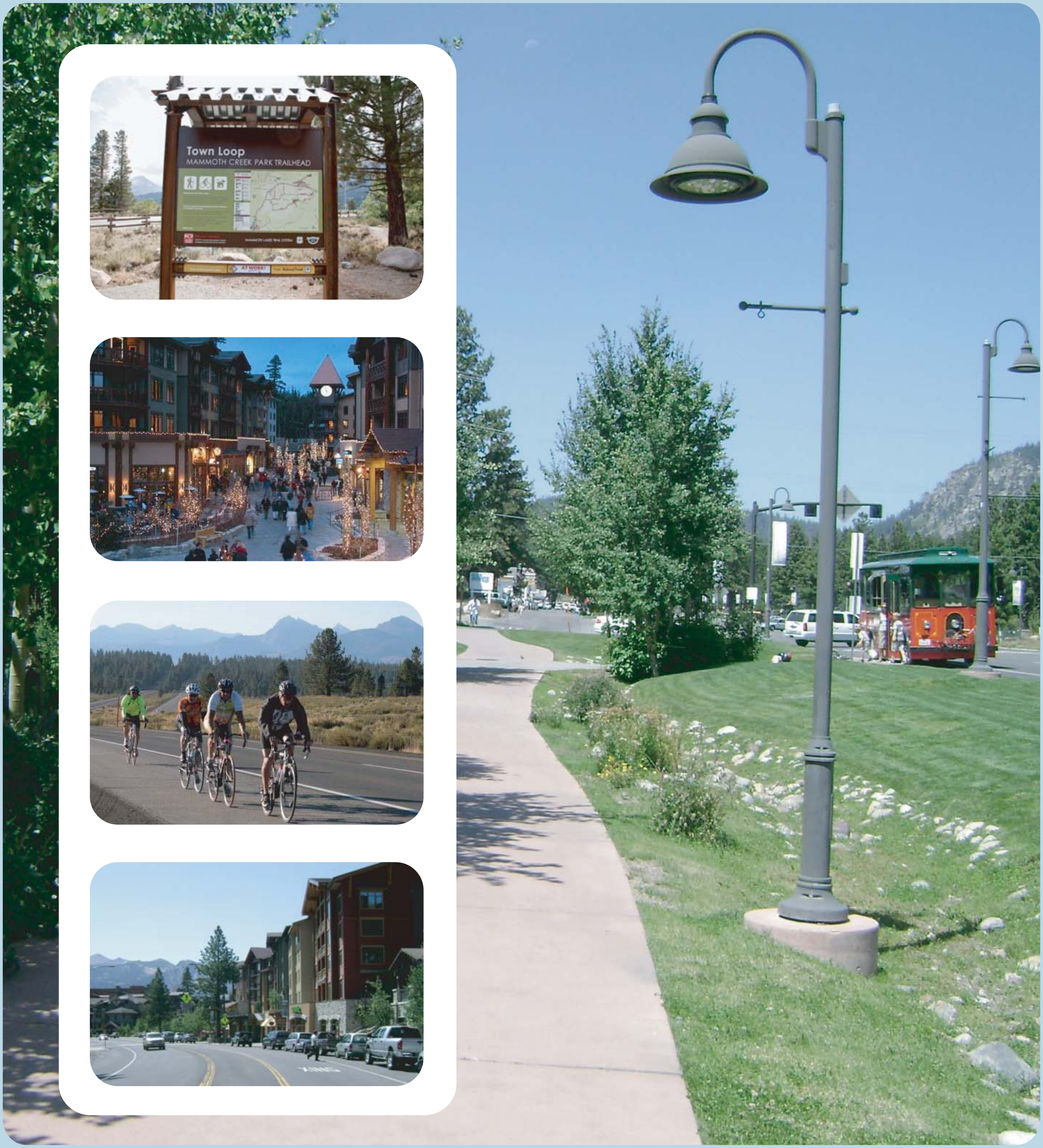

Town of Mammoth Lakes
Draft General Plan Mobility Element
Appendices

September 6, 2011

Mammoth Lakes
CALIFORNIA

APPENDICES

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Appendix A:
Community Engagement Materials and Public Comments

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MOBILITY ELEMENT COMMUNITY ENGAGEMENT OVERVIEW

Public participation played an important role in the development of the Mobility Element. Broad-based public outreach and community engagement was conducted to solicit feedback and input from the public about mobility issues and needs and to discuss potential solutions and priorities. The Town encouraged participation from all sectors of the community, including permanent residents, visitors, second home-owners, and other agencies and organizations.

A variety of methods to garner input were used. In addition to the Neighborhood District Planning (NDP) processes, in which a substantial amount of transportation related public input was received and analyzed, there were also many additional opportunities for the public to provide input on transportation and mobility specifically related to the preparation of the Mobility Element. These opportunities included two workshops, one all day open house, two "roadshow" trolley tours of the major transportation corridors, and an internet-based survey. Community members were also invited to provide comments to Town staff through email.

Workshops, Open-House, and "Roadshow" Trolley Tours

The workshops, open house, and trolley tours were held between Thursday, July 16 and Saturday, July 18, 2009 and were facilitated by Town staff. In advance of the events, a "briefing packet" was developed and available to the public to download from the Town's website or to pick up at the Town offices. The "briefing packet" was developed to provide background information and to establish a frame of reference for the events. A copy of the "briefing packet" is provided in this Appendix.

A series of detailed maps were also created and presented for discussion and comment at the workshops and open house. The maps provided information about existing, near-term (under construction, funded, and/or designed), and recommended infrastructure (from previous planning efforts such as NDPs, 2009 Draft Trail System Master Plan, and the 2006 Physical Development and Mobility Study). Copies of the maps are provided in this Appendix.

***Detailed maps** were presented for discussion and comments at the workshops and open house.*

Morriss

The workshops were designed to solicit public input on a variety of transportation topics, including multimodal infrastructure, safety, and accessibility. Topics discussed at the workshops were organized as follows:

- Workshop 1: Multimodal Mobility – Topics included an introduction and interactive discussion of multimodal principles and practices that are applicable in Mammoth Lakes. Participants discussed pedestrian, bicycle, transit, and parking issues, concerns, ideas, and needs.

- Workshop 2: Community Safety and Mobility – Topics included a discussion of public safety related mobility issues, including emergency response, snow management, and accident prevention.

***Community members** discuss traffic calming options at workshop 2. Public participation was an important component of the preparation of the Mobility Element.*

***Written comments** were recorded on map and were used to develop the Mobility Element.*

The two "roadshow" trolley tours took participants on an hour long tour of the major transportation corridors in Mammoth Lakes (Main Street, Old Mammoth Road, and the North Village). On the tours, participants viewed and discussed recent and near-term capital improvement projects, safe routes to school projects, multimodal infrastructure "gaps," and other safety and mobility issues.

***"Roadshow" Trolley Tours** gave participants the opportunity to discuss transportation issues and needs in the field.*

Morriss

Public input and comments were recorded by note takers who documented the round –table discussions during the workshops and on the trolley tours. Written comments were also recorded by participants in their briefing packets and on the maps during the workshops and open house. Discussion notes and a summary table of written comments are provided in this Appendix.

Overall, the public events received moderate attendance: workshop 1 was attended by 22 people, workshop 2 by 21 people, and the open house by 29 people, for a total of 72. However, many of these attendees came to more than one of the events. While the events had limited attendance, the public input received was valuable in terms of identifying key mobility issues and problem areas, as well as identifying potential solutions and priorities to incorporate into the Mobility Element.

Internet-Based Transportation Survey

As part of the public participation process, the Town developed and initiated an online transportation survey to gather information about the transportation choices, preferences, and patterns of Mammoth Lakes' residents, visitors, business owners, and workers. The online survey was launched on July 2, 2010 and was available for approximately 30 days.

The survey was primarily focused on the Main Street District and included questions related to travel to, from, and within the District. The survey included a total of 47 questions; however, because the survey was logic-based (questions would change depending on how the previous question was answered), no individual participant was given all 47 questions. Approximately 144 people completed the survey and the information gathered has been used in the preparation of the Mobility Element. A copy of the survey, including the results and a flowchart illustrating the survey logic design is included in this Appendix.

Promotion and Advertising

Extensive promotion and advertising of all public participation opportunities was conducted in order to reach a broad and diverse cross section of the community. A community engagement plan was created and implemented by the Town in partnership with MLTPA (Appendix B of the Technical Appendices). The following is a summary of the promotion and advertising methods that were used to advertise the public workshops, open house, and trolley tours:

- TV Advertisements: A 30-second television commercial was developed and run on Mammoth Channel 72 and Sierra Wave/Channel 33 between July 8 and July 18, 2009.
- Radio Advertisements: A 30-second radio commercial was developed and run on three local radio stations between July 8 and July 18, 2009. Additionally, a radio interview with the Chair of the Mobility Commission occurred on July 10, 2009.
- Newspaper Advertisements: A series of print advertisements were included in the Sheet and the Mammoth Times between the week of June 22 and the week of July 13, 2009.
- Flyers: An 11x17 color flyer was designed and posted throughout the community, including at local businesses, transit stops, and other public spaces.
- Town Manger's Friday Update: An announcement was included in the "Friday Update" between June 5 and July 17, 2009.

- Stu’s News: A brief announcement was included in Stu’s News between June 11 and July 17, 2009.
- Calendar Postings: The events were posted on the Events Calendar on the Town of Mammoth Lakes’ website and Visitmammoth.com website.
- Email Distribution: Flyers and other event details were distributed out via email. Emails were distributed to Town staff, Commissions, and other stakeholders, including MLTPA’s email lists.
- Town Council and Commission Attendance: Brief announcements were made at meetings of the Town Council, Planning Commission, Mobility Commission, Airport Commission, and Tourism and Recreation Commission leading up to the events.
- Community Meeting Attendance: Brief announcements were made local community organization meetings such as the Lion’s Club, Rotary, Chamber of Commerce, and other organization deemed appropriate.

Event flyer and newspaper advertisement *used to publicize the public mobility events.*

Public Meeting Announcement Schedule

June 3, 2009: Town Council

June 10, 2009: Planning Commission

June 17, 2009: Town Council

June 23, 2009: Chamber of Commerce

June 24, 2009: Airport Commission

June 25, 2009: Noon Rotary

July 1, 2009: Morning Rotary, Lions Club, Town Council

July 8, 2009: Planning Commission

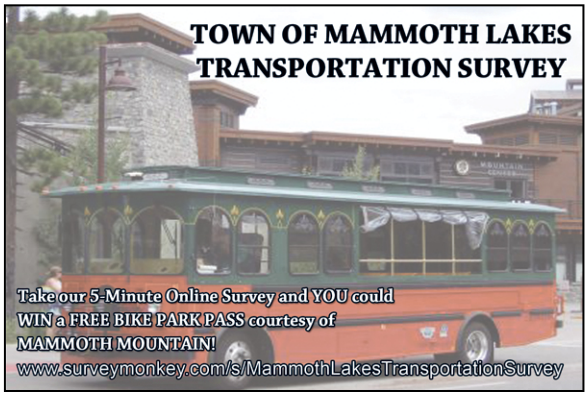
July 9, 2009: Area Governments, Tourism and Recreation Commission

July 15, 2009: Town Council

Promotion and advertising of the internet-based transportation survey was conducted in a variety of ways. Additionally, to incentivize participation in the survey, Mammoth Mountain Ski Area generously donated a Bike Park season pass to be given away to one, randomly selected participant. The following methods of advertisement were used:

- Postcard Mailings: Postcards advertising the internet survey were mailed to all property owners within the Main Street District. Postcards were also distributed to businesses on Main Street and Old Mammoth Road.
- Town Manager’s Friday Update: An announcement was included in the July 23, 2010 “Friday Update.”
- Stu’s News: A brief announcement was included in the July 23, 2010 Stu’s News.

- Website Announcement: Information about the survey was posted on the Town of Mammoth Lakes' website.
- Email Distribution: Information about the survey was distributed to Town staff and Commissions.



Transportation survey postcard *distributed to property owners in the Main Street District.*

Morriss

Mobility Plan Briefing Packet Cafés 1 and 2

Town of Mammoth Lakes

Mobility Plan

July 2009

PUBLIC WORKS DEPARTMENT
P.O. BOX 1609, MAMMOTH LAKES, CA 93546
(760) 934-8989 ext.257, fax (760) 934-8608
email: rjarvis@ci.mammoth-lakes.ca.us

DATE: **JULY 16, 2009**

TO: **TOWN OF MAMMOTH LAKES PUBLIC PARTICIPANTS**

FROM: **RAY JARVIS, PUBLIC WORKS DIRECTOR**

RE: **TOWN OF MAMMOTH LAKES MOBILITY PLAN**

Thank you for your participation in the Town of Mammoth Lakes Mobility Plan community planning events! The Town of Mammoth Lakes Mobility Plan will enable Mammoth Lakes to realize the Vision and Goals outlined in the 2007 General Plan Mobility Element. It aims to achieve a progressive and integrated multi-modal transportation system, one that serves the various needs of residents, employees and visitors in a way that is connected, accessible, uncongested and safe with emphasis on feet first, public transportation second, and car last.

Your input will be used to develop the Town's Mobility Plan, including a series of recommendations for future development of transportation infrastructure to serve all modes of travel: pedestrian, bicycle, transit, and vehicle. The plan will also address community transportation issues such as parking, snow management, traffic calming, and emergency response.

Hearing your input is necessary in order to produce a plan that meets the needs and reflects the values of the community. Thank you for your interest and participation in the development of the Town of Mammoth Lakes Mobility Plan. We look forward to your input in this very important planning effort.

If you would like to stay informed about the Town's progress on the Mobility Plan, please contact Jessica Morriss at Jmorriss@ci.mammoth-lakes.ca.us or (760) 934-8989 x 225 to be added to our contact list.

Sincerely,

Ray Jarvis

Ray Jarvis, Public Works Director

What is the Mobility Plan? What Will it Do? Who is it for?

- ***The established goals, policies, and actions of the General Plan Mobility Element will be further articulated and defined through the Mobility Plan, which will serve as the implementation document for the General Plan Mobility Element.***

- ***An adopted Mobility Plan will provide a cohesive program of transportation system improvements and recommendations that will assist both the development community and Town Staff in planning transportation projects, with an emphasis on "feet first" travel.***

- ***The Mobility Plan will address all modes of transportation in Mammoth Lakes, such as pedestrian, bicycle, transit, trails, roads, and air service. The plan will also speak to transportation issues related to parking, safety, wayfinding, signage, and operations and maintenance.***

How is the Mobility Plan different from the Draft Trail System Master Plan?

The Mobility Plan is intended to further previous Town transportation planning efforts, including the extensive effort performed during the preparation of the Town of Mammoth Lakes Draft Trail System Master Plan (DTSMP), completed in February 2009.

Mobility Plan

- *Planning Area – Inside of the Urban Growth Boundary*
- *Primary focus is multi-modal transportation and circulation in town*
- *Considers transportation to and from all types of activity nodes: employment, shopping, recreation, etc.*
- *Focused on all aspects of transportation: pedestrian, bicycle, trails, transit, parking, roads, snow management, maintenance, air service, etc.*

Draft Trail System Master Plan (DTSMP)

- *Planning Area – Inside and Outside of the Urban Growth Boundary*
- *Primary focus is trail system connectivity and access to recreation*
- *Considers transportation to and from recreation nodes and providing facilities that will improve access to trails*
- *Focused mostly on trails, but also discussed pedestrian, bicycle and transit connections to recreation*

The Mobility Plan will not repeat or reproduce the DTSMP work effort, rather the DTSMP will be used as a reference document for the Mobility Plan as it relates to trail connectivity and integration with the in-town transportation system.

While the DTSMP was focused primarily on trail connectivity and recreation access, significant public feedback was received about the in-town transportation system, particularly about sidewalks, bicycle facilities and snow management. All of this public input will be used in the preparation of the Mobility Plan.

Mobility Plan, District Planning, and Creating a Destination Resort Community

The Destination Resort Community and Economic Development Strategy (DRCEDS) identifies ten (10) high level initiatives on which the Town should focus its resources in order to become a destination resort, a goal established in the 2007 General Plan. One of the ten initiatives is to focus on providing feet-first mobility improvements and to complete the Town's Mobility Plan.

The Mobility Plan will consider and analyze the transportation system from a Town-wide and District level perspective, with a focus on the four key districts identified in the Destination Resort Community and Economic Development Strategy (DRCEDS), some of which have a complete District Plan/Study and some that do not:

District	District Plan or Study Complete?
North Village – visitor-oriented entertainment retail district	Yes "North Village Neighborhood District Planning Study"
Main Street *– mixed-use corridor connecting the North Village and Town Center Districts*	No
Town Center *– local and visitor-oriented mixed-use district centered around North Old Mammoth Road*	Yes "North Old Mammoth Road District Special Study"
The Great Park *– centered around Mammoth Creek Park, Hayden Cabin, and Sherwin Meadows areas*	No "Draft East Open Space Stream Corridor Study"

Completion of the Mobility Plan and District Plans will further the Town's transportation and economic sustainability goals.

General Plan Mobility Element Goals

M.1. *Develop and implement a townwide **way-finding** system.*

M.2. *Improve regional transportation system.*

M.3. *Emphasize **feet first**, **public transportation second, and car last** in planning the community transportation system while still meeting Level of Service standards.*

M.4. *Encourage feet first by providing a linked **year-round recreational and commuter trail system** that is safe and comprehensive.*

M.5. *Provide a year-round local public **transit system that is convenient and efficient**.*

M.6. *Encourage alternative transportation and improve **pedestrian mobility** by developing a comprehensive **parking management** strategy.*

M.7. *Maintain and improve **safe and efficient** movement of people, traffic, and goods in a manner consistent with the feet first initiative.*

M.8. *Enhance **small town community character** through the design of the transportation system.*

M.9. *Improve snow and ice management.*

Mobility Plan Vision Statement

"The Town of Mammoth Lakes Mobility Plan will enable Mammoth Lakes to realize the Vision and Goals outlined in the 2007 General Plan Mobility Element.

It aims to achieve a progressive and integrated multi-modal transportation system, one that serves the various needs of residents, employees and visitors in a way that is connected, accessible, uncongested and safe with emphasis on feet first, public transportation second, and car last."

Mobility Plan Guiding Principles

- **Feet First Community**: Create an accessible and connected multi-modal transportation system that encourages feet first mobility while meeting the needs of the community.

- **Partnerships and Cooperation**: Cooperation and partnership among stakeholders is necessary to achieve mobility goals. Stakeholders include residents, visitors, user groups, businesses, and government agencies.

- **Community Character and Design**: Create a multi-modal transportation system that is consistent with community character and design goals.

- **Environmental Stewardship**: The creation of a multi-modal transportation system that encourages feet first mobility shall be balanced with a respect for the natural environment.

- **Community Engagement**: Community input and involvement in the planning process is imperative to the development of a multi-modal transportation system that meets the needs of the community.

- **Sustainable Economics**: Develop financing strategies that allocate the cost of multi-modal transportation system improvements appropriately and identify a variety of funding sources.

Mobility Improvement Measures

- *Increasing and improving available transportation options*
- *Providing incentives to change travel mode, time or destination*
- *Land use planning that reinforces feet first and improves mobility*
- *Connecting sidewalks and trails to transit, parking facilities, and parks year-round to provide a better experience*
- *Parking facilities that encourage people to walk, bike or use transit*
- *Future streets located to create flexibility of movement and provide multiple access routes to improve access for emergency, delivery, service, public and private vehicles*
- *Traffic calming and control measures*

Steps to Achieving a Better Mobility System

Public Input and Feedback

(community needs, ideas, recommendations, and priorities)

Planning and Policy Reforms (MOBILITY PLAN)

(increased support for Travel Demand Management programs, changes to land use planning practices, changes to transportation planning practices, increased funding for alternative transportation, etc.)

Changes Travel Options and Incentives

(improved walking and cycling conditions, improved transit, more compact and mixed use development, increased connectivity, etc.)

Travel Changes

(community shifts in travel mode, route, time, destination and frequency)

Outcomes

(reduced traffic congestion, road and parking facility cost savings, accident reductions, energy conservation, pollution emission reductions, improved mobility for non-drivers, etc.)

Multi-Modal Mobility Café #1

Town of Mammoth Lakes

Mobility Plan

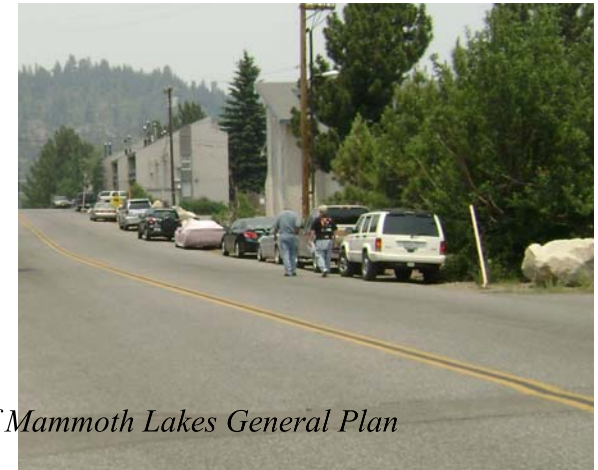
July 16, 2009

Pedestrian Mobility

Encourage feet first by providing a linked year-round recreational and commuter trail system that is safe and comprehensive. (General Plan Goal M.4.)

Pedestrian Mobility Objectives:

- Improve the connectivity of the pedestrian network
- Improve accessibility for all users
- Provide safe street crossings
- Provide a comfortable and appealing pedestrian environment
- Improve pedestrian access to transit
- Create a walkable town center
- Promote and encourage walking
- Maintain the pedestrian system and provide year-round access
- Improve funding and implementation of pedestrian projects



Pedestrian Mobility Strategies:

- Continue building safe routes to schools
- Construct mid-block connectors that break up “super blocks”
- Prioritize closing existing pedestrian network gaps
- Construct sidewalks with adequate separation from vehicles
- Safe and glare-free lighting
- Implement way-finding
- Sidewalks connect to transit stops and shelters
- Provide trash receptacles and benches
- Remove snow on priority pedestrian corridors
- Consider expanded use of Benefit Assessment Districts for maintenance and snow removal

Pedestrian Mobility

What the Community Has Said

- Main Street gap is the key missing link in the Main Path Loop. [3]
- Main Street is not pedestrian accessible and is dangerous. [1,2,3]
- Main Street and Minaret Road intersection is not pedestrian friendly. [3]
- Main Path Loop should be completed. [3]
- Increased pedestrian connectivity in town center is important. [2,3]
- Major streets should have sidewalks on both sides. [3]
- Sidewalks and Paths are not usable year-round. [1,2,3]
- Sidewalks and Paths should have more separation from vehicle travel lanes. [2,3]
- Creating safe routes to schools is a high priority. [1,2]
- Neighborhood pedestrian connectivity should be improved. [1]
- Connectivity between sidewalks, trails, and transit should be improved. [2,3]
- Street Crossings should be consistent and well-lit. [1,2,3]
- Signage and wayfinding should be improved. [1,2]
- Streetscaping and pedestrian furnishings should be provided. [1]

Reference Documents:

[1] 2006 Mobility Report

[2] 2007 Mobility Café

[3] 2008 Trail System Master Plan

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Pedestrian Mobility

The pedestrian infrastructure graphic depicts existing, near-term, and planned or recommended pedestrian facilities, including sidewalks, Multi-Use Paths (MUPs) and tunnel under-crossings. Planned and/or recommended facilities have been referenced from previous plans, studies, and workshops.

On the graphic, please mark or draw 3 *pedestrian* connections that you think are the most important to improving pedestrian mobility in town. Then, write those 3 connections in the space provided below:

Circle One	On or Near (Street/Road)	From (Street/Road)	To (Street/Road)
1. Sidewalk or Multi-Use Path	____________________	____________________	____________________
2. Sidewalk or Multi-Use Path	____________________	____________________	____________________
3. Sidewalk or Multi-Use Path	____________________	____________________	____________________

Please Rank the following options, starting with #1 indicating the "*highest*" priority.

Pedestrian facility improvements and connectivity should be prioritized as follows in the Districts below:

______ North Village District

______ Main Street District

______ Old Mammoth Road Commercial District

______ Snowcreek District

______ Other ______________

Pedestrian facility improvements and connectivity should be prioritized as follows:

______ Safe Routes To School

______ Access to Transit Stops

______ In Commercial / Employment / Entertainment Areas

______ In Neighborhoods (specify ________________)

______ To Recreational / Trailhead / Park Areas

______ Other ______________

Additional Comments:

____

____

____

Bicycle Mobility

Encourage feet first by providing a linked year-round recreational and commuter trail system that is safe and comprehensive. (General Plan Goal M.4.)

Bicycle Mobility Objectives:

- Improve the connectivity of the bicycle network
- Improve bicycle facility safety
- Improve bicyclist access to transit
- Promote and encourage bicycling
- Facilitate year-round bicycle commuting
- Improve funding and implementation of bicycle facility projects

Bicycle Mobility Strategies:

- Provide bike racks at key locations, including commercial areas
- Provide safe and secure bike racks and storage
- Emphasize use of collector and local streets for bicycle facilities
- Link bike lanes, routes, and racks with transit
- Provide additional signage and street striping denoting bike lanes and routes
- Include bicycle parking standards as part of Municipal Code parking code
- Reduce use of bicycle routes and lanes for snow storage

Bicycle Mobility

What the Community Has Said

- More bike racks and storage should be available at key locations. [2,3]
- Old Mammoth Road and Main Street are key gaps in bicycle connectivity. [1]
- Bicycle facilities should be provided to connect to Crowley, Devils Postpile, and the Scenic Loop to Mammoth Lakes. [1]
- Bicycle facilities and Paths should have more separation from vehicle travel lanes. [2,3]
- Bicycle facilities are typically used for snow storage, limiting winter accessibility. [1,3]
- More bicycle facility signage should be provided (Share the Road, Bike Lane, Bike Route). [3]
- Improve access to mountain biking portals. [3]

Reference Documents:
[1] 2006 Mobility Report
[2] 2007 Mobility Café
[3] 2008 Trail System Master Plan

Bicycle Mobility

The bicycle infrastructure graphic depicts existing, near-term, and planned or recommended bicycle facilities, including bike lanes, bike routes, Multi-Use Paths (MUPs), and tunnel under-crossings. Planned and/or recommended facilities have been referenced from previous plans, studies, and workshops.

On the graphic, please mark or draw 3 *bicycle* connections that you think are the most important to improving bicycle circulation in town. Then, write those 3 connections in the space provided below:

	On or Near (Street/Road)	From (Street/Road)	To (Street/Road)
1. Bike-Lane/Route or Multi-Use Path	______________________	____________________	_____________________
2. Bike-Lane/Route or Multi-Use Path	______________________	____________________	_____________________
3. Bike-Lane/Route or Multi-Use Path	______________________	____________________	_____________________

Also, on the graphic, please mark or draw 3 locations where bike racks/storage should placed. Then, write those 3 locations in the space provided: ____

____

Please Rank the following options, with #1 indicating the *"highest"* priority.

Bicycle facility improvements such as bicycle racks and/or storage should be provided in the following locations and prioritized as follows:

______ At Transit Stops

______ At Commercial / Employment / Entertainment Areas

______ At Lodging / Visitor Areas

______ At Recreational / Trailhead / Park Areas

Other

Additional Comments:

____
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Transit System Mobility

Provide a year-round local public transit system that is convenient and efficient. (General Plan Goal M.5.)

Transit System Objectives:

- Expand and increase the reliability of transit service
- Improve and add transit infrastructure, including shelters and roadway turnouts
- Promote and encourage transit use
- Improve year-round access to transit
- Improve funding and implementation of transit expansion projects

Transit System Strategies:

- Continue work with the Eastern Sierra Transit Authority and Mammoth Mountain Ski Area to improve the existing transit system
- Regularly update transit plan
- Improve access to transit stops through construction of sidewalks, paths, and bicycle facilities
- Require new development to provide transit facility improvements
- Consider locating bicycle racks at transit stops
- Encourage use of Park N' Ride facility in conjunction with transit
- Develop transit performance standards
- Prepare an annual transit user needs assessment
- Continue to improve transit maps, signage, and other information

Transit System Mobility

What the Community Has Said

- Transit should be more reliable. [2]
- Ski Shuttles are too crowded during peak season. [1,2]
- Transit should be improved and extended. [2]
- Transit should serve neighborhoods. [1,2,3]
- Transit should be more coordinated with the Main Path Loop. [3]
- Providing transit turnouts and shelters on Main Street should be a high priority. [1,3]
- Turnouts and shelters should be improved and added. [1,3]
- Pedestrian access to transit stops should be improved and should be accessible year-round. [1,3]
- Transit does not accommodate skier and snowboarder equipment. [1]
- Signage should be consistent. [2]
- Schedules should be clearer and more widely available. [2]
- Real-time “next bus” information should be provided. [3]
- Expansion of gondola system should be considered. [2]

Reference Documents:

[1] 2006 Mobility Report

[2] 2007 Mobility Café

[3] 2008 Trail System Master Plan

Transit System Mobility

The transit graphics depict existing Summer and Winter transit routes and stops. A 500 foot walking distance is also depicted for each transit stop.

On the graphic, please mark or draw 3 areas that you feel need improved or additional transit service. This may include new areas of service, an increase in existing service, or improvements to transit facilities (shelters, turnouts, etc.). Then, write a brief description of those 3 transit needs and locations in the space provided:

1. ____________________
2. ____________________
3. ____________________

Please Rank the following options, with #1 indicating the *"highest"* priority.

Transit service and/or facilities should be improved and prioritized as follows:

_______ Expand Service (transit goes to additional areas of town)

_______ Increase Existing Service (Increased frequency or more buses on existing routes)

_______ Improve or Add Transit Facilities (shelters and/or turnouts)

Additional Comments:

____

____

____

____

____

____

Parking Management

Encourage alternative transportation and improve pedestrian mobility by developing a comprehensive parking management strategy. (General Plan Goal M.6.)

Parking Management Objectives:

- Reduce the amount of land dedicated to surface parking lots through flexible and efficient parking strategies
- Strategically locate public parking facilities
- Conduct a thorough review of parking needs
- Improve funding and implementation of parking management strategies

Parking Management Strategies:

- Further parking management strategies, including shared-parking, in lieu fees, off-site parking, and on-street parking
- Encourage "park once" concepts
- Provide tour bus parking
- Link parking, transit, and other modes
- Encourage use of Park N' Ride facility in conjunction with transit
- Discourage "strip commercial" type of development with surface parking
- Include bicycle parking standards as part of Municipal Code parking code
- Update Municipal Code parking standards

Parking Management

What the Community Has Said

- Inadequate parking in the North Village, Old Mammoth Road, and Main Street. [1]
- Convenient on-street parking for businesses is not available. [1]
- No overnight public parking available. [1]
- Inadequate ski area parking. [1]
- Inadequate trailhead parking. [1,3]
- Park n' Ride lot is underutilized. [1]
- Provide additional parking for snowmobilers at Shady Rest. [3]
- Parking garage construction is very expensive. [1]

Reference Documents:
[1] 2006 Mobility Report
[2] 2007 Mobility Café
[3] 2008 Trail System Master Plan

Parking Management

The parking graphic depicts existing parking areas and planned & recommended parking areas, including potential parking structures, surface lots, and trailhead or staging areas for recreation access. A 500 and 1000 foot walking distance is also depicted.

On the graphic, please mark or draw 3 areas that you feel need improved or additional parking. This may include parking structures, surface lots, and trailhead parking or staging. Then, write a brief description of those 3 parking needs and locations in the space provided:

1. ____
2. ____
3. ____

Please Rank the following options, starting with #1 indicating the "*highest*" priority.

Parking management and/or additional parking should be prioritized as follows in the Districts below:

______ North Village District

______ Main Street District

______ Old Mammoth Road Commercial District

______ Other ________________

Through which strategies do you feel parking can be better managed in Mammoth Lakes? Rank the following:

______ Additional On-Street Parking

______ Shared Parking Facilities and Agreements

______ Park N' Ride Facilities Coordinated with Transit

______ Other ________________

Additional Comments:

____
____
____
____
____

In-Town Gondola (Conceptual)

*Reduce automobile trips by promoting and facilitating: walking, bicycling, local and regional transit, innovative parking management, **gondolas and trams**, employer-based trip reduction programs, alternate work schedules, telecommuting, ride-share programs, and cross-country skiing and snowshoeing. (General Plan Policy M.3.B.)*

In-Town Gondola Objectives:

- Alternative transportation option serving both residents and guests
- Enclosed gondola cars are “all-weather” and can move people and their belongings (strollers, recreation equipment, etc.)
- Move riders to/from major activity areas in town, including recreation, shopping, employment, and other locations
- Reduce automobile traffic and vehicle miles traveled
- Reduce parking demand at ski area portals and other locations in-town

In-Town Gondola Strategies:

- Could potentially construct in phases with available funding
- Gondola extension from the North Village to Main Street, Old Mammoth Road, Meridian, and Eagle Lodge area
- Strategically located gondola stations linked with parking and transit
- Serve workforce neighborhoods

In-Town Gondola (Conceptual)

The gondola graphic is a conceptual drawing of an in-town gondola route that could move riders from town to the ski area and other locations. A gondola could extend into town from the existing Village Gondola, as well as provide a connection to the existing ski lifts at Eagle Lodge.

Do you think that an in-town gondola system would benefit the community? Why or why not?

____

____

The graphic currently shows the following conceptual gondola route, which could be constructed in 3 phases. Please Rank the following segments in terms of phasing priority, with #1 indicating the "highest" priority:

_______ **Main Street** – from the North Village to Old Mammoth Road

_______ **Old Mammoth Road** – from Main Street to Meridian Boulevard

_______ **Meridian Boulevard** – from Eagle Lodge to Old Mammoth Road

On the graphic, please mark or draw any *additional* areas of town that you think may benefit from a gondola connection. Then, write those areas in the space provided:

____

____

Additional Comments:

____

____

____

____

____

Community Safety and Mobility Café #2

Town of Mammoth Lakes

Mobility Plan

July 17, 2009

Street Connectivity, Traffic Congestion, and Emergency Response

Maintain and improve safe and efficient movement of people, traffic, and goods in a manner consistent with the feet first initiative. (General Plan Goal M.7.)

Street Connectivity, Traffic Congestion, and Emergency Response Objectives:

- Locate future streets to create flexibility of movement and provide multiple access routes to improve access for emergency, delivery, service, public and private vehicles
- Provide an interconnected street network that disperses traffic, reduces connection and improves emergency access
- Create a functional hierarchy of arterial, collector, and local streets and rights-of-way including mid-block connectors
- Maintain a Level of Service D or better at intersections along arterial and collector roads
- Implement “Complete Streets” concepts to design and construct streets that serve all users, including vehicles, pedestrians, bicyclists, and transit

Street Connectivity, Traffic Congestion, and Emergency Response Strategies:

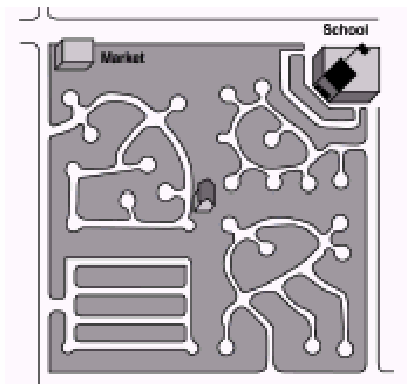
- Plan new and/or reroute existing streets and circulation facilities where required by new development to achieve circulation objectives
- Development shall dedicate, design, and construct internal and adjacent streets, sidewalks and trails to Town Standards
- Improve substandard streets to Town Standards
- Annually review and update the Town’s Capital Improvement Program
- Require all development to construct improvements and/or pay traffic impact fees to adequately mitigate identified impacts

Street Connectivity, Traffic Congestion, and Emergency Response

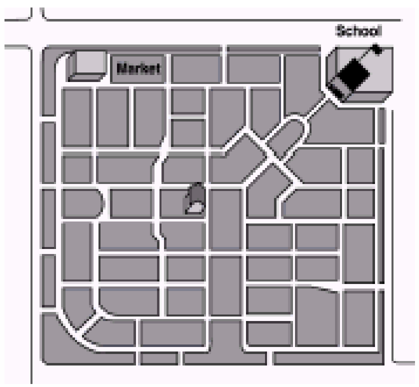
A connected street network that is comprised of a grid system of compact blocks creates multiple routes and access opportunities for drivers, pedestrians, bicyclists, and deliveries. This not only can improve emergency response abilities, but also helps to disperse traffic and reduce congestion.

The figures below illustrate the differences between a suburban "sprawl" style street network and a more traditional grid-based street network.

Figure 1

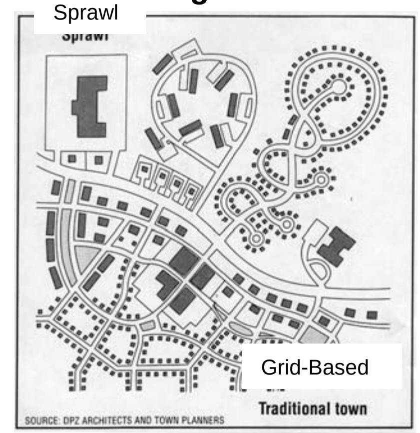


"Sprawl" Style Street Network

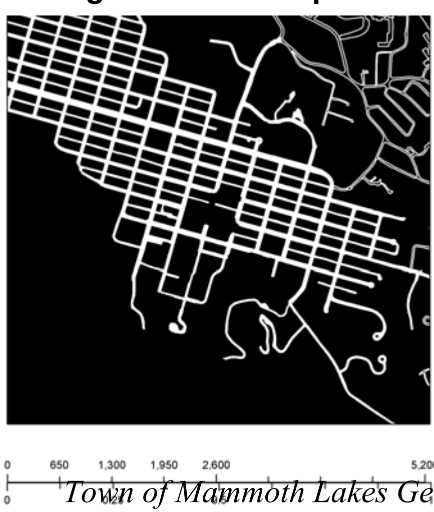


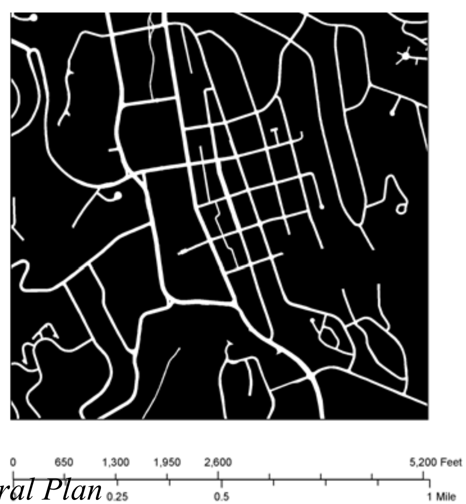
Grid-Based Street Network

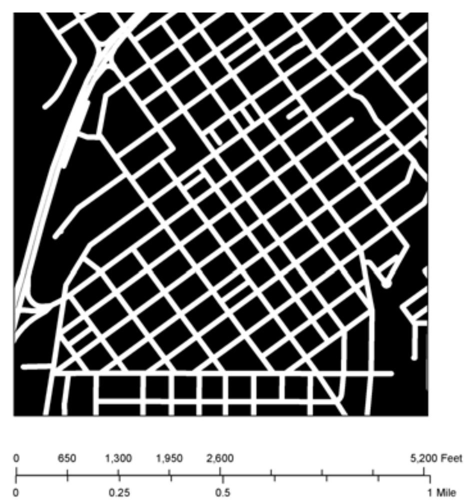
Figure 2

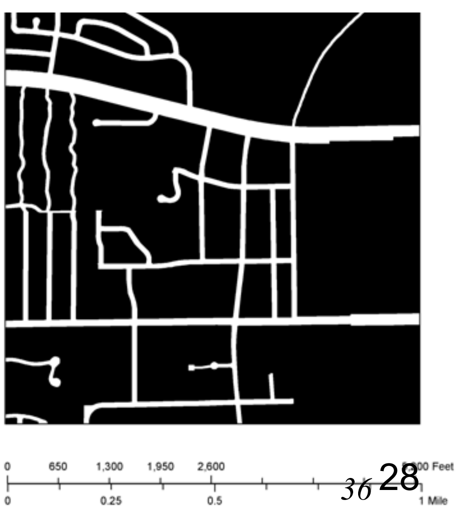


The figures below represent grid-based street networks vs. Mammoth Lakes' street network.


Downtown Aspen


Downtown Breckenridge


San Luis Obispo


Mammoth Lakes

Street Connectivity, Traffic Congestion, and Emergency Response

What the Community Has Said

- "Superblocks" focus emergency service vehicles, transit, cross-town, neighborhood, business, and service deliveries on only a few streets (especially Old Mammoth Road). [1]
- Streets are not interconnected, which causes circuitous travel. [1]
- Old Mammoth Road, Main Street, and Minaret through the North Village is too congested. [1,2, 3]
- Emergency access is limited by: narrow roadways, tight turning radii, and blind-spots created b snow berms. [1]
- Too many driveways (curbcuts) reduces snow storage, impedes through traffic, and creates pedestrian conflicts. [1]
- Vehicle and pedestrian conflicts are common in: North Village, Main Street, Old Mammoth Road, Sierra Park Road. [1]
- Signage and wayfinding should be improved. [1,3]
- Speeding in neighborhoods and other in-town locations should be addressed. [1]
- Traffic Calming in neighborhoods should be provided. [1]
- Unpaved and substandard roadways are a safety issue. [1]

Reference Documents:

[1] 2006 Mobility Report

[2] 2007 Mobility Café

[3] 2008 Trail System Master Plan

Street Connectivity, Traffic Congestion, and Emergency Response

The street connectivity, traffic congestion, and emergency response graphic depicts streets and intersections in Mammoth Lakes that the community has previously described as "congested."

On the graphic, please mark or draw 3 locations (if any) that you feel are also congested, including intersections or streets. Then, name those 3 locations in the space provided:

1. ______________________________
2. ______________________________
3. ______________________________

Please answer the following questions about traffic and congestion in Mammoth Lakes:

In general, traffic and congestion in Mammoth is:

_______ Acceptable

_______ Somewhat Acceptable

_______ Not Acceptable

_______ Not Sure/Don't Know

On a "Holiday" or "Event" weekend, traffic and congestion is:

_______ Acceptable

_______ Somewhat Acceptable

_______ Not Acceptable

_______ Not Sure/Don't Know

Do you feel that traffic and congestion in Mammoth Lakes is:

_______ A Major Problem

_______ A Moderate Problem

_______ A Minor Problem

_______ Not a Problem

_______ Not Sure/Don't Know

Rank the following streets, with #1 indicating the "most congested."

_______ Main Street (Hwy 203)

_______ Old Mammoth Road

_______ Minaret through North Village

_______ Forest Trail

_______ Sierra Park Road

_______ Other ______________________

Additional Comments:

Reducing Impacts Through Alternative Transportation

Emphasize feet first, public transportation second, and car last in planning the community transportation system while still meeting Level of Service standards. (General Plan Goal M.3.)

Alternative Transportation Objectives:

- Reduce automobile trips and vehicle miles traveled by encouraging the use of alternative transportation
- Implement land use planning strategies that reinforce feet first concepts to improve mobility
- Encourage visitors to leave their vehicles at their lodging by developing pedestrian, bicycle, transit, and parking strategies
- Encourage “park-once” development concepts

Alternative Transportation Strategies:

- Implement compact pedestrian-oriented development ; clustered and infill development; mixed uses and neighborhood serving commercial mixed-use centers
- Encourage travel by alternate modes by providing enhanced multi-modal infrastructure and safety features
- Create Level of Service guidelines for pedestrian, bicycle, and transit modes
- Implement “Complete Streets” concepts to design and construct streets that serve all users, including vehicles, pedestrians, bicyclists, and transit
- Implement Travel Demand Management measures

Alternative Transportation and Level of Service - Balancing Mobility Goals

Level of Service is a measurement used to evaluate the quality of service of a transportation mode, which can refer to safety, convenience, comfort, speed, wait-times, and other indicators.

Please Rank the importance of the following, with #1 indicating the most important:

______ Providing a *Better* Level of Service for *Drivers and Vehicles*

______ Providing a *Better* Level of Service for *Pedestrians*

______ Providing a *Better* Level of Service for *Transit Riders*

______ Providing a *Better* Level of Service for *Bicyclists*

Please consider the following statement and <u>Fill In the Blank</u> from the list of modes below:

I would accept a *Worse* Level of Service for

_________________ (pick mode)

if it created a *Better* Level of Service for

_________________ (pick mode).

- Vehicles / Drivers
- Pedestrians
- Transit Riders
- Bicyclists
- None of the above (no trade-off)

Please Rank the following transportation issues, from <u>most important to least important</u>, with #1 indicating the most important.

______ Traffic Congestion

______ Insufficient Parking

______ Lack of Pedestrian Facilities (sidewalks, Multi-Use Paths)

______ Lack of Bicycle Facilities (bike racks, bike lanes/routes)

______ Lack of Transit Shelters

______ Traffic Calming (speeding, cut-through traffic)

______ Other _________________

Additional Comments: ____

____

Traffic Calming – What is it?

Traffic calming is the combination of mainly physical measures that reduce the negative effects of motor vehicle use, alter driver behavior and improve conditions for non-automobile street users. Traffic calming involves changes in street alignment, installation of barriers, and other physical measures to reduce traffic speeds and/or cut-through traffic.

Traffic Calming Goals:

- Increasing the quality of life for residents and visitors
- Addressing the transportation and safety needs of the community
- Creating safe and attractive streets
- Helping to reduce the negative effects of motor vehicles on the environment (e.g., pollution, sprawl)
- Promoting pedestrian, bicycle, and transit use

Traffic Calming Objectives:

- Reducing motor vehicle speeds
- Reducing collision frequency and severity
- Increasing safety for non-motorized users
- Reducing the need for police enforcement
- Enhancing the street environment (e.g., streetscaping)
- Encouraging water infiltration into the ground
- Increasing access for all modes of transportation
- Reducing cut-through motor vehicle traffic

Traffic Calming Strategies:

Some popular traffic calming strategies used in other communities, such as speed bumps and raised center medians, are not appropriate for Mammoth Lakes because they interfere with snow removal operations.

However, other strategies can and have been used in Mammoth Lakes, such as radar speed signs and parallel parking.

The Town also plans to construct roundabouts at key intersections in Town to help reduce speeds, collisions, and greenhouse gas emissions.

Traffic Calming

The traffic calming graphic depicts areas that the community has previously described as needing "traffic calming," including speeding issues, potential cut-through traffic, and general conflict areas.

On the graphic, please mark or draw 3 areas that you feel need improved or additional traffic calming. Then, write a brief description of those 3 traffic calming needs and locations in the space provided:

1. ______________________________
2. ______________________________
3. ______________________________

Please answer the following questions about traffic calming:

In general, which area of town do you think has the most "conflicts" between vehicles and pedestrians or bicyclists in Mammoth Lakes? (*Mark One*) :

- _______ Main Street (Hwy 203)
- _______ Old Mammoth Road (Commercial Area)
- _______ Old Mammoth Road (South of Commercial Area)
- _______ North Village
- _______ Sierra Valley Sites
- _______ Near the Schools / Hospital
- _______ Forest Trail
- _______ Other ______________________

In general, do you think speeding in Mammoth Lakes is:

- _______ A Major Problem
- _______ A Moderate Problem
- _______ A Minor Problem
- _______ Not a Problem
- _______ Not Sure/Don't Know

In general, if you had to choose between a traffic signal, stop signs or a roundabout at an intersection, which would you choose?

- _______ Roundabouts
- _______ Traffic Signals
- _______ Stop Signs

Additional Comments:

Snow Management

Improve snow and ice management. (General Plan Goal M.9.) The Town's existing snow removal policy establishes priorities for snow removal based on public safety as the primary concern.

Some sidewalks and Multi-Use paths are groomed, while others are fully cleared of snow during the winter.

How Much Does it Cost to Groom or Clear a Sidewalk/MUP During the Winter?

- *Approximately $2,500 per 0.25 mile per winter* *(does not include trucking snow if needed)*

Who Pays for It?

- *Town / Community*

  Some sidewalks and paths are cleared or groomed using tax dollars collected from the community or visitors. In some cases, the State Gas Tax will reimburse up to 50% of this cost.

- *Benefit Assessment Districts (BADs)*

  Some sidewalks and paths are cleared or groomed as part of a Benefit Assessment District. A BAD is an area of town that pays a special assessment for public improvements and maintenance. A BAD is voted on by the property owners who would receive the benefits paid for by the assessment.

  For example, Old Mammoth Road and the North Village are part of BADs and property owners in these locations pay special assessments for snow removal and other maintenance.

Snow Management

What the Community Has Said

- High-use pedestrian areas should be better maintained.[1]
- Existing multi-use paths (MUPs) should be cleared/groomed.[3]
- Bus stops and sidewalks leading to them are not cleared/groomed.[1]
- Daytime snow hauling worsens congestion.[1]
- Insufficient setback area and right-of-way for snow storage on roads.[1]
- Snow berms limit visibility and sight distance.[1]
- Parking lot safety and efficiency is compromised by snow and ice.[1]

Reference Documents:

[1] 2006 Mobility Report

[2] 2007 Mobility Café

[3] 2008 Trail System Master Plan

Snow Management

The Town's existing snow removal policy establishes priorities for snow removal based on public safety as the primary concern.

Please review the following current snow removal priorities. If you feel that the order of some snow removal priorities should be reconsidered, please renumber the priorities in the last column of the table.

Existing Snow Removal Priority	Snow Removal Operation	How Would You Prioritize?
1	Support for Emergency Agency Response	
2	Main Arterials and Bus Routes	
3	Secondary Residential Streets	
4	Cul-de-sacs	
5	Scenic Loop	
6	Park N' Ride Lot	
7	Sidewalks and Multi-Use Paths	
8	Bus Shelters	
9	Traffic Signals and Pedestrian Beacons	

If you had to choose between the following *2 options* regarding the construction of sidewalks and snow removal, which would you choose?

_____ The Town only builds a sidewalk that it can afford to clear of snow (i.e. no new snow removal money, no new sidewalk)

_____ The Town builds a sidewalk even if it can *not* afford to clear it of snow (i.e. sidewalk is potentially usable only during non-winter months)

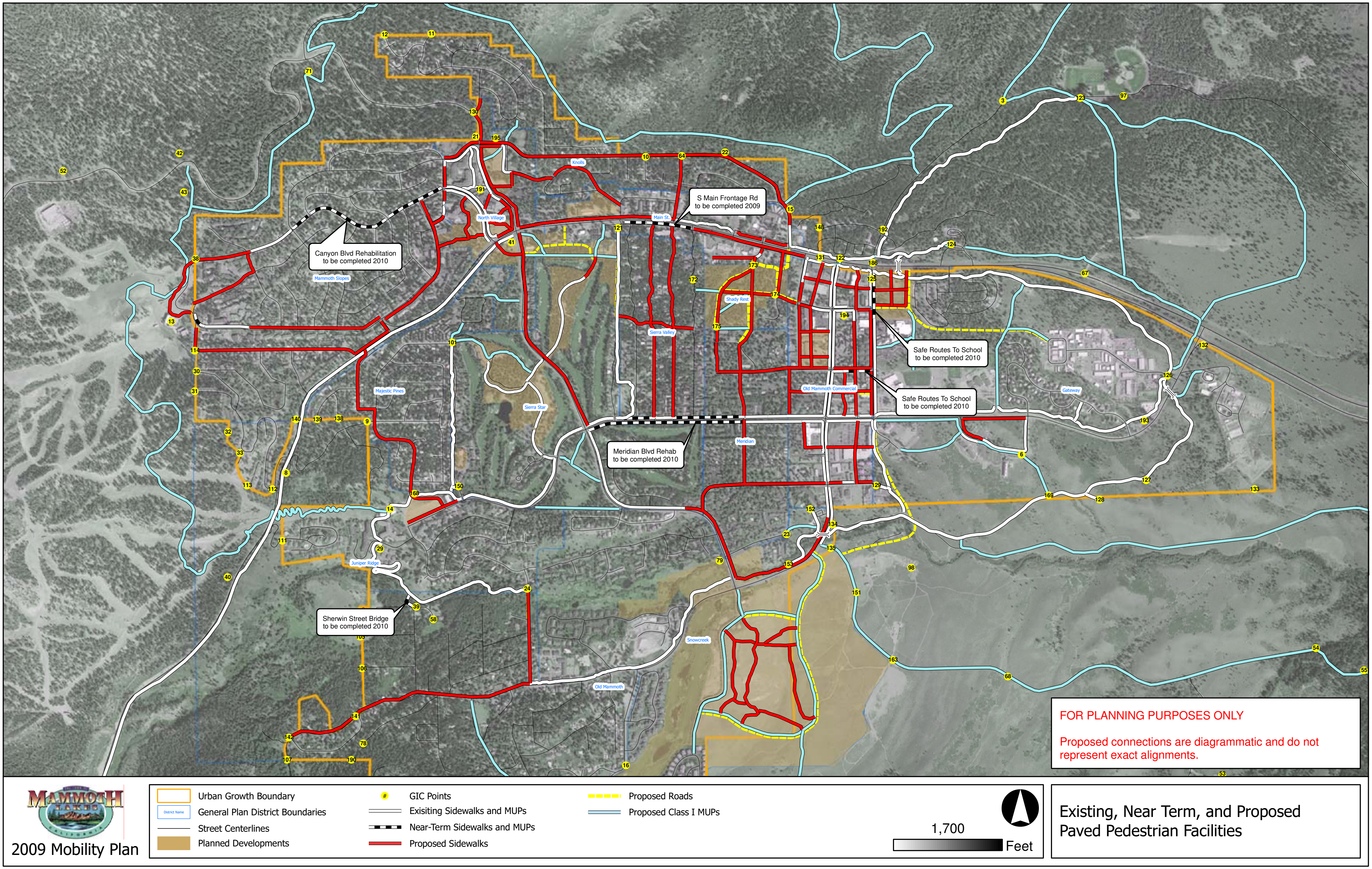
The snow management graphic depicts sidewalks and Multi-Use Paths (MUPs) that are cleared or groomed during the winter. Existing Business Assessment Districts are also shown.

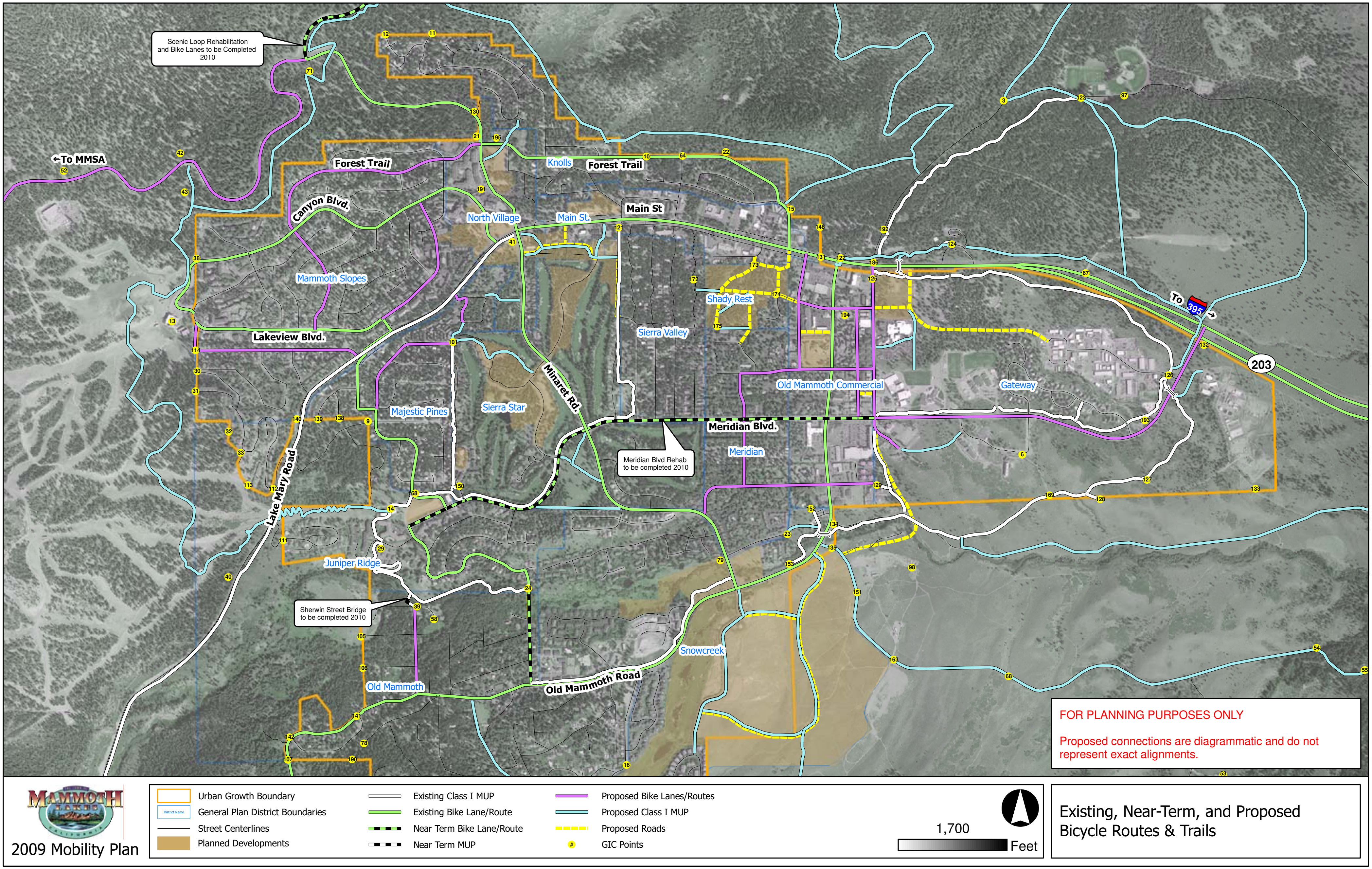
On the graphic, please mark or draw 3 specific sidewalks or Multi-Use Paths (if any) that you feel should be cleared/groomed in winter that currently are not . Then, name those 3 locations in the space provided:

1. ____

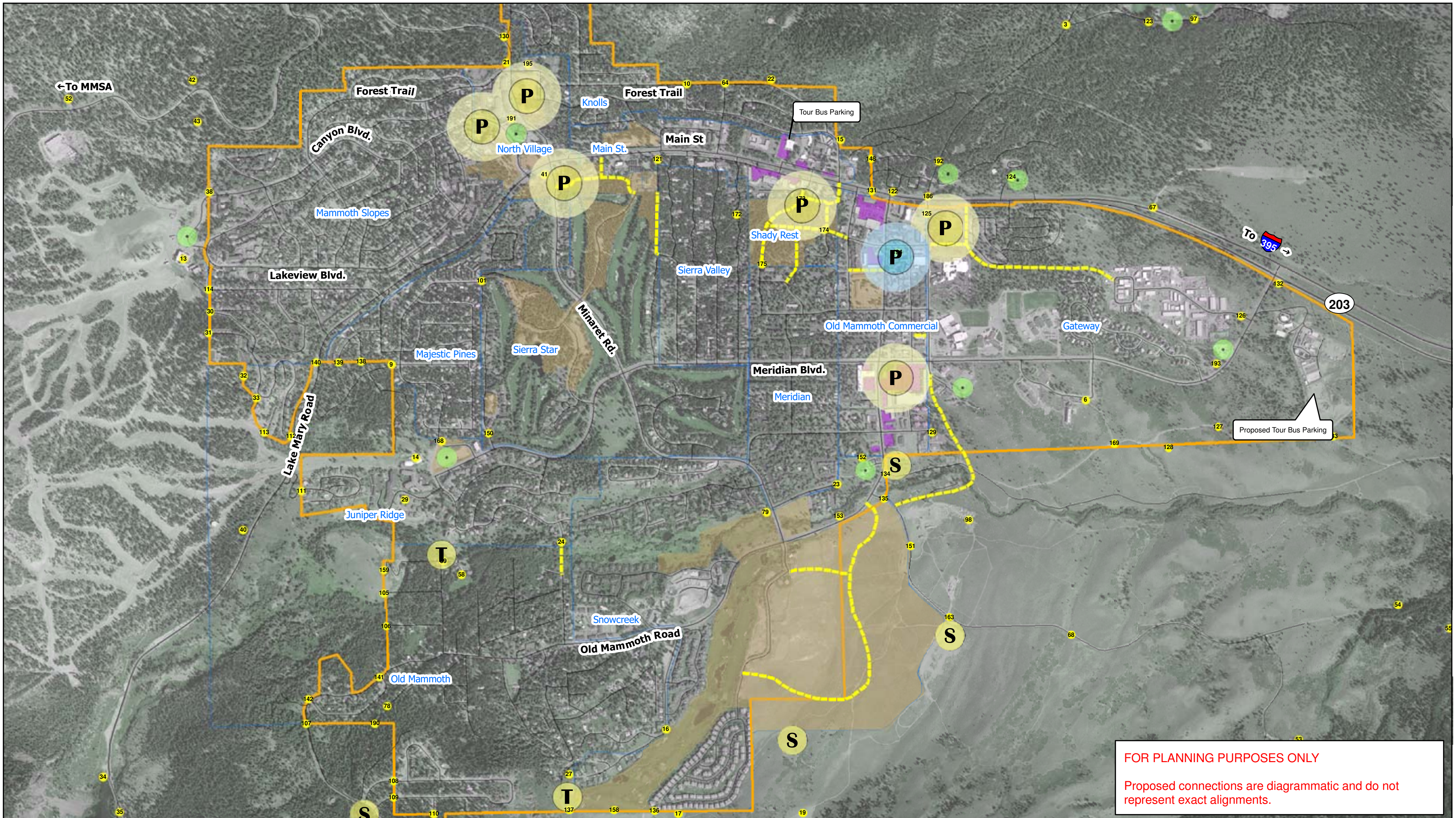
2. ____

3. ____


Canyon Blvd Rehabilitation
to be completed 2010
S Main Frontage Rd
to be completed 2009
Safe Routes To School
to be completed 2010
Safe Routes To School
to be completed 2010
Meridian Blvd Rehab
to be completed 2010
Sherwin Street Bridge
to be completed 2010
FOR PLANNING PURPOSES ONLY
Proposed connections are diagrammatic and do not represent exact alignments.
2009 Mobility Plan
Urban Growth Boundary
General Plan District Boundaries
Street Centerlines
Planned Developments
GIC Points
Exisiting Sidewalks and MUPs
Near-Term Sidewalks and MUPs
Proposed Sidewalks
Proposed Roads
Proposed Class I MUPs
1,700
Feet
Existing, Near Term, and Proposed
Paved Pedestrian Facilities



Existing, Near-Term, and Proposed Bicycle Routes & Trails

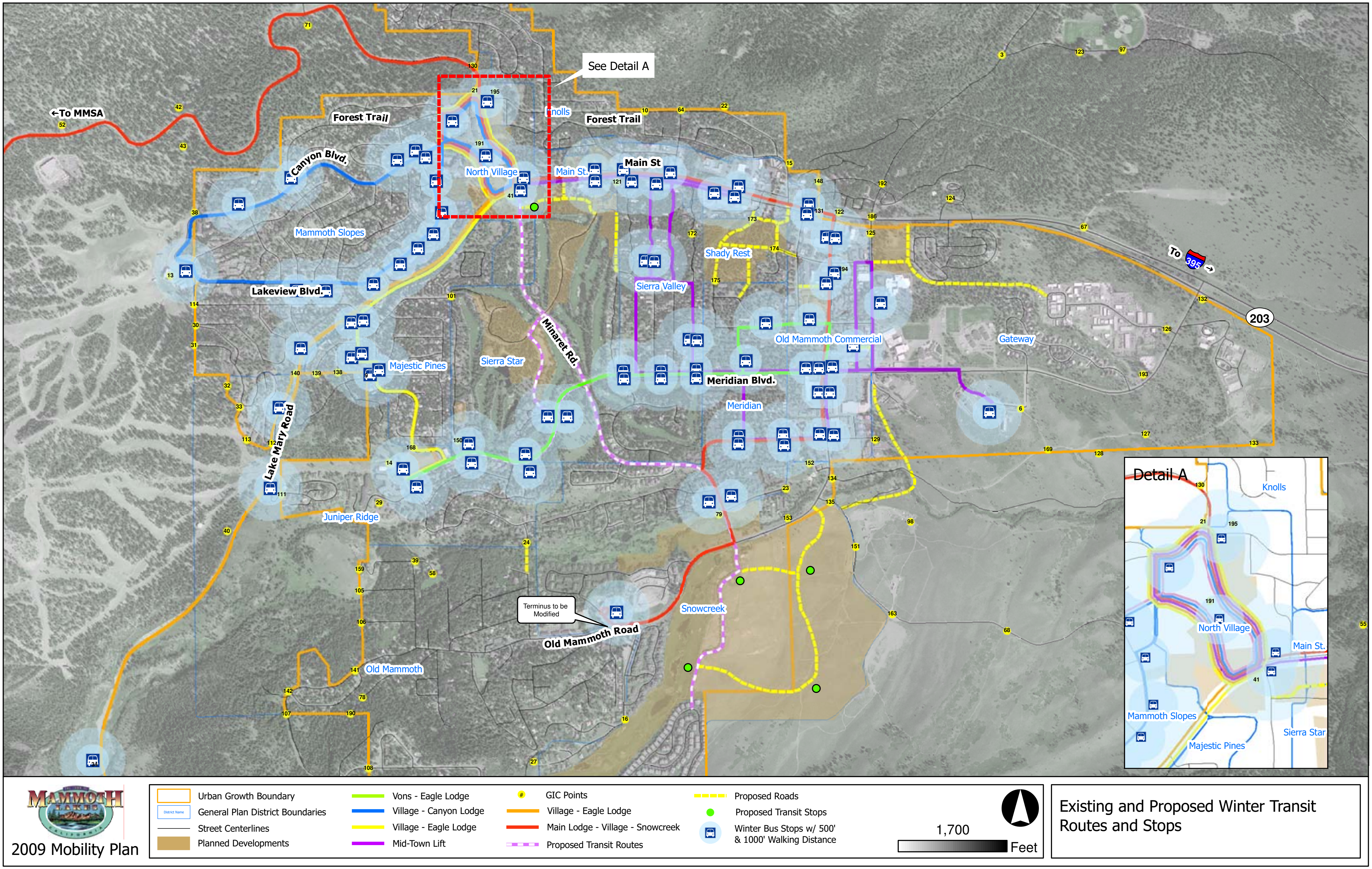


2009 Mobility Plan

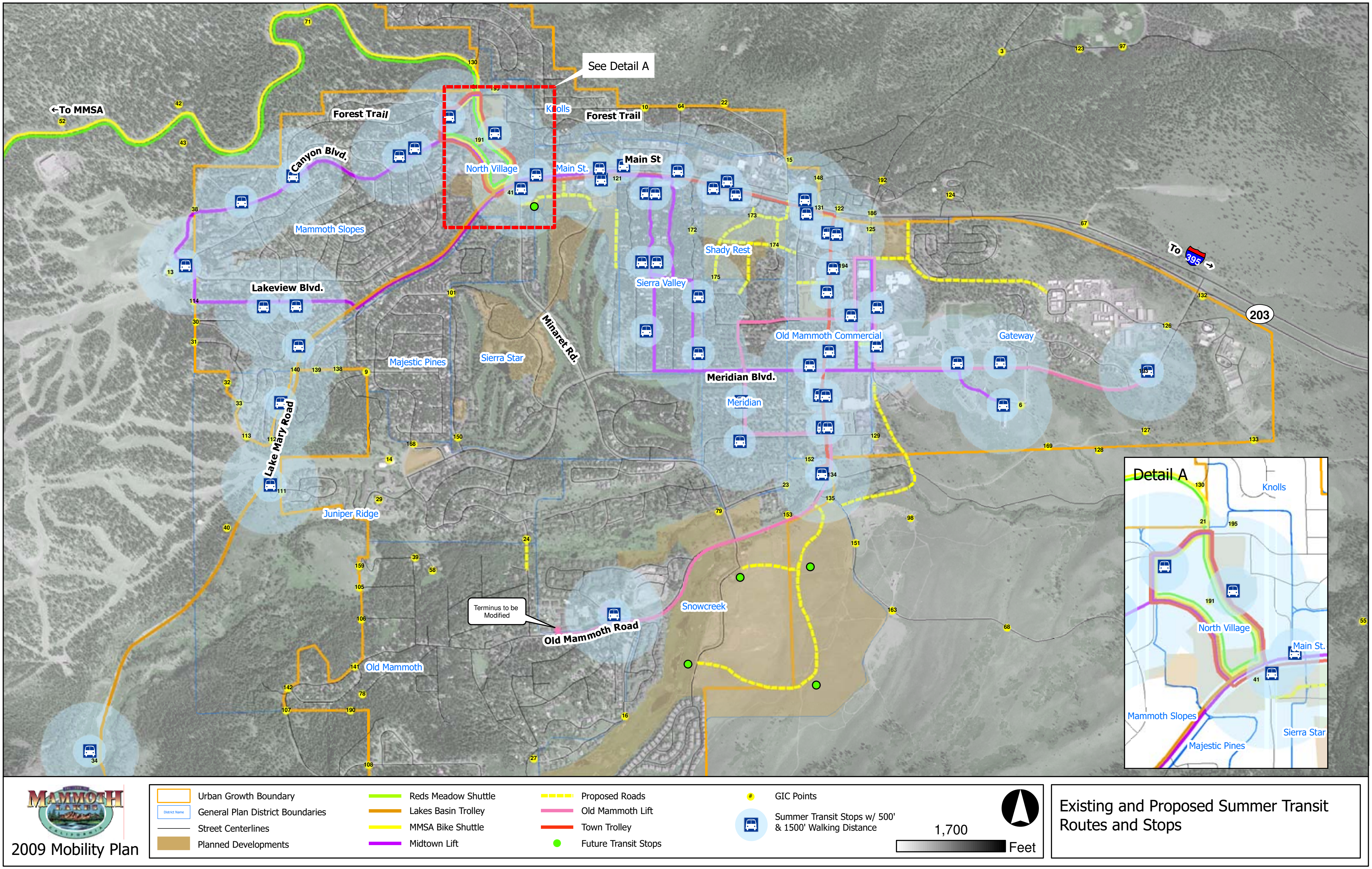
- Urban Growth Boundary
- General Plan District Boundaries
- Planned Developments
- Local Streets
- P — Proposed Commercial Parking (50+ Spaces) w/ 500' & 1000' Walking Distance
- S — Proposed Staging Area Parking (5-50 Spaces)
- T — Proposed Trailhead Parking (1-5 Spaces)
- P — Existing Parking & Ride Lot w/ 500' & 1000' Walking Distance
- Existing Portal/Recreational Facility
- Existing Commercial Area Parking
- Proposed Roads
- GIC Points

1,700 Feet

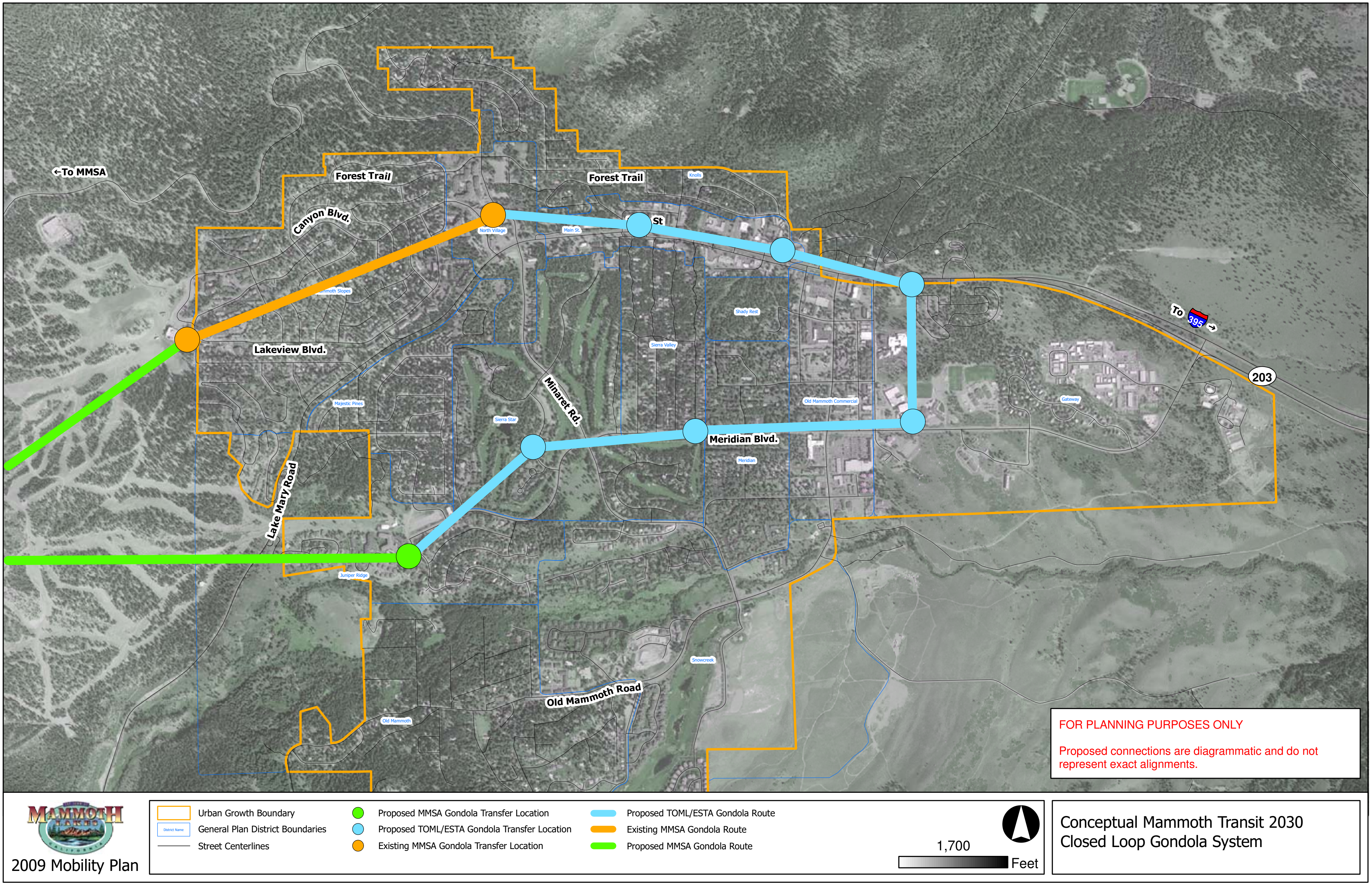
Existing and Proposed Parking Facilities

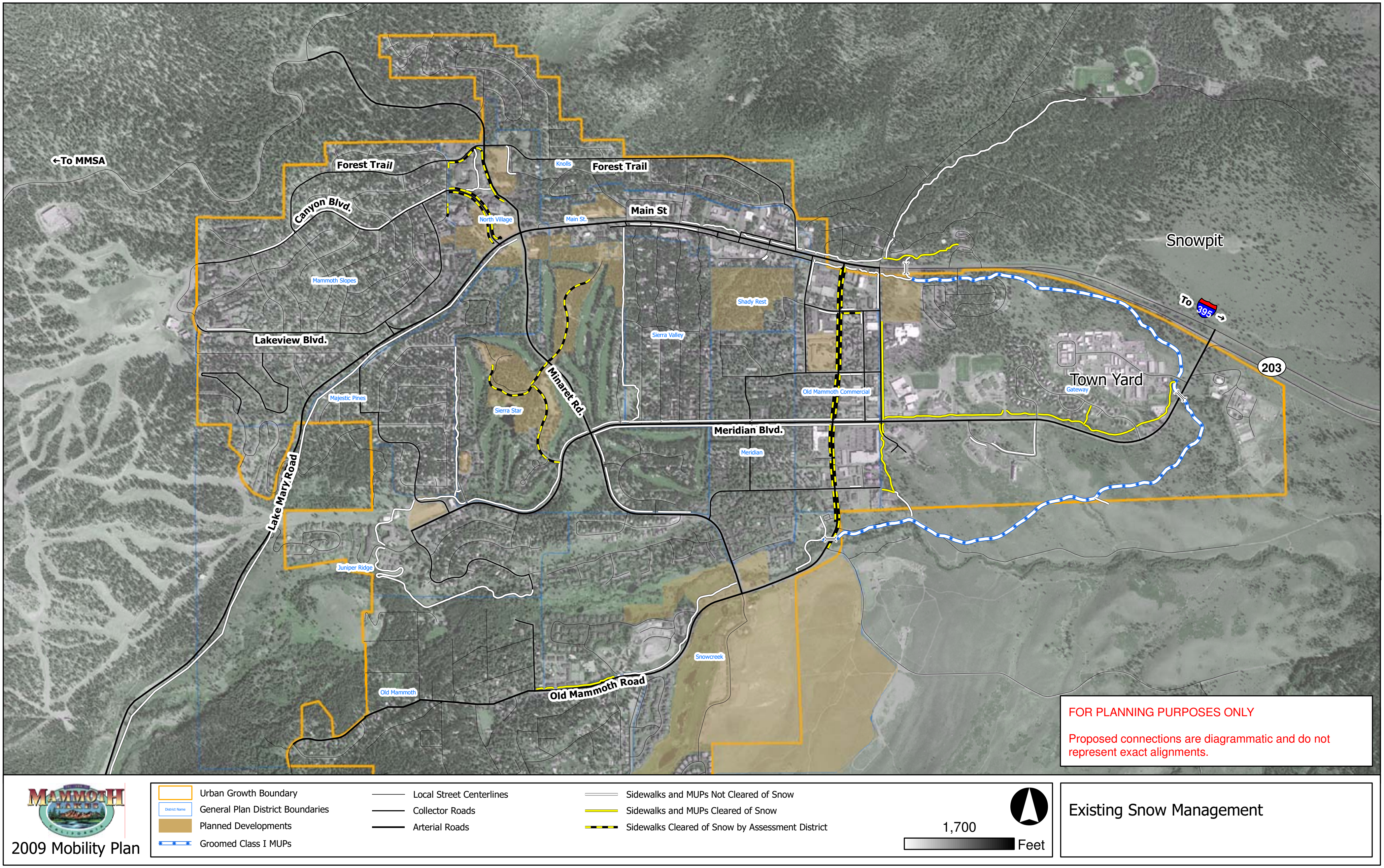


See Detail A
←To MMSA
Forest Trail
Forest Trail
Canyon Blvd.
Main St
Main St.
North Village
Knolls
Mammoth Slopes
Shady Rest
Sierra Valley
Lakeview Blvd.
Minaret Rd.
Old Mammoth Commercial
Gateway
Sierra Star
Majestic Pines
Meridian Blvd.
Meridian
Lake Mary Road
Juniper Ridge
Snowcreek
Terminus to be Modified
Old Mammoth Road
Old Mammoth
To 395
203
Detail A
Knolls
North Village
Main St.
Mammoth Slopes
Sierra Star
Majestic Pines
2009 Mobility Plan
Urban Growth Boundary
General Plan District Boundaries
Street Centerlines
Planned Developments
Vons - Eagle Lodge
Village - Canyon Lodge
Village - Eagle Lodge
Mid-Town Lift
GIC Points
Village - Eagle Lodge
Main Lodge - Village - Snowcreek
Proposed Transit Routes
Proposed Roads
Proposed Transit Stops
Winter Bus Stops w/ 500' & 1000' Walking Distance
1,700
Feet
Existing and Proposed Winter Transit Routes and Stops

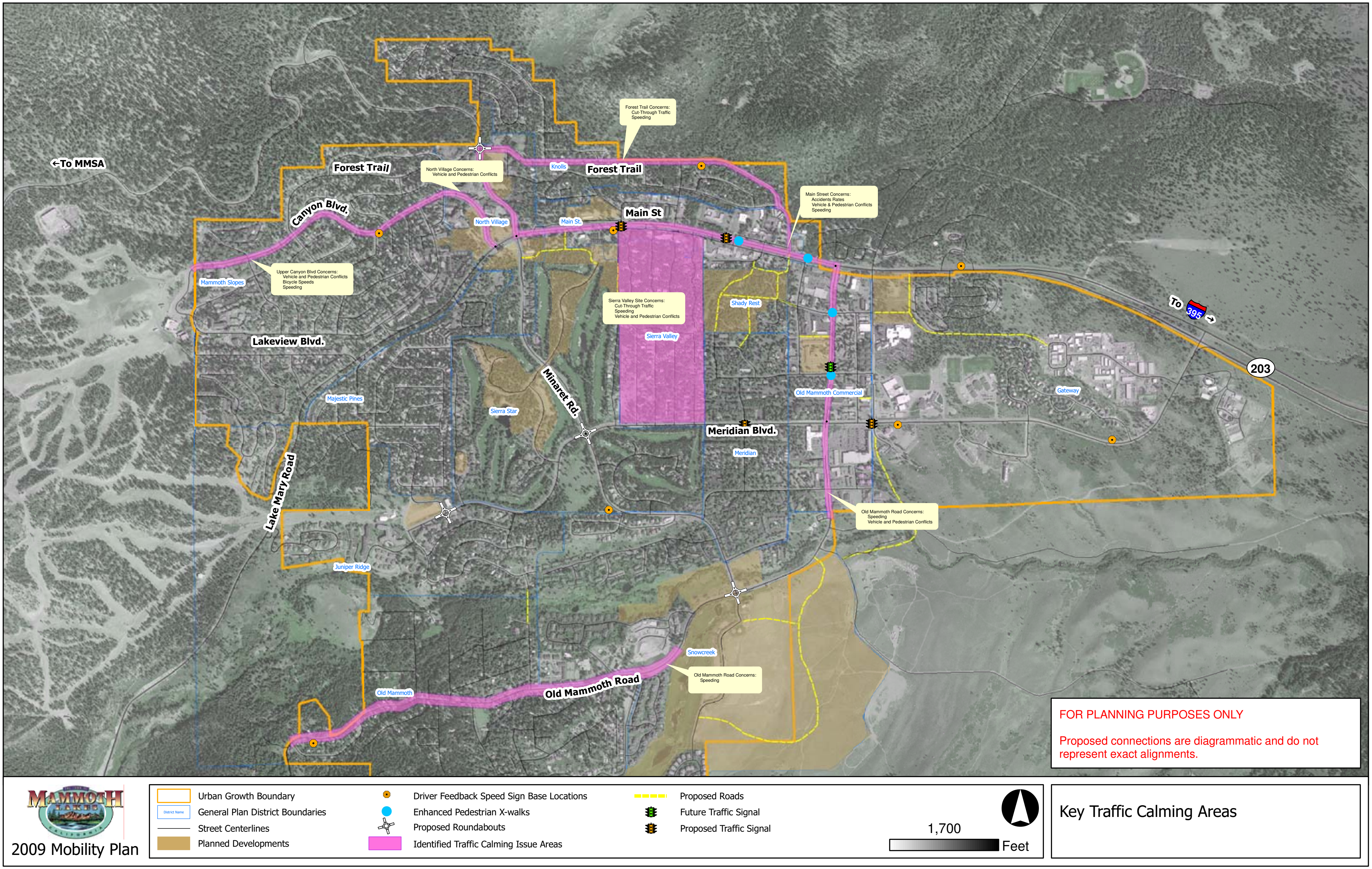


Existing and Proposed Summer Transit Routes and Stops

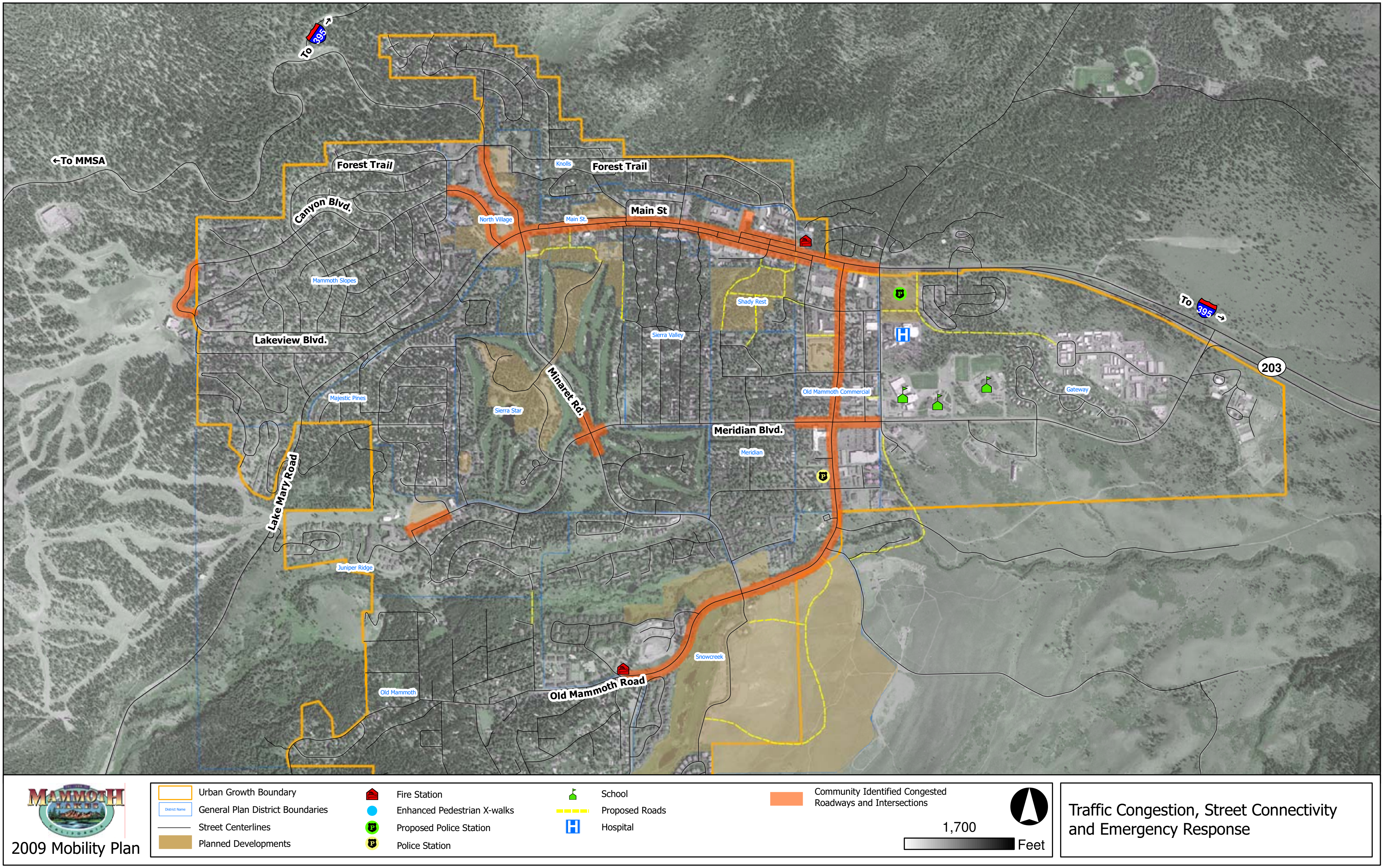

←To MMSA
Forest Trail
Forest Trail
Canyon Blvd.
St
North Village
Main St.
Knolls
Mammoth Slopes
Shady Rest
Lakeview Blvd.
Sierra Valley
Minaret Rd.
Majestic Pines
Sierra Star
Old Mammoth Commercial
Gateway
Meridian Blvd.
Meridian
Lake Mary Road
Juniper Ridge
To 395
203
Snowcreek
Old Mammoth Road
Old Mammoth
FOR PLANNING PURPOSES ONLY
Proposed connections are diagrammatic and do not represent exact alignments.
Mammoth Lakes California
2009 Mobility Plan
Urban Growth Boundary
General Plan District Boundaries
Street Centerlines
Proposed MMSA Gondola Transfer Location
Proposed TOML/ESTA Gondola Transfer Location
Existing MMSA Gondola Transfer Location
Proposed TOML/ESTA Gondola Route
Existing MMSA Gondola Route
Proposed MMSA Gondola Route
1,700
Feet
Conceptual Mammoth Transit 2030
Closed Loop Gondola System



←To MMSA
Forest Trail
Forest Trail
Knolls
Canyon Blvd.
North Village
Main St.
Main St
Snowpit
Mammoth Slopes
Shady Rest
To 395
203
Lakeview Blvd.
Sierra Valley
Town Yard
Gateway
Minaret Rd.
Majestic Pines
Old Mammoth Commercial
Sierra Star
Meridian Blvd.
Meridian
Lake Mary Road
Juniper Ridge
Snowcreek
Old Mammoth
Old Mammoth Road
FOR PLANNING PURPOSES ONLY
Proposed connections are diagrammatic and do not represent exact alignments.
2009 Mobility Plan
Urban Growth Boundary
General Plan District Boundaries
Planned Developments
Groomed Class I MUPs
Local Street Centerlines
Collector Roads
Arterial Roads
Sidewalks and MUPs Not Cleared of Snow
Sidewalks and MUPs Cleared of Snow
Sidewalks Cleared of Snow by Assessment District
1,700
Feet
Existing Snow Management



←To MMSA
Forest Trail
Forest Trail
Canyon Blvd.
Main St
Knolls
North Village
Main St.
Forest Trail Concerns:
Cut-Through Traffic
Speeding
North Village Concerns:
Vehicle and Pedestrian Conflicts
Main Street Concerns:
Accidents Rates
Vehicle & Pedestrian Conflicts
Speeding
Upper Canyon Blvd Concerns:
Vehicle and Pedestrian Conflicts
Bicycle Speeds
Speeding
Sierra Valley Site Concerns:
Cut-Through Traffic
Speeding
Vehicle and Pedestrian Conflicts
Mammoth Slopes
Shady Rest
Sierra Valley
Lakeview Blvd.
To 395 →
203
Minaret Rd.
Majestic Pines
Sierra Star
Old Mammoth Commercial
Gateway
Meridian Blvd.
Meridian
Lake Mary Road
Old Mammoth Road Concerns:
Speeding
Vehicle and Pedestrian Conflicts
Juniper Ridge
Snowcreek
Old Mammoth Road Concerns:
Speeding
Old Mammoth
Old Mammoth Road
FOR PLANNING PURPOSES ONLY
Proposed connections are diagrammatic and do not represent exact alignments.
2009 Mobility Plan
Urban Growth Boundary
General Plan District Boundaries
Street Centerlines
Planned Developments
Driver Feedback Speed Sign Base Locations
Enhanced Pedestrian X-walks
Proposed Roundabouts
Identified Traffic Calming Issue Areas
Proposed Roads
Future Traffic Signal
Proposed Traffic Signal
1,700
Feet
Key Traffic Calming Areas



To 395
←To MMSA
Forest Trail
Forest Trail
Canyon Blvd.
Knolls
North Village
Main St.
Main St
Mammoth Slopes
Shady Rest
Sierra Valley
Lakeview Blvd.
To 395
203
Minaret Rd.
Majestic Pines
Sierra Star
Old Mammoth Commercial
Gateway
Meridian Blvd.
Meridian
Lake Mary Road
Juniper Ridge
Snowcreek
Old Mammoth
Old Mammoth Road
2009 Mobility Plan
Urban Growth Boundary
General Plan District Boundaries
Street Centerlines
Planned Developments
Fire Station
Enhanced Pedestrian X-walks
Proposed Police Station
Police Station
School
Proposed Roads
Hospital
Community Identified Congested Roadways and Intersections
1,700
Feet
Traffic Congestion, Street Connectivity and Emergency Response

Mobility Plan Trolley Tour
11:00 AM and 2:00 PM
JULY 18, 2009

Tour Description: Existing, Planned and Future Capital Projects Tour of the Commercial Districts (North Old Mammoth Road, Main Street, and North Village)

Trolley(s) parks in loading zone in front of movie theater and Elegant Kitchen and Bath in the Minaret Village Mall upper parking lot.

Tour should last approximately 1 hour to 1.5 hours.

Peter/Hayes: Please ask tour participants to sign in on sign in sheet.

Tour Route, Schedule, and Discussion Topics

1. **Leave Minaret Village Mall parking lot at approximately 11:10 to 11:15 AM (or 2:10 to 2:15 PM).**

2. **Drive East (right) onto Meridian Boulevard and then Turn North (left) onto Sierra Park Road.**
   - Observe MUP and sidewalk connection at northeast corner of Sierra Park Road and Meridian Blvd. (good examples of MUP facility and standard sidewalk)
   - Talk about future Safe Routes to School Projects and the Town's previous success in getting grants.

3. **Turn West (left) on Tavern Road; pull into Town Park n' Ride Lot and STOP.**
   - Continue discussion about Safe Routes to School Projects
   - Ask everyone to *exit the trolley* and walk up to Transit Shelter on OMR
   - Discuss Park n' Ride facility and Transit Shelter:
     - Park n' Ride lot seems to be under-utilized although well-connected to transit. How can TOML increase use?
     - Is the park n' ride lot in the right location? Should there be other park n' ride locations?
     - Would you use transit more if we had shelters like this at more stops?
   - *Re-board trolley.*

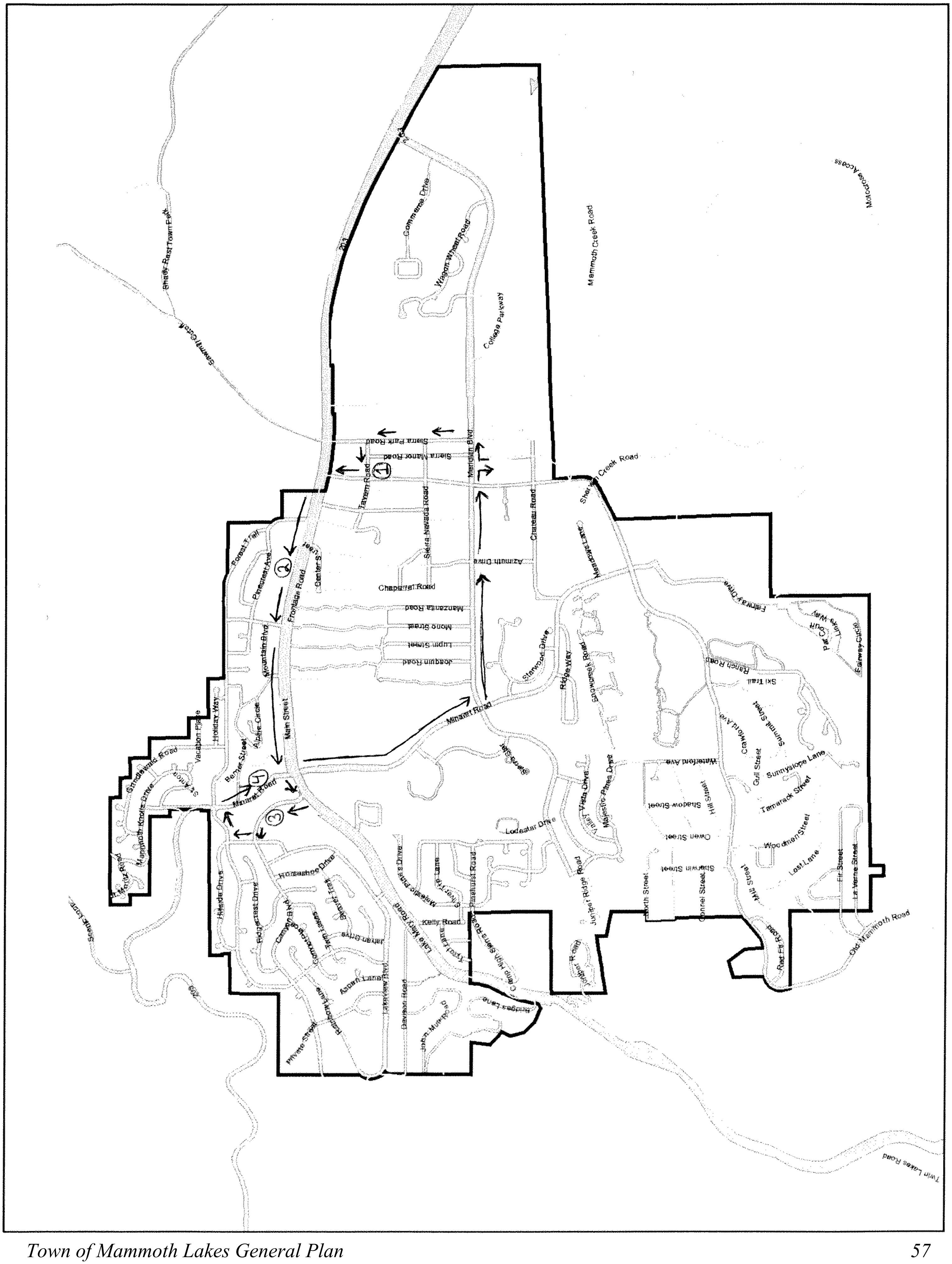
4. **Exit the Park n' Ride Lot and turn North (right) on Old Mammoth Road, Turn West (left) on Main Street and Turn into Post Office and STOP.**
   - While driving, begin to discuss future traffic signal projects
     - Ask group for opinion about traffic signal projects
   - Ask group to *exit the trolley* and walk to the corner near Main Street.
   - Observe lack of transit shelters on the south side of Main street, nor any sidewalks or pedestrian paths leading to transit.

    - Ask group for comment on lack of continuous sidewalks, lack of access to transit stops.
- Observe North and South Frontage Roads
    - Ask participants how they would feel about the frontage roads being one-way?
    - Did they take part in the Main Street 4th of July events on Main Street when the south frontage road was one-way? What did they think?
- *Re-board trolley.*

5. **Turn West (right) on Main Street, Turn North (right) on Canyon Blvd and STOP at the bus turnout in front of Gondola Station**
    - While driving, Observe lack of continuous pedestrian facility on north and south side of Main street.
    - While driving, Observe intersection of Main Street and Minaret.
    - Discuss the proposed North Village Parking Structure
        - Ask participants if they believe a parking structure in the proposed location would be a benefit to the town. How?

6. **Continue North on Canyon Boulevard, Turn North on Hillside (right), Turn East on Forest Trail, Turn South on Minaret and STOP at the bus turnout in front of the Village.**
    - While driving, discuss future roundabout at Forest Trail
        - Ask participants if they believe this is a good location for a roundabout? Do they think it will help reduce traffic congestion.
    - Observe lack of sidewalks on east and west side of Minaret near Whiskey Creek

7. **Continue South on Minaret, Turn East (left) on Meridian, End at Minaret Village Mall**
    - While driving, discuss future roundabout at Meridian and Minaret.
    - While driving, discuss Meridian Boulevard project.



203
Commerce Drive
Wagon Wheel Road
College Parkway
Mammoth Creek Road
Motocross Access
Shady Rest Town Park
Sawmill Cutoff
Sierra Park Road
Sierra Manor Road
Tavern Road
Meridian Blvd
Chateau Road
Sierra Nevada Road
Azimuth Drive
Chaparral Road
Manzanita Road
Mono Street
Lupin Street
Joaquin Road
Frontage Road
Center Street
Forest Trail
Pinecrest Ave
Mountain Blvd
Main Street
Minaret Road
Alpine Circle
Holiday Way
Vacation Place
Berner Street
Grindelwald Road
St Anton
Mammoth Knolls Drive
St. Moritz Road
Sherwin Creek Road
Meadow Lane
Fairway Drive
Fairway Circle
Ranch Road
Ski Trail
Stanwood Drive
Ridge Way
Snowcreek Road
Waterford Ave
Summit Street
Crawford Ave
Gull Street
Sunnyslope Lane
Tamarack Street
Shadow Street
Hill Street
Owen Street
Sherwin Street
Woodmen Street
Lost Lane
Fir Street
La Verne Street
Old Mammoth Road
Majestic Pines Drive
Vista Drive
Lodestar Drive
Juniper Ridge Road
Horseshoe Drive
Kelly Road
Lake Mary Road
Lakeview Blvd
Davison Road
Bridges Lane
Pinehurst Road
Camp High Sierra Road
Ridgecrest Drive
Hillside Drive
Canyon Blvd
Twin Lakes Road

Sign-In Sheet
Community Mobility Plan Open House
July 18, 2009

Name	Organization	Email Address or Other Contact
Sandy Hogan		
Michael O'Kelly		
Jane Audie	—	jande_005@live.com
Bill Estess		live
Marshall Minobe	Mobility Comm	
Bob Pearlman		
Greg & Scott Busche		greg.busche@boeing.com
Janell Owens		janeymay@embarqmail.com
Leigh Gaasch		
Tim Trimble	Falls Tract	TimmTrimble@gmail.com
Jo Bacon		
Brian Murillo		bam_mhp@yahoo.com
Charles Crooks		SanDiegoMale619@yahoo.com
Ann Daran		Daranfamily@earthlink.net

open house 7-18-09

Name	Organization	Email Address or Other Contact
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Tim Mory	ESTA	
John Wentworth	MLTPA	
JOSEPH GRAY	ESTA	
✓ Chris Ricci		hootinany2@yahoo.com
✓ Jenn Mack		jbb311@yahoo.com
Sharon Mertinson		
✓ Diane Eagle	Mam. Times	diane@mammothtimes.com
✓ Patty Schwartzkopf	Self	patty@Qnet.com
Hazel Wittmer	self	
[illegible]		934-5029
MARGIE [illegible]	Self	
[illegible]		
✓ Susy Fontana	Self	Sfontana@cox.net

Open House 7-18-09

Name	Organization	Email Address or Other Contact
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Sign-In Sheet
Community Safety and Mobility Café
July 17, 2009

Name	Organization	Email Address or Other Contact
✓ Brian Picken	TML	Blicken@ci.mammoth-lakes.ca.us
Sandy Hogan		
✓ Mike Schlafmann	FS	mschlafmann@fs.fed.us
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Bill Cockroft		cockroft@mammoth-mtn.com.
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Gary Smith	—	tows@xtctows.com
Peter Bernasconi	TML.	pbernasconi@ci.mammoth-lakes.ca.
Brent Harper	MLFPD	bharper@mammothlakesfire...
Jeremy McGhee	DSES	mcgoose56@gmail.com
John Vereuck		john@parcu.net
Danna Stroud	TOML	

community safety cafe
7-17-09

Name	Organization	Email Address or Other Contact
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RANDY SCHIENLE	MAMMOTH PD	RSCHIENLE@ MAMMOTHLAKESPD.ORG
THOM HELLER	MLFD	THELLER@MAMMOTHLAKESFD.ORG
Tom Daniels		tforestd@yahoo.com
Leigh Gaasch	—	— 934-2443
[illegible]		[illegible]

Multi-modal Cafe
7-16-09

Name	Organization	Email Address or Other Contact
Elizabeth Tenney	M.L. Pl. Comm.	
Rand Rappen		928 606 8166
Jeremy McGhee	Yo Mama (AKA DSES)	mcgoose56@gmail.com
Marshall Minobe	Mobility Comm.	marsh_on_lead@yahoo.com
Gary Small		tours@xtctours.com
Ellie & Gil Somerfeld		Gilsom@charter.net

Sign-In Sheet
Multi – Modal Mobility Café
July 16, 2009

Name	Organization	Email Address or Other Contact
Leigh Gaasch	—	— 934-2443
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Ray Jarvis		
Skip Harvey		—
Bill Cockroft		Cockroft@mammoth-mtn.com
Sandy Hogan		
John Vereuck		
Danna Stroud		
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Thom Heller	MLFD	THOM@MAMMOTHLAKESFD.COM

Multi-Modal Mobility Café #1 Discussion Notes

1. Pedestrian Mobility:
Table 4 – Bill Taylor's Table
- Identified gaps: north end of Waterford to east end of Majestic Pines and Snowcreek III
- Southeast corner of Monterey Pines
- Gap at northeast end as well, can't get out of neighborhood
- Emphasize getting sidewalk along lower Forest Trail
- Gap on Main St. from Sierra Blvd to the Village

Table 3 – Jay Deinken's Table
-Connectivity across Main St. near Post Office
-Tunnel under 203 near visitor center, gap to tunnel, people go directly across 203
-Intersection of Meridian and Sierra Park, crosswalks needed all four sides
-Sidewalk along OMR changed to MUP across from Snowcreek VIII
-End of Majestic Pines by Bigwood, disconnect from bicycle path
-Same point at end of Majestic Pines – signage issue to go from there through Starwood to Bear Lake Dr. and connecting to Callahan Way
-South end of Monterey Pines – gap to get to bike path, by the water district
-Laurel Mtn. Rd. to Hidden Creek Crossing

Table 2 – Sandy Hogan's Table
-Getting from the Knolls to North Village
-Forest Trail – no pedestrian facilities
-Main St. highway
-Streets inside Sierra Valley Sites
-Sidewalks around Vons and Rite – need mid block connectors
-Break up parking lots in front of central areas
-No internal pedestrian way
-Monterey Pines over to LMR
-Forest Trail as a multi-use path

Table 1 – Jon Robertson's Table
-Crosswalks, many don't work and those that do need improvement
-North side of Main St after you pass Angels, no clear path to Village

Table 5 – Bill Cockroft's Table
-All listed are incomplete or need work
-Main St from OMR to Village
-Meridian from OMR to Minaret
-Minaret Rd south

2 Bicycle Mobility
Table 5
-Shoulders are dirty and full of glass – bicyclists can't ride
-Maintain existing
-Safety would be increased if you clean up what is there already
-Ski Area road is crowded and difficult – 203 to Village to Main Lodge
-Vons to Skate Park – little space and high speeds

Table 1
-Connector trails
-Legal connection that connects Old Mammoth trail to driving range
-Connector to Uptown/Downtown that's legal
-Majestic Pines to Golf Course to Dorrance to central town –Chair 15 to downtown legally

Table 2
-Connections between MUPs – large gaps
-Main St to existing bike path on OMR
-Big break in OMR on bike path – complete
-Bike path into major commercial areas – designate a bike path that goes east from here (Wild Willys) behind Vons
-Separate path with bike parking at end – mid block connections
-Prefer to have off-road bike paths – would go out of way to get to those paths
-Don't want to breathe exhaust and don't want to be afraid of being run over
-Monterey Pines and LMR connection – same as pedestrian comments
-Kelly Road needs a MUP
-Off-road or at least some physical barrier to block off a bike path

Table 3
-MUP from north side of 203 past Visitors Center to Meridian – gap at Visitor Center – should go around back of parking lot
-Bike lanes on Scenic Loop
-North end of Majestic Pines – path through Sierra Star across Minaret and connecting to Callahan Way
-Consider different colors for bike lanes – would need to use non-slippery paint otherwise could be problem for road bikers
-MUP at Chair 15 to Juniper to Minaret

Table 4
-Meridian Blvd needs decent bike lanes
-Gap on north side of OMR near Mammoth Creek Park
-Main Street up to Canyon
-Waterford from OMR to Majestic – complete

3. Transit System Mobility
Table 1

-New areas out at the Trails and the Old Mammoth area
-More bus stops by affordable housing and Chateau Rd.

Table 2
-Increase existing service
-Expand existing service down OMR, down to gate
-Additional service on Meridian from OMR down around industrial area and looping to Main St
-Main St to Forest Trail and through Forest Trail neighborhoods and down to Village
-More shelters in the winter – perhaps every second or third stop
-Shelters should hold many people

Table 3
-General concept of having a coupe of loops – inner and outer circles
-Hub routes connecting to outer routes
-Information system at transit stops
-Times when buses will show up
-Improved shelters that protect from elements
-School bus system – figure out how to replace after they take away because of budget
-Transit effective for kids
-Bus service into Old Mammoth
-Community outreach to get buy in for service
-Target underserved neighborhoods

Table 4
-Small improvements like a ramp from parking lot on OMR to bus shelter
-Loop going down Main St to Meridian and back – service the Trails, skate park, RV park
-Loop through Knolls
-Red Fir extension should be tried
-Problems with lifts on the buses – make sure buses are truly accessible

Table 5
-ADA on all buses
-Connection out to Old Mammoth
-College loop – Wagon Wheel to connect the Trails
-Shelters
4. Parking Management
Table 5
-Priority is Village parking – use the lot designated for parking
-OMR is second most important
-Underground as well as parking structure
-Over-park rather than under-park
-Additional Parking needing down by skate park and by Mammoth Creek park

Table 1
-Parking at small businesses – deal with this during District Planning
-Look at which districts need more parking where
-Mammoth Crossing will be very important to watch
-No parking on streets
-Snowcreek VIII needs to make sure everyone is not all parking out there to do activities
-Residents need parking out there too
-Increase parking at Village and Eagle

Table 2
-Move lot further north near Hidden Creek
-Vons redevelopment should have all parking underground with retail and pedestrian above
-Mammoth Crossing should be structured well
-Go to top from Mammoth Crossing sites 2 and 3 and be able to cross over roads
-Structures under 203

Table 3
-Segregate parking between motorized and non at areas like Shady rest Park area
-Near-term parking needs to be thought about even though financing tough
-Encourage people to combine trips around town to run errands so they are not parking so many times a day
-Park and transfer lot at entrance of town – motivate people to use it
-Make the system good enough that people want to use transit
-Existing Park and Ride is under-utilized
-Leave the market with our own trolley and push it into the side of public transit- spend one third of what we spend on cars to make our public transit top notch
-Make it convenient
-Tour bus parking needed

Table 4
-Staging areas at Juniper, North Village and Shady Rest should be identified
-Winter staging and maybe summer on north side of 203 opposite Meridian
-Staging on south side of Snowcreek VIII doesn't make sense if you are going to have one at Borrow Pit
-Winter staging at closure on OMR
-Trailhead at Mammoth Rock trail
-Winter closure on LMR needs better staging
-Parking in Village
-Main St from Tavern past Center has major parking issues that should be dealt with
-Roberto's needs more parking
-Parking for those using Sherwins – no good to have access without parking
-Park along OMR for Sherwins – need room for snow removal – 80 ft right of way could be enough room
-North Village economic recovery and sustainability grant – hub of eastern sierra transit – yes the Village is naturally a transit hub

-But a completely different approach to transit would need to be taken on in that area if grant was awarded
-Need to solve bridge issue to do that – crosswalk issues would be included in project application
-Grant has to be shovel ready
-Big picture planning needs parking structure out of town but that wouldn't fit into grant – interesting concept that continues to be discussed
-Have to have four lanes on Main St at this time, could change in the future
-Allow overnight parking somewhere – can't enough use of transit like YARTS

5. In-Town Gondola
Table 4
-Most important is to get one from Village to Main Lodge – deal with bottleneck
-Terminals should be across street from Kittredge, not on it
-Move terminals by high school closer to Sierra Park to serve Vons
-Connector from Sierra Star to North Village terminals – loop

Table 3
-Look at cost – how does it compare to number of passengers carried as compared to surface area transit
-How much are we alleviating traffic by putting this in
-Provides multiple benefits
-Visitor driving amenity

Table 2
-Like the idea
-Granting something of tremendous value to community
-Cost is huge however
-North Village to Main Lodge would be good and there you have the parking garage – makes it more sensible
-In relation to cost – nice ride but people aren't going to be taking luggage to hotel on it
-Electricity to run would be huge
-Better to have the cart on the bus – electric – better cost benefit
-Instead of looking so large, scale it down so you have two stops – one in center of town and one around Village
-For cost you could think of automated subway system
-Would have to employ people which would be additional cost
-Would it just be a benefit to the Mountain
-All electric bus system is better
-Bus system would get over hump of door to door service
-Year round versus seasonal
-Would you have to pay or would this be free – would make a huge difference
-Great that you would even throw this out there tonight

Table 1
-Same as others

Table 5
-Buses need to be able to haul 3,000 people per hour in order to compete
-Need buses to run better on six inches of snow in order to compete
-Going to Main Lodge – would make it a shorter route than by bus

More Comments
-On Main Street would be top priority
-Move it up toward Old Mammoth where you would have more traffic
-Phased project would have to start with Main St so it would tie in with Village
-Can pick up all guests along Main St – resort corridor
-Take out section above Vons would still take you to interior of town rather than just on Main – move to OMR rather than Sierra Park
-Make sure you don't miss the hospital

Community Safety and Mobility Café #2 Discussion Notes

Street Connectivity, Traffic Congestion, and Emergency Response

Table 2

-Congested area at Sierra Park where school drops off and picks up – problematic
-Congestion in front of Post Office
-Mid-street OMR near Vons and Sierra Center Mall, not using crosswalks
-Same thing up at Village near Petra's
-Inconvenient merge at Canyon and LMR – right hand turn, people don't know they can't go straight
-Absence of left-hand turn lane west on 203 – cars still turning left, other cars backing up
-Cut through traffic on Manzanita – cutting through to save time but there are a lot of pedestrian and bikers

Table 5

-Extending Dorrance to Chapparal – might help to not use Manzanita
-Waterford to Majestic pines extension good idea for emergency response
-Get Old Mammoth opened up – problematic for fire right now
-Take Old Mammoth all the way down to Chapparal and make one-way circulation
-Would make it easier for fire to get through
-Roundabouts at government center – Sawmill and Sierra Park Rd

Table 4

-Carl's Jr. area and getting to Vons
-Skier traffic coming down through Village
-Crosswalk situation
-Post Office congestion in and out
-Connection from Sierra Park and runs it into Sherwin – extends Sierra Park
-Keep extension on North side of creek, south of Chateau to avoid bottleneck
-Forest Trail – trying to make left turn onto Main Street
-Same on Laurel Mtn.

Table 1

-99 percent of time traffic is not so bad
-Get complete understanding of complaints by doing complete traffic analysis – cover more days and more areas
-Agree that we need to design for design day and not peak day, but need to avoid people not wanting to come back because of bad traffic
-Yellow line going behind Vons on map – need structural improvements to mitigate traffic, don't just redo a lane
-Need to mitigate for all new developments
-Don't put circulation issues in low priority
-Pedestrian and bike paths in between streets in Sierra Valley Sites – a suggestion to mitigate people walking through properties in the areas

-Main St access road, businesses turn backs on residential – same in a lot of places in a lot of barriers to walking in town
-Encourage bike and foot traffic
-Don't make Main St. two lanes

No one sitting at Table 3

General Comments
-What are we doing for special needs?
-Is traffic congestion unacceptable – only on peak holiday weekends at certain times during the day
-Less than 10 days per year have unacceptable traffic
-What measures are we going to take to correct the problem?
-Developed over 30 years, but Town staff should be experts and should have been planned 20 years ago
-Narrowing OMR to two lanes with sidewalks was probably a big mistake
-The road is calm when it's not busy but gums everything up when it is busy
-Sidewalks are nice in summer
-When lots of people in town that road doesn't work, but need to focus on other things first
-One alternative is to extend Sierra Park to help OMR
-No roads added to inventory in 21 years, but we are adding numbers to people at build out
-Other places with build out that Mammoth is looking at have more intense road structures
-Exceeded 10 days a year and are probably closer to 20 days

Traffic Calming
Table 5
-On Main St between Minaret and Joaquin there is no pedestrian availability – would like to see a MUP and more lighting
-Forest Trail speed issues – need more signs, gear down sign up and down
-Reiterate speeding and traffic going through Sierra Valley
-Make sure methods are specific to Mammoth

Table 4
-Crosswalks – speed of traffic in those areas
-Four areas in North Village will need better passage at some point
-Round about coming down 203 at Village – blind corner
-No one slowing down at all until they get to Sushi Rei
-Park by OMR – blind curve
-People going around it fast

Table 1
-Old Mammoth Road three major problems

-Speed, volume and lack of signs
-Solar powered sign has helped speeds drop
-Need more of those signs throughout road, especially coming down
-Are no speed limit signs until bottom of grade
-Diesel truck going up that road needs to be solved
-Need to decide the speed we want out there
-Data we have was done in June which is a quiet month
-Need to do it now or during a busy month
-Children living up there
-Volume
-Cool way to go back and forth to Lakes Basin – now road has become a main artery
-Large volume in summer
-Houses along OMR don't have a lot of driveway
-Is it a neighborhood or main traffic way – same with Forest Trail
-Lots of people don't know where they are and come up that road looking for JSL or Eagle Lodge – need better signs
-Vehicular wayfinding
-Often people don't even know how to get to Main Lodge
-Perhaps make Red Fir one-way
-Problem isn't people who live there – people who live there turn on lower Red Fir, not as dangerous
-Was never an access point until work started on LMR
-Turn the area to bike and hike area – close road to vehicles
-Could be a safety issue to have it closed
-Rip up all the asphalt
-Make it one way up – get rid of half of the traffic
-Do studies in August
-Aspen Village made speed limit drop to 25mph but it has become a thoroughfare
-Why can't we just lower speed limit throughout town to 25 mph
-Speed has to be established in a survey to make it enforceable
-Very difficult to lower speed limits once they have been established
-People getting hurt near driving range because of speed
-Would give advantage to pedestrians and bikers with lower speeds
-OMR thoroughfare is losing its charm
-Not sure if town-wide speed limit can be done according to police chief
-Why don't we take into consideration that we want people walking and biking
-Can we go to State and ask for resort speed limit?

Table 2
-Entrance to town has no reduced speed ahead signs – people fly through
-Interim suggestion at PO – cars are not stopping at pedestrian crossing perhaps do written comments at the stop too of what to do
-Residential speed limit at Forest Trail
-Put stops signs where road is flat along Forest trail, might discourage people from using as a connector, same on OMR
-What about speed bumps?

