MT. PLEASANT CITY
REMEMBERING THE PAST
EST. 1859
PREPARING FOR THE FUTURE

TRANSPORTATION

MASTER PLAN 2025

SUNRISE ENGINEERING

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

GLOSSARY OF TERMS

AADT	Average Annual Daily Traffic
AASHTO	American Association of State Highway and Transportation Officials
FHWA	Federal Highway Administration
GIS	Geographic Information System
HCM	Highway Capacity Manual
HH	Household
ITE	Institute of Transportation Engineers
LOS	Level of Service
PMP	Pavement Management Plan
ROW	Right-of-Way
STIP	Statewide Transportation Improvement Program
TAZ	Traffic Analysis Zone
TDM	Travel Demand Model
TIP	Transportation Improvement Program
TMP	Transportation Master Plan
TRB	Traffic Research Board
UDOT	Utah Department of Transportation
USTDM	Utah Statewide Travel Demand Model

EXECUTIVE SUMMARY

The Transportation Master Plan (TMP) for Mt. Pleasant, Utah, provides a comprehensive framework to address current and future transportation needs in this growing rural community. The plan outlines strategies to improve roadway infrastructure, enhance safety, and accommodate anticipated population growth while preserving Mt. Pleasant's small-town character and rural charm. Leveraging detailed analyses of traffic patterns, roadway conditions, and community priorities, the TMP prioritizes projects that will enhance mobility, support economic development, and promote sustainability.

ROADWAY NETWORK ANALYSIS

Regional transportation planning in Utah consists of a collaborative effort between state and local agencies. The Utah Department of Transportation (UDOT) continues to maintain a regional transportation travel demand model. The roadway network analysis section discusses the general process of traffic demand modeling, roadway functional classification, and roadway/intersection capacity through level of service (LOS).

TRAFFIC DEMAND MODELING

The Utah Statewide Travel Demand Model (USTDM) was utilized as a base model to establish model traffic volumes representing existing conditions and projecting out to future horizon years 2030, 2035 and 2045. At the time this TMP was being prepared the USTDM was in the process of being updated. All TDM values and projections reflect the most current data available.

Local adjustments to the USTDM must be made to give better estimations of future conditions. The dcc

- Socioeconomic updates to TAZs
- Local Traffic Data Validation

FUNCTIONAL CLASSIFICATION

In any transportation roadway network, there are two primary functions of roads, mobility, and access. As described by the Federal Highway Administration (FHWA), the ideal roadway mobility function provides few opportunities for entry and exit to a roadway and therefore low travel friction from vehicle access/egress. The ideal roadway accessibility function provides many opportunities for entry and exit, which creates potentially higher friction from vehicle access/egress. Each roadway functional classification is intended to serve some level of accessibility and mobility. On the extreme end of mobility there are arterial roadways, these roadways restrict direct access to prioritize the efficient movement of vehicles. On the extreme end of accessibility there are local roadways, these roadways prioritize access and provide low efficiency movement. In between Arterial roadways and Local roadways are Collectors.

Collectors balance access and mobility and provide circulation and connection between Arterial and Local roadways.

Level of Service

According to the Institute of Transportation Engineers (ITE) Traffic Engineering Handbook 7th Edition, LOS is the standard analytic tool that measures the effectiveness of surface transportation facilities. Typically, LOS assigns a letter grade from A to F based on various measurements or estimates of speed, delay, volume to capacity ratios, stops or other criteria. Traditionally, LOS A describes a free-flowing facility with little to no interruption and LOS F describes a failed facility operating over capacity. Specific to rural areas, LOS C is commonly used as the threshold of acceptable LOS at intersections and along roadway segments. A mitigating project is recommended for any facility operating below a LOS C.

Existing Roadway Network

The USTDM base model output was calibrated to represent existing traffic conditions in Mt. Pleasant. Traffic data was collected and utilized to validate the USTDM daily traffic volumes. Based on the existing traffic data in the city, all intersections and roadway segments in Mt. Pleasant function at acceptable LOS.

Future Roadway Network Conditions

Once calibrated to existing conditions the TDM can then be used to project future volumes and conditions. The existing model was projected out to 2030, 2035, and 2045 representing 5-year, 10-year, and 20-year model scenarios. For each future volume scenario, a No-Build model was created to identify projects needed within the 5-year, 10-year, and 20-year planning horizons.

Capital Improvement Projects List

All existing and future deficiencies were noted and capital projects necessary to mitigate the deficiencies are included on the capital projects list. Coordination between Mt. Pleasant, UDOT, and local governments also inform this project list to help define improvements not identified by formal analyses. These projects are included in the Capital Improvement Project list, Table 5.

Alternative Modes of Transportation

Freight Trucks

Hwy-89 serves as the main route for freight transportation throughout Mt. Pleasant. SR-116 and SR-117 connect to smaller regional centers and municipalities in Utah. Truck traffic originating or terminating within Mt. Pleasant has predominantly used Hwy-89 for freight transport.

Transit

While there are no immediate plans of extending a public transportation system within Mt Pleasant, as growth continues public transit systems should be considered for connecting employment and recreational hubs to residential and commercial areas which can alleviate future trips to and from these development areas and lengthen the life of transportation facilities.

Active Transportation

Pedestrian and bicycle safety is a top priority of any transportation master plan. Mt. Pleasant, like many cities in Utah, is surrounded by several outdoor recreational attractions that attract visitors. With the recent establishment of the Utah Trails Network Fund efforts can be made to plan for and construct regionally connected multi-use paths and trails throughout the city and surrounding area. This TMP suggests the use of various active transportation facilities encouraging recreational activity and greater connectivity throughout the region.

Pavement Management

Pavement management Plans (PMP) are vital for municipalities to effectively manage their roadway network conditions. The PMP assists decision makers in maximizing their limited budgets by applying the most cost-effective maintenance solutions on each segment of road within the network. The ideal PMP helps decide which road should receive maintenance, when the maintenance should happen, and what type of maintenance should be applied. Additionally, the PMP must be updated on a regular basis to accurately track pavement conditions and needs.

Funding

The careful consideration of potential revenue sources for financing transportation capital improvements is crucial, particularly in addressing the demands of new growth and development. This section provides detailed insights into the diverse transportation funding sources available to facilitate the successful implementation of recommended improvements for Mt. Pleasant City, including Federal, State/County, and City.

Traffic Impact Study (TIS) Requirements

One of the most important steps in coordinating development impacts on the transportation network between jurisdictions is to establish consistent TIS requirements. For consistency, many of the requirements are reflective of UDOT standards for a TIS. UDOT's specific TIS requirements can be referenced in Appendix F.

The need for a TIS should be investigated with every development application submitted to the City. The purpose of the TIS is to identify the system and immediate area impacts associated with the proposed development. Identification of impacts and appropriate mitigation measures allows the City to assess the existing and future system safety, performance, maintenance, and capacity needs. Upon submitting an application to develop or redevelop an application meeting shall be held to determine the requirements of the TIS and establish stakeholders to include as part of the reviewing body (UDOT, County, Local Government). This section of the TMP establishes guidelines and policy to be followed in regard to performing a TIS within Mt. Pleasant jurisdictions.

Access Management

Access management is the process of establishing and enforcing road and driveway access 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 and suggested policy for Access Management practices.

INTRODUCTION

Mt. Pleasant, located in Sanpete County, Utah, is a vibrant rural community known for its scenic beauty, strong sense of community, and historical significance. As the city continues to grow, its transportation network faces challenges related to increasing traffic volumes, aging infrastructure, and the need for multimodal transportation options. The Transportation Master Plan is a strategic guide designed to address these challenges while maintaining the city's unique character. The following is a list and summary of previous planning efforts. Figure 1 shows an overview map of Mt. Pleasant City.

PREVIOUS PLANNING EFFORTS

MT. PLEASANT, UTAH GENERAL PLAN (2021-2031)

This comprehensive plan outlines the city's vision for development over a decade, addressing land use, transportation, housing, and community facilities. It emphasizes sustainable growth, improved transportation networks, and enhanced quality of life for residents.

SANPETE COUNTY TRANSPORTATION MASTER PLAN (2022)

The Sanpete County Transportation Master Plan, approved on December 6, 2022, serves as a strategic framework to address current and future transportation needs across the county, including Mount Pleasant. Key components of the plan relevant to Mount Pleasant include:

UTAH UNIFIED TRANSPORTATION PLAN (

Mount Pleasant benefits from the statewide Utah Unified Transportation Plan, which outlines long-term transportation projects through 2050. This comprehensive plan includes road, transit, and active transportation projects that impact the region, aiming to create a healthier, more connected Utah.

UTAH MOVE TRANSPORTATION SURVEY (2023)

The 2023 Utah Moves Transportation Survey is the state's most recent comprehensive study of residents' travel behaviors and preferences. Conducted in the spring of 2023, this survey aimed to gather detailed data to inform transportation planning and policy decisions across Utah.

Key Components of the Survey:

- **Core Household Travel Survey:** This segment collected detailed information on daily travel patterns from over 9,799 households, encompassing more than 25,000 individuals. Participants recorded their travel activities for at least one weekday, providing insights into trip purposes, modes of transportation, and travel times.
- **University Student Travel Survey:** Targeting the travel behaviors of college and university students, this component involved over 1,300 participants from eight higher education

institutions statewide. The data helps understand the unique travel needs and patterns of the student population.

- **Supplemental and Long-Distance Travel Survey:** Following the core survey, an additional 3,250 respondents provided information on long-distance travel and attitudinal factors influencing their transportation choices. This aspect of the survey aimed to capture travel behaviors beyond daily commutes, including intercity and interstate trips.

Purpose and Utilization:

The collected data serves multiple purposes:

1. **Transportation Modeling:** Enhances the accuracy of travel demand models used by state and regional planning agencies.
2. **Policy Development:** Informs policymakers about current travel behaviors, aiding in the creation of effective transportation policies.
3. **Infrastructure Planning:** Assists in identifying areas requiring infrastructure improvements or new developments to meet residents' needs.

By understanding the travel habits and preferences of Utah's residents, the survey supports the development of a transportation system that is efficient, sustainable, and responsive to the community's needs. For more detailed information, refer to the Utah Unified Transportation Plan's Household Travel Surveys page.

Utah Trail Network

The **Utah Trail Network** is a statewide initiative led by the Utah Department of Transportation (UDOT) to develop an interconnected system of paved trails, enhancing active transportation options for residents and visitors. In May 2024, UDOT announced nearly $95 million in inaugural funding to construct and plan approximately 60 miles of new paved trails across Utah.

Key Objectives of the Utah Trail Network:

- **Connectivity:** Link communities, destinations, and existing trail systems to provide seamless routes for non-motorized travel.
- **Accessibility:** Ensure trails are usable by individuals of all ages and abilities, promoting inclusiveness.
- **Safety:** Design trails to offer secure pathways for pedestrians and cyclists, separate from vehicular traffic.

UDOT aims to create a comprehensive network of paved trails that integrate with existing infrastructure, fostering sustainable transportation and recreational opportunities statewide. The initiative emphasizes collaboration with local communities and planning organizations to ensure the network meets diverse regional needs.

Mt. Pleasant Transportation Master Plan
Figure 1: Overview Map

LEGEND

Mt. Pleasant City Limits

Buffer Zone

Mount Pleasant

SUNRISE

Creating solutions that work and relationships that last

Roadway Network Analysis

This analysis assesses the city's roadway system, focusing on connectivity, capacity, and safety.

This section provides a comprehensive analysis of Mt. Pleasant City's existing and future roadway network, addressing traffic demand, functional classifications, and levels of service. This analysis guides infrastructure decisions to support the city's current needs and projected future growth.

Traffic Demand Modeling

The travel demand model for Mt. Pleasant relies on the Utah Statewide Travel Demand Model (USTDM), developed using CUBE Voyager. This model forms the foundation for forecasting future traffic volumes, understanding travel behavior, and identifying potential congestion points. To create a model that reflects Mt. Pleasant's unique travel patterns and population characteristics, the base model has been validated using updated socioeconomic data and traffic counts specific to key locations throughout the city.

