SPRINGVILLE CITY

TRANSPORTATION MASTER PLAN

HORROCKS ENGINEERS

2016

GLOSSARY OF TERMS

AASHTO	American Association of State Highways and Transportation Officials
ADA	Americans with Disability Act
ADT	Average Annual Daily Traffic
BRT	Bus Rapid Transit
CFP	Capital Facilities Plan
FHWA	Federal Highway Administration
GOPB	Governor's Office of Planning and Budget
HCM	Highway Capacity Manual
HOA	Home Owners Association
IFFP	Impact Fee Facilities Plan
ITE	Institute of Transportation Engineers
LOS	Level of Service
LRTP	Long Range Transportation Plan
MAG	Mountainland Association of Governments
MPO	Metropolitan Planning Organization
MUTCD	Manual on Uniform Traffic Control Devices
RTP	Regional Transportation Plan
STIP	Statewide Transportation Improvement Program
STP	Surface Transportation Program
TAZ	Traffic Analysis Zone
TCM	Traffic Calming Measures
TDM	Travel Demand Model
TIP	Transportation Improvement Program
TIS	Traffic Impact Study
TMP	Transportation Master Plan
TransPlan40	MAG Regional Transportation Plan
TRAX	Transit Express (light rail)
TRB	Transportation Research Board
UDOT	Utah Department of Transportation
UTA	Utah Transit Authority

EXECUTIVE SUMMARY

Springville City, founded in 1850, has experienced significant growth and development in recent years with growth of approximately 17,500 residents since 1990. With Springville City committed to continued growth, it is projected that the population in 2040 will be around 58,000. A Transportation Master Plan (TMP) has been implemented so the transportation system can accommodate the projected growth in the City for the year 2040.

As part of the plan, the current roadway network was assessed using existing traffic volumes. Traffic volumes were projected to the year 2040 using the current roadway network to find the capacity improvements necessary for the roadway network to positively contribute to the economic and community development in Springville City. The following sections are included in the Springville City TMP.

Roadway Network

In order to have an effective transportation system, the City requires a connected street system. A connected system decreases traffic congestion, commute times, emergency response times, etc. Roadways share two functions: mobility and land access. These two functions share an inverse relationship, meaning a roadway with high mobility has minimal land access points and a roadway with low mobility has frequent land access points. Roadway classifications are implemented in a connected roadway network to designate the amount of mobility and land access the roadway will have. The following roadway classification system is used in Springville City: Freeway, Major Arterial, Major Collector, Minor Collector, Commercial Local, and Local Street. These classifications range from most mobile and least land access points (Freeway) to least mobile with frequent land access points (Local Street), creating a hierarchy in the roadway system. Intersections are used in the roadway system to allow for the progression from high mobility to low mobility. Freeways connect with Arterial Streets, which connect with Collector Streets, which connect with Local Streets. Correct use of all roadway functional classifications within the city allows for a successful, connected roadway system.

To measure the performance of a roadway, Level of Service (LOS) is used. LOS, as defined by the Highway Capacity Manual (HCM), determines the level of congestion on a roadway segment or intersection. To measure LOS, a roadway segment is assigned a letter grade A through F where A represents free flowing traffic and F represents grid lock. LOS is measured on a roadway segment using its daily traffic volume and at an intersection based on the average delay per vehicle. The LOS of a roadway segment or intersection is used to determine if capacity improvements are necessary. In Springville City, the standard for LOS is LOS D or better.

As part of the TMP, data was collected for the existing roadway network and a LOS was determined for each major roadway segment and major intersection. The existing traffic volumes were projected to 2040 using the Mountainland Association of Governments (MAG) travel demand model (TDM). MAG is

a collaboration of local government and community members from Utah, Summit and Wasatch Counties in Utah tasked with regional transportation planning. Adjustments to the MAG travel demand model were made based on socioeconomic data and the City's land use plan. Projected 2040 traffic was first modeled for the no-build scenario. Typically, the no-build scenario acts as a guide for roadway capacity inefficiencies that will need to be improved by 2040. Using the no-build scenario as a base for roadway capacity improvements, the projected 2040 traffic was modeled using the MAG model. The segments with LOS E or worse with the 2040 projected traffic volumes will be recommended for capacity improvements to achieve acceptable LOS.

Alternative Modes of Transportation

This TMP discusses alternative modes of transportation. Currently, the transit service in Springville City is operated by the Utah Transit Authority (UTA). UTA offers services such as commuter rail, light rail, bus, bus rapid transit (BRT), ski buses, and van share. Currently, transit service in Springville City is limited to bus services. The MAG long range plan calls for more transit service in Springville City as well as the addition of the FrontRunner commuter rail as it continues to develop.

Non-motorized modes of transportation include pedestrians and bicycles. Included in this TMP are discussions for safe pedestrian and bicycle facilities and planned future bike lanes and trails in Springville.

Other Elements of the Transportation Master Plan

This section is a discussion of the other elements included in the TMP. There is a discussion describing the appropriate use of Traffic Impact Studies (TIS) prior to development. A TIS assesses the impacts to the roadway system due to new development, which helps the City prepare for the impacts to the roadway network caused by the development. Another discussion included in the TMP is Intelligent Transportation Systems (ITS). ITS refers to the increased use of technology and communication methods to improve traffic operations. Specifically, the use of ITS to improve traffic signal performance. The other elements discussed in this section are Access Management, Travel Demand Management, Safety, Intersection Improvements, Americans with Disabilities Act (ADA), and Corridor Preservation.

Capital Facilities Plan

A Capital Facilities Plan (CFP) outlines all improvements necessary to provide Springville City with an adequate roadway system in 2040 based on the projected 2040 traffic volumes. This plan is updated by the City as project scopes change and development occurs. As part of the TMP, a Transportation Improvement Plan (TIP) is included that outlines all the projects necessary to accommodate future traffic volumes. It is expected that the total cost of roadway improvements necessary to accommodate 2040 growth for Springville City is approximately **$27,918,000**.

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INTRODUCTION

Overview

Springville City is a rapidly growing community located in the middle of Utah County. It is bordered by Provo on the north, the Wasatch Mountains on the east, Mapleton and Spanish Fork on the south, and Palmyra and Utah Lake on the west. Springville has a mix of agricultural, commercial, residential, and industrial areas. The city is bisected by I-15, with most of the city being located east of I-15, giving it good access to the rest of the state. A map of Springville and the surrounding areas is shown in **Figure 2**.

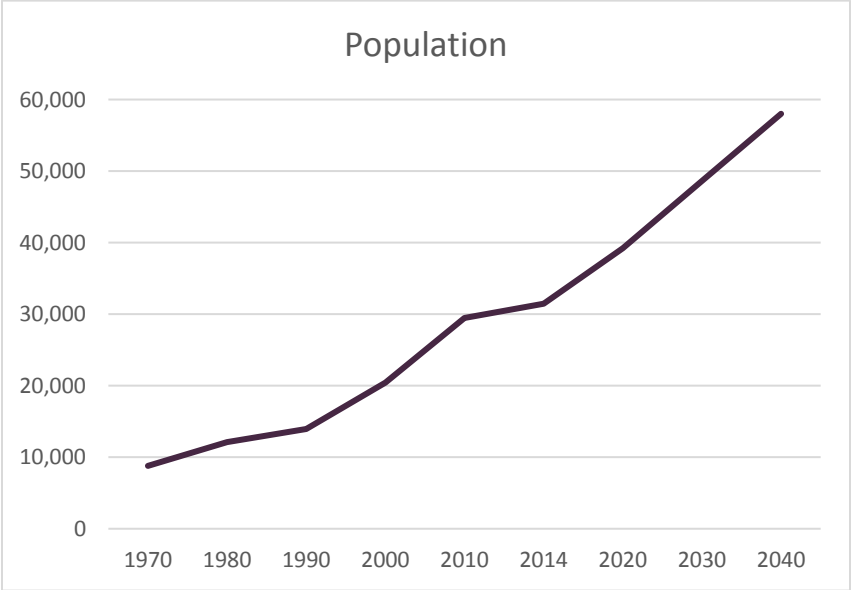
Springville and the surrounding communities have experienced a significant amount of growth and development over the last several years, and this growth is expected to continue in the future, as shown in **Figure 1**. The population in Springville is expected to approximately double from 2010 to 2040.

In order to keep up with this projected growth, a comprehensive transportation plan must be developed and regularly updated. The purpose of this plan is to incorporate the goals of Springville City regarding the transportation systems within their jurisdiction including regional facilities maintained by the Utah Department of Transportation (UDOT), Utah Transit Authority (UTA), Utah County, and all neighboring communities.

Table 1: Springville Population

Year	Population
1970	8,790
1980	12,101
1990	13,950
2000	20,424
2010	29,466
2014	31,464
2020	39,214
2030	48,609
2040	58,004

Figure 1: Projected Population

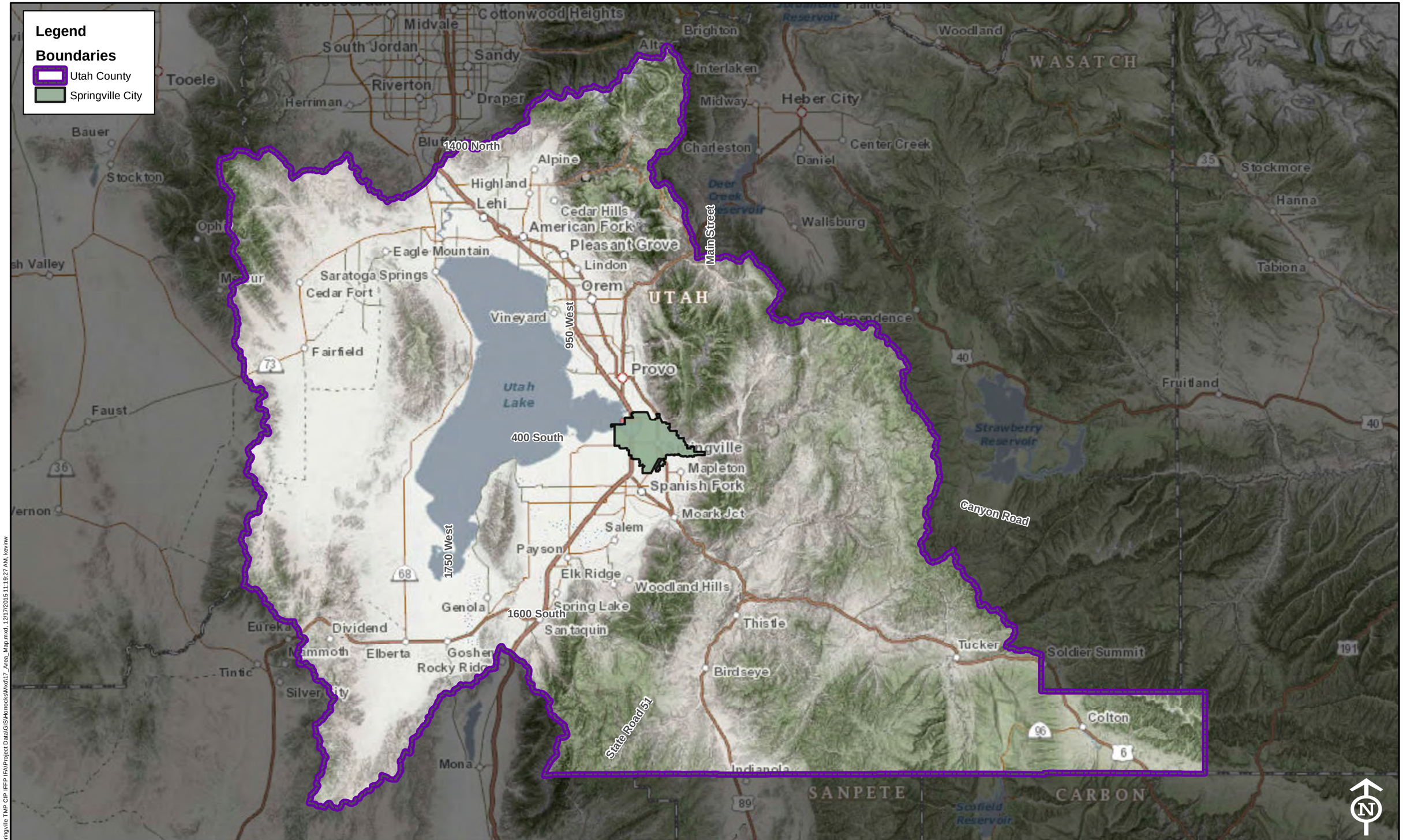


History

First explored by Father Escalante, a Jesuit Priest, in 1776, Springville was originally settled by eight pioneer families in 1850. It was first called Hobble Creek by the early pioneers because their horses were often hobbled (by loosely tying their front feet together) and left along the stream to graze in the lush grass. If the horses wandered into the creek, the hobbles came off in the water. Thus, the settlement earned its original name. Later as the town grew, the name was changed to Springville, but the canyon stream and golf course have retained the name of Hobble Creek.

Springville is known as "Art City" due to its strong development of the arts. Springville is home to the Springville Museum of Art, Utah's oldest museum for the visual fine arts. The museum showcases a variety of collections local and other well-known artists.

Springville is a thriving community which has experienced steady growth over the past 10 years. As shown in **Table 1** and **Figure 1**, a large growth rate is projected in Springville through 2040 in line with the expected future expansion of its commercial, office, retail and industrial sectors along the I-15 Corridor.



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Springville Transportation Master Plan

Springville City Area Map

5 0 5 Miles

DATE 12/17/2015

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Figure 2

O:\2014\PG-103-1409 Springville TMP CIP IFFP IFA\Project Data\GIS\Horrocks\Mxd\17_Area_Map.mxd, 12/17/2015 11:19:27 AM, kevinw

Roadway Network

Transportation planning in the region is a cooperative effort of state and local agencies. All urbanized areas throughout the country are separated into areas called Metropolitan Planning Organizations (MPO), where the responsible agency coordinates transportation planning for the area. The MPO for Utah, Summit and Wasatch Counties is called the Mountainland Association of Governments (MAG). MAG became the MPO for these counties in 1972. Included in this section is an inventory of existing conditions as well as the projected future conditions in 2040.

Existing Conditions

Before projecting traffic into the future, a thorough documentation of the city's existing conditions is necessary. Accurate data within the existing roadway network will ensure that the future traffic projections are as accurate as possible. It also helps evaluate the existing transportation system to address needs within the City. The existing roadway network in Springville City is found in **Figure 4**. The data collected for this TMP update includes:

- **Key Roadway Traffic Volumes**
- **Socioeconomic Conditions**
- **Land Use and Zoning**
- **Roadway Classifications/Widths/Cross Sections**
- **Public Transit Routes**
- **Bicycle/Pedestrian Trails**

This data forms the basis for analyzing the existing transportation system, as well as providing the foundation to project future traffic conditions.

Existing Socioeconomic Conditions

Socioeconomic data used in the transportation analysis was obtained from the City and the Mountainland Association of Governments (MAG). MAG involves Utah, Summit, and Wasatch counties. When estimating future traffic on roadways throughout the county, MAG uses a travel demand model (TDM) that uses specific inputs based on population, existing and future land use, as well as socioeconomic data. This model will be referenced throughout the document as the MAG Travel Demand Model or TDM.

To generate future traffic, the area is split into areas known as Traffic Analysis Zones (TAZ). Each TAZ uses the land use and socioeconomic data to determine how many vehicle trips begin and end within the zone. The MAG Travel Demand Model focuses on traffic on a regional level and has large TAZs. The MAG regional travel demand model was modified within Springville with smaller TAZs to more accurately estimate the travel demand within the City.

Street System

Streets provide for two distinct and competing functions: mobility and land access. As mobility increases, land access decreases and vice versa as shown in **Figure 3**. Both functions are vital and no trip is made without both. In Springville, street facilities are classified by the relative amounts of through and land-access service they provide. There are four primary classifications, with detailed descriptions in **Table 2**:

Local Streets – *Local facilities primarily serve land-access functions. Local Street design and control facilitates the movement of vehicles onto and off the street system from land parcels. Through movement is difficult and is discouraged by both the design and control of this facility.*

Collectors – *Collector facilities, the "middle" classification, are intended to serve both through and land-access functions in relatively equal proportions. For long through trips, such facilities are usually inefficient, nevertheless they are frequently used for shorter through movements associated with the distribution and collection portion of trips.*

Arterials – *Arterial facilities are provided to primarily serve through-traffic movement. While some land-access service may be accommodated, it is clearly a minor function. All traffic controls and the facility design are intended to provide efficient through movement.*

Freeways and Expressways – *Freeway and expressway facilities are provided to service long distance trips between cities and states. No land access is provided by these facilities.*

Roadway functional classification does not define the number of lanes required for each roadway. For instance a collector street may have two or four lanes, whereas an arterial street may have up to nine lanes. The number of lanes is a function of the expected traffic volume on the roadway and serves as the greatest measure of roadway capacity. The roadway network in **Figure 4** is separated into functional classes by access as well as number of lanes.

Figure 3: Mobility vs. Access by Functional Classification

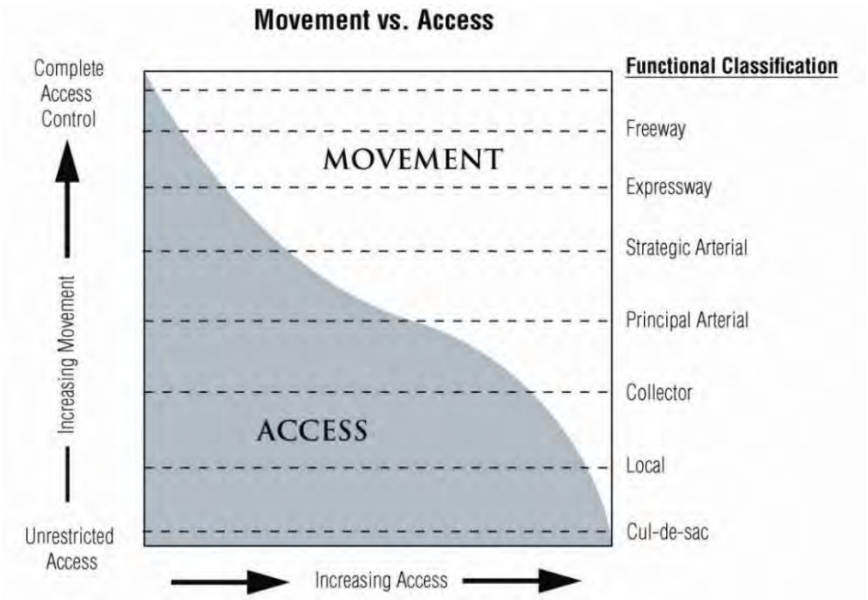


Table 2: Street Functional Classification

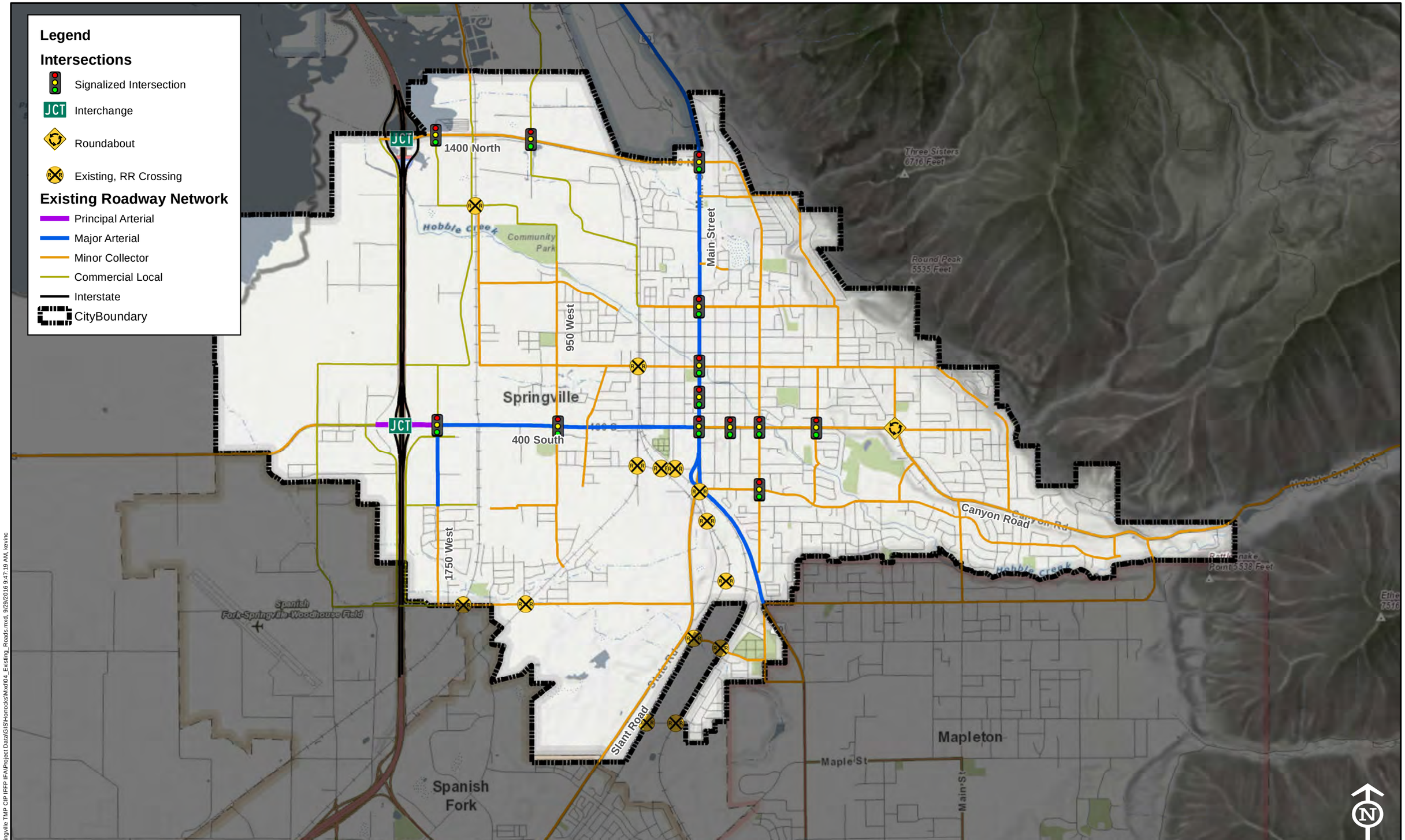
Characteristic	Functional Classification			
	Freeway and Expressway	Arterial	Collector	Local Street
Function	Traffic movement	Traffic movement, land access	Collect and distribute traffic between streets and arterials, land access	Land access
Typical % of Surface Street System Mileage	Not applicable	5-10%	10-20%	60-80%
Continuity	Continuous	Continuous	Continuous	None
Spacing	4 miles	1 mile	Major Collector ½ Mile Minor Collector ⅛ - ¼ Mile	As needed
Typical % of Surface Street System Vehicle-Miles Carried	Not applicable	40-65%	10-20%	10-25%
Direct Land Access	None	Limited: Major Generators Only	Restricted: Some movements prohibited; number and spacing of driveways controlled	Safety controls access
Minimum Roadway Intersection Spacing	Approximately 1 Mile	Approximately ½ Mile	300 feet – ¼ Mile	150 Feet
Speed Limit	55-75 mph	40-50 mph in fully developed areas	30-40 mph	25 mph
Parking	Prohibited	Discouraged	Limited	Allowed
Comments	Supplements capacity of arterial street system & provides high-speed mobility	Backbone of Street System		Through traffic should be discouraged

Roadway Cross Sections

The typical cross-sections for each functional classification in Springville were updated. Ranges for Right of Way (ROW) width as well as pavement width for each functional classification are included in **Table 3**. It is important for Springville to use specific values for each cross-section for future development. The cross-sections can be found in **Appendix A: Typical Cross-Sections**. As these are newly developed cross-sections, the existing roadway network in **Figure 4** may not reflect the new cross-sections. All future development will use these standards.

Table 3: Cross-Sections in Springville

Functional Classification	Number of Lanes	Right-of-Way (ROW)
Principal Arterial	7	118’
Major Arterial with Trail	5	107’
Major Arterial	5	102’
Minor Collector	3	72’
Minor Collector	2	72’
Commercial Local	2	67’
Residential Local	2	59’



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Springville Transportation Master Plan

Existing Functional Class

0.5 0 0.5 Miles

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Figure 4

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Existing Traffic Volumes and Level of Service

The adequacy of an existing street system can be quantified by assigning Levels of Service (LOS) to major roadways and intersections. As defined in the Highway Capacity Manual (HCM), a document published by the Transportation Research Board (TRB), LOS serves as the traditional form of measurement of a roadway's functionality. The TRB identifies LOS by reviewing elements, such as the number of lanes assigned to a roadway, the amount of traffic using the roadway and the time of delay per vehicle traveling on the roadway and at the intersections. Levels of service range from A (free flow where users are virtually unimpeded by other traffic on the roadway) to F (traffic exceeds the operating capacity of the roadway).

Roadway Level of Service

Roadway LOS is used as a planning tool to quantitatively represent the ability of a particular roadway to accommodate the travel demand. LOS D is approximately 80 percent of a roadway's capacity and is a common goal for urban streets during peak hours. Peak hours during the day usually occur from 6:00 AM to 8:00 AM in the morning and 4:00 PM to 6:00 PM in the evening. Typically the PM peak hours have the highest traffic volumes. LOS D was adopted by the Springville City Council with the general plan for system streets (collectors and arterials) as acceptable for future planning and was used in this TMP. Attaining LOS C on these streets would be potentially cost prohibitive and may present societal impacts, such as the need for additional lanes and wider street cross-sections. LOS D suggests that for most times of the day, the roadways will be operating at well below capacity. During peak times of day, the roadway network will likely experience moderate congestion characterized by a higher vehicle density and slower than free flow speeds. **Table 4**, **Table 5**, and **Table 6** were used as guides for quantifying LOS, and, subsequently the conditions of each of the major roadways in the City are based on HCM principles and regional experience. A four-lane freeway facility can accommodate 70,000 vehicles per day at LOS D; adding two additional lanes will increase this threshold by 40,000 vehicles to 110,000 vehicles per day. Arterial streets can handle significantly less traffic at LOS D; a seven lane arterial (6 travel lanes and one center turn lane) can only accommodate approximately 50 percent of the traffic of a freeway of similar lane configuration (55,000 versus 110,000). Similarly, much capacity is lost when reducing the number of arterial lanes by one in each direction, which results in a 17,700 vehicle per day reduction in LOS D capacity. Collector streets are designed at lower speeds than arterials in order to be less intrusive and are not as strictly access-controlled. Again, this results in a loss of capacity when compared to arterial streets. A three lane collector street will be able to move 1,700 less vehicles per day than a three lane arterial street.

Special consideration is needed to determine the capacity of 2 lane collector streets. There are many factors which determine the capacity for roadways. One factor considered is livability. 2 lane Collector streets typically include on street parking, many driveways as well as significant amounts of pedestrian and bicyclist activity. The number of driveways and conflicts due to pedestrians and bicyclists cause increased delay as traffic volumes increase since left turning vehicles do not have a turn lane. To ensure adequate traffic flow, the LOS D capacity for a 2 lane collector is 5,000 vehicles per day. For this reason, Springville has a 2 lane and 3 lane Minor Collector roadway which fit within the same Right-of-Way and pavement width (as shown in **Table 3** and **Appendix A: Typical Cross-Sections**) to minimize the cost to increase lane capacity as traffic volumes grow.

Table 4: Suburban Freeway LOS Capacity Criteria in Vehicles per Day

Lanes	LOS C	LOS D	LOS E
4	60,000	70,000	89,000
6	95,000	110,000	140,000

Source: Utah/Wasatch Front Specific Daily Capacity Estimates; MAG & WFRC

Table 5: Suburban Arterial LOS Capacity Criteria in Vehicles per Day

Lanes	LOS C	LOS D	LOS E
3	11,500	13,000	16,500
5	26,500	30,500	39,000
7	40,000	46,000	59,000

Source: Utah/Wasatch Front Specific Daily Capacity Estimates; MAG & WFRC

Table 6: Suburban Collector LOS Capacity Criteria in Vehicles per Day

Lanes	LOS C	LOS D	LOS E
2	NA	5,000	7,000
3	10,000	11,500	15,000
5	21,500	25,000	31,500

Source: Utah/Wasatch Front Specific Daily Capacity Estimates; MAG & WFRC

Intersection Level of Service

Whereas roadway LOS considers an overall picture of a roadway to estimate operating conditions, intersection LOS looks at each individual movement at an intersection and provides a much more precise method for quantifying operations. Since intersections tend to be a source of bottlenecks in the transportation network, a detailed look into the delay at each intersection should be performed on a regular basis. The methodology for calculating delay at an intersection is outlined in the *Highway Capacity Manual* and the resulting criteria for assigning LOS to signalized and un-signalized intersections are outlined in **Table 7**. As in the case with roadways, LOS D is considered the industry standard for intersections in an urbanized area. LOS D at an intersection corresponds to an average control delay of 35-55 seconds per vehicle for a signalized intersection and 25-35 seconds per vehicle for an un-signalized intersection.

At a signalized intersection under LOS D conditions, the average vehicle will be stopped for less than 55 seconds. This is considered an acceptable amount of delay to experience during the times of the day when roadways are most congested. As a general rule, traffic signal cycle lengths (the length of time it takes for a traffic signal to cycle through each movement in turn) are kept below 90 seconds. An average delay of less than 55 seconds suggests that in most cases, vehicles will not have to wait more than one cycle before proceeding through an intersection.

Un-signalized intersections are generally stop-controlled. In areas where there is a major street, the intersection may be two-way stop-controlled where the minor street traffic must stop. In cases where traffic volumes are more evenly distributed or where sight distances may be limited, four-way stop-controlled intersections are common. LOS for an un-signalized intersection is assigned based on the average control at the worst approach (always a stopped approach) of the intersection. An un-signalized

intersection operating at LOS D means that the average vehicle waiting at one of the stop-controlled approaches will wait no longer than 35 seconds before proceeding through the intersection. This delay may be caused by large volumes of traffic on the major street resulting in fewer gaps in traffic for a vehicle to turn into, or from queued vehicles waiting at the stop sign.

