CITY OF TREMONTON •1903•

HORROCKS ENGINEERS

TREMONTON TRANSPORTATION MASTER PLAN

RESOLUTION NO. 18-40

A RESOLUTION OF TREMONTON CITY CORPORATION ADOPTING THE TREMONTON CITY TRANSPORTATION MASTER PLAN MAY 2018

WHEREAS, Tremonton City made application to Box Elder County for the use of the Local Option Transportation Corridor Preservation Fund for creating a transportation master plan for Tremonton City in August 2016; and

WHEREAS, Box Elder County awarded Tremonton City with funds necessary to contract with a transportation engineering firm to analyze Tremonton City's future traffic patterns, refine the City's existing transportation map, and to create a transportation master plan; and

WHEREAS, Tremonton City enter into a professional service with Horrocks Engineering for the creation of the Tremonton City Transportation Master Plan with the approval of Resolution No. 17-12 on April 4, 2017; and

WHEREAS, in coordination with the Planning Commission and City staff, Horrocks Engineering has drafted the Tremonton City Transportation Master Plan May 2018; and

WHEREAS, Tremonton City has caused a notice of the public hearing to be published in *The Leader,* a newspaper of general circulation on May 30, 2018; and

WHEREAS, Tremonton City has caused a draft copy of the Tremonton City Transportation Master Plan May 2018 to be available for public inspection during regular business hours at the office of Tremonton City Corporation, 102 South Tremont Street, Tremonton, Utah; and

WHEREAS, on June 12, 2018, the Tremonton City Planning Commission held a Public Hearing regarding the Tremonton Transportation Master Plan May 2018; and

WHEREAS, the Tremonton City Planning Commission has considered all written and oral statements made at the public hearing objecting or supporting the Tremonton Transportation Master Plan May 2018 and recommends to the Tremonton City Council, the adoption of the aforementioned master plan.

NOW, THEREFORE, BE IT RESOLVED that the Tremonton City Council hereby adopts the Tremonton City Transportation Master Plan May 2018 as attached in Exhibit "A."

Adopted and passed by the governing body of Tremonton City Corporation this 7th day of August 2018.

TREMONTON CITY
A Utah Municipal Corporation

By ____________________
Roger Fridal, Mayor

ATTEST:

____
Linsey Nessen, City Recorder

EXHIBIT "A"

Glossary of Terms

AADT	Annual Average Daily Traffic
ADA	Americans with Disabilities Act
BRAG	Bear River Association of Governments
DZ	Development Zone
FHWA	Federal Highway Administration
GOPB	Governor's Office of Planning and Budget
HCM	Highway Capacity Manual
ITE	Institute of Transportation Engineers
LOS	Level of Service
MUTCD	Manual on Uniform Traffic Control Devices
RPO	Rural Planning Organization
STIP	Statewide Transportation Improvement Program
STP	Surface Transportation Program
TCM	Traffic Calming Measures
TIP	Transportation Improvement Program
TIS	Traffic Impact Study
TMP	Transportation Master Plan
TOD	Transit Oriented Development
TRB	Transportation Research Board
UDOT	Utah Department of Transportation
UTA	Utah Transit Authority

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TRANSPORTATION MASTER PLAN
May 2018

Executive Summary

Tremonton City has experienced moderate growth and development throughout the years with growth of approximately 4,100 residents since 1990. With Tremonton City committed to continued growth, a Transportation Master Plan (TMP) has been implemented so the transportation system can accommodate the projected growth in the City for the next 50 years.

As part of the plan, the current roadway network was assessed using current traffic volumes. Current traffic volumes were projected for the next 50 years using the current roadway network to find the capacity improvements necessary for the roadway network to positively contribute to the local economy and quality of life in Tremonton City. The following sections are included in the Tremonton City TMP.

Roadway Network Analysis

Transportation planning in the region is a cooperative effort of state and local agencies. This section includes a general discussion on the traffic demand modeling process used for this TMP, functional classification of streets, and level of service of streets and intersections. Also included are the existing and future conditions for the 20-Year and 50-Year scenarios.

Traffic Demand Modeling

Traffic Demand Modeling was used to project existing traffic conditions into the future using the *PTV Vistro 5* software. This software works by assigning trips to the roadway network based on existing and future data included in *ITE's Trip Generation Manual*. Each trip includes an origin, destination, and path between the two. As there are a significant number of origin and destinations within Tremonton City, the City was split into eight Development Zones (DZ). This reduces the complexity of the model while maintaining the accuracy of future traffic demand in the City. Each Development Zone acts as an origin or destination. All trips generated within each zone are assigned to another development zone.

Functional Classification

All trips include two distinct functions: mobility and land access. Mobility and land access share an inverse relationship, meaning as mobility increases land access decreases. Included in the TMP document is a summary of the functional classification included in Tremonton with an analysis of the typical cross-sections used.

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 performance. 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).

Existing Roadway Network Conditions

The Traffic Demand Model was calibrated to fit existing traffic conditions in Tremonton City. The method used to calibrate the model was to use traffic counts throughout the City. Traffic counts were received from UDOT on State Roads and include annual average daily traffic (AADT) volumes as defined in Traffic on Utah Highways. Additionally, traffic counts were obtained by installing temporary electronic counters on City roads. Based on the existing traffic data in the City, all roadways in Tremonton function at adequate LOS, being LOS D or greater.

Future Roadway Network Conditions

By calibrating the Traffic Demand Model to fit the existing traffic conditions in Tremonton City, the model can project traffic volumes into the future. There are three future models used for this TMP. The first model used was to identify potential capacity deficiencies, called the No Build Model. The other two models project traffic volumes 20 and 50 years into the future to create a 20-Year Model and 50-Year Model.

From the analysis, the No Build Model showed future deficiencies on Main Street for both the 20-Year Model and 50 Year Model if nothing was done to improve capacity. For the 50-Year Model, 1000 North and 2300 West also had deficiencies.

Capital Project List

All deficiencies were documented and proposed improvements are included on the Capital Project List. New roadways and intersection improvements are also included on the project list to assist future growth in the City. A new highway south of I-15/I-84, new arterial connecting 1000 North to Main Street, and a new pedestrian HAWK signal highlight a few future capital projects.

Alternative Modes of Transportation

Transit

Previous planning efforts regarding transit were analyzed and included in the TMP document. Tremonton is also desirous to incorporate FrontRunner into the TMP. An analysis of four potential station locations indicated that a future FrontRunner station would be the best at 6400 West & 1600 South. This is not a final alternative location but will assist the City with future planning.

Pedestrian and Bicycles

Pedestrian and bicycle safety is an important feature of any transportation master plan. Tremonton City is currently working on the *Tremonton City Bike Route & Non-Motorized Trail Plan*. People are more inclined to walk or ride their bicycle when the experience is pleasant, they feel safe, and distances are reasonable. High-density housing near high-traffic generators or main street type areas encourages people to use alternative travel options.

Other Elements of the Transportation Master Plan

There are many other elements and guidelines to help improve and maintain the roadway network's LOS in Tremonton City. Future planning, especially where there is the potential for significant development, is vital to ensure the transportation network functions well as the City grows.

Semi-Truck Routes

With existing semi-trucking companies located within the city the interchange of I-15 and I-84 as well as many industrial destinations, Tremonton City is a major origin and destination for semi-truck traffic. There is concern regarding the significant number of semi-trucks utilizing Main Street. Many semi-trucks accessing the P&G manufacturing plant south of Tremonton City utilizing Main Street to access I-15/I-84. It is recommended to build a commercial corridor roadway on the south side of I-15/I-84 connecting Iowa String Road and Main Street. This road acts as a way for trucks to bypass downtown as well as a commercial center for Tremonton City. This road is shown as Project 71 of **Figure 10**.

School Zones

Many children are using all modes of transportation to travel to and from school. Without proper planning, students have a higher risk of injury during their commute. All guidelines for traffic control in school zones are found in Chapter 7 of the Utah MUTCD. Included in this TMP is an analysis regarding the school zone crossings for all existing schools in Tremonton City.

Access Management

Access management is the process of establishing and enforcing road and driveway accesses within the City. This includes establishing the location, number, spacing, type, and design of city streets and accesses to minimize vehicle conflicts and maximize the traffic capacity and safety of a roadway. Access management is typically enforced based on the functional classification of mobility vs. access. Unmanaged or unorganized access management along travel corridors can result in poor and unsafe roadways. Included in this TMP are guidelines for Access Management practices.

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. Tremonton also follows the Utah grid system with some interruptions due to I-15, I-84, railroad tracks, and geologic features of rivers and hillsides. This TMP includes guidance for different Traffic Calming measures which can be implemented.

Corridor Preservation

Corridor preservation is an important transportation implementation tool that agencies should use and apply to all known future transportation corridors. 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. The 50-year build roadway network acts as a corridor plan for Tremonton City as seen in **Figure 12**. Included in this TMP is techniques for Corridor Preservation.

Traffic Impact Studies

As growth occurs throughout the City, the City needs to evaluate the impacts of proposed developments on the surrounding transportation networks prior to giving approval to build. This ongoing evaluation may 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 allows the City to determine the site-specific impacts of a development including internal site circulation, access issues, and adjacent roadway and intersection impacts. Included in this TMP is guidance and requirements for the City to use for Traffic Impact Studies.

Railroad Crossings

There are a number of railroad crossings in the City. Railroad line runs north/south through the City and crosses Main Street at approximately 250 West. On the north side of the City are connections to manufacturing plants which cross city streets. Each of these rail crossings must be treated with extreme caution when planning the roadway network for safety reasons. Vehicle/train or pedestrian/train accidents are catastrophic when they occur at at-grade rail crossings. Additionally, it is extremely difficult to get new crossing at railroads from UDOT. Included in this TMP is a railroad inventory for all existing and future railroad crossings in the City.