Model Structure

The USTDM operates using a traditional four-step model framework (Trip Generation, Trip Distribution, Mode Choice, and Trip Assignment) to simulate traffic flow across the network.

1. **Trip Generation:** This step estimates the number of trips generated and attracted within Mt. Pleasant based on land use, population, and employment data. Updated socioeconomic data, including projected population growth and employment rates within the city and neighboring areas, were used to refine trip generation rates.
2. **Trip Distribution:** This step models how trips are distributed across different locations, determining travel patterns between origins and destinations. In Mt. Pleasant, key destination points include...
3. **Mode Choice:** Mode choice modeling identifies the proportion of trips taken by different modes, including car, bike, and walking.
4. **Trip Assignment:** Trip assignment routes the trips across the network, producing volume estimates for each roadway segment. It accounts for congestion effects and adjusts routes accordingly, particularly during peak hours and tourist season influx.

Model Validation Approach

The base model was validated specifically for Mt. Pleasant City using:

- **Traffic Counts:** Traffic data collected at key locations across the city, including intersections along Hwy-89 and main routes in and out of the city.

- **Socioeconomic Data:** The model integrates local socioeconomic projections, including residential growth and anticipated commercial developments. This calibration ensures that the model reflects the latest land-use patterns, housing trends, and economic conditions in Mt. Pleasant.

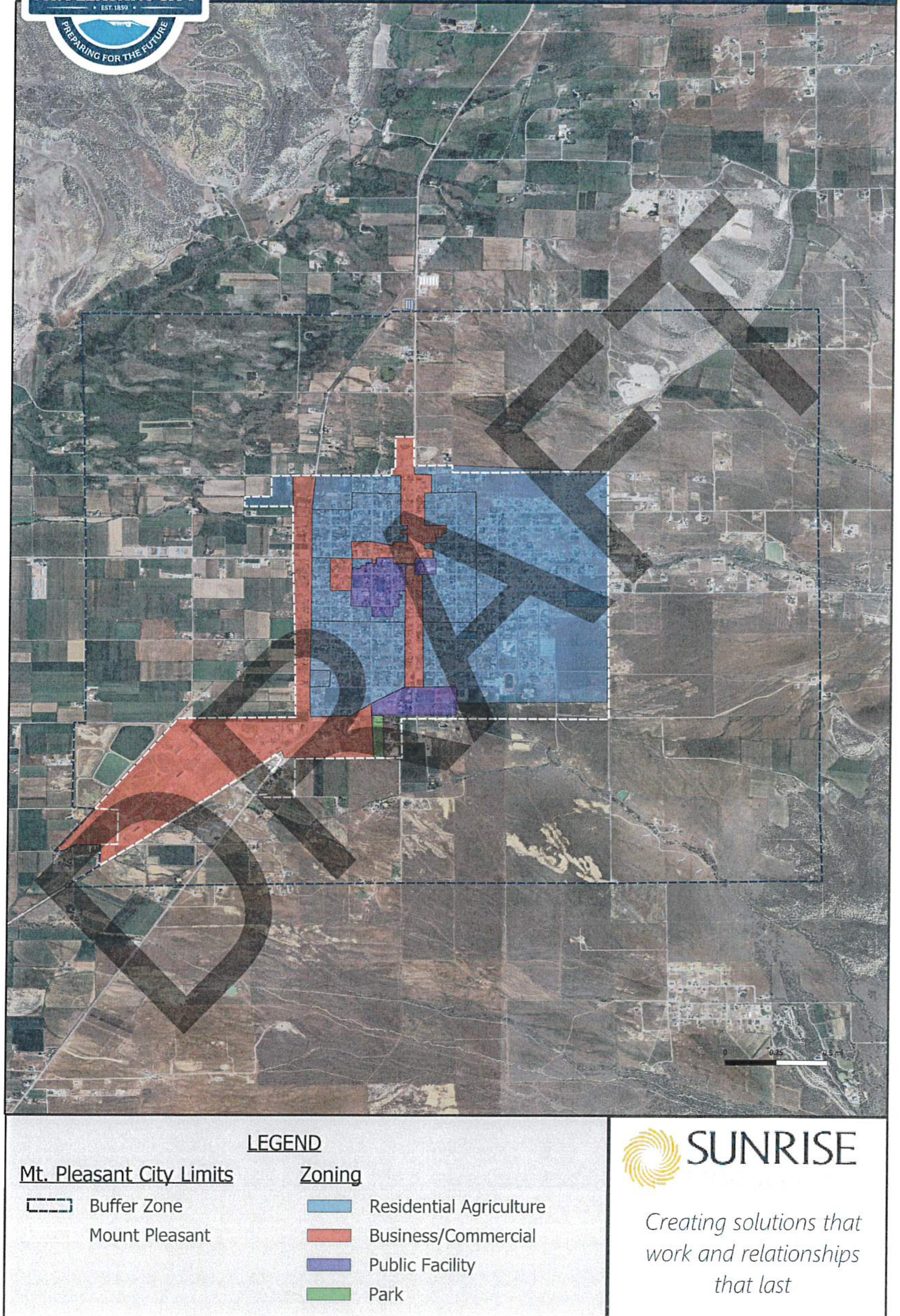
ZONING AND LAND USE PLANNING

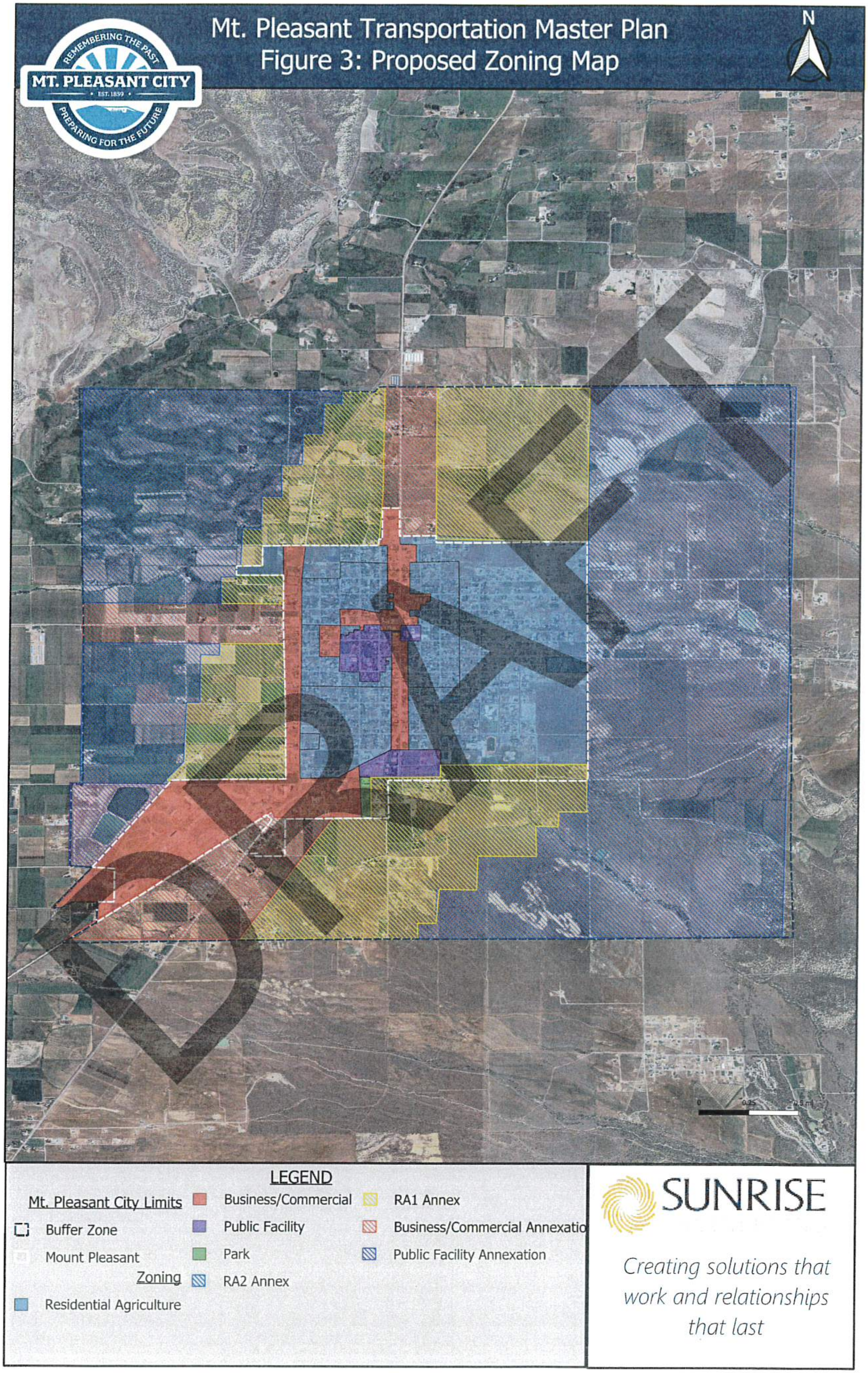
Socioeconomic data used in this plan is based on the latest census information and supplemented and verified using the data provided by the city in the form of the latest existing and future zoning maps as shown in **Figure 2** and **Figure 3**. This information is considered to be the best available 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.

Land use planning plays a crucial role in determining the arrangement and concentration of various land activities, including residential, commercial, industrial, and recreational uses. The configurations of land use significantly shape driver behavior and the demand for transportation services, influencing both environmental and social consequences. For instance, adopting compact and mixed-use development can decrease reliance on motor vehicles, enhance the appeal and accessibility of walking, biking, and public transit, and contribute to the creation of diverse and lively neighborhoods. Conversely, sprawling, and isolated land use patterns tend to amplify car dependency, lead to longer and more congested journeys, and result in higher levels of greenhouse gas emissions and air pollution.

Careful consideration should be given whenever making changes to land-use, zoning, or the transportation network to ensure that changes of one or the other have the desired effect according to the overall city goals and vision.

Mt. Pleasant Transportation Master Plan
Figure 2: Existing Zoning Map




Mt. Pleasant Transportation Master Plan
Figure 3: Proposed Zoning Map
N
REMEMBERING THE PAST
MT. PLEASANT CITY
EST. 1859
PREPARING FOR THE FUTURE
DRAFT
LEGEND
Mt. Pleasant City Limits
Buffer Zone
Mount Pleasant
Zoning
Residential Agriculture
Business/Commercial
Public Facility
Park
RA2 Annex
RA1 Annex
Business/Commercial Annexatio
Public Facility Annexation
SUNRISE
Creating solutions that work and relationships that last

Socioeconomic Data

Currently, Mt. Pleasant City's population is estimated to be 3,939 residents. As of 2024 the median household income is $61,441 and the average household size is 2.96. The median age of Mt. Pleasant City residents is 31.5 years old. Mt. Pleasant experienced moderate growth in the ten years between 2010 and 2020, with an increase in population from 3,666 to 3,939 reflecting a 7.48% increase. Mt. Pleasant City has an estimated unemployment rate of 4.3%.

Based on the current land use, zoning, demographics, growth patterns, and city staff input Mt. Pleasant City is expected to grow to approximately 10,643 residents by the 20-year (2045) scenario. The forecasted growth within Mt. Pleasant City and the surrounding cities increases the number of trip productions which places increased pressure on the City's roadway network. Mt. Pleasant City is also committed to increasing commercial, office, and retail stores to provide greater opportunities for residents to live, work, and play. This economic growth also increases pressure on the roadway network through attracting new trips to the city.

Trip Generation

Trip generation is an essential step in a traditional travel demand forecasting process. The trip generation model estimates the number of person trip ends for each Traffic Analysis Zone (TAZ). These trips are calculated on a household, person, or employee basis and then aggregated to a TAZ level. Therefore, trip generation uses disaggregate data and a disaggregate model to perform aggregate estimation or forecasting.

Trip generation within the TDM is based on a compilation of data from the Utah Travel Study completed in 2012.