Table 7: Signalized and Unsignalized Intersection LOS Criteria

Level of Service	Signalized Intersections Average Control Delay (sec/veh)	Unsignalized Intersections Average Control Delay (sec/veh)
A	≤ 10	≤ 10
B	> 10 - 20	> 10 - 15
C	> 20 - 35	> 15 - 25
D	> 35 - 55	> 25 - 35
E	> 55 - 80	> 35 - 50
F	> 80	> 50

Note: LOS for unsignalized intersections is measured for the worst approach only

Existing Operating Conditions

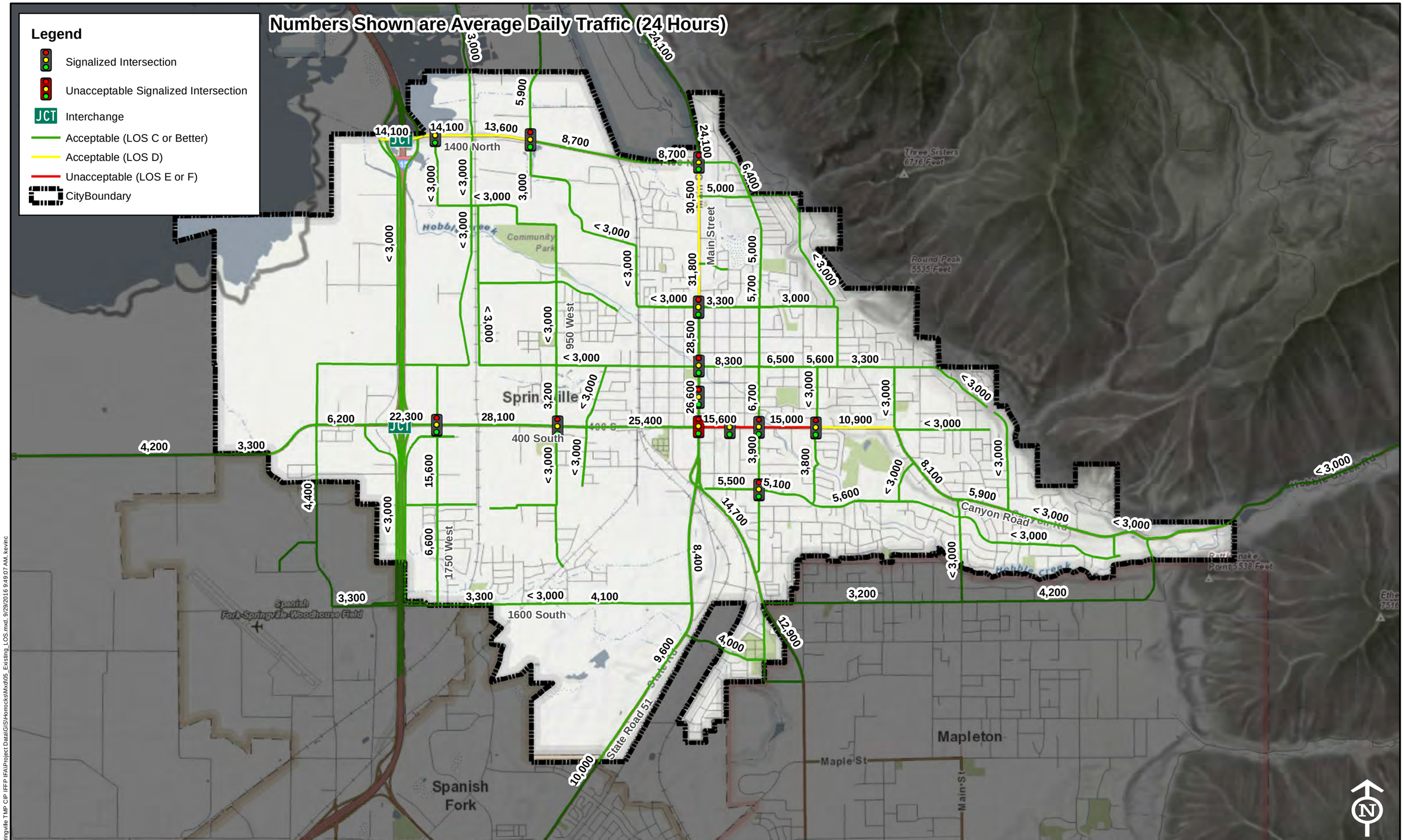
Using the methodologies above, the LOS for the existing network was found. The results are shown in **Figure 5** with acceptable roads and intersections represented in green and unacceptable roads represented in red. Roadways represented in yellow signify an acceptable roadway or intersection at LOS D. Roadways and intersections presently operating at LOS D have been included to alert the City to areas where mitigation efforts may be needed in the near future. The following roadways from **Figure 5** are at LOS D or experience unacceptable conditions currently:

LOS D (Acceptable)

- **1400 North** (I-15 to 1100 West)
- **Main Street** (1400 North to Center Street)
- **400 South** (Brookside Drive to Canyon Road)

LOS E or Worse (Unacceptable)

- **400 South** (Main Street to Brookside Drive)
- **400 South & Main Street** (Traffic Signal)



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Springville Transportation Master Plan

Existing Level of Service

0.5 0 0.5 Miles

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Figure 5

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Future Conditions

Future Socioeconomic Conditions

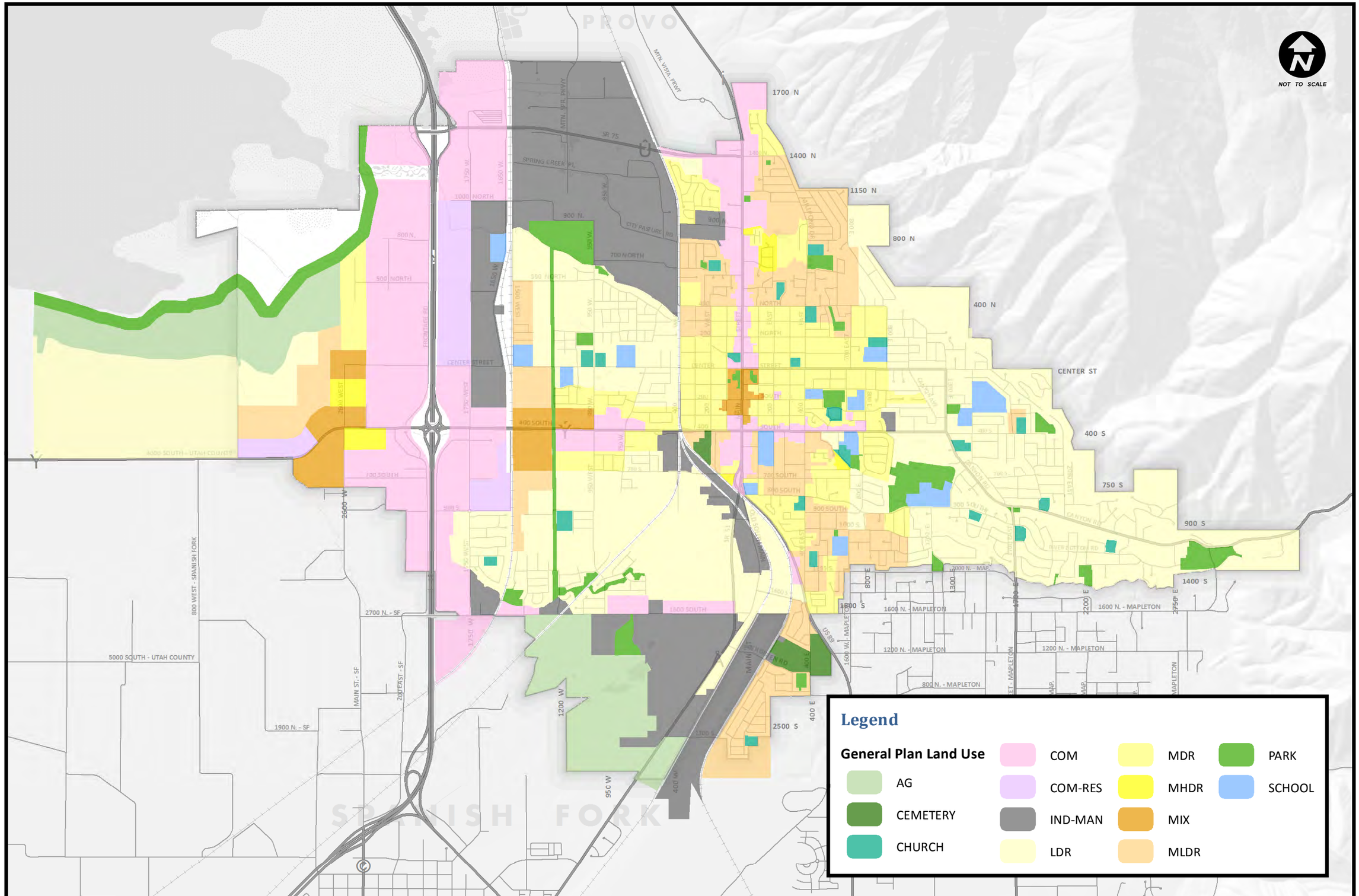
The majority of the projected socioeconomic data used in this study comes from the MAG travel demand model, which is based on the best available statewide data provided by the Governor's Office of Planning and Budget (GOPB). This data was supplemented and verified using the data provided by the City in the form of the adopted Land Use Plan shown in **Figure 6**. The current zoning map for Springville includes a variety of uses, including agriculture, residential, industrial manufacturing, commercial, and business. The information provided is considered the best available for predicting future travel demand. However, land use planning is a dynamic process and the assumptions made in this report should be used as a guide and should not supersede other planning efforts particularly when it comes to localized intersections and roadways.

Transportation planning in the region is a cooperative effort of state and local agencies. MAG is responsible for coordinating this transportation planning process in the Summit, Wasatch, and Utah County urbanized areas as the designated Metropolitan Planning Organization (MPO). Metropolitan Planning Organizations are agencies responsible for transportation planning in urbanized areas throughout the United States. The Governor designated MAG as the Metropolitan Planning Organization for Utah County, Summit County, and Wasatch County.

Travel Model Development

Projecting future travel demand is a function of projected land use and socioeconomic conditions. The MAG Travel Demand Model was used to predict future traffic patterns and travel demand. The travel demand model was modified to reflect better accuracy through the Springville area by creating smaller TAZs and a more accurate and extensive roadway network. Existing conditions were simulated in the travel demand model and compared to the observed traffic count data to get a reasonable base line for future travel demand. Once this effort was completed, future land uses and socioeconomic data was input into the model to predict the roadway conditions for the design year 2040. 2040 was selected as the design year in order to be consistent with the MAG planning process. The 2040 Metropolitan Transportation Plan, TransPlan40, (available at www.mountainland.org) was adopted by the Mountainland MPO Regional Planning Committee in 2016. TransPlan40 is a guide to maintain and enhance the regional transportation system for urbanized Utah County.

General Plan Land Use



Projected Traffic Volumes and Conditions

The resulting outputs of the travel demand model were made up of traffic volumes on all of the classified streets in the City and surrounding area. This data was used to identify the need for future roadway improvements to accommodate the projected growth in the City. The following two scenarios were analyzed in detail to assess the travel demand and resulting network performance in the City:

- No-Build
- Recommended Roadway Network
    - MAG Regional Transportation Plan (TransPlan40)
    - Additional Projects

No-Build Conditions

A no-build scenario is intended to show what the roadway network would be like in the future if no action were taken to improve the City roadway network. The travel demand model was again used to predict this condition by applying the future growth and travel demand to the existing roadway network. As shown in **Figure 7**, if no improvements are made to Springville's transportation infrastructure, projected traffic volumes for the planning year 2040 will significantly worsen the LOS of many of the major streets and intersections throughout the city. The following list includes the streets expected to perform at LOS D or worse:

LOS D (Acceptable)

- **1400 North** (1200 West to Main Street)
- **Main Street** (Northern Border to 1400 North)
- **Center Street** (Main Street to 700 East)
- **400 South** (I-15 to 1750 West)
- **400 South** (Western Border to 2600 West)
- **400 South** (Brookside Drive/800 East to Canyon Road)
- **Canyon Road** (400 South to 1700 East)
- **1600 South** (1200 West to 950 West)
- **950 West** (400 South to Center Street)
- **2600 West** (Center Street to Southern Border)
- **SR-51** (5400 South to Southern Border)

LOS E or Worse (Unacceptable)

- **1400 North** (I-15 to 1200 West)
- **1200 West** (Northern Border to Spring Creek Road)
- **Main Street** (1400 North to 700 South)
- **950 West** (550 North to Center Street)
- **400 South** (2600 West to I-15 & 1750 West to Brookside Drive/800 East)
- **1600 South** (1750 West to 1200 West)
- **State Street (SR-51)** (1600 South to 5400 South)
- **1400 North (SR-75) & 1750 West** (Traffic Signal)
- **1400 North (SR-75) & 1100 West** (Traffic Signal)
- **Center Street & 400 East** (Stop Controlled Intersection)
- **400 South & 2600 West** (Stop Controlled Intersection)

- **400 South & 950 West** (Traffic Signal)
- **400 South & Main Street** (Traffic Signal)
- **400 South & 400 East** (Traffic Signal)
- **1600 South & 1750 West** (Stop Controlled Intersection)
- **1600 South & State Street** (Stop Controlled Intersection)
- **State Street & Evergreen Drive** (Stop Controlled Intersection)
  Canyon Road & 620 East (Stop Controlled Intersection)
- **900 South & 800 East** (Stop Controlled Intersection)
- **900 South & 1350 East** (Stop Controlled Intersection)

Based on the number of roadways at LOS D and worse, there are a significant amount of capacity improvements necessary for 2040.

Recommended 2040 Roadway Conditions

Improvements will need to be made as growth continues in Springville in order to preserve the quality of life and to maintain an acceptable LOS on city streets and intersections. These improvements will also provide a sound street system that will support the city's growing economic base.

Signals will also need to be monitored and updated as conditions change. It is recommended that the signalized intersections in the city be regularly monitored and signal timings adjusted as needed to maintain acceptable operating conditions. Additionally, care should be taken to regularly monitor the non-signalized intersections in the city and, where appropriate, studies should be completed to determine the best mitigation for the intersection. The most common mitigations to failing non-signalized intersections are roundabouts and traffic signals. For each intersection, both roundabout and traffic signal mitigations should be investigated and studied to determine the best alternative. Funding sources for signals and roundabouts should be explored and may include general funds, impact fees, where appropriate, and/or a special transportation improvement fund.

The future analysis in Springville can be split into two sections. The first are regional projects included in MAG's TransPlan40. These projects may be funded by MAG with a 6.77% match by Springville. After determining where the improvements occur after the addition of the MAG projects, the second section includes the rest of the projects necessary to improve the roadway network to LOS D or better.

Regional Transportation Plan

Springville is not alone in improving the roadway network. MAG, in cooperation with UDOT, provides financial assistance for projects included in their Regional Transportation Plan (RTP) as shown in **Figure 8**. If the roadway is included on the RTP and is owned and operated by UDOT, full financial responsibility falls to UDOT. It is important for Springville to include these projects in this TMP as well as coordinate with UDOT to ensure these projects are implemented. If the roadway is on the RTP and not owned by UDOT, Springville must match 6.77% of the project cost. The projects in Springville included on the RTP are shown in **Figure 8** and the following is a list of the RTP projects to be completed in various phases and an interactive map can be viewed on MAG's website ***www.mountainland.org***:

Phase 1 (2015-2024)

- **Springville 1200 West**
  - Provo 1860 South to US-6
  - New 5 lane road (widen existing portions)
- **Springville 1400 North**
  - I-15 Freeway to Springville Main Street
  - Widen to 5 lanes, 2 bridges reconstructed, add trail
- **Springville 400 South**
  - I-15 Freeway to 2600 West (Spanish Fork Main Street)
  - Widen to 5 lanes
- **Springville 400 South**
  - Springville Main Street to 400 East
  - Widen to 4 lanes, additional turn lanes at Main Street
- **Springville Main Street/US-89/SR-51 Interchange**
  - Reconstruct interchange
- **I-15/Springville 1600 South/Spanish Fork 2700 North Interchange**
  - New Interchange
- **Springville 1600 South/ Spanish Fork 2700 North**
  - Spanish Fork Main Street to US-89
  - New and widen to 4 lanes, new railroad bridges

Phase 3 (2035-2040)

- **Springville 400 South**
  - I-15 Freeway to Springville 950 West
  - Widen to 6 lanes

To indicate the impacts of the RTP projects, these projects from **Figure 8** were added to the future travel demand model to determine how the roadway network improves. This is necessary as major roadway changes will occur in Springville, specifically the new interchange at 1600 South and I-15. Since this interchange will attract traffic serving the southern half of the City, the vehicles currently using 400 South will use 1600 South to travel east/west through Springville.

Only the RTP projects were added to the travel demand model. The LOS is represented in **Figure 9** and the following roads perform at LOS D or at LOS E or worse.

LOS D (Acceptable)

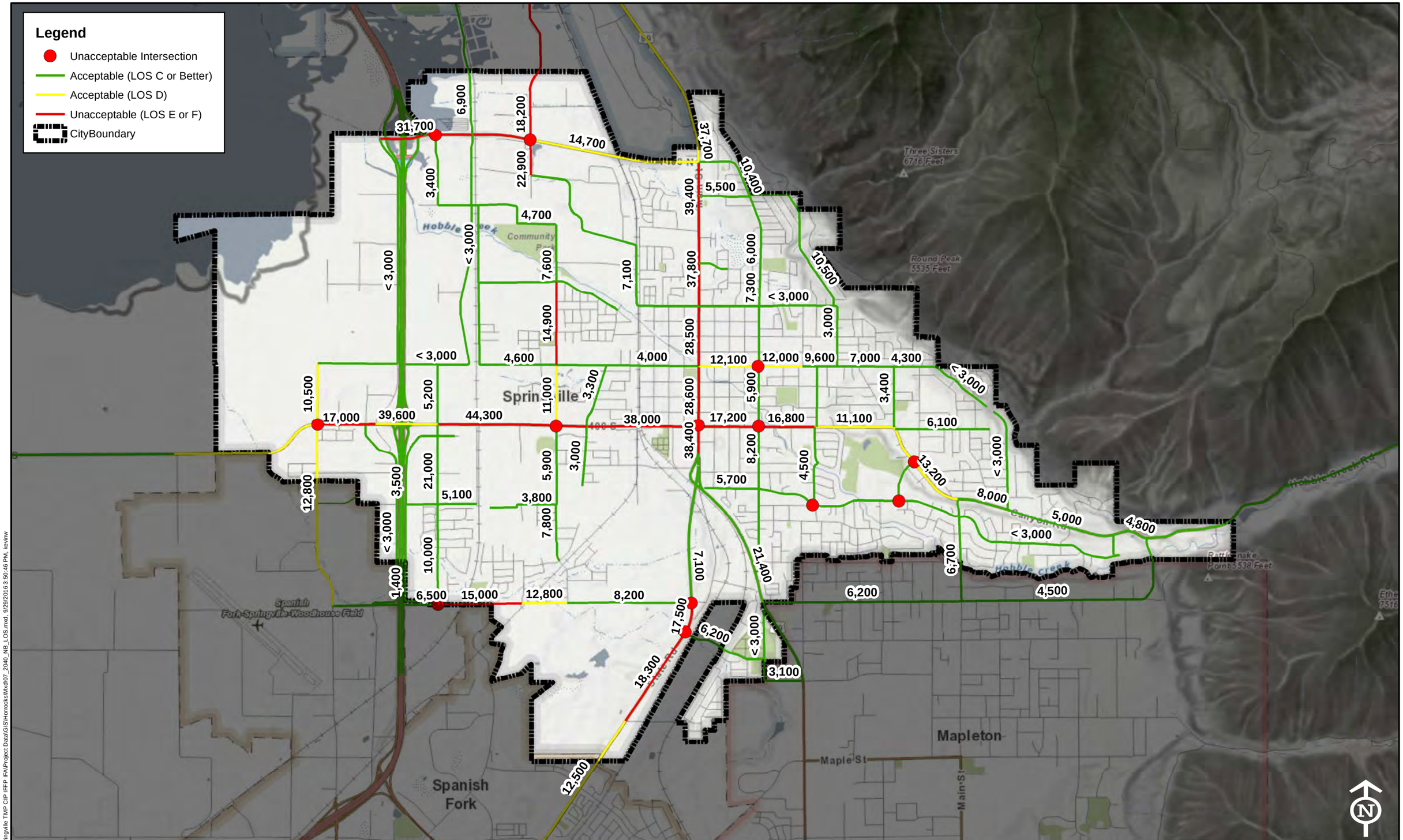
- **400 South** (I-15 to Main Street)
- **1100 West** (Northern Border to 1400 North)
- **Canyon Road** (400 South to 1700 West)

LOS E or Worse (Unacceptable)

- **Main Street** (Northern Border to 400 South)
- **State Street** (SR-51) (1600 South to Southern Border)
- **Center Street & 400 East** (Stop Controlled Intersection)
- **400 South & 400 East** (Traffic Signal)
- **State Street & Evergreen Drive** (Stop Controlled Intersection)

Additional Projects

The improvements for the roadways at LOS E or worse from the RTP LOS map (**Figure 9**) need to be addressed by the City and incorporated into this TMP in order to receive any additional funding where possible. **Figure 9** acts as a base to plan additional projects not included in the MAG RTP. These projects along with improvement projects that need to be addressed are those of connectivity, frontage roads, crossings and traffic signals make up the additional projects necessary to maintain an acceptable level of service. **Figure 10** shows all the additional projects included in the TMP. A full projects list is shown in **Table 8** on page 39.



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Springville Transportation Master Plan

2040 No Build Level of Service

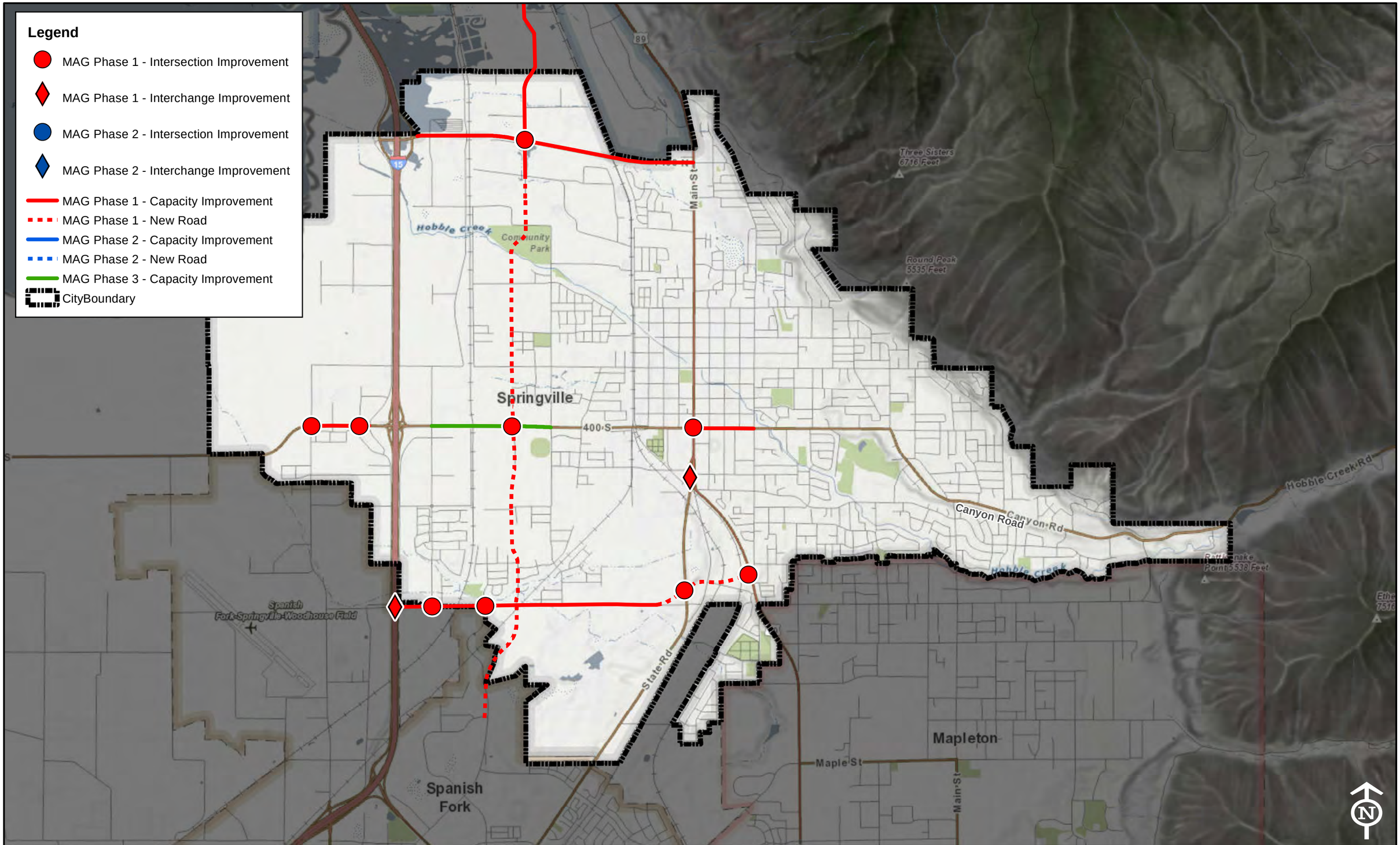
0.5 0 0.5 Miles

DATE 9/29/2016

DRAWN KJC

Figure 7

O:\!2014\PG-103-1409 Springville TMP CIP IFFP IFA\Project Data\GIS\Horrocks\Mxd\07_2040_NB_LOS.mxd, 9/29/2016 3:50:46 PM, kevinw



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Springville Transportation Master Plan

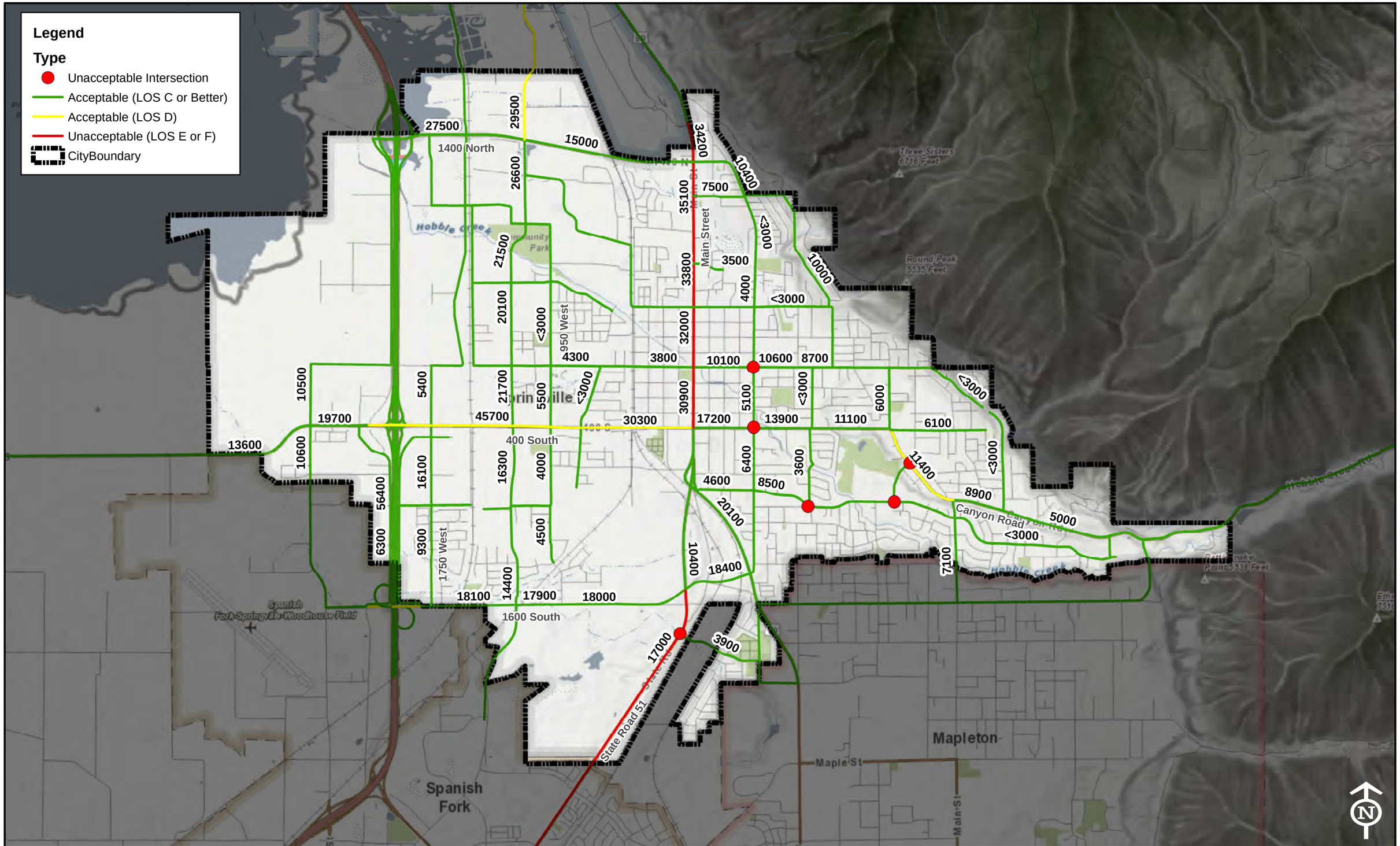
2040 RTP Projects

0.5 0 0.5 Miles

DATE 9/29/2016

DRAWN TRB

Figure 8



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Springville Transportation Master Plan

2040 RTP Level of Service

0.5 0 0.5 Miles

DATE 7/20/2016

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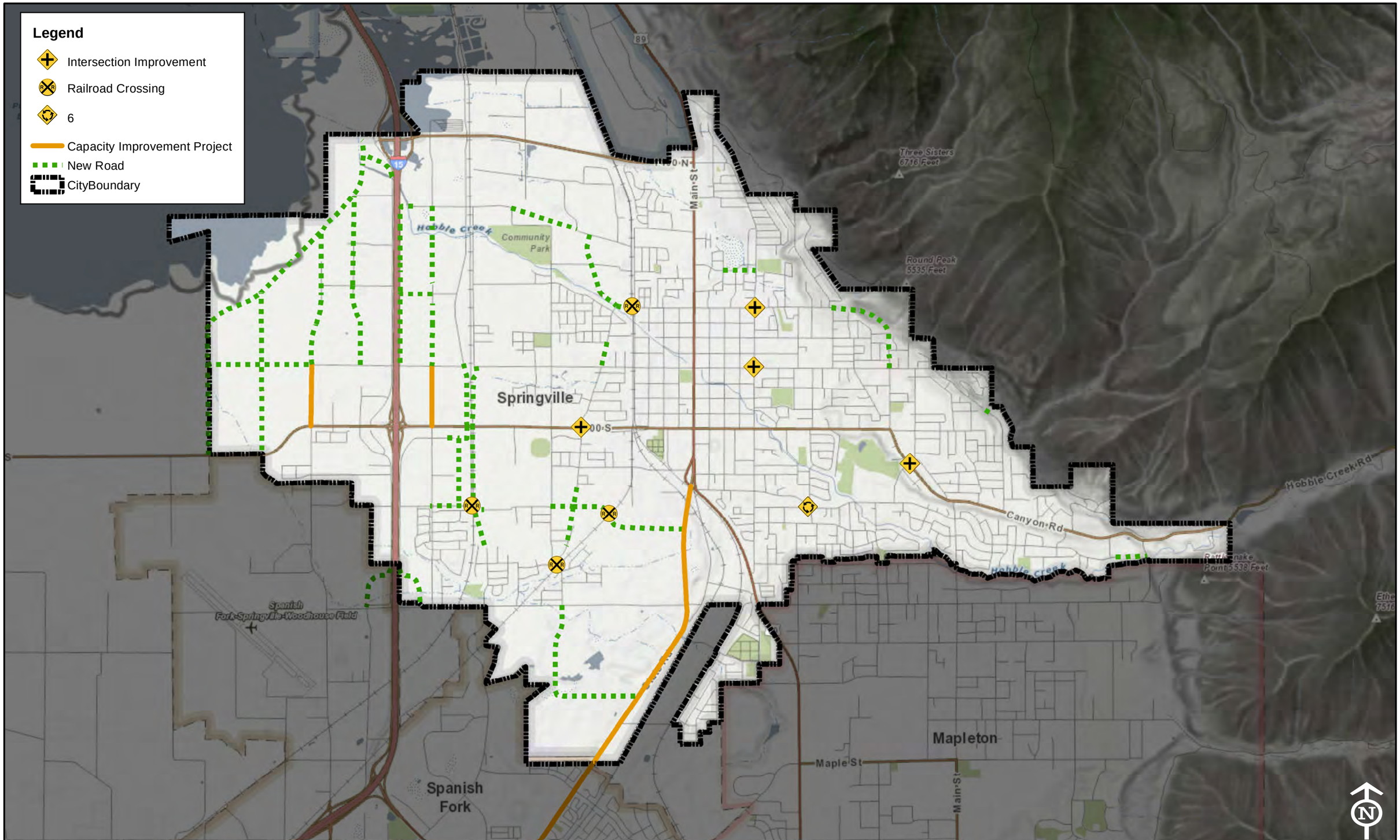
Figure 9