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TRANSPORTATION MASTER PLAN
May 2018

Introduction

This Transportation Master Plan (TMP) contains an analysis of the existing transportation network and conditions. Any major deficiencies are itemized, and possible improvement or mitigation alternatives are discussed. An analysis of the future transportation network is also included for the 50-year horizon of 2067. Any major UDOT projects and improvements within the city are reflected in the future network. Any deficiencies in the future transportation network that are expected to exist and would not be accommodated by projects that are currently planned will be discussed. A list of recommended improvements and projects are given to aid Tremonton City in planning for future transportation projects as well as in working with other agencies such as UDOT or neighboring cities. This TMP is intended to be a useful tool to aid Tremonton City in taking a proactive effort in planning and maintaining the overall transportation network within the city. The following is a comprehensive list of topics discussed in this chapter:

1. **Tremonton History**
2. **Previous Tremonton Planning Efforts**
    - Tremonton Transportation Master Plan (UDOT)
    - Box Elder Emerging Area Plan (UDOT)
    - Tremonton City Trails, Parks, and Open Spaces Master Plan
    - Cache Valley Short-Range Transit Plan – Interim Report #2
    - Transportation Master Plan Implementation

Tremonton History

Mr. John Petty, at the age of 28, took up a homestead of 160 acres in Tremonton in the year 1888. His farm covered the present south half of Tremonton town, all south of Main Street, now within the city limits. Toward the beginning of the new century, land agents went east to induce more people to settle in the Bear River Valley, and as a result, a number of families settled to Tremonton from Nebraska.

After tapping the Bear River and building the great canal system, water began to flow over the sterile thirsty soil. In 1892, possibilities for Bear River Valley began to look promising for many new settlers. Settlers soon came from a German colony in Illinois and also a number of families from Nebraska. The townsite of Tremonton was laid out early in the spring of 1903. Soon buildings were erected to attract business to the new townsite including a meat market, barber shop, saloon, and an office for "The Tremont Times" newspaper. Mail was distributed from the meat market. Following the first general business boom and for a year thereafter, businessmen were attracted from all parts of the county. A blacksmith shop, general merchandise store, drug store, millinery, boarding house, 2 more hotels, a livery stable, furniture store, and a wagon & machine company were among them. Very few homes were built during the first year as most families lived in the rear rooms of their places of business.

During the first weeks of its existence, the new town was without a name but was soon given the name Tremont after the Illinois hometown of one of the German settlers. Within three or four years, however, the name of Tremont, Utah was so frequently confused with Fremont, Utah, that postal authorities requested a name change for the newer town. By simply adding "on" to Tremont, the town became Tremonton and the identity problem was solved.

A town organization was effected January 6, 1906 and they began at once to make improvements. A city park was purchased, and in 1909 the old board sidewalks were replaced by cement walks. In 1910, a water system was installed using water from the canals, and in 1911, the electric light system was installed. The Midland Hotel was erected through the efforts of the Tremonton Commercial Club. The contractors soon learned that the underground water was too near the surface to make the building of foundations and basements either safe or possible. A drainage company was therefore organized in 1913, and by November of that year a sewer and drainage system was extended to the greater portion of the town.

From the summer of 1912 to the close of 1914, Tremonton experienced a building boom. May 6, 1918, Tremonton was incorporated as a City of the third class. This same year the City installed a new water system using water from the Johnson Spring located just east of Point Lookout. By 1925 the population of Tremonton numbered one thousand people.

Tremonton is a Twenty-First Century City. From 1906, when first incorporated as a town, to 1918 when designated a Third Class City, to 1992, growth has been steady and firm. Educational, recreational, civic, health, medical, and religious services and facilities are updated and have expanded with the steady growth of the City. Economically, the City is a central shopping place for the Bear River Valley.

The full history used for the TMP was found online at *www.boxeldercounty.org/tremonton-history.htm*.

Previous Tremonton Planning Efforts

Transportation planning is vital for future growth and development within a City. Development without planning causes negative impacts such as acquisition of developed property, improperly sized spacing of infrastructure, etc. Good planning minimizes these negative impacts and implements standards, policies and guidelines to ensure development occurs for the wellbeing of the City. The challenge of any planning effort is to capture the continuously changes that occur with development within a static document. This TMP is to be dynamic and updated as development occurs. As such, this TMP will supplement and add to previous transportation plans. The following previously completed plans were analyzed and are included as part of this TMP and are summarized below:

- Tremonton Transportation Master Plan – *UDOT* (2004)
- Box Elder Transit Studies – *InterPlan* (2004-2005)
- Box Elder Emerging Area Plan – *UDOT* (2008)
- Tremonton City Trails, Parks, and Open Space Master Plan – *Tremonton City* (2011)
- Cache Valley Short-Range Transit Plan, Interim Report #2 – *Lee Scott & Cleary* (2017)

Tremonton Transportation Master Plan

The *Tremonton Transportation Plan* was completed in 2004 by UDOT as a supplement to the Tremonton General Plan. This became the first plan specifically for transportation in Tremonton City. As this plan was completed by UDOT, the plan focused on the UDOT roadways located within and surrounding the City. Included are specific guidelines and policies regarding Access Management, Context Sensitive Solutions (CSS), roadway cross-sections, bicycle and pedestrian, enhancements program, and corridor preservation. A review summary is included to assist the City to request and receiving additional funding for projects. Recommendations for the roadway network and bicycle and pedestrian are included in the plan, and a summary is included below:

Roadway Network

- New Road – 2000 West (Main Street to 1000 North) (which has since been completed)
- Traffic Signal/Warrant – Main Street & 1000 West (which has since been completed)
- Interchange Improvements to Improve Site Distance – I-84 & Main Street (SR-102)
- Semi-Truck or Passing Lanes – SR-30 (SR-38 to SR-23)
- Bicycle and Walking Trail – Iowa String Road (1000 North to Rocket Road)
- Transit Study to tie-in Tremonton to Commuter Rail
- Traffic Signal/Warrant – 1000 North & 300 East (which has since been completed)

Bicycle and Pedestrian

- Conduct sidewalk inventory
- Continue to require developers to install sidewalk
- Develop routing plan for safe routes to schools

Box Elder Transit Studies (2004-2005)

The *Box Elder County Transit Feasibility Study* evaluated the existing conditions of transit services in Tremonton, Brigham City and Box Elder County. The report provides for policy planning in order to assess the types of transit services desired by the community and the range of costs associated with various levels of transit service. The report concludes that transit services could be significantly improved through improved coordination of existing services. Among the conclusions is a three phase plan to improve transit services throughout the area. The three phases are detailed below:

1. Short-Term Expansion of Transit Service
- Intra-County Transit Service
- Could be provided within 6 months to one year depending on taxpayer willingness and the ability of a service provider to bring in the necessary capital equipment
- Most likely would be a ¼ cent sales tax increase Countywide

2. Mid-Term Expansion of Transit Service
- Expansion to Cache County
- Scheduled transit service to and from Cache County could be operating with six months to three years, again depending on taxpayer willingness and the ability to coordinate with various service providers.

3. Commuter Rail Service
- Commuter rail service to the existing UTA service areas
- Should follow, not precede, intra-county transit service

According to the report all phases of transit implementation would require a taxpayer approval ballot measure. A comprehensive transit system would require approximately ¾ of one percent sales tax Countywide dedicated to transit, which includes the existing ¼ cent dedicated to transit in the cities of Brigham City, Perry, and Willard.

An additional study was completed in 2005 which refined transit service alternatives, estimated ridership, costs and revenues. There are four transit routes which travel through Tremonton connecting to Brigham City, Elwood, Deweyville, Honeyville, Corinne, Bear River City and Logan.

Box Elder Emerging Area Plan

The *Box Elder Plan Emerging Area Plan* was completed in 2008 by UDOT with coordination with Bear River Association of Governments (BRAG), Box Elder County, and Box Elder Cities and Towns. Cities in Box Elder County are primarily rural communities. Although future growth and development will occur, the desire is to maintain current quality of life within these cities and towns. Residents stated that an important aspect to maintaining a rural community feel is to preserve the cities' main streets. Included in the plan are three scenarios which offer different development patterns for the county as described below:

Scenario 1 – Inter-Regional Connections

The inter-regional connections scenario improves transportation facilities for both roads and transit which serve long-distance travel. The scenario prioritizes principal arterials over smaller arterials and collector streets. It assumes FrontRunner extends to Brigham City with additional services to Tremonton via commuter bus, Bus Rapid Transit (BRT), or fixed guideway system.

Scenario 2 – Connecting Local Activity Centers

The connecting local activity centers scenario improves efficiency for connections to key activity centers such as Brigham City and Tremonton City. This ensures efficient travel for residents for work, shopping or recreation. The roadway network is more balanced with more minor arterial and collector streets. This scenario improves and adds interchanges to the Interstate corridor. It also includes additional bus transit service connecting Brigham City and Tremonton City.

Scenario 3 – Local Circulation Scenario

The local circulation scenario focuses on smaller roads throughout the area which provides better circulation between cities and towns. The scenario prioritizes circulation on a local level and includes additional access to the interstate. This includes a bike/pedestrian trail connecting Brigham City and Tremonton City utilizing Iowa String Road. An additional trail which forms a loop in Tremonton is included to improve pedestrian and bicycle access. It is assumed Frontrunner will be extended to Brigham City with transit services connecting to Tremonton City.

