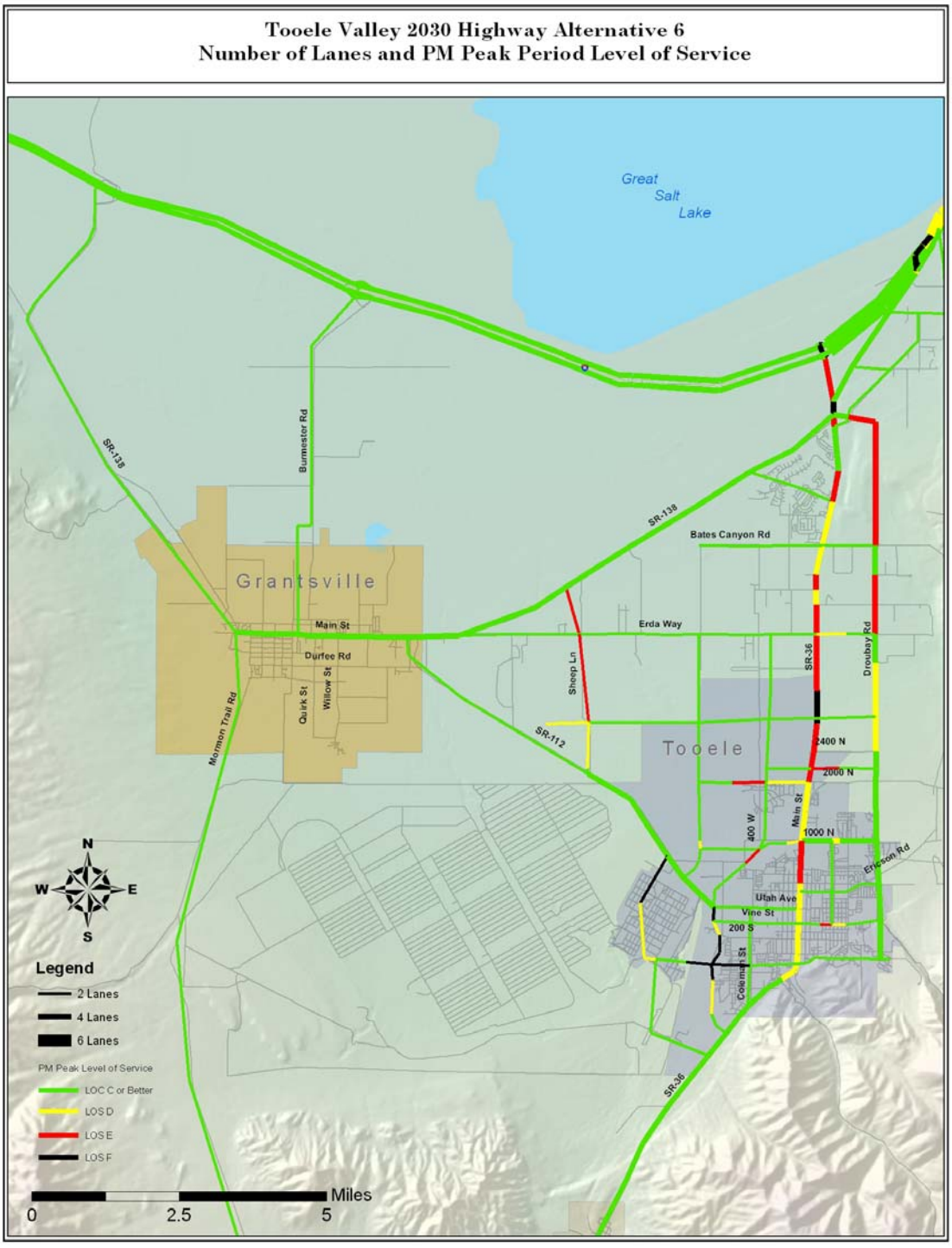
Map III-4


Tooele Valley 2030 Highway Alternative 4
Number of Lanes and PM Peak Period Level of Service
Great Salt Lake
Grantsville
Tooele
Burmester Rd
SR-138
Bates Canyon Rd
Main St
Durfee Rd
Quirk St
Willow St
Mormon Trail Rd
Erda Way
Sheep Ln
SR-112
SR-36
Droubay Rd
2400 N
2000 N
400 W
Main St
1000 N
Ericson Rd
Utah Ave
Vine St
200 S
Coleman St
N
W
E
S
Legend
2 Lanes
4 Lanes
6 Lanes
PM Peak Level of Service
LOC C or Better
LOS D
LOS E
LOS F
Miles
0
2.5
5

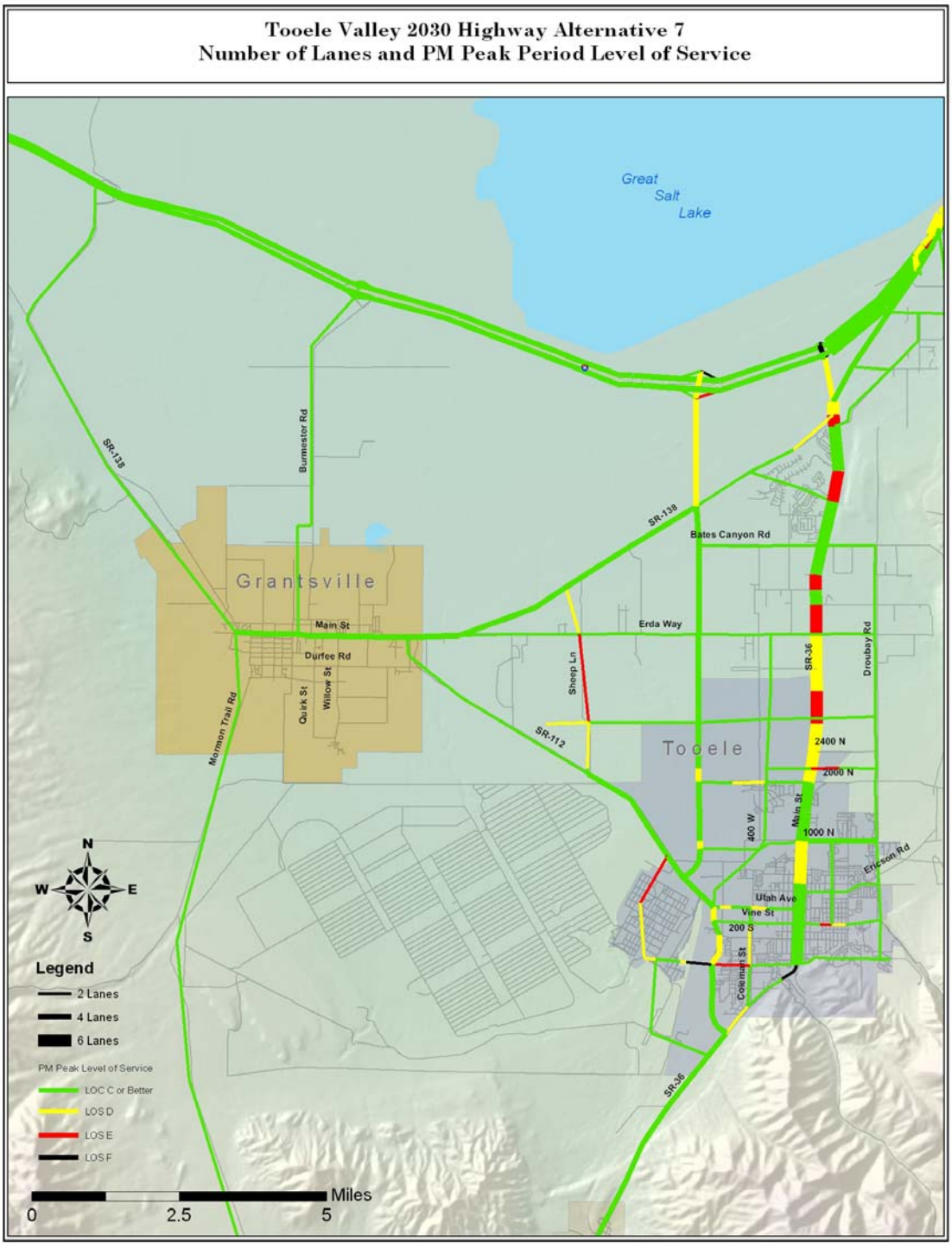
Map III-5


Tooele Valley 2030 Highway Alternative 5
Number of Lanes and PM Peak Period Level of Service
Great Salt Lake
Grantsville
Tooele
SR-138
Burmester Rd
Bates Canyon Rd
Main St
Durfee Rd
Quirk St
Willow St
Mormon Trail Rd
Erda Way
Sheep Ln
SR-112
SR-36
Droubay Rd
2400 N
2000 N
400 W
Main St
1000 N
Ericson Rd
Utah Ave
Vine St
200 S
Coleman St
N
W
E
S
Legend
2 Lanes
4 Lanes
6 Lanes
PM Peak Level of Service
LOS C or Better
LOS D
LOS E
LOS F
Miles
0
2.5
5

Map III-6


Tooele Valley 2030 Highway Alternative 6
Number of Lanes and PM Peak Period Level of Service
Great Salt Lake
Grantsville
Tooele
Burmester Rd
SR-138
Bates Canyon Rd
Main St
Durfee Rd
Erda Way
Sheep Ln
SR-36
Droubay Rd
Mormon Trail Rd
Quirk St
Willow St
SR-112
2400 N
2000 N
400 W
Main St
1000 N
Ericson Rd
Utah Ave
Vine St
200 S
Coleman St
N
W
E
S
Legend
2 Lanes
4 Lanes
6 Lanes
PM Peak Level of Service
LOS C or Better
LOS D
LOS E
LOS F
Miles
0
2.5
5