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Springville Transportation Master Plan

2040 Additional Projects

0.5 0 0.5 Miles

DATE 9/29/2016

DRAWN TRB

Figure 10

With all projects included, **Figure 11** and **Figure 12** show the proposed 2040 roadway network and LOS with all future projects (including MAG RTP projects) respectively. The following roadways perform at LOS D or worse in the 2040 proposed roadway network:

LOS D (Acceptable)

- **1200 West** (Northern Border to 400 South)
- **Main Street** (700 South to 900 North)
- **Center Street** (400 East to 700 East)
- **Canyon Road** (400 South to 1700 East)
- **400 South** (West Frontage Road to 1750 West & 950 West to Main Street)
- **1600 South** (I-15 to 1200 West)

LOS E or Worse (Unacceptable)

- **Main Street** (Northern Border to 900 North)

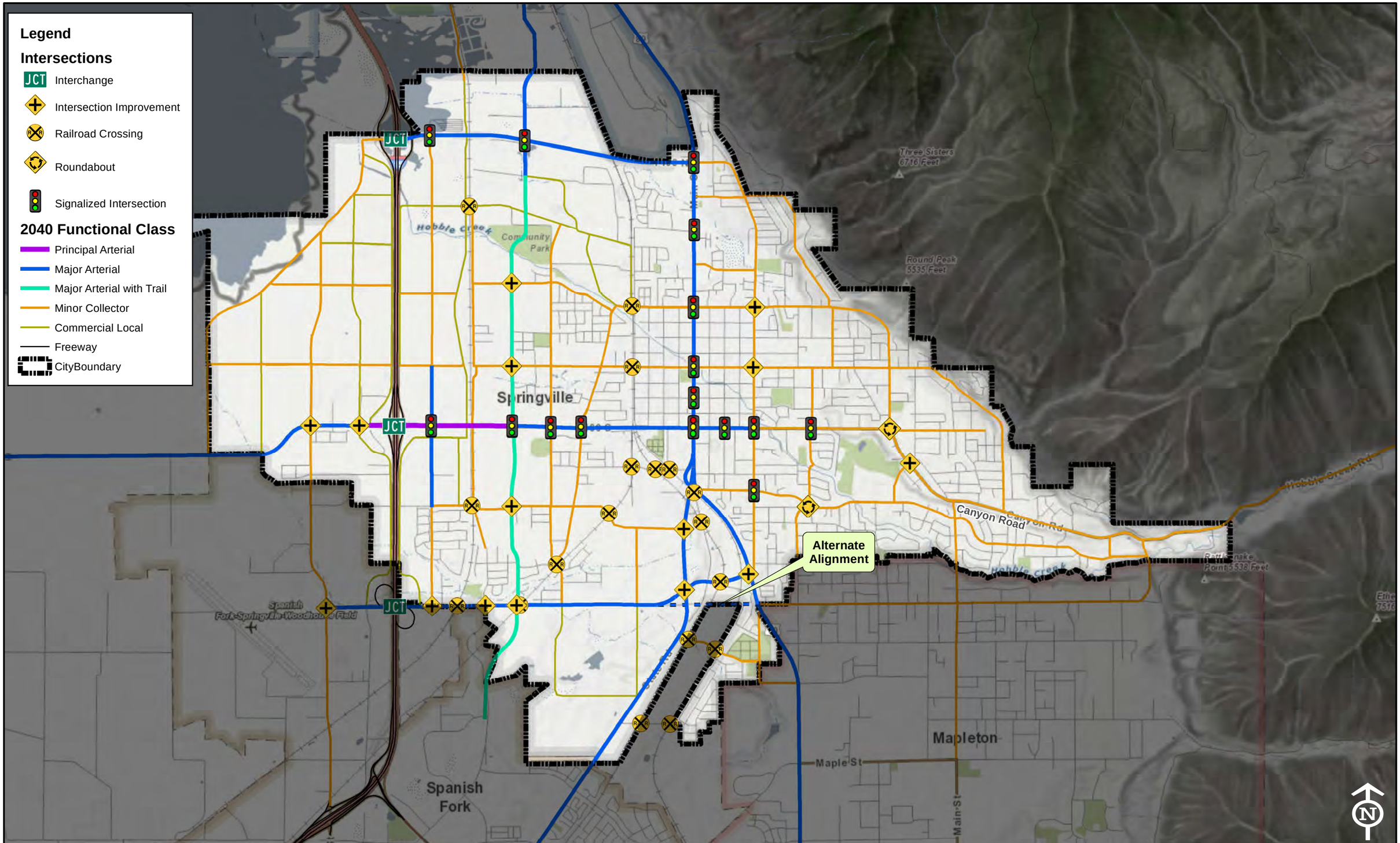
Although the goal of this TMP is to improve the entire roadway network to LOS D or better, there are circumstances where additional lanes are not possible. Main Street is a five lane, UDOT owned corridor with many businesses. To increase to seven lanes would impact all the businesses along the corridor. Therefore, it is not in the best interest of the City to encourage UDOT to widen Main Street and displace the businesses along the corridor.

1200 West Alignment

The alignment for the proposed 1200 West roadway is near the north/south power corridor which runs through the city. The alignment for 1200 West shown on **Figure 11** is an approximate location for the roadway. There are three potential alignments to best serve the future development as well as maintain the proper distance from the power corridor:

- **East of the Power Corridor** (both travel directions east of the power corridor)
- **West of the Power Corridor** (both travel directions west of the power corridor)
- **Both Sides of Power Corridor** (NB lanes to the east and SB lanes to the west of power corridor)

1200 West will be designed in phases based on development within the City. When each phase is built, the location of the roadway will be determined based on the type of development as well as any Right-of-Way constraints due to the power corridor.



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Springville Transportation Master Plan

2040 Build Roadway Network

0.5 0 0.5 Miles

DATE 9/20/2016

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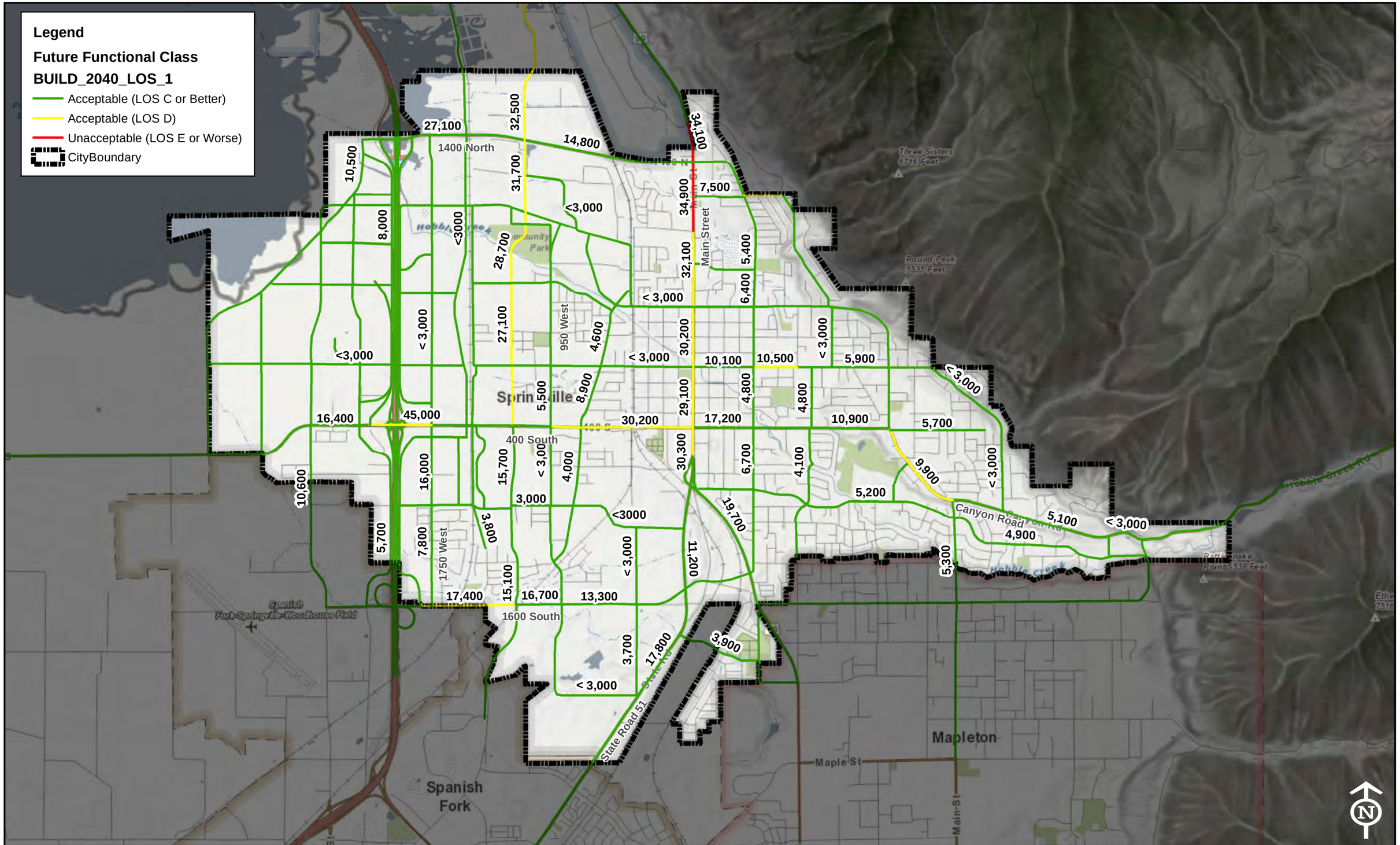
Figure 11



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Springville Transportation Master Plan

2040 Build Level of Service

0.5 0 0.5 Miles

DATE 9/15/2016

DRAWN TRB

Figure 12

Alternative Modes of Transportation

Existing Alternative Transportation Modes

Accommodating alternative modes of transportation is a vital consideration when planning a livable and sustainable community. As a vibrant and growing city, it is important for Springville to continue to plan for improved transit, trails, and pedestrian facilities. These facilities will improve the overall quality of life of the residents while aiding in congestion relief and increasing the lifespan of the City's roadway network.

Pedestrian and Bicycle

Pedestrian and bicycle safety is an important feature of any transportation master plan. People will be more inclined to walk or ride their bicycle when the experience is pleasant, they feel safe, and distances are reasonable. The following descriptions of bicycle-related terms are provided to assist readers who are unfamiliar with bicycle terminology. The terms bicycle and bike are used interchangeably. **Figure 13** shows the existing and future pedestrian and bike paths in Springville.

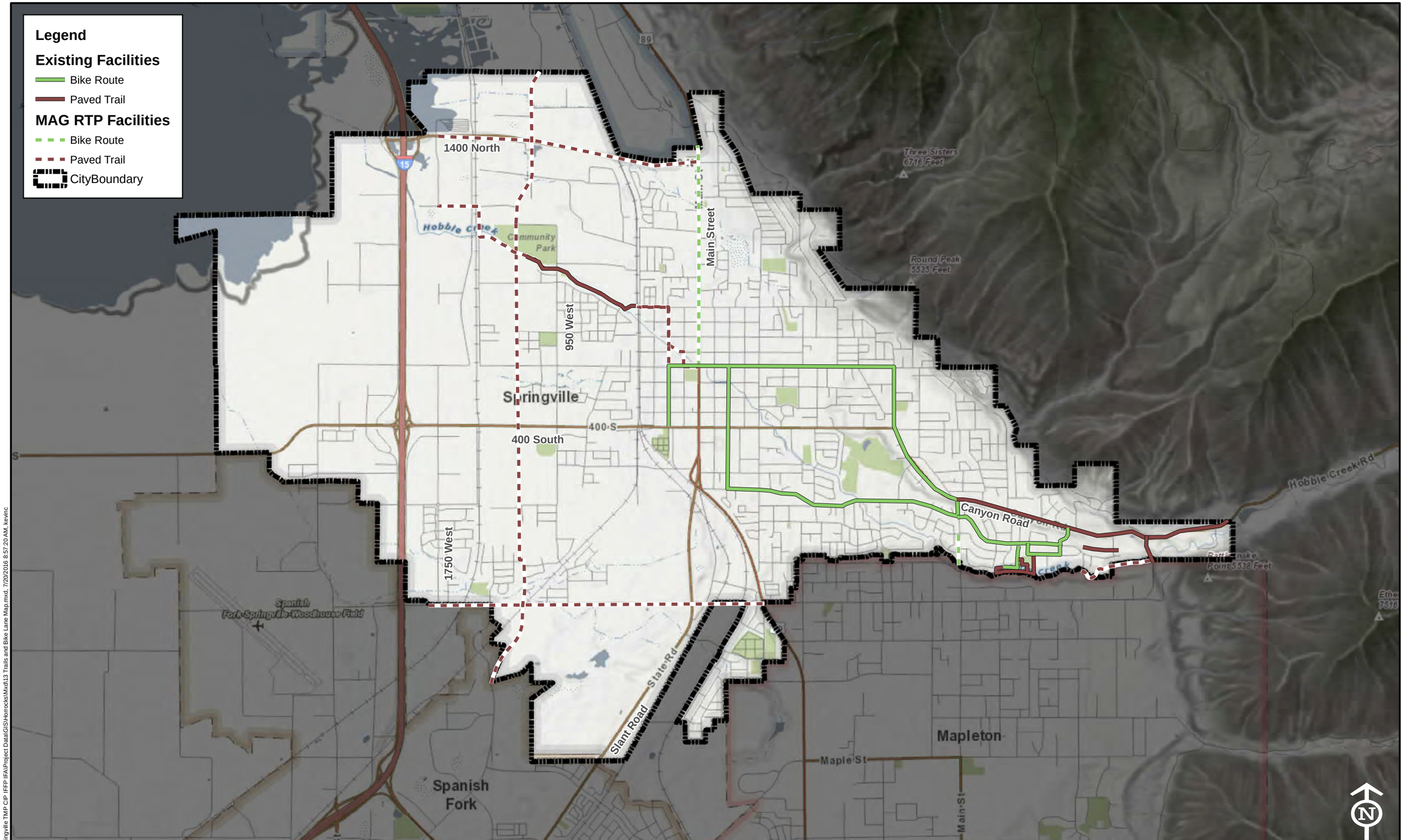
- **Bikeway** - A thoroughfare suitable for bicycles - it may either exist within the right-of-way of other modes of transportation, such as highways, or along a separate and independent corridor.
- **Bicycle Facilities** - A general term denoting improvements and provisions to accommodate or encourage bicycling, including parking facilities, maps, all bikeways, and shared roadways.
- **Bicycle or Multi-use Path (Bike Path)** - A bikeway physically separated from motorized vehicular traffic and either within the highway right-of-way or within an independent right-of-way. Bike path facilities are often excellent recreational routes and can be developed where right-of-way is available. Typically, bike paths are a minimum of 10 feet to 12 feet wide, with an additional graded area maintained on each side of the path.
- **Bicycle Lane (Bike Lane)** - A portion of a roadway that has been designated by striping, signing, and pavement markings for the preferential or exclusive use of bicyclists. Bike lanes are ideal for minor thoroughfares or collectors. Under certain conditions, bike lanes may be beneficial on streets with significant traffic volumes and/or speeds. Under ideal conditions, minimum bike lane width is five feet.
- **Signed Bike Route** - A segment of a system of bikeways designated by appropriate directional and/or informational signs. In this plan, a signed bike route may be a local or residential street, Bicycle Boulevard, an arterial with wide outside lanes, or a roadway with a paved shoulder.
- **Paved Shoulder** - The part of the highway that is adjacent to the regularly traveled portion of the highway, is on the same level as the highway, and when paved can serve as a bikeway. Paved

shoulders should be at least four feet wide, and additional width is desirable in areas where speeds are high and/or a large number of trucks use the roadway.

- **Wide Outside Lane** - An outside (curb) lane on a roadway that does not have a striped bike lane, but is of sufficient width for a bicyclist and motorist to share the lane with a degree of separation. A width of 14 feet is recommended to safely accommodate both motor vehicles and bicycles.
- **Bicycle Boulevard** - A residential street that has been modified for bicyclist safety and access.

The Mountainland Association of Governments, in conjunction with the communities of Springville, Mapleton, Salem, Spanish Fork, Woodland Hills, Elk Ridge, Payson, and Santaquin, is developing an Active Transportation Plan to improve bicycling and walking in South Utah County. The Plan will address walking and biking for both transportation and recreation through improvements to trails and on-street facilities. The Plan began in July 2015 and will be completed by the summer of 2016. The goals of this plan are found online at ***http://bikewalksutahco.com/*** and are listed below:

- **Develop well-used active transportation facilities**
- **Create regional connections and routes**
- **Create collaborative energy and a shared vision between municipalities and others**
- **Develop design and maintenance standards**
- **Institutionalize trails as integral to our growth and future**



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Springville Transportation Master Plan

Trails and Bike Lanes Map

0.5 0 0.5 Miles

DATE 7/20/2016

DRAWN KJC

Figure 12

O:\2014\PG-103-1409 Springville TMP CIP IFFP IFA\Project Data\GIS\Horrocks\Mxd\13 Trails and Bike Lane Map.mxd, 7/20/2016 8:57:20 AM, kevinc

Transit Service

The Utah Transit Authority (UTA) is the provider of public transportation throughout the Wasatch Front. UTA operates fixed route buses, express buses, bus rapid transit (BRT), ski buses, light rail, and commuter rail. In this capacity, UTA is responsible for the operation of the transit network in Springville. It is the responsibility of both Springville and UTA to cooperate to provide transit planning to accommodate alternative transportation options to residents as demand increases. Currently, two UTA bus routes have stops in Springville. Route 821 begins at the Provo FrontRunner Station and ends in Payson, and Route 822 begins at Utah Valley University and ends in Payson. Both have stops at 900 North and Main and 400 South and Main in Springville.

The combined efforts of the Utah Transit Authority (UTA), UDOT, MAG, and Springville will largely dictate the nature of a future expanded transit system. The following sections describe planned improvements as well as recommendations for the transit system in Springville.

Local Bus Routes

There are many opportunities for transit service enhancements in Springville. As new roads are built and the population expands, it will be necessary for UTA to provide service to these new corridors.

It is recommended that more frequent and additional bus routes be considered and that the City meet with UTA to decide bus stop locations, frequency, better signage, and shelter alternatives. Attention should also be given to ensure that bus stops are in compliance with the Americans with Disabilities Act (ADA).

Bus Rapid Transit (BRT)

Other enhancements to bus service will be through the implementation of Bus Rapid Transit (BRT). BRT is a way to provide a higher level of service similar to that of a rail system without the high capital costs of a rail system. There are a number of ways in which a BRT system can be implemented and by which bus service is made more efficient by reducing travel time and delay. One of the simplest forms of BRT is to provide transit priority at traffic signals. Through this technology, the traffic signal timing is adjusted by extending the green phase for approaching buses so there is a greater chance for the bus to make it through the intersection without stopping. Another BRT enhancement is to provide queue jumper lanes for buses. These are essentially right turn lanes that are available for through buses to use. The bus can then travel past the queue in the through lanes to the stop bar. This is typically used in conjunction with transit priority at the traffic signal, in which the bus can proceed through a green light before other vehicles, so the bus can get a head start.

More advanced BRT systems include exclusive bus-only travel lanes, similar to a light rail system. The system has regularly spaced bus stations and operates just like a rail system. With lower construction costs and lack of a fixed guide way, these systems are more flexible than traditional light rail.

According to MAG's Metropolitan Transportation Plan, a BRT system is planned to run from Provo to Spanish Fork, traveling through Springville. This is a Vision project, meaning it is unfunded as seen in **Figure 14**.

Commuter Rail: FrontRunner

The most recent addition to the Utah statewide transit system is UTA's FrontRunner commuter rail line. The line connects Davis, Weber, Salt Lake, and Utah counties with stations along the Wasatch Front. Many stations have a connection to the TRAX and bus networks. FrontRunner is a push/pull locomotive system, which can travel up to 79 miles per hour. Future planned expansions will add service to Brigham City in the north and Payson in the South. Part of the MAG plan, includes a FrontRunner line connecting Provo to Payson. This line passes through and has a stop in Springville (located just north of 400 South on 1500 West) and is included as a phase 2 project (2025-2034).

An essential consideration of a good transportation system is the ability to seamlessly transfer from one transportation mode to the next. This could be from car to commuter rail, bike to bus, or foot to light rail. Each of these transfers must be accomplished efficiently in order for a transit system to be attractive to users. One way to accomplish exceptional connectivity is with an intermodal center. Intermodal centers are transit hubs where multiple modes of transportation converge and passengers enter using one form of transportation and leave by another. Transfers can occur between as many modes as the physical space can permit. The future FrontRunner station in Springville has the potential to provide this connectivity. In the future, other pieces of the transportation system may be added to this area.

Transit

TransPlan40

Regional Transportation Plan
2015-2040 Plan for the Provo/Orem Metropolitan Area

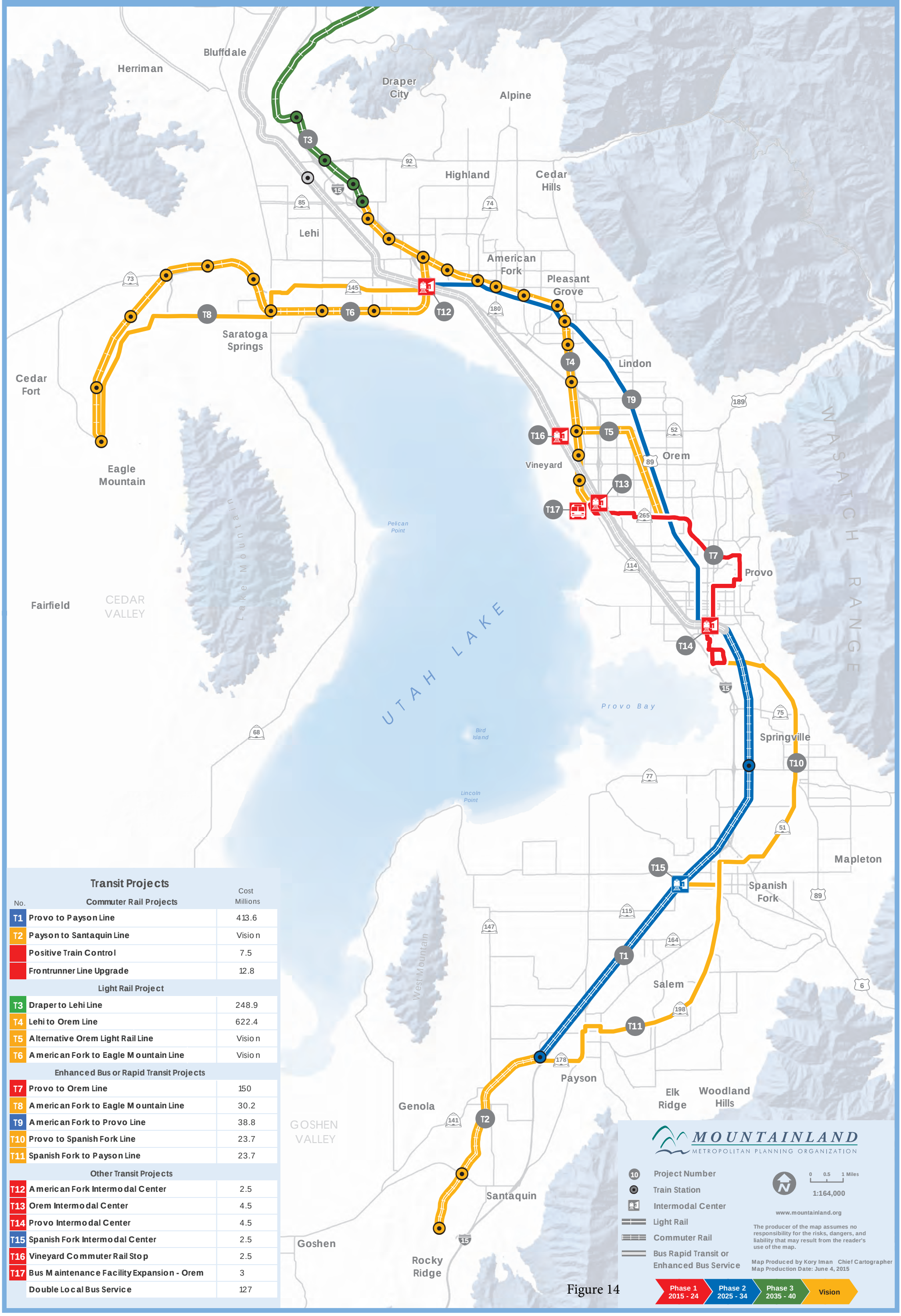


Figure 14

Transit Projects

No.	Commuter Rail Projects	Cost Millions
T1	Provo to Payson Line	413.6
T2	Payson to Santaquin Line	Vision
	Positive Train Control	7.5
	Frontrunner Line Upgrade	12.8
	Light Rail Project	
T3	Draper to Lehi Line	248.9
T4	Lehi to Orem Line	622.4
T5	Alternative Orem Light Rail Line	Vision
T6	American Fork to Eagle Mountain Line	Vision
	Enhanced Bus or Rapid Transit Projects	
T7	Provo to Orem Line	150
T8	American Fork to Eagle Mountain Line	30.2
T9	American Fork to Provo Line	38.8
T10	Provo to Spanish Fork Line	23.7
T11	Spanish Fork to Payson Line	23.7
	Other Transit Projects	
T12	American Fork Intermodal Center	2.5
T13	Orem Intermodal Center	4.5
T14	Provo Intermodal Center	4.5
T15	Spanish Fork Intermodal Center	2.5
T16	Vineyard Commuter Rail Stop	2.5
T17	Bus Maintenance Facility Expansion - Orem	3
	Double Local Bus Service	127

Other Elements of the Transportation Master Plan

Intelligent Transportation Systems

Intelligent Transportation Systems (ITS) refers to the increased use of technology and communication methods to improve traffic operations. Pavement detectors, traffic cameras and weather sensors are used to gather constant information about traffic flow conditions along corridors or at intersections. This information may be relayed to a traffic control center where operators can change traffic signal timing plans or post messages on variable message signs. All of the traffic signals located on UDOT owned roadways are connected to the new fiber optic network called Max View.

Traffic Signal Coordination

Traffic signal coordination is another ITS method that is used to improve traffic operations and efficiency. Traffic signal timing and phasing improvements generally improve all traffic flow but can also be used to favor high-occupancy vehicles or buses. Some ways in which signal timing can be used to favor transit include transit pre-emption and priority. Transit pre-emption means that as a transit vehicle approaches an intersection the signal timing is interrupted to accommodate the transit vehicle. This interrupts the signal coordination of a corridor or network and as such is generally not recommended. Transit priority allows traffic signals to adjust their phasing to give priority to transit vehicles without interrupting the overall traffic signal timing plan.

Access Management

Access management is a term that refers to providing and managing access to land development while maintaining traffic flow and being attentive to safety issues. It includes elements such as driveway spacing, signal spacing, and corner clearance. Access management is a key element in transportation planning, helping to make transportation corridors operate more efficiently and carry more traffic without costly road widening projects. Access management offers local governments a systematic approach to decision-making, applying principles uniformly, equitably, and consistently throughout the jurisdiction. It is recommended that the City adopt an Access Management Program.

Principles of Access Management

Constantly growing traffic congestion, concerns over traffic safety, and the ever increasing cost of upgrading roads have generated interest in managing the access to not only the highway system, but to surface streets as well. Access management is the process that provides access to land development while simultaneously preserving the flow of traffic on the surrounding road system in terms of safety,

capacity, and speed. Access management attempts to balance the need to provide good mobility for through traffic with the requirements for reasonable access to adjacent land uses.

Arguably the most important concept in understanding the need for access management is to understand that movement of traffic and access to property are competing priorities. No facility can move traffic very well and provide unlimited access at the same time. The extreme examples of this concept are the freeways and the cul-de-sac. The freeway moves traffic very well with few opportunities for access, while the cul-de-sac has unlimited opportunities for access, but doesn't move traffic very well. In many cases, accidents and congestion are the result of streets trying to serve both mobility and access at the same time.

A good access management program will accomplish the following:

- **Limit the number of conflict points at driveway locations.**
- **Separate conflict areas.**
- **Reduce the interference of through traffic.**
- **Provide sufficient spacing for at-grade, signalized intersections.**
- **Provide adequate on-site circulation and storage.**

Access management attempts to put an end to the seemingly endless cycle of road improvements followed by increased access, increased congestion, and the need for more road improvements.

Poor planning and inadequate control of access can quickly lead to an unnecessarily high number of direct accesses along roadways. The movements that occur on and off roadways at driveway locations, when those driveways are too closely spaced, can make it very difficult for through traffic to flow smoothly at desired speeds and levels of safety. The American Association of State Highway and Transportation Officials (AASHTO) states, "the number of accidents is disproportionately higher at driveways than at other intersections…thus their design and location merits special consideration." Studies have shown that anywhere between 50 and 70 percent of all crashes that occur on the urban street system are access related.

Fewer direct access, greater separation of driveways, and better driveway design and location are the basic elements of access management. There is less occasion for through traffic to brake and change lanes in order to avoid turning traffic when these techniques are implemented uniformly and comprehensively.

Consequently, with good access management, the flow of traffic will be smoother and average travel speeds higher. There will definitely be less potential for accidents. According to the Federal Highway Administration (FHWA), before and after analyses show that routes with well managed access can experience 50 percent fewer accidents than comparable facilities with no access controls.

Traffic Calming

Street patterns are typically developed at the time of construction. In Utah, the history of using a grid system for planning and development purposes started with the first settlers and has proven efficient for moving people and goods throughout a network of surface streets. However, the nature of a grid system with wide and often long, straight roads can result in excessive speeds. For that reason, traffic

calming measures (TCM) can be implemented to reduce speeds on residential roadways. Springville also follows the Utah grid system, with some minor interruptions. Traffic calming is however still applicable to many neighborhood or local streets and should be at least given consideration on the City's local and residential streets on a case-by-case basis where applicable.

ITE has established a definition for traffic calming that reads, "*Traffic calming is the combination of mainly physical measures that reduce the negative effects of motor vehicle use, alter driver behavior and improve conditions for non-motorized street users*." Altering driver behavior includes lowering of speeds, reducing aggressive driving, and increasing respect for non-motorized street users. It is recommended that the City adopt traffic calming guidelines to allow specified traffic calming measures to be implemented within the City.

Corridor Preservation

Corridor preservation is an important transportation planning tool that agencies should use and apply to all future transportation corridors. There are several new transportation facilities that have been identified in the TMP. In planning for these future facilities, corridor preservation techniques should be employed. The main purposes of corridor preservation are to:

- **Preserve the viability of future options**
- **Reduce the cost of these options**
- **Minimize environmental and socio-economic impacts of future implementation**

Corridor preservation seeks to preserve the right-of-way needed for future transportation facilities and prevent development that might be incompatible with these facilities. This is primarily accomplished by the community's ability to apply land use controls, such as zoning and approval of developments.

Perhaps the most important elements of corridor preservation are ensuring that the corridors are preserved in the correct location and that they meet the applicable design and right-of-way standards for the type of facility being preserved. As the master plan does not define the exact alignment of each future corridor, it becomes the responsibility of the City to make sure that the corridors are correctly preserved. This will have to be accomplished through the engineering and planning reviews done within the City as development and annexation requests are approved that involve properties within or adjacent to the future corridors.