The Common Transportation Vision

All three scenarios were analyzed and the common transportation vision was created. The plan includes a list of Action Items which need to be addressed and the items pertaining to Tremonton City are included below:

Transportation Connections to Cache Valley and the Wasatch Front

- Continued discussions with UTA to extend FrontRunner to Brigham City
- Coordination with Cache Valley Transit regarding bus service to and from Cache Valley
- Creating individual maps for cities and towns which show the Common Transportation Network

Preserving Rural Community Character

- Develop city and town transportation plans
- Meet with UDOT to discuss corridor preservation, access management, and signal spacing
- Identify priority corridors in the area and determine which characteristics about the road should be maintained or improved
- Meet with UDOT on local governments to outline priority corridors

Integrating Transit Service throughout the County

- Continued discussions with UTA to extend FrontRunner to Brigham City
- Revisit recommendations outlined in the Box Elder Transit Study

Providing Bicyclists and Pedestrians Safe and Desirable Transportation Options

- Examine and coordinate city and town general plans and transportation plans to determine how bicycle and pedestrian routes fit into their overall circulation plan
- Encourage local elementary and middle schools to create and submit to UDOT their School Neighborhood Access Plan (SNAP)

Providing Safe and Efficient Routes for Semi-Truck Traffic

- Begin discussions with UDOT and local governments to preserve access control, built to semi-truck related pavement/design standards and maintain high speed function on Iowa String Road
- Identify current state routes where increased local control might provide advantages to local governments in development approval
- Work with UDOT to create a semi-truck route plan to allow for appropriate development standards on designated semi-truck routes

Unresolved Issues

- The connections to I-15 and I-84 in Tremonton need to be further discussed. There is currently high semi-truck traffic on local commercial areas and discussion is needed to determine if this is adequate

Tremonton City Trails, Parks, and Open Spaces Master Plan

The *Tremonton City Trails, Parks and Open Spaces Master Plan* was developed in 2011 as a cooperative effort of the National Park Service Rivers, Trails, and Conservation Assistance Program (RTCA), BRAG, and Tremonton City. The document defines trails as a hard surface with generally non-motorized users. Included in the plan are goals for existing trails, opportunities for existing trails, and future trails.

Future Trails

- Malad River Loop Trail
- Right-of-Way Trail System
- Trails in Canal Right-of-Way
- Tremonton Rail Corridor

The master plan also includes goals and opportunities for existing and new parks and open spaces. These are vital to the future growth of Tremonton City as the trail network acts as an alternative mode of transportation. The full plan is included online and can be accessed using the following link: *Tremonton City Trails, Parks & Open Spaces Master Plan*.

Cache Valley Short-Range Transit Plan – Interim Report #2

The *Cache Valley Short-Range Transit Plan – Interim Report #2* evaluates service changes in the Cache Valley Transit District (CVTD) completed in 2017. The primary purpose of the study was to improve efficiency of CVTD and effectively meet the needs of the community. Planning with CVTD is important for as there is a significant number of commuters from Tremonton to Cache Valley. This study prepared a five-year working plan to identify unmet transportation needs, develop service options to meet those needs to improve service delivery, and provide recommendations for implementing services changes. The following are the items included in the report which pertain to Tremonton City:

Transit Service

- Bus Service - Tremonton to Logan
  - Route time: 1.5 Hours – Required 1 small bus
  - Monday-Saturday: two morning runs and two afternoon runs
  - Annual operating cost: $272,460
  - Annual estimated ridership: 15,584
  - Average cost per passenger: $17.48

Vanpool Service

- Vanpool Service - Tremonton to Logan
  - Annual operating cost: $3,500 to $10,000

Transportation Master Plan Implementation

Although these plans were completed a number of years ago, elements of the plans still apply today. This TMP will analyze and ensure the recommendations from previous planning efforts are still valid and any updates to these recommendations will be included in the plan.

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May 2018

Roadway Network Analysis

Transportation planning in the region is a cooperative effort of state and local agencies. The Bear River Association of Governments (BRAG) is responsible for coordinating this transportation planning process in the Box Elder, Cache, and Rich County areas and is the Rural Planning Organization (RPO). RPO's are agencies responsible for transportation planning in rural areas throughout the United States. This section includes a general discussion on the traffic demand modeling process used for this TMP, functional classification of streets, and level of service of streets and intersections. Also included are the existing and future conditions for the 20-Year and 50-Year scenarios. The following is a comprehensive list of topics discussed in this chapter:

1. **Traffic Demand Modeling**
    - Land Use Planning
    - Trip Generation
2. **Functional Classification**
3. **Level of Service**
    - Roadway
    - Intersection
4. **Existing Roadway Network Conditions**
5. **Future Roadway Network Conditions**
    - No-Build Analysis
    - 2037 Analysis
    - 2067 Analysis
6. **Capital Project List**
7. **Alternative Modes of Transportation**
    - Transit
    - Pedestrians and Bicycles

HORROCKS ENGINEERS

Traffic Demand Modeling

Traffic Demand Modeling was used to project existing traffic conditions into the future using the *PTV Vistro 5* software. This software works by assigning trips to the roadway network based on existing and future data based on *ITE's Trip Generation Manual*. Each trip includes an origin, destination and path between the two. As there are a significant number of origin and destinations within Tremonton City, the City was split into eight Development Zones (DZ) as shown in **Figure 1**, which reduces the complexity of the model while maintaining the accuracy of future traffic demand in the City. Each Development Zone acts as an origin or destination. All trips generated within each zone are assigned to another development zone. **Appendix A: Traffic Demand Model Methodology** includes a description of all assumptions and methodology of the Traffic Demand Model.

Land Use Planning

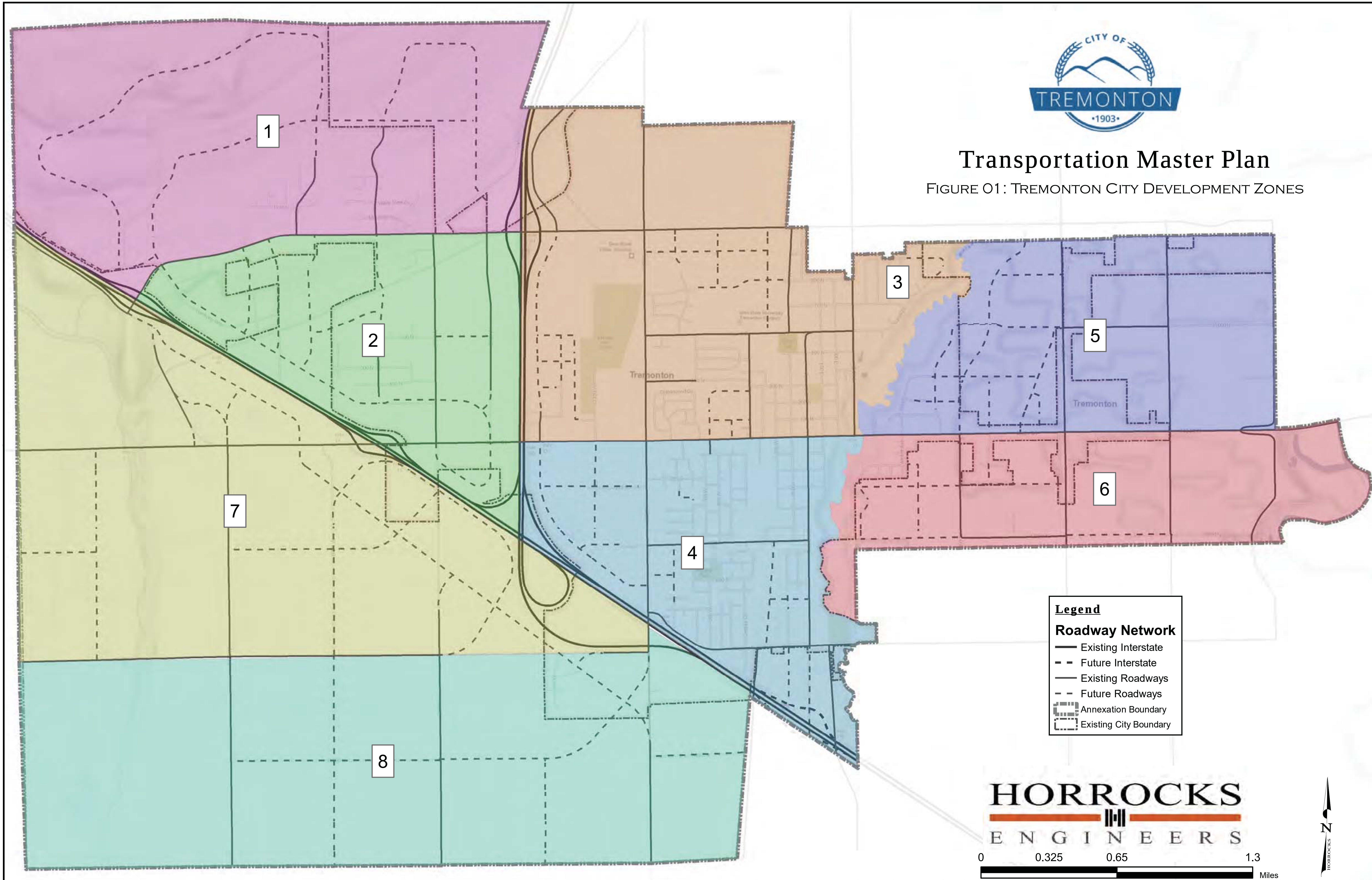
The majority of the socioeconomic data used in this plan is based on the best available statewide data provided by the Governor's Office of Planning and Budget (GOPB). This data was supplemented and verified using the data provided by the City in the form of the currently adopted zoning map as shown in **Figure 2** (the most recent version can be found on Tremonton City's website at *http://tremontoncity.org*).

The information is considered to be the best available data for predicting future traffic demands. However, land use planning is a dynamic process and the assumptions made in this plan should be used as a guide and should not supersede other planning efforts especially when it comes to localized intersections and roadways.

Socioeconomic Conditions

Currently, Tremonton City's population is estimated to be 8,426 residents with the median household income in the city is $46,739 (2015) and the average family size is 3.2 (2015). The median age of Tremonton City residents is 29.5 (2014) years. The 2000 to 2010 decade saw moderate growth in Tremonton, with an increase in population from 5,592 to 7,647 (36.7 percent or an average of 3.67 percent per year). The City has an unemployment rate of 3.4 (2015).