-Just need to find a way to make it inconvenient to traverse the road
-Need to do a warrant analysis to get stops signs
-Not enough traffic volume at those sites to warrant stop signs
-Speed dips may be an option
-What about temporary speed bumps like at Alpine Meadows? – they are removable in the fall when snow arrives – humps
-Guidelines for speed that relate to pitch of road
-Get neighbors involved and say we have a problem – have to get buy in before town initiates
-Scenic Loop is dangerous – project is coming forward to repave, not biker friendly right now
-Plan for Sierra Valley area? – it's scary to walk there at night, especially with a dog

Snow Management
Table 2
-LMR bike path – minimum to Lakes View maximum to Davison
-Need to know how it will be cleared
-Meridian to OMR clear one side or the other – pedestrians in street all winter
-Students from Joaquin to school – kids in streets
-Walking home from Vons in the street
-OMR and Main to Sawmill cutoff needs to clear path
-Clear who path along Main St from OMR up to fire station
-Build a sidewalk even if you can't clear it? Table is divided, some think good to have in summer others think if you build it you have to clear it
-Need to look at winter pedestrian mobility as being on MUPs discreet from streets and not dealing with plowed snow on top
-Need to do this analysis
-Alternative infrastructure that could support pedestrian mobility in winter without having to clear

Table 1
-Want to see sidewalks and pedestrian use in winter
-Bike paths used as bike paths and cross country skiing
-Don't want sidewalks unless they can be groomed
-Sierra Valley Sites who will pay for sidewalks if you put them there – poor area, people can't pay for it
-Could get grants if there is an easement

Table 5
-Have businesses and residents keep their sidewalks clear
-Have people be responsible, not just the town if there were sidewalks put in
-Take some of it off of the town
-Create expectation for when developments come in so they don't just rely on town either – developers need to do their share
-Assessment districts should be formed
-Safe Routes to Schools, especially on Meridian from Mono all the way down to Vons

-Especially if school buses are going by wayside
-More kids may be walking
-Think about creative solutions for storing snow
-Leave some streets covered – snow streets
-Costs are huge especially if trucked out
-Think outside the box

General Comments
-Open space on property needed
-Each person needs open space for snow blower

Table 4
-Better coordination between town and Caltrans
-Make removal more consistent so safety is a higher priority

Mobility Element Public Outreach Event Comments

Comment #	Date	Plan	Source	Mode / Topic	Location	District	Comment or Map Markup[1]
B 1	7/18/2009	Mobility Element/Plan	Open House "pin marks the spot"	Bicycle Facilities	All	All	Bike racks that are secure and bike friendly
B 2	7/18/2009	Mobility Element/Plan	Open House "pin marks the spot"	Bicycle Facilities	Old Mammoth Road, Snowcreek	Snowcreek	Complete MUP near Snowcreek
B 3	7/18/2009	Mobility Element/Plan	Open House "pin marks the spot"	Bicycle Facilities	All	All	MUP network cost and maintained is intensive. Need thoughtful motivation for implementation part of mobility plan.
B 4	7/18/2009	Mobility Element/Plan	Open House "pin marks the spot"	Bicycle Facilities	Sierra Valley Sites	Sierra Valley Sites	Sierra valley area - since there is a pedestrian path proposed through this area please add bikes as well. Bikes now just ride thru property randomly.
B 5	7/18/2009	Mobility Element/Plan	Open House "pin marks the spot"	Bicycle Facilities	All	All	Bike trailers on all trolleys
B 6	7/18/2009	Mobility Element/Plan	Open House "pin marks the spot"	Bicycle Facilities	All	All	Need maps and marking because many of the trails are hidden from view
B 7	7/18/2009	Mobility Element/Plan	Open House "pin marks the spot"	Bicycle Facilities	All	All	Need many more bike racks - standards are too low
B 8	7/18/2009	Mobility Element/Plan	Open House "pin marks the spot"	Bicycle Facilities	Joaquin	Sierra Valley Sites	Integrate Joaquin street at # 121 to another path don't dump bikers onto the frontage road
B 9	7/18/2009	Mobility Element/Plan	Open House "pin marks the spot"	Bicycle Facilities	Main Street	Main Street	Need connection from no frontage road at fire station to path by fs barracks
B 10	7/18/2009	Mobility Element/Plan	Open House "pin marks the spot"	Bicycle Facilities	Juniper Ridge, Snowcreek	Juniper Ridge, Snowcreek	Need easement to enter snowcreek 4 from just above #24 majestic pines?
B 11	7/18/2009	Mobility Element/Plan	Open House "pin marks the spot"	Bicycle Facilities	Snowcreek	Snowcreek	Check S.C. gondola easement
B 12	7/18/2009	Mobility Element/Plan	Open House "pin marks the spot"	Bicycle Facilities	Knolls	Knolls	Need to connect mammoth knolls to MUP
B 13	7/18/2009	Mobility Element/Plan	Open House "pin marks the spot"	Bicycle Facilities	All, Postpile	All, Postpile	More bike lanes especially down to the Postpile
B 14	7/18/2009	Mobility Element/Plan	Open House "pin marks the spot"	Bicycle Facilities	All	All	Multi use paths keep bicycles and pedestrians off road shoulders or high volume traffic roads
B 15	7/18/2009	Mobility Element/Plan	Open House "pin marks the spot"	Bicycle Facilities			We need to put a proper dirt bike park here in the woods of unused land. Shady rest park.
B 16	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 1	Bicycle Facilities	Upper Forest Trail, 203, Scenic Loop	Mammoth Slopes	Connect Upper Forest Trail to 203 below Scenic Loop turn off
B 17	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 1	Bicycle Facilities	Lodestar Drive, Bear Lake Drive, Callahan, Dorrance	Sierra Star, Sierra Valley Sites	Connections between Dorrance Drive to Callahan to Bear Lake Drive
B 18	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 1	Bicycle Facilities	North Village, Vons, Rite Aid, Main Street	North Village Main Street, Old Mammoth Road	Bike racks needed at North Village, Vons, Rite Aid area, Main Street area
B 19	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 1	Bicycle Facilities	Old Mammoth Road	Snowcreek	Fill gap in existing Main Path Loop MUP between Mammoth Creek Park and Minaret on north side of Old Mammoth Road
B 20	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 1	Bicycle Facilities	All	All	More bike racks around town!
B 21	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 1	Bicycle Facilities	Post Office, Vons, Rite Aid	North Village Main Street, Old Mammoth Road	Bike racks at Post office, Vons, Do It Center
B 22	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 1	Bicycle Facilities	Canyon Blvd	Mammoth Slopes, North Village	I am very concerned about downhill bike Traffic on Canyon Boulevard to Village bus stop
B 23	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 1	Bicycle Facilities	Hillside Drive	Mammoth Slopes, North Village	Connection from Hillside Drive to Uptown/Downtown
B 24	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 2	Bicycle Facilities	Old Mammoth Road	Snowcreek	Fill gap in existing Main Path Loop MUP between Mammoth Creek Park and Minaret on north side of Old Mammoth Road
B 25	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 2	Bicycle Facilities	Lodestar Drive, Hidden Valley Road, Lake Mary Road	Sierra Star, Majestic Pines, Mammoth Slopes	Confirm: proposed MUP connection between north end of Lodestar MUP to Hidden Valley Road to Lake Mary Road
B 26	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 2	Bicycle Facilities	Main Street	Main Street	Main Street from North Village to Sierra Park Road
B 27	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 2	Bicycle Facilities	Minaret	North Village, Sierra Star	Minaret Road from Main Street to Meridian Boulevard
B 28	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 2	Bicycle Facilities	Meridian	Meridian, Old Mammoth Road	Confirm near-term bicycle facility on Meridian Boulevard between Old Mammoth Road and Sierra Park Road
B 29	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 2	Bicycle Facilities	Meridian	Gateway	Meridian Boulevard from Sierra Park Road to College Parkway
B 30	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 2	Bicycle Facilities	All	All	Would like MUP to connect all major streets: Main Street, Meridian, Minaret, Old Mammoth, Chair 15 to Ski Museum
B 31	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 2	Bicycle Facilities	Old Mammoth Rd	Old Mammoth Road,	Old Mammoth Road from Main Street to Snowcreek V
B 32	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 2	Bicycle Facilities	Industrial Park, Main Street, Old Mammoth Road, North Village	Industrial Park, Main Street, Old Mammoth Road, North Village	Bike racks at industrial park, commercial centers (Vons, Center Street, Factory Shops, etc.)
B 33	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 2	Bicycle Facilities	Minaret, 203	North Village	Multi-use path from North Village to Main Lodge
B 34	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 2	Bicycle Facilities	Minaret	North Village, Sierra Star	Multi-use path on Minaret Road from Meridian Boulevard to Main Street
B 35	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 3	Bicycle Facilities	All	All	Would be great to consider colored differential to identify bike lanes clearly - painted
B 36	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 3	Bicycle Facilities	Main Street, Old Mammoth Road, North Village	Main Street, Old Mammoth Road, North Village	High priority for bike racks at Old Mammoth Commercial, Main Street, North Village
B 37	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 3	Bicycle Facilities	Welcome Center	Main Street	Connect proposed MUP at Welcome Center all the way through
B 38	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 3	Bicycle Facilities	Lodestar Drive, Bear Lake Drive, Sierra Valley Sites	Sierra Star, Majestic Pines, Mammoth Slopes	Confirm: Connect north end of Majestic Pines Drive (Lodestar MUP) to Main Street and Callahan Way (via Bear Lake Drive)
B 39	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 3	Bicycle Facilities	Scenic Loop		Confirm: Scenic Loop priority bike lanes
B 40	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 3	Bicycle Facilities	Juniper Lodge	Juniper Ridge	Confirm: Proposed MUP on MMSA property near Chair 15 to connect to Canyon Lodge and 203
B 41	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 3	Bicycle Facilities	Waterford	Old Mammoth, Juiper Ridge	Confirm: near-term bicycle facility on Waterford with bridge to connect to existing bicycle facility on Majestic Pines
B 42	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 3	Bicycle Facilities	All	All	Support idea of maintenance of bike lanes - keep clear of debris (volunteer)
B 43	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 4	Bicycle Facilities	Sierra Park Road	Old Mammoth Road	Confirm: Proposed bicycle facilities on Sierra Park Road
B 44	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 4	Bicycle Facilities	Waterford	Old Mammoth, Juiper Ridge	Confirm: near-term bicycle facility on Waterford with bridge to connect to existing bicycle facility on Majestic Pines
B 45	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 4	Bicycle Facilities	Majestic Pines Drive, Snowcreek Road	Majestic Pines, Juniper Ridge, Snowcreek	Connect south Majestic Pines Drive (east end) to Snowcreek Road (Snowcreek III)
B 46	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 4	Bicycle Facilities	Old Mammoth Road	Snowcreek	Continue existing MUP on east side of Old Mammoth Road between Sherwin Creek and proposed Snowcreek VIII entrance
B 47	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 4	Bicycle Facilities	Old Mammoth Road	Snowcreek	Fill gap in existing Main Path Loop MUP between Mammoth Creek Park and Minaret on north side of Old Mammoth Road
B 48	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 4	Bicycle Facilities	Lodestar Drive, Hidden Valley Road, Lake Mary Road	Sierra Star, Majestic Pines, Mammoth Slopes	Confirm: proposed MUP connection between north end of Lodestar MUP to Hidden Valley Road to Lake Mary Road
B 49	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 4	Bicycle Facilities	Bear Lake Drive, Meridian	Sierra Star	Connect proposed MUP on east Bear Lake Drive to Meridian Bike facility
B 50	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 4	Bicycle Facilities	Lodestar Drive, Monterey Pines Road	Sierra Star, Majestic Pines	Connect existing MUP along Lodestar Drive to southeast and northeast ends of Monterey Pine Road
B 51	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 4	Bicycle Facilities	Meridian	Old Mammoth Road	Confirm near-term bicycle facility on Meridian Boulevard between Old Mammoth Road and Sierra Park Road
B 52	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 4	Bicycle Facilities	Meridian	Sierra Valley Sites, Meridian, Old Mammoth Road	Bicycle facility on Meridian Boulevard from Sierra Park Road to Joaquin Road
B 53	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 4	Bicycle Facilities	Meridian	Juniper Ridge, Sierra Star, Sierra Valley Sites, Meridian, Old Mammoth Road	Bicycle facility on Meridian Boulevard from Sierra Park Road to Majestic Pines Drive
B 54	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 4	Bicycle Facilities	Main Street	Main Street	Bicycle facility on Main Street between Visitor Center and Minaret Road
B 55	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 4	Bicycle Facilities	All	All	Bike with rider silhouette in the lane really shows up - painting entire lane will eventually disappear in drivers' minds - the silhouette graphics repeatedly call drivers' attention to cyclists
B 56	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 5	Bicycle Facilities	Meridian	Gateway	Confirm: Proposed bicycle facility on Meridian Boulevard from Sierra Park Road to 203
B 57	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 5	Bicycle Facilities	Laurel Mountain	Old Mammoth Road	Confirm: Proposed bicycle facility on Laurel Mountain Road from Main Street to Sierra Nevada Road
B 58	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 5	Bicycle Facilities	Sierra Park Rd	Old Mammoth Road	Confirm: Proposed bicycle facility on Sierra Park Road from Main Street to Meridian Boulevard
B 59	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 5	Bicycle Facilities	Minaret	North Village	Minaret Road from North Village to Scenic Loop
B 60	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 5	Bicycle Facilities	203		203 from Scenic Loop to Main Lodge
B 61	7/18/09	Open House Survey Comment Sheet	Open House Survey Comment Sheet	Bicycle Facilities	All	All	Make additional connecting paths to assure reasonable circulation/concenient routes
B 62	2007, 2008/2009	2007 Mobility Café, 2008/2009 TSMP	2007 Mobility Café, 2008/2009 TSMP	Bicycle Facilities	All	All	More bike racks and storage should be available at key locations
B 63	2006	2006 Mobility Report	2006 Mobility Report	Bicycle Facilities	Old Mammoth, Main Street	Old Mammoth, Main Street	Old Mammoth Road and Main Street are key gaps in bicycle connectivity
B 64	2006	2006 Mobility Report	2006 Mobility Report	Bicycle Facilities	All		Bicycle facilities should be provided to connect to Crowley, Devils Postpile, and the Scenic Loop
B 65	2007, 2008/2009	2007 Mobility Café, 2008/2009 TSMP	2007 Mobility Café, 2008/2009 TSMP	Bicycle Facilities	All	All	Bicycle facilities and Paths should have more separation from vehicle travel lanes
B 66	2006, 2008/2009	2006 Mobility Report, 2008/2009 TSMP	2006 Mobility Report, 2008/2009 TSMP	Bicycle Facilities	All	All	Bicycle facilities are typically used for snow storage, limiting winter accessibility
B 67	2008/2009	2008/2009 TSMP	2008/2009 TSMP	Bicycle Facilities	All	All	More bicycle facility signage should be provided (Share the Road, Bike Lane, Bike Route)
B 68	2008/2009	2008/2009 TSMP	2008/2009 TSMP	Bicycle Facilities	Canyon Lodge, Eagle Lodge	Mammoth Slopes, Juniper Ridge	Improve access to mountain biking portals
G 1	7/18/2009	Mobility Element/Plan	Open House "pin marks the spot"	Gondola	All	All	General - cost / benefit should be analyzed vs. other improvements such as more transit. Electricity? Staffing? Building stations?

Mobility Element Public Outreach Event Comments

Comment #	Date	Plan	Source	Mode / Topic	Location	District	Comment or Map Markup[1]
G 2	7/18/2009	Mobility Element/Plan	Open House "pin marks the spot"	Gondola	Snowcreek	Snowcreek	If built, should extend to snowcreek 8 (if that's built)
G 3	7/18/2009	Mobility Element/Plan	Open House "pin marks the spot"	Gondola	All	All	Cost? Both initial, and long term.
G 4	7/18/2009	Mobility Element/Plan	Open House "pin marks the spot"	Gondola	All	All	aesthetics?
G 5	7/18/2009	Mobility Element/Plan	Open House "pin marks the spot"	Gondola	All	All	How would this look in such a small town? Good green idea, but everywhere you look, gondolas. If you live near one with noisy people early morning and night? Extra noise, extra lights, extra taking away from mountain
G 6	7/18/2009	Mobility Element/Plan	Open House "pin marks the spot"	Gondola	All	All	You still need parking need gondolas. So calif visitors drive to mammoth. Gondolas move skiers, not people shopping for groceries.
G 7	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 1	Gondola	Snowcreek	Snowcreek, Sierra Star, Juniper Ridge	Connect from Meridian to Snowcreek VIII
G 8	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 1	Gondola	Main Street	Main Street	Connect to bus parking area and park n ride area on edge of town
G 9	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 1	Gondola	Main Lodge		Connect to Main Lodge
G 10	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 2	Gondola	Sierra Star, North Village	Sierra Star, North Village	Connect from Sierra Star to North Village
G 11	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 2	Gondola	North Village, Main Lodge	North Village	Connect to Main Lodge from North Village
G 12	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 2	Gondola	Juniper Ridge, Meridian	Juniper Ridge, Meridian, Sierra Star	Meridian Boulevard not needed
G 13	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 2	Gondola	Old Mammoth Road	Old Mammoth Road	Should go on Old Mammoth Road, not from Civic Center to College
G 14	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 3	Gondola	All	All	Great idea - go for it
G 15	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 3	Gondola	All	All	Good that it provides a desirable mode-split and there is a marketing P & R component. However it is capital intensive and operating cost and maintenance.
G 16	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 3	Gondola	All	All	This provides other value than just mode split
G 17	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 3	Gondola	All	All	Less air pollution. Renewable energy powered(?)
G 18	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 3	Gondola	All	All	Solar or geothermal powered
G 19	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 3	Gondola	All	All	Compare operating costs to surface transit
G 20	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 3	Gondola	All	All	Need mode split analysis. How much is traffic alleviated?
G 21	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 3	Gondola	All	All	Visitor-driving
G 22	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 3	Gondola	All	All	Attraction in and of itself. Ride for fun.
G 23	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 4	Gondola	North Village, Main Lodge	North Village	Connect to Main Lodge from North Village
G 24	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 4	Gondola	Sierra Star, North Village	Sierra Star, North Village	Connect Sierra Star to North Village
G 25	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 4	Gondola	Sierra Park Road	Old Mammoth Road	Sierra Park Road instead of from Civic Center area to College
G 26	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 5	Gondola	Old Mammoth Road	Old Mammoth Road	Should go on Old Mammoth Road, not from Civic Center to College
G 27	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 5	Gondola	North Village, Main Lodge	North Village	3000 PPH main to village
G 28	7/18/2009	Mobility Element/Plan	Open House Survey Comment Sheet	Gondola	All	All	It would benefit the community, but it is probably cost prohibitive unless substantially funded through redevelopment. Possibly transit tax could also be used, but wouldn't be nearly enough. If it ran on geothermal power it could be more feasible financially and more environmentally friendly.
G 29	7/18/2009	Mobility Element/Plan	Open House Survey Comment Sheet	Gondola	All	All	A gondola system would facilitate transit. Is likely more energy efficient and moves more people move efficiently than other modes. It's flashy enough to entice people into another mode and out of vehicles.
G 30	7/18/2009	Mobility Element/Plan	Open House Survey Comment Sheet	Gondola	All	All	No, an in-town gondola system would not benefit the community. Why would a town that wants to keep its small town feel, want gondolas floating overhead in winter and tracks in the summer like its San Francisco.
G 31	7/18/2009	Mobility Element/Plan	Open House Survey Comment Sheet	Gondola	Meridian, Main Street, North Village	Meridian, Main Street, North Village	Yes on Main Street to Canyon and along Old Mammoth Road to support commercial. Should not go up Meridian, which is residential.
G 32	7/18/2009	Mobility Element/Plan	Open House Survey Comment Sheet	Gondola	Sierra Star	Sierra Star, Meridian	Gondola from Sierra Star to Meridian would work
G 33	7/18/2009	Mobility Element/Plan	Open House Survey Comment Sheet	Gondola	All	All	More buses and routes would be more flexible as to times and routes
G 34	7/18/2009	Mobility Element/Plan	Open House Survey Comment Sheet	Gondola	All	All	I question the cost effectiveness. Very expensive only used in winter - or would people really use it in summer? Seems like a waste of money.
G 35	7/18/2009	Mobility Element/Plan	Open House Survey Comment Sheet	Gondola	All	All	No gondola in town. We will no longer have a small town (community) atmosphere.
G 36	7/18/2009	Mobility Element/Plan	Open House Survey Comment Sheet	Gondola	All	All	Costly for what reason - Disneyland feeling
F 1	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 1	Open Comments	Sierra Valley Sites	Sierra Valley Sites	Too much water drains into Sierra Valley Sites from up above (sierra star area)
F 2	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 1	Open Comments	Sierra Valley Sites	Sierra Valley Sites	New projects can impact Sierra Valley Sites with water drainage
F 3	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 5	Open Comments	All	All	Creative solutions that are Mammoth specific
P 1	7/18/2009	Mobility Element/Plan	Open House "pin marks the spot"	Parking Facilities	Shady Rest Tract	Shady Rest	Hidden Creek (Shady Rest Tract) is zoned for Workforce Housing - no public parking!
P 2	7/18/2009	Mobility Element/Plan	Open House "pin marks the spot"	Parking Facilities	Sierra Valley Sites	Sierra Valley Sites	In sierra Valley Sites no parking down the streets from the businesses into the residential area! (Business off of main street)
P 3	7/18/2009	Mobility Element/Plan	Open House "pin marks the spot"	Parking Facilities	Old Mammoth Road	Old Mammoth Road	Parking district(s) in North Old Mammoth road area parking should be shared and easily accessible to peds
P 4	7/18/2009	Mobility Element/Plan	Open House "pin marks the spot"	Parking Facilities	Snowcreek	Snowcreek	Should be within snowcreek 8 -- is located with planned parking for snowcreek facilities.
P 5	7/18/2009	Mobility Element/Plan	Open House "pin marks the spot"	Parking Facilities			Should be trailhead and staging. Its need a staging area.
P 6	7/18/2009	Mobility Element/Plan	Open House "pin marks the spot"	Parking Facilities			It's a shame to ruin this area with parking
P 7	7/18/2009	Mobility Element/Plan	Open House "pin marks the spot"	Parking Facilities			Not sure where this trailhead is - by #58 so cant comment
P 8	7/18/2009	Mobility Element/Plan	Open House "pin marks the spot"	Parking Facilities	Park and Ride Lot	Old Mammoth Road	Allow overnight parking in summer only for YARTS customers in park n' ride facility
P 9	7/18/2009	Mobility Element/Plan	Open House "pin marks the spot"	Parking Facilities			Move parking at #41 to whiskey creek side
P 10	7/18/2009	Mobility Element/Plan	Open House "pin marks the spot"	Parking Facilities	MCWD	Gateway	Tour bus parking at H2O district - good idea! (at least as a temporary use)
P 11	7/18/2009	Mobility Element/Plan	Open House "pin marks the spot"	Parking Facilities	All	All	We don't have anywhere in town for oversized vehicles and/or toy trailers - could Eagle and Canyon be used in short term?
P 12	7/18/2009	Mobility Element/Plan	Open House "pin marks the spot"	Parking Facilities	College	Gateway	Need more parking at the college
P 13	7/18/2009	Mobility Element/Plan	Open House "pin marks the spot"	Parking Facilities	Canyon Lodge, Eagle Lodge	Juniper Ridge, Mammoth Slopes	Negotiate with MMSA for tour bus parking and Eagle and Canyon lodges
P 14	7/18/2009	Mobility Element/Plan	Open House "pin marks the spot"	Parking Facilities	All	All	No parking fees
P 15	7/18/2009	Mobility Element/Plan	Open House "pin marks the spot"	Parking Facilities	Tamarack St	Old Mammoth	It is "unnessary" to provide a parking lot for parking access for area beyond the end of tamarack st in old mammoth as we presently have 2+ spaces in summer and don't feel it appropriate for "parking spaces" in winter and to condition of snow and street re: snowremoval it is a snow removal problem between --- and assessment district from sunnyslope all winter as is. summer use is (and has been) no problem for pedestrians, bicycles and horses --- old mammoth community and use itregulary with little parking needs. the only need is for emergency vehicle use. our neighborhood associations have been meeting for 2 years regarding this subject. discussing with Terry Plum and Triad people. we hope that this very expensive idea is addressed in a more economical and suitable way. we will be continuing our meeting as the situations comes toward resolution as a neighborhood consensus. Please consider our thoughts. Thank you.
P 16	7/18/2009	Mobility Element/Plan	Open House "pin marks the spot"	Parking Facilities	Tamarack St	Old Mammoth	There is no need for a parking lot at the end of Tamarack street. As an alternative, create 2-3 parallel parking "turn outs" on the proposed "plum" easement. Also - said easement should allow for ped, equestrian and bike passage (no cars except emergency vehicles)
P 17	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 1	Parking Facilities	North Village	North Village	Confirm: North Village parking
P 18	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 1	Parking Facilities	Sherwins	Snowcreek	Sherwin Staging area east of Snowcreek V is important for Sherwins access!
P 19	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 1	Parking Facilities	Snowcreek	Snowcreek	Snowcreek District parking - once snowcreek VIII is in, snowcreek district will need more parking
P 20	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 1	Parking Facilities	Eagle Lodge	Juniper Ridge	Eagle Lodge parking
P 21	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 1	Parking Facilities	Main Street	Main Street	Intercept parking area near edge of town on 203
P 22	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 1	Parking Facilities	Shady Rest Tract	Shady Rest	Confirm: Shady Rest Tract (Hidden Creek Crossing) parking
P 23	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 1	Parking Facilities	Vons	Old Mammoth Roadd	Confirm: Vons area commercial parking
P 24	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 1	Parking Facilities	North Village	North Village	North Village needs traffic/parking management dealing with people loading/unloading at the gondola blocking the bus turn outs
P 25	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 1	Parking Facilities	North Village	North Village	Village parking for people to take the gondola to canyon
P 26	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 1	Parking Facilities	All	All	General Parking area for tour buses
P 27	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 1	Parking Facilities	All	All	No additional on-street parking - no room for it
P 28	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 1	Parking Facilities	All	All	Park n ride facilities coordinated with transit
P 29	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 1	Parking Facilities	All	All	Affordable housing: needs to have more guest parking on their project
P 30	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 1	Parking Facilities	North Village	North Village	Additional on-street parking in Village
P 31	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 1	Parking Facilities	Main Street	Main Street	You can't really park and walk in the Main Street core of Town because the crossings are unsafe and the area lacks sidewalks. The issue is not just parking but park it and leave it.
P 32	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 1	Parking Facilities	Mammoth Slopes, Meridian	Mammoth Slopes, Meridian	Some solution to street side parking at Eagle Lodge on Meridian and Canyon Lodge on Lakeview
P 33	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 1	Parking Facilities	Mammoth Crossings	North Village	Rather than require Mammoth Crossings to build 100 spaces public parking at site 3, have them pay $50,000/space ($5 million) to purchase lot across from Village (East) (now in receivership) for large (400 space) parking structure. Encourage park n' ride to ski area by providing direct shuttle from structure to Main Lodge. Encourage use of Village before/after skiing. Provide long-term revenue stream.
P 34	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 2	Parking Facilities	Park and Ride Lot	Old Mammoth Road	Park and Ride Lot: Future expand to structured parking. It is currently underutilized
P 35	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 2	Parking Facilities	Shady Rest Tract	Shady Rest	No parking at Shady Rest Tract (Hidden Creek Crossing) - that's for workforce housing
P 36	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 2	Parking Facilities	North Village	North Village	North Village Area - Southeast corner of Main/Minaret intersection (M-xing): Understructure parking with retail on top. Public access connections to Village.
P 37	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 2	Parking Facilities	All	All	Need tour bus parking
P 38	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 2	Parking Facilities	Hayden Cabin	Snowcreek	Better parking at Hayden Museum
P 39	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 2	Parking Facilities	All	All	Overnight parking lot
P 40	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 2	Parking Facilities	All	All	"S" Lots of staging areas needed around town
P 41	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 2	Parking Facilities	Main Street, Old Mammoth Road, North Village	Main Street, Old Mammoth Road, North Village	"P" Commercial parking needed around shops
P 42	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 2	Parking Facilities	All	All	"T" Lots of trailhead parking sites so trails are used and found
P 43	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 2	Parking Facilities	Hayden Cabin	Snowcreek	Better parking at Hayden Cabin Museum
P 44	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 2	Parking Facilities	Main Street	Main Street	Parking structure under 203 - long-term future project

Mobility Element Public Outreach Event Comments

Comment #	Date	Plan	Source	Mode / Topic	Location	District	Comment or Map Markup[1]
P 45	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 2	Parking Facilities	Old Mammoth Road, Vons	Old Mammoth Road	Vons redevelopment - parking underground, retail & pedestrian and public spaces above
P 46	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 3	Parking Facilities	All	All	While proposed parking is needed, we need a nearer-term plan. I think that we should utilize all existing parking. Try to create opportunities where people drive and park, fulfill several tasks, possibly ride transit, before returning to
P 47	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 3	Parking Facilities	Shady Rest Park		Segregated parking for motorized staging at Shady Rest Campground area (Sawmill Cutoff)
P 48	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 3	Parking Facilities	Snow Pit	Snowcreek	Segregate motorized parking from non-motorized parking near Sherwins borrow pit site (Sherwin Creek Road)
P 49	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 3	Parking Facilities	All	All	In-town loader parking to minimize time, gas, and hazard to traffic and pedestrians
P 50	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 3	Parking Facilities	All	All	Need allowed overnight parking for Yosemite trips out of town
P 51	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 3	Parking Facilities	Main Street	Main Street	Intercept Lot - Park and transfer stop at edge of town, park - leave car there for entire visit
P 52	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 4	Parking Facilities	Lakes Basin		Lakes Basin staging/parking for transfer to Basin bus
P 53	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 4	Parking Facilities	Main Street	Main Street	Meridian and 203 - bus stop/encourage out of towners to park and ride
P 54	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 4	Parking Facilities	North Village	North Village	Village transit plan - good location but poor implementation currently - poor mix of transit/auto/ped
P 55	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 4	Parking Facilities	All	All	No additional on-street parking
P 56	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 4	Parking Facilities	Main Street	Main Street	Main Street from Tavern to Center
P 57	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 4	Parking Facilities	North Village	North Villgae	Village!
P 58	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 4	Parking Facilities	All	All	Minimize surface lots
P 59	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 4	Parking Facilities	All	All	Diagonal back-in parking is an option for on-street parking
P 60	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 4	Parking Facilities	Snowcreek	Snowcreek	Staging area due south of Snowcreek VIII does not make sense
P 61	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 4	Parking Facilities	St. Josephs, Ranch Road	Old Mammoth	Parking at St. Joesphs is a good shared use
P 62	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 4	Parking Facilities	All	All	If there's more on-street parking, where do the bikes go?
P 63	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 5	Parking Facilities	North Village	North Village	Confirm: North Village parking
P 64	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 5	Parking Facilities	Park and Ride Lot	Old Mammoth Road	Confirm: Park n Ride parking
P 65	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 5	Parking Facilities	Mammoth Creek Park	Snowcreek	Confirm: Mammoth Creek Park area parking
P 66	7/18/2009	Mobility Element/Plan	Open House Survey Comment Sheet	Parking Facilities	Main Street, Old Mammoth Road	Main Street, Old Mammoth Road	Parking appears sufficient in Main Street District and Old Mammoth Road Commercial District with exception of peak demand
P 67	7/18/2009	Mobility Element/Plan	Open House Survey Comment Sheet	Parking Facilities	All	All	Emphasis should be on sufficient parking at lodging facilities rather than at retail.
P 68	7/18/2009	Mobility Element/Plan	Open House Survey Comment Sheet	Parking Facilities	Main Street, Old Mammoth Road, North Village	Main Street, Old Mammoth Road, North Village	Important not to plan retail parking to accommodate peak demand - emphasis should be on effective transit.
P 69	7/18/2009	Mobility Element/Plan	Open House Survey Comment Sheet	Parking Facilities	Minaret, Meridian	Sierra Star, Meridian	On-street parking in town is a little scary! On Minaret by Sam's woodsite during special events is a scary nightmare! I always make sure to go a different way. Oh well, I guess that solves that, but its also scary on Meridian by Horizon condos. Pedestrians just don't pay attention and in my opinion is very unsafe.
P 70	7/18/2009	Mobility Element/Plan	Open House Survey Comment Sheet	Parking Facilities	North Village	North Villgae	From the beginning, after the first month, I didn't bother going to the Village because the parking and access was so difficult. Visitors and patrons should not have to cross traffic on Minaret Road in inclement conditions. They won't go. There are other places to shop and eat in town.
P 71	7/18/2009	Mobility Element/Plan	Open House Survey Comment Sheet	Parking Facilities	Main Street, Old Mammoth Road, North Village	Main Street, Old Mammoth Road, North Village	Certain areas of town are fine with on-street parking - most areas are not - businesses need to provide parking and the cities master plan needs to reflect that.
P 72	2006	2006 Mobility Report	2006 Mobility Report	Parking Facilities	North Village, Main Street, Old Mammoth Road,	Main Street, North Village, Old Mammoth Road	Inadequate parking in the North Village, Old Mammoth Road, and Main Street
P 73	2006	2006 Mobility Report	2006 Mobility Report	Parking Facilities	All	All	Convenient on-street parking for businesses is not available
P 74	2006	2006 Mobility Report	2006 Mobility Report	Parking Facilities	All	All	No overnight public parking available
P 75	2006	2006 Mobility Report	2006 Mobility Report	Parking Facilities	Ski portals	Juniper Ridge, Mammoth Slopes, North Village	Inadequate ski area parking
P 76	2006, 2008/2009	2006 Mobility Report, 2008/2009 TSMP	2006 Mobility Report, 2008/2009 TSMP	Parking Facilities	All	All	Inadequate trailhead parking
P 77	2006	2006 Mobility Report	2006 Mobility Report	Parking Facilities	Park N' Ride	Old Mammoth Road	Park n' Ride lot is underutilized
P 78	2008/2009	2008/2009 TSMP	2008/2009 TSMP	Parking Facilities	Shady Rest Park		Provide additional parking for snowmobilers at Shady Rest
P 79	2006	2006 Mobility Report	2006 Mobility Report	Parking Facilities	All	All	Parking garage construction is very expensive
PED 1	7/18/2009	Mobility Element/Plan	Open House "pin marks the spot"	Pedestrian	Old Mammoth Road	Old Mammoth Road	Main sidewalk should move people to west side of buildings (sunny side in winter) on clearwater site along old mammoth
PED 2	7/18/2009	Mobility Element/Plan	Open House "pin marks the spot"	Pedestrian	Main Street	Main Street, Old Mammoth Road	Need a safe crosswalk/access @ 203 and sierra park across to sawmill - the tunnel is not convenient
PED 3	7/18/2009	Mobility Element/Plan	Open House "pin marks the spot"	Pedestrian	Sierra Nevada	Old Mammoth Road, Main Street, Meridian	Sidewalks on sierra Nevada - safe route to school
PED 4	7/18/2009	Mobility Element/Plan	Open House "pin marks the spot"	Pedestrian	Joaquin	Sierra Valley Sites	Lighting on Joaquin
PED 5	7/18/2009	Mobility Element/Plan	Open House "pin marks the spot"	Pedestrian	Old Mammoth Road	Old Mammoth Road	Lighting on Old Mammoth Road
PED 6	7/18/2009	Mobility Element/Plan	Open House "pin marks the spot"	Pedestrian	Minaret	North Village	Sidewalk on minaret near whiskey creek
PED 7	7/18/2009	Mobility Element/Plan	Open House "pin marks the spot"	Pedestrian	Sierra Park Road, Old Mammoth Road	Old Mammoth Road, Snowcreek	Consider connection further west (i.e. Old Mammoth) proposed route impacts both sierra meadows and Hayden cabin and further fragments mammoth creek.
PED 8	7/18/2009	Mobility Element/Plan	Open House "pin marks the spot"	Pedestrian	Meridian	Meridian	On meridian blvd (between minaret and azimuth) most important for safety. Many pedestrians and bikes (4th of July absolutely crazy) but normal flow is always high (even in winter)
PED 9	7/18/2009	Mobility Element/Plan	Open House "pin marks the spot"	Pedestrian	Snowcreek	Snowcreek	Snowcreek meadow has too many parallel trails and no wayfinding signs
PED 10	7/18/2009	Mobility Element/Plan	Open House "pin marks the spot"	Pedestrian	All	All	Prioritize sidewalk clearing in the winter (#7 in priority is too low) applies to whole system
PED 11	7/18/2009	Mobility Element/Plan	Open House "pin marks the spot"	Pedestrian	All	All	When redeveloping the strip malls, make more mid block connections i.e. from this room (wild willy's) to the library makes you go all the way to meridian and around.
PED 12	7/18/2009	Mobility Element/Plan	Open House "pin marks the spot"	Pedestrian	All, Main Street	All, Main Street	Snow removal on existing walks to keep people from having to walk on street. (particularly on main street)
PED 13	7/18/2009	Mobility Element/Plan	Open House "pin marks the spot"	Pedestrian	All, Main Street	All	Need better transition between neighborhoods and commercial (I.e. s of main, s of ctr, around village, to facilitate walk/bike)
PED 14	7/18/2009	Mobility Element/Plan	Open House "pin marks the spot"	Pedestrian	Majestic Pines Drive, Snowcreek Road	Majestic Pines, Juniper Ridge, Snowcreek	Connect snowcreek 3 to majestic pines
PED 15	7/18/2009	Mobility Element/Plan	Open House "pin marks the spot"	Pedestrian	All	All	When ever possible move sidewalks away from street, like west of post office
PED 16	7/18/2009	Mobility Element/Plan	Open House "pin marks the spot"	Pedestrian	Canyon Blvd	North Village	More sidewalks bike lanes take out light on canyon leading to village or longer response time when a car hits lake mary road
PED 17	7/18/2009	Mobility Element/Plan	Open House "pin marks the spot"	Pedestrian	Lake Mary Road	Mammoth Slopes, Majestic Pines	Need sidewalk on one side on lake mary road from village to lee road.
PED 18	7/18/2009	Mobility Element/Plan	Open House "pin marks the spot"	Pedestrian	Main Street	Main Street	There needs to be a sidewalk and proper lighting to help moving up to the 4 way light at minaret from where it stops at angels by mountain blvd. There is a lot of foot traffic headed back from the village or up to the village and during some of the seasons up here the roads can be bad in that area.
PED 19	7/18/2009	Mobility Element/Plan	Open House "pin marks the spot"	Pedestrian	Main Street	Main Street	Sidewalks need to be widened and provided on main especially to transit stops
PED 20	7/18/2009	Mobility Element/Plan	Open House "pin marks the spot"	Pedestrian	All	All	If you want people to walk must provide year around access.
PED 21	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 1	Pedestrian	Main Street	Main Street	Main at center street, laurel mtn, north frontage, post office to light at minaret
PED 22	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 1	Pedestrian	North Village	North Village	Crosswalk in North Village to Parking lot, near bus stop
PED 23	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 1	Pedestrian	Main Street	Main Street	Confirm - proposed pedestrian facility on north side of Main Street between Minaret and existing MUP near North Frontage (Angels)
PED 24	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 1	Pedestrian	All	All	Improve crosswalks
PED 25	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 1	Pedestrian	North Village	North Village	Confirm - North Village
PED 26	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 1	Pedestrian	Main Street	Main Street	Near Goodyear
PED 27	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 1	Pedestrian	Main Street	Main Street	Near Basecamp
PED 28	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 1	Pedestrian	Main Street	Main Street	Main Street near Bank of America
PED 29	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 1	Pedestrian	All	All	All crosswalks need to be in working order
PED 30	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 1	Pedestrian	All, North Village	All, North Village	Areas that attract people i.e. North Village should have a way for pedestrians to safely come to and from the area. It is not enough to have busses going that way but have a way for people to walk there.
PED 31	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 1	Pedestrian	Main Street, Post Office, Bank of America, North Vilalge	Main Street, North Village	There are many problem areas but I am forced to identify these first (crosswalks at Post Office, North Village and Bank of America) - safety of crosswalks
PED 32	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 2	Pedestrian	Sierra Valley Sites	Sierra Valley Sites	Pedestrian facilities in Sierra Valley Sites
PED 33	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 2	Pedestrian	Main Street	Main Street	Pedestrian facilities on Main Street - fill gaps
PED 34	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 2	Pedestrian	Forest Trail	Knolls	Confirm - proposed pedestrian facility on Forest Trail between Minaret and Main Street - north side
PED 35	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 2	Pedestrian	Minaret	North Village	Confirm - proposed pedestrian facility on Minaret between Forest Trail and Mammoth Knolls Drive. Connect to Knolls.
PED 36	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 2	Pedestrian	Meridian	Gateway	Confirm - proposed Meridian Boulevard MUP between Sierra Park Road and College Parkway (ski museum)
PED 37	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 2	Pedestrian	Main Street, Laurel Mountain, Old Mammoth Road	Main Street, Old Mammoth Road	Confirm - proposed mid-block connections south of Main between Laurel Mountain Road and Old Mammoth Road (Bank of America, Rite Aide, etc.)
PED 38	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 2	Pedestrian	Meridian, Old Mammoth Road	Old Mammoth Road	Confirm - proposed mid-block connections south of Meridian Boulevard between Old Mammoth Road and Vons
PED 39	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 2	Pedestrian	Lodestar Drive, Bear Lake Drive	Sierra Star	Confirm - proposed MUP connection between north end of Lodestar Drive and west Bear Lake Drive (near Woodwinds condos)

Mobility Element Public Outreach Event Comments

Comment #	Date	Plan	Source	Mode / Topic	Location	District	Comment or Map Markup[1]
PED 40	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 2	Pedestrian	Majestic Pines Drive, Lake Mary Road	Majestic Pines, Mammoth Slopes	Pedestrian facility between Monterey Pine Road/Majestic Pines Drive and Lake Mary Road
PED 41	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 2	Pedestrian	Sierra Valley Sites	Sierra Valley Sites	Sidewalk in Sierra Valley Sites from Main Street to Meridian on at least 1 side, even if it is narrow
PED 42	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 3	Pedestrian	Main Street, Sierra Park Road	Main Street, Old Mammoth Road	Crosswalk at 203 and Sawmill Cutoff and Sierra Park Road
PED 43	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 3	Pedestrian	Meridian, Sierra Park Road	Old Mammoth Road	4-way crosswalk at Meridian Boulevard and Sierra Park Road
PED 44	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 3	Pedestrian	Waterford	Old Mammoth, Juiper Ridge	Waterford pedestrian facility should be a MUP that connects to bridge at creek (not a sidewalk)
PED 45	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 3	Pedestrian	Old Mammoth Road	Snowcreek	Proposed sidewalk on north side of Old Mammoth Road should be a MUP, not a sidewalk (Gap between Minaret and Mammoth Creek Park).
PED 46	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 3	Pedestrian	Minaret	North Village	Add additional crosswalks across Minaret Road to/from Village - provide more/safe crossings
PED 47	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 3	Pedestrian	Majestic Pines	Majestic Pines, Mammoth Slopes	Connect north end of Majestic Pines to Lake Mary Road/North Village (existing Lodestar MUP)
PED 48	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 3	Pedestrian	Monterey Pines Road, Meridian	Majestic Pines	Connect southeast end of Monterey Pine Road to Meridian Boulevard bike path
PED 49	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 3	Pedestrian	North Village	North Village	North Village major walkability issues. Need to start cohesive planning with developers
PED 50	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 3	Pedestrian	Lodestar Drive, Bear Lake Drive, Callahan	Sierra Star, Sierra Valley Sites	Connect north end of Majestic Pines Drive (Lodestar MUP) to Mains Street and Callahan Way (via Bear Lake Drive)
PED 51	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 3	Pedestrian	Main Street, Center Street, Shady Rest	Main Street, Shady Rest	A lot of business on main street south side don't face neighborhood. Suggest walkable retail along North border of shady rest tract that facilitates neighborhood foot traffic toward main street.
PED 52	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 3	Pedestrian	Main Street, Old Mammoth Road	Main Street, Old Mammoth Road	Commercial districts all front streets. This means business' backs are turned to the neighborhoods. Examples are South of Center Street, South of Main Street Access Road. Suggest improving foot/bike connectivity by creating commercial space more geared to neighborhoods, facing neighborhoods.
PED 53	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 3	Pedestrian	All	All	Suggest using existing parking as walkable hubs. People park, fulfill several tasks before getting back into the car
PED 54	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 3	Pedestrian	Forest Trail	Knolls	Proposed pedestrian facility on Forest Trail between Minaret Road and Main Street is a LOW priority
PED 55	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 3	Pedestrian	Sierra Park Road	Old Mammoth Road	Pedestrian facilities on Sierra Park Road north of hospital and on Tavern are a HIGH priority
PED 56	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 3	Pedestrian	Sierra Valley Sites	Sierra Valley Sites	Mid-block pedestrian/bike connections in Sierra Valley estates
PED 57	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 3	Pedestrian	All	All	Sidewalks/Multi-use path connectivity is not adequately addressed with large developments
PED 58	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 3	Pedestrian	Waterford	Old Mammoth, Juiper Ridge	Waterford bridge that connects MUP from southside across creek to north side
PED 59	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 4	Pedestrian	Forest Trail	Knolls	Confirm - proposed pedestrian facility on Forest Trail between Minaret and Main Street
PED 60	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 4	Pedestrian	Main Street	Main Street	Confirm - proposed pedestrian facility on north side of Main Street between Minaret and existing MUP near North Frontage (Sierra Boulevard to Whiskey Creek)
PED 61	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 4	Pedestrian	Old Mammoth Road	Snowcreek	Continue existing MUP on east side of Old Mammoth Road between Sherwin Creek and proposed Snowcreek VIII entrance
PED 62	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 4	Pedestrian	Old Mammoth Road	Snowcreek	Fill gap in existing Main Path Loop MUP between Mammoth Creek Park and Minaret on north side of Old Mammoth Road
PED 63	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 4	Pedestrian	Waterford, Snowcreek Meadow	Snowcreek	Pedestrian connection along creek between Minaret and north end of Waterford (GIC #24) - Snowcreek Meadow
PED 64	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 4	Pedestrian	Waterford	Old Mammoth, Juiper Ridge	Confirm - proposed Waterford bridge connection
PED 65	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 4	Pedestrian	Monterey Pines Road, Lodestar Drive	Majestic Pines	Connect existing MUP along Lodestar Drive to southeast and northeast ends of Monterey Pine Road
PED 66	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 4	Pedestrian	Majestic Pines Drive, Snowcreek Road	Majestic Pines, Juniper Ridge, Snowcreek	Connect south Majestic Pines Drive (east end) to Snowcreek Road (Snowcreek III)
PED 67	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 4	Pedestrian	All	All	Sidewalks that access transit need to be cleared of snow. Note: it was a COA for Aspen Village Workforce Housing Use Permit that access to transit at Snowcreek Athletic Club by clear year-round.
PED 68	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 4	Pedestrian	Meridian	Meridian	Sidewalk from Old Mammoth Road to Sierra Park on south side should be cleared rather than snow storage for Minaret Mall!
PED 69	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 4	Pedestrian	Main Street, Old Mammoth Road	Main Street, Old Mammoth Road	Center of town needs sidewalks on both sides.
PED 70	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 5	Pedestrian	Main Street	Main Street	Main Street connectivity from Sierra Park Road to North Village
PED 71	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 5	Pedestrian	Main Street	Main Street	Confirm: proposed pedestrian facility on Main Street from Manzanita/Mountain Boulevard to Minaret/Lake Mary
PED 72	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 5	Pedestrian	Minaret Road	North Village, Sierra Star	Confirm: proposed pedestrian facility on Minaret from Main Street to Meridian Boulevard
PED 73	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 5	Pedestrian	Meridian	Meridian, Sierra Valley Sites, Sierra Star	Confirm: near-term pedestrian facilities on Meridian Boulevard from Old Mammoth Road to Minaret Road
PED 74	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 4	Pedestrian	All	All	Provide off grade pedestrian street crossings
PED 75	7/18/2009	Mobility Element/Plan	Open House Survey Comment Sheet	Pedestrian	All	All	All of the districts (North Village, Main Street, Old Mammoth Road, and Snowcreek) have adequate to wonderful sidewalks, paths and other pedestrian facilities. Spend money on more important things.
PED 76	7/18/2009	Mobility Element/Plan	Open House Survey Comment Sheet	Pedestrian	Meridian, Majestic Pines	Meridian, Sierra Valley Sites, Sierra Star, Majestic Pines	I'm glad to see proposed sidewalks on Meridian and up Majestic Pines - pedestrian mobility means nothing without snow removal from sidewalks in the winter.
PED 77	2008/2009	2008/2009 TSMP	2008/2009 TSMP	Pedestrian	Main Street	Main Street	Main Street gap is the key missing link in the Main Path Loop
PED 78	2006, 2007, 2008/2009	2006 Mobility Report, 2007 Mobility Café, 2008/2009 TSMP	2006 Mobility Report, 2007 Mobility Café, 2008/2009 TSMP	Pedestrian	Main Street	Main Street	Main Street is not pedestrian accessible and is dangerous
PED 79	2008/2009	2008/2009 TSMP	2008/2009 TSMP	Pedestrian	Main Street	Main Street	Main Street and Minaret Road intersection is not pedestrian friendly
PED 80	2008/2009	2008/2009 TSMP	2008/2009 TSMP	Pedestrian	Main Street	Main Street	Main Path Loop should be completed
PED 81	2007, 2008/2009	2007 Mobility Café, 2008/2009 TSMP	2007 Mobility Café, 2008/2009 TSMP	Pedestrian	Main Street, Old Mammoth Road	Main Street, Old Mammoth Road	Increased pedestrian connectivity in town center is important
PED 82	2008/2009	2008/2009 TSMP	2008/2009 TSMP	Pedestrian	All	All	Major streets should have sidewalks on both sides
PED 83	2006, 2007, 2008/2009	2006 Mobility Report, 2007 Mobility Café, 2008/2009 TSMP	2006 Mobility Report, 2007 Mobility Café, 2008/2009 TSMP	Pedestrian	All	All	Sidewalks and Paths are not usable year-round
PED 84	2007, 2008/2009	2007 Mobility Café, 2008/2009 TSMP	2007 Mobility Café, 2008/2009 TSMP	Pedestrian	All	All	Sidewalks and Paths should have more separation from vehicle travel lanes
PED 85	2006,	2006 Mobility Report,	2006 Mobility Report, 2007 Mobility	Pedestrian	Schools, All	Old Mammoth Road,	Creating safe routes to schools is a high priority
PED 86	2006	2006 Mobility Report	2006 Mobility Report	Pedestrian	All	All	Neighborhood pedestrian connectivity should be improved
PED 87	2007, 2008/2009	2007 Mobility Café, 2008/2009 TSMP	2007 Mobility Café, 2008/2009 TSMP	Pedestrian	All	All	Connectivity between sidewalks, trails, and transit should be improved
PED 88	2006, 2007, 2008/2009	2006 Mobility Report, 2007 Mobility Café, 2008/2009 TSMP	2006 Mobility Report, 2007 Mobility Café, 2008/2009 TSMP	Pedestrian	All	All	Street Crossings should be consistent and well-lit
PED 89	2006, 2007	2006 Mobility Report, 2007 Mobility Café	2006 Mobility Report, 2007 Mobility Café	Pedestrian	All	All	Signage and wayfinding should be improved
PED 90	2006	2006 Mobility Report	2006 Mobility Report	Pedestrian	All	All	Streetscaping and pedestrian furnishings should be provided
SM 1	7/18/2009	Mobility Element/Plan	Open House "pin marks the spot"	Snow Management	Sierra Valley Sites	Sierra Valley Sites	In sierra valley sites - each lot needs to have an open space "no parking" so town loads can put snow there - so the next lot does not have it all on theirs!
SM 2	7/18/2009	Mobility Element/Plan	Open House "pin marks the spot"	Snow Management	Meridian	Old Mammoth Road	South site of meridian between old mammoth road and sierra park should be cleared (in front of union bank and Vons)
SM 3	7/18/2009	Mobility Element/Plan	Open House "pin marks the spot"	Snow Management	Main Street, Old Mammoth Road	Main Street, Old Mammoth Road	Old mammoth road assessment district should include promenade path on south side of main from bank of America to McDonalds
SM 4	7/18/2009	Mobility Element/Plan	Open House "pin marks the spot"	Snow Management	Old Mammoth Road, Sierra Park Road	Old Mammoth Road	Clear sidewalks from om rd to sierra park rd of snow in winter.
SM 5	7/18/2009	Mobility Element/Plan	Open House "pin marks the spot"	Snow Management	Schools, All	Old Mammoth Road, Meridian, All	Prioritize snow management for sidewalks and mup's - especially important are the safe routes to schools sidewalks (meridian)!
SM 6	7/18/2009	Mobility Element/Plan	Open House "pin marks the spot"	Snow Management	All	All	No project allowed without snow storage
SM 7	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 1	Snow Management	Meridian	Old Mammoth Road, Meridian, Sierra Valley Sites, Sierra Star	Clear snow Meridian Boulevard between Old Mammoth Road and Minaret
SM 8	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 1	Snow Management	Sierra Valley Sites	Sierra Valley Sites	People who own property need to leave an open space so the town blower has a place to blow it - (i.e. Sierra Valley Sites). Sierra Valley Sites is a poor area. Who will pay for it?? Not the land owners.
SM 9	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 2	Snow Management	Lake Mary Road	Majestic Pines, Mammoth Slopes	Lake Mary Road bike path at minimum groomed in winter for pedestrian use
SM 10	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 2	Snow Management	Meridian	Old Mammoth Road, Meridian, Sierra Valley Sites, Sierra Star	Meridian Boulevard - pedestrian access, get them out of the street

Mobility Element Public Outreach Event Comments

Comment #	Date	Plan	Source	Mode / Topic	Location	District	Comment or Map Markup[1]
SM 11	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 2	Snow Management	Main Street, Welcome Center	Main Street, Old Mammoth Road	Clear snow from path at Old Mammoth Road light to Sawmill Cutoff that connects to trail to welcome center
SM 12	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 2	Snow Management	Meridian	Old Mammoth Road, Meridian, Sierra Valley Sites, Sierra Star	Meridian Boulevard (should be cleared or groomed)
SM 13	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 2	Snow Management	Meridian	Sierra Star, Sierra Valley Sites	MUP from Meridian at Tallus to Main Street at Callahan Way (should be cleared or groomed)
SM 14	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 2	Snow Management	Lake Mary Road	Majestic Pines, Mammoth Slopes	Lake Mary Road bike path (should be cleared or groomed)
SM 15	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 2	Snow Management	East Main Path	Main Street, Gateway	Main Path Loop at east end
SM 16	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 2	Snow Management	Main Street	Main Street	Path from Welcome Center to Old Mammoth Road - groomed.
SM 17	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 2	Snow Management	Meridian	Old Mammoth Road, Meridian, Sierra Valley Sites, Sierra Star	Clear sidewalks on Meridian
SM 18	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 4	Snow Management	Main Street	Main Street	Main Street from Post Office to North Village
SM 19	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 4	Snow Management	North Village	North Village	North Village area
SM 20	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 4	Snow Management	Meridian	Old Mammoth Road	Sidewalk north of Vons parking lot should not be snow storage for Minaret Mall (should be cleared or groomed)
SM 21	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 4	Snow Management	Main Street	Main Street	Promenade on Main Street. (Let's get together with Caltrans!) (should be cleared or groomed)
SM 22	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 4	Snow Management	Main Street	Main Street	Especially Main Street from P.O. to Village (should be cleared or groomed)
SM 23	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 4	Snow Management	Old Mammoth Road	Snowcreek	Clearing the sidewalk in front of Aspen Village Townhomes was a condition of approval for the Use Permit. Year-round access to the transit stop was a critical condition for the reduced parking to be accepted by the Planning Commission. This last year, sidewalk wasn't cleared after 1st three storms and mothers with strollers and children had to walk in the narrowed (by snow berms) Old Mammoth Road. It was horrible. We can't endanger our workforce and schoolchildren like this. To be "feet first" and "transit second" and not have access (cleared sidewalks) for pedestrians is unacceptable.
SM 24	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 4	Snow Management	All	All	Need to figure out how to NOT dump road snow on sidewalks.
SM 25	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 4	Snow Management	Main Street	Main Street	Main Street snow removal
SM 26	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 4	Snow Management	Meridian, Old Mammoth Road	Old Mammoth Road	Meridian/Old Mammoth Road intersection - pedestrians and kids are forced to walk in the roads.
SM 27	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 4	Snow Management	Main Street	Main Street	Snow removal on Main Street has to be resolved between Caltrans and Town
SM 28	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 5	Snow Management	Meridian	Old Mammoth Road, Meridian, Sierra Valley Sites, Sierra Star	Clear snow on Meridian Boulevard between Minaret Road and Sierra Park
SM 29	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 5	Snow Management	Old Mammoth Road	Snowcreek	Clear snow on Old Mammoth Road MUP between Aspen Village and Minaret Road
SM 30	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 5	Snow Management	Lake Mary Road	Majestic Pines, Mammoth Slopes	Clear snow on Lake Mary Road MUP between Davison Road and Minaret Road
SM 31	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 5	Snow Management	Eagle Lodge	Juniper Ridge	Clear snow on MUP near Eagle Lodge on north side of Meridian Road between Valley Vista Drive and Eagle Lodge
SM 32	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 5	Snow Management	All	All	Suggestion: Have businesses/residents to clear their snow on sidewalks
SM 33	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 5	Snow Management	Old Mammoth Road	Old Mammoth Road	Should be MUP on upper Old Mammoth Road (cross county, bike, pedestrian)
SM 34	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 5	Snow Management	Main Street	Main Street	Should be a discrete MUP adjacent to Main Street between Callahan Way and path at Laurel Mountain Road (Bank of America)
SM 35	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 5	Snow Management	Sierra Valley Sites	Sierra Valley Sites	Should be a MUP through Sierra Valley Sites (east/west) from Callahan Way to Sierra Park Road (along Tavern Road)
SM 36	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 5	Snow Management	Main Street	Main Street	Get a pedestrian path on all of Main Street and keep cleared
SM 37	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 5	Snow Management	Sierra Valley Sites, Shady Rest, Old Mammoth Road	Sierra Valley Sites, Shady Rest, Old Mammoth Road	Also a path Sierra Valley to Shady Rest to Old Mammoth Road
SM 38	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 5	Snow Management	Schools, All	Old Mammoth Road, Meridian, All	Safe Routes to Schools!!! Major!!
SM 39	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 5	Snow Management	All	All	Have businesses and residents keep sidewalks clear.
SM 40	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 5	Snow Management	Sierra Valley Sites, Shady Rest, Old Mammoth Road	Sierra Valley Sites, Shady Rest, Old Mammoth Road	Having a path through Sierra Valley Sites/Shady Rest to Old Mammoth Road/Sierra Park will keep pedestrians off streets.
SM 41	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 5	Snow Management	Schools, All	Old Mammoth Road, Meridian, All	Safe Routes to Schools - snow removal
SM 42	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 5	Snow Management	Main Street	Main Street	203/Main Street - connect BAD sidewalks
SM 43	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 5	Snow Management	All	All	Winter feet first mobility infrastructure - MUPS/Groomed
SM 44	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 5	Snow Management	All	All	Creative solutions to winter pedestrian mobility - more snow storing solutions
SM 45	7/18/2009	Mobility Element/Plan	Open House Survey Comment Sheet	Snow Management	All	All	Decent space in winter months to walk along road
SM 46	7/18/2009	Mobility Element/Plan	Open House Survey Comment Sheet	Snow Management	All	All	Do not allow projects to be built without adequate snow storage
SM 47	2006	2006 Mobility Report	2006 Mobility Report	Snow Management	All	All	High-use pedestrian areas should be better maintained
SM 48	2008/2009	2008/2009 TSMP	2008/2009 TSMP	Snow Management	All	All	Existing multi-use paths (MUPs) should be cleared/groomed
SM 49	2006	2006 Mobility Report	2006 Mobility Report	Snow Management	All	All	Bus stops and sidewalks leading to them are not cleared/groomed
SM 50	2006	2006 Mobility Report	2006 Mobility Report	Snow Management	All	All	Daytime snow hauling worsens congestion
SM 51	2006	2006 Mobility Report	2006 Mobility Report	Snow Management	All	All	Insufficient setback area and right-of-way for snow storage on roads
SM 52	2006	2006 Mobility Report	2006 Mobility Report	Snow Management	All	All	Snow berms limit visibility and sight distance
SM 53	2006	2006 Mobility Report	2006 Mobility Report	Snow Management	All	All	Parking lot safety and efficiency is compromised by snow and ice
TC 1	7/18/2009	Mobility Element/Plan	Open House "pin marks the spot"	Traffic Calming	Sierra Valley Sites	Sierra Valley Sites	Empower the police to give out tickets for going too fast sierra valley sites.
TC 2	7/18/2009	Mobility Element/Plan	Open House "pin marks the spot"	Traffic Calming	Sierra Valley Sites	Sierra Valley Sites	In sierra valley sites do not let them use it as a short cut to old mammoth
TC 3	7/18/2009	Mobility Element/Plan	Open House "pin marks the spot"	Traffic Calming	All	All	More round about less lights - more emphasis on traffic calming. Lights seem more effective for ensuring safe pedestrian crossings than effective in most efficiently handling congestion
TC 4	7/18/2009	Mobility Element/Plan	Open House "pin marks the spot"	Traffic Calming	Main Street, Old Mammoth Road, North Village	Main Street, Old Mammoth Road, North Village	More planning freedom, for businesses to have outdoor cafes, restaurant, sidewalk use, etc.
TC 5	7/18/2009	Mobility Element/Plan	Open House "pin marks the spot"	Traffic Calming	Main Street	Main Street	Consider traffic circles, town square where no vehicles are allowed
TC 6	7/18/2009	Mobility Element/Plan	Open House "pin marks the spot"	Traffic Calming	All	All	Use traffic circles rather than stoplights in areas where the public easement is limited (e.g. omr, s manor rd)
TC 7	7/18/2009	Mobility Element/Plan	Open House "pin marks the spot"	Traffic Calming	Main Street, North Village	Main Street, North Village	Add roundabouts at town entry (s pk rd/203), om rd/203, p.o/203, f trail/203
TC 8	7/18/2009	Mobility Element/Plan	Open House "pin marks the spot"	Traffic Calming	Forest Trail	Knolls	Traffic feedback sign on (uphill direction) F trail ; "gear down" sign on F trail (at pinecrest junction)
TC 9	7/18/2009	Mobility Element/Plan	Open House "pin marks the spot"	Traffic Calming	Old Mammoth Road	Old Mammoth Road	Upper old mammoth road same as #9
TC 10	7/18/2009	Mobility Element/Plan	Open House "pin marks the spot"	Traffic Calming	North Village	North Village	Investigate "bulb outs/ neckdowns" for mammoth Xing ped issues (l Mary rd, Minaret only not 203) sites 2 & 3
TC 11	7/18/2009	Mobility Element/Plan	Open House "pin marks the spot"	Traffic Calming	All	All	Roundabout, if were to have them, should be used around town
TC 12	7/18/2009	Mobility Element/Plan	Open House "pin marks the spot"	Traffic Calming	All	All	Stupid people without chains most accidents at 203 and minaret road during winter (trying to beat light or make left turn)
TC 13	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 1	Traffic Calming	Old Mammoth Road, Lakes Basin	Old Mammoth	Old Mammoth Road becoming the popular way to get to/from Lakes Basin
TC 14	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 1	Traffic Calming	Old Mammoth Road, Minaret	Snowcreek	Old Mammoth near Minaret - lack of signs creates "lost drivers"
TC 15	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 1	Traffic Calming	All	All	25 MPH in all of town. Better for people, bikes, noise, pollution
TC 16	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 1	Traffic Calming	Main Street, Minaret	North Village	Traffic calming on Minaret south of Main Street, when the Crossing comes in
TC 17	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 1	Traffic Calming	Old Mammoth Road	Old Mammoth Road, Snowcreek	Traffic calming on Old Mammoth Road when Snowcreek VIII comes in
TC 18	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 1	Traffic Calming	Main Street	Main Street	Traffic Calming on Main Street between Post Office and North Village
TC 19	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 1	Traffic Calming	Eagle Lodge	Juniper Ridge	Traffic Calming near Eagle Lodge
TC 20	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 1	Traffic Calming	Main Street, Laurel	Main Street	Main Street and Laurel Mountain Road intersection can't turn left (northbound left) onto Main Street
TC 21	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 1	Traffic Calming			Publish (hardcopy or online) statistics downloaded from speed signs.
TC 22	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 1	Traffic Calming	All	All	Speeding should be solvable without much expense (to satisfaction of community members)
TC 23	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 1	Traffic Calming	Old Mammoth Road	Old Mammoth Road	Upper Old Mammoth
TC 24	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 1	Traffic Calming	Forest Trail	Knolls	Lower Forest Trail
TC 25	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 1	Traffic Calming	Sierra Valley Sites	Sierra Valley Sites	Sierra Valley Sites
TC 26	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 1	Traffic Calming	Old Mammoth Road	Old Mammoth Road, Old Mammoth, Snowcreek	Old Mammoth Road
TC 27	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 1	Traffic Calming	North Village	North Village	North Village
TC 28	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 2	Traffic Calming	Main Street, Post Office	Main Street	Post Office interim suggestion to include written instructions to "STOP WHEN FLASHING LIGHTS" too many don't stop
TC 29	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 2	Traffic Calming	Forest Trail	Knolls	Forest Trail - narrow and speed limit is too fast should be residential instead of connector

Mobility Element Public Outreach Event Comments

Comment #	Date	Plan	Source	Mode / Topic	Location	District	Comment or Map Markup[1]
TC 30	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 2	Traffic Calming	Main Street	Main Street	At entrance of TOML, cars don't slow down until they get to the light at Old Mammoth and Main St. They're flying into town. Need "REDUCED SPEED AHEAD" sign
TC 31	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 2	Traffic Calming	All	All	Resort Speed Designation 30/15
TC 32	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 2	Traffic Calming	All	All	Slow cars down - will help in all areas.
TC 33	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 2	Traffic Calming	All	All	People won't get out of their cars and bike or walk if its not safe! Less vehicles, and slow speeds would help immensely.
TC 34	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 2	Traffic Calming	Forest Trail	Knolls	Stop sign at Grindelwald and Pinecrest along Forest Trail to reduce speed
TC 35	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 2	Traffic Calming	Old Mammoth Road	Old Mammoth Road, Old Mammoth, Snowcreek	Old Mammoth Road more speed signs and potential stop signs
TC 36	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 4	Traffic Calming	North Village	North Village	Traffic Calming in North Village - crosswalks.
TC 37	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 4	Traffic Calming	Old Mammoth Road	Old Mammoth Road, Snowcreek	Traffic calming near Mammoth Creek Park on Old Mammoth Road
TC 38	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 4	Traffic Calming	Forest Trail, Minaret	North Village	Forest Trail and Minaret Road intersection
TC 39	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 4	Traffic Calming	Minaret	North Village	Minaret coming into North Village from Main Lodge
TC 40	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 4	Traffic Calming	Old Mammoth Road	Old Mammoth Road, Snowcreek	Old Mammoth Road passing park. Turning left from park is scary.
TC 41	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 4	Traffic Calming	All	All	You can move more traffic at 25 mph through roundabout than at 35 mph through stoplights
TC 42	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 4	Traffic Calming	Main Street, North Village, Old Mammoth Road	Main Street, North Village, Old Mammoth Road	Isn't diagonal back-in parking better than parallel? Mall shoppers don't know how to parallel park. I've read about the success of diagonal back-in parking in planning magazines.
TC 43	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 4	Traffic Calming	Sierra Valley Sites, Shady Rest	Sierra Valley Sites, Shady Rest	Sierra Valley Sites needs to connect with Shady Rest Tract Better and through to Old Mammoth Road. Why not alternate one-way streets in SVS with traffic calming like they use in New Zealand (Auckland) (see John Armstrong at MMSA)? Fork-lifted portable planters are placed at an angle so cars have to slow down (in New Zealand they're permanent with curbing etc.) The planters could be a point of neighborhood pride. The flowers would be maintained by neighborhood association or interested neighbors.
TC 44	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 4	Traffic Calming	Old Mammoth Road	Old Mammoth, Snowcreek	Old Mammoth Road downhill from Bluffs and by Snowcreek
TC 45	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 4	Traffic Calming	Canyon Blvd	North Village	Canyon Boulevard - traffic travels too fast in both directions.
TC 46	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 4	Traffic Calming	Old Mammoth Road	Old Mammoth, Snowcreek	Old Mammoth Road - several sections are traveled too fast (particularly in Old Mammoth).
TC 47	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 4	Traffic Calming	Forest Trail	Knolls	Forest Trail - downhill traffic too fast.
TC 48	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 4	Traffic Calming	North Village	North Village	Bridge - elevated pedestrian crossings throughout Village area.
TC 49	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 4	Traffic Calming	All	All	Put in a roundabout to see how it will work - population could become an advocate for them if they get used to one
TC 50	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 5	Traffic Calming	Old Mammoth Road	Old Mammoth, Snowcreek	Old Mammoth Road south of Minaret Road - 35 MPH or 25 MPH
TC 51	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 5	Traffic Calming	Main Street	North Village	Main Street between the North Village and Callahan Way - add MUP's and lighting
TC 52	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 5	Traffic Calming	Forest Trail	Knolls	Forest trail speeding issues
TC 53	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 5	Traffic Calming	Old Mammoth Road	Old Mammoth Road, Snowcreek	Old Mammoth Road at Mammoth Creek Park blind curve right before park…children! Maybe a warning sign.
TC 54	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 5	Traffic Calming	Sierra Valley Sites	Sierra Valley Sites	Sierra Valley Sites - needs lighting. Pedestrians!
TC 55	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 5	Traffic Calming	Old Mammoth Road	Old Mammoth Road	Old Mammoth Road, get a bike lane on upper part of Old Mammoth.
TC 56	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 5	Traffic Calming	Main Street	Main Street	Better sidewalk on Main between Minaret and Joaquin.
TC 57	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 5	Traffic Calming	All	All	Traffic calming increases emergency response.
TC 58	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 5	Traffic Calming	All	All	Depending on intersection, roundabouts are generally best.
TC 59	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 5	Traffic Calming	All	All	Signs in town where Mtn. Ski can be located.
TC 60	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 5	Traffic Calming	Sierra Valley Sites	Sierra Valley Sites	Sierra Valley!!! Speeding/pedestrians walking trough property
TC 61	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 5	Traffic Calming	Forest Trail	Knolls	Forest Trail - grade is steep - speeding - more signs?
TC 62	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 5	Traffic Calming	Old Mammoth Road	Old Mammoth Road, Snowcreek	Blind curve on Old Mammoth Road near park.
TC 63	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 5	Traffic Calming	Main Street	Main Street, All	Vehicular wayfinding on 203. Vehicular wayfinding is really bad in general.
TC 64	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 5	Traffic Calming	All	All	Consider traffic circles (mini-roundabouts) that trucks can handle - anywhere we can put them. Get rid of traffic signals.
TC 65	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 5	Traffic Calming	Forest Trail	Knolls	Forest Trail - "gear down" sign, another feedback sign (uphill)
TC 66	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 5	Traffic Calming	Sierra Valley Sites	Sierra Valley Sites	Sierra Valley Sites - consider one-way streets if additional connector between Dorrance and Chaparral.
TC 67	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 5	Traffic Calming	Lake Mary Road, Minaret	North Village	Mammoth Crossing - narrow Lake Mary Road and South Minaret to improve pedestrian safety. (For Mammoth Crossing project - do it now, with Mammoth Crossing project. Don't wait and retrofit later.
TC 68	7/18/2009	Mobility Element/Plan	Open House Survey Comment Sheet	Traffic Calming	All	All	From an outside perspective - having lived in other towns with big pedestrian/vehicle conflicts - situation here does not seem that bad. Certainly better, safer crossings are needed.
TC 69	7/18/2009	Mobility Element/Plan	Open House Survey Comment Sheet	Traffic Calming			After ski hours people driving can/are tired. Probably have lessened reflexes when driving.
TC 70	7/18/2009	Mobility Element/Plan	Open House Survey Comment Sheet	Traffic Calming	All	All	I watch people run stop signs in this town often. I don't think more stop signs will solve the problem. I only think a roundabout is necessary at Main and Minaret. That is a dangerous intersection in the winter. People are always speeding around here like their still on the 395. I think the solar radars are awesome!
TC 71	7/18/2009	Mobility Element/Plan	Open House Survey Comment Sheet	Traffic Calming	All	All	Traffic signals are not the answer
C&S 1	7/18/2009	Mobility Element/Plan	Open House "pin marks the spot"	Traffic Congestion and Connectivity	All	All	General comment - mammoth is rarely if ever congested. Real congestion is in SoCal. We're lucky!
C&S 2	7/18/2009	Mobility Element/Plan	Open House "pin marks the spot"	Traffic Congestion and Connectivity	Snowcreek, Old Mammoth Road	Snowcreek, Old Mammoth Road	Great idea - should connect to snowcreek 8
C&S 3	7/18/2009	Mobility Element/Plan	Open House "pin marks the spot"	Traffic Congestion and Connectivity	Snowcreek, Old Mammoth Road	Snowcreek, Old Mammoth Road	Great - will help with evacuation for an emergency, will also help ped/ bike connectivity
C&S 4	7/18/2009	Mobility Element/Plan	Open House "pin marks the spot"	Traffic Congestion and Connectivity	Snowcreek, Old Mammoth Road	Snowcreek, Old Mammoth Road	Just moves problem further east on meridian and does not address congestion on old mammoth south and west of the creek crossing. Creates potential for congestion at Sherwin road intersection - seems short sighted.
C&S 7	7/18/2009	Mobility Element/Plan	Open House "pin marks the spot"	Traffic Congestion and Connectivity	Callahan Way	Sierra Valley Sites	Fix storm drains west of callahan before road extension is built (north village, holiday house - ritz)
C&S 8	7/18/2009	Mobility Element/Plan	Open House "pin marks the spot"	Traffic Congestion and Connectivity	Main Street	Main Street	Don't narrow 203 back to 3 lanes (main street) I lived here before it was widened, & it was NOT good.
C&S 9	7/18/2009	Mobility Element/Plan	Open House "pin marks the spot"	Traffic Congestion and Connectivity	Snowcreek, Old Mammoth Road	Snowcreek, Old Mammoth Road	Sierra park extension - do not cross creek - make connection at chateau road instead
C&S 10	7/18/2009	Mobility Element/Plan	Open House "pin marks the spot"	Traffic Congestion and Connectivity	All	All	Large developments need to address circulation issues. Redoing lanes at intersections is not enough. Need structural measures.
C&S 11	7/18/2009	Mobility Element/Plan	Open House "pin marks the spot"	Traffic Congestion and Connectivity	All	All	More shuttle service 15-20 minutes apart instead of 30.
C&S 12	7/18/2009	Mobility Element/Plan	Open House "pin marks the spot"	Traffic Congestion and Connectivity	All	All	Need facilities for loaders (private) in town to minimize trips to commercial park causing obstructions to traffic.
C&S 13	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 1	Traffic Congestion and Connectivity	North Village	North Village	North village
C&S 14	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 1	Traffic Congestion and Connectivity	Main Street, Post Office	Main Street	Main street at post office
C&S 15	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 1	Traffic Congestion and Connectivity	Main Street, Fire Station	Main Street	Main street at fire station (forest trail)
C&S 16	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 1	Traffic Congestion and Connectivity	All	All	Traffic issues during worst case scenarios should at least be understood
C&S 17	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 1	Traffic Congestion and Connectivity	All	All	Consistent with my opinion that big developments need structural improvement to mitigate traffic. Its not good enough to just redo lanes, adding turn lane. Need assessment dist. So developer bears cost.
C&S 18	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 1	Traffic Congestion and Connectivity	Old Mammoth Road, Minaret	Snowcreek	Old Mammoth Road and Minaret Intersection
C&S 19	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 1	Traffic Congestion and Connectivity	Meridian, Schools	Gateway	Meridian at schools
C&S 20	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 1	Traffic Congestion and Connectivity	All	All	I accept traffic due to lots of visitors. However, it seems at least some of the reason for circ. Problems is poor design/planning.
C&S 21	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 1	Traffic Congestion and Connectivity	Main Street, Sierra Valley Sites	Main Street, Sierra Valley Sites	If you make 203 2 lanes they will cut through Sierra Valley Sites to Old Mammoth - they already do it now!!! All four streets.
C&S 22	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 1	Traffic Congestion and Connectivity	All	All	Don't correct a perceived problem and create another - i.e. - be aware of routing/encouraging traffic through neighborhoods to reduce main artery conditions.
C&S 23	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 2	Traffic Congestion and Connectivity	Canyon, Lake Mary Road	North Village	Inconvenient merge at Canyon and Lake Mary Road (right hand turn lane has cars wanting to go straight)
C&S 24	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 2	Traffic Congestion and Connectivity	Main Street, Sierra Blvd	Main Street	Absence of (center) left hand turn lane on 203 creates congestion across from Angels area

Mobility Element Public Outreach Event Comments

Comment #	Date	Plan	Source	Mode / Topic	Location	District	Comment or Map Markup[1]
C&S 25	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 2	Traffic Congestion and Connectivity	Sierra Park Road, Meridian, Schools	Old Mammoth Road	Congestion during school in session - in AM for drop-off and PM for pick-up
C&S 26	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 2	Traffic Congestion and Connectivity	Main Street, Old Mammoth Road, Vons, Post Office	Main Street, Old Mammoth Road	Congestion , particularly where there are pedestrian/vehicle conflicts at Main and Post office and Old Mammoth Road near Vons
C&S 27	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 2	Traffic Congestion and Connectivity	Manzanita	Sierra Valley Sites	Manzanita - volume, speed, pedestrians, bikers
C&S 28	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 2	Traffic Congestion and Connectivity	North Village	North Village	North Village
C&S 29	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 2	Traffic Congestion and Connectivity	All	All	"Complete Streets" concept should strongly factor in feet-first - i.e., more improvements for pedestrian, bicyclists, than for motor vehicles.
C&S 30	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 2	Traffic Congestion and Connectivity	All	All	Traffic congestion is seasonal. When not a major weekend there are few problems.
C&S 31	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 4	Traffic Congestion and Connectivity	North Village, 203, Main Lodge	North Village	203 from North Village to Main Lodge
C&S 32	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 4	Traffic Congestion and Connectivity	Main Street, Post Office	Main Street	Main and Post Office intersection - congestion
C&S 33	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 4	Traffic Congestion and Connectivity	Sierra Park Road, Mammoth Creek Road	Snowcreek	Connect Mammoth Creek Road to new Sierra Park extension
C&S 34	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 4	Traffic Congestion and Connectivity	Sierra Park Road, Sherwin Creek Road	Snowcreek	Additional connection from Snowcreek VIII to Sherwin Creek Road
C&S 35	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 4	Traffic Congestion and Connectivity	Main Street, Forest Trail	Main Street	Main and Forest Trail intersection - congestion
C&S 36	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 4	Traffic Congestion and Connectivity	Main Street, Laurel Mountain Road	Main Street	Main and Laurel Mountain Road intersection - congestion
C&S 37	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 4	Traffic Congestion and Connectivity	Meridian, Schools	Gateway	Congestion in front of schools on Meridian
C&S 38	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 4	Traffic Congestion and Connectivity	Waterford	Old Mammoth, Juiper Ridge	All of Old Mammoth is a cul-de-sac because no alternate emergency egress. Need Waterford to go through to Majestic Pines.
C&S 39	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 4	Traffic Congestion and Connectivity	Waterford, Sierra Park Road, Sherwin Creek Road	Snowcreek, Old Mammoth	Need new access to Old Mammoth Road from Chateau to east (new road). Can existing bike lane bridge near Hayden Cabin (~10 feet wide) be widened for auto traffic without getting into watershed impacts with USFS? Bridge crossing already exists. Can it be enlarged? Let's Look into this! New Zealand has very successful one lane bridges (see John Armstrong at MMSA). When two cars approach, a stop light at either end of the bridge is activate, so driver knows when to stop or go ahead. Works very well. A one lane bridge at Waterford or a one lane bridge or enlargement of the existing bike bridge by the Hayden Cabin would be good candidates for this. 4 square miles
C&S 40	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 4	Traffic Congestion and Connectivity	All	All	Having a smooth integrated system with easy access is the key. If one part of it doesn't work, then none of it will.
C&S 41	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 4	Traffic Congestion and Connectivity	All	All	Our road network intensity is the least compared to Aspen/Breckenridge. At buildout this will need to change.
C&S 42	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 4	Traffic Congestion and Connectivity	Waterford	Old Mammoth, Juiper Ridge	Waterford extension.
C&S 43	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 4	Traffic Congestion and Connectivity	Sierra Park Road, Sherwin Creek Road, Old Mammoth Road	Snowcreek	Extend Sierra Park to the South to link to Old Mammoth Road
C&S 44	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 4	Traffic Congestion and Connectivity	Sierra Park Road, Waterford, Shady Rest	Shady Rest, Old Mammoth Road, Old Mammoth	More roads in critical areas - Sierra Park, Waterford, Shady Rest Parcel
C&S 45	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 5	Traffic Congestion and Connectivity	Waterford	Old Mammoth, Juiper Ridge	Waterford bridge - provides alternate exit in the event of fire and disperse traffic
C&S 46	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 5	Traffic Congestion and Connectivity	Majestic Pines, Meridian, Minaret, Forest Trail, Main Street, Old Mammoth Road	Juniper Ridge, Meridian, Old Mammoth Road, Main Street	Roundabouts - Majestic Pines/Meridian, Meridian/Minaret, Minaret/Forest Trail, Main Street/Sierra Park, Main Street/Old Mammoth Road, Old Mammoth Road/Minaret
C&S 47	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 5	Traffic Congestion and Connectivity	Old Mammoth Road, Tavern, Sierra Nevada Road	Old Mammoth Road	Traffic circles - Old Mammoth Road/Tavern, Old Mammoth Road, Sierra Nevada
C&S 48	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 5	Traffic Congestion and Connectivity	Canyon Blvd, Lake Mary Road	North Village	Danger - intersection of Canyon and Lake Mary Road
C&S 49	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 5	Traffic Congestion and Connectivity	Chateau, Sierra Park Road	Old Mammoth Road	Extend Chateau to new Sierra Park extension
C&S 50	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 5	Traffic Congestion and Connectivity	Old Mammoth Road, Sierra Park Road	Old Mammoth Road	Create one-way pairs of Old Mammoth Road and Sierra Park Road. One way south on Old Mammoth Road and one way north on Sierra Park
C&S 51	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 5	Traffic Congestion and Connectivity	Dorrance, Chaparral	Sierra Valley Sites, Meridian	Extend Dorrance to Chaparral
C&S 52	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 5	Traffic Congestion and Connectivity	All	All	Traffic calming and snow storage will greatly reduce fire department access, increase response times.
C&S 53	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 5	Traffic Congestion and Connectivity	Dorrance, Chaparral	Sierra Valley Sites, Meridian	Extend Dorrance Street (in Sierra Valley) to Chaparral
C&S 54	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 5	Traffic Congestion and Connectivity	All	All	A lot of pedestrians walking through other resident's property.
C&S 55	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 5	Traffic Congestion and Connectivity	All	All	Put in roundabouts wherever possible
C&S 56	7/18/2009	Mobility Element/Plan	Open House Survey Comment Sheet	Traffic Congestion and Connectivity	All	All	Just avoid peak by using transit!
C&S 57	7/18/2009	Mobility Element/Plan	Open House Survey Comment Sheet	Traffic Congestion and Connectivity	Main Street	Main Street	Do not narrow Main Street (Highway 203) to 3 lanes - I lived here before it was widened and it was NOT good.
C&S 58	7/18/2009	Mobility Element/Plan	Open House Survey Comment Sheet	Traffic Congestion and Connectivity	Main Street, Minaret	North Village	Intersection of Main and Minaret is a winter death trap!! Better signage need for turn lanes! I've been sent sideways twice down Minaret because the person in the center lane decides to go straight! It's scary! I REALLY DON'T LIKE THE INTERSECTION IN WINTER!
C&S 59	7/18/2009	Mobility Element/Plan	Open House Survey Comment Sheet	Traffic Congestion and Connectivity	All	All	Feet first, transit second, car LAST. Smaller intersections and roads, but more connectivity.
C&S 60	2006	2006 Mobility Report	2006 Mobility Report	Traffic Congestion and Connectivity	All	All	"Superblocks" focus emergency service vehicles, transit, cross-town, neighborhood, business, and service deliveries on only a few streets (especially Old Mammoth Road)
C&S 61	2006	2006 Mobility Report	2006 Mobility Report	Traffic Congestion and Connectivity	All	All	Streets are not interconnected, which causes circuitous travel
C&S 62	2006	2006 Mobility Report	2006 Mobility Report	Traffic Congestion and Connectivity	All	All	Emergency access is limited by: narrow roadways, tight turning radii, and blind-spots created b snow berms
C&S 63	2006	2006 Mobility Report	2006 Mobility Report	Traffic Congestion and Connectivity	All	All	Too many driveways (curbcuts) reduces snow storage, impedes through traffic, and creates pedestrian conflicts
C&S 64	2006	2006 Mobility Report	2006 Mobility Report	Traffic Congestion and Connectivity	North Village, Main Street, Old Mammoth Road, Sierra Park Road	Main Street, North Village, Old Mammoth Road	Vehicle and pedestrian conflicts are common in: North Village, Main Street, Old Mammoth Road, Sierra Park Road
C&S 65	2006, 2008/2009	2006 Mobility Report, 2008/2009 TSMP	2006 Mobility Report, 2008/2009 TSMP	Traffic Congestion and Connectivity	All	All	Signage and wayfinding should be improved
C&S 66	2006	2006 Mobility Report	2006 Mobility Report	Traffic Congestion and Connectivity	All	All	Speeding in neighborhoods and other in-town locations should be addressed
C&S 67	2006	2006 Mobility Report	2006 Mobility Report	Traffic Congestion and Connectivity	All	All	Traffic Calming in neighborhoods should be provided
C&S 68	2006	2006 Mobility Report	2006 Mobility Report	Traffic Congestion and Connectivity	All	All	Unpaved and substandard roadways are a safety issue

Mobility Element Public Outreach Event Comments

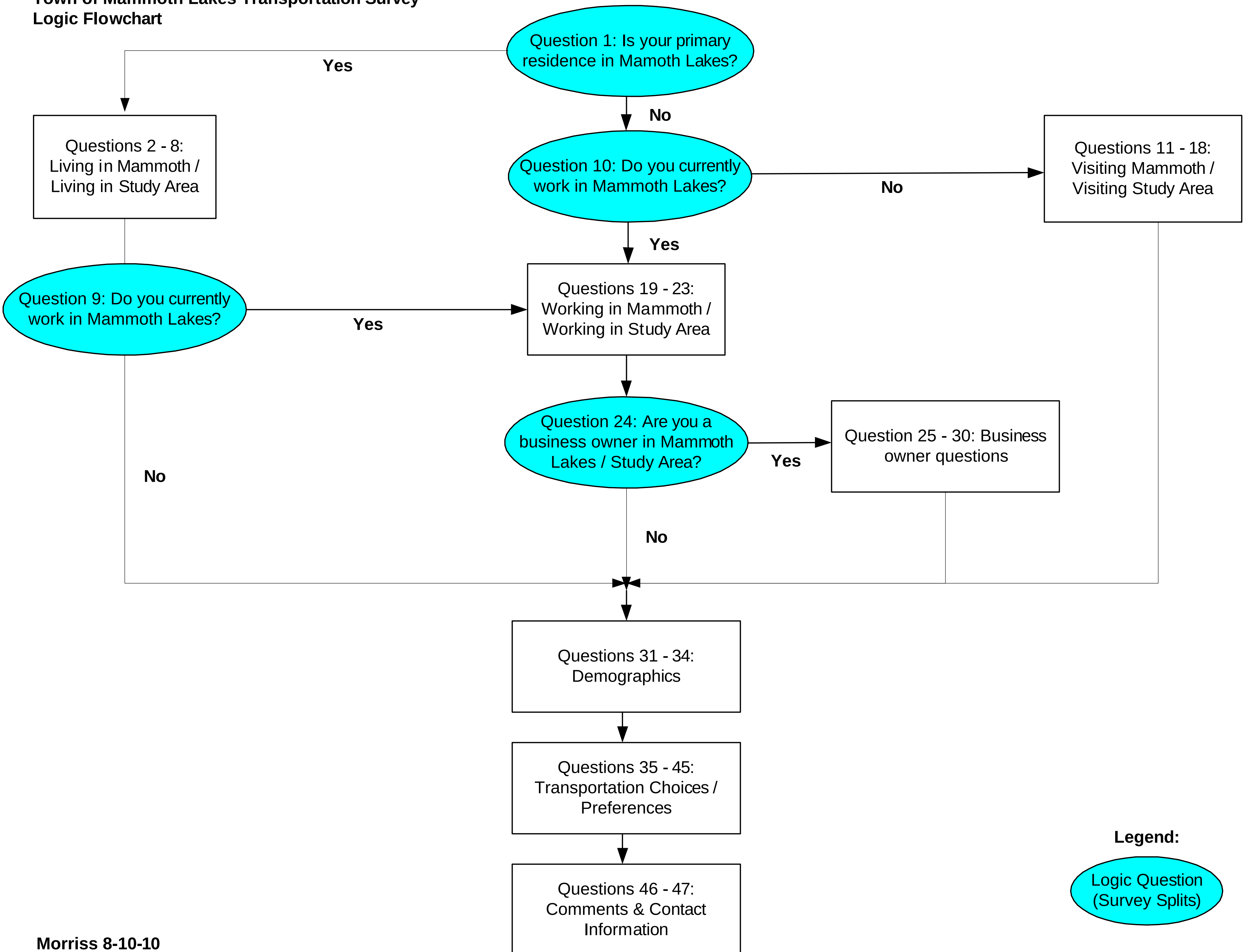
Comment #	Date	Plan	Source	Mode / Topic	Location	District	Comment or Map Markup[1]
C&S 69	2008/2009	2008/2009 TSMP	2008/2009 TSMP	Traffic Congestion and Connectivity	Main Street, RV Park, Shady Rest	Main Street	Snowmobilers should be able to access Shady Rest from the Mammoth Mountain RV Park via the tunnel under Main Street
T 1	7/18/2009	Mobility Element/Plan	Open House "pin marks the spot"	Transit Facilities	Juniper Lodge, Red Fir	Juniper Ridge, Old Mammoth	People have said to me wish we had the bus come to our area 1. Chair 15 area 2. Old mammoth red fir road.
T 2	7/18/2009	Mobility Element/Plan	Open House "pin marks the spot"	Transit Facilities	Juniper Ridge, Meridian, Old Mammoth Road, Main Street, North Village	Snowcreek, Old Mammoth Road, Main Street, Meridian, Sierra Star, Sierra Valley Sites	More frequency on green line and red line to main lodge in winter
T 3	7/18/2009	Mobility Element/Plan	Open House "pin marks the spot"	Transit Facilities	Snowcreek	Snowcreek	Proposed purple/white line on map should be added when/if snowcreek 8 hotel and residential is built. Developer should fund. snowcreek 8 should have red line year round and purple in winter only.
T 4	7/18/2009	Mobility Element/Plan	Open House "pin marks the spot"	Transit Facilities	Main Street, North Village, Reds Meadow	Main Street, North Village	Incorporate opportunities for connectivity between Reds shuttle and retail core with express, direct or just careful coordination of schedules.
T 5	7/18/2009	Mobility Element/Plan	Open House "pin marks the spot"	Transit Facilities	Lakes Basin		Work with FS on a lakes basin specific mobility plan. FS has planning $ at the moment.
T 6	7/18/2009	Mobility Element/Plan	Open House "pin marks the spot"	Transit Facilities	Welcome Center	Main Street	Consider bus stop at the visitor center and shady rest.
T 7	7/18/2009	Mobility Element/Plan	Open House "pin marks the spot"	Transit Facilities	Shady Rest		Add bus stop at shady rest winter staging area
T 8	7/18/2009	Mobility Element/Plan	Open House "pin marks the spot"	Transit Facilities	All	All	Very nice to have transit with bike trailers
T 9	7/18/2009	Mobility Element/Plan	Open House "pin marks the spot"	Transit Facilities	All	All	Operate and adjust capacity needs for peak periods. Low service levels in peak periods reduce return users. Adjust capacity for demand
T 10	7/18/2009	Mobility Element/Plan	Open House "pin marks the spot"	Transit Facilities	All	All	If a time is posted, bus should stop and wait if it arrives early
T 11	7/18/2009	Mobility Element/Plan	Open House "pin marks the spot"	Transit Facilities	Library	Gateway	Keep stop at library/ ice rink, especially if rink is going this winter.
T 12	7/18/2009	Mobility Element/Plan	Open House "pin marks the spot"	Transit Facilities	Old Mammoth Road	Snowcreek	Why does the summer red line no longer go out to snowcreek gym?
T 13	7/18/2009	Mobility Element/Plan	Open House "pin marks the spot"	Transit Facilities	Lakes Basin	North Village, Main Street, Old Mammoth Road	Lakes basin trolley from village starts an hour earlier on weekends than any connecting line. Could red and or Lift start early enough for that connection at 8 am?
T 14	7/18/2009	Mobility Element/Plan	Open House "pin marks the spot"	Transit Facilities	Old Mammoth Road	Old Mammoth Road	Express service from park n ride lot will increase usage of lot in winter
T 15	7/18/2009	Mobility Element/Plan	Open House "pin marks the spot"	Transit Facilities	Main Street, Old Mammoth Road	Main Street, Old Mammoth Road	Express to main lodge and 15-20 min wait for town shuttles
T 16	7/18/2009	Mobility Element/Plan	Open House "pin marks the spot"	Transit Facilities	Lee Road, Lake Mary Road	Mammoth Slopes, Majestic Pines	Trolley stop at lee and lake mary road is on the map but driver does not stop to pick up - so I have to walk down to village on lake mary road NOT SAFE
T 17	7/18/2009	Mobility Element/Plan	Open House "pin marks the spot"	Transit Facilities	Old Mammoth Road	Old Mammoth	Trolley to red fir please!
T 18	7/18/2009	Mobility Element/Plan	Open House "pin marks the spot"	Transit Facilities	Old Mammoth Road	Old Mammoth	Old mammoth turn around: good location is at red fir (downhill corner)
T 19	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 1	Transit Facilities	Chateau Road	Meridian	Shelters at stops on Chateau Road
T 20	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 1	Transit Facilities	Old Mammoth Road	Snowcreek	Shelter at stop near Snowcreek Athletic Club
T 21	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 1	Transit Facilities	Old Mammoth Road	Old Mammoth	Extend service down Old Mammoth Road (Red Fir Road, Tamarack Street, Ski Trail areas)
T 22	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 1	Transit Facilities	Juniper Ridge	Juniper Ridge	Extend service to Juniper Ridge and chair 15 areas (Summer)
T 23	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 1	Transit Facilities	Industrial Park	Gateway	Extend service to Industrial Park
T 24	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 1	Transit Facilities	Mammoth Slopes	Mammoth Slopes	Summer service needed in Mammoth Slopes (Canyon Boulevard, Lakeview, etc.)
T 25	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 1	Transit Facilities	All	All	More shelters for bus riders
T 26	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 1	Transit Facilities	All	All	Shelters should not have trash cans inside them, should be outside
T 27	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 1	Transit Facilities	Sierra Valley Sites	Sierra Valley Sites	Transit service in Sierra Valley Sites is good
T 28	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 1	Transit Facilities	All	All	In general, greater frequency of transit
T 29	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 1	Transit Facilities	All	All	Dog friendly
T 30	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 1	Transit Facilities	All	All	Shelters need to be bigger with benches and activities boards/info boards
T 31	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 1	Transit Facilities	Lakes Basin		Promote Lakes Basin shuttle more! And the current driver is outstanding.
T 32	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 1	Transit Facilities	All	All	Is an electric bus fleet possible?
T 33	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 2	Transit Facilities	Old Mammoth Road	Old Mammoth	Extend service down Old Mammoth Road (Red Fir)
T 34	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 2	Transit Facilities	Forest Trail, Grindewald, Mammoth Knolls, 203	Knolls	Provide service on Forest Trail, to Grindelwald Road, to Mammoth Knolls Drive, to 203 and down to Village
T 35	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 2	Transit Facilities	Welcome Center	Main Street	Provide service to Welcome Center
T 36	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 2	Transit Facilities	Industrial Park	Gateway	Extend service on Meridian to Industrial Park and inside Industrial Park. Extend service onto proposed road from Commerce Circle to 203.
T 37	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 2	Transit Facilities	All	All	Have same transit routes in summer and in winter
T 38	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 2	Transit Facilities	All	All	Shelters at each stop but I guess it isn't practical but perhaps every 2nd or third stop - really needed for winter
T 39	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 2	Transit Facilities	All	All	Information systems at each stop
T 40	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 2	Transit Facilities	All	All	ADA "kneeler" buses w/ flipout ramp!
T 41	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 3	Transit Facilities	Airport		Consider shuttle service to airport
T 42	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 3	Transit Facilities	All	All	School bus system need to figure out transport to schools
T 43	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 3	Transit Facilities	Old Mammoth Rd	Old Mammoth	Extend bus service further into Old Mammoth Road. Need to make extra effort in community outreach to get buy-in for this type of service
T 44	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 3	Transit Facilities	All	All	Need to target underserved neighborhoods
T 45	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 3	Transit Facilities	All	All	Improved bus shelters, large enough to protect from elements
T 46	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 3	Transit Facilities	Welcome Center	Main Street	Bus stop at welcome center to access nordic trail system
T 47	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 3	Transit Facilities	All	All	Info systems at transit stops that tell minutes until next bus/trolley; GPS unit on board for timed tracking)
T 48	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 3	Transit Facilities	All	All	General Idea - Loops (2) around town - "hubs" from which you can connect to "spokes" around town
T 49	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 3	Transit Facilities	North Village, 203, Main Lodge	North Village	Short run between Village parking and Main Lodge (winter)
T 50	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 3	Transit Facilities	All	All	Use school buses to supplement MMSA service for peak demand
T 51	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 3	Transit Facilities	203, Main Lodge		Make Minaret Road a toll road, with the toll station just above the turnoff to Scenic Loop. This will: 1) enable paying for town taking over maintenance of (former) 203 from Caltrans. 2) Greatly reduce problem of private vehicles parking from Chair 4 to Main Lodge. 3) Reduce environmental impact of private vehicle trips to Main Lodge.
T 52	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 3	Transit Facilities	North Village, All	North Village, All	Identify the Village as a transit hub - improved signage/information kiosk/easy transfers
T 53	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 3	Transit Facilities	All	All	Address/consider the mix of pedestrians/cars/buses
T 54	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 4	Transit Facilities	Old Mammoth Road	Old Mammoth	Extend service down Old Mammoth Road (Red Fir)
T 55	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 4	Transit Facilities	Forest Trail	Knolls	Provide service on Forest Trail
T 56	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 4	Transit Facilities	Meridian, College, Industrial Park, Welcome Center	Gateway, Main Street	Extend service on Meridian from College Parkway to Industrial Park and then to Welcome Center
T 57	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 4	Transit Facilities	Park and Ride Lot	Old Mammoth Road	Provide ADA ramp at Park and Ride Lot to access the transit shelter more directly
T 58	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 4	Transit Facilities	Knolls	Knolls	Extend service to Knolls
T 59	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 4	Transit Facilities	All	All	ADA lifts need to operate on buses
T 60	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 4	Transit Facilities	Old Mammoth Road, Main Street	Old Mammoth Road, Main Street	Red Line needs to be broken up - too long, too many people
T 61	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 4	Transit Facilities	All	All	Perfect existing system
T 62	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 4	Transit Facilities	Schools, All	Old Mammoth Road	Need to plan for more bus routes and less traffic in/around schools
T 63	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 4	Transit Facilities	All	All	Predictable schedule and adequate frequency
T 64	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 4	Transit Facilities	Snowcreek, North Village	Old Mammoth Road, Snowcreek, Main Street, North Village	More buses from Snowcreek Athletic Club to Village
T 65	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 4	Transit Facilities	All	All	Have transit system work for to and from school - separate school buses really doesn't make sense
T 66	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 5	Transit Facilities	Old Mammoth Road	Old Mammoth	Extend service down Old Mammoth Road (to Red Fir)
T 67	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 5	Transit Facilities	All	All	Training bus drivers to operate ADA lift. Should offer refresher training.
T 68	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 5	Transit Facilities	Trails	Gateway	Extend service to the Trails via Wagon Wheel/College Parkway
T 69	7/16/2009	Mobility Element/Plan	Mobility Café 1 Table 5	Transit Facilities	The Trails	Gateway	Shelters
T 70	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 4	Transit Facilities	All	All	More buses to meet demands on holidays/weekends
T 71	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 4	Transit Facilities	Old Mammoth Road, Main Street	Old Mammoth Road, Main Street	Break up the Red line - it takes too long and fills up too quickly
T 72	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 4	Transit Facilities	Airport		Airport transit with multiple flights per day. Hotel shuttles may not be able to balance hotel needs with multiple pick-ups at airport
T 73	7/17/2009	Mobility Element/Plan	Mobility Café 2 Table 5	Transit Facilities	Airport, Shady Rest Park, Mammoth Creek Park		Bus integration with airport and parks
T 74	7/18/2009	Mobility Element/Plan	Open House Survey Comment Sheet	Transit Facilities	All	All	More shelters like one on Old Mammoth/Tavern
T 75	7/18/2009	Mobility Element/Plan	Open House Survey Comment Sheet	Transit Facilities	Main Street	Main Street	Need shelters on both sides of Main Street

Mobility Element Public Outreach Event Comments

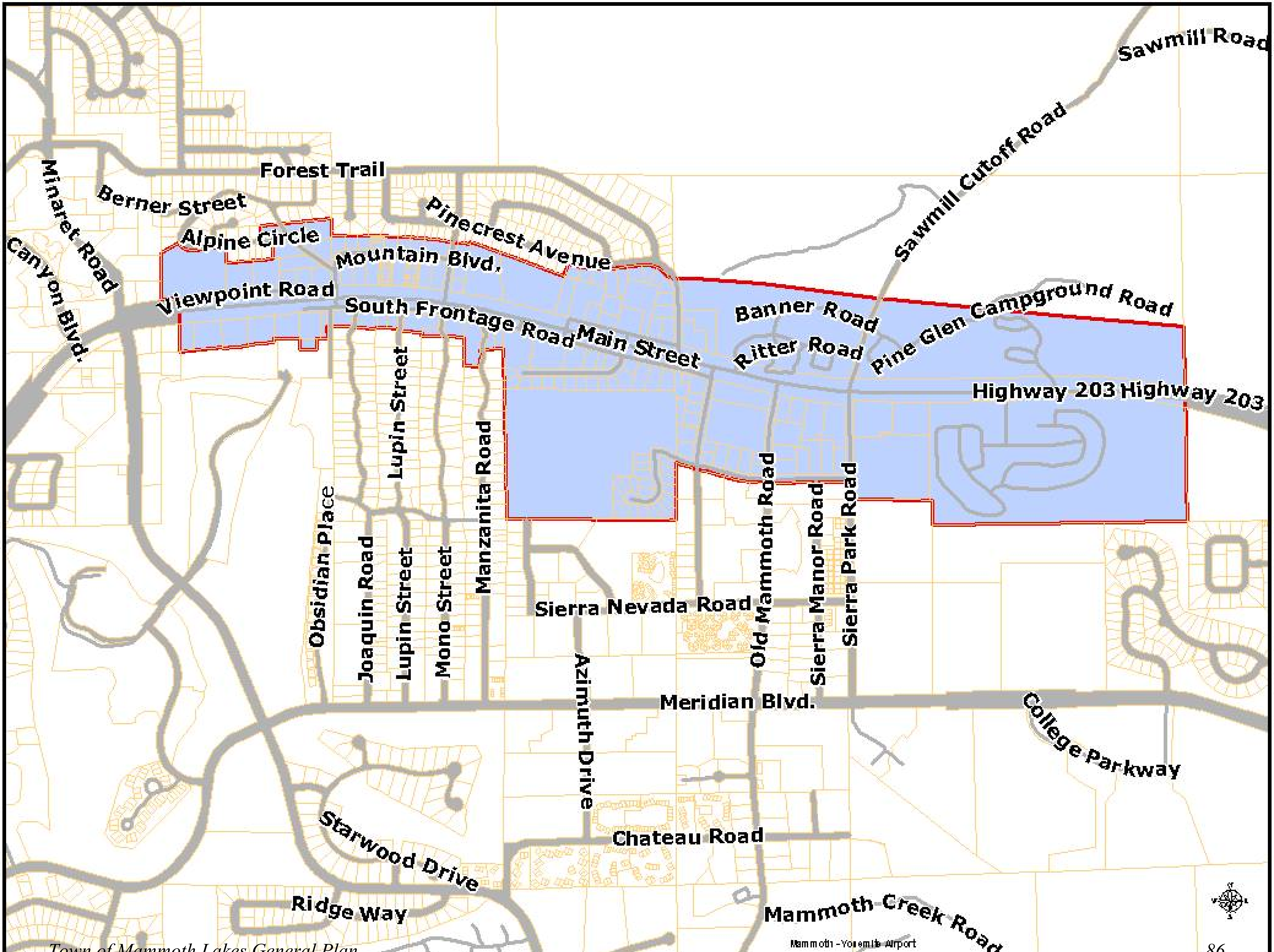
Comment #	Date	Plan	Source	Mode / Topic	Location	District	Comment or Map Markup[1]
T 76	7/18/2009	Mobility Element/Plan	Open House Survey Comment Sheet	Transit Facilities	Juniper Ridge, Meridian, Old Mammoth Road, Main Street, North Village	Snowcreek, Old Mammoth Road, Main Street, Meridian, Sierra Star, Sierra Valley Sites	More red line and green line buses in winter
T 77	7/18/2009	Mobility Element/Plan	Open House Survey Comment Sheet	Transit Facilities	All	All	Remove shelters not in use
T 78	7/18/2009	Mobility Element/Plan	Open House Survey Comment Sheet	Transit Facilities	Majestic Pines Drive	Majestic Pines	No buses come near where I live at the end of Majestic Pines. If bus service were better, year-round, I'd use bus and not car.
T 79	2007	2007 Mobility Café	2007 Mobility Café	Transit Facilities	All	All	Transit should be more reliable
T 80	2006, 2007	2006 Mobility Report, 2007 Mobility Café	2006 Mobility Report, 2007 Mobility Café	Transit Facilities	All	All	Ski Shuttles are too crowded during peak season
T 81	2007	2007 Mobility Café	2007 Mobility Café	Transit Facilities	All	All	Transit should be improved and extended
T 82	2006, 2007, 2008/2009	2006 Mobility Report, 2007 Mobility Café, 2008/2009 TSMP	2006 Mobility Report, 2007 Mobility Café, 2008/2009 TSMP	Transit Facilities	All	All	Transit should serve neighborhoods
T 83	2008/2009	2008/2009 TSMP	2008/2009 TSMP	Transit Facilities	All	All	Transit should be more coordinated with the Main Path Loop
T 84	2006, 2008/2009	2006 Mobility Report, 2008/2009 TSMP	2006 Mobility Report, 2008/2009 TSMP	Transit Facilities	Main Street	Main Street	Providing transit turnouts and shelters on Main Street should be a high priority
T 85	2006, 2008/2009	2006 Mobility Report, 2008/2009 TSMP	2006 Mobility Report, 2008/2009 TSMP	Transit Facilities	All	All	Turnouts and shelters should be improved and added
T 86	2006, 2008/2009	2006 Mobility Report, 2008/2009 TSMP	2006 Mobility Report, 2008/2009 TSMP	Transit Facilities	All	All	Pedestrian access to transit stops should be improved and should be accessible year-round
T 87	2006	2006 Mobility Report	2006 Mobility Report	Transit Facilities	All	All	Transit does not accommodate skier and snowboarder equipment
T 88	2007	2007 Mobility Café	2007 Mobility Café	Transit Facilities	All	All	Signage should be consistent
T 89	2007	2007 Mobility Café	2007 Mobility Café	Transit Facilities	All	All	Schedules should be clearer and more widely available
T 90	2008/2009	2008/2009 TSMP	2008/2009 TSMP	Transit Facilities	All	All	Real-time “next bus” information should be provided
T 91	2007	2007 Mobility Café	2007 Mobility Café	Transit Facilities	All	All	Expansion of gondola system should be considered

Note: 1 "Confirm" indicates that the commenter agreed with the proposed facility indicated on the concept maps.

Town of Mammoth Lakes Transportation Survey
Logic Flowchart

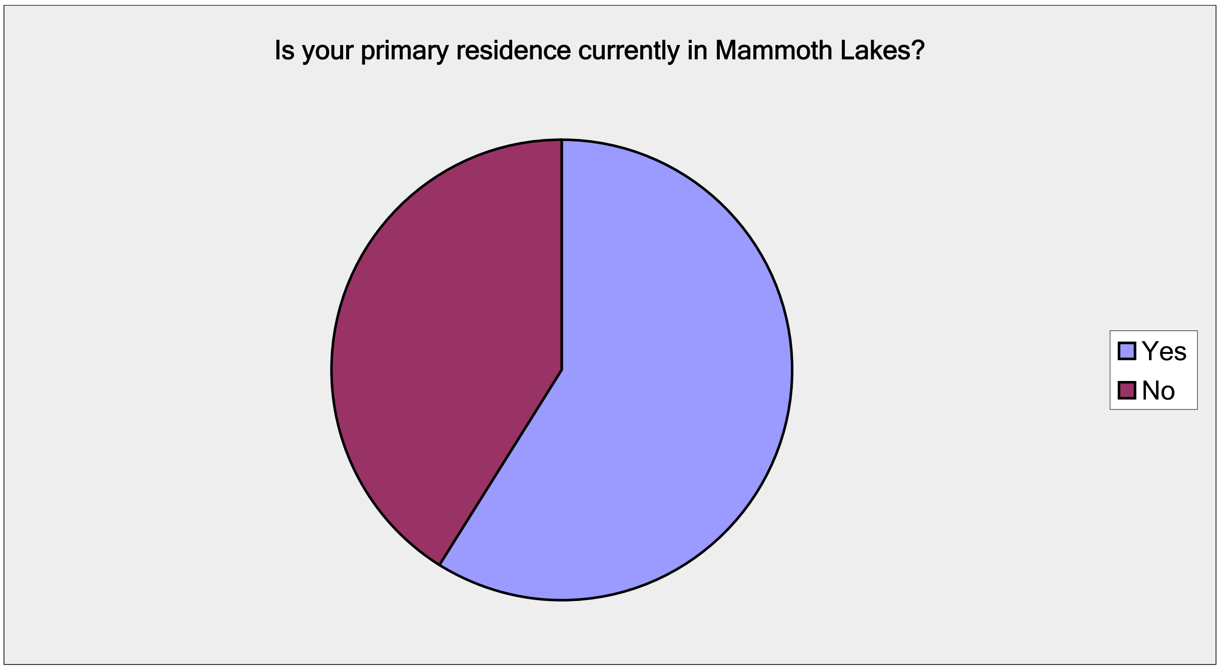


Morriss 8-10-10


Sawmill Road
Sawmill Cutoff Road
Forest Trail
Berner Street
Minaret Road
Canyon Blvd.
Alpine Circle
Pinecrest Avenue
Mountain Blvd.
Viewpoint Road
South Frontage Road
Main Street
Banner Road
Ritter Road
Pine Glen Campground Road
Highway 203
Highway 203
Lupin Street
Manzanita Road
Obsidian Place
Joaquin Road
Lupin Street
Mono Street
Old Mammoth Road
Sierra Manor Road
Sierra Park Road
Sierra Nevada Road
Azimuth Drive
Meridian Blvd.
College Parkway
Chateau Road
Starwood Drive
Ridge Way
Mammoth Creek Road
Mammoth - Yosemite Airport

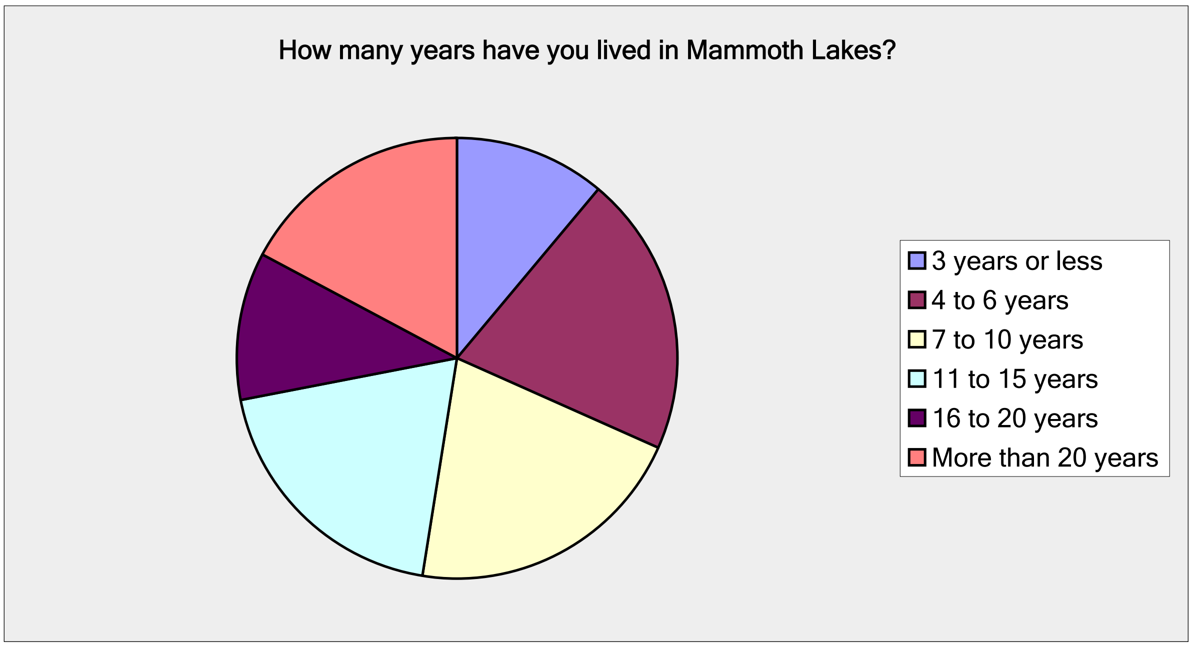
Mammoth Lakes Transportation Survey Question 1

Is your primary residence currently in Mammoth Lakes?		
Answer Options	Response Percent	Response Count
Yes	59.0%	85
No	41.0%	59
	answered question	144
	skipped question	0



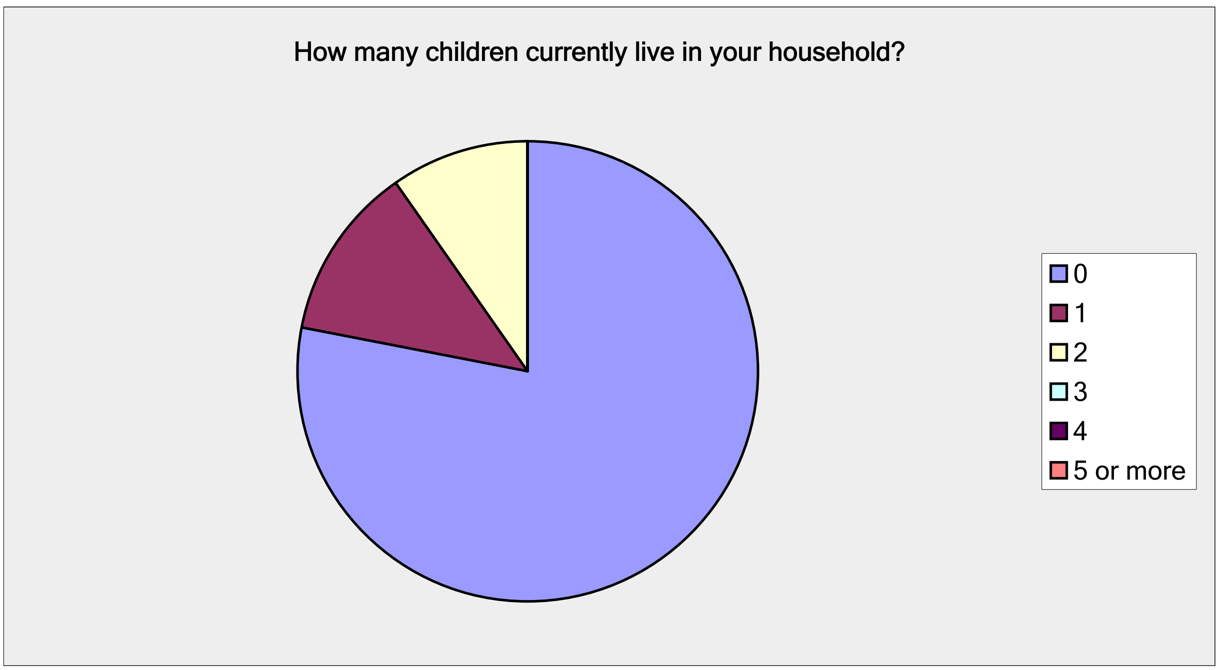
Mammoth Lakes Transportation Survey Question 2

How many years have you lived in Mammoth Lakes?		
Answer Options	Response Percent	Response Count
3 years or less	11.0%	9
4 to 6 years	20.7%	17
7 to 10 years	20.7%	17
11 to 15 years	19.5%	16
16 to 20 years	11.0%	9
More than 20 years	17.1%	14
	answered question	82
	skipped question	62



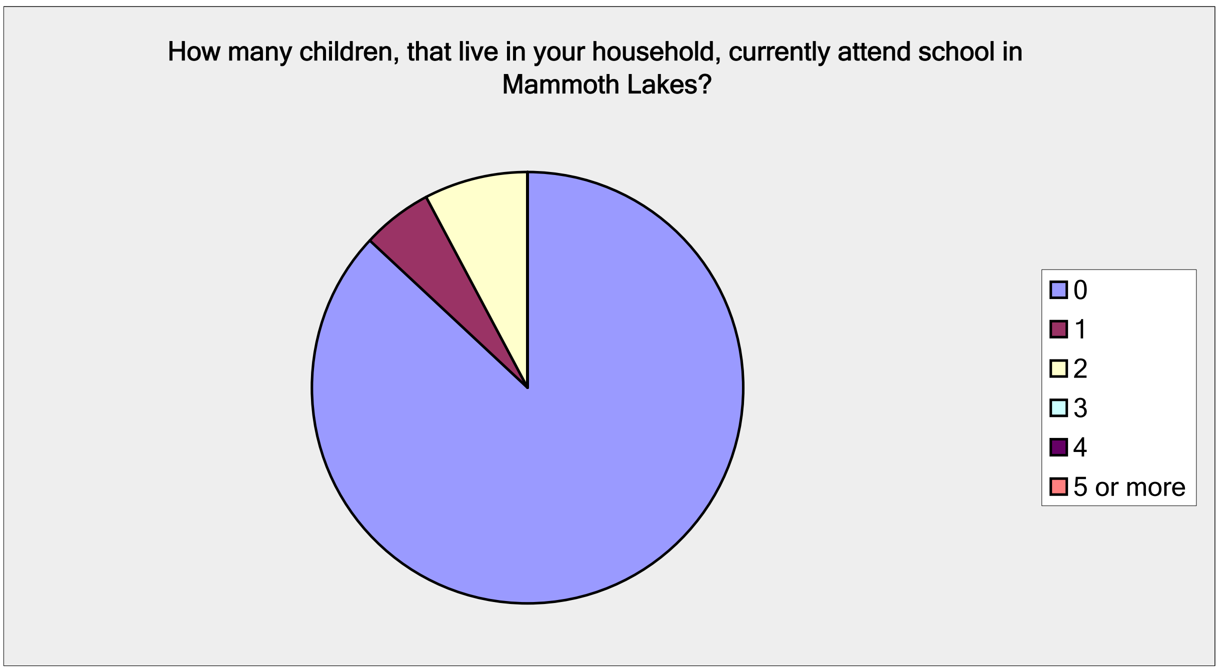
Mammoth Lakes Transportation Survey Question 3

How many children currently live in your household?		
Answer Options	Response Percent	Response Count
0	78.0%	64
1	12.2%	10
2	9.8%	8
3	0.0%	0
4	0.0%	0
5 or more	0.0%	0
	answered question	82
	skipped question	62



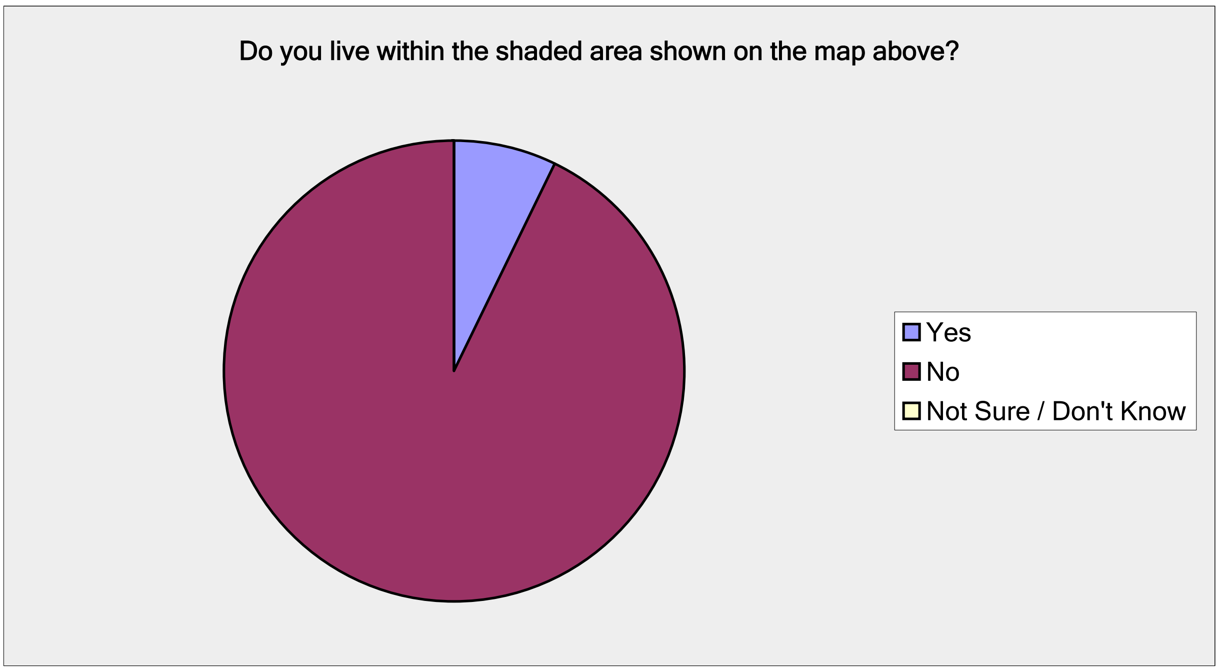
Mammoth Lakes Transportation Survey Question 4

How many children, that live in your household, currently attend school in Mammoth Lakes?		
Answer Options	Response Percent	Response Count
0	87.0%	67
1	5.2%	4
2	7.8%	6
3	0.0%	0
4	0.0%	0
5 or more	0.0%	0
	answered question	77
	skipped question	67



Mammoth Lakes Transportation Survey Question 5

Do you live within the shaded area shown on the map above?		
Answer Options	Response Percent	Response Count
Yes	7.3%	6
No	92.7%	76
Not Sure / Don't Know	0.0%	0
	answered question	82
	skipped question	62



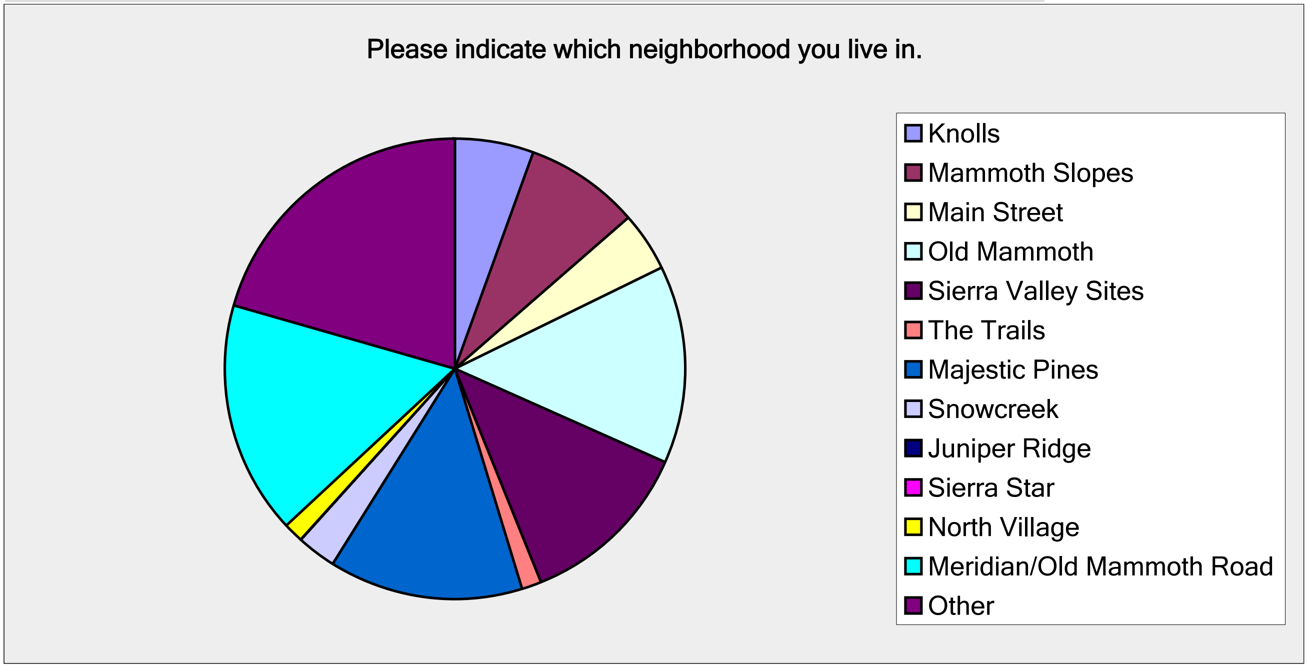
Mammoth Lakes Transportation Survey Question 6

Please indicate which neighborhood you live in.		
Answer Options	Response Percent	Response Count
Knolls	5.5%	4
Mammoth Slopes	8.2%	6
Main Street	4.1%	3
Old Mammoth	13.7%	10
Sierra Valley Sites	12.3%	9
The Trails	1.4%	1
Majestic Pines	13.7%	10
Snowcreek	2.7%	2
Juniper Ridge	0.0%	0
Sierra Star	0.0%	0
North Village	1.4%	1
Meridian/Old Mammoth Road	16.4%	12
Other	20.5%	15
Other (please specify)		23
	answered question	73
	skipped question	71

Number	Other (please specify)
1	Rusty Ln
2	Industrial Park
3	Timber Ridge Estates
4	shadow st
5	132 sierra
6	crowley lake
7	Tavern Rd. between Sierra Manor and Sierra Park
8	college parkway dorms
9	SIERRA HOLIDAY MHP - AZIMUTH DRIVE
10	End of Sierra Nevada Rd
11	Top of John Muir Road...between Canyon Lodge and Chair 15...is that Mammoth Slopes?
12	John Muir (adjacent to Greyhawk), between Canyon and Eagle Creek/Chair 15
13	On Shady Rest Rd, closest intersection Tavern Rd. &Laurel Mtn.
14	Knob Hill Lane (Sierra Estates?)
15	Sierra Nevada Rd
16	Bluffs
17	Mountain Boulevard
18	Pine Crest
19	Sierra Park Road across from the hospital
20	San Joaquin Villas
21	The Ghetto
22	Lake Mary & Lee Road (near Davison)
23	Canyon Blvd. and Mammoth Slopes Drive

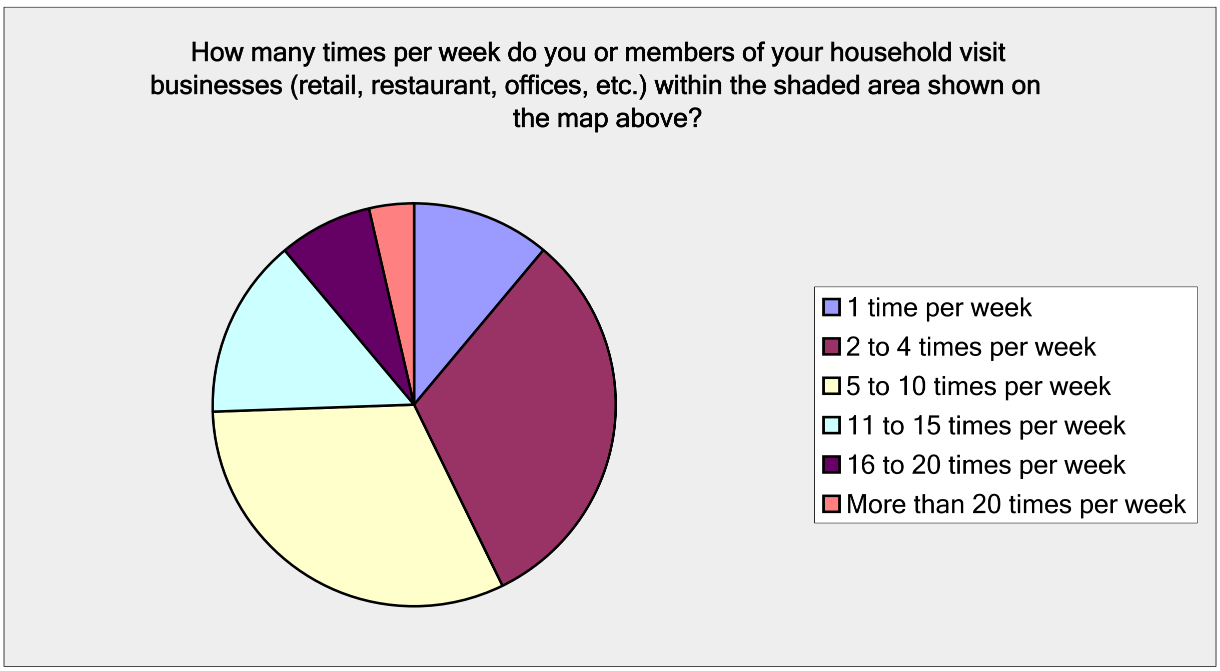
Mammoth Lakes Transportation Survey

Please indicate which neighborhood you live in.