Corridor Preservation Techniques

Some examples of specific corridor preservation techniques that may be most beneficial and easily implemented include the following:

- **Developer Incentives and Agreements:** Public agencies can offer incentives in the form of tax abatements, density credits, or timely site plan approvals to developers who maintain property within proposed transportation corridors in an undeveloped state.
- **Exactions:** As development proposals are submitted to the City for review, efforts should be made to exact land identified within the future corridors. Exactions are similar to impact fees, except they are paid with land rather than cash.

- **Fee Simple Acquisitions:** This will most likely consist of hardship purchases or possible City acquisition of property identified within the corridors. Parcels obtained in fee title can later be sold at market value to the owner of the transportation facility when construction begins.
- **Transfer of Development Rights and Density Transfers:** Government entities can provide incentives for developers and landowners to participate in corridor preservation programs using the transfer of development rights and density transfers. This is a powerful tool in that there seldom is any capital cost to local governments.
- **Land Use Controls:** This method allows government entities to use its policing power to regulate intensity and types of land use. Zoning ordinances are the primary controls over land use and the most important land use tools available for use in corridor preservation programs.
- **Purchase of Options and Easements:** Options and easements allow government agencies to purchase interests in property that lies within highway corridors without obtaining full title of the land. Usually, easements are far less expensive than fee title acquisitions.

Traffic Impact Studies

As growth occurs throughout the City, the City will evaluate the impacts of proposed developments on the surrounding transportation networks prior to giving approval to build. This can be accomplished by requiring that a Traffic Impact Study (TIS) be performed for any development in the City based on City staff recommendations. A TIS will allow the City to determine the site specific impacts of a development including internal site circulation, access issues, and adjacent roadway and intersection impacts. In addition, a TIS will assist in defining possible impacts to the overall transportation system in the vicinity of the development. The area and items to be evaluated in a TIS include key intersections and roads as determined by the City Engineer on a case by case basis. It is recommended that the City adopt specific TIS guidelines for future development within the City.

Americans with Disabilities Act (ADA)

The Americans with Disabilities Act of 1990 prohibits discrimination and ensures equal opportunity and access for persons with disabilities. ADA standards govern the construction and alteration of places of public accommodation, commercial facilities, and State and local government facilities. The Department of Justice (DOJ) maintains ADA standards that apply to all ADA facilities except transit facilities, which are subject to similar standards issued by the Department of Transportation (DOT). The DOJ published revised regulations for Titles II and III of the American with Disabilities Act of 1990 in the Federal Register on September 15, 2010, which are available online at **http://www.ada.gov/2010ADAstandards_index.htm**. Chapter 4: Accessible Routes of the 2010 ADA Standards for Titles II and II Facilities governs the design of Accessible Routes.

The ADA standards should be regularly reviewed to ensure that City standards and specifications are in compliance with Federal ADA regulations. All areas of newly designed and newly constructed buildings and facilities and altered portions of existing buildings and facilities shall comply with the ADA requirements as published. All new and altered facilities must be in compliance with ADA standards. In order to improve the quality of life of Springville residents with disabilities, a review of all public rights-of-way and facilities should be conducted over the next few years, as far as is economically viable.

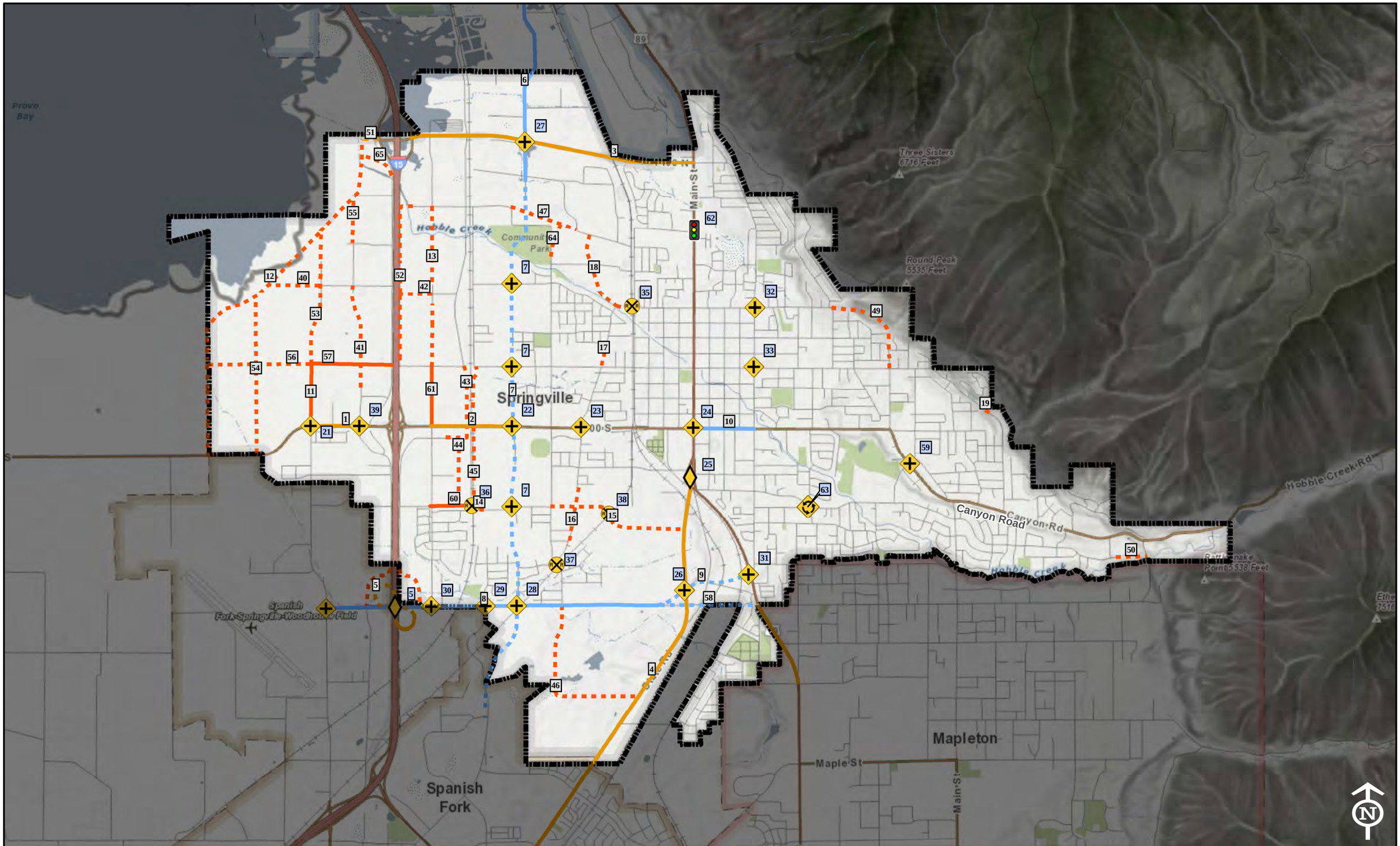
CAPITAL FACILITIES PLAN

As shown in the **Roadway Network** section of this document, Springville will need to construct new roads, widen existing transportation corridors, and make spot intersection improvements to provide future residents of the City with an adequate transportation system. A concept plan for future growth between the planning years of 2015-2040 is provided below.

Transportation Needs as a Result of New Development

The specific transportation needs resulting from future growth throughout the City are identified in **Table 8** and **Figure 15**. **Table 8** and **Figure 15** will need to be regularly updated by the City as project scopes change and development occurs in the City. Individual projects were identified and costs estimates were compiled to produce a Transportation Improvement Plan (TIP) for the City. Table 8 identifies the specific projects that will be necessary in the near future; however, only arterial and collector improvements were identified since any local roads would be required to be built as part of future development. Costs have not been adjusted for inflation and therefore represent 2016 costs. The cost estimates shown represent the costs of construction, right-of-way, and engineering. Impact fee eligible costs, as well as other potential funding sources, were identified for each project in **Table 8**. Roadways of regional significance were assumed to be built through help from other jurisdictions, such as UDOT and MAG. Details for each project cost can be found in **Appendix B: Cost Estimates**

Table 8 includes all projects in the City through the year 2040. Actual development and transportation needs should provide the final decision on project timing. Although many of these projects are included on MAG's RTP (see **Figure 8**), MAG funding is not guaranteed. The City will assume these projects will only be completed with financial assistance from MAG. Therefore, the City will only collect impact fees for the required 6.77 percent match. It is expected that the total cost of roadway improvements needed before 2040 will be approximately **$357,097,000**, of which **$27,918,000** will be the responsibility of the City and may be eligible for impact fee expenditure.



HORROCKS ENGINEERS

2162 West Grove Parkway
Suite 400
Pleasant Grove, UT 84062
(801) 763-5100

Springville Transportation Master Plan

2040 Projects

0.5 0 0.5 Miles

DATE 9/29/2016

DRAWN TRB

Figure 15

Table 8: Capital Facilities Plan Costs – 2040

Capital Facilities Plan - 2040					
Project	**Location**	**Total Price**	**Funding Source**	**Springville City %**	**Springville City Total**
1	400 South Widening: I-15 to Spanish Fork Main Street	$3,095,000	UDOT	0%	$0
2	400 South Widening: 1750 West to 950 West	$5,604,000	UDOT	0%	$0
3	1400 North Widening: I-15 to Main Street	$29,783,000	UDOT	0%	$0
4	SR-51 Widening: Main St. to Southern Border	$16,861,000	UDOT	0%	$0
5	1600 South Interchange	$55,358,000	UDOT	0%	$0
6	1200 West Widening: Northern Border to 1200 North	$5,826,000	Springville/MAG	6.77%	$395,000
7	1200 West: 1400 North to Southern Border	$40,035,000	Springville/MAG	6.77%	$2,711,000
8	1600 South Widening: 300 West to Southwestern Border	$45,782,000	Springville/MAG	6.77%	$3,100,000
9	1600 South Extension to US-89	$6,717,000	Springville/MAG	6.77%	$455,000
10	400 South Widening: Main Street to 400 East	$2,768,000	Springville/MAG	6.77%	$188,000
11	2600 West Widening: 400 South to Center Street	$1,710,000	Springville	100%	$1,710,000
12	New Road: 1400 North to 400 South (West of I-15)	$18,104,000	Springville	6%	$1,147,000
13	1750 West Connection: Between 1000 North & Center Street	$4,976,000	Springville	6%	$316,000
14	900 South Extension Over RR Tracks	$473,000	Springville	0%	$0
15	900 South Extension to SR-51	$5,188,000	Springville	16%	$855,000
16	Connection of Mattea Lane & 750 West	$2,097,000	Springville	16%	$346,000
17	Connection of Wood Springs Dr. & 550 West	$917,000	Springville	16%	$151,000
18	Connection of 550 West & 400 North	$2,723,000	Springville	0%	$0
19	Connection of 2080 East Near 250 South	$302,000	Springville	16%	$50,000
21	Intersection Improvement: 400 South & 2060 West	$254,000	UDOT	0%	$0
22	Intersection Improvement: 400 South & 1200 West	$254,000	UDOT	0%	$0
23	Intersection Improvement: 400 South & Wood Springs Dr.	$254,000	UDOT	0%	$0
24	Intersection Improvement: 400 South & Main Street	$254,000	UDOT	0%	$0
25	Traffic Signal and Intersection Reconfiguration: Main Street & US-89	$25,300,000	UDOT	0%	$0
26	Intersection Improvement: SR-51 & 1600 South Extension	$254,000	UDOT	0%	$0
27	Intersection Improvement: 1400 North & 1200 West	$254,000	UDOT	0%	$0

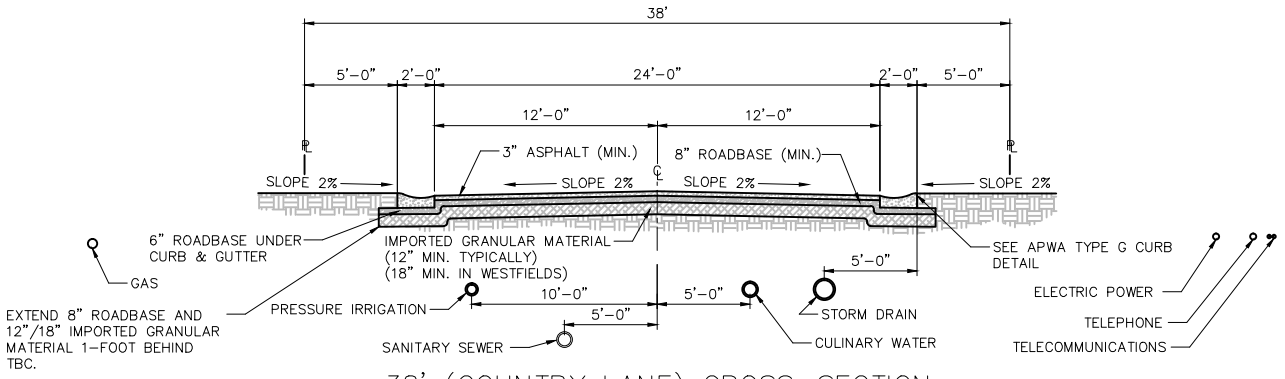
Capital Facilities Plan - 2040					
Project	**Location**	**Total Price**	**Funding Source**	**Springville City %**	**Springville City Total**
28	Intersection Improvement: 1600 South & 1200 West	$254,000	Springville/MAG	6.77%	$18,000
29	Intersection Improvement: 1600 South & Wallace Dr.	$254,000	Springville/MAG	6.77%	$18,000
30	Intersection Improvement: 1600 South & 1750 West	$254,000	Springville/MAG	6.77%	$18,000
31	Intersection Improvement: US:89 & 1600 South Extension	$254,000	UDOT	0%	$0
32	Intersection Improvement: 400 East & 400 North	$254,000	Springville	100%	$254,000
33	Intersection Improvement: 400 East & Center Street	$254,000	Springville	100%	$254,000
35	Railroad Crossing: 400 North & Spring Creek Place	$705,000	Springville	100%	$705,000
36	Railroad Crossing: 900 South & 1500 West	$705,000	Springville	100%	$705,000
37	Railroad Crossing: 950 West & 1400 South	$705,000	Springville	100%	$705,000
38	Railroad Crossing: 900 South & 600 West	$705,000	Springville	100%	$705,000
39	Intersection Improvement: West of 400 South Interchange	$254,000	UDOT	0%	$0
40	500 North: 2500 West to 2650 West	$276,000	Springville	6%	$18,000
41	2200 West Extension to 500 North	$3,485,000	Springville	0%	$0
42	500 North Extension to Frontage Road	$1,165,000	Springville	6%	$74,000
43	1500 West Extension to 500 South	$3,192,000	Springville	0%	$0
44	1700 West: 500 South to 900 South	$2,251,000	Springville	0%	$0
45	1500 West: Center Street to 900 South	$5,082,000	Springville	16%	$837,000
46	1600 South & SR-51 Connection	$5,875,000	Springville	0%	$0
47	1000 North Extension to City Pasture Road	$2,390,000	Springville	0%	$0
49	400 North Connection to 400 South to 1300 East	$2,499,000	Springville	16%	$412,000
50	River Bottom Rd. Extension to 1600 North	$1,165,000	Springville	16%	$192,000
51	1400 North Extension to New Frontage Road	$636,000	Springville	16%	$105,000
52	Frontage Road: 1000 North to Center Street	$5,775,000	Springville	0%	$0
53	2600 West Extension: Center Street to New Road	$6,141,000	Springville	6%	$389,000
54	3200 West: 400 South to New Road	$6,871,000	Springville	0%	$0
55	2250 West Extension to 1150 North	$2,141,000	Springville	0%	$0
56	Center Street: Extension to Western Border	$6,141,000	Springville	6%	$389,000
57	Center Street Widening: I-15 to 2600 West	$4,792,000	Springville	100%	$4,792,000
58*	1600 South Alternative Alignment:	$6,568,000	Springville/MAG	6.77%	$445,000

Capital Facilities Plan - 2040					
Project	**Location**	**Total Price**	**Funding Source**	**Springville City %**	**Springville City Total**
59	Roundabout: Canyon Road and 620 South	$705,000	Springville	100%	$705,000
60	900 South: 1750 West to 1700 West	$1,098,000	Springville	100%	$1,098,000
61	1750 West: 400 South to Center Street	$2,144,000	Springville	100%	$2,144,000
62	Traffic Signal: Main Street & 900 North	$254,000	UDOT	0%	$0
63	Roundabout: 900 South and 800 East	$705,000	Springville	100%	$705,000
64	950 West Realignment: 700 North to 1000 North	$2,188,000	Springville	16%	$361,000
65	Frontage Road Realignment: North of 1150 North to New Road (Project 12)	$2,398,000	Springville	0%	$0
	Total	**$357,097,000**			**$27,918,000**

* Project Alternative (#9 or #58) will be chosen at time of project (Assume Project #9 Alternative is Used)

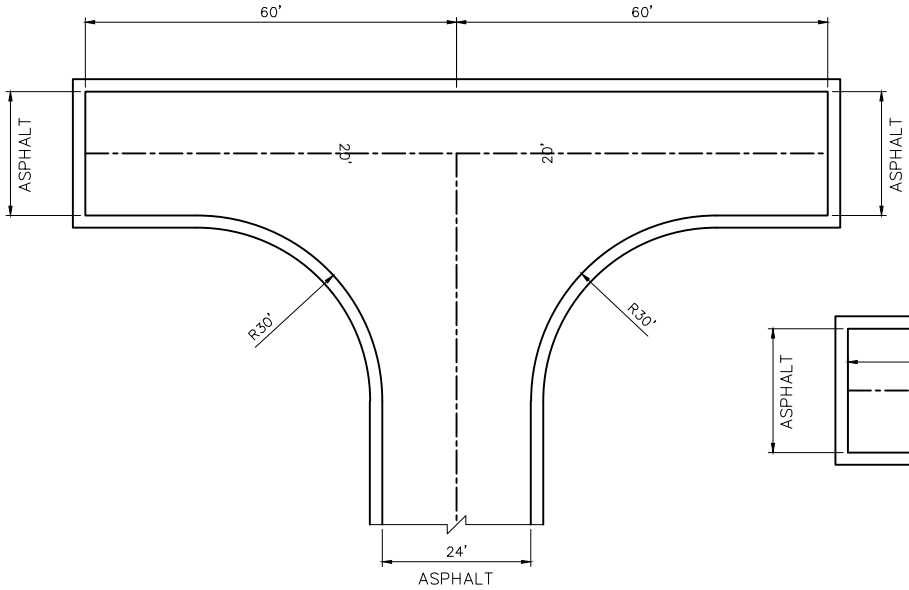
APPENDIX A: TYPICAL CROSS-SECTIONS

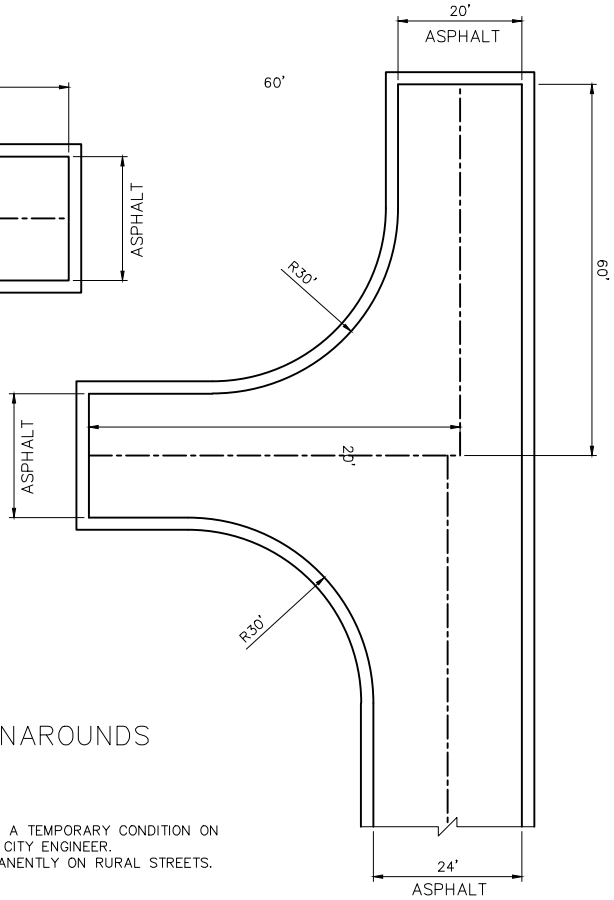
DETAILS ON THIS SHEET TO BE USED ONLY BY PERMISSION OF CITY ENGINEER



38' (COUNTRY LANE) CROSS-SECTION
LOOKING NORTH OR WEST

NOTES:
1. CULINARY WATER LINES SHALL BE INSTALLED ON THE NORTH AND EAST SIDE OF THE STREET AND PRESSURE IRRIGATION ON THE SOUTH AND WEST SIDE.
2. FIRE HYDRANTS SHALL BE LOCATED EVERY 500 FEET AND ON THE SAME SIDE AS THE CULINARY WATER LINES OR AS APPROVED BY THE CITY.
3. CULINARY VALVES SHALL BE LOCATED ADJACENT TO THE TEE OR CROSS IN THE INTERSECTION. PRESSURE IRRIGATION VALVES SHALL BE ALIGNED WITH PROPERTY LINES WHERE POSSIBLE.
4. NO CULINARY WATER LINE SMALLER THAN 8" DIA. SHALL BE INSTALLED WITHOUT APPROVAL OF PUBLIC WORKS.
5. NO PRESSURE IRRIGATION LINE SMALLER THAN 6" DIA. SHALL BE INSTALLED WITHOUT APPROVAL OF PUBLIC WORKS.
6. IMPORTED GRANULAR MATERIAL, ROADBASE AND WHERE NECESSARY ASPHALT THICKNESS WILL MEET THE CITY MIN AS SHOWN ABOVE OR THE RECOMMENDED THICKNESS FROM THE GEOTECHNICAL REPORT, WHICHEVER IS GREATER.
7. TELECOMMUNICATIONS CONDUIT SHALL BE LAID WHERE TELEPHONE CONDUIT IS LAID.
8. 30" OF COVER IS REQUIRED FOR ALL UTILITIES UNDER THE ASPHALT SECTION OF A PUBLIC ROADWAY. THE REQUIRED COVER OVER UTILITY LINES ARE AS FOLLOWS:
   CULINARY WATER = 48" MINIMUM
   PRESSURE IRRIGATION = 30" MINIMUM
   SANITARY SEWER = PER DESIGN
   STORM DRAIN = 30" MINIMUM
   TELECOMMUNICATIONS = 30" MINIMUM
   ALL OTHERS = PER UTILITY REQUIREMENTS





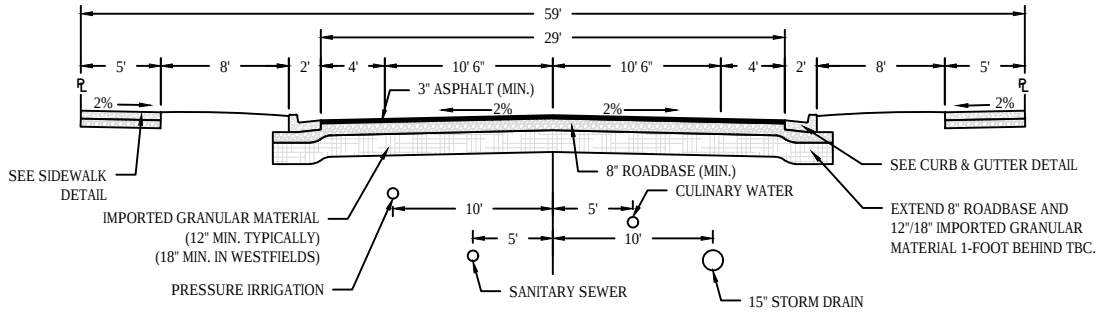
HAMMERHEAD TURNAROUNDS

NOTES:
1. HAMMERHEAD TURNAROUNDS ARE TO BE INSTALLED AS A TEMPORARY CONDITION ON STANDARD STREETS AND ONLY BY PERMISSION OF THE CITY ENGINEER.
2. HAMMERHEAD TURNAROUNDS MAY BE INSTALLED PERMANENTLY ON RURAL STREETS.

SPRINGVILLE CITY
110 SOUTH MAIN STEET
SPRINGVILLE UTAH 84663
ENGINEERING OFFICE
(801)491-2780

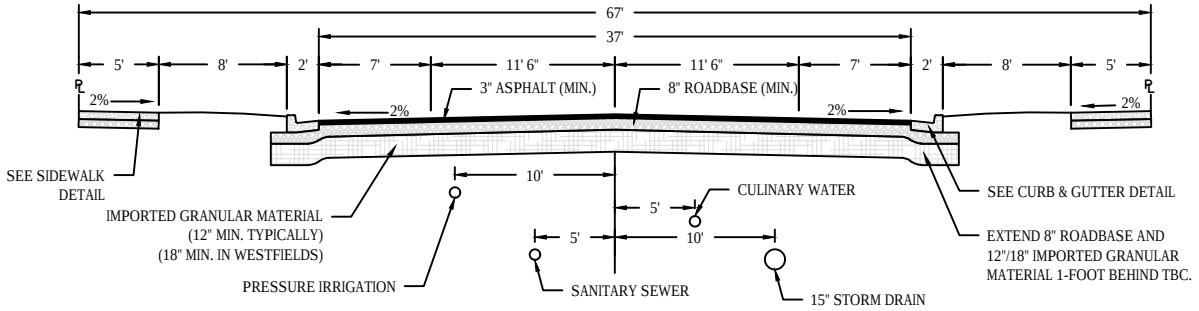
RURAL STREET CROSS SECTIONS
AND HAMMERHEAD TURNAROUNDS

DRAWING #
RD-05
ADOPTED DATE
SEPT. 2015



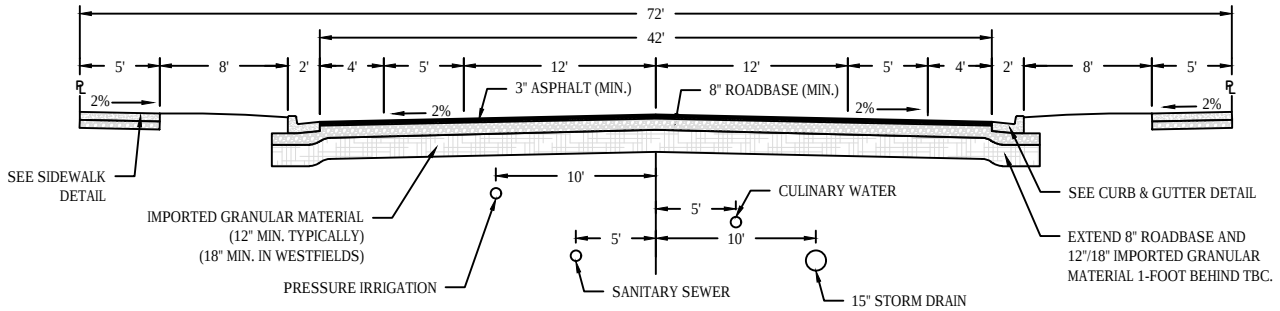
59' STREET CROSS-SECTION (RESIDENTIAL LOCAL)

LOOKING NORTH OR WEST



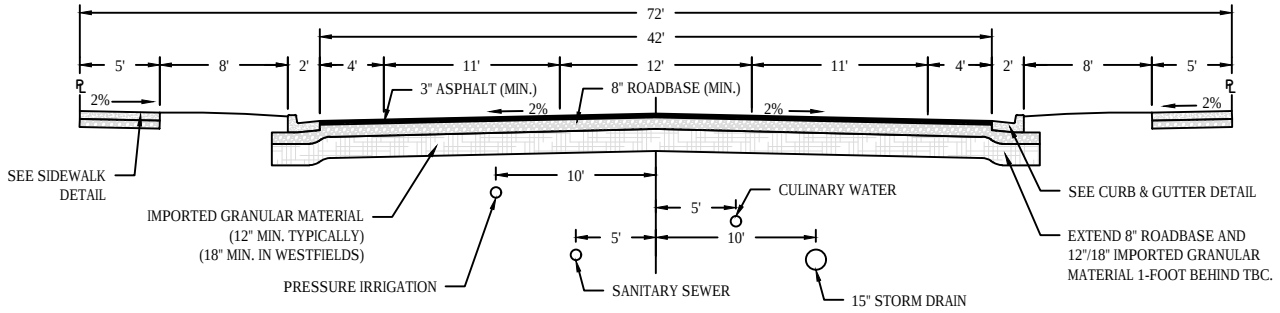
67' STREET CROSS-SECTION (COMMERCIAL LOCAL)

LOOKING NORTH OR WEST



72' STREET CROSS-SECTION (MINOR COLLECTOR)

TWO LANE LOOKING NORTH OR WEST



72' STREET CROSS-SECTION (MINOR COLLECTOR)

THREE LANE LOOKING NORTH OR WEST

NOTES:

1. IMPORTED GRANULAR MATERIAL, ROADBASE AND WHERE NECESSARY ASPHALT THICKNESS WILL MEET THE CITY MIN. AS SHOWN ABOVE OR THE RECOMMENDED THICKNESS FROM THE GEOTECHNICAL REPORT, WHICHEVER IS GREATER.
2. TELECOMMUNICATIONS CONDUIT SHALL BE LAID WHERE TELEPHONE CONDUIT IS LAID.
3. 30" OF COVER IS REQUIRED FOR ALL UTILITIES UNDER THE ASPHALT SECTION OF A PUBLIC ROADWAY. THE REQUIRED COVER OVER UTILITY LINES ARE AS FOLLOWS:
   CULINARY WATER = 48" MINIMUM
   PRESSURE IRRIGATION = 30" MINIMUM
   SANITARY SEWER = PER DESIGN
   STORM DRAIN = 30" MINIMUM
   TELECOMMUNICATIONS = 30" MINIMUM
   ALL OTHERS = PER UTILITY REQUIREMENTS

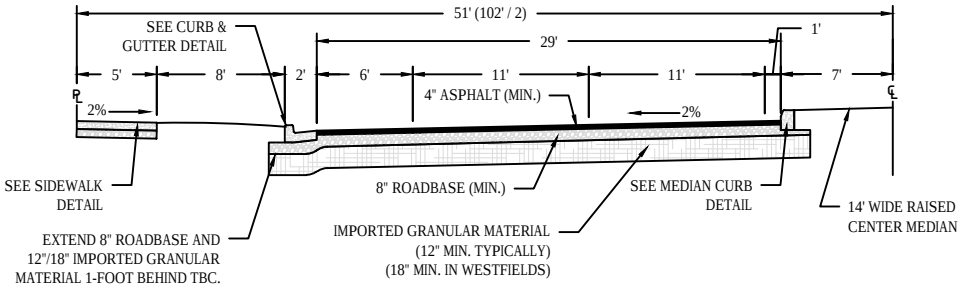
Springville

SPRINGVILLE CITY
110 SOUTH MAIN STEET
SPRINGVILLE UTAH 84663
ENGINEERING OFFICE
(801)491-2780

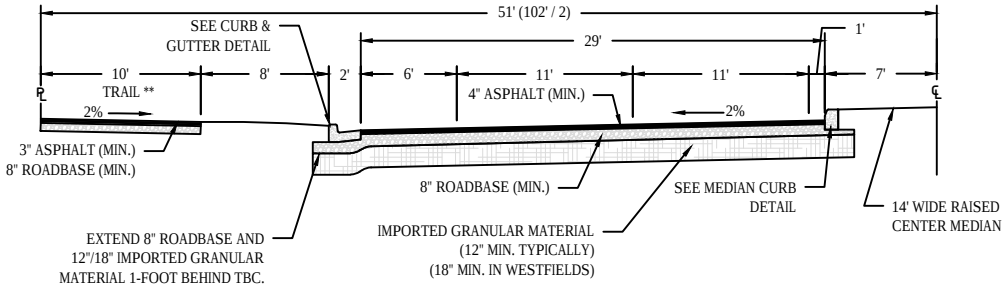
MAJOR STREET CROSS SECTION AND UTILITY LOCATION