Based on the current land use, zoning, demographics, and growth patterns, Tremonton City is expected to grow to approximately 14,632 and 23,315 residents by the year 2040 and 2060 respectively. The forecasted growth within Tremonton City as well the surrounding cities will place increased pressure on the City's infrastructure, including the roadway network. Tremonton City is also committed to increasing commercial, office, and retail stores to provide greater opportunity for residents to live, work, and play in the City. This growth will therefore have considerable impact on traffic volumes in the City.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1903
Transportation Master Plan
Figure 01: Tremonton City Development Zones
1
2
3
4
5
6
7
8
Tremonton
Legend
Roadway Network
Existing Interstate
Future Interstate
Existing Roadways
Future Roadways
Annexation Boundary
Existing City Boundary
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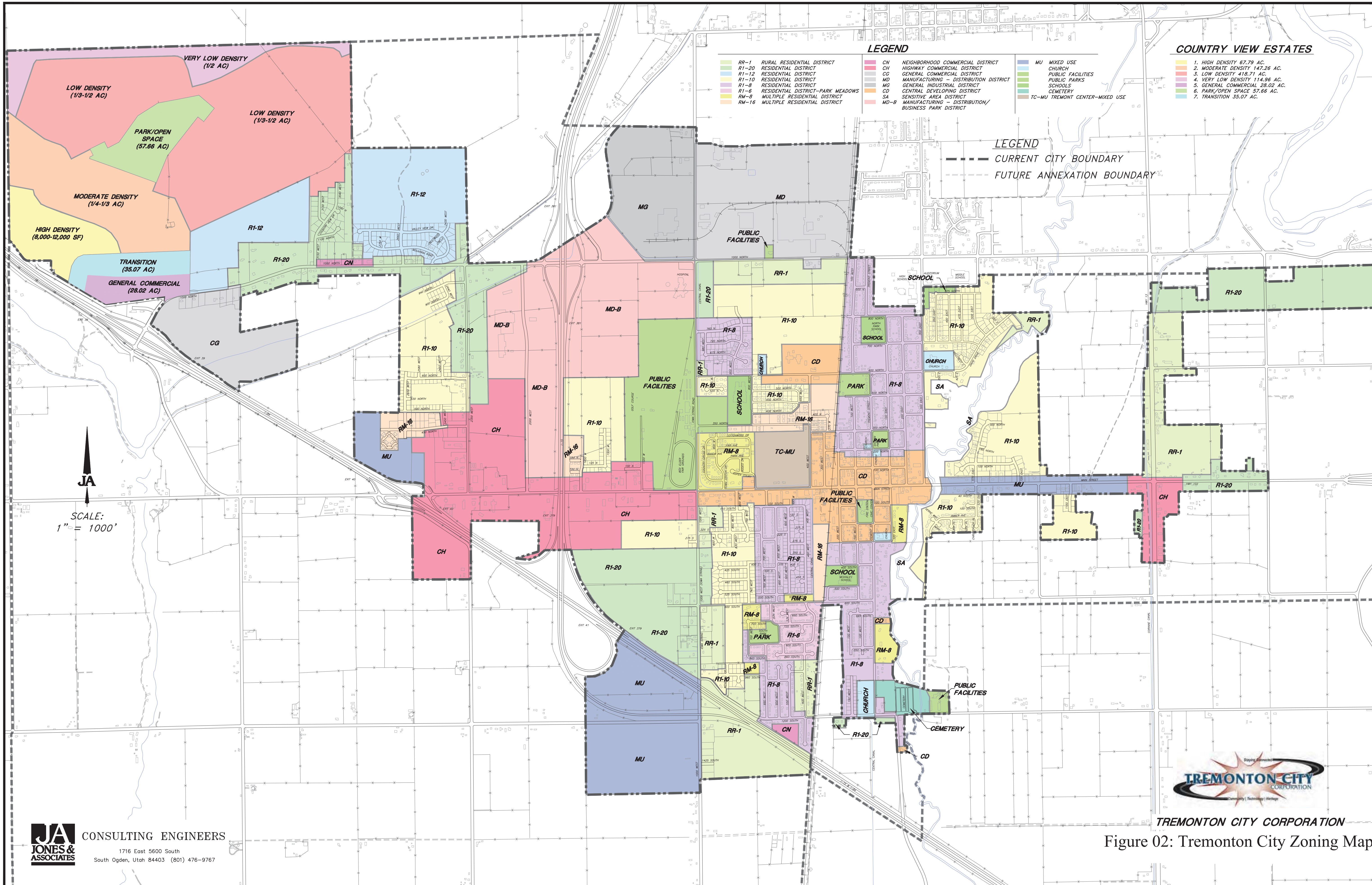


Figure 02: Tremonton City Zoning Map

Trip Generation

In order to generate vehicle trips for each DZ, The Institute of Transportation Engineers (ITE) *Trip Generation Manual, 9th Edition* was used to estimate vehicle trips throughout the City. The ITE *Trip Generation Manual* estimates trip generation for different land uses based on factors such as per unit, per acre, and per 1,000 square feet of building. Based on the existing development, City input as well as the zoning map in **Figure 2**, the estimated trip generation for the existing, 20-year, and 50 year conditions was created.

Traffic Demand Model Precautions

Tremonton City aims to plan for and encourage responsible and sustainable growth in the City. Part of the commitment to provide a sustainable system includes encouraging a reduction in vehicle trips by providing a balance of roads, trails and bikeways, and public transit facilities. Today's transportation system should not only accommodate existing traffic demands, but should also have built-in capacity to account for the demand that will be placed on the system in the future. While considering the socioeconomic data used in this report and the anticipated growth in the City, some precautions should be considered. First, the growth is based on existing and estimated development pressures throughout the City. As development occurs, it is recommended to revisit the TMP and update if necessary. Second, actual values may vary somewhat as a result of the study area, which includes the unincorporated areas around Tremonton City. Therefore, the recommendations in this TMP represent a planning level analysis and should not be used for construction of any project without review and further analysis. This TMP should also be updated regularly as development plans, zoning plans, and traffic patterns and trends change.

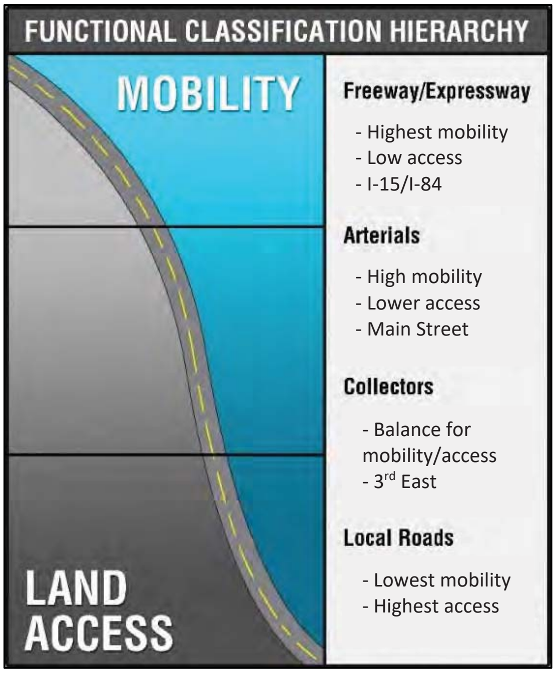
Functional Classification

All trips include two distinct functions: mobility and land access. Mobility and land access share an inverse relationship, meaning as mobility increases land access decreases. Street facilities are classified by the relative amounts of through and land-access service they provide. There are four primary functional classifications: Interstate, Arterial, Collector and Local Streets. Each functional classification is explained in further detail in the following paragraphs and is also represented in **Table 3**.

Interstate – Interstate facilities provide service for long distance trips between cities and states. No land access is provided by these facilities.

Arterials – Arterial facilities provide service primarily through-traffic movements. All traffic controls and the facility design are intended to provide efficient through movement of vehicles. There are limited land access points provided by these facilities.

Figure 3: Mobility vs Access Chart



Collectors – Collector facilities are intended to serve both through movements of vehicles and land-access functions in relatively equal proportions. They are frequently used for shorter through movements associated with the distribution and collection portion of trips.

Local Roads – Local roads facilities primarily serve land-access functions. The design and control facilitates the movement of vehicles onto and off of the street system from land parcels.

Roadway Classifications in Tremonton

Each of the primary classifications described above can be further subdivided. Currently in Tremonton City, arterials are divided into major and minor classifications. For each classification, major arterials have higher carrying capacity and provide more through movements than the minor arterials. For this TMP, the major and minor designations are determined based on the number of lanes on the roadway facility. Table 1 shows the number of lanes and the right of way for each functional class. This designation helps in identifying the appropriate cross-section as well as the carrying capacity of the roadway.

Figure 6 contains the roadway network with each of the roads labeled as interstates, major arterial, minor arterial, collector, and local roads. It should be noted that the boundaries of Tremonton City at the time of this TMP are shown on the map as well as the future boundaries. The future boundaries include the planned annexation area which will be included in all future traffic analyses.

For this TMP, each functional classification is color coded based on the number of lanes on each street. Many of the city streets were constructed prior to the adoption of the typical street sections and therefore do not comply with the standards in Table 1. As such, designating the streets as arterials and collectors in the existing conditions analysis may be misleading. Private streets are rare in the City and should be used where public streets are not possible. However, if private streets are allowed they should meet the minimum cross-section design.

Table 1: Typical Cross Sections

Functional Classification	Number of Lanes	Right of Way Width (ft.)
Local	2	60
Collector	2	66
Minor Arterial	3	80
Major Arterial	5	100

Typical Cross Section Review

The City has adopted typical cross-sections which are used throughout the City. The typical cross-section number of lanes and ROW are included in **Table 1** . The cross-sections as currently used in Tremonton City invite future growth on the roadway network without widening the existing ROW. An example is the addition of 8-foot trail throughout the City. The curb and gutter are shifted in 2’ on each side to get the additional 4’ of ROW required to add the trail.