Functional Classification

In any transportation roadway network, there are two primary functions of roads, mobility, and access. As described by the Federal Highway Administration (FHWA), the ideal roadway mobility function provides few opportunities for entry and exit to a roadway and therefore low travel friction from vehicle access/egress. The ideal roadway accessibility function provides many opportunities for entry and exit, which creates potentially higher friction from vehicle access/egress. **Figure 4** represents the mobility and access relationship.

Mt. Pleasant City Roadway Classifications

Each roadway classification described below is utilized as part of the overall network in Mt. Pleasant City. For this TMP, the major and minor designations are determined based on the number of lanes and total ROW. These classifications assist in determining the appropriate cross-section as well as the capacity of the roadway. **Figure 5** and **Figure 6** show the existing and future roadway functional classifications, respectively, with each of the roads labeled as major arterial, minor arterial, major collector, minor collector and local roads.

Major Arterial – Serve major activity centers with the highest traffic volume corridors and longest trip demands. They carry a high percentage of the total area travel in the least amount of mileage. Interconnect and provide continuity for major rural corridors to accommodate trips entering and leaving urban areas and movements through the urban area. Serve demand for intra-area travel between the central business district and outlying residential areas.

FIGURE 4: MOBILITY/ACCESS RELATIONSHIP

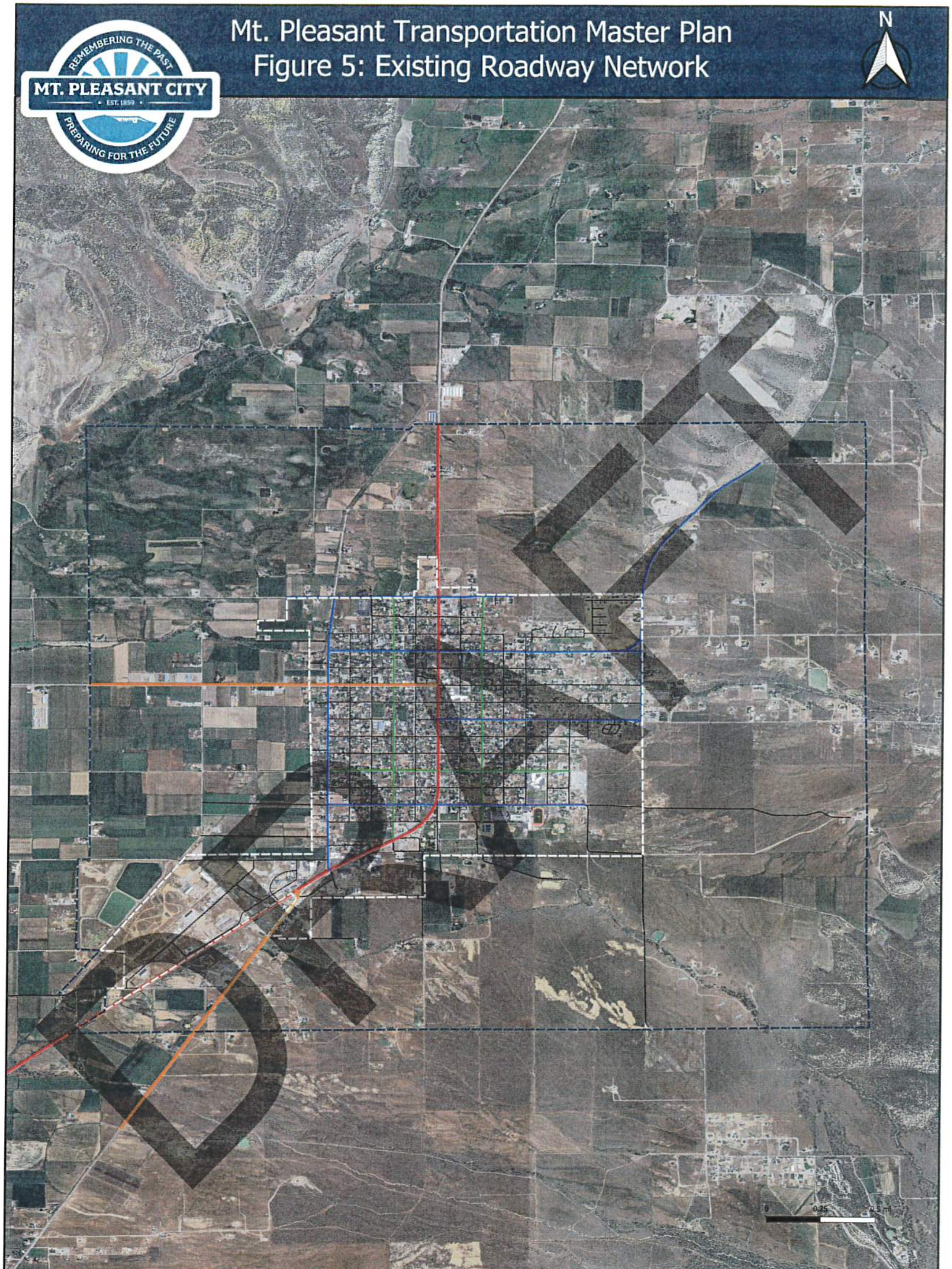
Minor Arterial – Interconnect and augment the higher-level Arterials. Serving trips of moderate length at a somewhat lower level of travel mobility than Principal Arterials. Distribute traffic to smaller geographic areas than those served by higher-level Arterials. Provide more land access than Principal Arterials without penetrating identifiable neighborhoods. Provide urban connections for Rural Collectors

Collector – Serve both land access and traffic circulation in lower density residential and commercial/industrial areas. Penetrate residential neighborhoods, often only for a short distance. Distribute and channel trips between Local Roads and Arterials, usually over less than three-quarters of a mile. Operating characteristics include lower speeds and fewer signalized intersections.

Local - Provide direct access to adjacent land. Provide access to higher systems. Carry no through traffic movement. Constitute the mileage not classified as part of the Arterial and Collector systems.

Currently the city arterials are divided into major and minor arterials. For each classification, major arterials have higher capacity and provide more through movements than minor arterials.

Mt. Pleasant Transportation Master Plan
Figure 5: Existing Roadway Network



LEGEND

Mt. Pleasant City Limits

- Buffer Zone
- Mount Pleasant

Existing Roadway Network

- Major Arterial
- Minor Arterial
- Major Collector
- Minor Collector
- Local

SUNRISE

Creating solutions that work and relationships that last

MT. PLEASANT CITY
REMEMBERING THE PAST · EST. 1859 · PREPARING FOR THE FUTURE

Mt. Pleasant Transportation Master Plan
Figure 6: Future Roadway Network

N

LEGEND

Mt. Pleasant City Limits
- Buffer Zone
- Mount Pleasant

Future Roadway Network
- Major Collector
- Minor Collector
- Local

Existing Roadway Network
- Major Arterial
- Minor Arterial
- Major Collector
- Minor Collector
- Local

SUNRISE

Creating solutions that work and relationships that last

Typical Cross-Section Review

The city has adopted typical cross-sections which are used throughout the city. The detailed cross-sections can be viewed in **Appendix B**. The typical cross-section number of lanes and ROW are included in **Table 1** .

TABLE 1: TYPICAL CROSS-SECTIONS

Functional Classification	Number of Lanes	Right of Way Width (ft.)
Local	2	55
Minor Collector	2	60
Major Collector	3	70
Minor Arterial	3	99
Major Arterial	5	121

Proper access management standards should be enforced according to each functional class to better achieve the intended capacity for each roadway. Typical cross-sections should be revisited as growth continues. Refer to **Figure 5** and **Figure 6** for maps of the existing and future functional class roadway network respectively.

Level of Service

The operational efficiency of a roadway network can be calculated and represented by a Level of Service (LOS) value assigned to each roadway segment and intersection. The Highway Capacity Manual (HCM), published by the Transportation Research Board (TRB), defines level of service as "a quantitative stratification of a performance measure or measures that represent quality of service" The TRB identifies LOS by reviewing performance measures, such as number of lanes, traffic volumes on the roadway, and delay experienced per vehicle along roadway segments and at intersections. LOS values 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). A visual representation of the LOS scale is shown in Figure 7.

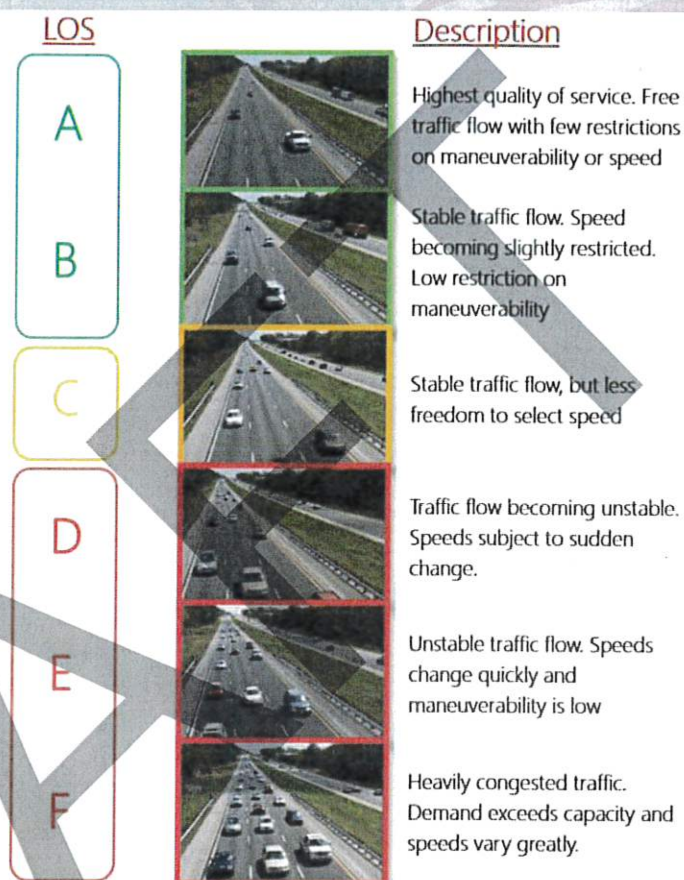


FIGURE 7: LOS REPRESENTATION

Roadway Segment Level of Service

Roadway segment LOS is utilized to quantify and represent the efficiency and functionality of the roadway. LOS allows local governments to plan and make better informed decisions when prioritizing and budgeting for future projects. Table 1 shows LOS traffic volume thresholds by functional classification. These values are based on HCM principles and regional experience.

Note that the color coding of the LOS scale shown in Figure 7 is specifically based on a LOS capacity threshold of D. Yellow indicates that the roadway is on the verge of failing and mitigations should be considered. LOS values A-C are labeled as green, indicating that the road is operating under capacity and no mitigations are necessary from a capacity standpoint. Although the roadways may not warrant mitigations due to capacity, oversized roads may still require safety mitigations caused by excessive speeding. LOS values E and F are labeled as red, indicating that the road is operating over capacity and mitigations are needed.

TABLE 2: LEVEL OF SERVICE CAPACITY CRITERIA (VEH/DAY)

Lanes	LOS C	LOS D	LOS E	LOS F
Arterial				
3	6,001-9,000	9,001-11,500	11,501-13,000	>13,000
5	10,001-15,000	15,001-19,000	19,001-22,000	>22,000
Collector				
2	2,001-3,000	3,001-4,500	4,501-5,500	>5,500
3	4,001-6,000	6,001-8,000	8,001-9,500	>9,500
Local				
2	801-1,200	1,201-1,800	1,801-2,000	>2,000

Roadway Mitigation Recommendations

The purpose of the roadway network is to move people and goods as efficiently as possible. Traditionally the most common mitigations have been:

- Adding travel lanes
- Installing two-way left turn lanes
- Geometry improvements
- Adopting and enforcing access management principles
- Improving/Expanding on Multi-modal transportation options

The most common mitigation is to add additional travel lanes to the roadway to increase capacity. In some cases, additional travel lanes may be added within existing right-of-way but many times adding more travel lanes requires additional right-of-way which has a high impact on adjacent property owners and reduces space between alternative modes (i.e., bikes and pedestrians). Careful consideration should be taken when considering the addition of travel lanes to a roadway since adding travel lanes may induce further demand and fill the capacity of the additional lanes quicker than anticipated in-turn negating any capacity benefits gained from adding lanes.