DRAWING #
RD-04

ADOPTED DATE
JAN. 2016

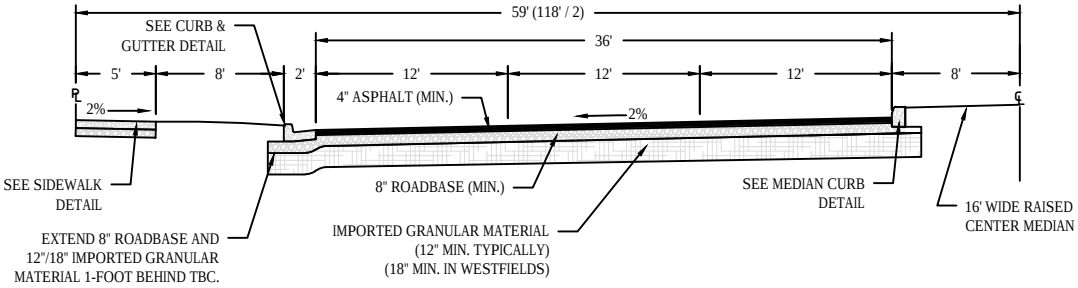


102' STREET CROSS-SECTION (MAJOR ARTERIAL)



107' STREET CROSS-SECTION (MAJOR ARTERIAL WITH TRAIL)

** TRAIL LOCATION MAY VARY EITHER SIDE OF CROSS SECTION (5' SIDEWALK ON OPPOSITE SIDE)



118' STREET CROSS-SECTION (PRINCIPAL ARTERIAL)

NOTES:

1. IMPORTED GRANULAR MATERIAL, ROADBASE AND WHERE NECESSARY ASPHALT THICKNESS WILL MEET THE CITY MIN. AS SHOWN ABOVE OR THE RECOMMENDED THICKNESS FROM THE GEOTECHNICAL REPORT, WHICHEVER IS GREATER.
2. TELECOMMUNICATIONS CONDUIT SHALL BE LAID WHERE TELEPHONE CONDUIT IS LAID.
3. ALL UTILITY LOCATIONS TO BE APPROVED BY CITY ENGINEER.
4. 30" OF COVER IS REQUIRED FOR ALL UTILITIES UNDER THE ASPHALT SECTION OF A PUBLIC ROADWAY. THE REQUIRED COVER OVER UTILITY LINES ARE AS FOLLOWS:
   CULINARY WATER = 48" MINIMUM
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Springville
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110 SOUTH MAIN STEET
SPRINGVILLE UTAH 84663
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(801)491-2780

MAJOR STREET CROSS SECTION AND UTILITY LOCATION

DRAWING #
RD-04
ADOPTED DATE
JAN. 2016

APPENDIX B: COST ESTIMATES

Project Summary						
Project	**Location**	**Total Price**	**Funding Source**	**Range (Yr)**	**Springville City %**	**Springville City Total**
1	400 South Widening: I-15 to Spanish Fork Main Street	$3,095,000	UDOT	2025	0%	$0
2	400 South Widening: 1750 West to 950 West	$5,604,000	UDOT	2040	0%	$0
3	1400 North Widening: I-15 to Main Street	$29,783,000	UDOT	2025	0%	$0
4	SR-51 Widening: Main Street to Southern Border	$16,861,000	UDOT	2025	0%	$0
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11	2600 West Widening: 400 South to Center Street	$1,710,000	Springville	2040	100%	$1,710,000
12	New Road: 1400 North to 400 South (West of I-15)	$18,104,000	Springville	2040	6%	$1,147,000
13	1750 West Connection: Between 1000 North & Center Street	$4,976,000	Springville	2040	6%	$316,000
14	900 South Extension Over RR Tracks	$473,000	Springville	2040	0%	$0
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18	Connection of 550 West & 400 North	$2,723,000	Springville	2040	0%	$0
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62	Traffic Signal: Main Street & 900 North	$254,000	UDOT	2025	0%	$0
63	Roundabout: 900 South and 800 East	$705,000	Springville	2025	100%	$705,000
64	950 West Realignment: 700 North to 1000 North	$2,188,000	Springville	2040	16%	$361,000
65	Frontage Road Realignment: North of 1150 North to New Road (Project 12)	$2,398,000	Springville	2040	0%	$0
	Total	**$357,097,000**				**$27,918,000**

Springville City
Transportation Improvement Program (TIP)

Unit Costs

Item	Unit	Unit Cost
Parkstrip	S.F.	$4.00
Removal of Existing Asphalt	S.Y.	$4.00
Clearing and Grubbing	Acre	$2,000.00
Roadway Excavation	C.Y.	$10.50
HMA Concrete	Ton	$85.00
Untreated Base Course	C.Y.	$10.00
Granular Borrow	C.Y.	$40.00
Curb and Gutter (2' width)	L.F.	$22.50
Sidewalk (5' width)	L.F.	$25.00
Drainage	L.F.	$45.00
Right of Way	S.F.	$4.00
Removal of Existing Curb and Gutter	L.F.	$5.00
Grind Existing Asphalt	S.F.	$5.00
Restriping	L.F.	$5.00
Roundabout	Each	$500,000
Traffic Signal	Each	$180,000

Contingency	15%

Mobilization	10%

Preconstruction Engineering	8%
Construction Engineering	8%

Springville City TMP
Developer's Responsibility vs. City's Responsibility

Item	Unit	Unit Cost		100' Length of Local		100' Length of Commercial Local		100' Length of Minor Collector		100' Length of Major Arterial		100' Length of Major Arterial with Trail		100' Length of Principal Arterial	
				Quantity	Cost	Quantity	Cost	Quantity	Cost	Quantity	Cost	Quantity	Cost	Quantity	Cost
Parkstrip	S.F.	$4.00		1600	$6,400	1600	$6,400	1600	$6,400	1600	$6,400	1600	$6,400	1600	$6,400
Removal of Existing Asphalt	S.Y.	$4.00		-	-	-	-	-	-	-	-	-	-	-	-
Clearing and Grubbing	Acre	$2,000		0.14	$271	0.15	$308	0.17	$331	0.23	$468	0.25	$491	0.27	$542
Roadway Excavation	C.Y.	$10.50		215	$2,256	274	$2,878	311	$3,267	533	$5,600	533	$5,600	652	$6,844
HMA Concrete	Ton	$85.00		56	$4,776	72	$6,093	81	$6,917	186	$15,810	186	$15,810	227	$19,323
Untreated Base Course	C.Y.	$10.00		72	$716	91	$914	104	$1,037	178	$1,778	178	$1,778	217	$2,173
Granular Borrow	C.Y.	$40.00		161	$6,444	206	$8,222	233	$9,333	400	$16,000	400	$16,000	489	$19,556
Curb and Gutter (2' width)	L.F.	$22.50		200	$4,500	200	$4,500	200	$4,500	200	$4,500	200	$4,500	200	$4,500
Sidewalk (5' width)	L.F.	$25.00		200	$5,000	200	$5,000	200	$5,000	200	$5,000	200	$5,000	200	$5,000
Drainage	L.F.	$45.00		100	$4,500	100	$4,500	100	$4,500	100	$4,500	100	$4,500	100	$4,500
Right of Way	S.F.	$4.00		5900	$23,600	6700	$26,800	7200	$28,800	10200	$40,800	10700	$42,800	11800	$47,200
Removal of Existing Curb and Gutter	L.F.	$5.00		-	-	-	-	-	-	-	-	-	-	-	-
Grind Existing Asphalt	S.F.	$5.00		-	-	-	-	-	-	-	-	-	-	-	-
Restriping	L.F.	$5.00		100	$500	100	$500	100	$500	100	$500	100	$500	100	$500
Roundabout	Each	$500,000		-	-	-	-	-	-	-	-	-	-	-	-
Traffic Signal	Each	$180,000		0	$0	0	$0	0	$0	0	$0	0	$0	0	$0
Railroad Crossing	Each	$500,000													
Subtotal					$58,963		$66,115		$70,584		$101,356		$103,379		$116,538
Contingency			15%		$8,844		$9,917		$10,588		$15,203		$15,507		$17,481
Mobilization			10%		$5,896		$6,611		$7,058		$10,136		$10,338		$11,654
Preconstruction Engineering			8%		$4,717		$5,289		$5,647		$8,108		$8,270		$9,323
Construction Engineering			8%		$4,717		$5,289		$5,647		$8,108		$8,270		$9,323
Total Project Cost					$83,138		$93,222		$99,524		$142,912		$145,764		$164,319
Developers Responsibility				100%	$83,138	-	-	84%	$83,138	58%	$83,138	57%	$83,138	51%	$83,138
Springville City's Responsibility (Residential)				0%	$0	-	-	16%	$16,386	42%	$59,774	43%	$62,626.81	49%	$81,181
Springville City's Responsibility (Commercial)				-	-	100%	$93,222	94%	$93,222	65%	$93,221.64	64%	$93,222	57%	$93,222
				-	-	0%	$0	6%	$6,302.49	35%	$49,690.46	36%	$52,543	43%	$71,097

Overall Assumptions:

HMA Pavement Density (pcf) =	155	155	155	155	155	155
HMA Thickness (in) =	3	3	3	4	4	4
Untreated Base Course Thickness (in) =	8	8	8	8	8	8
Granual Borrow Thickness (in) =	18	18	18	18	18	18
Roadway Excavation Depth (ft) =	2	2	2	2	2	2
Number of Sidewalks (No.) =	2	2	2	2	2	2
Overlay HMA Thickness (in) =	2	3	3	3	3	3

Springville City
Transportation Master Plan

400 South Widening: I-15 to Spanish Fork Main Street

Major Arterial

Costs

Item	Unit	Unit Cost	Quantity	Cost
Parkstrip	S.F.	$4.00	38,980	$155,922
Removal of Existing Asphalt	S.Y.	$4.00	11,640	$46,560
Clearing and Grubbing	Acre	$2,000.00	2	$4,810
Roadway Excavation	C.Y.	$10.50	5,233	$54,952
HMA Concrete	Ton	$85.00	3,855	$327,666
Untreated Base Course	C.Y.	$10.00	1,744	$17,445
Granular Borrow	C.Y.	$40.00	3,925	$157,004
Curb and Gutter (2' width)	L.F.	$22.50	4,873	$109,632
Sidewalk (5' width)	L.F.	$25.00	4,873	$121,814
Drainage	L.F.	$45.00	4,873	$219,265
Right of Way	S.F.	$4.00	104,760	$419,039
Removal of Existing Curb and Gutter	L.F.	$5.00	4,873	$24,363
Grind Existing Asphalt	S.F.	$5.00	104,760	$523,799
Restriping	L.F.	$5.00	2,436	$12,181
Roundabout	Each	$500,000	0	$0
Traffic Signal	Each	$180,000	0	$0
			Subtotal	**$2,194,453**

Contingency	15%	$329,168
Mobilization	10%	$219,445
Preconstruction Engineering	8%	$175,556
Construction Engineering	8%	$175,556
Total Project Costs		**$3,095,000**
Springville City's Responsibility		**0%**
		$0

Overall Assumptions:

HMA Pavement Density (pcf) =	155	Project No.	**1**
HMA Thickness (in) =	4	Funding:	**UDOT**
Untreated Base Course Thickness (in) =	8	Type:	**Capacity Improvement**
Granual Borrow Thickness (in) =	18	Cost from 2040 RTP	
Roadway Excavation Depth (ft) =	2		
Number of Sidewalks (No.) =	2		
Overlay HMA Thickness (in) =	3		

Springville City
Transportation Master Plan

400 South Widening: 1750 West to 950 West

Principal Arterial

Costs

Item	Unit	Unit Cost	Quantity	Cost
Parkstrip	S.F.	$4.00	64,189	$256,758
Removal of Existing Asphalt	S.Y.	$4.00	37,444	$149,775
Clearing and Grubbing	Acre	$2,000.00	2	$4,973
Roadway Excavation	C.Y.	$10.50	1,189	$12,481
HMA Concrete	Ton	$85.00	6,944	$590,226
Untreated Base Course	C.Y.	$10.00	396	$3,962
Granular Borrow	C.Y.	$40.00	892	$35,661
Curb and Gutter (2' width)	L.F.	$22.50	8,024	$180,533
Sidewalk (5' width)	L.F.	$25.00	8,024	$200,592
Drainage	L.F.	$45.00	8,024	$361,066
Right of Way	S.F.	$4.00	108,320	$433,279
Removal of Existing Curb and Gutter	L.F.	$5.00	8,024	$40,118
Grind Existing Asphalt	S.F.	$5.00	336,995	$1,684,974
Restriping	L.F.	$5.00	4,012	$20,059
Roundabout	Each	$500,000	0	$0
Traffic Signal	Each	$180,000	0	$0
			Subtotal	**$3,974,459**

Contingency	15%	$596,169
Mobilization	10%	$397,446
Preconstruction Engineering	8%	$317,957
Construction Engineering	8%	$317,957
Total Project Costs		**$5,604,000**

Springville City's Responsibility	**0%**
	$0

Overall Assumptions:

HMA Pavement Density (pcf) =	155	Project No.	**2**
HMA Thickness (in) =	4	Funding:	**UDOT**
Untreated Base Course Thickness (in) =	8	Type:	**Capacity Improvement**
Granual Borrow Thickness (in) =	18	Cost from 2040 RTP	
Roadway Excavation Depth (ft) =	2		
Number of Sidewalks (No.) =	2		
Overlay HMA Thickness (in) =	3		

Springville City
Transportation Master Plan

1400 North Widening: I-15 to Main Street

Major Arterial

Costs

Item	Unit	Unit Cost	Quantity	Cost
Parkstrip	S.F.	$4.00	411,213	$1,644,853
Removal of Existing Asphalt	S.Y.	$4.00	77,103	$308,410
Clearing and Grubbing	Acre	$2,000.00	25	$50,741
Roadway Excavation	C.Y.	$10.50	85,669	$899,529
HMA Concrete	Ton	$85.00	43,322	$3,682,367
Untreated Base Course	C.Y.	$10.00	28,556	$285,565
Granular Borrow	C.Y.	$40.00	64,252	$2,570,083
Curb and Gutter (2' width)	L.F.	$22.50	25,701	$578,269
Sidewalk (5' width)	L.F.	$25.00	25,701	$642,521
Drainage	L.F.	$45.00	51,402	$2,313,075
Right of Way	S.F.	$4.00	1,105,136	$4,420,543
Removal of Existing Curb and Gutter	L.F.	$5.00	25,701	$128,504
Grind Existing Asphalt	S.F.	$5.00	693,923	$3,469,613
Restriping	L.F.	$5.00	25,701	$128,504
Roundabout	Each	$500,000	0	$0
Traffic Signal	Each	$180,000	0	$0
			Subtotal	**$21,122,578**

Contingency	15%	$3,168,387
Mobilization	10%	$2,112,258
Preconstruction Engineering	8%	$1,689,806
Construction Engineering	8%	$1,689,806
Total Project Costs		**$29,783,000**

Springville City's Responsibility	**0%**
	$0

Overall Assumptions:

HMA Pavement Density (pcf) =	155	Project No.	**3**
HMA Thickness (in) =	4	Funding:	**UDOT**
Untreated Base Course Thickness (in) =	8	Type:	**Capacity Improvement**
Granual Borrow Thickness (in) =	18	Cost from 2040 RTP	
Roadway Excavation Depth (ft) =	2		
Number of Sidewalks (No.) =	2		
Overlay HMA Thickness (in) =	3		

Springville City
Transportation Master Plan

SR-51 Widening: Main Street to Southern Border

Major Arterial

Costs

Item	Unit	Unit Cost	Quantity	Cost
Parkstrip	S.F.	$4.00	218,000	$872,000
Removal of Existing Asphalt	S.Y.	$4.00	43,903	$175,611
Clearing and Grubbing	Acre	$2,000.00	13	$26,900
Roadway Excavation	C.Y.	$10.50	43,398	$455,681
HMA Concrete	Ton	$85.00	22,791	$1,937,205
Untreated Base Course	C.Y.	$10.00	14,466	$144,660
Granular Borrow	C.Y.	$40.00	32,549	$1,301,944
Curb and Gutter (2' width)	L.F.	$22.50	27,250	$613,125
Sidewalk (5' width)	L.F.	$25.00	27,250	$681,250
Drainage	L.F.	$45.00	27,250	$1,226,250
Right of Way	S.F.	$4.00	585,875	$2,343,500
Removal of Existing Curb and Gutter	L.F.	$5.00	27,250	$136,250
Grind Existing Asphalt	S.F.	$5.00	395,125	$1,975,625
Restriping	L.F.	$5.00	13,625	$68,125
Roundabout	Each	$500,000	0	$0
Traffic Signal	Each	$180,000	0	$0
			Subtotal	**$11,958,127**

Contingency	15%	$1,793,719

Mobilization	10%	$1,195,813

Preconstruction Engineering	8%	$956,650
Construction Engineering	8%	$956,650

Total Project Costs	**$16,861,000**

Springville City's Responsibility	**0%**
	$0

Overall Assumptions:

HMA Pavement Density (pcf) =	155	Project No.	**4**
HMA Thickness (in) =	4	Funding:	**UDOT**
Untreated Base Course Thickness (in) =	8	Type:	**Capacity Improvement**
Granual Borrow Thickness (in) =	18		
Roadway Excavation Depth (ft) =	2		
Number of Sidewalks (No.) =	2		
Overlay HMA Thickness (in) =	3		

Springville City
Transportation Master Plan

1600 South Interchange

Major Arterial

Costs

Item	Unit	Unit Cost	Quantity	Cost
Parkstrip	S.F.	$4.00	747,451	$2,989,805
Removal of Existing Asphalt	S.Y.	$4.00	186,863	$747,451
Clearing and Grubbing	Acre	$2,000.00	45	$90,085
Roadway Excavation	C.Y.	$10.50	124,575	$1,308,040
HMA Concrete	Ton	$85.00	43,446	$3,692,876
Untreated Base Course	C.Y.	$10.00	41,525	$415,251
Granular Borrow	C.Y.	$40.00	93,431	$3,737,256
Curb and Gutter (2' width)	L.F.	$22.50	93,431	$2,102,207
Sidewalk (5' width)	L.F.	$25.00	93,431	$2,335,785
Drainage	L.F.	$45.00	93,431	$4,204,413
Right of Way	S.F.	$4.00	1,962,059	$7,848,238
Removal of Existing Curb and Gutter	L.F.	$5.00	93,431	$467,157
Grind Existing Asphalt	S.F.	$5.00	1,681,765	$8,408,826
Restriping	L.F.	$5.00	46,716	$233,579
Roundabout	Each	$500,000	1	$500,000
Traffic Signal	Each	$180,000	1	$180,000
			Subtotal	**$39,260,969**

Contingency	15%	$5,889,145
Mobilization	10%	$3,926,097
Preconstruction Engineering	8%	$3,140,878
Construction Engineering	8%	$3,140,878
Total Project Costs		**$55,358,000**

Springville City's Responsibility	**0%**
	$0

Overall Assumptions:

HMA Pavement Density (pcf) =	155	Project No.	**5**
HMA Thickness (in) =	4	Funding:	**UDOT**
Untreated Base Course Thickness (in) =	8	Type:	**Interchange**
Granual Borrow Thickness (in) =	18	Cost from 2040 RTP	
Roadway Excavation Depth (ft) =	2		
Number of Sidewalks (No.) =	2		
Overlay HMA Thickness (in) =	3		

Springville City
Transportation Master Plan

1200 West Widening: Northern Border to 1200 North

Major Arterial

Costs

Item	Unit	Unit Cost	Quantity	Cost
Parkstrip	S.F.	$4.00	74,989	$299,957
Removal of Existing Asphalt	S.Y.	$4.00	26,559	$106,235
Clearing and Grubbing	Acre	$2,000.00	4	$7,532
Roadway Excavation	C.Y.	$10.50	7,291	$76,552
HMA Concrete	Ton	$85.00	7,174	$609,771
Untreated Base Course	C.Y.	$10.00	2,430	$24,302
Granular Borrow	C.Y.	$40.00	5,468	$218,719
Curb and Gutter (2' width)	L.F.	$22.50	9,374	$210,907
Sidewalk (5' width)	L.F.	$25.00	9,374	$234,341
Drainage	L.F.	$45.00	9,374	$421,815
Right of Way	S.F.	$4.00	164,039	$656,156
Removal of Existing Curb and Gutter	L.F.	$5.00	9,374	$46,868
Grind Existing Asphalt	S.F.	$5.00	239,028	$1,195,141
Restriping	L.F.	$5.00	4,687	$23,434
Roundabout	Each	$500,000	0	$0
Traffic Signal	Each	$180,000	0	$0
			Subtotal	**$4,131,730**

Contingency	15%	$619,759

Mobilization	10%	$413,173

Preconstruction Engineering	8%	$330,538
Construction Engineering	8%	$330,538

Total Project Costs	**$5,826,000**

Springville City's Responsibility	**7%**
	$395,000

Overall Assumptions:

HMA Pavement Density (pcf) =	155	Project No.	**6**
HMA Thickness (in) =	4	Funding:	**Springville/MAG**
Untreated Base Course Thickness (in) =	8	Type:	**Capacity Improvement**
Granual Borrow Thickness (in) =	18	Costs apportioned from 2040 RTP	
Roadway Excavation Depth (ft) =	2		
Number of Sidewalks (No.) =	2		
Overlay HMA Thickness (in) =	3		

Springville City
Transportation Master Plan

1200 West: 1400 North to Southern Border

Major Arterial with Trail

Costs

Item	Unit	Unit Cost	Quantity	Cost
Parkstrip	S.F.	$4.00	665,882	$2,663,529
Removal of Existing Asphalt	S.Y.	$4.00	0	$0
Clearing and Grubbing	Acre	$2,000.00	46	$91,719
Roadway Excavation	C.Y.	$10.50	132,560	$1,391,879
HMA Concrete	Ton	$85.00	46,230	$3,929,572
Untreated Base Course	C.Y.	$10.00	44,187	$441,866
Granular Borrow	C.Y.	$40.00	99,420	$3,976,797
Curb and Gutter (2' width)	L.F.	$22.50	83,235	$1,872,794
Sidewalk (5' width)	L.F.	$25.00	83,235	$2,080,882
Drainage	L.F.	$45.00	83,235	$3,745,587
Right of Way	S.F.	$4.00	1,997,647	$7,990,586
Removal of Existing Curb and Gutter	L.F.	$5.00	0	$0
Grind Existing Asphalt	S.F.	$5.00	0	$0
Restriping	L.F.	$5.00	41,618	$208,088
Roundabout	Each	$500,000	0	$0
Traffic Signal	Each	$180,000	0	$0
			Subtotal	**$28,393,299**

Contingency	15%	$4,258,995

Mobilization	10%	$2,839,330

Preconstruction Engineering	8%	$2,271,464
Construction Engineering	8%	$2,271,464

Total Project Costs	**$40,035,000**

Springville City's Responsibility	**6.77%**
	$2,711,000

Overall Assumptions:

HMA Pavement Density (pcf) =	155	Project No.	**7**
HMA Thickness (in) =	4	Funding:	**Springville/MAG**
Untreated Base Course Thickness (in) =	8	Type:	**New Road**
Granual Borrow Thickness (in) =	18	Costs apportioned from 2040 RTP	
Roadway Excavation Depth (ft) =	2		
Number of Sidewalks (No.) =	2		
Overlay HMA Thickness (in) =	3		

Springville City
Transportation Master Plan

1600 South Widening: 300 West to Southwestern Border

Major Arterial

Costs

Item	Unit	Unit Cost	Quantity	Cost
Parkstrip	S.F.	$4.00	591,920	$2,367,680
Removal of Existing Asphalt	S.Y.	$4.00	119,206	$476,824
Clearing and Grubbing	Acre	$2,000.00	37	$73,039
Roadway Excavation	C.Y.	$10.50	117,836	$1,237,277
HMA Concrete	Ton	$85.00	61,882	$5,259,957
Untreated Base Course	C.Y.	$10.00	39,279	$392,786
Granular Borrow	C.Y.	$40.00	88,377	$3,535,078
Curb and Gutter (2' width)	L.F.	$22.50	73,990	$1,664,775
Sidewalk (5' width)	L.F.	$25.00	73,990	$1,849,750
Drainage	L.F.	$45.00	73,990	$3,329,550
Right of Way	S.F.	$4.00	1,590,785	$6,363,140
Removal of Existing Curb and Gutter	L.F.	$5.00	73,990	$369,950
Grind Existing Asphalt	S.F.	$5.00	1,072,855	$5,364,275
Restriping	L.F.	$5.00	36,995	$184,975
Roundabout	Each	$500,000	0	$0
Traffic Signal	Each	$180,000	0	$0
			Subtotal	**$32,469,056**

Contingency	15%	$4,870,358

Mobilization	10%	$3,246,906

Preconstruction Engineering	8%	$2,597,525
Construction Engineering	8%	$2,597,525

Total Project Costs	**$45,782,000**

Springville City's Responsibility	**7%**
	$3,100,000

Overall Assumptions:

HMA Pavement Density (pcf) =	155	Project No.	**8**
HMA Thickness (in) =	4	Funding:	**Springville/MAG**
Untreated Base Course Thickness (in) =	8	Type:	**Capacity Improvement**
Granual Borrow Thickness (in) =	18	Cost apportioned from 2040 RTP	
Roadway Excavation Depth (ft) =	2		
Number of Sidewalks (No.) =	2		
Overlay HMA Thickness (in) =	3		

Springville City
Transportation Master Plan

1600 South Extension to US-89

Major Arterial

Costs

Item	Unit	Unit Cost	Quantity	Cost
Parkstrip	S.F.	$4.00	72,000	$288,000
Removal of Existing Asphalt	S.Y.	$4.00	0	$0
Clearing and Grubbing	Acre	$2,000.00	11	$21,074
Roadway Excavation	C.Y.	$10.50	24,000	$252,000
HMA Concrete	Ton	$85.00	8,370	$711,450
Untreated Base Course	C.Y.	$10.00	8,000	$80,000
Granular Borrow	C.Y.	$40.00	18,000	$720,000
Curb and Gutter (2' width)	L.F.	$22.50	9,000	$202,500
Sidewalk (5' width)	L.F.	$25.00	9,000	$225,000
Drainage	L.F.	$45.00	9,000	$405,000
Right of Way	S.F.	$4.00	459,000	$1,836,000
Removal of Existing Curb and Gutter	L.F.	$5.00	0	$0
Grind Existing Asphalt	S.F.	$5.00	0	$0
Restriping	L.F.	$5.00	4,500	$22,500
Roundabout	Each	$500,000	0	$0
Traffic Signal	Each	$180,000	0	$0
			Subtotal	**$4,763,524**

Contingency	15%	$714,529
Mobilization	10%	$476,352
Preconstruction Engineering	8%	$381,082
Construction Engineering	8%	$381,082
Total Project Costs		**$6,717,000**

Springville City's Responsibility	**7%**
	$455,000

Overall Assumptions:

HMA Pavement Density (pcf) =	155	Project No.	**9**
HMA Thickness (in) =	4	Funding:	**Springville/MAG**
Untreated Base Course Thickness (in) =	8	Type:	**New Road**
Granual Borrow Thickness (in) =	18		
Roadway Excavation Depth (ft) =	2		
Number of Sidewalks (No.) =	2		
Overlay HMA Thickness (in) =	3		

Springville City
Transportation Master Plan

400 South Widening: Main Street to 400 East

Major Arterial

Costs

Item	Unit	Unit Cost	Quantity	Cost
Parkstrip	S.F.	$4.00	34,928	$139,712
Removal of Existing Asphalt	S.Y.	$4.00	10,187	$40,749
Clearing and Grubbing	Acre	$2,000.00	2	$4,310
Roadway Excavation	C.Y.	$10.50	4,851	$50,937
HMA Concrete	Ton	$85.00	3,468	$294,801
Untreated Base Course	C.Y.	$10.00	1,617	$16,170
Granular Borrow	C.Y.	$40.00	3,638	$145,533
Curb and Gutter (2' width)	L.F.	$22.50	4,366	$98,235
Sidewalk (5' width)	L.F.	$25.00	4,366	$109,150
Drainage	L.F.	$45.00	4,366	$196,470
Right of Way	S.F.	$4.00	93,869	$375,476
Removal of Existing Curb and Gutter	L.F.	$5.00	4,366	$21,830
Grind Existing Asphalt	S.F.	$5.00	91,686	$458,430
Restriping	L.F.	$5.00	2,183	$10,915
Roundabout	Each	$500,000	0	$0
Traffic Signal	Each	$180,000	0	$0
			Subtotal	**$1,962,718**

Contingency	15%	$294,408
Mobilization	10%	$196,272
Preconstruction Engineering	8%	$157,017
Construction Engineering	8%	$157,017
Total Project Costs		**$2,768,000**
Springville City's Responsibility		**7%**
		$188,000

Overall Assumptions:

HMA Pavement Density (pcf) =	155	Project No.	**10**
HMA Thickness (in) =	4	Funding:	**Springville/MAG**
Untreated Base Course Thickness (in) =	8	Type:	**Capacity Improvement**
Granual Borrow Thickness (in) =	18	Cost from 2040 RTP	
Roadway Excavation Depth (ft) =	2		
Number of Sidewalks (No.) =	2		
Overlay HMA Thickness (in) =	3		

Springville City
Transportation Master Plan

2600 West Widening: 400 South to Center Street

Minor Collector

Costs

Item	Unit	Unit Cost	Quantity	Cost
Parkstrip	S.F.	$4.00	33,120	$132,480
Removal of Existing Asphalt	S.Y.	$4.00	6,670	$26,680
Clearing and Grubbing	Acre	$2,000.00	1	$1,236
Roadway Excavation	C.Y.	$10.50	1,993	$20,930
HMA Concrete	Ton	$85.00	1,684	$143,179
Untreated Base Course	C.Y.	$10.00	664	$6,644
Granular Borrow	C.Y.	$40.00	1,495	$59,800
Curb and Gutter (2' width)	L.F.	$22.50	4,140	$93,150
Sidewalk (5' width)	L.F.	$25.00	4,140	$103,500
Drainage	L.F.	$45.00	4,140	$186,300
Right of Way	S.F.	$4.00	26,910	$107,640
Removal of Existing Curb and Gutter	L.F.	$5.00	4,140	$20,700
Grind Existing Asphalt	S.F.	$5.00	60,030	$300,150
Restriping	L.F.	$5.00	2,070	$10,350
Roundabout	Each	$500,000	0	$0
Traffic Signal	Each	$180,000	0	$0
			Subtotal	**$1,212,739**

Contingency	15%	$181,911

Mobilization	10%	$121,274

Preconstruction Engineering	8%	$97,019
Construction Engineering	8%	$97,019

Total Project Costs	**$1,710,000**

Springville City's Responsibility	**100%**
	$1,710,000

Overall Assumptions:

HMA Pavement Density (pcf) =	155	Project No.	**11**
HMA Thickness (in) =	3	Funding:	**Springville**
Untreated Base Course Thickness (in) =	8	Type:	**Capacity Improvement**
Granual Borrow Thickness (in) =	18		
Roadway Excavation Depth (ft) =	2		
Number of Sidewalks (No.) =	2		
Overlay HMA Thickness (in) =	3		