Included are a 66-foot ROW minor arterial and a Main Street widening typical cross-section. The 66’ ROW minor arterial are indicated for arterials within the City where widening to the typical 80’ will cause significant impact to the adjacent land uses. Examples of roadways which will utilize this cross-section are on 1000 North from I-80 to Iowa String Road and on Iowa String Road from 1000 North to Main Street.

There are no recommendations in this TMP for the City regarding any updates to the typical cross-sections. The current cross-sections meet and fulfill what is currently needed in the City. As development occurs throughout the City, it is recommended to revisit the typical cross-sections to determine if any updates are required.

Roadway Characteristics

For all roadways, there are additional characteristics such as roadway and intersection spacing, access, speed limit, parking, pedestrian facilities and bicycle facilities which will improve traffic flow when followed. A description of these characteristics of the four primary functional classifications of streets are found in **Table 2**. The performance of the roadway network begins to degrade when the roadways are too close together or there are too many of one functional classification. The city’s roadway network was analyzed as part of this TMP to determine where improvements can be made for roadway characteristics.

Table 2: Street Functional Classification Characteristics

Characteristic	Functional Classification			
	Interstate	Arterial	Collector	Local Road
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	1-2 miles	½-1 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	1 mile	660 feet – ½ mile	300 feet – ¼ mile	300 feet
Speed Limit	55-75 mph	40-50 mph in fully developed areas	30-40 mph	25 mph
Parking	Prohibited	Discouraged	Limited	Permitted
Pedestrian	Separated Trail	Sidewalk/Trail (Parkstrip desired)	Sidewalk/Trail (Parkstrip desired)	Sidewalk (Parkstrip desired)
Cyclist	Separated Trail	Bike Lane or Trail	Shared Bike, Bike Lane or Trail	Shared Bike Lane or Trail
Comments	Supplements capacity of arterial street system & provides high-speed mobility	Backbone of city's road network	Minimal mobility with significant access	Through traffic should be discouraged

For instances where there is an interstate or railroad corridor, access to collector roadways are limited to the number of crossings. To maintain good traffic flow on both sides of these corridors, a collector road should be installed on both sides parallel to the corridor. Although it is recommended to space collector roadways according between ½ – 1 mile, collector roadways which have an interstate or railroad corridor between them should be spaced no closer than ¼ mile. When collector roads are spaced close together without a bisecting corridor, it is recommended to de-emphasize one of the two roadways. The following are methods to de-emphasize a roadway:

- **Reduce Speed Limit**
- **Traffic Calming**
- **Remove, Restrict, or Change Access to Roadway**

De-emphasizing is beneficial for roadways with a high number of residential driveways, where safety needs to be improved, where the roadway surface cannot support the traffic demand, where roadway spacing is an issue, and where reduced speed or traffic volumes are desired. As development occurs throughout the City, especially in annexation areas, roadways should be analyzed to determine if they should be de-emphasized.

After analysis of the existing and future roadway network, the following are suggestions for Tremonton City to improve collector roadway spacing:

1. De-emphasize the following collector roadways
    - **Tremont Street** (Main Street to 600 North)
    - **2300 West** (Main Street to 1000 North)
2. Build North/South collector at approximately 3300 West

Level of Service

The adequacy of an existing road network 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 performance. 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 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) as shown in Figure 4

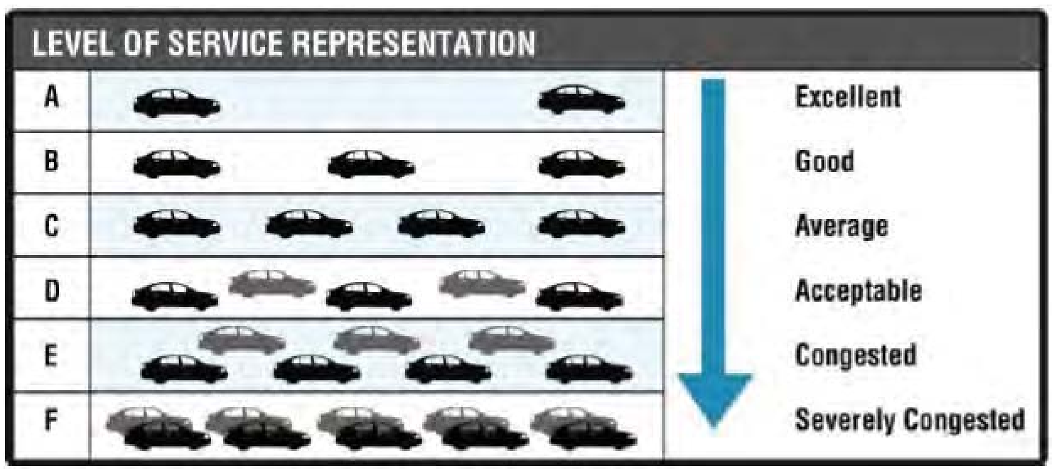


Figure 4: Level of Service Representation

Roadway Level of Service

Roadway LOS is used as a planning tool to quantitatively represent the ability of a particular roadway to accommodate the traffic demand. **Table 3** shows LOS traffic volume thresholds for each of the major roadways in the City. These values are based on HCM principles and regional experience. Roadway segment LOS can be mitigated with geometry improvements, additional lanes, two-way-left turn lanes, and access management.

LOS D is approximately 80 percent of a roadway's capacity and is an acceptable LOS for the roadway network during peak hours. A standard of LOS D for system streets (collectors and arterials) is acceptable for future planning. Attaining LOS C or better 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 well below capacity. The peak times of the day will likely experience moderate congestion characterized by a higher vehicle density and slower than free flow speeds.

Mitigations to Roadway Deficiencies

There are multiple methods to mitigate roadway deficiencies. The most well-known mitigation is to add traffic lanes. This method significantly increases the roadway capacity but comes at a significant impact as well. There are locations where the impact is too large to justify additional lanes. An example in Tremonton City is Main Street. To add a lane, additional pavement width is required. This may require ROW acquisition, removal of on-street parking, and decrease the safety for pedestrians using the commercial properties along Main Street.

Table 3: Interstate, Arterial and Collector LOS Capacity Criteria in Vehicles per Day

Lanes	LOS D	LOS E
Interstate		
4	63,000	80,000
6	91,000	115,000
Arterial		
2	15,500	19,500
3	16,500	21,000
5	26,000	33,000
7	42,000	53,000
Collector		
2	9,500	12,000
3	10,500	13,500
5	20,500	25,500

Other mitigation methods can be used to improve and mitigate roadway deficiencies. Where there is space, an additional roadway to bypass the deficient roadway can be built. This deemphasizes the deficient roadway and diverts the traffic to the new roadway. To improve traffic flow, access can be restricted to minimize conflict points for turning vehicles. Where roadway widths can accommodate, lane widths and shoulders can be reduced to fit additional travel lanes.

Intersection Level of Service

Whereas roadway LOS considers an overall operation 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 are typically a source of congestion in the roadway network, a detailed look into vehicle 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 (HCM) and the resulting criteria for assigning LOS to signalized and un-signalized intersections are outlined in Table 4. LOS D is considered the industry standard for intersections in Tremonton City during peak times. 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.

Table 4: Intersection Level of Service

LOS*	Signalized Intersection (sec)	Stop-Controlled/ Roundabout (sec)
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

*LOS F when traffic volumes exceed capacity

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 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) should be below 90 seconds. An average delay of less than 55 seconds suggests that in most cases, no vehicles will have to wait more than one cycle before proceeding through an intersection. Un-signalized intersections are generally stop-controlled. These intersections allow major streets to flow freely, and minor intersecting streets to stop prior to entering the intersection. 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 of the worst approach (always a stop approach) at the intersection. An un-signalized intersection operating at LOS D means 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, or for queued vehicles waiting at the stop sign. Roundabout LOS is also measured using the stopped controlled LOS parameters.

Intersection and roadway segment LOS problems must be solved independently of each other, as the treatment required to mitigate the congestion is different in each case. Intersection problems may be mitigated by adding turn lanes, improving signal timing, and improving corridor signal coordination.

Intersection Deficiency Mitigations

Mitigations at intersections depend on the existing intersection configuration. At signalized intersections, timing of the signal should be investigated to determine if the timing is the cause for excessive delay. It is recommended to investigate signal timing periodically to ensure intersection deficiencies are not being caused by improper timing. Other mitigations methods which apply to all intersection types involve separating specific movements which cause significant delay at the intersection. Typical mitigations include left turn pockets, right turn pockets, and increase storage lengths. There are other measures which can be implemented at unsignalized intersections based on the geometry and traffic flow. These should be investigated on a case by case basis. When all these methods at an un-signalized intersection are investigated and will not improve LOS to acceptable levels, then the intersection should be signalized.