As roadways expand there is often a plateau in economic benefit followed by an inverse relationship with economic stability. This is both in terms of the cost of the road itself and the effects on the surrounding businesses. Meaning, once streets exceed a certain size the economic vitality of the area diminishes, and the costs for maintaining the larger roadways may exceed the benefit they are providing. (For example, big box stores that are designed for primarily vehicle traffic provide far less economic benefit to the city than dense walkable neighborhoods. However, dense walkable neighborhoods/districts are not compatible with high volumes of vehicular travel, they are compatible with high pedestrian travel.

Other mitigation methods can be used to improve and mitigate roadway deficiencies especially in cases where there is insufficient ROW or other physical limitations exist to add travel lanes or turn lanes. Additional roadways or improving connectivity between existing roadways may assist in diverting traffic away from the deficient roadway by providing multiple route options. Properly applied access management policies help to reduce conflict points and allow for better control over the intended use of each roadway functional classification.

The transportation network should always be looked at wholistically, including the benefits of implementing transit and other multi-modal options such as biking and walking. Improving and encouraging the use of multi-modal facilities removes passenger vehicle trips from the roadway extending the service life of each road. Mt. Pleasant is working to prepare an Active Transportation Plan intended to analyze existing and future bike and pedestrian facility needs.

Intersection Level of Service

Where roadway segment LOS considers the overall function and operation of a roadway to represent operating conditions, LOS looks at each individual movement at an intersection typically during AM/PM peak-hours (commonly between 7-9 am and 4-6 pm) and provides more defined criteria for quantifying level of operation. Evaluation of operations during peak hours provides a worst-case scenario analysis. Intersections (including accesses) are typically the most common source of conflict and congestion within a roadway network. Frequent monitoring of intersection delays can provide the city with additional means of improving overall roadway flow and operation. The Highway Capacity Manual (HCM) outlines the accepted methodology for defining intersection LOS at signalized and un-signalized intersections. Table 3 shows the LOS thresholds for each LOS value. LOS D is the standard threshold for intersections in Mt. Pleasant City during peak hours. 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 3: INTERSECTION LEVEL OF SERVICE DELAY CRITERIA

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

Refer to HCM 7th Edition

At a signalized intersection under LOS D conditions, the average vehicle will be stopped for less than 55 seconds. This is typically considered an acceptable amount of delay during the times of the day when roadways are most congested (peak hours). Generally, traffic signal cycle lengths (the length of time it takes for a traffic signal to cycle through each movement) 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. While LOS D is typically used as a threshold for urban areas, the city may determine on a case-by-case basis what amount of delay is acceptable for 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 Mitigation Recommendations

Intersections may be mitigated by adding turn lanes, adding signals, adding roundabouts, improving signal timing, improving corridor signal coordination, or improving other aspects of intersection geometry. 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 mitigation 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 increasing 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 unsignalized intersection are investigated and will not improve LOS to acceptable levels, then installation of a roundabout or signal should be considered. Note that in many cases an intersection that is two-way stop controlled may drop below LOS thresholds but not warrant a signal, roundabout, or four-way stop. As stated previously, these instances typically occur due to high volumes on the major roadway that don't allow for acceptable gaps for vehicles to enter from the minor roadway. These cases should be carefully inspected for mitigations that may assist with traffic flow and safety until further mitigations are warranted.

TRAFFIC CRASH DATA

The UDOT Traffic and Safety Division oversees research and programs that assist in improving roadway safety statewide. Crash data is made available through the Numetric database which documents all vehicle collisions on roads across the state. It includes details on crash types, crash severity, roadway conditions, and crash circumstances. For this TMP, data spanning from 2010 to 2023 was gathered and is presented in Table 4. This data was analyzed to identify frequent crash areas and patterns to ultimately determine if further mitigations or improvements may be warranted. Most incidents appeared to occur without significant identifiable patterns that would warrant additional mitigation efforts. Appendix C contains a heat map of traffic locations and a report featuring data on traffic crashes from 2010 to 2023.

TABLE 4: CRASH DATA

Year	Total Accidents	Total Injuries	Total Fatalities
2010	8	2	0
2011	8	4	0
2012	10	3	0
2013	10	5	0
2014	2	0	0
2015	6	1	0
2016	6	3	0
2017	1	1	0
2018	6	2	0
2019	1	0	0
2020	5	2	0
2021	1	0	0
2022	2	1	0
2023	2	1	0

Data includes all state, county, and municipal roadways within Mt. Pleasant limits

ADDITIONAL SAFETY CONCERNS

Safety concerns in Mt. Pleasant City encompass a combination of community observations and data-driven insights. While crash data highlights specific intersections or roadways with a high frequency of accidents, community feedback often sheds light on broader concerns, such as pedestrian safety near schools, inadequate lighting in residential areas, or speeding in zones with high foot traffic. These concerns may not always appear in crash statistics but are critical to fostering a safer environment. By addressing both crash data and locally identified issues, the city can create a comprehensive approach to safety that reflects the experiences and priorities of its residents. The additional safety concerns point out the following topics

- Intersection safety for vehicles entering the highway and pedestrians crossing
- Speeding along 500 W and Main Street/SR-116
- Roadway drainage
    - 200 N
    - 300 S
    - 400 S
    - 500 W
    - 700 S (due to school parking lots)

Where possible drainage concerns can be included within transportation projects by installing curb and gutter along strategic locations to assist in directing flows to drop inlets.

EXISTING TRANSPORTATION NETWORK CONDITIONS

TRAFFIC DEMAND MODEL CALIBRATION

The USTDM volumes were calibrated to better align with existing traffic conditions in Mt. Pleasant City. The method used to calibrate the model was to use traffic counts throughout the city. Where available, traffic count data was gathered from UDOT in the form of annual average daily traffic (AADT) volumes via the UDOT traffic-data/traffic-statistics database. Additional peak-hour and 24-hour counts were performed at various locations throughout the city. Figure 8 shows the traffic data collection locations throughout the city used for model calibration.

EXISTING LEVEL OF SERVICE

The existing LOS was calculated for each roadway and intersection according to the guidelines explained in the LOS section. Figure 9 shows the existing roadway segment LOS according to average annual daily traffic (AADT). Figure 10 shows the existing AM and PM peak-hour intersection LOS. Currently all roadways and intersections within Mt. Pleasant City function at LOS C or above.

Mt. Pleasant Transportation Master Plan
Figure 8: Traffic Counts Map

LEGEND

Mt. Pleasant City Limits
- Buffer Zone
- Mount Pleasant

Traffic Count Locations
- TMC
- Volume Count

SUNRISE

Creating solutions that work and relationships that last

FIGURE 9: EXISTING ROADWAY SEGMENT LEVEL OF SERVICE

Mt. Pleasant Transportation Master Plan
Figure 10: Existing AM Intersection LOS

LEGEND

Mt. Pleasant City Limits
- Buffer Zone
- Mount Pleasant

Existing AM Intersection LOS
- A
- B
- C

SUNRISE

Creating solutions that work and relationships that last

Mt. Pleasant Transportation Master Plan
Figure 11: Existing PM Intersection LOS

MT. PLEASANT CITY — REMEMBERING THE PAST · PREPARING FOR THE FUTURE · EST. 1859

N

LEGEND

Mt. Pleasant City Limits
- Buffer Zone
- Mount Pleasant

Existing PM Intersection LOS
- A
- B
- C

SUNRISE

Creating solutions that work and relationships that last

FUTURE TRANSPORTATION NETWORK CONDITIONS

After calibrating to the existing conditions in Mt. Pleasant City, the USTDM was then used to model both the 2030 (5-year), 2035 (10-year), and 2045 (20-year) traffic volume projections based on the anticipated population growth and future land-use plans.

FUTURE TRIP GENERATION

Future trips generated within Mt. Pleasant City are based on a combination of socioeconomic projections for households, population, and employment data throughout the Mt. Pleasant TAZs. Input from City staff also provided specific information regarding location, type, and quantity of development growth within the city.

NO-BUILD LEVEL OF SERVICE

The purpose of a No-Build scenario is to identify future roadway deficiencies if no capital projects were constructed. No-Build scenarios were created representing 5-year, 10-year, and 20-year growth. The TDM is used for each scenario by projecting future growth and traffic demand onto the existing roadway network. **Figure 12**, **Figure 13,** and **Figure 14** show the LOS values for the 5-year, 10-year, and 20-year scenarios respectively. All roadways currently operate at an acceptable LOS during all future scenarios.

FIGURE 12: NO-BUILD 2030 LEVEL OF SERVICE

FIGURE 13: NO-BUILD 2035 LEVEL OF SERVICE

FIGURE 14: NO-BUILD 2045 LEVEL OF SERVICE

ALTERNATIVE MODES OF TRANSPORTATION

TRANSIT

Mt. Pleasant does not currently have fixed-route public transit, with the only service being limited demand-response trips operated through the Six County Association of Governments (SCAOG). Given the City's low density and distance from major job and service centers, traditional bus service is not feasible at this time. Instead, the City should focus on enhancing existing demand-response options, exploring volunteer driver or vanpool programs, and pursuing grant funding for accessible vehicles. Possible next steps include coordinating with SCAOG to expand service hours, conducting a community transit needs survey, identifying potential park-and-ride locations along SR-116 and US-89, and working with UDOT and regional partners to plan for a future connector shuttle or intercity bus stop as population and demand increase.

WALKING AND BIKING

Walking and biking are important features of any TMP. People will be more inclined to walk or ride their bicycle when the experience is pleasant, they feel safe, distances are reasonable, and routes are direct. High-density housing near high-traffic generators or main street type areas encourages people to use alternative travel options. Active transportation facilities work to improve roadway capacity by encouraging alternative modes of transportation, essentially removing vehicle trips from the roadway network. Figure 15 shows the existing active transportation infrastructure network including sidewalks and crosswalks.

MT. PLEASANT CITY
REMEMBERING THE PAST • EST. 1859 • PREPARING FOR THE FUTURE

Mt. Pleasant Transportation Master Plan
Figure 15: Existing Active Transportation Network

N

LEGEND

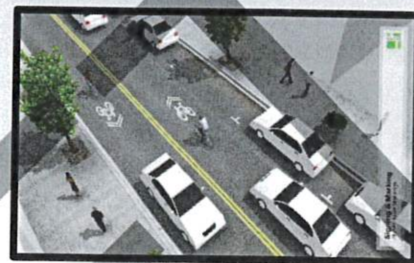
Mt. Pleasant City Limits	Crosswalks	Sidewalks
Buffer Zone	General	Ex. Sidewalk
Mount Pleasant	School	EX_Trail

SUNRISE

Creating solutions that work and relationships that last

The following identifies potential active transportation infrastructure that could be implemented into the city's potential projects.

Shared Roadway and Bike Boulevard



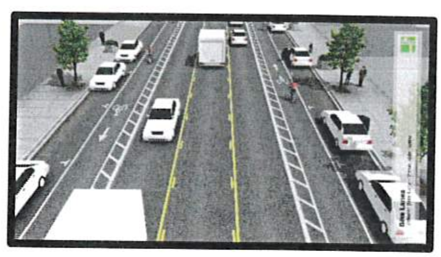
AASHTO defines a shared roadway as "a roadway which is not officially designated and marked as a bicycle route, but which is open to both bicycle and motor vehicle travel. This may be an existing roadway, street with wide curb lanes, or a road with paved shoulders." (AASHTO, 1998). Sharrows are commonly used markings that identify a roadway as a shared space with bicycles. Shared roadways are best suited for urban areas on roads with lower speeds (25 mph or less) or roads with low traffic volumes (3,000 vehicles or less).

Bike boulevards emphasize the use of bicycles by modifying local roads for the specific use of bicycle traffic while maintaining local vehicle access. Modifications may include traffic calming devices to reduce vehicle traffic and speeds and prioritize bicycle traffic as well as the addition of improved bicycle route wayfinding signs.