Springville City
Transportation Master Plan

New Road: 1400 North to 400 South (West of I-15)

Minor Collector

Costs

Item	Unit	Unit Cost	Quantity	Cost
Parkstrip	S.F.	$4.00	273,600	$1,094,400
Removal of Existing Asphalt	S.Y.	$4.00	0	$0
Clearing and Grubbing	Acre	$2,000.00	28	$56,529
Roadway Excavation	C.Y.	$10.50	53,200	$558,600
HMA Concrete	Ton	$85.00	13,915	$1,182,786
Untreated Base Course	C.Y.	$10.00	17,733	$177,333
Granular Borrow	C.Y.	$40.00	39,900	$1,596,000
Curb and Gutter (2' width)	L.F.	$22.50	34,200	$769,500
Sidewalk (5' width)	L.F.	$25.00	34,200	$855,000
Drainage	L.F.	$45.00	34,200	$1,539,000
Right of Way	S.F.	$4.00	1,231,200	$4,924,800
Removal of Existing Curb and Gutter	L.F.	$5.00	0	$0
Grind Existing Asphalt	S.F.	$5.00	0	$0
Restriping	L.F.	$5.00	17,100	$85,500
Roundabout	Each	$500,000	0	$0
Traffic Signal	Each	$180,000	0	$0
			Subtotal	**$12,839,448**

Contingency	15%	$1,925,917

Mobilization	10%	$1,283,945

Preconstruction Engineering	8%	$1,027,156
Construction Engineering	8%	$1,027,156

Total Project Costs	**$18,104,000**

Springville City's Responsibility	**6%**
	$1,147,000

Overall Assumptions:

HMA Pavement Density (pcf) =	155	Project No.	**12**
HMA Thickness (in) =	3	Funding:	**Springville**
Untreated Base Course Thickness (in) =	8	Type:	**New Road**
Granual Borrow Thickness (in) =	18		
Roadway Excavation Depth (ft) =	2		
Number of Sidewalks (No.) =	2		
Overlay HMA Thickness (in) =	3		

Springville City
Transportation Master Plan

1750 West Connection: Between 1000 North & Center Street

Minor Collector

Costs

Item	Unit	Unit Cost	Quantity	Cost
Parkstrip	S.F.	$4.00	75,200	$300,800
Removal of Existing Asphalt	S.Y.	$4.00	0	$0
Clearing and Grubbing	Acre	$2,000.00	8	$15,537
Roadway Excavation	C.Y.	$10.50	14,622	$153,533
HMA Concrete	Ton	$85.00	3,825	$325,093
Untreated Base Course	C.Y.	$10.00	4,874	$48,741
Granular Borrow	C.Y.	$40.00	10,967	$438,667
Curb and Gutter (2' width)	L.F.	$22.50	9,400	$211,500
Sidewalk (5' width)	L.F.	$25.00	9,400	$235,000
Drainage	L.F.	$45.00	9,400	$423,000
Right of Way	S.F.	$4.00	338,400	$1,353,600
Removal of Existing Curb and Gutter	L.F.	$5.00	0	$0
Grind Existing Asphalt	S.F.	$5.00	0	$0
Restriping	L.F.	$5.00	4,700	$23,500
Roundabout	Each	$500,000	0	$0
Traffic Signal	Each	$180,000	0	$0
			Subtotal	**$3,528,971**

Contingency	15%	$529,346

Mobilization	10%	$352,897

Preconstruction Engineering	8%	$282,318
Construction Engineering	8%	$282,318

Total Project Costs	**$4,976,000**

Springville City's Responsibility	**6%**
	$316,000

Overall Assumptions:

HMA Pavement Density (pcf) =	155	Project No.	**13**
HMA Thickness (in) =	3	Funding:	**Springville**
Untreated Base Course Thickness (in) =	8	Type:	**New Road**
Granual Borrow Thickness (in) =	18		
Roadway Excavation Depth (ft) =	2		
Number of Sidewalks (No.) =	2		
Overlay HMA Thickness (in) =	3		

Springville City
Transportation Master Plan

900 South Extension Over RR Tracks

Commercial Local

Costs

Item	Unit	Unit Cost	Quantity	Cost
Parkstrip	S.F.	$4.00	7,600	$30,400
Removal of Existing Asphalt	S.Y.	$4.00	0	$0
Clearing and Grubbing	Acre	$2,000.00	1	$1,461
Roadway Excavation	C.Y.	$10.50	1,302	$13,669
HMA Concrete	Ton	$85.00	341	$28,944
Untreated Base Course	C.Y.	$10.00	434	$4,340
Granular Borrow	C.Y.	$40.00	976	$39,056
Curb and Gutter (2' width)	L.F.	$22.50	950	$21,375
Sidewalk (5' width)	L.F.	$25.00	950	$23,750
Drainage	L.F.	$45.00	950	$42,750
Right of Way	S.F.	$4.00	31,825	$127,300
Removal of Existing Curb and Gutter	L.F.	$5.00	0	$0
Grind Existing Asphalt	S.F.	$5.00	0	$0
Restriping	L.F.	$5.00	475	$2,375
Roundabout	Each	$500,000	0	$0
Traffic Signal	Each	$180,000	0	$0
			Subtotal	**$335,420**

Contingency	15%	$50,313

Mobilization	10%	$33,542

Preconstruction Engineering	8%	$26,834
Construction Engineering	8%	$26,834

Total Project Costs	**$473,000**

Springville City's Responsibility	**0%**
	$0

Overall Assumptions:

HMA Pavement Density (pcf) =	155	Project No.	**14**
HMA Thickness (in) =	3	Funding:	**Springville**
Untreated Base Course Thickness (in) =	8	Type:	**New Road**
Granual Borrow Thickness (in) =	18		
Roadway Excavation Depth (ft) =	2		
Number of Sidewalks (No.) =	2		
Overlay HMA Thickness (in) =	3		

Springville City
Transportation Master Plan

900 South Extension to SR-51

Minor Collector

Costs

Item	Unit	Unit Cost	Quantity	Cost
Parkstrip	S.F.	$4.00	78,400	$313,600
Removal of Existing Asphalt	S.Y.	$4.00	0	$0
Clearing and Grubbing	Acre	$2,000.00	8.10	$16,198
Roadway Excavation	C.Y.	$10.50	15,244	$160,067
HMA Concrete	Ton	$85.00	3,987	$338,927
Untreated Base Course	C.Y.	$10.00	5,081	$50,815
Granular Borrow	C.Y.	$40.00	11,433	$457,333
Curb and Gutter (2' width)	L.F.	$22.50	9,800	$220,500
Sidewalk (5' width)	L.F.	$25.00	9,800	$245,000
Drainage	L.F.	$45.00	9,800	$441,000
Right of Way	S.F.	$4.00	352,800	$1,411,200
Removal of Existing Curb and Gutter	L.F.	$5.00	0	$0
Grind Existing Asphalt	S.F.	$5.00	0	$0
Restriping	L.F.	$5.00	4,900	$24,500
Roundabout	Each	$500,000	0	$0
Traffic Signal	Each	$180,000	0	$0
			Subtotal	**$3,679,140**

Contingency	15%	$551,871
Mobilization	10%	$367,914
Preconstruction Engineering	8%	$294,331
Construction Engineering	8%	$294,331
Total Project Costs		**$5,188,000**
Springville City's Responsibility		**16%**
		$855,000

Overall Assumptions:

HMA Pavement Density (pcf) =	155	Project No.	**15**
HMA Thickness (in) =	3	Funding:	**Springville**
Untreated Base Course Thickness (in) =	8	Type:	**New Road**
Granual Borrow Thickness (in) =	18		
Roadway Excavation Depth (ft) =	2		
Number of Sidewalks (No.) =	2		
Overlay HMA Thickness (in) =	3		

Springville City
Transportation Master Plan

Connection of Mattea Lane & 750 West

Minor Collector

Costs

Item	Unit	Unit Cost	Quantity	Cost
Parkstrip	S.F.	$4.00	31,680	$126,720
Removal of Existing Asphalt	S.Y.	$4.00	0	$0
Clearing and Grubbing	Acre	$2,000.00	3	$6,545
Roadway Excavation	C.Y.	$10.50	6,160	$64,680
HMA Concrete	Ton	$85.00	1,611	$136,954
Untreated Base Course	C.Y.	$10.00	2,053	$20,533
Granular Borrow	C.Y.	$40.00	4,620	$184,800
Curb and Gutter (2' width)	L.F.	$22.50	3,960	$89,100
Sidewalk (5' width)	L.F.	$25.00	3,960	$99,000
Drainage	L.F.	$45.00	3,960	$178,200
Right of Way	S.F.	$4.00	142,560	$570,240
Removal of Existing Curb and Gutter	L.F.	$5.00	0	$0
Grind Existing Asphalt	S.F.	$5.00	0	$0
Restriping	L.F.	$5.00	1,980	$9,900
Roundabout	Each	$500,000	0	$0
Traffic Signal	Each	$180,000	0	$0
			Subtotal	**$1,486,673**

Contingency	15%	$223,001

Mobilization	10%	$148,667

Preconstruction Engineering	8%	$118,934
Construction Engineering	8%	$118,934

Total Project Costs	**$2,097,000**

Springville City's Responsibility	**16%**
	$346,000

Overall Assumptions:

HMA Pavement Density (pcf) =	155	Project No.	**16**
HMA Thickness (in) =	3	Funding:	**Springville**
Untreated Base Course Thickness (in) =	8	Type:	**New Road**
Granual Borrow Thickness (in) =	18		
Roadway Excavation Depth (ft) =	2		
Number of Sidewalks (No.) =	2		
Overlay HMA Thickness (in) =	3		

Springville City
Transportation Master Plan

Connection of Wood Springs Dr. & 550 West

Minor Collector

Costs

Item	Unit	Unit Cost	Quantity	Cost
Parkstrip	S.F.	$4.00	13,856	$55,424
Removal of Existing Asphalt	S.Y.	$4.00	0	$0
Clearing and Grubbing	Acre	$2,000.00	1	$2,863
Roadway Excavation	C.Y.	$10.50	2,694	$28,289
HMA Concrete	Ton	$85.00	705	$59,900
Untreated Base Course	C.Y.	$10.00	898	$8,981
Granular Borrow	C.Y.	$40.00	2,021	$80,827
Curb and Gutter (2' width)	L.F.	$22.50	1,732	$38,970
Sidewalk (5' width)	L.F.	$25.00	1,732	$43,300
Drainage	L.F.	$45.00	1,732	$77,940
Right of Way	S.F.	$4.00	62,352	$249,408
Removal of Existing Curb and Gutter	L.F.	$5.00	0	$0
Grind Existing Asphalt	S.F.	$5.00	0	$0
Restriping	L.F.	$5.00	866	$4,330
Roundabout	Each	$500,000	0	$0
Traffic Signal	Each	$180,000	0	$0
			Subtotal	**$650,232**

Contingency	15%	$97,535

Mobilization	10%	$65,023

Preconstruction Engineering	8%	$52,019
Construction Engineering	8%	$52,019

Total Project Costs	**$917,000**

Springville City's Responsibility	**16%**
	$151,000

Overall Assumptions:

HMA Pavement Density (pcf) =	155	Project No.	**17**
HMA Thickness (in) =	3	Funding:	**Springville**
Untreated Base Course Thickness (in) =	8	Type:	**New Road**
Granual Borrow Thickness (in) =	18		
Roadway Excavation Depth (ft) =	2		
Number of Sidewalks (No.) =	2		
Overlay HMA Thickness (in) =	3		

Springville City
Transportation Master Plan

Connection of 550 West & 400 North

Commercial Local

Costs

Item	Unit	Unit Cost	Quantity	Cost
Parkstrip	S.F.	$4.00	43,744	$174,976
Removal of Existing Asphalt	S.Y.	$4.00	0	$0
Clearing and Grubbing	Acre	$2,000.00	4	$8,410
Roadway Excavation	C.Y.	$10.50	7,493	$78,678
HMA Concrete	Ton	$85.00	1,960	$166,595
Untreated Base Course	C.Y.	$10.00	2,498	$24,977
Granular Borrow	C.Y.	$40.00	5,620	$224,796
Curb and Gutter (2' width)	L.F.	$22.50	5,468	$123,030
Sidewalk (5' width)	L.F.	$25.00	5,468	$136,700
Drainage	L.F.	$45.00	5,468	$246,060
Right of Way	S.F.	$4.00	183,178	$732,712
Removal of Existing Curb and Gutter	L.F.	$5.00	0	$0
Grind Existing Asphalt	S.F.	$5.00	0	$0
Restriping	L.F.	$5.00	2,734	$13,670
Roundabout	Each	$500,000	0	$0
Traffic Signal	Each	$180,000	0	$0
			Subtotal	**$1,930,604**

Contingency	15%	$289,591

Mobilization	10%	$193,060

Preconstruction Engineering	8%	$154,448
Construction Engineering	8%	$154,448

Total Project Costs	**$2,723,000**

Springville City's Responsibility	**0%**
	$0

Overall Assumptions:

HMA Pavement Density (pcf) =	155	Project No.	**18**
HMA Thickness (in) =	3	Funding:	**Springville**
Untreated Base Course Thickness (in) =	8	Type:	**New Road**
Granual Borrow Thickness (in) =	18		
Roadway Excavation Depth (ft) =	2		
Number of Sidewalks (No.) =	2		
Overlay HMA Thickness (in) =	3		

Springville City
Transportation Master Plan

Connection of 2080 East Near 250 South

Minor Collector

Costs

Item	Unit	Unit Cost	Quantity	Cost
Parkstrip	S.F.	$4.00	4,560	$18,240
Removal of Existing Asphalt	S.Y.	$4.00	0	$0
Clearing and Grubbing	Acre	$2,000.00	0	$942
Roadway Excavation	C.Y.	$10.50	887	$9,310
HMA Concrete	Ton	$85.00	232	$19,713
Untreated Base Course	C.Y.	$10.00	296	$2,956
Granular Borrow	C.Y.	$40.00	665	$26,600
Curb and Gutter (2' width)	L.F.	$22.50	570	$12,825
Sidewalk (5' width)	L.F.	$25.00	570	$14,250
Drainage	L.F.	$45.00	570	$25,650
Right of Way	S.F.	$4.00	20,520	$82,080
Removal of Existing Curb and Gutter	L.F.	$5.00	0	$0
Grind Existing Asphalt	S.F.	$5.00	0	$0
Restriping	L.F.	$5.00	285	$1,425
Roundabout	Each	$500,000	0	$0
Traffic Signal	Each	$180,000	0	$0
			Subtotal	**$213,991**

Contingency	15%	$32,099

Mobilization	10%	$21,399

Preconstruction Engineering	8%	$17,119
Construction Engineering	8%	$17,119

Total Project Costs	**$302,000**

Springville City's Responsibility	**16%**
	$50,000

Overall Assumptions:

HMA Pavement Density (pcf) =	155	Project No.	**19**
HMA Thickness (in) =	3	Funding:	**Springville**
Untreated Base Course Thickness (in) =	8	Type:	**New Road**
Granual Borrow Thickness (in) =	18		
Roadway Excavation Depth (ft) =	2		
Number of Sidewalks (No.) =	2		
Overlay HMA Thickness (in) =	3		

Springville City
Transportation Master Plan

Intersection Improvement: 400 South & 2060 West

Minor Collector

Costs

Item	Unit	Unit Cost	Quantity	Cost
Parkstrip	S.F.	$4.00	0	$0
Removal of Existing Asphalt	S.Y.	$4.00	0	$0
Clearing and Grubbing	Acre	$2,000.00	0	$0
Roadway Excavation	C.Y.	$10.50	0	$0
HMA Concrete	Ton	$85.00	0	$0
Untreated Base Course	C.Y.	$10.00	0	$0
Granular Borrow	C.Y.	$40.00	0	$0
Curb and Gutter (2' width)	L.F.	$22.50	0	$0
Sidewalk (5' width)	L.F.	$25.00	0	$0
Drainage	L.F.	$45.00	0	$0
Right of Way	S.F.	$4.00	0	$0
Removal of Existing Curb and Gutter	L.F.	$5.00	0	$0
Grind Existing Asphalt	S.F.	$5.00	0	$0
Restriping	L.F.	$5.00	0	$0
Roundabout	Each	$500,000	0	$0
Traffic Signal	Each	$180,000	1	$180,000
			Subtotal	**$180,000**

Contingency	15%	$27,000

Mobilization	10%	$18,000

Preconstruction Engineering	8%	$14,400
Construction Engineering	8%	$14,400

Total Project Costs	**$254,000**

Springville City's Responsibility	**0%**
	$0

Overall Assumptions:

HMA Pavement Density (pcf) =	155	Project No.	**21**
HMA Thickness (in) =	3	Funding:	**UDOT**
Untreated Base Course Thickness (in) =	8	Type:	**Traffic Signal**
Granual Borrow Thickness (in) =	18		
Roadway Excavation Depth (ft) =	2		
Number of Sidewalks (No.) =	2		
Overlay HMA Thickness (in) =	3		

Springville City
Transportation Master Plan

Intersection Improvement: 400 South & 1200 West

Minor Collector

Costs

Item	Unit	Unit Cost	Quantity	Cost
Parkstrip	S.F.	$4.00	0	$0
Removal of Existing Asphalt	S.Y.	$4.00	0	$0
Clearing and Grubbing	Acre	$2,000.00	0	$0
Roadway Excavation	C.Y.	$10.50	0	$0
HMA Concrete	Ton	$85.00	0	$0
Untreated Base Course	C.Y.	$10.00	0	$0
Granular Borrow	C.Y.	$40.00	0	$0
Curb and Gutter (2' width)	L.F.	$22.50	0	$0
Sidewalk (5' width)	L.F.	$25.00	0	$0
Drainage	L.F.	$45.00	0	$0
Right of Way	S.F.	$4.00	0	$0
Removal of Existing Curb and Gutter	L.F.	$5.00	0	$0
Grind Existing Asphalt	S.F.	$5.00	0	$0
Restriping	L.F.	$5.00	0	$0
Roundabout	Each	$500,000	0	$0
Traffic Signal	Each	$180,000	1	$180,000
			Subtotal	**$180,000**

Contingency	15%	$27,000

Mobilization	10%	$18,000

Preconstruction Engineering	8%	$14,400
Construction Engineering	8%	$14,400

Total Project Costs	**$254,000**

Springville City's Responsibility	**0%**
	$0

Overall Assumptions:

HMA Pavement Density (pcf) =	155	Project No.	**22**
HMA Thickness (in) =	3	Funding:	**UDOT**
Untreated Base Course Thickness (in) =	8	Type:	**Traffic Signal**
Granual Borrow Thickness (in) =	18	Springville City Paying 10%	
Roadway Excavation Depth (ft) =	2	Currently two sidewalks	
Number of Sidewalks (No.) =	2		
Overlay HMA Thickness (in) =	3		

Springville City
Transportation Master Plan

Intersection Improvement: 400 South & Wood Springs Dr.

Major Arterial

Costs

Item	Unit	Unit Cost	Quantity	Cost
Parkstrip	S.F.	$4.00	0	$0
Removal of Existing Asphalt	S.Y.	$4.00	0	$0
Clearing and Grubbing	Acre	$2,000.00	0	$0
Roadway Excavation	C.Y.	$10.50	0	$0
HMA Concrete	Ton	$85.00	0	$0
Untreated Base Course	C.Y.	$10.00	0	$0
Granular Borrow	C.Y.	$40.00	0	$0
Curb and Gutter (2' width)	L.F.	$22.50	0	$0
Sidewalk (5' width)	L.F.	$25.00	0	$0
Drainage	L.F.	$45.00	0	$0
Right of Way	S.F.	$4.00	0	$0
Removal of Existing Curb and Gutter	L.F.	$5.00	0	$0
Grind Existing Asphalt	S.F.	$5.00	0	$0
Restriping	L.F.	$5.00	0	$0
Roundabout	Each	$500,000	0	$0
Traffic Signal	Each	$180,000	1	$180,000
			Subtotal	**$180,000**

Contingency	15%	$27,000

Mobilization	10%	$18,000

Preconstruction Engineering	8%	$14,400
Construction Engineering	8%	$14,400

Total Project Costs	**$254,000**

Springville City's Responsibility	**0%**
	$0

Overall Assumptions:

HMA Pavement Density (pcf) =	155	Project No.	**23**
HMA Thickness (in) =	4	Funding:	**UDOT**
Untreated Base Course Thickness (in) =	8	Type:	**Traffic Signal**
Granual Borrow Thickness (in) =	18	Springville City Paying 10%	
Roadway Excavation Depth (ft) =	2		
Number of Sidewalks (No.) =	2		
Overlay HMA Thickness (in) =	3		

Springville City
Transportation Master Plan

Intersection Improvement: 400 South & Main Street

Major Arterial

Costs

Item	Unit	Unit Cost	Quantity	Cost
Parkstrip	S.F.	$4.00	0	$0
Removal of Existing Asphalt	S.Y.	$4.00	0	$0
Clearing and Grubbing	Acre	$2,000.00	0	$0
Roadway Excavation	C.Y.	$10.50	0	$0
HMA Concrete	Ton	$85.00	0	$0
Untreated Base Course	C.Y.	$10.00	0	$0
Granular Borrow	C.Y.	$40.00	0	$0
Curb and Gutter (2' width)	L.F.	$22.50	0	$0
Sidewalk (5' width)	L.F.	$25.00	0	$0
Drainage	L.F.	$45.00	0	$0
Right of Way	S.F.	$4.00	0	$0
Removal of Existing Curb and Gutter	L.F.	$5.00	0	$0
Grind Existing Asphalt	S.F.	$5.00	0	$0
Restriping	L.F.	$5.00	0	$0
Roundabout	Each	$500,000	0	$0
Traffic Signal	Each	$180,000	1	$180,000
			Subtotal	**$180,000**

Contingency	15%	$27,000

Mobilization	10%	$18,000

Preconstruction Engineering	8%	$14,400
Construction Engineering	8%	$14,400

Total Project Costs	**$254,000**

Springville City's Responsibility	**0%**
	$0

Overall Assumptions:

HMA Pavement Density (pcf) =	155	Project No.	**24**
HMA Thickness (in) =	4	Funding:	**UDOT**
Untreated Base Course Thickness (in) =	8	Type:	**Traffic Signal**
Granual Borrow Thickness (in) =	18		
Roadway Excavation Depth (ft) =	2		
Number of Sidewalks (No.) =	2		
Overlay HMA Thickness (in) =	3		

Springville City
Transportation Master Plan

Traffic Signal and Intersection Reconfiguration: Main Street & US-89

Major Arterial

Costs

Item	Unit	Unit Cost	Quantity	Cost
Parkstrip	S.F.	$4.00	0	$0
Removal of Existing Asphalt	S.Y.	$4.00	0	$0
Clearing and Grubbing	Acre	$2,000.00	0	$0
Roadway Excavation	C.Y.	$10.50	0	$0
HMA Concrete	Ton	$85.00	0	$0
Untreated Base Course	C.Y.	$10.00	0	$0
Granular Borrow	C.Y.	$40.00	0	$0
Curb and Gutter (2' width)	L.F.	$22.50	0	$0
Sidewalk (5' width)	L.F.	$25.00	0	$0
Drainage	L.F.	$45.00	0	$0
Right of Way	S.F.	$4.00	0	$0
Removal of Existing Curb and Gutter	L.F.	$5.00	0	$0
Grind Existing Asphalt	S.F.	$5.00	0	$0
Restriping	L.F.	$5.00	0	$0
Roundabout	Each	$500,000	0	$0
Traffic Signal	Each	$180,000	1	$180,000
			Subtotal	**$180,000**

Contingency	15%	$27,000

Mobilization	10%	$18,000

Preconstruction Engineering	8%	$14,400
Construction Engineering	8%	$14,400

Total Project Costs	**$25,300,000**

Springville City's Responsibility	**0%**
	$0

Overall Assumptions:

HMA Pavement Density (pcf) =	155	Project No.	**25**
HMA Thickness (in) =	4	Funding:	**UDOT**
Untreated Base Course Thickness (in) =	8	Type:	**Traffic Signal**
Granual Borrow Thickness (in) =	18	Cost from 2040 RTP	
Roadway Excavation Depth (ft) =	2		
Number of Sidewalks (No.) =	2		
Overlay HMA Thickness (in) =	3		

Springville City
Transportation Master Plan

Intersection Improvement: SR-51 & 1600 South Extension

Major Arterial

Costs

Item	Unit	Unit Cost	Quantity	Cost
Parkstrip	S.F.	$4.00	0	$0
Removal of Existing Asphalt	S.Y.	$4.00	0	$0
Clearing and Grubbing	Acre	$2,000.00	0	$0
Roadway Excavation	C.Y.	$10.50	0	$0
HMA Concrete	Ton	$85.00	0	$0
Untreated Base Course	C.Y.	$10.00	0	$0
Granular Borrow	C.Y.	$40.00	0	$0
Curb and Gutter (2' width)	L.F.	$22.50	0	$0
Sidewalk (5' width)	L.F.	$25.00	0	$0
Drainage	L.F.	$45.00	0	$0
Right of Way	S.F.	$4.00	0	$0
Removal of Existing Curb and Gutter	L.F.	$5.00	0	$0
Grind Existing Asphalt	S.F.	$5.00	0	$0
Restriping	L.F.	$5.00	0	$0
Roundabout	Each	$500,000	0	$0
Traffic Signal	Each	$180,000	1	$180,000
			Subtotal	**$180,000**

Contingency	15%	$27,000

Mobilization	10%	$18,000

Preconstruction Engineering	8%	$14,400
Construction Engineering	8%	$14,400

Total Project Costs	**$254,000**

Springville City's Responsibility	**0%**
	$0

Overall Assumptions:

HMA Pavement Density (pcf) =	155	Project No.	**26**
HMA Thickness (in) =	4	Funding:	**UDOT**
Untreated Base Course Thickness (in) =	8	Type:	**Traffic Signal**
Granual Borrow Thickness (in) =	18		
Roadway Excavation Depth (ft) =	2		
Number of Sidewalks (No.) =	2		
Overlay HMA Thickness (in) =	3		

Springville City
Transportation Master Plan

Intersection Improvement: 1400 North & 1200 West

Major Arterial

Costs

Item	Unit	Unit Cost	Quantity	Cost
Parkstrip	S.F.	$4.00	0	$0
Removal of Existing Asphalt	S.Y.	$4.00	0	$0
Clearing and Grubbing	Acre	$2,000.00	0	$0
Roadway Excavation	C.Y.	$10.50	0	$0
HMA Concrete	Ton	$85.00	0	$0
Untreated Base Course	C.Y.	$10.00	0	$0
Granular Borrow	C.Y.	$40.00	0	$0
Curb and Gutter (2' width)	L.F.	$22.50	0	$0
Sidewalk (5' width)	L.F.	$25.00	0	$0
Drainage	L.F.	$45.00	0	$0
Right of Way	S.F.	$4.00	0	$0
Removal of Existing Curb and Gutter	L.F.	$5.00	0	$0
Grind Existing Asphalt	S.F.	$5.00	0	$0
Restriping	L.F.	$5.00	0	$0
Roundabout	Each	$500,000	0	$0
Traffic Signal	Each	$180,000	1	$180,000
			Subtotal	**$180,000**

Contingency	15%	$27,000

Mobilization	10%	$18,000

Preconstruction Engineering	8%	$14,400
Construction Engineering	8%	$14,400

Total Project Costs	**$254,000**

Springville City's Responsibility	**0%**
	$0

Overall Assumptions:

HMA Pavement Density (pcf) =	155	Project No.	**27**
HMA Thickness (in) =	4	Funding:	**UDOT**
Untreated Base Course Thickness (in) =	8	Type:	**Traffic Signal**
Granual Borrow Thickness (in) =	18		
Roadway Excavation Depth (ft) =	2		
Number of Sidewalks (No.) =	2		
Overlay HMA Thickness (in) =	3		

Springville City
Transportation Master Plan

Intersection Improvement: 1600 South & 1200 West

Major Arterial

Costs

Item	Unit	Unit Cost	Quantity	Cost
Parkstrip	S.F.	$4.00	0	$0
Removal of Existing Asphalt	S.Y.	$4.00	0	$0
Clearing and Grubbing	Acre	$2,000.00	0	$0
Roadway Excavation	C.Y.	$10.50	0	$0
HMA Concrete	Ton	$85.00	0	$0
Untreated Base Course	C.Y.	$10.00	0	$0
Granular Borrow	C.Y.	$40.00	0	$0
Curb and Gutter (2' width)	L.F.	$22.50	0	$0
Sidewalk (5' width)	L.F.	$25.00	0	$0
Drainage	L.F.	$45.00	0	$0
Right of Way	S.F.	$4.00	0	$0
Removal of Existing Curb and Gutter	L.F.	$5.00	0	$0
Grind Existing Asphalt	S.F.	$5.00	0	$0
Restriping	L.F.	$5.00	0	$0
Roundabout	Each	$500,000	0	$0
Traffic Signal	Each	$180,000	1	$180,000
			Subtotal	**$180,000**

Contingency	15%	$27,000

Mobilization	10%	$18,000

Preconstruction Engineering	8%	$14,400
Construction Engineering	8%	$14,400

Total Project Costs	**$254,000**

Springville City's Responsibility	**7%**
	$18,000

Overall Assumptions:

HMA Pavement Density (pcf) =	155	Project No.	**28**
HMA Thickness (in) =	4	Funding:	**Springville/MAG**
Untreated Base Course Thickness (in) =	8	Type:	**Traffic Signal**
Granual Borrow Thickness (in) =	18		
Roadway Excavation Depth (ft) =	2		
Number of Sidewalks (No.) =	2		
Overlay HMA Thickness (in) =	3		

Springville City
Transportation Master Plan

Intersection Improvement: 1600 South & Wallace Dr.