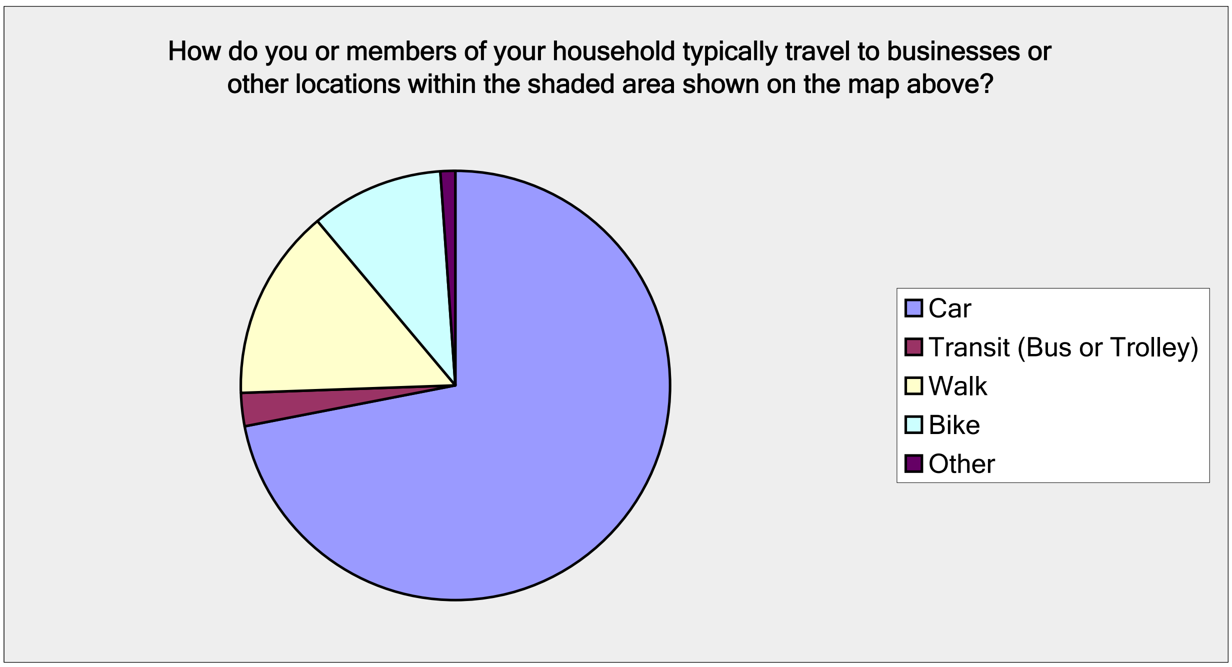
Mammoth Lakes Transportation Survey Question 7

How many times per week do you or members of your household visit businesses (retail, restaurant, offices, etc.) within the shaded area shown on the map above?		
Answer Options	Response Percent	Response Count
1 time per week	11.0%	9
2 to 4 times per week	31.7%	26
5 to 10 times per week	31.7%	26
11 to 15 times per week	14.6%	12
16 to 20 times per week	7.3%	6
More than 20 times per week	3.7%	3
	answered question	82
	skipped question	62



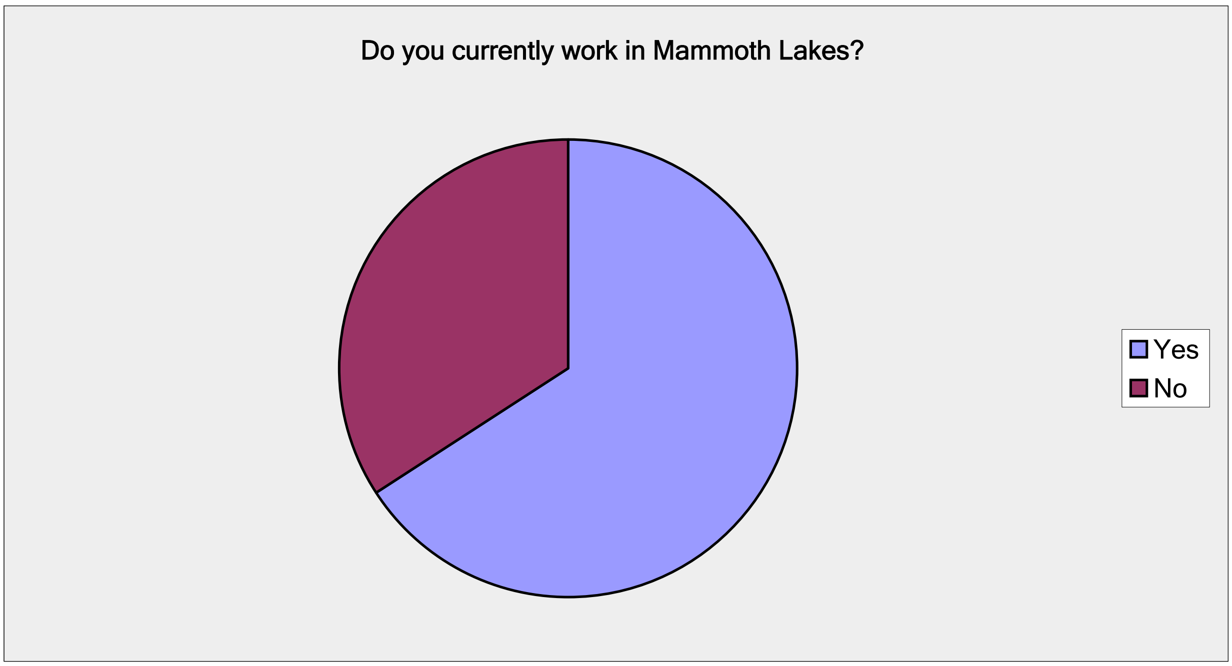
Mammoth Lakes Transportation Survey Question 8

How do you or members of your household typically travel to businesses or other locations within the shaded area shown on the map above?		
Answer Options	Response Percent	Response Count
Car	72.0%	59
Transit (Bus or Trolley)	2.4%	2
Walk	14.6%	12
Bike	9.8%	8
Other	1.2%	1
	answered question	82
	skipped question	62



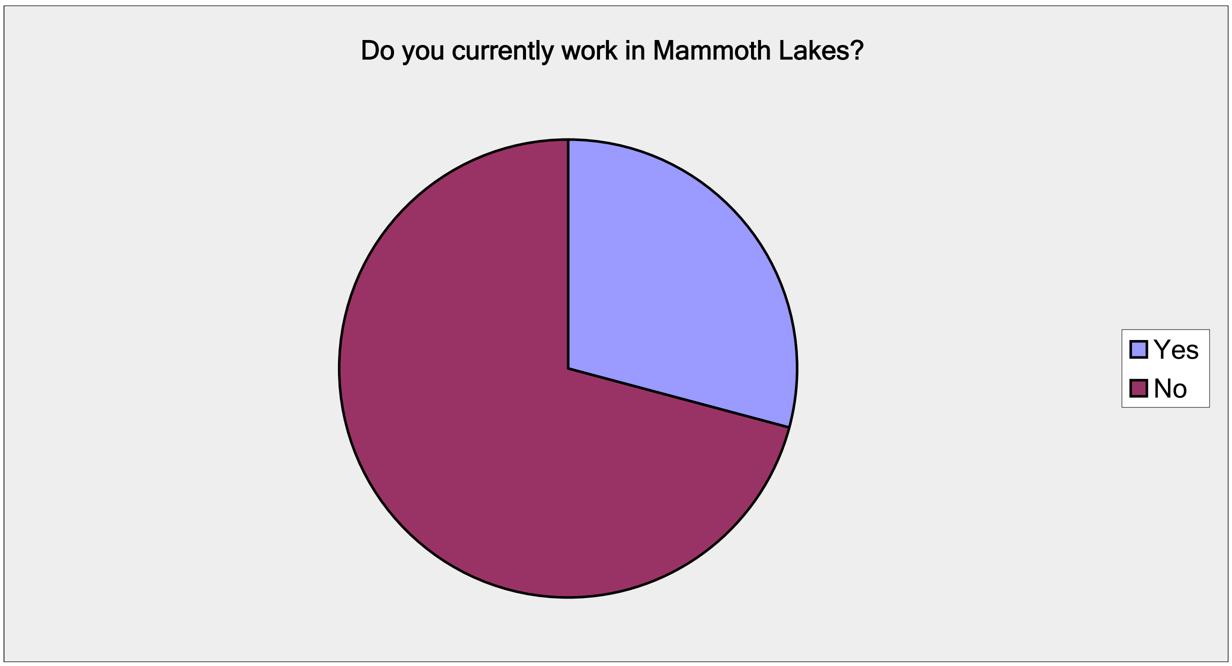
Mammoth Lakes Transportation Survey Question 9

Do you currently work in Mammoth Lakes?		
Answer Options	Response Percent	Response Count
Yes	65.9%	54
No	34.1%	28
	answered question	82
	skipped question	62



Mammoth Lakes Transportation Survey Question 10

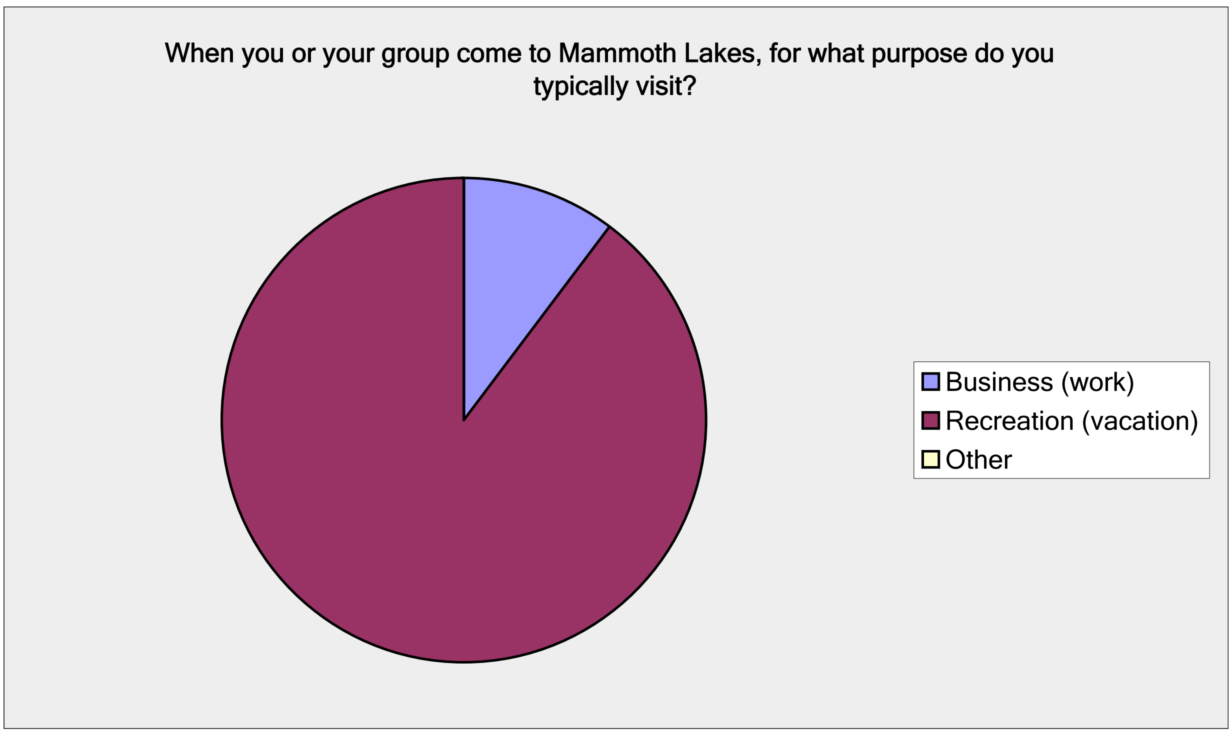
Do you currently work in Mammoth Lakes?		
Answer Options	Response Percent	Response Count
Yes	29.3%	17
No	70.7%	41
	answered question	58
	skipped question	86



Mammoth Lakes Transportation Survey Question 11

When you or your group come to Mammoth Lakes, for what purpose do you typically visit?		
Answer Options	Response Percent	Response Count
Business (work)	10.3%	4
Recreation (vacation)	89.7%	35
Other	0.0%	0
Other (please specify)		1
	answered question	39
	skipped question	105

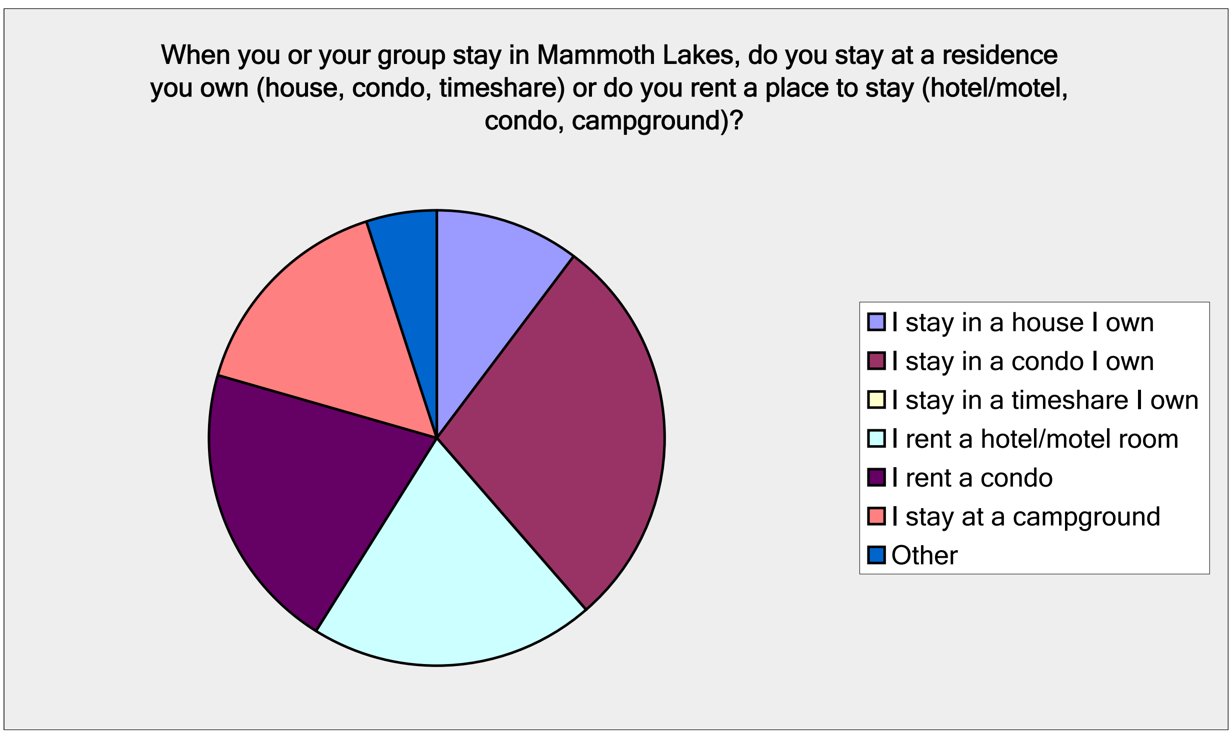
Number	Other (please specify)
1	SKI CAMP BIKE FISH CLIMB HIKE



Mammoth Lakes Transportation Survey Question 12

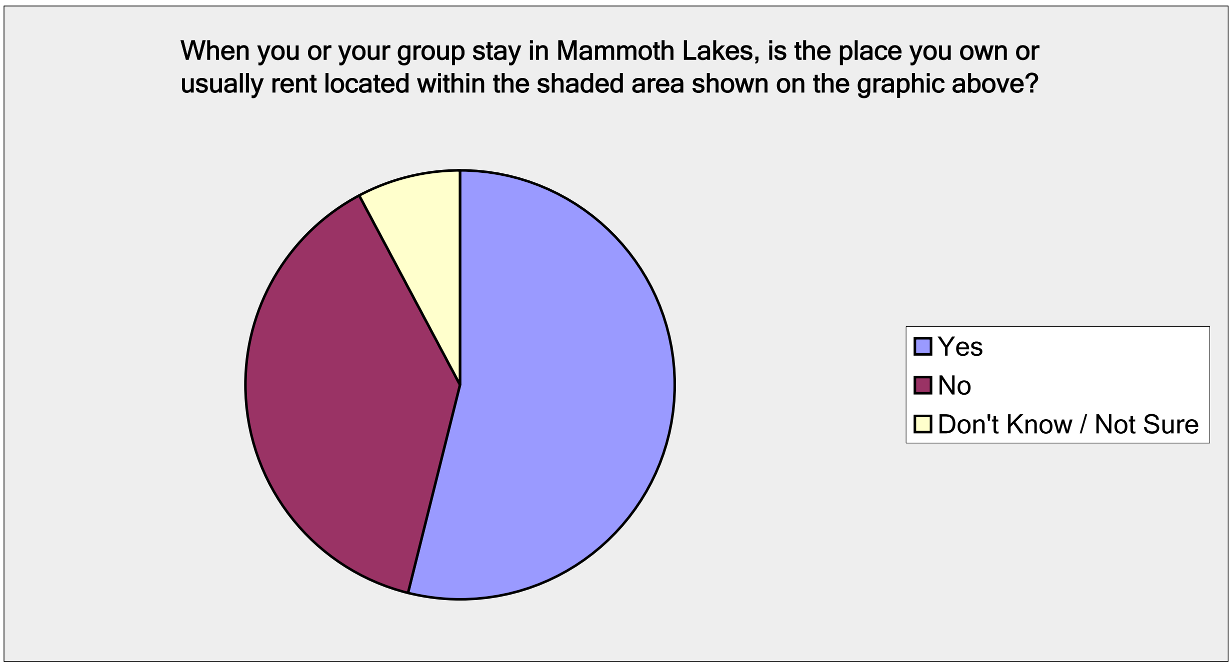
When you or your group stay in Mammoth Lakes, do you stay at a residence you own (house, condo, timeshare) or do you rent a place to stay (hotel/motel, condo, campground)?		
Answer Options	Response Percent	Response Count
I stay in a house I own	10.3%	4
I stay in a condo I own	28.2%	11
I stay in a timeshare I own	0.0%	0
I rent a hotel/motel room	20.5%	8
I rent a condo	20.5%	8
I stay at a campground	15.4%	6
Other	5.1%	2
Other (please specify)		3
	answered question	39
	skipped question	105

Number	Other (please specify)
1	stay in Bishop
2	My home in Bishop
3	SUMMER CAMP WINTER CONDO



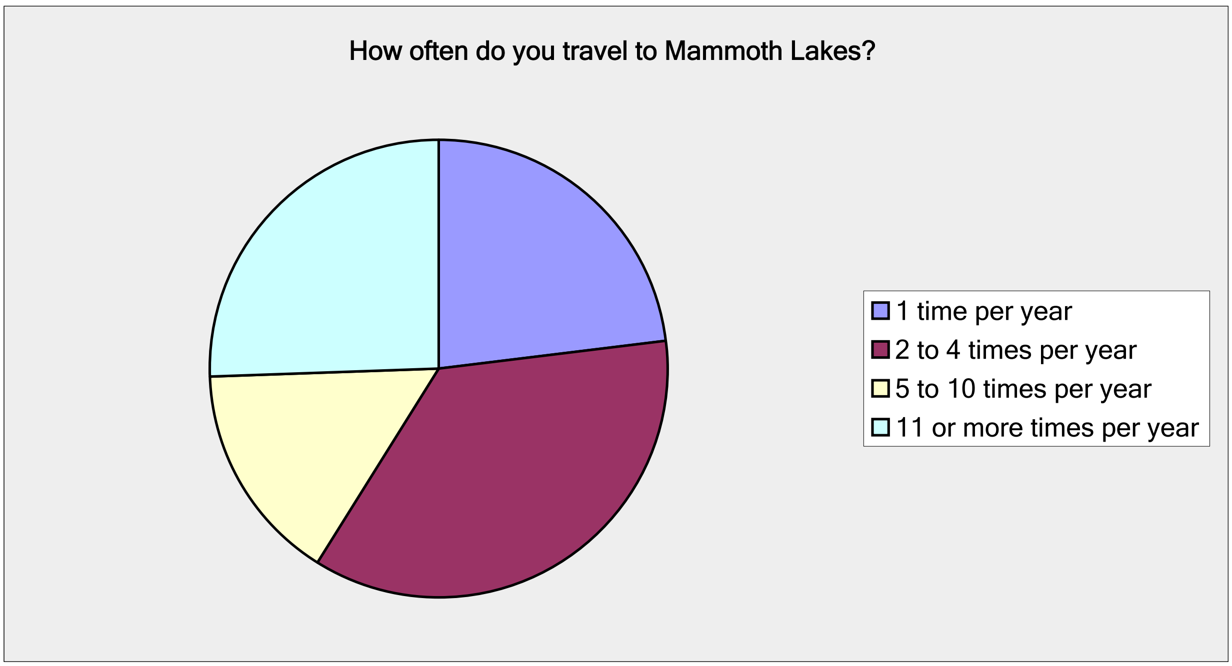
Mammoth Lakes Transportation Survey Question 13

When you or your group stay in Mammoth Lakes, is the place you own or usually rent located within the shaded area shown on the graphic above?		
Answer Options	Response Percent	Response Count
Yes	53.8%	21
No	38.5%	15
Don't Know / Not Sure	7.7%	3
	answered question	39
	skipped question	105



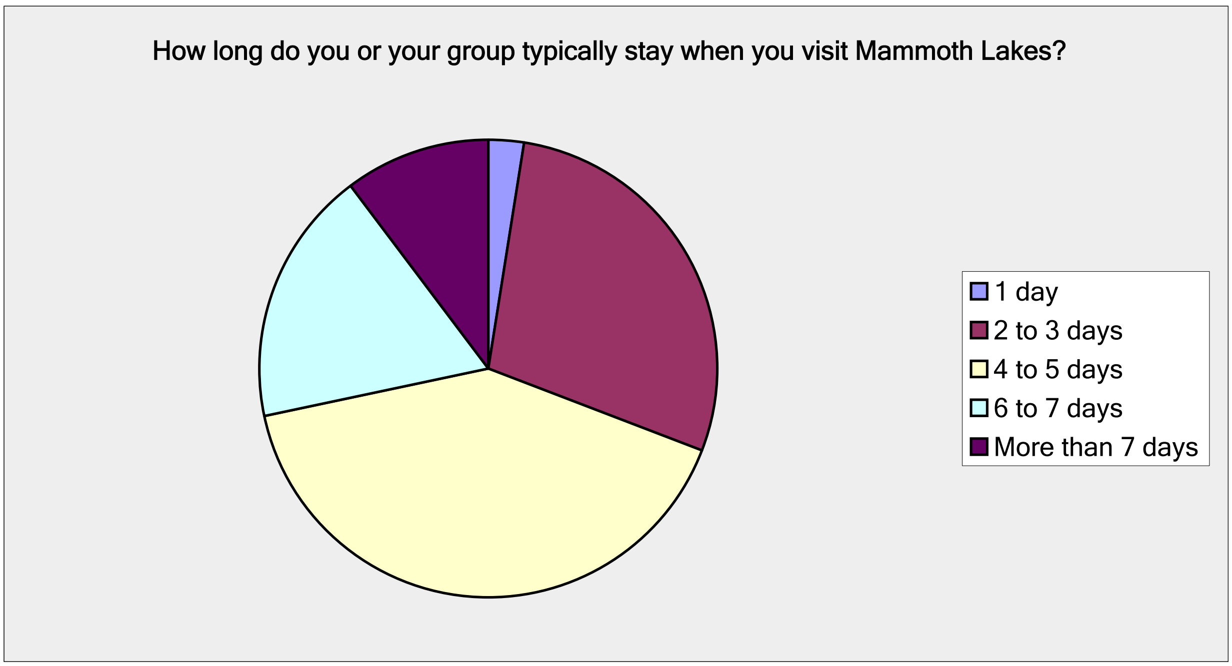
Mammoth Lakes Transportation Survey Question 14

How often do you travel to Mammoth Lakes?		
Answer Options	Response Percent	Response Count
1 time per year	23.1%	9
2 to 4 times per year	35.9%	14
5 to 10 times per year	15.4%	6
11 or more times per year	25.6%	10
	answered question	39
	skipped question	105



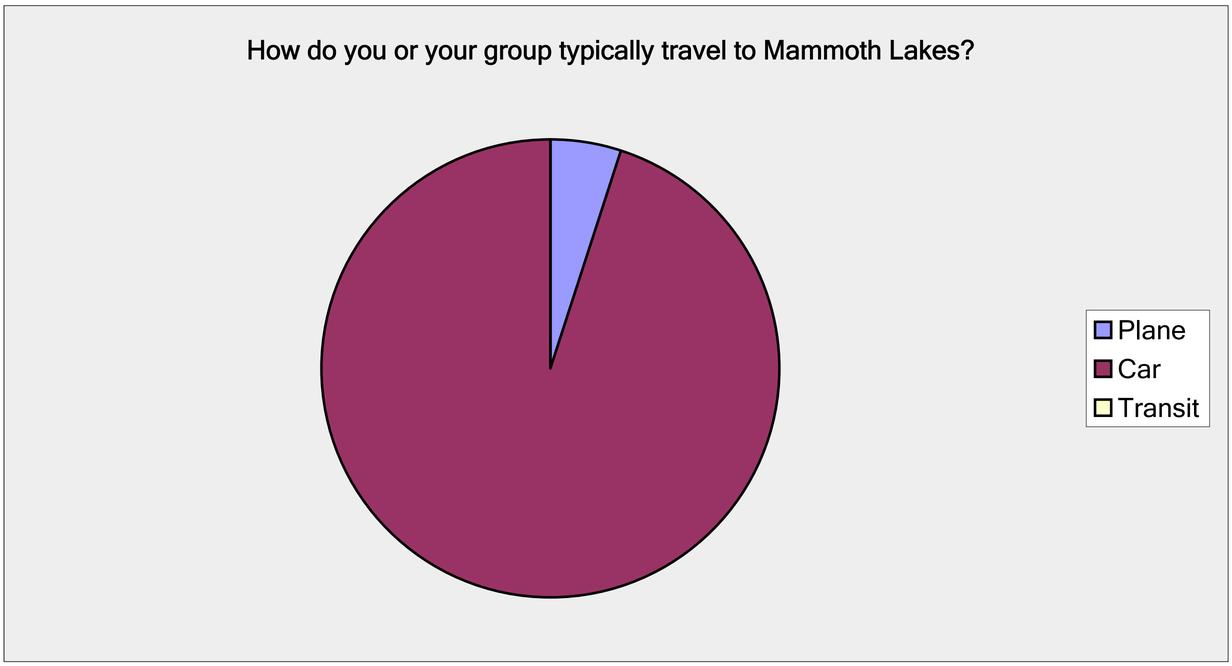
Mammoth Lakes Transportation Survey Question 15

How long do you or your group typically stay when you visit Mammoth Lakes?		
Answer Options	Response Percent	Response Count
1 day	2.6%	1
2 to 3 days	28.2%	11
4 to 5 days	41.0%	16
6 to 7 days	17.9%	7
More than 7 days	10.3%	4
	answered question	39
	skipped question	105



Mammoth Lakes Transportation Survey Question 16

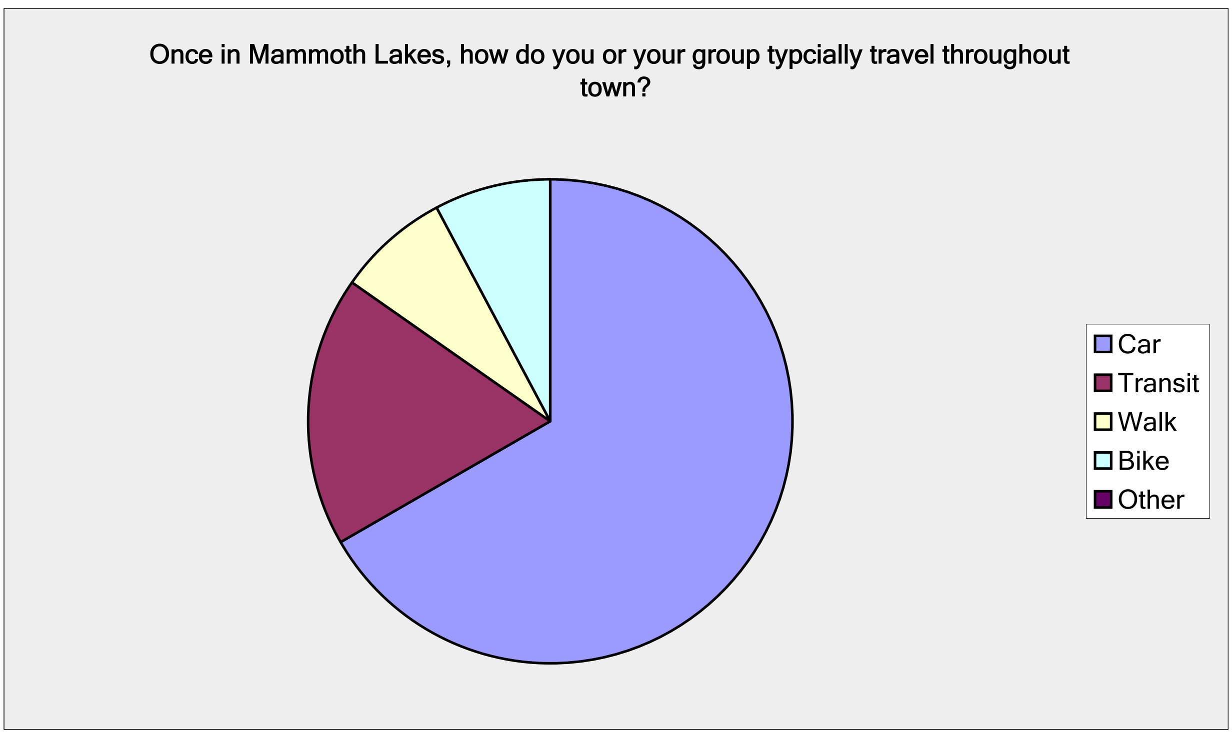
How do you or your group typically travel to Mammoth Lakes?		
Answer Options	Response Percent	Response Count
Plane	5.1%	2
Car	94.9%	37
Transit	0.0%	0
	answered question	39
	skipped question	105



Mammoth Lakes Transportation Survey Question 17

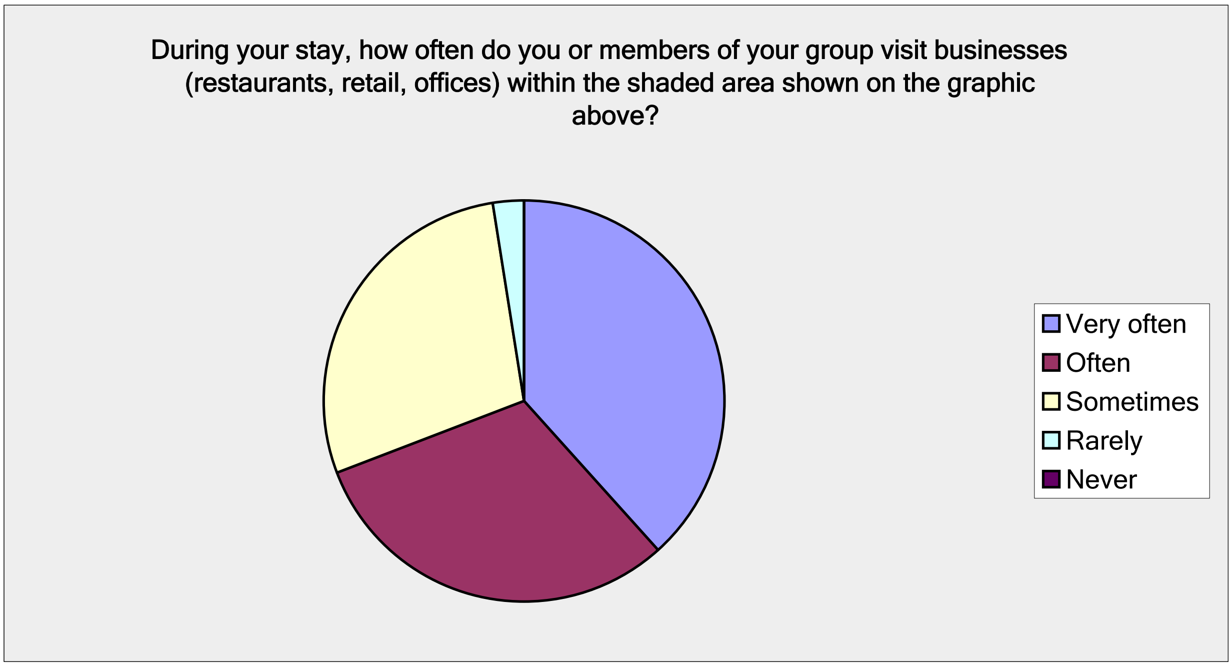
Once in Mammoth Lakes, how do you or your group typcially travel throughout town?		
Answer Options	Response Percent	Response Count
Car	66.7%	26
Transit	17.9%	7
Walk	7.7%	3
Bike	7.7%	3
Other	0.0%	0
Other (please specify)		3
	answered question	39
	skipped question	105

Number	Other (please specify)
1	trolly
2	BIKE SUMMER CAR WINTER
3	sometimes transit



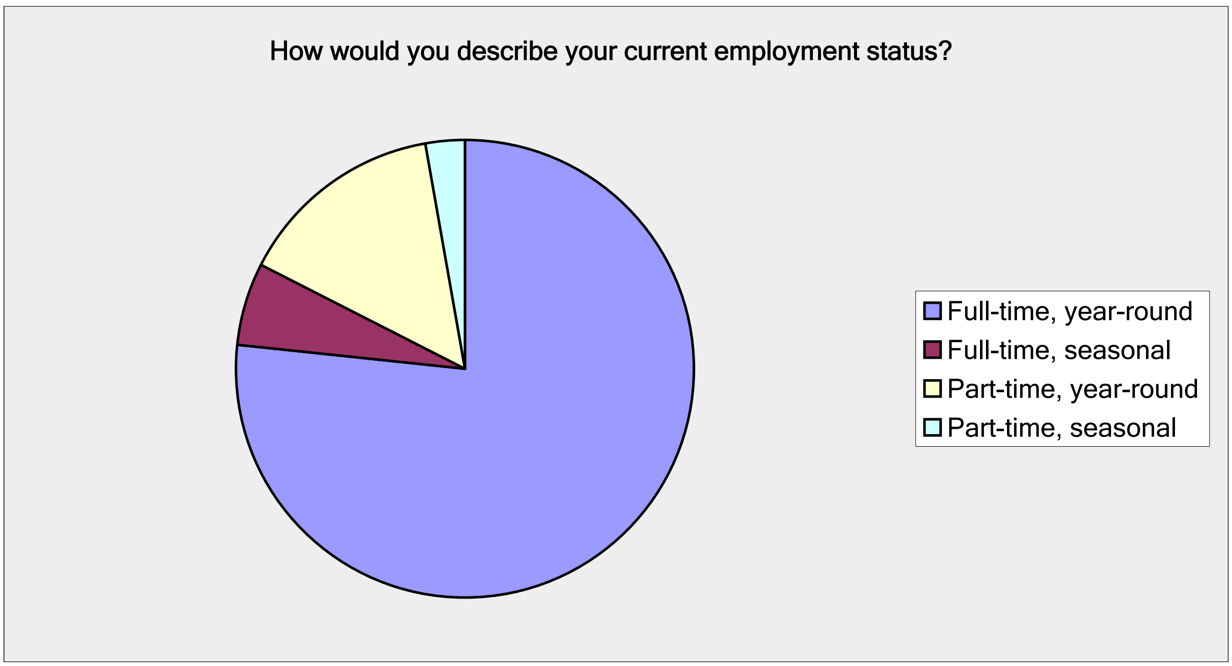
Mammoth Lakes Transportation Survey Question 18

During your stay, how often do you or members of your group visit businesses (restaurants, retail, offices) within the shaded area shown on the graphic above?		
Answer Options	Response Percent	Response Count
Very often	38.5%	15
Often	30.8%	12
Sometimes	28.2%	11
Rarely	2.6%	1
Never	0.0%	0
	answered question	39
	skipped question	105



Mammoth Lakes Transportation Survey Question 19

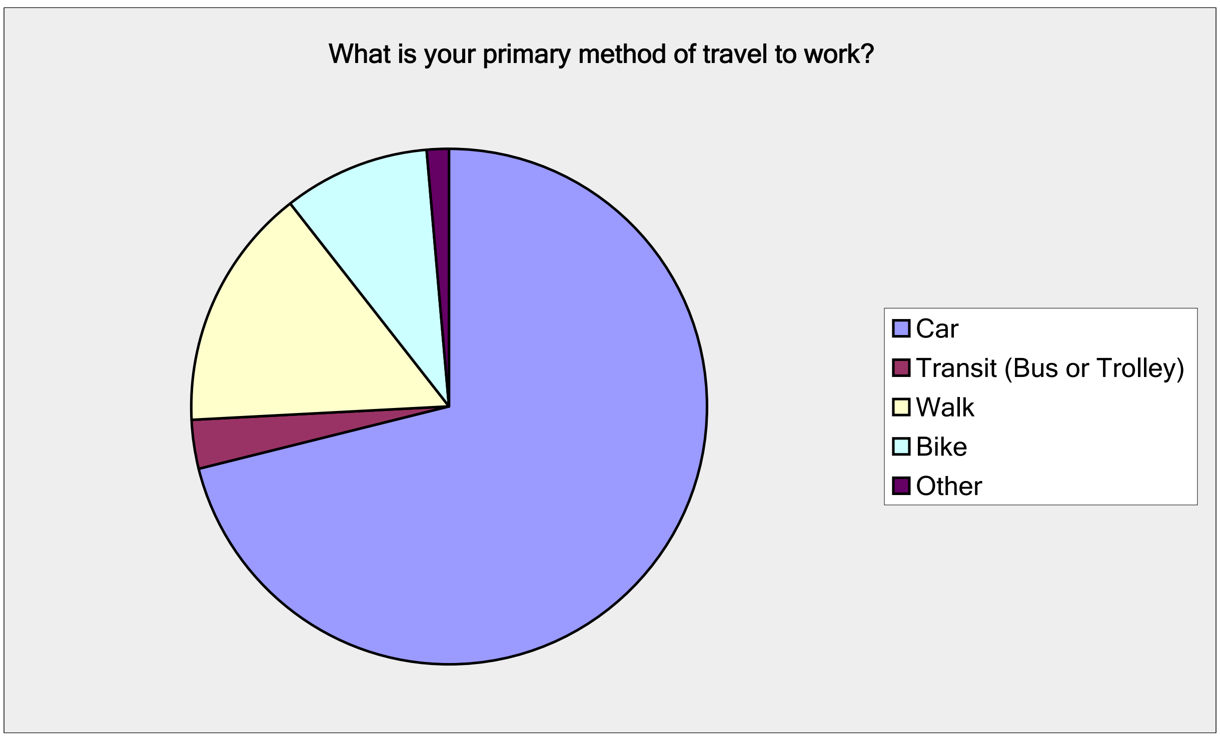
How would you describe your current employment status?		
Answer Options	Response Percent	Response Count
Full-time, year-round	76.8%	53
Full-time, seasonal	5.8%	4
Part-time, year-round	14.5%	10
Part-time, seasonal	2.9%	2
	answered question	69
	skipped question	75



Mammoth Lakes Transportation Survey Question 20

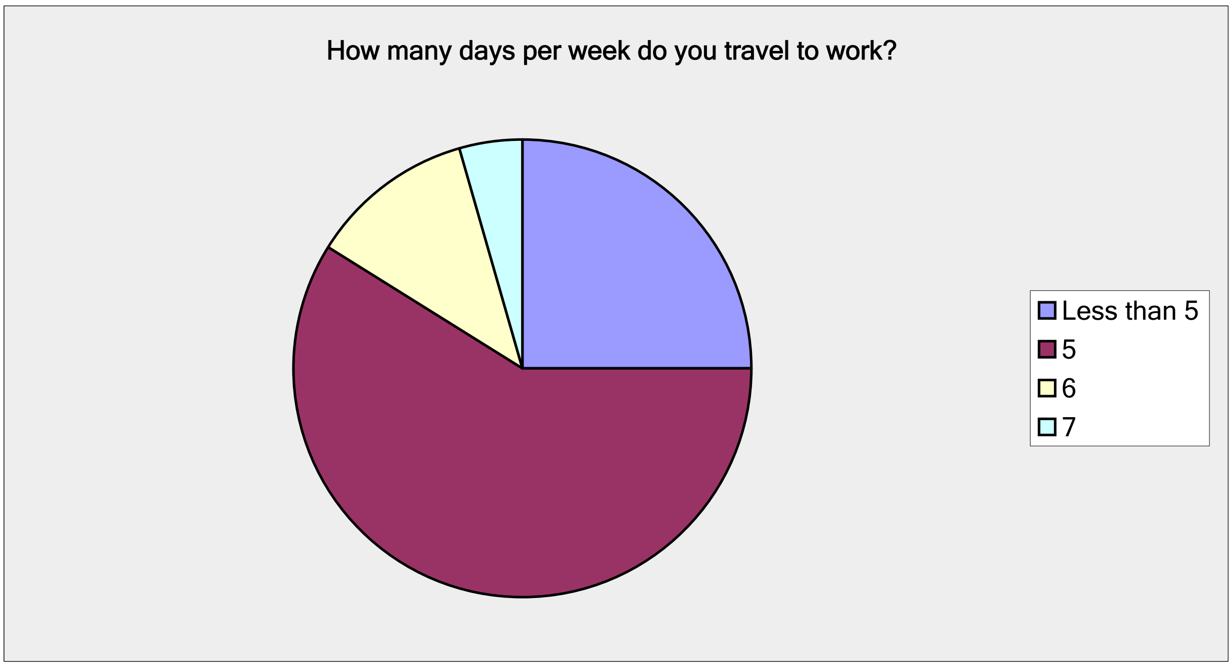
What is your primary method of travel to work?		
Answer Options	Response Percent	Response Count
Car	71.2%	47
Transit (Bus or Trolley)	3.0%	2
Walk	15.2%	10
Bike	9.1%	6
Other	1.5%	1
Other (please specify)		5
	answered question	66
	skipped question	78

Number	Other (please specify)
1	Work at home
2	bike too
3	Walk ~ Summertime only
4	from home
5	work at home



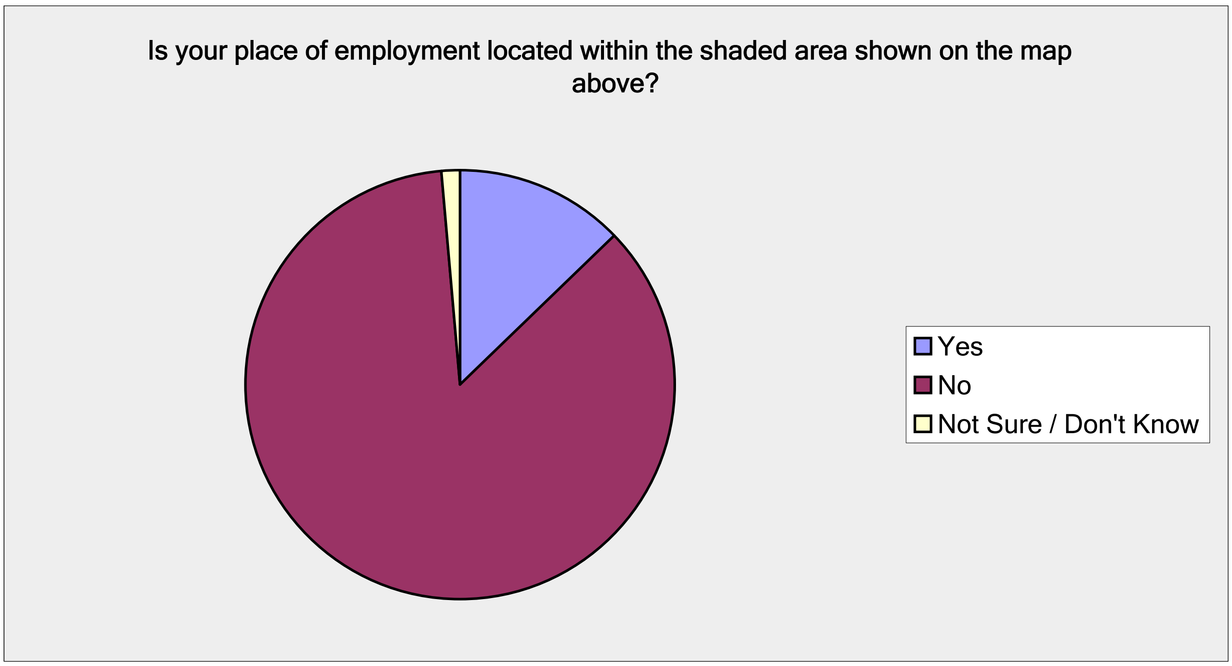
Mammoth Lakes Transportation Survey Question 21

How many days per week do you travel to work?		
Answer Options	Response Percent	Response Count
Less than 5	25.0%	17
5	58.8%	40
6	11.8%	8
7	4.4%	3
	answered question	68
	skipped question	76



Mammoth Lakes Transportation Survey Question 22

Is your place of employment located within the shaded area shown on the map above?		
Answer Options	Response Percent	Response Count
Yes	12.9%	9
No	85.7%	60
Not Sure / Don't Know	1.4%	1
	answered question	70
	skipped question	74



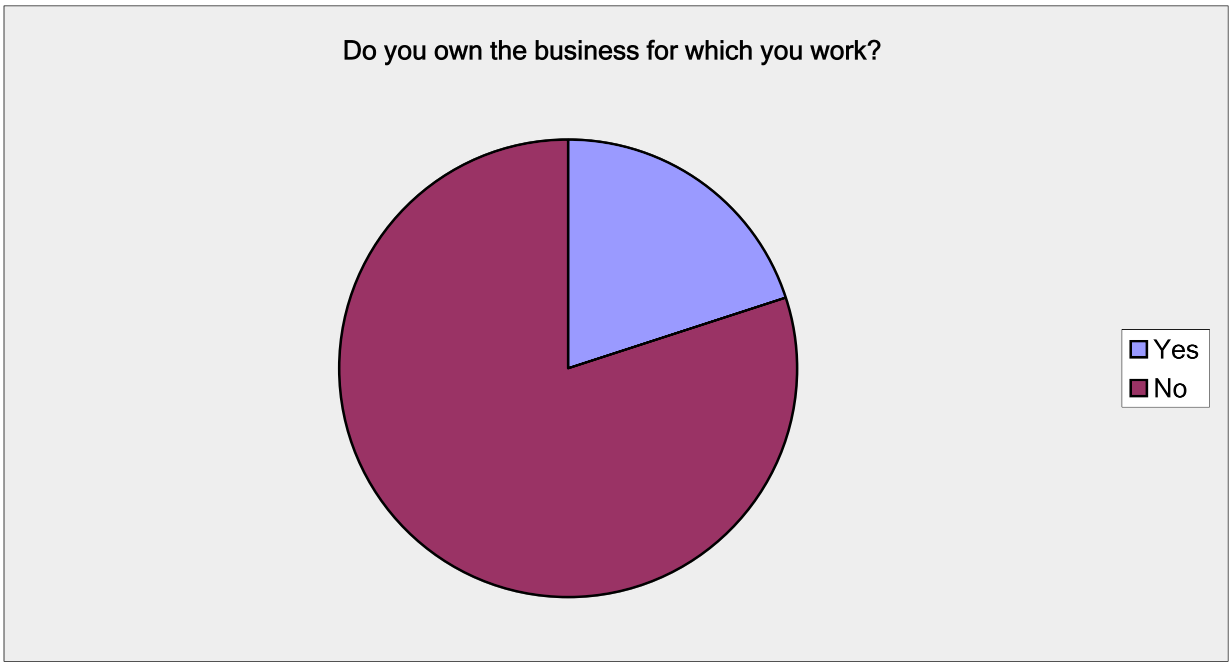
Mammoth Lakes Transportation Survey Question 23

Which of the following roadways is your place of employment located on or closest to?		
Answer Options	Response Percent	Response Count
Main Street	30.0%	3
Old Mammoth Road	20.0%	2
Center Street	0.0%	0
Laurel Mountain Road	0.0%	0
Sierra Manor Road	0.0%	0
Sierra Park Road	20.0%	2
Other	30.0%	3
Other (please specify)		3
	answered question	10
	skipped question	134

Number	Other (please specify)
1	all of town
2	Meridian and Hwy 203
3	2510 Hwy 203

Mammoth Lakes Transportation Survey Question 24

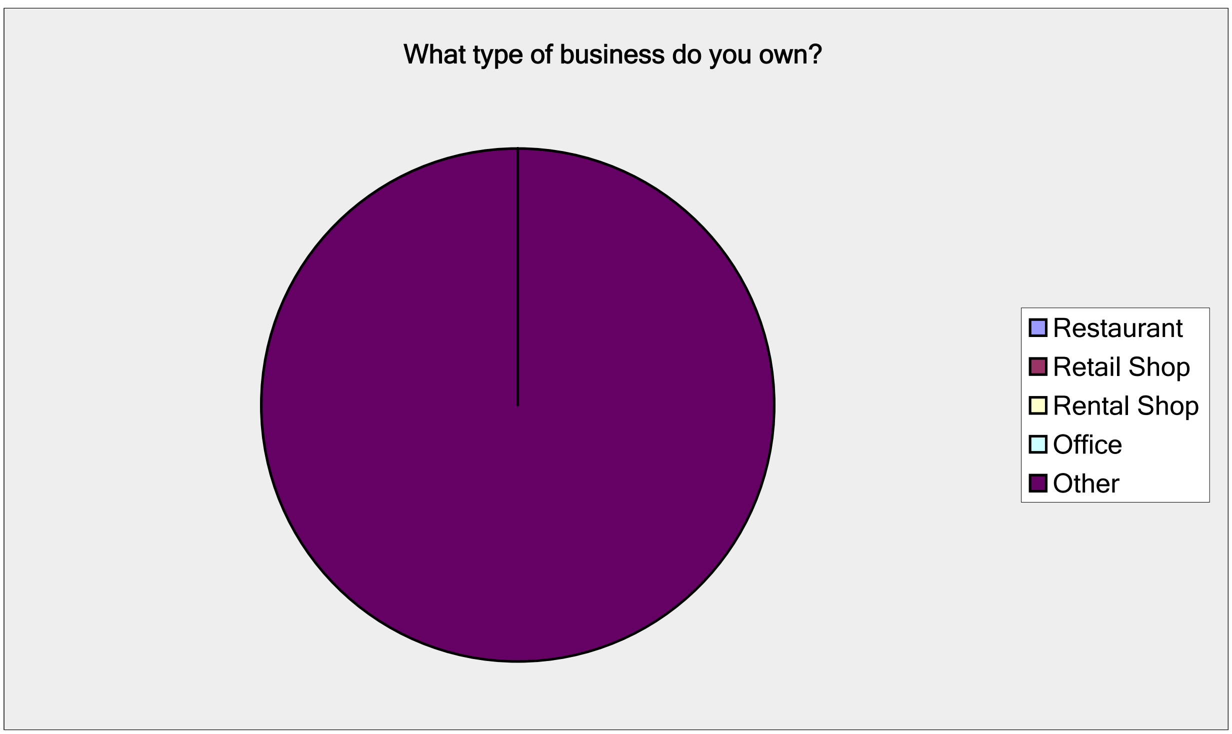
Do you own the business for which you work?		
Answer Options	Response Percent	Response Count
Yes	20.0%	2
No	80.0%	8
	answered question	10
	skipped question	134



Mammoth Lakes Transportation Survey Question 25

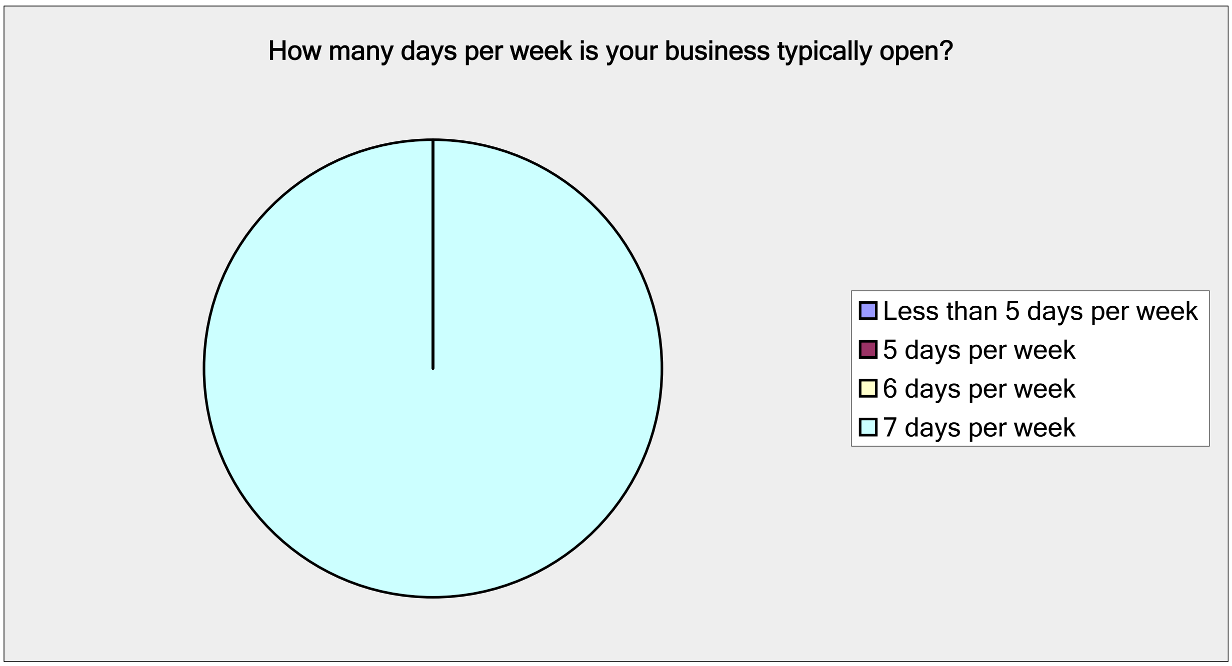
What type of business do you own?		
Answer Options	Response Percent	Response Count
Restaurant	0.0%	0
Retail Shop	0.0%	0
Rental Shop	0.0%	0
Office	0.0%	0
Other	100.0%	1
Other (please specify)		1
	answered question	1
	skipped question	143

Number	Response Date	Other (please specify)
1	Jul 8, 2010 12:49 AM	service



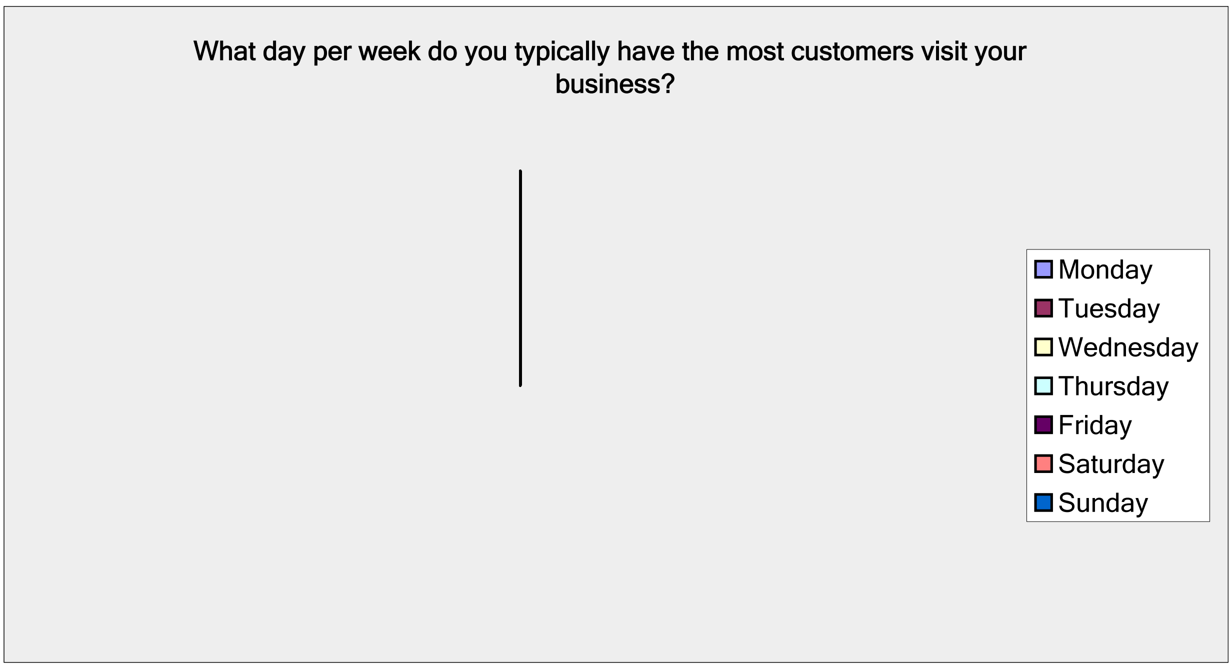
Mammoth Lakes Transportation Survey Question 26

How many days per week is your business typically open?		
Answer Options	Response Percent	Response Count
Less than 5 days per week	0.0%	0
5 days per week	0.0%	0
6 days per week	0.0%	0
7 days per week	100.0%	1
	answered question	1
	skipped question	143



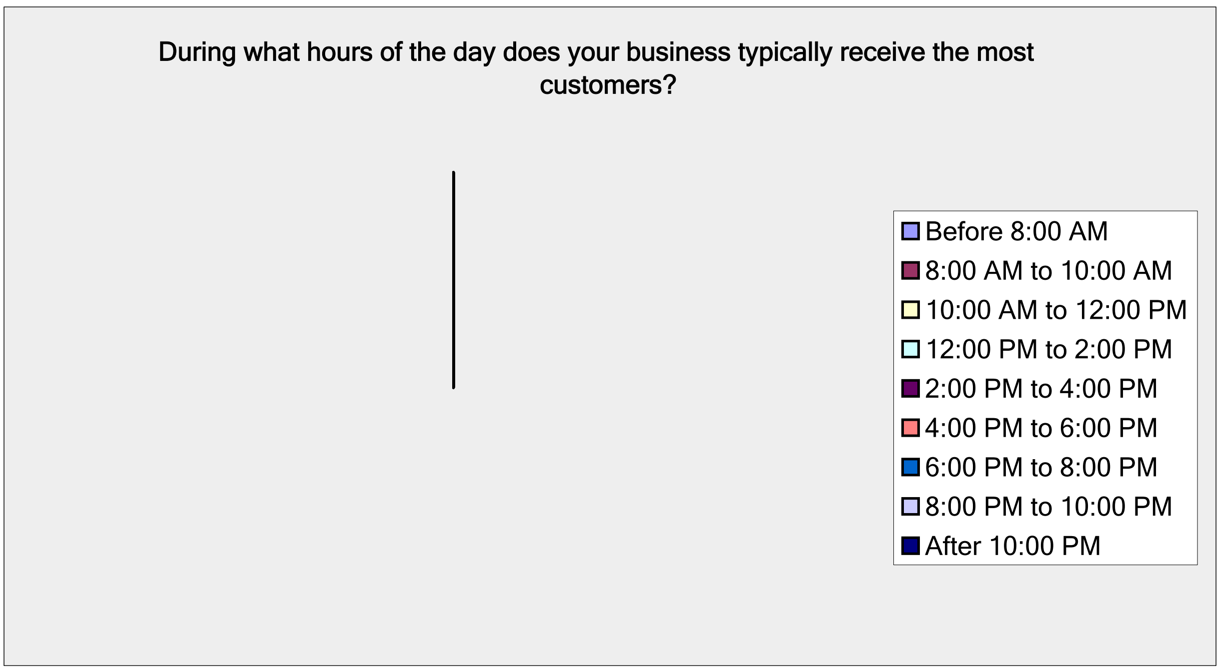
Mammoth Lakes Transportation Survey Question 27

What day per week do you typically have the most customers visit your business?		
Answer Options	Response Percent	Response Count
Monday	0.0%	0
Tuesday	0.0%	0
Wednesday	0.0%	0
Thursday	0.0%	0
Friday	0.0%	0
Saturday	0.0%	0
Sunday	0.0%	0
	answered question	0
	skipped question	144



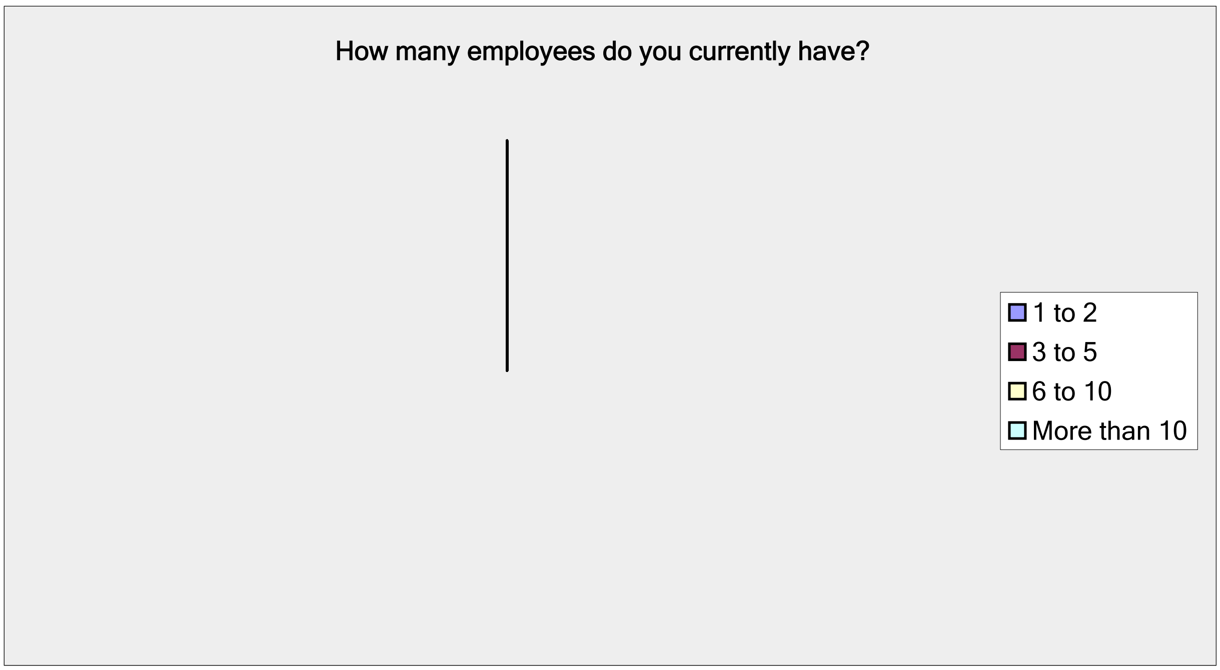
Mammoth Lakes Transportation Survey Question 28

During what hours of the day does your business typically receive the most customers?		
Answer Options	Response Percent	Response Count
Before 8:00 AM	0.0%	0
8:00 AM to 10:00 AM	0.0%	0
10:00 AM to 12:00 PM	0.0%	0
12:00 PM to 2:00 PM	0.0%	0
2:00 PM to 4:00 PM	0.0%	0
4:00 PM to 6:00 PM	0.0%	0
6:00 PM to 8:00 PM	0.0%	0
8:00 PM to 10:00 PM	0.0%	0
After 10:00 PM	0.0%	0
	answered question	0
	skipped question	144



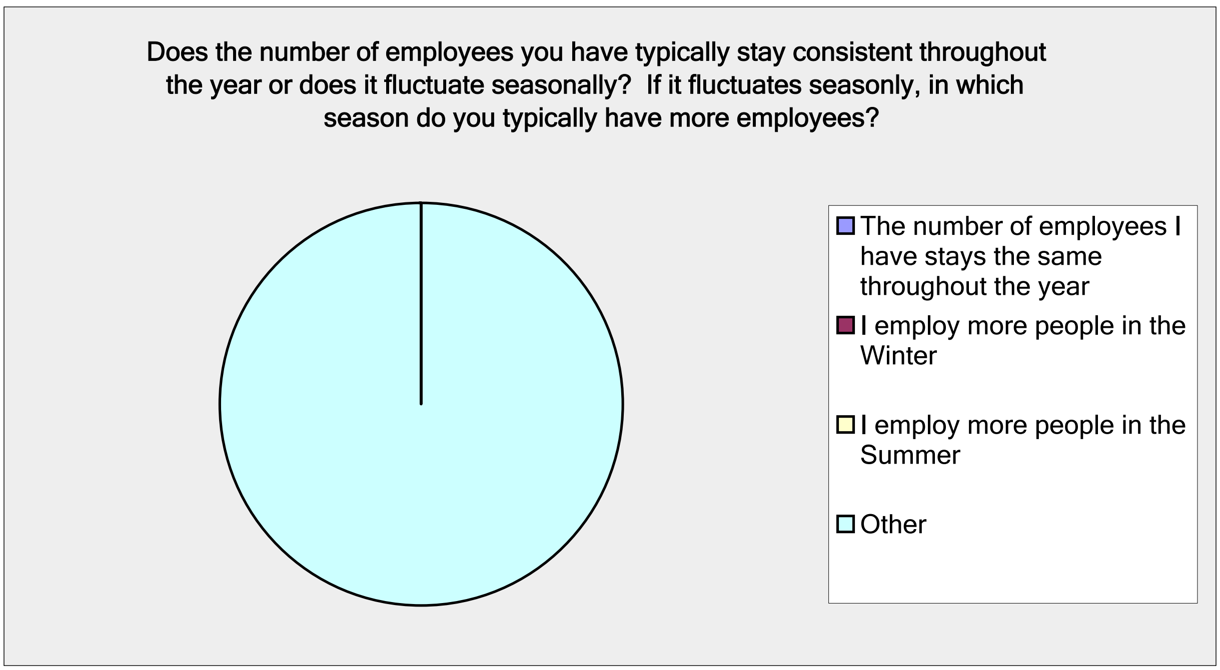
Mammoth Lakes Transportation Survey Question 29

How many employees do you currently have?		
Answer Options	Response Percent	Response Count
1 to 2	0.0%	0
3 to 5	0.0%	0
6 to 10	0.0%	0
More than 10	0.0%	0
	answered question	0
	skipped question	144



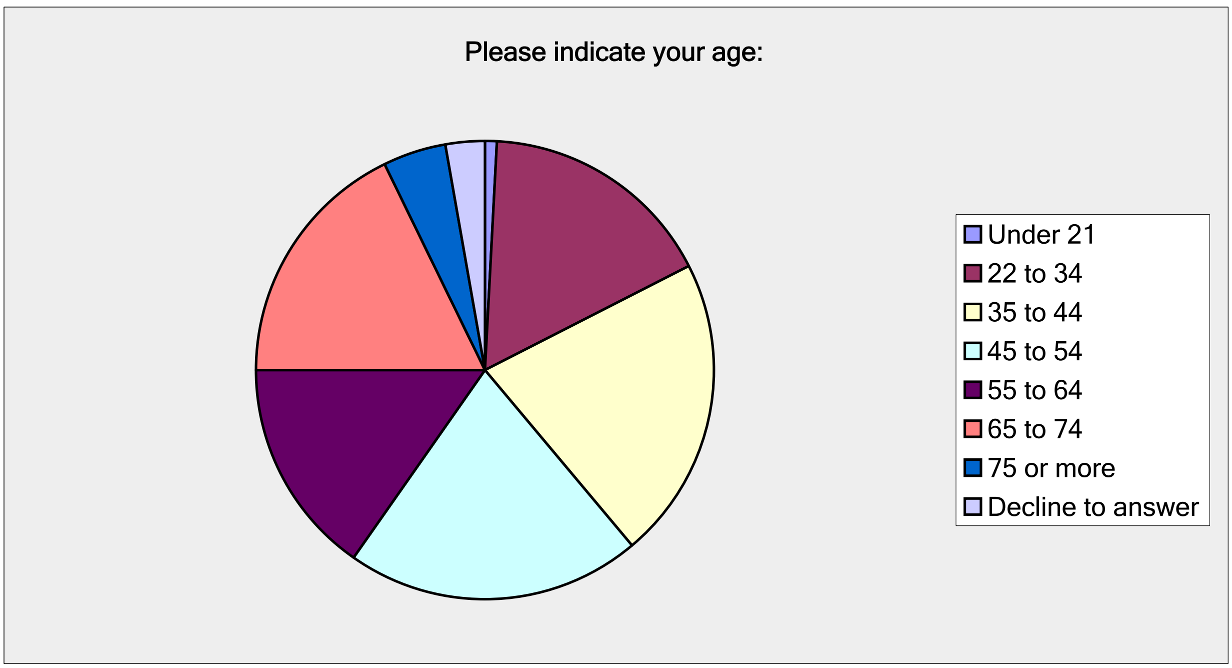
Mammoth Lakes Transportation Survey Question 30

Does the number of employees you have typically stay consistent throughout the year or does it fluctuate seasonally? If it fluctuates seasonly, in which season do you typically have more employees?		
Answer Options	Response Percent	Response Count
The number of employees I have stays the same	0.0%	0
I employ more people in the Winter	0.0%	0
I employ more people in the Summer	0.0%	0
Other	100.0%	1
Other (please specify)		1
answered question		1
skipped question		143



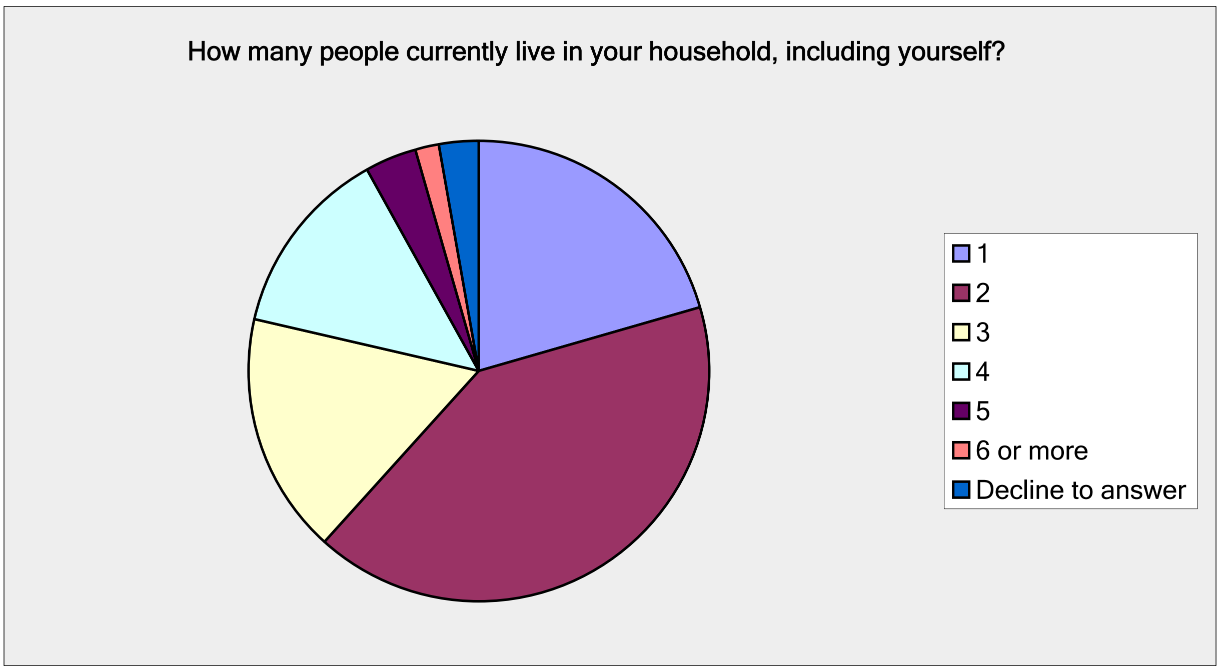
Mammoth Lakes Transportation Survey Question 31

Please indicate your age:		
Answer Options	Response Percent	Response Count
Under 21	0.7%	1
22 to 34	16.9%	23
35 to 44	21.3%	29
45 to 54	20.6%	28
55 to 64	15.4%	21
65 to 74	17.6%	24
75 or more	4.4%	6
Decline to answer	2.9%	4
	answered question	136
	skipped question	8



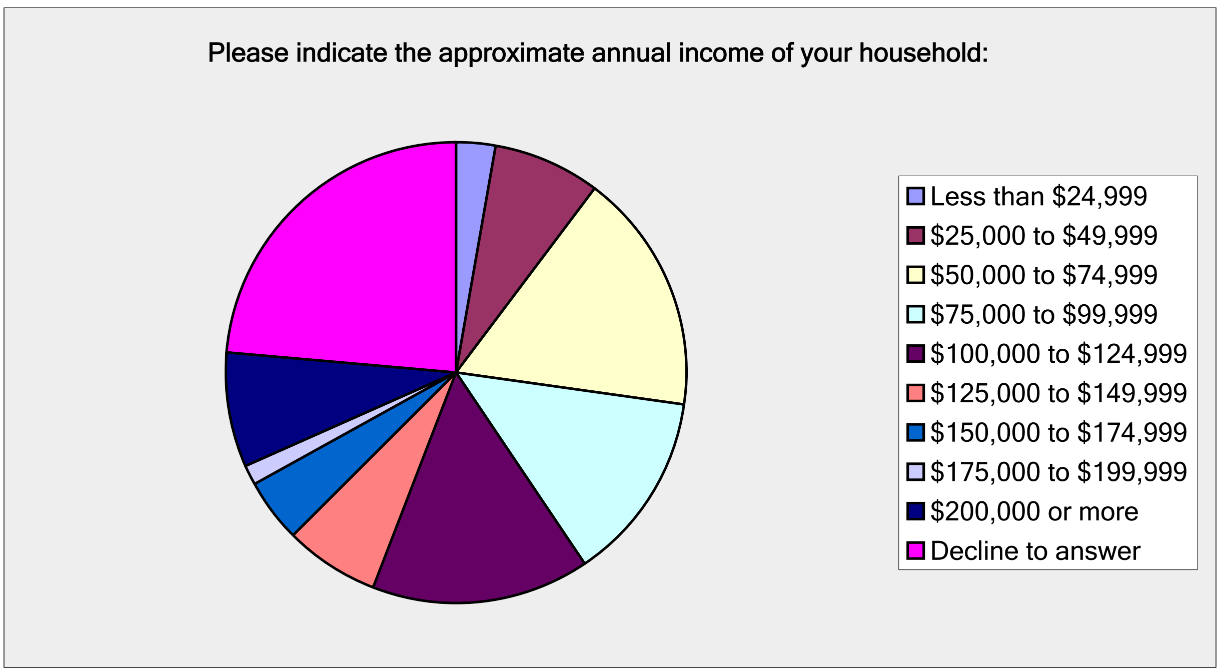
Mammoth Lakes Transportation Survey Question 32

How many people currently live in your household, including yourself?		
Answer Options	Response Percent	Response Count
1	20.6%	28
2	41.2%	56
3	16.9%	23
4	13.2%	18
5	3.7%	5
6 or more	1.5%	2
Decline to answer	2.9%	4
	answered question	136
	skipped question	8



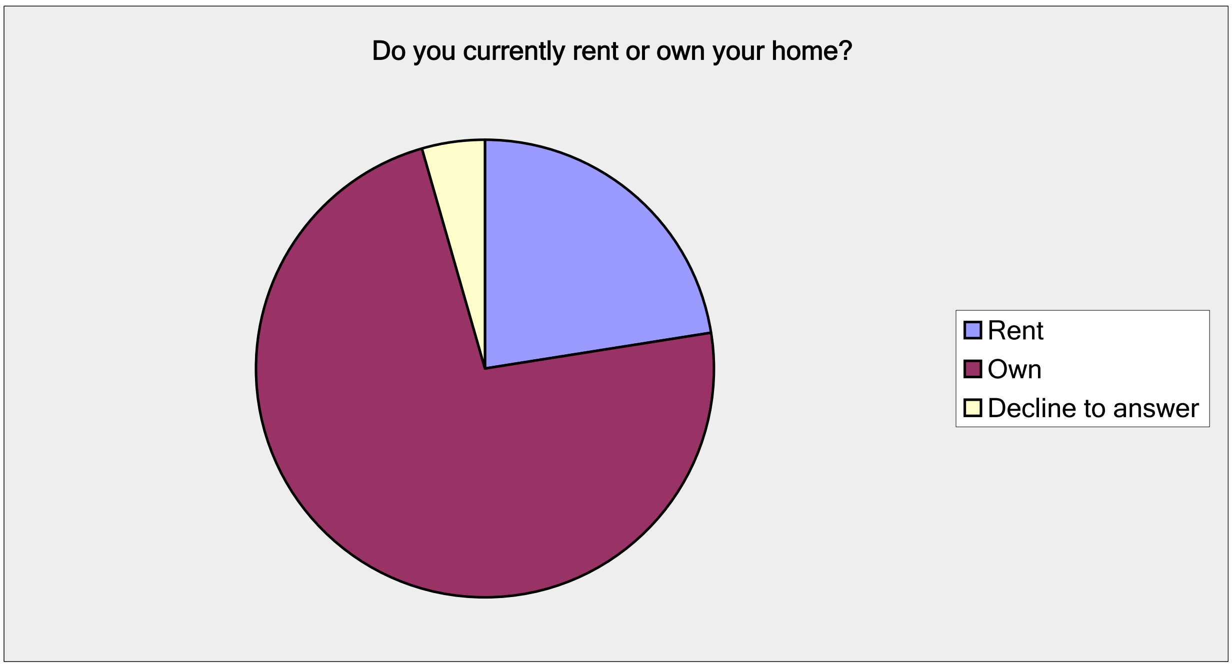
Mammoth Lakes Transportation Survey Question 33

Please indicate the approximate annual income of your household:		
Answer Options	Response Percent	Response Count
Less than $24,999	2.9%	4
$25,000 to $49,999	7.4%	10
$50,000 to $74,999	16.9%	23
$75,000 to $99,999	13.2%	18
$100,000 to $124,999	15.4%	21
$125,000 to $149,999	6.6%	9
$150,000 to $174,999	4.4%	6
$175,000 to $199,999	1.5%	2
$200,000 or more	8.1%	11
Decline to answer	23.5%	32
	answered question	136
	skipped question	8



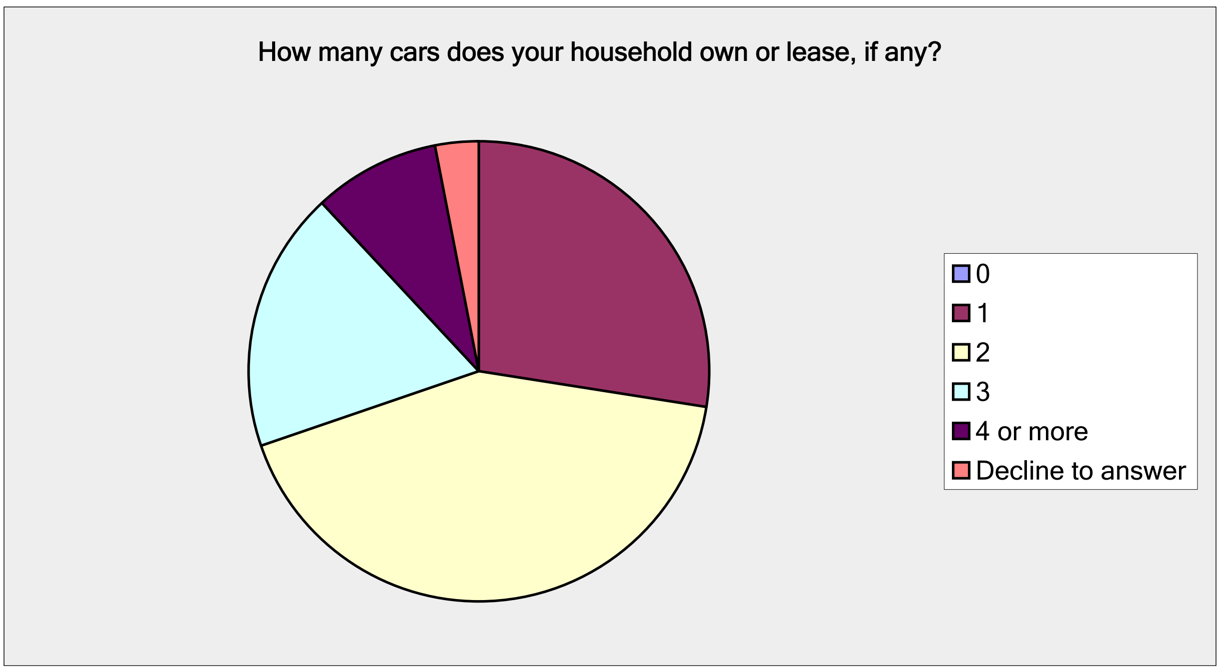
Mammoth Lakes Transportation Survey Question 34

Do you currently rent or own your home?		
Answer Options	Response Percent	Response Count
Rent	22.4%	30
Own	73.1%	98
Decline to answer	4.5%	6
	answered question	134
	skipped question	10



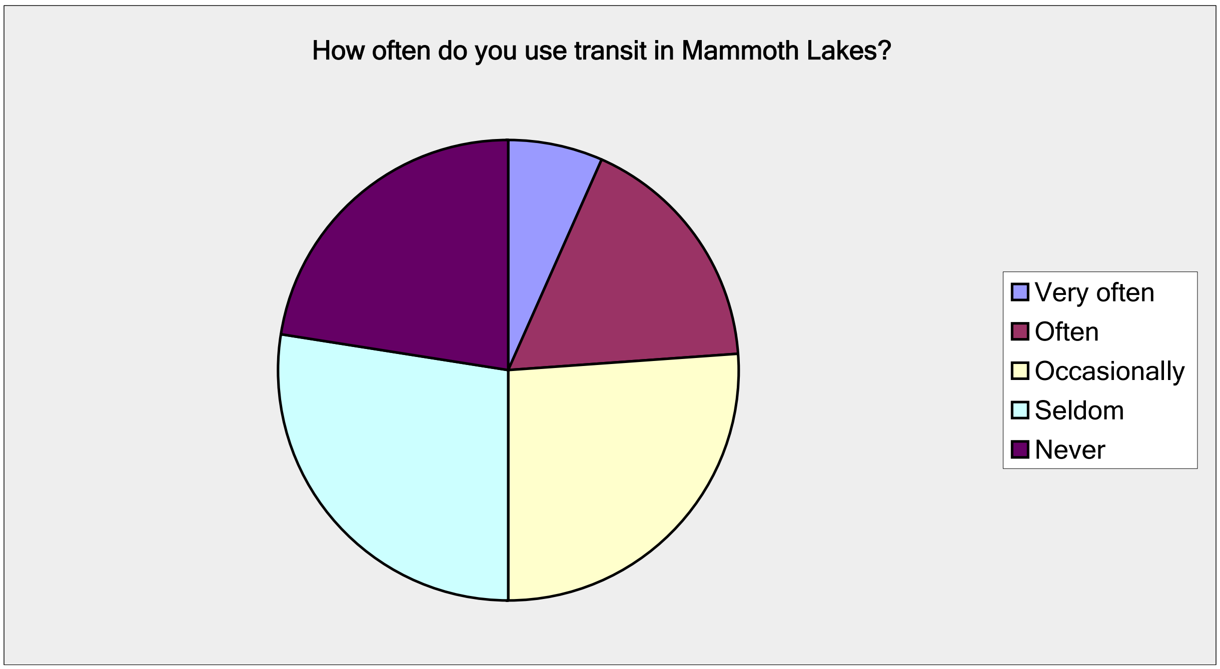
Mammoth Lakes Transportation Survey Question 35

How many cars does your household own or lease, if any?		
Answer Options	Response Percent	Response Count
0	0.0%	0
1	27.4%	37
2	42.2%	57
3	18.5%	25
4 or more	8.9%	12
Decline to answer	3.0%	4
	answered question	135
	skipped question	9



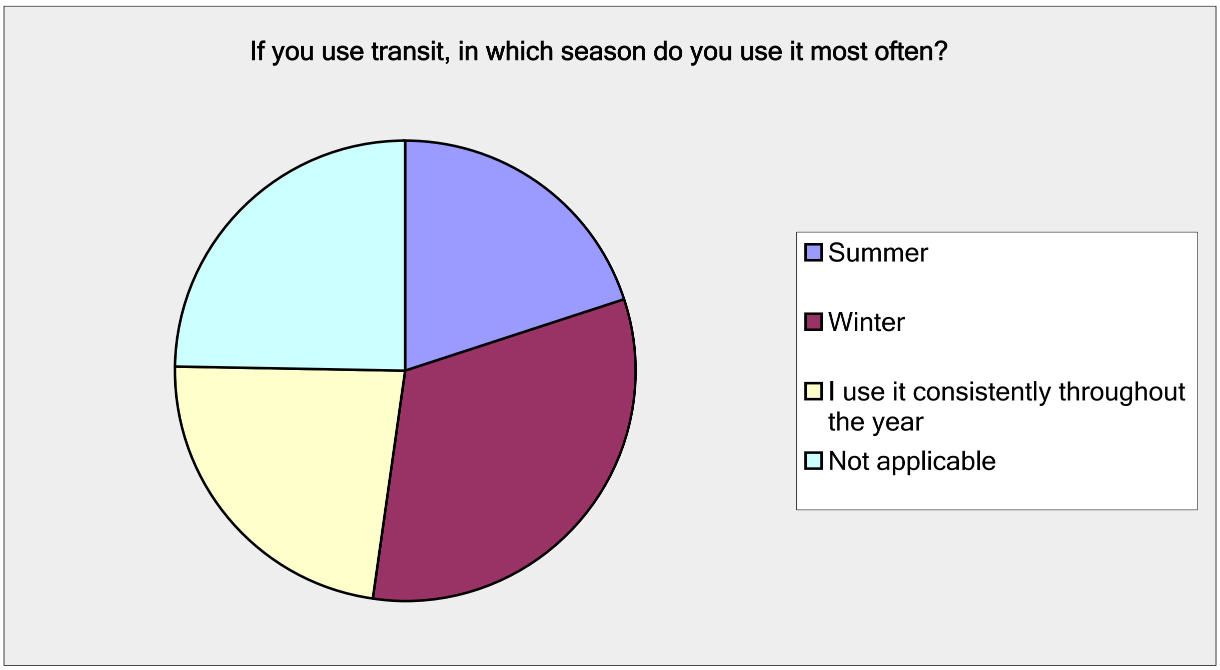
Mammoth Lakes Transportation Survey Question 36

How often do you use transit in Mammoth Lakes?		
Answer Options	Response Percent	Response Count
Very often	6.7%	9
Often	17.2%	23
Occasionally	26.1%	35
Seldom	27.6%	37
Never	22.4%	30
	answered question	134
	skipped question	10



Mammoth Lakes Transportation Survey Question 37

If you use transit, in which season do you use it most often?		
Answer Options	Response Percent	Response Count
Summer	20.1%	27
Winter	32.1%	43
I use it consistently throughout the year	23.1%	31
Not applicable	24.6%	33
	answered question	134
	skipped question	10



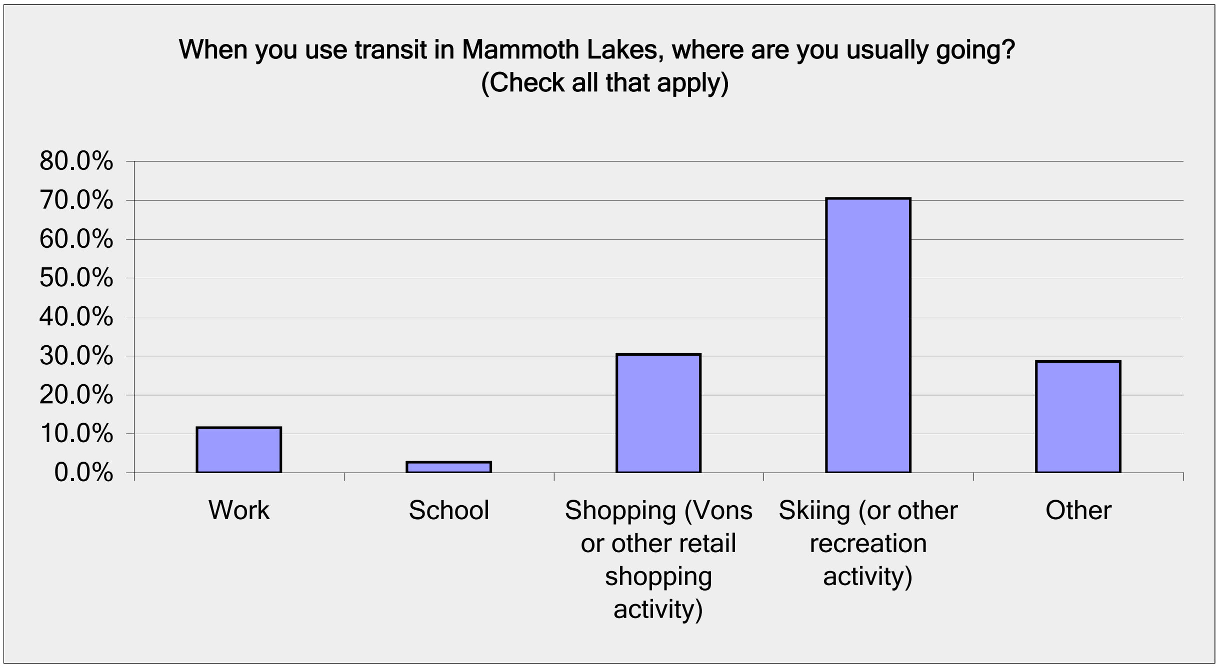
Mammoth Lakes Transportation Survey Question 38

When you use transit in Mammoth Lakes, where are you usually going? (Check all that apply)		
Answer Options	Response Percent	Response Count
Work	11.6%	13
School	2.7%	3
Shopping (Vons or other retail shopping activity)	30.4%	34
Skiing (or other recreation activity)	70.5%	79
Other	28.6%	32
Other (please specify)		33
	answered question	112
	skipped question	32

Number	Other (please specify)
1	Bars/Food
2	volunteer work
3	dining
4	recreation
5	recreation trailheads
6	restaurant and bar
7	events
8	Events
9	athletic club
10	dinner or lakes basin
11	errands - post office, etc
12	sometimes work, often errands
13	Dinner, drinks, etc. in The Village
14	parks, hiking, biking areas
15	reds meadow
16	Feed friend's cats--transit then walk to upper Knolls
17	fishing
18	day camps (Valentine Reserve), events (Village)
19	Special Events
20	I don't use it.
21	Car maintenance drop off / pick up
22	all the above
23	Home
24	Bars or restaurants where I don't have to drive after drinking
25	Home from hiking
26	I use The Crest, other ESTA buses to travel
27	Biking hiking
28	Have not used transit in Mammoth Lakes
29	post office
30	non timeframe activity - to park, etc
31	Events in Village or elsewhere, bars
32	Hikling
33	bus from main lodge to devils postpile

Mammoth Lakes Transportation Survey

When you use transit in Mammoth Lakes, where are you usually going? (Check all that



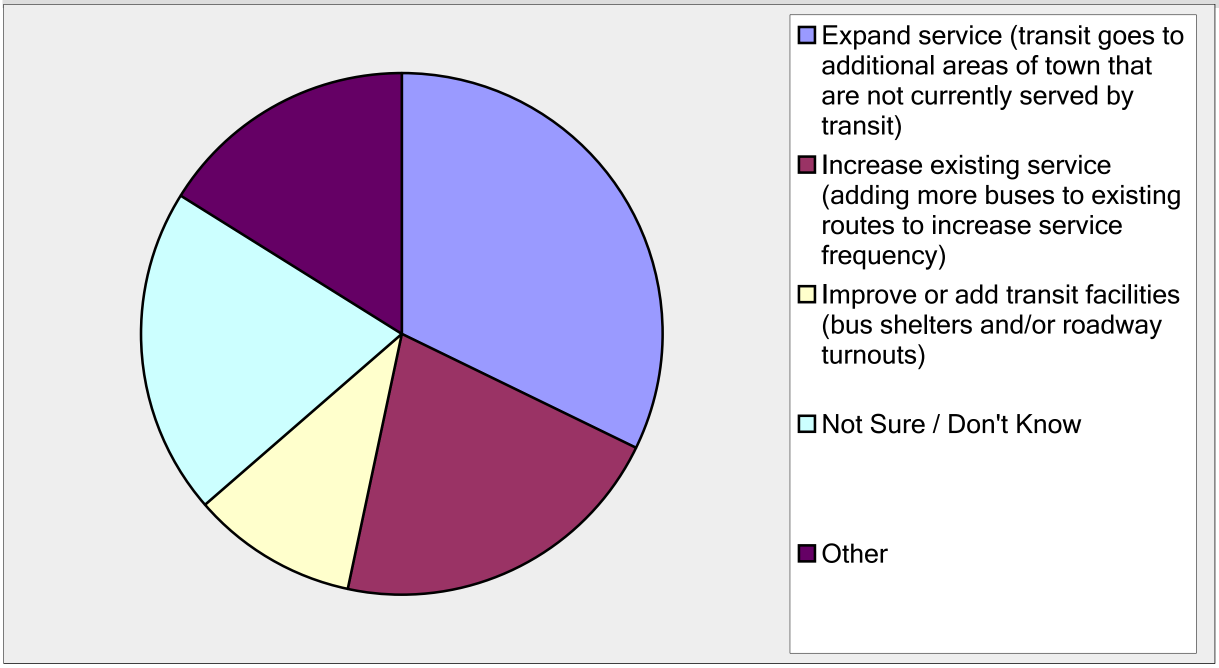
Mammoth Lakes Transportation Survey Question 39

In your opinion, which of the below suggested transit improvements do you think would improve the Mammoth Lakes Transit System the most and may encourage you or members of your household to ride transit more often?		
Answer Options	Response Percent	Response Count
Expand service (transit goes to additional areas of town	32.3%	40
Increase existing service (adding more buses to existing	21.0%	26
Improve or add transit facilities (bus shelters and/or	10.5%	13
Not Sure / Don't Know	20.2%	25
Other	16.1%	20
Other (please specify)		28
	answered question	124
	skipped question	20

Number	Other (please specify)
1	Remedy current confusion as to what services are provided to what areas by who and during what times of year! It's too hard to figure out where I'll end up and when.
2	Coordinate transfers
3	better route through the ghetto
4	leave service alone we do not have the money, expand as nesessary to accomodate skiers so that busses are not filled when passing a stop
5	unsafe to cross streets on foot after dropped off in winter
6	Add another dial-a ride for night service so people can get home after work
7	Forest Trail
8	both expand and increase service, but more important - make sure buses are on time
9	non-looping routes, e.g. Old Mammoth Lift uses only one route there and back
10	have late night busses
11	make it safe to walk to the locations where the buses pick up passengers
12	later hours in summer
13	better narketing/information/takes time to figure it out
14	More stopping points on way up mountain
15	Very, very difficult to cross main street to reach transit stops.
16	make it easy for people to us
17	scheduled stops
18	Expand service outside of town (Crowley, Tom's Place, Paradise, Bishop, etc)
19	allow my dog to ride the shuttle as in the past
20	Summer service to MMSA
21	Stop at Welcome Center on way to town and out. Welcome Center bus should hook directly into the red line and not go through the ghetto.
22	Impractical from top of John Muir Road
23	more dog friendly
24	Operate later for drinking crowds- until 2:00 or 2:30
25	Ready availability of bus schedules
26	Expand the Crest, other ESTA buses
27	better publicized hours of operation
28	consistent schedules

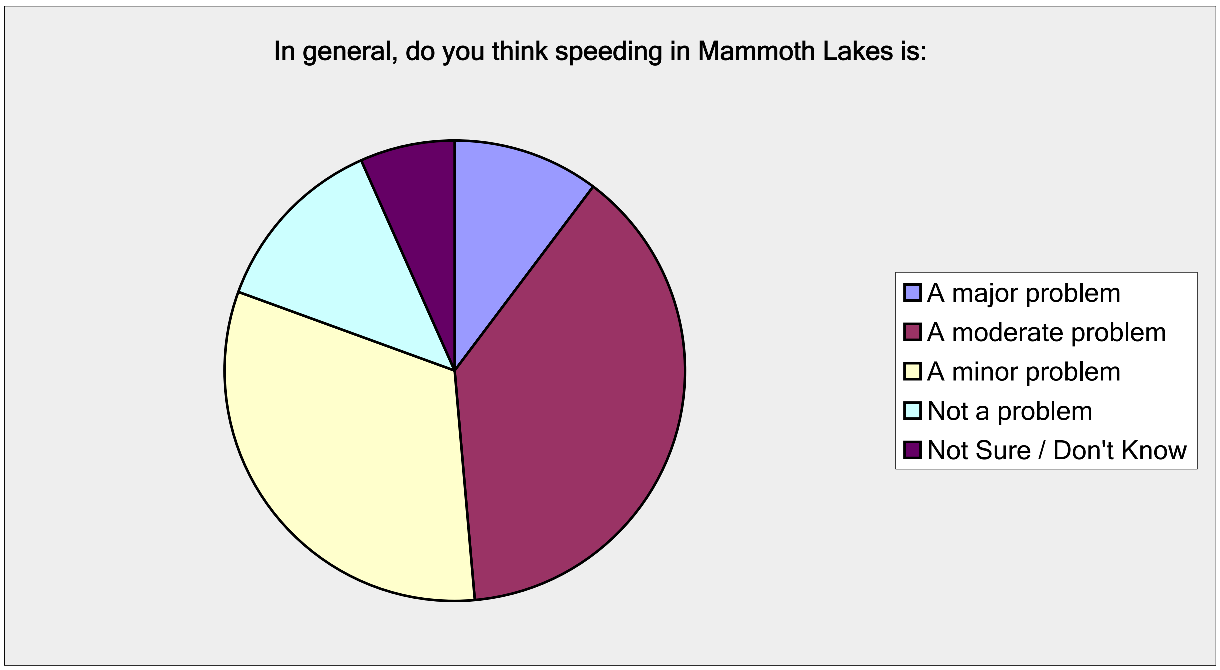
Mammoth Lakes Transportation Survey

In your opinion, which of the below suggested transit improvements do you think would improve the Mammoth Lakes Transit System the most and may encourage you or members of your household to ride transit more often?



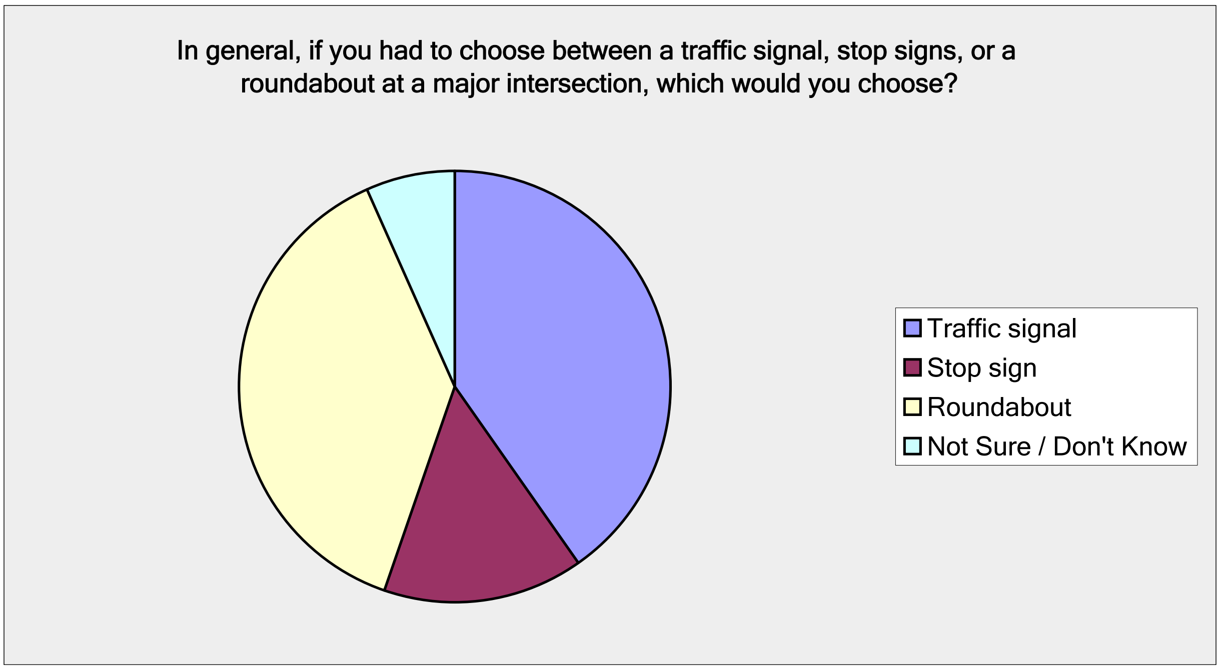
Mammoth Lakes Transportation Survey Question 40

In general, do you think speeding in Mammoth Lakes is:		
Answer Options	Response Percent	Response Count
A major problem	10.4%	14
A moderate problem	38.1%	51
A minor problem	32.1%	43
Not a problem	12.7%	17
Not Sure / Don't Know	6.7%	9
	answered question	134
	skipped question	10



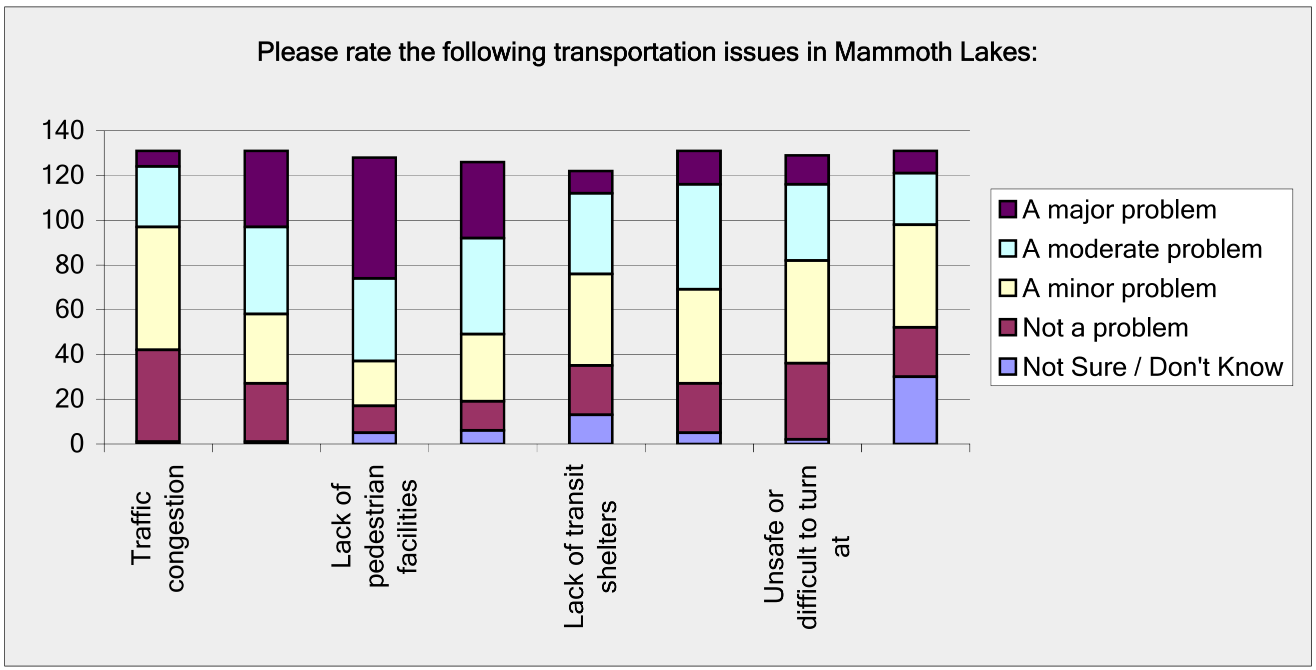
Mammoth Lakes Transportation Survey Question 41

In general, if you had to choose between a traffic signal, stop signs, or a roundabout at a major intersection, which would you choose?		
Answer Options	Response Percent	Response Count
Traffic signal	40.3%	54
Stop sign	14.9%	20
Roundabout	38.1%	51
Not Sure / Don't Know	6.7%	9
	answered question	134
	skipped question	10



Mammoth Lakes Transportation Survey Question 42

Please rate the following transportation issues in Mammoth Lakes:						
Answer Options	A major problem	A moderate problem	A minor problem	Not a problem	Not Sure / Don't Know	Response Count
Traffic congestion	7	27	55	41	1	131
Insufficient parking	34	39	31	26	1	131
Lack of pedestrian facilities (sidewalks, paths)	54	37	20	12	5	128
Lack of bicycle facilities (bike lanes/routes, bike racks)	34	43	30	13	6	126
Lack of transit shelters	10	36	41	22	13	122
Speeding	15	47	42	22	5	131
Unsafe or difficult to turn at unsignalized intersections	13	34	46	34	2	129
Neighborhood cut-through traffic	10	23	46	22	30	131
					answered question	133
					skipped question	11



Mammoth Lakes Transportation Survey Question 43

Should the existing gondola that ends in Village be extended into town down Main Street?		
Answer Options	Response Percent	Response Count
Yes	24.8%	33
Maybe - it should be studied further.	40.6%	54
No	27.8%	37
Not Sure / Don't Know	6.8%	9
Please feel free to add your comments regarding this question in the box		43
answered question		133
skipped question		11

Number	Please feel free to add your comments regarding this question in the box below
1	If it did it would by pass existing retail shops....bad idea.
2	Extending the gondola is just a ploy to create parking in the middle of town for the Village. You should build parking at the Village instead of a gondola from a parking structure in the middle of town. Putting a gondola terminal in the middle of town will increase traffic in that area and it is already a difficult drive when the town is crowded or in the Winter when it's snowing.
3	Needs to be cost effective - who would pay vs. who would see benefits? This would be of most use to tourists so they should pay. Locals by and large do not want to be forced to afford it.
4	And extend the top end of the Gondola to go to Lincoln Mountain or the top of Dave's run...
5	Really need to extend the Village Gondola, so that skiers can access Main Lodge without using Chair 2.
6	It will ruin what little downtown we actually have
7	This might be a novelty to tourists, but I think it will be too costly and not as efficient as bus transportation.
8	Expand transit, not the gondola. It would bypass some businesses, & ruin our great view of the mountains & crest. Ask this question again in 30 years...maybe it could be feasible then, though I think the same problems would occur.
9	What will the cost be. It's a nice wish but can it be a reality????
10	In the summer ML is a outdoor,recreational use not thinking about snow. This is a way to keep the village with people. Not good for the main street folks.
11	Who's going to pay for it. Why, the buses work well and are gone in the winter. Gondolas look bad I think it's a silly idea. How about a mini subway, maybe the Fed's will go for it!
12	To be used sufficiently, there are going to have to be nurerous stops. Each station is going to raise the price one million or more. It is going to take more than just wanting stations to make it happen.

13 The idea of extending the gondola down Main Street would totally annihilate all the businesses on Main Street!!! How could this even be considered!! This idea would enrich North Village at the cost local business ownership.

14 It would kill businesses along main street

15 This gondola would bypass all Main Street businesses and give an unfair advantage to businesses located in The Village.

16 no gondola, just make it possible to safely walk up to the Village from the Main Street area. We need connected sidewalks that are maintained (free of snow year round) and not disrupted by too many turn offs from Main Street (like all the entrances to the frontage road from Main Street (it's insane!).

17 An expansion of the Village gondola must be considered along with a realignment of Main Street. A center median should be installed and portions of Front Street should be utilized and realigned as part of Main Street to maintain the current four-lane configuration so traffic congestion is not worsened during the winter months. The median can be used for support poles for the gondola, landscaping, and bike path.

18 Would be OK for skiing, but parking? where? It would improve business to the Village,

19 What a great idea!

20 This "could be" nice but not a priority like sidewalks, lighting in the Sierra Valley sites, bike paths and clearing of all paths in the winter. Pedestrian traffic should not just happen in the non-snowy months in Mammoth Lakes.

21 Where ever it is it needs appropriate staff and parking.

22 FInance is the issue. WOuld it be cost effective? WOuld it pay for itself or even generate money for our area? Questions to ask.

23 How about a decent parking lot at the Village instead? Sounds a whole lot cheaper and less construction than lift towers down Main Street and the parking lot and facilities needed at the end of the gondola. In fact, the more I think about this proposal, the more ridiculous it sounds.

24 main st businesses claim it would take away. but to be seen from above has potential, as well. it'd take a lot of effort to make some of main st "presentable," though. sometimes I find the idea of a gondola up main st silly, sometimes cutting edge

25 huge improvement and would cut down on bus needs and maybe save money in the long run

26 The gondola extention would make the connection to downtown extremely valuable if was a way to have several stops along the way. It would help to ease the crowding of the shuttles and traffic on Main St. during ski season.

27 It would be nice for the gondola to begin where their is ample winter parking. Perhaps a parking garage open to the public? I bet one with a $10/day fee would be very successful assuming it is convinient, and the spaces are big enough for big mountian cars!

28 Only if you extend the gondola from Canyon to Main and then run it year-round! Half way kidding.

29 That would be absurd!

30 We come to Mammoth most years in both the summer and winter. We look forward to sharing the area and all it has to offer with our children and hope that they will do the same. As for myself, can't wait for the bike lane to open up. Each time we go, there is a little bit more excitment in the air of the lane being done. I do miss the quilt shop. Hoping that the homes will be low enough soon to buy

31 I am sensitive to concerns that it not result in decreasing walk-in traffic to Main Street businesses. And it should be part of an integrated system, perhaps extending to chair15/Snowcreek area. If cost effective and transport effective, I like the idea and think it would appeal strongly to visitors who already utilize the village to Canyon gondola.

32 It is nice concept, but I'm concerned about it bypassing existing businesses. I'm also concerned about the unattractive look of the gondola going up main street.

33 Getting up to the level of the gondola will be a major hurdle, similar to when the Mountain had a mono-rail so people would rather use the bus since it goes along the same route. Better and less expensive to just add more busses.

34 I don't understand why this idea hasn't been laughed out of existance. We do not want a disneyland atmosphere in our mountain enviornment. It would make main street ugly it would ruin the businesses that are thereand only make us the laughingstock of a resort. We are not a winter ski snow fun only town and I for one don't want to become one.The people proposing such foolishness have only their self interests at heart. That of money and the hell with anyone who gets in the way. Granted the mountain is the engine of the towns economy but even the best engines can go bad. This is one time that the engine needs to be stopped, overhauled and redirected.

35 Would the gondola stop at the malls? I suspect it would reduce business along Main Street if it bypasses the commercial area. Where would it come from/terminate? We need sidewalks along Main Street where there are businesses, Walking in parking lots and along the access roads is dangerous, especially in winter. I don't use public transport in winter because I wouldn't dare walk along Forest Trail when the snow is piled high and ice patches dot the road, hence I use my car.

36 We have enough gondolas. A gondola to Main Street would be too long, too costly, and not worth the investment in terms of usage or invironmental concerns (tree loss, blocked view of mountains caused by gondola, etc)

37 The idea seems "sexy" to me but I am unclear on how effective it would be in improving mobility, economic growth, etc.

38 It would be wonderful if ESTA expanded bus service every day of the week to Lancaster.

39 A gondola stop down Main Street would need ample parking.

40 As long there is adequate parking at the bottom station to encourage drive and ride. Could this be a free service.

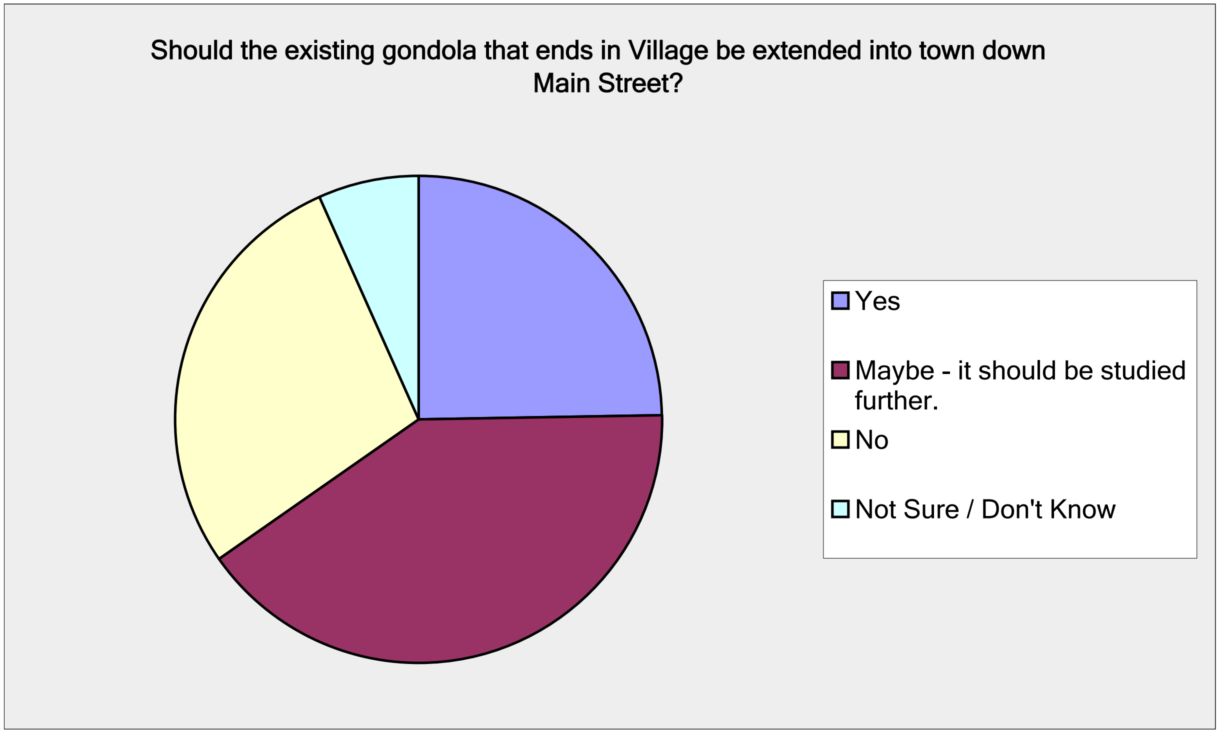
41 I believe the businesses on Main Street would suffer too greatly. Much like the freeway by-passes going around little rural towns. Getting the parking structure built up at the Village so people can drive to that point and then take the gondola seems to me to be the best option. Thereby leaving more opportunity for people to frequent the Main St. businesses on their way to and from skiing.

42 The hours of the Gondola and its extention if applicable should be extended to allow those of us who own at the mountain (or top of the Gondola) to go into town and be able to get back up after hours.