Map III-7


Tooele Valley 2030 Highway Alternative 7
Number of Lanes and PM Peak Period Level of Service
Great Salt Lake
Grantsville
Tooele
SR-138
Burmester Rd
Bates Canyon Rd
Main St
Durfee Rd
Quirk St
Willow St
Mormon Trail Rd
Erda Way
Sheep Ln
SR-112
SR-36
Droubay Rd
2400 N
2000 N
400 W
Main St
1000 N
Ericson Rd
Utah Ave
Vine St
200 S
Coleman St
N
W
E
S
Legend
2 Lanes
4 Lanes
6 Lanes
PM Peak Level of Service
LOC C or Better
LOS D
LOS E
LOS F
Miles
0
2.5
5

IV. RECOMMENDATIONS

Highway Recommendations

Recommended highway improvements in the Tooele Valley Long Range Plan 2007-2030 include a balance of freeway, highway, and arterial, road projects. The projects add needed capacity through the construction of new facilities or the widening of existing roads. Alternatives 2 and 3, with modifications and clarifications discussed below, were chosen as the preferred alternative because of their ability to have the most impact in addressing the travel demand throughout the Tooele Valley. They were both chosen because more study is needed to recommend an alignment of the Mid-Valley Highway.

The congestion levels in the No-build Alternative and Alternatives 1, 4, 5, and 6 are clearly worse than the levels of service found in Alternatives 2 and 3. These latter alternatives containing a grade-separated Mid-Valley Highway are also recommended over Alternative 7 for two primary reasons: 1) freeways generally operate more safely than do arterials and 2) nearly 500 fewer vehicle hours of delay each weekday are expected in Alternatives 2 and 3. A planning level analysis in Appendix A demonstrates that the safety and time savings from a grade-separated facility are greater than the construction costs of such a facility.

Upon discussion by the RPO, the following modification and clarification were made to Alternatives 2 and 3. The potential location for the Mid-Valley Highway north of SR-138 has been widened to reach from Sheep Lane to SR-36. The RPO believes that, as with the southern section, an environmental impact study (EIS) should determine the alignment of the facility. While two additional accesses to I-80 will be needed by 2030, the EIS is the appropriate instrument for deciding the location of those accesses. The RPO has clarified that in light of funding realities, they prefer designating Mid-Valley Highway as an arterial in phase one of the Plan and as a freeway in phase two of the Plan. Preserving right of way for the freeway and interchanges in phase one is essential.

There are approximately 58 miles of road projects recommended. The Tooele Valley RPO Committee recommended that two phases be used in the long range plan. Phase 1 was selected to go from the year 2007 to 2020, while Phase 2 was selected to go from 2021 to 2030.

The Tooele Valley Long Range Plan 2007-2030 Project List provides details on which sections of roadways will require capacity improvements or new construction by 2030. Each segment includes project type, length, a future functional classification, bicycle class within corridor, number of current and future lanes, current and recommended right-of-way width, suggested phasing (2007-2020, or 2021-2030), project sponsor, and projected cost when built of each project. Tooele Valley Long Range Plan 2007-2030 Projects is shown as Figure IV-1. Map IV-1 includes both the recommended project type and phase. Project type, either New Construction, Widening, Interchange, or the Mid-Valley Highway, is represented with a solid line, dashed line, dot or hatch section

respectively. The project phase is represented by color, with Phase 1 being red, and Phase 2 being blue.

Costs for freeway and highway construction were derived from previous and existing freeway and highway project estimates. Costs for arterials were derived from the concept level cost estimation tool from the UDOT. The concept level cost estimation includes a contingency, preliminary engineering, construction engineering, roadway and drainage, traffic and safety, structures, environmental mitigation, and ITS costs. It is assumed that projects being widened would also be rebuilt and reconstructed for the entire width of the road. Figure IV-2 gives a cost per mile for different sizes of roadway facilities.

The local governments and the UDOT were called on to assist with right-of-way costs (ROW). ROW costs are listed by type of adjacent land use type and given in a cost of dollars per square foot. Land use types were identified by members of the Tooele Valley RPO or by an aerial photograph. The ROW costs were added to the construction costs and the total project cost is inflated at four percent per year to the average year of their appropriate phase.

Figure IV-1

TOOELE VALLEY LONG RANGE PLAN 2007 -2030 PROJECTS

ID	STREET TO - FROM	PROJECT TYPE	LENGTH (MILES)	2030 FUNCTIONAL CLASS	BIKE CLASS	2006 LANE	2030 LANE	2006 ROW (FT.)	2030 RO (FT.)	PHASE 1=2007-2020 2=2021-2030	SPONSOR	PHASE COST
1	Additional I-80 Interchange I-80	New Construction	0.0	Interchange	0	0	0	0	0	1	UDOT	$47,900,000
2	Additional I-80 Access Road I-80 - SR-36	New Construction	1.0	Principal Arterial	0	0	4	0	200	1	UDOT	$15,000,000
3	I-80 Additional I-80 Interchange - SR-201	Widening	4.9	Freeway	0	4	6	375	375	2	UDOT	$516,200,000
4	SR-138 SR-112 - Mid-Valley Highway	Widening	3.1	Minor Arterial	1	2	4	100	100	1	UDOT	$29,800,000
5	SR-138 Mid-Valley Highway - SR-36	Widening	5.1	Minor Arterial	1,0	2	4	100	100	2	UDOT	$78,500,000
6	1000 North SR-112 - SR-36	New Construction	2.4	Minor Arterial	2	0	4	0	66	1	Local	$18,800,000
7	1000 North SR-36 - Droubay Road	Restripping	1.3	Minor Arterial	2	2	4	66	66	2	Local	$1,400,000
8	2000 North SR-112 - SR-36	New Construction	3.6	Minor Arterial	0	0	2	0	66	1	Local	$29,500,000
9	3700 North Mid-Valley Highway - Droubay Road	New Construction	6.5	Minor Arterial	0	0	2	0	66	2	Local	$81,700,000
10	SR-112 Mid-Valley Highway - Tooele Blvd.	Widening	3.3	Principal Arterial	0	2	4	100	100	1	UDOT	$31,800,000
11	Mid-Valley Highway SR-36 - I-80	Corridor Preservation	11.7	Freeway	0	0	4	0	200	1	UDOT	$12,300,000
12	Mid-Valley Highway SR-36 - I-80	New Construction	11.7	Principal Arterial	0	0	4	0	200	1	UDOT	$193,600,000
13	Mid-Valley Highway SR-36 - I-80	New Construction	11.7	Freeway	0	0	4	0	200	2	UDOT	$442,500,000
14	Tooele Blvd SR-36 - 1000 North/SR-36	New Construction	4.1	Minor Arterial	0	0	4	0	84	1	Local	$38,300,000
15	SR-36 South Depot Entrance - 500 South	Widening	2.4	Principal Arterial	1	2	4	100	100	1	UDOT	$19,900,000
16	SR-36 Stockton - South Depot Entrance	Widening	3.3	Minor Arterial	1	2	4	100	100	2	UDOT	$57,800,000
17	400 West 1000 North - 3700 North	New Construction	2.7	Minor Arterial	0	0	2	0	66	1	Local	$21,200,000
18	1200 West 1000 North - 3700 North	New Construction	2.7	Minor Arterial	0	0	2	0	66	1	Local	$21,200,000