Bike Lanes

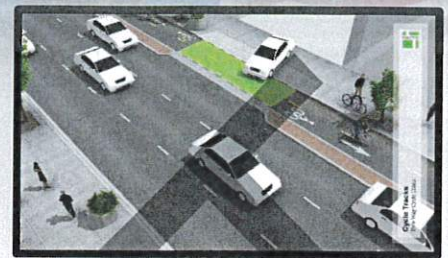
As defined by the Urban Bikeway Design Guide, "a bike lane is defined as a portion of the roadway that has been designated by striping, signage, and pavement markings for the preferential or exclusive use of bicyclists. Bike lanes enable bicyclists to ride at their preferred speed without interference from prevailing traffic conditions and facilitate predictable behavior and movements between bicyclists and motorists."

Buffered Bike Lanes



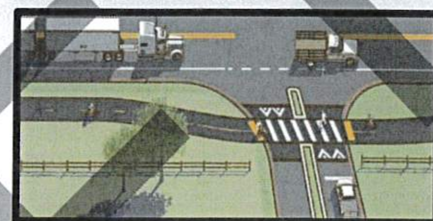
Buffered bike lanes are conventional bike lanes that have additional space designated as a buffer separating motor vehicle traffic from the adjacent bicycle traffic.

Protected Bike Lanes



Protected bike lanes are similar to buffered bike lanes with the addition of physical barriers incorporated within the buffer space. These facilities may be one-way or two-way and improve the quality of separation between motor vehicles and bicycle traffic.

Sidepaths and Shared-Use Trails



Sidepaths are typically wider facilities that accommodate both bicycle and pedestrian traffic. Sidepaths are typically meant to be part of the transportation network and run parallel to a roadway.

Shared-use trails accommodate both bike and pedestrian traffic but are commonly meant for more recreational purposes and may not run adjacent to a roadway. Unpaved trails may also be utilized in areas with certain constraints that wouldn't allow for a paved facility.

Safe Routes to School

There are two schools located within city limits, namely Mt. Pleasant Elementary School and North Sanpete High School in order to improve safety, connectivity, and encourage alternative modes of transportation, improvements to the active transportation network are proposed and included as part of the Capital Improvement Project list.

Figure 16 shows an overview of proposed active transportation projects. Mt Pleasant will continue to coordinate closely with North Sanpete School District, UDOT, and other localities to establish active transportation improvements.

Mt. Pleasant Transportation Master Plan
Figure 16: Future Active Transportation Network

LEGEND

Mt. Pleasant City Limits
Buffer Zone
Mount Pleasant
Crosswalks
General

School
Sidewalks
Ex. Sidewalk
EX_Trail
Fut_MPNHA Trail

Fut_Sidewalk 1
Fut_Sidewalk 2
Fut_Sidewalk 3

SUNRISE

Creating solutions that work and relationships that last

CAPITAL IMPROVEMENT PROJECT LIST

Table 5 shows a summary of projects and the anticipated proportionate cost to Mt. Pleasant City assuming funding assistance from federal, state, county, and private programs. Figure 17 shows an overview map of the proposed projects and their phasing.

TABLE 5: CAPITAL IMPROVEMENT PROJECT LIST

Project #	Description	Street	From	To	Total Project Cost	Funding Sources	Estimated Funding Proportion	City Proportion	Estimated City Cost
Roadway Projects									
1	New Major Collector	900 E	200 S	1000 S	$ 4,404,000	City/Developer	86%	14.00%	$616,560
2	New Major Collector	500 N	300 E	475 N	$2,103,000	City/Developer	86%	14.00%	$294,420
3	New Minor Collector	300 E	300 N	500 N	$1,187,000	City/Developer	96%	4.00%	$47,480
4	New Minor Collector	400 S	600 E	900 E	$1,665,000	City/Developer	96%	4.00%	$66,600
5	Widen Local	Main St	400 E	900 E	$712,000	City	0%	100.00%	$712,000
6	New Local	285 N	300 E	400 E	$427,000	City	100%	0.00%	$ -
7	Fire Department Access Improvements	SR-116			$257,000	City/UDOT	90%	10.00%	$25,700
8	New Major Collector	Hawks Blvd	700 E	900 E	$1,432,000	City/UDOT	86%	14.00%	$200,480
				Totals	$10,755,000				$1,762,760
Active Transportation/SRTS Projects									
20	N/S Sidewalk	Hwy-89	500 W	200 W	$179,000	City/SRTS	75.00%	25.00%	$44,750
21	W Sidewalk	Hwy-89	800 S	600 S	$88,000	City/SRTS	75.00%	25.00%	$22,000
22	W Sidewalk	Hwy-89	300 N	400 N	$44,000	City/SRTS	75.00%	25.00%	$11,000
23	E/W Sidewalk	Hwy-89	400 N	500 N	$58,000	City/SRTS	75.00%	25.00%	$14,500
24	E/W Sidewalk	500 W	Hwy-89	SR-116	$195,000	City/SRTS	75.00%	25.00%	$48,750
25	S Sidewalk	Hawks Blvd	Hwy-89	600 E	$56,000	City/SRTS	75.00%	25.00%	$14,000
26	N/S Sidewalk	700 S	Hwy-89	500 W	$87,000	City/SRTS	75.00%	25.00%	$21,750

27	N/S Sidewalk	200 S	Hwy-89	900 E	$167,000	City/SRTS	75.00%	25.00%	$41,750
28	E/W Sidewalk	900 E	200 S	200 N	$74,000	City/SRTS	75.00%	25.00%	$18,500
29	S Sidewalk	200 N	Hwy-89	500 W	$51,000	City/SRTS	75.00%	25.00%	$12,750
30	N/S Sidewalk	200 N	Hwy-89	900 E	$167,000	City/SRTS	75.00%	25.00%	$41,750
31	E/W Sidewalk	200 W	Hwy-89	SR-117	$161,000	City/SRTS	75.00%	25.00%	$40,250
32	E/W Sidewalk	200 W	SR-117	500 N	$90,000	City/SRTS	75.00%	25.00%	$22,500
33	N/S Sidewalk	400 S	Hwy-89	500 W	$88,000	City/SRTS	75.00%	25.00%	$22,000
34	N/S Sidewalk	400 S	Hwy-89	600 E	$106,000	City/SRTS	75.00%	25.00%	$26,500
35	E/W Sidewalk	300 E	700 S	300 N	$160,000	City/SRTS	75.00%	25.00%	$40,000
36	N/S Trail	US-89	800 S	200 N	$627,000	City/TAP	80.00%	20.00%	$125,400
37	E/W Trail	200 N	US-89	900 E	$575,000	City/TAP	80.00%	20.00%	$115,000
38	E/W Trail	Horseshoe Mtn Ln	SR-117	925 S	$310,000	City/TAP	80.00%	20.00%	$62,000
				Totals	$3,283,000				$745,150

FIGURE 17: CAPITAL IMPROVEMENT PROJECT MAP

Pavement Management

On average Mt. Pleasant City has spent approximately $492,507.56 per year on roadway improvements to the city road system since 2020. A more detailed account of the exact amount spent per year can be found below in **Table 6**

TABLE 6: ROAD IMPROVEMENT COST PER FISCAL YEAR

Fiscal Year	Road Improvement Cost
FY 2024 (7/2023 to 6/2024)	$597,596.17
FY 2023 (7/2022 to 6/2023)	$430,851.26
FY 2022 (7/2021 to 6/2022)	$506,968.52
FY 2021 (7/2020 to 6/2021)	$49,482.97
FY 2020 (7/2019 to 6/2020)	$877,638.86

The City of Mt. Pleasant maintains a roadway network that is a critical component of its transportation system. A structured Pavement Management Plan (PMP) ensures that limited maintenance funds are invested in the most effective way possible, preserving and extending the life of the roadway network while minimizing long-term costs. This plan is based on field evaluations of pavement condition, engineering best practices, and a prioritization framework that accounts for pavement performance, functional classification, and city priorities. The PMP process for Mt. Pleasant followed these key steps:

Data Collection and Condition Assessment

The Governmental Accounting Standards Board (GASB) has created financial reporting requirements that encourages municipalities throughout the nation to keep better records of their infrastructure. For many small government entities this can be difficult as the needs of its citizens change, the economy forces budget alterations and restraints, or city planning moves in different directions. Sunrise Engineering's Road Surface Inventory Management Tool seeks to alleviate some of these pressures by providing a tool to easily track the health and longevity of a city's roadway and other related infrastructure. Some of the benefits offered include evaluation of road system data, prioritizing maintenance and repair based on evaluation, present maintenance, or repair methods suitable for each section, calculate costs of maintenance and repairs, and establish long-term work and budget plans.

Sunrise Cloud SMART GIS® has created a system for road surface inventory and conditions. This Road Surface Inventory Management Tool (RSIMT) provides an easy-to-use platform for editing, viewing, and gives the ability to share this information with city councils, board members, or maintenance leaders.

The data produces a focused inventory of maintenance and repair recommendations as well as a comprehensive long-term work and budget plan that are customized for each city or municipality.

As budgets for all government levels get tighter each year it is important to prioritize which tasks are necessary for the current year and to plan for future years. This tool creates a way to assist city leaders to make data driven decisions and present information to governing boards for their consideration. Evaluations with this tool examine five separate types of road deterioration:

- Potholes
- Raveling
- Fatigue cracking
- Transverse cracking
- Horizontal cracking.

Road evaluations are based on a simple 10 number rating system (0-9) from the Federal Highway Administration. This makes any evaluation process simple, fast, and standardized so that the process achieves the same result as any evaluator.

This system gives the ability to see current pavement conditions and suggested treatments, in a real-time, automated environment, based on past evaluations. **Figure 18** shows some of the criteria used in the 0–9-point evaluation by the Road Surface Inventory Tool.

			Extent		
			Low	Medium	High
Pot-Holes, Bad Patching 10000		0	1-5 holes	5-15 holes	> 15 holes
Severity	low	< 5 sq ft	1	2	3
	medium	60 to 20 sq ft	4	5	6
	high	> 20 sq ft	7	8	9

			Extent		
			Low	Medium	High
Fatigue Cracking 100		0	Little to No Cracking	Cracking in Some Areas <half	In Most Travel Lanes
Severity	low	Crack <1/4"	1	2	3
	medium	Crack <1/4" to 3/4"	4	5	6
	high	Crack >3/4"	7	8	9

			Extent		
			Low	Medium	High
Raveling 1000		0	Patches	Throughout Roadway	Majority of Segment
Severity	low	Loss of Fine Aggregate	1	2	3
	medium	Loss of Some Coarse Aggreage	4	5	6
	high	Loss of Coarse Aggregate	7	8	9

			Extent		
			Low	Medium	High
Horizontal Cracking 10		0	Little to No Cracking	Cracking in Some Areas <half	In Most Travel Lanes
Severity	low	Crack <1/4"	1	2	3
	medium	Crack <1/4" to 3/4"	4	5	6
	high	Crack >3/4"	7	8	9

FIGURE 18: ROAD SURFACE INVENTORY TOOL EVALUATION CRITERIA

Treatment Selection

For each segment, an appropriate primary treatment was identified along with any recommended pre-treatments and secondary treatments. These were selected based on RSL, severity of distress, and expected cost-effectiveness.
Common treatments in the plan include:

- No Action – Applied to pavements in excellent condition with no immediate maintenance need.
- Crack Seal – Seals cracks to prevent water intrusion and slow deterioration.
- Skin Patch – Repairs localized surface failures.
- Chip Seal – Seals and protects pavement while restoring skid resistance.
- Fog Seal / Rejuvenator – Restores binder flexibility and seals minor surface defects.
- Friction Seal (GSB-88®) – Seals and preserves the pavement surface while enhancing skid resistance.
- Thin Lift Overlay – Adds a thin asphalt layer to restore surface smoothness and extend life.
- Mill and Overlay – Removes the top asphalt layer and replaces it with new asphalt, correcting surface distresses and restoring ride quality.
- Reconstruction – Full-depth pavement replacement when the structure is beyond repair.