43 as long as there is all day parking for a reasonable price

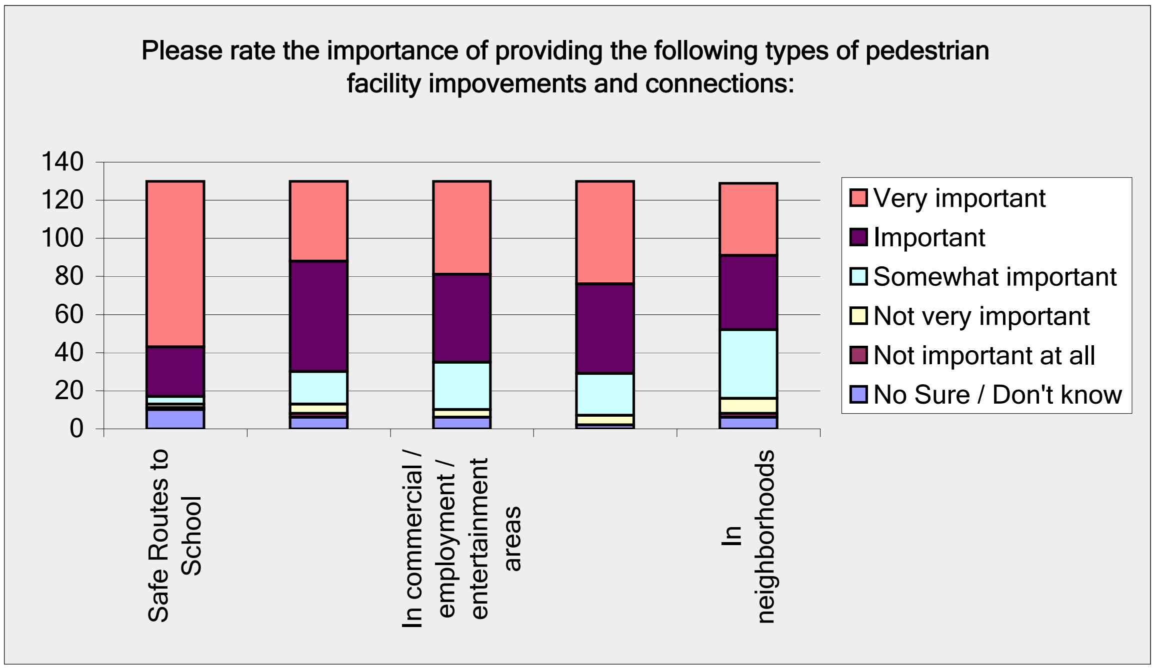
Mammoth Lakes Transportation Survey

Should the existing gondola that ends in Village be extended into town down Main



Mammoth Lakes Transportation Survey Question 44

Please rate the importance of providing the following types of pedestrian facility impovements and connections:							
Answer Options	Very important	Important	Somewhat important	Not very important	Not important at all	No Sure / Don't know	Response Count
Safe Routes to School	87	26	4	2	1	10	130
Access to transit stops	42	58	17	5	2	6	130
In commercial / employment /	49	46	25	4	0	6	130
To / from recreational / trailhead / park	54	47	22	5	0	2	130
In neighborhoods	38	39	36	8	2	6	129
						answered question	131
						skipped question	13



Mammoth Lakes Transportation Survey Question 45

Please rate the importance of providing pedestrian facility and connectivity improvements in each of the below areas of Mammoth Lakes:

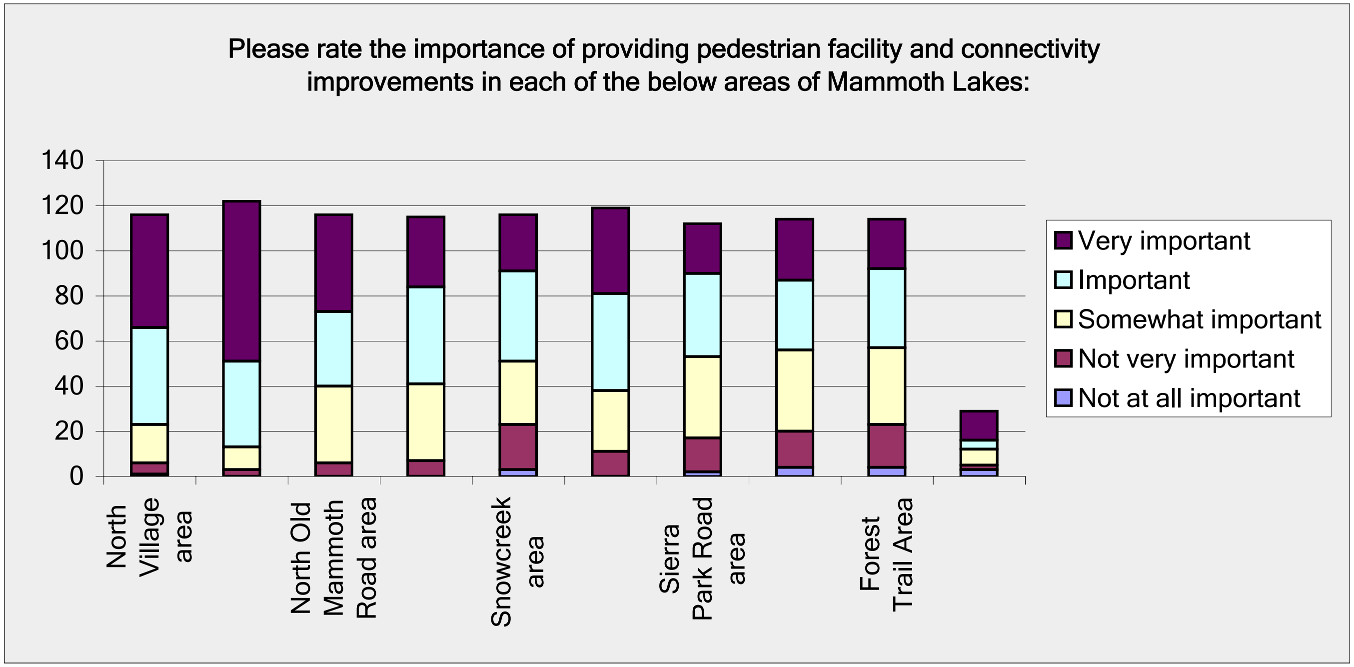
Answer Options	Very important	Important	Somewhat important	Not very important	Not at all important	Response Count
North Village area	50	43	17	5	1	116
Main Street area	71	38	10	3	0	122
North Old Mammoth Road area	43	33	34	6	0	116
South Old Mammoth Road area	31	43	34	7	0	115
Snowcreek area	25	40	28	20	3	116
Meridian Boulevard area	38	43	27	11	0	119
Sierra Park Road area	22	37	36	15	2	112
Sierra Valley Sites area	27	31	36	16	4	114
Forest Trail Area	22	35	34	19	4	114
Other	13	4	7	2	3	29
Other (please specify)						21
					answered question	125
					skipped question	19

Number	Other (please specify)
1	to all trail heads....
2	better transit needed to mammoth Mountain Inn when red line is not running
3	Lakeview and Canyon
4	meridian to the college
5	Surrounding Forest Service Lands (Lakes Basin, Sherwins, etc.)
6	Ski Portals
7	Juniper Springs Area
8	Old Mammoth
9	Lakes Basin
10	The Bluffs
11	Majestic Pines area
12	Library stop seems obviously neccessary.
13	Where is north and south old Mammoth rd.? Where is Sierra Valley?
14	Meridian Blvd/Sierra Valley Sites has extreme pedestrian usage. Suggestion: Walk path thru the middle of Sierra Valley to Mammoth Hospital for pedestrians. Keeps them off of Meridian and safe. Make path large enough to plow snow and for a fire truck to access if needed.
15	I believe you mean sidewalks???
16	Welcome Center
17	pedestrian walkway on Sierra Nevada Rd AND Laurel Mt rd VERY IMPORTANT
18	A trailhead shuttle would be nice
19	We need better sidewalks all over town and they need to be cleared in winter
20	Lake Mary

21 Lake Mary Road up to Davison or Kelly Road

Mammoth Lakes Transportation Survey

Please rate the importance of providing pedestrian facility and connectivity improvements in each of the below areas of Mammoth Lakes:



Mammoth Lakes Transportation Survey Question 46

Please feel free to write additional comments in the box below.	
Answer Options	Response Count
	49
answered question	49
skipped question	95

Number	Response Text
1	Public transportation is very important if you don't have a car. As in the case for seasonal and immigrant labor. But generally, using public transportation for simple errands -- like going to the market -- adds an hour of inconvenience to the task. For example: going to the market (Vons) for a weeks groceries will leave you with 5-10 bags of groceries to carry from the market to the bus stop where you wait until the bus comes while road dust coats your groceries and then you have to load them on the bus making several trips from the wait station into the bus and back. Then when you finally get back to the bus stop nearest your home (if the bus driver remembers to stop there) you have to carry all those bags of groceries several blocks home. A lot of work and a lot of time -- you really have to have a car -- I speak from experience. I was without a car for a while. Public transportation in Mammoth is useful for getting back and forth to work but not for day to day living. Those open air trolleys are little more than an amusement park ride.
2	I am not in favor of any round abouts, those that have been proposed do not fit the 3 main requirements of round abouts.
3	I know that in the winter, the town is quite well served with transit, but as soon as that season ends, the trolley discontiinues to serve Canyon/Lakeview Blvd. area and Meridian area. There is no incentive for a visitor to rent a hotel or condo in those areas, not to mention the full time residents who live in those areas. I would love to see a continuation of the combined blue/yellow line like they did for one week following the end of major ski season.. at the very least.
4	Would love a large parking lot area in town with direct service to Main Lodge/Mill Creek.
5	We need more sidewalks and they should be accessible all year long!
6	The stairs and walkway along main st near the ghetto were a huge waste of money...not maintained (buried)in winter.
7	Question #7 should allow multiple answers. I go to the area in my car, via transit, on my bike, and walking. Therefore I chose "Other". Also, where's the Spanish language version of this survey and what outreach is being done to that community?
8	More sidewalks would keep pedestrians out of the streets (especially in winter) where the pose a safety concern. Perhaps snow removal on sidewalks could be coordinated with condo complexes/businesses adjacent to the sidewalk, as the town may lack the resources to keep sidewalks free of snow during the winter. Meridian could definitely use a sidewalk on the sunny side (north) all the way to Old Mammoth. Currenlty, during the winter pedestrians walk along the side of the road and with a speed limit of 35-40mph on Meridian pedestrians don't feel at ease.
9	A committment to making town more pedestrian and bike-friendly throughout town would be my top recommendation - while it might not be as feasable in the winter, I think it is something that could be improved along main street and old mammoth through town. I use crosswalks on both streets regularly and many people neglect to stop for pedestrians. If we stepped up law enforcement at these crosswalks, drivers might start to drive more cautiously around pedestrians trying to use the roads too.

10 There's no point in sidewalks if people don't use them. During the winter on Meridian and in the North Village and the Gondola Village sidewalks are swept of snow and people still walk in the street. Public information should be made available, explaining the rules of the road I was taught in grammar school! to Walk facing traffic, and Ride bicycles with traffic. Bike lanes are nice but following the rules of the road works very well. My greatest concern is people walking in the street (Meridian especially) in the dark wearing dark cloths, I'm surprised we don't have people run over every week.

11 Summer transit needs to be improved. There is no reliable way to get from my house on Mono St. to Main Lodge for work without taking my car. In the winter I ride the MAS almost daily, in the summer I have to drive daily. I'm not sure why ESTA is doing the Red's Meadow bus, which start in the early morning hours but they offer no way to get from town to the Red's bus staging area in the early morning hours. The bike park shuttle is great for people who don't have to be at work earlier than 9:30 or don't wish to go to Red's any earlier than that, but it's not a guarantee. If that bus is too full then they will not take non-biking passengers. Currently the trolley goes to Canyon Lodge which seems totally unnecessary in the summer, there's nothing going on there except the occasional biker who could easily ride their bike downhill to the Village to catch the shuttle again. Please revisit the plans for re-doing Meridian Blvd. That street is scary, I see people traveling upwards of 55 mph on it. I fell one time in the winter on a slippery spot on Meridian and the cars were coming so fast that one car tried stopping in between Joaquin and Lupin and couldn't so he resorted to just honking at me to ge

12 It would be nice if "the powers that be" took a look at the posting of road signs and the lack of posting signs in town. You'd think a supervisor would be in charge of this! The new library has be opened for almost 3 years? Yet there is a blue sign posted at the corner of Whiskey Creek indicating that the community center and library are both located up Minaret. Both signal lights at Meridian and Old Mammoth and the one at Hwy203/Main and Old Mammoth both have right turn only lanes, but there are no signs posted above at signal height to indicate this. Yet every winter, the painted roadway turn indication gets covered with snow and out-of-towners, instead of turning right, go straight causing a problem and all the while thinking they're in the right. And NEVER have I've seen law enforcement cite them for it (although I have seen MLPD watch it twice :(Please fix by buying two signs indicating the proper flow of traffic and installing them at signal height (like the one up at the Whiskey Creek intersection). BIGGEST complaint in town re: buses - no night service for employees whose work ends after 10pm (same for those going to the bars). And that the taxi services are unreliable (don't/wor

13 Survey is TOO LONG

14 For me, on-time, frequent, and convenient service would make a major difference in whether or not I use public transportation. I think it is a very important element for our town and should get the consideration it deserves. My past attempts to use the buses have been frustrating and I haven't tried again for many years.

15 Snow removal is very important to pedestrian access and mobility in winter. Also, a schedule of times each route stops at each bus stop would be enormously helpful and encourage people to use transit more because they can plan the times they will actually catch a bus.

16 Would like to see more areas of town covered by transit. Have I read this year that the free transit now goes up to Lake Mar area?

17 Let's make this a truly feet-first community! I'd love to see parking relegated to the back of businesses (such as with Salsa's) rather than in front (such as the strip malls, Vons, etc.). More bike parking would be useful, as would more frequent transit stops and a "next bus" signal at these stops.

18 Connecting existing bike paths should be a high priority.

19 I think it is odd that a small 4 square mile town is unable to have bus routes with specific times. I understand there may be a 5 even 10 minute delay at times, however, if large metropolitan areas can have bus systems that move millions of people I do do not understand why Mammoth is unable to have a timed schedule. I would suggest fine tuning the transit we have before expanding and/or undertaking a much larger system.

20 You need to advertise this survey to everyone in Mammoth via the newspaper! Everyone needs to complete this survey!

21 Mammoth's bus transportation system has greatly improved in recent years. The new Old Mammoth LIFT system is an especially nice addition as it provides access to the Bluffs and back country ski opportunities of the Sherwin Range. However, the Bike Paths in town need to be completed in a LOGICAL manner and facilitate a complete loop around town (i.e. Village thru Sierra Star across Mammoth Creek thru Old Mammoth, Snowcreek, current main path, offset path traveling length of main street back to village).

22 Mammoth is the most beautiful place i know of.We go up there 2 or 3 times a year and its always a cool memory.I hope my info helped,thanks and good luck on the improvements.

23 The summer trolley should go later. During the winter it was always busy at night. There are people like me, that would use the trolley to get home from work.

24 Please change signage in a timely manner during seasonal changes. I recently planned a day using transit to several locations, but at 8 a.m. the sign at the Mid-Town Bus stop (near Vons) stated it began at 9 a.m. on weekends. It was Sunday, so I hurriedly began walking to the Village and then the bus passed me. As I walked past other signs, several were for winter, others for summer. Since I live here and walk everywhere, this was not a problem, but visitors would no doubt be confused and irritated. Also, I love the current transit system, but would like earlier starts (7 a.m.) whenever possible in the summer. The winter transit to the Mountain is great--just needs more buses at times (a sign of success). Thank you for all your efforts.

25 any walk way and bike paths would be a great improvment

26 Sidewalks on Main Street are very important before someone gets seriously hurt or worse.
Love what has been done so far, just needs to go all the way up Main street to Meridian.
More bus stops up mtn (such as at The Mill).

27 Lowering speed limits in town, and then strictly enforcing them, could completely change the feel of Mammoth and make it so pedestrians and bikers are not taking their lives in their hands trying to get around town in a feet first manner.

28 On number 4 above, only one option was available so I picked the one most important but the top three options are all necessary. I choose the option of adding more buses for shorter wait-times and an example of why was on the Saturday before the Fourth of July we used the trolley to get from Fire Station #2 to the Village - from point A to B took us over 40 minutes. Additionally, the signage at the stops (ie. Fire Station #2) don't say what time the buses are to be at the stops only that they are there every 20 minutes - not really that helpful is you don't know when the last but was there. Please add the times when the buses/trolley will be at each stop. This would make for much more efficient use of user's time. Thank you.

29 I support making Mammoth more pedestrian and bike friendly within town.

30 Suggestion: For safety, create a pedestrian path from Sierra Valley Sites, where there is extremely pedestrian usage, to Mammoth Hospital. This will clear up pedestrains using Meridian as their main thorough way. Keep the people safe from vehicles during the winter. Allow this path to be cleared during the winter and large enough for a fire truck to access if necessary. This is alleviate putting sidewalks down Meridian where the snow would be dumped upon this sidewalk during the winter and unable to use.

31 Mammoth Lakes should be a pedestrian / cyclist friendly town. More infrastructure and services are needed to make this happen.

32 Thank you, the transit system in Mammoth is very good and appreciated by all. Keep it up!!!! Please consider adding Crowley/June Lake/Lee Vining, if it makes sense/cents.

33 The pedestrian walking lane concept would benefit businesses, help reduce traffic, and make strolling in Mammoth a pleasurable way to get to know the town intimately. Using the gondola would help reduce the shuttle traffic, and connect downtown with the Village Hub and or the Canyon Lodge.

34 I would certainly use public transit more often if there was a bus that ran regularly from Vons to Snowcreek during the lunch hour. With the current schedule, I cannot get to the gym and back during an hour lunch break.

35 Let's get some more bike lanes and bike racks in town! Especially could use bike lanes on Old Mammoth Rd. Yikes. Looking forward to the re-re-paving of the mountain road and to the new, wide shoulders on the Mammoth Loop.

36 Will this survey be available in local press? Will this survey be available via Channel 51? There are far too many people in ML who do NOT have access to computers. This is a significant portion of our population and we need their input.

37 parking (park & ride) is crucial for any system for residents as many residents will probably remain too far from even improved transit stops to walk (especially uphill with groceries, etc.). Transit should also be integrated fully with the developing trail system (e.g., Sherwin access points) so as to emphasize arrival by transit rather than in cars.

38 We need to finished the plans we have started before thinking about new projects. 1. we need to complete the sidewalks connections (i.e. west main street, sidewalks by Fireside/Whiskey Creek). 2. We need to complete bike trails 3. I would like to see the completed plans set forth for Mammoth before we decide on any new projects.

39 The current transit system is pretty good from all I hear. I don't use it to any great extent but that is my choice. There can always be improvements to any traffic and transit situattion. I think that speedinmg is rampant in town. Main st. isn't safe to cross anywhere but with the signal at Old Mammoth Rd. and at Meridian. Sid dtreets are a legal speedway 90 % of the time. Installation of moderate sped bumps might be tried. Roundabouts although cutesy and conversation starters are dangerous and inefectual to all but the ean visitor. I'e drivinen in Britain, France Belgium Italy Austria and Germany and have experienced Roundabouts. They are trecherous.

40 If we want to reduce traffic and peak load congestion, we need safe walkways throughout town so that people can leave their vehicles at home and walk to stores, or safely walk to transit stops. Gondolas have limited use for moving large numbers of people, and keep them from being tempted to sample shops and restaurants.

41 When the new development Clearwater is built we definitely need pedestrian access to this for the 350 or so employees who will work there and for pedestrians who will walk to and from this commercial and residential development. This is very important for the safety of the residents and visitors. The number of rooms in the hotel, the businesses and residents on this site will mean a concentration of people in this area. Hence the need for safe walkways.

42 The transit system is very important. While visiting Mammoth Lakes, I met many people from out of the Country (Sweden, Germany, France and Austria). I think the transit system would greatly help these individuals, as they are far from home.

43 Keep educating people on local transit options if you want people out of their cars.

44 Take a survey at any typical Town council meeting, and see what % of all people present came in private vehicles. We seem to focus on visitors going "feet first", but its apparent that virtually anyone living in Mammoth that has the option currently chooses to use a car to go anywhere from 3 blocks to across town. Look at Meridian St along the schools on any morning when in session, and its clear that Mammoth residents do NOT currently try to practice what we ask visitors to do; park the car and use other transportation means. For the Mountain traffic, nothing would be more effective at increasing use of shuttles than to charge a parking fee for the major parking areas. It would both raise revenue (for public use and/or private) and greatly decrease traffic congestion in winter. Finally, anyone on the Mobility Commission and Town Council should have to go one week in typical mid winter conditions, without the use of their car, and try to make all the regular travels around town, before they pontificate about going "feet first".   Currently, it sucks to do so. Its dangerous, inconvenient, and largely done only by lower economic (ie "workforece") stata of the town residents.

45 Please consider that us dirt riding motorcyclest and mountain bikers want to access the trail system from our back door of our residence, forever. Thank You

46 Each time I have visited town I have never had a major concern with traffic congestion. During major holidays it is expected to have above normal traffic. I have always been able to make my travel to any location throughout town by either car, bike, buses, or by walking without any delay. I enjoy the old town feel rather that major development of a new town feel.

47 There needs to be pedestrian access or more public transportation (more often than once an hour) during the winter on Lake Mary Road up to Davison (or at least Kelly Road). The bike path needs to be plowed in the winter (I understand it isn't due to the budget constraints) or someone is going to get killed walking down Lake Mary Road. Since the bike path has been built, Lake Mary Road is now much narrower with no shoulder. During the winter, there is even less of a non-existent shoulder due to the snow banks. Because there is only one bus per hour that goes up and down Lake Mary Road, many people walk on that street. With the dangers of the icy roads and "voodoo shoot", it is only a matter of time before a pedestrian is seriously hurt or killed on Lake Mary Road during the winter. I understand it is good for tourism and for recreation to make more sidewalks more in the center of town, but I feel that Lake Mary Road's winter pedestrian access is human safety issue.

48 The transit and trolley drivers tend to be very friendly and helpful employees and often enhance the transit experience. We urge you to keep the small town appeal with big town offerings. In this day and age, where can you experience a "free ride" that's safe!

49 Can't wait to get there!

Appendix B:
Promotion and Advertising

Table of Contents:

Mobility...

get better connected!

We want to hear from you!

The Town of Mammoth Lakes is hosting three interactive public events to gather community input on mobility related issues, needs, and ideas that will lead to an integrated multi-modal system for the community.

Please join us!

JULY 16, 17, 18

MINARET VILLAGE MALL

In the old "Wild Willy's Arcade" next to Minaret Cinemas

www.visitmammoth.com/mobility

760-934-8989 ext. 225

1 Multi-Modal Mobility Café

When THURSDAY, JULY 16, 2009

Time 5:30 P.M. to 7 P.M.
Open House starting at 4:30 P.M.

Topic A community conversation about getting around in Mammoth Lakes, and to learn how we can make it easier.

2 Community Safety and Mobility Café

When FRIDAY, JULY 17, 2009

Time 5:30 P.M. to 7 P.M.
Open House starting at 4:30 P.M.

Topic A community conversation about the impacts of mobility on public safety, including emergency response, snow management, and accident prevention.

3 Community Mobility Plan Open House and Trolley Tours

When SATURDAY, JULY 18, 2009

Time 10 A.M. to 5 P.M. Open House
Trolley Tours at 11 A.M. and 2 P.M.

Topic Participants will be able to provide comments on all aspects of transportation and mobility, including existing multi-modal infrastructure, near-term capital projects, and district and town-wide mobility issues at the Open House and on the Trolley Tours.

Mobility...

get better connected!

We want to hear from you!

Help Mammoth Lakes become a more connected, accessible, uncongested, and safe community with an emphasis on feet-first and public transportation.

The Town of Mammoth Lakes is hosting three interactive public events to gather community input on mobility related issues, needs, and ideas that will lead to an integrated multi-modal system for the community.

Please join us!

MINARET VILLAGE MALL
In the old "Wild Willy's Arcade"
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THE TOWN OF MAMMOTH LAKES CALIFORNIA

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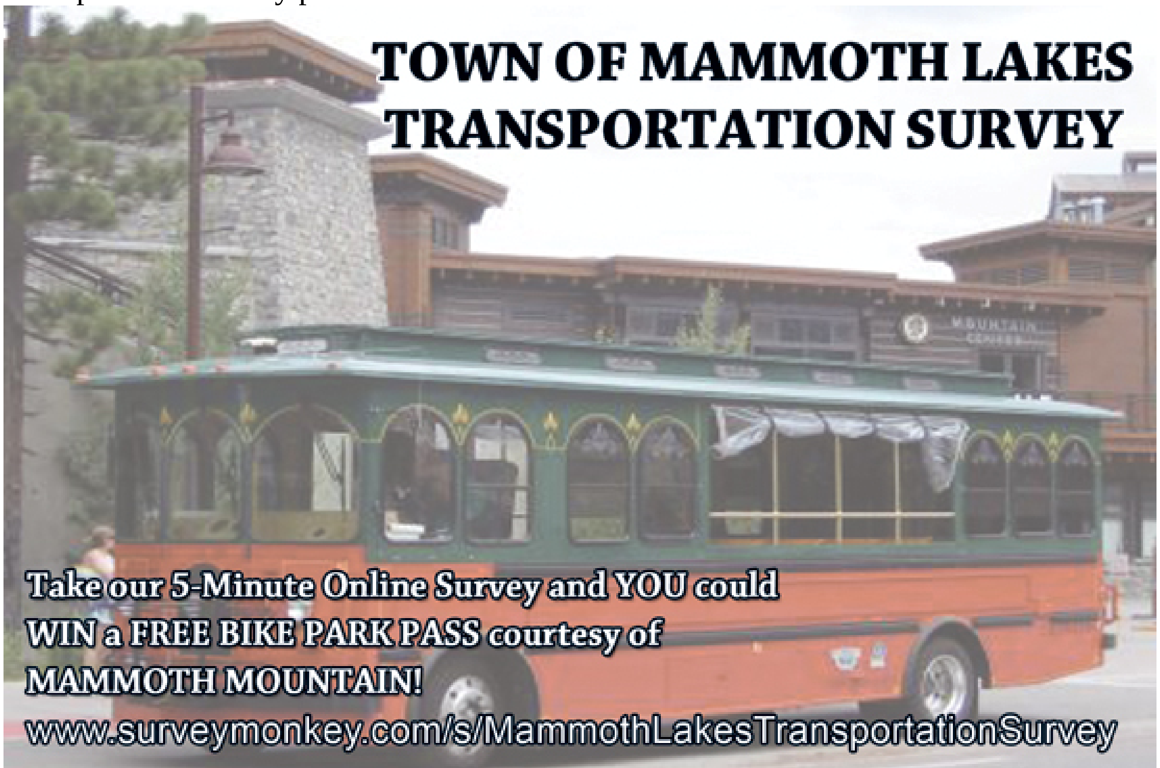
Transportation Survey postcard front and back



Take our Town of Mammoth Lakes Transportation Survey
It's quick and easy – just go to the following link:

www.surveymonkey.com/s/MammothLakesTransportationSurvey

If you want Mammoth Lakes to become a more connected, accessible, and safe community with an emphasis on feet-first transportation, then we want to hear from you!

We appreciate your time and input!

Caltrans

Mammoth

This survey has been generously funded by a California Department of Transportation Community Based Planning Grant.

OFFICE OF TOWN MANAGER

Robert F. Clark, Town Manager

P.O. BOX 1609, MAMMOTH LAKES, CALIFORNIA 93546

MEMORANDUM

To: Mayor and Council
From: Robert F. Clark, Town Manager
Subject: Thursday Update
Date: July 9, 2009

Budget Process

In accordance with Council direction staff has developed several alternatives for reducing expenditures based on reduced estimates of transient occupancy tax and sales tax. These options will be reviewed at the July 15th meeting. Several other budget related matters are scheduled for future meetings. These include detailed reviews of 1) Property tax projections, 2) Police staffing levels, 3) Sidewalk snow removal, 4) Animal control officer staffing, 5) Policy for use of reserves. In addition, the Council directed the Town Manager to bring back options for restructuring Town Government over the next six months.

Regional Forester Visit

Mayor McCarroll and I will be meeting with Randy Moore, Regional Forester for USFS Region 5, during his visit to Mammoth next week.

Snowcreek Master Plan Update (Snowcreek VIII)

On Wednesday, July 8, 2009, the Town Council unanimously certified the Snowcreek VIII Environmental Impact Report (EIR), approved the Minor General Plan Amendment 2009-01, and adopted the Snowcreek Master Plan Update and Zone Code Amendment 2006-04, as amended.

The Final Environmental Impact Report (EIR) Addition and Final and Draft Environmental Impact Reports for this project are available at the Town Offices and www.ci.mammoth-lakes.ca.us/comdev/Snowcreek%20VIII.htm

The Snowcreek Master Plan Update proposal is available at the Town Offices and www.ci.mammoth-lakes.ca.us/comdev/Snowcreek%20VIII.htm.

The Final Snowcreek Neighborhood District Plan (NDP) (dated April 8, 2009) is available at the Town Offices and www.ci.mammoth-lakes.ca.us/comdev/SNOWCREEK%20VIII/SWG_TOML_Snowcreek_NDP_Final_040809.pdf

Phone: (760) 934-8989, ext. 226 Email: rclark@ci.mammoth-lakes.ca.us

Please contact Jen Daugherty, Associate Planner at (760) 934-8989 x260 for more information.

Mammoth Crossing North Village Specific Plan Amendment

On July 8, the Planning Commission voted 3-1 to recommend approval of the Mammoth Crossing North Village Specific Plan Amendment to Town Council. The Planning Commission hearing, which was continued from its previous meeting on June 24, provided an opportunity for public comments and Planning Commission deliberation, resulting in direction to modify maximum building heights, revised setbacks from those originally proposed, and refine other recommended conditions of approval.

The Planning Commission's decision followed the Town Council's acceptance of the North Village District Planning Study on July 1, 2009, with consensus to accept the "Option 4" alternative, and direction to the Planning Commission to consider a number of issues for the Mammoth Crossing sites related to height, building envelopes, and mobility.

The Town Council hearing for the Mammoth Crossing NVSP Amendment has not been scheduled, but is likely to take place in August or early September.

The complete staff report and attachments from the 6-24 and 7-8 Planning Commission meetings, including the proposed amendments to the NVSP can be viewed on-line at http://www.ci.mammoth-lakes.ca.us/Planning%20Commission/planning%20commission.htm

A copy of the November Draft NVNDP is available for review on the Town's website, at the following link: http://www.ci.mammoth-lakes.ca.us/comdev/MAMMOTH%20CROSSSING/Draft%2011-5-08/North%20Village%20Planning%20Study_Draft%2011-5-08.pdf

The **Final Environmental Impact Report** for the Mammoth Crossing project can be reviewed at the Town Offices, Mono County library, and on-line at http://www.ci.mammoth-lakes.ca.us/comdev/districtplanning.htm#mammothcrossing.

Mobility - Get Better Connected!

If you want Mammoth Lakes to become a more connected, accessible, un-congested and safe community with an emphasis on feet first, public transportation second, and vehicles last, then we want to hear from you! As part of the Mobility Plan, the Town is hosting three interactive public events (see the attached flyer) to gather community input on mobility related issues, needs, and ideas that will ultimately lead to a complete and integrated multi-modal system for the community.

1. **Multi-Modal Mobility Café**
   When: Thursday, July 16, 2009
   Time: 5:30 p.m. to 7:00 p.m. with an Open House starting at 4:30 p.m.
   Topic: A community conversation about getting around in Mammoth Lakes, and to learn how we can make it easier.

2. **Community Safety and Mobility Café**
   When: Friday, July 17, 2009
   Time: 5:30 p.m. to 7:00 p.m. with an Open House starting at 4:30 p.m.
   Topic: A community conversation about the impacts of mobility on public safety, including emergency response, snow management, and accident prevention.

3. **Community Mobility Plan Open House and Trolley Tours**
   When: Saturday, July 18, 2009
   Time: Open House 10:00 a.m. to 5:00 p.m.;Trolley Tours: 11:00 a.m. and 2:00 p.m.

   Topic: Participants will be able to provide comments on all aspects of transportation and mobility, including existing multi-modal infrastructure, near-term capital projects, and district and town-wide mobility issues at the Open House and on the Trolley Tours.

All events will be held in the old "Wild Willy's Arcade" in the Minaret Village Mall. We look forward to getting better connected with you! For more information: Go to www.visitmammoth.com/mobility or call Jessica Morriss (760) 934-8989 ext. 225.

Tour of Mammoth Returns

Back for its second season, the Tour of Mammoth: Commuter Bike Challenge has begun. Designed to promote Mammoth's network of bike trails and the use of pedal power instead of horsepower, the Commuter Bike Challenge is a great way to get around Mammoth with the chance to win fabulous prizes including a free commuter (multi-street) bike from Specialized.

Footloose Sports partnered with the Tourism and Recreation Department to create the Tour of Mammoth in association with Mammoth Lakes Trails and Public Access (MLTPA), Snowcreek Athletic Club, Village Sports, and the Mammoth Lakes Welcome Center. The Commuter Bike Challenge is open to both residents and visitors throughout the month of July and August, concluding on Monday, September 7, 2009.

The goal of the Commuter Bike Challenge is simple. Show up in your cycling gear at Footloose Sports during store hours, pick up your 2009 Tour of Mammoth Passport and Map, get your passport dated and time stamped, and start pedaling! To learn more about the 2009 Tour of Mammoth: Commuter Bike Challenge, please log onto: www.visitmammoth.com/tourofmammoth, or call Footloose Sports at (760) 934-2400.

21st Annual Mammoth Jazz Jubilee

Summer is in full swing in Mammoth with "hot jazz in the cool sierra" taking center stage from July 8 – 12, 2009. The 21st annual Mammoth Jazz Jubilee is in town – review the complete schedule online at www.mammothjazz.org. Visit the 10 venues on the complimentary shuttles, and listen to the 30 performers from across the country each playing their unique style of jazz. Many of the favorites are back including "Gator Beat," "High Street," Night Blooming Jazzmen," and "Titan Hot Seven with Draga and Barnhart." The Holler is the headquarters for Jazz: purchase tickets, souvenirs, jazzy T-shirts, food and beverage, and lost and found. Call (760) 934-2478 or 1-877-Mtn-Jazz for additional information.

Tourism and Recreation Commission Special Workshop

A special workshop of the Tourism and Recreation Commission will be held on Monday, July 13, 2009 from 4:00 p.m. to 6:00 p.m. in the Tourism and Recreation Administrative Office Conference Room for the purpose of discussing the Definition of Marketing for Measure A Funding and Ice Rink Operations. This is a rescheduled date from the workshop that had been scheduled for Wednesday, July 8, 2009.

Recreation This Week!

All the events, programs and activities listed below are detailed in the summer/fall Mammoth Recreation Guide. Contact the Tourism and Recreation Dept. at (760) 934-2712 ext. 1234 to register or for additional information.

July 11 – June Lake Triathlon
July 12 – Nordic Walking Fitness series begins
July 13 - Wilderness Camp 2
July 13 – Swim Lessons Session 4
July 18-19 – Adult Men's Softball Tourney – lower division

Projected Average Resort Occupancy

Friday night 7/10/09 - Saturday night 7/11/09 = 51%
Sunday night 7/12/09 - Thursday night 7/16/09 = 25%

Jazz Jubilee Traffic

The 21st annual Mammoth Jazz Jublilee rolls into town this week, bringing several thousand visitors and extra traffic. Old Mammoth Road in the area of Sierra Nevada Road, and Minaret Road between Main Street and Meridian Boulevard will be especially congested. Please obey all traffic cone patterns and temporarily reduced speed limits in these areas.

Busy July 4th Weekend

MLPD had a busy three day weekend, making several arrests and handling traffic accidents, assault calls and domestic violence incidents. A high risk traffic stop was conducted on Main Street and Old Mammoth Road when an apparently intoxicated driver failed to stop for the red lights and sirens of several MLPD patrol units. Because of the high pedestrian and vehicle traffic volume in the area at the time, officers were concerned the driver and two passengers would injure someone in what appeared to be an active attempt to evade contact. The vehicle did stop just west of the intersection, and the three occupants were removed at gunpoint. The driver was arrested for DUI and the passengers for public intoxication. A preliminary breath alcohol result on the driver, Octavio DeJesus Navarro Garcia, was recorded at .31%, more than four times the legal limit.

Arrests

- Victoria Ashby Shaw, 48, Redondo Beach, for drunk in public
- Ricardo Vaca Munoz, 69, Mammoth Lakes, for lewd and lascivious acts with a child under 14 and lewd or dissolute conduct in public
- Marco Antonio Lopez Cruz, 39, Mammoth Lakes, for warrants charging embezzlement and illegal reentry to the United States after criminal deportation

- Joshua Ronald Vaith, 29, Mammoth Lakes, for DUI
- Luis Miguel Velasco, 23, Mammoth Lakes, for a civil warrant
- Kimberly Denise Stockton, 22, Mammoth Lakes, for felony spousal abuse
- Michael Ian Epstein, 28, Mammoth Lakes, for drunk in public
- Vicente Ramirez Garcia, 26, Mammoth Lakes, for drunk in public
- Octavio DeJesus Navarro Garcia, 24, Mammoth Lakes, for DUI
- Juan Navarro Ramon, 22, Mammoth Lakes, for drunk in public

Calls for Service/Officer Observations
170, including 6 business/building checks

Crime/Incident Reports
25 reports

Traffic Stops/Citations
30 stops; 12 citations

Skate Park Enforcement
No citations were issued last week

OFFICE OF TOWN MANAGER

Robert F. Clark, Town Manager

P.O. BOX 1609, MAMMOTH LAKES, CALIFORNIA 93546

MEMORANDUM

To: Mayor and Council
From: Robert F. Clark, Town Manager
Subject: Friday Update
Date: July 23, 2010

Airport, Mobility, Planning, and Public Arts Commissions
Two terms each are set to expire on the Airport, Mobility, Planning, and Public Arts Commissions on July 31, 2010. All of the terms are for four years. The application period closed on Thursday, July 15, 2010 at 5:00 p.m. The Town Council interviewed the applicants on Tuesday, July 20th, and made appointments at the regular meeting of July 21st. Thom Heller and Pam Murphy were appointed to the Airport Commission. Dana Grenier and Sandy Hogan were appointed to the Mobility Commission. Tony Barrett and Rhonda Duggan were appointed to the Planning Commission. Noelle Deinken and Sandra Peterson were appointed to the Public Arts Commission.

Property Tax—County 'AB-8 Worksheet'
The County has released their first draft 'AB-8 Worksheet' for FY 10-11. The worksheet itemizes by tax area the change in assessed valuation and the change in property tax allocations to jurisdictions. The reported assessed valuation for the Town of Mammoth Lakes is $4,088,442,935 (yes that is billion). This is a decrease in assessed valuations from the prior year of 8.17%. The Secured, Unsecured and Homeowner Property Tax Relief 'types' of property taxes are allocated based on the assessed valuation adjusted by the Educational Augmentation Relief Fund. The County has estimated that these 'types' of property tax will decrease over the prior year by 8.59%. The proposed budget had anticipated a decrease of 10%.

Lake Mary Road Bike Path
The Lake Mary Road Multiuse Path (Lakes Basin Path) is a 5.3 mile, Class 1, bike path. When completed the path will begin in Town at the Lake Mary/Minaret Road intersection and will end at Horseshoe Lake. The contractor is finishing up the work on the section between Minaret Road and Lower Twin Lake. This section of the path is open with local closures at work zones. The majority of this work will be complete by August 1, 2010. The contractor has also begun work in the upper section of the path between Upper Twin Lake and Horseshoe Lake. This work is expected to be paved by October 15, 2010.

Phone: (760) 934-8989, ext. 226 Email: rclark@ci.mammoth-lakes.ca.us

Lake Mary Road Bike Path Completion Project

The Lake Mary Multiuse Bike Path Completion Project will complete a gap in the system between Lower Twin Lake and the Twin Lakes Store. The project consists of a new bridge at Mammoth Creek, an under crossing at Twin Lake Loop Road, and 3,000 feet of a Class 1 bike path. Town staff will assist the U.S. Forest Service in management of this contract. The U.S. Forest Service is currently advertising for a contractor to complete this work and it is expected that the contract will be awarded by September 1, 2010.

Mammoth Lakes Wayfinding Project

The Mammoth Lakes Wayfinding Project will construct signage throughout the Town's Multiuse Path system to assist residents and visitors using the system. This project has two parts. The first part is to work on the portions of the bike path system (that the Town has a 30 year Special Use Permit) on U.S. Forest Service land and the second part is to work on the portion of the bike path system on Town owned right of way. The Town, U.S. Forest Service, and Mammoth Lakes Trails and Public Access (MLTPA) have worked collaboratively on the signage system. A U.S. Forest Service contract was awarded to Advertising Concepts Inc. DBA:Adcon Signs located in Fort Collins, Colorado. Construction is anticipated to begin in the fall 2010 and completed in summer 2011.

Town Road Rehabilitation

Town crews have completed the overlay maintenance work on Wagon Wheel Road, Trails End, the North Main Frontage Road, and Lower Forest Trail. Striping and shoulder backing will be completed in the next several weeks. Town Crews will begin working on the Sherwin Road project during the second week of August.

Community Center Tennis Courts

Work on four of the six tennis courts will be completed today and the remaining two courts will be completed by the middle of next week. The courts are over 30 years old and had numerous large cracks. The cracks were repaired and all courts will be fully recoated and painted.

Downtown Neighborhood District Plan (DNDP)

The Draft DNDP Report was discussed by the Tourism and Recreation Commission, Mobility Commission, and Public Arts Commission; thank you to those who were able to attend and provide comments!

The Planning Commission will consider these comments and consider making recommendations to the Town Council for acceptance of the Report (as proposed or with modifications) at their July 28th meeting. Town Council consideration of the study is targeted for September.

The Draft DNDP Report and PowerPoint presentation for these meetings are available at http://www.ci.mammoth-lakes.ca.us/index.aspx?NID=133. Hard copies of the Draft DNDP Report are also available for your review at the Town Offices and at the Library (400 Sierra Park Road).

If you are interested in being sent DNDP updates via email or text message, please visit http://www.ci.mammoth-lakes.ca.us/list.aspx and add your information via the Town's Notify Me feature on the new website. For additional information, please contact Jen Daugherty at jdaugherty@ci.mammoth-lakes.ca.us, or at 934-8989, extension 260.

July 28th Planning Commission Meeting

The Commission will conduct a site visit of the Plum property and consider the Downtown Neighborhood District Plan Report.

Terry Plum Vesting Tentative Parcel Map 10-001 (South end of Tamarack Street)

In March of 2010, Terry Plum, owner of three (3) existing single-family residential lots in the Rural Residential (RR) zone located at the southern end of Tamarack Street, submitted an application to the Town for a Vesting Tentative Parcel Map (TPM). The TPM application proposes to subdivide the southerly parcel into four (4) lots, one with access from Le Verne Street in the Bluffs, and three (3) with access from Tamarack Street.

Approval of the TPM will require Planning Commission review and approval, including analysis of issues and concerns that have been expressed by community members regarding proposed parking, recreational access to U.S. Forest Service lands, Mammoth Community Water District access, and emergency vehicle access.

The Planning Commission will visit the project site during their July 28th, 2010 Planning Commission meeting. The site visit will begin at 1:30 p.m. at the south end of Tamarack Street, near the Plum properties. The site visit is expected to be approximately one hour. After the site visit, the Planning Commission will return to Suite Z for the remainder of the meeting. Members of the Community are encouraged to attend the site visit to receive more information about the project and provide comments to the Planning Commission.

It is anticipated that a public hearing for the project will occur at the September 8, 2010 Planning Commission. This meeting will be publicly noticed as required. For more information, please contact Jessica Morriss, Transportation Planner, at 934-8989 ext. 225 or Jmorriss@ci.mammoth-lakes.ca.us.

Town Launches Transportation Survey

Take our 5-Minute Online Survey and you could win a Free Bike Park Pass courtesy of Mammoth Mountain Ski Area. If you want Mammoth Lakes to become a more connected, accessible, and safe community with an emphasis on feet-first transportation, then we want to hear from you! Just go to the following link: www.surveymonkey.com/s/MammothLakesTransportationSurvey and complete the brief survey. We appreciate your time and input! The survey has been generously funded by a California Department of Transportation Community Based Planning Grant.

Recreation Update

The Recreation Department wrapped up a week of swim lessons, open swim, climbing camp, skateboard camp, and the men's softball tournament over the weekend was won by a traveling team out of Yucaipa, California. Over 200 softball playing adults from out of town spent the weekend in Mammoth; some were here for the whole week. Please see the attached Coed and Mens softball standings.

Projected Average Resort Occupancy
Friday, July 23 - Saturday, July 24 = **55%**
Sunday, July 25 - Thursday, July 29 = **41%**

Reminder to Renew Dog Licenses
This is a reminder that Town of Mammoth Lakes dog licenses expired on June 30, 2010. Tags for the 2010-11 license year are now available at the Mammoth Lakes Police Department, Monday through Friday, 8:00 A.M. to 3:30 P.M. Please bring proof of a current rabies vaccination (shot must be effective through May 2011) and a veterinarian certificate of spay/neuter if the animal is fixed. Cost is $13 for spayed/neutered dogs, and $30 if unaltered. License fees may be paid by cash, check or debit/credit card.
State law and Town ordinance require all dogs four months old or older have a current rabies shot and a Town license. Licenses renewed after August 1, 2010 are subject to a $5 late fee.

Calls for Service/Officer Observations
275, including 4 business/building checks

Crime/Incident Reports
40 reports, including 13 arrests

Traffic Stops/Citations/Traffic Collisions
80 stops; 22 citations; 4 parking citations; 0 skate park citations; 4 collisions

Animal Control Incidents
5 incidents; 0 reports

Wildlife Calls/Reports
4 calls; 1 report

Town of Mammoth Lakes
P.O. Box 1609
Mammoth Lakes, CA, 93546
Ph: (760) 934-8989
Fax: (760) 934-8608

Town of Mammoth Lakes - Weekly Communication Brief

Week of June 15, 2009

News from the Town Manager

Town Council Meeting – June 17

The next regular **Town Council** meeting is scheduled for Wednesday, June 17, 2009 at 5:00 p.m. with a Budget Workshop in the Town Council Chambers – Suite Z of the Minaret Village Shopping Center. Don't forget, if you can't make it, watch it LIVE or the following Thursday and Friday on TV CHANNEL 51. Some of the agenda items include:

- **Study Session:** Budget Workshop - report from Citizens Budget Oversight Committee, and results of the third party budget review.

- **Policy Matters:** (1) Extended Air Service Schedule and funding, (2) PAOT Ad Hoc Committee project impact evaluation criteria policy recommendations, (3) Adoption of the Community Benefits and Incentive Zoning Policy Recommendations. (Continued from the meeting of May 6, 2009.), (4) Adoption of policies regarding appropriate locations for height and density of development, (5) North Village District Planning Study. (This item will be introduced, no action will be taken, and it will be continued to the special meeting of June 24, 2009.), (6) General Fund Revenue Update.

- **Public Hearings:** (1) Budget for fiscal year 2009-10 and an update to the Master Fee Schedule, (2) Fiscal year 2009-10 State Community Development Block Grant allocation. (Continued from the meeting of June 3, 2009.), (3) Approve an application for funding and the execution of a grant agreement, and any amendments thereto, from the 2009/2010 General Allocation of the State CDBG Program, (4) Fiscal year 2009-10 State Community Development Block Grant application for Economic Development Plan. (Staff has requested that this item be continued to the meeting of July 1, 2009.)

- **Consent Agenda:** (1) Resolution authorizing the Mayor to enter into a Solid Waste Agreement with Mono County to continue the program and schedule of solid waste parcel fees, (2) 2009 Youth Sports Funding, (3) Resolution authorizing the Town Manager to enter into a lease extension with the Minaret Village Shopping Center c/o Pacific West Management, (4) Award of bid for asphalt maintenance sealer for portions of the Mammoth Lakes Trail System and the Bluffs Subdivision, (5) Award of bid for purchase of asphalt concrete material.

Citizen's Budget Committee

The Committee has had its fourth and last staff-supported meeting. They will be meeting independently to prepare a final report for the Town Council and will present their conclusions at the June 17, 2009 Town Council meeting at 5:00 p.m.

Possible Summer Air Service

It appears that the cost of air service from mid April through mid December is much less than expected. With a 45 day hiatus in October and early November the total estimated subsidy would be $650,000, which MMSA is willing to split with the Town. The Town Council will consider an agenda bill on the 6/17 agenda recommending that we partner with MMSA to make this happen.

MLPD Calls for Service/Officer Observation

There were 113 calls for service last week.

Crime/Incident Reports

There were 21 reports written last week by the MLPD.

Traffic Citations

There were 13 traffic citations issued last week by the Mammoth Lakes Police Department

Skate Park Enforcement

There were no citations issued last week.

Community Development

Snowcreek VIII Master Plan Update Approved

On Thursday, June 11, 2009 the Planning Commission voted 5-0 to recommend approval of the Snowcreek Master Plan Update to Town Council. The Planning Commission met on Wednesday and continued through Thursday to thoroughly review the application, listen to public comments, and refine recommended conditions of approval.

Community Development Department Calendar

- June 17, 2009 Tentative Town Council Agenda Items
  Policy Items - Consider approval of: Impact Evaluation Criteria recommended by the PAOT Ad Hoc Committee; Community Benefits and Incentive Zoning policies; and policies regarding Appropriate Locations for Height and Density recommended by the Planning Commission. Policy item – Discuss and consider accepting the North Village District Planning Study. This item will be continued to June 24.

- June 24, 2009 Tentative Planning Commission Agenda Items
  Public hearing to consider recommending that the Town Council approve the Mammoth Crossing North Village Specific Plan Amendment and certify the Final Environmental Impact Report. Policy Item - consider approval of revised Planning Commission Rules of Procedure.

- July 1, 2009 Tentative Town Council Agenda Items

Public hearing to consider approval of the Snowcreek VIII Master Plan Update and certification of the Final Environmental Impact Report.

Mobility Commission Meeting – June 16

The next regular **Mobility Commission** meeting is scheduled for Tuesday, June 16, 2009 at **4:00 p.m.** in the Town/County Conference Room of the Minaret Village Shopping Center.

North Village District Planning Study – June 17

The Town Council will review and consider acceptance of the North Village District Planning Study (NVDPS), which will complete Neighborhood District Planning for the Mammoth Crossing Project on Wednesday, June 17, 2009. The Planning Commission reviewed and forwarded the NVDP to the Town Council on November 19, 2008. A copy of the November Draft NVNDP is available for review on the Town's website.

Planning Commission Meeting – June 24

The next regular **Planning Commission** meeting is scheduled for Wednesday, June 24, 2009 at **9:00 a.m.** in the Town Council Chambers – Suite Z of the Minaret Village Shopping Center.

Mobility - Get Better Connected!

If you want Mammoth Lakes to become a more connected, accessible, uncongested and safe community with an emphasis on feet first, public transportation second and vehicles last, then we want to hear from you! As part of the Mobility Plan, the Town is hosting 3 interactive public events to gather community input on mobility related issues, needs, and ideas that will ultimately lead to a complete and integrated multi-modal system for the community. The Café's begin **Thursday, July 16 and** conclude on **Saturday, July 18, 2009.** All events will be held in the old "Wild Willy's Arcade" in the Minaret Village Mall. For additional information, call (760) 934-8989 ext. 225 or log onto: www.visitmammoth.com/mobility.

Community News

Reds Meadow Shuttle Service Begins June 13

Mandatory Shuttle Service to Reds Meadow and Devils Postpile begins on **Saturday, June 13, 2009.** The first bus leaves the Adventure Center at approximately 7:30 a.m. and the last bus out departs Devils Postpile at 7:45 p.m., and Agnew Meadows at 8:00 pm, arriving back at the Adventure Center by 8:30 p.m.

Visitors to Reds Meadow can now begin their adventure from The Village 7-days a week. The ESTA operated shuttle will transport guests from Minaret Rd. (Stop 4M) to the Main Lodge Adventure Center every 45 – 60 minutes beginning at 7:15 a.m. with the last shuttle at 11:05 a.m. After 11:05 a.m., passengers can travel to the Main Lodge Adventure Center on the Mammoth Bike Park shuttle (space available). Log onto: www.visitmammoth.com/transit for all the details.

June 2009

June 2009

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July 2009

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Monday	Tuesday	Wednesday	Thursday	Friday	Sat/Sun
June 1	2	3 Town Council Public Comment Jessica ✓	4	5	6 7
8	9	10 Planning Commission Public Comment Jessica ✓	11	12	13 14
15	16	17 Town Council Public Comment ✓ Sandy or Jessica	18	19	20 21
22	23 Chamber of Commerce Noon - WC Eric/~~Sandy~~?	24 ✓ Airport Commission Jessica	25 Noon Rotary ✓ Sandy	26	27 28
29	30				

Daniel Dennis 1 6/9/2009 10:59 AM

July 2009

July 2009

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August 2009

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Monday	Tuesday	Wednesday	Thursday	Friday	Sat/Sun
		July 1 Town Council Presentation - Jessica M.	2 ~~Noon Rotary BBQ - Sandy~~	3	4 5
6	7 7-8 Planning Commission Public Comment → Jessica	8 Morning Rotary 7AM - Petra's - Sandy? Lion's - Noon-WC Sandy?	9 Area Governments Meeting - Pam H. Tourism & Rec Comm. Jessica	10	11 12
13	14	15 Town Council Public Comment - Sandy	16 Multi-Modal Mobility Café 5:30 - 7:00 - Open House - 4:30	17 Community Safety & Mobility Café 5:30 - 7:00 - Open House - 4:30	18 Mobility Plan Open House 10:00 - 5:00 Trolley Tours 11:00 & 2:00 19
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If you want Mammoth Lakes to become a more connected, accessible, uncongested and safe community with an emphasis on feet first, public transportation second and vehicles last, then we want to hear from you!

As part of the Mobility Plan, the Town is hosting 3 interactive public events to gather community input on mobility related issues, needs, and ideas that will ultimately lead to a complete and integrated multi-modal system for the community.

Join us for one event or particpate in all three events:

Multi-Modal Mobility Café: Thursday, July 16

This is a community conversation about getting around in Mammoth Lakes, and to learn how we can make it easier. The Café starts at 5:30 p.m. to 7:00 p.m. with an Open House starting at 4:30 p.m.

Community Safety and Mobility Café: Friday, July 17

This is a community conversation about the impacts of mobility on public safety, including emergency response, snow management, and accident prevention. The Café starts at 5:30 p.m. to 7:00 p.m. with an Open House starting at 4:30 p.m.

Community Mobility Plan Open House and Trolley Tours: Saturday, July 18

Participants will be able to provide comments on all aspects of transportation and mobility, including existing multi-modal infrastructure, near-term capital projects, and district and town-wide mobility issues at the Open House and on the Trolley Tours. The Open House starts at 10:00 a.m. to 5:00 p.m. (Open House); Trolley Tours: 11:00 a.m. and 2:00 p.m.

All events will be held in the old "Wild Willy's Arcade" in the Minaret Village Mall. For additional information, contact **Jessica Morriss** at (760) 934-8989 ext. 225.

Adobe PDF **Download the Flyer**

What is the Mobility Plan?

The Mobility Plan is intended to be utilized as an implementation document for the General Plan Mobility Element. Adoption of the Mobility Plan will place the Town in a better position to achieve the desired outcomes related to becoming a community that is more "connected, accessible, uncongested and safe with an emphasis on feet first, public transportation second and car last."

An adopted Mobility Plan will provide a cohesive program of transportation system improvements and recommendations that will assist both the development community and Town Staff in planning projects in a manner that will ultimately lead to a complete and integrated multi-modal system for the community.

Calendar of Events
How to Get Here
Weather and Conditions
What To Do
Where To Stay

Featured Events

2009 Ford Mammoth Motocross
4th of July Fireworks at Crowley Lake
Independence Day Parade
Great American 4th of July Celebrations at the Village at Mammoth
4th of July Weekend Events List

Calendar of Events

July 16, 2009

Special Events

Mammoth Lakes Music Festival
July 15, 2009 - July 31, 2009

http:www.chambermusicunbound.org
Phone: 760-934-7015

Chamber Music Unbound presents the 2009 Mammoth Lakes Music Festival. More information to come.

Introductions to the Wildflowers of Valentine Reserve Walk & Talk
July 16, 2009

Times: 9:30 am - 12:30 pm
http://www.vesr.ucnrs.org
Location: Valentine Reserve / SNARL
Phone: 760-934-4356 / Leslie Dawson
Admission: $15.00

Every plant has a story, or a native use, and learning a plant's story is often a key to helping remember its name. If you are looking for a fun way to learn many local wildflowers by common name this is your class. The class will hike through five distinct plant communities, and the dominant species found in each community will be described. This class is a wonderful opportunity to spend time walking around the spectacular Valentine Meadow. The hike is moderate, with a 500' elevation gain. Bring water, hat, sunscreen and a snack.
9:30-12:30 pm; moderate hike, Meet at the Valentine Reserve entrance gate. Reservations are required. $15.00 per person donation

Movies Under the Stars at the Village at Mammoth - "IGOR"
July 16, 2009

Times: Dusk - 8:00 pm
http://www.villageatmammoth.com
Location: Village at Mammoth
Phone: 760-924-1575
Admission: Free

Join us at the Village at Mammoth for Free family movies under the stars. Movies begin at Dusk (8:00 pm). Seating provided for the first 80 people, bring a blanket as it does get chilly! Popcorn & drinks for sale. (Weather permitting. All times and dates are subject to change.)

Multi-Modal Mobility Café
July 16, 2009

Times: 4:30 p.m. - 7:00 p.m.
http://www.visitmammoth.com/mobility

July 2009

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Click on a day or the arrow before a week to view events for that day or week.

Search for Events
From:
To:
Keyword:
Category:
--Choose One--
Search Reset

Location: Old "Wild Willy's Arcade - Minaret Village Mall
Phone: (760) 934-8989 ext. 225
Admission: FREE

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Multi-Modal Mobility Café: This is a community conversation about getting around in Mammoth Lakes, and to learn how we can make it easier. The Café starts at 5:30 p.m. to 7:00 p.m. with an Open House starting at 4:30 p.m.

Current Weather
MAMMOTH LAKES
Request a Free Destination Guide | Contact Us | Company Info | Area Info | Site Map | Privacy

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July 17, 2009

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Mammoth Lakes Music Festival
July 15, 2009 - July 31, 2009

http:www.chambermusicunbound.org
Phone: 760-934-7015

Chamber Music Unbound presents the 2009 Mammoth Lakes Music Festival. More information to come.

Chamber Music Unbound presents - Mammoth Lakes Music Festival - "The Russia House"
July 17, 2009

Times: 7:30 pm
http://www.chambermusicunbound.org
Location: Cerro Coso College
Phone: 760-934-7015
Admission: $20, $15, $7

Chamber Music Unbound presents a 2009 Mammoth Lakes Music Festival concert, "The Russia House". Soulful works by Tchaikovsky, Beethoven (his "Rasoumovsky" Quartet no. 3) and Arensky are explored by the Felici Trio, virtuoso violinists Corey Cerovsek & Lina Bahn, among others. Tickets are $20.00 for adults, $15.00 for seniors at Access Business Center, online or at the door on concert nights beginning at 6:45 pm. Student tickets - $7.00 available at the door only.

Community Safety and Mobility Café
July 17, 2009

Times: 4:30 p.m. t0 7:00 p.m.
http://www.visitmammoth.com/mobility
Location: Old
Phone: (760) 934-8989 ext. 225
Admission: FREE

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Living History-Los Angeles to Valentine Camp in the 1920's Walk & Talk
July 17, 2009

Times: 3:30 - 6:00 pm
http://www.vesr.ucnrs.org
Location: Valentine Reserve / SNARL
Phone: 760-935-4356 / Leslie Dawson
Admission: $15.00

In the 1920's some of the most influential men of Los Angeles left the city once a year and came to Valentine Camp to hike and fish. Join Old Timer Ken as he talks about this period. Ken lives in the posh Alexandria Hotel and frequently lunches at the California Club with William Mulholland. He is acquainted with William Valentine (Robinson's Department Store), Henry O'Melveney (law), William Kerchoff (Southern California Gas), and Joseph Sartori (Security Pacific Bank). Ken is invited to be their guest in 1924 at Valentine Camp. Ken will tell stories about Los Angeles, Old Mammoth, and life with the rich and powerful at Valentine Camp. The group will walk in the Valentine entrance road and around the historic log cabins. 3:30-6:00 pm; easy hike, Meet at the Valentine Reserve entrance gate. Reservations required. $15.00 donation per person.

Summer Sundown Concert Series at the Village at Mammoth
July 17, 2009 - July 18, 2009

http://www.villageatmammoth.com
Location: Village at Mammoth
Phone: 760-924-1575
Admission: Free

Come to the Village at Mammoth and enjoy a Free concert with a different musician performing each week.

Calendar of Events

July 18, 2009

Special Events

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Community Mobility Plan Open House and Trolley Tour
July 18, 2009

Times: 10:00 a.m. - 5:00 p.m.
http://www.visitmammoth.com/mobility
Location: Old "Wild Willy's Arcade" Minaret Village Mall
Phone: (760) 934-8989 ext. 225
Admission: FREE

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Community Mobility Plan Open House and Trolley Tour: Participants will be able to provide comments on all aspects of transportation and mobility, including existing multi-modal infrastructure, near-term capital projects, and district and town-wide mobility issues at the Open House and on the Trolley Tours. The Open House starts at 10:00 a.m. to 5:00 p.m. (Open House); Trolley Tours: 11:00 a.m. and 2:00 p.m.

Mammoth Lakes Trails and Public Access Foundation

TOML Mobility Plan - Outreach Documentation Report

August 20, 2009

MLTPA
MAMMOTH LAKES TRAILS - PUBLIC ACCESS
PO Box 100 PMB# 432
Mammoth Lakes, CA 93546
760 934 3154
mltpa.org

Table of Contents

Chapter 1: Outline of Project

In July 2009, the Town of Mammoth Lakes (TOML) contracted with the Mammoth Lakes Trails and Public Access Foundation (MLTPA) to provide supplementary advertising and promotion services related to community engagement and public input for an update to the TOML Mobility Plan. MLTPA also was contracted to provide staff to assist the TOML with running each event (from setup through breakdown) and to capture the event outcomes via written notes and photographs. All efforts were intended to drive public participation at a series of three public events hosted by the TOML from Thursday, July 16, through Saturday, July 18, and to help ensure that the events ran smoothly and were well-documented. The following chapters describe in detail the tasks completed by MLTPA in fulfillment of the terms of this contract as well as other efforts undertaken by the TOML in support of this project.

Chapter 2: Banners

Any banners produced for the Mobility Plan public events were coordinated and managed by the TOML per the terms of its consulting agreement with MLTPA.

Chapter 3: Directional Signage

Any directional signage produced for the Mobility Plan public events was coordinated and managed by the TOML per the terms of its consulting agreement with MLTPA.

Chapter 4: Exhibit Hall

Any “exhibit hall/base camp” area set up and staffed for the Mobility Plan public events was coordinated and managed by the TOML per the terms of its consulting agreement with MLTPA.

Chapter 5: Display Materials

Any display materials made available at the Mobility Plan public events were coordinated and managed by the TOML per the terms of its consulting agreement with MLTPA. MLTPA provided 12 easels to TOML staff to assist with their displays.

Chapter 6: Schedule of Events

The TOML hosted three different public events over a three-day period (July 16–18, 2009), all of which were based out of the former Wild Willy's Arcade in the Minaret Village Mall. The event schedule is below; see Chapter 7 of this report, "Session Information," for details.

THURSDAY, JULY 16, 2009: Multi-Modal Mobility Café
Open House starting at 4:30 p.m.; Café from 5:30 p.m. to 7 p.m.

FRIDAY, JULY 17, 2009: Community Safety and Mobility Café
Open House starting at 4:30 p.m.; Café from 5:30 p.m. to 7 p.m.

SATURDAY, JULY 18: Community Mobility Plan Open House and Trolley Tours
Open House from 10 a.m. to 5 p.m.; Trolley Tours at 11 a.m. and 2 p.m.

Chapter 7: Session Information

The TOML hosted three different public events during the outreach period, which are described below. Each event was supported by a briefing packet made available to participants by the TOML (attached) and was attended and documented by MLTPA staff. TOML staff was responsible for tracking participation numbers and other event-related data. Transportation Planner Jessica Morriss signed off on the delivery receipt (attached) stating that the TOML has the typed notes created by Lara Kirkner from July 16 and 17 on a TOML computer, as well as the six CDs containing all image files. These items are therefore not attached to this report.

Multi-Modal Mobility Café: Thursday, July 16
Description: A community conversation about getting around in Mammoth Lakes and how we can make it easier. The Café will run from 5:30 p.m. to 7 p.m., with an Open House starting at 4:30 p.m.
MLTPA staffing: Lara Kirkner (notes; setup/breakdown); Linsey Duddridge (registration table); John Wentworth (photos)
Documentation: The former Wild Willy's Arcade in the Minaret Village Mall was set up with five round tables. Approximately 20 people attended the café and were asked to comment on Pedestrian Mobility, Bicycle Mobility, Transit System Mobility, Parking Management, and the concept of an In-Town Gondola. Participants were able to comment through surveys distributed on site by TOML and MLTPA staff, as well as by drawing on provided maps to show where the biggest missing links in each discussion area were located. After working in small groups, participants shared their ideas with the entire group. Comments were recorded electronically and projected onto a large screen so participants could view their progress in real time.

Community Safety and Mobility Café: Friday, July 17
Description: A community conversation about the impacts of mobility on public safety, including emergency response, snow management, and accident prevention. The Café will run from 5:30 p.m. to 7 p.m., with an Open House starting at 4:30 p.m.
MLTPA staffing: Lara Kirkner (notes; setup/breakdown); Linsey Duddridge (registration table); John Wentworth (photos)
Documentation: The former Wild Willy's Arcade in the Minaret Village Mall was set up with five round tables. Approximately 10 people attended the café and were asked to comment on Street Connectivity, Traffic Congestion, Emergency Response, Alternative Transportation and Level of Service, Traffic Calming, and Snow Management. Participants were able to comment through surveys distributed on site by TOML and MLTPA staff, as well as by drawing on provided maps to show where the biggest missing links in each discussion area were located. After working in small groups, participants shared their ideas with the entire group. Comments were recorded electronically and projected onto a large screen so participants could view their progress in real time.

Community Mobility Plan Open House and Trolley Tours: Saturday, July 18
Description: Participants will be able to provide comments on all aspects of

transportation and mobility, including existing multi-modal infrastructure, near-term capital projects, and district- and town-wide mobility issues at the Open House and on the Trolley Tours. The Open House will run from 10 a.m. to 5 p.m. Trolley Tours will depart at 11 a.m. and 2 p.m.
MLTPA staffing: Lara Kirkner (notes and photos)
Documentation: Participants gathered Saturday morning at the former Wild Willy's Arcade in the Minaret Village Mall, where they were able to fill out surveys and ask questions of TOML staff before boarding the trolley for their tour. The first tour began at 11 a.m. and had one public participant. The participant was in a wheelchair and provided good feedback on ADA efforts around town. The participant was also very willing to allow the trolley driver to practice using the trolley lift to get him in and out of the trolley. The tour departed from the Minaret Village Mall parking lot, turned right onto Meridian Boulevard, and then turned left onto Sierra Park Road. It continued to Highway 203/Main Street, where it turned left onto Main Street, followed Main Street west toward The Village, and then turned right onto Canyon Boulevard. The trolley circled The Village and then turned right onto Minaret Road, which it followed to the intersection at Meridian Boulevard. The trolley turned left onto Meridian Boulevard and ended at its original departure point at the Minaret Village Mall parking lot. Several stops were made along the way so that participants could discuss mobility needs. The tour ended at approximately 12:30 p.m. The Open House continued until the second tour at 2 p.m. That tour had two public participants, followed the same route as the first tour, and ended at 3 p.m.

Memo

To: Jessica Morriss

From: Lara Kirkner

CC: John Wentworth, Ray Jarvis, Peter Bernasconi

Date: 8-3-09

Re: Mobility Cafes

Dear Jessica,

This is notice that MLTPA has delivered the following documents from the Mobility Cafes of July 16-18:

1. Six CDs of photos from the events. Two CDs have the photos as JPEGs and the remaining four have the photos in their RAW format.

2. Two sets of notes from July 16 and 17, typed on the Town's computer and left on the desktop.

3. A third set of notes from the July 18 Trolley Tour, e-mailed to Ms. Morriss on July 22, 2009.

Please accept the above as the first deliverables for this project. MLTPA will also deliver a final outreach report before the contract due date of August 20, 2009.

Thank you.

Lara Kirkner

Lara Kirkner
Operations Director, MLTPA Foundation

Jessica Morriss
Transportation Planner, TOML: ______________________

Date: 8/3/09

PO Box 100 PMB 432 Mammoth Lakes, CA 93546-0100
(760) 934-3154 [p] (760) 934-3154 [f] www.mltpa.org

Chapter 8: Takeaways

Any takeaway items made available by the TOML to participants in the Mobility Plan public events were coordinated and managed by the TOML per the terms of its consulting agreement with MLTPA.

Chapter 9: Outreach

As described in “Exhibit A: Scope of Work” (attached in Chapter 1, “Outline of Event”), MLTPA sourced, coordinated, and executed a number of advertising and promotion opportunities designed to drive participants to the three public events scheduled over the project period (July 16–18, 2009). The following sub-chapters detail these opportunities as well as other efforts undertaken by the TOML in support of this project.

Chapter 9-A: Advertising plan

Any comprehensive advertising plan for the Mobility Plan public events was coordinated and managed by the TOML per the terms of its consulting agreement with MLTPA. MLTPA fulfilled its identified role when specified; see the following chapters for details.

Chapter 9-B: Advertising, print

The TOML coordinated and managed a series of print-ad insertions in *The Sheet* and the *Mammoth Times* that began their run the week of June 22, 2009, and concluded at the close of the event on July 18, 2009. Print advertising was the sole responsibility of the TOML.

Chapter 9-C: Advertising, radio

MLTPA coordinated and managed a series of radio ads with KMMT-FM/KRHV-FM, KSRW-FM, and KIBS-FM/KBOV-AM that began their runs on July 8, 2009, and concluded at the close of the event on July 18, 2009. MLTPA produced and delivered to KMMT-FM/KRHV-FM one 30-second radio ad and supplied a script for production of the ad by KSRW-FM and KIBS-FM/KBOV-AM. MLTPA created the script (attached) and provided voice talent for the spot (see attached invoice).

Radio advertising was the sole responsibility of MLTPA. See below for airtimes; ads can be heard on the accompanying “TOML Mobility 2009 Radio Ads” CD.

KMMT-FM/KRHV-FM (see attached contract and invoice)
One 30-second radio spot to run on KMMT-FM and KRHV-FM three times per day between 6 a.m. and 8 p.m. from Wednesday, July 8, through Friday, July 17, 2009, and three times on Saturday, July 18, 2009, between 6 a.m. and 2 p.m.

KSRW-FM (see attached contract and invoice)
One 30-second radio spot to run on KSRW-FM between 6 a.m. and 6 p.m. and 15 spots to run between 6 p.m. and 6 a.m. from Thursday, July 9, to Saturday, July 18, 2009 (total of 45 spots). Excludes Local News.

KIBS-FM/KBOV-AM (see attached contract and invoice)
One 30-second radio ad to run on the following schedule: July 9: 5 p.m. Local News spot; July 10: all three Local News spots; July 11–12: 3 KIBS-FM only spots between 6 a.m. and 8 p.m.; July 13–17: all three Local News spots; July 18: 2 KIBS-FM only spots between 6 a.m. and 2 p.m.

Town of Mammoth Lakes Mobility Public Outreach Series
Radio Spot (30 seconds)

Mobility! Help Mammoth become a more connected, accessible, and safe community with an emphasis on feet-first and public transit! The Town of Mammoth Lakes is hosting three interactive public events Thursday, July 16th, through Saturday, July 18th, to help develop an integrated local transportation system. Join your friends and neighbors at the old Wild Willy's Arcade in the Minaret Village Mall for cafés, open-house events, and trolley tours. Be part of the conversation! For details, go to www.visitmammoth.com/mobility or call (760) 934-8989 ext. 225. Mobility: Get better connected!

Chapter 9-D: Advertising, television

MLTPA coordinated and managed a series of television ads with Mammoth Channel 72 and Sierra Wave/Channel 33 that began their runs on July 8, 2009, and concluded at the close of the event on July 18, 2009. MLTPA, with the assistance of On Point Productions, produced and delivered to local stations one 30-second television ad. MLTPA and On Point Productions created and/or developed the script, footage, graphics (as supplied by the TOML), audio, and other necessary elements, and provided voice talent for the spot (see previous attached invoice).

Television advertising was the sole responsibility of MLTPA. See below for airtimes; ads can be viewed on the accompanying “TOML Mobility Public Outreach TV Ads” CD.

Mammoth Channel 72 (see attached contract and invoice)
One 30-second TV ad to run on Channel 72 once per hour between Thursday, July 9, and Saturday, July 18, 2009 (10 consecutive days)

Sierra Wave Channel 33 (see attached contract and invoice)
One 30-second TV ad to run on Channel 33 between Thursday, July 9, and Saturday, July 18, 2009 (45 spots total). Excludes Local News.

Town of Mammoth Lakes Mobility Public Outreach Series
TV Spot (30 seconds)

Mobility: Go feet-first! Help Mammoth become a more connected, accessible, and safe community. The Town of Mammoth Lakes is hosting three interactive events to help develop an integrated transportation system. Join friends and neighbors Thursday, July 16th, through Saturday, July 18th, for cafés, open-house events, and trolley tours. For details, go to www.visitmammoth.com/mobility or call (760) 934-8989 ext. 225. Mobility: Get better connected!

Chapter 9-E: Advertising, theater

Any movie-theater advertising related to the Mobility Plan public events was coordinated and managed by the TOML per the terms of its consulting agreement with MLTPA.

Chapter 9-F: Calendar postings, print

Any listing of public events related to the Mobility Plan were coordinated and managed by the TOML per the terms of its consulting agreement with MLTPA.

Chapter 9-G: Calendar postings, Web

Any listing of public events related to the Mobility Plan were coordinated and managed by the TOML per the terms of its consulting agreement with MLTPA.

Chapter 9-H: Collateral

The TOML designed, printed, and distributed in the TOML offices and at Town transit stops an 11" x 17" flyer to advertise the Mobility Plan public events. Using this original digital design file supplied by the TOML, MLTPA created a master file for an 8.5" x 11" flyer (attached), which was returned to the TOML for reproduction. MLTPA staff approached 86 local businesses in person to distribute flyers of both sizes, dependent on mounting opportunity, on July 9, 2009; 54 businesses allowed staff to post the collateral or accepted it for posting on their own. MLTPA staff checked each business to make sure existing flyers were still posted on July 13–15, 2009. For a complete list of locations, please see the flyering list (attached), which was developed by MLTPA.

Mobility...

get better connected!

We want to hear from you!

Help Mammoth Lakes become a more connected, accessible, uncongested, and safe community with an emphasis on feet-first and public transportation.

The Town of Mammoth Lakes is hosting three interactive public events to gather community input on mobility related issues, needs, and ideas that will lead to an integrated multi-modal system for the community.

Please join us!

MINARET VILLAGE MALL
In the old "Wild Willy's Arcade"
next to Minaret Cinemas

www.visitmammoth.com/mobility
760-934-8989 ext. 225

1 Multi-Modal Mobility Café

When THURSDAY, JULY 16, 2009
Time 5:30 P.M. to 7 P.M.
Open House starting at 4:30 P.M.
Topic A community conversation about getting around in Mammoth Lakes, and to learn how we can make it easier.

2 Community Safety and Mobility Café

When FRIDAY, JULY 17, 2009
Time 5:30 P.M. to 7 P.M.
Open House starting at 4:30 P.M.
Topic A community conversation about the impacts of mobility on public safety, including emergency response, snow management, and accident prevention.

3 Community Mobility Plan Open House and Trolley Tours

When SATURDAY, JULY 18, 2009
Time 10 A.M. to 5 P.M. Open House
Trolley Tours at 11 A.M. and 2 P.M.
Topic Participants will be able to provide comments on all aspects of transportation and mobility, including existing multi-modal infrastructure, near-term capital projects, and district and town-wide mobility issues at the Open House and on the Trolley Tours.

MOBILITY OUTREACH

MLTPA

MAMMOTH LAKES TRAILS · PUBLIC ACCESS

HL 7/9/09

MLTPA Poster List

MAMMOTH AREA (Mammoth Lakes, Crowley Lake, Convict Lake, Sunny Slopes)

Mammoth Lakes: Minaret Road from Main Lodge to Snowcreek Golf Course at Old Mammoth Road

1. **MMSA Main Lodge Area:** Ask permission *in advance* before posting anything at the time clocks.
   - a. **Main Lodge 1:** Time clock on the first floor at the employee entrance to the ticketing office.
   - b. **Main Lodge 2:** Time clock on the cafeteria level (third floor) through the double doors off of Roma's Room, between the restrooms and the staircase.
   - c. **Main Lodge 3:** Time clock on the fourth floor.
   - d. **Slopeside Center:** Time clock located in the kitchen area (back right corner on the first floor).
   - e. **WoollyWood/Disabled Sports Eastern Sierra:** Time clock in the hallway on the right (front side of the building).
   - f. **Mammoth Mountain Inn 1:** Time clock on the first floor, on the left, off of the hallway exiting to face The Yodler.
   - g. **Mammoth Mountain Inn 2:** Time clock on the third floor through a staircase accessible near the front desk.
   - h. **The Yodler:** Time clock in the basement.
   - i. **MMSA Garage:** The garage is halfway down Minaret (leaving Main Lodge), on the right. The turnoff is across from Sledz. Place a poster at the mechanics' desk and at the time clock.

dropped off @ 4th floor

2. **The Village at Mammoth**
   - ✓a. **New York Deli and Bagel Company**
   - b. **Busy Beez General Store**
   - ✓c. **Pita Pit**
   - d. **Auld Dubliner:** Make sure that the manager gets the flyer.
   - ✓e. **McCoy Sports**
   - no-one here f. **Alpine Approach**
   - ✓g. **Side Door Café**
   - ✓h. **Ben & Jerry's**
   - ✓i. **Village Neighborhood Company offices**: Pass the Side Door and continue to the end of the sidewalk. Door is on the right, across from the short-term parking on Canyon Blvd. Leave flyer with Betsy Smith; ask her to post it in her break room.
3. **Across from The Village at Mammoth**
   - ✓a. **Community Center, next the old library on Forest Trail**
   - ✓b. **Burgers Restaurant**
   - ✓c. **The Clocktower**
   - ✓d. **The Alpenhof**
   - ✓e. **Petra's**
4. ✓ **Whiskey Creek**
5. **Juniper Springs Lodge:** Off of Meridian Blvd. at Chair 15.

✓ Post office

checked all 7/13, 7/14, 7/15
HL

MLTPA 112

Mammoth Lakes: Old Mammoth Road from Main Street to Snowcreek Athletic Club, west of Minaret

1. **Footloose Sports**
2. **Rite-Aid Center**
    a. **Sierra Sundance Health Food Store**
    b. **Take 2 Video**
    c. **Looney Bean**
    d. **Do-It Center:** Posting board inside the store to the right of the entry/exit
    e. **Rite-Aid:** Put them on the second set of doors, on the glass.
    f. **Aloha Suds Laundromat**
3. **Breakfast Club**
4. **Shell gas station**
5. **Chart House area**
    a. **Nik-n-Willie's**
    b. **Good Life Café**
    c. **Radio Shack**
6. **Roberto's** NO DISPLAY
7. **The Body Shop:** Intersection of Sierra Nevada and Laurel Mountain roads
8. **Grumpy's**
9. **Mammoth Business Essentials:** Next to Domino's Pizza on Meridian Blvd.
10. **Vons Plaza/Sierra Center Mall**
    a. **Giovanni's**
    b. **Access Printing**
    FULL c. **Booky Joint**
    d. **Java Joint**
    e. Inside the mall there is a **board near the Rocky Mountain Chocolate Factory**, on the far right.
    f. Continue down the stairs to **Vons**; there are two posting boards before you reach the left-hand store entry. Vons may also have an employee area where you can post things; ask the management first.
11. **Shogun Plaza**
    a. **Hot Chicks Rotisserie**
    b. **Inside the mall** there is a posting board on the first floor. Alta I
    c. There is a **posting area at the *Mammoth Times* offices** on the second floor.
    d. **Posting area** down the hallway to the left of the *Mammoth Times* offices, on the second floor
    e. **Posting areas** on the way to Shogun
12. **Hollywood Suds:** On the east side of Old Mammoth Road, across from the police station
13. **Skadi:** Posting area on first floor, near the restroom entrance
14. **Thai'd Up**
15. **Salsa's**
16. **The Stove**
17. **Country Liquor:** There is posting space on the doors to the right of the entrance.
18. **Healing Arts Center:** There is posting space on the second floor at the entrance to the Healing Arts Center.
19. **The Cast-Off**

20. **Snowcreek Resort Check-In:** On the north side of Old Mammoth Road, just west of Minaret Road
21. **Snowcreek Athletic Club**: Area at the front entrance for posting information

Mammoth Lakes: Lake Mary Road at Tamarack Lodge to Main Street at Welcome Center

1. **Tamarack Lodge** (Lakes Basin)
2. **Gomez's**
3. **76 gas station**
4. **The Tap**: There is a board at the base of the steps where you enter. NO
5. **John's Pizza Works**
6. **A-Frame Liquor**
7. **Perry's**
8. **Base Camp Café** Closed
9. **P3**
10. **In Touch Micro-Spa:** Next to Base Camp Café
11. **Stellar Brew**
12. **Chevron**
13. **Kittredge Sports**
14. **Rick's Sports Center**
15. **Mammoth Liquors**
16. **Wave Rave**
17. **Mammoth Mountaineering**
18. **Mammoth Lakes Welcome Center**
19. **Forest Service offices:** Post outside the entrance.

Mammoth Lakes: Laurel Mountain Road south of Old Mammoth Road

1. **Mammoth Pet Shop**
2. **Mammoth Lakes Laundromat**

Sunny Slopes: From Mammoth Lakes, drive south on Highway 395, pass Crowley Lake, and turn left at Tom's Place Restaurant onto Rock Creek Road.

1. **Sunny Slopes:** There is a message board under the group of mailboxes on the right, just as you turn off of the road.
2. **Tom's Place:** Cross the highway on Rock Creek Road, turn right onto Crowley Lake Drive, and go to Tom's Place Restaurant on the right. There is a posting board on the outside of the building to the right of the right-hand door. There is also a bulletin board inside the restaurant, in the hallway between the bar and the convenience store.

Crowley Lake: From Mammoth Lakes, drive south on Highway 395 and take the Crowley Lake exit (South Landing Road).

1. **Crowley Lake General Store:** The store is on the left as you enter the residential area. They have a posting board on the outside of the store, to the right of the entry. Drop off a poster inside and ask them to place the poster on the entry door itself.
2. **Church:** Continue on South Landing Road and you will see the church on the left. Please check with church staff before posting.

Chapter 9-I: Editorial, print

Any editorial related to the Mobility Plan public events that appeared in any print-media outlet was coordinated and managed by the TOML per the terms of its consulting agreement with MLTPA.

Chapter 9-J: Editorial, radio

Though not requested by the TOML, and therefore outside the scope of work of the consulting agreement, MLTPA staff facilitated a brief interview opportunity with KMMT-FM for Mobility Commission Chair Sandy Hogan. Ms. Hogan appeared on DJ Lisa Meuret's "Arts, Culture & Entertainment" show at 10 a.m. on Friday, July 10, 2009. Additionally, MLTPA Development & Community Relations Director Kim Stravers did two live "shout-outs"—brief live promotions in-studio with the on-air DJ—to further market the event. Recordings of these opportunities are not available from KMMT-FM.

Chapter 9-K: Editorial, television

Any editorial related to the Mobility Plan public events that appeared on any television channel was coordinated and managed by the TOML per the terms of its consulting agreement with MLTPA.

Chapter 9-L: E-mail campaigns

The TOML produced event-related e-mail messaging and saw its distribution through the following channels:

Town Manager's Friday Update: Start date of June 5, 2009, and continuing through the week of the events.

Stu's News: Start date of June 11, 2009, and continuing through the week of the events.

Traditional e-mail blasts: According to the terms of the consulting agreement, "Flyers and other event details have been e-mail blasted by TOWN Staff. Mobility Commission members have also received event details to e-mail to contacts."

In accordance with the consulting agreement, MLTPA produced an HTML-ready version of the event flyer for e-mail distribution, developed a list of additional e-mail opportunities with third parties, and drafted event-specific e-mail messaging. Once approved by the TOML, MLTPA distributed this messaging to identified contacts and tracked their distribution when possible. Please see the messaging and tracking documents (attached) for details.

Also in accordance with the consulting agreement, MLTPA sent an e-mail blast to its own internal list. Please see the MLTPA-specific PDF and reporting (attached) for details.

Town of Mammoth Lakes Mobility Public Outreach Series
E-mail blast draft text

Dear **[INSERT RECIPIENT GROUP NAME HERE]**:

This Thursday, Friday, and Saturday (July 16-18), the Town of Mammoth Lakes will host a series of interactive public events to gather community input on mobility in Mammoth. Town staff and the Mobility Commission are working together to develop an integrated local transportation system that emphasizes feet-first travel and public transit and that will make Mammoth better connected, more accessible, and safer. Community members will discuss pedestrian and bicycle travel, transit, air service, parking, snow management, signage and wayfinding, and more.

We invite you to join your friends and neighbors at the following events, all of which are free, open to everyone, and will be held at the old Wild Willy's Arcade in the Minaret Mall:

Multi-Modal Mobility Café: Thursday, July 16
A community conversation about getting around in Mammoth Lakes and how we can make it easier. The Café will run from 5:30 p.m. to 7 p.m., with an Open House starting at 4:30 p.m.

Community Safety and Mobility Café: Friday, July 17
A community conversation about the impacts of mobility on public safety, including emergency response, snow management, and accident prevention. The Café will run from 5:30 p.m. to 7 p.m., with an Open House starting at 4:30 p.m.

Community Mobility Plan Open House and Trolley Tours: Saturday, July 18
Participants will be able to provide comments on all aspects of transportation and mobility, including existing multi-modal infrastructure, near-term capital projects, and district- and town-wide mobility issues at the Open House and on the Trolley Tours. The Open House will run from 10 a.m. to 5 p.m. Trolley Tours will depart at 11 a.m. and 2 p.m.

Once adopted, the Mobility Plan will be an indispensable tool to help implement the Mobility Element of the Mammoth Lakes General Plan. We encourage you to provide your local knowledge, opinions, and suggestions in support of this exciting project. For additional information, visit www.visitmammoth.com/mobility or call TOML Transportation Planner Jessica Morriss at (760) 934-8989 ext. 225.

Many thanks,
The Town of Mammoth Lakes

GROUP	CONTACT	DATE	WAS IT BLASTED?
395 Fat Tire Council	Roscoe Cummins, Board member	7/14/09	No.
Disabled Sports Eastern Sierra	Kathy Copeland, executive director	7/14/09	No: Christine Souza was to blast per Kathy Copeland, but it did not go out, as Sierra Cycle Challenge was top priority.
Eastern Sierra Avalanche Center	Forrest Cross (membership director), Nate Greenberg (vice-president)	7/14/09	No response.
Eastern Sierra Nordic Ski Association	Hank Garretson, president	7/14/09	No: Hank Garretson was away and did not receive the request until July 20, 2009.
Eastside Velo	John Armstrong, president	7/14/09	No response.
Friends of the Inyo	Stacy Corless, communications director	7/14/09	No response.
High Sierra Equestrian Club	Doug Will, president	7/14/09	Yes, on 7/14/09.
High Sierra Striders	Andrew Kastor, president	7/14/09	Yes, on 7/14/09.
High Sierra Triathlon Club	Alana Levin, president	7/14/09	No response.
Mammoth Hospital	Lori Ciccarelli, Community Relations Director	7/14/09	Lori Ciccarelli agreed to post flyers and use electronic message board on 7/15/09.
Mammoth Lakes Board of Realtors	Shannon Crouch	7/14/09	Yes, on 7/15/09.
Mammoth Lakes Chamber of Commerce	Eric Wasserman, president	7/14/09	Yes, by Annette Scholl on 7/15/09.
Mammoth Nordic	Brian Knox, president	7/14/09	No response.
Mammoth Track Club	Terrence Mahon, head coach	7/14/09	No response.
McGee Creek Pack Station	Jennifer Roeser, owner	7/14/09	No response.
MLTPA E-Newsletter Recipients	Kim Stravers, Development and Community Relations Director	—	Yes, on 7/15/09.

MMSA (employees; department heads; Mammoth Mountain Hosts; Tamarack)	Mary Walker	7/14/09	Mary Walker agreed to send it on 7/14/09.
Mono County	Sarah McCahill, Economic Development Manager	7/14/09	No: Sarah McCahill was out of the office and did not receive the message in time to forward it.
Mono County Board of Supervisors	Vikki Magee-Bauer (District 3); Tom Farnetti (District 1); Hap Hazard (District 2); Bill Reid (District 4); Byng Hunt (District 5)	7/14/09	No response from any of the supervisors.
Sierra Club	Malcolm Clark, Range of Light Chapter president	7/14/09	Yes, on 7/15/09.
TOML Airport Commission	Pam Murphy (chair), Deb Pierrel (vice-chair), Thom Heller (commissioner), Lee Hughes (commissioner), John Walter (commissioner)	7/15/09	No response from any of the commissioners.
TOML Council	Neil McCarroll (mayor), John Eastman (mayor pro tem), Jo Bacon (councilmember), Skip Harvey (councilmember), Wendy Sugimura (councilmember)	7/15/09	Jo Bacon forwarded it on 7/15/09. Wendy Sugimura was out of town at the time. Other Councilmembers did not respond.
TOML employees	Anita Hatter, Town Clerk	7/15/09	Already distributed to private list on 6/19/09 and 7/14/09 by Anita Hatter.
TOML Mobility Commission	Sandy Hogan (chair), Eric Wasserman (vice-chair), Marshall Minobe (commissioner), Bill Cockroft (commissioner), Pam Hennarty (commissioner), John Vereuck (commissioner)	7/15/09	No response from any of the commissioners.

TOML Planning Commission	Elizabeth Tenney (commissioner), Rhonda Duggan (chair), Tony Barrett (vice-chair), Sharon Clark (commissioner), Jay Deinken (commissioner)	7/15/09	Elizabeth Tenney tried to send an e-mail on July 15 but was unable due to technical difficulties with the outgoing mail. Other commissioners did not respond.
TOML Public Arts Commission	Paul Jurewitz (chair), Noelle Deinken (vice-chair), Michael Bornfeld (commissioner), Warren Harrell (commissioner), Kendra Knight (commissioner)	7/15/09	Noelle Deinken did not have identified constituents who wouldn't already have received messaging from the Town. Paul Jurewitz and Warren Harrell were no longer part of the Commission at this time. Kendra Knight did not forward the blast, as she thought the deadline was later. Michael Bornfeld did not respond.
TOML Tourism & Recreation Commission	Bill Sauser (chair), Tony Colasardo (parks and recreation vice-chair), Teri Stehlik (tourism vice-chair), Ruth Harrell (commissioner), Shields Richardson (commissioner), Knud Svendsen (commissioner) [Dieter Fiebiger (commissioner) has no e-mail address]	7/15/09	No response from any of the commissioners.

From: Roscoe Cummins <roscoe_c@hotmail.com>
Subject: **RE: E-mail blast for Town's Mobility Public Outreach Events**
Date: August 6, 2009 9:49:00 p.m. PDT
To: Kim Stravers <kimstravers@mltpa.org>

Kim,

I don't believe we sent that out.

Roscoe

From: kimstravers@mltpa.org
To: roscoe_c@hotmail.com
Subject: Fwd: E-mail blast for Town's Mobility Public Outreach Events
Date: Tue, 4 Aug 2009 10:37:45 -0700

Hi, Roscoe!

We are wrapping up our reporting for the Mobility outreach; did you get a chance to forward the below message to your list? If yes, please let me know on which date it was sent.

Thanks!

Best,
Kim Stravers
Development & Community Relations Director
Mammoth Lakes Trails & Public Access Foundation
kimstravers@mltpa.org
(949) 632-7882 [direct]
(866) 760-0285 [fax]
(760) 934-3154 [general office inquiries]

From: "Anita Hatter" <ahatter@ci.mammoth-lakes.ca.us>
Subject: **Mobility Plan Cafes--hope to see you there!**
Date: June 19, 2009 3:32:19 p.m. PDT
To: "Anita Hatter" <ahatter@ci.mammoth-lakes.ca.us>
2 Attachments, 513 KB

Would love to have you part c pate n these upcom ng events to gather commun ty nput and create shared understand ng about mob l ty n ML--
contact Jess ca Morr ss at 934-8989, ext. 225.

Best regards,

An ta Hatter

From: "Anita Hatter" <ahatter@ci.mammoth-lakes.ca.us>
Subject: **information for Mobility Workshops**
Date: July 14, 2009 4:34:53 p.m. PDT
To: "Anita Hatter" <ahatter@ci.mammoth-lakes.ca.us>
1 Attachment, 5.5 KB

Hello--br ef ng mater als for the Mob l ty Cafes th s Thursday, Fr day and Saturday can be accessed on the front page of our webs te, www.c .mammoth-lakes.ca.us. I hope you ll be able to attend one or all and help gu de the development of the plan!

Best,

An ta

From: "Elizabeth Tenney" <e10ney@npgcable.com>
Subject: **Re: couldn't forward Re: Mobility: Get Better Connected!**
Date: July 15, 2009 6:46:04 p.m. PDT
To: "Kim Stravers" <kimstravers@mltpa.org>
1 Attachment, 50.5 KB

That's a thought, Kim, but a problem as I wasn't forwarding the MLTPA msg. as sent. That would be an "endorsement" by a Planning Commissioner and I didn't think that was appropriate. I wanted to forward the two attachments with a msg. of my own but it didn't work. I'll try and find another way to spread the word.
Elizabeth

> ----- Original Message -----
> **From:** Kim Stravers
> **To:** Elizabeth Tenney
> **Sent:** Wednesday, July 15, 2009 3:24 PM
> **Subject:** Re: couldn't forward Re: Mobility: Get Better Connected!
>
> Hi, Elizabeth!
>
> Have you tried the "send to a friend" button on the top right corner of the e-mail? That might help.
>
> Thanks!
>
> Best,
> Kim Stravers
> Development & Community Relations Director
> Mammoth Lakes Trails & Public Access Foundation
> kimstravers@mltpa.org
> (949) 632-7882 [direct]
> (866) 760-0285 [fax]
> (760) 934-3154 [general office inquiries]
>
> MLTPA
> MAMMOTH LAKES TRAILS + PUBLIC ACCESS
> PO Box 100 PMB# 432
> Mammoth Lakes, CA 93546
> 760 934 3154
> mltpa.org
>
> On Jul 15, 2009, at 3:07 p.m., Elizabeth Tenney wrote:
>
>> Kim--
>> I tried to send a forward of your msg. to my critical contacts list and it wouldn't go through, although I tried repeatedly. Too many spam filters in this world!
>> Elizabeth
>>
>>> ----- Original Message -----
>>> **From:** MLTPA
>>> **To:** e10ney@npgcable.com
>>> **Sent:** Wednesday, July 15, 2009 2:46 PM
>>> **Subject:** Mobility: Get Better Connected!
>>>
>>> If you're having trouble viewing this email, you may see t online.
>>>
>>> send this to a friend

From: "Douglas Will" <dougw@att.net>
Subject: **RE: E-mail blast for Town's Mobility Public Outreach Events**
Date: July 14, 2009 7:52:58 p.m. PDT
To: "'Kim Stravers'" <kimstravers@mltpa.org>

Kim,

I sent out the announcement.

Doug

-----Original Message-----
From: Kim Stravers [mailto:kimstravers@mltpa.org]
Sent: Tuesday, July 14, 2009 4:16 PM
To: Doug Will
Cc: Jessica Morriss; Ray Jarvis; Peter Bernasconi; John Wentworth
Subject: E-mail blast for Town's Mobility Public Outreach Events

Hi, Doug!

The Town is hosting a number of public events starting this Thursday to gather input for the Mobility Plan they are drafting. As this is an issue that affects all of us here in Mammoth, would you mind sending out an e-mail blast on behalf of the Town to your High Sierra Equestrian Club list to help drive participation? I've attached text for you to use, as well as a PDF of the flyer and some supplementary documents. We also have the TV ad optimized for the Web if you'd like to include that in the blast or on HSEC's Web site, which I will send to you on request.

Please let me know if you're able to help us out, or if you have any questions about the events. Thanks!

From: "Andrew Kastor" <andrew@highsierrastriders.org>
Subject: **RE: Mammoth Trails Charter Member Events**
Date: July 14, 2009 7:34:34 p.m. PDT
To: "'Kim Stravers'" <kimstravers@mltpa.org>

The next Mammoth Trails meeting is set for Thursday at 4pm at the Sierra Meadows Ranch? Please confirm time, date and location.
I sent an email blast to the Striders regarding the Mobility meeting.
Andrew

-----Original Message-----
From: Kim Stravers [mailto:kimstravers@mltpa.org]
Sent: Wednesday, July 01, 2009 1:33 PM
To: Undisclosed-recipients:
Cc: John Wentworth
Subject: Mammoth Trails Charter Member Events

Hello, all!

Thanks again for the excellent meeting last week! I've put together a tentative events calendar based on visitmammoth.com and the dates John A. sent me for Eastside Velo, which I've attached as a PDF. As you can see, we're already stacking up!

Please send me your group's planned events from now through December 31 and I will get them into a calendar to share with the larger group at our next meeting.

Thanks!

From: Jo Bacon <j.bacon22@verizon.net>
Subject: **Re: Mobility workshops this week!**
Date: July 15, 2009 2:02:46 p.m. PDT
To: Kim Stravers <kimstravers@mltpa.org>
1 Attachment, 50.5 KB

Hi Kim,

Just letting you know that this was a really large email. I didn't mind forwarding it, but you might consider file size in the future...

Jo

Kim Stravers wrote:

> Hello, Council!
>
> As you know, the Town is hosting a number of public events starting this Thursday to gather input for the Mobility Plan they are drafting. Would you mind sending out an e-mail blast on behalf of the Town to your constituents list to help drive participation? I've attached text for you to use, as well as a PDF of the flyer and some supplementary documents. We also have the TV ad optimized for the Web if you'd like to include that in the blast, which I will send to you on request.
>
> Please let me know if you're able to help us out, or if you have any questions about the events. Thanks!
>
> Best,
> Kim Stravers
> Development & Community Relations Director
> Mammoth Lakes Trails & Public Access Foundation
> kimstravers@mltpa.org
> (949) 632-7882 [direct]
> (866) 760-0285 [fax]
> (760) 934-3154 [general office inquiries]
>
> ---
>
> MLTPA
> MAMMOTH LAKES TRAILS • PUBLIC ACCESS
> PO Box 100 PMB# 432
> Mammoth Lakes, CA 93546
> 760 934 3154
> mltpa.org

From: "Kendra Knight" <Kendra@mammothskimuseum.org>
Subject: **RE: E-mail blast for mobility events this week**
Date: August 6, 2009 12:12:21 p.m. PDT
To: "Kim Stravers" <kimstravers@mltpa.org>

Hi Kim,
Unfortunately I did not have a chance to pass the message. I thought the deadline was later, my apologies.

Thanks!

Kendra Knight
Museum Director/Curator
Mammoth Ski Museum
kendra@mammothskimuseum.org
www.mammothskimuseum.org
P 760.934.6592~F 760.934.6019
100 College Parkway~Box 1815
Mammoth Lakes, CA 93546

Enjoy&Explore the Fine Art of Skiing

-----Original Message-----
From: Kim Stravers [mailto:kimstravers@mltpa.org]
Sent: Tuesday, August 04, 2009 11:12 AM
To: Paul Jurewitz; Noelle Deinken; Michael J. Bornfeld; Kendra Knight; Warren Harrell
Subject: Re: E-mail blast for mobility events this week

Hello, all!

Were any of you able to pass the below message on to your constituents last month? If yes, please let me know.

Thanks!

Best,
Kim Stravers
Development & Community Relations Director Mammoth Lakes Trails & Public Access Foundation kimstravers@mltpa.org
(949) 632-7882 [direct]
(866) 760-0285 [fax]
(760) 934-3154 [general office inquiries]

From: "Sarah McCahill" <smccahill@mono.ca.gov>
Subject: **RE: E-mail blast for Town of Mammoth Lakes' Mobility Public Outreach Events**
Date: August 4, 2009 12:58:39 p.m. PDT
To: "Kim Stravers" <kimstravers@mltpa.org>

Kim – I am so sorry. I was out of the office and did not forward this on. Is there something else you want me to send out?

Sarah

Sarah McCahill
Economic Development Manager
Mono County
PO Box 603
Mammoth Lakes, CA 93546
760.924.1738
760.924.1697 (Fax)
smccahill@mono.ca.gov

From: Kim Stravers [mailto:kimstravers@mltpa.org]
Sent: Tuesday, August 04, 2009 10:59 AM
To: Sarah McCahill
Subject: Fwd: E-mail blast for Town of Mammoth Lakes' Mobility Public Outreach Events

Hello, Sarah!

Just wondering if you'd been able to forward this message on last month. If yes, please let me know which day.

Thanks!

Best,
Kim Stravers
Development & Community Relations Director
Mammoth Lakes Trails & Public Access Foundation
kimstravers@mltpa.org
(949) 632-7882 [direct]
(866) 760-0285 [fax]
(760) 934-3154 [general office inquiries]

From: "Lori Ciccarelli" <cicc@mammothhospital.com>
Subject: **RE: E-mail blast for Town's Mobility Public Outreach Events**
Date: July 15, 2009 8:23:56 a.m. PDT
To: "'Kim Stravers'" <kimstravers@mltpa.org>
Reply-To: <cicc@mammothhospital.com>

We can post flyers around the hospital and post the announcement on our electronic announcement board.

Lori Ciccarelli
Community Relations Director
Mammoth Hospital
PO Box 660 / 85 Sierra Park Road
Mammoth Lakes, Ca 93546
phone: 760-924-4015 / fax: 760-924-4006
lori.ciccarelli@mammothhospital.com
www.mammothhospital.com

-----Original Message-----
From: Kim Stravers [mailto:kimstravers@mltpa.org]
Sent: Tuesday, July 14, 2009 17:54
To: Lori Ciccarelli; Lori Ciccarelli
Cc: Jessica Morriss; Peter Bernasconi; Ray Jarvis; John Wentworth
Subject: E-mail blast for Town's Mobility Public Outreach Events

Hi, Lori!

The Town is hosting a number of public events starting this Thursday to gather input for the Mobility Plan they are drafting. As this is an issue that affects all of us here in Mammoth, would you mind sending out an e-mail blast on behalf of the Town to your Mammoth Hospital staff list/board to help drive participation? I've attached text for you to use, as well as a PDF of the flyer and some supplementary documents. We also have the TV ad optimized for the Web if you'd like to include that in the blast or on the internal staff page of the hospital's Web site, which I will send to you on request.

Please let me know if you're able to help us out, or if you have any questions about the events. Thanks!

From: "Shannon Crouch" <mlbor@qnet.com>
Subject: **Re: E-mail blast for Town's Mobility Public Outreach events**
Date: July 15, 2009 10:42:23 a.m. PDT
To: "Kim Stravers" <kimstravers@mltpa.org>

Hi Kim,

Thank you for the email and great information.
It has been forwarded to our membership.
We hope that you have a terrific turn-out for these events.
Have a nice afternoon.

Sincerely,

Shannon Crouch, E.O.
Mammoth Lakes Board of REALTORS®, Inc.
(760) 934-4637, Fax (760) 934-1188
mlbor@qnet.com
www.mlbor.com

----- Original Message ----- From: "Kim Stravers" <kimstravers@mltpa.org>
To: "Shannon Crouch" <mlbor@qnet.com>
Cc: "Jessica Morriss" <jmorriss@ci.mammoth-lakes.ca.us>; "Peter Bernasconi" <pbernasconi@ci.mammoth-lakes.ca.us>; "Ray Jarvis" <rjarvis@ci.mammoth-lakes.ca.us>; "John Wentworth" <johnwentworth@mltpa.org>
Sent: Tuesday, July 14, 2009 6:16 PM
Subject: E-mail blast for Town's Mobility Public Outreach events

> Hello, Shannon!
>
> The Town is hosting a number of public events starting this Thursday to gather input for the Mobility Plan they are drafting. As this is an issue that affects all of us here in Mammoth, would you mind sending out an e-mail blast on behalf of the Town to your Board of Realtors list to help drive participation? I've attached text for you to use, as well as a PDF of the flyer and some supplementary documents. We also have the TV ad optimized for the Web if you'd like to include that in the blast or on the MLBOR Web site, which I will send to you on request.
>
> Please let me know if you're able to help us out, or if you have any questions about the events. Thanks!

> Best,
> Kim Stravers
> Development & Community Relations Director
> Mammoth Lakes Trails & Public Access Foundation
> kimstravers@mltpa.org
> (949) 632-7882 [direct]
> (866) 760-0285 [fax]
> (760) 934-3154 [general office inquiries]

From: "Walker, Mary" <mwalker@mammoth-mtn.com>
Subject: **Re: E-ail blast for Town's Mobility Public Outreach Events**
Date: July 14, 2009 6:32:27 p.m. PDT
To: <kimstravers@mltpa.org>

Sure

Original Message
From: Kim Stravers <kimstravers@mltpa org>
To: Walker Mary
Cc: Jessica Morriss <jmorriss@ci mammoth lakes ca us>; Ray Jarvis <rjarvis@ci mammoth lakes ca us>; Peter Bernasconi <pbernasconi@ci mammoth lakes ca us>; John Wentworth <johnwentworth@mltpa org>
Sent: Tue Jul 14 18:21:22 2009
Subject: E ail blast for Town s Mobility Public Outreach Events

Hello Mary!

The Town is hosting a number of public events starting this Thursday to gather input for the Mobility Plan they are drafting As this is an issue that affects all of us here in Mammoth would you mind sending out an e mail blast on behalf of the Town to MMSA s employee department head Mammoth Mountain Host and Tamarack lists to help drive participation? ve attached text for you to use as well as a PDF of the flyer and some supplementary documents We also have the TV ad optimized for the Web if you d like to include that in the blast or on MMSA s Web site which will send to you on request

Please let me know if you re able to help us out or if you have any questions about the events Thanks for your consideration!

From: Noelle Deinken <noelledeinken@hotmail.com>
Subject: **RE: E-mail blast for mobility events this week**
Date: August 4, 2009 11:36:23 a.m. PDT
To: kim stravers <kimstravers@mltpa.org>

Hi Kim,

PAC doesn't have any constiuents that I know of that might be different from the Town's. Also, Paul (barjur) and Warren (bella) are no longer on the PAC.

We're going out of town for the week right now but would be glad to talk when we get back.

Noelle

> From: kimstravers@mltpa.org
> To: barjur11@aol.com; noelledeinken@hotmail.com; mjbalawcorp@msn.com; kendra@mammothskimuseum.org; belladesign@npgcable.com
> Subject: Re: E-mail blast for mobility events this week
> Date: Tue, 4 Aug 2009 11:12:24 -0700
>
> Hello, all!
>
> Were any of you able to pass the below message on to your constituents
> last month? If yes, please let me know.
>
> Thanks!
>
> Best,
> Kim Stravers
> Development & Community Relations Director
> Mammoth Lakes Trails & Public Access Foundation
> kimstravers@mltpa.org
> (949) 632-7882 [direct]
> (866) 760-0285 [fax]
> (760) 934-3154 [general office inquiries]
>

From: "Mammoth Lakes Chamber of Commerce" <info@mammothlakeschamber.org>
Subject: **July 15, 2009**
Date: July 15, 2009 3:27:05 p.m. PDT
To: <kim@thetyperighter.com>
Reply-To: <info@mammothlakeschamber.org>

Mammoth Lakes
Chamber of Commerce

760.934.6717
P.O. Box 3268
Mammoth Lakes, CA 93546

July 15, 2009

Dear Chamber Members:

This Thursday, Friday, and Saturday (July 16-18), the Town of Mammoth Lakes will host a series of interactive public events to gather community input on mobility in Mammoth. Town staff and the Mobility Commission are working together to develop an integrated local transportation system that emphasizes feet-first travel and public transit and that will make Mammoth better connected, more accessible, and safer. Community members will discuss pedestrian and bicycle travel, transit, air service, parking, snow management, signage and wayfinding, and more.

We invite you to join your friends and neighbors at the following events, all of which are free, open to everyone, and will be held at the old Wild Willy's Arcade in the Minaret Mall:

Multi-Modal Mobility Café: Thursday, July 16
A community conversation about getting around in Mammoth Lakes and how we can make it easier. The Café will run from 5:30 p.m. to 7 p.m., with an Open House starting at 4:30 p.m.

Community Safety and Mobility Café: Friday, July 17
A community conversation about the impacts of mobility on public safety, including emergency response, snow management, and accident prevention. The Café will run from 5:30 p.m. to 7 p.m., with an Open House starting at 4:30 p.m.

Community Mobility Plan Open House and Trolley Tours: Saturday, July 18
Participants will be able to provide comments on all aspects of transportation and mobility, including existing multi-modal infrastructure, near-term capital projects, and district- and town-wide mobility issues at the Open House and on the Trolley Tours. The Open House will run from 10 a.m. to 5 p.m. Trolley Tours will depart at 11 a.m. and 2 p.m.

Once adopted, the Mobility Plan will be an indispensable tool to help implement the Mobility Element of the Mammoth Lakes General Plan. We encourage you to provide your local knowledge, opinions, and suggestions in support of this exciting project. For additional information, visit www.visitmammoth.com/mobility or call TOML Transportation Planner Jessica Morriss at (760) 934-8989 ext. 225.

From: Hank Garretson <w6sx@arrl.net>
Subject: **Re: Town Mobility Public Events E-mail Blast**
Date: July 20, 2009 7:08:37 a.m. PDT
To: Kim Stravers <kimstravers@mltpa.org>

> The Town is hosting a number of public events starting this Thursday to gather input for the Mobility Plan they are drafting. As this is an issue that affects all of us here in Mammoth, would you mind sending out an e-mail blast on behalf of the Town to your ESNSA list to help drive participation? I've attached text for you to use, as well as a PDF of the flyer and some supplementary documents. We also have the TV ad optimized for the Web if you'd like to include that in the blast or on the ESNSA Web site, which I will send to you on request.

Good Morning Kim,

I have been off email for about a week and just saw your request.

Ski Exuberantly,

Hank

Mammoth Lakes, California

send this to a friend

Hello, Friends!

This Thursday, Friday, and Saturday (July 16-18), the Town of Mammoth Lakes will host a series of **interactive public events** to gather **community input on mobility in Mammoth**. Town staff and the Mobility Commission are working together to develop an integrated local transportation system that emphasizes feet-first travel and public transit and that will make Mammoth **better connected, more accessible, and safer**. Community members will discuss pedestrian and bicycle travel, transit, air service, parking, snow management, signage and wayfinding, and more.

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  A community conversation about the impacts of mobility on public safety, including emergency response, snow management, and accident prevention. The Café will run from 5:30 p.m. to 7 p.m., with an Open House starting at 4:30 p.m.

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Once adopted, the Mobility Plan will be an indispensable tool to help implement the Mobility Element of the Mammoth Lakes General Plan. We encourage you to provide your local knowledge, opinions, and suggestions in support of this exciting project. For additional information, visit www.visitmammoth.com/mobility or call TOML Transportation Planner Jessica Morriss at (760) 934-8989 ext. 225.

We hope to see you there!
Kim Stravers
Development & Community Relations Director
MLTPA Foundation

PO Box 100 PMB #432 | 1934 Meridian Blvd. | Mammoth Lakes, CA 93546
(760) 934-3154 | news@mltpa.org | www.mltpa.org

From: "MLTPA" <news@mltpa.org>
Subject: **Mobility: Get Better Connected!**
Date: July 15, 2009 2:47:08 p.m. PDT
To: kimstravers@mltpa.org

To view this email online, paste this link into your browser:
http://e2ma.net/map/view=CampaignPublic/id=11541.2210370871/rid=2504f849a64d3fa63eccdf636ae09a43

Hello, Friends!

This Thursday, Friday, and Saturday (July 16-18), the Town of Mammoth Lakes will host a series of interactive public events to gather community input on mobility in Mammoth. Town staff and the Mobility Commission are working together to develop an integrated local transportation system that emphasizes feet-first travel and public transit and that will make Mammoth better connected, more accessible, and safer. Community members will discuss pedestrian and bicycle travel, transit, air service, parking, snow management, signage and wayfinding, and more.

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Once adopted, the Mobility Plan will be an indispensable tool to help implement the Mobility Element of the Mammoth Lakes General Plan. We encourage you to provide your local knowledge, opinions, and suggestions in support of this exciting project. For additional information, visit www.visitmammoth.com/mobility/ or call TOML Transportation Planner Jessica Morriss at (760) 934-8989 ext. 225.

We hope to see you there!
Kim Stravers
Development & Community Relations Director
MLTPA Foundation

campaign: Mobility Public Outreach Events		
subject: Mobility: Get Better Connected!		
sent: Jul 15, 2009 2:38 pm		
from: MLTPA <news@mltpa.org>		
to: *The Gang's All Here*		
response totals as of Jul 20, 2009 05:04pm		
total emails sent	1043	
total received	1027	98.5%
total bounces	16	1.5%
people who opened it	237	23.1%
people who clicked	12	5.1%
people who forwarded	0	0%
people who opted out	1	0.1%
new people who signed up	0	0%
clicks on links		
link 1: www.mltpa.org (http://www.mltpa.org)	0	0%
link 2: MLTPA Mammoth Lakes Trails (http://www.mltpa.org)	6	40%
link 3: www.visitmammoth.com/mobility (http://www.visitmammoth.com/mobility)	7	46.7%
link 4: http://www.visitmammoth.com/mobility/ (http://www.visitmammoth.com/mobility/)	2	13.3%

Chapter 9-M: Hard mailings

Any hard mailings related to the Mobility Plan public events were coordinated and managed by the TOML per the terms of its consulting agreement with MLTPA.

Chapter 9-N: In-person presentations

Per the terms of its consulting agreement with MLTPA, TOML staff announced the public events during the public-comment portion of the June 3, 2009 Town Council meeting and at the June 10, 2009 Planning Commission meeting. Additional Town staff announcements were scheduled for the June 24, 2009 Airport Commission meeting and the July 9, 2009 Tourism and Recreation Commission meeting. In-person presentations were the sole responsibility of the TOML.

Additionally, in accordance with the consulting agreement, Mobility Commissioners were scheduled by the TOML to announce the public events at meetings of the following groups:

- Lions Club
- Noon Rotary
- Morning Rotary
- Area Governments
- Chamber of Commerce

TOML staff developed a "Mobility Plan Talking Points" document (attached) in association with the event and furnished it to TOML staff, Mobility Commissioners, and MLTPA. MLTPA used this document to develop its e-mail messaging (see Chapter 9-K, "E-mail campaigns").

Mobility Plan Talking Points

1. The Mobility Plan is intended to be utilized as an implementation document for the General Plan Mobility Element.

2. An adopted Mobility Plan will provide a cohesive program of transportation system improvements and recommendations that will assist both the development community and Town Staff in planning transportation projects, with an emphasis on “feet first” travel.

3. The Mobility Plan will address all modes of transportation in Mammoth Lakes, such as pedestrian, bicycle, transit, trails, roads, and air service. The plan will also speak to transportation issues related to parking, safety, wayfinding, signage, and operations and maintenance.

4. The Public Works and Community Development Departments will be holding a series of community engagement events to collect input from the public about mobility and transportation issues, needs, and ideas.

    - **Multi-Modal Mobility Café: Thursday, July 16**

      This is a community conversation about getting around in Mammoth Lakes, and to learn how we can make it easier. The Café starts at 5:30 p.m. to 7:00 p.m. with an Open House starting at 4:30 p.m.

    - **Community Safety and Mobility Café: Friday, July 17**

      This is a community conversation about the impacts of mobility on public safety, including emergency response, snow management, and accident prevention. The Café starts at 5:30 p.m. to 7:00 p.m. with an Open House starting at 4:30 p.m.

    - **Community Mobility Plan Open House and Trolley Tours: Saturday, July 18**

      Participants will be able to provide comments on all aspects of transportation and mobility, including existing multi-modal infrastructure, near-term capital projects, and district and town-wide mobility issues at the Open House and on the Trolley Tours. The Open House starts at 10:00 a.m. to 5:00 p.m. (Open House); Trolley Tours: 11:00 a.m. and 2:00 p.m.

    All events will be held in the old "Wild Willy's Arcade" in the Minaret Village Mall. For additional information, call *Jessica Morriss* at (760) 934-8989 ext. 225.

Chapter 9-O: Media alerts

Any media alerts related to the Mobility Plan public events were coordinated and managed by the TOML per the terms of its consulting agreement with MLTPA.

Chapter 9-P: Personal phone calls

Any personal phone calls made by TOML Staff or Mobility Commissioners related to the Mobility Plan public events were coordinated and managed by the TOML per the terms of its consulting agreement with MLTPA.

Chapter 9-Q: Spanish-language outreach

Any Spanish-language outreach related to the Mobility Plan public events was coordinated and managed by the TOML per the terms of its consulting agreement with MLTPA.

Chapter 9-R: Web, external

Per the terms of its consulting agreement with MLTPA, the TOML was to ensure that materials and/or links related to the public events would be posted on the TOML Web site. TOML staff also made information available at the following address: http://www.visitmammoth.com/mobility.

Chapter 9-S: Web, MLTPA

The scope of work asked that MLTPA post a link to a TOML Web page containing information about the public events on its own homepage, http://www.mltpa.org, until the events were complete. MLTPA did not complete this task.

Chapter 10: Registration

Any pre-event or on-site registration for the Mobility Plan public events was coordinated and managed by the TOML per the terms of its consulting agreement with MLTPA.

Chapter 11: Videography

Any videography related to the Mobility Plan public events was coordinated and managed by the TOML per the terms of its consulting agreement with MLTPA.

Chapter 12: Volunteers

Any volunteer efforts related to the Mobility Plan public events were coordinated and managed by the TOML per the terms of its consulting agreement with MLTPA.

Appendix C: General Plan Guidelines: Complete Streets and the Circulation Element

Table of Contents:

Update to the General Plan Guidelines: Complete Streets and the Circulation Element

December 15, 2010

STATE OF CALIFORNIA
Arnold Schwarzenegger,
Governor

GOVERNOR'S OFFICE
OF PLANNING AND
RESEARCH
Cathleen Cox,
Acting Director

1400 Tenth Street
Sacramento, CA 95814

P.O. Box 3044
Sacramento, CA 95812

(916) 322-2318

www.opr.ca.gov

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State of California
Arnold Schwarzenegger, Governor

Governor's Office of Planning and Research
Cathleen Cox, Acting Director

Scott Morgan, Director, State Clearinghouse

Contributors:
Selena Gallagher, Project Manager- Graduate Planner Intern, State Clearinghouse
Cuauhtemoc Gonzalez, Associate Planner, State Clearinghouse
Julia Lave Johnston, OPR Deputy Director for Planning Policy, State Clearinghouse
Seth Litchney, Senior Planner, State Clearinghouse
Anna Marie Young, Assistant Planner, State Clearinghouse

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DIRECTOR'S MESSAGE

December 2010

I am pleased to announce the publication of the Governor's Office of Planning and Research (OPR), *Update to the General Plan Guidelines: Complete Streets and the Circulation Element.* Assembly Bill 1358 (AB 1358, Chapter 657, Statutes of 2008), the California Complete Streets Act, required OPR to amend the *2003 General Plan Guidelines* to provide guidance to local jurisdictions on how to plan for multimodal transportation networks in general plan circulation elements. This document amends guidance on preparing circulation elements found on pages 55-62 of Chapter 4 of the *2003 General Plan Guidelines*. Local jurisdictions should use this *Update* in conjunction with the *2003 Guidelines* when they are updating their general plan circulation elements.

The OPR staff thanks the many organizations and stakeholders who generously shared their expertise during the development of this *Update*. OPR consulted with various state agencies, regional agencies, local jurisdictions, planning and transportation consultants, health organizations, pedestrian and bicycle advocacy groups, and members of the public. This document is another example of how partnerships and collaboration can support quality communities for all Californians.

Based upon this broad consultation, OPR issued a *Draft Update to the General Plan Guidelines: Complete Streets and the Circulation Element* on October 20, 2010 for 30 days of public review and comment. All comments received on the draft document were carefully considered for incorporation. We hope that you will find this update to be an informative guide and useful tool in the practice of local planning. OPR always welcomes suggestions on ways to improve the *General Plan Guidelines*, and other OPR guidance documents. OPR strives to provide quality planning guidance to city and county decision makers, staff and community residents.

Cathleen Cox,

Acting Director, OPR

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Table of Contents

SECTION I: PURPOSE AND BACKGROUND

PURPOSE

This update to the circulation element section of the *2003 General Plan Guidelines* meets the requirements of Assembly Bill 1358, The California Complete Streets Act. The Act requires the Governor's Office of Planning and Research (OPR) to amend the *General Plan Guidelines* to assist city and counties in integrating multimodal transportation network policies into the circulation elements of their general plans. Starting January 2011, all cities and counties, upon the next update of their circulation element, must plan for the development of multimodal transportation networks.[1]

To support cities and counties in meeting the requirements and objectives of AB 1358, this update provides guidance on general plan circulation element goals, policies, data collection techniques, and implementation measures related to multimodal transportation networks. The goal of this update is to provide information on how a city or county can plan for the development of a well-balanced, connected, safe, and convenient multimodal transportation network. This network should consist of complete streets which are designed and constructed to serve all users of streets, roads, and highways, regardless of their age or ability, or whether they are driving, walking, bicycling, or taking transit.