Map IV-1

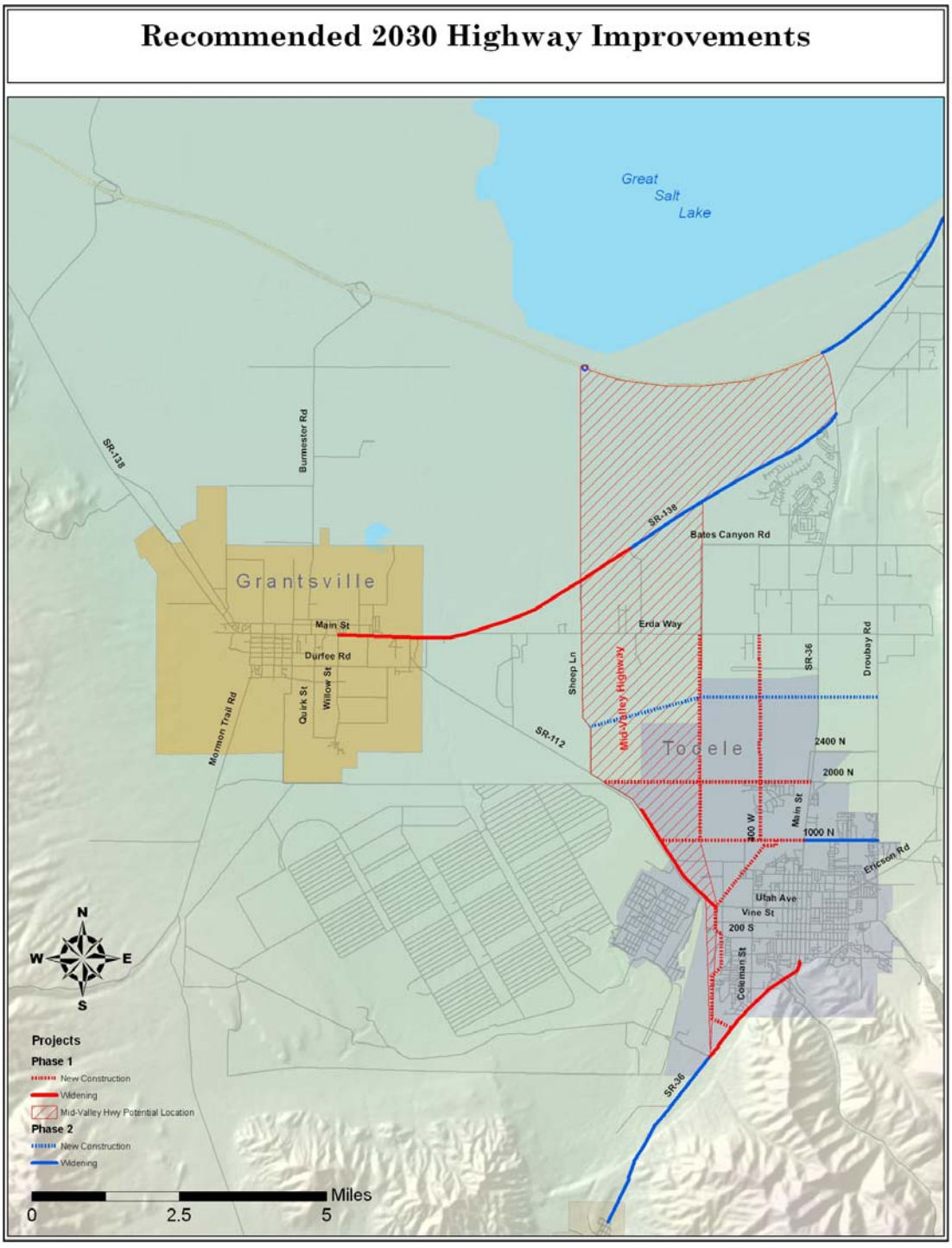

Recommended 2030 Highway Improvements
Great Salt Lake
Grantsville
Tooele
SR-138
Burmester Rd
Bates Canyon Rd
Main St
Durfee Rd
Mormon Trail Rd
Quirk St
Willow St
Sheep Ln
Mid-Valley Highway
Erda Way
SR-112
SR-36
Droubay Rd
2400 N
2000 N
1000 N
100 W
Main St
Ericson Rd
Utah Ave
Vine St
200 S
Coleman St
N
W
E
S
Projects
Phase 1
New Construction
Widening
Mid-Valley Hwy Potential Location
Phase 2
New Construction
Widening
Miles
0
2.5
5

Figure IV-2

TOOELE VALLEY LRP PROJECT COST TEMPLATE

ROW (ft)	**Construction Costs $/Mile** - 2006	Description
60 - 66	**$ 5,500,000**	4 lanes, and sidewalks; or 2 lanes, 2 shoulders, and sidewalks
80 - 86	**$ 6,300,000**	4 lanes, 1 two way left turn or median, and sidewalks; or 2 lanes, 1 two way left turn or median, 2 shoulders, and sidewalks
100 - 110	**$ 7,300,000**	6 lanes, 1 two way left turn or median, and sidewalks; or 4 lanes, 1 two way left turn or median, 2 shoulders, and sidewalks
125 - 200	**$ 8,300,000**	6 lanes, 1 two way left turn or median, 2 shoulders, and sidewalks
Mid-Valley Highway	**$ 50,000,000**	Including interchanges
I-80	**$ 50,000,000**	Including interchanges
Restriping	**$ 500,000**	
	Interchanges	
	$ 35,000,000	New
	ROW	
Vacant Farm Land	**$ 1.26**	**/ sq ft**
Residential w/o improvements	**$ 3.50**	**/ sq ft**
Residential with home, School, church, park	**$ 4.50**	**/ sq ft**
Comm. Out of main business district	**$ 7.00**	**/ sq ft**
Comm. in main business district	**$ 12.50**	**/ sq ft**
Industrial Land	**$ 3.00**	**/ sq ft**

Transit Recommendations

As discussed in the "Needs" section of this document, there will be an estimated 2,400 weekday transit riders between Tooele Valley and Salt Lake County in 2030. Given this and the fact that current bus capacity could accommodate about an additional 200 riders, it is suggested that peak period bus service be increased by 3.5 times between now and 2030. Some service should also be provided during off-peak hours. Additional park-and-ride lots should be constructed to improve access to the transit system.

One method for increasing bus service in and to Tooele Valley is to develop a bus layover facility in Tooele. By reducing the amount of deadheading required to provide service to the Valley, money can be freed up to carry more passengers through more routes or more frequency on existing routes.

Work trips will continue to be at the core of transit demand in Tooele Valley through 2030. The majority of these work trips will be to the Salt Lake Valley's major activity centers. To the extent that peak period bus service matches transit access with locations that residents of Tooele Valley work, the bus system will continue to be successful. As service availability increases, routes should take into account those non-CBD activity centers that are attracting workers from Tooele Valley and serve those trips when possible.

Currently, there is very little intra-valley bus service in the Tooele Valley. The low densities and long distances separating Tooele, Grantsville, Stansbury Park and the Deseret Peak Complex make providing local bus service difficult, costly and inefficient. However, as population and employment reach sustainable thresholds within the valley, more local bus routes will become viable. Service should be phased in over time as development, population and trip demand warrant.

The Miller Motor Sports Park at the County's Deseret Peak Complex presents a challenging traffic management issue. On race days, the expected numbers of visitors will strain the road network and the facility's own parking supply. Transit may be able to help mitigate the impact of this special event traffic. UTA and Tooele County should work together to determine what can be done for special events and how to accomplish it.

There are some existing rail facilities in the Valley that may eventually have some utility for transit service. By 2030, the population and travel demand is not expected to have grown enough to justify investment in rail transit. But beyond 2030, the need may eventually arise. Where those facilities or corridors exist, the local communities should be careful to not allow development to impede the possibility of conversion to rail transit in the future.

Bicycle Recommendations

The Tooele Valley RPO Committee reviewed revised initial bicycle recommendations developed from the needs analysis discussed earlier. The result is shown in Figure IV-3, Planned Bicycle Projects. Specific facilities for bicycles and pedestrians are normally provided within street rights-of-way in the form of wider roadways, shoulders, bike lanes and sidewalks. Also, separate trail facilities can be provided. Class 1 bicycle routes are separated from the roadway and may be paved or unpaved, could have steep grades, and can be shared with pedestrians. Class 2 bicycle routes provide a striped and signed lane for one-way bike travel on a street. Class 3 bicycle routes provide a sign only for designated bicycle travel on a roadway shared with cares. Map IV-2 is the planned bicycle plan by bicycle route type. WFRC recommends, to those interested, to refer to the AASHTO Guide for the Development of Bicycle Facilities, 1999, for information on design criteria for these types of facilities. UDOT has recently updated the Roadway Design Manual of Instruction in March 2006 to include design criteria for bicycle and pedestrian facilities in Section 9, Auxiliary Facilities.

The bicycle project phasing used the same phasing as the rest of the plan. Phase 1 is from 2007 to 2020 and Phase 2 is from 2021 to 2030. Four criteria were used to place projects into Phase 1 or Phase 2. Projects were placed into Phase 1 if they had applied for Enhancement Funding, are in the current Transportation Improvement Program (TIP), had a high score in the Bicycle Compatibility Index (BCI), or were needed for connectivity. Map IV-3 illustrates the phased bicycle plan