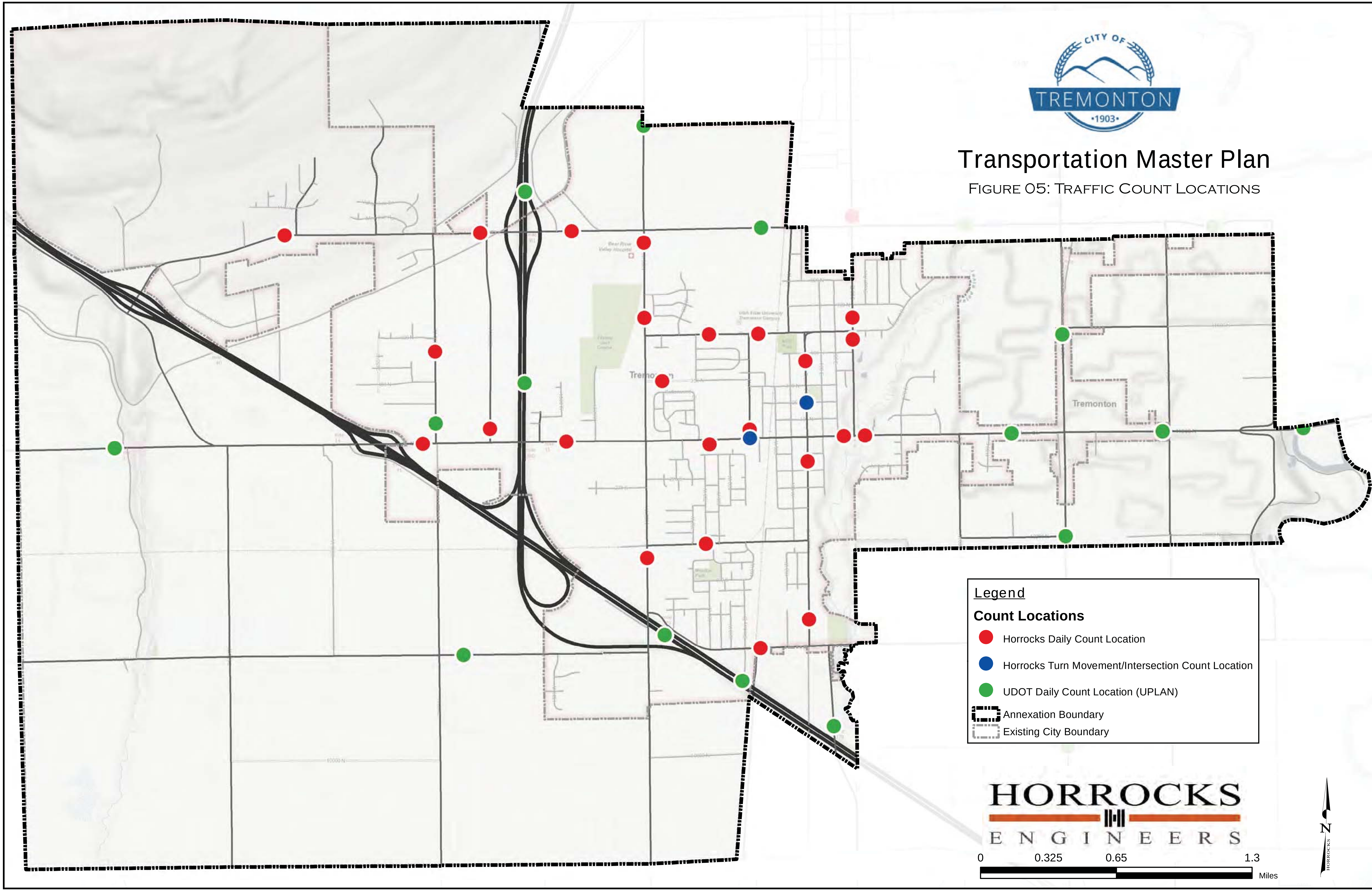
Existing Roadway Network Conditions

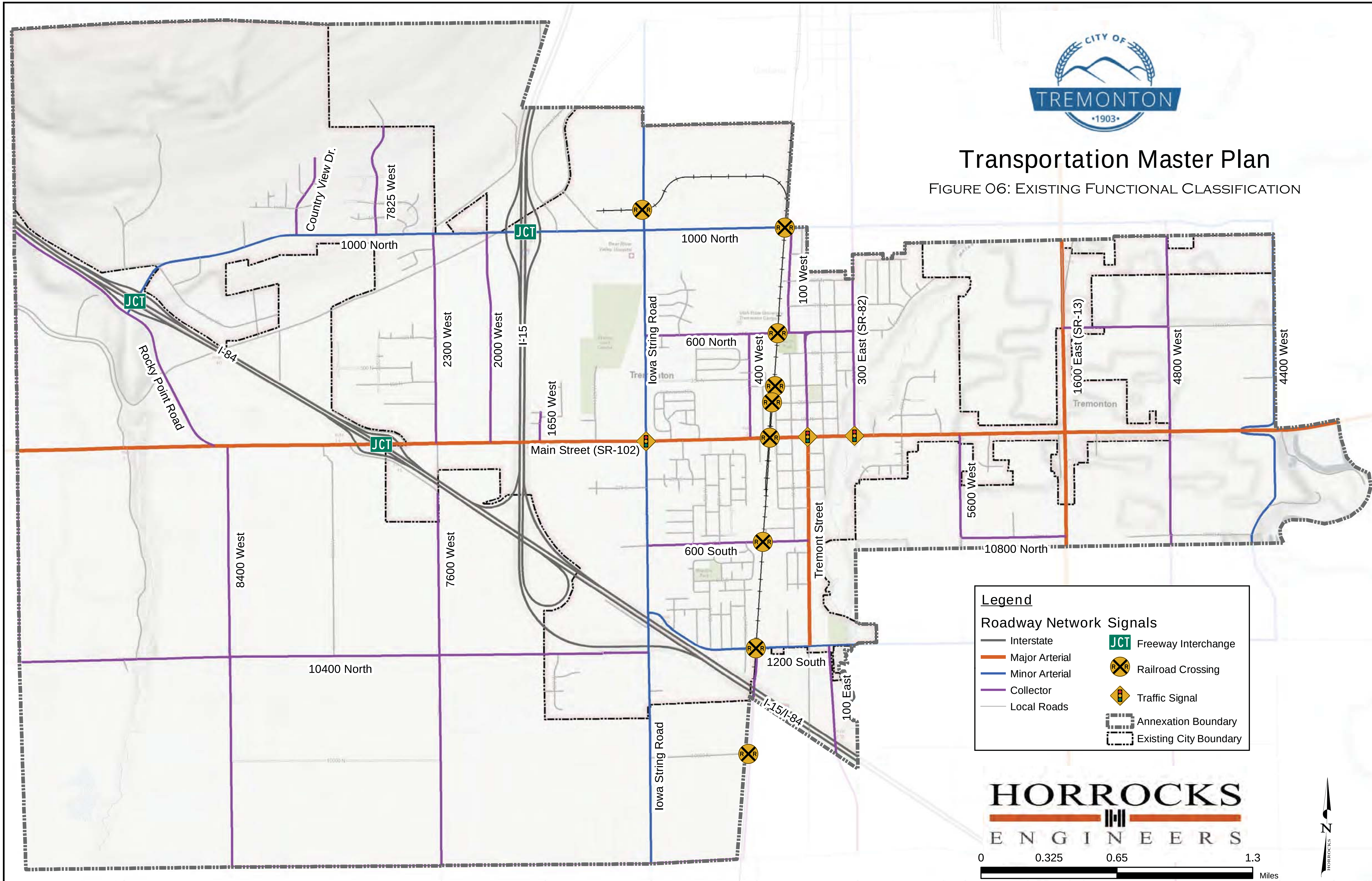
Traffic Demand Model Calibration

The Traffic Demand Model was calibrated to fit existing traffic conditions in Tremonton City. The method used to calibrate the model was to use traffic counts throughout the City. Traffic counts were received from UDOT and include annual average daily traffic (AADT) volumes as defined in Traffic on Utah Highways. Current and historical UDOT counts were obtained online at *www.udot.gov*. The historical count data on the UDOT website contain counts on many roadways, even roadways not under UDOT jurisdiction. On City owned roadways, traffic counts were either provided by Tremonton City or were manually counted using roadway tube counters as part of this TMP. **Figure 5** shows the count locations throughout the City used for model calibration.

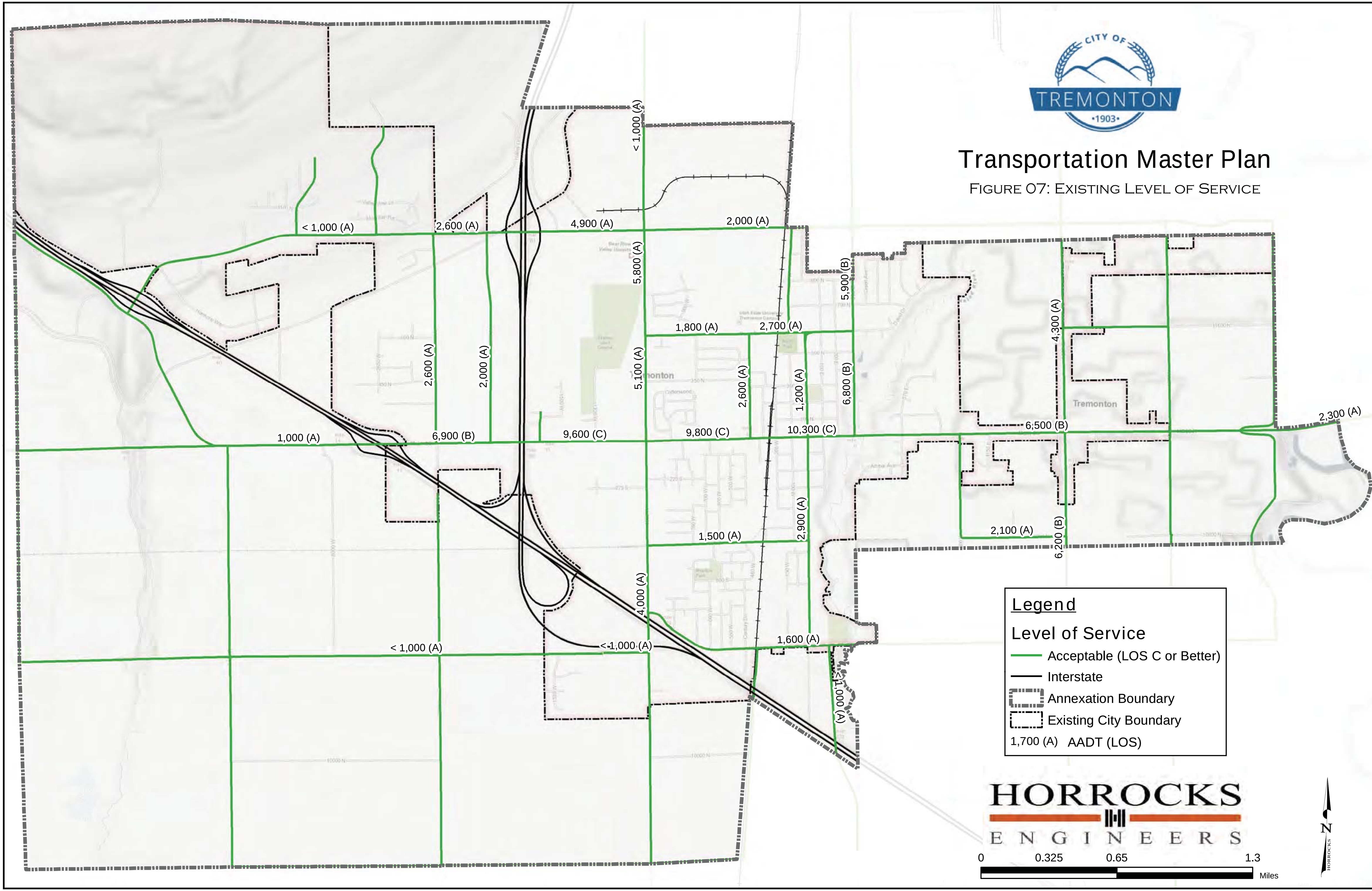
Existing Functional Classification and Level of Service