AB 1358 places the planning, designing, and building of complete streets into the larger planning framework of the general plan by requiring jurisdictions to amend their circulation elements to plan for multimodal transportation networks. These networks should allow for all users to effectively travel by motor vehicle, foot, bicycle, and transit to reach key destinations within their community and the larger region. OPR recommends that local jurisdictions view all transportation projects, new or retrofit, as opportunities to improve safety, access, and mobility for all travelers and recognize pedestrian, bicycle, and transit modes as integral elements of their transportation system. The standard practice should be to construct complete streets while prioritizing project selection and project funding so that jurisdictions accelerate development of a balanced, multimodal transportation network.

Understanding the existing resources, location, and design of a local jurisdiction is imperative to successfully implement a multimodal transportation network. The planning, design, construction, and operation of a multimodal transportation network will be different for each community. Complete streets will look different in rural, suburban, or urban communities. Cities and counties should focus on crafting a network of travel options that are reflective of a community's individual context. A list of selected references with more information on multimodal transportation networks is provided at the end of this document.

1 Assembly Bill 1358, Chapter 657, Statutes 2008.

BACKGROUND

The California Complete Streets Act (AB 1358)

On September 30, 2008 Governor Arnold Schwarzenegger signed Assembly Bill 1358, the California Complete Streets Act. The Act states: "In order to fulfill the commitment to reduce greenhouse gas emissions, make the most efficient use of urban land and transportation infrastructure, and improve public health by encouraging physical activity, transportation planners must find innovative ways to reduce vehicle miles traveled (VMT) and to shift from short trips in the automobile to biking, walking and use of public transit."[2]

The legislation impacts local general plans by adding the following language to Government Code Section 65302(b)(2)(A) and (B):

(A) Commencing January 1, 2011, upon any substantial revision of the circulation element, the legislative body shall modify the circulation element to plan for a balanced, multimodal transportation network that meets the needs of all users of the streets, roads, and highways for safe and convenient travel in a manner that is suitable to the rural, suburban, or urban context of the general plan.

(B) For the purposes of this paragraph, "users of streets, roads, and highways" means bicyclists, children, persons with disabilities, motorists, movers of commercial goods, pedestrians, users of public transportation, and seniors.

RELATED FEDERAL AND STATE POLICIES

U.S. Department of Transportation (DOT) Bicycle and Pedestrian Policy:

The *United States Department of Transportation Policy Statement on Bicycle and Pedestrian Transportation Accommodations Regulations and Recommendations* supports "fully integrated active transportation networks," that include accommodations for bicyclists and pedestrians.[3] The DOT's bicyclist and pedestrian accommodation regulations and recommendations are consistent with California's complete street policies and AB 1358. The DOT encourages all transportation agencies and local governments to adopt similar policies to ensure all users of streets, roads, and highways are taken into consideration when developing new or retrofitting existing transportation systems.

The *United States Department of Transportation Policy Statement on Bicycle and Pedestrian Accommodation Regulations and Recommendations* can be found at the following website:

http://www.fhwa.dot.gov/environment/bikeped/policy_accom.htm

2 Assembly Bill 1358, Chapter 657, Statutes 2008.

3 U.S. Department of Transportation Federal Highway Administration, *United States Department of Transportation Policy Statement on Bicycle and Pedestrian Accommodation Regulations and Recommendations*, March 2010 http://www.fhwa.dot. gov/environment/bikeped/policy_accom.htm (accessed July 2010).

California Department of Transportation (Caltrans) Complete Streets Policy:

The *California Department of Transportation Deputy Directive 64-Revision #1: 'Complete Streets: Integrating the Transportation System'* (DD-64-R1) was released on October 2, 2008. DD-64-R1 directs Caltrans staff to support increased mobility and access for all Californians on Caltrans built and maintained roads.

DD-64-R1 states that Caltrans will:

- "Provide for the needs of travelers of all ages and abilities in all planning, programming, design construction, operations, and maintenance activities and products on the State Highway System;
- View transportation improvements (new and retrofit) as opportunities to improve safety, access, and mobility for all travelers and recognizes bicycle, pedestrian, and transit modes as integral elements of the transportation system;
- Develop integrated multimodal projects in balance with community goals, plans, and values; addressing the safety and mobility needs of bicyclists, pedestrians and transit users in all projects, regardless of funding;
- Facilitate bicycle, pedestrian, and transit travel by creating 'complete streets' beginning early in system planning and continuing through project delivery and maintenance and operations; and,
- Collaborate among all (Caltrans) department functional units and stakeholders to develop a network of complete streets." [4]

DD-64-R1 is limited to Caltrans owned and maintained streets, roads, and highways and focuses on the planning, construction, and maintenance of complete streets and when possible, on the creation of multimodal networks. The goals of DD-64-R1 provide important guidance for the design of streets that make up a local integrated multimodal transportation network.

Caltrans' *Complete Streets Implementation Action Plan* and other information on Caltrans' complete street policies can be found at the following website:

http://www.dot.ca.gov/hq/tpp/offices/ocp/complete_streets.html

Safe Routes to School:

In 2005 the United States Congress passed the Safe, Accountable, Flexible, Efficient, Transportation Equity Act: A Legacy for Users Act (SAFETEA-LU). This transportation reauthorization bill included funding for the Federal Safe Routes to School (SRTS) program. The objective of the SRTS program is to support the use of safe, active transportation modes (i.e. walking and bicycling) for children to and

4 California Department of Transportation, *Deputy Directive 64-R1*, (2008) http://www.dot.ca.gov/hq/tpp/offices/ ocp/complete_streets_files/dd_64_r1_signed.pdf (accessed June 2010).

from schools. The availability of active transportation modes can increase children's activity levels and decrease the likelihood of childhood diseases. This is especially important as childhood obesity rates and other illnesses related to inactivity are rapidly increasing both nationally and throughout California. [5]

The SRTS program is administered by the Federal Highway Administration, which distributes program funds to individual State Departments of Transportation. In California, Caltrans distributes the federal grant funding to eligible cities and counties for local SRTS projects. In addition, Caltrans administers its own Safe Routes to School program, known as SR2S, which includes high schools. The federal program opens eligibility only for K-8 schools. Funds for both programs are available on a competitive basis, with each Caltrans District having a fixed amount available for cities and counties.

Federal and State funding criteria vary slightly, but typically funds are allocated for:

(1) "The planning, design, and construction of infrastructure-related projects within approximately two miles of a primary or middle school (high schools per Caltrans funding) that will improve the ability of students to walk and bicycle to school;

(2) Non infrastructure-related activities that encourage walking and bicycling to school, including awareness campaigns and outreach to the press and community leaders, traffic education and enforcement, student training; and,

(3) SRTS program capacity building including training and hiring of state program volunteers, and managers." [6]

Eligible projects can include pedestrian facilities, traffic calming, traffic control devices, bicycle facilities, and public outreach and education.

Schools are an important node to include in the development of a local multimodal transportation network. Local multimodal transportation networks should address the needs of parents and children by providing safe active transportation options to and from schools. Doing so can reduce vehicle trips, reduce congestion, and improve road safety near schools, and increase children's activity rates. While the general plan itself is not eligible for funding, Safe Routes to School programs can help implement part of a connected, safe multimodal transportation network.

Additional information on SRTS and SR2S can be found at the following web sites:

http://www.saferoutesinfo.org
http://www.dot.ca.gov/hq/LocalPrograms/saferoutes/saferoutes.htm.

5 California Department of Health Services, *Prevalence of Obesity and Healthy Weight in California Counties, 2001*, June 2004 http://www.cdph.ca.gov/pubsforms/Pubs/OHIRobesityweightCA2001.pdf (accessed December 1, 2010).
6 Safe Routes to School, *Safe Routes to School Guide*, http://www.saferoutesinfo.org/guide/index.cfm (accessed August 2010).

MULTIMODAL TRANSPORTATION NETWORKS

What are Multimodal Transportation Networks?

Multimodal transportation networks allow for all modes of travel including walking, bicycling, and transit to be used to reach key destinations in a community and region safely and directly. Jurisdictions can use complete streets design to construct networks of safe streets that are accessible to all modes and all users no matter their age or ability. Complete streets are defined below:

The National Complete Streets Coalition defines complete streets as follows:

> Complete streets are designed and operated to enable safe access for all users. Pedestrians, bicyclists, motorists and transit riders of all ages and abilities must be able to safely move along and across a complete street.
>
> Creating complete streets means transportation agencies must change their orientation toward building primarily for cars. Instituting a complete streets policy ensures that transportation agencies routinely design and operate the entire right of way to enable safe access for all users. [7]

The American Planning Association describes complete streets as follows:

> Complete streets serve everyone – pedestrians, bicyclists, transit riders, and drivers – and they take into account the needs of people with disabilities, older people, and children. The complete streets movement seeks to change the way transportation agencies and communities approach every street project and ensure safety, convenience, and accessibility for all. [8]

Caltrans defines complete streets as follows:

> A transportation facility that is planned, designed, operated, and maintained to provide safe mobility for all users, including bicyclists, pedestrians, transit vehicles, truckers, and motorists, appropriate to the function and context of the facility. Complete street concepts apply to rural, suburban, and urban areas.[9]

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7 National Complete Streets Coalition, www.completestreets.org (accessed July 2010).

8 Barbara McCann and Suzanne Rynne, *Complete Streets: Best Policy and Implementation Practices*, American Planning Association, Report No. 559:1.

9 California Department of Transportation, *Complete Streets Implementation Action Plan*, Feb. 2010 http://www.dot.ca.gov/hq/tpp/offices/ocp/complete_streets_files/CompleteStreets_IP03-10-10.pdf (accessed July 2010).

POTENTIAL BENEFITS OF MULTIMODAL TRANSPORTATION NETWORKS

Safety

Multimodal transportation networks, using complete streets best practices, can lead to safer travel for all roadway users. Designing streets and travel routes that consider safe travel for all modes can reduce the occurrence and severity of vehicular collisions with pedestrian and bicyclists.[10] Streets and other transportation facility design considerations that accommodate a variety of modes and user abilities can contribute to a safer environment that makes all modes of travel more appealing.

Health

Multimodal transportation networks that allow people to walk or bicycle as a viable transportation option can promote an active lifestyle by encouraging travelers to walk or ride bicycles instead of driving. These active transportation modes increase physical activity rates. Frequent exercise is known to reduce obesity rates and lower the risk of heart disease and diabetes.[11] A comprehensive transportation network that allows safe walking and bicycling to multiple destinations, including transit, promotes better health.

Reducing the amount that people drive by increasing the opportunity for walking, bicycling, and transit also reduces vehicle emissions. Emissions from vehicles are a major contributor to poor air quality, which in turn, is a major contributor to health ailments such as asthma. Although poor air quality is not always the cause of asthma, vehicle emissions are a major contributor to asthma related illnesses.[12]

Multimodal transportation networks provide options and increase mobility for people who cannot or do not drive to stay connected to their communities. This is especially important for people with disabilities and for all people as they age. Without alternatives to the automobile, these individuals can easily become socially isolated; unable to access essential resources such as grocery stores, houses of worship, and medical care. Social isolation and a lack of access to essential resources can negatively impact people's physical and mental well-being.

Greenhouse Gas (GHG) Emission Reduction

Land use patterns and the existing transportation infrastructure play a direct role in the rate and growth of vehicle miles traveled (VMT); influencing the distance that people travel and the mode of travel they choose. The need to reduce transportation-related GHG emissions was highlighted in the

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10 California Department of Transportation, *Complete Streets Implementation Action Plan*.

11 California Department of Public Health, *The Burden of Cardiovascular Disease in California, A Report of the California Heart Disease and Stroke Prevention Program*, 2007 http://www.cdph.ca.gov/programs/cvd/ Documents/CHDSP-BurdenReport-HighRes.pdf (accessed June 2010).

12 California Department of Health Services, *The Burden of Asthma in California: A Surveillance Report*, 2007 http://www.californiabreathing.org/images/stories/publications/asthmaburdenreport.pdf (accessed June 2010).

California Air Resources Board's (CARB) *2008 AB 32 Climate Change Scoping Plan*.[13] Transportation accounts for 38 percent of California's GHG emissions.[14] Studies show that even with aggressive state and federal vehicle efficiency standards and the use of alternative fuels, meeting the State's GHG reduction goals will require a reduction in how much the average Californian drives.[15] Reducing the number of automobile trips can reduce fuel consumption and GHG emissions.

Economic Development and Cost Savings

Creating multimodal transportation networks can improve economic conditions for both business owners and residents. A network of complete streets can be safer and more appealing to residents and visitors, which can benefit retail and commercial development. Multimodal transportation networks can improve conditions for existing businesses by helping revitalize an area and attracting new economic activity. Integrating the needs of all users can also be cost-effective, by reducing public and privates costs. Accommodating all modes reduces the need for larger infrastructure projects, such as additional vehicle parking and road widening, which can be more costly than complete streets retrofits.

REGIONAL PLANNING

Assembly Bill 32 and Senate Bill 375

The Legislature passed Assembly Bill 32 (AB 32), The Global Warming Solutions Act of 2006.[16] AB 32 requires the State of California to reduce its GHG emissions to 1990 levels no later than 2020. Senate Bill 375 (SB 375) builds on the existing regional transportation planning process undertaken by the state's 18 Metropolitan Planning Organizations (MPOs) to connect the reduction of GHG emissions from cars and light trucks to regional land use and infrastructure planning.[17] According to the California Air Resources Board (CARB), passenger vehicles are the number one emitter of GHG emissions in California.[18] SB 375 asserts that "Without improved land use and transportation policy, California will not be able to achieve the goals of AB 32."[19]

13 California Air Resources Board, *AB 32 Climate Change Scoping Plan*, (2008): http://www.arb.ca.gov/cc/scopingplan/ document/scopingplandocument.htm (accessed September 2010).
14 California Climate Change Portal, "Greenhouse Gas Emissions Inventory," 2004 http://www.climatechange.ca.gov/inventory/index.html (accessed June 2010).
15 California Air Resources Board, *AB 32 Climate Change Scoping Plan*.
16 Assembly Bill 32, Chapter 488, Statutes 2006.
17 Senate Bill 375, Section 1(c), 2008.
18 California Air Resources Board, *California Greenhouse Gas Inventory for 2000-2008- by Category as Defined in the Scoping Plan*, (May 2010): http://www.arb.ca.gov/cc/inventory/data/tables/ghg_inventory_scopingplan_00-08_2010-05-12.pdf (accessed September 2010).
19 Senate Bill 375, Section 1(c), 2008.

The main objectives of SB 375 are:

(1) To use the regional transportation planning process to direct funding to transportation projects that reduce GHG emissions by coordinating land use and transportation planning;

(2) To use the California Environmental Quality Act (CEQA) streamlining as an incentive to encourage residential development projects which help achieve AB 32 GHG emission reduction goals; and,

(3) To coordinate the state's requirements for regional housing development and planning with the regional transportation planning process.

Regional Transportation Plans (RTPs)

Each regional transportation planning agency, including federally recognized MPOs and state recognized Regional Transportation Planning Agencies (RTPAs), is required to prepare and adopt a RTP. The RTP's goal is to achieve a coordinated and balanced regional transportation system. The plan should consider all transportation systems, as well as their users and associated facilities and services including, but not limited to: mass transit, highways, railroads, bicycle, walking, goods movement, maritime, and aviation. The plan is meant to be action-oriented and pragmatic and to consider both short-term and long-term system issues. An RTP establishes the region's priorities for funding transportation infrastructure projects and other transportation programs.

The *2010 Regional Transportation Plan Guidelines* (RTP Guidelines) approved by the California Transportation Commission and prepared by Caltrans, summarizes RTP requirements in both federal and state law. State law directs the RTP to "present clear, concise policy guidance to local and state officials" and to "consider and incorporate, as appropriate, the transportation plans of cities, counties, districts, private organizations, and state and federal agencies"[20] A RTP must be consistent with the *RTP Guidelines*.

Although it is not legislatively required, the *RTP Guidelines* suggest that MPOs and RTPAs include local multimodal transportation policies in their plans. The *RTP Guidelines* recommend that regional transportation agencies integrate multimodal transportation network policies into their RTPs, identify the financial resources necessary to accommodate such policies, and consider accelerating programming for projects that retrofit existing roads to provide safe and convenient travel by all users. The guidelines also encourage MPOs and RTPAs to work with jurisdictions and agencies within their region to ensure that general plan circulation elements and local street and road standards include the necessary planning, design, construction, operations, and maintenance procedures, to support all transportation system users.[21]

20 California Government Code §65080(a).

21 California Transportation Commission, 2010 *California Regional Transportation Plan Guidelines*, (April 2010): http://www.catc.ca.gov/programs/rtp/2010_RTP_Guidelines.pdf (accessed September 2010).

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Update to the General Plan Guidelines:
Complete Streets and the Circulation Element

Federal transportation law emphasizes the need for the coordination of regional and local plans by requiring a RTP to be based on the most recent local planning assumptions including local general plans and other relevant factors. Any decisions about the allocation of transportation funds must be consistent with the RTP."[22]

Sustainable Communities Strategy

SB 375 requires each of the state's 18 MPOs to include a Sustainable Communities Strategy (SCS) in its RTP. RTPAs are not required to develop a SCS as part of their RTP. SB 375 also directs CARB, in consultation with MPOs, to develop regional GHG emission reduction targets for each MPO. MPO's must develop a SCS as part of its RTP that explains what feasible land use patterns and transportation system improvements would be necessary to meet CARB targets. An SCS must be adopted whether or not it meets CARB targets; however, if an MPO cannot meet these targets through its SCS, it must develop an alternative plan called an Alternative Planning Strategy (APS). An APS is not required to be part of the RTP and therefore does not impact RTP transportation funding decisions.

The SCS is expected to set forth a growth strategy that integrates land use, regional housing needs allocations, and the region's transportation infrastructure plan consistent with the goal of meeting CARB's regional GHG reduction targets. The SCS does not supersede a local general plan, specific plan, or zoning ordinance. SB 375 does not require that a local general plan, specific plan, or zoning ordinance be consistent with an SCS. However, a RTP must be internally consistent, so regional transportation funding and policy decisions need to be consistent with the SCS.

An SCS should perform the following tasks:

- Identify the general location of uses, residential densities, and building intensities within the region;
- Identify areas within the region sufficient to house all economic segments of the regional population, taking into account migration patterns, population growth, etc.;
- Identify areas within the region sufficient to house an eight-year projection of the regional housing need;
- Identify a transportation network to service the transportation needs of the region;
- Gather and consider the best available scientific information regarding the region's resource areas and farmland;
- When feasible, forecast a development pattern for the region, which when integrated with the transportation network, and other transportation

22 Part 450 of Title 23of, and Part 93 of Title 40 of, the Code of Federal.

9

measures and policies, reduces GHG emissions from passenger vehicles to achieve, the CARB GHG emissions reduction targets; and,

- Quantify the GHG emissions reduction projected by the SCS. If the SCS does not achieve the SB 375 targets, the SCS must identify the difference between its projected GHG emissions reduction and the CARB identified target for the region.[23]

To see a full description of what is required of an SCS please see G.C §65080(b)(2)(B).

SB 375 requires all regional counties not just MPOs to consider financial incentives for cities and counties that have resource areas or farmland, for the purpose of transportation investments. Such considerations include, but are not limited to:

- The preservation and safety of the city street or county road system;
- Farm-to-market transportation needs; and,
- Interconnectivity transportation needs.

Farm-to-market refers to the transportation facilities needed to provide connections between areas of agricultural production, processing, and storage facilities to agricultural distribution and sales activities.

The bill also requires that MPOs or county transportation agencies address financial assistance for counties to address countywide (transportation) service responsibilities, in counties that contribute towards the greenhouse gas emission reduction targets by implementing policies for growth to occur within their cities.

General plans should identify city and county resource areas and/or farmlands. County general plans may also identify policies targeting growth into the incorporated cities or towns within their limits.[24]

By updating general plans to include multimodal transportation network policies, cities and counties can support MPOs in developing an RTP and SCS and reaching regional GHG emission reduction targets. Once an SCS is adopted, establishing multimodal transportation network policies in the general plan that are consistent with the RTP and SCS can potentially increase the likelihood of funding for local priority projects through the RTP process. A city or county whose general plan is consistent with the regional SCS may be better situated to use the CEQA exemption and streamlining included in SB 375. The applicability of the SB 375 CEQA exemption is the sole realm of the city and county, MPOs cannot require a city or county to use an exemption or streamlining provisions for any particular site or project.

23 California Government Code §65080(b)(2)(B); Part 450 of Title 23 of, and Part 93 of Title 40 of, the Code of Federal.
24 California Government Code §65080(4)(C).

SECTION II: CIRCULATION ELEMENT UPDATE

This section is an update to the *2003 General Plan Guidelines* section on the circulation element (Chapter 4, pages 55-61). This amended and reformatted section of the *Guidelines* contains new information related to goals, policies, data collection, and implementation measures that will assist local governments in modifying the circulation element to plan for a balanced multimodal transportation network and the safe and convenient travel of all users of streets, roads, and highways.

CIRCULATION ELEMENT

The circulation element is not limited to transportation network issues. For the purpose of the circulation element, circulation includes all systems that move people, goods, energy, water, sewage, storm drainage, and communications. As a result, the circulation element should contain objectives, policies, and standards for transportation systems, including multimodal transportation networks, airports and ports, military facilities and operations, and utilities.

By statute, the circulation element must correlate directly with the land use element.[25] Land use patterns can have a significant impact on the effectiveness of a multimodal transportation network, since trip distance is a determinant of whether pedestrians and bicyclists, as well as transit users walking or bicycling to and from terminals, can reach a given destination. The land use plan and transportation network should be complementary. The close proximity of land uses can also facilitate effective transportation services and provide the ridership necessary to support high quality mass transit. Multimodal transportation policies should link transportation planning and land use planning to support effective multimodal transportation networks that connect people with desired destinations. This means that although AB 1358 only requires cities and counties to modify the circulation element to plan for a balanced, multimodal transportation network, jurisdictions will need to examine, and amend as necessary, the land use element. Jurisdictions should also consider the housing, open space, noise, conservation, and safety elements.

A key factor in creating a successful multimodal transportation network is making sure the planning objectives, policies, and standards reflect the rural, suburban, and/or urban context of a community within the planning area. Rural, suburban, and urban areas have different growth and development patterns and therefore face different opportunities and challenges when designing a multimodal transportation network.

A rural jurisdiction may require wide shoulders to accommodate pedestrian, bicycle, or equestrian travel. A jurisdiction with an suburban or urban context may accommodate

25 California Government Code §65302(b)(1).

pedestrian and bicycle travel with the inclusion of sidewalks and bicycle lanes along with controlled street crossings. Rural and suburban areas where there are greater distances between destinations may consider benches, covered resting areas, and other facilities that allow for people to successfully walk or ride a bicycle to frequently visited destinations. Jurisdictions that include all or a combination of rural, suburban, or urban areas should consider different policies, standards, and implementation measures specific for those areas when modifying the circulation element to plan for a well-balanced multimodal transportation network. When considering context issues such as needs of all users, needs of the community, traffic demand, impacts on alternate routes, impacts on safety, funding feasibility, and maintenance feasibility; relevant laws and regulations should be addressed.

The provisions of a circulation element can affect a community's environment as follows:

Physical—The circulation system is one of the chief determinants of physical settlement patterns and the system's location, design, accessibility, and mode varieties have major impacts on air, water, and soil quality, plant and animal habitats, environmental noise, energy use, community appearance, and the placement of land uses.

Social—The circulation system is a primary determinant of the pattern of human settlement. It has a major impact on the areas and activities it serves because of its potential to both provide accessibility and act as a barrier. The circulation system should be accessible to all segments of the population, including the disadvantaged, the young, the poor, the elderly, and the disabled. Transportation systems and facilities should not serve as barriers to community resources.

Health and Safety—The circulation system through design and accessibility of multiple modes of transportation can either promote or deter physical activity. Physical inactivity is linked to such health ailments as heart disease, diabetes, and obesity. The availability of multiple modes can also reduce automobile use and air pollution, reducing other negative health impacts. Circulation design can also influence travel safety by increasing or decreasing vehicle collision risks.

Economic—Economic activities normally require circulation of materials, products, ideas, and employees, so the efficiency of a community's circulation system has a direct effect on its economic productivity. The efficiency of a community's circulation system can either contribute to or adversely affect its economy and economic sustainability.

CIRCULATION ELEMENT CHECKLIST

The following is a checklist of statutory requirements for a general plan circulation element.

Requirements	***Statute***	***Check***
The general plan requires the inclusion of a circulation element.	*§65302(b)*	
A circulation element shall consist of the general location and extent of existing and proposed major thoroughfares, transportation routes, terminals, any military airports and ports, and other local public utilities and facilities, all correlated with the land use element of the plan.	*§65302(b)*	
Commencing January 1, 2011, upon any substantive revision of the circulation element, the legislative body shall modify the circulation element to plan for a balanced, multimodal transportation network that meets the needs of all users of streets, roads, and highways for safe and convenient travel in a manner that is suitable to the rural, suburban, or urban context of the general plan.	*§65302(b)(2)(A)*	

MANDATORY CIRCULATION ELEMENT ISSUES

The circulation element shall contain objectives, policies, principles, plan proposals, and/or standards for planning the infrastructure to support the circulation of people, goods, energy, water, sewage, storm drainage, and communications. Mandatory circulation element issues as defined in statute include: major thoroughfares, transportation routes, terminals, any military airports and ports, and other local public utilities and facilities.[26] Additionally, the statute requires the circulation element be modified to plan for a balanced, multimodal transportation network that meets the needs of all users of streets, roads, and highways. The statute defines "all users of streets, roads, and highways" as "bicyclists, children, persons with disabilities, motorists, movers of commercial goods, pedestrians, users of public transportation, and seniors."[27] Transportation networks should additionally consider pedestrian, bicycle, and transit routes, which may not always be located on or along streets, roads, and highways.

Circulation elements shall also take into consideration the provision of safe and convenient travel that is suitable to the rural, suburban, or urban context of a local jurisdictions general plan. This could include policies and implementation measures

26 California Government Code §65302(b).
27 California Government Code §65302(b)(2)(A).

for both retrofitting and developing streets to serve multiple modes and the development of multimodal transportation network design standards based on street types.

In addressing these mandatory issues, cities and counties may wish to consider the following:

No city or county can ignore its regional setting. Local planning agencies should coordinate their circulation element provisions with applicable state and regional transportation plans.[28] In addition, funding for new infrastructure and the maintenance of existing infrastructure can benefit from a regional approach. Likewise, the state must coordinate its plans with those of local governments.[29] The federal government is under similar obligations.[30]

Caltrans is particularly interested in the transportation planning roles of local general plans and suggests that the following areas should be considered:

- Coordination of planning efforts between local agencies and Caltrans districts;
- Preservation of transportation corridors for future multimodal system improvements;
- Development of coordinated transportation system management plans that include multimodal and transportation system demand strategies to achieve the optimal use of present and proposed infrastructure; and,
- Identification of complete streets and multimodal improvements on state highway routes.

These areas of emphasis are addressed through Caltrans' Intergovernmental Review (IGR), Regional Planning, and System Planning programs.[31] Caltrans goal is to resolve transportation problems early enough in the planning process so as to avoid costly delays to development. Coordinating state and local transportation planning is a key to the success of a circulation element.

28 California Government Code §65103(f) and §65080.
29 California Government Code §65080(a).
30 Title 23 USC 134.
31 California Department of Transportation, *Local Development-Intergovernmental Review (LD-IGR)*, (2007): http://www. dot.ca.gov/hq/tpp/offices/ocp/igr_ceqa.html (accessed September 2010).

POSSIBLE POLICY AREAS AND DATA COLLECTION TECHNIQUE CONSIDERATIONS

The following suggestions are examples of possible policy areas and data collection technique considerations that could be used to prepare or amend a circulation element. Suggestions are generally categorized based on the statutorily required portions of the circulation element as described in G.C. 65302(b). Not all of these suggestions will be relevant in every jurisdiction. Suggestions pertaining to multimodal transportation networks (i.e. complete streets) are marked with a ‡.

Major Thoroughfares

Streets, Roads, and Highways

Policies and data collection for streets, roads, highways should include the consideration of transit services within a roadway right-of-way, in either mixed flow lanes, high occupancy vehicle (HOV) lanes, and/or street-running light rail tracks.

Possible Policy Areas:

- The availability of a mix of transportation modes and the infrastructure to support those modes to meet community needs. ‡
- The development and improvement of major thoroughfares, including future acquisitions and dedications, based on proposed land use patterns and projected demand. This may include a street, road, and highway classification system.
- The consideration of street patterns; curvilinear, grid, modified grid, etc. ‡
- The design of streets (including, but not limited to, width, block size, etc.)
    - The consideration of sidewalks and curbs as a standard street design principle. ‡
    - The consideration of bicycle lanes and/or shared lanes as a standard street design principle. ‡
    - The consideration of transit accessibility and transit priority measures as a standard street design principle. ‡
    - The consideration of shade trees and planting strips as a standards street design principle. ‡
- The consideration of traffic calming measures (narrower travel lanes, roundabouts, raised medians, speed tables, planting strips, etc.). ‡
- The safety of the traveling public, including pedestrians and bicyclists. ‡
- The accessibility and accommodation of bicycle and pedestrian traffic, where appropriate, on and across major thoroughfares. ‡

Appendix D:
Typical Cross-Section Graphics
(Not Yet Adopted as
Public Works Standards)

Table of Contents:

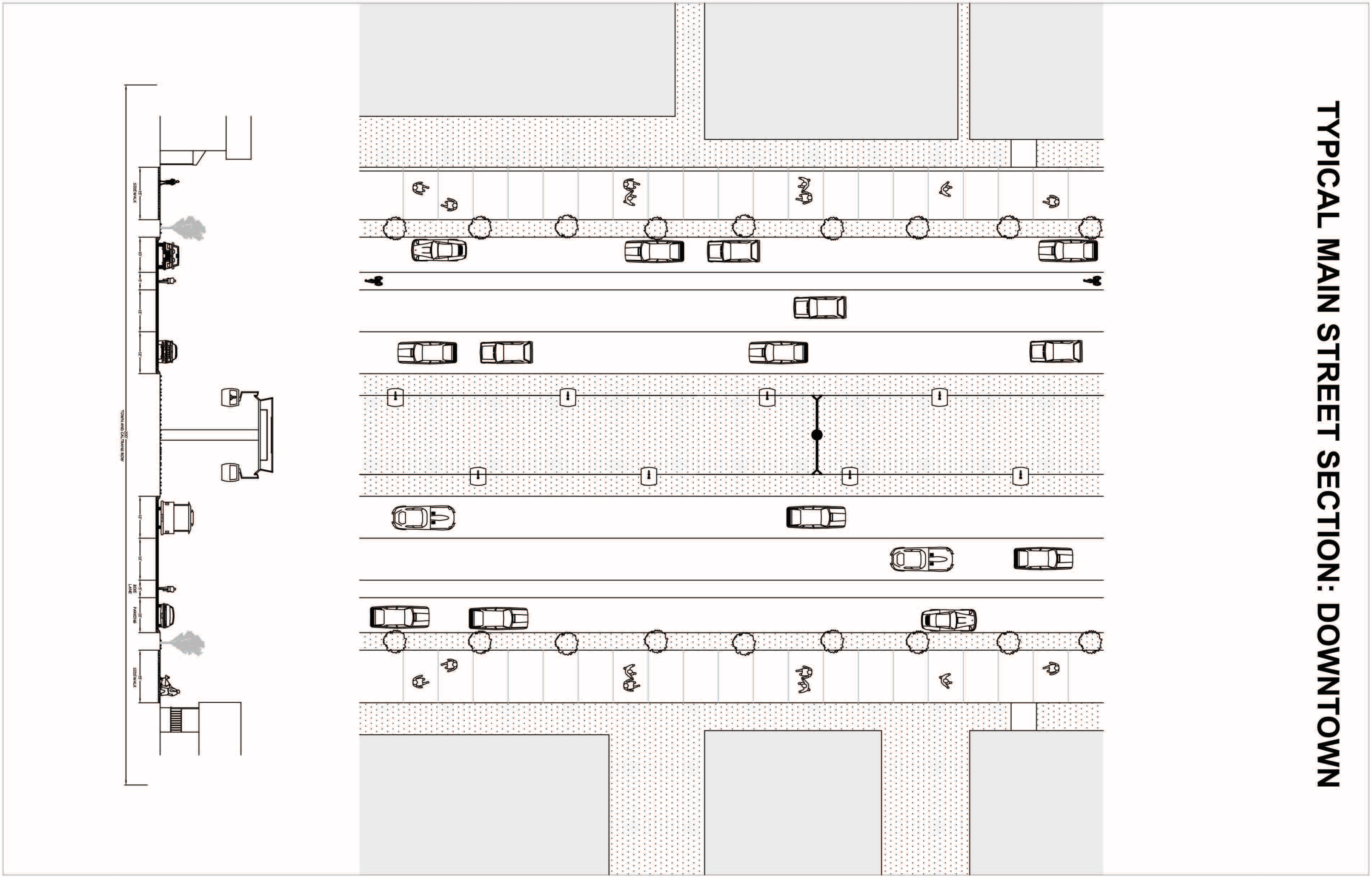


Figure 5-2: Downtown Cross Section

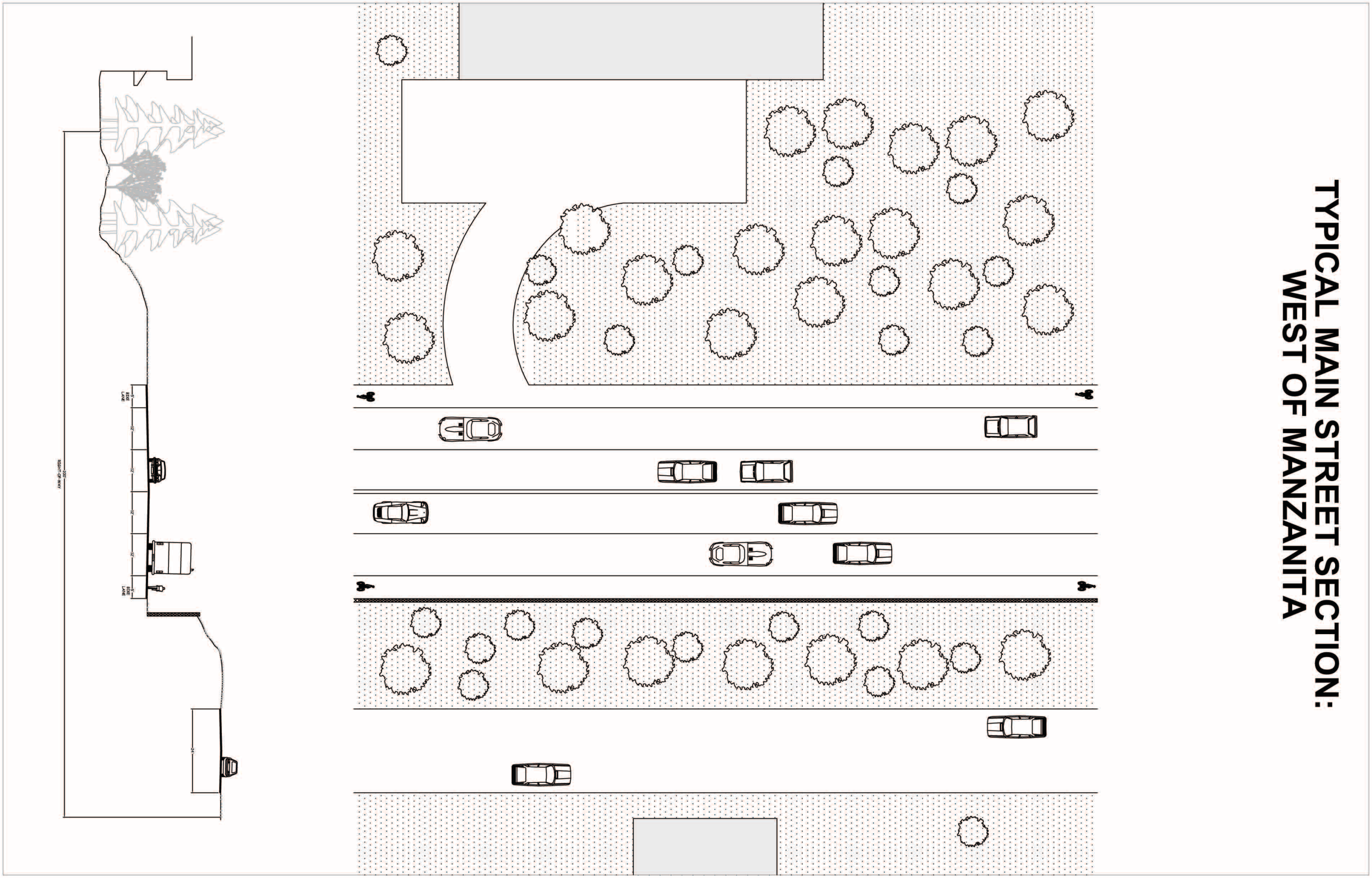


Figure 5-3: Typical Main Street Section, West of Manzanita

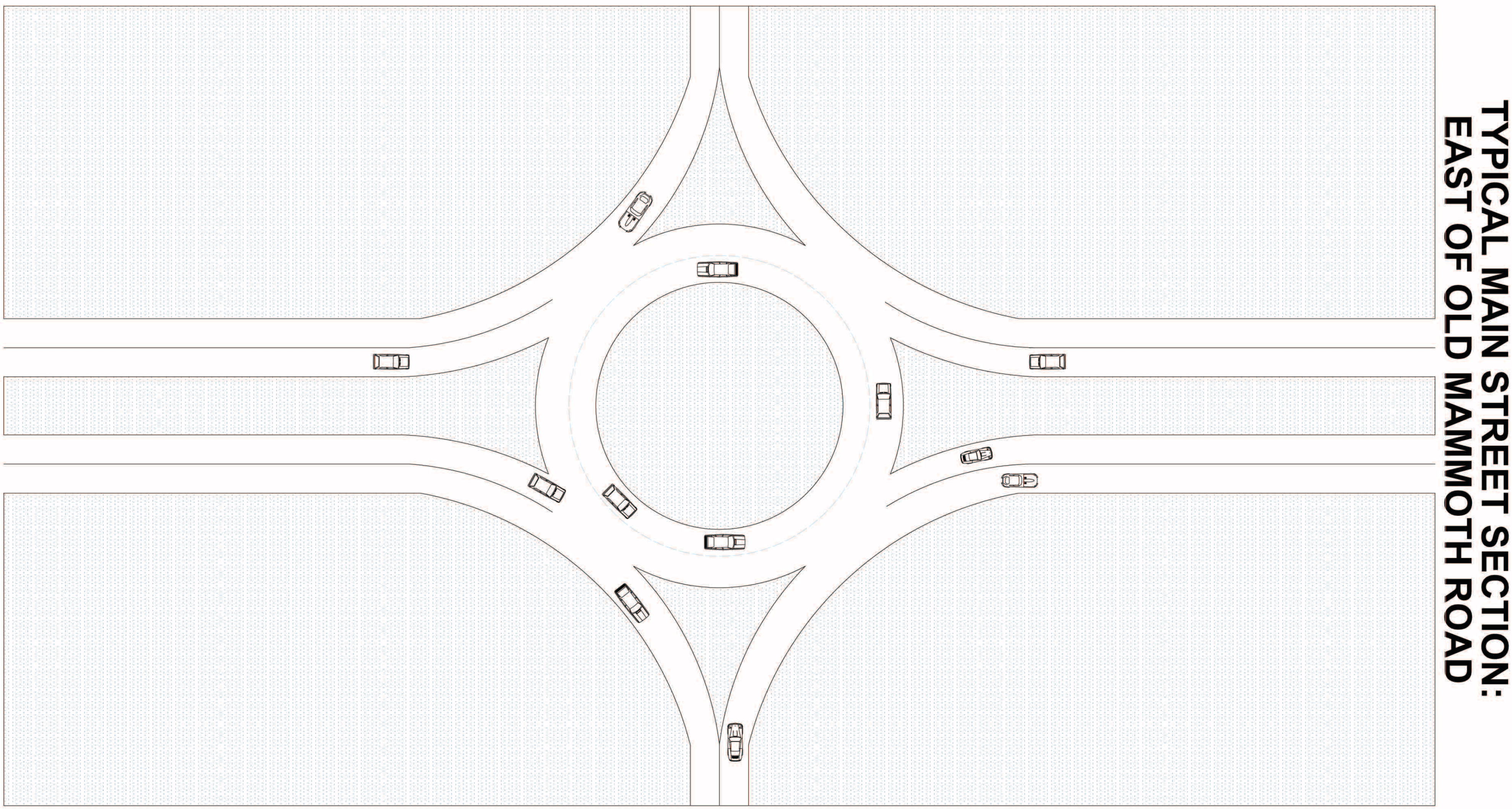
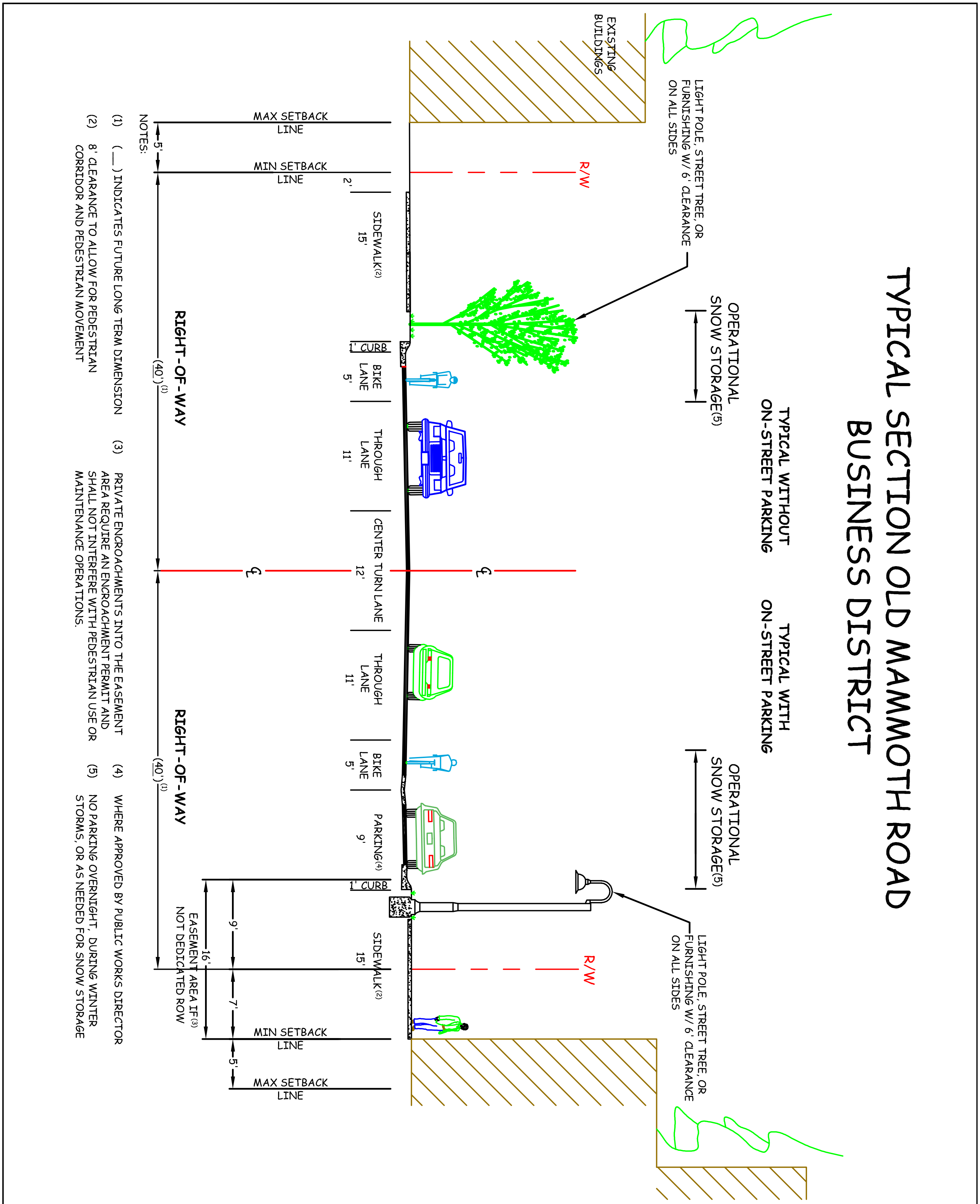
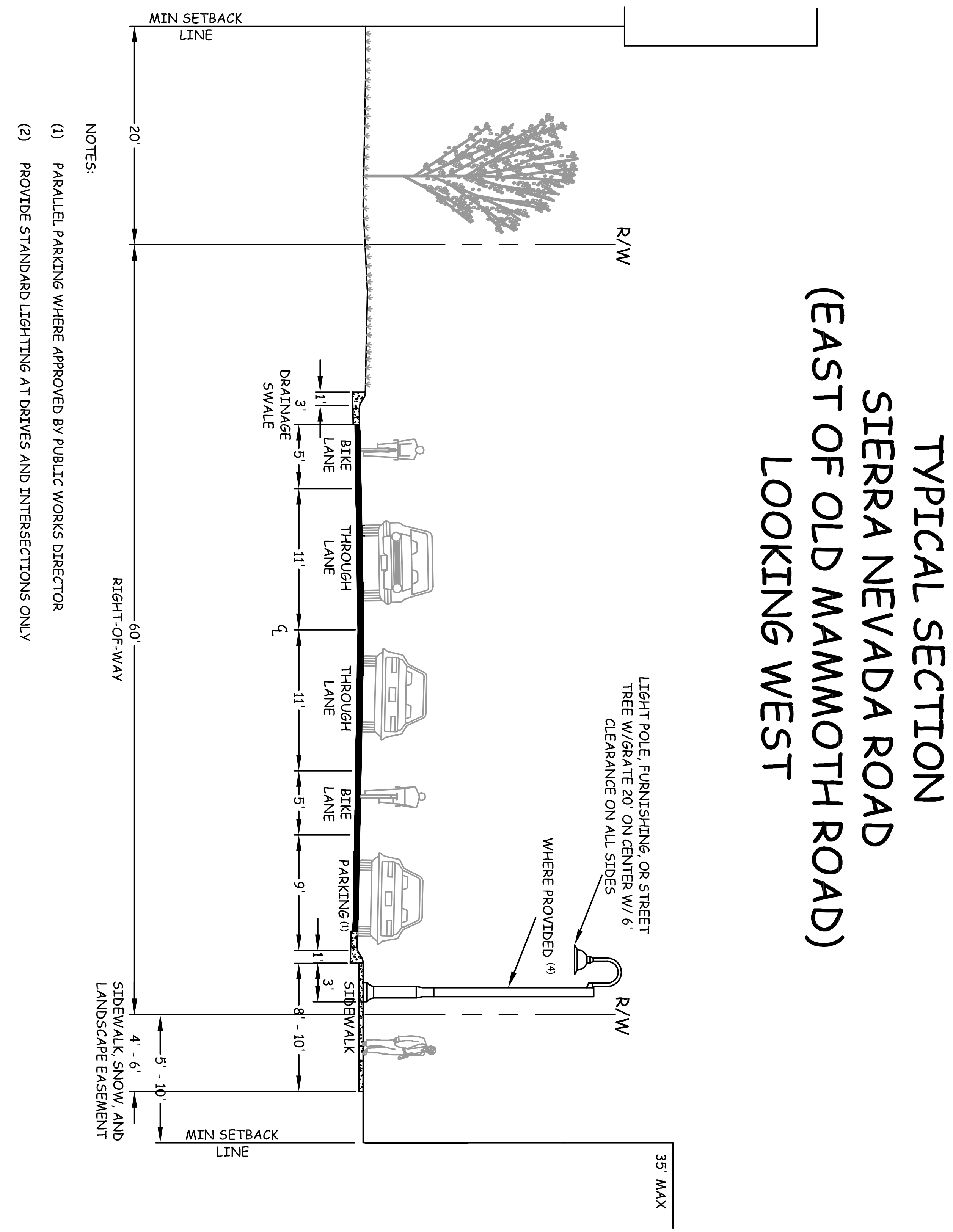


Figure 5-4: Typical Main Street Cross Section, East of Old Mammoth Road



TOWN OF MAMMOTH LAKES - DEPARTMENT OF PUBLIC WORKS

THE TOWN OF MAMMOTH LAKES CALIFORNIA	**NORTH OLD MAMMOTH ROAD DISTRICT SPECIAL STUDY** **TYPICAL SECTION - OMR Buisiness District**	STANDARD PLAN - - - -
	PUBLIC WORKS DIRECTOR APPROVAL: ____________ DATE: ________	SHEET 1 OF 1



TOWN OF MAMMOTH LAKES - DEPARTMENT OF PUBLIC WORKS

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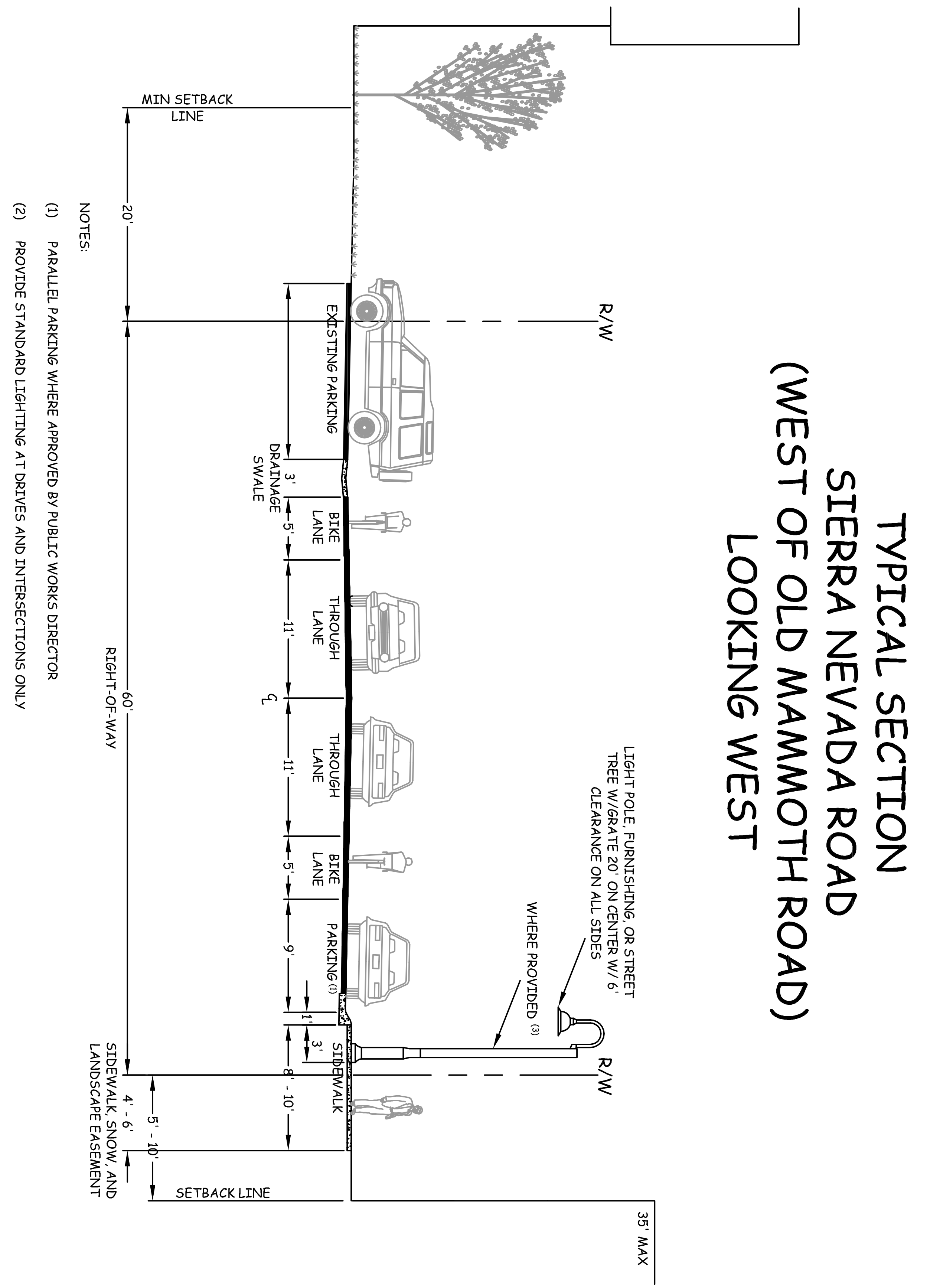
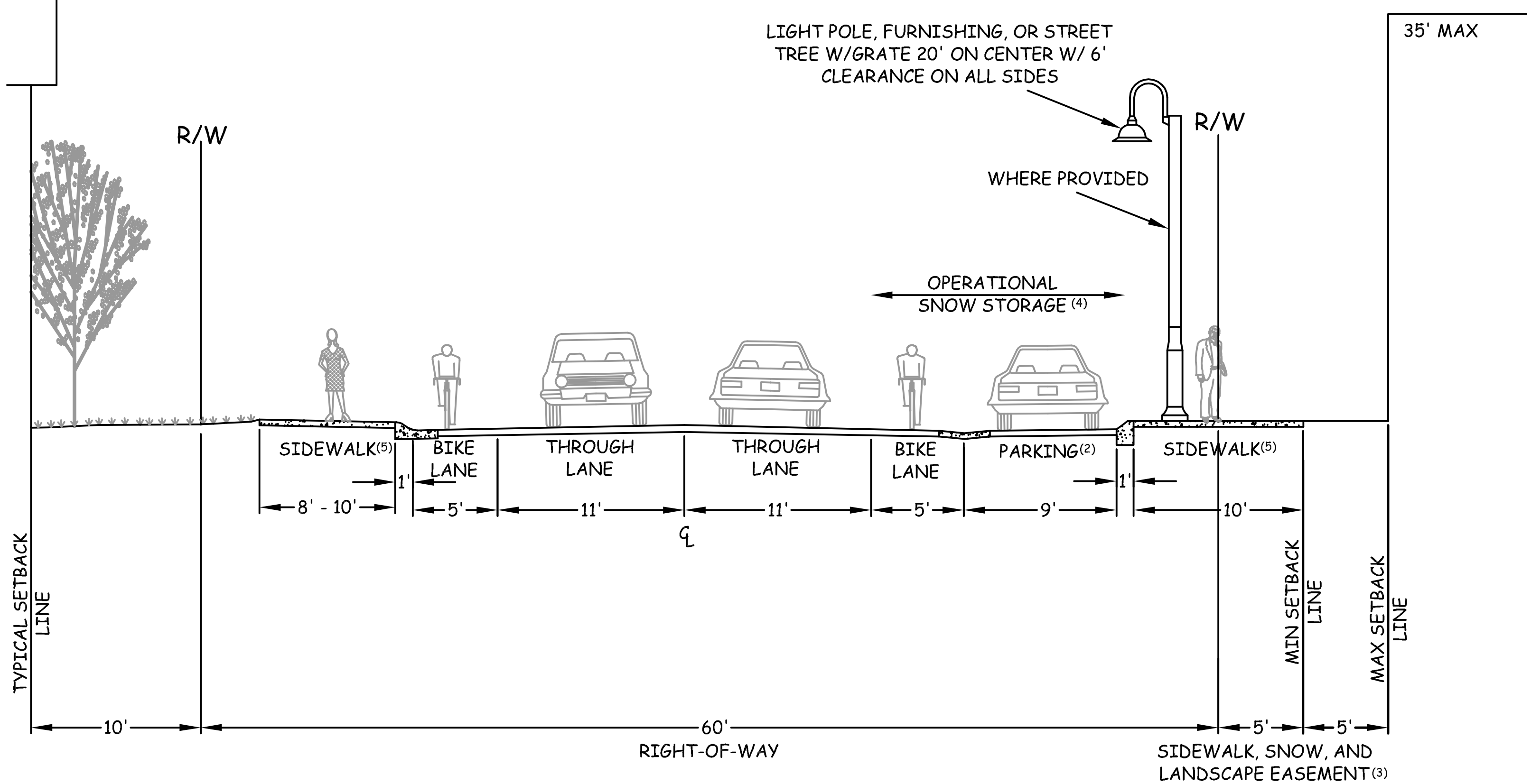


TOWN OF MAMMOTH LAKES - DEPARTMENT OF PUBLIC WORKS

THE TOWN OF MAMMOTH LAKES CALIFORNIA	**NORTH OLD MAMMOTH ROAD DISTRICT SPECIAL STUDY** **TYPICAL SECTION - SIERRA NEVEADA ROAD (WEST OF OMR)**	STANDARD PLAN **- - - -**
	PUBLIC WORKS DIRECTOR APPROVAL: ________ DATE: ________	SHEET 1 OF 1

TYPICAL SECTION
LAUREL MOUNTAIN ROAD
(NORTH OF TAVERN ROAD)
LOOKING NORTH



NOTES:

(1) SIDEWALKS ON BOTH SIDES PER NORTH OLD MAMMOTH ROAD DISTRICT SPECIAL STUDY

(2) PARALLEL PARKING WHERE APPROVED BY PUBLIC WORKS DIRECTOR

(3) MAX 5' SETBACK FROM SIDEWALK PURSUANT TO NORTH OLD MAMMOTH ROAD DISTRICT SPECIAL STUDY

(4) PROVIDE "NO PARKING DURING WINTER STORMS" SIGNS IF PARALLEL PARKING IS APPROVED

(5) NO OUTSIDE DINING ON 8 - 10' SIDEWALKS PER NORTH OLD MAMMOTH ROAD DISTRICT SPECIAL STUDY

TOWN OF MAMMOTH LAKES - DEPARTMENT OF PUBLIC WORKS

NORTH OLD MAMMOTH ROAD DISTRICT SPECIAL STUDY

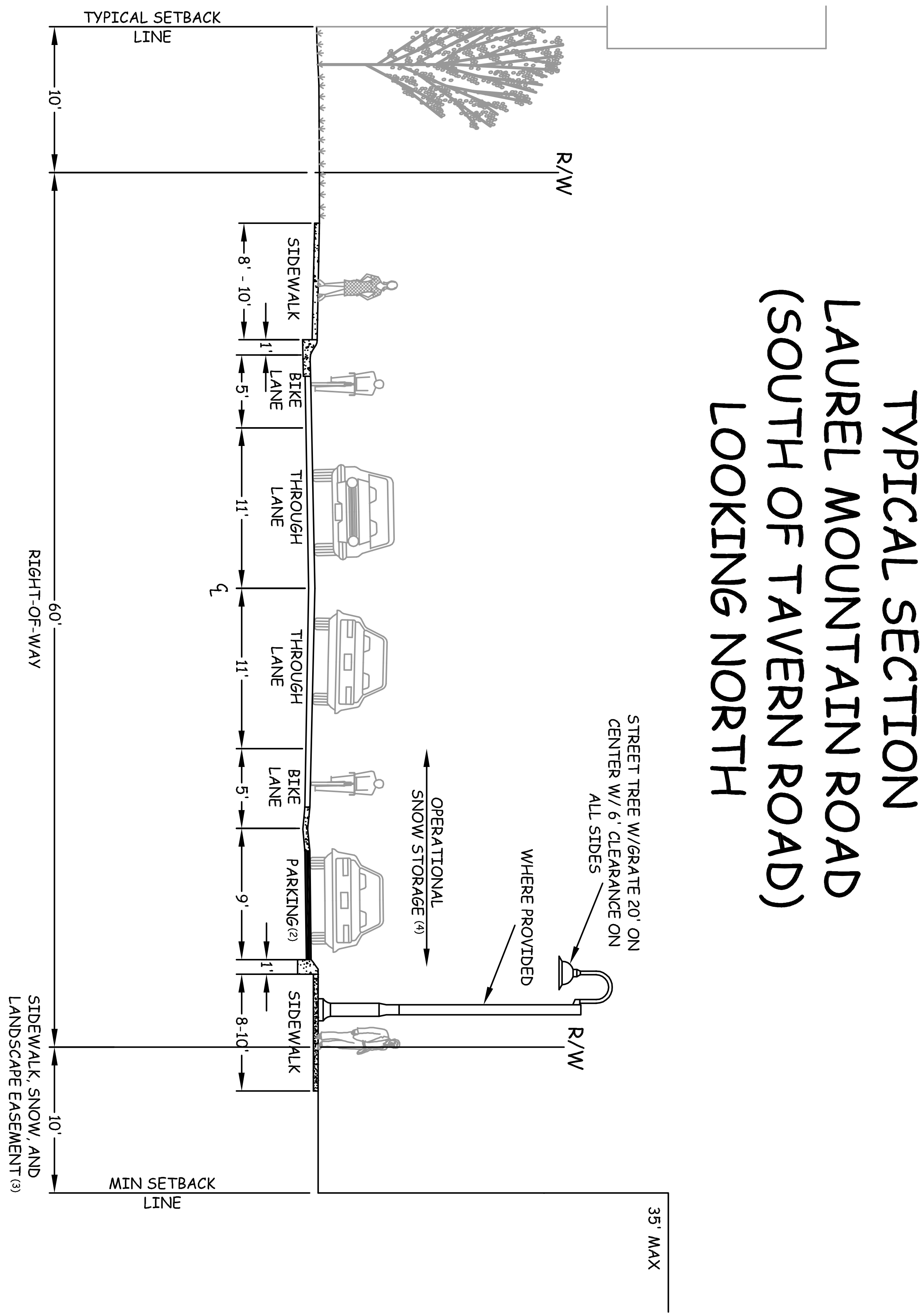
TYPICAL SECTION - LAUREL MOUNTAIN ROAD (NORTH OF TAVERN)

PUBLIC WORKS DIRECTOR APPROVAL: ______ DATE: ______

STANDARD PLAN

\- - - -

SHEET 1 OF 1



NOTES:

(1) SIDEWALKS ON BOTH SIDES PER NORTH OLD MAMMOTH ROAD DISTRICT SPECIAL STUDY

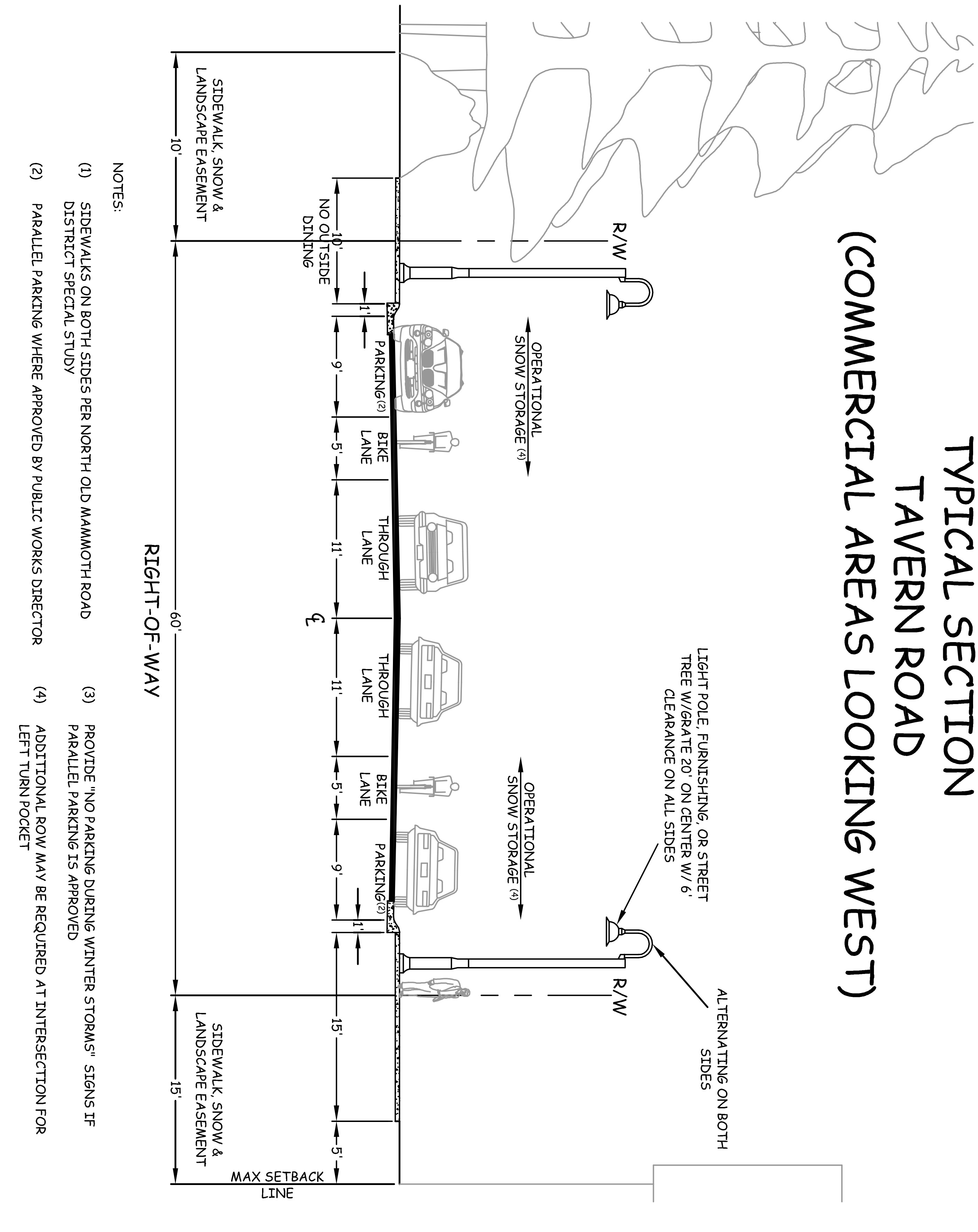
(2) PARALLEL PARKING WHERE APPROVED BY PUBLIC WORKS DIRECTOR

(3) MIN 10' SETBACK PURSUANT TO NORTH OLD MAMMOTH ROAD DISTRICT SPECIAL STUDY

(4) PROVIDE "NO PARKING DURING WINTER STORMS" SIGNS IF PARALLEL PARKING IS APPROVED

TOWN OF MAMMOTH LAKES - DEPARTMENT OF PUBLIC WORKS

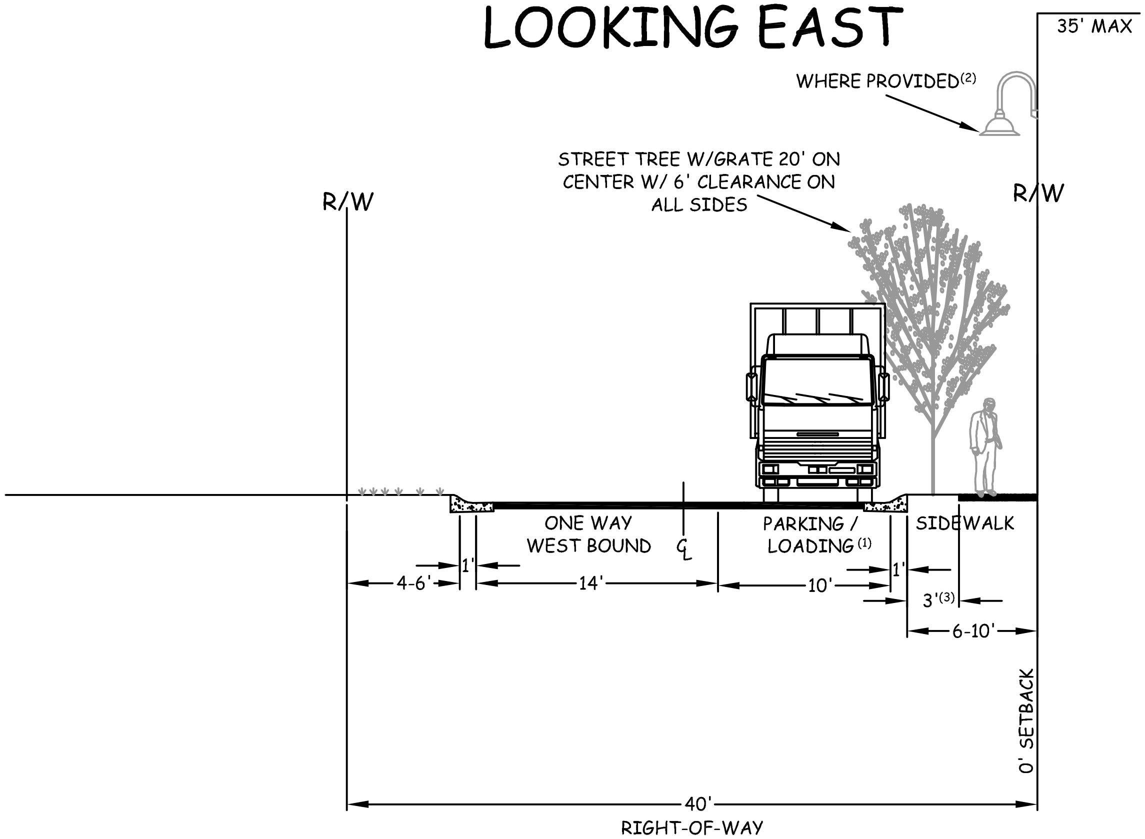
MAMMOTH LAKES CALIFORNIA	**NORTH OLD MAMMOTH ROAD DISTRICT SPECIAL STUDY** **TYPICAL SECTION - LAUREL MOUNTAIN ROAD(SOUTH OF TAVERN)**	STANDARD PLAN - - - -
	PUBLIC WORKS DIRECTOR APPROVAL: ______ DATE: ______	SHEET 1 OF 1



TOWN OF MAMMOTH LAKES - DEPARTMENT OF PUBLIC WORKS

	NORTH OLD MAMMOTH ROAD DISTRICT SPECIAL STUDY **TYPICAL SECTION - TAVERN ROAD (COMMERCIAL AREAS)**	STANDARD PLAN **- - - -**
	PUBLIC WORKS DIRECTOR APPROVAL: ______ DATE: ______	SHEET 1 OF 1

TYPICAL SECTION
ONE-WAY MID-BLOCK CONNECTOR
LOOKING EAST



NOTES:

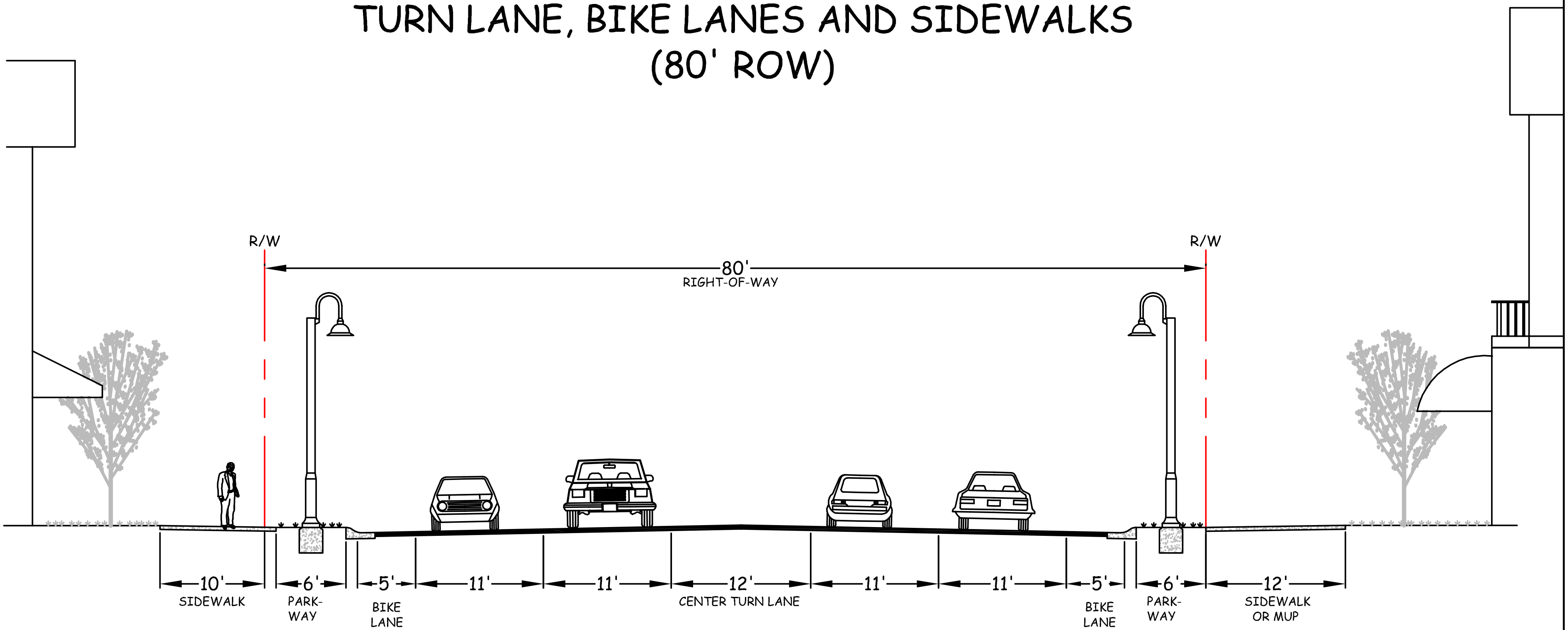
(1) PARKING / LOADING ZONE WHERE APPROVED BY PUBLIC WORKS DIRECTOR

(2) OPTIONAL - ATTACH STREET LIGHTING TO BUILDING FACE. PROVIDE STANDARD LIGHTING AT DRIVES AND INTERSECTIONS

(3) VARIES FROM 0' - 3' TO PROVIDE LANDSCAPE POCKETS

TOWN OF MAMMOTH LAKES - DEPARTMENT OF PUBLIC WORKS		
	NORTH OLD MAMMOTH ROAD DISTRICT SPECIAL STUDY **TYPICAL SECTION - ONE-WAY MID-BLOCK CONNECTOR**	STANDARD PLAN - - - -
	PUBLIC WORKS DIRECTOR APPROVAL: ______ DATE: ______	SHEET 1 OF 1

FOUR-LANE ARTERIAL WITH CENTER TURN LANE, BIKE LANES AND SIDEWALKS (80' ROW)

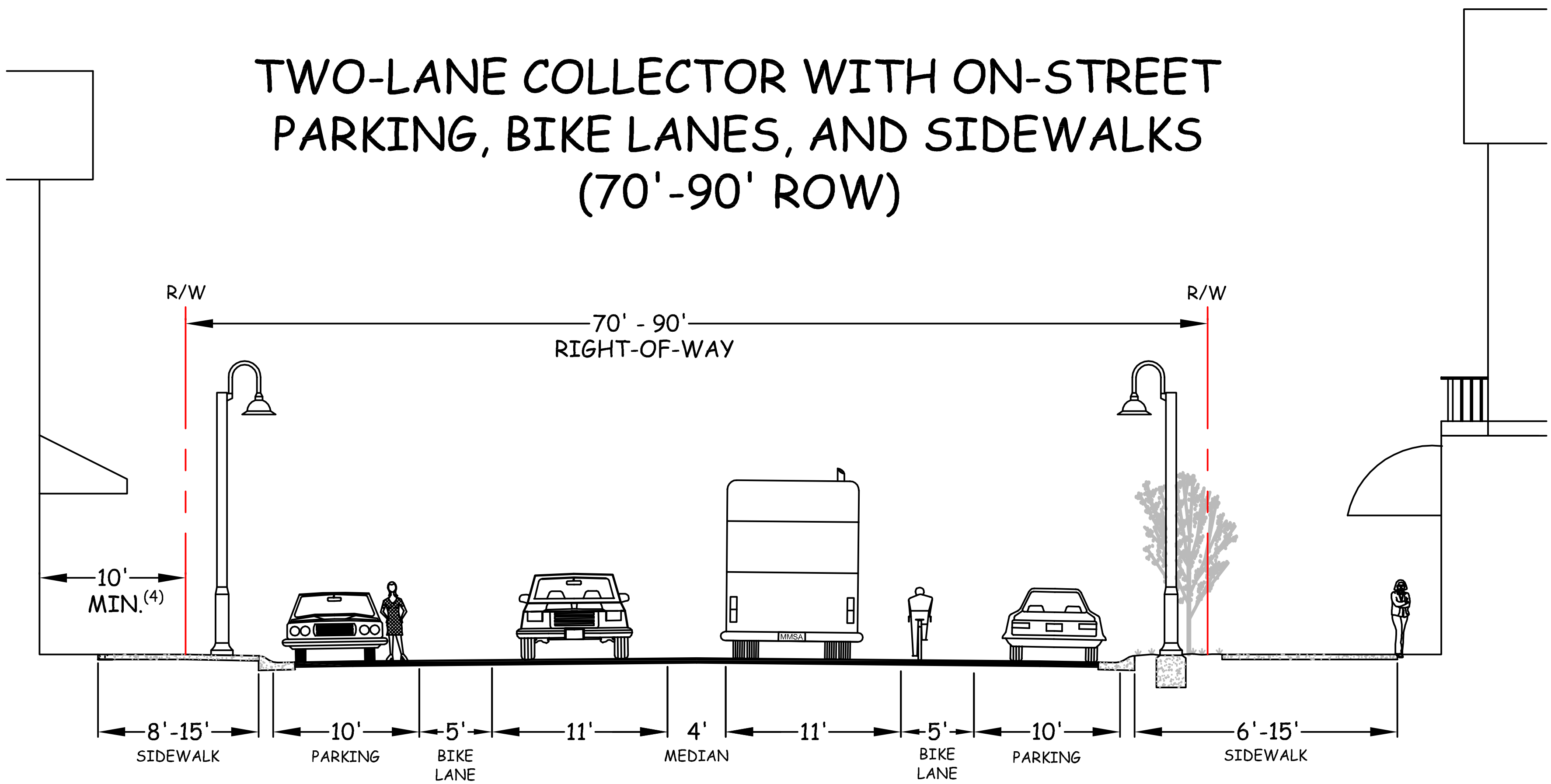


DESCRIPTION:

- 4 THROUGH LANES
- CENTER TURN LANE
- BIKE LANES
- SIDEWALKS OR MULTI-USE PATHS (MUPS)

- CONCEPTUAL TYPICAL SECTION TO BE USED FOR PLANNING PURPOSES ONLY

TWO-LANE COLLECTOR WITH ON-STREET PARKING, BIKE LANES, AND SIDEWALKS (70'-90' ROW)

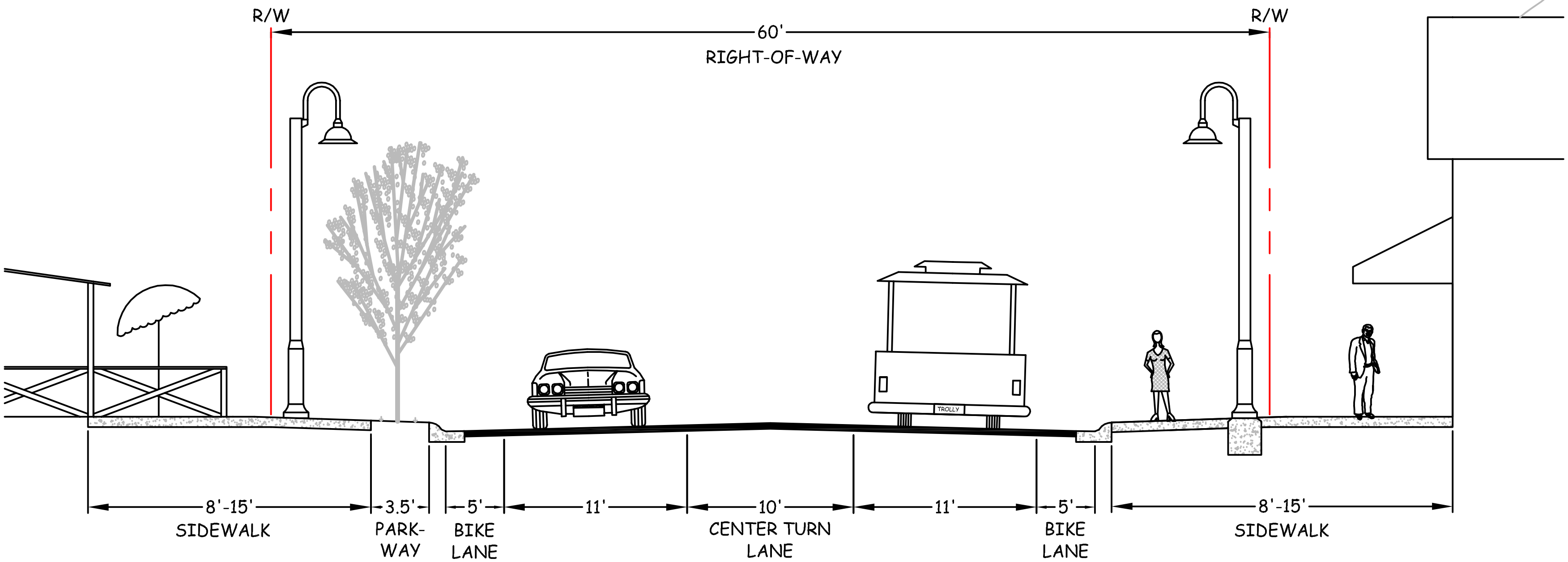


DESCRIPTION:

- 2 THROUGH LANES
- ON-STREET PARKING BOTH SIDES
- BIKE LANES
- SIDEWALKS

- CONCEPTUAL TYPICAL SECTION TO BE USED FOR PLANNING PURPOSES ONLY

TWO LANE COLLECTOR WITH CENTER TURN LANE, BIKE LANES, AND SIDEWALKS NO ON-STREET PARKING (60' ROW)

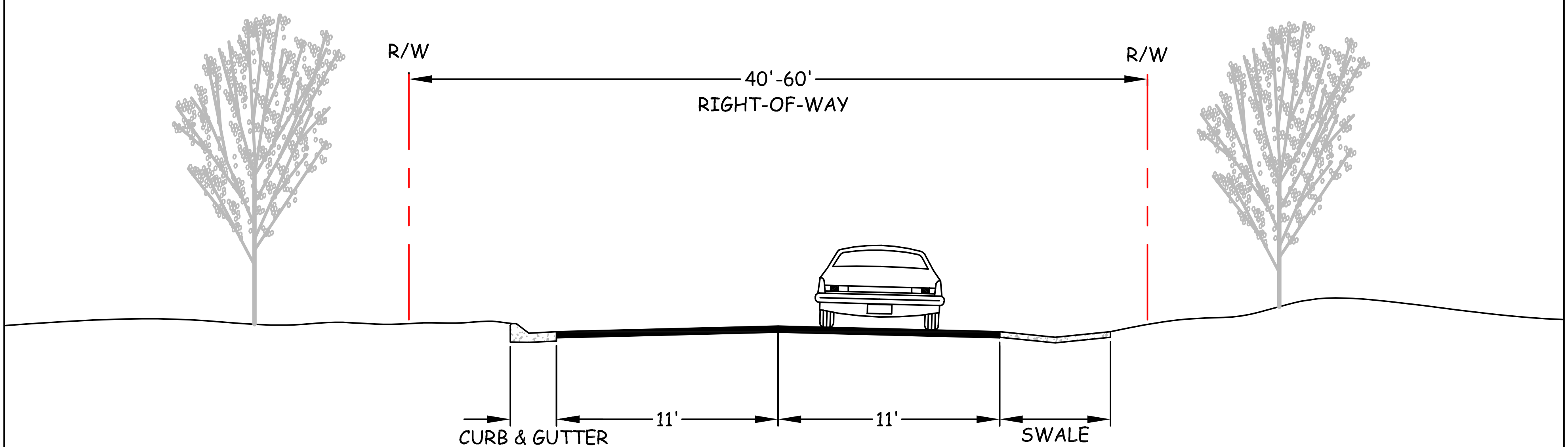


DESCRIPTION:

- 2 THROUGH LANES
- NO ON-STREET PARKING BOTH SIDES
- BIKE LANES
- SIDEWALKS
- CENTER TURN LANE

- CONCEPTUAL TYPICAL SECTION TO BE USED FOR PLANNING PURPOSES ONLY

TWO-LANE LOCAL RESIDENTIAL STREET WITHOUT BIKE LANES OR SIDEWALKS (40'-60' ROW)

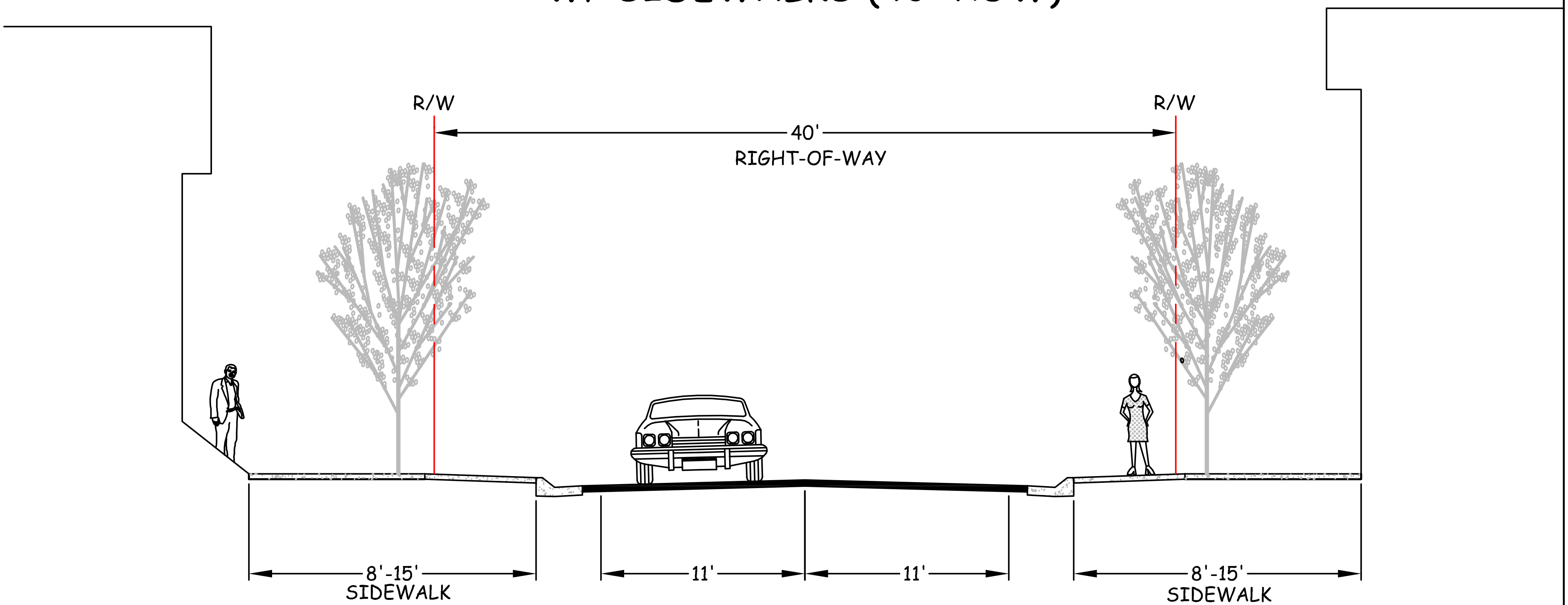


DESCRIPTION:

- 2 THROUGH LANES
- NO SIDEWALKS OR BIKELANES

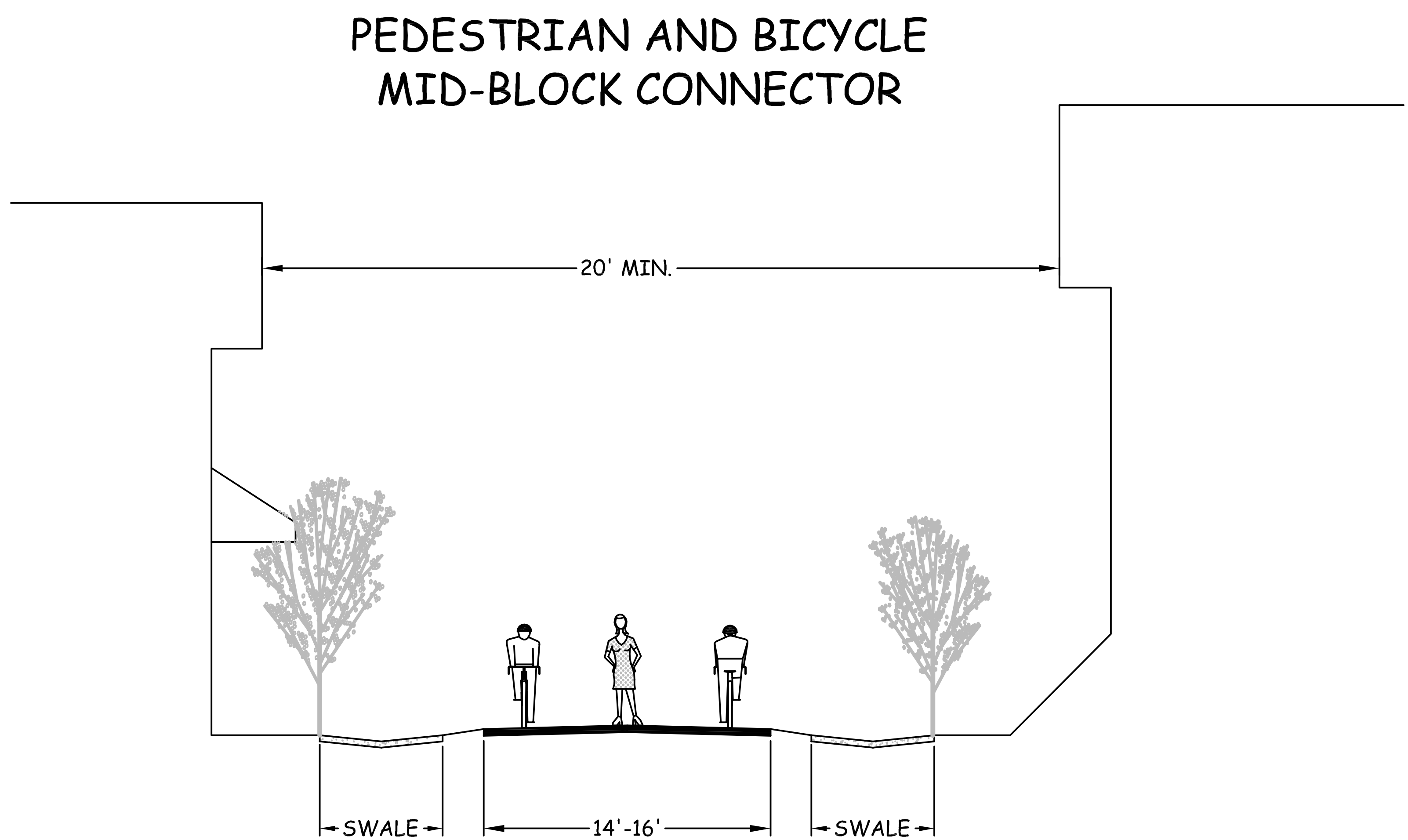
- CONCEPTUAL TYPICAL SECTION TO BE USED FOR PLANNING PURPOSES ONLY

TWO-LANE VEHICULAR MID-BLOCK CONNECTOR W/ SIDEWALKS (40' ROW)



DESCRIPTION:
- 2 THROUGH LANES
- SIDEWALKS

- CONCEPTUAL TYPICAL SECTION TO BE USED FOR PLANNING PURPOSES ONLY



DESCRIPTION:

- PEDESTRIANS AND BICYCLES
- NO VEHICLES
- 14' - 16' WIDE

- CONCEPTUAL TYPICAL SECTION TO BE USED FOR PLANNING PURPOSES ONLY

Appendix E:
Town Traffic Model

Table of Contents:

Town of Mammoth Lakes 2010 Traffic Model
Quick Look

Purpose

The purpose of this modeling effort is to test a variety of possible new roadway connections, mode splits, and land use assumptions and assess the potential impacts the various scenarios may have on the overall transportation system in Mammoth Lakes.

Basics

- 167 Traffic Analysis Zones
- Design Day: Typical winter Saturday (average of Saturday ADTs from last 3 winter seasons measured on Main Street at Old Mammoth Road and at Lake Mary/Minaret Road)
- 20-year buildout horizon

Existing Conditions Model

The existing (2009) conditions model consists of existing land uses, roadway network, and traffic volumes. Existing traffic volumes are adjusted to reflect the "design day" and the "design day" volumes are used to calibrate the existing conditions model.

- Uses existing roadway network
- Uses existing land uses (from GIS)
- Comprehensive traffic volume data collected in January 2009
  - 18 intersections (turning movements)
  - 21 roadway locations (count stations)

"Buildout Baseline" Model

The "buildout baseline" serves as a starting point from which to test and compare alternatives or scenarios of buildout and how changes to the roadway network, increases in transit ridership, and changes to land use might impact overall traffic volumes.

- Existing roadway network
- Buildout "baseline" land uses
  - Units: based on PAOT methodology, including approved projects
  - Commercial/Industrial:
    - Approved projects
    - Assumes development of vacant land and redevelopment of some projects at a reasonable level in the Commercial General, Commercial Lodging, and Industrial zones (CG/CL = 0.25 FAR; Ind. 0.90 FAR)

Buildout Alternative Models (1 through 5)

Model alternatives were developed to represent a "layered" approach to future roadway network and land use changes, as described below. Table 1 provides a more detailed description of the model alternatives and Figure 1 illustrates the proposed roadway network additions.

- Alternative 1 – Models buildout "baseline" land uses with new streets that are anticipated to be implemented with new development.
- Alternative 2 – Models buildout "baseline" land uses with all new streets that would be anticipated to be constructed as part of the complete circulation network as recommended

by the Downtown Neighborhood District Planning Concept (DNDP) and Mobility Plan. (This alternative maintains the Main Street Frontage Roads)

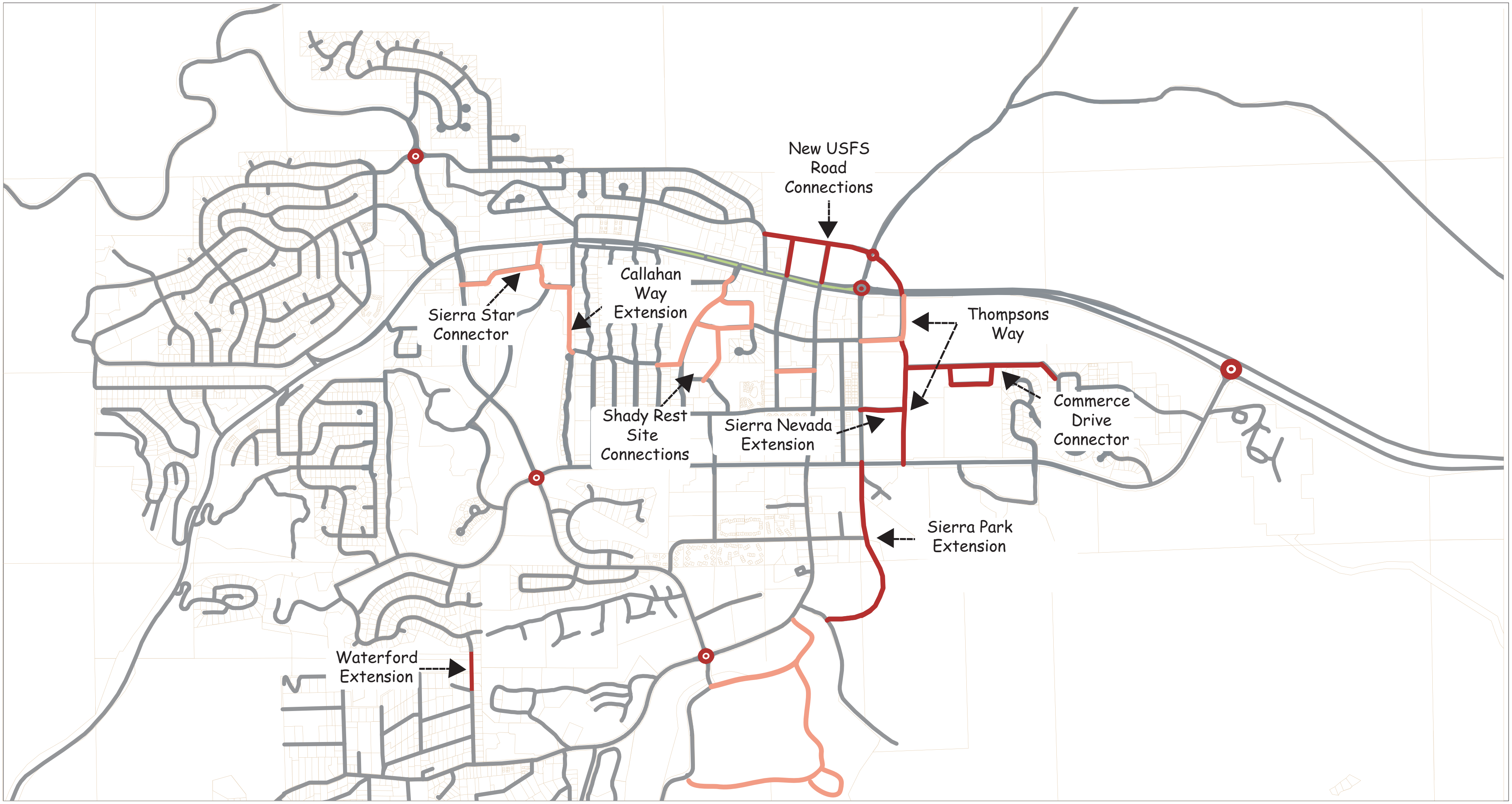
- Alternative 3 – Same as above Alterative 2; however, the Main Street Frontage Roads are removed.
- Alternative 4 – Same as Alternative 3; however, the land use assumptions are increased to include additional residential and commercial space possible under the DNDP.
- Alternative 5 – Same as Alternative 4; however, an additional transit line is added to Minaret Road to serve planned development.

Results

Preliminary intersection Level of Service (LOS) results are provided in Table 2. As shown, all existing *signalized* intersections operate at an acceptable LOS (LOS D or better) under current conditions and are expected to maintain an acceptable LOS under all future alternatives. LOS at the existing signalized intersections appears to improve modestly with the addition of new roadway links and transit service as modeled under the alternatives and there does not appear to be a significant impact to signalized intersection LOS under Alternatives 4 and 5, in which increased land use along Main Street associated with the DNDP was modeled.

However, as shown in Table 2, a number of existing *unsignalized* intersections currently operate, or are close to operating, at an unacceptable LOS (LOS D or worse), particularly along Main Street and Old Mammoth Road. The LOS for many of these intersections is expected to worsen under future buildout "baseline" conditions and to remain at unacceptable levels of service under all alternatives, even with the addition of new roadway links and transit service, if intersection improvements are not implemented (e.g. installation of roundabouts or signals).

PREFERRED ALTERNATIVE: CIRCULATION NETWORK



Downtown Neighborhood District Plan

Figure 1
Future Circulation Network

New Streets Implemented by Other Planned Development
New Streets Recommended by DNDP
Existing Streets
Proposed Roundabouts
Median - Greenway

0 200 400 800 1,200 1,600 2,000 2,400 Feet

Town of Mammoth Lakes
Table 1: Buildout Traffic Model Alternatives

Alt.		Description	Future Roadway Network	Future Land Use Assumptions	Other Assumptions
X	Buildout "Baseline" + Existing Network	This alternative models buildout with the existing roadway network. Land use assumptions are based on PAOT and traffic model for residential uses and commercial/industrial land uses.	Existing network	o Residential: use PAOT assumptions for units and rooms. o Commercial: Approved projects + 0.25 FAR for vacant/redevelopment land in CG/CL zones o Industrial: 0.9 FAR for vacant land in Industrial zone	Transit share = 14%
1	Buildout "Baseline" + "Future Development Roads"	This alternative models the existing roadway network plus roads that are reasonably expected to be built with future development. (The frontage roads are maintained in this alternative.) Land use assumptions are the same as above.	Existing network plus Future Development Roads	Same as above	Transit share = 14%
2	Buildout "Baseline" + "Complete Circulation Network"	This alternative models the existing roadway network plus roads that are recommended in the DNDP/Mobility Plan Complete Circulation Network. (The frontage roads are maintained in this alternative.) Land use assumptions are the same as above.	Existing network plus "Complete Circulation Network"	Same as above	Transit share = 14%
3	Buildout "Baseline" + "Complete Circulation Network" (No Frontage Roads)	This alternative models the existing roadway network plus roads that are recommended in the DNDP/Mobility Plan Complete Circulation Network. The frontage roads are removed in this alternative. Land use assumptions are the same as above.	Existing network plus "Complete Circulation Network" – Frontage Roads	Same as above	Transit share = 14%

Alt.		Description	Future Roadway Network	Future Land Use	Other Assumptions
4	Buildout "DNDP" + "Complete Circulation Network" (No Frontage Roads)	This alternative models the existing roadway network plus roads that are recommended in the Mobility Plan/DNDP Complete Circulation Network. The frontage roads are removed in this alternative. Land use assumptions are increased from the alternatives above to include rooms/units and commercial space possible under the DNDP.	Existing network plus "Complete Circulation Network" minus Frontage Roads	o Additional units/rooms and commercial square footage available due to ROW relinquishment in DNDP Study Area (4 acres/175,000 sq. ft. additional) between Manzanita and Sierra Park). ▪ Residential: Additional 320 rooms possible at 80 rpa ▪ Commercial (CG/CL): 175,000 sq. ft additional. Need to determine appropriate FAR. o RV Park – New Sports/Events Park o FS Compound – New Civic Center, Retail and MF Res units ▪ 30,000 sq. ft. additional retail ▪ 82 MF units o Industrial: 0.9 FAR for vacant land in Industrial zone	Transit share = 13% (transit share decreased slightly due to increased land use)
5	Buildout "DNDP " + "Complete Circulation Network" (No Frontage Roads) + Increased Transit	Roadway network is the same as Alternative 4, but transit ridership is increased by adding a transit line to Minaret Road from Snowcreek to Main Lodge and increasing frequency on existing lines. Land use assumptions are the same as Alternative 4.	Same as Alternative 4 with additional transit	Same as Alternative 4	Transit Share = 18 %

Table 2

Future Alternatives Comparison - Intersection Level of Service Results[1]

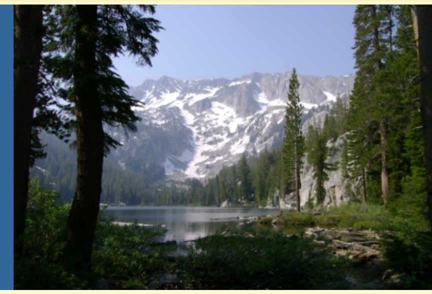
Intersection	**Existing**		**Base Future**		**Alternative 1**		**Alternative 2**		**Alternative 3**		**Alternative 4**		**Alternative 5**	
Signalized	Overall LOS	Overall Delay (sec./veh.)	Overall LOS	Overall Delay (sec./veh.)	Overall LOS	Overall Delay (sec./veh.)	Overall LOS	Overall Delay (sec./veh.)	Overall LOS	Overall Delay (sec./veh.)	Overall LOS	Overall Delay (sec./veh.)	Overall LOS	Overall Delay (sec./veh.)
Lake Mary Road/Canyon Boulevard	A	9.2	A	8.8	A	9.4	A	9.4	A	9.2	A	9.4	A	9.1
Main Street/Minaret Road	C	29.7	D	37.2	C	33.4	C	32.6	C	32.7	C	33.8	C	31.8
Main Street/Old Mammoth Road	B	14.3	B	14.8	B	14.5	B	14.1	B	14.0	B	14.0	B	14.2
Meridian Boulevard/Minaret Road	B	15.5	C	22.0	C	22.0	C	21.2	C	20.9	C	21.3	C	20.2
Meridian Boulevard/Old Mammoth Road	B	19.7	C	22.6	C	21.9	C	22.1	C	20.9	C	22.1	C	21.9
Unsignalized	Critical Approach LOS	Critical Approach Delay (sec./veh.)[2]	Critical Approach LOS	Critical Approach Delay (sec./veh.)[2]	Critical Approach LOS	Critical Approach Delay (sec./veh.)[2]	Critical Approach LOS	Critical Approach Delay (sec./veh.)[2]	Critical Approach LOS	Critical Approach Delay (sec./veh.)[2]	Critical Approach LOS	Critical Approach Delay (sec./veh.)	Critical Approach LOS	Critical Approach Delay (sec./veh.)
Minaret Road/Forest Trail	**F**	**0.37**	**F**	**1.24**	**F**	**0.94**	**F**	**1.02**	**F**	**1.03**	**F**	**0.91**	**F**	**0.76**
Lake Mary Road/Davison Road/Kelley Road	B	12.9	B	14.4	B	14.4	B	14.9	B	14.7	B	14.9	B	14.2
Main Street/Mountain Boulevard	D	32.2	**F**	**1.30**	**F**	**2.25**	**F**	**1.85**	**F**	**2.67**	**F**	**> 7.00**	**F**	**5.64**
Main Street/Center Street	D	31.9	**F**	**1.19**	**F**	**7.60**	**F**	**6.75**	**F**	**1.44**	**F**	**1.66**	**F**	**1.55**
Main Street/Forest Trail	**F**	**1.17**	**F**	**2.09**	**F**	**1.74**	**F**	**1.68**	**F**	**1.88**	**F**	**2.76**	**F**	**2.42**
Main Street/Laurel Mountain Road	**F**	**0.87**	**F**	**1.46**	**F**	**1.08**	**F**	**0.87**	**F**	**0.94**	**F**	**1.86**	**F**	**1.37**
Main Street/Sierra Park Road/Sawmill Cutoff	B	13.4	C	16.3	C	16.5	C	16.5	C	16.3	C	16.9	C	16.9
Old Mammoth Road/Tavern Road	C	23.9	E	47.9	**F**	**0.55**	C	23.8	D	28.6	**F**	**0.60**	D	34.6
Old Mammoth Road/Sierra Nevada Road	E	35.4	**F**	**1.00**	**F**	**0.66**	**F**	**0.54**	**F**	**0.55**	**F**	**0.84**	**F**	**0.77**
Meridian Boulevard/Majestic Pines Drive	B	11.0	B	14.4	B	14.2	B	14.0	B	14.0	B	14.1	B	13.8
Meridian Boulevard/Sierra Park Road	A	8.2	A	8.4	A	8.4	A	8.4	A	8.3	A	8.3	A	8.3
Old Mammoth Road/Chateau Road	C	18.6	**F**	**0.67**	**F**	**0.59**	D	32.0	D	30.6	E	42.7	E	40.3
Old Mammoth Road/Minaret Road	B	14.5	**F**	**6.44**	**F**	**1.27**	**F**	**1.07**	**F**	**1.18**	**F**	**1.26**	**F**	**1.10**

Notes:

(1) Performed in the *Synchro* capacity analysis software using the 2000 *Highway Capacity Manual* methodology.

(2) For unsignalized intersections with a Level of Service "F", critical approach volume-to-capacity ratio is reported instead of delay.

Town of Mammoth Lakes Travel Model



Prepared for

THE TOWN OF MAMMOTH LAKES CALIFORNIA

LSC TRANSPORTATION CONSULTANTS, INC.

Town of Mammoth Lakes Travel Model

Final Report

Prepared for:

Town of Mammoth Lakes
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516 North Tejon Street
Colorado Springs, CO 80903
(719) 633-2868

LSC #084870

February 15, 2011

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TRANSPORTATION
CONSULTANTS, INC.

CHAPTER I
Introduction

This report documents the development of a computer-based transportation model for the Town of Mammoth Lakes, California. In addition to documenting the model itself, this report also presents an explanation of the development of land use quantities used in the model.

The Town of Mammoth Lakes had previously used the TRANPLAN modeling software, which was updated through 1998. For this project, a new model development effort has been completed using the TransCAD modeling software, borrowing some information from the previous model as described below.

The purpose of this model is to be able to test and assess changes to land use and the transportation system, and to thereby inform decision making for the benefit of the Town of Mammoth Lakes. The model is designed and intended for those types of decisions that go beyond site-level traffic impact studies usually required as part of the development review process. The model uses winter traffic levels as the basis for analysis.

OVERVIEW OF THE MODELING PROCESS

A transportation network model is a computerized representation of the transportation system. A model is useful for comparing the impacts of various growth assumptions and for evaluating alternative transportation improvement programs. Although it would also be possible to use growth factors based on recent trends to project future traffic and transit volumes, a model allows the use of better projections of growth within the area, accounting for subarea development. Computerized transportation models are also the best means by which to evaluate the flow of traffic between various land uses and to consider the effects of traffic congestion on travel times and driver route choice.

Among the various computer software modeling packages, the TransCAD software package was selected for the Town of Mammoth Lakes model as it provides the necessary modeling capabilities while providing GIS opportunities that can be used to coordinate transportation and land use planning and to better communicate the results of the traffic analyses in graphic form. In addition, it is well supported by its developer and is being used by many other agencies in the region.

Transportation models, by definition, are representations of travel choices made by individuals across a geographic area, impacting physical structures such as roads, bridges, parking areas, and intersections. Each model should rely on sound behavioral theory of how individuals make travel choices. The structure of choice sequences suggested by the model and the variables used in the model should reflect a logical process of decision making followed by travelers in deciding when, where, and how to travel.

The travel choices of individuals are most commonly represented in the United States by what is referred to as the "four-step process." These four steps represent the thought process of the individual, who makes four travel decisions as follows: (1) the decision that a trip is necessary to fulfill some need or purpose (trip generation), (2) the decision where that need/purpose is best fulfilled (trip distribution), (3) the decision as to which means is best to get there (mode choice), and (4) the decision about which route to take (trip assignment). Trip generation is described in Chapter III, trip distribution in Chapter IV, mode choice in Chapter V, and trip assignment in Chapter VI.

Geographic patterns are represented by data considered to be at the heart of individual travel decisions—where people live, where people work, and where people recreate, shop, or otherwise interact. The specific data proposed for use in this project are discussed more fully below.

Land use quantities are represented by a series of Traffic Analysis Zones (TAZs). A total of 167 TAZs and three external stations were defined to encompass the model area. TAZs were generally defined to follow property lines and to accurately reflect vehicular access to/from the roadway network. As discussed in detail below, land use quantities were developed to reflect existing uses within each TAZ.

The physical structures of travel are represented through a combination of links (paths) and nodes (intersections or transfer points). Zone centroids are special types of nodes associated with both the TAZ data mentioned above and the origins and destinations of an individual's trips. The links typically have a travel time associated with them, either explicitly given or inferred from speed and distance information.

As with any representation of a real system, there are associated limitations. To minimize the effects of these limitations, the model is "calibrated" so that it matches reality for all critical links in the system. In other words, adjustments are made until the modeled traffic volumes approximate existing traffic volumes, often referred to as "ground counts." Once the model is calibrated, then and only then can the model be used to estimate future travel patterns and volumes.

MODEL STUDY AREA

The model was developed to encompass the Town of Mammoth Lakes in western Mono County. This includes portions of State Route (SR) 203 but does not include US 395. SR 203 becomes Main Street in town. The other major roads in the model are Minaret Road, Old Mammoth Road, and Meridian Boulevard.

The study area includes the following major ski base areas:

- Eagle Lodge
- Canyon Lodge
- Main Lodge (including the Mill Café area)
- North Village

The study area has the following external nodes:

- SR 203/Mammoth Scenic Loop north of Minaret Road
- SR 203 east of Meridian Boulevard and just west of US 395
- Minaret Road just west of the Main Lodge

Four other external nodes were considered but deemed unnecessary for a winter model. (See more below for discussion of the winter model design volumes.) The following roads are closed or have very little traffic in the winter.

- Sawmill cutoff north of SR 203/Main Street
- Mammoth Creek Road east of Old Mammoth Road
- Sherwin Creek Road east of Old Mammoth Road
- Lake Mary Road south of Old Mammoth Road

MODEL DESIGN AND PURPOSE

Each travel model has an intended purpose, with a base year to which the model is calibrated, and a future year toward which the model is intended to forecast. This travel model is intended to represent a typical winter Saturday under daily and peak-hour conditions. The model is intended to provide information about link volumes and intersection approach volumes. The model is also intended to provide information about transit boardings on a route and system level.

Although the approach volumes at intersections can be used in this manner, the travel model is not intended to specifically represent or produce turning count movement forecasts. Link volumes are inclusive of both roadway and transit route link volumes.

Although the model can be used to estimate volumes of boardings at specific transit stops, it is not intended to be completely accurate at this level for all routes. The model is, however, intended to be fairly accurate for the ski base areas and downtown so that parking, congestion, and mode splits are useful in these key locations.

Calibration Year

The base year for the model is 2009. Transportation and land use data from 2007 through 2009 have been used to calibrate the model and to adjust collected traffic data to the “design day.” The 2009 volumes that were collected were adjusted slightly higher than actual to account for trend line growth occurring in most recent years but not 2009 due to the downturn in national, state, and local economies. The remainder of this chapter sets the targets for calibration. Chapters

II through V describe the calibration process. Then Chapter VI shows how well the model matches the base year calibration targets.

Horizon Years

The model is intended to be used to forecast a "buildout" horizon year of 2030 or 2035 as determined by the Town of Mammoth Lakes. With the base year calibration complete and those results reviewed, future forecasting was undertaken. Additional checking for reasonableness was conducted to verify that each of the model's four steps were producing results within the bounds of expected rates of growth in population, employment, skier visits, and other community indicators of travel as described in the Model Inputs chapter. The future-year reasonableness checks are presented in Chapter VII.

Trip Purposes

This travel model uses the following five trip purposes to describe the trip-making characteristics of individuals in Mammoth Lakes:

- H-REC (home-based recreation)
- H-S (home-based shopping)
- H-W (home-based work)
- H-O (home-based other)
- O-O (other trips)

All home-based trips start or end at the home. In other words, the purpose of the trip is to fulfill a need for the home, irrespective of the direction of the trip, whether from home to a destination, or the reverse, from a destination to home. For the model, home-based recreation is primarily a trip with skiing at one end and the home at the other end of the trip. Home-based shopping trips are primarily a trip with a retail store at one end and the home at the other end of the trip. Home-based work trips, are trips between work and home or home and work. Home-based other trips have a governmental, commercial, industrial, service, or other purpose at one end, with the home at the other end of the trip. Examples of home-based other trips may include, but are not limited to, trips to the post office, the auto mechanic, a lawyer or accountant, a doctor or dentist, or similar trips.

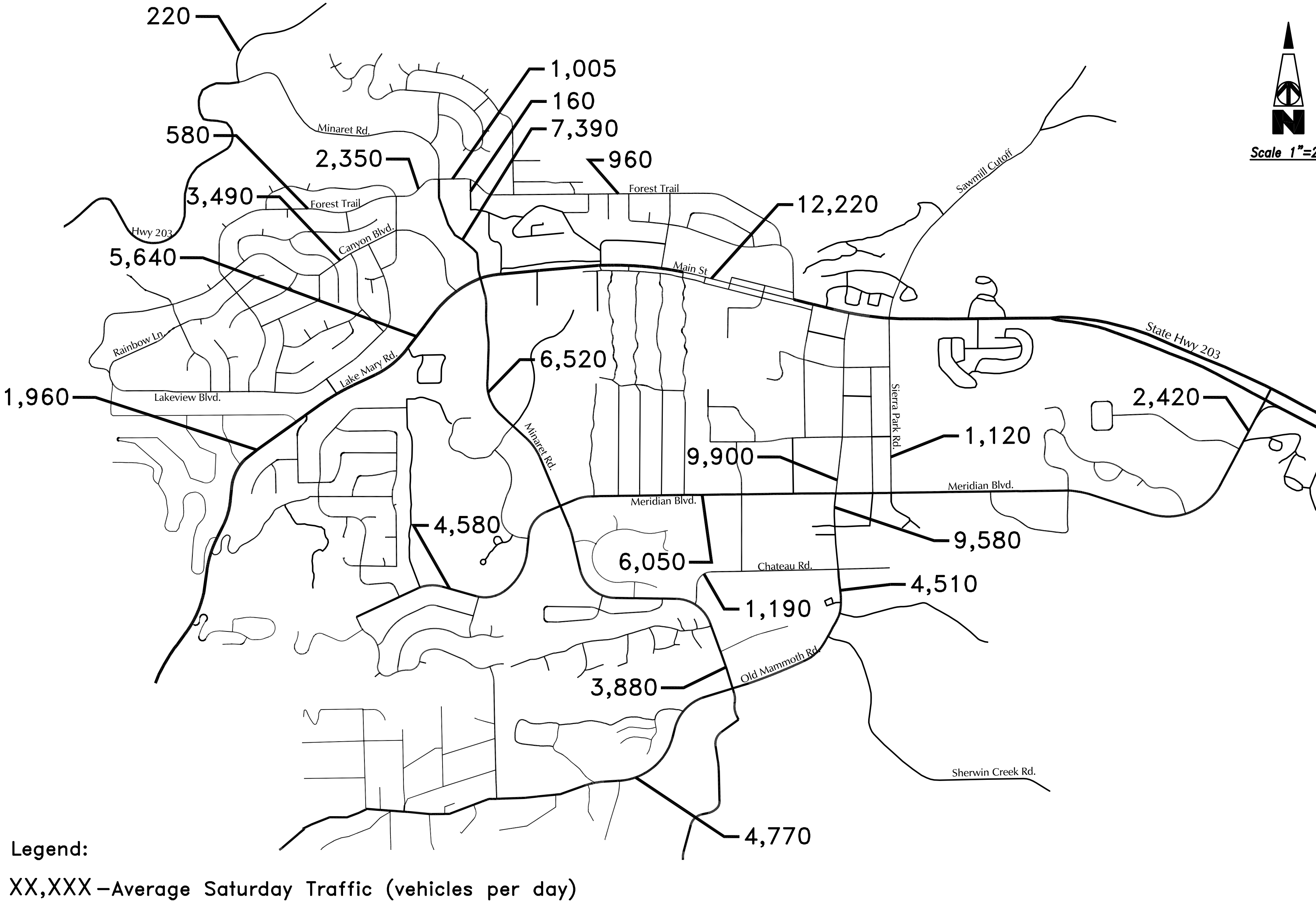
The O-O trips fulfill a purpose not associated with the home at either end of the trip. These trips are sometimes called non-home-based (NHB) trips. Going to lunch from work is a O-O trip because it fulfills the need to continue working. Going to the gas station between errands fulfills the need to continue making trips.

DEVELOPMENT OF WINTER 2009 DESIGN VOLUMES

A crucial step in development of a traffic model is determining the appropriate level of traffic volumes to use as the basis for the design of the model. This is particularly challenging in areas that experience large variations in traffic levels, such as in Mammoth Lakes where traffic volumes vary greatly by time of day, day of week, and by season depending on visitation trends.

To avoid the development or expansion of facilities that are needed only a relatively few days per year, or hours per year, it is standard practice to use a design volume level that is slightly less than the absolute peak traffic volume. In order to accomplish this, the Town of Mammoth Lakes uses the concept of the "typical winter Saturday peak hour" as the basis for the design of facilities. While daily traffic volumes in Mammoth Lakes are sometimes the highest in the summer months, the highest peak-hour volumes are typically experienced on winter Saturdays, during the afternoon hours when skiers "download" from the Mammoth Mountain Ski Area.

Existing 2009 winter Saturday design volumes for the study were developed through a sequence of steps. Weekday and Saturday 24-hour traffic counts were conducted at a total of eight locations throughout the Town of Mammoth Lakes. These counts were "tube counts" intended to obtain volumes in each direction of a road link (link volumes) between intersections. These counts were conducted from Wednesday, January 28, 2009 to Wednesday, February 4, 2009. These data were supplemented with 24-hour traffic counts taken by the Town's permanent count stations. A total of 13 additional 24-hour counts were obtained for a total of 21 locations. A map showing the location and Saturday 24-hour volume at each location is presented in Figure I-1.