Figure IV-3

PLANNED BICYCLE PROJECTS

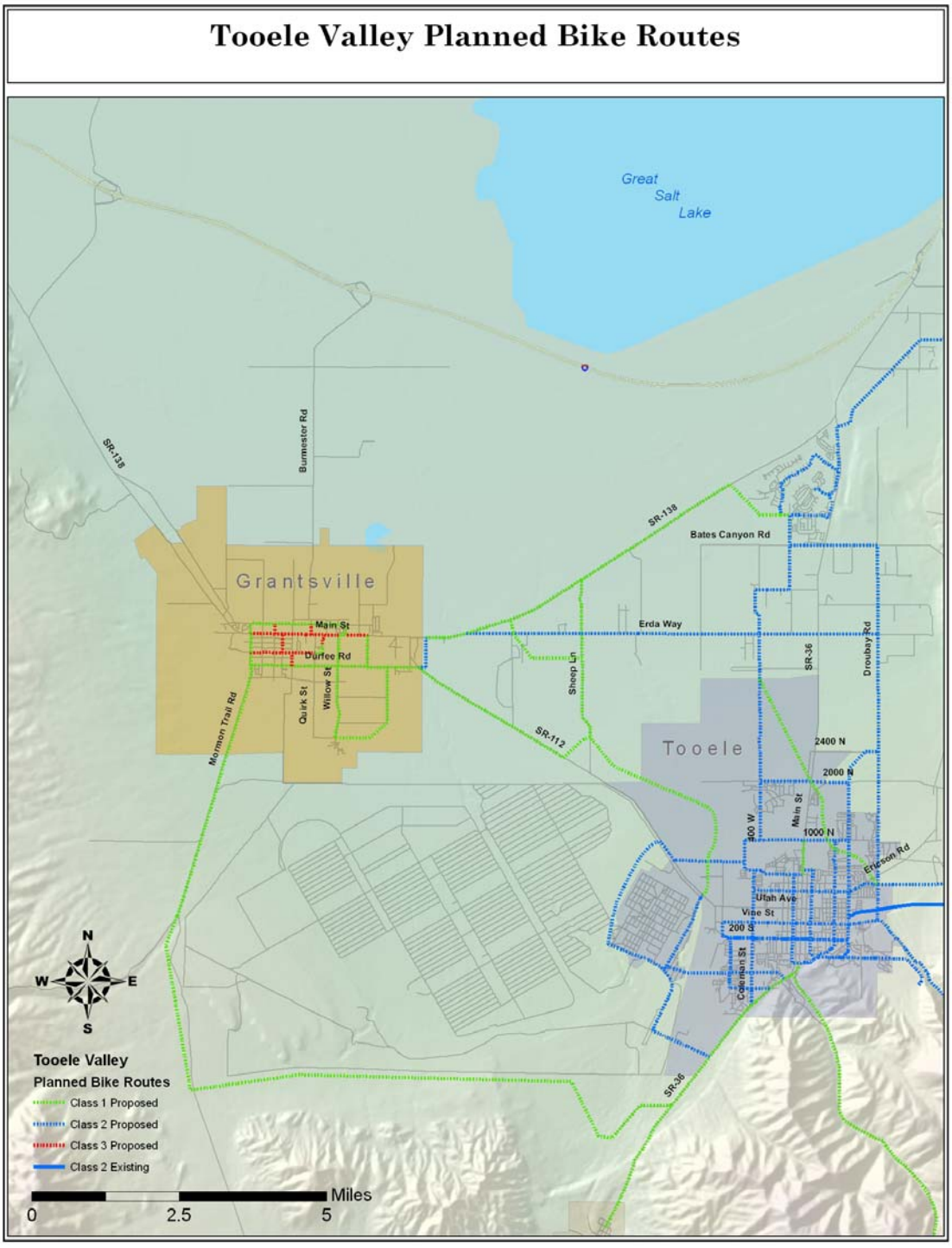
ROUTE	TO / FROM	CLASS	PHASE 1=2007-2020 2=2021-2030
Grantville			
Main Street (SR-138)	Mormon Trail Road to Sheep Lane	3	1 and 2
Cherry Street	Mormon Trail Road to Church Street	1 and 3	2
Durfee Street	Mormon Trail Road to Sun Valley Drive	1	1
Clark Street	Mormon Trail Road to Bowery Street	3	2
Mormon Trail Road	Tooele County to Clark Street	3	1
Center Street	Clark Street to Main Street	3	2
Kearl Street	Clark Street to Main Street	3	2
Bowery Street	Clark Street to Main Street	1	2
Hollywood Street	Willow Street to Nygren Street	1	2
Park Street	Main Street to Cherry Street	3	2
Church Street	Main Street to Cherry Street	1 and 3	2
Willow Street	Main Street to Hollywood Street	1	1
Worthington Street	Durfee Street to Nygren Street	1	2
Hale Street	Cherry Street to Durfee Street	3	2
Sheep Lane	Main Street to Durfee Street	1	2
Tooele City			
West Pacific Railroad	Sheep Lane to SR-112	1	1
400 West	Tooele County to 1000 North	1	1
2000 North	400 West to 520 East	2	2
520 East / 7th Street / Mapleton Drive	2200 North to Skyline Drive	2	1 and 2
1000 North	700 West to 520 East	2	1
Rogers Road	SR-112 to 700 West	2	1 and 2
700 West	670 North to 1000 North	2	1
600 North / 670 North	700 West to Main Street	2	1 and 2
SR-36	1000 North to 600 North	1	2
700 North	SR-36 to 100 East	2	2
400 North/500 North	Coleman Street to Droubay Road	2	2
Vine Street	1000 West to Droubay Road	2	1 and 2
1000 West	Vine Street to 200 South	2	2
900 West	200 South to Timpie Road	2	2
Coleman Street	670 North to SR-36	2	1
200 South	1000 West to 7th Street	2	2
D Avenue / 700 South	Emerald Street to SR-36	2	2
Emerald Street/Feldspar Street	B Avenue to West Pacific Railroad	2	2
B Avenue	Main Entrance Road to Industrial Loop Road	2	2
Industrial Loop Road	B Avenue to SR -112	2	2
SR-112	Ruby Street to Rodgers Road	2	2

Main Entrance Road	B Avenue to SR-36	2	2
Skyline Drive	SR-36 to Grimm Hill Road	2	1 and 2
Broadway Drive	1000 North to Skyline Drive	2	2
Timpie Road	900 West to SR-36	2	2
100 West	600 North to SR-36	2	2
100 East	700 North to Skyline Drive	2	2
Tooele / Erda Connection	400 West to 500 North	1	2

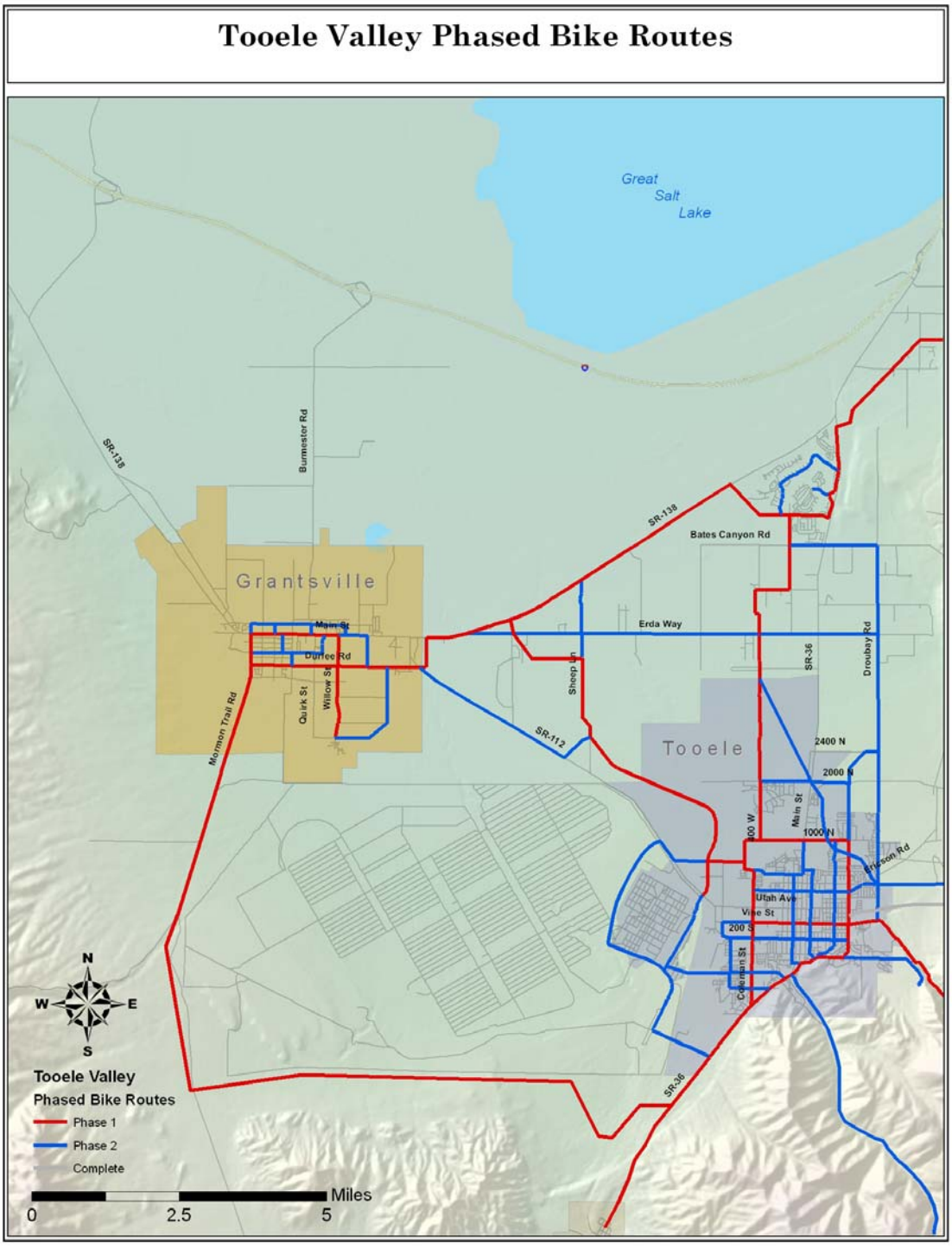
Tooele County

SR-138	Sun Valley Drive to Village Drive Extension	1	1
Sun Valley Drive	Durfee Street to SR-138	2	1
SR-112	Sun Valley Drive to West Pacific Railroad	1	2
Lakeview Drive	Country Club Drive to Village Drive	2	2
Village Boulevard	Country Club Drive to SR-138	1	1
Country Club Drive	Center Street to Village Drive	2	1 and 2
Center Street / Canyon Road	Country Club Drive to Railroad	2	1
Bates Canyon Road	Liddell Lane to Droubay Road	2	2
Liddell Lane	Village Drive to Church Road	2	1
Church Street	Cochrane Lane to Liddell Lane	2	1
Campbell Road / Cochrane Lane	Tooele City to Church Street	2	1
Erda Way	SR-138 to Droubay Road	2	2
Sheep Lane	SR-138 to West Pacific Railroad	1	1 and 2
Droubay Road	Middle Canyon Road to Bates Canyon Road	2	2
2400 North	Droubay Road to 520 East	2	2
500 North	Droubay Road to the canyon	2	2
Mormon Trail Rd	Grantsville City to South Tooele Connection Road	1	1
Middle Canyon Road	Vine Street to the canyon	2	1
Grimm Hill Road	Skyline Drive to the canyon	2	2
Settlement Canyon	SR-36 to the end of the canyon	1	2
SR-36	Stockton to 500 South	1	1
Bauer Road	SR-36 to Mormon Trail Road	1	1
West Pacific Railroad / Road Extension	SR-138 to Sheep Lane	1	1