Treatments are applied strategically:

- Preventive maintenance (e.g., crack seal, friction seal) is targeted at higher-RSL roads to extend service life cost-effectively.
- Corrective treatments (e.g., overlays, mill & overlays) address moderate to severe distresses before full reconstruction is required.
- Reconstruction is reserved for the lowest-RSL pavements where structural failure is present.

Project Batching and Prioritization

To maximize efficiency, individual segments requiring similar treatments in close proximity were grouped into "projects."
Projects were prioritized based on a weighted formula considering:

- Remaining Service Life
- Severity of Distresses
- Functional Classification
- Treatment Cost
- City Priority (1–10 scale)

This approach ensures that streets with high importance, critical condition, or cost-effective treatments rise to the top of the priority list.

10-Year Implementation Plan

A year-by-year schedule was developed, matching projects to available annual budgets (in base-year dollars) and accounting for inflation. The plan balances early investment in preventive treatments with timely intervention on more deteriorated roadways, ensuring the network as a whole remains in a state of good repair.

Projects are spread across all functional classes to maintain system equity, but collector and arterial streets are given slightly higher weight due to their importance to mobility.

Funding and Budget Considerations

Annual budgets were normalized to a base-year value for consistent comparison. Inflation factors were applied to reflect future-year cost increases. The PMP is designed to be flexible—project years can be adjusted as funding changes, while the prioritization logic remains consistent.

Key Benefits of the PMP:

- Maximizes pavement life at the lowest long-term cost.
- Provides a defensible, data-driven method for selecting projects.
- Balances preventive maintenance with necessary rehabilitation.
- Groups projects to minimize mobilization and overhead costs.
- Provides clear direction for annual budget planning.

The accompanying **Figure 19** and **Figure 20** illustrate the current Remaining Service Life across the roadway network and the distribution of planned projects over the next ten years. **Table 7** lists each year's planned projects, associated costs, and total lane-miles treated.

TABLE 7: 10-YEAR PAVEMENT MANAGEMENT PROJECTS

Project ID	To	From	Year	Inflated Cost	Base Cost	Overall Treatment	Lane Miles
*200 N	400 E	900 E	1	$260,305.38	$260,305.38	Chip Seal	0.8997
*200 N	500 W	State St	1	$235,766.18	$235,766.18	Thin Lift Overlay	1.0107
*200 N	State St	400 E	2	$11,955.40	$11,607.18	Chip Seal	0.8002
*400 S	State St	400 E	2	$117,725.56	$114,296.66	Thin Lift Overlay	1.205
MAIN ST	State St	400 E	2	$67,673.54	$65,702.46	Thin Lift Overlay	0.8064
100 N	100 W	End	2	$202,405.87	$196,510.55	Thin Lift Overlay	1.2493
400 S	400 W	State St	3	$210,798.57	$198,697.87	Thin Lift Overlay	0.8152

200 W	SR-116	State St	3	$7,893.23	$7,440.13	Chip Seal	1.9545
800 S	State St	200 E	3	$5,300.79	$4,996.50	GSB88® / Sand	0.5387
300 N	State St	300 E	3	$50,518.73	$47,618.75	Thin Lift Overlay	1.05
200 E	500 N	Main St	3	$54,207.47	$51,095.74	Thin Lift Overlay	1.0461
500 S	400 W	State St	3	$267,260.50	$251,918.65	Thin Lift Overlay	0.8148
800 S	400 W	State St	4	$115,705.17	$105,886.62	Thin Lift Overlay	0.6842
MOUNTAINVILLE HWY	200 N	900 E	4	$3,066.46	$2,806.24	GSB88® / Sand	0.2493
400 N	State St	200 E	4	$189,008.54	$172,969.59	Mill and Overlay	0.4059
*700 S	400 W	State St	5	$463,339.90	$411,671.50	Mill and Overlay	0.7875
1000 S	700 E	Pine Creek	6	$564,707.82	$487,121.92	Rebuild	0.5106
100 W	100 S	800 S	6	$65,859.25	$56,810.76	Thin Lift Overlay	1.0008
200 W	500 N	SR-116	6	$80,967.66	$69,843.42	Thin Lift Overlay	1.0324
300 W	400 N	SR-116	6	$12,691.70	$10,947.97	Chip Seal	0.8121
200 E	Main St	800 S	6	$25,674.44	$22,147.00	Chip Seal	1.6069
100 S	State St	900 E	6	$28,639.49	$24,704.68	Chip Seal	1.8672
100 E	500 N	Main St	6	$43,375.24	$37,415.86	Thin Lift Overlay	0.9518
100 W	500 N	SR-116	6	$133,005.23	$114,731.48	Thin Lift Overlay	0.9282
HAWK BLVD	State St	700 E	7	$12,816.74	$10,733.82	GSB88® / Sand	1.3729
100 N	500 W	200 W	7	$177,860.38	$148,955.27	Thin Lift Overlay	0.6007
900 S	500 W	300 W	7	$203,629.14	$170,536.20	Thin Lift Overlay	0.3923
400 W	SR-116	800 S	8	$251,568.39	$204,548.12	Thin Lift Overlay	1.6128
300 W	SR-116	800 S	8	$269,193.40	$218,878.87	Thin Lift Overlay	1.6118
200 S	500 W	State St	8	$5,163.08	$4,198.06	Chip Seal	0.6069
100 E	100 S	800 S	9	$325,916.84	$257,281.76	Mill and Overlay	1.3999
700 E	200 S	300 S	9	$38,811.94	$30,638.51	Thin Lift Overlay	0.1979
MAIN ST	400 E	900 E	9	$357,398.52	$282,133.69	Thin Lift Overlay	1.0638
300 N	500 W	State St	10	$916,360.20	$702,313.79	Rebuild	1.0032
*300 S	State St	700 E	10	$207,207.07	$158,806.97	Thin Lift Overlay	1.3773
400 W	300 N	SR-116	10	$14,047.97	$10,766.60	Chip Seal	0.397
700 E	Hawk Blvd	1000 S	10	$226,013.55	$173,220.57	Thin Lift Overlay	0.5355
TOTAL				$6,223,839.34	$5,336,025.32		35.20

*Where possible evaluate and address drainage issues

Mt. Pleasant Transportation Master Plan
Figure 19: Roadway Remaining Service Life

LEGEND

Buffer Zone

Mount Pleasant

Roadway Remaining Service Life

- 0 - 3
- 3 - 5
- 5 - 8
- 8 - 12
- 12 - 15

SUNRISE

Creating solutions that work and relationships that last

Mt. Pleasant Transportation Master Plan
Figure 20: 10-Year Pavement Management Plan

LEGEND

Mt. Pleasant City Limits

- Buffer Zone
- Mount Pleasant

10-Year PMP

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10

SUNRISE

Creating solutions that work and relationships that last

FUNDING

It is imperative to carefully consider all potential revenue sources for financing transportation capital improvements, especially in addressing the demands stemming from new growth and development. Given that transportation routes often traverse multiple jurisdictions, they hold regional significance within the transportation network. Therefore, establishing collaboration with various government agencies, such as the federal government, UDOT, or County becomes essential to secure funding for improvements that offer regional benefits. Mt. Pleasant City must actively engage with these agencies to secure sufficient funds for specific enhancements needed to maintain an acceptable LOS into the future. Additionally, collaborative efforts with adjacent communities are indispensable to ensure a seamless continuum across jurisdictional boundaries. The subsequent sections provide detailed insights into the diverse transportation funding sources available to Mt. Pleasant City, aiming to facilitate the successful implementation of recommended improvements.

FEDERAL FUNDING

Cities and counties can access federal funding through the federal-aid program, typically administered by UDOT. To be eligible, projects must be listed on the five-year Statewide Transportation Improvement Program (STIP). Detailed information can be found on UDOT's website. The Surface Transportation Program (STP), from the FHWA, provides funding for roadway projects classified as a collector street or larger. STP funds support both rehab and new construction, with urban projects allocated by the Joint Highway Committee and statewide discretionary use by the State Transportation Commission. Transportation enhancement funds cover various categories such as historic preservation and bicycle facilities. Additional federal and state trails funds are accessible through the Utah State Parks and Recreation Program.

STATE/COUNTY

Mt. Pleasant City's infrastructure greatly depends on the crucial State Class B and C Program funds, overseen by UDOT and mandated by State Legislation. These funds, derived from state fuel taxes, registration fees, and other sources, see UDOT retaining 75%, with the remainder supporting counties and cities. Given Mt. Pleasant's reliance on State routes such as Highway 89, it becomes imperative for the city's staff to comprehend UDOT's allocation procedures. The distribution of Class B and C funds, which takes into account factors like population, lane miles, and land area, proves to be beneficial for Mt. Pleasant City. Class C funds, specifically allocated to cities like Mt. Pleasant, can be utilized for a variety of projects, with a stipulation that 30% of the allocation must be directed towards projects exceeding $40,000.

City

Cities commonly rely on general fund revenues to support transportation programs, but there are alternative funding options available. Special improvement districts, created for specific projects that benefit particular properties, provide a viable financing avenue. Private interests, especially developers, contribute resources by constructing local streets, dedicating right-of-way, and participating in the construction of collector/arterial streets, often facilitated through impact fees. Revenue bonding is employed for community-wide projects, and if available, general funds may also support service expansion. General obligation bonds, backed by taxing power, are utilized for high-demand facilities, preventing the imposition of additional burdens on existing residents for new growth-related projects.

In certain instances, alternative funding sources like Special Assessment Areas (SAAs) may be necessary. These are established for specific needs through tax levies, bonds, and fees, subject to voter approval. While grant funds can be beneficial, they present challenges in terms of securing and should not be solely relied upon as a stable revenue source for the city.

Impact Fees

Impact fees serve as a mechanism for communities to secure funds aimed at enhancing infrastructure due to the demands of new growth. The underlying premise is that, in the absence of new development, the existing infrastructure would be sufficient. Consequently, new developments are subject to impact fees to finance the necessary improvements resulting from this growth. Impact fees, mandated by state law, are applicable to various facilities, with a designated portion specifically allocated to community roadway projects. State law dictates that impact fees are exclusively earmarked for improvements related to growth systems.

To facilitate upgrades to roadways, it is advisable to establish impact fees. In alignment with state law, a comprehensive citywide Impact Fee Facilities Plan will be devised to determine the appropriate values for impact fees within the city.

Traffic Impact Study (TIS) Requirements

One of the most important steps in coordinating development impacts on the transportation network between jurisdictions is to establish consistent TIS requirements. For consistency, many of the requirements are reflective of UDOT standards for a TIS. UDOT's specific TIS requirements can be referenced in **Appendix D**.

The need for a TIS should be investigated with every development application submitted to the City. The purpose of the TIS is to identify the system and immediate area impacts associated with the proposed development. Identification of impacts and appropriate mitigation measures allows the City and any affected jurisdictions to assess the existing and future system safety, performance, maintenance, and capacity needs. Upon submitting an application to develop or redevelop an application meeting shall be held to determine the requirements of the TIS and establish stakeholders to include as part of the reviewing body (UDOT, County, Local Government).

Study Area

Determination of the extent of the TIS study area is at the discretion of Mt. Pleasant staff. The study area, depending on the size and intensity of the proposed development and existing development, may be identified by parcel boundary, area of immediate influence or reasonable travel time boundary.

The TIS shall, at a minimum, incorporate traffic engineering principles and the standards as presented in these guidelines. Additional requirements and investigation may be imposed upon the applicant as necessary. Likely information presented in the TIS may include, but is not limited to:

- Site location
- Proposed accesses
- Phased and/or full development trip generation.
- Access design elements
- Adjacent and relevant development
- Existing and future traffic volumes
- Assessment of the system impacts
- Mitigation measures as appropriate

The applicant will be responsible for performance and delivery of an acceptable traffic impact study. The TIS should be performed by an individual or entity demonstrating capability to analyze and report mobility, traffic engineering elements, and design elements as necessary for the application study area and site design. The TIS should be prepared directly, or by direct supervision by a State of Utah Licensed Professional Engineer.