Major Arterial

Costs

Item	Unit	Unit Cost	Quantity	Cost
Parkstrip	S.F.	$4.00	0	$0
Removal of Existing Asphalt	S.Y.	$4.00	0	$0
Clearing and Grubbing	Acre	$2,000.00	0	$0
Roadway Excavation	C.Y.	$10.50	0	$0
HMA Concrete	Ton	$85.00	0	$0
Untreated Base Course	C.Y.	$10.00	0	$0
Granular Borrow	C.Y.	$40.00	0	$0
Curb and Gutter (2' width)	L.F.	$22.50	0	$0
Sidewalk (5' width)	L.F.	$25.00	0	$0
Drainage	L.F.	$45.00	0	$0
Right of Way	S.F.	$4.00	0	$0
Removal of Existing Curb and Gutter	L.F.	$5.00	0	$0
Grind Existing Asphalt	S.F.	$5.00	0	$0
Restriping	L.F.	$5.00	0	$0
Roundabout	Each	$500,000	0	$0
Traffic Signal	Each	$180,000	1	$180,000
			Subtotal	**$180,000**

Contingency	15%	$27,000
Mobilization	10%	$18,000
Preconstruction Engineering	8%	$14,400
Construction Engineering	8%	$14,400
Total Project Costs		**$254,000**
Springville City's Responsibility		**7%**
		$18,000

Overall Assumptions:

HMA Pavement Density (pcf) =	155	Project No.	**29**
HMA Thickness (in) =	4	Funding:	**Springville/MAG**
Untreated Base Course Thickness (in) =	8	Type:	**Traffic Signal**
Granual Borrow Thickness (in) =	18	Springville City Paying 10%	
Roadway Excavation Depth (ft) =	2		
Number of Sidewalks (No.) =	2		
Overlay HMA Thickness (in) =	3		

Springville City
Transportation Master Plan

Intersection Improvement: 1600 South & 1750 West

Major Arterial

Costs

Item	Unit	Unit Cost	Quantity	Cost
Parkstrip	S.F.	$4.00	0	$0
Removal of Existing Asphalt	S.Y.	$4.00	0	$0
Clearing and Grubbing	Acre	$2,000.00	0	$0
Roadway Excavation	C.Y.	$10.50	0	$0
HMA Concrete	Ton	$85.00	0	$0
Untreated Base Course	C.Y.	$10.00	0	$0
Granular Borrow	C.Y.	$40.00	0	$0
Curb and Gutter (2' width)	L.F.	$22.50	0	$0
Sidewalk (5' width)	L.F.	$25.00	0	$0
Drainage	L.F.	$45.00	0	$0
Right of Way	S.F.	$4.00	0	$0
Removal of Existing Curb and Gutter	L.F.	$5.00	0	$0
Grind Existing Asphalt	S.F.	$5.00	0	$0
Restriping	L.F.	$5.00	0	$0
Roundabout	Each	$500,000	0	$0
Traffic Signal	Each	$180,000	1	$180,000
			Subtotal	**$180,000**

Contingency	15%	$27,000

Mobilization	10%	$18,000

Preconstruction Engineering	8%	$14,400
Construction Engineering	8%	$14,400

Total Project Costs	**$254,000**

Springville City's Responsibility	**7%**
	$18,000

Overall Assumptions:

HMA Pavement Density (pcf) =	155	Project No.	**30**
HMA Thickness (in) =	4	Funding:	**Springville/MAG**
Untreated Base Course Thickness (in) =	8	Type:	**Traffic Signal**
Granual Borrow Thickness (in) =	18	Springville City Paying 10%	
Roadway Excavation Depth (ft) =	2		
Number of Sidewalks (No.) =	2		
Overlay HMA Thickness (in) =	3		

Springville City
Transportation Master Plan

Intersection Improvement: US:89 & 1600 South Extension

Major Arterial

Costs

Item	Unit	Unit Cost	Quantity	Cost
Parkstrip	S.F.	$4.00	0	$0
Removal of Existing Asphalt	S.Y.	$4.00	0	$0
Clearing and Grubbing	Acre	$2,000.00	0	$0
Roadway Excavation	C.Y.	$10.50	0	$0
HMA Concrete	Ton	$85.00	0	$0
Untreated Base Course	C.Y.	$10.00	0	$0
Granular Borrow	C.Y.	$40.00	0	$0
Curb and Gutter (2' width)	L.F.	$22.50	0	$0
Sidewalk (5' width)	L.F.	$25.00	0	$0
Drainage	L.F.	$45.00	0	$0
Right of Way	S.F.	$4.00	0	$0
Removal of Existing Curb and Gutter	L.F.	$5.00	0	$0
Grind Existing Asphalt	S.F.	$5.00	0	$0
Restriping	L.F.	$5.00	0	$0
Roundabout	Each	$500,000	0	$0
Traffic Signal	Each	$180,000	1	$180,000
			Subtotal	**$180,000**

Contingency	15%	$27,000

Mobilization	10%	$18,000

Preconstruction Engineering	8%	$14,400
Construction Engineering	8%	$14,400

Total Project Costs	**$254,000**

Springville City's Responsibility	**0%**
	$0

Overall Assumptions:

HMA Pavement Density (pcf) =	155	Project No.	**31**
HMA Thickness (in) =	4	Funding:	**UDOT**
Untreated Base Course Thickness (in) =	8	Type:	**Traffic Signal**
Granual Borrow Thickness (in) =	18		
Roadway Excavation Depth (ft) =	2		
Number of Sidewalks (No.) =	2		
Overlay HMA Thickness (in) =	3		

Springville City
Transportation Master Plan

Intersection Improvement: 400 East & 400 North

Minor Collector

Costs

Item	Unit	Unit Cost	Quantity	Cost
Parkstrip	S.F.	$4.00	0	$0
Removal of Existing Asphalt	S.Y.	$4.00	0	$0
Clearing and Grubbing	Acre	$2,000.00	0	$0
Roadway Excavation	C.Y.	$10.50	0	$0
HMA Concrete	Ton	$85.00	0	$0
Untreated Base Course	C.Y.	$10.00	0	$0
Granular Borrow	C.Y.	$40.00	0	$0
Curb and Gutter (2' width)	L.F.	$22.50	0	$0
Sidewalk (5' width)	L.F.	$25.00	0	$0
Drainage	L.F.	$45.00	0	$0
Right of Way	S.F.	$4.00	0	$0
Removal of Existing Curb and Gutter	L.F.	$5.00	0	$0
Grind Existing Asphalt	S.F.	$5.00	0	$0
Restriping	L.F.	$5.00	0	$0
Roundabout	Each	$500,000	0	$0
Traffic Signal	Each	$180,000	1	$180,000
			Subtotal	**$180,000**

Contingency	15%	$27,000

Mobilization	10%	$18,000

Preconstruction Engineering	8%	$14,400
Construction Engineering	8%	$14,400

Total Project Costs	**$254,000**

Springville City's Responsibility	**100%**
	$254,000

Overall Assumptions:

HMA Pavement Density (pcf) =	155	Project No.	**32**
HMA Thickness (in) =	3	Funding:	**Springville**
Untreated Base Course Thickness (in) =	8	Type:	**Traffic Signal**
Granual Borrow Thickness (in) =	18		
Roadway Excavation Depth (ft) =	2		
Number of Sidewalks (No.) =	2		
Overlay HMA Thickness (in) =	3		

Springville City
Transportation Master Plan

Intersection Improvement: 400 East & Center Street

Minor Collector

Costs

Item	Unit	Unit Cost	Quantity	Cost
Parkstrip	S.F.	$4.00	0	$0
Removal of Existing Asphalt	S.Y.	$4.00	0	$0
Clearing and Grubbing	Acre	$2,000.00	0	$0
Roadway Excavation	C.Y.	$10.50	0	$0
HMA Concrete	Ton	$85.00	0	$0
Untreated Base Course	C.Y.	$10.00	0	$0
Granular Borrow	C.Y.	$40.00	0	$0
Curb and Gutter (2' width)	L.F.	$22.50	0	$0
Sidewalk (5' width)	L.F.	$25.00	0	$0
Drainage	L.F.	$45.00	0	$0
Right of Way	S.F.	$4.00	0	$0
Removal of Existing Curb and Gutter	L.F.	$5.00	0	$0
Grind Existing Asphalt	S.F.	$5.00	0	$0
Restriping	L.F.	$5.00	0	$0
Roundabout	Each	$500,000	0	$0
Traffic Signal	Each	$180,000	1	$180,000
			Subtotal	**$180,000**

Contingency	15%	$27,000

Mobilization	10%	$18,000

Preconstruction Engineering	8%	$14,400
Construction Engineering	8%	$14,400

Total Project Costs	**$254,000**

Springville City's Responsibility	**100%**
	$254,000

Overall Assumptions:

HMA Pavement Density (pcf) =	155	Project No.	**33**
HMA Thickness (in) =	3	Funding:	**Springville**
Untreated Base Course Thickness (in) =	8	Type:	**Traffic Signal**
Granual Borrow Thickness (in) =	18		
Roadway Excavation Depth (ft) =	2		
Number of Sidewalks (No.) =	2		
Overlay HMA Thickness (in) =	3		

Springville City
Transportation Master Plan

Railroad Crossing: 400 North & Spring Creek Place

Minor Collector

Costs

Item	Unit	Unit Cost	Quantity	Cost
Parkstrip	S.F.	$4.00	0	$0
Removal of Existing Asphalt	S.Y.	$4.00	0	$0
Clearing and Grubbing	Acre	$2,000.00	0	$0
Roadway Excavation	C.Y.	$10.50	0	$0
HMA Concrete	Ton	$85.00	0	$0
Untreated Base Course	C.Y.	$10.00	0	$0
Granular Borrow	C.Y.	$40.00	0	$0
Curb and Gutter (2' width)	L.F.	$22.50	0	$0
Sidewalk (5' width)	L.F.	$25.00	0	$0
Drainage	L.F.	$45.00	0	$0
Right of Way	S.F.	$4.00	0	$0
Removal of Existing Curb and Gutter	L.F.	$5.00	0	$0
Grind Existing Asphalt	S.F.	$5.00	0	$0
Restriping	L.F.	$5.00	0	$0
Roundabout	Each	$500,000	0	$0
Traffic Signal	Each	$180,000	0	$0
Railroad Crossing	Each	$500,000	1	$500,000
			Subtotal	**$500,000**

Contingency	15%	$75,000

Mobilization	10%	$50,000

Preconstruction Engineering	8%	$40,000
Construction Engineering	8%	$40,000

Total Project Costs	**$705,000**

Springville City's Responsibility	**100%**
	$705,000

Overall Assumptions:

HMA Pavement Density (pcf) =	155	Project No.	**35**
HMA Thickness (in) =	3	Funding:	**Springville**
Untreated Base Course Thickness (in) =	8	Type:	**Railroad**
Granual Borrow Thickness (in) =	18		
Roadway Excavation Depth (ft) =	2		
Number of Sidewalks (No.) =	2		
Overlay HMA Thickness (in) =	3		

Springville City
Transportation Master Plan

Railroad Crossing: 900 South & 1500 West

Minor Collector

Costs

Item	Unit	Unit Cost	Quantity	Cost
Parkstrip	S.F.	$4.00	0	$0
Removal of Existing Asphalt	S.Y.	$4.00	0	$0
Clearing and Grubbing	Acre	$2,000.00	0	$0
Roadway Excavation	C.Y.	$10.50	0	$0
HMA Concrete	Ton	$85.00	0	$0
Untreated Base Course	C.Y.	$10.00	0	$0
Granular Borrow	C.Y.	$40.00	0	$0
Curb and Gutter (2' width)	L.F.	$22.50	0	$0
Sidewalk (5' width)	L.F.	$25.00	0	$0
Drainage	L.F.	$45.00	0	$0
Right of Way	S.F.	$4.00	0	$0
Removal of Existing Curb and Gutter	L.F.	$5.00	0	$0
Grind Existing Asphalt	S.F.	$5.00	0	$0
Restriping	L.F.	$5.00	0	$0
Roundabout	Each	$500,000	0	$0
Traffic Signal	Each	$180,000	0	$0
Railroad Crossing	Each	$500,000	1	$500,000
			Subtotal	**$500,000**

Contingency	15%	$75,000

Mobilization	10%	$50,000

Preconstruction Engineering	8%	$40,000
Construction Engineering	8%	$40,000

Total Project Costs	**$705,000**

Springville City's Responsibility	**100%**
	$705,000

Overall Assumptions:

HMA Pavement Density (pcf) =	155	Project No.	**36**
HMA Thickness (in) =	3	Funding:	**Springville**
Untreated Base Course Thickness (in) =	8	Type:	**Railroad**
Granual Borrow Thickness (in) =	18		
Roadway Excavation Depth (ft) =	2		
Number of Sidewalks (No.) =	2		
Overlay HMA Thickness (in) =	3		

Springville City
Transportation Master Plan

Railroad Crossing: 950 West & 1400 South

Minor Collector

Costs

Item	Unit	Unit Cost	Quantity	Cost
Parkstrip	S.F.	$4.00	0	$0
Removal of Existing Asphalt	S.Y.	$4.00	0	$0
Clearing and Grubbing	Acre	$2,000.00	0	$0
Roadway Excavation	C.Y.	$10.50	0	$0
HMA Concrete	Ton	$85.00	0	$0
Untreated Base Course	C.Y.	$10.00	0	$0
Granular Borrow	C.Y.	$40.00	0	$0
Curb and Gutter (2' width)	L.F.	$22.50	0	$0
Sidewalk (5' width)	L.F.	$25.00	0	$0
Drainage	L.F.	$45.00	0	$0
Right of Way	S.F.	$4.00	0	$0
Removal of Existing Curb and Gutter	L.F.	$5.00	0	$0
Grind Existing Asphalt	S.F.	$5.00	0	$0
Restriping	L.F.	$5.00	0	$0
Roundabout	Each	$500,000	0	$0
Traffic Signal	Each	$180,000	0	$0
Railroad Crossing	Each	$500,000	1	$500,000
			Subtotal	**$500,000**

Contingency	15%	$75,000

Mobilization	10%	$50,000

Preconstruction Engineering	8%	$40,000
Construction Engineering	8%	$40,000

Total Project Costs	**$705,000**

Springville City's Responsibility	**100%**
	$705,000

Overall Assumptions:

HMA Pavement Density (pcf) =	155	Project No.	**37**
HMA Thickness (in) =	3	Funding:	**Springville**
Untreated Base Course Thickness (in) =	8	Type:	**Railroad**
Granual Borrow Thickness (in) =	18		
Roadway Excavation Depth (ft) =	2		
Number of Sidewalks (No.) =	2		
Overlay HMA Thickness (in) =	3		

Springville City
Transportation Master Plan

Railroad Crossing: 900 South & 600 West

Minor Collector

Costs

Item	Unit	Unit Cost	Quantity	Cost
Parkstrip	S.F.	$4.00	0	$0
Removal of Existing Asphalt	S.Y.	$4.00	0	$0
Clearing and Grubbing	Acre	$2,000.00	0	$0
Roadway Excavation	C.Y.	$10.50	0	$0
HMA Concrete	Ton	$85.00	0	$0
Untreated Base Course	C.Y.	$10.00	0	$0
Granular Borrow	C.Y.	$40.00	0	$0
Curb and Gutter (2' width)	L.F.	$22.50	0	$0
Sidewalk (5' width)	L.F.	$25.00	0	$0
Drainage	L.F.	$45.00	0	$0
Right of Way	S.F.	$4.00	0	$0
Removal of Existing Curb and Gutter	L.F.	$5.00	0	$0
Grind Existing Asphalt	S.F.	$5.00	0	$0
Restriping	L.F.	$5.00	0	$0
Roundabout	Each	$500,000	0	$0
Traffic Signal	Each	$180,000	0	$0
Railroad Crossing	Each	$500,000	1	$500,000
			Subtotal	**$500,000**

Contingency	15%	$75,000
Mobilization	10%	$50,000
Preconstruction Engineering	8%	$40,000
Construction Engineering	8%	$40,000
Total Project Costs		**$705,000**

Springville City's Responsibility	**100%**
	$705,000

Overall Assumptions:

HMA Pavement Density (pcf) =	155	Project No.	**38**
HMA Thickness (in) =	3	Funding:	**Springville**
Untreated Base Course Thickness (in) =	8	Type:	**Railroad**
Granual Borrow Thickness (in) =	18		
Roadway Excavation Depth (ft) =	2		
Number of Sidewalks (No.) =	2		
Overlay HMA Thickness (in) =	3		

Springville City
Transportation Master Plan

Intersection Improvement: West of 400 South Interchange

Principal Arterial

Costs

Item	Unit	Unit Cost	Quantity	Cost
Parkstrip	S.F.	$4.00	0	$0
Removal of Existing Asphalt	S.Y.	$4.00	0	$0
Clearing and Grubbing	Acre	$2,000.00	0	$0
Roadway Excavation	C.Y.	$10.50	0	$0
HMA Concrete	Ton	$85.00	0	$0
Untreated Base Course	C.Y.	$10.00	0	$0
Granular Borrow	C.Y.	$40.00	0	$0
Curb and Gutter (2' width)	L.F.	$22.50	0	$0
Sidewalk (5' width)	L.F.	$25.00	0	$0
Drainage	L.F.	$45.00	0	$0
Right of Way	S.F.	$4.00	0	$0
Removal of Existing Curb and Gutter	L.F.	$5.00	0	$0
Grind Existing Asphalt	S.F.	$5.00	0	$0
Restriping	L.F.	$5.00	0	$0
Roundabout	Each	$500,000	0	$0
Traffic Signal	Each	$180,000	1	$180,000
			Subtotal	**$180,000**

Contingency	15%	$27,000

Mobilization	10%	$18,000

Preconstruction Engineering	8%	$14,400
Construction Engineering	8%	$14,400

Total Project Costs	**$254,000**

Springville City's Responsibility	**0%**
	$0

Overall Assumptions:

HMA Pavement Density (pcf) =	155	Project No.	**39**
HMA Thickness (in) =	4	Funding:	**UDOT**
Untreated Base Course Thickness (in) =	8	Type:	**Traffic Signal**
Granual Borrow Thickness (in) =	18		
Roadway Excavation Depth (ft) =	2		
Number of Sidewalks (No.) =	2		
Overlay HMA Thickness (in) =	3		

Springville City
Transportation Master Plan

500 North: 2500 West to 2650 West

Minor Collector

Costs

Item	Unit	Unit Cost	Quantity	Cost
Parkstrip	S.F.	$4.00	4,160	$16,640
Removal of Existing Asphalt	S.Y.	$4.00	0	$0
Clearing and Grubbing	Acre	$2,000.00	0	$860
Roadway Excavation	C.Y.	$10.50	809	$8,493
HMA Concrete	Ton	$85.00	212	$17,984
Untreated Base Course	C.Y.	$10.00	270	$2,696
Granular Borrow	C.Y.	$40.00	607	$24,267
Curb and Gutter (2' width)	L.F.	$22.50	520	$11,700
Sidewalk (5' width)	L.F.	$25.00	520	$13,000
Drainage	L.F.	$45.00	520	$23,400
Right of Way	S.F.	$4.00	18,720	$74,880
Removal of Existing Curb and Gutter	L.F.	$5.00	0	$0
Grind Existing Asphalt	S.F.	$5.00	0	$0
Restriping	L.F.	$5.00	260	$1,300
Roundabout	Each	$500,000	0	$0
Traffic Signal	Each	$180,000	0	$0
			Subtotal	**$195,220**

Contingency	15%	$29,283

Mobilization	10%	$19,522

Preconstruction Engineering	8%	$15,618
Construction Engineering	8%	$15,618

Total Project Costs	**$276,000**

Springville City's Responsibility	**6%**
	$18,000

Overall Assumptions:

HMA Pavement Density (pcf) =	155	Project No.	**40**
HMA Thickness (in) =	3	Funding:	**Springville**
Untreated Base Course Thickness (in) =	8	Type:	**New Road**
Granual Borrow Thickness (in) =	18		
Roadway Excavation Depth (ft) =	2		
Number of Sidewalks (No.) =	2		
Overlay HMA Thickness (in) =	3		

Springville City
Transportation Master Plan

2200 West Extension to 500 North

Commercial Local

Costs

Item	Unit	Unit Cost	Quantity	Cost
Parkstrip	S.F.	$4.00	56,000	$224,000
Removal of Existing Asphalt	S.Y.	$4.00	0	$0
Clearing and Grubbing	Acre	$2,000.00	5	$10,767
Roadway Excavation	C.Y.	$10.50	9,593	$100,722
HMA Concrete	Ton	$85.00	2,509	$213,270
Untreated Base Course	C.Y.	$10.00	3,198	$31,975
Granular Borrow	C.Y.	$40.00	7,194	$287,778
Curb and Gutter (2' width)	L.F.	$22.50	7,000	$157,500
Sidewalk (5' width)	L.F.	$25.00	7,000	$175,000
Drainage	L.F.	$45.00	7,000	$315,000
Right of Way	S.F.	$4.00	234,500	$938,000
Removal of Existing Curb and Gutter	L.F.	$5.00	0	$0
Grind Existing Asphalt	S.F.	$5.00	0	$0
Restriping	L.F.	$5.00	3,500	$17,500
Roundabout	Each	$500,000	0	$0
Traffic Signal	Each	$180,000	0	$0
			Subtotal	**$2,471,512**

Contingency	15%	$370,727
Mobilization	10%	$247,151
Preconstruction Engineering	8%	$197,721
Construction Engineering	8%	$197,721
Total Project Costs		**$3,485,000**

Springville City's Responsibility	**0%**
	$0

Overall Assumptions:

HMA Pavement Density (pcf) =	155	Project No.	**41**
HMA Thickness (in) =	3	Funding:	**Springville**
Untreated Base Course Thickness (in) =	8	Type:	**New Road**
Granual Borrow Thickness (in) =	18		
Roadway Excavation Depth (ft) =	2		
Number of Sidewalks (No.) =	2		
Overlay HMA Thickness (in) =	3		

Springville City
Transportation Master Plan

500 North Extension to Frontage Road

Minor Collector

Costs

Item	Unit	Unit Cost	Quantity	Cost
Parkstrip	S.F.	$4.00	17,600	$70,400
Removal of Existing Asphalt	S.Y.	$4.00	0	$0
Clearing and Grubbing	Acre	$2,000.00	2	$3,636
Roadway Excavation	C.Y.	$10.50	3,422	$35,933
HMA Concrete	Ton	$85.00	895	$76,086
Untreated Base Course	C.Y.	$10.00	1,141	$11,407
Granular Borrow	C.Y.	$40.00	2,567	$102,667
Curb and Gutter (2' width)	L.F.	$22.50	2,200	$49,500
Sidewalk (5' width)	L.F.	$25.00	2,200	$55,000
Drainage	L.F.	$45.00	2,200	$99,000
Right of Way	S.F.	$4.00	79,200	$316,800
Removal of Existing Curb and Gutter	L.F.	$5.00	0	$0
Grind Existing Asphalt	S.F.	$5.00	0	$0
Restriping	L.F.	$5.00	1,100	$5,500
Roundabout	Each	$500,000	0	$0
Traffic Signal	Each	$180,000	0	$0
			Subtotal	**$825,929**

Contingency	15%	$123,889
Mobilization	10%	$82,593
Preconstruction Engineering	8%	$66,074
Construction Engineering	8%	$66,074
Total Project Costs		**$1,165,000**
Springville City's Responsibility		**6%**
		$74,000

Overall Assumptions:

HMA Pavement Density (pcf) =	155	Project No.	**42**
HMA Thickness (in) =	3	Funding:	**Springville**
Untreated Base Course Thickness (in) =	8	Type:	**New Road**
Granual Borrow Thickness (in) =	18		
Roadway Excavation Depth (ft) =	2		
Number of Sidewalks (No.) =	2		
Overlay HMA Thickness (in) =	3		

Springville City
Transportation Master Plan

1500 West Extension to 500 South

Commercial Local

Costs

Item	Unit	Unit Cost	Quantity	Cost
Parkstrip	S.F.	$4.00	51,280	$205,120
Removal of Existing Asphalt	S.Y.	$4.00	0	$0
Clearing and Grubbing	Acre	$2,000.00	5	$9,859
Roadway Excavation	C.Y.	$10.50	8,784	$92,233
HMA Concrete	Ton	$85.00	2,298	$195,295
Untreated Base Course	C.Y.	$10.00	2,928	$29,280
Granular Borrow	C.Y.	$40.00	6,588	$263,522
Curb and Gutter (2' width)	L.F.	$22.50	6,410	$144,225
Sidewalk (5' width)	L.F.	$25.00	6,410	$160,250
Drainage	L.F.	$45.00	6,410	$288,450
Right of Way	S.F.	$4.00	214,735	$858,940
Removal of Existing Curb and Gutter	L.F.	$5.00	0	$0
Grind Existing Asphalt	S.F.	$5.00	0	$0
Restriping	L.F.	$5.00	3,205	$16,025
Roundabout	Each	$500,000	0	$0
Traffic Signal	Each	$180,000	0	$0
			Subtotal	**$2,263,199**

Contingency	15%	$339,480

Mobilization	10%	$226,320

Preconstruction Engineering	8%	$181,056
Construction Engineering	8%	$181,056

Total Project Costs	**$3,192,000**

Springville City's Responsibility	**0%**
	$0

Overall Assumptions:

HMA Pavement Density (pcf) =	155	Project No.	**43**
HMA Thickness (in) =	3	Funding:	**Springville**
Untreated Base Course Thickness (in) =	8	Type:	**New Road**
Granual Borrow Thickness (in) =	18		
Roadway Excavation Depth (ft) =	2		
Number of Sidewalks (No.) =	2		
Overlay HMA Thickness (in) =	3		

Springville City
Transportation Master Plan

1700 West: 500 South to 900 South

Commercial Local

Costs

Item	Unit	Unit Cost	Quantity	Cost
Parkstrip	S.F.	$4.00	36,160	$144,640
Removal of Existing Asphalt	S.Y.	$4.00	0	$0
Clearing and Grubbing	Acre	$2,000.00	3	$6,952
Roadway Excavation	C.Y.	$10.50	6,194	$65,038
HMA Concrete	Ton	$85.00	1,620	$137,712
Untreated Base Course	C.Y.	$10.00	2,065	$20,647
Granular Borrow	C.Y.	$40.00	4,646	$185,822
Curb and Gutter (2' width)	L.F.	$22.50	4,520	$101,700
Sidewalk (5' width)	L.F.	$25.00	4,520	$113,000
Drainage	L.F.	$45.00	4,520	$203,400
Right of Way	S.F.	$4.00	151,420	$605,680
Removal of Existing Curb and Gutter	L.F.	$5.00	0	$0
Grind Existing Asphalt	S.F.	$5.00	0	$0
Restriping	L.F.	$5.00	2,260	$11,300
Roundabout	Each	$500,000	0	$0
Traffic Signal	Each	$180,000	0	$0
			Subtotal	**$1,595,891**

Contingency	15%	$239,384

Mobilization	10%	$159,589

Preconstruction Engineering	8%	$127,671
Construction Engineering	8%	$127,671

Total Project Costs	**$2,251,000**

Springville City's Responsibility	**0%**
	$0

Overall Assumptions:

HMA Pavement Density (pcf) =	155	Project No.	**44**
HMA Thickness (in) =	3	Funding:	**Springville**
Untreated Base Course Thickness (in) =	8	Type:	**New Road**
Granual Borrow Thickness (in) =	18		
Roadway Excavation Depth (ft) =	2		
Number of Sidewalks (No.) =	2		
Overlay HMA Thickness (in) =	3		

Springville City
Transportation Master Plan

1500 West: Center Street to 900 South

Minor Collector

Costs

Item	Unit	Unit Cost	Quantity	Cost
Parkstrip	S.F.	$4.00	76,800	$307,200
Removal of Existing Asphalt	S.Y.	$4.00	0	$0
Clearing and Grubbing	Acre	$2,000.00	8	$15,868
Roadway Excavation	C.Y.	$10.50	14,933	$156,800
HMA Concrete	Ton	$85.00	3,906	$332,010
Untreated Base Course	C.Y.	$10.00	4,978	$49,778
Granular Borrow	C.Y.	$40.00	11,200	$448,000
Curb and Gutter (2' width)	L.F.	$22.50	9,600	$216,000
Sidewalk (5' width)	L.F.	$25.00	9,600	$240,000
Drainage	L.F.	$45.00	9,600	$432,000
Right of Way	S.F.	$4.00	345,600	$1,382,400
Removal of Existing Curb and Gutter	L.F.	$5.00	0	$0
Grind Existing Asphalt	S.F.	$5.00	0	$0
Restriping	L.F.	$5.00	4,800	$24,000
Roundabout	Each	$500,000	0	$0
Traffic Signal	Each	$180,000	0	$0
			Subtotal	**$3,604,056**

Contingency	15%	$540,608

Mobilization	10%	$360,406

Preconstruction Engineering	8%	$288,324
Construction Engineering	8%	$288,324

Total Project Costs	**$5,082,000**

Springville City's Responsibility	**16%**
	$837,000

Overall Assumptions:

HMA Pavement Density (pcf) =	155	Project No.	**45**
HMA Thickness (in) =	3	Funding:	**Springville**
Untreated Base Course Thickness (in) =	8	Type:	**New Road**
Granual Borrow Thickness (in) =	18		
Roadway Excavation Depth (ft) =	2		
Number of Sidewalks (No.) =	2		
Overlay HMA Thickness (in) =	3		

Springville City
Transportation Master Plan

1600 South & SR-51 Connection

Commercial Local

Costs

Item	Unit	Unit Cost	Quantity	Cost
Parkstrip	S.F.	$4.00	94,400	$377,600
Removal of Existing Asphalt	S.Y.	$4.00	0	$0
Clearing and Grubbing	Acre	$2,000.00	9	$18,150
Roadway Excavation	C.Y.	$10.50	16,170	$169,789
HMA Concrete	Ton	$85.00	4,230	$359,513
Untreated Base Course	C.Y.	$10.00	5,390	$53,901
Granular Borrow	C.Y.	$40.00	12,128	$485,111
Curb and Gutter (2' width)	L.F.	$22.50	11,800	$265,500
Sidewalk (5' width)	L.F.	$25.00	11,800	$295,000
Drainage	L.F.	$45.00	11,800	$531,000
Right of Way	S.F.	$4.00	395,300	$1,581,200
Removal of Existing Curb and Gutter	L.F.	$5.00	0	$0
Grind Existing Asphalt	S.F.	$5.00	0	$0
Restriping	L.F.	$5.00	5,900	$29,500
Roundabout	Each	$500,000	0	$0
Traffic Signal	Each	$180,000	0	$0
			Subtotal	**$4,166,264**

Contingency	15%	$624,940

Mobilization	10%	$416,626

Preconstruction Engineering	8%	$333,301
Construction Engineering	8%	$333,301

Total Project Costs	**$5,875,000**

Springville City's Responsibility	**0%**
	$0

Overall Assumptions:

HMA Pavement Density (pcf) =	155	Project No.	**46**
HMA Thickness (in) =	3	Funding:	**Springville**
Untreated Base Course Thickness (in) =	8	Type:	**New Road**
Granual Borrow Thickness (in) =	18		
Roadway Excavation Depth (ft) =	2		
Number of Sidewalks (No.) =	2		
Overlay HMA Thickness (in) =	3		

Springville City
Transportation Master Plan

1000 North Extension to City Pasture Road

Commercial Local

Costs

Item	Unit	Unit Cost	Quantity	Cost
Parkstrip	S.F.	$4.00	38,400	$153,600
Removal of Existing Asphalt	S.Y.	$4.00	0	$0
Clearing and Grubbing	Acre	$2,000.00	4	$7,383
Roadway Excavation	C.Y.	$10.50	6,578	$69,067
HMA Concrete	Ton	$85.00	1,721	$146,243
Untreated Base Course	C.Y.	$10.00	2,193	$21,926
Granular Borrow	C.Y.	$40.00	4,933	$197,333
Curb and Gutter (2' width)	L.F.	$22.50	4,800	$108,000
Sidewalk (5' width)	L.F.	$25.00	4,800	$120,000
Drainage	L.F.	$45.00	4,800	$216,000
Right of Way	S.F.	$4.00	160,800	$643,200
Removal of Existing Curb and Gutter	L.F.	$5.00	0	$0
Grind Existing Asphalt	S.F.	$5.00	0	$0
Restriping	L.F.	$5.00	2,400	$12,000
Roundabout	Each	$500,000	0	$0
Traffic Signal	Each	$180,000	0	$0
			Subtotal	**$1,694,751**

Contingency	15%	$254,213
Mobilization	10%	$169,475
Preconstruction Engineering	8%	$135,580
Construction Engineering	8%	$135,580
Total Project Costs		**$2,390,000**

Springville City's Responsibility	**0%**
	$0

Overall Assumptions:

HMA Pavement Density (pcf) =	155	Project No.	**47**
HMA Thickness (in) =	3	Funding:	**Springville**
Untreated Base Course Thickness (in) =	8	Type:	**New Road**
Granual Borrow Thickness (in) =	18		
Roadway Excavation Depth (ft) =	2		
Number of Sidewalks (No.) =	2		
Overlay HMA Thickness (in) =	3		