Map IV-2


Tooele Valley Planned Bike Routes
Great Salt Lake
Grantsville
Tooele
Main St
Durfee Rd
Quirk St
Willow St
Mormon Trail Rd
Burmester Rd
SR-138
SR-138
Bates Canyon Rd
Erda Way
Sheep Ln
SR-112
SR-36
Droubay Rd
2400 N
2000 N
1000 N
Main St
300 W
Ericson Rd
Utah Ave
Vine St
200 S
Coleman St
SR-36
N
W
E
S
Tooele Valley
Planned Bike Routes
Class 1 Proposed
Class 2 Proposed
Class 3 Proposed
Class 2 Existing
Miles
0
2.5
5

Map IV-3


Tooele Valley Phased Bike Routes
Great Salt Lake
Grantsville
Tooele
Burmester Rd
SR-138
Bates Canyon Rd
Erda Way
Droubay Rd
SR-36
Sheep Ln
SR-112
Mormon Trail Rd
Quirk St
Willow St
Main St
Durfee Rd
2400 N
2000 N
1000 N
Main St
100 W
Utah Ave
Vine St
200 S
Coleman St
Erisson Rd
N
W
E
S
Tooele Valley
Phased Bike Routes
Phase 1
Phase 2
Complete
Miles
0
2.5
5

Safety Recommendations

During the local field review, safety recommendations were identified for most of the road sections and intersections listed in the needs section of this report. In most cases a more in depth study should be completed. The project list in Figure IV-4 was reviewed by the Tooele Valley RPO. Map IV-4 can also be used to reference the recommended safety projects.

Figure IV-4

RECOMMENDED SAFETY PROJECTS

Tooele City

Main Street (2000 North to Coleman Street)

- Improve access management
- Complete construction of 200 West through to 1000 North

Main Street & 2000 North Intersection

- Construct a pedestrian overpass along SR-36
- Construct a permanent pedestrian overpass over railroad tracks

Vine Street (Main Street to 1100 West)

- Correct alignment near Tooele City Library
- Put in sidewalks on south side and sections of north side, curb and gutter

400 North and Main Street (SR-36) Intersection

- Include a left signal arrow on Westbound 400 North to Main Street (SR-36)

Broadway Street & 400 North Intersection

- Stripe lanes on 400 North
- Incorporate traffic calming, i.e.
    - Curb extensions
    - Center islands
    - Tree canopy
- Trim trees from the line of sight (location looking west from Broadway Street onto 400 North)
- Stripe lanes on Broadway Street

Vine Street & Main Intersection

- Remove angle parking on Vine Street east of Main

Coleman Street & Vine Street Intersection

- Stripe Vine Street
- Incorporate traffic calming on Vine Street
    - Curb extensions
    - Center island
- 4-way stop or light needed (traffic study)

Coleman Street & Utah Avenue (SR-112) Intersection

- Correct line-of-sight on northwest corner facing south and looking west
- Finish curb/gutter and sidewalks
- Work with school district to fix the pick up and drop off problem at the location of the Northlake Elementary School and Head Start

Main Street (SR-36) & Utah Avenue (SR-112) Intersection

- Correct turning radius for trucks turning onto SR-112
- Correct shoulder to prevent use as a right turning lane
- Eliminate multiple entrances on SR-36, middle 2 entrances (access management, by Key Bank)

Rogers Road & SR-112 Intersection

- Extend acceleration lanes

1000 West (South of Rogers Road) and Droubay Rd (North of 2400 North)

- Improve railroad crossing

Grantsville City

Main Street

- Perform a traffic study
- Add signal light at intersection with Hale Street
- Incorporate access management between Park Street and Race Street where appropriate

SR-112 & Durfee Road Intersection

- Realign Durfee Road into SR-112, this will eliminate the >90 degree intersection

Tooele County

SR-112 & SR-138

- Widen shoulders

Millpond Road & SR-138 Intersection

- Improve geometric and safety deficiencies

Sheep Lane & SR-138 Intersection

- Improve geometric and safety deficiencies

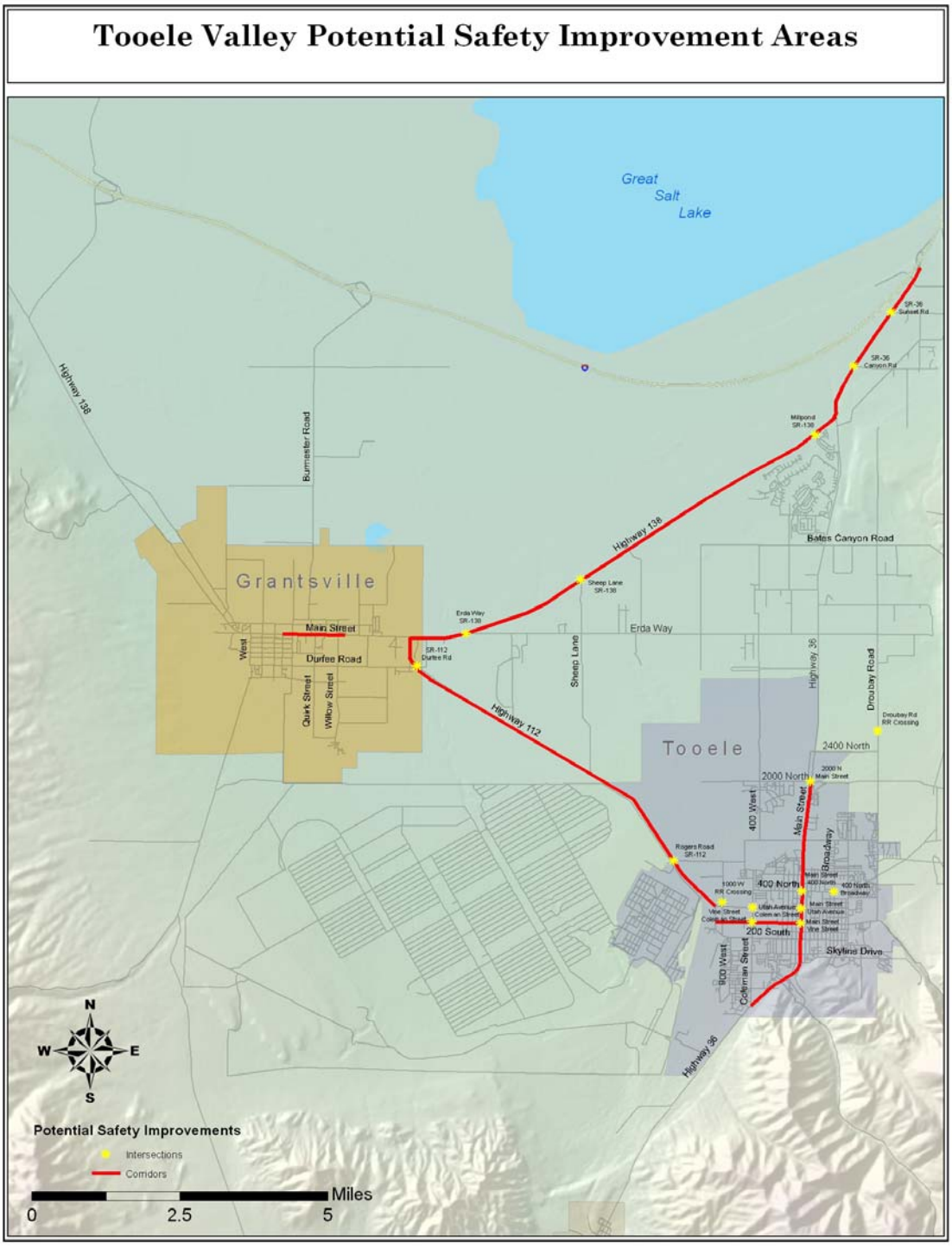
Erda Way & SR-138 Intersection

- Improve geometric and safety deficiencies

SR-36

- Reduce speeds between I-80 and SR -138
- Add acceleration lanes for Canyon Road and Sunset Road

Map IV-4


Tooele Valley Potential Safety Improvement Areas
Great Salt Lake
Highway 138
Burmester Road
Grantsville
Main Street
West
Durfee Road
Quirk Street
Willow Street
SR-112 Durfee Rd
Erda Way SR-138
Sheep Lane SR-138
Erda Way
Sheep Lane
Highway 112
Tooele
Highway 36
Droubay Road
Droubay Rd RR Crossing
2400 North
2000 North
2000 N Main Street
400 West
Main Street
Broadway
Rogers Road SR-112
1000 W RR Crossing
400 North
400 North Broadway
Vine Street
Coleman Street
Utah Avenue
200 South
800 West
Skyline Drive
Bates Canyon Road
Millpond SR-138
SR-36 Sunset Rd
SR-36 Canyon Rd
N
W
E
S
Potential Safety Improvements
Intersections
Corridors
Miles
0
2.5
5

Intelligent Transportation System Recommendations

As stated previously, maintaining the capacity of roadways is critical through strategies such as intelligent transportation systems (ITS). These systems take advantage of modern technology to better manage the transportation system. ITS applications include traffic signal coordination, freeway traffic monitoring and management, automated transit vehicle location and passenger counting, incident management, ramp metering and strategies to monitor and manage commercial vehicle operations.