Legend:

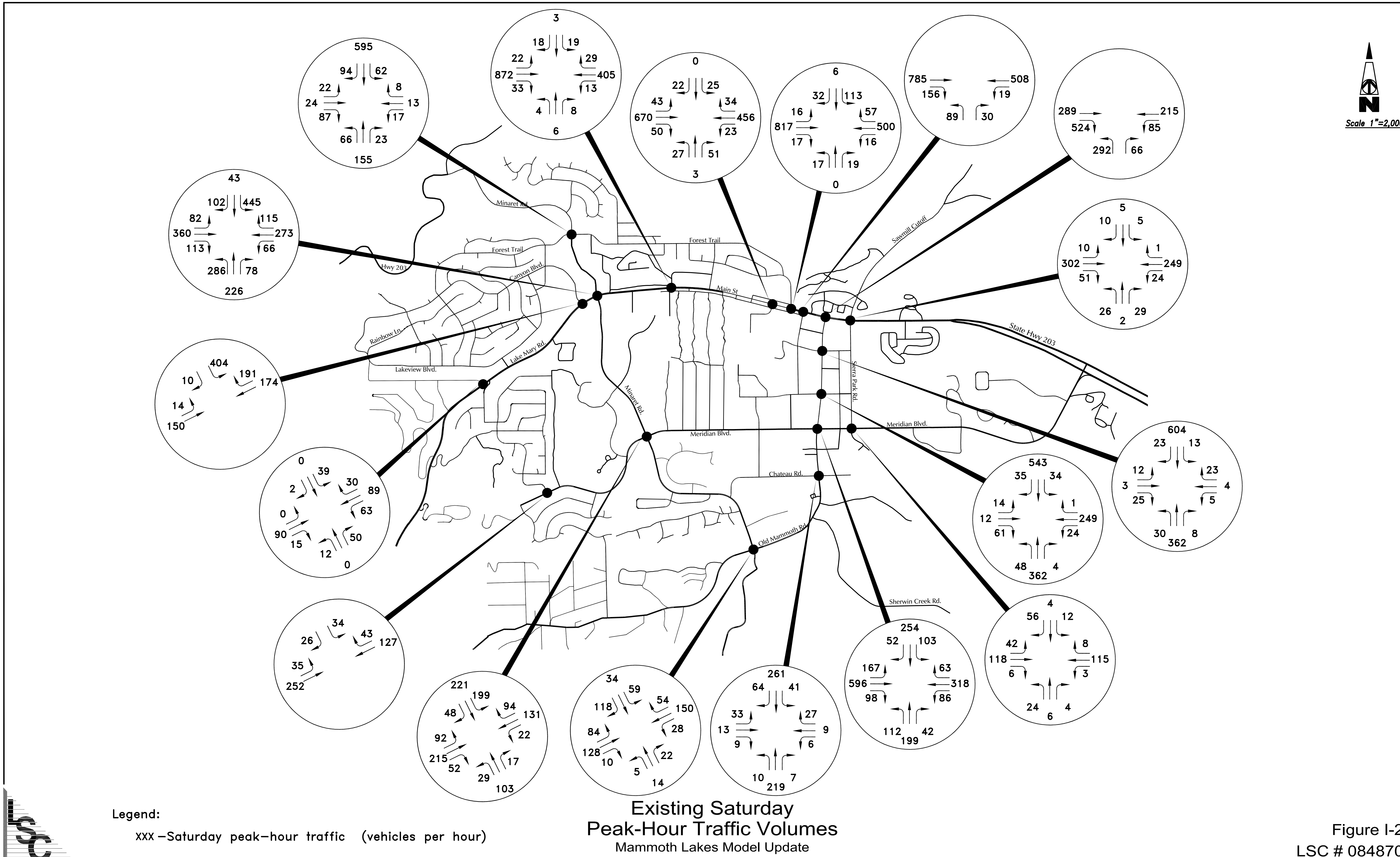
XX,XXX – Average Saturday Traffic (vehicles per day)

Existing Saturday
Daily Traffic Volumes
Mammoth Lakes Model Update

Figure I-1
LSC # 084870

D:\LSC-Projects\2008\084870\MAMMOTH_BASEr2.dwg, Existing Saturday ADT, 11/30/2010 12:26:52 PM

In addition to the 24-hour traffic counts, weekday and Saturday peak-hour intersection traffic counts were conducted at a total of 18 intersections on Friday, January 30, 2009 and Saturday, January 31, 2009. Intersection counts, also known as turning movement counts, are intended to show how many people make turns (left or right) or continue through an intersection without turning. A map showing the location of these intersections and the peak-hour volumes observed at each is presented in Figure I-2.



Legend:

XXX –Saturday peak–hour traffic (vehicles per hour)

Existing Saturday
Peak-Hour Traffic Volumes
Mammoth Lakes Model Update

Figure I-2
LSC # 084870

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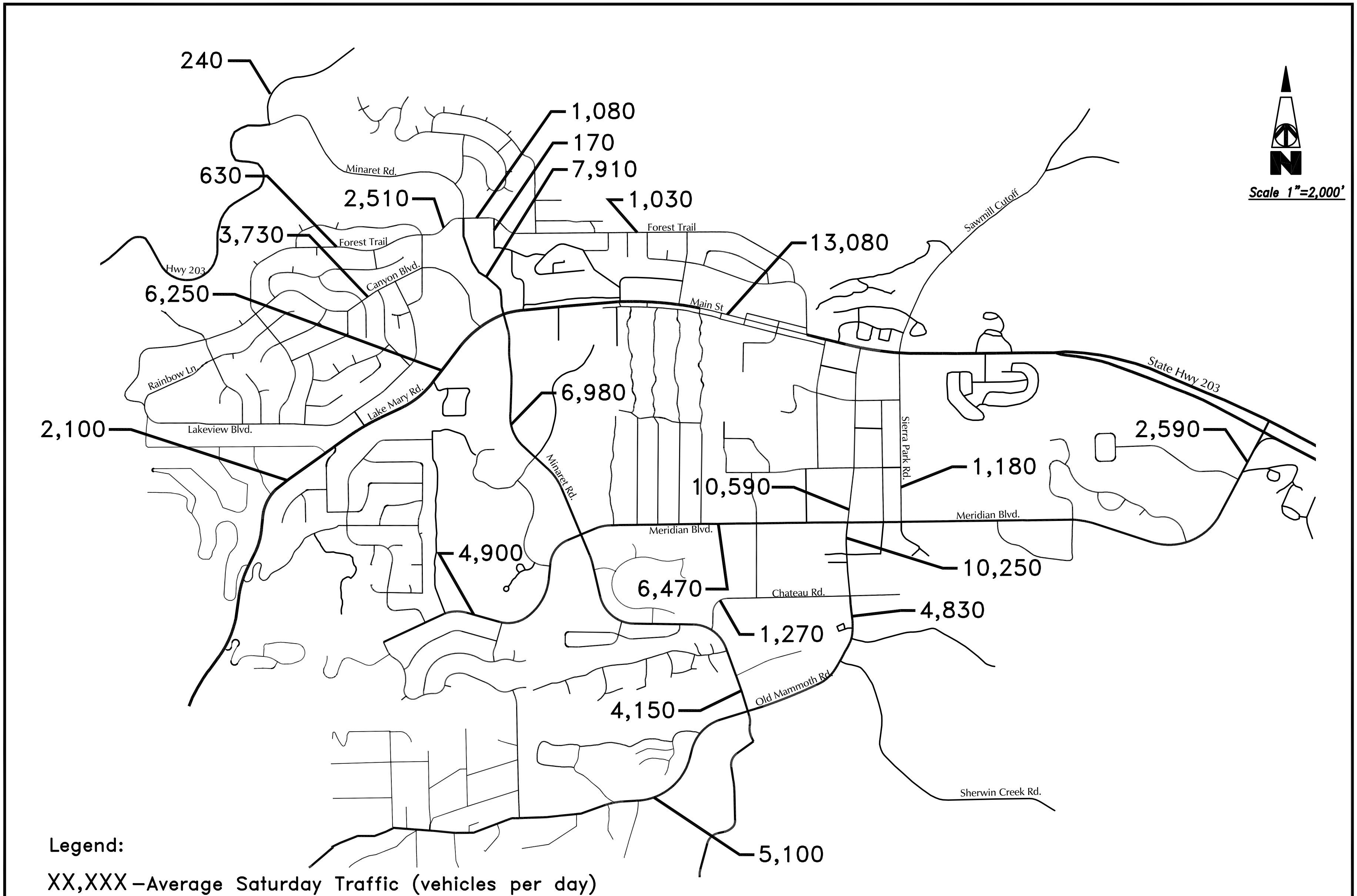
To develop the travel demand model design hour, daily traffic volumes for each Saturday during the three recent winter seasons (06/07, 07/08, 08/09) were obtained from Caltrans' permanent count stations at two major intersections on Main Street (Old Mammoth Road, Lake Mary/Minaret Road). The volumes from each Saturday during these three winter seasons were averaged to determine the average daily traffic volume on Main Street during a "typical winter Saturday." The average daily volume was then compared to the average volume that occurred during the date of the Town's most recent extensive and comprehensive traffic volume survey, which occurred on Saturday, January 31, 2009 at all major intersections and roadway segments within Mammoth Lakes.

This comparison was used to develop a "factor" of 1.07, which was applied to the collected intersection and roadway segment volumes which were reported in Figures I-1 and I-2. The adjusted volumes are reported in Figures I-3 and I-4. The adjusted volumes are used to calibrate the travel demand model so that it more accurately represents a "typical winter Saturday."

It should also be noted that, consistent with standard analysis procedures elsewhere, level of service and capacity were not adjusted to account for snow conditions. The occurrence of stormy/snowy weather conditions and snow on the roadways occurs over a relatively small proportion of the winter and vehicle traffic generally decreases significantly in inclement weather conditions. Furthermore, it would be speculative to try to determine the impact to roadway capacity resulting from stormy conditions, as conditions are unique to each storm, as is driver behavior. This approach is consistent with other traffic analyses and travel demand models that LSC has prepared in similar areas with high annual snowfall, such as the Lake Tahoe region; Park City, Utah; and Aspen, Colorado.



Existing Saturday
(Adjusted to Peak Winter Saturday)
Daily Traffic Volumes
Mammoth Lakes Model Update

Figure I-3
LSC # 084870

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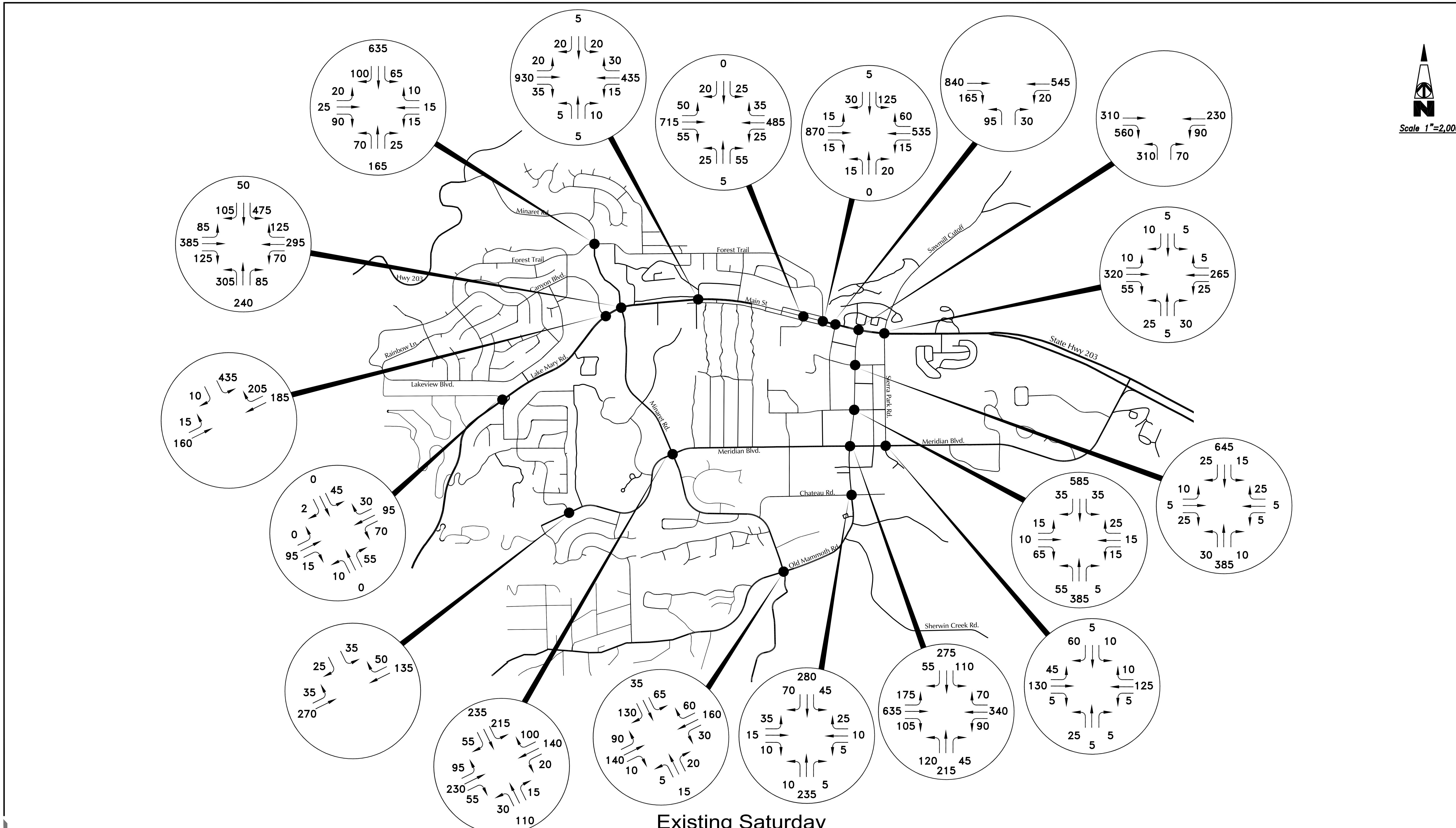


Legend:

XXX – Saturday peak-hour traffic (vehicles per hour)

Note: Traffic volumes are rounded to nearest five.

Existing Saturday
(Adjusted to Peak Winter Saturday)
Peak-Hour Traffic Volumes

Mammoth Lakes Model Update

Figure I-4

LSC # 084870

Chapter II

TRANSPORTATION
CONSULTANTS, INC.

CHAPTER II

Model Inputs

INTRODUCTION

This chapter reviews the input data used by and acted on by the four components of the travel demand model. Road and transit networks are defined and given performance characteristics. These characteristics answer questions about how (i.e., speed, direction, distance/length) trips move from place to place and how many trips can be accommodated on any given link. Existing (and future) land uses describe how many homes, jobs, shops, and other community opportunities exist in each place. Some additional data are also included to show how the final land use input table relates to other existing community information.

ROAD NETWORK AND ZONAL STRUCTURE

The transportation network in a travel demand model is a simplified representation of the real world. While it is simplified, it should contain all of the transport options available for individuals in order to have useful forecasting properties. The model represents the actual network as a series of links and nodes. TransCAD's mapping database was used to code the following data:

- Link speeds (free-flow based on posted speed limits)
- Directions of travel (one- or two-way)
- Link capacity (the product of lane capacity and number of lanes)
- Location of the end nodes
- Other attribute data (street name, classification, surface, other)

An existing link network in GIS format was obtained from the Town of Mammoth Lakes. This network was carefully reviewed to ensure a complete network that represents the study area roadway network and to remove minor unpaved roads not used for through traffic.

Facility Types

This road network was then classified into nine facility types. While default values were identified for each type, changes from these default values were made as part of the calibration process (as discussed below) to reflect differences in conditions, especially speeds in more congested areas or where site visits indicate speeds deviate substantially from posted speeds. However, the default values of each roadway type are shown in Table II-1.

Table II-1
Road Network Characteristics

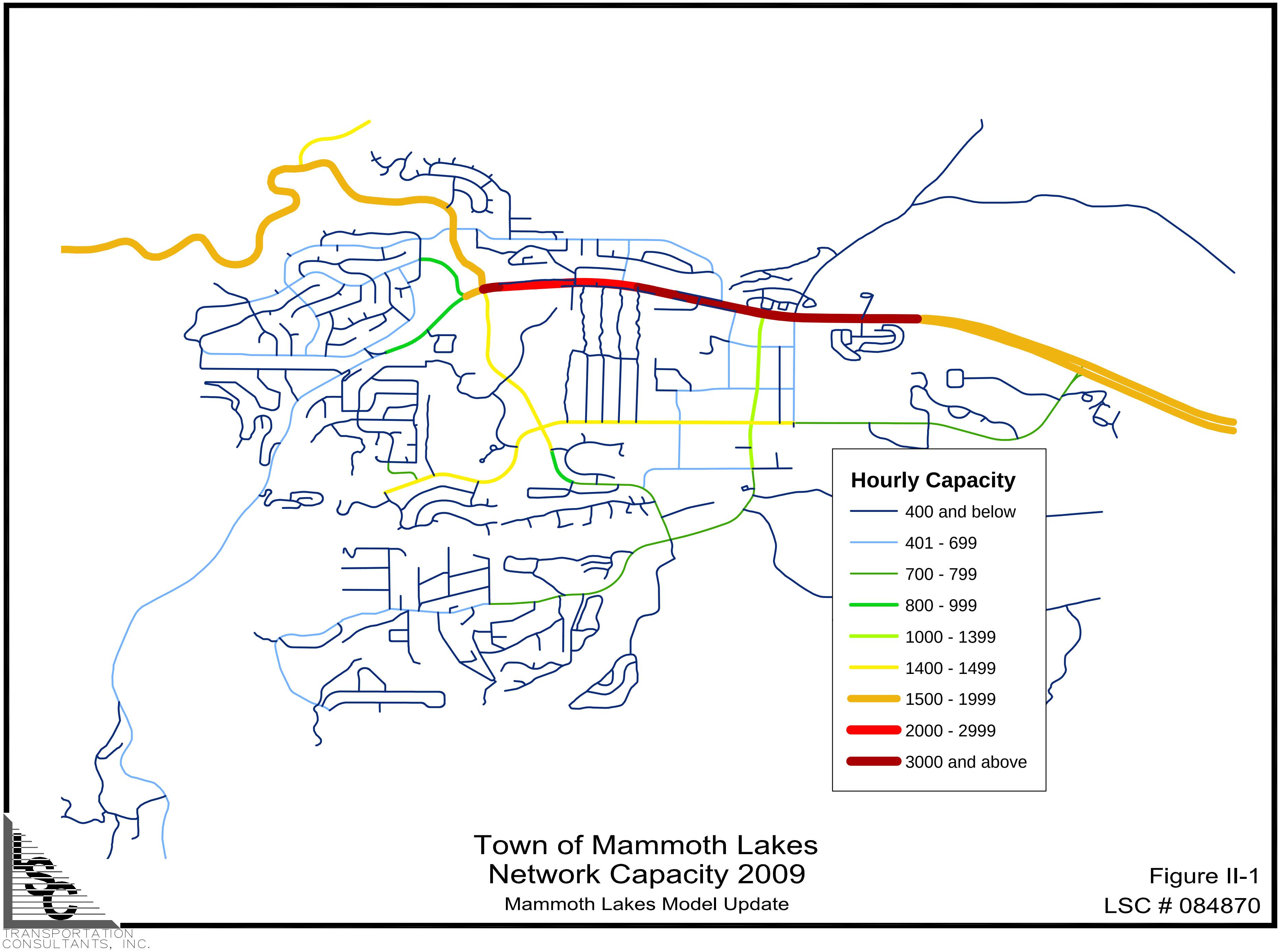
No.	Facility Type	Daily Capacity (ADT)	Hourly Capacity (vphpl)	Speed (mph)	# Links of Each Type	% Links of Each Type
0	Centroid Connector	n/a	n/a	25	194	18.7%
1	Highway	15,000 - 32,000	800	50-55	16	1.5%
2	Arterial	5,000 - 32,000	500-800	40-50	127	12.2%
3	Collector	4,000 - 5,000	400-500	25-40	147	14.2%
4	Local	2,500 - 5,000	250-500	25-40	421	40.6%
5	County Road	4,000	400	25	27	2.6%
6	Other	4,000	400	25	16	1.5%
7	Private	4,000	400	25	31	3.0%
8	Alley	4,000	400	25	10	1.0%
9	USFS Route	4,000	400	25	49	4.7%
Total					**1,038**	**100.0%**

Notes: vphpl = vehicles per hour per lane, mph = miles per hour, ADT = average daily traffic in all travel lanes both directions.
Source: LSC, 2010.

Capacity

Figure II-1 presents the capacity of the Town of Mammoth Lakes' model roadway network. These values are based upon standard values employed by the traffic engineering profession and are consistent with the values used in the previous versions of the model. The roadways with the greatest capacities are Meridian Boulevard and State Highway 203, which are coded to have capacities equal to 7,000 to 16,000 vehicles per day per direction. The next highest capacity roadways are Old Mammoth Road and Minaret Road, which are assumed to have capacities between 3,500 and 7,500 vehicles per day per direction. The remaining roadways are coded to have capacities that are less than 4,500 vehicles per day per direction. Most of the lower capacity roadways are collectors or local streets.

The centroid links are shown in gray on Figure II-1. The capacity on the centroid links is considered to be unlimited. This is because centroid connectors represent a network of smaller roadway facilities for which the model is not intended to forecast. They are given unlimited capacity so there is no congestion or limit to flows on these facilities. These smaller roadway facilities include some local roads, alleys, and driveways.


Hourly Capacity
400 and below
401 - 699
700 - 799
800 - 999
1000 - 1399
1400 - 1499
1500 - 1999
2000 - 2999
3000 and above
Town of Mammoth Lakes
Network Capacity 2009
Mammoth Lakes Model Update
Figure II-1
LSC # 084870
LSC
TRANSPORTATION
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Traffic Analysis Zone Structure

The next step in updating the Town of Mammoth Lakes' travel demand model was to review the existing model network and Traffic Analysis Zones (TAZ). The model network was last updated in 2005. Thus, a review was warranted to assure the current accuracy of the network input within the modeling process. The LSC team worked with the Town of Mammoth Lakes planning staff to determine the network revisions required in order to match the current network conditions. Based on this effort, the number of TAZs was increased from 152 to 167. The new TAZs were created to better represent certain areas in the new model. Specifically, the following areas were refined:

- Commercial parcels south of Lake Mary Road and west of Minaret Road.
- The area east of Old Mammoth Road and south of Meridian Boulevard including the Cerro Coso Community College and nearby utility parcels.
- Tamarack Lodge.
- The area south of Chateau Road and east of Old Mammoth Road.

In addition, several other TAZ boundaries were revised to better separate out different land use types.

The revised 2009 zone system, shown in Figure II-2, includes 167 centroid nodes and three external station nodes that correspond to 170 total TAZs. All of the socioeconomic and land use data are attached to the centroid nodes. There are 727 additional nodes where roadway segments connect to each other at intersections, turns, and access points from the adjacent land use developments (centroid nodes). The nodes are connected by 1,038 links that represent the roadway segments within the network. Each link has corresponding attributes that define the roadway in terms of distance, speed, number of lanes, and segment capacity.

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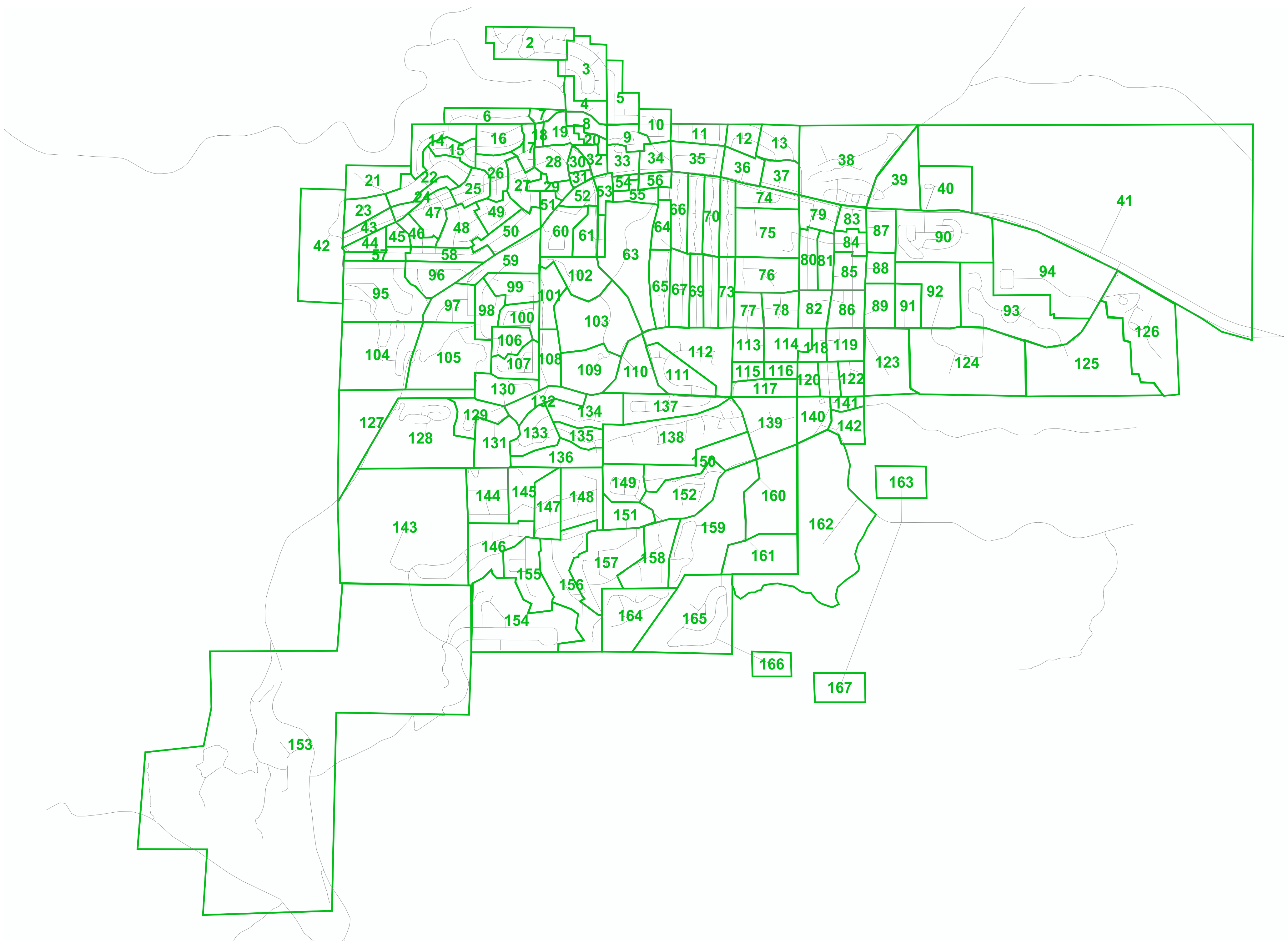

Town of Mammoth Lakes
Traffic Analysis Zones 2009
Mammoth Lakes Model Update

Figure II-2
LSC # 084870

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Intersections

Table II-2 provides a list of 24 intersections of interest to the study. For 18 of the intersections, traffic counts were conducted in 2009. Six additional intersections are listed based upon their having been analyzed in prior studies. As the table indicates, there are currently five signalized intersections and one four-way stop-controlled intersection in town.

Table II-2
Intersection Listing

Roadway Segment Extents		
North-South Street	**East-West Street**	**Type of Control**
Intersections of Major Roads		
Minaret Rd.*	Lake Mary Rd./Main Street	Signalized
Minaret Rd.*	Meridian Blvd.	Signalized
Canyon Blvd.*	Lake Mary Rd.	Signalized, 3-Leg
Old Mammoth Rd.*	Main Street	Signalized, 3-Leg
Old Mammoth Rd.*	Meridian Blvd.	Signalized
Forest Trail Between Main Street and Minaret Rd.		
Berner St.	Forest Trail	Stop on Berner St. Leg
Sierra Blvd.	Forest Trail	Stop on Sierra Blvd Leg
Main Street Between Sierra Park Rd./Sawmill Cutoff and Minaret Rd.		
Center St.*	Main Street	2-Way Stop on Center St.
Forest Trail*	Main Street	2-Way Stop on Forest Trail
Laurel Mountain	Main Street	2-Way Stop on Laurel Mountain
Mountain Blvd.*	Main Street	Stop on Sierra Blvd Leg
Sierra Park Rd./Sawmill Cutoff *	Main Street	2-Way Stop on Sierra Park/Sawmill
Meridian Blvd. Between SR 203 and Minaret Rd.		
Azimuth Dr.	Meridian Blvd.	2-Way Stop on Azimuth Dr.
Majestic Pines Dr.*	Meridian Blvd.	Stop on Majestic Pines Leg
Sierra Park Rd.*	Meridian Blvd.	4-Way Stop
Minaret Rd. Between Main Street and Mammoth Scenic Loop (SR 203)		
Minaret Rd.*	Forest Trail	2-Way Stop on Forest Trail
Minaret Rd. Between Main Street and Old Mammoth Rd.		
Minaret Rd.	Chateau Rd.	Stop on Chateau Leg
Minaret Rd.*	Old Mammoth Rd.	2-Way Stop on Minaret Rd.
Minaret Rd.	Sierra Star	2-Way Stop on Sierra Star
Lake Mary Road Between Minaret Rd. and Bridge Lane		
Lake Mary Rd.	Kelly Rd./Davidson	Split Intersection. Stops on both Kelly Rd. and Davidson
Lake Mary Rd.	Lakeview Blvd. Cutoff	Stop on Lakeview Blvd. Leg
Old Mammoth Rd. Between Main Street and Meridian Blvd.		
Old Mammoth Rd.*	Chateau Rd.	2-Way Stop On Chateau Rd.
Old Mammoth Rd.*	Sierra Nevada Rd.	2-Way Stop On Sierra Nevada Rd.
Old Mammoth Rd.*	Tavern Rd.	2-Way Stop On Tavern Rd.

*Source: LSC 2009. *Intersection counts completed in 2009. See Figure I-2.*

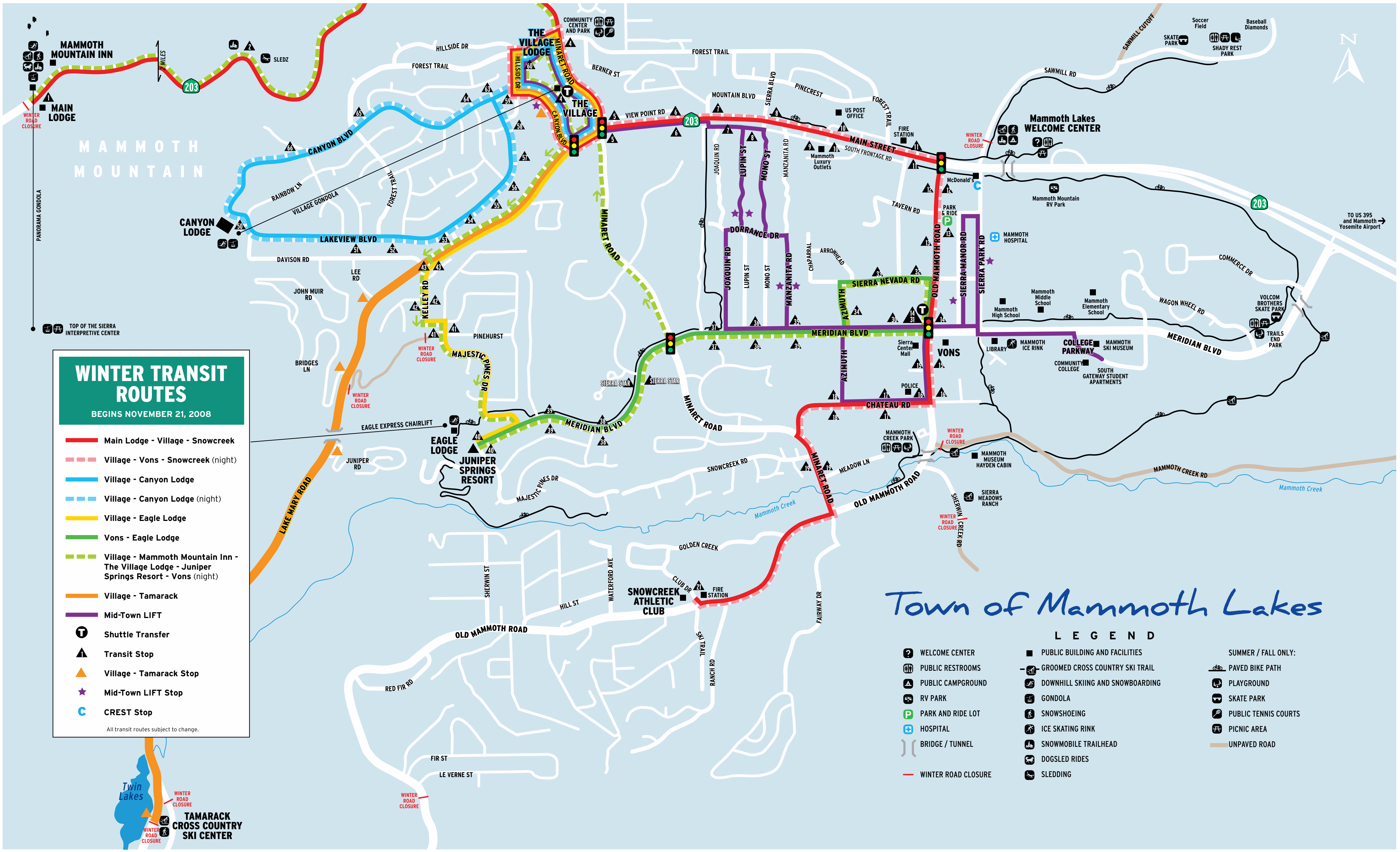
TRANSIT NETWORK

Figure II-3 presents the existing bus transit network for the Town of Mammoth Lakes. The Village Gondola is also part of the transit network. The transit networks of previous models had coded the three main routes (Blue, Red, and Green), while this version of the model considers all six. Only daytime service and service frequencies are represented in the model. Table II-3 shows the model data attributed to each route. All services are represented in the model as being fare-free.

Table II-3
Transit Network Characteristics

Name of Route	Route Color	Number of Route Stops	Frequency
Main Lodge-Village-Snowcreek	Red	36	15 minutes
Village-Canyon Lodge	Blue	17	15 minutes
Village-Eagle Lodge	Yellow	14	15 minutes
Vons-Eagle Lodge	Green	18	15 minutes
Village-Tamarack	Orange	8	60 minutes
Mid-Town Lift	Maroon	7	30 minutes
Village Gondola	n/a	2	20 seconds

Sources: Eastern Sierra Transit. Mammoth Transit Map, Winter 2009; Town of Mammoth Lakes and LSC for the number of stops, 2009.



Town of Mammoth Lakes
Transit System - Winter 2009
Mammoth Lakes Model Update

Figure II-3
LSC # 084870

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EXISTING LAND USE DATA

The following information about land use data is presented as background to the creation of the final land use input table used in the travel model. Some information is also provided as supporting information for later chapters in this report.

Zoning and Land Use Districts

Figure II-4 shows the current Mammoth Lakes zoning. This is the color-coded representation of the data attached to the traffic analysis zones. Shown on this map, but excluded from the travel model, are the Lakes Basin open space and the Yosemite Airport.

Figure II-5 shows a map of 13 neighborhood districts and three mountain portals. The concept of districts is applied in the validation of the model during the trip distribution step, both to check trip-interchanges between districts as well as continuing the Town's land use planning into the travel model.

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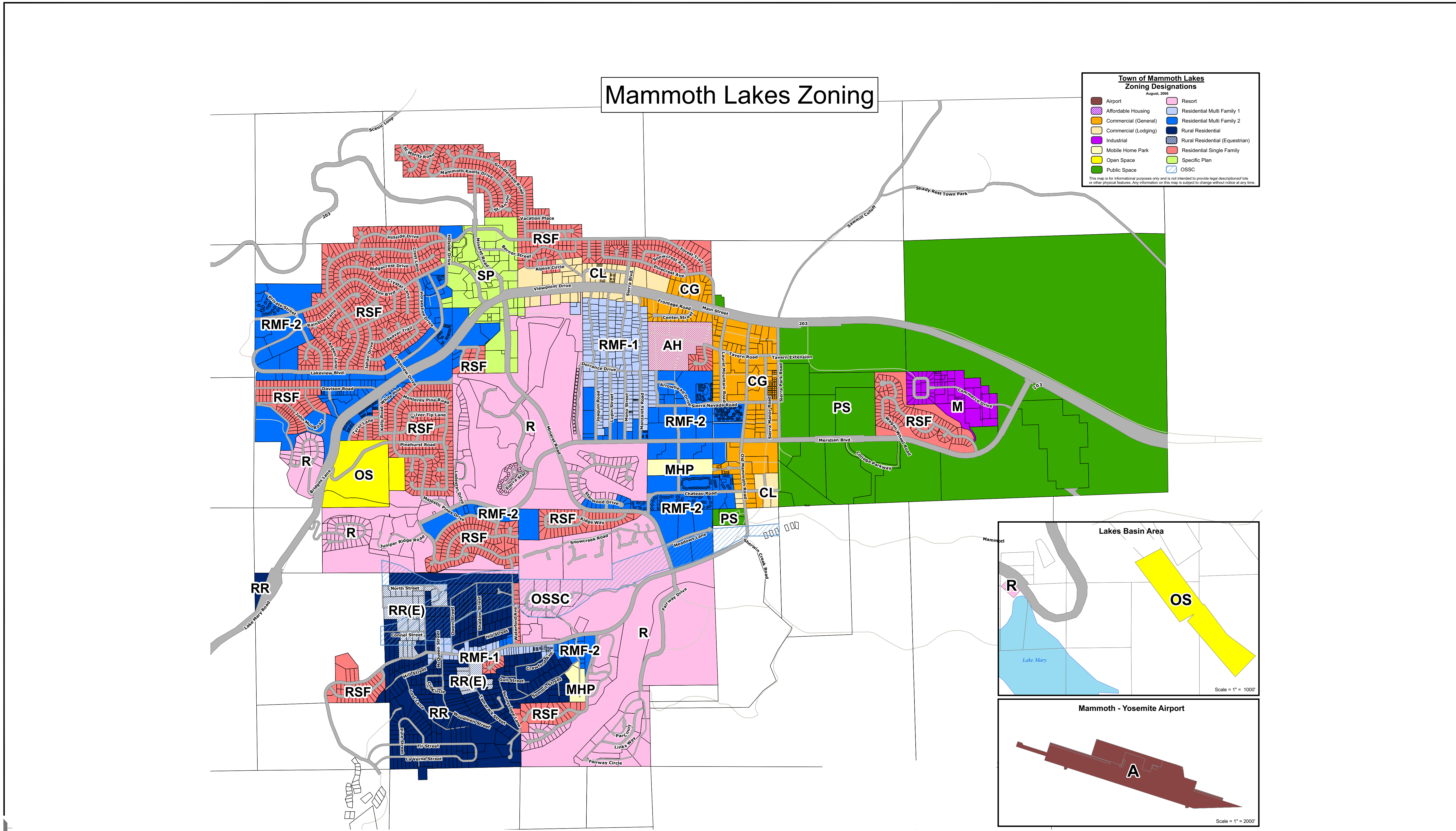

Town of Mammoth Lakes Zoning

Mammoth Lakes Model Update

Figure II-4

LSC # 084870

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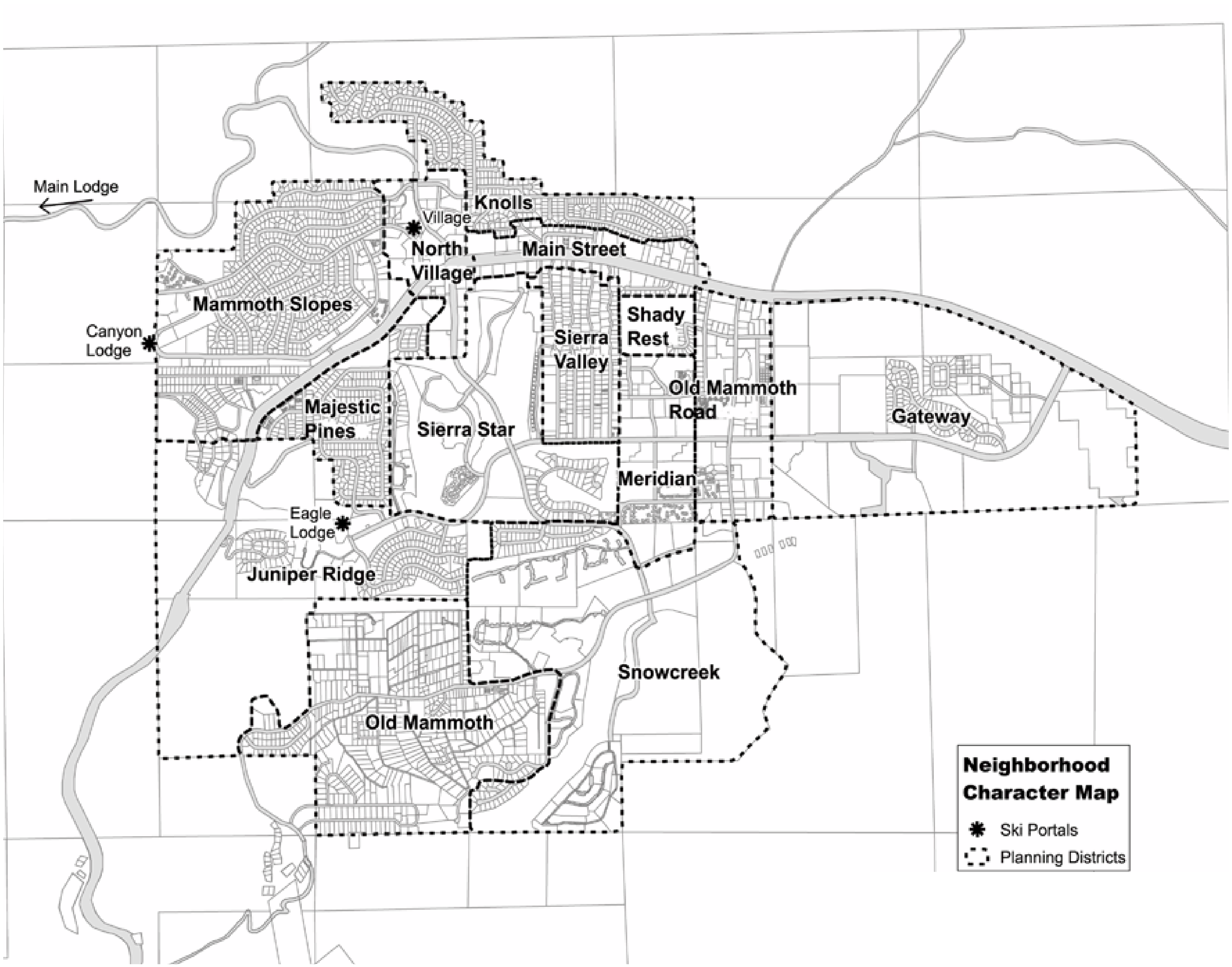

Town of Mammoth Lakes Neighborhood Districts
Mammoth Lakes Model Update

Figure II-5
LSC # 084870

Households and Population

Tables II-4 and II-5 show relevant sources of data for population and household characteristics within the Town of Mammoth Lakes. These sources contain information that was consolidated and updated for the final land use input table for the travel model. The Town of Mammoth Lakes has since gone through an extensive and comprehensive process to account for existing land uses and to estimate buildout and the associated population. These data were used as the basis for the update of the travel model. The tables below are preserved in this document to show continuity with prior work.

Population data show growth from 2000 to 2003, with a leveling or slight decline to 2008. Housing data, in contrast, show a continued increase in the number of dwelling units, amounting to 16 percent over eight years or 1.89 percent compounded average annual growth.

Table II-4
Population Growth Trends (1970-2008)

Year	Population	Numerical Change	Average Annual Change	
			Number	Percent
1970	3,528			
1980	3,929	401	40.1	1.14%
1990	4,785	856	85.6	2.18%
2000	7,094	2,308	230.8	4.82%
2003	7,495	402	134	1.89%
2008	7,413	-82	-16	-0.32%

Sources: Census Bureau (2000 Census, SF3: P1) and (1990 Census, STF3: P1), DOF (Report E-5) as presented in the "Town of Mammoth Lakes Housing Element," December 2003; DOF & EDAW 2008 as presented in the "Town of Mammoth Lakes General Plan, Housing Element Draft," January 2009.

Table II-5
Housing Units by Type (1990-2008)

Housing Unit Type	1990		2000		2008	
	Number	Percent	Number	Percent	Number	Percent
Single-Family Detached	1,671	23.5%	2,122	26.7%	2,496	27%
Single-Family Attached	588	8.3%	965	12.1%	1,132	12.2%
2 Units	325	4.6%	301	3.8%	338	3.7%
3-4 Units	1,300	18.3%	1,239	15.6%	5,052	54.6%
5-9 Units	1,310	18.4%	1,169	14.7%		
10-19 Units	1,018	14.3%	749	9.4%		
20+ Units	655	9.2%	1,220	15.3%		
Mobile Homes, Etc.	235	3.3%	193	2.4%	227	2.5%
Total	7,102	100.0%	7,958	99.7%	9,245	100.0%

Sources: Census Bureau (2000 Census, SF 3: H30) and (1990 Census, SF: H20) as presented in the "Town of Mammoth Lakes Housing Element," December 2003; Claritas and EDAW, 2008 as presented in the "Town of Mammoth Lakes General Plan, Housing Element Draft," January 2009. The original data in the 2003 report separated out Mobile Homes from "Boat, RV, Van, Etc." and those data have been combined here.

Employment

Tables II-6 and II-7 show employment data by industry for 2000 and 2008, respectively. The data are grouped in different categories and are therefore not directly comparable across all categories. The growth between the two years is roughly 800 employees, representing an annual average growth rate of 2.27 percent.

Table II-6 Employment by Industry - 2000		
Industry Type	**2000**	
	Number	**Percent**
Agriculture, Forestry, Fishing and Hunting, and Mining	40	0.9%
Construction	350	8.1%
Manufacturing	113	2.6%
Wholesale Trade	77	1.8%
Retail Trade	424	9.8%
Transportation and Warehousing, and Utilities	60	1.4%
Information	46	1.1%
Finance, Insurance, Real Estate and Rental and Leasing	166	10.8%
Professional, Scientific, Management, Administration	379	8.8%
Educational, Health and Social Services	482	11.2%
Arts, Entertainment, Recreation, and Services	1,598	37.1%
Other Services	117	2.7%
Public Administration	161	3.7%
Total	**4,013**	100%

Source: Census Bureau (2000 Census, SF3: P49 as presented in the "Town of Mammoth Lakes Housing Element," December 2003.

Table II-7 Employment by Industry - 2008		
Industry Type	**2008**	
	Number	**Percent**
Management and Professional	1,662	34.6%
Service	1,229	25.6%
Sales and Office	1,046	21.8%
Farming, Fishing, and Forestry	4	0.1%
Construction, Extraction, and Maintenance	535	11.1%
Production, Transportation, and Material Moving	325	6.8%
Total	**4,801**	100.0%

Source: Claritas and EDAW, 2008 as presented in the "Town of Mammoth Lakes General Plan, Housing Element Draft," January 2009.

Recreational

Table II-8 shows the estimated capacity of downhill skiers at one time (SAOT) at each of the four Mammoth Mountain portals. This information was provided by the Town of Mammoth Lakes and is based on the current capacity of Mammoth Mountain. As shown, a total of 24,000 downhill skiers are able to access the mountain at one time. In addition, Table II-8 also shows the number of cross-country skiers at the Tamarack Lodge and Shady Rest Trail areas. Once again, this information was provided by the Town of Mammoth Lakes. As shown, a total of 350 cross-county skiers are estimated to visit these areas during a typical winter Saturday.

Table II-8
Skier Capacity Assumptions - 2009

Ski Area	2009	
	Number	Percent
Downhill Skiers		
Main Lodge	8,000	33.3%
Canyon Lodge	8,000	33.3%
Eagle Lodge	4,000	16.7%
The North Village	4,000	16.7%
Total	**24,000**	100.0%
Cross-County Skiers		
Tamarack Lodge Area	200	57.1%
Shady Rest Trails	150	42.9%
Total	**350**	100.0%

Source: Town of Mammoth Lakes, January 2009.

Final Land Use Input Table

Table II-9 shows the final land use input table, which is used as the base data in the travel model—all 167 zones excluding the external station—aggregated. It is believed that these data are more recent and more accurate than the sources reviewed earlier in this chapter. Appendix A contains the disaggregated, zone-by-zone land use input information.

The number of dwelling units is the key input to the model and provides a more realistic representation of traffic and travel demand than using population as a base input. Use of population data would suggest little or no growth since 2000. Some data would show as much as 16 percent growth. The official 2009 estimate for dwelling units represents 8.8 percent growth over 2000 Census data, an intermediate estimate between the extremes. This finding indicates that at the level of trip generation, the first step of the model, input data may have as much as ±five percent variation.

Table II-9 Total Land Uses By Land Use Code (2009)			
Land Use Code	Description of Land Use	Units	Quantity
1	Residential Low Density (SF) - Resident	DUs	1,454
3	Residential High Density (MF) - Resident	DUs	4,023
4	Mobile Home Park - Resident	DUs	132
5	Residential Low Density (SF) - Visitor	DUs	627
7	Residential High Density (MF) - Visitor	DUs	2,426
10	Lodging (Hotel) - Visitor	Room	997
11	Resort Hotel - Visitor	Room	976
13	Retail/Commercial	KSF	1,305
21	Light Industrial	KSF	311
23	Public Utility	Acres	49
31	Public School	Acres	832
32	High School	Acres	314
33	College	Student	0
34	Hospital	Bed	21
36	Post Office	PRS	7,402
37	Church	Acres	14
39	Downhill Skiing-Employees	Employee	2,163
40	Downhill Skiing-Skiers	SAOT	24,000
41	Cross-Country Skiing/Snowmobiling	SAOT	350
Notes: DU = Dwelling Unit, KSF = Thousand Square Feet, PRS = postal receptacles (mailboxes), SAOT = skiers at one time.			
Source: Town of Mammoth Lakes, 2009			

One area to consider improving is the accounting of single-family versus multi-family dwelling units. Base information—both the Census and Housing Element data—shows 58 to 59 percent multi-family and 39 percent single-family, whereas data provided for the travel model are 74 percent multi-family and 24 percent single-family shares. The difference may be in how attached single-family units (i.e., duplexes and triplexes) are counted. All data sources agree on a two percent mobile home share.

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CHAPTER III
Trip Generation

INTRODUCTION

Once all the input data are assembled, as described in the previous chapter, trip generation is the first step in the four-step model process. In this step, the land use input quantities are estimated to produce or attract a certain number of trips per unit of land use, per dwelling unit, per thousand square feet of retail space, or per employee. This chapter reviews how the land use quantities and trip rates are used to produce the total number of trips used in later steps of the model.

PRODUCTION AND ATTRACTION RATES

The Town of Mammoth Lakes provided the land use data by traffic analysis zone (TAZ) and land use type. Each land use category has a certain trip rate, defined to be the number of daily person-trips generated by every unit of land use within a TAZ. This trip rate varies by land use category.

There are 19 different land use types used in the Town of Mammoth Lakes transportation demand model. As compared to the 2005 model update, the following categories of land use were eliminated by combining them with other related categories: residential medium density - resident, residential medium density - visitor, retail/commercial and town offices measured in acres. Residential dwelling units are now classified as either low or high density, and all retail/commercial/office uses are now measured in thousands of square feet of floor space.

The same five trip purposes were used in the development of the 2009 model as were used in 2005. The five trip purposes are:

- Home-Based Recreation or "Home to Recreation" (H-REC)
- Home-Based Shopping or "Home to Shopping" (H-S)
- Home-Based Work or "Home to Work" (H-W)
- Home-Based Other or "Home to Other" (H-O)
- Other-to-Other (O-O)

Trip Generation

Table III-1 shows the trip rates associated with each of the 19 land use types. Also shown are the rate of trips by trip purpose and by whether they are a production or attraction. For example, if a low-density housing unit produces 12.80 trips per day, two of those trips are for shopping (2.048), more than two are for work (2.304), and four are for other trips from the home and so forth (4.096), for the rest of that line.

Table III-1
Daily Person-Trip End Production/Attraction Proportions by Trip Purpose

Description	Unit	Land Use Code	Daily Person-Trip End Rate	Productions					Attractions					TOTAL
				H-REC	H-S	H-W	H-O	O-O	H-REC	H-S	H-W	H-O	O-O	
Residential Low Density (SF) - Resident	DUs	1	12.800	1.152	2.048	2.304	4.096	1.920	0.000	0.000	0.000	0.000	1.280	12.80
Residential High Density (MF) - Resident	DUs	3	8.100	0.891	1.458	1.539	2.511	0.729	0.000	0.000	0.000	0.000	0.972	8.10
Mobile Home Park - Resident	DUs	4	5.400	0.594	0.918	1.080	1.566	0.486	0.000	0.000	0.000	0.000	0.756	5.40
Residential Low Density (SF) - Visitor	DUs	5	14.000	4.620	3.220	0.000	3.080	1.960	0.000	0.000	0.000	0.000	1.120	14.00
Residential High Density (MF) - Visitor	DUs	7	11.500	3.795	2.645	0.000	2.530	1.610	0.000	0.000	0.000	0.000	0.920	11.50
Lodging (Hotel) - Visitor	Room	10	12.000	4.080	2.400	0.000	1.920	1.080	0.000	0.120	0.480	0.720	1.200	12.00
Resort Hotel - Visitor	Room	11	12.000	4.080	2.400	0.000	1.920	1.080	0.000	0.120	0.480	0.720	1.200	12.00
Retail/Commercial	KSF	13	60.200	0.000	0.000	0.000	0.000	8.729	6.923	15.351	3.010	20.167	6.020	60.20
Light Industrial	KSF	21	11.200	0.000	0.000	0.000	0.000	2.834	0.000	0.000	2.598	1.221	4.547	11.20
Public Utility	Acres	23	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Public School	Acres	31	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
High School	Acres	32	1.270	1.000	0.000	0.000	0.000	0.020	0.000	0.000	0.006	0.224	0.019	1.27
College	Student	33	2.080	2.000	0.000	0.000	0.000	0.000	0.010	0.000	0.006	0.062	0.002	2.08
Hospital	Bed	34	17.000	3.000	0.000	0.000	0.000	3.220	0.000	0.000	1.456	6.216	3.108	17.00
Post Office	PRS	36	0.080	0.000	0.000	0.000	0.000	0.023	0.000	0.000	0.002	0.031	0.024	0.08
Church	Acres	37	140.000	0.000	0.000	0.000	0.000	29.540	0.000	0.000	0.000	61.320	49.140	140.00
Downhill Skiing-Employees	Employee	39	1.500	0.000	0.000	0.000	0.000	0.465	0.000	0.000	0.450	0.120	0.465	1.50
Downhill Skiing-Skiers	SAOT	40	1.600	0.000	0.000	0.000	0.000	0.000	1.408	0.000	0.000	0.032	0.160	1.60
Cross-Country Skiing/Snowmobiling	SAOT	41	1.900	0.000	0.000	0.000	0.000	0.000	1.653	0.000	0.076	0.019	0.152	1.90

Source: LSC, 2010.

Trip Generation

Table III-2 presents the number of trips by land use for both production and attraction totals, inclusive of trips from the external station at SR 203 near US 395. These are the raw, unbalanced result of applying the trip rates by TAZ, by land use, and by production/attraction, then adding the results together. The external stations comprised 29,402 daily person-trips of the total daily person-trip generation of 270,847 or about eleven percent of trips prior to trip balancing.

Table III-3 presents the number of trips by trip purpose for both production and attraction totals, inclusive of trips from the external station at SR 203 near US 395. These are the raw, unbalanced results of applying the trip rates by TAZ, by trip purpose, and by production/attraction, then adding the results together.

Description	Unit	Land Use Code	Quantity	Daily Person-Trip End Rate	Productions	Attractions	Total
Residential Low Density (SF) - Resident	DUs	1	1,454	12.80	16,750	1,861	18,611
Residential High Density (MF) - Resident	DUs	3	4,023	8.10	28,676	3,910	32,586
Mobile Home Park - Resident	DUs	4	132	5.40	613	100	713
Residential Low Density (SF) - Visitor	DUs	5	627	14.00	8,076	702	8,778
Residential High Density (MF) - Visitor	DUs	7	2,426	11.50	25,667	2,232	27,899
Lodging (Hotel) - Visitor	Room	10	997	12.00	9,452	2,512	11,964
Resort Hotel - Visitor	Room	11	976	12.00	9,252	2,460	11,712
Retail/Commercial	KSF	13	1,305	60.20	11,391	67,170	78,561
Light Industrial	KSF	21	311	11.20	881	2,602	3,483
Public Utility	Acres	23	49	0.00	0	0	0
Public School	Acres	31	832	0.00	0	0	0
High School	Acres	32	314	1.27	320	79	399
College	Student	33	0	2.08	0	0	0
Hospital	Bed	34	21	17.00	131	226	357
Post Office	PRS	36	7,402	0.08	169	423	592
Church	Acres	37	14	140.00	414	1,546	1,960
Downhill Skiing-Employees	Employee	39	2,163	1.50	1,006	2,239	3,245
Downhill Skiing-Skiers	SAOT	40	24,950	1.60	0	39,920	39,920
Cross-Country Skiing/Snowmobiling	SAOT	41	350	1.90	0	665	665
External Station at SR 203					26,412	2,990	29,402
Subtotal Without External Station					112,798	128,647	241,445
Totals With External Station					139,210	131,637	270,847

Table III-2
Unbalanced Daily Person Productions and Attractions by Land Use

Source: LSC, 2010.

Table III-3
Unbalanced Daily Person Productions and Attractions by Trip Purpose

Description	Unit	Land Use Code	Quantity	Productions					Attractions					TOTAL
				H-REC	H-S	H-W	H-O	O-O	H-REC	H-S	H-W	H-O	O-O	
Residential Low Density (SF) - Resident	DUs	1	1,454	1,675	2,978	3,350	5,956	2,792	0	0	0	0	1,861	18,611
Residential High Density (MF) - Resident	DUs	3	4,023	3,584	5,866	6,191	10,102	2,933	0	0	0	0	3,910	32,586
Mobile Home Park - Resident	DUs	4	132	78	121	143	207	64	0	0	0	0	100	713
Residential Low Density (SF) - Visitor	DUs	5	627	2,897	2,019	0	1,931	1,229	0	0	0	0	702	8,778
Residential High Density (MF) - Visitor	DUs	7	2,426	9,207	6,417	0	6,138	3,906	0	0	0	0	2,232	27,899
Lodging (Hotel) - Visitor	Room	10	997	4,068	2,393	0	1,914	1,077	0	120	479	718	1,196	11,964
Resort Hotel - Visitor	Room	11	976	3,982	2,342	0	1,874	1,054	0	117	468	703	1,171	11,712
Retail/Commercial	KSF	13	1,305	0	0	0	0	11,391	9,035	20,033	3,928	26,318	7,856	78,561
Light Industrial	KSF	21	311	0	0	0	0	881	0	0	808	380	1,414	3,483
Public Utility	Acres	23	49	0	0	0	0	0	0	0	0	0	0	0
Public School	Acres	31	832	0	0	0	0	0	0	0	0	0	0	0
High School	Acres	32	314	314	0	0	0	6	0	0	2	70	6	399
College	Student	33	0	0	0	0	0	0	0	0	0	0	0	0
Hospital	Bed	34	21	63	0	0	0	68	0	0	31	131	65	357
Post Office	PRS	36	7,402	0	0	0	0	169	0	0	17	231	175	592
Church	Acres	37	14	0	0	0	0	414	0	0	0	858	688	1,960
Downhill Skiing-Employees	Employee	39	2,163	0	0	0	0	1,006	0	0	973	260	1,006	3,245
Downhill Skiing-Skiers	SAOT	40	24,950	0	0	0	0	0	35,130	0	0	798	3,992	39,920
Cross-Country Skiing/Snowmobiling	SAOT	41	350	0	0	0	0	0	579	0	27	7	53	665
			Totals	25,868	22,135	9,684	28,121	26,989	44,743	20,270	6,733	30,473	26,429	241,445
						112,798					128,647			

Source: LSC, 2010.

Table III-4 shows the results by trip purpose after trip balancing has been completed. Balancing was performed by holding attractions for home-based recreation and home-based shopping trips, holding productions for home-based work trips, and averaging productions and attractions for home-based other and other-to-other trips. The greatest number of trips are generated as home-based recreation trips. In fact, 95,324 daily person home-based recreation trips were generated out of the 268,930 total trips, which equates to 35 percent of the total trip generation. The next greatest trip purpose was home-based other for which 59,124 daily person-trips were generated. The smallest portion of trips were home-based work trips, which comprised seven percent of the total daily person-trips generated by the model area. These totals include external station trip production and attraction from locations at SR 203 near US Highway 395. The trip purpose totals represent the person-trip travel volumes for travel to and from the TAZs within the Town of Mammoth Lakes on a typical winter Saturday.

Table III-4
Balanced Daily Person Productions and Attractions by Trip Purpose

Description	Productions	Attractions	Total
Home-Based Recreation	47,662	47,662	95,324
Home-Based Shopping	20,270	20,270	40,540
Home-Based Work	9,999	9,999	19,998
Home-Based Other	29,562	29,562	59,124
Other-to-Other	26,972	26,972	53,944
Total			**268,930**

Notes: From balanced.bin file. Includes 240,290 from land uses and 28,640 from external station volumes.
Source: LSC 2010.

Table III-5 presents a comparison of trip rate changes from the 2005 model. Some of the land use categories saw no change in trip rates between 2005 and 2009. For most land use categories, the recommended changes in trip rates were more notable, with a reduction of 20-30 percent in some.

Table III-5
Trip Rate Changes from 2005 to 2009 Model

Land Use Code	Description	2005 Rate	2005 Units	2009 Rate	2009 Units	Reason for Change from 2005
1	Residential Low Density (SF) - Resident	19.00	DUs	12.80	DUs	Reduced 19.00 by 12% to reflect over-prediction of residential trips. Additional 25% reduction based on new calibration targets.
3	Residential High Density (MF) - Resident	12.00	DUs	8.10	DUs	Reduced 19.00 by 12% to reflect over-prediction of residential trips. Additional 25% reduction based on new calibration targets.
4	Mobile Home Park - Resident	7.00	DUs	5.40	DUs	25% reduction based on new calibration targets.
5	Residential Low Density (SF) - Visitor	21.00	DUs	14.00	DUs	Reduced 19.00 by 12% to reflect over-prediction of residential trips. Additional 25% reduction based on new calibration targets.
7	Residential High Density (MF) - Visitor	17.00	DUs	11.50	DUs	Reduced 19.00 by 12% to reflect over-prediction of residential trips. Additional 25% reduction based on new calibration targets.
10	Lodging (Hotel) - Visitor	16.00	Room	12.00	Room	25% reduction based on new calibration targets.
11	Resort Hotel - Visitor	16.00	Room	12.00	Room	25% reduction based on new calibration targets.
13	Retail/Commercial	78.71	KSF	60.20	KSF	Changes in Floor Area Ratio (FAR) assumptions and 25% reduction based on new calibration targets.
21	Light Industrial	14.60	Acres	11.20	KSF	Units were incorrect in 2005 table. KSF is correct for both 2005 and 2009. Change in FAR assumptions and 25% reduction.
23	Public Utility	0.00	Acres	0.00	Acres	No change.
31	Public School	71.00	Acres	0.00	Acres	School is not in session on Saturdays. 2009 model is a Saturday model.
32	High School	71.00	Acres	1.27	Acres	School is not in session on Saturdays. Some high school events still occur on Saturdays, so not taken to zero. 2009 model is a Saturday model.
33	College	76.00	Student	2.08	Student	2005 model had college employees and dorms in the same TAZ. Dorm trips are now represented as residential high density.
34	Hospital	18.00	Bed	17.00	Bed	Minor adjustment to reflect new calibration targets.
36	Post Office	0.50	PRS	0.08	PRS	7,400 postal boxes. New rate more indicative of a Saturday. Prior rate more indicative of weekday conditions.
37	Church	182.00	Acres	140.00	Acres	25% reduction based on new calibration targets.
39	Downhill Skiing-Employees	6.10	Employee	1.50	Employee	6.10 represented all ski-related trips against the number of employees. 2.00 represents only employees.
40	Downhill Skiing-Skiers	2.30	SAOT	1.60	SAOT	25% reduction based on new calibration targets.
41	Cross-Country Skiing/Snowmobiling	2.50	SAOT	1.90	SAOT	25% reduction based on new calibration targets.

Source: LSC and Town of Mammoth Lakes, 2010.

TRIP GENERATION VALIDATION

The information discussed above provides the foundation for the modeling process. Although there has been significant review and analysis of the input data (land use types by TAZ) provided by the Town of Mammoth, many of the trip rates had been carried over from 1997 to 2005 and then to this 2009 model. Given the many changes throughout the creation of this model in TransCAD, it was felt that additional effort was warranted to further validate this step in the modeling process to provide additional reassurance that the final output traffic and transit assignment volumes were as accurate as possible.

Home-Based Trips

A comparison was made to Institute of Transportation Engineers (ITE) trip rates to confirm that a similar number of trips are produced by different methods. The comparison includes all residential dwelling unit categories for all trip types, whether to recreation, shopping, work, or other. The comparison was made with the unbalanced trips. The comparison does not include trips generated at a non-residential location. Table III-6 presents the results of this comparison, concluding that by different methods, the total number of estimated trips is within two percent with ITE rates predicting 87,000 trips (rounded) and the model predicting 88,600 (rounded). This is considered a very good match.

A second comparison was made to National Highway Cooperative Research Program (NCHRP) data available in the *NCHRP 365 Travel Estimation Techniques for Urban Planning* publication. Tables III-7 through III-9 look at the following comparisons:

- Households by Vehicle Availability
- Households by Household Size
- Households by Income

Based on these data, the NCHRP data suggest a range of 73,300 to 82,700 trips for home-based trip purposes, with a midpoint of 78,000 (rounded). At 88,600 the travel model is within 14 percent of the midpoint of that range. This is also a good finding.

Table III-6 Residential Trip Generation Validation Using ITE Trip Rates						
Land Use Code	**Description of Land Use**	**Units**	**Quantity[1]**	**ITE Trip Generation Rate (Vehicle-Trips)[2]**	**Average Auto Occupancy[3]**	**Person-Trips Based on ITE Vehicle and AAO (Qty x Rate x AAO)**
1	Residential Low Density (SF) - Resident	DUs	1,454	9.57	1.49	20,733
3	Residential High Density (MF) - Resident	DUs	4,023	5.86	1.49	35,126
4	Mobile Home Park - Resident	DUs	132	4.99	1.49	981
5	Residential Low Density (SF) - Visitor	DUs	627	9.57	1.49	8,941
7	Residential High Density (MF) - Visitor	DUs	2,426	5.86	1.49	21,182
	ITE Trip Rate Totals for These Land Uses		**8,662**			**86,964**
	Model Totals for These Land Uses		**8,662**			**88,587**

Notes: HBW = home-based work, HBO = home-based other, HBS = home-based shopping, DUs = Dwelling Units.

Sources: [1] Town of Mammoth Lakes, 2009; [2] Institute of Transportation Engineers, "Trip Generation Manual, 7th Edition," 2003; [3] NCHRP 365, Table 37, all trip purposes, 1998; LSC, 2010.

Table III-7 Trip Generation Estimate Based On the Number of Households and Vehicle Availability (excludes Ski Trips)			
Household Vehicle Availability (Occupied Housing Units)	**Number of Households[1]**	**Person-Trips Per Household Based on Vehicles[2]**	**Person-Trips Generated**
0 Vehicles Available	146	3.9	569
1 Vehicles Available	1,112	6.3	7,006
2 Vehicles Available	1,159	10.6	12,285
3+ Vehicles Available	398	13.2	5,254
Total in 2000	**2,815**		**25,114**
Rate to convert from Occupied to Total Housing Units on a Typical Weekend[3]			2.827
Rate to convert from 2000 to 2009 Total Housing Units[4]			1.088
Total 2009 Person-Trips Generated			**77,278**

Sources: [1]US Census Bureau. Census 2000, SF 3, Table H44.
[2]NCHRP 365, Table 6.
[3]7,958 total / 2,815 occupied (Census 2000, SF 3, Table H6).
[4]8,662 (Town of Mammoth Lakes 2009) / 7,958 (Census 2000).

Table III-8 Trip Generation Estimate Based On the Number of Households and Household Size (excludes Ski Trips)			
Household Size (Occupied Housing Units)	**Number of Households[1]**	**Person-Trips Per Household Based on Size[2]**	**Person-Trips Generated**
1-Person Household	805	3.7	2,979
2-Person Household	1,005	7.6	7,638
3-Person Household	408	10.6	4,325
4-Person Household	341	13.6	4,638
5+ Person Household	256	16.6	4,250
Total in 2000	**2,815**		**23,829**
Rate to convert from Occupied to Total Housing Units on a Typical Weekend[3]			2.827
Rate to convert from 2000 to 2009 Total Housing Units[4]			1.088
Total 2009 Person-Trips Generated			**73,322**

Sources: [1]US Census Bureau. Census 2000, SF 3, Table H16.
[2]NCHRP 365, Table 6.
[3]7,958 total / 2,815 occupied (Census 2000, SF 3, Table H6).
[4]8,662 (Town of Mammoth Lakes 2009) / 7,958 (Census 2000).

Table III-9 Trip Generation Estimate Based On the Number of Households by Income (excludes Ski Trips)			
Household Vehicle Availability (Occupied Housing Units)	**Number of Households[1]**	**Person-Trips Per Household Based on Vehicles[2]**	**Person-Trips Generated**
Low (<15,000)	304	6.0	1,824
Medium (15,000-89,999)	2,052	9.3	19,086
High (90,000+)	471	12.7	5,979
Total in 2000	**2,827**		**26,888**
Rate to convert from Occupied to Total Housing Units on a Typical Weekend[3]			2.827
Rate to convert from 2000 to 2009 Total Housing Units[4]			1.088
Total 2009 Person-Trips Generated			**82,738**

Sources: [1]US Census Bureau. Census 2000, SF 3, Table P52 and LSC 2009.
[2]NCHRP 365, Table 5.
[3]7,958 total / 2,815 occupied (Census 2000, SF 3, Table H6).
[4]8,662 (Town of Mammoth Lakes 2009) / 7,958 (Census 2000).

Non-Home-Based Trips

A similar comparison was made for non-home-based (non-residential) trip types. The ITE *Trip Generation Manual* does not contain trip rates for all categories of trips unique to the Town of Mammoth Lakes, so a comparison was made only for those land uses and trip categories for which data were available. Table III-10 presents the results of the non-home-based trip generation comparison. The results are within 20 percent, which is reasonable.

Table III-10
Non-Residential Generation Validation Using ITE Trip Rates

Land Use Code	Description of Land Use	Units	Quantity[1]	ITE Trip Generation Rate (Vehicle-Trips)[2]	Average Auto Occupancy[3]	Person-Trips Based on ITE Vehicle and AAO (Qty x Rate x AAO)
10	Lodging (Hotel) - Visitor	Room	997	8.17	2.1	17,106
11	Resort Hotel - Visitor	Room	976	8.17	2.1	16,745
13	Retail/Commercial	KSF	1,305	42.94	1.7	95,262
21	Light Industrial	KSF	311	6.97	1.6	3,468
	ITE Trip Rate Totals for These Land Uses					**132,581**
	Model Totals for These Land Uses					**105,720**

Notes: DU = Dwelling Unit, KSF = Thousand Square Feet, PRS = postal receptacles (mailboxes), SAOT = skiiers at one time.

Sources: [1] Town of Mammoth Lakes, 2009; [2] Institute of Transportation Engineers, "Trip Generation Manual, 7th Edition," 2003; [3] Model Validation and Reasonableness Checking Manual, Table 5-5, 2001; LSC, 2009.

Chapter IV

TRANSPORTATION
CONSULTANTS, INC.

CHAPTER IV
Trip Distribution

INTRODUCTION

Trip distribution is the second major step in the travel model. It answers the "where" question with regard to trip-making. Once a person decides that a trip is needed to satisfy some purpose, a choice among many possible destinations that might meet that purpose must be made and this decision is represented in the travel model.

TRIP DISTRIBUTION THEORY

The representation of the location decision is based on Newton's model of gravity, which says the attractiveness of two objects is related to the size of the objects and inversely-related to the squared distance between them. In simpler terms and relating it to trip-making, an individual prefers a shorter trip if all else is equal, but will balance the prospect of a shorter-trip with knowledge that some destinations may serve the trip purpose better than others even if they are farther away.

In trip-making choices, it is not only the distance that individuals respond to, but also travel time. Two equal choices for a product or service (e.g., the same chain store) might be an equal distance away, but the perceived attractiveness of the destinations can be affected by a number of factors. Examples of equal chain store choices being affected by the travel time include:

- One location is served by a higher-speed arterial street and the other a lower-speed residential street (a.k.a. link speeds).
- One location is on a street that is always congested and the is other not.
- One location may have a parking cost (i.e., parking meter or pay lot) and the other does not.
- One may have a bus stop nearer than the other.

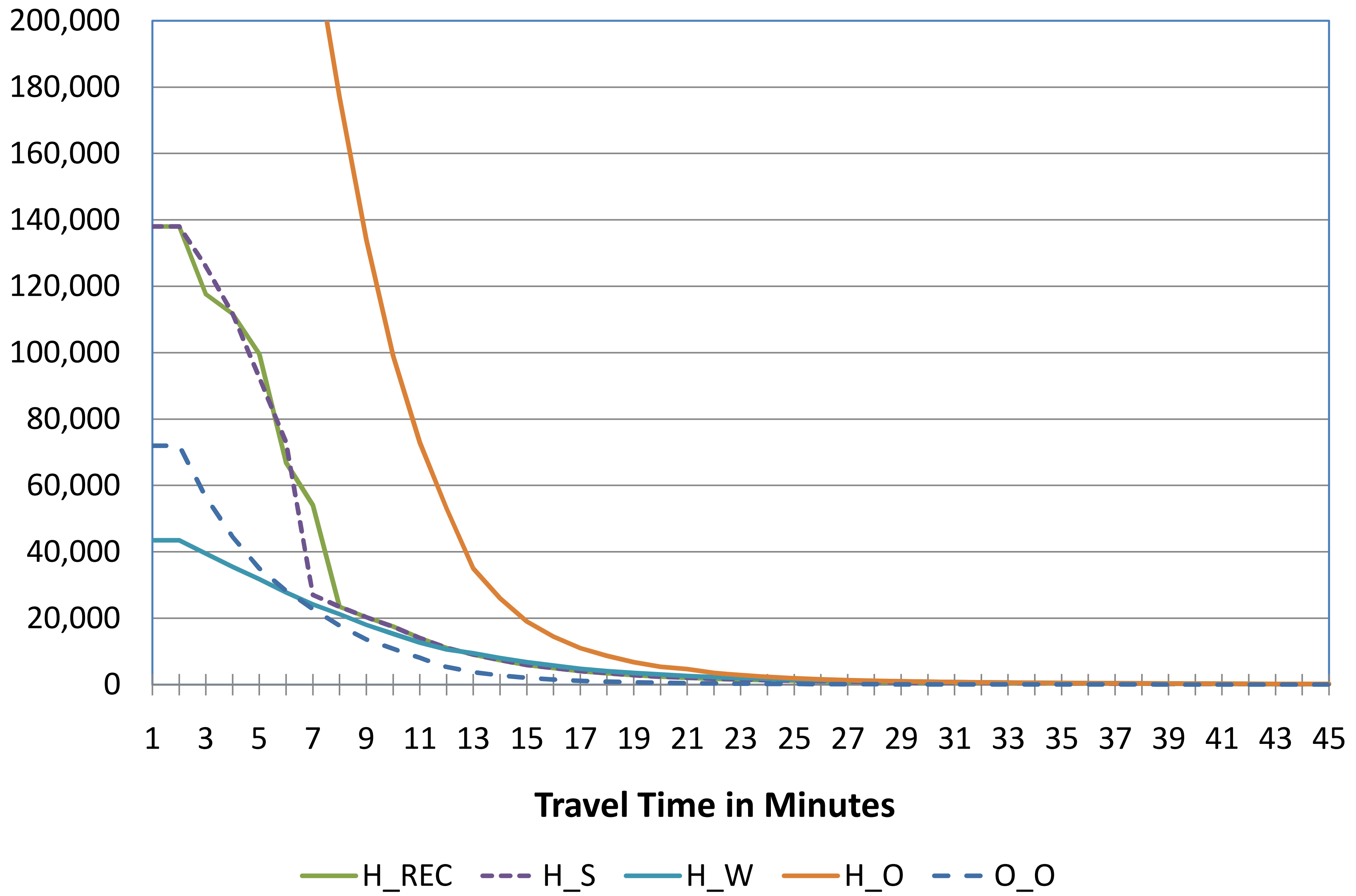
The total of these travel time increments or "impedances" is compared in the model.

FRICTION FACTORS

Friction factors are sets of numbers in the modeling process that help to describe the sensitivity of travelers to the total impedance by trip purpose. Many errands individuals run, for example, occur at non-congested times of day and therefore may be less sensitive to travel distance and travel time. Trips to work, on the other hand, are more sensitive to congestion and delay as individuals need to arrive on time reliably.

Friction factors for this model were adapted from the 2005 model and are shown in Figure IV-1. In this chart on the vertical axis, the higher the number, the lower the sensitivity. Looking at the solid line labeled H-O for home-based other or home to other, it does not become sensitive to travel time until about the ten-minute mark where it touches the top of the chart. This chart is intended to communicate the relative sensitivity among trip purposes.

Figure IV-1
Friction Factor Curves

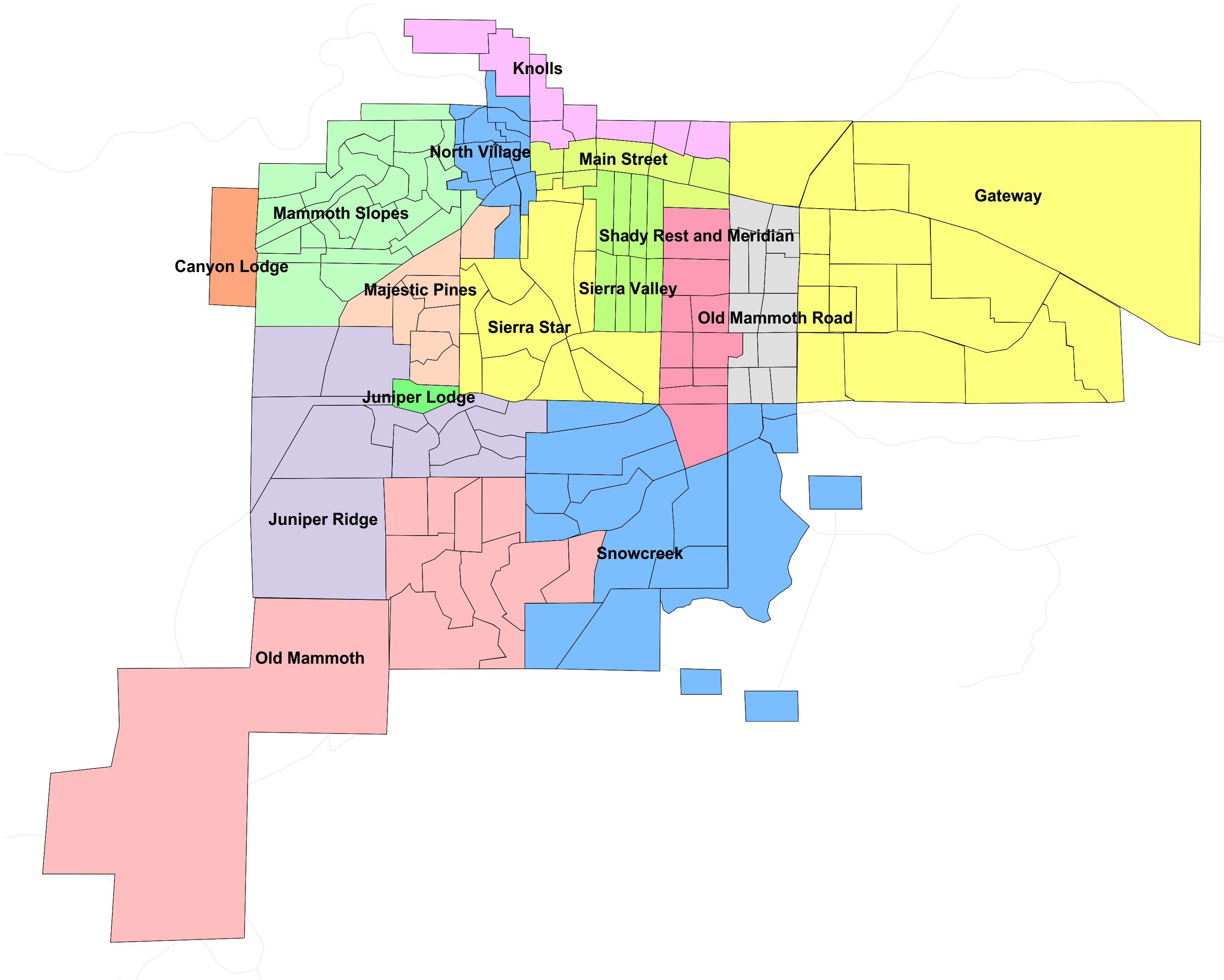


K-FACTORS

K-factors or "socioeconomic adjustment factors" are applied when all other impedance variables, after adjustments, still do not produce satisfactory results for some geographic subarea of the travel model.

K-factors are used in the Town of Mammoth Lakes travel model for the Mammoth Slopes neighborhood area surrounding the Canyon Lodge. Figure IV-2 shows the districts used in the modeling process, consistent with the neighborhood boundaries and ski portals.

Table IV-1 presents the adjustment results showing the results with and without a K-factor. The original raw results had 40 percent of residents in the Mammoth Slopes neighborhood using the Canyon Lodge ski area portal, despite that being the nearest place to access the mountain. Half of Mammoth Slopes residents were originally forecast to make a longer trip to the Main Lodge to access the mountain. When carried through the model, this resulted in inordinately high traffic volumes leaving the neighborhood via the Forest Trail and Minaret roadways. After adjustments were made, Mammoth Slopes residents are more likely to access the mountain at Canyon Lodge than either of the other lodge/portal base areas.



Town of Mammoth Lakes
Neighborhood Districts
Mammoth Lakes Model Update

Figure IV-2
LSC # 084870

Table IV-1
Mammoth Slopes K-Factor Adjustment Results

Mammoth Slopes	Original Raw Results						Corrected Results					
	Main Lodge TAZ 1		Canyon TAZ 42		Eagle TAZ 130		Main Lodge TAZ 1		Canyon TAZ 42		Eagle TAZ 130	
TAZ	Trips	%	Trips	%	Trips	%	Trips	%	Trips	%	Trips	%
6	73	56%	47	36%	11	8%	57	39%	84	57%	5	4%
14	78	52%	58	39%	12	9%	61	37%	99	60%	6	3%
15	52	53%	39	39%	8	8%	41	37%	65	59%	4	4%
16	66	54%	46	37%	12	9%	50	36%	83	60%	6	4%
17	43	56%	27	36%	6	8%	36	43%	45	54%	3	3%
21	293	50%	233	40%	62	10%	195	28%	469	68%	25	4%
22	110	52%	83	39%	18	9%	85	36%	144	61%	9	3%
23	305	49%	258	41%	63	10%	205	28%	498	68%	26	4%
24	60	53%	45	39%	9	8%	48	38%	73	58%	4	4%
25	47	52%	35	39%	9	9%	37	36%	62	60%	4	4%
26	56	51%	42	39%	11	10%	43	35%	76	61%	5	4%
27	198	50%	153	39%	41	11%	144	31%	295	65%	18	4%
43	82	47%	76	43%	19	10%	86	50%	69	40%	17	10%
44	143	46%	133	43%	34	11%	93	25%	259	71%	13	4%
45	23	49%	19	41%	5	10%	16	31%	34	65%	2	4%
46	37	48%	33	42%	8	10%	28	32%	56	64%	4	4%
47	72	52%	55	39%	12	9%	56	36%	93	60%	6	4%
48	94	52%	70	39%	16	9%	77	39%	114	57%	8	4%
49	59	53%	43	39%	8	8%	49	41%	68	56%	4	3%
50	272	49%	215	39%	63	12%	187	29%	437	67%	27	4%
51	65	53%	45	37%	12	10%	48	34%	87	62%	5	4%
57	82	47%	74	42%	19	11%	58	29%	136	67%	8	4%
58	175	49%	146	41%	38	10%	122	30%	274	66%	16	4%
95	204	48%	185	43%	39	9%	157	33%	306	64%	18	3%
96	189	50%	147	39%	40	11%	136	32%	279	65%	17	3%
Total	2,878	50%	2,308	40%	573	10%	2,115	32%	4,204	64%	261	4%

Source: Trip Distribution.mtx files from TransCAD modeling. Excerpted by LSC, 2010.

TRIP DISTRIBUTION RESULTS

The results of the trip distribution step are a table or matrix of 170 rows and 170 columns (or 167 x 167 without the external zones). This table is used by the model in subsequent steps. To digest the results more easily, the results were distilled into a 17-row and 17-column district table—Table IV-2—using the neighborhood districts previously mentioned in this report. Each district represents a collection of individual TAZs.

The grey-highlighted cells diagonally across the table show trips that both begin and end in the same district. Row totals show how many trips are from each district while column totals show how many person-trips are destined to each district. As an example, there are 4,001 person-trips from the Main Lodge going to other places while other places are sending 26,269 person-trips to the Main Lodge on a daily basis.

The largest trip-interchanges are between the following pairs (listed in "from" to "to" order):

- Main Lodge to Main Lodge (3.0%)
- Mammoth Slopes to Canyon Lodge (3.1%)
- Mammoth Slopes to Old Mammoth Road (4.5%)
- Shady Rest/Meridian to Old Mammoth Road (3.2%)
- Old Mammoth Road to Old Mammoth Road (3.2%)
- Juniper Ridge to Old Mammoth Road (2.9%)
- External Stations to Main Lodge (6.1%)
- External Stations to Canyon Lodge (3.7%)

Table IV-2
Saturday District-to-District Person-Trip Distribution Results

DISTRICT		Destinations																	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	TOTAL
Origins	1	3,993	1	0	1	1	0	1	0	0	0	0	2	0	0	0	0	0	4,001
	2	0	1,123	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1,126
	3	0	0	28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	29
	4	2,115	4,204	261	302	1,284	61	2,142	84	30	318	199	6,069	533	291	165	566	87	18,714
	5	1,178	707	266	124	1,941	26	622	35	14	103	91	1,960	151	100	76	212	116	7,722
	6	646	380	87	73	354	15	521	18	8	80	54	1,554	165	67	44	143	37	4,246
	7	1,174	759	289	256	716	55	786	70	28	160	183	2,373	304	164	121	287	125	7,848
	8	792	548	149	85	429	15	627	24	9	93	60	1,856	174	94	59	177	53	5,243
	9	396	255	98	33	201	7	260	10	4	39	28	826	68	35	28	90	38	2,417
	10	882	567	160	88	485	19	707	24	10	105	72	2,182	242	96	66	229	64	5,998
	11	1,785	1,159	381	140	907	32	1,375	41	18	201	134	4,287	441	170	134	494	171	11,871
	12	1,678	1,137	472	620	1,096	146	1,485	178	80	365	495	4,308	778	403	324	689	173	14,426
	13	386	247	100	87	205	22	329	25	12	68	90	992	181	65	49	120	42	3,021
	14	1,133	790	1,156	125	584	25	938	39	15	145	105	3,009	251	132	90	316	86	8,941
	15	824	567	162	66	348	15	585	20	10	88	77	2,081	196	79	78	263	65	5,522
	16	1,080	742	230	110	511	25	834	32	17	128	125	2,881	285	120	104	368	95	7,687
	17	8,208	4,942	2,489	33	2,553	8	1,036	9	4	117	33	3,543	275	69	184	317	1,834	25,655
	TOTAL	26,269	18,128	6,328	2,143	11,619	471	12,248	610	259	2,011	1,746	37,924	4,045	1,885	1,523	4,270	2,985	134,465

District Key

1. Main Lodge
2. Canyon Lodge
3. Eagle Lodge
4. Mammoth Slopes
5. North Village
6. Knolls
7. Main Street
8. Majestic Pines
9. Sierra Star
10. Sierra Valley
11. Shady Rest / Meridian
12. Old Mammoth Road
13. Gateway
14. Juniper Ridge
15. Old Mammoth
16. Snowcreek
17. Externals

Source: Trip Distribution.mtx aggregated using area_aggregate_tables_extnl.bin. LSC, 2010.

Trip Length Frequency Distributions by Trip Purpose

Figure IV-3 shows the trip length frequency distribution for the five trip purposes. This chart is intended to communicate that the highest number of trips are about three minutes in duration and that trips of over 10 minutes are rare, except recreation trips.

Validation of trip distribution is usually done, in part, by comparing household travel survey information on trip times to modeled trip times. Comprehensive data are not available in this regard. Census data do exist to validate the home-based work trip purpose with the caveat that Census data generally represent weekday commuting times, whereas this model is attempting to represent Saturday work trip times.

Figure IV-3
Trip Length Frequency Distribution

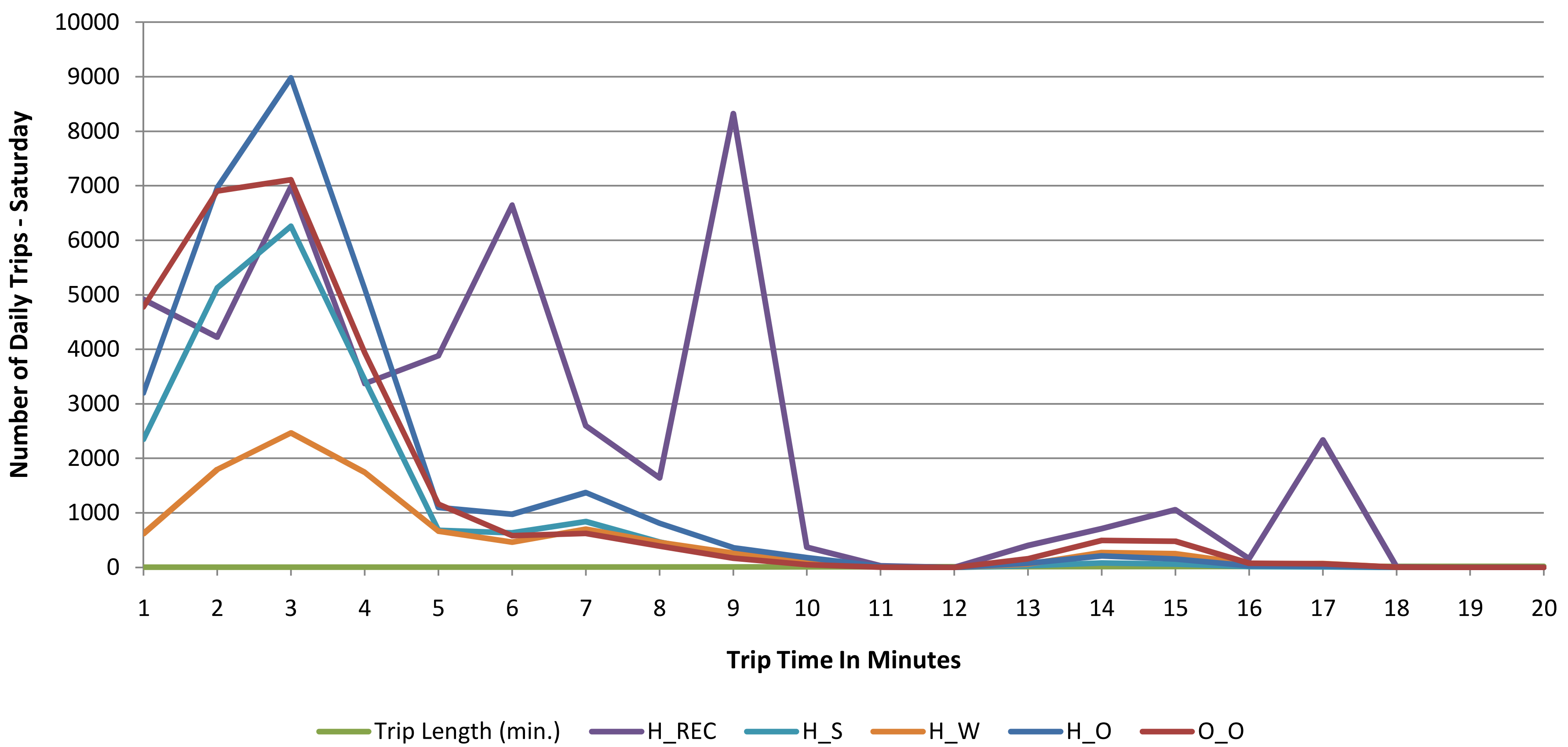


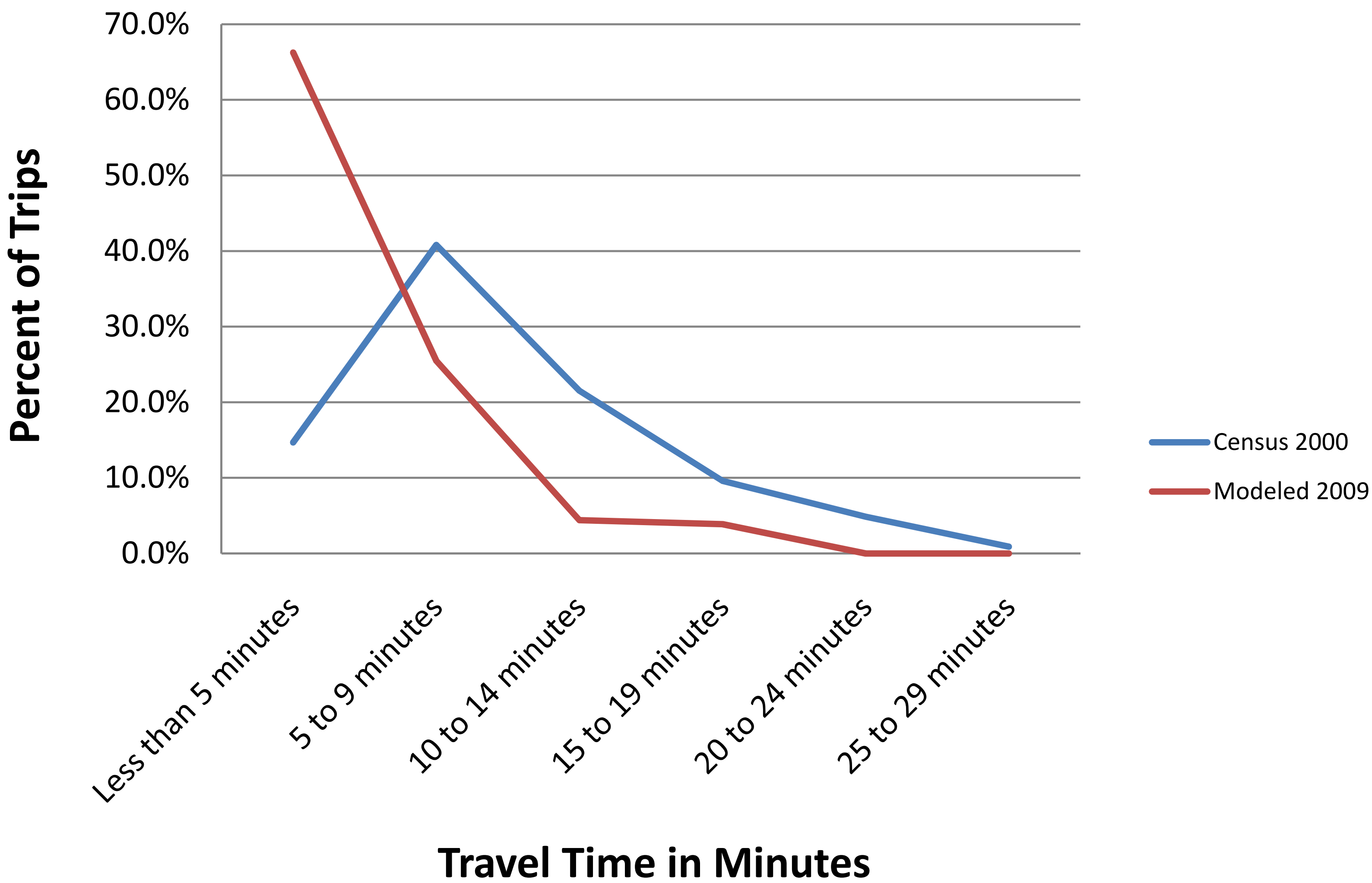
Table IV-3 presents the available data from the Census and from model outputs. At a gross level, both actual and modeled data show in excess of 90 percent of work trips taking less than 24 minutes to complete. There is consistency on this point. Figure IV-4 shows the trip length frequency distribution visually. From this chart, the shape of the curves are similar, indicating reasonable results.

Table IV-3
Travel Time to Work Trip Length Validation

Travel Time	Census 2000, Weekday (Persons)		Saturday Modeled
	Number	Percentage	Percentage
Less than 5 minutes	573	14.7%	66.3%
5 to 9 minutes	1,593	40.8%	25.5%
10 to 14 minutes	840	21.5%	4.4%
15 to 19 minutes	375	9.6%	3.9%
20 to 24 minutes	190	4.9%	0.0%
25 to 29 minutes	35	0.9%	0.0%
30 to 34 minutes	105	2.7%	0.0%
35 to 39 minutes	0	0.0%	0.0%
40 to 44 minutes	17	0.4%	0.0%
45 to 59 minutes	102	2.6%	0.0%
60 to 89 minutes	0	0.0%	0.0%
90 or more minutes	74	1.9%	0.0%
Did not work at home	3,904	100.0%	100.0%
Worked at home	323	n/a	n/a
Total	4,227	n/a	n/a

Source: US Census Bureau, 2000 Census, SF3: Table P31. LSC, 2010.

Figure IV-4
HBW Trip Length Frequency Distribution



Recreation Trip Distribution Results

As noted in the chapter on trip generation, recreation trips represent 35 percent of peak Saturday trip making in the Town of Mammoth Lakes. Not only do recreation trips represent a large proportion of all Saturday trips, but their geographic distribution is primarily to four locations. It is therefore important to look at validating the results of the trip distribution for recreation trips.

Table IV-4 presents the results of the modeled versus the current trip distribution for recreation trips. Estimates of current skier totals provided by the Town of Mammoth Lakes suggest a percentage distribution of skiers of 33/33/17/17 at the Main Lodge, Canyon Lodge, Eagle Lodge, and North Village, respectively. This distribution is only for skiers and does not include employees, lodge area shopping, or other associated trips.

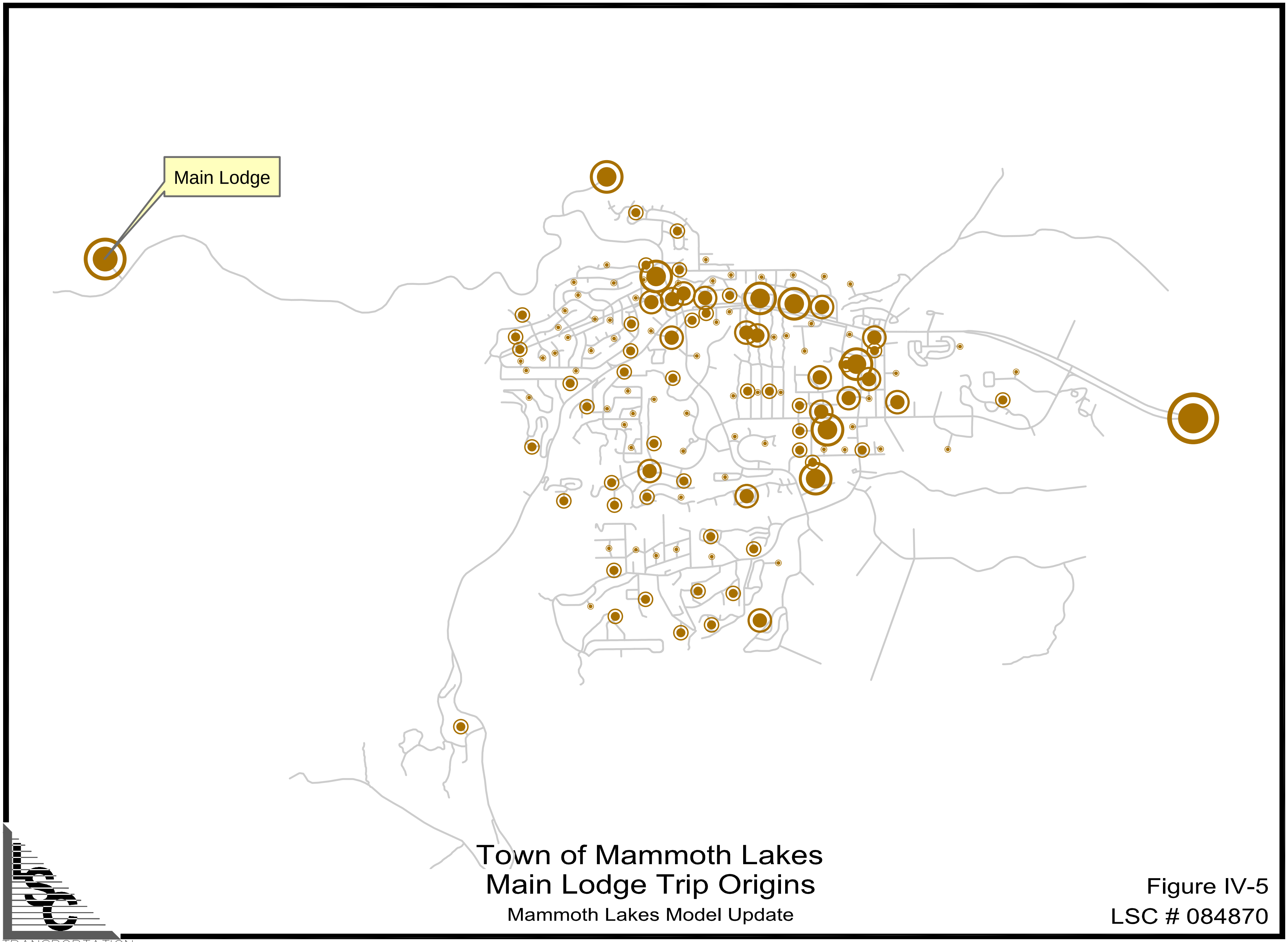
Modeled percentage recreation trips are distributed 41/30/15/14 at Main Lodge, Canyon Lodge, Eagle Lodge, and North Village, respectively. Like the actual data, these data are for skiers only. These modeled results are within three percent for Canyon Lodge, Eagle Lodge, and North Village, and are within eight percent for the Main Lodge, so are considered to be within expected model tolerances.

Table IV-4
Ski Lodge / Portal Distribution Results
(H-REC Trip Purpose)

		Lodge / Portal Destinations				
		Main Lodge TAZ 1	Canyon Lodge TAZ 42	Eagle Lodge TAZ 130	North Village TAZ 28	Total
Internal Origins	Trips	7,025	6,350	3,017	2,962	19,353
External Origins	Trips	8,049	4,834	2,475	2,247	17,605
Modeled Total[1]	#	15,073	11,184	5,491	5,209	36,958
	%	40.8%	30.3%	14.9%	14.1%	100.0%
Current Skier Estimates, Including Employees[2]	%	33.3%	33.3%	16.7%	16.7%	83.3%

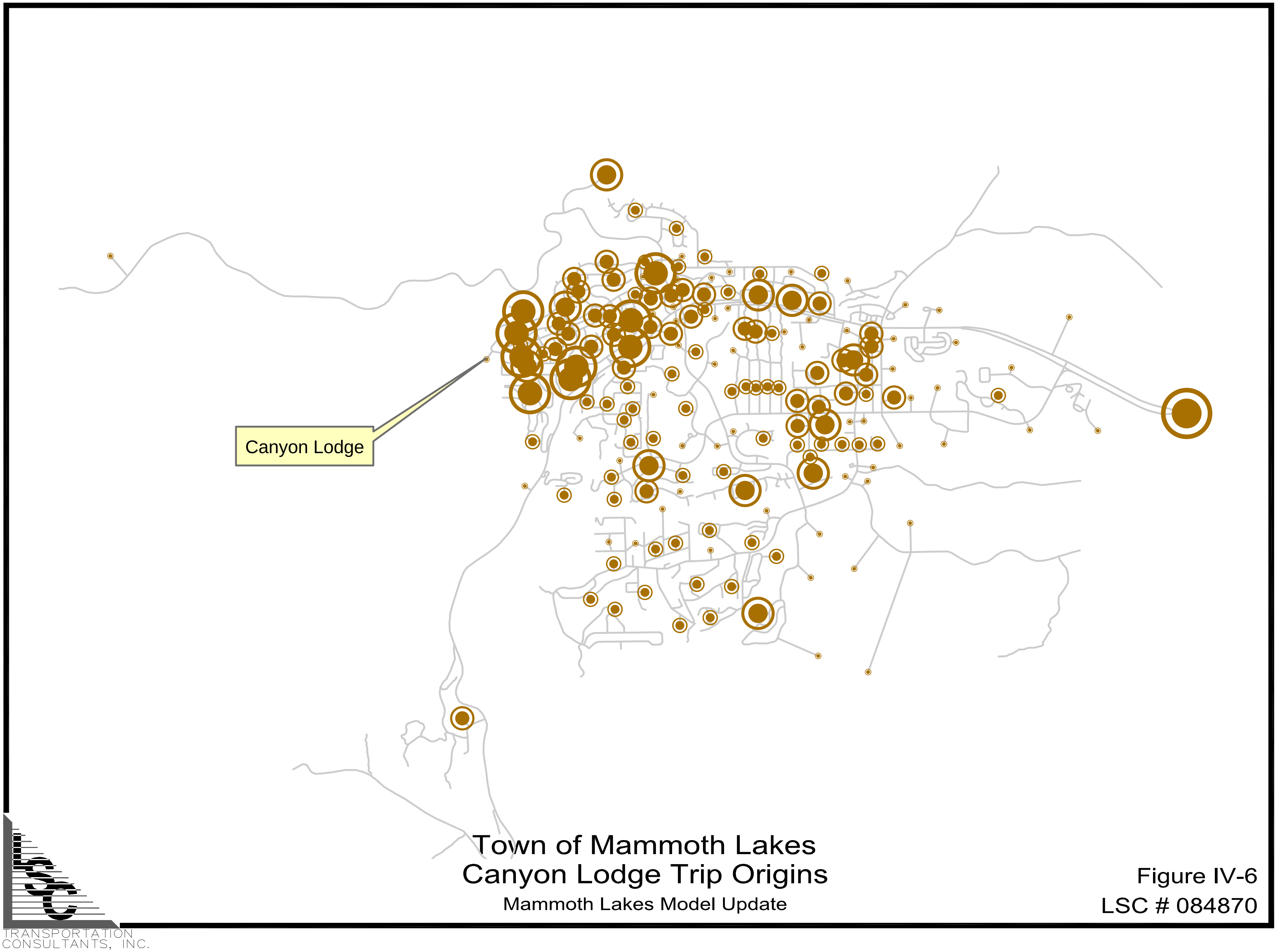
Sources: [1]LSC (modeled) and [2]Town of Mammoth Lakes (estimates of actual utilization), 2010.

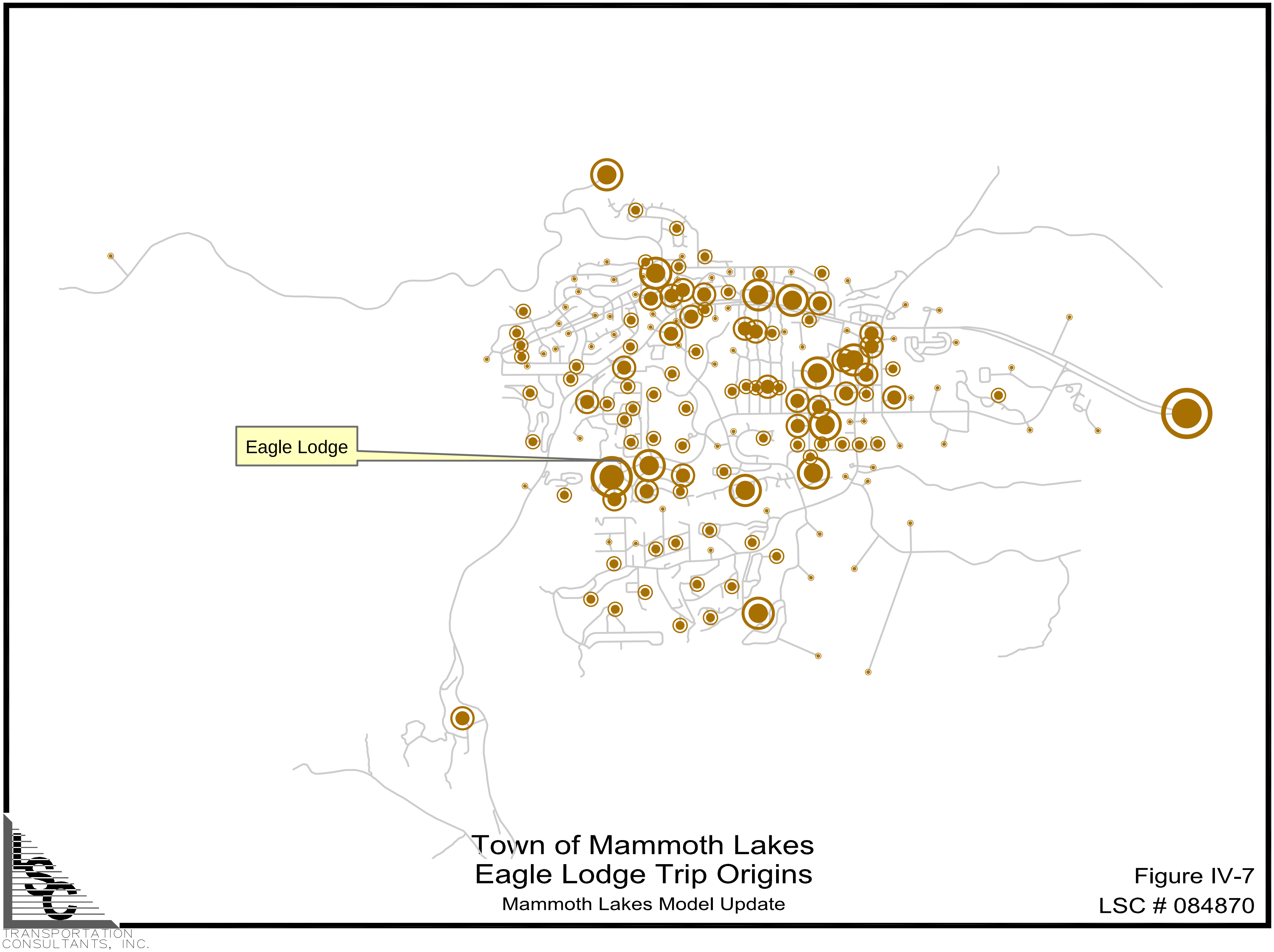
Figures IV-5, IV-6, IV-7, and IV-8 visually display the origin location of trips attracted to the Main Lodge, Canyon Lodge, Eagle Lodge, and North Village, respectively. Trips attracted to the Main Lodge come primarily from the SR 203 external, and the following neighborhood districts: Old Mammoth Road, Meridian, North Village and Main Street areas. Trips attracted to the Canyon Lodge come primarily from the SR 203 external node, and the Mammoth Slopes neighborhood district. Trips attracted to the Eagle Lodge come primarily from the SR 203 external node and the following neighborhood districts: Juniper Ridge, Main Street, Meridian, and Snowcreek. Trips attracted to the North Village come primarily from the SR 203 external, and the North Village, Main Street, and Old Mammoth neighborhood districts.

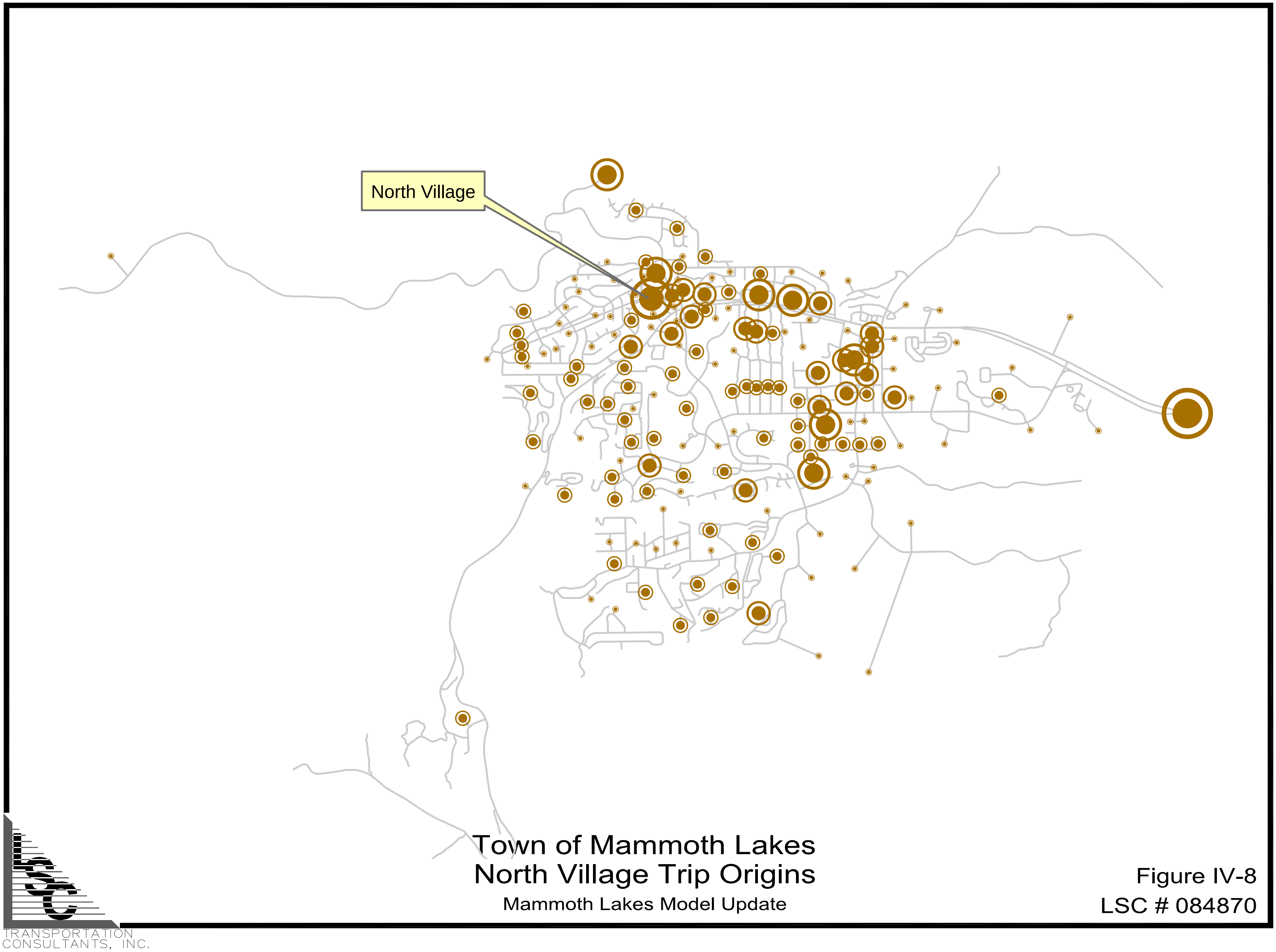


Town of Mammoth Lakes
Main Lodge Trip Origins
Mammoth Lakes Model Update

Figure IV-5
LSC # 084870


Canyon Lodge
Town of Mammoth Lakes
Canyon Lodge Trip Origins
Mammoth Lakes Model Update
Figure IV-6
LSC # 084870
TRANSPORTATION CONSULTANTS, INC.


Eagle Lodge
Town of Mammoth Lakes
Eagle Lodge Trip Origins
Mammoth Lakes Model Update
Figure IV-7
LSC # 084870
TRANSPORTATION CONSULTANTS, INC.


North Village
Town of Mammoth Lakes
North Village Trip Origins
Mammoth Lakes Model Update
Figure IV-8
LSC # 084870
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Chapter V

TRANSPORTATION CONSULTANTS, INC.

CHAPTER V
Mode Split

INTRODUCTION

Mode split refers to the allocation of person-trips between the available travel modes. The Town of Mammoth Lakes model includes two modes for travel—auto and transit. The process splits the trips for each origin-destination pair between the two trip modes. The end result provides the number of person-trips between each zone pair by mode.

MODE SPLIT METHODOLOGY

Mode split in the model was calculated by comparing auto travel times to transit travel times and applying a mode split curve. The logic behind a mode split curve is that potential transit riders will be more likely to choose transit if the travel time is similar to the auto travel time. Where these differences are large (i.e., areas far from transit services), the transit mode split will be low to reflect the lower attractiveness of transit options. Two separate mode split curves were used—one for home-based recreation trips and one for the other four trip purposes. The difference between them reflects a higher transit utilization for home-based recreation trips. This is due to the fact that the Town of Mammoth Lakes transit system is specifically designed to maximize ridership for recreation trips since the ski area portals currently have a low parking supply. The curves are shown in Figures V-1 and V-2 and are consistent with those used in the prior Town of Mammoth Lakes model.

Figure V-1
Recreation Trip Mode Split Curve

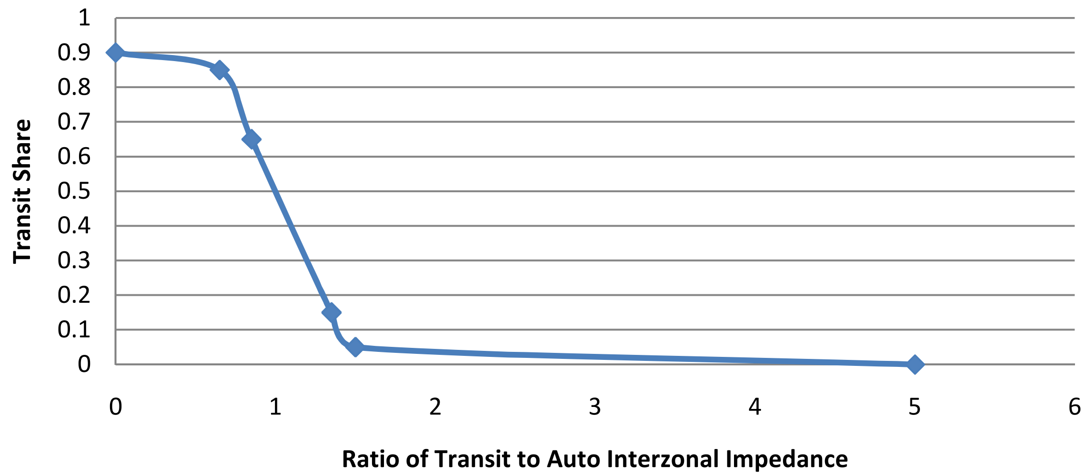
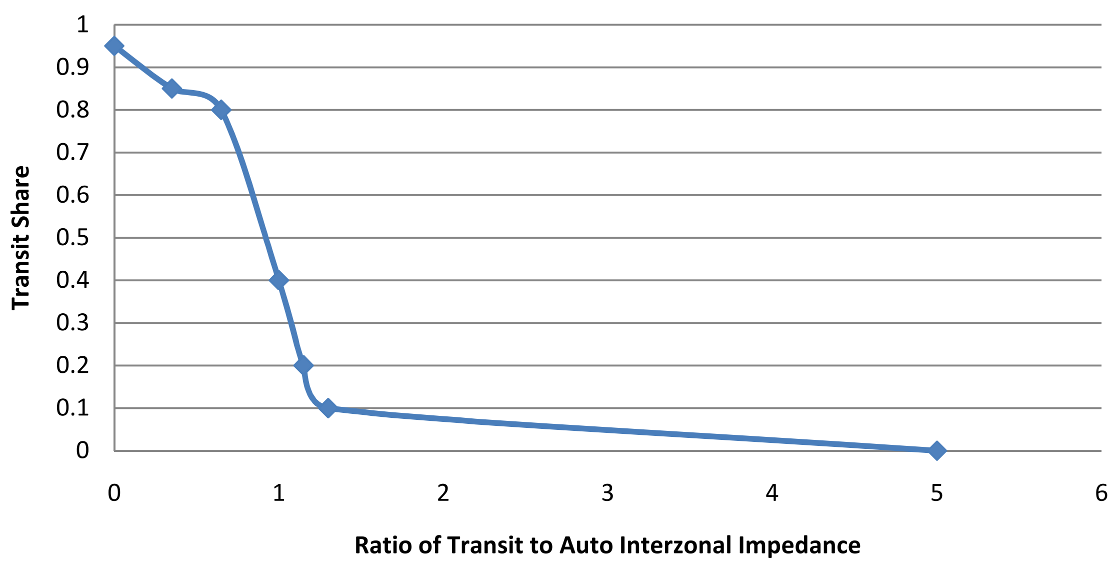


Figure V-2
Non-Recreation Trip Mode Split Curve



In addition to using the mode split curves, mode split for recreation trip destinations at the ski areas was adjusted to match the observed mode split based on survey data collected by the Town. Table V-1 shows the mode split at the three ski area portals as collected in January 2009.

Table V-1

Observed Mode Split at Ski Gateways

Gateway	Mode Choice Responses				Mode Choice Split		
	Vehicle	Transit	Walk	Total	Vehicle	Transit	Walk
Main	62	17	20	99	63%	17%	20%
Canyon	51	30	24	105	49%	29%	23%
Eagle	29	9	8	46	63%	20%	17%

Source: Town of Mammoth Lakes Survey, Dec. 2008.

As shown, auto trips represented approximately 49 to 63 percent of total trips to the ski portals while transit trips ranged from 17 percent at the Main Lodge to 29 percent at Canyon Lodge. The higher percentage at Canyon Lodge is likely due to The Village Gondola which connects the Canyon Lodge ski area to The Village area near Minaret Road. In addition to the bus service, the gondola is included in the modeled transit network.