The existing functional classification used in the Traffic Demand Model is shown in **Figure 6**. The LOS was calculated for each roadway and intersection according to the guidelines explained in the Level of Service section and a LOS map is included in **Figure 7**. At present all roadways within the existing Tremonton City ROW function at acceptable LOS and is indicated for each roadway segment in **Figure 7**.


CITY OF
TREMONTON
•1903•
Transportation Master Plan
Figure 05: Traffic Count Locations
Tremonton
Tremonton
Legend
Count Locations
Horrocks Daily Count Location
Horrocks Turn Movement/Intersection Count Location
UDOT Daily Count Location (UPLAN)
Annexation Boundary
Existing City Boundary
HORROCKS
ENGINEERS
0
0.325
0.65
1.3
Miles
N



CITY OF
TREMONTON
1903
Transportation Master Plan
Figure 06: Existing Functional Classification
Legend
Roadway Network
Interstate
Major Arterial
Minor Arterial
Collector
Local Roads
Signals
Freeway Interchange
Railroad Crossing
Traffic Signal
Annexation Boundary
Existing City Boundary
HORROCKS
ENGINEERS
0
0.325
0.65
1.3
Miles
N
1000 North
Country View Dr.
7825 West
2300 West
2000 West
I-15
I-84
Rocky Point Road
1650 West
Iowa String Road
600 North
400 West
100 West
300 East (SR-82)
1600 East (SR-13)
4800 West
4400 West
Tremonton
Main Street (SR-102)
5600 West
10800 North
600 South
Tremont Street
8400 West
7600 West
10400 North
1200 South
100 East
I-15/I-84
Iowa String Road
JCT



Transportation Master Plan

Figure 07: Existing Level of Service

Future Roadway Network Conditions

By calibrating the Traffic Demand Model to fit the existing traffic conditions in Tremonton City, the model is prepared to project vehicle traffic volumes into the future. There are three future models used for this TMP. The first model used was to identify potential capacity deficiencies, called the No Build Model. The other two models project traffic volumes 20 and 50 years into the future to create a 20-Year Model and 50-Year Model.

Future Trip Generation

Future trips generated within Tremonton City are based on the Institute of Traffic Engineers (ITE) *Trip Generation Manual, 9th Edition*. All trips within the manual are generated based on a unit of measurement (i.e., per residential unit, per 1,000 square feet gross floor area, per acre, etc.). As a significant amount of the City is not currently developed and in order to simplify and streamline the process to generate trips throughout the City, all units of measure were converted to be per acre. See **Appendix A: Traffic Demand Model Methodology** for detailed information regarding trip generation. Input from City staff as well as development pressures in the City were used to determine the appropriate proportion of development which will occur for the 2037 (20 year model) and 2067 (50 year model) Traffic Demand models.

No Build Level of Service

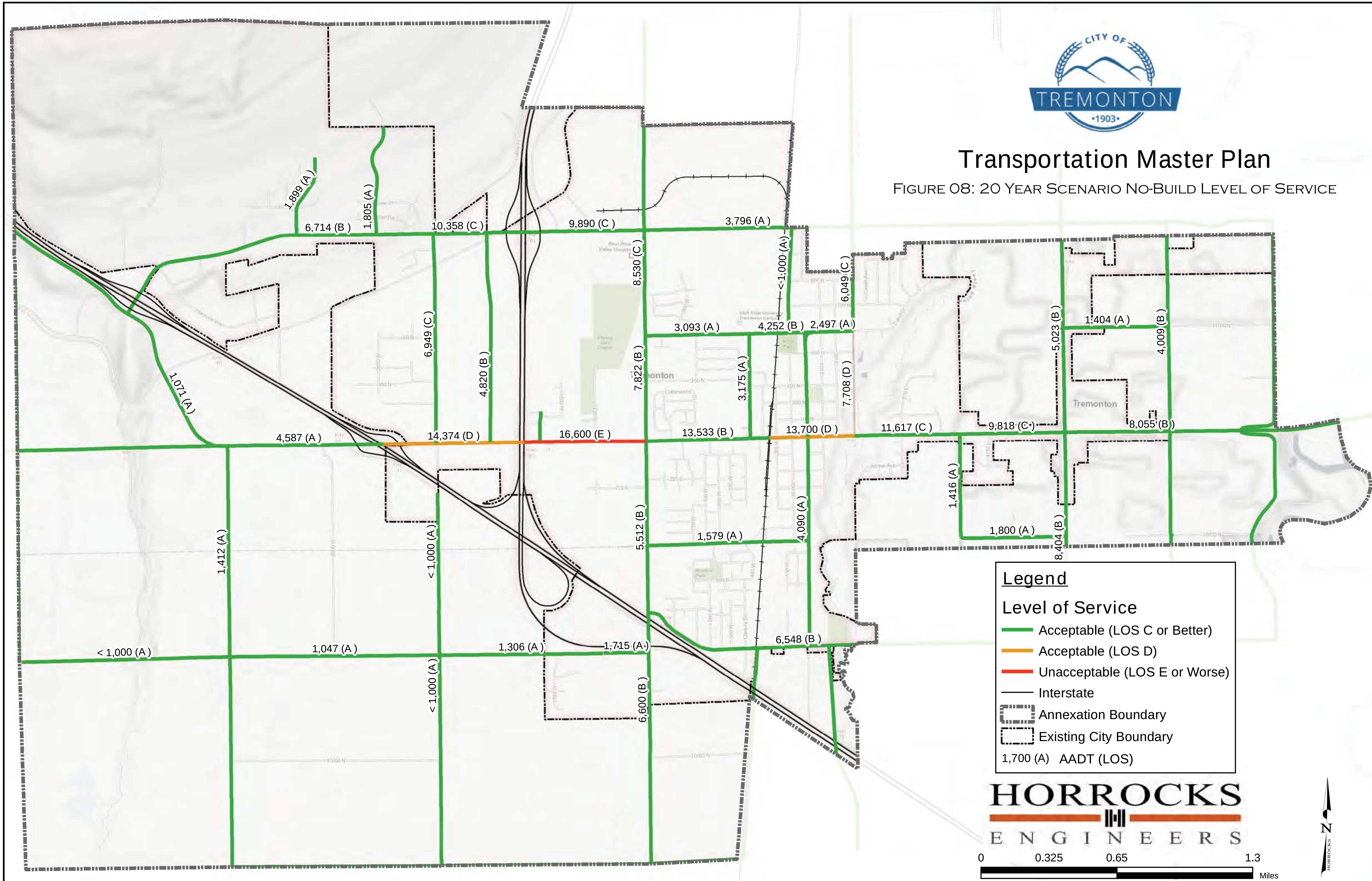
A No-Build Model is intended to show what the roadway network would be like in the future if no action is taken to improve the City roadway network. A 20-year and 50-year No-Build Model are included in this analysis. The traffic demand model was again used to predict this condition by applying the future growth and traffic demand to the existing roadway network. As shown in **Figure 8** and **Figure 9**, the following roadways would perform at LOS E (which is an unacceptable LOS) or worse if no action were taken to improve the roadway network within a 20 year and 50 year period respectively:

20 Year No-Build Model Deficiencies

- **Main Street** (Iowa String Road to 1650 West)

50 Year No-Build Model Deficiencies

- **Main Street** (Iowa String Road to I-84)
- **Main Street** (400 West to 570 East)
- **1000 North** (Country View Drive to I-15)
- **2300 West** (1000 North to Main Street)