ITS technologies change rapidly and it becomes impractical to plan these improvements very far into the future. However, the recommendations in Figure IV-5 have been developed with the intent to advance traffic management capabilities in the Tooele Valley. Trailblazer and variable message signs (VMS) are electronic message boards that are used to notify motorists of incidents, the need to take an alternate route, or other events so that they can prepare for or avoid traffic congestion and other incidents if possible. Closed circuit television (CCTV) allows traffic management personnel to respond more rapidly to changes in traffic conditions and where needed, alert the traveling public.

Figure IV-5

RECOMMENDED INTELLIGENT TRANSPORTATION SYSTEM PROJECTS

Overhead VMS:
- I-80 westbound at milepost 100

Trailblazer Signs:
- SR-36, southbound, north of SR-138
- SR-36, northbound, south of SR-138
- SR-36, northbound, south of Erda Way
- SR-138, eastbound, west of SR-112

CCTV:
- At signalized intersections on SR-36
- I-80 at interchanges

Signal Coordination:
- Sections of SR-36 where signals are spaced less than one mile apart

Road Weather Information System:
- SR-36 between SR-138 and I-80
- I-80

Interagency Connections:
- Connect local government dispatch to Commuterlink (Utah's ITS)

Funding Sources

A summary of funding sources available for transportation projects in the Plan can be found in Appendix B. The reader should note that for longer term transit improvements, an increase will be needed in the percentage of local sales tax collected for transit.

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APPENDIX A

Planning Level Analysis of Safety, Time, and Construction Costs					
	Average of Alternatives 2 and 3			Alternative 7**	
		SR-36		SR-36 and 1200 West	
	Freeway	Arterial		Arterials	
2030 Vehicle Miles of Travel	373,396	290,450		615,985	
VMT * 365	136,289,540	106,014,250		224,834,525	
Assumed Crash Rate^	0.85	3.23		3.23	
2030 Crashes per Year	115.62	342.78		726.96	
			Total		**Difference**
Annual Crash Cost^^	$12,980,772	$38,484,530	$51,465,302	$81,617,810	$30,152,509
2030 PM Peak Period Delay (Vehicle Hours)			1,398	1,885	
Delay * 260			363,480	490,100	
Annual Delay Cost^^^ (Value of Time)			$5,452,200	$7,351,500	$1,899,300
Annual Delay + Crash Cost					**$32,051,809**
Annual Construction Cost*	$39,110,010	$0		$10,995,000	**$28,130,130**
Lane Miles	46.8	38	84.8	80.6	
Annual Maintenance Cost			$305,280	$290,160	

^ From sample of 2003 crash rates for I-15 and Bangerter Highway

^^ Assuming FHWA value for "Evident" level of severity and taking into account inflation

^^^ Census 1999 household median income of $45,773, assuming 2 workers per household, 1% annual growth

* Assuming 20 year life

** 4-lane 1200 West (minus 1000 N - 3700 N cost) + widen SR-36 to 6-lane

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APPENDIX B

Funding sources for transportation improvement projects are needed if the recommended projects of the Transportation Plan are to be built. In the Wasatch Front Region, federal, state, and local governments as well as private developers provide funds to pay for improvements. ISTEA of 1991 and TEA-21 (Transportation Equity Act for the 21st Century) combined or renamed many of the former federal-aid programs, such as Federal-Aid Urban and Federal-Aid Secondary. ISTEA greatly increased the flexibility of federal highway and transit programs. ISTEA also created some new programs, such as the Congestion Mitigation/Air Quality program and Transportation Enhancements. The current federal highway and transit bill SAFETEA-LU (Safe, Accountable, Flexible, and Efficient Transportation Equity Act: A Legacy for Users) continues the programs created by ISTEA & TEA-21, but with adjusted funding levels and additional programs. The following section briefly outlines the available funds and what they may be used for. The table contained in this section provides a summary of the specific federal, state, and local programs available to fund transportation projects.

FEDERAL SOURCES

The Federal Highway Administration and the Federal Transit Administration provide the major source of funds from the federal government for transportation improvements. However, some funds are also available from several other federal agencies. All are discussed below.

Federal Highway Administration

The FHWA administers the highway programs of the federal government. Included are programs for improvements to the Federal-Aid Interstate System, for improvements to other highways in rural and urban areas, and for safety related improvements.

Interstate Maintenance (IM) – The interstate Maintenance program provides federal funds to rehabilitate, restore, and resurface the Interstate highway system. The program will not fund reconstruction projects that add new travel lanes to the freeways unless the new lanes are High Occupancy Vehicle (HOV) lanes or Auxiliary lanes (a freeway lane dedicated to traffic entering and/or exiting the freeway, reducing interference with through traffic). However, reconstruction of bridges and interchanges along existing Interstate routes, including the acquisition of right-of-way, may be funded under this program. These funds can only be used on Interstate highways. The federal share of these projects is approximately 94 percent.

National Highway System (NHS) – The National Highway System (NHS) funds can be used for any type of improvement (new lanes, reconstruction, resurfacing, etc.) on roadways designated as part of the National Highway System. These include all the Interstate routes as well as other freeways and specially designated

"principal arterials". These eligibility guidelines for NHS are more flexible than the Interstate programs. Funds can be used for transit projects, ridesharing projects, or any other type of project in the travel corridor served by a NHS road so long as it improves travel in the corridor. The federal share for this program is approximately 93 percent.

Surface Transportation Program (STP) – The STP program is one of several Surface Transportation Programs that provide funds for projects not on the Interstate System or the National Highway System. The funds are intended to benefit any road that is functionally classified as a collector or higher for urban streets or as a major collector or higher for rural areas. The type of projects may range from rehabilitation to new construction. Eligible safety projects include Hazard Elimination, Railroad Crossings, and Railroad Protective Devices. These funds may also be used for transit projects. The federal share for STP projects is 93 percent.

As under TEA-21 and previous legislation, 2 percent of each State's annual STP apportionment is set aside for state planning and research (SPR) activities under 23 U.S.C. 505.

For FY 2005, the 10 percent set-aside of a State's STP funds for the safety program continues as it was under TEA-21. However, this provision [23 U.S.C. 133(d)(1)] was repealed on

October 1, 2005, under the provisions of Section 1113(b) of SAFETEA-LU. Funding is provided for these safety programs for FY 2006 and thereafter under the new Highway Safety Improvement Program of 23 U.S.C. 148 (added by Section 1401 of SAFETEA-LU).

For FY 2005, the 10 percent set-aside of a State's STP funds for Transportation Enhancements (TE) continues as under TEA-21. For 2006 and thereafter, under the provisions of 23 U.S.C. 133(d)(2), as amended by Section 1113(c) of SAFETEA-LU, the TE set-aside is to be the greater of 10 percent of the State's STP apportionment for the fiscal year or the dollar amount of the TE set-aside for the State for FY 2005.

The division of STP funds between urbanized areas of over 200,000 population and other areas of the State continues as under TEA-21, except that, for FYs 2006 and thereafter, this division of funds is based upon the remaining 90 percent of the STP apportionment rather than 80 percent, because of the elimination of the safety set-aside within the STP program. This required division of funds is under 23 U.S.C. 133(d)(3), as amended by Section 1113(b) of SAFETEA-LU.

STP – Enhancement Program (TE) – Ten percent of all STP funds must be spent on transportation enhancement projects. There is no single criterion or definition of what constitutes an "enhancement" project. Generally, however, the project should enhance the environment of motorists, transit users, pedestrians, or bicyclists.

Restoration of historic transportation facilities is also an eligible type of project.

Categories of eligible activities as listed in the legislation include: (note: all activities below must relate to surface transportation)

- Facilities for pedestrians and bicycles
- Safety and educational activities for pedestrians and bicyclists
- Scenic easements and scenic or historic sites
- Landscaping and other scenic beautification
- Historic preservation
- Rehabilitation & operation of historic transportation facilities
- Preservation of abandoned railway corridors
- Control and removal of outdoor advertising
- Archeological planning and research
- Environmental mitigation to address water pollution due to highway runoff or reduce wildlife mortality while maintaining habitat connectivity
- Establishment of transportation museums

The funding ratio for the STP-Enhancement program is 80 percent federal funds to be matched by at least 20 percent local funds.

Highway Safety Improvement Program – Beginning in FY2006, safety improvement projects will be funded through the new Highway Safety Improvement Program, which was established under SAFETEA-LU "to achieve a significant reduction in traffic fatalities and serious injuries on all public roads." These funds may be used to carry out any highway safety improvement project on any public road or publicly owned bicycle or pedestrian pathway or trail. High priority projects under this program are railway-highway crossings, improvements on high risk rural roads, and infrastructure safety needs relation to highway safety improvement projects.

Congestion Mitigation/ Air Quality (CMAQ) – Congestion Mitigation/ Air Quality is a program created specifically to address congestion and air quality problems. Funds must be used for projects that reduce congestion and/or vehicular emissions. The funds are intended to help achieve the goal of the 1990 federal Clean Air Act amendments. Examples of eligible activities include: signal coordination, park and ride lots, ridesharing, bus service expansion, alternative transportation modes, which include bicycle and pedestrian facilities, transit improvements, travel demand management strategies, traffic flow improvements, and public fleet conversions to cleaner fuels.