Based on these data, auto travel time penalties were calculated and inserted into the auto travel time skims to calibrate the mode split for recreation trips to the ski area data shown in Table V-1. In other words, if a skier base area had too high a vehicular mode share, then additional travel time was added to that base area for vehicular trips (auto, vanpool, etc.) to make it less attractive an option relative to transit. This was done only at the base area so that it did not affect vehicular trips to adjacent zones. These penalties, shown below, account for the reduced attractiveness of auto trips due to various factors, including low parking supply and congestion at the ski area portals.

- Main Lodge = 21 minutes, 16 seconds
- Canyon Lodge = 19 minutes, 49 seconds
- Eagle Lodge = 11 minutes

Finally, additional penalties were added to TAZs 19, 28, and 30, which represent the resort areas surrounding The Village. A 10-minute penalty was added to account for lower parking supply in the area and the presence of The Village Gondola.

RESULTS

The resulting mode split by TAZ is shown in Figure V-3. As shown, transit share is high at the three ski area portals as well as areas surrounding The Village and the gondola. Transit share is also high along Main Street and Old Mammoth Road due to the transit routes that serve these areas. Overall, transit share is approximately 15 percent for all trip purposes with home-based recreation trips having the largest share at approximately 35 percent. This is due to the high transit share at the ski area portals. Table V-2 shows the final transit share by trip purpose. Table V-3 shows the final transit share at the four ski portals.

Table V-2

Mode Choice by Trip Purpose

Trip Purpose	Daily Person-Trips by Mode			Mode Split	
	Vehicle	Transit	Total	Vehicle	Transit
H-REC	31,200	16,462	47,662	65.5%	34.5%
H-S	19,830	440	20,270	97.8%	2.2%
H-W	9,787	213	10,000	97.9%	2.1%
H-O	28,718	844	29,562	97.1%	2.9%
O-O	24,846	2,126	26,972	92.1%	7.9%
Totals	114,381	20,084	136,465	85.1%	14.9%

Source: LSC, 2010.

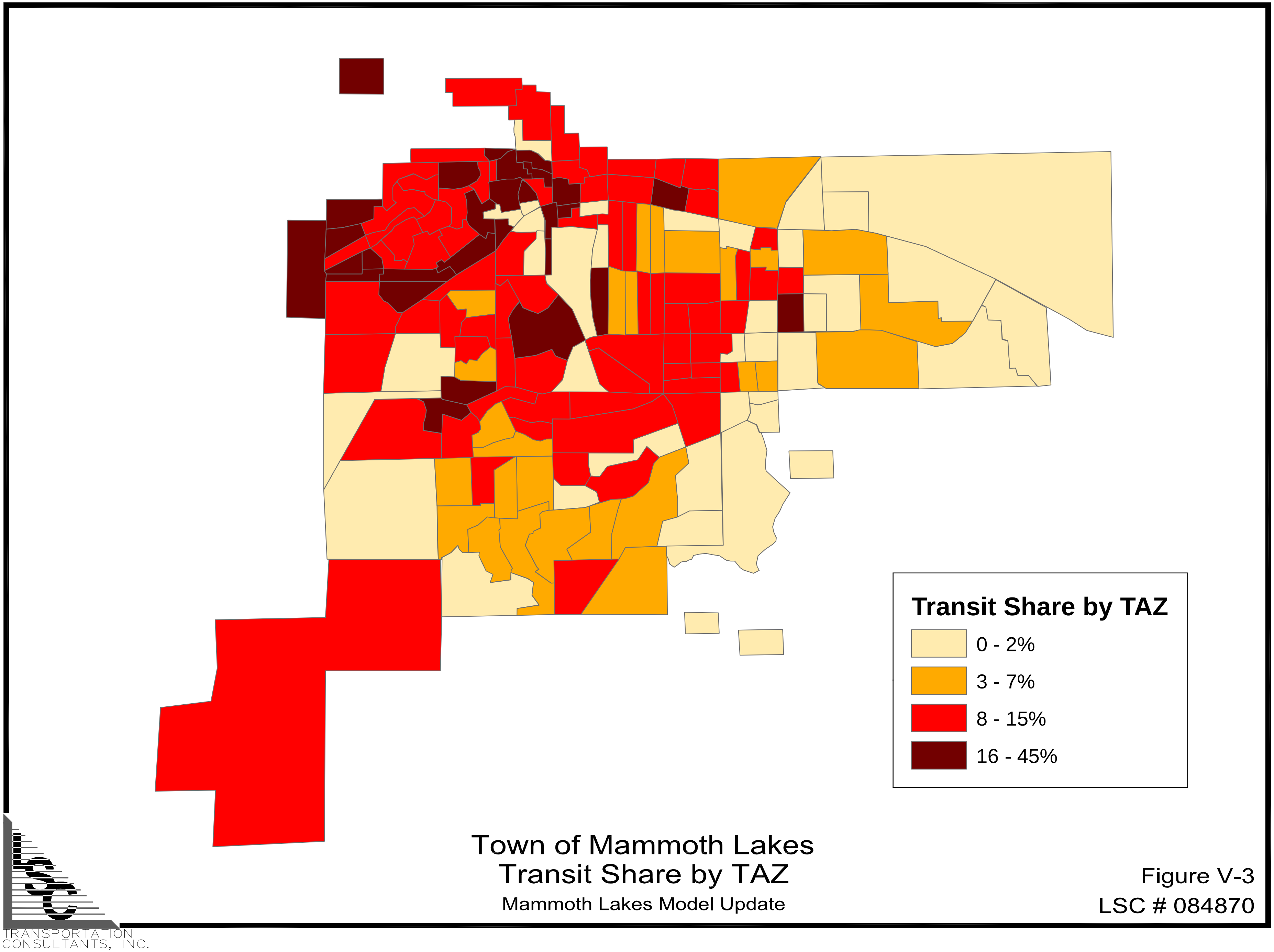

Transit Share by TAZ
0 - 2%
3 - 7%
8 - 15%
16 - 45%
Town of Mammoth Lakes
Transit Share by TAZ
Mammoth Lakes Model Update
Figure V-3
LSC # 084870
LSC
TRANSPORTATION CONSULTANTS, INC.

Table V-3 Mode Choice at Ski Area Gateway (All Trip Purposes)						
Gateway	TAZ	Daily Person-Trips by Mode			Mode Split	
		Vehicle	Transit	Total	Vehicle	Transit
Main	1	10,256	4,891	15,147	67.7%	32.3%
Canyon	42	6,919	2,705	9,624	71.9%	28.1%
Eagle	130	2,070	1,107	3,177	65.2%	34.8%
North Village	28	3,189	1,466	4,655	68.5%	31.5%
Source: LSC, 2010.						

As shown, transit shares at the ski portals range from 35 percent at Eagle Lodge to 28 percent at Canyon Lodge. These percentages compare well to the actual transit share shown in Table V-1 with the differences caused by the fact that the data in Table V-1 are for home-based recreation trips only and include the walk mode while the shares shown in Table V-3 are for all trip purposes and include only vehicle and transit modes. Since the other non-recreation trip purposes generally have a lower transit share, the totals in Table V-3 are lower than those shown in Table V-1.

To further confirm the correct transit share, total transit system boardings from the model were compared to current ridership data provided by the Town of Mammoth Lakes. The results show that model-generated transit boardings are within three percent of the actual transit boardings. Since the level of transit use is correctly represented in the model, this confirms that the correct transit share is being used. This is important since it ensures that the correct number of vehicle-trips are used in the vehicle assignment.

P-A to O-D TRANSFORMATION

The final step before assignment is to convert the production-attraction (P-A) person-trips between TAZ pairs to origin-destination (O-D) transit and auto trips. Specifically, the production-attraction person-trips generated in the trip distribution step were first split into transit and auto person-trips using the mode split data discussed above. The resulting daily transit person-trips were then used in the transit assignment step discussed in Chapter VI. For daily auto trips, the transformation involved conversion from person-trips to auto trips. This conversion required the use of occupancy factors, or the average number of persons per vehicle. Vehicle occupancy factors generally differ based on trip purpose. The following vehicle occupancy factors were used in the model:

- Home-based recreation trips = 3.0 persons per vehicle
- Home-based work trips = 1.1 persons per vehicle
- Home-based shopping, home-based other, and other-to-other trips = 1.8 persons per vehicle

These vehicle occupancy factors were estimated based on several sources, including the *2001 National Household Travel Survey* (NHTS), *NCHRP 365 - Travel Estimation Techniques for Urban Planning*, the US Census data shown in Table V-4, as well as adjustments made based on the count data in Chapter I.

Table V-4
Private Vehicle Occupancy for Workers Age 16 and Older

Travel Time	Persons	
	Number	Percentage
Drove Alone (SOV)	2,543	78.7%
2-person carpool	654	20.2%
3-person carpool	21	0.6%
4-person carpool	13	0.4%
5-or-more-person carpool	0	0.0%
Total	3,231	100.0%
Computed Average Auto Occupancy		1.23

Source: US Census Bureau, 2000 Census, SF4, Table PCT60; LSC Computation of Average Auto Occupancy, 2009.

Once the daily origin-destination transit and auto trips were calculated using the P-A to O-D transformation, the daily trips were converted to peak-hour trips using daily distribution curves. Different curves were used for home-based recreation, home-based work, and the other three trip purposes (home-based shopping, home-based other, and other-to-other). The curves were calculated based on the daily count data shown in Figure I-3. For home-based recreation trips, the count along Minaret Road near The Village was used since it was assumed to contain mostly recreation trips driving to and from the Main Lodge ski area. For home-based shopping trips, home-based other trips, and other-to-other trips, the curve was calculated by taking an average from various count locations throughout the town.

Finally, the home-based work curve was calculated by averaging the recreation-based and the home-based shopping, home-based other, and other-to-other curves. This assumption was considered reasonable since a large proportion of peak winter Saturday work trips are associated with recreational uses, but do not experience the large peaking characteristics of home-based recreation trips. The resulting daily distribution curves are shown in Figure V-4.

As shown in Figure V-4, the peak hour for all three daily distribution curves is 4:00 to 5:00 p.m. As a result, data for this hour were used to calculate the peak winter Saturday peak-hour auto O-D trips to be used in the peak-hour auto assignment.

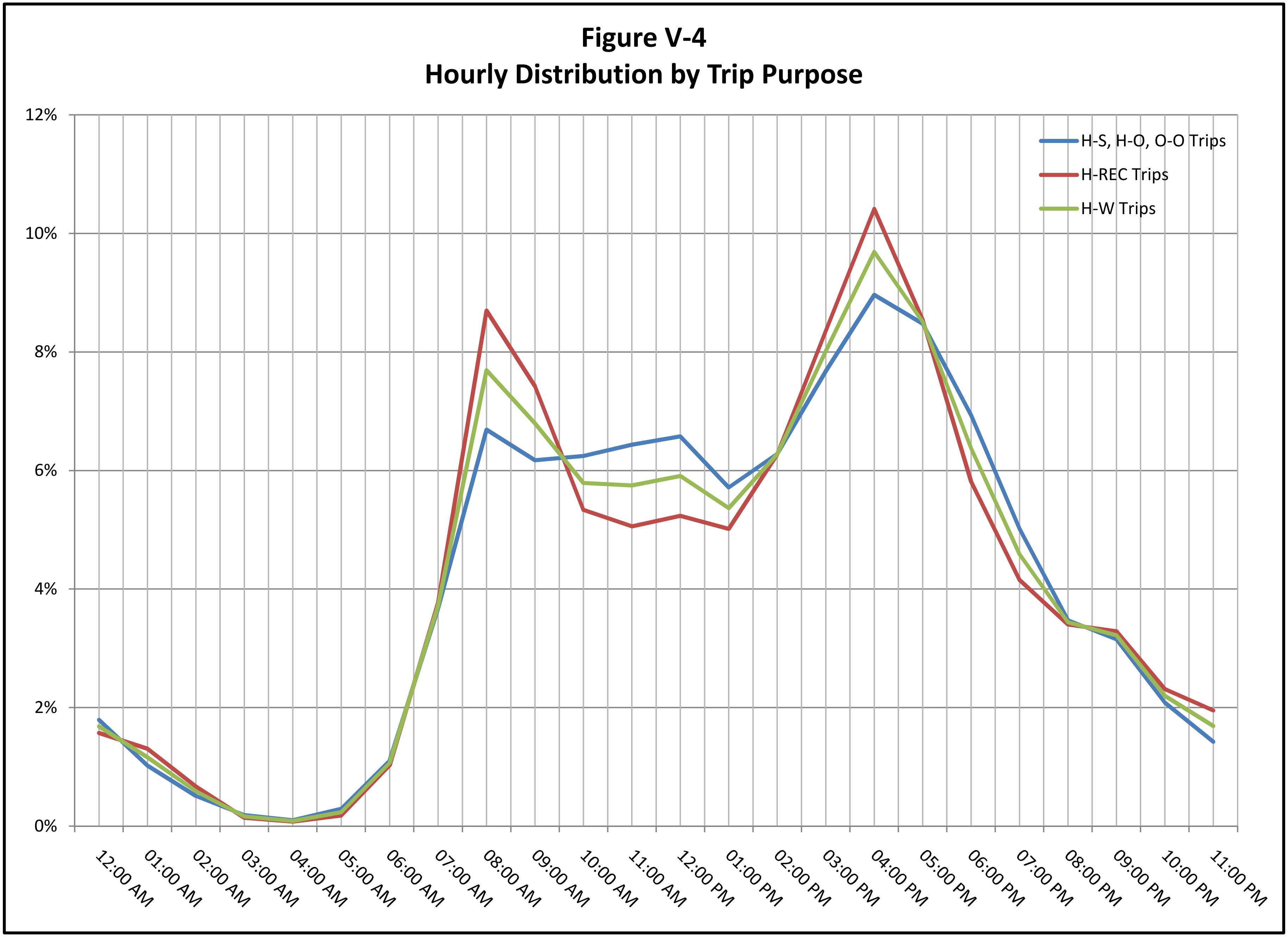


Figure V-4
Hourly Distribution by Trip Purpose
12%
10%
8%
6%
4%
2%
0%
H-S, H-O, O-O Trips
H-REC Trips
H-W Trips
12:00 AM
01:00 AM
02:00 AM
03:00 AM
04:00 AM
05:00 AM
06:00 AM
07:00 AM
08:00 AM
09:00 AM
10:00 AM
11:00 AM
12:00 PM
01:00 PM
02:00 PM
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08:00 PM
09:00 PM
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11:00 PM

Chapter VI

LSC TRANSPORTATION CONSULTANTS, INC.

CHAPTER VI
Assignment

INTRODUCTION

This chapter discusses the trip assignment models that were used to estimate traffic flow on the network using the origin-destination pairs generated in trip distribution. The assignment of trips to the network relies on the determination of routes through the network based on the impedance or travel time of each link.

ASSIGNMENT METHODOLOGY

Various assignment procedures are available depending on the type of estimate desired.[1] TransCAD provides six options for trip assignment as follows:

- All or Nothing
- Capacity Restraint
- Incremental
- User Equilibrium
- Stochastic User Equilibrium
- System Optimum

The Stochastic User Equilibrium (SUE) method, which uses an iterative process to achieve a solution based upon travel time and capacity, was used in the model. The solution reached is an assignment in which no travelers can improve their travel times by shifting routes or a state of "user equilibrium." In each iteration, network link flows are computed, which incorporate link capacity restraint effects and flow-dependent travel times. SUE assumes travelers do not have perfect

1

The all-or-nothing method is typically used to identify where traffic would go if there were no capacity limitations. Capacity restraint and incremental assignment methods are older, less robust methods of allocating traffic volumes with some consideration for congestion, but do not provide "feedback loops" for the assignment to reach an optimum allocation. User equilibrium (UE) contains a feedback loop and assumes all drivers know the street network perfectly. In practice, many drivers do not always exit congested facilities (i.e., highways) for side streets because they do not know their way and/or are unaware that side streets might be faster. UE is practicable in a smaller urban area like Mammoth Lakes, and SUE still offers some advantages. The system optimum method offers more tools to segregate traffic by types (e.g., trucks vs. cars), a capability that is not yet needed for the Town of Mammoth Lakes Model.

information concerning network attributes and/or they perceive travel costs in different ways. The assignment results are more realistic because SUE permits use of less attractive as well as the most attractive routes.

The traffic assignment procedure uses the following Bureau of Public Roads (BPR) volume delay function to update travel times based upon the volume assigned to each roadway:

$$T_i = t_i \times \left[1 + \alpha \left(\frac{x_i}{C_i} \right)^{\beta} \right]$$

where: T_i = Congested travel time on link i

t_i = Free-flow travel time on link i

x_i = Volume on link i

C_i = Capacity of link i

α, β = Calibration parameters

As roadways begin to approach capacity, the travel time along those roadways is recalculated in the traffic assignment procedure. The newly calculated travel times are then used to assign another portion of the traffic. The model is designed to stop iterating once adequate equilibrium is reached (which under existing conditions occurs after four iterations for the daily assignment and six iterations for the peak-hour assignment). As roadways become more congested in the future, more iterations will be needed.

ROADWAY ASSIGNMENT

All-Day Traffic Assignment

Daily assignment was performed using the daily origin-destination trip information and the existing roadway network. Daily roadway capacities were used along with the BPR volume delay function to calculate congested travel times. The assignment model performed a total of four iterations before equilibrium was reached.

To validate the daily model results, the model traffic assignment was compared to the observed traffic volumes presented in Figure I-3. The approach to the validation process is to conduct a point validation analysis. Point validation represents a higher standard for calibration than is typically used. Not only are overall flows of traffic volumes compared, but also site-specific volumes. A calibrated model should provide results that are reasonably close for major links in the street network. Table VI-1 shows the two-way volume error range that was used in validating the model. For low-volume links, a larger error range is acceptable because of the lack of congestion. A difference of 100 percent for volumes less than 1,000 vehicles per day has little effect on congestion because less roadway capacity is being used. For higher volume roadways, the percentage error must be much smaller.

Table VI-1
Point Validation Error Range - Daily

Daily Two-Way Traffic Volumes	Error Range +/-
< 1,000	100%
1,000 - 3,999	50%
4,000 - 9,999	25%
10,000 - 15,000	15%
> 15,000	10%

During the validation process, links with non-validating traffic counts were identified. In order to have the model accurately match actual traffic counts and therefore represent the actual travel patterns of the Town of Mammoth Lakes, iterative adjustments were made to the impedances of the model network. Calibrated model parameters that establish the base-year model were used in modeling the future growth projections and to evaluate alternate transportation network improvements. Table VI-2 shows the links that were adjusted and the corresponding increase in impedance that was made in order to improve the model's representation of existing travel patterns.

Table VI-2
Daily Vehicular Assignment - Impedance Adjustments

Link No.	Street Name	Added Travel Time (min.)
9	Canyon Blvd.	0.35000
10	Canyon Blvd.	0.24001
30	Forest Trail	0.11992
33	Forest Trail	0.35743
45	Grindelwald Road	0.79991
55	Lake Mary Road	0.56071
57	Lakeview Blvd.	0.19996
126	Sierra Nevada Road	0.24000
157	Main Street	0.05998
158	Main Street	0.15499
162	Main Street	0.04008
167	Minaret Road	0.40000
177	Sierra Park Road	0.20003
179	Tavern Road	0.33997
186	Forest Trail	0.62557
196	Crest Lane	0.20000
200	Tavern Road	0.62003
201	Tavern Road	0.20009
205	Sierra Manor Road	0.19002
206	Sierra Park Road	0.05598
326	Davison Road	0.09994
337	Sierra Blvd.	0.59994
350	Chateau Road	0.23999
361	Meridian Blvd.	0.20005
376	Old Mammoth Road	0.60006
377	Old Mammoth Road	0.20001
397	Kelley Road	0.18004
411	South Frontage Road	0.05804
413	South Frontage Road	0.00504
414	Main Street Access	0.01996
415	Main Street	0.08896
416	Main Street Access	-0.00001
417	South Frontage Road	0.10000
425	Main Street Access	0.28004
429	Center Street	0.01001
468	Forest Trail	0.08201
472	Main Street	0.11596
511	Meridian Blvd.	0.21998
524	Lee Road	0.02998
525	Sawmill Cutoff Road	0.60008

Table VI-2
Daily Vehicular Assignment - Impedance Adjustments

Link No.	Street Name	Added Travel Time (min.)
541	Minaret Road	0.35996
542	Lakeview Blvd.	0.19999
602	Old Mammoth Road	0.11994
37165206	Sierra Manor Road	0.00004
37165207	Sierra Center Centroid Connector	0.20009
37165240	Forest Trail	0.13999
37165325	Lake Mary Road	0.83610
37165692	Old Mammoth Road	0.07995
37165365	Berner Street	0.41992
37165368	Berner Street	0.59999
37165374	Minaret Road	0.04000
37165376	Canyon Blvd.	0.76159
37165415	North Majestic Pines Drive	0.69993
37165459	Rainbow Lane	0.40008
37165473	Azimuth Drive	0.79991
37165477	Sierra Nevada Road	0.39999
37165517	Main Street	0.09998
37165518	Laurel Mountain Road	0.03998
37165521	Forest Trail	0.06002
37165524	South Frontage Road	0.04003
37165525	Main Street	0.11596
37165527	Main Street	0.19993
37165529	Manzanita Road	0.19991
37165534	Mountain Blvd.	1.00002
37165541	Lake Mary Road	0.02002
37165573	Meridian Blvd.	0.40003
37165631	Meridian Blvd.	0.65999
37165636	Von's Centroid Connector	0.62992
37165640	South Frontage Road	0.00797
37165641	Main Street Centroid Connector	0.00998
37165644	Old Mammoth Road	0.08003
37165647	Old Mammoth Road Centroid Connector	0.16996
37165670	Minaret Road	0.19994

Source: From ADT_TT_adjustments.bin, LSC, 2010.

As shown, a total of 73 links were adjusted in order to calibrate the daily assignment to existing count data. Increases to impedance varied from approximately one second to 60 seconds.

Once the model was run with the impedance adjustments listed in Table VI-2, the model generated several files. The output from the run was a 24-hour traffic volume loaded network. The following is a summary of the model results:

- Total Trips = 60,072
- Daily Vehicle-Miles Traveled (VMT) = 144,192
- Daily Vehicle-Hours Traveled (VHT) = 11,621
- Average Vehicle Speed (mph) = 27.0

The above results are a key baseline for comparison of different future transportation scenarios. When the number of trips is divided into the VMT, the average trip distance is 2.40 miles.

The daily VMT number is calculated as follows. Each link has a length and a volume in each direction. A two-mile link with a volume in each direction of 10,000 trips per day would result in 40,000 vehicle-miles traveled (2-mile link x 10,000 vehicle-trips x 2 directions). The sum of all links in the network, both directions, or single direction in the case of one-way streets, is added together to generate the daily systemwide VMT. Note the daily VMT for this model is based on the network representation using 1,028 links to define the road network.

Table VI-3 shows the calibrated link volumes compared to the actual 2009 daily traffic counts collected in the field.

Table VI-3
Daily Vehicular Assignment Comparison - Calibrated Model Results

Link No.	Street Name	Actual Daily Volume	Existing Model Daily Volume	Error	Acceptable Error	Within Acceptable Error?
17	Canyon Blvd.	3,730	3,943	5.7%	50%	Yes
30	Forest Trail	1,030	1,008	2.2%	50%	Yes
33	Forest Trail	630	1,260	100.0%	100%	Yes
55	Lake Mary Road	6,250	4,783	23.5%	25%	Yes
167	Minaret Road	4,750	4,664	1.8%	25%	Yes
186	Forest Trail	2,510	3,626	44.5%	50%	Yes
206	Sierra Park Road	1,180	1,381	17.1%	50%	Yes
224	Minaret Road	4,150	4,212	1.5%	25%	Yes
326	Davison Road	760	1,284	69.0%	100%	Yes
350	Chateau Road	1,270	1,297	2.1%	50%	Yes
361	Meridian Blvd.	6,070	6,304	3.9%	25%	Yes
376	Old Mammoth Road	4,830	5,019	3.9%	25%	Yes
377	Old Mammoth Road	4,720	5,019	6.3%	25%	Yes
397	Kelley Road	1,500	2,068	37.9%	50%	Yes
415	Main Street	13,080	14,450	10.5%	15%	Yes
467	Minaret Road	9,580	9,396	1.9%	25%	Yes
468	Forest Trail	1,080	1,490	38.0%	50%	Yes
511	Meridian Blvd.	4,900	5,029	2.6%	25%	Yes
525	Sawmill Cutoff Road	350	72	79.3%	100%	Yes
541	Minaret Road	6,980	6,306	9.6%	25%	Yes
552	Highway 203	3,670	3,925	7.0%	50%	Yes
557	Mammoth Scenic Loop	240	286	19.3%	100%	Yes
602	Old Mammoth Road	10,250	9,012	12.1%	15%	Yes
621	Highway 203	4,010	4,288	6.9%	25%	Yes
622	Highway 203	4,010	4,288	6.9%	25%	Yes
37165198	Highway 203	3,670	3,924	6.9%	50%	Yes
37165202	Meridian Blvd.	2,780	3,481	25.2%	50%	Yes
37165216	Chateau Road	1,480	1,679	13.5%	50%	Yes
37165365	Berner Street	170	187	10.0%	100%	Yes
37165374	Minaret Road	7,910	9,292	17.5%	25%	Yes
37165376	Canyon Blvd.	6,630	8,182	23.4%	25%	Yes
37165509	Highway 203	6,530	7,988	22.3%	25%	Yes
37165517	Main Street	16,560	17,825	7.6%	10%	Yes
37165544	Lake Mary Road	2,100	1,131	46.1%	50%	Yes
37165559	Old Mammoth Road	5,200	6,477	24.5%	25%	Yes
37165589	Meridian Blvd.	2,590	3,192	23.2%	50%	Yes
37165631	Meridian Blvd.	6,470	6,731	4.0%	25%	Yes
37165644	Old Mammoth Road	10,590	10,326	2.5%	15%	Yes
	Total	**174,210**	**184,829**	**6.1%**		
	Total for Key Roadways	**122,530**	**127,864**	**4.4%**		

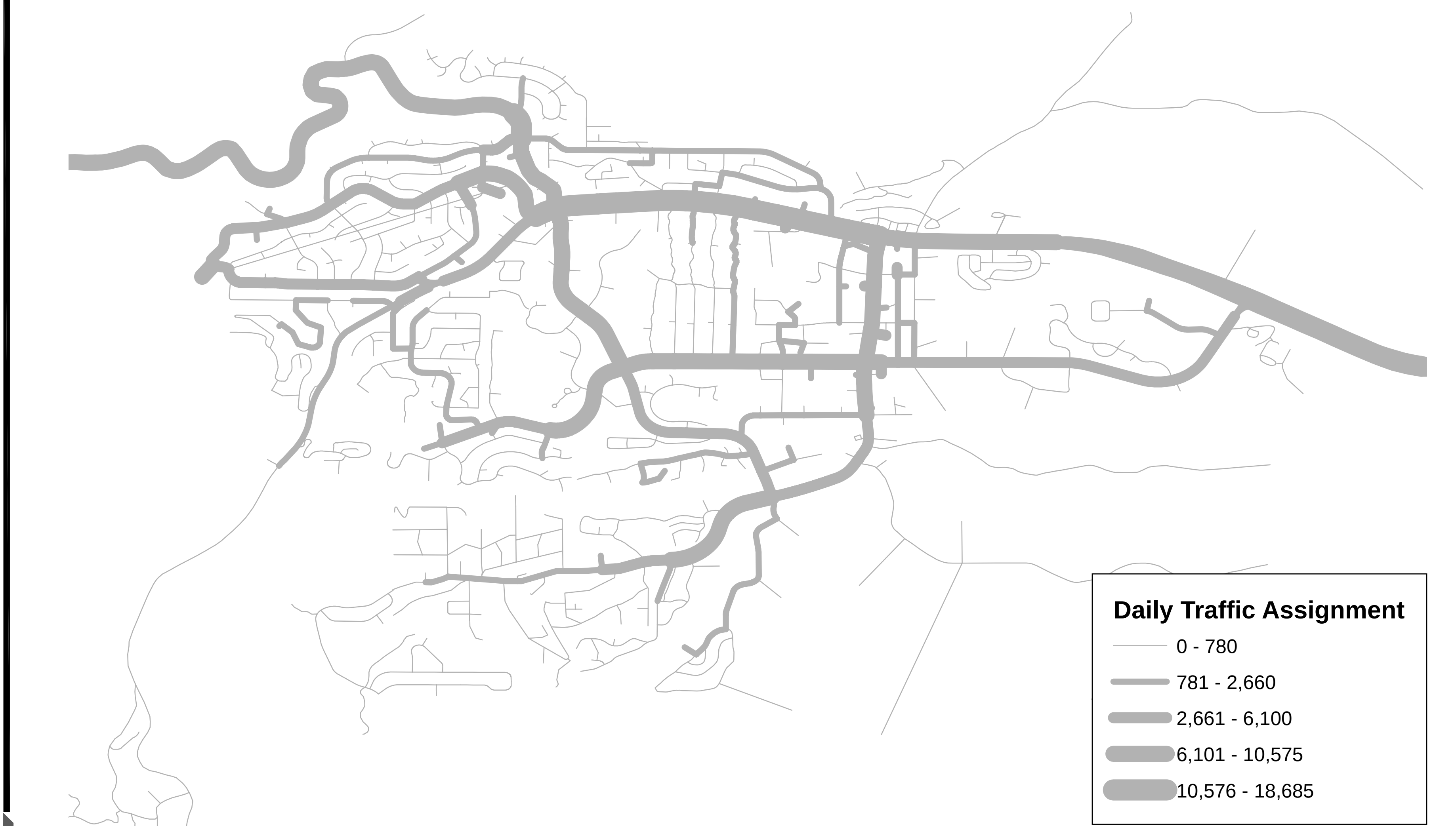
Source: LSC, 2010.

As shown, model volumes on all 38 links are within the acceptable error ranges shown in Table VI-1. Overall, for existing conditions, model volumes were within 6.1 percent of actual daily volumes. Figure VI-1 presents the traffic volume along all the network links compared to each other. As the traffic volume increases on a link, the bandwidth or thickness of the link increases. Hence, the greater the bandwidth, the greater the volume on the link. The bandwidth graphically reflects the travel patterns on the transportation system. As Figure VI-1 indicates, most traffic uses Main Street, Meridian Boulevard, Old Mammoth Road, and Minaret Road.

Peak-Hour Traffic Assignment

Peak-hour assignment was performed using the peak-hour origin-destination trip information and the existing roadway network. Hourly roadway capacities were used along with the BPR volume delay function to calculate congested travel times. However, unlike the daily assignment, the peak-hour assignment incorporated delay at signalized intersections. This provides a more realistic assignment because intersection delays are added to travel times to calculate the total travel time for a specific path. In order to account for signalized intersection delay, various intersection-related data were input into the model at the five signalized intersections in the Town of Mammoth Lakes. These data included lane geometry, length of auxiliary lanes, signal phasing, and cycle lengths. During the assignment process, delay at these signalized intersections is calculated using the delay model from the *2000 Highway Capacity Manual*. In this methodology, the turning movement delay is divided into a uniform delay and an incremental delay (due to non-uniform arrivals).

Once the additional data were input into the model, the peak-hour assignment with volume-dependent turning delays was run. The model performed a total of six iterations before equilibrium was reached.



Town of Mammoth Lakes
2009 Typical Winter Saturday Daily Traffic Assignment
Mammoth Lakes Model Update

Figure VI-1
LSC # 084870

LSC TRANSPORTATION CONSULTANTS, INC.

Assignment

To validate the peak-hour model results, the model traffic assignment was compared to the observed peak-hour link traffic volumes presented in Figure I-4. Table VI-4 shows the two-way volume error range that was used in validating the peak-hour model.

Table VI-4
Point Validation Error Range - Peak Hour

Peak-Hour Two-Way Traffic Volumes	Error Range +/-
< 100	100%
100 - 399	50%
400 - 999	25%
1,000 - 1,500	15%
> 1,500	10%

During the validation process, links with non-validating traffic counts were identified. In order to have the model accurately match actual traffic counts and therefore represent the actual travel patterns of the Town of Mammoth Lakes, iterative adjustments were made to the impedances of the model network. Calibrated model parameters that establish the base-year model were used in modeling the future growth projections and to evaluate alternate transportation network improvements. Table VI-5 shows the links that were adjusted and the corresponding increase in impedance that was made in order to improve the model's representation of existing travel patterns.

Table VI-5
Peak-Hour Vehicular Assignment - Impedance Adjustments

Link No.	Street Name	Added Travel Time (min.)
9	Canyon Blvd.	0.1750
10	Canyon Blvd.	0.1200
30	Forest Trail	0.0800
33	Forest Trail	0.3487
45	Grindelwald Road	0.9400
57	Lakeview Blvd.	0.1000
126	Sierra Nevada Road	0.2700
128	Sierra Nevada Road	0.2000
167	Minaret Road	0.1500
177	Sierra Park Road	0.0900
186	Forest Trail	0.5928
196	Crest Lane	0.1000
200	Tavern Road	0.5100
201	Tavern Road	0.1000
205	Sierra Manor Road	0.1740
206	Sierra Park Road	0.0600
224	Minaret Road	0.0200
244	Villa Vista Drive	0.6000
279	Lakeview Blvd.	0.1000
326	Davison Road	0.1300
337	Sierra Blvd.	0.4000
350	Chateau Road	0.2700
361	Meridian Blvd.	0.1000
376	Old Mammoth Road	0.3000
377	Old Mammoth Road	0.1000
397	Kelley Road	0.7000
414	Main Street Access	0.2000
425	Main Street Access	0.2000
429	Center Street	0.2000
37165690		0.0000
468	Forest Trail	1.1150
472	Main Street	0.0200
511	Meridian Blvd.	0.1100
525	Sawmill Cutoff Road	0.6000
541	Minaret Road	0.1100
542	Lakeview Blvd.	0.1000

Table VI-5 Peak-Hour Vehicular Assignment - Impedance Adjustments		
Link No.	**Street Name**	**Added Travel Time (min.)**
602	Old Mammoth Road	0.2500
37165207		0.1000
37165240	Forest Trail	0.1000
37165276	Sierra Star Parkway	0.2000
37165325	Lake Mary Road	0.0651
37165692	Old Mammoth Road	0.0300
37165365	Berner Street	0.2100
37165368	Berner Street	0.3000
37165374	Minaret Road	0.0000
37165376	Canyon Blvd.	0.5030
37165415	North Majestic Pines Drive	0.8100
37165459	Rainbow Lane	0.2000
37165473	Azimuth Drive	0.4400
37165477	Sierra Nevada Road	0.2000
37165488		0.2200
37165518	Laurel Mountain Road	0.1700
37165525	Main Street	0.2200
37165527	Main Street	0.1000
37165534	Mountain Blvd.	0.5000
37165573	Meridian Blvd.	0.2000
37165574	Laurel Mountain Road	0.1000
37165620		0.5800
37165621		0.6000
37165623		0.1000
37165689		0.7500
37165631	Meridian Blvd.	0.3300
37165636		0.7750
37165644	Old Mammoth Road	0.1920
37165647		0.3000
37165670	Minaret Road	0.0800
Source: LSC, 2010.		

As shown, a total of 66 links were adjusted in order to calibrate the peak-hour assignment to existing count data. Increases to impedance varied from approximately one second to 67 seconds.

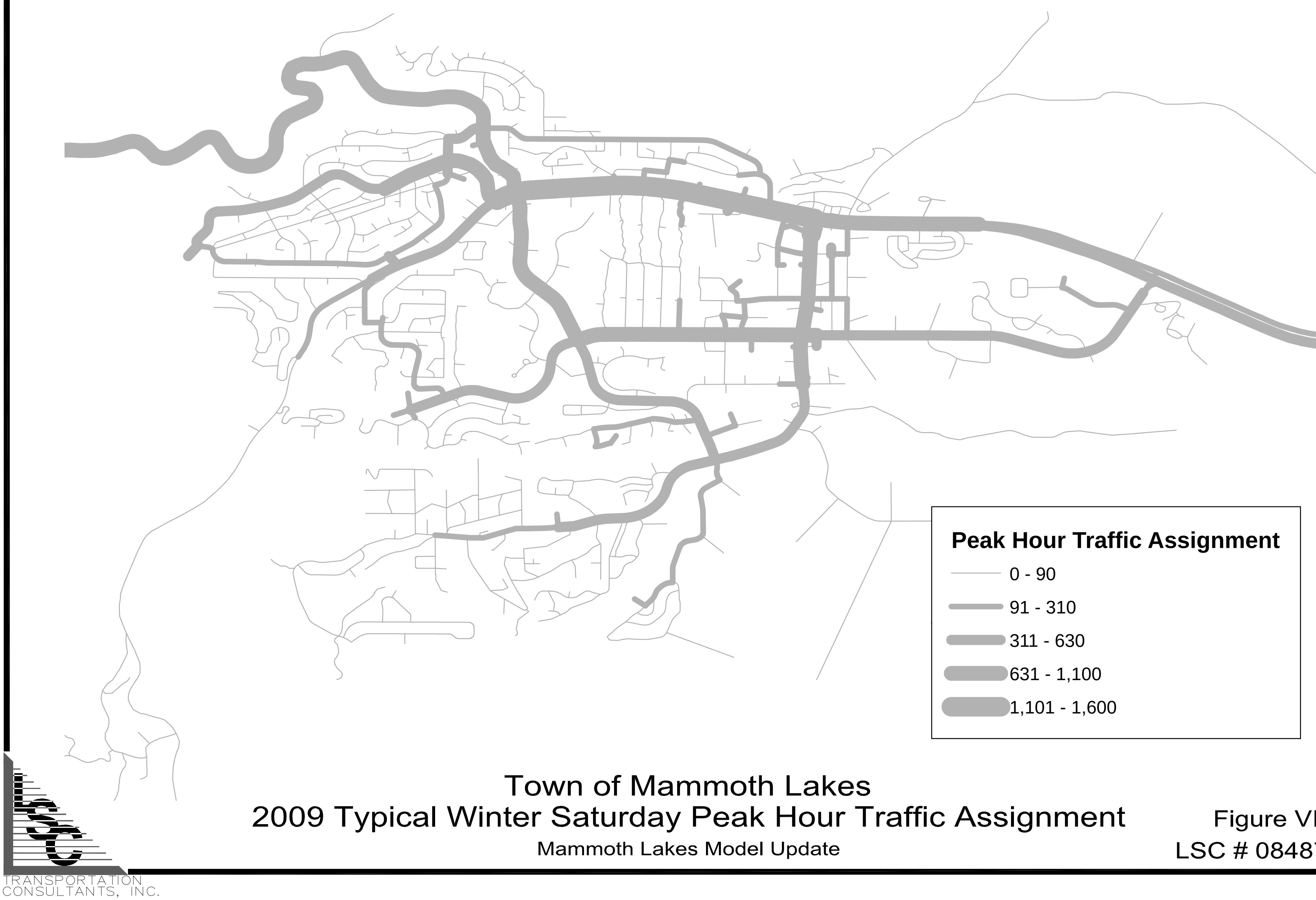
Once the model was run with the impedance adjustments listed in Table VI-3, the model generated a peak-hour traffic volume loaded network. Table VI-6 shows the calibrated link volumes compared to the actual 2009 peak-hour traffic counts collected in the field.

Table VI-6
Peak-Hour Vehicular Assignment Comparison - Calibrated Model Results

Link No.	Street Name	Actual Peak-Hour Volume	Existing Model Peak-Hour Volume	Error	Acceptable Error	Within Acceptable Error?
17	Canyon Blvd.	438	530	21.1%	50%	Yes
30	Forest Trail	157	227	44.6%	50%	Yes
33	Forest Trail	81	18	77.9%	100%	Yes
55	Lake Mary Road	420	359	14.5%	25%	Yes
160	Main Street	830	1,026	23.6%	25%	Yes
167	Minaret Road	475	449	5.4%	25%	Yes
168	Minaret Road	1,035	908	12.3%	15%	Yes
169	Minaret Road	810	774	4.4%	25%	Yes
177	Sierra Park Road	155	232	49.5%	50%	Yes
179	Tavern Road	99	105	5.8%	100%	Yes
186	Forest Trail	340	402	18.3%	50%	Yes
200	Tavern Road	59	29	50.1%	100%	Yes
206	Sierra Park Road	123	164	33.2%	50%	Yes
212	Meridian Blvd.	810	768	5.1%	25%	Yes
224	Minaret Road	389	440	13.1%	25%	Yes
326	Davison Road	76	85	12.4%	100%	Yes
328	Lake Mary Road	1,136	1,145	0.8%	15%	Yes
349	Meridian Blvd.	470	375	20.1%	25%	Yes
350	Chateau Road	117	75	36.0%	50%	Yes
361	Meridian Blvd.	606	618	1.9%	25%	Yes
376	Old Mammoth Road	548	519	5.2%	25%	Yes
377	Old Mammoth Road	472	519	10.0%	25%	Yes
441	Lake Mary Road	374	350	6.3%	50%	Yes
467	Minaret Road	1,001	893	10.8%	25%	Yes
468	Forest Trail	157	171	9.2%	50%	Yes
472	Main Street	1,411	1,457	3.3%	15%	Yes
512	Meridian Blvd.	488	458	6.1%	25%	Yes
525	Sawmill Cutoff Road	35	11	67.2%	100%	Yes
541	Minaret Road	717	781	8.9%	25%	Yes
557	Mammoth Scenic Loop	22	29	33.7%	100%	Yes
602	Old Mammoth Road	846	737	12.9%	15%	Yes
37165216	Chateau Road	148	98	34.0%	50%	Yes
37165325	Lake Mary Road	372	370	0.5%	50%	Yes
37165327	Lake Mary Road	1,293	1,184	8.4%	15%	Yes
37165692	Old Mammoth Road	1,015	942	7.2%	15%	Yes
37165365	Berner Street	26	27	4.3%	100%	Yes
37165370	Minaret Road	955	813	14.9%	15%	Yes
37165376	Canyon Blvd.	662	776	17.3%	25%	Yes
37165415	North Majestic Pines Drive	147	172	17.1%	50%	Yes
37165517	Main Street	1,413	1,412	0.1%	10%	Yes
37165531	Main Street	1,440	1,400	2.8%	15%	Yes
37165544	Lake Mary Road	223	138	38.1%	50%	Yes
37165559	Old Mammoth Road	529	595	12.5%	25%	Yes
37165573	Meridian Blvd.	726	813	12.0%	25%	Yes
37165589	Meridian Blvd.	234	304	30.1%	50%	Yes
37165634	Meridian Blvd.	756	714	5.6%	25%	Yes
37165644	Old Mammoth Road	897	828	7.7%	15%	Yes
37165670	Minaret Road	910	1,134	24.6%	25%	Yes
	Total	**26,443**	**26,377**	**0.2%**		

Source: LSC, 2010.

Model volumes on all 48 links are within the acceptable error ranges shown in Table VI-4. Overall, for the base condition, model volumes were within one percent of actual peak-hour volumes. Figure VI-2 presents the peak-hour traffic volumes in the form of bandwidths. As the traffic volume increases on a link, the bandwidth or thickness of the link increases. As with daily volumes, most peak-hour traffic uses Main Street, Meridian Boulevard, Old Mammoth Road, and Minaret Road.



Town of Mammoth Lakes
2009 Typical Winter Saturday Peak Hour Traffic Assignment
Mammoth Lakes Model Update

Figure VI-2
LSC # 084870

TRANSIT ASSIGNMENT

The last step involved running the validated model to generate the transit boarding estimates for the various transit routes in the Town of Mammoth Lakes. In order to validate the transit portion of the model, the typical winter day transit boardings provided by the Town of Mammoth Lakes were compared to model-generated boardings. The results are shown in Table VI-7.

Table VI-7
Transit Boarding Comparison - Calibrated Model Results

Route	Actual Boardings	Existing Model Boardings	Percent Error
Red Line	6,700	6,710	0.1%
Green Line	1,800	1,370	23.9%
Blue Line	2,400	1,240	48.3%
Yellow Line	800	1,250	56.3%
Orange	100	210	110.0%
Mid-Town Lift	n/a	330	
Gondola	n/a	2,740	
Total	**11,800**	**10,780**	**8.6%**

Sources: MMTS/TOML for actual and LSC, 2010.

Although the error for individual routes varies, it is within 25 percent for the routes with the majority of transit riders. Systemwide, the model-generated transit boardings are within nine percent of the actual transit boardings. This ensures that transit ridership is accurately accounted for in the model and the correct number of vehicle-trips are used in the vehicle assignment.

Chapter VII

TRANSPORTATION
CONSULTANTS, INC.

CHAPTER VII
Future Year Model Validation

INTRODUCTION

The purpose of this chapter is to document the data used to produce the initial horizon year travel model. The chapter compares existing 2009 data and land uses to future (2030) data to show the predicted growth. Then the data are traced through the four steps of the model to verify that the model produces predictable results in each step. When that is shown, the chapter gives the results of the traffic assignment as a "base future" condition. The base future condition, then, is the point of comparison for land use and transportation network changes which are the subject of Chapter VIII.

Nominally, the horizon year is 20 years from the date of the 2007 General Plan, which would make the base future 2027. For purposes of this document, the rounded number of 2030 is used given that 2030 is 20 years from the current year.

NETWORK STABILITY

From 2009 through 2030, no additional roadway improvements are assumed. The extension of the Red Line into Snowcreek (down to TAZs 160 and 161) was the only transit network change included in the future base model. Thus the future transportation networks are stable and nearly identical across this 20-year planning horizon.

TRIP GENERATION

The Town of Mammoth Lakes General Plan expects permanent resident population to grow at a rate of 1.4 percent to 2.4 percent per year into the future. Table VII-1 shows how the Town has grown since 1970 and is forecast to grow through 2030. Figure VII-1 also shows this in graphic format. What these data communicate is that the Town's permanent resident population is expected to grow 18-33 percent by 2020 and 36-68 percent by 2030.

Table VII-1
Population Growth Trends (1970-2030)

Year	Population	Numerical Change	Average Annual Change	
			Number	Percent
1970	3,528			
1980	3,929	401	40	1.08%
1990	4,785	856	86	2.0%
2000	7,094	2,309	231	4.0%
2008	7,413	319	40	0.6%
2020	8,760 to 9,855	1346 to 2,441	112 to 203	1.4% to 2.4%
2030	10,065 to 12,491	1306 to 2,637	131 to 264	1.4% to 2.4%

Source: Census Bureau (2000 Census, SF3: P1) and (1990 Census, STF3: P1), DOF (Report E-5) as presented in the ""Town of Mammoth Lakes Housing Element,"" December 2003; DOF & EDAW 2008 as presented in the ""Town of Mammoth Lakes General Plan, Housing Element Draft,"" January 2009. LSC application of growth rates to 2020 and 2030.

Figure VII-1
Mammoth Lakes Permanent Resident Growth Forecasts

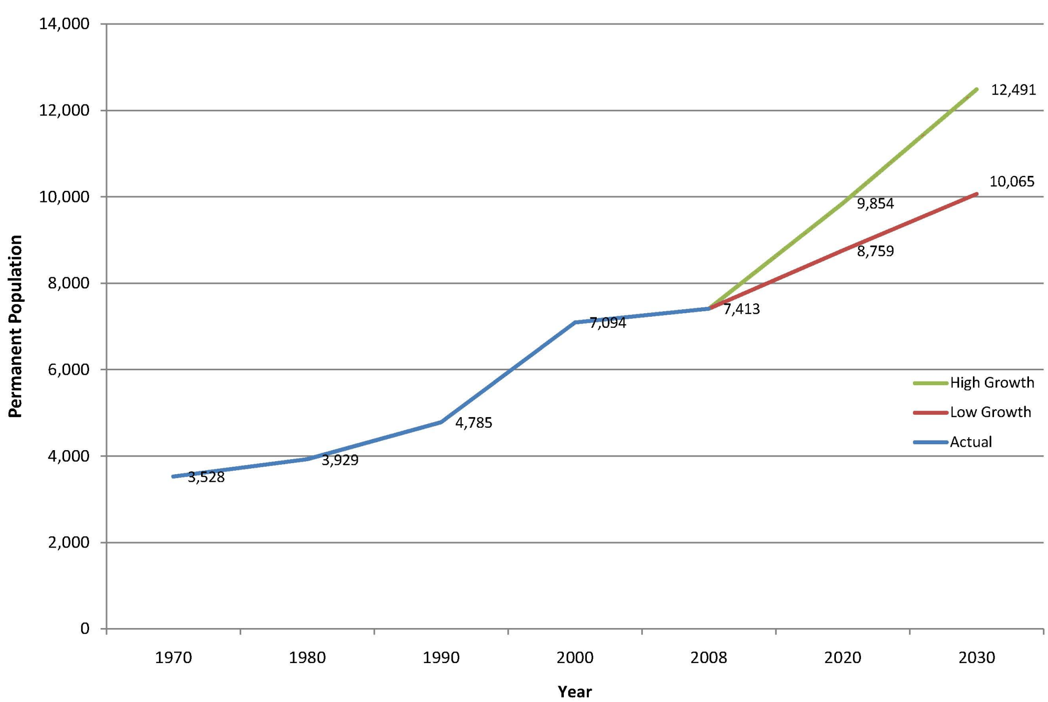


Table VII-2 compares the existing 2009 and 2030 land uses which are inputs to the model. The permanent resident population growth for the base future model is more consistent with the low growth scenario of 1.4 percent per year or 36 percent total growth by 2030.

The future land use table shows the most growth in the categories of high-density residential (visitor), lodging (standard hotels), and resort hotels. Consistent with the General Plan expectations, not all of the visitor housing and lodging is expected to be skier-related. This is observable with the skier population growing by 18 percent, whereas the visitor housing and lodging is growing at 47 percent to 262 percent.

Other categories of land use show no forecast growth. Employment and land use related to utilities, K-12 schools, colleges, government, and ski-industry employees are all expected to remain at 2009 levels. Please note that the schools, college, and government employees are kept at 2009 levels because they do not typically produce trips on a winter Saturday.

The land uses, when applied in the trip generation portion of the model, generate a future estimate of 368,192 trips per day, as seen in Table VII-3. No changes in trip rates are assumed. The total number of trips represents an increase of 36.9 percent in trips between 2009 and 2030. The table also shows that the overall annualized growth in trips is expected to be 1.5 percent per year, slightly faster than the growth in permanent resident population. Skier-related trips are expected to grow most slowly, at under one percent per year, while shopping and other non-work trips are expected to grow at 1.7 percent to 2.0 percent per year.

Table VII-2
Total Land Uses By Land Use Code: 2009 vs. 2030

Land Use Code	Description of Land Use	Units	2009	2030	% Change
1	Residential Low Density (SF) - Resident	DUs	1,454	1,925	32%
3	Residential High Density (MF) - Resident	DUs	4,023	5,416	35%
4	Mobile Home Park - Resident	DUs	132	132	0%
5	Residential Low Density (SF) - Visitor	DUs	627	700	12%
7	Residential High Density (MF) - Visitor	DUs	2,426	3,563	47%
10	Lodging (Hotel) - Visitor	Room	997	2,574	158%
11	Resort Hotel - Visitor	Room	976	3,529	262%
13	Retail/Commercial	KSF	1,305	1,828	40%
21	Light Industrial	KSF	311	422	36%
23	Public Utility	Acres	49	49	-1%
31	Public School	Acres	832	832	0%
32	High School	Acres	314	314	0%
33	College	Student	0	0	0%
34	Hospital	Bed	21	33	57%
36	Post Office	PRS	7,402	7,400	0%
37	Church	Acres	14	14	0%
39	Downhill Skiing-Employees	Employee	2,163	2,163	0%
40	Downhill Skiing-Skiers	SAOTS	24,000	28,350	18%
41	Cross-Country Skiing/Snowmobiling	SAOTS	350	350	0%

Source: Town of Mammoth Lakes, 2009.

Notes: DU = Dwelling Unit, KSF = Thousand Square Feet, PRS = postal receptacles (mailboxes), SAOTS = skiers at one time.

Table VII-3
Balanced Daily Person-Trips by Trip Purpose: 2009 vs. 2030

Trip Purpose	2009 Balanced Total Trips	2030 Balanced Total Trips	Numerical Increase	Percent Increase	Annualized Growth Rate
Home-Based Recreation	95,324	114,707	19,383	20.3%	0.89%
Home-Based Shopping	40,540	57,588	17,048	42.1%	1.69%
Home-Based Work	19,998	26,642	6,644	33.2%	1.38%
Home-Based Other	59,124	89,589	30,465	51.5%	2.00%
Other-to-Other	53,944	79,667	25,723	47.7%	1.87%
Total	**268,930**	**368,192**	**99,262**	**36.9%**	**1.51%**

Source: LSC, 2010, sum of productions and attractions in balance.bin.

TRIP DISTRIBUTION

Table VII-4 presents the 2030 base future trip distribution results. The five largest trip interchanges are between the following pairs, listed in from/to order:

- North Village to North Village (3.1%)
- North Village to Old Mammoth Road (2.5%)
- Snowcreek to Old Mammoth Road (2.5%)
- External Stations to Main Lodge (4.0%)
- External Stations to North Village (2.3%)

The future trip distribution patterns change from the existing patterns. Trips are less concentrated in 2030 than in 2009. Table VII-5 shows the computed differences between the trip distribution tables. North Village sees the largest increase in trip making, both as an origin and a destination. The Main Street, Sierra Star, and Snowcreek districts also see substantial increases in trip making. Canyon Lodge is forecast to see some decreases in trip making over the same period. Most other districts remain stable or see very little increase in trip making.

Figure VII-2 shows the 2030 trip length frequency distribution for the five trip purposes. This chart indicates that the highest number of trips are about three minutes in duration. Most trips are under 10 minutes in duration. Both of these characteristics and the shape of the distribution curves match those of 2009. There is a slight increase in trips of 14 minutes in length, reflecting more trips from outlying neighborhood districts going to North Village. Overall, these results are consistent with the growth patterns implied by the planned land uses in 2030.

Table VII-4
Saturday District-to-District Person-Trip Distribution Results - 2030

	DISTRICT	Destinations																	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	TOTAL
Origins	1	3,621	1	1	1	2	0	2	0	1	0	0	2	0	0	0	1	0	3,631
	2	0	1,111	0	0	1	0	1	0	0	0	0	1	0	0	0	0	0	1,116
	3	5	3	1,434	2	9	1	9	1	3	2	2	13	3	1	1	5	1	1,494
	4	1,606	2,930	693	267	2,851	52	3,021	67	798	432	180	3,969	568	141	135	896	102	18,711
	5	3,134	1,697	1,436	371	5,715	79	3,114	98	843	478	285	4,551	522	188	228	1,219	447	24,405
	6	472	257	180	66	760	14	758	15	207	111	50	1,047	188	36	36	243	35	4,475
	7	1,270	726	599	355	2,036	78	1,624	90	522	296	264	2,345	483	166	159	726	183	11,923
	8	531	339	269	72	840	13	831	18	235	120	52	1,141	175	45	44	274	47	5,046
	9	1,469	840	783	185	2,022	40	1,813	51	499	276	154	2,661	363	104	126	762	199	12,345
	10	670	398	325	95	1,067	20	1,054	24	290	155	80	1,523	281	58	60	412	68	6,579
	11	1,363	807	689	130	1,977	29	2,056	34	548	295	129	3,020	507	92	114	850	175	12,815
	12	1,702	1,005	871	455	2,676	108	2,415	122	782	439	396	3,496	823	250	274	1,281	281	17,376
	13	275	155	136	95	460	25	457	26	153	89	103	708	238	55	53	233	38	3,297
	14	798	514	1,122	103	1,222	20	1,313	30	359	193	88	1,928	262	65	70	483	79	8,648
	15	673	426	319	65	866	14	942	18	283	138	80	1,648	254	50	79	516	67	6,439
	16	2,003	1,227	1,020	210	2,632	48	2,744	58	831	408	252	4,511	645	149	209	1,400	286	18,633
	17	7,315	3,766	3,279	38	4,271	10	1,781	10	348	218	39	2,772	282	22	154	572	2,286	27,163
	TOTAL	26,908	16,203	13,153	2,509	29,408	551	23,935	660	6,701	3,649	2,155	35,335	5,597	1,423	1,742	9,873	4,295	184,096

District Key

1. Main Lodge
2. Canyon Lodge
3. Eagle Lodge
4. Mammoth Slopes
5. North Village
6. Knolls
7. Main Street
8. Majestic Pines
9. Sierra Star
10. Sierra Valley
11. Shady Rest / Meridian
12. Old Mammoth Road
13. Gateway
14. Juniper Ridge
15. Old Mammoth
16. Snowcreek
17. Externals

Source: Trip Distribution.mtx aggregated using area_aggregate_tables_extnl.bin. LSC 2010.

Table VII-5
Saturday District-to-District Person-Trip Distribution Results - Change from 2009 to 2030

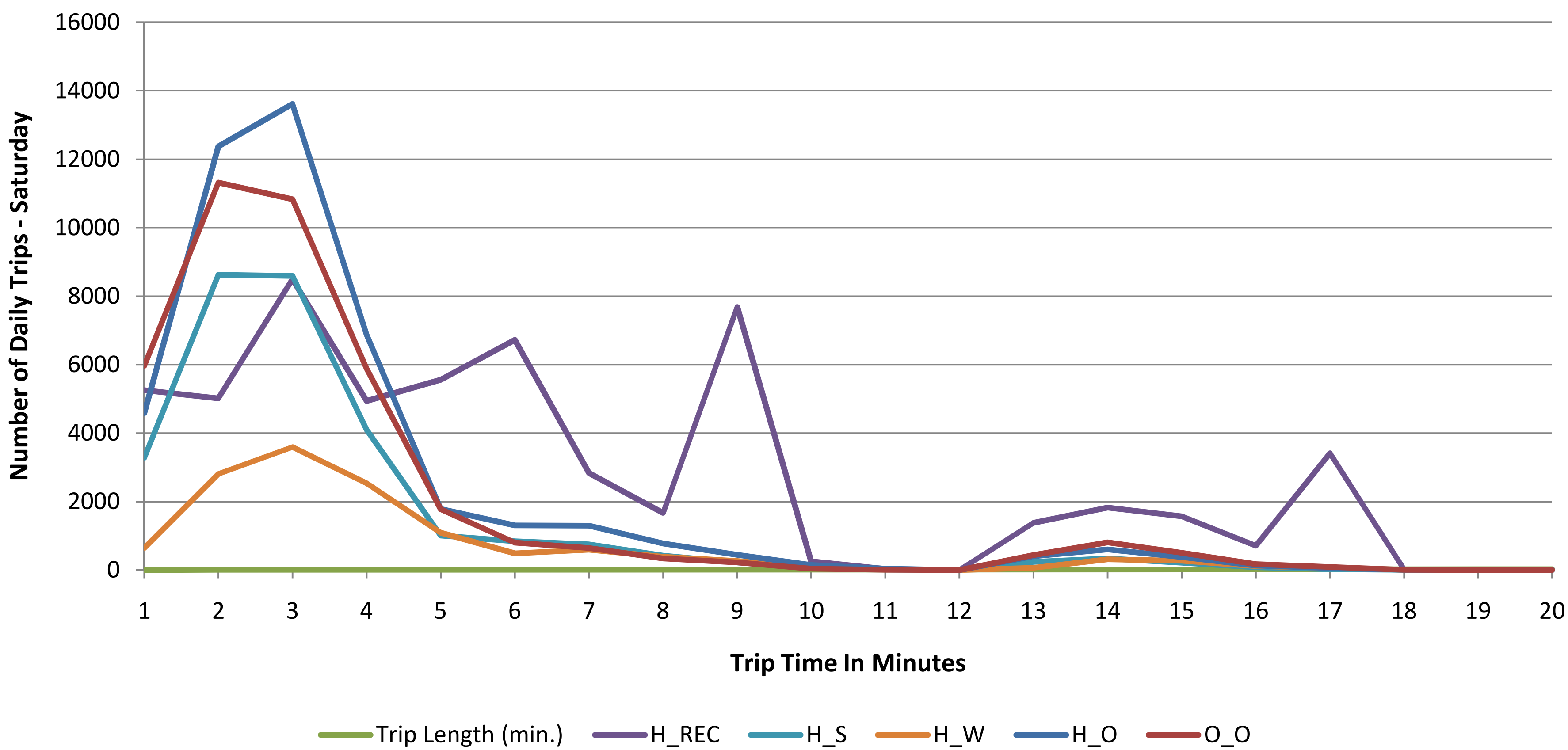
DISTRICT		Destinations 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	TOTAL
Origins	1	-372	0	0	0	1	0	1	0	1	0	0	0	0	0	0	0	0	-369
	2	0	-12	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	-10
	3	5	3	1,406	2	9	0	9	1	3	2	2	13	3	1	1	5	1	1,465
	4	-508	-1,274	431	-35	1,567	-8	879	-17	768	114	-19	-2,101	35	-150	-30	330	15	-3
	5	1,956	990	1,170	246	3,774	53	2,492	62	830	375	194	2,591	371	88	151	1,007	331	16,683
	6	-173	-123	92	-7	406	-2	237	-3	199	31	-4	-507	23	-31	-8	101	-2	229
	7	96	-34	310	99	1,321	23	838	20	494	136	81	-28	180	3	38	439	58	4,075
	8	-260	-209	120	-13	410	-3	204	-6	226	27	-8	-715	2	-50	-15	98	-5	-197
	9	1,073	585	685	152	1,820	33	1,552	41	495	236	126	1,835	295	69	98	671	160	9,928
	10	-212	-169	164	7	582	1	347	0	280	50	7	-659	40	-38	-6	183	4	580
	11	-422	-352	307	-10	1,069	-3	682	-7	530	94	-4	-1,267	66	-78	-20	357	3	944
	12	24	-131	399	-164	1,580	-37	930	-56	702	74	-99	-811	45	-153	-51	592	108	2,950
	13	-112	-92	36	8	255	3	128	0	140	21	13	-284	57	-10	3	113	-4	276
	14	-335	-276	-34	-22	638	-5	375	-10	344	48	-16	-1,081	10	-67	-20	167	-7	-293
	15	-150	-141	158	-1	518	0	357	-2	274	50	3	-434	58	-28	1	253	3	917
	16	923	485	790	100	2,121	23	1,910	26	814	280	127	1,630	360	29	105	1,032	191	10,947
	17	-893	-1,176	790	5	1,718	1	745	0	343	100	6	-771	7	-48	-29	255	453	1,508
	TOTAL	639	-1,925	6,825	366	17,790	79	11,687	50	6,442	1,637	409	-2,588	1,552	-462	219	5,602	1,310	49,631

District Key

1. Main Lodge
2. Canyon Lodge
3. Eagle Lodge
4. Mammoth Slopes
5. North Village
6. Knolls
7. Main Street
8. Majestic Pines
9. Sierra Star
10. Sierra Valley
11. Shady Rest / Meridian
12. Old Mammoth Road
13. Gateway
14. Juniper Ridge
15. Old Mammoth
16. Snowcreek
17. Externals

Source: Trip Distribution.mtx aggregated using area_aggregate_tables_extnl.bin. LSC 2010.

Figure VII-2
2030 Trip Length Frequency Distribution



MODE SPLIT

The 2030 mode split by TAZ is mapped and shown in Figure VII-3. The transit share is high in the same locations as in 2009, including the four ski area gateways/portals and Main Street. There are also forecast transit mode share increases in the Sierra Star, Juniper Ridge, and Snowcreek neighborhood districts.

Overall, the transit share in 2030 is 18 percent for all trip purposes, with home-based recreation having the largest share at 36 percent. Table VII-6 shows the 2030 results by trip purpose. In comparison to the 2009 results, presented in an earlier chapter, there is a 1.6 percent increase in transit mode share for home-based recreation trips and 0.9 percent increase in transit mode share for home-based shopping trips. Other trip purposes hold steady or have negligible decreases in their transit mode share. These 2030 results show consistent patterns and reasonable shifts in transit mode share in comparison to 2009 results.

Table VII-7 shows the transit mode share at the four ski area portals. In comparison to 2009 results, volumes and transit shares for the Main Lodge and Canyon Lodge remain relatively unchanged. Although the Eagle Lodge and North Village see substantial increases in the number of transit trips, the persons in vehicles increases a greater amount, resulting in a decrease in transit mode share for those two ski area portals.

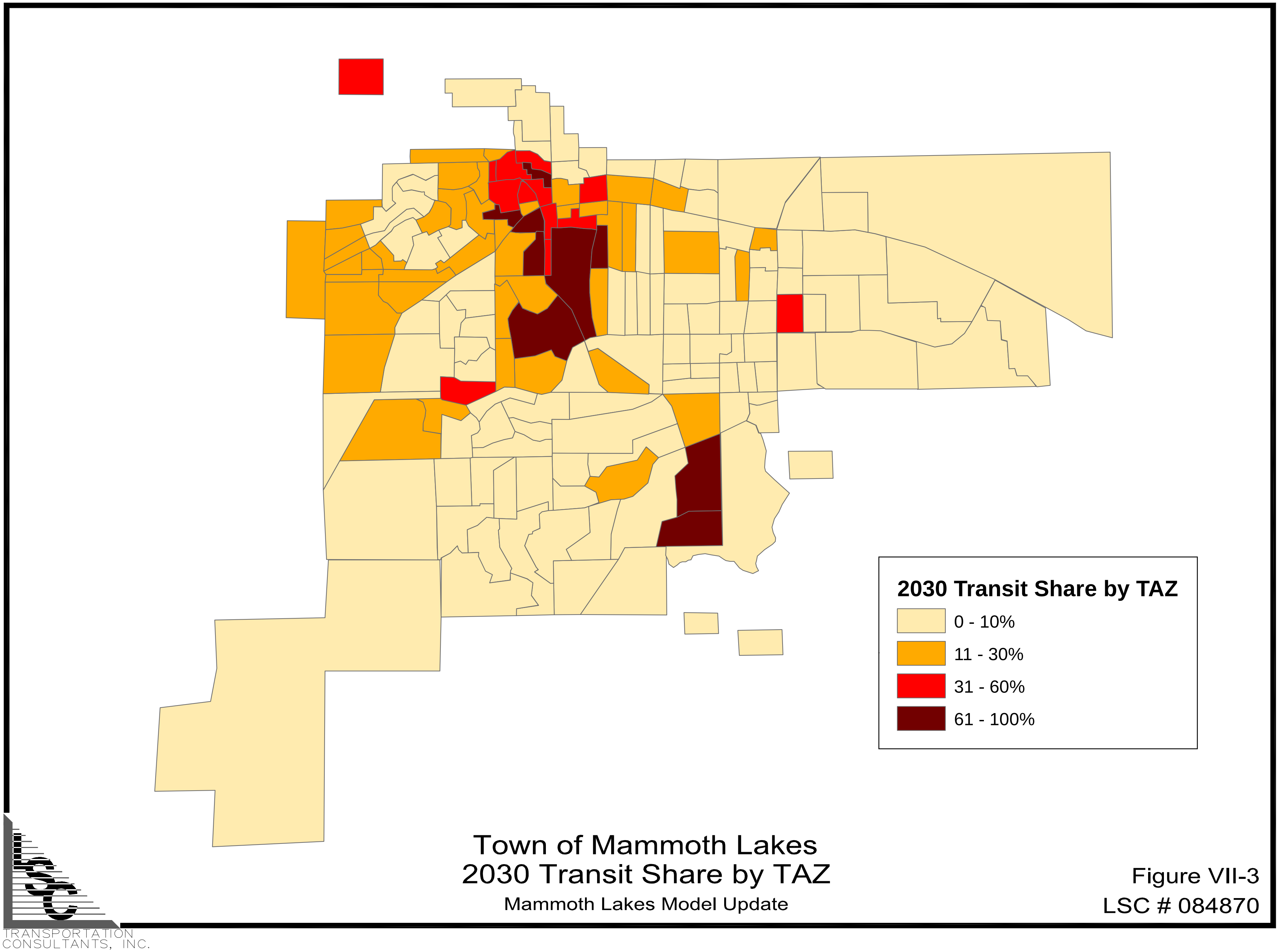

2030 Transit Share by TAZ
0 - 10%
11 - 30%
31 - 60%
61 - 100%
Town of Mammoth Lakes
2030 Transit Share by TAZ
Mammoth Lakes Model Update
Figure VII-3
LSC # 084870
TRANSPORTATION CONSULTANTS, INC.

Table VII-6
2030 Mode Choice By Trip Purpose

Trip Purpose	Daily Person-Trips by Mode			Mode Split	
	Vehicle	Transit	Total	Vehicle	Transit
Home-Based Recreation	36,675	20,678	57,354	63.9%	36.1%
Home-Based Shopping	27,894	900	28,794	96.9%	3.1%
Home to Work	13,073	248	13,321	98.1%	1.9%
Home-Based Other	43,251	1,544	44,794	96.6%	3.4%
Other-to-Other	37,410	2,423	39,833	93.9%	6.1%
Totals	**158,303**	**25,794**	**184,096**	**86.0%**	**14.0%**

Source: LSC, 2010.

Table VII-7
2030 Mode Choice at Ski Area Gateways
(All Trip Purposes)

Gateway	TAZ	Daily Person-Trips by Mode			Mode Split	
		Vehicle	Transit	Total	Vehicle	Transit
Main Lodge	1	10,040	5,243	15,284	65.7%	34.3%
Canyon Lodge	42	6,157	2,502	8,659	71.1%	28.9%
Eagle Lodge	130	5,422	1,901	7,323	74.0%	26.0%
North Village	28	4,683	1,942	6,625	70.7%	29.3%

Source: LSC, 2010.

ASSIGNMENT

As was done for the existing base year, the same procedures were run on the future base year to assign trips to roadway links and transit routes. The following is a summary of the overall results for 2030:

- Total Vehicle-Trips = 84,417
- Daily Vehicle-Miles Traveled (VMT) = 179,708
- Daily Vehicle-Hours Traveled (VHT) = 13,761
- Average Vehicle Speed (mph) = 26.9

The above results are a key baseline for comparison of different future transportation scenarios. The daily average network speed drops slightly from 27.0 to 26.9 mph, which is expected given greater congestion during portions of the typical Saturday.

When the number of trips is divided into the VMT, the average trip distance is 2.1 miles. This 2030 result is 0.3 miles shorter than the 2009 existing base average of 2.4 miles. This is reflective of more short-distance trips being made within localized areas which see greater development (i.e., North Village).

Future Traffic Assignment Results

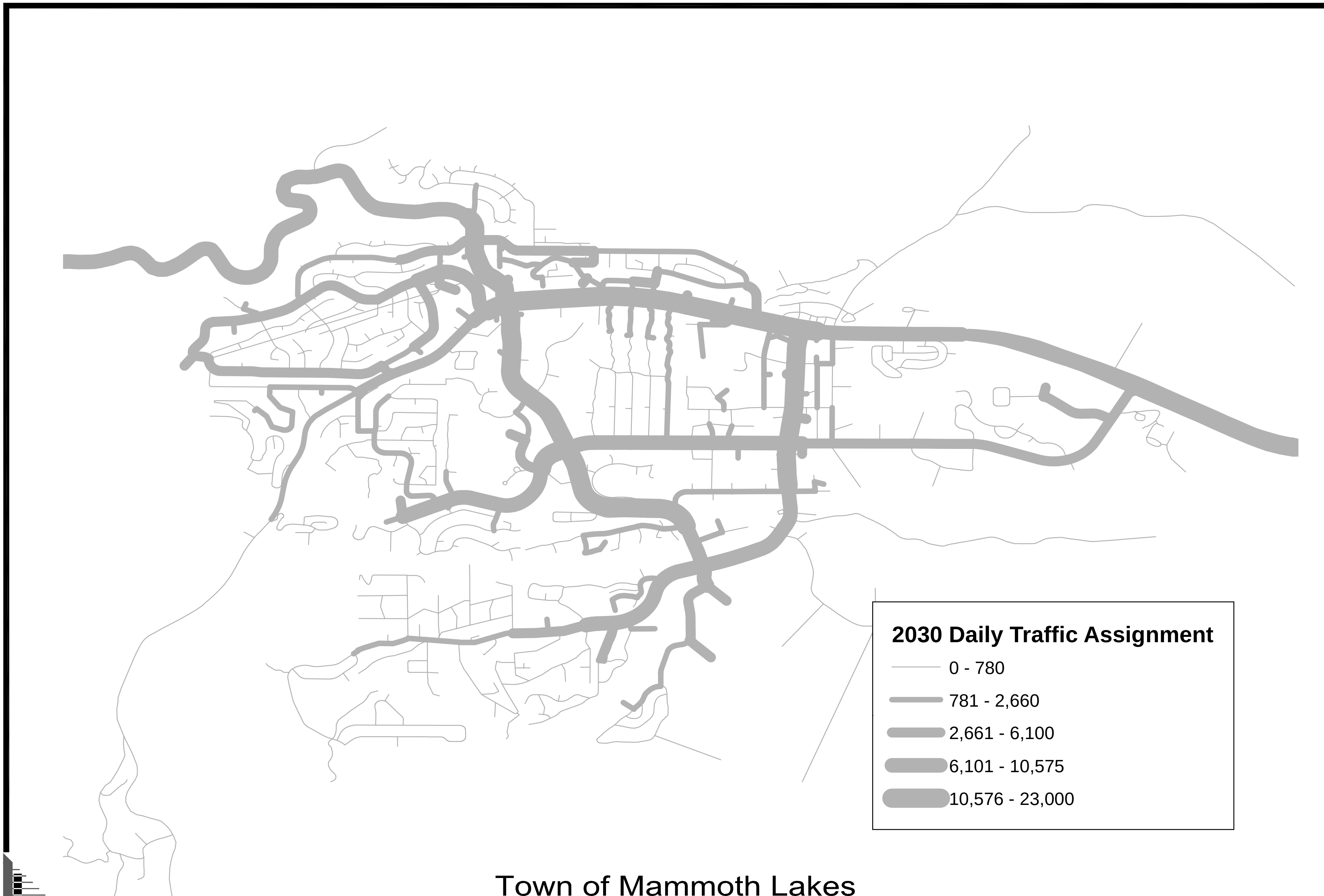
Daily Traffic Assignment Results

Table VII-8 shows the two-way volumes on roadways throughout the Town of Mammoth Lakes. The table also compares existing base to future base volumes. Overall, roadway volumes are expected to increase 35 percent by 2030. On some roadways, the increases are more pronounced, such as on segments of Minaret Road, Old Mammoth Road, and Forest Trail.

Figure VII-4 presents the picture of traffic volumes along all roadway links. Most traffic continues to use streets that had high volumes in 2009.

Table VII-8 Daily Vehicular Assignment Comparison - Base vs. Future Buildout								
Link No.	**Street Name**	**Actual Daily Volume**	**Existing Model Daily Volume**	**Error**	**Acceptable Error**	**Within Acceptable Error?**	**Future Model Daily Volume**	**Percent Change vs. Existing**
17	Canyon Blvd.	3,730	3,943	5.7%	50%	Yes	3,898	-1%
30	Forest Trail	1,030	1,008	2.2%	50%	Yes	1,842	83%
33	Forest Trail	630	1,260	100.0%	100%	Yes	1,535	22%
55	Lake Mary Road	6,250	4,783	23.5%	25%	Yes	5,143	8%
167	Minaret Road	4,750	4,664	1.8%	25%	Yes	11,466	146%
186	Forest Trail	2,510	3,626	44.5%	50%	Yes	4,628	28%
206	Sierra Park Road	1,180	1,381	17.1%	50%	Yes	940	-32%
224	Minaret Road	4,150	4,212	1.5%	25%	Yes	10,058	139%
326	Davison Road	760	1,284	69.0%	100%	Yes	1,769	38%
350	Chateau Road	1,270	1,297	2.1%	50%	Yes	1,288	-1%
361	Meridian Blvd.	6,070	6,304	3.9%	25%	Yes	11,306	79%
376	Old Mammoth Road	4,830	5,019	3.9%	25%	Yes	7,371	47%
377	Old Mammoth Road	4,720	5,019	6.3%	25%	Yes	7,371	47%
397	Kelley Road	1,500	2,068	37.9%	50%	Yes	2,468	19%
415	Main Street	13,080	14,450	10.5%	15%	Yes	15,349	6%
467	Minaret Road	9,580	9,396	1.9%	25%	Yes	9,875	5%
468	Forest Trail	1,080	1,490	38.0%	50%	Yes	5,248	252%
511	Meridian Blvd.	4,900	5,029	2.6%	25%	Yes	8,040	60%
525	Sawmill Cutoff Road	350	72	79.3%	100%	Yes	59	-18%
541	Minaret Road	6,980	6,306	9.6%	25%	Yes	15,240	142%
552	Highway 203	3,670	3,925	7.0%	50%	Yes	4,395	12%
557	Mammoth Scenic Loop	240	286	19.3%	100%	Yes	318	11%
602	Old Mammoth Road	10,250	9,012	12.1%	15%	Yes	12,435	38%
621	Highway 203	4,010	4,288	6.9%	25%	Yes	4,686	9%
622	Highway 203	4,010	4,288	6.9%	25%	Yes	4,686	9%
37165198	Highway 203	3,670	3,924	6.9%	50%	Yes	4,392	12%
37165202	Meridian Blvd.	2,780	3,481	25.2%	50%	Yes	4,608	32%
37165216	Chateau Road	1,480	1,679	13.5%	50%	Yes	1,440	-14%
37165365	Berner Street	170	187	10.0%	100%	Yes	2,145	1047%
37165374	Minaret Road	7,910	9,292	17.5%	25%	Yes	13,219	42%
37165376	Canyon Blvd.	6,630	8,182	23.4%	25%	Yes	9,376	15%
37165509	Highway 203	6,530	7,988	22.3%	25%	Yes	8,844	11%
37165517	Main Street	16,560	17,825	7.6%	10%	Yes	20,195	13%
37165544	Lake Mary Road	2,100	1,131	46.1%	50%	Yes	1,182	5%
37165559	Old Mammoth Road	5,200	6,477	24.5%	25%	Yes	8,277	28%
37165589	Meridian Blvd.	2,590	3,192	23.2%	50%	Yes	4,436	39%
37165631	Meridian Blvd.	6,470	6,731	4.0%	25%	Yes	7,894	17%
37165644	Old Mammoth Road	10,590	10,326	2.5%	15%	Yes	12,071	17%
	Total	**174,210**	**184,829**	**6.1%**			**249,494**	**35%**
	Total for Key Roadways	**122,530**	**127,864**	**4.4%**				

Source: LSC, 2010.



Town of Mammoth Lakes
2030 Typical Winter Saturday Daily Traffic Assignment
Mammoth Lakes Model Update

Figure VII-4
LSC # 084870

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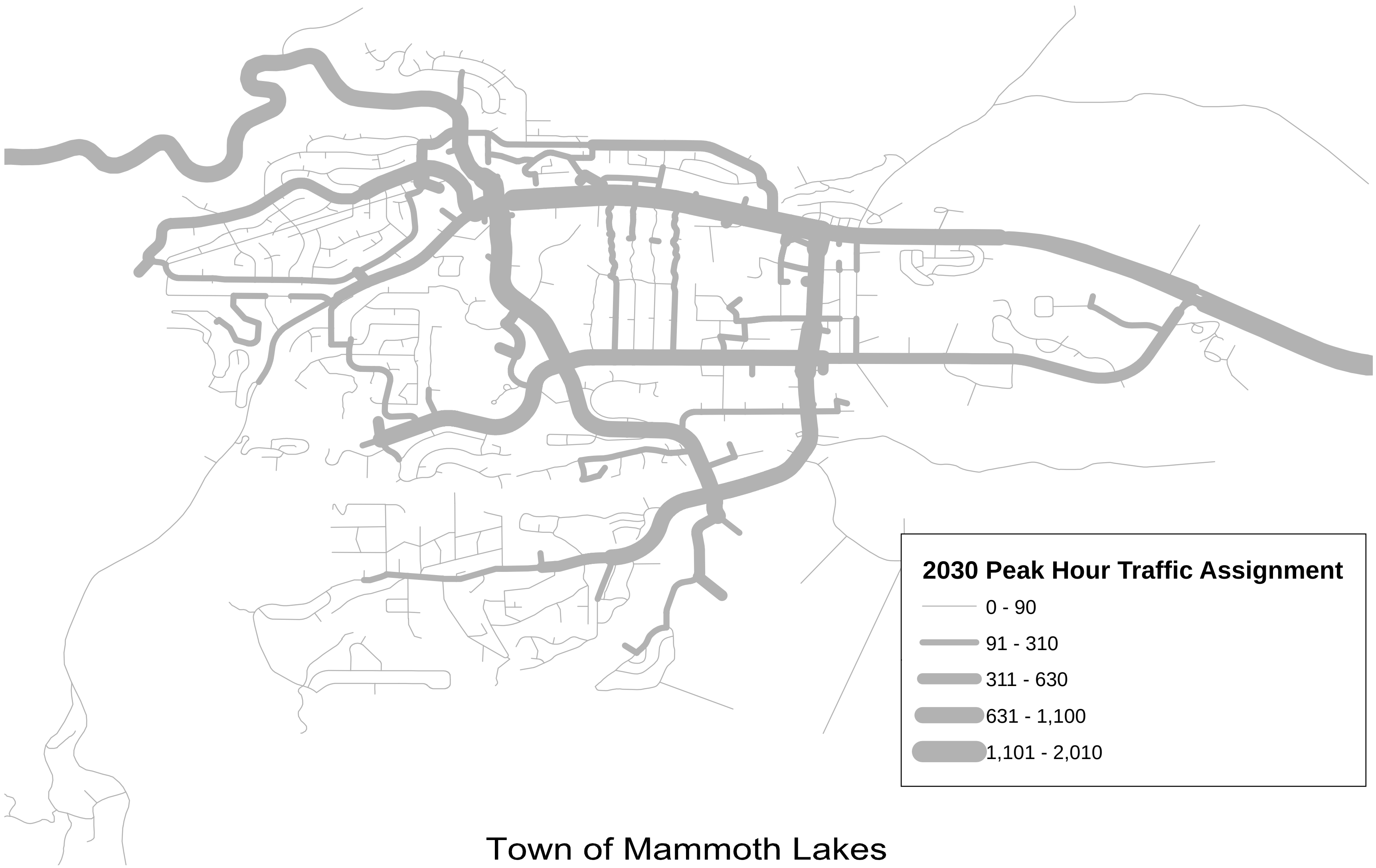
Peak-Hour Traffic Assignment Results

Table VII-9 shows the two-way peak-hour volumes on roadways throughout the Town of Mammoth Lakes. The table also compares existing base to future base volumes in the peak hour. Overall, peak-hour volumes are expected to increase 35 percent by 2030. Portions of Meridian Boulevard are forecast to experience 35 to 64 percent increases in peak-hour traffic volumes. Portions of Minaret Road are forecast to experience 89 to 131 percent increases in peak-hour traffic volumes. Several segments of Old Mammoth Road are forecast to experience 47 to 58 percent increases in peak-hour traffic volumes.

Figure VII-5 presents the picture of peak-hour traffic volumes along all roadway links.

Table VII-9 Peak-Hour Vehicular Assignment Comparison - Base vs. Future Buildout								
Link No.	Street Name	Actual Peak-Hour Volume	Existing Model Peak Hour Volume	Error	Acceptable Error	Within Acceptable Error?	Future Model Peak-Hour Volume	Percent Change vs. Existing
17	Canyon Blvd.	438	530	21.1%	50%	Yes	602	14%
30	Forest Trail	157	227	44.6%	50%	Yes	289	27%
33	Forest Trail	81	18	77.9%	100%	Yes	24	34%
55	Lake Mary Road	420	359	14.5%	25%	Yes	364	1%
160	Main Street	830	1,026	23.6%	25%	Yes	1,077	5%
167	Minaret Road	475	449	5.4%	25%	Yes	1,040	131%
168	Minaret Road	1,035	908	12.3%	15%	Yes	1,267	40%
169	Minaret Road	810	774	4.4%	25%	Yes	1,335	72%
177	Sierra Park Road	155	232	49.5%	50%	Yes	128	-45%
179	Tavern Road	99	105	5.8%	100%	Yes	162	55%
186	Forest Trail	340	402	18.3%	50%	Yes	446	11%
200	Tavern Road	59	29	50.1%	100%	Yes	35	19%
206	Sierra Park Road	123	164	33.2%	50%	Yes	121	-26%
212	Meridian Blvd.	810	768	5.1%	25%	Yes	791	3%
224	Minaret Road	389	440	13.1%	25%	Yes	930	111%
326	Davison Road	76	85	12.4%	100%	Yes	127	49%
328	Lake Mary Road	1,136	1,145	0.8%	15%	Yes	1,485	30%
349	Meridian Blvd.	470	375	20.1%	25%	Yes	614	64%
350	Chateau Road	117	75	36.0%	50%	Yes	98	31%
361	Meridian Blvd.	606	618	1.9%	25%	Yes	922	49%
376	Old Mammoth Road	548	519	5.2%	25%	Yes	761	47%
377	Old Mammoth Road	472	519	10.0%	25%	Yes	761	47%
441	Lake Mary Road	374	350	6.3%	50%	Yes	405	16%
467	Minaret Road	1,001	893	10.8%	25%	Yes	935	5%
468	Forest Trail	157	171	9.2%	50%	Yes	232	36%
472	Main Street	1,411	1,457	3.3%	15%	Yes	2,029	39%
512	Meridian Blvd.	488	458	6.1%	25%	Yes	693	51%
525	Sawmill Cutoff Road	35	11	67.2%	100%	Yes	9	-19%
541	Minaret Road	717	781	8.9%	25%	Yes	1,477	89%
557	Mammoth Scenic Loop	22	29	33.7%	100%	Yes	33	11%
602	Old Mammoth Road	846	737	12.9%	15%	Yes	1,162	58%
37165216	Chateau Road	148	98	34.0%	50%	Yes	101	3%
37165325	Lake Mary Road	372	370	0.5%	50%	Yes	504	36%
37165327	Lake Mary Road	1,293	1,184	8.4%	15%	Yes	1,709	44%
37165692	Old Mammoth Road	1,015	942	7.2%	15%	Yes	1,231	31%
37165365	Berner Street	26	27	4.3%	100%	Yes	152	460%
37165370	Minaret Road	955	813	14.9%	15%	Yes	1,002	23%
37165376	Canyon Blvd.	662	776	17.3%	25%	Yes	994	28%
37165415	North Majestic Pines Drive	147	172	17.1%	50%	Yes	188	9%
37165517	Main Street	1,413	1,412	0.1%	10%	Yes	1,656	17%
37165531	Main Street	1,440	1,400	2.8%	15%	Yes	1,732	24%
37165544	Lake Mary Road	223	138	38.1%	50%	Yes	145	5%
37165559	Old Mammoth Road	529	595	12.5%	25%	Yes	760	28%
37165573	Meridian Blvd.	726	813	12.0%	25%	Yes	1,096	35%
37165589	Meridian Blvd.	234	304	30.1%	50%	Yes	465	53%
37165634	Meridian Blvd.	756	714	5.6%	25%	Yes	703	-1%
37165644	Old Mammoth Road	897	828	7.7%	15%	Yes	1,091	32%
37165670	Minaret Road	910	1,134	24.6%	25%	Yes	1,715	51%
	Total	**26,443**	**26,377**	**0.2%**			**35,603**	**35.0%**

Source: LSC, 2010.



Town of Mammoth Lakes
2030 Typical Winter Saturday Peak Hour Traffic Assignment
Mammoth Lakes Model Update

Figure VII-5
LSC # 084870

LSC TRANSPORTATION CONSULTANTS, INC.

Future Transit Assignment

Table VII-10 shows a comparison of existing base (2009) and future base (2030) transit assignment results. Like traffic volumes, transit trips are expected to increase 35 percent overall by 2030. The Green Line—with service between Old Mammoth Road and Eagle Lodge along Meridian Boulevard—is expected to see a greater than average increase in ridership by 2030. The Red Line and Yellow Line will see an average increase in ridership by 2030, serving the North Village area. The results suggest that there may be a shift from bus to gondola between North Village, through Mammoth Slopes, and reaching the Canyon Lodge.

Table VII-10
Transit Boarding Comparison - Base vs. Future Buildout

Route	Actual Boardings	Existing Model Boardings	Percent Error	Future Model Boardings	Percent Change vs. Existing
Red Line	6,700	6,710	0.1%	9,160	36.5%
Green Line	1,800	1,370	23.9%	2,450	78.8%
Blue Line	2,400	1,240	48.3%	990	-20.2%
Yellow Line	800	1,250	56.3%	1,680	34.4%
Orange	100	210	110.0%	220	4.8%
Mid-Town Lift	n/a	330		250	-24.2%
Gondola	n/a	2,740		3,090	12.8%
Total	**11,800**	**10,780**	**8.6%**	**14,500**	**34.5%**

Source: LSC, 2010.

SUMMARY

The following summarizes the findings of the future year model validation:

- Permanent resident population is estimated to grow 36 percent by 2030.
- Total trips made by residents and visitors is forecast to grow 37 percent.
- North Village sees the largest increase in trip making.
- Main Street, Sierra Star, and Snowcreek districts also see substantial increases in trip making.
- Vehicular and transit volumes are both forecasted to increase 35 percent.
- Because lower-occupancy vehicle-trips increase more than high-occupancy trips, there will be little outward sign of a shift from vehicle to transit use.

- Meridian Boulevard, Minaret Road, and Old Mammoth Road are forecast to see the highest increases in peak-hour traffic volumes.
- The Green Line—with service along Meridian Boulevard—is expected to have the highest growth in transit volumes.
- Based on the results, there is a forecast shift from bus to gondola ridership in the area between North Village and Canyon Lodge.

Overall the model processes future land uses, trips, and assigns them to the network in expected proportions compared to the existing base (2009) model. These results indicate the model is performing as it should and is ready to be used to test future land use and transportation network scenarios.

Chapter VIII

TRANSPORTATION
CONSULTANTS, INC.

CHAPTER VIII

Future Scenario Results

This chapter presents the results of the future base-year model discussed in the previous chapter and analysis of several variations/enhancements to the base-year model representing some future alternatives. The base-year model represents the loading of additional trips to be generated by the anticipated future land uses to the **current** transportation system. The overall purpose of this project is to use a calibrated model to forecast future traffic volumes and levels of congestion and to evaluate alternatives. As the future base model does not include any transportation system capacity improvements, enhancements, or other changes, it is essentially the "do-nothing" alternative. The only exception to this is the addition of Snowcreek transit. This extension of the red line into Snowcreek (down to TAZs 160 and 161) was included in the future base model since it is a requirement of Snowcreek to add this extension.

As stated in Chapter I, the purpose of this modeling effort is to be able to test and assess changes to the land use and transportation system, and to thereby inform decision-makers for the benefit of the Town of Mammoth Lakes. The model is designed and intended to assist in making the types of decisions that go beyond site-level traffic impact studies usually required as part of the development review process.

The future base model results present a scenario useful in identifying areas of congestion that may occur if land use and trip generation increase without any expansion or increase in the carrying capacity of the transportation system (with the exception of the addition of Snowcreek transit). The results presented in this chapter also show the existing conditions for comparison to forecasted future conditions.

The analysis of several scenarios or alternatives to the future base-model alternative has been performed to identify the relative effectiveness of each in mitigating or minimizing further degradation of level of service of congested streets and intersections identified in the existing and future base-year model. Two of the alternatives also present analysis of conditions with higher levels of development and trip generation in certain areas than used in the future base model combined expansion of the transportation system.

DESCRIPTION OF SCENARIOS/CHANGES TO THE FUTURE BASE MODEL

The following describes the five alternatives evaluated using modified versions of the Future Base Model. Table VIII-1 summarizes these descriptions.

Scenario 1

This scenario models the addition of new streets (to the future base model) expected to be implemented by Other Planned Development. These added streets are depicted in Figure VIII-1. Alternative 1 does not model all the new streets shown in this figure, only the salmon-colored streets that would be "new streets implemented by Other Planned Development." This alternative also maintains the Main Street frontage roads. This scenario uses the same land use assumptions as the future base model.

Scenario 2

This scenario models the addition of new streets (to the future base model) recommended in the Downtown Neighborhood District Plan (DNDP)/Mobility Plan Complete Circulation Network. These added streets are depicted in Figure VIII-1. As in the case of Scenario 1, this alternative also maintains the Main Street frontage roads and uses the same land use assumptions as the future base model.

Scenario 3

Scenario 3 is the same as Scenario 2 with the exception of the Main Street frontage roads. These have been removed in the Scenario 3 model. As with the previous two scenarios, the same land use assumptions as the future base model were used.

Table VIII-1 Buildout Traffic Model Alternatives for LSC Contract					
Alt.		**Description**	**Future Roadway Network**	**Future Land Use Assumptions**	**Other Assumptions**
X	Buildout "Baseline" + Existing Network	This alternative models buildout with the existing roadway network. Land use assumptions are based on PAOT and traffic model for residential uses and commercial/industrial land uses.	Existing network	o Residential: use PAOT assumptions for units and rooms. o Commercial: Approved projects + 0.25 FAR for vacant/redevelopment land in CG/CL zones o Industrial: 0.9 FAR for vacant land in Industrial zone	Transit share = 14%
1	Buildout "Baseline" + "Future Development Roads"	This alternative models the existing roadway network plus roads that are reasonably expected to be built with future development. (The frontage roads are maintained in this alternative.) Land use assumptions are the same as above.	Existing network plus Future Development Roads	Same as above	Transit share = 14%
2	Buildout "Baseline" + "Complete Circulation Network"	This alternative models the existing roadway network plus roads that are recommended in the DNDP/Mobility Plan Complete Circulation Network. (The frontage roads are maintained in this alternative.) Land use assumptions are the same as above.	Existing network plus "Complete Circulation Network"	Same as above	Transit share = 14%
3	Buildout "Baseline" + "Complete Circulation Network" (No Frontage Roads)	This alternative models the existing roadway network plus roads that are recommended in the DNDP/Mobility Plan Complete Circulation Network. The frontage roads are removed in this alternative. Land use assumptions are the same as above.	Existing network plus "Complete Circulation Network" – Frontage Roads	Same as above	Transit share = 14%
4	Buildout "DNDP" + "Complete Circulation Network" (No Frontage Roads)	This alternative models the existing roadway network plus roads that are recommended in the Mobility Plan/DNDP Complete Circulation Network. The frontage roads are removed in this alternative. Land use assumptions are increased from the alternatives above to include rooms/units and commercial space possible under the DNDP.	Existing network plus "Complete Circulation Network" minus Frontage Roads	o Additional units/rooms and commercial square footage available due to ROW relinquishment in DNDP Study Area (4 acres/175,000 sq. ft. additional) between Manzanita and Sierra Park). ▪ Residential: Additional 320 rooms possible at 80 rpa ▪ Commercial (CG/CL): 175,000 sq. ft additional. Need to determine appropriate FAR. o RV Park – New Sports/Events Park o FS Compound – New Civic Center, Retail and MF Res units ▪ 30,000 sq. ft. additional retail ▪ 82 MF units o Industrial: 0.9 FAR for vacant land in Industrial zone	Transit share = 14%
5	Buildout "DNDP " + "Complete Circulation Network" (No Frontage Roads) + Increased Transit	Roadway network is the same as Alternative 4, but transit ridership is increased. Land use assumptions are the same as Alternative 4.	Same as Alternative 4 with additional transit	Same as Alternative 4	Transit Share = 17%

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PREFERRED ALTERNATIVE: CIRCULATION NETWORK

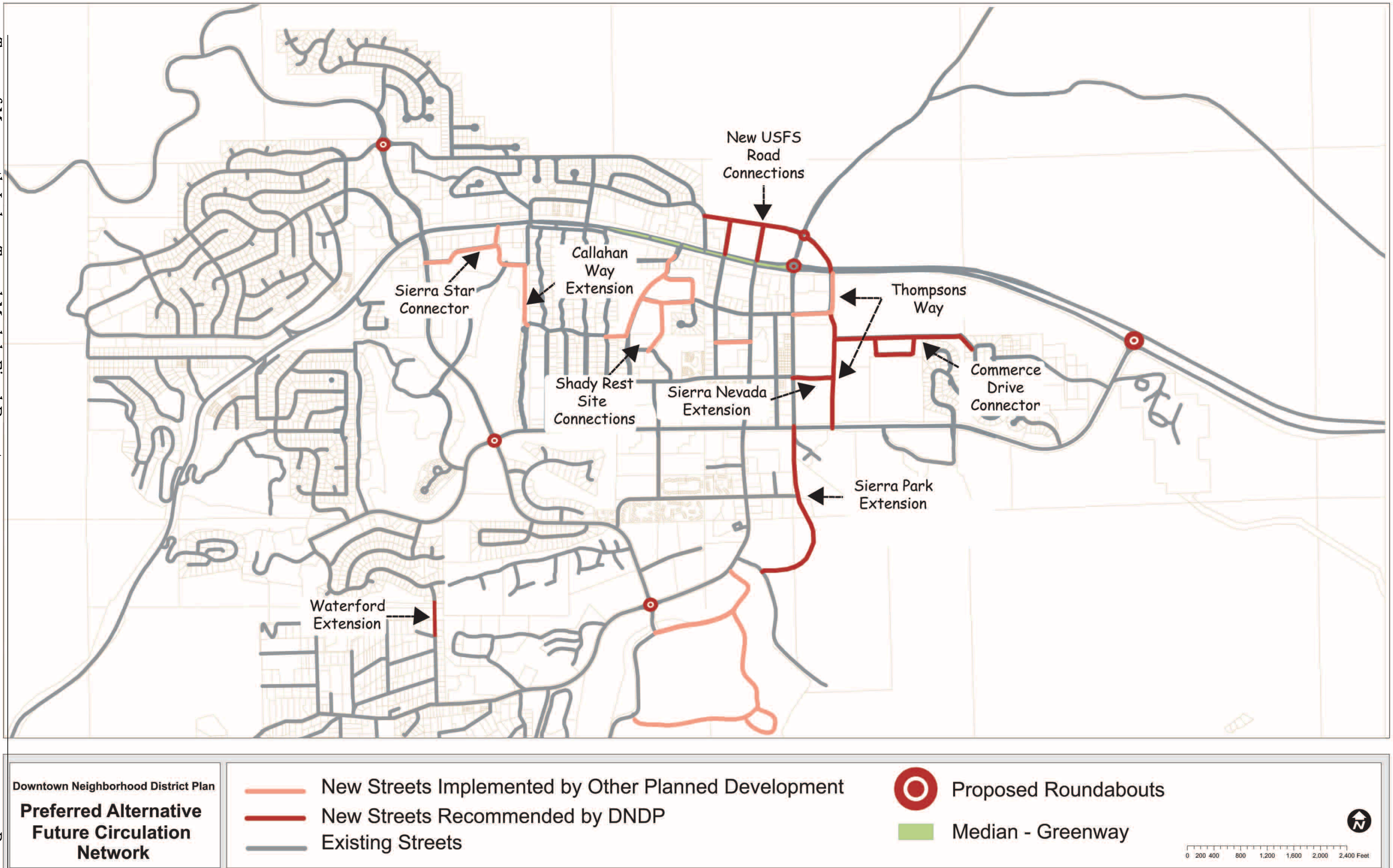

Figure VIII-1
Future Circulation Network

Scenario 4

Scenarios 4 considers land use changes to the future base model assumptions to include rooms/units and commercial space possible under the DNDP. Table VIII-1 presents a summary of the land use assumptions and land use quantities. Appendix D includes more detailed information regarding the assumptions.

The land-use changes include:

- Relatively modest increases in land use along Main Street between the RV park and Mountain Boulevard area associated with the assumptions/recommendations of the DNDP involving right-of-way (ROW) relinquishment, which frees up approximately four acres of additional land.
- Recommendations for a sports/event park on the site of the current RV park and Town/County property (TAZs 87 and 90).
- The recommended addition of a Civic Center and employee housing on the existing Forest Service compound/campground (TAZs 38 and 39). For the Civic Center and sports/events park, it is assumed that these uses would not be very productive on the design day (winter Saturday) so a small amount of retail has been added as a proxy.

In addition to the land use changes, this scenario models the addition of new streets that are recommended in the DNDP/Mobility Plan Complete Circulation Network to the future base model. These added streets are depicted in Figure VIII-1. As with Scenario 3, this alternative also assumes the removal of the frontage roads.

Scenario 5

Scenario 5 is the same as Scenario 4 with the exception of an increased transit ridership assumption. Alternative 5 adds the transit route between Snowcreek and Main Lodge along Minaret referred to as the “Orange Line.” Stops were modeled within Snowcreek, at Meridian, near the Village, and at Main Lodge line from Snowcreek to the village and then the Main Lodge. The model generated ridership along this route of approximately 2,000 passengers per day. The overall transit mode split for this scenario rose from 14 percent in previous scenarios to 17 percent in Scenario 5.

MODEL RESULTS

The modeled results of the existing, future base model, and Scenarios 1 through 5 are summarized in Tables VIII-2 and VIII-3. Results are expressed in terms of street segment/link volume, segment volume-to-capacity ratios, and intersection level of service for signalized intersections and critical approaches at unsignalized intersections.

Peak-Hour Link Volumes and Volume-to-Capacity Ratios

Table VIII-2 contains the study street segment model-forecasted peak-hour volumes (per lane, single direction of travel) and corresponding volume-to-capacity ratios for the existing condition, future baseline condition, and future conditions for each of the five modeled alternatives. The specific street segments are identified by the "link number" shown in the first column of the table. For reference, a printout of the model showing the street network and corresponding link numbers is contained in the appendix. Streets such as Minaret Road appear in multiple rows in the table as the street has been broken into separate segments with separate link numbers for analysis purposes.

The assumed capacity of segments used in this calculation is based on the facility type of the street segment. These capacity values are identified in Table II-1 "Road Network Characteristics." Volume-to-capacity ratios of 1.0 or greater have been highlighted in the table to indicate that the model-forecasted volume is equal to or greater than the assumed capacity. Generally, the higher the volume-to-capacity ratio, the greater the level of congestion. Although this report assigns a capacity value based on facility type/functional classification, individual street capacities vary depending on characteristics, including on-street parking, street width, number of driveways, spacing of intersections, horizontal and vertical alignment, auxiliary turn lanes, and medians. In urban areas, intersection level of service/capacity analysis is often a better indicator of the capacity limitations of the network, as intersections tend to control the capacity with most of the delay and congestion occurring at them. However, street segment volume-to- capacity ratios give a general indication if a street is forecasted to carry traffic levels at or above the generally accepted hourly, industry-recommended volumes.

Peak-Hour Intersection Level of Service

Table VIII-3 presents calculated peak-hour intersection level of service (LOS).

The level of service values corresponding to the signalized intersections identified in the top part of the table under the heading "Signalized" represent the levels of service for the entire intersection.

The level of service values corresponding to the unsignalized intersections identified in the bottom part of the table under the heading "Unsignalized" represent the levels of service for the "critical approaches" at the unsignalized intersections analyzed. For example, LOS F is listed for the Old Mammoth Road/Chateau Road intersection under Alterative 1. This level of service applies to the eastbound approach only. The westbound approach is LOS C, and the northbound and southbound left-turn movements are LOS A. The intersection volume worksheets and Synchro models for each alternative are also attached.

In addition to the LOS rating, Table VIII-3 includes the overall average delay values (seconds per vehicle) for the signalized intersections and average critical approach delay (seconds per vehicle) values for the unsignalized intersections. For those unsignalized intersections where the Level of Service is "F," the approach volume-to-capacity ratio is shown instead of the delay since it is a better relative measure for comparison of how the intersection approach would operate. In Synchro, once the movement or approach delays exceed 120 seconds per vehicle, they tend to increase exponentially and provide unrealistic results. The volume-to-capacity ratios provide a better measure for comparison of scenarios and an indication of how far above capacity the expected demand will be.

The level of service values of "F" do not necessarily indicate definitive "failure" of the intersection, or even the critical approach. It is simply a calculation of the estimated average delay per vehicle during the Saturday peak hour. The level of service values in the "E" and "F" ranges and volume-to-capacity ratios identify potential intersection approaches which may require closer monitoring or evaluation to determine if mitigation will become necessary. LSC recommends considering the approach volume of traffic for which the level of service applies. Site-specific conditions should be considered, such as nearby traffic signals that may cause gaps in traffic allowing side street traffic to enter the intersection with lower average delay than Synchro LOS analyses. Also, consideration should be given to available alternatives to those intersections with high delay approaches, as there may be alternate routes available to motorists that do not include a high-delay left turn or through movement from a stop-sign-controlled intersection approach.

Alternative 3 provides the best overall performance for all of the analyzed intersections and does not have any volume-to-capacity ratios above 3.00. The total delay is significantly lower than some of the other alternatives.

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Table VIII-2
Future Alternatives Comparison - Segment Capacity

Link No.	Street Name	from	to	Capacity	Existing Peak-Hour Volume	Existing Model Peak-Hour Volume	Existing Volume/ Capacity Ratio	Base Future Peak-Hour Volume	Base Future Volume/ Capacity Ratio	Alternative 1 Peak-Hour Volume	Alternative 1 Volume/ Capacity Ratio	Alternative 2 Peak-Hour Volume	Alternative 2 Volume/ Capacity Ratio	Alternative 3 Peak-Hour Volume	Alternative 3 Volume/ Capacity Ratio	Alternative 4 Peak-Hour Volume	Alternative 4 Volume/ Capacity Ratio	Alternative 5 Peak-Hour Volume	Alternative 5 Volume/ Capacity Ratio
17	Canyon Blvd.	Lakeview Blvd.	Forest Trail	500	438	634	1.27	619	1.24	567	1.13	625	1.25	593	1.19	606	1.21	578	1.16
30	Forest Trail	Sierra Blvd.	Rusty Ln.	500	157	174	0.35	336	0.67	287	0.57	342	0.68	309	0.62	329	0.66	320	0.64
33	Forest Trail	Crest Ln.	Forest Pl.	500	81	20	0.04	24	0.05	51	0.10	83	0.17	75	0.15	75	0.15	70	0.14
55	Lake Mary Road	Hidden Valley Rd.	Canyon Blvd.	800	420	327	0.41	396	0.50	367	0.46	318	0.40	352	0.44	378	0.47	369	0.46
160	Main Street	Old Mammoth Rd.	Sierra Manor Rd.	3,200	830	966	0.30	1,070	0.33	1,101	0.34	1,182	0.37	1,181	0.37	1,322	0.41	1,301	0.41
167	Minaret Road	Evening Star	Meridian Blvd.	1,400	475	430	0.31	993	0.71	1,019	0.73	896	0.64	907	0.65	893	0.64	831	0.59
168	Minaret Road	Main St.	Forest Trail	1,500	1,035	934	0.62	1,238	0.83	1,236	0.82	1,218	0.81	1,222	0.81	1,219	0.81	1,124	0.75
169	Minaret Road	Meridian Blvd.	E. Bear Lake Dr.	1,400	810	710	0.51	1,260	0.90	1,256	0.90	1,278	0.91	1,230	0.88	1,246	0.89	1,158	0.83
177	Sierra Park Road	Main St.	Tavern Rd.	500	155	198	0.40	119	0.24	136	0.27	204	0.41	214	0.43	263	0.53	247	0.49
179	Tavern Road	Old Mammoth Rd.	Laurel Mtn. Rd.	500	99	98	0.20	180	0.36	240	0.48	105	0.21	177	0.35	299	0.60	214	0.43
186	Forest Trail	Hillside Dr.	Minaret Rd.	500	340	423	0.85	479	0.96	423	0.85	447	0.89	446	0.89	416	0.83	405	0.81
200	Tavern Road	Old Mammoth Rd.	Sierra Manor Rd.	500	59	58	0.12	44	0.09	60	0.12	12	0.02	14	0.03	16	0.03	16	0.03
206	Sierra Park Road	Meridian Blvd.	Sierra Nevada Rd.	500	123	191	0.38	122	0.24	127	0.25	179	0.36	176	0.35	215	0.43	203	0.41
212	Meridian Blvd.	Azimuth Dr.	Old Mammoth Rd.	1,400	810	698	0.50	759	0.54	730	0.52	741	0.53	703	0.50	767	0.55	750	0.54
224	Minaret Road	Meadow Ln.	Old Mammoth Rd.	700	389	429	0.61	878	1.25	897	1.28	798	1.14	808	1.15	805	1.15	759	1.08
326	Davison Road	Lee Rd.	Lake Mary Rd.	400	76	85	0.21	125	0.31	124	0.31	159	0.40	149	0.37	156	0.39	153	0.38
328	Lake Mary Road	Canyon Blvd.	Minaret Rd.	1,600	1,136	1,211	0.76	1,454	0.91	1,499	0.94	1,450	0.91	1,451	0.91	1,542	0.96	1,423	0.89
349	Meridian Blvd.	Majestic Pines Dr.	N. Majestic Pines Dr.	1,400	470	391	0.28	696	0.50	695	0.50	690	0.49	688	0.49	689	0.49	658	0.47
350	Chateau Road	Minaret Rd.	Azimuth Dr.	500	117	73	0.15	102	0.20	108	0.22	89	0.18	91	0.18	96	0.19	93	0.19
361	Meridian Blvd.	Sierra Star Pkwy.	Minaret Rd.	1,400	606	622	0.44	985	0.70	1,013	0.72	920	0.66	929	0.66	960	0.69	914	0.65
376	Old Mammoth Road	Sherwin Creek Rd.	Chateau Rd.	700	548	536	0.77	783	1.12	760	1.09	683	0.98	661	0.94	732	1.05	719	1.03
377	Old Mammoth Road	Minaret Rd.	Sherwin Creek Rd.	700	472	536	0.77	783	1.12	584	0.83	585	0.84	615	0.88	690	0.99	679	0.97
440	Lake Mary Road	Davidson Rd.	Kelley Rd.	400	374	219	0.55	268	0.67	268	0.67	268	0.67	268	0.67	280	0.70	270	0.68
467	Minaret Road	Mammoth Knolls Dr.	Forest Trail	1,500	1,001	988	0.66	997	0.66	999	0.67	997	0.66	1,001	0.67	988	0.66	884	0.59
468	Forest Trail	Minaret Rd.	Berner St.	500	157	129	0.26	237	0.47	159	0.32	209	0.42	204	0.41	195	0.39	189	0.38
472	Main Street	Minaret Rd.	Mountain Blvd.	3,200	1,411	1,596	0.50	2,011	0.63	1,604	0.50	1,520	0.47	1,571	0.49	1,570	0.49	1,584	0.50
512	Meridian Blvd.	Majestic Pines Dr.	Lodestar Dr.	1,400	488	477	0.34	754	0.54	754	0.54	703	0.50	705	0.50	720	0.51	693	0.49
525	Sawmill Cutoff Road	Main St.	Ritter Rd.	400	35	12	0.03	10	0.02	23	0.06	0	0.00	0	0.00	0	0.00	0	0.00
541	Minaret Road	E. Bear Lake Dr.	Main St.	1,400	717	718	0.51	1,382	0.99	1,181	0.84	1,299	0.93	1,145	0.82	1,138	0.81	1,020	0.73
557	Mammoth Scenic Loop	Minaret Rd.		1,400	22	29	0.02	33	0.02	33	0.02	33	0.02	33	0.02	33	0.02	33	0.02
602	Old Mammoth Road	Meridian Blvd.	Oak Tree Way	1,200	846	852	0.71	1,179	0.98	1,152	0.96	1,084	0.90	1,006	0.84	1,120	0.93	1,096	0.91
37165216	Chateau Road	Azimuth Dr.	Old Mammoth Rd.	500	148	99	0.20	103	0.21	97	0.19	82	0.16	82	0.16	90	0.18	88	0.18
37165325	Lake Mary Road	Hidden Valley Rd.	Canyon Blvd.	800	372	337	0.42	520	0.65	491	0.61	442	0.55	476	0.60	507	0.63	496	0.62
37165327	Lake Mary Road	Canyon Blvd.	Minaret Rd.	1,600	1,293	1,251	0.78	1,678	1.05	1,724	1.08	1,674	1.05	1,675	1.05	1,778	1.11	1,654	1.03
37165365	Berner Street	Alpine Cir.	Forest Trail	400	26	29	0.07	162	0.41	159	0.40	161	0.40	153	0.38	152	0.38	148	0.37
37165370	Minaret Road	Main St.	Forest Trail	1,500	955	860	0.57	1,011	0.67	1,010	0.67	987	0.66	996	0.66	977	0.65	904	0.60
37165376	Canyon Blvd.	Hillside Dr.	Lake Mary Rd.	800	662	875	1.09	943	1.18	1,019	1.27	1,018	1.27	985	1.23	1,045	1.31	937	1.17
37165415	North Majestic Pines Drive	Monterey Pine Rd.	Meridian Blvd.	700	147	172	0.25	204	0.29	216	0.31	241	0.34	243	0.35	244	0.35	233	0.33
37165517	Main Street	Laurel Mtn. Rd	Old Mammoth Rd.	3,200	1,413	1,468	0.46	1,644	0.51	1,552	0.49	1,650	0.52	1,612	0.50	1,642	0.51	1,672	0.52
37165531	Main Street	Mountain Blvd.	Sierra Blvd.	2,800	1,440	1,518	0.54	1,774	0.63	1,982	0.71	1,906	0.68	1,942	0.69	2,141	0.76	2,061	0.74
37165544	Lake Mary Road	Lee Rd.	Davidson Rd.	500	223	134	0.27	143	0.29	145	0.29	109	0.22	119	0.24	124	0.25	117	0.23
37165559	Old Mammoth Road	Timber Creek Rd.	Minaret Rd.	700	529	594	0.85	762	1.09	762	1.09	691	0.99	691	0.99	718	1.03	703	1.00
37165573	Meridian Blvd.	Minaret Rd.	Obsidian Pl.	1,400	726	766	0.55	1,096	0.78	996	0.71	982	0.70	959	0.69	1,043	0.75	993	0.71
37165589	Meridian Blvd.	Commerce Dr.	Highway 203	700	234	328	0.47	448	0.64	448	0.64	456	0.65	455	0.65	460	0.66	461	0.66
37165634	Meridian Blvd.	Old Mammoth Rd.	Sierra Manor Rd.	1,400	756	699	0.50	684	0.49	669	0.48	574	0.41	537	0.38	548	0.39	539	0.39
37165644	Old Mammoth Road	Meridian Blvd.	Sierra Nevada Rd.	1,200	897	926	0.77	1,131	0.94	1,061	0.88	866	0.72	986	0.82	1,117	0.93	1,095	0.91
37165670	Minaret Road	E. Bear Lake Dr.	Main St.	1,400	910	982	0.70	1,681	1.20	1,322	0.94	1,257	0.90	1,222	0.87	1,385	0.99	1,098	0.78
37165692	Old Mammoth Road	Tavern Rd.	Main St.	1,200	1,015	1,105	0.92	1,211	1.01	1,140	0.95	765	0.64	718	0.60	723	0.60	772	0.64

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Table VIII-3

Future Alternatives Comparison - Intersection Level of Service Results[1]

Intersection	Existing		Base Future		Alternative 1		Alternative 2		Alternative 3		Alternative 4		Alternative 5	
Signalized	Overall LOS	Overall Delay (sec./veh.)	Overall LOS	Overall Delay (sec./veh.)	Overall LOS	Overall Delay (sec./veh.)	Overall LOS	Overall Delay (sec./veh.)	Overall LOS	Overall Delay (sec./veh.)	Overall LOS	Overall Delay (sec./veh.)	Overall LOS	Overall Delay (sec./veh.)
Lake Mary Road/Canyon Boulevard	A	9.2	A	8.8	A	9.4	A	9.4	A	9.2	A	9.4	A	9.1
Main Street/Minaret Road	C	29.7	D	37.2	C	33.4	C	32.6	C	32.7	C	33.8	C	31.8
Main Street/Old Mammoth Road	B	14.3	B	14.8	B	14.5	B	14.1	B	14.0	B	14.0	B	14.2
Meridian Boulevard/Minaret Road	B	15.5	C	22.0	C	22.0	C	21.2	C	20.9	C	21.3	C	20.2
Meridian Boulevard/Old Mammoth Road	B	19.7	C	22.6	C	21.9	C	22.1	C	20.9	C	22.1	C	21.9
Unsignalized	Critical Approach LOS	Critical Approach Delay (sec./veh.)[2]	Critical Approach LOS	Critical Approach Delay (sec./veh.)[2]	Critical Approach LOS	Critical Approach Delay (sec./veh.)[2]	Critical Approach LOS	Critical Approach Delay (sec./veh.)[2]	Critical Approach LOS	Critical Approach Delay (sec./veh.)[2]	Critical Approach LOS	Critical Approach Delay (sec./veh.)	Critical Approach LOS	Critical Approach Delay (sec./veh.)
Minaret Road/Forest Trail	**F**	**0.37**	**F**	**1.24**	**F**	**0.94**	**F**	**1.02**	**F**	**1.03**	**F**	**0.91**	**F**	**0.76**
Lake Mary Road/Davidson Road/Kelley Road	B	12.9	B	14.4	B	14.4	B	14.9	B	14.7	B	14.9	B	14.2
Main Street/Mountain Boulevard	D	32.2	**F**	**1.30**	**F**	**2.25**	**F**	**1.85**	**F**	**2.67**	**F**	**> 7.00**	**F**	**5.64**
Main Street/Center Street	D	31.9	**F**	**1.19**	**F**	**7.60**	**F**	**6.75**	**F**	**1.44**	**F**	**1.66**	**F**	**1.55**
Main Street/Forest Trail	**F**	**1.17**	**F**	**2.09**	**F**	**1.74**	**F**	**1.68**	**F**	**1.88**	**F**	**2.76**	**F**	**2.42**
Main Street/Laurel Mountain Road	**F**	**0.87**	**F**	**1.46**	**F**	**1.08**	**F**	**0.87**	**F**	**0.94**	**F**	**1.86**	**F**	**1.37**
Main Street/Sierra Park Road/Sawmill Cutoff	B	13.4	C	16.3	C	16.5	C	16.5	C	16.3	C	16.9	C	16.9
Old Mammoth Road/Tavern Road	C	23.9	E	47.9	**F**	**0.55**	C	23.8	D	28.6	**F**	**0.60**	D	34.6
Old Mammoth Road/Sierra Nevada Road	E	35.4	**F**	**1.00**	**F**	**0.66**	**F**	**0.54**	**F**	**0.55**	**F**	**0.84**	**F**	**0.77**
Meridian Boulevard/Majestic Pines Drive	B	11.0	B	14.4	B	14.2	B	14.0	B	14.0	B	14.1	B	13.8
Meridian Boulevard/Sierra Park Road	A	8.2	A	8.4	A	8.4	A	8.4	A	8.3	A	8.3	A	8.3
Old Mammoth Road/Chateau Road	C	18.6	**F**	**0.67**	**F**	**0.59**	D	32.0	D	30.6	E	42.7	E	40.3
Old Mammoth Road/Minaret Road	B	14.5	**F**	**6.44**	**F**	**1.27**	**F**	**1.07**	**F**	**1.18**	**F**	**1.26**	**F**	**1.10**

Notes:

(1) Performed in the *Synchro* capacity analysis software using the 2000 *Highway Capacity Manual* methodology.

(2) For unsignalized intersections with a Level of Service "F," critical approach volume-to-capacity ratio is reported instead of delay.

Appendix A: Existing Land Uses

TRANSPORTATION
CONSULTANTS, INC.