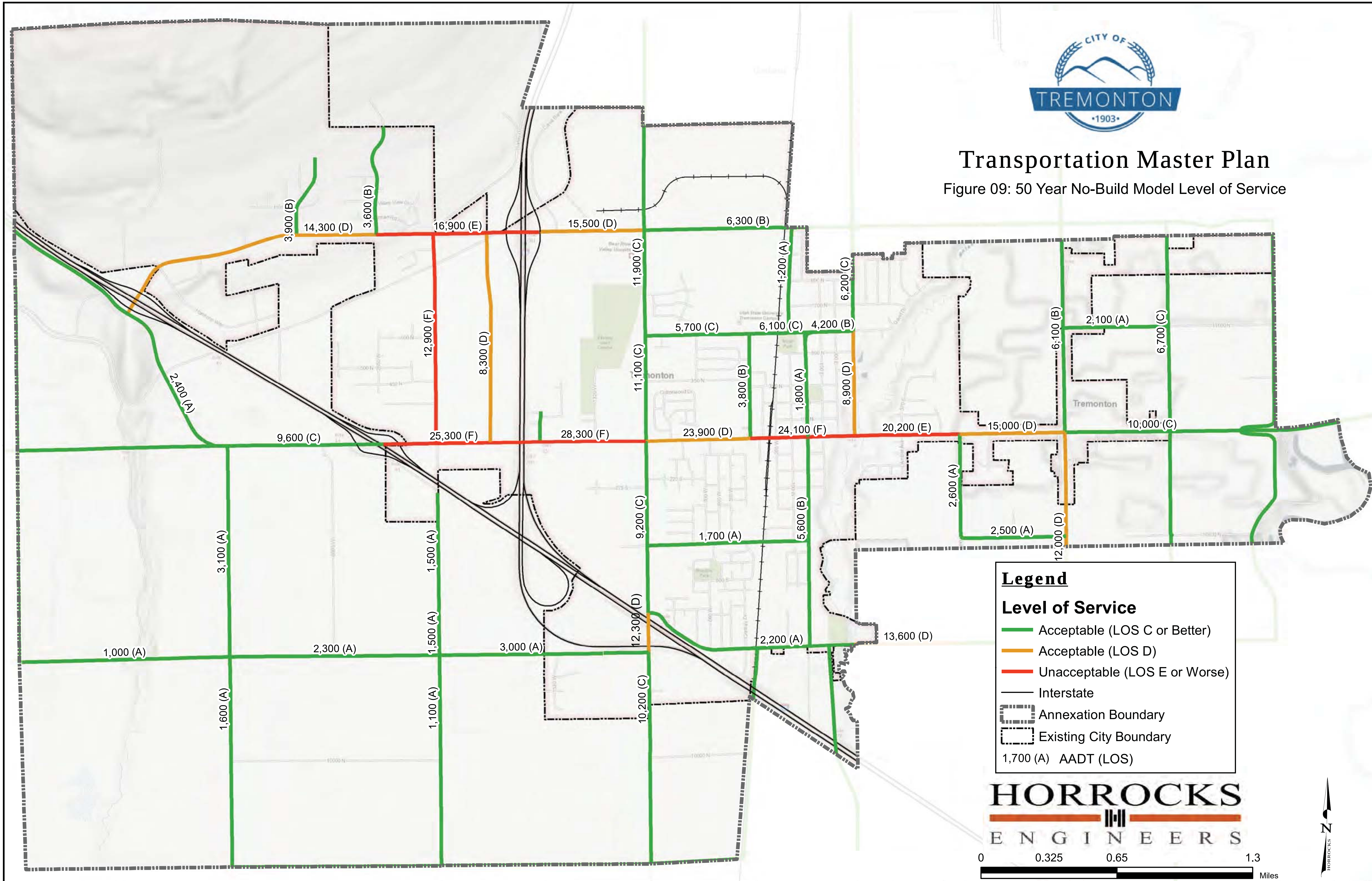


Transportation Master Plan

Figure 08: 20 Year Scenario No-Build Level of Service

Transportation Master Plan

Figure 09: 50 Year No-Build Model Level of Service



Capital Project List

As new development occurs in Tremonton City, the roadway network will need to be improved by constructing new roads, widening existing transportation corridors, and making intersection improvements to provide future residents of the city with an adequate transportation system. All capital projects listed in this TMP are included in **Table 5** and shown in **Figure 10**.

There are a significant number of projects included in **Table 5**. Many of these projects will be built as development occurs by the developers. All projects on UDOT roadways will be primarily funded by UDOT. Projects listed as new roads and local roads will generally be constructed by Developers, as an exaction, as development occurs. For all other roadways where the City is required to fund the projects, it is recommended to utilize all funding opportunities explained in this TMP document. Updating projects in **Table 5** and **Figure 10** regularly is recommended since project scopes change as new development occurs throughout the City. The projects in **Table 5** are organized by horizon year (20-Year and 50-Year) and denote projects that are anticipated to be funded solely by development. All costs are based on typical unit prices for asphalt, base course, ROW, etc. and are represented as 2017 total costs. See **Appendix B: Cost Estimates** for unit costs and individual project cost estimates. The numbers associated with the projects listed in **Table 5** is not relevant as they are just used to differentiate between the different projects.

Table 5: Capital Project List

Project No.	Project Location	Cost (2017)
20-Year Horizon Projects		
4	New Minor Arterial: 1000 North to 2300 West	$5,905,000
5	New Minor Arterial: 2300 West to Main Street	$933,000
8	2650 West Extension to Project #4	$201,000
10	2000 West Realignment to Project #4	$344,000
11	New Traffic Signal : 2000 West & Main Street	$300,000
14	HAWK Pedestrian Signal: Intersection of Main Street & 400 West	$310,000
15	Railroad Crossing: 800 North & 150 West	$465,000
23	1000 North: I-84 to 2300 West	$3,303,000
24	1000 North: 2300 West to 2000 West	$1,729,000
25	1000 North: 2000 West to 1500 West	$644,000
26	1000 North: 1500 West to Iowa String Road	$663,000
27	Iowa String Road: 1000 North to Main St	$1,747,000
67	Main Street Widening: Iowa String Road to 1650 West	$1,813,000
20-Year Horizon Projects Funded Solely by Development		
1	New Collector: 1000 North to Project #3	$6,292,000
2	New Collector: Country View Drive Extension to Project #1	$572,000
3	New Collector: Project #1 to 1000 North	$1,716,000
6	New Collector (3040 West): 1000 N to Project #4	$2,060,000
7	New Collector: 2650 West Extension to 1000 North	$1,488,000
9	New Local Road: Project #6 to Project #7	$1,030,000
12	Local Roads: South of 1000 North from Iowa String Road to 100 West	$4,010,000
13	New Collector: 1000 North to 600 North	$1,545,000
16	New Collector: 1000 North to Main Street	$3,318,000
17	New Collector (11600 North): 1600 East to Project #16	$1,087,000
18	Local Roads: West of Project #16	$2,556,000
19	Local Roads: East of Project #16	$4,661,000
20	Local Roads: West of 5600 W	$3,083,000
21	Local Roads: East of 5600 W	$2,123,000

Project No.	Project Location	Cost (2017)
22	New Collector: 10800 North Extension: 550 East to 1600 East	$1,578,000
Total Cost for 20-Year Horizon Projects (Not Including Projects Funded Solely by Development)		$18,357,000
50-Year Horizon Projects		
32	Rocky Point Road Re-Alignment: I-84 to Main Street	$4,156,000
35	Old Rocky Point Road: Re-Align to Connect to New Rocky Point Road and Main Street*	$744,000
42	10400 North Alignment to Project #71 (West)	$1,131,000
44	Iowa String Road Alignment to Project #71	$849,000
45	New Collector: 10400 North Alignment to Project #71 (East)	$340,000
49	New Traffic Signal: 5600 West & Main Street	$300,000
59	New Traffic Signal: Main Street & Project #32 and #71	$300,000
60	New Traffic Signal: Main Street & 1650 West	$300,000
61	New Traffic Signal: Main St & 600 West	$300,000
62	New Traffic Signal: Main Street & 1600 East	$300,000
63	I-15 JCT at Project 64	$77,500,000
64	New Minor Arterial (Tremont Street): Extension to I-15 Interchange (Project #64)	$2,116,000
65	10400 North Widening: 9200 West to 2300 West	$5,699,000
66	1200 South Widening: Malad River to 4700 West	$2,870,000
68	Main Street Widening: 1650 West to I-84	$2,220,000
69	New Traffic Signal: Main Street & 4800 West	$300,000
71	New Minor Arterial (Commerce Highway): Iowa String Road to Main Street	$8,420,000
72	New Minor Arterial: I-15 Interchange to Iowa String Road	$3,135,000
73	New Traffic Signal: Tremont Street & Rocket Road	$300,000
50-Year Horizon Projects Funded Solely by Development		
28	New Collector: 1000 N to Country View Dr (Project #1)	$8,008,000
29	New Collector: Project #1 to Project #3	$3,318,000
30	New Collector (3300 West): 1000 North to Project #4*	$1,831,000
31	New Collector (3450 West): 1000 North to Project #4*	$1,373,000
33	New Collector: Main Street to Project #32*	$916,000
34	New Collector: Main Street to Old Rocky Point Rd*	$1,001,000
36	New Collector: Main Street to 10400 North	$3,089,000
37	New Collector (10400 North): 9200 West to Project #36	$1,202,000
38	New Collector (10400 North): 8400 W to Project #32 and Project #71	$2,489,000

Project No.	Project Location	Cost (2017)
39	New Collector: 10400 North to Project #71	$3,062,000
40	New Collector: 10400 North to 9600 North	$3,053,000
41	New Collector: 2300 West Alignment to Project #71	$286,000
43	New Collector: 10000 North Extension to Project #71	$3,003,000
46	New Collector: 9600 North to Project #43	$1,545,000
47	New Collector: 1650 West Extension to 1000 N	$2,717,000
48	New Collector: Main Street to 850 South	$2,975,000
50	Local Roads Northeast of Project #71	$4,360,000
51	Local Roads Southwest of Tremont St and 600 S	$2,674,000
52	New Local Connection: 830 West to 760 West	$351,000
53	Local Roads Southwest of Main St/Iowa String Rd	$3,308,000
54	Local Road connecting 600 N to 2000 W	$702,000
55	Local Roads East of Project #47	$2,857,000
56	Local Roads Northwest of Main St/4th W	$1,754,000
57	Local Roads Southeast of 600 S/6800 W	$1,003,000
58	Local Rd connecting 875 N to David Dr.	$652,000
70	New Loop Road: 2300 West to 2000 West	$1,716,000
Total Cost for 50-Year Horizon Projects Only (Not Including Projects Funded Solely by Development)		**$111,280,000**
Total Cost for All Projects through 50-Year Horizon (Not Including Projects Funded Solely by Development)		**$129,637,000**

*Projects included are alternatives. Decision of which alternative will occur during design of the roadway