Bridge Replacement Program - This program provides funds for the replacement of substandard bridges, both on and off federal-aid systems. Bridges must have a span of 20 feet in order to be eligible to receive these funds. The UDOT has evaluated all eligible bridges in the state and given them a rating. All bridges with a rating of less than 50 are eligible to receive funding on a first-come, first-served basis. The UDOT re-inventories the bridges about every two years. The State Transportation Commission has established a policy that 65 percent of these funds will be used for bridges on the state system with the

remaining 35 percent being used for bridges under local jurisdiction. The federal share for these projects is 80 percent.

High Priority Projects (HPP) – The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) included over 3,600 high priority projects specified by Congress. Unlike other funding programs authorized by SAFETEA, Congress included a specific list of individual projects to be included in the program. Funds can only be used for the projects on the list. Unlike any other funding category, HPP funds for any given project are appropriated in annual installments over the six years of the bill. The federal share for these projects is 80 percent.

Recreational Trails Program - This program was created in TEA-21 replacing the National Recreational Trails Funding Program of ISTEA of 1991. Funds may be used to maintain and restore trails, develop trailside and trailhead facilities, acquire easements or land for trails, and to construct new trails. The federal share for these projects is 80 percent.

Minimum Guarantee Program - The Minimum Guarantee provides funding to States based on equity considerations. These include specific shares of overall program funds and a minimum return on contributions to the Highway Account of the Highway Trust Fund. The federal share for these projects is 93 percent.

Federal Transit Administration

Federal funds for transit capital, planning and preventive maintenance are made available through the Federal Transit Administration. A brief description of the transit assistance program follows.

Section 5307 Urbanized Area Formula Program (formerly FTA Section 9 Program) - Established in 1982, by the Surface Transportation Assistance Act, the Urbanized Area Formula Program provided a block grant to local transit agencies to fund capital projects, provide operating assistance, and support planning activities. With the passage of TEA 21, use of the funds for operating assistance was not authorized for urbanized area over 200,000 people. However, the funds were authorized to be used for preventive maintenance activities.

The formula program funds are distributed annually to the Salt Lake-Ogden Urbanized Areas and calculated with a formula based on population, population density, and transit revenue miles of service. The Federal share for projects under the Urbanized Area Formula Program is typically 80 percent of the net project cost.

Section 5309 Capital Program (formerly FTA Section 3 Program) - This program provides federal discretionary funding, outlined by Congress, for capital

improvement projects under the bus, fixed guideway modernization, and new starts categories. Established in 1982, by the Surface Transportation Assistance Act, the Capital Program has been funded by a gasoline tax dedicated to transit. The Federal share for projects assisted under the Capital Program for "Bus" is typically 80 percent while the federal share for "New Starts" is typically 50 percent of the net project cost.

Specifically the three eligible project categories within the Capital Program are bus and bus-related facilities, modernization of fixed guideway systems, and new fixed guideway systems and extensions ("New Starts").

Bus and Bus-related Facilities. The major purchases under this category are buses and other rolling stock, ancillary equipment, and the construction of bus facilities (i.e., maintenance facilities, garages, storage areas, waiting facilities and terminals, transit malls and centers, transfer facilities, and intermodal facilities). This category also includes bus rehabilitation and leasing, park-and-ride facilities, parking lots associated with transit facilities, and bus passenger shelters.

Modernization of Fixed Guideway Systems. Projects typically funded under fixed guideway modernization are infrastructure improvements to existing rail and other fixed guideway systems. These improvements can include track and right of way rehabilitation, modernization of stations and maintenance facilities, rolling stock purchase and rehabilitation, and signal and power modernization. Modernization of ferry terminals and the transit portion of ferry boats are also eligible costs.

New Fixed Guideway Systems or Extensions (New Starts). Capital projects under this category include preliminary engineering, acquisition of real property (including relocation costs), final design and construction, and initial acquisition of rolling stock for new fixed guideway systems or extensions, including light rail, heavy rail, and commuter rail systems.

Section 5310 Elderly and Persons with Disabilities Program (formerly FTA Section 16 Program) - This program provides funding to private non-profit agencies for capital improvements for the provision of transportation services to senior citizens and persons with disabilities. ISTEA also made public agencies eligible to receive these funds. The Utah Department of Transportation has established a committee to review the projects submitted to use these funds. The Federal share for projects under the Elderly and Persons with Disabilities Program is 80 percent of the net project cost.

Other Federal Programs

Other federal agencies provide funds which can be used for transportation improvements under certain conditions. Two of these are discussed below.

Community Development Block Grants - These funds can be used for a wide variety of activities directed toward neighborhood revitalization, economic development, and improved community facilities and services, including the construction or improvement of streets and highways. However, it must be clearly demonstrated that all projects principally benefit low and moderate income persons, aid in the prevention or elimination of slums and blight, or meet other urgent community health and safety needs. The Department of Housing and Urban Development is the sponsor of this program. Municipalities with a population of over 50,000 and counties with a population of over 200,000 are entitlement areas and are allocated CDBG funds on an annual basis. Municipalities with a population under 50,000 must compete for state-administered "small cities" Community Development Block Grant funds. These funds can be used to pay for the entire cost of the project or to provide the local matching funds for other federal funding sources.

Economic Development Grants - This is another possible source of federal funding for transportation improvement projects, if the construction or rehabilitation activities have a significant and long-lasting favorable impact on an economically distressed area. These funds are available from the Economic Development Administration. EDA funds should be considered if a project is to be constructed in an area of high unemployment or will assist in the creation of long term employment opportunities. In order to be eligible to make application for EDA funds, entities must be within an Economic Development District and the proposed project must be a part of the District's Overall Economic Development Program.

STATE SOURCES

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, drivers 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. This funding mechanism is being used for several projects in this TIP.

With the approval of an increase in the state gasoline tax and other fees in 1997, the State Legislature created a **Centennial Highway Fund (CHF)** to fund major highway needs throughout the state. The Legislature also has created a revolving **Corridor Preservation Fund** using a tax on rental cars. The Fund can be used by state and local agencies to acquire right-of-way for future transportation corridors. The amount of funds used must be paid back to the Corridor Preservation Fund by other sources when the project goes to construction.

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 SOURCES

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.

Finally, local funding for transit improvements and service is provided through a one-half percent sales tax in Salt Lake, Davis, and Weber Counties. In Salt Lake County only 7/16 percent of the tax goes for transit projects, while the remaining 1/16 percent is designated for improvements to state highways in the county. Tooele, Grantsville and other parts of Tooele have a quarter of a percent sales tax for transit improvements.

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.

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The preceding tables outline the basic sources of funds available for implementation of the Transportation Improvement Program. No attempt has been made to describe in detail the many specific programs which make up the above. The staff of the Wasatch Front Regional Council and the Utah Department of Transportation is available to respond to any questions concerning the funding of transportation improvements.

TRANSPORTATION PROGRAM FUNDING SOURCES AND RESPONSIBILITIES

FUND CATEGORY	REVENUE SOURCE	PROGRAM RESPONSIBILITY
FEDERAL HIGHWAY ADMINISTRATION **Surface Transportation Program (STP)** Salt Lake & Ogden/ Layton Areas **Congestion Mitigation/Air Quality (CMAQ)** Salt Lake & Ogden/ Layton Areas **Interstate Maintenance** (IM) **National Highway System** (NHS) **Surface Transportation Program** Urbanized Area Small Urban Non-Urban Any-Area Statewide (STP) Safety Hazard Elimination Railroad Crossings Transportation Enhancements **Bridge On System State** **Bridge Replacement** Off System - Local Off System - Optional **Federal Lands Programs** **High Priority Projects** **Recreational Trails** **Minimum Guarantee**	**NATIONAL HIGHWAY TRUST FUND**	**WASATCH FRONT REGIONAL COUNCIL** **UTAH DEPARTMENT OF TRANSPORTATION** (See note below)
FEDERAL TRANSIT ADMINISTRATION **(5307)** Block Grant Funds **(5309)** Discretionary Funds **(5310)** Capital Funds for services to elderly and disabled persons	**TRANSIT ACCOUNT OF NATIONAL HIGHWAY TRUST FUND & U.S. GENERAL FUND**	**UTAH TRANSIT AUTHORITY** **UDOT (5310)**
STATE **State Construction** **State General Funds** **State Traffic** **Centennial Highway Funds** **Corridor Preservation Funds**	**STATE HIGHWAY USER RECEIPTS & STATE GENERAL FUND**	**UTAH DEPARTMENT OF TRANSPORTATION**
LOCAL **County (B Funds)** **City (C Funds)** **General Funds** **Transit Sales Tax**	**SALES & PROPERTY TAX, OTHER GENERAL FUND, B & C ROAD FUND**	**CITY / COUNTY** **UTAH TRANSIT AUTHORITY**
PRIVATE Donations / User Fee	**PRIVATE**	**PRIVATE**

* The Joint Highway Committee makes recommendations to UDOT on the Small Urban, Non-Urban, and Local Bridge Replacement Programs.