Application

The Mt. Pleasant Planning & Zoning Board is the primary contact for the applicant with the City throughout the process. Direct inquiries regarding a development application or review, are directed to the Mt. Pleasant Planning & Zoning Board Secretary.

Need for TIS

A traffic study is necessary to identify, review, and make recommendations for mitigation of the potential impacts a development may have on the roadway system. Physical characteristics and operational characteristics of the roadway are typically identified. The Planning & Zoning Board determines the need for a TIS. An applicant may be required to submit a traffic study for any proposed access or connection within an area identified by the City. Area definition may be defined by, but not limited to, an identified safety problem, accident review, congested locations, or as a result of a change in land use and/or access in accordance with an access permit application. The study area may also be defined by a travel time boundary, area of influence, physical boundaries, or political boundaries.

Purpose of the TIS

A TIS is intended to:

- Document whether or not the development request can meet the standards and requirements of this these requirements and other applicable regulations.
- Analyze appropriate location, spacing, and design of the access connection(s) necessary to mitigate the traffic.
- Analyze operational impacts on the surrounding network in accordance with applicable requirements and standards.
- Recommend the need for any improvements to the adjacent and nearby roadway system to maintain a satisfactory level of service (LOS threshold C) and safety and to protect the function of the roadway classifications/transportation system while providing appropriate and necessary access to the proposed development.
- Assure that the internal traffic circulation of the proposed development is designed to provide safe and efficient access to and from the adjacent and nearby roadway system.
- Analyze and recommend the means for land uses to minimize their external transportation costs to the traveling public through traffic improvements necessitated by that development as well as making the fullest use of alternative travel modes.

TIS Requirements

When a TIS is required (**See Table 8**), prepare the study according to the City TIS Requirements. The Planning & Zoning Board, in consultation with the permit applicant, will determine the traffic study area limits. All existing and proposed access points, driveways, and streets, shall be identified for each site, including access on the opposite side of the site and within the influence area of the proposed site access. Each access will be labeled for proposed accesses as P1, P2, P3... and existing accesses as E1, E2, E3, etc.

TABLE 8: TIS REQUIREMENT AND CATEGORY

TIS Category	Threshold	Typical Land-Use Intensity Thresholds (ITE Trip Generation)		Traffic Impact Study Required
I	Projected Site Traffic < 100 ADT and No proposed modifications to signals or elements of the roadway	Single-Family	< 10 Units	YES With Conditions
		Multi-Family	< 15 Units	
		Lodging	< 11 Occupied Rooms	
		General Office	< 9,000 SQFT	
		Retail	< 2,500 SQFT	
II	Projected site traffic between 100 and 3,000 ADT or Projected peak hour traffic < 500 and Minor modifications to traffic signals or elements of the roadway	Single Family	10-315 Units	YES
		Multi-Family	15-450 Units	
		Lodging	11-330 Occupied Rooms	
		General Office	9,000-270,000 SQFT	
		Retail	2,500-70,000 SQFT	
		Gas Station	1-18 fueling stations	
		Fast Food Restaurant	1,000-6,000 SQFT	
		Sit-Down Restaurant	1,000-26,000 SQFT	
III	Projected site traffic between 3,000 and 10,000 ADT or Projected peak hour traffic between 500 and 1,200 or Proposed installation or modification to traffic signals or elements of the roadway, regardless of project size	Single-Family	315-1,000 Units	YES
		Multi-Family	450-1,500 Units	
		Lodging	330-1,100 Occupied Rooms	
		General Office	270,000-900,000 SQFT	
		Retail	70,000-230,000 SQFT	
		Fast Food Restaurant	6,000-20,000 SQFT	
IV	Projected site traffic > 10,000 ADT or Proposed installation /modification of two or more traffic signals, addition of travel lanes to State Highway or proposed modification of freeway interchange, regardless of project size	Single-Family	> 1,000 Units	YES
		Multi-Family	> 1,500 Units	
		Lodging	> 1,100 Occupied Rooms	
		General Office	> 900,000 SQFT	
		Retail	> 230,000 SQFT	

TRAFFIC STUDY CATEGORY I
Project ADT < 100 trips.

No proposed modifications to traffic signals, roadway elements, or geometry.

The traffic study shall, at a minimum, incorporate typical traffic engineering principles and standards as presented by Mt. Pleasant and national practices. Additional requirements and investigation may be imposed upon the applicant as necessary. The Planning & Zoning Board determines the need and requirements for a TIS.

1. Study Area.
   a. Defined by the Planning & Zoning Board
   b. The study area, depending on the size and intensity of the development and surrounding development, may be identified by parcel boundary, area of immediate influence or reasonable travel time boundary.
   c. Study area may be limited to or include property frontage and include neighboring and adjacent parcels. Identify site, cross, and next adjacent up and down stream access points within a specified distance of property boundaries.
2. Design Year.
   a. Opening day of project.
3. Analysis Conditions and Period
   a. Identify site traffic volumes and characteristics.
   b. Identify adjacent street(s) traffic volume and characteristics.
4. Identify right-of-way (ROW), geometric boundaries and physical conflicts.
   a. Investigate existence of federal or state, no access or limited access control line.
5. Generate access point capacity analysis as necessary.
   a. Analyze site and adjacent road traffic for the following time periods: weekday A.M. and P.M. peak hours including Saturday peak hours. Identify special event peak hour as necessary (per roadway peak and site peak).
6. Design and Mitigation.
   a. Identify operational concerns and mitigation measures to ensure safe and efficient operation pursuant to appropriate Mt. Pleasant and industry standards.

Traffic Study Category II

The traffic study shall, at a minimum, incorporate typical traffic engineering principles and standards as presented by Mt. Pleasant and national practices. Additional requirements and investigation may be imposed upon the applicant as necessary.

The Planning & Zoning Board determines the need and requirements for a TIS.

Project ADT 100 to 500 trips.

1. Study Area.
    a. Defined by the Planning & Zoning Board.
    b. The study area, depending on the size and intensity of the development and surrounding development, may be identified by parcel boundary, area of immediate influence or reasonable travel time boundary.
    c. Intersection of site access drives with classified collectors or arterials and any signalized and unsignalized intersection within the defined access spacing distance of property line. Include any identified queuing distance at site and study intersections.
2. Design Year.
    a. Opening day of project.
3. Analysis Period.
    a. Identify site and adjacent road traffic for weekday A.M. and P.M. peak hours.
4. Data Collection
    a. Identify site and adjacent street roadway and intersection geometry.
    b. Identify adjacent street(s) traffic volume and characteristics.
5. Conflict / Capacity Analysis
    a. Diagram flow of traffic at access point(s) for site and adjacent development.
    b. Perform capacity analysis.
6. Right-of-Way Access
    a. Identify right-of-way, geometric boundaries, and physical conflicts.
    b. Investigate existence of federal or state, no access or limited access control line.
7. Design and Mitigation
    a. Determine and document safe and efficient operational design needs based on site and study area data.
    b. Identify operational concerns and mitigation measures to ensure safe and efficient operation pursuant to appropriate Mt. Pleasant and industry standards.

Project ADT 500 to 3,000 trips or peak hour < 500 trips.

Any proposed modification to traffic signals or roadway elements or geometry.

1. Study Area.
    a. Defined by the Planning & Zoning Board.

b. The study area, depending on the size and intensity of the development and surrounding development, may be identified by parcel boundary, area of immediate influence or reasonable travel time boundary. An acceptable traffic study boundary, based on travel time, may be identified as a ten- or twenty-minute travel time or even by market area influence.

c. Intersection of site access drives with classified arterial or collector roadways and any signalized and unsignalized intersection within access spacing distance of property line. Include any identified queuing distance at site and study intersections.

2. Design Year.
   a. Opening day of project and five years after project completion.
   b. Document and include all phases of development (includes out pad parcels)
3. Analysis Period.
   a. Analyze site and adjacent road traffic for weekday A.M. and P.M. peak hours including Saturday peak hours. Identify special event peak hour as necessary (adjacent roadway peak and site peak).
4. Data Collection
   a. Daily and Turning Movement counts.
   b. Identify site and adjacent street roadway and intersection geometry.
   c. Traffic control devices including traffic signals and regulatory signs.
   d. Traffic accident data
5. Trip Generation.
   a. Use equations or rates available in latest edition of ITE Trip Generation. Where developed equations are unavailable for intended land use, perform trip rate study and estimation following ITE procedures or develop justified trip rate agreed to by the Mt. Pleasant.
6. Trip Distribution and Assignment
   a. Document distribution and assignment of existing, site, background, and future traffic volumes on surrounding network of study area.
7. Conflict / Capacity Analysis.
   a. Diagram flow of traffic at access point(s) for site and adjacent development.
   b. Perform capacity analysis for daily and peak hour volumes.
8. Traffic Signal Impacts. For modified and proposed traffic signals:
   a. Traffic Signal Warrants as identified.
   b. Traffic Signal drawings as identified.
   c. Queuing Analysis
9. Right-of-Way (ROW) Access
   a. Identify ROW, geometric boundaries, and physical conflicts.
   b. Investigate existence of federal or state, no access or limited access control line.

10. Design and Mitigation.
    a. Determine and document safe and efficient operational design needs based on site and study area data.
    b. Identify operational concerns and mitigation measures to ensure safe and efficient operation pursuant to appropriate City and industry standards.

TRAFFIC STUDY CATEGORY III

Project ADT 3,000 to 10,000 trips or peak hour traffic 500 to 1,200 trips.

Proposed installation or modification to traffic signals or roadway elements or geometry, regardless of project size or trip generation.

The traffic study shall, at a minimum, incorporate typical traffic engineering principles and standards as presented by Mt. Pleasant and national practices. Additional requirements and investigation may be imposed upon the applicant as necessary.

The Planning & Zoning Board determines the need and requirements for a TIS.

1. Study Area.
   a. Defined by the Planning & Zoning Board.
   b. The study area, depending on the size and intensity of the development and surrounding development, may be identified by parcel boundary, area of immediate influence or reasonable travel time boundary.
   c. An acceptable traffic study boundary, based on travel time, may be identified as a ten- or twenty-minute travel time or even by market area influence.
   d. Intersection of site access drives with classified arterial or collector roadways within 1/2 mile of property line on each side of project site.
2. Design Year.
   a. Opening day of project, five years, and twenty years after opening. Document and include all phases of development (includes out pad parcels).
3. Analysis period.
   a. For each design year analyze site and adjacent road traffic for weekday A.M. and P.M. peak hours including Saturday peak hours. Identify special event peak hour as necessary (adjacent roadway peak and site peak).
4. Data Collection.
   a. Daily and Turning movement counts.
   b. Identify site and adjacent street roadway and intersection geometry.
   c. Traffic control devices including traffic signals and regulatory signs.
   d. Automatic continuous traffic counts for at least 48 hours.
   e. Traffic accident data.
5. Trip Generation.
   a. Use equations or rates available in latest edition of ITE Trip Generation. Where developed equations are unavailable for intended land use, perform trip rate study and estimation following ITE procedures or develop justified trip rate agreed to by the Mt. Pleasant.
6. Trip Distributions and Assignment.

a. Document distribution and assignment of existing, site, background, and future traffic volumes on surrounding network of study area.

7. Capacity Analysis.
    a. Level of Service (LOS) for all intersections.
    b. LOS for existing conditions, design year without project, design year with project.
8. Traffic Signal Impacts. For proposed Traffic Signals:
    a. Traffic Signal Warrants as identified.
    b. Traffic Signal drawings as identified.
    c. Queuing Analysis.
    d. Traffic Systems Analysis. Includes acceleration, deceleration, and weaving.
    e. Traffic Coordination Analysis
9. Right-of-Way Access
    a. Identify right-of-way, geometric boundaries, and physical conflicts. Investigate existence of federal or state, no access or limited access control line.
10. Accident and Traffic Safety Analysis. Existing vs. as proposed development.
11. Design and Mitigation.
    a. Determine and document safe and efficient operational design needs based on site and study area data.
    b. Identify operational concerns and mitigation measures to ensure safe and efficient operation pursuant to appropriate city access spacings and state highway access category as applicable.