Springville City
Transportation Master Plan

400 North Connection to 400 South to 1300 East

Minor Collector

Costs

Item	Unit	Unit Cost	Quantity	Cost
Parkstrip	S.F.	$4.00	37,760	$151,040
Removal of Existing Asphalt	S.Y.	$4.00	0	$0
Clearing and Grubbing	Acre	$2,000.00	4	$7,802
Roadway Excavation	C.Y.	$10.50	7,342	$77,093
HMA Concrete	Ton	$85.00	1,920	$163,238
Untreated Base Course	C.Y.	$10.00	2,447	$24,474
Granular Borrow	C.Y.	$40.00	5,507	$220,267
Curb and Gutter (2' width)	L.F.	$22.50	4,720	$106,200
Sidewalk (5' width)	L.F.	$25.00	4,720	$118,000
Drainage	L.F.	$45.00	4,720	$212,400
Right of Way	S.F.	$4.00	169,920	$679,680
Removal of Existing Curb and Gutter	L.F.	$5.00	0	$0
Grind Existing Asphalt	S.F.	$5.00	0	$0
Restriping	L.F.	$5.00	2,360	$11,800
Roundabout	Each	$500,000	0	$0
Traffic Signal	Each	$180,000	0	$0
			Subtotal	**$1,771,994**

Contingency	15%	$265,799

Mobilization	10%	$177,199

Preconstruction Engineering	8%	$141,760
Construction Engineering	8%	$141,760

Total Project Costs	**$2,499,000**

Springville City's Responsibility	**16%**
	$412,000

Overall Assumptions:

HMA Pavement Density (pcf) =	155	Project No.	**49**
HMA Thickness (in) =	3	Funding:	**Springville**
Untreated Base Course Thickness (in) =	8	Type:	**New Road**
Granual Borrow Thickness (in) =	18		
Roadway Excavation Depth (ft) =	2		
Number of Sidewalks (No.) =	2		
Overlay HMA Thickness (in) =	3		

Springville City
Transportation Master Plan

River Bottom Rd. Extension to 1600 North

Minor Collector

Costs

Item	Unit	Unit Cost	Quantity	Cost
Parkstrip	S.F.	$4.00	17,600	$70,400
Removal of Existing Asphalt	S.Y.	$4.00	0	$0
Clearing and Grubbing	Acre	$2,000.00	2	$3,636
Roadway Excavation	C.Y.	$10.50	3,422	$35,933
HMA Concrete	Ton	$85.00	895	$76,086
Untreated Base Course	C.Y.	$10.00	1,141	$11,407
Granular Borrow	C.Y.	$40.00	2,567	$102,667
Curb and Gutter (2' width)	L.F.	$22.50	2,200	$49,500
Sidewalk (5' width)	L.F.	$25.00	2,200	$55,000
Drainage	L.F.	$45.00	2,200	$99,000
Right of Way	S.F.	$4.00	79,200	$316,800
Removal of Existing Curb and Gutter	L.F.	$5.00	0	$0
Grind Existing Asphalt	S.F.	$5.00	0	$0
Restriping	L.F.	$5.00	1,100	$5,500
Roundabout	Each	$500,000	0	$0
Traffic Signal	Each	$180,000	0	$0
			Subtotal	**$825,929**

Contingency	15%	$123,889

Mobilization	10%	$82,593

Preconstruction Engineering	8%	$66,074
Construction Engineering	8%	$66,074

Total Project Costs	**$1,165,000**

Springville City's Responsibility	**16%**
	$192,000

Overall Assumptions:

HMA Pavement Density (pcf) =	155	Project No.	**50**
HMA Thickness (in) =	3	Funding:	**Springville**
Untreated Base Course Thickness (in) =	8	Type:	**New Road**
Granual Borrow Thickness (in) =	18		
Roadway Excavation Depth (ft) =	2		
Number of Sidewalks (No.) =	2		
Overlay HMA Thickness (in) =	3		

Springville City
Transportation Master Plan

1400 North Extension to New Frontage Road

Minor Collector

Costs

Item	Unit	Unit Cost	Quantity	Cost
Parkstrip	S.F.	$4.00	9,600	$38,400
Removal of Existing Asphalt	S.Y.	$4.00	0	$0
Clearing and Grubbing	Acre	$2,000.00	1	$1,983
Roadway Excavation	C.Y.	$10.50	1,867	$19,600
HMA Concrete	Ton	$85.00	488	$41,501
Untreated Base Course	C.Y.	$10.00	622	$6,222
Granular Borrow	C.Y.	$40.00	1,400	$56,000
Curb and Gutter (2' width)	L.F.	$22.50	1,200	$27,000
Sidewalk (5' width)	L.F.	$25.00	1,200	$30,000
Drainage	L.F.	$45.00	1,200	$54,000
Right of Way	S.F.	$4.00	43,200	$172,800
Removal of Existing Curb and Gutter	L.F.	$5.00	0	$0
Grind Existing Asphalt	S.F.	$5.00	0	$0
Restriping	L.F.	$5.00	600	$3,000
Roundabout	Each	$500,000	0	$0
Traffic Signal	Each	$180,000	0	$0
			Subtotal	**$450,507**

Contingency	15%	$67,576

Mobilization	10%	$45,051

Preconstruction Engineering	8%	$36,041
Construction Engineering	8%	$36,041

Total Project Costs	**$636,000**

Springville City's Responsibility	**16%**
	$105,000

Overall Assumptions:

HMA Pavement Density (pcf) =	155	Project No.	**51**
HMA Thickness (in) =	3	Funding:	**Springville**
Untreated Base Course Thickness (in) =	8	Type:	**New Road**
Granual Borrow Thickness (in) =	18		
Roadway Excavation Depth (ft) =	2		
Number of Sidewalks (No.) =	2		
Overlay HMA Thickness (in) =	3		

Springville City
Transportation Master Plan

Frontage Road: 1000 North to Center Street

Commercial Local

Costs

Item	Unit	Unit Cost	Quantity	Cost
Parkstrip	S.F.	$4.00	92,800	$371,200
Removal of Existing Asphalt	S.Y.	$4.00	0	$0
Clearing and Grubbing	Acre	$2,000.00	9	$17,842
Roadway Excavation	C.Y.	$10.50	15,896	$166,911
HMA Concrete	Ton	$85.00	4,158	$353,419
Untreated Base Course	C.Y.	$10.00	5,299	$52,988
Granular Borrow	C.Y.	$40.00	11,922	$476,889
Curb and Gutter (2' width)	L.F.	$22.50	11,600	$261,000
Sidewalk (5' width)	L.F.	$25.00	11,600	$290,000
Drainage	L.F.	$45.00	11,600	$522,000
Right of Way	S.F.	$4.00	388,600	$1,554,400
Removal of Existing Curb and Gutter	L.F.	$5.00	0	$0
Grind Existing Asphalt	S.F.	$5.00	0	$0
Restriping	L.F.	$5.00	5,800	$29,000
Roundabout	Each	$500,000	0	$0
Traffic Signal	Each	$180,000	0	$0
			Subtotal	**$4,095,649**

Contingency	15%	$614,347

Mobilization	10%	$409,565

Preconstruction Engineering	8%	$327,652
Construction Engineering	8%	$327,652

Total Project Costs	**$5,775,000**

Springville City's Responsibility	**0%**
	$0

Overall Assumptions:

HMA Pavement Density (pcf) =	155	Project No.	**52**
HMA Thickness (in) =	3	Funding:	**Springville**
Untreated Base Course Thickness (in) =	8	Type:	**New Road**
Granual Borrow Thickness (in) =	18		
Roadway Excavation Depth (ft) =	2		
Number of Sidewalks (No.) =	2		
Overlay HMA Thickness (in) =	3		

Springville City
Transportation Master Plan

2600 West Extension: Center Street to New Road

Minor Collector

Costs

Item	Unit	Unit Cost	Quantity	Cost
Parkstrip	S.F.	$4.00	92,800	$371,200
Removal of Existing Asphalt	S.Y.	$4.00	0	$0
Clearing and Grubbing	Acre	$2,000.00	10	$19,174
Roadway Excavation	C.Y.	$10.50	18,044	$189,467
HMA Concrete	Ton	$85.00	4,720	$401,179
Untreated Base Course	C.Y.	$10.00	6,015	$60,148
Granular Borrow	C.Y.	$40.00	13,533	$541,333
Curb and Gutter (2' width)	L.F.	$22.50	11,600	$261,000
Sidewalk (5' width)	L.F.	$25.00	11,600	$290,000
Drainage	L.F.	$45.00	11,600	$522,000
Right of Way	S.F.	$4.00	417,600	$1,670,400
Removal of Existing Curb and Gutter	L.F.	$5.00	0	$0
Grind Existing Asphalt	S.F.	$5.00	0	$0
Restriping	L.F.	$5.00	5,800	$29,000
Roundabout	Each	$500,000	0	$0
Traffic Signal	Each	$180,000	0	$0
			Subtotal	**$4,354,900**

Contingency	15%	$653,235
Mobilization	10%	$435,490
Preconstruction Engineering	8%	$348,392
Construction Engineering	8%	$348,392
Total Project Costs		**$6,141,000**
Springville City's Responsibility		**6%**
		$389,000

Overall Assumptions:

HMA Pavement Density (pcf) =	155	Project No.	**53**
HMA Thickness (in) =	3	Funding:	**Springville**
Untreated Base Course Thickness (in) =	8	Type:	**New Road**
Granual Borrow Thickness (in) =	18		
Roadway Excavation Depth (ft) =	2		
Number of Sidewalks (No.) =	2		
Overlay HMA Thickness (in) =	3		

Springville City
Transportation Master Plan

3200 West: 400 South to New Road

Commercial Local

Costs

Item	Unit	Unit Cost	Quantity	Cost
Parkstrip	S.F.	$4.00	110,400	$441,600
Removal of Existing Asphalt	S.Y.	$4.00	0	$0
Clearing and Grubbing	Acre	$2,000.00	11	$21,226
Roadway Excavation	C.Y.	$10.50	18,911	$198,567
HMA Concrete	Ton	$85.00	4,946	$420,447
Untreated Base Course	C.Y.	$10.00	6,304	$63,037
Granular Borrow	C.Y.	$40.00	14,183	$567,333
Curb and Gutter (2' width)	L.F.	$22.50	13,800	$310,500
Sidewalk (5' width)	L.F.	$25.00	13,800	$345,000
Drainage	L.F.	$45.00	13,800	$621,000
Right of Way	S.F.	$4.00	462,300	$1,849,200
Removal of Existing Curb and Gutter	L.F.	$5.00	0	$0
Grind Existing Asphalt	S.F.	$5.00	0	$0
Restriping	L.F.	$5.00	6,900	$34,500
Roundabout	Each	$500,000	0	$0
Traffic Signal	Each	$180,000	0	$0
			Subtotal	**$4,872,410**

Contingency	15%	$730,862

Mobilization	10%	$487,241

Preconstruction Engineering	8%	$389,793
Construction Engineering	8%	$389,793

Total Project Costs	**$6,871,000**

Springville City's Responsibility	**0%**
	$0

Overall Assumptions:

HMA Pavement Density (pcf) =	155	Project No.	**54**
HMA Thickness (in) =	3	Funding:	**Springville**
Untreated Base Course Thickness (in) =	8	Type:	**New Road**
Granual Borrow Thickness (in) =	18		
Roadway Excavation Depth (ft) =	2		
Number of Sidewalks (No.) =	2		
Overlay HMA Thickness (in) =	3		

Springville City
Transportation Master Plan

2250 West Extension to 1150 North

Commercial Local

Costs

Item	Unit	Unit Cost	Quantity	Cost
Parkstrip	S.F.	$4.00	34,400	$137,600
Removal of Existing Asphalt	S.Y.	$4.00	0	$0
Clearing and Grubbing	Acre	$2,000.00	3	$6,614
Roadway Excavation	C.Y.	$10.50	5,893	$61,872
HMA Concrete	Ton	$85.00	1,541	$131,009
Untreated Base Course	C.Y.	$10.00	1,964	$19,642
Granular Borrow	C.Y.	$40.00	4,419	$176,778
Curb and Gutter (2' width)	L.F.	$22.50	4,300	$96,750
Sidewalk (5' width)	L.F.	$25.00	4,300	$107,500
Drainage	L.F.	$45.00	4,300	$193,500
Right of Way	S.F.	$4.00	144,050	$576,200
Removal of Existing Curb and Gutter	L.F.	$5.00	0	$0
Grind Existing Asphalt	S.F.	$5.00	0	$0
Restriping	L.F.	$5.00	2,150	$10,750
Roundabout	Each	$500,000	0	$0
Traffic Signal	Each	$180,000	0	$0
			Subtotal	**$1,518,215**

Contingency	15%	$227,732

Mobilization	10%	$151,821

Preconstruction Engineering	8%	$121,457
Construction Engineering	8%	$121,457

Total Project Costs	**$2,141,000**

Springville City's Responsibility	**0%**
	$0

Overall Assumptions:

HMA Pavement Density (pcf) =	155	Project No.	**55**
HMA Thickness (in) =	3	Funding:	**Springville**
Untreated Base Course Thickness (in) =	8	Type:	**New Road**
Granual Borrow Thickness (in) =	18		
Roadway Excavation Depth (ft) =	2		
Number of Sidewalks (No.) =	2		
Overlay HMA Thickness (in) =	3		

Springville City
Transportation Master Plan

Center Street: Extension to Western Border

Minor Collector

Costs

Item	Unit	Unit Cost	Quantity	Cost
Parkstrip	S.F.	$4.00	92,800	$371,200
Removal of Existing Asphalt	S.Y.	$4.00	0	$0
Clearing and Grubbing	Acre	$2,000.00	10	$19,174
Roadway Excavation	C.Y.	$10.50	18,044	$189,467
HMA Concrete	Ton	$85.00	4,720	$401,179
Untreated Base Course	C.Y.	$10.00	6,015	$60,148
Granular Borrow	C.Y.	$40.00	13,533	$541,333
Curb and Gutter (2' width)	L.F.	$22.50	11,600	$261,000
Sidewalk (5' width)	L.F.	$25.00	11,600	$290,000
Drainage	L.F.	$45.00	11,600	$522,000
Right of Way	S.F.	$4.00	417,600	$1,670,400
Removal of Existing Curb and Gutter	L.F.	$5.00	0	$0
Grind Existing Asphalt	S.F.	$5.00	0	$0
Restriping	L.F.	$5.00	5,800	$29,000
Roundabout	Each	$500,000	0	$0
Traffic Signal	Each	$180,000	0	$0
			Subtotal	**$4,354,900**

Contingency	15%	$653,235
Mobilization	10%	$435,490
Preconstruction Engineering	8%	$348,392
Construction Engineering	8%	$348,392
Total Project Costs		**$6,141,000**

Springville City's Responsibility	**6%**
	$389,000

Overall Assumptions:

HMA Pavement Density (pcf) =	155	Project No.	**56**
HMA Thickness (in) =	3	Funding:	**Springville**
Untreated Base Course Thickness (in) =	8	Type:	**New Road**
Granual Borrow Thickness (in) =	18		
Roadway Excavation Depth (ft) =	2		
Number of Sidewalks (No.) =	2		
Overlay HMA Thickness (in) =	3		

Springville City
Transportation Master Plan

Center Street Widening: I-15 to 2600 West

Minor Collector

Costs

Item	Unit	Unit Cost	Quantity	Cost
Parkstrip	S.F.	$4.00	92,800	$371,200
Removal of Existing Asphalt	S.Y.	$4.00	18,689	$74,756
Clearing and Grubbing	Acre	$2,000.00	2	$3,462
Roadway Excavation	C.Y.	$10.50	5,585	$58,644
HMA Concrete	Ton	$85.00	4,720	$401,179
Untreated Base Course	C.Y.	$10.00	1,862	$18,617
Granular Borrow	C.Y.	$40.00	4,189	$167,556
Curb and Gutter (2' width)	L.F.	$22.50	11,600	$261,000
Sidewalk (5' width)	L.F.	$25.00	11,600	$290,000
Drainage	L.F.	$45.00	11,600	$522,000
Right of Way	S.F.	$4.00	75,400	$301,600
Removal of Existing Curb and Gutter	L.F.	$5.00	11,600	$58,000
Grind Existing Asphalt	S.F.	$5.00	168,200	$841,000
Restriping	L.F.	$5.00	5,800	$29,000
Roundabout	Each	$500,000	0	$0
Traffic Signal	Each	$180,000	0	$0
			Subtotal	**$3,398,013**

Contingency	15%	$509,702
Mobilization	10%	$339,801
Preconstruction Engineering	8%	$271,841
Construction Engineering	8%	$271,841
Total Project Costs		**$4,792,000**

Springville City's Responsibility	**100%**
	$4,792,000

Overall Assumptions:

HMA Pavement Density (pcf) =	155	Project No.	**57**
HMA Thickness (in) =	3	Funding:	**Springville**
Untreated Base Course Thickness (in) =	8	Type:	**Capacity Improvement**
Granual Borrow Thickness (in) =	18		
Roadway Excavation Depth (ft) =	2		
Number of Sidewalks (No.) =	2		
Overlay HMA Thickness (in) =	3		

Springville City
Transportation Master Plan

1600 South Alternative Alignment:

Major Arterial

Costs

Item	Unit	Unit Cost	Quantity	Cost
Parkstrip	S.F.	$4.00	70,400	$281,600
Removal of Existing Asphalt	S.Y.	$4.00	0	$0
Clearing and Grubbing	Acre	$2,000.00	10	$20,606
Roadway Excavation	C.Y.	$10.50	23,467	$246,400
HMA Concrete	Ton	$85.00	8,184	$695,640
Untreated Base Course	C.Y.	$10.00	7,822	$78,222
Granular Borrow	C.Y.	$40.00	17,600	$704,000
Curb and Gutter (2' width)	L.F.	$22.50	8,800	$198,000
Sidewalk (5' width)	L.F.	$25.00	8,800	$220,000
Drainage	L.F.	$45.00	8,800	$396,000
Right of Way	S.F.	$4.00	448,800	$1,795,200
Removal of Existing Curb and Gutter	L.F.	$5.00	0	$0
Grind Existing Asphalt	S.F.	$5.00	0	$0
Restriping	L.F.	$5.00	4,400	$22,000
Roundabout	Each	$500,000	0	$0
Traffic Signal	Each	$180,000	0	$0
			Subtotal	**$4,657,668**

Contingency	15%	$698,650

Mobilization	10%	$465,767

Preconstruction Engineering	8%	$372,613
Construction Engineering	8%	$372,613

Total Project Costs	**$6,568,000**

Springville City's Responsibility	**7%**
	$445,000

Overall Assumptions:

HMA Pavement Density (pcf) =	155	Project No.	**58**
HMA Thickness (in) =	4	Funding:	**Springville/MAG**
Untreated Base Course Thickness (in) =	8	Type:	**New Road**
Granual Borrow Thickness (in) =	18		
Roadway Excavation Depth (ft) =	2		
Number of Sidewalks (No.) =	2		
Overlay HMA Thickness (in) =	3		

Springville City
Transportation Master Plan

Roundabout: Canyon Road and 620 South

Minor Collector

Costs

Item	Unit	Unit Cost	Quantity	Cost
Parkstrip	S.F.	$4.00	0	$0
Removal of Existing Asphalt	S.Y.	$4.00	0	$0
Clearing and Grubbing	Acre	$2,000.00	0	$0
Roadway Excavation	C.Y.	$10.50	0	$0
HMA Concrete	Ton	$85.00	0	$0
Untreated Base Course	C.Y.	$10.00	0	$0
Granular Borrow	C.Y.	$40.00	0	$0
Curb and Gutter (2' width)	L.F.	$22.50	0	$0
Sidewalk (5' width)	L.F.	$25.00	0	$0
Drainage	L.F.	$45.00	0	$0
Right of Way	S.F.	$4.00	0	$0
Removal of Existing Curb and Gutter	L.F.	$5.00	0	$0
Grind Existing Asphalt	S.F.	$5.00	0	$0
Restriping	L.F.	$5.00	0	$0
Roundabout	Each	$500,000	1	$500,000
Traffic Signal	Each	$180,000	0	$0
			Subtotal	**$500,000**

Contingency	15%	$75,000

Mobilization	10%	$50,000

Preconstruction Engineering	8%	$40,000
Construction Engineering	8%	$40,000

Total Project Costs	**$705,000**

Springville City's Responsibility	**100%**
	$705,000

Overall Assumptions:

HMA Pavement Density (pcf) =	155	Project No.	**59**
HMA Thickness (in) =	3	Funding:	**Springville**
Untreated Base Course Thickness (in) =	8	Type:	**Roundabout**
Granual Borrow Thickness (in) =	18		
Roadway Excavation Depth (ft) =	2		
Number of Sidewalks (No.) =	2		
Overlay HMA Thickness (in) =	3		

Springville City
Transportation Master Plan

900 South: 1750 West to 1700 West

Minor Collector

Costs

Item	Unit	Unit Cost	Quantity	Cost
Parkstrip	S.F.	$4.00	20,800	$83,200
Removal of Existing Asphalt	S.Y.	$4.00	0	$0
Clearing and Grubbing	Acre	$2,000.00	1	$1,910
Roadway Excavation	C.Y.	$10.50	4,044	$42,467
HMA Concrete	Ton	$85.00	1,058	$89,919
Untreated Base Course	C.Y.	$10.00	1,348	$13,481
Granular Borrow	C.Y.	$40.00	3,033	$121,333
Curb and Gutter (2' width)	L.F.	$22.50	2,600	$58,500
Sidewalk (5' width)	L.F.	$25.00	2,600	$65,000
Drainage	L.F.	$45.00	2,600	$117,000
Right of Way	S.F.	$4.00	41,600	$166,400
Removal of Existing Curb and Gutter	L.F.	$5.00	2,600	$13,000
Grind Existing Asphalt	S.F.	$5.00	0	$0
Restriping	L.F.	$5.00	1,300	$6,500
Roundabout	Each	$500,000	0	$0
Traffic Signal	Each	$180,000	0	$0
			Subtotal	**$778,711**

Contingency	15%	$116,807
Mobilization	10%	$77,871
Preconstruction Engineering	8%	$62,297
Construction Engineering	8%	$62,297
Total Project Costs		**$1,098,000**

Springville City's Responsibility	**100%**
	$1,098,000

Overall Assumptions:

HMA Pavement Density (pcf) =	155	Project No.	**60**
HMA Thickness (in) =	3	Funding:	**Springville**
Untreated Base Course Thickness (in) =	8	Type:	**Capacity Improvement**
Granual Borrow Thickness (in) =	18		
Roadway Excavation Depth (ft) =	2		
Number of Sidewalks (No.) =	2		
Overlay HMA Thickness (in) =	3		

Springville City
Transportation Master Plan

1750 West: 400 South to Center Street

Major Arterial

Costs

Item	Unit	Unit Cost	Quantity	Cost
Parkstrip	S.F.	$4.00	32,800	$131,200
Removal of Existing Asphalt	S.Y.	$4.00	11,844	$47,378
Clearing and Grubbing	Acre	$2,000.00	0	$0
Roadway Excavation	C.Y.	$10.50	3,037	$31,889
HMA Concrete	Ton	$85.00	3,125	$265,586
Untreated Base Course	C.Y.	$10.00	1,012	$10,123
Granular Borrow	C.Y.	$40.00	2,278	$91,111
Curb and Gutter (2' width)	L.F.	$22.50	4,100	$92,250
Sidewalk (5' width)	L.F.	$25.00	4,100	$102,500
Drainage	L.F.	$45.00	4,100	$184,500
Right of Way	S.F.	$4.00	0	$0
Removal of Existing Curb and Gutter	L.F.	$5.00	4,100	$20,500
Grind Existing Asphalt	S.F.	$5.00	106,600	$533,000
Restriping	L.F.	$5.00	2,050	$10,250
Roundabout	Each	$500,000	0	$0
Traffic Signal	Each	$180,000	0	$0
			Subtotal	**$1,520,287**

Contingency	15%	$228,043
Mobilization	10%	$152,029
Preconstruction Engineering	8%	$121,623
Construction Engineering	8%	$121,623
Total Project Costs		**$2,144,000**

Springville City's Responsibility	**100%**
	$2,144,000

Overall Assumptions:

HMA Pavement Density (pcf) =	155	Project No.	**61**
HMA Thickness (in) =	4	Funding:	**Springville**
Untreated Base Course Thickness (in) =	8	Type:	**Capacity Improvement**
Granual Borrow Thickness (in) =	18		
Roadway Excavation Depth (ft) =	2		
Number of Sidewalks (No.) =	2		
Overlay HMA Thickness (in) =	3		

Springville City
Transportation Master Plan

Traffic Signal: Main Street & 900 North

Minor Collector

Costs

Item	Unit	Unit Cost	Quantity	Cost
Parkstrip	S.F.	$4.00	0	$0
Removal of Existing Asphalt	S.Y.	$4.00	0	$0
Clearing and Grubbing	Acre	$2,000.00	0	$0
Roadway Excavation	C.Y.	$10.50	0	$0
HMA Concrete	Ton	$85.00	0	$0
Untreated Base Course	C.Y.	$10.00	0	$0
Granular Borrow	C.Y.	$40.00	0	$0
Curb and Gutter (2' width)	L.F.	$22.50	0	$0
Sidewalk (5' width)	L.F.	$25.00	0	$0
Drainage	L.F.	$45.00	0	$0
Right of Way	S.F.	$4.00	0	$0
Removal of Existing Curb and Gutter	L.F.	$5.00	0	$0
Grind Existing Asphalt	S.F.	$5.00	0	$0
Restriping	L.F.	$5.00	0	$0
Roundabout	Each	$500,000	0	$0
Traffic Signal	Each	$180,000	1	$180,000
			Subtotal	**$180,000**

Contingency	15%	$27,000

Mobilization	10%	$18,000

Preconstruction Engineering	8%	$14,400
Construction Engineering	8%	$14,400

Total Project Costs	**$254,000**

Springville City's Responsibility	**0%**
	$0

Overall Assumptions:

HMA Pavement Density (pcf) =	155	Project No.	**62**
HMA Thickness (in) =	3	Funding:	**UDOT**
Untreated Base Course Thickness (in) =	8	Type:	**Traffic Signal**
Granual Borrow Thickness (in) =	18		
Roadway Excavation Depth (ft) =	2		
Number of Sidewalks (No.) =	2		
Overlay HMA Thickness (in) =	3		

Springville City
Transportation Master Plan

Roundabout: 900 South and 800 East

Minor Collector

Costs

Item	Unit	Unit Cost	Quantity	Cost
Parkstrip	S.F.	$4.00	0	$0
Removal of Existing Asphalt	S.Y.	$4.00	0	$0
Clearing and Grubbing	Acre	$2,000.00	0	$0
Roadway Excavation	C.Y.	$10.50	0	$0
HMA Concrete	Ton	$85.00	0	$0
Untreated Base Course	C.Y.	$10.00	0	$0
Granular Borrow	C.Y.	$40.00	0	$0
Curb and Gutter (2' width)	L.F.	$22.50	0	$0
Sidewalk (5' width)	L.F.	$25.00	0	$0
Drainage	L.F.	$45.00	0	$0
Right of Way	S.F.	$4.00	0	$0
Removal of Existing Curb and Gutter	L.F.	$5.00	0	$0
Grind Existing Asphalt	S.F.	$5.00	0	$0
Restriping	L.F.	$5.00	0	$0
Roundabout	Each	$500,000	1	$500,000
Traffic Signal	Each	$180,000	0	$0
			Subtotal	**$500,000**

Contingency	15%	$75,000
Mobilization	10%	$50,000
Preconstruction Engineering	8%	$40,000
Construction Engineering	8%	$40,000
Total Project Costs		**$705,000**

Springville City's Responsibility	**100%**
	$705,000

Overall Assumptions:

HMA Pavement Density (pcf) =	155	Project No.	**63**
HMA Thickness (in) =	3	Funding:	**Springville**
Untreated Base Course Thickness (in) =	8	Type:	**Roundabout**
Granual Borrow Thickness (in) =	18		
Roadway Excavation Depth (ft) =	2		
Number of Sidewalks (No.) =	2		
Overlay HMA Thickness (in) =	3		

Springville City
Transportation Master Plan

950 West Realignment: 700 North to 1000 North

Minor Collector

Costs

Item	Unit	Unit Cost	Quantity	Cost
Parkstrip	S.F.	$4.00	22,400	$89,600
Removal of Existing Asphalt	S.Y.	$4.00	0	$0
Clearing and Grubbing	Acre	$2,000.00	2	$4,628
Roadway Excavation	C.Y.	$10.50	4,356	$45,733
HMA Concrete	Ton	$85.00	1,139	$96,836
Untreated Base Course	C.Y.	$10.00	1,452	$14,519
Granular Borrow	C.Y.	$40.00	3,267	$130,667
Curb and Gutter (2' width)	L.F.	$22.50	2,800	$63,000
Sidewalk (5' width)	L.F.	$25.00	2,800	$70,000
Drainage	L.F.	$45.00	2,800	$126,000
Right of Way	S.F.	$4.00	100,800	$403,200
Removal of Existing Curb and Gutter	L.F.	$5.00	0	$0
Grind Existing Asphalt	S.F.	$5.00	0	$0
Restriping	L.F.	$5.00	1,400	$7,000
Roundabout	Each	$500,000	1	$500,000
Traffic Signal	Each	$180,000	0	$0
			Subtotal	**$1,551,183**

Contingency	15%	$232,677
Mobilization	10%	$155,118
Preconstruction Engineering	8%	$124,095
Construction Engineering	8%	$124,095
Total Project Costs		**$2,188,000**

Springville City's Responsibility	**16%**
	$361,000

Overall Assumptions:

HMA Pavement Density (pcf) =	155	Project No.	**64**
HMA Thickness (in) =	3	Funding:	**Springville**
Untreated Base Course Thickness (in) =	8	Type:	**New Road**
Granual Borrow Thickness (in) =	18		
Roadway Excavation Depth (ft) =	2		
Number of Sidewalks (No.) =	2		
Overlay HMA Thickness (in) =	3		

Springville City
Transportation Master Plan

Frontage Road Realignment: North of 1150 North to New Road (Project 12)

Commercial Local

Costs

Item	Unit	Unit Cost	Quantity	Cost
Parkstrip	S.F.	$4.00	27,200	$108,800
Removal of Existing Asphalt	S.Y.	$4.00	0	$0
Clearing and Grubbing	Acre	$2,000.00	3	$5,230
Roadway Excavation	C.Y.	$10.50	4,659	$48,922
HMA Concrete	Ton	$85.00	1,219	$103,588
Untreated Base Course	C.Y.	$10.00	1,553	$15,531
Granular Borrow	C.Y.	$40.00	3,494	$139,778
Curb and Gutter (2' width)	L.F.	$22.50	3,400	$76,500
Sidewalk (5' width)	L.F.	$25.00	3,400	$85,000
Drainage	L.F.	$45.00	3,400	$153,000
Right of Way	S.F.	$4.00	113,900	$455,600
Removal of Existing Curb and Gutter	L.F.	$5.00	0	$0
Grind Existing Asphalt	S.F.	$5.00	0	$0
Restriping	L.F.	$5.00	1,700	$8,500
Roundabout	Each	$500,000	1	$500,000
Traffic Signal	Each	$180,000	0	$0
			Subtotal	**$1,700,449**

Contingency	15%	$255,067
Mobilization	10%	$170,045
Preconstruction Engineering	8%	$136,036
Construction Engineering	8%	$136,036
Total Project Costs		**$2,398,000**
Springville City's Responsibility		**0%**
		$0

Overall Assumptions:

HMA Pavement Density (pcf) =	155	Project No.	**65**
HMA Thickness (in) =	3	Funding:	**Springville**
Untreated Base Course Thickness (in) =	8	Type:	**New Road**
Granual Borrow Thickness (in) =	18		
Roadway Excavation Depth (ft) =	2		
Number of Sidewalks (No.) =	2		
Overlay HMA Thickness (in) =	3		