** Federal highway and transit funds must be included in the WFRC's Transportation Improvement Program.

POTENTIAL FUNDING SOURCES FOR TRANSPORTATION PROJECTS

Transportation Program	Funding Agency	Description	Requirements for Use
Surface Transportation Program - Urban (STP)	FHWA (WFRC)	For transportation facility improvements ranging from rehabilitation of existing facilities to new construction. May also be used for transit capital improvements and ridesharing promotion.	1. May be used on any road not functionally classified as local or rural minor collector in the Metropolitan Area. 2. Must be consistent with Long Range and Short Range Elements of Transportation Plan, except for minor projects. 3. Initiation of projects by local officials through MPO. 4. Environmental impact evaluation.
Surface Transportation Program - Rural (STP)	FHWA	Same as above, only for use outside the Urban Area Boundary.	1. Can be used for projects within the Metropolitan Area but outside the designated Urbanized Area.
Surface Transportation Program - Transportation Enhancements	FHWA	A mandatory ten percent of all STP funds to be used for non-traditional uses, including pedestrian and bicycle facilities and landscaping.	1. Enhancement projects will be selected by the State Transportation Commission and by a UDOT appointed committee. The committee will include UDOT staff and persons from around the state interested in non-traditional transportation projects.
Surface Transportation Program - Highway Safety	FHWA	For safety improvements to roads, rail-highway crossings including crossing devices, and hazard elimination activities, respectively.	1. Funds set aside for safety may be used on any public road for any of the activities of (rail-highway crossings and hazard elimination activities). 2. TEA-21 amended ISTEA to allow funding of safety improvements at public transportation facilities and public pedestrian and bicycle pathways and trails
Congestion Mitigation/Air Quality (CMAQ)	FHWA (WFRC)	For transportation-related projects that significantly reduce emissions in non-attainment areas.	1. Projects must contribute to the attainment of air quality standards (reducing emissions) in the region. 2. Projects that increase capacity for single occupancy vehicles are not allowed. 3. Projects in the State Implementation Plan for clean air attainment should receive priority.

Transportation Program	Funding Agency	Description	Requirements for Use
Bridge Replacement Program	FHWA	For replacement of substandard bridges.	1. Can be used for bridges on all streets, both on and off Federal-Aid Systems. 2. Bridges must have a 20-foot span and a rating of less than 50 using bridge evaluation procedures.
Minimum Guarantee	FHWA	For projects eligible for all other federal highway programs.	1. Ensures that each State receives a specific share of funding based on its federal gas tax receipts
Interstate - Maintenance Program (IM)	FHWA	For the resurfacing, restoration, and rehabilitation of the Federal-Aid Interstate System.	1. Limited to Federal-Aid Interstate System. 2. Environmental impact evaluation. 3. May not be used to add capacity or construct new interchanges.
National Highway System (NHS)	FHWA	To provide an interconnected system of principal arterial routes which serve major population centers, airports, public transportation facilities, and other intermodal transportation facilities. May also be used for transit oriented projects.	1. May be used on construction of, and operational improvements for, a Federal-aid highway not on the NHS and construction of a transit project eligible for assistance under the FTA if, (a) such project is in the same corridor and in proximity to, a fully access controlled NHS highway (b) improvements will improve the level of service on the fully access controlled highway and improve regional travel, (c) improvements are more cost-effective than work on the NHS highway would be to provide the same benefits.
High Priority Projects (HPP)	FHWA	Specific projects identified by Congress. Nationally, there are 1,850 with 15 in Utah. The projects have been identified and will be funded over the six years of TEA-21.	1. Funds can only be used for the particular project assigned 2. Funds are allocated to the States by project in accordance with the following schedule, 11% in the First FY, 15% in the Second FY, 18% in each of the Third & Forth FYs, and 19% in each of the Fifth & Sixth FYs. 3. Eligible activities for funds include (i.e., studies, preliminary engineering, construction, etc.) **Projects identified for HPP funds will remain eligible for the funds beyond 2003 unless funds are re-authorized by Congress.

Transportation Program	Funding Agency	Description	Requirements for Use
Recreational Trails Program	FHWA	To maintain and restore trails, develop trailside and trailhead facilities, acquire easements or land for trails, and to construct new trails.	1. May be used to provide and maintain recreational trails for motorized and non-motorized recreational tail uses. 2. May be used to improve or construct trailside and trailhead facilities, including provisions to facilitate access for people with disabilities.
General Obligation Bonds	Counties, Cities, Towns, & Improvement Districts	For capital improvements to implement or improve transportation facilities or other public facilities.	1. Voter approval is required. 2. The taxing power of the jurisdiction is pledged to pay interest upon and retire the debt. 3. Limits on the amount of bonded indebtedness a jurisdiction may incur is established by state constitution or statute. Counties are limited to two percent of the reasonable fair cash value of the taxable property within the county and cities are limited to four percent.
Section 5309 (Formerly Section 3)	FTA	Discretionary grant funds for bus or rail capital improvements to implement or improve public transit system.	1. Must be part of an approved Transit Development Program. 2. Must be consistent with long range and short range transportation plan, goals, and objectives. 3. Environmental impact evaluation. 4. Restricted to capital improvements (purchase of equipment, construction of maintenance facilities, etc.)
Section 5307 (Formerly Section 9)	FTA	Formula grants for public transit capital improvements, preventive maintenance, or planning assistance.	1. Urbanized area allocation based on population, population density, and transit revenue miles. 2. May be used for preventive maintenance, capital improvements or planning assistance. 3. Must be part of an approved Transit Development Program. 4. Environmental impact evaluation.
Section 5310 (Formerly Section 16(b)2 Program)	FTA	Grants for capital expenditures by private non-profit and public agencies providing service to elderly persons and persons with disabilities.	1. Must be used for capital expenditures, including purchase of vans or buses. 2. Must be recommended by UDOT review committee. 3. Recipients must coordinate service with other service providers in area.

Transportation Program	Funding Agency	Description	Requirements for Use
Safe Sidewalks Program	State	For sidewalk construction on roads on the state system.	1. Must only be used on state roads. 2. Funds allocated by formula to each county, prioritized by the UDOT District, and selected by a statewide committee.
State Motor Vehicle, Motor Fuel, Other Highway User Taxes and Fees	State	For construction, improvement, or maintenance of state highway system.	1. May be used throughout the State. 2. Projects are selected at the discretion of the State. 3. Must be approved by the Utah State Transportation Commission.
Economic Development Grants	EDA	For public facilities such as access roads to industrial parks, or to other economically significant locations.	1. Must fulfill a pressing need of the area and tend to improve opportunity for successfully establishing or expanding industrial or commercial plants or facilities. 2. Must assist in creation of long term employment opportunities. 3. Must benefit long term unemployed, members of low income families or further the objectives of Economic Opportunity Act of 1964.
Community Development Block Grant (Entitlement and Discretionary Grants) (CDBG)	HUD	For acquisition, construction of certain public works facilities and improvements, parking facilities, pedestrian malls and walkways, curb, gutter, sidewalks, signs, lighting, and other transportation appurtenance.	1. Entitlement grants allocated to cities with populations in excess of 50,000, or counties with population in excess of 200,000 or central cities in SMSA's with populations of under 50,000. 2. Discretionary grants (small cities) allocated to all counties or units of general local government, except metropolitan cities and urban counties. 3. Projects must be shown to principally benefit persons of low and moderate income, meet an urgent public health or safety need, and eliminate slum or blight. 4. Highway expenditures have to be in support of broader community development programs.
State General Fund	State	For construction, improvement, or maintenance of state highway system. Also used to pay for bonding.	1. May be used throughout the State. 2. Projects are selected at the discretion of the State. 3. Must be approved by the Utah State Transportation Commission. 4. State Legislature must appropriate each year.

Transportation Program	Funding Agency	Description	Requirements for Use
Corridor Preservation	State	For acquisition of right-of-way to preserve corridors for future transportation projects.	1. Maybe used throughout the State. 2. Maybe used for state and local highway, transit, or other transportation projects. 3. Projects are selected by the Utah State Transportation Commission.
Class B&C Program	State	For road improvement projects including construction, improvement or maintenance of city or county streets and highways.	1. Allocation by formula to cities and counties throughout the State. 2. Projects are selected at the discretion of the city or county. 3. Monies used primarily for street maintenance. 4. Thirty percent of the funds must be used for construction projects or maintenance projects over $40,000.
Special Improvement Districts	Cities and Counties	For permanently improving the roadways, curb, gutter, and sidewalks on any city or county road.	1. Must be within a special improvement district as set up by the County Commission or City Council. 2. The cost of road improvements in any special road district except the intersection of roads within such districts shall be assessed upon the lots and lands abutting upon the roads.
Transit Sales Tax	UTA	For support of public transit service in Salt Lake, Davis, Weber, and Tooele Counties.	1. Can be used to pay for operating and capital costs of transit service. 2. One half percent sales tax has been approved by voters in Salt Lake, Davis, and Weber Counties. 3. State law authorization is limited to one half percent.
Tax Increment	Towns, Cities and Counties	For public facility improvements within or adjacent to redevelopment project areas.	1. Removal of slum and blight with redevelopment project area. 2. Must be for public improvements that support the redevelopment effort. 3. Establishment of redevelopment agency. 4. Identification of a redevelopment project area and a specific redevelopment.
Revenue Bonds	Counties, Cities, Towns, & Improvement Districts	For capital improvement projects which generally produce revenues.	1. Revenue bonds may be issued where the revenue generated from the improvement or other specifically pledged revenues are used to finance the bonds.

Transportation Program	Funding Agency	Description	Requirements for Use
Demonstration	FHWA	For studies, preliminary engineering, construction, etc. for projects designated by Congress.	1. Information relative to eligible activities is specified in the project description in the section of the law authorizing it.
General Fund	Towns, Cities and Counties	For transportation facility improvements ranging from maintenance to new construction.	1. Major portion of fund is accumulated through property taxes. 2. Projects are selected at the discretion of the city or county. 3. Funds are generally allocated in conjunction with the capital improvements program needs of the municipality.
Developer Dedications	Private	For transportation improvements including dedication of right-of-way and new roads.	1. Municipal planning commission must review new subdivision plats and conditional plan.