Traffic Study Category IV

Project ADT greater than 10,000 trips or peak hour traffic > 1,200 vehicles per hour.

Proposed installation or modification of two or more traffic signals, addition of traffic lanes or modification of freeway interchange.

The traffic study shall, at a minimum, incorporate typical traffic engineering principles and standards as presented by Mt. Pleasant and national practices. Additional requirements and investigation may be imposed upon the applicant as necessary.

The Planning & Zoning Board determines the need and requirements for a traffic impact study.

1. Study Area.
   a. Defined by the Planning & Zoning Board.
   b. The study area, depending on the size and intensity of the development and surrounding development, may be identified by parcel boundary, area of immediate influence or reasonable travel time boundary.
   c. An acceptable traffic study boundary, based on travel time, may be identified as a ten- or twenty-minute travel time or even by market area influence.
   d. Intersection of site access drives with classified arterial or collector roadways and any intersection within 1/2 mile of property line of each side of project site and any intersection or freeway interchange impacted by more than 500 peak hour trips.
2. Design Year.
   a. Opening day of project, five years, and twenty years after opening. Document and include all phases of development (includes out pad parcels).
3. Analysis Period.
   a. For each design year analyze site and adjacent road traffic for weekday A.M. and P.M. peak hours including Saturday peak hours. Identify special event peak hour as necessary (adjacent roadway peak and site peak).
4. Data Collection.
   a. Daily and Turning movement counts.
   b. Identify site and adjacent street roadway and intersection geometry.
   c. Traffic control devices including traffic signals and regulatory signs.
   d. Automatic continuous traffic counts for at least 48 hours.
   e. Traffic accident data.
5. Trip Generation.
   a. Use equations or rates available in latest edition of ITE Trip Generation. Where developed equations are unavailable for intended land use, perform trip rate study and

estimation following ITE procedures or develop justified trip rate agreed to by Mt. Pleasant.

6. Trip Distributions and Assignment.
    a. Document distribution and assignment of existing, site, background, and future traffic volumes on surrounding network of study area.
7. Capacity Analysis.
    a. Level of Service (LOS) for all intersections.
    b. LOS for existing conditions, design year without project, design year with project.
8. Traffic Signal Impacts. For proposed traffic signals:
    a. Traffic Signal Warrants as identified.
    b. Traffic Signal drawings as identified.
    c. Queuing Analysis.
    d. Traffic Systems Analysis. Includes acceleration, deceleration, and weaving.
    e. Traffic Coordination Analysis.
9. Right-of-Way (ROW) Access
    a. Identify ROW, geometric boundaries, and physical conflicts. Investigate existence of federal or state, no access or limited access control line.
10. Accident and Traffic Safety Analysis. Existing vs. as proposed develop.
11. Design and Mitigation.
    a. Determine and document safe and efficient operational design needs based on site and study area data.
    b. Identify operational concerns and mitigation measures to ensure safe and efficient operation pursuant to appropriate city access spacings and state highway access category as applicable.

Access Management

Access management policies and standards that are properly implemented and enforced work to balance mobility and access as well as improve safety and capacity of the intended functional class of roadway. As previously discussed, each functional class of roadway prioritizes access and mobility differently. Most properties require some form of vehicle access to the public roadway network. Access management standards work to control the level and design of the access granted depending on the functional class of the roadway and the type of access needed.

Importance of Access Management

Properly designed and actively enforced access management is beneficial to the residents, visitors, and businesses of any city as it improves safety and mobility. According to the TRB Access Management Committee the benefits of access management also extend to lengthened service life of major roadways, improved traffic congestion, encouragement of alternative transportation modes, and improved appearance and quality of the transportation network. Failure to enforce effective access management principles can lead to the following negative impacts:

- Increased vehicle to pedestrian crashes
- Increased vehicle to cyclist crashes
- Increased vehicle to vehicle crashes
- Rapid loss of roadway capacity
- Arterial/collector traffic overflows on to residential streets
- Rise in commuting times, fuel consumption, and vehicle emissions
- Detrimental impacts to homes and businesses from roadway widenings

Access Management General Principles

Implementing the access management principles identified below by the TRB Access Management Committee will assist Mt. Pleasant City in limiting and consolidating access along major roadways. In doing so, as development and re-development continue, Mt. Pleasant City will be able to ensure each roadway is operating according to its intended functional class, optimizing safety and capacity.

1. Provide a Specialized Roadway System – Different types of roadways serve different functions. It is important to design and manage roadways according to the primary functions that they are expected to serve.

2. Limit Direct Access to Major Roadway – Roadways that serve higher traffic volumes need more access control to preserve their traffic-carrying function. Frequent and direct property access is more compatible with the function of local and collector roadways.
3. Promote an Intersection Hierarchy – An efficient transportation network provides appropriate transitions from one classification of a roadway to another. For example, freeways connect to arterials through an interchange that is designed for the transition.
4. Locate Signals to Favor Continuous Movement – Long, uniform spacing of intersections and signals on major roadways enhances the ability to coordinate signals and ensures continuous movement of traffic at a desired speed.
5. Preserve the Functional Area of Intersections – The functional area of an intersection is where vehicles decelerate and maneuver into the appropriate lane to stop or complete a turn. The design of this area, where lanes separate into their specific purposes, affects the intersection's functionality, safety, and efficiency. Access connections (or driveways) that are constructed too close to intersections could impact the functional area of an intersection and cause serious traffic conflicts that result in crashes and congestion.
6. Limit the Number of Conflict Points – Drivers make more mistakes and are more likely to have collisions when they approach complex intersections or driving situations that contain numerous conflict points. Conversely, simplifying the driving task by reducing the number of conflict points contributes to improved traffic operations and fewer collisions.
7. Separate Conflict Areas – Drivers need sufficient time to address one set of potential conflicts before facing another. Separating conflict areas where vehicle paths merge, diverge, or cross will help to simplify the driving task and contribute to improved traffic operations and safety.
8. Remove Turning Vehicles from Through Traffic Lanes – Turning lanes allow drivers to decelerate gradually out of the through lane and wait in a protected area for an opportunity to complete a turn. Incorporating a separate turning lane removes any potential build-up from the turning vehicle and, thus, promotes mobility and safety.
9. Use Non-traversable Medians to Manage Left-Turn Movements – Medians help funnel vehicles turning onto or off major roadways. Non-traversable medians are the physical barriers (such as concrete barriers or raised curbs) that prohibit movement across the median. These and other techniques that minimize left turns or reduce the driver workload can be especially effective in improving roadway clarity and safety.
10. Provide a Supporting Roadway and Circulation System – Well-planned communities provide a supporting network of local and collector roads to accommodate development as well as to unify property access and circulation. Interconnected roadway and circulation systems support alternative modes of transportation and provide alternative routes for bicyclists, pedestrians, and drivers.

Access Management Design Principles

Access management is also addressed through good roadway design. Geometric design features that are utilized to manage access and vehicle turning movements include interchanges, frontage roads, medians, median openings, auxiliary lanes, driveway design, and intersection channelization. Four major goals of roadway design requirements are:

- Separating conflict areas
- Minimizing the number of access points
- Removing turning vehicles from through traffic lanes
- Minimizing acceleration and deceleration requirements

Thoughtful design prior to construction can play a critical role in meeting access management principles, rules, and design elements. Visual illustrations of the basic rules and design elements of access management are displayed in Appendix E.

MT. PLEASANT CITY ACCESS MANAGEMENT STANDARDS

This section covers the Mt. Pleasant City Access Management policy standards regarding allowable access, Table 9, intersection and access spacing, Table 10, corner clearance, cross-access/shared-access requirements, intersection offsets, Table 11, and on-street parking, Table 12.

ALLOWABLE ACCESS STANDARDS

Limiting the number and type of accesses on a roadway assists in defining the use and purpose of the roadway. By allowing more access the roadway limits flow. By restricting access, the roadway is improving flow. As previously discussed, each functional class of road falls within a spectrum of prioritizing mobility or access. Table 9 identifies the type of access allowed according to functional class.

TABLE 9: ALLOWABLE ACCESS

Functional Class	Commercial Access	Multi-Family Access	Single Family Access
Major Arterial	Yes[1]	No	No
Minor Arterial	Yes[1]	No	No
Major Collector	Yes	Yes	No
Minor Collector	Yes	Yes	Yes
Local	No[2]	Yes	Yes

1. It is preferable that multiple commercial accesses to an arterial be consolidated into a single access with a signal or through a public street. If direct access is permitted it should be limited to a RIRO.
2. A variance may be granted for allowable secondary access or small commercial developments.

ACCESS SPACING STANDARDS

Specifying access spacing standards works to optimize the flow of a roadway and avoid interruptions in mobility according to the defined functional class of the roadway. Access spacing standards also assist in reducing the number of conflicts caused by having access too close together.

TABLE 10: ACCESS SPACING REQUIREMENTS

Functional Class	Min. Signal Spacing (ft)	Min. Street Spacing No Signal (ft)	Min. Commercial Access Spacing No Signal (ft)	Min. Residential Access Spacing (ft)
Major Arterial	2,640	1000	330[2]	Not Allowed
Minor Arterial	2640	1000	330[2]	Not Allowed
Major Collector	1,320	660	330	Not Allowed
Minor Collector	1,320	330	150	150
Local	1,320	150	150	50

1. All distances are measured center-line to center-line.
2. Access to an arterial should only be granted when other reasonable access is not available to a collector or local street. If allowed, access should be limited to RIRO only.

Corner Clearance Standards

Corner clearance is the minimum distance required between an intersection and an adjacent driveway along an arterial road or collector street. The same standards set forth by access spacing requirements, Table 10, apply to corner clearance standards.

Cross Access/Shared Access Standards

Access to the public roadway network from private property must be allowed. In many cases the property accessing the public ROW has a small frontage and is unable to meet spacing requirements. In such cases, efforts should be made to analyze alternative accesses involving cross-access or shared access agreements with adjacent properties. If the adjacent properties are owned by the same person or entity, cross-access or shared-access must be implemented to maintain spacing requirements. On a case-by-case basis where the adjacent property is not owned by the same person or entity the city may offer incentives to encourage cross-access or shared-access agreements.

Intersection/Access Offset Standards

It is preferable that streets and driveways located on opposite sides of a street be placed directly across from each other. In cases where this is not possible due to property or site restrictions Table 11 establishes a minimum offset so opposing left turns do not overlap. On a case-by-case basis additional traffic or turning analysis may be requested by the city to establish the need for greater offset distance.

TABLE 11: INTERSECTION/ACCESS OFFSETS

Functional Class	Min. Offset (ft)

Major Arterial	400
Minor Arterial	250
Major Collector	180
Minor Collector	120
Local	N/A

On Street Parking

Allowing on-street parking serves as a strategy to enhance the pedestrian-friendliness of a corridor by introducing parked vehicles as a protective barrier between flowing traffic and pedestrians on the sidewalks. The act of parking and unparking along a roadway may introduce lateral friction, potentially slowing down or obstructing through traffic. The decision to permit on-street parking on a road primarily hinges on its intended function. As previously mentioned, arterial roads are designed for mobility rather than access, while local streets prioritize access over mobility. Additionally, the adjacent land use is a crucial factor. For instance, a core business area may benefit from on-street parking, even if classified as an arterial road, whereas a lower-classified road in an industrial area may not necessitate on-street parking, resulting in cost savings in construction and maintenance. The determination should also consider the available cross-section width, with a minimum of seven feet recommended for on-street parking. Table 17 outlines suggested on-street parking provisions based on functional classification.

TABLE 12: ON-STREET PARKING RECOMMENDATION

Functional Class	On-Street Parking Permitted[1]
Major Arterial	No
Minor Arterial	No
Major Collector	Yes
Minor Collector	Yes
Local	Yes

1. Other factors should also be considered such as land-use and cross-section width when permitting on-street parking.

APPENDIX

Appendix A – PTV Vistro Reports

Appendix B – Traffic Count Data

Appendix C – Roadway Typical Cross-Sections