Existing Land Uses																			
	1	3	4	5	7	10	11	13	21	23	31	32	33	34	36	37	39	40	41
TAZ	SF Resident	MF Resident	Mobile Home	SF Visitor	MF Visitor	Lodging Hotel	Resort Hotel	Retail/ Commercial	Light Industrial	Public Utility	Public School	High School	College	Hospital	Post Office	Church	Downhill Skiing Employees	Downhill Skiers	Cross-Country Skiers
1	0	0	0	0	0	0	234	154	0	0	0	0	0	0	0	0	1300	9950	0
2	66	0	0	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	68	0	0	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	9	0	0	0	0	0	0	0	0	0	0	0
5	39	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	30	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	0	19	0	1	26	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	0	16	0	0	0	23	0	0	0	0	0	0	0	0	0	0	0	0	0
9	19	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	17	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	37	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	29	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	25	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	34	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	24	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	24	0	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	11	19	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	287	14	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	0	75	0	0	101	23	0	0	0	0	0	0	0	0	0	0	0	0	0
22	42	5	0	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	0	81	0	0	127	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	17	19	0	4	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	21	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	23	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27	0	98	0	2	61	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28	0	0	0	0	0	0	231	0	0	0	0	0	0	0	0	0	400	3700	0
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	31	30	0	0	0	0	0	0	0	0	0	0	0	0	0
31	0	0	0	0	0	0	0	26	0	0	0	0	0	0	0	0	0	0	0
32	0	0	0	0	0	60	0	12	0	0	0	0	0	0	0	0	0	0	0
33	4	20	0	3	36	28	0	0	0	0	0	0	0	0	0	0	0	0	0
34	3	16	0	3	0	21	0	9	0	0	0	0	0	0	0	0	0	0	0
35	11	99	0	8	3	106	0	16	0	0	0	0	0	0	0	0	0	0	0
36	8	0	0	2	0	151	0	0	0	0	0	0	0	0	7400	0	0	0	0
37	0	0	0	0	14	72	0	36	11	0	0	0	0	0	2	0	0	0	0
38	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	150
40	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0
41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
42	0	0	0	0	0	0	0	110	0	0	0	0	0	0	0	0	400	7400	0
43	0	24	0	0	36	0	0	0	0	0	0	0	0	0	0	0	0	0	0
44	0	31	0	0	70	0	0	0	0	0	0	0	0	0	0	0	0	0	0
45	7	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
46	15	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
47	30	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
48	47	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
49	33	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
50	0	86	0	0	115	0	0	0	0	0	0	0	0	0	0	0	0	0	0
51	0	32	0	0	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0
52	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
53	0	0	0	0	0	57	0	0	0	0	0	0	0	0	0	0	0	0	0
54	0	0	0	0	0	37	0	0	0	0	0	0	0	0	0	0	0	0	0
55	0	23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
56	0	11	0	3	0	0	0	18	0	0	0	0	0	0	0	0	0	0	0
57	2	33	0	2	27	0	0	0	0	0	0	0	0	0	0	0	0	0	0
58	7	63	0	4	57	0	0	0	0	0	0	0	0	0	0	0	0	0	0
59	7	88	0	9	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0
60	9	64	0	8	39	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Existing Land Uses

TAZ	1 SF Resident	3 MF Resident	4 Mobile Home	5 SF Visitor	7 MF Visitor	10 Lodging Hotel	11 Resort Hotel	13 Retail/ Commercial	21 Light Industrial	23 Public Utility	31 Public School	32 High School	33 College	34 Hospital	36 Post Office	37 Church	39 Downhill Skiing Employees	40 Downhill Skiers	41 Cross-Country Skiers
61	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
62	0	0	0	0	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0
63	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
64	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
65	0	0	0	0	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0
66	17	87	0	0	3	36	0	0	0	0	0	0	0	0	0	0	0	0	0
67	8	68	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0
68	15	40	0	0	4	59	0	4	0	0	0	0	0	0	0	0	0	0	0
69	8	59	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
70	13	35	0	0	9	0	0	11	0	0	0	0	0	0	0	0	0	0	0
71	4	69	0	0	29	0	0	0	0	0	0	0	0	0	0	0	0	0	0
72	16	35	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0
73	5	86	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
74	0	10	0	0	0	14	0	117	0	0	0	0	0	0	0	0	0	0	0
75	17	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
76	0	182	0	1	70	0	0	0	0	0	0	0	0	0	0	0	0	0	0
77	0	119	0	0	33	0	0	0	0	0	0	0	0	0	0	0	0	0	0
78	0	110	0	0	53	0	0	0	0	0	0	0	0	0	0	3	0	0	0
79	0	0	0	1	11	0	0	88	0	0	0	0	0	0	0	0	0	0	0
80	0	97	0	0	40	0	0	27	0	0	0	0	0	0	0	0	0	0	0
81	0	0	0	0	44	156	0	70	0	0	0	0	0	0	0	0	0	0	0
82	0	54	0	0	66	0	0	0	0	0	0	0	0	0	0	0	0	0	0
83	0	4	0	0	0	71	0	15	0	0	0	0	0	0	0	0	0	0	0
84	0	0	0	0	64	0	0	102	42	0	0	0	0	0	0	0	0	0	0
85	0	158	0	0	30	0	0	3	0	0	0	0	0	0	0	0	0	0	0
86	0	0	0	1	21	0	0	102	25	0	0	0	0	0	0	2	0	0	0
87	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0
88	0	0	0	0	0	0	0	0	0	0	0	0	0	21	0	0	0	0	0
89	0	0	0	0	0	0	0	0	0	0	0	314	0	0	0	0	0	0	0
90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
91	0	0	0	0	0	0	0	0	0	0	264	0	0	0	0	0	0	0	0
92	0	0	0	0	0	0	0	0	0	0	568	0	0	0	0	0	0	0	0
93	82	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
94	0	0	0	2	0	0	0	0	227	0	0	0	0	0	0	0	0	0	0
95	38	73	0	23	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0
96	1	85	0	9	48	1	0	0	0	0	0	0	0	0	0	0	0	0	0
97	22	66	0	10	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0
98	31	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
99	33	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
100	19	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
101	0	18	0	5	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
102	0	0	0	0	28	0	0	0	0	0	0	0	0	0	0	0	0	0	0
103	0	0	0	0	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0
104	0	33	0	8	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0
105	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
106	30	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
107	33	0	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
108	0	19	0	1	27	0	0	0	0	0	0	0	0	0	0	0	0	0	0
109	0	21	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0
110	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
111	3	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
112	2	12	0	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
113	0	44	38	0	36	0	0	0	0	0	0	0	0	0	0	0	0	0	0
114	0	110	41	0	145	0	0	0	0	0	0	0	0	0	0	0	0	0	0
115	0	32	0	0	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0
116	0	32	0	0	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0
117	0	57	0	0	28	0	0	0	0	0	0	0	0	0	0	0	0	0	0
118	0	10	0	0	0	0	0	29	0	0	0	0	0	0	0	0	0	0	0
119	0	0	0	0	0	0	0	182	0	0	0	0	0	0	0	0	0	0	0
120	0	45	0	0	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Existing Land Uses

TAZ	1 SF Resident	3 MF Resident	4 Mobile Home	5 SF Visitor	7 MF Visitor	10 Lodging Hotel	11 Resort Hotel	13 Retail/ Commercial	21 Light Industrial	23 Public Utility	31 Public School	32 High School	33 College	34 Hospital	36 Post Office	37 Church	39 Downhill Skiing Employees	40 Downhill Skiers	41 Cross-Country Skiers
121	0	0	0	0	8	24	0	54	0	0	0	0	0	0	0	0	0	0	0
122	0	57	0	0	13	0	0	8	0	1	0	0	0	0	0	0	0	0	0
123	0	0	0	0	0	0	0	4	6	0	0	0	0	0	0	0	0	0	0
124	0	49	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
125	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
126	0	0	0	0	0	0	0	0	0	35	0	0	0	0	0	3	0	0	0
127	0	0	0	0	0	0	0	11	0	0	0	0	0	0	0	0	0	0	0
128	4	0	0	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
129	0	11	0	0	102	0	179	0	0	0	0	0	0	0	0	0	0	0	0
130	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	63	3900	0
131	0	79	0	0	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
132	0	89	0	0	121	0	0	0	0	0	0	0	0	0	0	0	0	0	0
133	20	82	0	23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
134	20	56	0	16	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0
135	10	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
136	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
137	26	0	0	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
138	0	161	0	0	96	0	0	0	0	0	0	0	0	0	0	0	0	0	0
139	0	151	0	0	129	0	0	0	0	0	0	0	0	0	0	0	0	0	0
140	0	0	0	0	0	0	0	0	0	12	0	0	0	0	0	0	0	0	0
141	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
142	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
143	22	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
144	11	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
145	5	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
146	23	0	0	13	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0
147	18	9	0	11	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
148	34	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
149	0	38	0	0	26	0	0	0	0	0	0	0	0	0	0	0	0	0	0
150	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
151	0	24	0	0	0	0	0	60	0	0	0	0	0	0	0	0	0	0	0
152	0	0	0	0	41	0	0	0	0	1	0	0	0	0	0	0	0	0	0
153	0	0	0	0	0	0	45	1	0	0	0	0	0	0	0	0	0	0	200
154	25	0	0	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
155	20	0	0	16	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0
156	37	18	0	10	1	8	0	0	0	0	0	0	0	0	0	0	0	0	0
157	42	53	0	11	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
158	6	19	53	6	0	10	0	0	0	0	0	0	0	0	0	3	0	0	0
159	0	105	0	0	1	0	0	2	0	0	0	0	0	0	0	0	0	0	0
160	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0
161	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
162	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
163	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
164	6	0	0	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
165	0	226	0	0	70	0	0	0	0	0	0	0	0	0	0	0	0	0	0
166	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
167	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	1454	4023	132	627	2426	997	976	1305	311	49	832	314	0	21	7402	14	2163	24950	350

Appendix B: Future Land Uses

TRANSPORTATION
CONSULTANTS, INC.

	Future Land Uses																		
	1 SF Resident	3 MF Resident	4 Mobile Home	5 SF Visitor	7 MF Visitor	10 Lodging Hotel	11 Resort Hotel	13 Retail/ Commercial	21 Light Industrial	23 Public Utility	31 Public School	32 High School	33 College	34 Hospital	36 Post Office	37 Church	39 Downhill Skiing Employees	40 Downhill Skiers	41 Cross-Country Skiers
1	0	0	0	0	0	0	234	154	0	0	0	0	0	0	0	0	1300	10400	0
2	78	0	0	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	73	0	0	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	9	0	0	0	0	0	0	0	0	0	0	0
5	49	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	36	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	0	19	0	1	26	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	0	16	0	0	0	123	0	7	0	0	0	0	0	0	0	0	0	0	0
9	24	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	25	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	39	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	29	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	40	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	40	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	25	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	31	0	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	12	31	0	1	3	4	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	287	65	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	2	2	0	276	22	0	0	0	0	0	0	0	0	0	0	0
21	0	75	0	0	101	23	0	0	0	0	0	0	0	0	0	0	0	0	0
22	49	5	0	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	0	81	0	0	127	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	18	19	0	4	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	27	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	26	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27	0	102	0	2	63	2	0	0	0	0	0	0	0	0	0	0	0	0	0
28	0	0	0	0	0	0	231	0	0	0	0	0	0	0	0	0	400	6400	0
29	0	0	0	0	22	0	229	12	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	31	83	0	0	0	0	0	0	0	0	0	0	0	0	0
31	0	0	0	0	0	0	198	22	0	0	0	0	0	0	0	0	0	0	0
32	0	0	0	0	54	60	300	30	0	0	0	0	0	0	0	0	0	0	0
33	4	21	0	3	38	68	0	12	0	0	0	0	0	0	0	0	0	0	0
34	3	22	0	3	0	226	0	82	0	0	0	0	0	0	0	0	0	0	0
35	13	104	0	8	3	121	0	45	0	0	0	0	0	0	0	0	0	0	0
36	8	8	0	2	0	152	0	63	0	0	0	0	0	0	7400	0	0	0	0
37	0	0	0	0	14	99	0	64	0	0	0	0	0	0	0	0	0	0	0
38	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	150
40	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0
41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
42	0	0	0	0	0	0	0	110	0	0	0	0	0	0	0	0	400	6200	0
43	0	39	0	0	59	13	0	0	0	0	0	0	0	0	0	0	0	0	0
44	0	31	0	0	70	0	0	0	0	0	0	0	0	0	0	0	0	0	0
45	9	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
46	17	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
47	36	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
48	49	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
49	36	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
50	0	86	0	0	115	0	0	0	0	0	0	0	0	0	0	0	0	0	0
51	0	32	0	0	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0
52	0	0	0	0	0	0	364	19	0	0	0	0	0	0	0	0	0	0	0
53	0	0	0	0	0	57	180	30	0	0	0	0	0	0	0	0	0	0	0
54	0	0	0	0	0	59	0	14	0	0	0	0	0	0	0	0	0	0	0
55	0	50	0	0	50	20	0	0	0	0	0	0	0	0	0	0	0	0	0
56	0	15	0	3	0	82	0	21	0	0	0	0	0	0	0	0	0	0	0
57	3	38	0	3	32	3	0	0	0	0	0	0	0	0	0	0	0	0	0
58	8	63	0	4	57	0	0	0	0	0	0	0	0	0	0	0	0	0	0
59	10	92	0	10	21	2	0	0	0	0	0	0	0	0	0	0	0	0	0
60	11	64	0	10	39	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Future Land Uses																			
	1 SF Resident	3 MF Resident	4 Mobile Home	5 SF Visitor	7 MF Visitor	10 Lodging Hotel	11 Resort Hotel	13 Retail/ Commercial	21 Light Industrial	23 Public Utility	31 Public School	32 High School	33 College	34 Hospital	36 Post Office	37 Church	39 Downhill Skiing Employees	40 Downhill Skiers	41 Cross-Country Skiers
61	0	0	0	0	188	188	0	0	0	0	0	0	0	0	0	0	0	0	0
62	0	0	0	0	18	51	0	0	0	0	0	0	0	0	0	0	0	0	0
63	25	30	0	25	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
64	0	0	0	0	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0
65	0	9	0	0	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0
66	17	89	0	0	3	45	0	10	0	0	0	0	0	0	0	0	0	0	0
67	8	81	0	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0
68	15	61	0	0	6	75	0	14	0	0	0	0	0	0	0	0	0	0	0
69	8	68	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
70	13	41	0	0	11	19	0	18	0	0	0	0	0	0	0	0	0	0	0
71	4	75	0	0	31	0	0	0	0	0	0	0	0	0	0	0	0	0	0
72	16	46	0	0	0	2	0	6	0	0	0	0	0	0	0	0	0	0	0
73	5	99	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
74	0	10	0	0	0	38	0	97	0	0	0	0	0	0	0	0	0	0	0
75	19	161	0	2	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0
76	0	186	0	1	71	0	0	0	0	0	0	0	0	0	0	0	0	0	0
77	0	119	0	0	33	0	0	0	0	0	0	0	0	0	0	0	0	0	0
78	0	110	0	0	53	0	0	0	0	0	0	0	0	0	0	3	0	0	0
79	0	0	0	1	11	29	0	82	0	0	0	0	0	0	0	0	0	0	0
80	0	108	0	0	45	23	0	21	0	0	0	0	0	0	0	0	0	0	0
81	0	0	0	0	44	487	0	40	0	0	0	0	0	0	0	0	0	0	0
82	0	54	0	0	66	0	0	0	0	0	0	0	0	0	0	0	0	0	0
83	0	4	0	0	0	99	0	45	0	0	0	0	0	0	0	0	0	0	0
84	0	0	0	0	64	24	0	47	0	0	0	0	0	0	0	0	0	0	0
85	0	173	0	0	33	26	0	0	0	0	0	0	0	0	0	0	0	0	0
86	0	0	0	1	21	30	0	102	0	0	0	0	0	0	0	2	0	0	0
87	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0
88	0	0	0	0	0	0	0	0	0	0	0	0	0	33	0	0	0	0	0
89	0	0	0	0	0	0	0	0	0	0	0	314	0	0	0	0	0	0	0
90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
91	0	0	0	0	0	0	0	0	0	0	264	0	0	0	0	0	0	0	0
92	0	0	0	0	0	0	0	0	0	0	568	0	0	0	0	0	0	0	0
93	91	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
94	0	0	0	2	0	0	0	0	422	0	0	0	0	0	0	0	0	0	0
95	56	103	0	27	24	12	0	0	0	0	0	0	0	0	0	0	0	0	0
96	1	104	0	9	59	10	0	0	0	0	0	0	0	0	0	0	0	0	0
97	24	66	0	10	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0
98	33	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
99	38	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
100	22	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
101	24	55	0	14	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0
102	0	20	0	0	47	0	0	0	0	0	0	0	0	0	0	0	0	0	0
103	0	20	0	0	43	0	500	80	0	0	0	0	0	0	0	0	0	0	0
104	0	58	0	8	31	0	0	0	0	0	0	0	0	0	0	0	0	0	0
105	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
106	33	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
107	36	0	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
108	19	39	0	29	57	0	0	0	0	0	0	0	0	0	0	0	0	0	0
109	0	47	0	0	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0
110	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
111	29	0	0	11	0	17	0	0	0	0	0	0	0	0	0	0	0	0	0
112	36	12	0	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
113	0	44	38	0	36	0	0	0	0	0	0	0	0	0	0	0	0	0	0
114	0	110	41	0	145	0	0	0	0	0	0	0	0	0	0	0	0	0	0
115	0	32	0	0	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0
116	0	32	0	0	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0
117	0	57	0	0	28	0	0	0	0	0	0	0	0	0	0	0	0	0	0
118	0	30	0	0	0	30	0	55	0	0	0	0	0	0	0	0	0	0	0
119	0	0	0	0	0	33	0	112	0	0	0	0	0	0	0	0	0	0	0
120	0	45	0	0	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Future Land Uses																			
	1 SF Resident	3 MF Resident	4 Mobile Home	5 SF Visitor	7 MF Visitor	10 Lodging Hotel	11 Resort Hotel	13 Retail/ Commercial	21 Light Industrial	23 Public Utility	31 Public School	32 High School	33 College	34 Hospital	36 Post Office	37 Church	39 Downhill Skiing Employees	40 Downhill Skiers	41 Cross-Country Skiers
121	0	0	0	0	8	42	0	59	0	0	0	0	0	0	0	0	0	0	0
122	0	69	0	0	16	24	0	46	0	1	0	0	0	0	0	0	0	0	0
123	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
124	0	49	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
125	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
126	0	0	0	0	0	0	0	0	0	35	0	0	0	0	0	3	0	0	0
127	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
128	44	0	0	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
129	0	11	0	0	102	0	179	0	0	0	0	0	0	0	0	0	0	0	0
130	0	0	0	0	0	0	106	80	0	0	0	0	0	0	0	0	63	5350	0
131	0	79	0	0	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
132	0	89	0	0	121	0	0	0	0	0	0	0	0	0	0	0	0	0	0
133	32	82	0	23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
134	20	56	0	16	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0
135	19	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
136	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
137	41	0	0	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
138	0	185	0	0	111	0	0	0	0	0	0	0	0	0	0	0	0	0	0
139	0	211	0	0	180	37	0	0	0	0	0	0	0	0	0	0	0	0	0
140	0	0	0	0	0	0	0	0	0	12	0	0	0	0	0	0	0	0	0
141	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
142	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
143	23	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
144	11	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
145	7	1	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
146	30	29	0	13	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0
147	20	13	0	11	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
148	37	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
149	0	61	0	0	42	0	0	0	0	0	0	0	0	0	0	0	0	0	0
150	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
151	0	24	0	0	0	0	0	60	0	0	0	0	0	0	0	0	0	0	0
152	0	87	0	0	94	0	0	0	0	1	0	0	0	0	0	0	0	0	0
153	0	0	0	0	0	0	45	1	0	0	0	0	0	0	0	0	0	0	200
154	75	0	0	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
155	26	3	0	17	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0
156	52	25	0	11	1	10	0	0	0	0	0	0	0	0	0	0	0	0	0
157	48	65	0	11	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0
158	9	28	53	6	0	13	0	0	0	0	0	0	0	0	0	3	0	0	0
159	0	144	0	0	1	0	0	5	0	0	0	0	0	0	0	0	0	0	0
160	0	197	0	0	198	0	200	4	0	0	0	0	0	0	0	0	0	0	0
161	0	197	0	0	198	0	200	61	0	0	0	0	0	0	0	0	0	0	0
162	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
163	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
164	12	0	0	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
165	0	256	0	0	79	0	0	0	0	0	0	0	0	0	0	0	0	0	0
166	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
167	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	1925	5416	132	700	3563	2574	3529	1828	422	49	832	314	0	33	7400	14	2163	28350	350
Existing	1454	4023	132	627	2426	997	976	1305	311	49	832	314	0	21	7402	14	2163	24950	350
Total - Existing	471	1393	0	73	1137	1577	2553	523	111	0	0	0	0	12	-2	0	0	3400	0
% Increase	32%	35%	0%	12%	47%	158%	262%	40%	36%	-1%	0%	0%	0%	57%	0%	0%	0%	14%	0%

Appendix C: Mammoth Lakes Travel Demand Model User's Guide

LSC
TRANSPORTATION CONSULTANTS, INC.

Mammoth Lakes Travel Demand Model
User Guide

1. Model Inputs

The model relies on the following input files:

Roadway Network.dbd
This is the geographic roadway network file containing all roadway links and nodes. It is based on a GIS file with some additional fields that are required by TransCAD. These include:

AB_Lanes/BA_Lanes	number of lanes in each direction
Capacity_HR	hourly total capacity of roadway used in the peak hour model
Capacity_ADT	daily total capacity used in the daily model
85th_Speed	85th percentile speed used to determine vehicle travel time
AB_VehicleTT/BA_VehicleTT	vehicle travel times in each direction, determined by dividing length by 85th percentile speed
BusTT	transit travel time, determined by dividing length by bus speed (assumed to be 12 mph)
WalkTT	walk travel time, determined by dividing length by 4 feet/second
LinkType	functional classification of roadway • 0 - Centroid Connector • 1 - State Route • 2 - Arterial • 3 - Collector • 4 - Local • 5 - County Road • 6 - Other • 7 - Private • 8 - Alley • 9 - USFS Route

The roadway network file also contains count data for existing counts in the 2009_ADT and 2009_PeakHour fields. These fields were used in the calibration process.

Traffic Analysis Zones.dbd

This is the geographic representation of the Traffic Analysis Zones (TAZ) used by the model. The model uses the size of each TAZ to determine intrazonal travel times.

Transit System.rts

The transit system information, including routes and stops, are stored in this file. The routes are displayed on the underlying roadway network. Transit specific information is stored inside fields in this file. These include:

Headway	headways between buses
Transfer_Penalty	the transfer penalty for each route, typically half of the headway

The total base ridership for each route is also stored in this file to assist during the calibration step.

land_use_data.dbf

This is the data file that contains the land use quantities by TAZ. The first row contains the TAZ numbers while the remaining rows contain the quantities by each land use type. Any land use changes need to be reflected in this file.

trip_rates.dbf

The trip rates used by the model for each land use type are stored in this file. Both attraction and production rates for each of the five trip purposes are listed (home based recreation, home based shopping, home based work, home based other, and other to other).

Base_VehicleTT.bin

This are the base vehicle travel times for each roadway link calculated by dividing link length by 85th percentile speeds. These values are used to reset model adjustments and ensure that the each model runs begins with a set of base vehicle travel times. Various travel time penalties are then added throughout the model steps.

ski_area_penalty.bin

This file contains the vehicle travel time penalties for the ski areas. These values are added to the base vehicle travel times to artificially inflate them and therefore increase the transit share. The values were calculated to obtain a transit share for each ski area that matched the transit share from the Town's travel survey.

external_gates.bin

The attractions and productions for the three external gates are included in this file. These values are based on actual traffic counts at the external gates and need to be adjusted for future scenarios. They are incorporated with the TAZ attractions and productions in the trip distribution step.

adjusted_friction_factors.bin

These are the friction factors that are used by the model in the gravity model to determine trip distribution. Factors for each of the five trip types are provided. These are based on the factors used in the prior model with some adjustments to provide better trip distribution results.

K-Factors.mtx

This matrix stores the K-factors that are used in the gravity model. Most TAZ pairs have a K-factor of 1.00 meaning that no adjustment is made. However, the K-factor was adjusted for some pairs in order to make trips between these zone more/less attractive. Specifically, this was used to adjust ski area distribution and the distribution in the Mammoth Slopes neighborhood to get the desired results.

ADT_TT_adjustments.bin

Adjustments to vehicle travel time in order to calibrate the daily model are stored in this file. These travel time are added to the base vehicle travel times to modify the demand on particular roadway links.

PH_TT_adjustments.bin

Adjustments to vehicle travel time in order to calibrate the peak hour model are stored in this file. These travel time are added to the base vehicle travel times to modify the demand on particular roadway links.

turning_movement_table.bin

Intersection data used in the peak hour assignment is stored in this file. This information is used to determine delays at signalized intersections during the assignment process.

2. Running the Model

To run the model, the resource file that contains all the instructions needs to be compiled within TransCAD. To do this, go to "Tools" and "GIS Developer's Kit" to open the GISDK Toolbox. In the toolbox, the third icon allows you to "Compile to UI". Select this option to compile the resource file to a UI file. Navigate to the correct resource file and open it. TransCAD will then ask for the location of the UI file. Navigate to the model folder and save it there.

To add the UI file to the Tools menu, go to "Tools" and "Setup Add-ins..." A dialog box will open allowing you to add the model to the Tools menu. Select "Add" and complete the required fields:

Type	type of menu, select "Dialog Box"
Description	a short name for the model to be listed in the Tools menu (ie. base model or future model)
Name	name of the model from the resource file, this must be list as "Mammoth Lakes Model"
UI Database	location of the compiled UI file, navigate to the UI file that was compiled earlier
In Folder	the folder you wish to place the model into within the Tools menu, generally left as "None"

Once the model has been set up, close the dialog box by clicking "OK". The model should now be listed under the Tools menu under "Add-Ins". Navigate to it and select the correct model to run the model dialog box. This will open the model dialog box which is used to run the model steps.

A total of seven individual model steps are listed. These include:

- Trip Generation
- Trip Distribution
- Mode Split
- Preliminary Assignment
- Feedback Loop
- Final Daily Assignment
- Peak Hour Assignment

To run the model, click on each model step in succession and wait a few seconds for the operations to complete. The correct order is as follows:

- Trip Generation
- Trip Distribution

- Model Split
- Preliminary Assignment
- Feedback Loop
- Preliminary Assignment
- Feedback Loop
- Final Daily Assignment

The feedback loop and preliminary assignment are each run twice before the final assignment. These steps calculate congested travel times and feed them back into the gravity model. This ensures that the gravity model accounts for congestion. Based on convergence tests, it takes two iterations for the gravity model to converge. This is why the preliminary assignment and feedback loop need to be run twice. Please also note that at the end of each feedback loop step, all open windows must be closed before the model can continue. This is due to the fact that the preliminary assignment cannot be completed unless all windows are closed. The model will provide a prompt to remind the user of this step. Once the gravity model converges, the final daily assignment and peak hour assignments can be executed.

The Peak Hour Assignment step should be run independently after the daily model is executed. This is necessary due to the fact that both the peak hour and daily model assignments utilize some of the same files and require that these files be closed prior to the execution of each step. Close the model menu and all open windows, re-enter the model menu and run the Peak Hour Assignment step. Due to limitations of the TransCAD GISDK scripting language, the final step of the peak hour assignment cannot be scripted and has to be performed manually. In order to do this, close all open windows and open the following files:

- Roadway Network.dbd
- turning_movement_table.bin
- PH Vehicle PA to OD.mtx

Make sure that the Roadway Network.dbd file is selected and go to “Planning”, “Single-Class Traffic Assignment”, and “Volume Dependant Turning Delays”. A dialog box will open requesting that you select the appropriate network file. Select “Network.net” in the model folder. The next box requires the correct network settings. Select “Centroids are in network” or “Create from Selection set”, Link Type to “In Use”, and Penalties to “None”. The next dialog box will ask for the assignment method that you want to use. Select the following options:

Method	Stochastic User Equilibrium
Matrix File	PA to OD
Matrix	QuickSum
Movement Table	turning_movement_table
Signal Plans	navigate to the Signal Plans.tms file in the model folder
Time	AB_VehicleTT/BA_VehicleTT

Capacity	Capacity_HR
Number of Lanes	AB_Lanes/BA_Lanes
Alpha	None
Beta	None
Control Type	AB_Control/BA_Control
Iterations	20
Relative Gap	0.01
Alpha	0.15
Beta	4.00

Once you've selected the correct options, select "OK". TransCAD will then ask for the location of the output files. Navigate to the model folder and select "OK". The peak hour assignment will then be performed and a dialog box will open indicating whether the procedure was a success or if there were problems.

3. Model Outputs

Once the model has been run, the following output files will be created:

<u>ASN_LinkFlow.bin</u>
This file contains the results of the daily assignment model. Various parameters are provided by direction. The traffic volumes are stored in rows two through four (AB_Flow, BA_Flow, and Tot_Flow.) The .bin file can be joined to the Roadway Network.dbd file to graphically display the results. Please review the TransCAD manual on how to join .bin files to geographic files.

<u>LinkFlow.bin</u>
This file contains the results of the peak hour assignment model. Various parameters are provided by direction. The traffic volumes are stored in rows two through four (AB_Flow, BA_Flow, and TOT_Flow.) The .bin file can be joined to the Roadway Network.dbd file to graphically display the results. Please review the TransCAD manual on how to join .bin files to geographic files.

<u>TASN_ONO.bin</u>
The daily transit on and off results by route are stored in this file. The results can be grouped by "ROUTE" to get the total ridership by each route. Go to "Dataview" and "Group By ..." to group the results.

<u>PH_TASN_ONO.bin</u>
The peak hour transit on and off results by route are stored in this file. The results can be grouped by "ROUTE" to get the total ridership by each route. Go to "Dataview" and "Group By ..." to group the results.

4. Modifying Model Inputs

The model can be modified in various ways, including changing the land use, changing the external gate productions and attractions, modifying the roadway network, and adjusting the transit share.

Land Use

To change the land use, open the land_use_data.dbf file and adjust the quantities. The model will then need to be re-run and will reflect the new land use values.

External Gate Productions and Attractions

To modify the amount of productions and attractions that are generated by the external gates, open the external_gates.bin file and edit the values at the bottom of the table. The three external gates are 701, 702, and 703, so only values for these three zones should be adjusted.

Roadway Network

To adjust roadway laneage and capacities, open the Roadway Network.dbd file and adjust these values in the AB_Lanes/BA_Lanes and Capacity_HR/Capacity_ADT fields for the specific roadway links.

To add new roadway connections, open the Roadway Network.dbd file and go to “Tools”, “Map Editing”, and “Toolbox”. A toolbox to allow you to edit the roadway map will appear. You can then perform the editing functions, such as adding new roadway connections. For detail on how to perform edits on line features, please see Chapter 24 of the TransCAD User’s Guide. Make sure that your connections are not between centroid connector nodes, by turning on the node layer (under “Map” and “Layers”) and not utilizing nodes 1 through 167 as well as 701, 702, and 703.

Once the new roadway links have been created, please note the ID of each link as this information will be used to edit various other input files. The appropriate values for each of the required roadway network fields listed in the Model Inputs section will need to be filled out for the new roadway links. All other fields can remain blank.

Since various other inputs are associated with the roadway network file, they will need to be modified to add the new links that have been created.

Base_VehicleTT.bin	The base AB_VehicleTT/BA_VehicleTT values for all new links should be entered into this file. This will require that new fields be created and the correct ID and travel times entered for each new link.

ski_area_penalty.bin	This file will need to be modified to include the new roadway links. New fields for each new link should be created and the correct ID entered. The additional travel time penalty should be 0.00 for each direction.
ADT_TT_Adjustments.bin	This file will need to be modified to include the new roadway links. New fields for each new link should be created and the correct ID entered. The additional travel time adjustment should be 0.00 for each direction unless manual adjustments to the travel time are desired.
PH_TT_Adjustments.bin	This file will need to be modified to include the new roadway links. New fields for each new link should be created and the correct ID entered. The additional travel time adjustment should be 0.00 for each direction unless manual adjustments to the travel time are desired.

Once all the required changes are made, the model can be re-run and will reflect the addition of the new roadway links.

<u>Transit Share</u>

The easiest method to modify the transit share is to adjust the transit travel time to vehicle travel time ratio. Since the transit share is inversely proportional to the ratio, increasing the ratio will lower the transit share while reducing the ratio will increase the transit share. There are two ways to adjust the travel time ratio, either increasing the vehicle travel time or decreasing the transit travel time.

To increase vehicle travel time, higher base vehicle travel times can be computed by assuming lower roadway speeds. For example, they can be computed by dividing the length by 70 percent of the speed, therefore assuming that vehicle speeds are 30 percent lower than in the current model. The Roadway Network.dbd and Base_VehicleTT.bin files will need to be modified to include these higher vehicle travel times.

To modify transit travel times, the BusTT field in the Roadway Network.dbd file will need to be adjusted. The base model assumes a transit speed of 12 mph. Lower transit travel times can be used by assuming a higher speed and re-calculating the travel times.

Either of these two modifications will impact the transit travel time to vehicle travel time ratio and increase the transit share for each TAZ. The model will then need to be re-run to see the effects of this change. To compute the overall transit share, a comparison of total transit trips to total trips will need to be made. The total trips found in the Transit PA to OD.mtx file should be divided by the total trips in the Trip Distribution.mtx file (to get the total trips, create a

QuickSum matrix and go to “Matrix” and “Statistics” to get the sum of the QuickSum matrix). To get specific transit share percentages, a trial and error approach may need to be used to determine the exact changes to the vehicle or transit travel times that will be needed.

5. Moving the Model

It is recommended that the whole model directory be copied for all additional model runs. In addition to copying the folder, several additional steps will need to be performed. TransCAD stores the path to the model files inside the resource file. As a result, the resource file will need to be edited to change all reference to the path to the new location. This can be done fairly easily within Notepad. Open the "mammoth_lakes_model_v1.12.rsc" file and do a replace find within the file. Please note that paths in TransCAD include a double slash instead of a single slash. For example:

C:\Program Files\TransCAD\ = C:\\Program Files\\TransCAD\\

Once the resource file has been updated with the new path information, it will need to be re-compiled and a new model menu added under "Tools" and "Setup Add-ins…". To assist in keeping the different model runs organized, it is recommended that a new folder be created under the "Add-ins" menu to keep all the alternative model scenarios in one location.

The other modification that has to be made is to the transit system file. This file stores the location of the underlying roadway network. Since the roadway network file has been moved, the transit route file has to be modified to point the file to the new location. To perform this, open the Roadway Network.dbd file in the new location and select "Route Systems", "Utilities", and "Move…". This opens the move dialog box. Select the Transit System.rts file in the new location and hit "OK" in the following dialog box to accept the default options. The Transit System.rts file will now utilize the correct underlying roadway network file.

Appendix D: Land Use Assumptions

Traffic Model Alternatives 4 and 5
Buildout DNDP Land use with Complete Circulation Network

Purpose:
To test the traffic impacts on the "complete circulation network" related to potential increases to land use (residential and commercial) within the DNDP Study Area associated with increased available land due to ROW relinquishment, redevelopment of the existing USFS compound/campground, and redevelopment of the existing RV Park . Potential ROW relinquishment would produce approximately 175,000 (4 acres) additional buildable square feet on Main Street between Manzanita Road and Sierra Park Road.

Methodology:

Buildout "DNDP" Land use with Complete Circulation Network = Buildout "Baseline" Land use + DNDP Land use

Where:

- Complete Circulation Network = existing roadway network plus future roads as recommended in the DNDP/Mobility Plan
- Buildout "Baseline" Land use = PAOT assumptions for Residential; Commercial = approved projects + 0.25 FAR for vacant/redevelopment CG/CL land
- DNDP Land use = potential additional rooms/units and commercial square footage due to ROW relinquishment, redevelopment of USFS/RV Park areas

ROW Relinquishment Assumptions:

- 2,850 lineal feet on South side of Main Street between Manzanita and Sierra Park Road
- 1,500 lineal feet on North side of Main Street between Manzanita and Forest Trail
- 40 feet additional ROW on south and north side of Main Street
- Additional rooms at 80 RPA =320
- Additional commercial square footage depends on assumed FAR. Minimum 0.25 FAR = 30,000 sq. ft. of additional commercial

USFS Compound and Campground Assumptions:

- Location of future Civic Center, additional employee housing, and retail
  - Retail 30,000 sq. ft.
  - 18 existing USFS units. Increase to 100
  - Civic Center – insignificant impact on traffic model because of winter Saturday design day

RV Park Assumptions:

- Location of future Sports/Events park
  - Sports/Event Park – insignificant impact on traffic model because of winter Saturday design day

TAZ	Existing Land Use	Buildout Baseline Land Use	Buildout DNDP Land Use (Alts 4/5)
36	○ SF = 10 ○ MF = 0 ○ Lodging = 151 ○ Post Office = 7400	○ SF = 10 ○ MF = 8 ○ Lodging = 152 ○ Post Office = 7400 ○ Retail = 75,000	○ SF = 10 ○ MF = 8 ○ Lodging = 211 ○ Post Office = 7400 ○ Retail = 83,000
37	○ MF = 14 ○ Lodging = 72 ○ Retail = 36,000	○ MF = 14 ○ Lodging = 99 ○ Retail = 77,000	○ MF = 14 ○ Lodging = 150 ○ Retail = 84,000
38	○ SF = 18	○ SF = 18	○ SF = 18 ○ MF = 32 ○ Retail = 15,000 ○ Civic Center (Retail as proxy) = 2000
39	○ XC Skiers = 150	○ XC Skiers = 150	○ XC Skiers = 150 ○ MF = 50 ○ Retail = 15,000
74	○ MF = 10 ○ Lodging = 14 ○ Retail = 117,000	○ MF = 10 ○ Lodging = 38 ○ Retail = 117,000	○ MF = 10 ○ Lodging = 148 ○ Retail = 132,000
79	○ SF = 1 ○ MF = 11 ○ Lodging = 0 ○ Retail = 88,000	○ SF =1 ○ MF = 11 ○ Lodging = 29 ○ Retail = 99,000	○ SF = 1 ○ MF = 11 ○ Lodging = 88 ○ Retail = 107,000
83	○ MF = 4 ○ Lodging = 71 ○ Retail = 15,000	○ MF = 4 ○ Lodging = 99 ○ Retail = 54,000	○ MF = 4 ○ Lodging = 139 ○ Retail = 59,000
87	○ Church = 3,000	○ Church = 3,000	○ Church = 3,000 ○ Sports/Events Park (Retail as proxy) = 2000
90	○ RV Park	○ RV Park	○ Sports/Events Park (Retail as proxy) = 2000
Total	○ **SF = 29** ○ **MF = 39** ○ **Lodging = 308** ○ **Retail = 256,000** ○ **Post Office = 7,400** ○ **Church = 3,000** ○ **XC Skiers = 150**	○ **SF = 29** ○ **MF = 47** ○ **Lodging = 417** ○ **Retail = 422,000** ○ **Post Office = 7,400** ○ **Church = 3,000** ○ **XC Skiers = 150**	○ **SF = 29** ○ **MF = 129** ○ **Lodging = 736** ○ **Retail = 495,000** ○ **Post Office = 7,400** ○ **Church = 3,000** ○ **XC Skiers = 150** ○ **Sports/Event (Retail proxy) = 4,000 s.f.** ○ **Civic Center Offices (Retail proxy) = 2,000 s.f.**

Traffic Model - Land Use Change Summary Table

TAZ	Existing Land Use	Buildout Baseline Land Use	Buildout DNDP Land Use (Alts 4/5)	Change in Land Use Between Buildout "Baseline" and DNDP (Alts 4/5)
36	○ SF/MF = 10 ○ Lodging = 151	○ SF/MF = 18 ○ Lodging = 152 ○ Retail =75,000	○ SF/MF = 18 ○ Lodging = 211 ○ Retail = 83,000	○ SF/MF = 0 ○ Lodging = 59 ○ Retail = 8,000
37	○ SF/MF = 14 ○ Lodging = 72 ○ Retail =36,000	○ SF/MF = 14 ○ Lodging = 99 ○ Retail = 77,000	○ SF/MF = 14 ○ Lodging = 150 ○ Retail = 84,000	○ SF/MF = 0 ○ Lodging = 51 ○ Retail = 7,000
38	○ SF/MF = 18 (USFS Compound)	○ SF/MF = 18	○ SF/MF = 50 ○ Civic Center(retail proxy) = 2,000 ○ Retail = 15,000	○ SF/MF = 32 ○ Civic Center(retail proxy) = 2,000 ○ Retail = 15,000
39	(USFS Campground)		○ SF/MF = 50 ○ Retail = 15,000	○ SF/MF = 50 ○ Retail = 15,000
74	○ SF/MF = 10 ○ Lodging = 14 ○ Retail = 117,000	○ SF/MF = 10 ○ Lodging = 38 ○ Retail = 117,000	○ SF/MF = 10 ○ Lodging = 148 ○ Retail = 132,000	○ SF/MF = 0 ○ Lodging = 110 ○ Retail = 15,000
79	○ SF/MF = 12 ○ Retail =88,000	○ SF/MF = 12 ○ Lodging = 29 ○ Retail = 99,000	○ SF/MF = 12 ○ Lodging = 88 ○ Retail = 107,000	○ SF/MF = 0 ○ Lodging = 59 ○ Retail = 8,000
83	○ SF/MF = 4 ○ Lodging = 71 ○ Retail = 15,000	○ SF/MF = 4 ○ Lodging = 99 ○ Retail = 54,000	○ SF/MF = 4 ○ Lodging = 139 ○ Retail = 59,000	○ SF/MF = 0 ○ Lodging = 40 ○ Retail = 5,000
87	(Existing Civic Center Site)		○ Sports/Event (Retail proxy) = 2,000	○ Sports/Event (Retail proxy)= 2,000
90	(RV Park)		○ Sports/Event (Retail proxy) = 2,000	○ Sports/Event (Retail proxy) = 2,000
Total	○ **SF/MF = 68** ○ **Lodging = 308** ○ **Retail = 256,000**	○ **SF/MF = 76** ○ **Lodging = 417** ○ **Retail = 422,000**	○ **SF /MF= 158** ○ **Lodging = 736** ○ **Retail = 495,000**	○ **SF /MF= 82 units** (82 new USFS units) ○ **Lodging = 319 rooms** ○ **Retail = 73,000 s.f.** (includes 30,000 s.f. on USFS) ○ **Sports/Event (Retail proxy) = 4,000 s.f.** ○ **Civic Center Offices (Retail proxy) = 2,000 s.f.**

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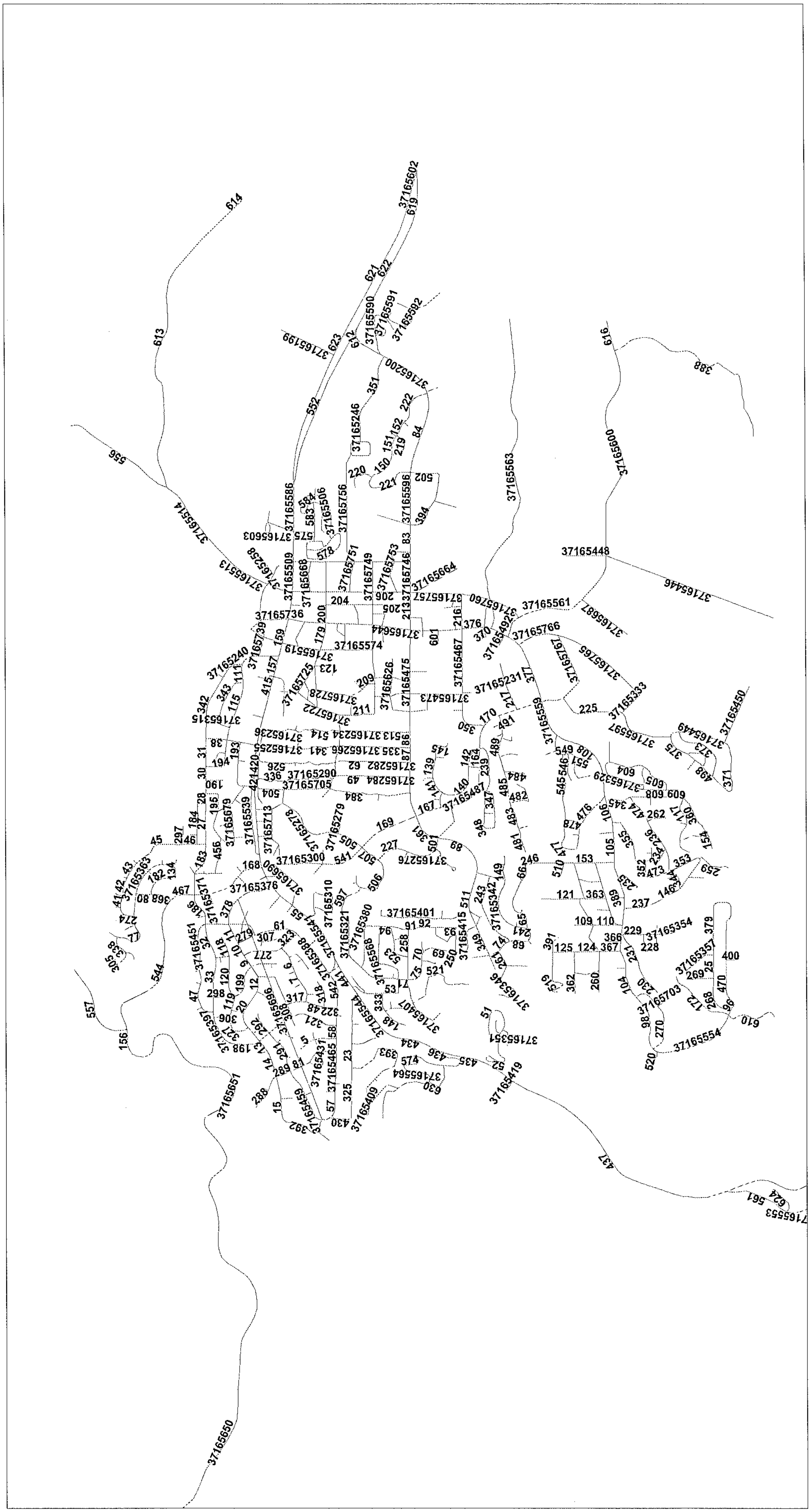

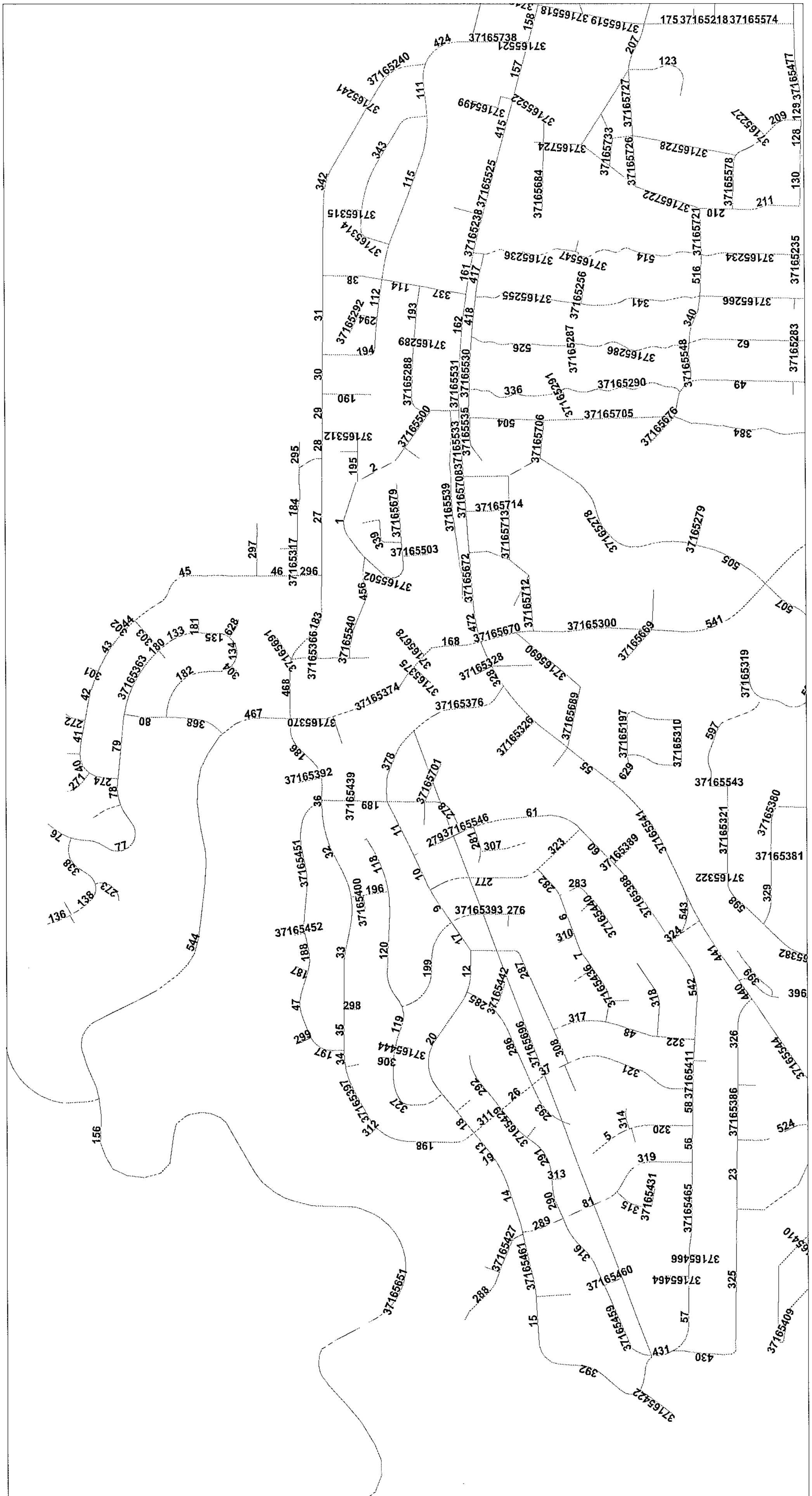

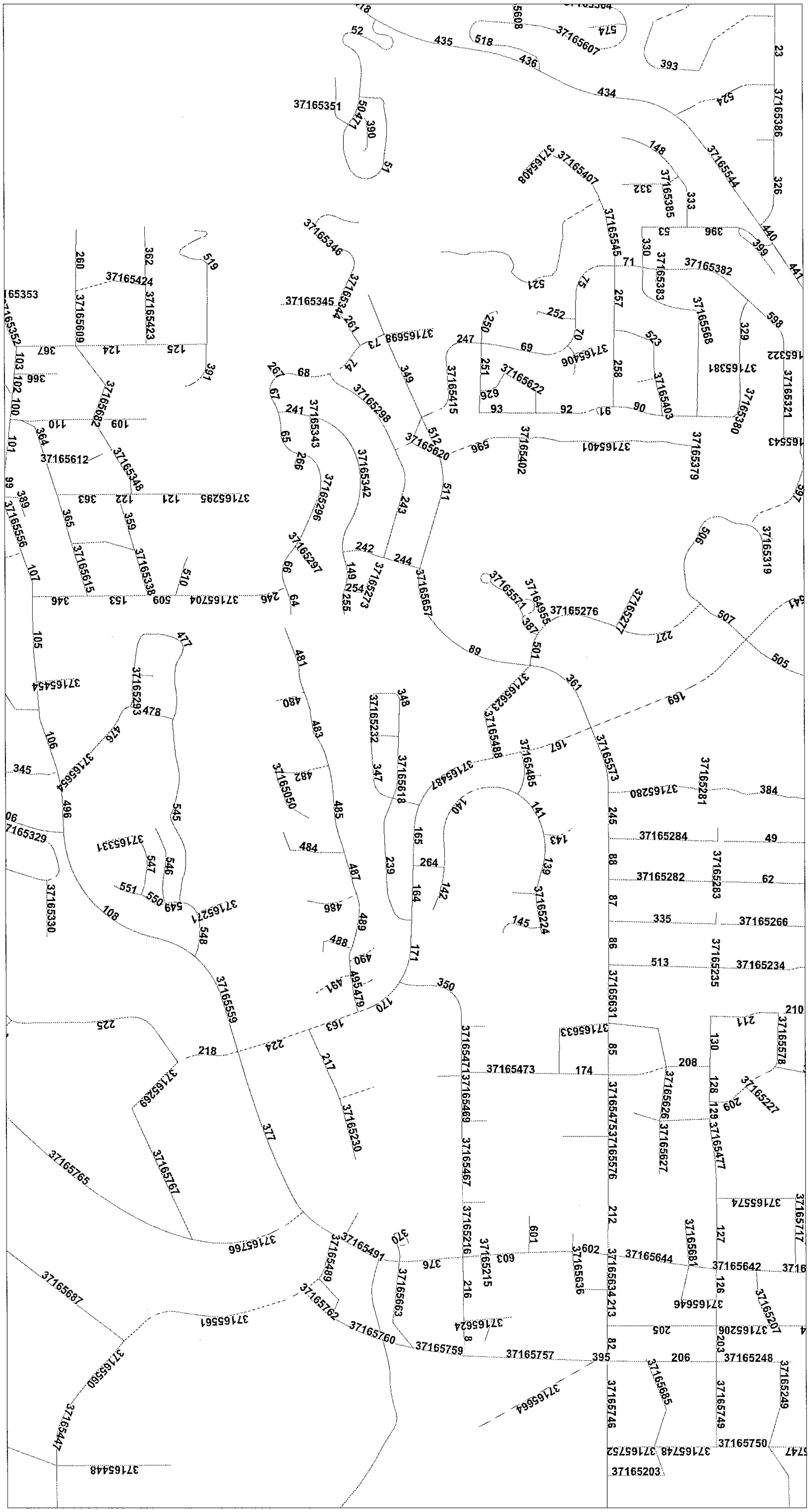

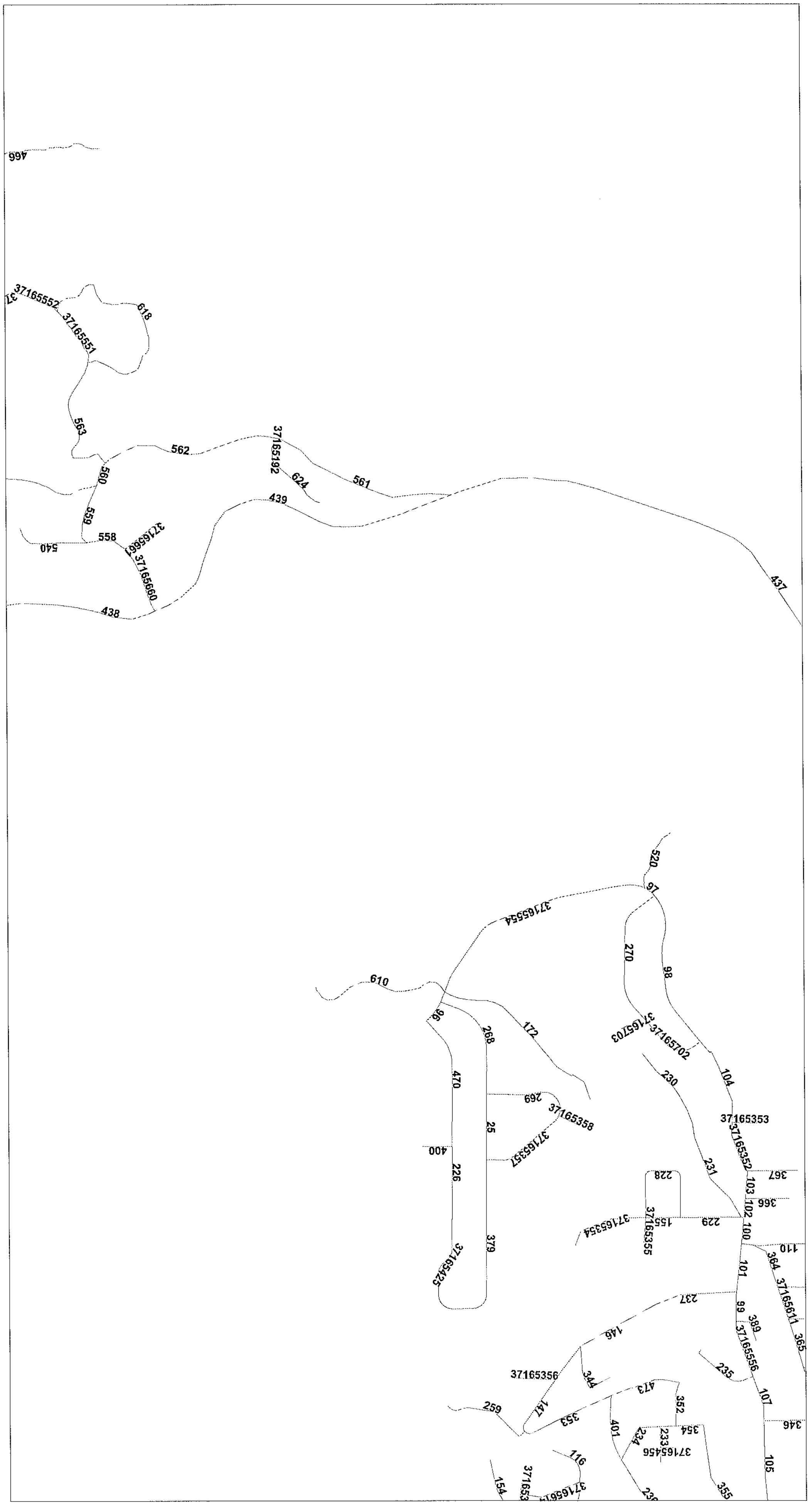
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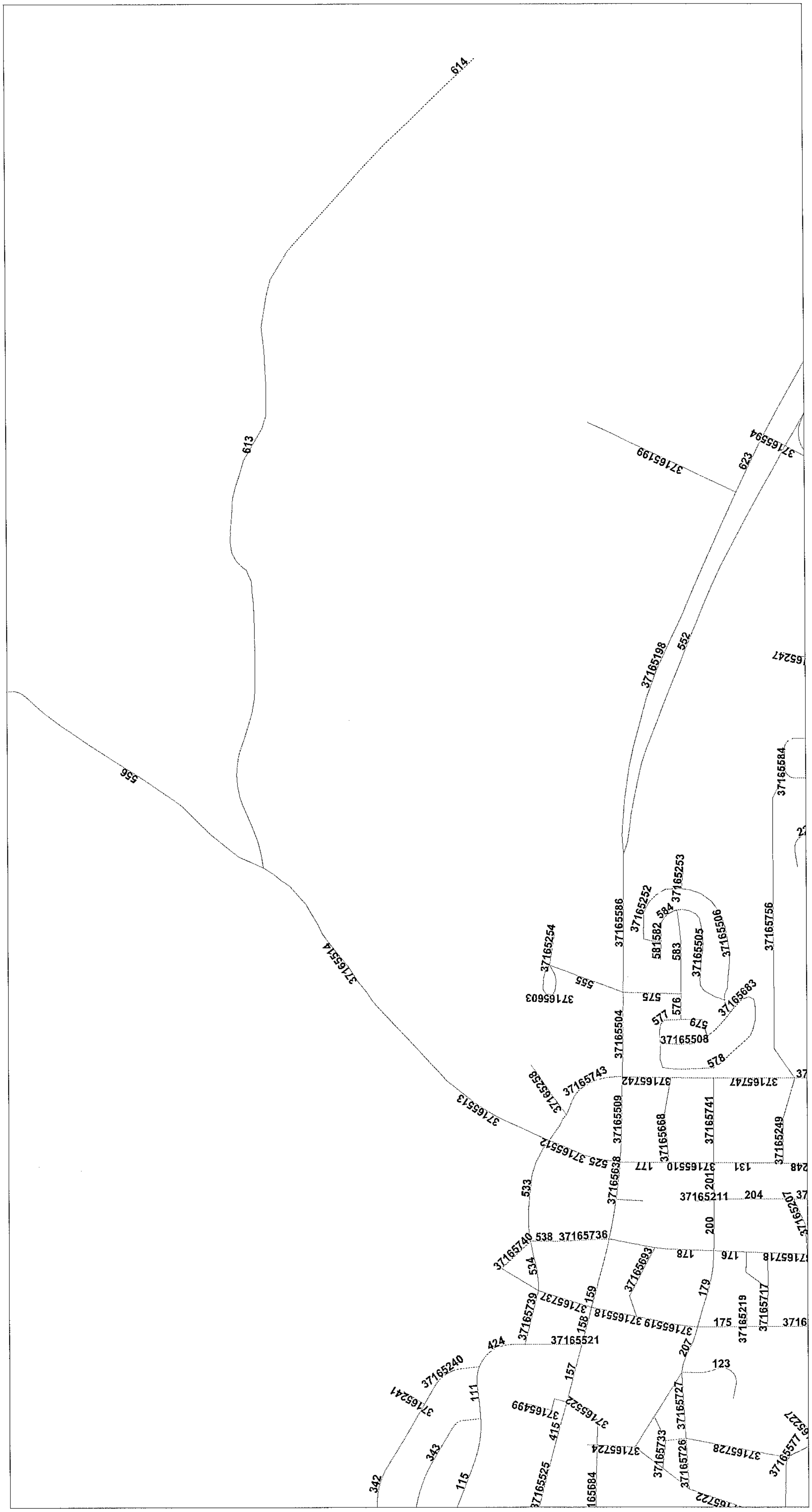
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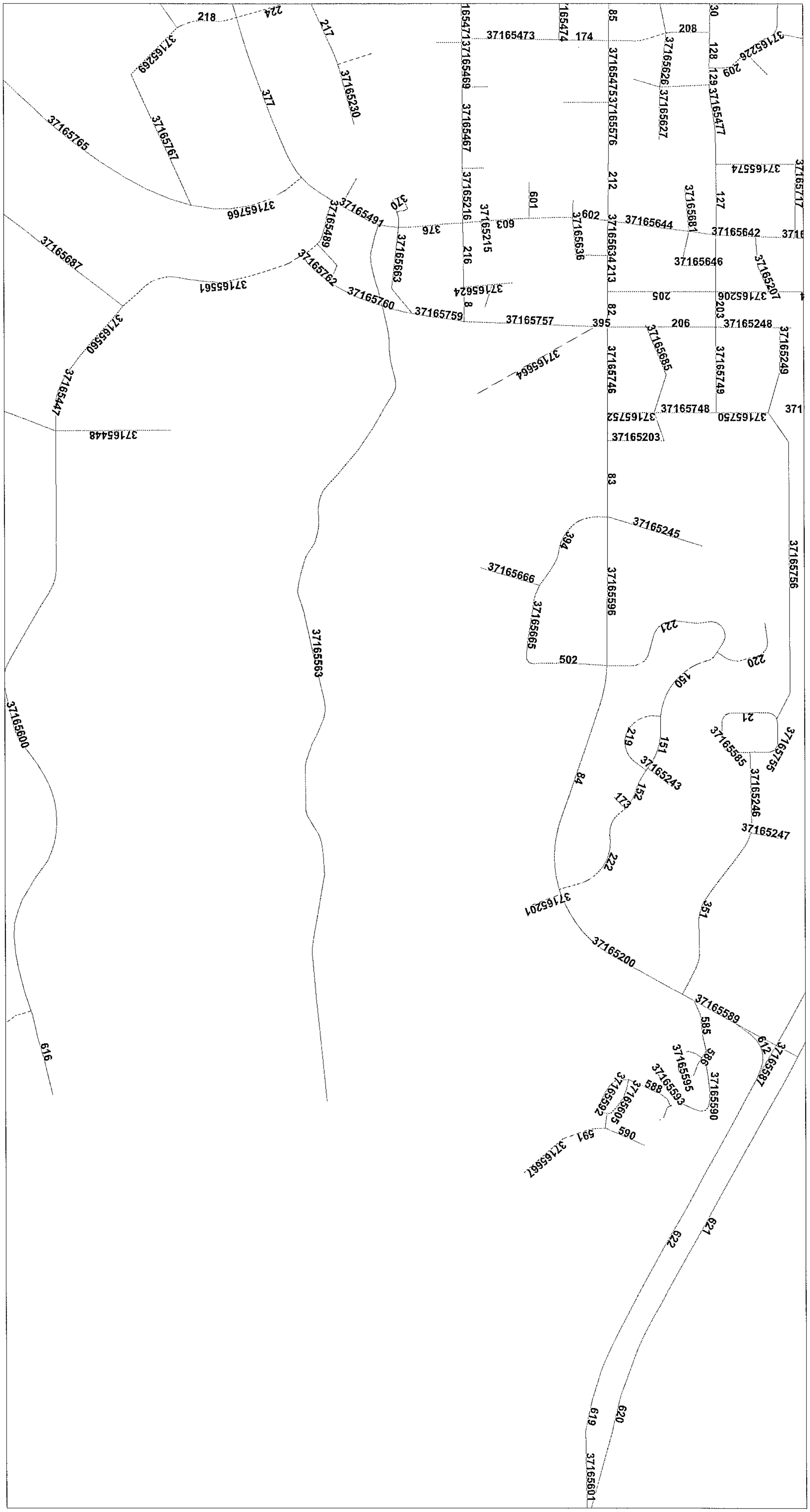
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Travel Model
Level of Service Reports

Base (Existing Conditions) LOS Reports

HCM Unsignalized Intersection Capacity Analysis — Saturday Peak - Base
1: Forest Trail & Minaret Road — 9/23/2010

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	20	25	90	15	15	10	70	165	25	65	635	100
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	22	28	100	17	17	11	78	183	28	72	706	111
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1278	1272	761	1372	1314	197	817			211		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1278	1272	761	1372	1314	197	817			211		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	81	81	75	76	88	99	90			95		
cM capacity (veh/h)	114	143	405	71	135	844	811			1359		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	150	44	289	889
Volume Left	22	17	78	72
Volume Right	100	11	28	111
cSH	236	119	811	1359
Volume to Capacity	0.64	0.37	0.10	0.05
Queue Length 95th (ft)	96	38	8	4
Control Delay (s)	43.5	52.1	3.5	1.4
Lane LOS	E	F	A	A
Approach Delay (s)	43.5	52.1	3.5	1.4
Approach LOS	E	F		

Intersection Summary			
Average Delay	8.1		
Intersection Capacity Utilization	61.2%	ICU Level of Service	B
Analysis Period (min)	15		

LSC, Inc. (BP) — HCM Unsignalized Intersection Capacity Analysis
Mammoth Lakes (LSC#084870) — Page 1
LSC, Inc.

HCM Unsignalized Intersection Capacity Analysis — Saturday Peak - Base
2: Lake Mary Road & Davidson — 9/23/2010

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	95	15	70	95	30	10	0	55	45	0	5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	106	17	78	106	33	11	0	61	50	0	6
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									2			
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	139			122			397	408	114	422	400	122
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	139			122			397	408	114	422	400	122
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			95			98	100	93	90	100	99
cM capacity (veh/h)	1445			1465			537	504	939	486	510	929

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	122	217	72	56
Volume Left	0	78	11	50
Volume Right	17	33	61	6
cSH	1445	1465	1109	510
Volume to Capacity	0.00	0.05	0.07	0.11
Queue Length 95th (ft)	0	4	5	9
Control Delay (s)	0.0	3.0	9.5	12.9
Lane LOS		A	A	B
Approach Delay (s)	0.0	3.0	9.5	12.9
Approach LOS			A	B

Intersection Summary			
Average Delay	4.4		
Intersection Capacity Utilization	33.5%	ICU Level of Service	A
Analysis Period (min)	15		

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LSC, Inc.

3: Lake Mary Road & Canyon Boulevard

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.97	
Frt	1.00	1.00	1.00	0.85	1.00	
Flt Protected	0.95	1.00	1.00	1.00	0.95	
Satd. Flow (prot)	1770	1863	1863	1583	3434	
Flt Permitted	0.63	1.00	1.00	1.00	0.95	
Satd. Flow (perm)	1171	1863	1863	1583	3434	
Volume (vph)	15	160	185	205	435	10
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	17	178	206	228	483	11
RTOR Reduction (vph)	0	0	0	94	5	0
Lane Group Flow (vph)	17	178	206	134	489	0
Turn Type	Perm			Perm		
Protected Phases		2	6		4	
Permitted Phases	2			6		
Actuated Green, G (s)	25.9	25.9	25.9	25.9	10.4	
Effective Green, g (s)	26.5	26.5	26.5	26.5	10.5	
Actuated g/C Ratio	0.59	0.59	0.59	0.59	0.23	
Clearance Time (s)	4.6	4.6	4.6	4.6	4.1	
Vehicle Extension (s)	6.1	6.1	6.1	6.1	2.0	
Lane Grp Cap (vph)	690	1097	1097	932	801	
v/s Ratio Prot		0.10	c0.11		c0.14	
v/s Ratio Perm	0.01			0.08		
v/c Ratio	0.02	0.16	0.19	0.14	0.61	
Uniform Delay, d1	3.9	4.2	4.3	4.2	15.4	
Progression Factor	1.00	1.00	0.38	0.93	1.00	
Incremental Delay, d2	0.1	0.3	0.3	0.3	1.0	
Delay (s)	3.9	4.5	2.0	4.2	16.4	
Level of Service	A	A	A	A	B	
Approach Delay (s)		4.5	3.1		16.4	
Approach LOS		A	A		B	

Intersection Summary			
HCM Average Control Delay	9.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	45.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	31.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

4: Lake Mary Road & Minaret Road

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.90	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	3433	1674	
Flt Permitted	0.47	1.00	1.00	0.36	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	867	3539	1583	673	3539	1583	1770	1863	1583	3433	1674	
Volume (vph)	85	385	125	70	295	125	305	240	85	475	50	105
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	94	428	139	78	328	139	339	267	94	528	56	117
RTOR Reduction (vph)	0	0	73	0	0	107	0	0	65	0	84	0
Lane Group Flow (vph)	94	428	66	78	328	32	339	267	29	528	89	0
Turn Type	pm+pt		Perm	pm+pt		Perm	Split		Perm	Split		
Protected Phases	5	2		1	6		8	8		7	7	
Permitted Phases	2		2	6		6			8			
Actuated Green, G (s)	24.8	20.0	20.0	24.8	20.0	20.0	26.4	26.4	26.4	20.3	20.3	
Effective Green, g (s)	25.8	20.9	20.9	25.8	20.9	20.9	27.3	27.3	27.3	20.9	20.9	
Actuated g/C Ratio	0.29	0.23	0.23	0.29	0.23	0.23	0.30	0.30	0.30	0.23	0.23	
Clearance Time (s)	4.1	4.9	4.9	4.1	4.9	4.9	4.9	4.9	4.9	4.6	4.6	
Vehicle Extension (s)	2.5	4.7	4.7	2.5	4.6	4.6	5.2	5.2	5.2	6.2	6.2	
Lane Grp Cap (vph)	298	822	368	253	822	368	537	565	480	797	389	
v/s Ratio Prot	c0.02	c0.12		0.02	0.09		c0.19	0.14		c0.15	0.05	
v/s Ratio Perm	0.07		0.04	0.07		0.02			0.02			
v/c Ratio	0.32	0.52	0.18	0.31	0.40	0.09	0.63	0.47	0.06	0.66	0.23	
Uniform Delay, d1	24.3	30.2	27.7	24.2	29.2	27.1	27.0	25.5	22.2	31.3	28.0	
Progression Factor	0.82	0.80	0.94	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.4	2.1	0.9	0.5	1.4	0.5	5.6	2.8	0.2	4.3	1.4	
Delay (s)	20.2	26.4	26.9	24.7	30.7	27.5	32.6	28.3	22.5	35.7	29.4	
Level of Service	C	C	C	C	C	C	C	C	C	D	C	
Approach Delay (s)		25.6			29.0			29.6			34.1	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	29.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	55.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis
5: Main Street & Mountain Boulevard

Saturday Peak - Base
9/23/2010

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	20	930	35	15	435	30	5	5	10	20	5	20
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	22	1033	39	17	483	33	6	6	11	22	6	22
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	517			1072			1397	1647	536	1108	1650	258
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	517			1072			1397	1647	536	1108	1650	258
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			97			94	94	98	85	94	97
cM capacity (veh/h)	1045			646			90	94	489	148	93	741

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	539	556	258	275	22	50
Volume Left	22	0	17	0	6	22
Volume Right	0	39	0	33	11	22
cSH	1045	1700	646	1700	154	209
Volume to Capacity	0.02	0.33	0.03	0.16	0.14	0.24
Queue Length 95th (ft)	2	0	2	0	12	23
Control Delay (s)	0.6	0.0	1.0	0.0	32.2	27.6
Lane LOS	A		A		D	D
Approach Delay (s)	0.3		0.5		32.2	27.6
Approach LOS					D	D

Intersection Summary				
Average Delay	1.6			
Intersection Capacity Utilization	52.3%	ICU Level of Service		A
Analysis Period (min)	15			

LSC, Inc. (BP)
Mammoth Lakes (LSC#084870)
LSC, Inc.

HCM Unsignalized Intersection Capacity Analysis
6: Main Street & Center Street

Saturday Peak - Base
9/23/2010

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	50	715	55	25	485	35	25	5	55	25	0	20
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	56	794	61	28	539	39	28	6	61	28	0	22
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)					1207							
pX, platoon unblocked												
vC, conflicting volume	578			856			1283	1569	428	1186	1581	289
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	578			856			1283	1569	428	1186	1581	289
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	94			96			75	94	89	76	100	97
cM capacity (veh/h)	992			780			110	100	575	115	98	708

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	56	530	326	28	359	219	94	50
Volume Left	56	0	0	28	0	0	28	28
Volume Right	0	0	61	0	0	39	61	22
cSH	992	1700	1700	780	1700	1700	228	183
Volume to Capacity	0.06	0.31	0.19	0.04	0.21	0.13	0.41	0.27
Queue Length 95th (ft)	4	0	0	3	0	0	48	26
Control Delay (s)	8.8	0.0	0.0	9.8	0.0	0.0	31.5	31.9
Lane LOS	A			A			D	D
Approach Delay (s)	0.5			0.4			31.5	31.9
Approach LOS							D	D

Intersection Summary				
Average Delay	3.2			
Intersection Capacity Utilization	40.2%	ICU Level of Service		A
Analysis Period (min)	15			

LSC, Inc. (BP)
Mammoth Lakes (LSC#084870)
LSC, Inc.

7: Main Street & Forest Trail

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	15	870	15	15	535	60	15	0	20	125	5	30
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	17	967	17	17	594	67	17	0	22	139	6	33
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												1
Median type								None			None	
Median storage veh)												
Upstream signal (ft)					793							
pX, platoon unblocked												
vC, conflicting volume	661			983			1342	1703	492	1200	1678	331
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	661			983			1342	1703	492	1200	1678	331
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			98			83	100	96	0	94	95
cM capacity (veh/h)	923			698			97	87	523	130	90	665

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	17	644	339	17	396	265	39	178
Volume Left	17	0	0	17	0	0	17	139
Volume Right	0	0	17	0	0	67	22	33
cSH	923	1700	1700	698	1700	1700	181	152
Volume to Capacity	0.02	0.38	0.20	0.02	0.23	0.16	0.21	1.17
Queue Length 95th (ft)	1	0	0	2	0	0	20	248
Control Delay (s)	9.0	0.0	0.0	10.3	0.0	0.0	30.2	184.6
Lane LOS	A			B			D	F
Approach Delay (s)	0.1			0.3			30.2	184.6
Approach LOS							D	F

Intersection Summary			
Average Delay	18.1		
Intersection Capacity Utilization	45.0%	ICU Level of Service	A
Analysis Period (min)	15		

8: Main Street & Laurel Mountain Road

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	840	165	20	545	95	30
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	933	183	22	606	106	33
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)				505		
pX, platoon unblocked						
vC, conflicting volume			1117		1372	558
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1117		1372	558
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			96		20	93
cM capacity (veh/h)			621		132	473

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1
Volume Total	622	494	22	303	303	139
Volume Left	0	0	22	0	0	106
Volume Right	0	183	0	0	0	33
cSH	1700	1700	621	1700	1700	160
Volume to Capacity	0.37	0.29	0.04	0.18	0.18	0.87
Queue Length 95th (ft)	0	0	3	0	0	151
Control Delay (s)	0.0	0.0	11.0	0.0	0.0	96.6
Lane LOS			B			F
Approach Delay (s)	0.0		0.4			96.6
Approach LOS						F

Intersection Summary			
Average Delay	7.3		
Intersection Capacity Utilization	42.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↱	↰	↑↑	↰	↱
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1583	1770	3539	1770	1583
Flt Permitted	1.00	1.00	0.43	1.00	0.95	1.00
Satd. Flow (perm)	3539	1583	805	3539	1770	1583
Volume (vph)	310	560	90	230	310	70
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	344	622	100	256	344	78
RTOR Reduction (vph)	0	433	0	0	0	47
Lane Group Flow (vph)	344	189	100	256	344	31
Turn Type		Perm	pm+pt			Perm
Protected Phases	2		1	6	3	
Permitted Phases		2	6			3
Actuated Green, G (s)	16.4	16.4	25.0	25.0	22.3	22.3
Effective Green, g (s)	17.3	17.3	25.9	25.9	22.9	22.9
Actuated g/C Ratio	0.30	0.30	0.46	0.46	0.40	0.40
Clearance Time (s)	4.9	4.9	4.1	4.9	4.6	4.6
Vehicle Extension (s)	5.2	5.2	2.5	5.2	5.2	5.2
Lane Grp Cap (vph)	1078	482	445	1614	714	638
v/s Ratio Prot	0.10		c0.02	0.07	c0.19	
v/s Ratio Perm		c0.12	0.08			0.02
v/c Ratio	0.32	0.39	0.22	0.16	0.48	0.05
Uniform Delay, d1	15.2	15.6	9.1	9.1	12.6	10.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	1.2	0.2	0.1	2.3	0.1
Delay (s)	15.6	16.8	9.3	9.2	14.9	10.5
Level of Service	B	B	A	A	B	B
Approach Delay (s)	16.4			9.2	14.1	
Approach LOS	B			A	B	

Intersection Summary			
HCM Average Control Delay	14.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	56.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	46.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↱		↰	↑↱			✣			✣	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	10	320	55	25	265	5	25	5	30	5	5	10
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	11	356	61	28	294	6	28	6	33	6	6	11
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)		544										
pX, platoon unblocked				0.98			0.98	0.98	0.98	0.98	0.98	
vC, conflicting volume	300			417			625	764	208	589	792	150
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	300			378			592	734	165	555	762	150
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			98			92	98	96	99	98	99
cM capacity (veh/h)	1258			1149			362	327	830	374	314	870

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	11	237	180	28	196	104	67	22
Volume Left	11	0	0	28	0	0	28	6
Volume Right	0	0	61	0	0	6	33	11
cSH	1258	1700	1700	1149	1700	1700	498	491
Volume to Capacity	0.01	0.14	0.11	0.02	0.12	0.06	0.13	0.05
Queue Length 95th (ft)	1	0	0	2	0	0	12	4
Control Delay (s)	7.9	0.0	0.0	8.2	0.0	0.0	13.4	12.7
Lane LOS	A			A			B	B
Approach Delay (s)	0.2			0.7			13.4	12.7
Approach LOS							B	B

Intersection Summary			
Average Delay	1.8		
Intersection Capacity Utilization	29.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	10	5	25	5	5	25	30	385	10	15	645	25
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	11	6	28	6	6	28	33	428	11	17	717	28
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)											760	
pX, platoon unblocked												
vC, conflicting volume	1289	1269	731	1281	1278	433	744			439		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1289	1269	731	1281	1278	433	744			439		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	91	97	93	96	96	96	96			99		
cM capacity (veh/h)	125	159	422	124	157	622	863			1121		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	44	39	33	439	17	744
Volume Left	11	6	33	0	17	0
Volume Right	28	28	0	11	0	28
cSH	235	312	863	1700	1121	1700
Volume to Capacity	0.19	0.12	0.04	0.26	0.01	0.44
Queue Length 95th (ft)	17	11	3	0	1	0
Control Delay (s)	23.9	18.2	9.3	0.0	8.3	0.0
Lane LOS	C	C	A		A	
Approach Delay (s)	23.9	18.2	0.7		0.2	
Approach LOS	C	C				

Intersection Summary				
Average Delay	1.7			
Intersection Capacity Utilization	46.1%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	15	10	65	15	15	25	55	385	5	35	585	35
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	17	11	72	17	17	28	61	428	6	39	650	39
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)								773				
pX, platoon unblocked												
vC, conflicting volume	1333	1303	669	1358	1319	431	689			433		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1333	1303	669	1358	1319	431	689			433		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	84	92	84	82	88	96	93			97		
cM capacity (veh/h)	105	145	457	92	141	625	905			1126		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	100	61	61	433	39	689
Volume Left	17	17	61	0	39	0
Volume Right	72	28	0	6	0	39
cSH	254	178	905	1700	1126	1700
Volume to Capacity	0.39	0.34	0.07	0.25	0.03	0.41
Queue Length 95th (ft)	44	36	5	0	3	0
Control Delay (s)	28.0	35.4	9.3	0.0	8.3	0.0
Lane LOS	D	E	A		A	
Approach Delay (s)	28.0	35.4	1.1		0.4	
Approach LOS	D	E				

Intersection Summary				
Average Delay	4.2			
Intersection Capacity Utilization	52.5%	ICU Level of Service		A
Analysis Period (min)	15			

HCM Unsignalized Intersection Capacity Analysis — Saturday Peak - Base
13: Meridian Boulevard & Majestic Pines Drive — 9/23/2010

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	35	270	135	50	35	25
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	39	300	150	56	39	28
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	206				406	103
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	206				406	103
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	97				93	97
cM capacity (veh/h)	1363				557	932

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	139	200	100	106	67
Volume Left	39	0	0	0	39
Volume Right	0	0	0	56	28
cSH	1363	1700	1700	1700	669
Volume to Capacity	0.03	0.12	0.06	0.06	0.10
Queue Length 95th (ft)	2	0	0	0	8
Control Delay (s)	2.3	0.0	0.0	0.0	11.0
Lane LOS	A				B
Approach Delay (s)	1.0		0.0		11.0
Approach LOS					B

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	27.3%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis — Saturday Peak - Base
14: Meridian Boulevard & Minaret Road — 9/23/2010

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	0.94		1.00	0.98		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3437		1770	3319		1770	1829		1770	1810	
Flt Permitted	0.42	1.00		0.56	1.00		0.57	1.00		0.55	1.00	
Satd. Flow (perm)	791	3437		1042	3319		1053	1829		1027	1810	
Volume (vph)	95	230	55	20	140	100	30	110	15	215	235	55
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	106	256	61	22	156	111	33	122	17	239	261	61
RTOR Reduction (vph)	0	23	0	0	91	0	0	5	0	0	8	0
Lane Group Flow (vph)	106	294	0	22	176	0	33	134	0	239	314	0
Turn Type	pm+pt			pm+pt			pm+pt			pm+pt		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	20.0	14.9		11.1	10.1		20.0	18.0		30.3	24.2	
Effective Green, g (s)	20.9	15.8		12.1	11.0		21.0	18.9		31.2	25.1	
Actuated g/C Ratio	0.35	0.26		0.20	0.18		0.35	0.31		0.52	0.42	
Clearance Time (s)	4.1	4.9		4.1	4.9		4.1	4.9		4.1	4.9	
Vehicle Extension (s)	2.5	5.0		2.5	5.0		2.5	5.0		2.5	5.0	
Lane Grp Cap (vph)	371	904		223	607		393	575		636	756	
v/s Ratio Prot	c0.03	c0.09		0.00	0.05		0.00	0.07		c0.05	c0.17	
v/s Ratio Perm	0.07			0.02			0.03			0.14		
v/c Ratio	0.29	0.33		0.10	0.29		0.08	0.23		0.38	0.42	
Uniform Delay, d1	13.8	17.9		19.4	21.2		13.0	15.2		8.2	12.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.3	0.4		0.1	0.6		0.1	0.4		0.3	0.8	
Delay (s)	14.1	18.3		19.6	21.7		13.0	15.7		8.5	13.1	
Level of Service	B	B		B	C		B	B		A	B	
Approach Delay (s)		17.2			21.6			15.2			11.1	
Approach LOS		B			C			B			B	

Intersection Summary			
HCM Average Control Delay	15.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	60.1	Sum of lost time (s)	8.0
Intersection Capacity Utilization	47.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3464		1770	3448		1770	1863	1583	1770	1863	1583
Flt Permitted	0.38	1.00		0.21	1.00		0.36	1.00	1.00	0.54	1.00	1.00
Satd. Flow (perm)	715	3464		384	3448		663	1863	1583	1008	1863	1583
Volume (vph)	175	635	105	90	340	70	120	215	45	110	275	55
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	194	706	117	100	378	78	133	239	50	122	306	61
RTOR Reduction (vph)	0	16	0	0	20	0	0	0	35	0	0	44
Lane Group Flow (vph)	194	807	0	100	436	0	133	239	15	122	306	17
Turn Type	pm+pt			pm+pt			pm+pt		Perm	pm+pt		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6			8		8	4		4
Actuated Green, G (s)	29.8	23.1		26.2	21.3		25.5	19.7	19.7	22.7	18.3	18.3
Effective Green, g (s)	30.8	24.0		27.2	22.2		26.5	20.6	20.6	23.7	19.2	19.2
Actuated g/C Ratio	0.44	0.34		0.39	0.32		0.38	0.29	0.29	0.34	0.27	0.27
Clearance Time (s)	4.1	4.9		4.1	4.9		4.1	4.9	4.9	4.1	4.9	4.9
Vehicle Extension (s)	2.5	3.7		2.5	3.8		2.5	3.8	3.8	2.5	3.8	3.8
Lane Grp Cap (vph)	416	1186		248	1092		344	547	465	390	510	434
v/s Ratio Prot	c0.05	c0.23		0.03	0.13		c0.03	0.13		0.02	c0.16	
v/s Ratio Perm	0.16			0.13			0.11		0.01	0.09		0.01
v/c Ratio	0.47	0.68		0.40	0.40		0.39	0.44	0.03	0.31	0.60	0.04
Uniform Delay, d1	12.6	19.8		14.6	18.7		15.2	20.1	17.6	16.5	22.1	18.7
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	1.7		0.8	0.3		0.5	0.7	0.0	0.3	2.2	0.0
Delay (s)	13.2	21.5		15.4	19.0		15.7	20.8	17.7	16.9	24.3	18.7
Level of Service	B	C		B	B		B	C	B	B	C	B
Approach Delay (s)		19.9			18.4			18.8			21.8	
Approach LOS		B			B			B			C	

Intersection Summary			
HCM Average Control Delay	19.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	70.1	Sum of lost time (s)	16.0
Intersection Capacity Utilization	60.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	45	130	5	5	125	10	25	5	5	10	5	60
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	50	144	6	6	139	11	28	6	6	11	6	67

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total (vph)	122	78	75	81	39	83
Volume Left (vph)	50	0	6	0	28	11
Volume Right (vph)	0	6	0	11	6	67
Hadj (s)	0.24	-0.02	0.07	-0.06	0.09	-0.42
Departure Headway (s)	5.2	4.9	5.1	4.9	4.9	4.4
Degree Utilization, x	0.18	0.11	0.11	0.11	0.05	0.10
Capacity (veh/h)	677	707	684	705	680	763
Control Delay (s)	8.1	7.3	7.4	7.3	8.2	7.8
Approach Delay (s)	7.8		7.4		8.2	7.8
Approach LOS	A		A		A	A

Intersection Summary			
Delay	7.7		
HCM Level of Service	A		
Intersection Capacity Utilization	26.3%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis — Saturday Peak - Base
17: Chateau Road & Old Mammoth Road — 9/23/2010

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	35	15	10	5	10	25	10	235	5	45	280	70
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	39	17	11	6	11	28	11	261	6	50	311	78
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)											1037	
pX, platoon unblocked												
vC, conflicting volume	767	739	350	717	775	264	389			267		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	767	739	350	717	775	264	389			267		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	87	95	98	98	96	96	99			96		
cM capacity (veh/h)	289	329	693	314	313	775	1170			1297		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	67	44	11	267	50	389
Volume Left	39	6	11	0	50	0
Volume Right	11	28	0	6	0	78
cSH	331	499	1170	1700	1297	1700
Volume to Capacity	0.20	0.09	0.01	0.16	0.04	0.23
Queue Length 95th (ft)	19	7	1	0	3	0
Control Delay (s)	18.6	12.9	8.1	0.0	7.9	0.0
Lane LOS	C	B	A		A	
Approach Delay (s)	18.6	12.9	0.3		0.9	
Approach LOS	C	B				

Intersection Summary				
Average Delay	2.8			
Intersection Capacity Utilization	42.3%	ICU Level of Service		A
Analysis Period (min)	15			

HCM Unsignalized Intersection Capacity Analysis — Saturday Peak - Base
18: Old Mammoth Road & Minaret Road — 9/23/2010

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	90	140	10	30	160	60	5	15	20	65	35	130
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	100	156	11	33	178	67	6	17	22	72	39	144
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									2			
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	244			167			769	672	161	653	644	211
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	244			167			769	672	161	653	644	211
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	92			98			98	95	97	78	89	83
cM capacity (veh/h)	1322			1411			223	340	884	331	353	829

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1	SB 2
Volume Total	100	167	33	244	44	72	183
Volume Left	100	0	33	0	6	72	0
Volume Right	0	11	0	67	22	0	144
cSH	1322	1700	1411	1700	622	331	645
Volume to Capacity	0.08	0.10	0.02	0.14	0.07	0.22	0.28
Queue Length 95th (ft)	6	0	2	0	6	20	29
Control Delay (s)	7.9	0.0	7.6	0.0	13.3	18.9	12.8
Lane LOS	A		A		B	C	B
Approach Delay (s)	3.0		0.9		13.3	14.5	
Approach LOS					B	B	

Intersection Summary				
Average Delay	6.3			
Intersection Capacity Utilization	37.3%	ICU Level of Service		A
Analysis Period (min)	15			

Future Conditions (Base)
LOS Reports

1: Forest Trail & Minaret Road

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥			✥			✥	
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	25	35	105	25	20	15	80	195	40	100	745	115
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	28	39	117	28	22	17	89	217	44	111	828	128
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1558	1553	892	1667	1594	239	956			261		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1558	1553	892	1667	1594	239	956			261		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	55	57	66	4	74	98	88			91		
cM capacity (veh/h)	61	91	341	29	86	800	719			1303		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	183	67	350	1067
Volume Left	28	28	89	111
Volume Right	117	17	44	128
cSH	150	54	719	1303
Volume to Capacity	1.22	1.24	0.12	0.09
Queue Length 95th (ft)	266	147	11	7
Control Delay (s)	205.3	327.9	3.9	2.2
Lane LOS	F	F	A	A
Approach Delay (s)	205.3	327.9	3.9	2.2
Approach LOS	F	F		

Intersection Summary			
Average Delay	37.9		
Intersection Capacity Utilization	73.9%	ICU Level of Service	D
Analysis Period (min)	15		

2: Lake Mary Road & Davidson

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥			↰	↱		✥	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	105	15	80	105	40	10	0	65	60	0	5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	117	17	89	117	44	11	0	72	67	0	6
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									2			
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	161			133			447	464	125	478	450	139
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	161			133			447	464	125	478	450	139
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			94			98	100	92	85	100	99
cM capacity (veh/h)	1418			1451			494	465	926	437	474	909

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	133	250	83	72
Volume Left	0	89	11	67
Volume Right	17	44	72	6
cSH	1418	1451	1068	456
Volume to Capacity	0.00	0.06	0.08	0.16
Queue Length 95th (ft)	0	5	6	14
Control Delay (s)	0.0	3.1	9.6	14.4
Lane LOS		A	A	B
Approach Delay (s)	0.0	3.1	9.6	14.4
Approach LOS			A	B

Intersection Summary			
Average Delay	4.8		
Intersection Capacity Utilization	36.0%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis | Saturday Peak - Future
3: Lake Mary Road & Canyon Boulevard | 10/12/2010

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↰	↑	↑	↱	↰↰↱	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.97	
Frt	1.00	1.00	1.00	0.85	1.00	
Flt Protected	0.95	1.00	1.00	1.00	0.95	
Satd. Flow (prot)	1770	1863	1863	1583	3431	
Flt Permitted	0.59	1.00	1.00	1.00	0.95	
Satd. Flow (perm)	1092	1863	1863	1583	3431	
Volume (vph)	25	220	255	235	495	15
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	28	244	283	261	550	17
RTOR Reduction (vph)	0	0	0	112	7	0
Lane Group Flow (vph)	28	244	283	149	560	0
Turn Type	Perm			Perm		
Protected Phases		2	6		4	
Permitted Phases	2			6		
Actuated Green, G (s)	25.1	25.1	25.1	25.1	11.2	
Effective Green, g (s)	25.7	25.7	25.7	25.7	11.3	
Actuated g/C Ratio	0.57	0.57	0.57	0.57	0.25	
Clearance Time (s)	4.6	4.6	4.6	4.6	4.1	
Vehicle Extension (s)	6.1	6.1	6.1	6.1	2.0	
Lane Grp Cap (vph)	624	1064	1064	904	862	
v/s Ratio Prot		0.13	c0.15		c0.16	
v/s Ratio Perm	0.03			0.09		
v/c Ratio	0.04	0.23	0.27	0.16	0.65	
Uniform Delay, d1	4.2	4.8	4.9	4.6	15.1	
Progression Factor	1.00	1.00	0.41	0.61	1.00	
Incremental Delay, d2	0.1	0.5	0.4	0.3	1.3	
Delay (s)	4.4	5.3	2.4	3.1	16.4	
Level of Service	A	A	A	A	B	
Approach Delay (s)		5.2	2.7		16.4	
Approach LOS		A	A		B	

Intersection Summary			
HCM Average Control Delay	8.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	45.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	42.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis | Saturday Peak - Future
4: Lake Mary Road & Minaret Road | 10/12/2010

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↑	↱	↰	↑↑	↱	↰	↑	↱	↰↰	↱	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.90	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	3433	1680	
Flt Permitted	0.32	1.00	1.00	0.25	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	602	3539	1583	471	3539	1583	1770	1863	1583	3433	1680	
Volume (vph)	115	500	190	105	385	160	465	320	125	615	75	140
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	128	556	211	117	428	178	517	356	139	683	83	156
RTOR Reduction (vph)	0	0	85	0	0	140	0	0	94	0	75	0
Lane Group Flow (vph)	128	556	126	117	428	38	517	356	45	683	164	0
Turn Type	pm+pt		Perm	pm+pt		Perm	Split		Perm	Split		
Protected Phases	5	2		1	6		8	8		7	7	
Permitted Phases	2		2	6		6			8			
Actuated Green, G (s)	25.6	19.6	19.6	23.2	18.4	18.4	27.1	27.1	27.1	20.0	20.0	
Effective Green, g (s)	26.6	20.5	20.5	24.2	19.3	19.3	28.0	28.0	28.0	20.6	20.6	
Actuated g/C Ratio	0.30	0.23	0.23	0.27	0.21	0.21	0.31	0.31	0.31	0.23	0.23	
Clearance Time (s)	4.1	4.9	4.9	4.1	4.9	4.9	4.9	4.9	4.9	4.6	4.6	
Vehicle Extension (s)	2.5	4.7	4.7	2.5	4.6	4.6	5.2	5.2	5.2	6.2	6.2	
Lane Grp Cap (vph)	257	806	361	197	759	339	551	580	492	786	385	
v/s Ratio Prot	c0.03	c0.16		0.03	0.12		c0.29	0.19		c0.20	0.10	
v/s Ratio Perm	0.11		0.08	0.13		0.02			0.03			
v/c Ratio	0.50	0.69	0.35	0.59	0.56	0.11	0.94	0.61	0.09	0.87	0.43	
Uniform Delay, d1	24.4	31.8	29.2	26.2	31.6	28.5	30.2	26.4	22.0	33.4	29.7	
Progression Factor	0.85	0.86	0.85	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.0	4.3	2.4	4.0	3.0	0.7	25.8	4.8	0.4	12.5	3.4	
Delay (s)	21.7	31.7	27.1	30.2	34.6	29.1	55.9	31.2	22.4	45.9	33.1	
Level of Service	C	C	C	C	C	C	E	C	C	D	C	
Approach Delay (s)		29.2			32.5			42.6			42.6	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM Average Control Delay	37.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	71.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis
5: Main Street & Mountain Boulevard

Saturday Peak - Future
10/12/2010

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	25	1115	60	25	520	75	10	20	15	50	15	50
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	28	1239	67	28	578	83	11	22	17	56	17	56
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	661			1306			1736	2044	653	1378	2036	331
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	661			1306			1736	2044	653	1378	2036	331
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			95			69	56	96	10	68	92
cM capacity (veh/h)	923			526			36	51	410	62	52	665

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	647	686	317	372	50	128
Volume Left	28	0	28	0	11	56
Volume Right	0	67	0	83	17	56
cSH	923	1700	526	1700	64	98
Volume to Capacity	0.03	0.40	0.05	0.22	0.78	1.30
Queue Length 95th (ft)	2	0	4	0	89	226
Control Delay (s)	0.8	0.0	1.8	0.0	161.8	271.7
Lane LOS	A		A		F	F
Approach Delay (s)	0.4		0.8		161.8	271.7
Approach LOS					F	F

Intersection Summary				
Average Delay	19.9			
Intersection Capacity Utilization	69.5%	ICU Level of Service		C
Analysis Period (min)	15			

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HCM Unsignalized Intersection Capacity Analysis
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HCM Unsignalized Intersection Capacity Analysis
6: Main Street & Center Street

Saturday Peak - Future
10/12/2010

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	55	790	110	50	535	55	50	10	110	40	0	30
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	61	878	122	56	594	61	56	11	122	44	0	33
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)					1207							
pX, platoon unblocked												
vC, conflicting volume	656			1000			1503	1828	500	1425	1858	328
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	656			1000			1503	1828	500	1425	1858	328
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	93			92			22	83	76	22	100	95
cM capacity (veh/h)	928			688			71	65	516	57	62	668

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	61	585	415	56	396	259	189	78
Volume Left	61	0	0	56	0	0	56	44
Volume Right	0	0	122	0	0	61	122	33
cSH	928	1700	1700	688	1700	1700	159	94
Volume to Capacity	0.07	0.34	0.24	0.08	0.23	0.15	1.19	0.83
Queue Length 95th (ft)	5	0	0	7	0	0	263	113
Control Delay (s)	9.2	0.0	0.0	10.7	0.0	0.0	188.4	131.4
Lane LOS	A			B			F	F
Approach Delay (s)	0.5			0.8			188.4	131.4
Approach LOS							F	F

Intersection Summary				
Average Delay	23.0			
Intersection Capacity Utilization	49.2%	ICU Level of Service		A
Analysis Period (min)	15			

LSC, Inc. (BP)
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HCM Unsignalized Intersection Capacity Analysis
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HCM Unsignalized Intersection Capacity Analysis
7: Main Street & Forest Trail

Saturday Peak - Future
10/12/2010

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	15	995	15	15	610	80	15	0	20	170	5	40
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	17	1106	17	17	678	89	17	0	22	189	6	44
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												1
Median type								None			None	
Median storage veh)												
Upstream signal (ft)					793							
pX, platoon unblocked												
vC, conflicting volume	767			1122			1522	1947	561	1364	1911	383
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	767			1122			1522	1947	561	1364	1911	383
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			97			75	100	95	0	91	93
cM capacity (veh/h)	843			618			68	61	471	98	64	615

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	17	737	385	17	452	315	39	239
Volume Left	17	0	0	17	0	0	17	189
Volume Right	0	0	17	0	0	89	22	44
cSH	843	1700	1700	618	1700	1700	133	114
Volume to Capacity	0.02	0.43	0.23	0.03	0.27	0.19	0.29	2.09
Queue Length 95th (ft)	2	0	0	2	0	0	28	501
Control Delay (s)	9.4	0.0	0.0	11.0	0.0	0.0	43.0	580.0
Lane LOS	A			B			E	F
Approach Delay (s)	0.1			0.2			43.0	580.0
Approach LOS							E	F

Intersection Summary			
Average Delay	63.9		
Intersection Capacity Utilization	51.0%	ICU Level of Service	A
Analysis Period (min)	15		

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HCM Unsignalized Intersection Capacity Analysis
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HCM Unsignalized Intersection Capacity Analysis
8: Main Street & Laurel Mountain Road

Saturday Peak - Future
10/12/2010

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	965	200	25	625	115	35
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	1072	222	28	694	128	39
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)				505		
pX, platoon unblocked						
vC, conflicting volume			1294		1586	647
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1294		1586	647
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			95		0	91
cM capacity (veh/h)			531		94	414

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1
Volume Total	715	580	28	347	347	167
Volume Left	0	0	28	0	0	128
Volume Right	0	222	0	0	0	39
cSH	1700	1700	531	1700	1700	114
Volume to Capacity	0.42	0.34	0.05	0.20	0.20	1.46
Queue Length 95th (ft)	0	0	4	0	0	296
Control Delay (s)	0.0	0.0	12.1	0.0	0.0	316.3
Lane LOS			B			F
Approach Delay (s)	0.0		0.5			316.3
Approach LOS						F

Intersection Summary			
Average Delay	24.3		
Intersection Capacity Utilization	48.2%	ICU Level of Service	A
Analysis Period (min)	15		

LSC, Inc. (BP)
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HCM Unsignalized Intersection Capacity Analysis
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Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↱	↰	↑↑	↰	↱
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1583	1770	3539	1770	1583
Flt Permitted	1.00	1.00	0.40	1.00	0.95	1.00
Satd. Flow (perm)	3539	1583	752	3539	1770	1583
Volume (vph)	345	620	100	255	345	75
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	383	689	111	283	383	83
RTOR Reduction (vph)	0	477	0	0	0	50
Lane Group Flow (vph)	383	212	111	283	383	33
Turn Type		Perm	pm+pt			Perm
Protected Phases	2		1	6	3	
Permitted Phases		2	6			3
Actuated Green, G (s)	16.7	16.7	25.3	25.3	22.4	22.4
Effective Green, g (s)	17.6	17.6	26.2	26.2	23.0	23.0
Actuated g/C Ratio	0.31	0.31	0.46	0.46	0.40	0.40
Clearance Time (s)	4.9	4.9	4.1	4.9	4.6	4.6
Vehicle Extension (s)	5.2	5.2	2.5	5.2	5.2	5.2
Lane Grp Cap (vph)	1089	487	426	1621	712	637
v/s Ratio Prot	0.11		c0.02	0.08	c0.22	
v/s Ratio Perm		c0.13	0.10			0.02
v/c Ratio	0.35	0.44	0.26	0.17	0.54	0.05
Uniform Delay, d1	15.4	15.8	9.2	9.1	13.0	10.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	1.4	0.2	0.1	2.9	0.2
Delay (s)	15.8	17.2	9.4	9.2	15.9	10.6
Level of Service	B	B	A	A	B	B
Approach Delay (s)	16.7			9.3	15.0	
Approach LOS	B			A	B	

Intersection Summary			
HCM Average Control Delay	14.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	57.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	50.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↱		↰	↑↱			↰↑↱			↰↑↱	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	10	345	85	40	285	10	40	10	45	10	10	15
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	11	383	94	44	317	11	44	11	50	11	11	17
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)		544										
pX, platoon unblocked				0.96			0.96	0.96	0.96	0.96	0.96	
vC, conflicting volume	328			478			722	869	239	681	911	164
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	328			415			670	823	167	626	866	164
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			96			85	96	94	96	96	98
cM capacity (veh/h)	1229			1095			301	280	815	310	264	852

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	11	256	222	44	211	117	106	39
Volume Left	11	0	0	44	0	0	44	11
Volume Right	0	0	94	0	0	11	50	17
cSH	1229	1700	1700	1095	1700	1700	424	399
Volume to Capacity	0.01	0.15	0.13	0.04	0.12	0.07	0.25	0.10
Queue Length 95th (ft)	1	0	0	3	0	0	24	8
Control Delay (s)	8.0	0.0	0.0	8.4	0.0	0.0	16.3	15.0
Lane LOS	A			A			C	B
Approach Delay (s)	0.2			1.0			16.3	15.0
Approach LOS							C	B

Intersection Summary			
Average Delay	2.7		
Intersection Capacity Utilization	34.2%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis — Saturday Peak - Future

11: Tavern Road & Old Mammoth Road — 10/12/2010

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥		↰	↱		↰	↱	
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	20	5	40	5	5	25	45	450	10	15	790	40
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	22	6	44	6	6	28	50	500	11	17	878	44
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)											760	
pX, platoon unblocked												
vC, conflicting volume	1564	1544	900	1564	1561	506	922			511		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1564	1544	900	1564	1561	506	922			511		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	71	95	87	92	95	95	93			98		
cM capacity (veh/h)	77	105	337	71	103	567	741			1054		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	72	39	50	511	17	922
Volume Left	22	6	50	0	17	0
Volume Right	44	28	0	11	0	44
cSH	153	214	741	1700	1054	1700
Volume to Capacity	0.47	0.18	0.07	0.30	0.02	0.54
Queue Length 95th (ft)	55	16	5	0	1	0
Control Delay (s)	47.9	25.5	10.2	0.0	8.5	0.0
Lane LOS	E	D	B		A	
Approach Delay (s)	47.9	25.5	0.9		0.2	
Approach LOS	E	D				

Intersection Summary			
Average Delay	3.2		
Intersection Capacity Utilization	57.9%	ICU Level of Service	B
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis — Saturday Peak - Future

12: Sierra Nevada Road & Old Mammoth Road — 10/12/2010

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥		↰	↱		↰	↱	
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	20	15	85	20	20	35	75	480	5	50	715	50
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	22	17	94	22	22	39	83	533	6	56	794	56
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)								773				
pX, platoon unblocked	0.95	0.95		0.95	0.95	0.95				0.95		
vC, conflicting volume	1683	1639	822	1711	1664	536	850			539		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1718	1672	822	1748	1698	512	850			515		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	48	78	75	37	70	93	89			94		
cM capacity (veh/h)	42	77	374	35	74	534	788			999		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	133	83	83	539	56	850
Volume Left	22	22	83	0	56	0
Volume Right	94	39	0	6	0	56
cSH	134	83	788	1700	999	1700
Volume to Capacity	0.99	1.00	0.11	0.32	0.06	0.50
Queue Length 95th (ft)	175	140	9	0	4	0
Control Delay (s)	139.7	188.4	10.1	0.0	8.8	0.0
Lane LOS	F	F	B		A	
Approach Delay (s)	139.7	188.4	1.4		0.5	
Approach LOS	F	F				

Intersection Summary			
Average Delay	20.4		
Intersection Capacity Utilization	63.2%	ICU Level of Service	B
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
13: Meridian Boulevard & Majestic Pines Drive

Saturday Peak - Future
10/12/2010

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	60	455	225	70	50	35
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	67	506	250	78	56	39
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	328				675	164
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	328				675	164
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	95				85	95
cM capacity (veh/h)	1229				366	852

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	235	337	167	161	94
Volume Left	67	0	0	0	56
Volume Right	0	0	0	78	39
cSH	1229	1700	1700	1700	479
Volume to Capacity	0.05	0.20	0.10	0.09	0.20
Queue Length 95th (ft)	4	0	0	0	18
Control Delay (s)	2.6	0.0	0.0	0.0	14.4
Lane LOS	A				B
Approach Delay (s)	1.1		0.0		14.4
Approach LOS					B

Intersection Summary			
Average Delay	2.0		
Intersection Capacity Utilization	37.7%	ICU Level of Service	A
Analysis Period (min)	15		

LSC, Inc. (BP)
Mammoth Lakes (LSC#084870)
LSC, Inc.

HCM Unsignalized Intersection Capacity Analysis
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HCM Signalized Intersection Capacity Analysis
14: Meridian Boulevard & Minaret Road

Saturday Peak - Future
10/12/2010

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	0.94		1.00	0.98		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3415		1770	3309		1770	1826		1770	1819	
Flt Permitted	0.33	1.00		0.38	1.00		0.31	1.00		0.41	1.00	
Satd. Flow (perm)	609	3415		714	3309		570	1826		765	1819	
Volume (vph)	150	345	105	35	210	160	60	195	30	345	480	90
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	167	383	117	39	233	178	67	217	33	383	533	100
RTOR Reduction (vph)	0	31	0	0	139	0	0	6	0	0	8	0
Lane Group Flow (vph)	167	469	0	39	272	0	67	244	0	383	625	0
Turn Type	pm+pt			pm+pt			pm+pt			pm+pt		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	24.5	18.7		18.9	15.9		25.3	22.3		41.6	34.5	
Effective Green, g (s)	25.5	19.6		19.9	16.8		26.3	23.2		42.5	35.4	
Actuated g/C Ratio	0.33	0.25		0.26	0.22		0.34	0.30		0.55	0.46	
Clearance Time (s)	4.1	4.9		4.1	4.9		4.1	4.9		4.1	4.9	
Vehicle Extension (s)	2.5	5.0		2.5	5.0		2.5	5.0		2.5	5.0	
Lane Grp Cap (vph)	290	867		226	720		242	549		620	834	
v/s Ratio Prot	c0.04	0.14		0.01	0.08		0.01	0.13		c0.12	c0.34	
v/s Ratio Perm	c0.15			0.04			0.08			0.22		
v/c Ratio	0.58	0.54		0.17	0.38		0.28	0.45		0.62	0.75	
Uniform Delay, d1	19.5	24.9		21.8	25.7		17.7	21.8		10.7	17.2	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.3	1.2		0.3	0.7		0.5	1.2		1.6	4.5	
Delay (s)	21.8	26.1		22.1	26.4		18.2	23.0		12.3	21.7	
Level of Service	C	C		C	C		B	C		B	C	
Approach Delay (s)		25.0			26.1			22.0			18.2	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM Average Control Delay	22.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	77.2	Sum of lost time (s)	16.0
Intersection Capacity Utilization	68.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

LSC, Inc. (BP)
Mammoth Lakes (LSC#084870)
LSC, Inc.

HCM Signalized Intersection Capacity Analysis
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HCM Signalized Intersection Capacity Analysis — Saturday Peak - Future
15: Meridian Boulevard & Old Mammoth Road — 10/12/2010

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3456		1770	3445		1770	1863	1583	1770	1863	1583
Flt Permitted	0.34	1.00		0.16	1.00		0.25	1.00	1.00	0.44	1.00	1.00
Satd. Flow (perm)	632	3456		307	3445		463	1863	1583	811	1863	1583
Volume (vph)	190	695	130	110	370	80	150	265	55	130	360	65
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	211	772	144	122	411	89	167	294	61	144	400	72
RTOR Reduction (vph)	0	17	0	0	20	0	0	0	43	0	0	50
Lane Group Flow (vph)	211	899	0	122	480	0	167	294	18	144	400	22
Turn Type	pm+pt			pm+pt			pm+pt		Perm	pm+pt		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6			8		8	4		4
Actuated Green, G (s)	33.8	25.9		28.8	23.4		27.7	22.2	22.2	26.1	21.4	21.4
Effective Green, g (s)	34.8	26.8		29.8	24.3		28.7	23.1	23.1	27.1	22.3	22.3
Actuated g/C Ratio	0.46	0.35		0.39	0.32		0.38	0.30	0.30	0.36	0.29	0.29
Clearance Time (s)	4.1	4.9		4.1	4.9		4.1	4.9	4.9	4.1	4.9	4.9
Vehicle Extension (s)	2.5	3.7		2.5	3.8		2.5	3.8	3.8	2.5	3.8	3.8
Lane Grp Cap (vph)	408	1215		226	1099		270	565	480	349	545	463
v/s Ratio Prot	c0.05	c0.26		0.04	0.14		c0.05	0.16		0.03	c0.21	
v/s Ratio Perm	0.18			0.17			0.19		0.01	0.12		0.01
v/c Ratio	0.52	0.74		0.54	0.44		0.62	0.52	0.04	0.41	0.73	0.05
Uniform Delay, d1	13.2	21.6		16.3	20.5		17.5	22.0	18.7	17.5	24.3	19.3
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.8	2.6		1.9	0.4		3.6	1.1	0.0	0.6	5.4	0.1
Delay (s)	14.1	24.2		18.2	20.9		21.1	23.0	18.8	18.0	29.6	19.4
Level of Service	B	C		B	C		C	C	B	B	C	B
Approach Delay (s)		22.3			20.4			21.9			25.7	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	22.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	76.2	Sum of lost time (s)	16.0
Intersection Capacity Utilization	70.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis — Saturday Peak - Future
16: Meridian Boulevard & Sierra Park Road — 10/12/2010

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	50	160	5	5	155	15	25	5	5	15	5	80
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	56	178	6	6	172	17	28	6	6	17	6	89

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total (vph)	144	94	92	103	39	111
Volume Left (vph)	56	0	6	0	28	17
Volume Right (vph)	0	6	0	17	6	89
Hadj (s)	0.23	-0.01	0.06	-0.08	0.09	-0.42
Departure Headway (s)	5.3	5.1	5.2	5.0	5.1	4.5
Degree Utilization, x	0.21	0.13	0.13	0.14	0.06	0.14
Capacity (veh/h)	651	685	665	687	642	729
Control Delay (s)	8.5	7.6	7.8	7.7	8.4	8.3
Approach Delay (s)	8.2		7.7		8.4	8.3
Approach LOS	A		A		A	A

Intersection Summary			
Delay	8.1		
HCM Level of Service	A		
Intersection Capacity Utilization	27.7%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis — Saturday Peak - Future

17: Chateau Road & Old Mammoth Road

10/12/2010

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	35	35	15	10	20	60	15	340	10	110	405	85
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	39	39	17	11	22	67	17	378	11	122	450	94
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)											1037	
pX, platoon unblocked	0.93	0.93	0.93	0.93	0.93		0.93					
vC, conflicting volume	1231	1164	497	1147	1206	383	544			389		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1249	1177	458	1159	1222	383	509			389		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	61	75	97	90	85	90	98			90		
cM capacity (veh/h)	101	156	559	115	147	664	980			1170		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	94	100	17	389	122	544
Volume Left	39	11	17	0	122	0
Volume Right	17	67	0	11	0	94
cSH	142	287	980	1700	1170	1700
Volume to Capacity	0.67	0.35	0.02	0.23	0.10	0.32
Queue Length 95th (ft)	92	38	1	0	9	0
Control Delay (s)	70.3	24.1	8.7	0.0	8.4	0.0
Lane LOS	F	C	A		A	
Approach Delay (s)	70.3	24.1	0.4		1.5	
Approach LOS	F	C				

Intersection Summary			
Average Delay	8.1		
Intersection Capacity Utilization	51.2%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis — Saturday Peak - Future

18: Old Mammoth Road & Minaret Road

10/12/2010

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	115	190	55	170	220	105	30	85	115	115	200	215
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	128	211	61	189	244	117	33	94	128	128	222	239
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									2			
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	361			272			1469	1236	242	1258	1208	303
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	361			272			1469	1236	242	1258	1208	303
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	89			85			0	30	84	0	0	68
cM capacity (veh/h)	1198			1291			0	134	797	45	140	737

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1	SB 2
Volume Total	128	272	189	361	256	128	461
Volume Left	128	0	189	0	33	128	0
Volume Right	0	61	0	117	128	0	239
cSH	1198	1700	1291	1700	40	45	241
Volume to Capacity	0.11	0.16	0.15	0.21	6.44	2.85	1.92
Queue Length 95th (ft)	9	0	13	0	Err	346	821
Control Delay (s)	8.4	0.0	8.3	0.0	Err	1024.7	461.9
Lane LOS	A		A		F	F	F
Approach Delay (s)	2.7		2.8		Err	584.0	
Approach LOS					F	F	

Intersection Summary			
Average Delay	1617.1		
Intersection Capacity Utilization	65.1%	ICU Level of Service	C
Analysis Period (min)	15		

Future - Alternative 1
LOS Reports

HCM Unsignalized Intersection Capacity Analysis — Saturday Peak - Alternative 1
1: Forest Trail & Minaret Road — 10/12/2010

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	20	30	100	20	15	10	75	195	30	80	745	110
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	22	33	111	22	17	11	83	217	33	89	828	122
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1486	1483	889	1594	1528	233	950			250		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1486	1483	889	1594	1528	233	950			250		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	71	68	68	42	83	99	88			93		
cM capacity (veh/h)	76	103	342	38	97	806	723			1316		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	167	50	333	1039
Volume Left	22	22	83	89
Volume Right	111	11	33	122
cSH	177	65	723	1316
Volume to Capacity	0.94	0.77	0.12	0.07
Queue Length 95th (ft)	182	87	10	5
Control Delay (s)	105.2	156.4	3.7	1.8
Lane LOS	F	F	A	A
Approach Delay (s)	105.2	156.4	3.7	1.8
Approach LOS	F	F		

Intersection Summary			
Average Delay	17.9		
Intersection Capacity Utilization	70.3%	ICU Level of Service	C
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis — Saturday Peak - Alternative 1
2: Lake Mary Road & Davidson — 10/12/2010

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	105	15	80	105	40	10	0	65	60	0	5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	117	17	89	117	44	11	0	72	67	0	6
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									2			
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	161			133			447	464	125	478	450	139
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	161			133			447	464	125	478	450	139
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			94			98	100	92	85	100	99
cM capacity (veh/h)	1418			1451			494	465	926	437	474	909

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	133	250	83	72
Volume Left	0	89	11	67
Volume Right	17	44	72	6
cSH	1418	1451	1068	456
Volume to Capacity	0.00	0.06	0.08	0.16
Queue Length 95th (ft)	0	5	6	14
Control Delay (s)	0.0	3.1	9.6	14.4
Lane LOS		A	A	B
Approach Delay (s)	0.0	3.1	9.6	14.4
Approach LOS			A	B

Intersection Summary			
Average Delay	4.8		
Intersection Capacity Utilization	36.0%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis — Saturday Peak - Alternative 1

3: Lake Mary Road & Canyon Boulevard

10/12/2010

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.97	
Frt	1.00	1.00	1.00	0.85	1.00	
Flt Protected	0.95	1.00	1.00	1.00	0.95	
Satd. Flow (prot)	1770	1863	1863	1583	3432	
Flt Permitted	0.59	1.00	1.00	1.00	0.95	
Satd. Flow (perm)	1097	1863	1863	1583	3432	
Volume (vph)	20	215	250	245	525	15
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	22	239	278	272	583	17
RTOR Reduction (vph)	0	0	0	118	6	0
Lane Group Flow (vph)	22	239	278	154	594	0
Turn Type	Perm			Perm		
Protected Phases		2	6		4	
Permitted Phases	2			6		
Actuated Green, G (s)	24.9	24.9	24.9	24.9	11.4	
Effective Green, g (s)	25.5	25.5	25.5	25.5	11.5	
Actuated g/C Ratio	0.57	0.57	0.57	0.57	0.26	
Clearance Time (s)	4.6	4.6	4.6	4.6	4.1	
Vehicle Extension (s)	6.1	6.1	6.1	6.1	2.0	
Lane Grp Cap (vph)	622	1056	1056	897	877	
v/s Ratio Prot		0.13	c0.15		c0.17	
v/s Ratio Perm	0.02			0.10		
v/c Ratio	0.04	0.23	0.26	0.17	0.68	
Uniform Delay, d1	4.3	4.8	5.0	4.7	15.1	
Progression Factor	1.00	1.00	0.42	0.82	1.00	
Incremental Delay, d2	0.1	0.5	0.5	0.3	1.6	
Delay (s)	4.4	5.3	2.6	4.2	16.7	
Level of Service	A	A	A	A	B	
Approach Delay (s)		5.3	3.4		16.7	
Approach LOS		A	A		B	

Intersection Summary			
HCM Average Control Delay	9.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	45.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	38.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

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LSC, Inc.

HCM Signalized Intersection Capacity Analysis — Saturday Peak - Alternative 1

4: Lake Mary Road & Minaret Road

10/12/2010

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.90	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	3433	1672	
Flt Permitted	0.36	1.00	1.00	0.30	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	675	3539	1583	550	3539	1583	1770	1863	1583	3433	1672	
Volume (vph)	115	460	170	80	350	145	415	320	100	555	65	140
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	128	511	189	89	389	161	461	356	111	617	72	156
RTOR Reduction (vph)	0	0	83	0	0	126	0	0	75	0	86	0
Lane Group Flow (vph)	128	511	106	89	389	35	461	356	36	617	142	0
Turn Type	pm+pt		Perm	pm+pt		Perm	Split		Perm	Split		
Protected Phases	5	2		1	6		8	8		7	7	
Permitted Phases	2		2	6		6			8			
Actuated Green, G (s)	25.6	19.6	19.6	23.2	18.4	18.4	27.1	27.1	27.1	20.0	20.0	
Effective Green, g (s)	26.6	20.5	20.5	24.2	19.3	19.3	28.0	28.0	28.0	20.6	20.6	
Actuated g/C Ratio	0.30	0.23	0.23	0.27	0.21	0.21	0.31	0.31	0.31	0.23	0.23	
Clearance Time (s)	4.1	4.9	4.9	4.1	4.9	4.9	4.9	4.9	4.9	4.6	4.6	
Vehicle Extension (s)	2.5	4.7	4.7	2.5	4.6	4.6	5.2	5.2	5.2	6.2	6.2	
Lane Grp Cap (vph)	274	806	361	214	759	339	551	580	492	786	383	
v/s Ratio Prot	c0.03	c0.14		0.02	0.11		c0.26	0.19		c0.18	0.08	
v/s Ratio Perm	0.11		0.07	0.09		0.02			0.02			
v/c Ratio	0.47	0.63	0.29	0.42	0.51	0.10	0.84	0.61	0.07	0.78	0.37	
Uniform Delay, d1	24.3	31.4	28.8	25.6	31.2	28.4	28.9	26.4	21.9	32.6	29.2	
Progression Factor	0.83	0.83	0.86	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.8	3.2	1.8	1.0	2.5	0.6	14.0	4.8	0.3	7.7	2.7	
Delay (s)	20.9	29.4	26.4	26.6	33.7	29.0	42.9	31.2	22.1	40.4	32.0	
Level of Service	C	C	C	C	C	C	D	C	C	D	C	
Approach Delay (s)		27.4			31.5			35.9			38.1	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM Average Control Delay	33.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	66.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

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LSC, Inc.

HCM Unsignalized Intersection Capacity Analysis | Saturday Peak - Alternative 1
5: Main Street & Mountain Boulevard | 10/12/2010

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	25	1235	65	30	575	85	10	20	20	55	15	55
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	28	1372	72	33	639	94	11	22	22	61	17	61
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	733			1444			1919	2264	722	1528	2253	367
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	733			1444			1919	2264	722	1528	2253	367
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			93			50	39	94	0	55	90
cM capacity (veh/h)	867			465			22	36	369	36	37	630

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	714	758	353	414	56	139
Volume Left	28	0	33	0	11	61
Volume Right	0	72	0	94	22	61
cSH	867	1700	465	1700	47	62
Volume to Capacity	0.03	0.45	0.07	0.24	1.18	2.25
Queue Length 95th (ft)	2	0	6	0	128	338
Control Delay (s)	0.8	0.0	2.3	0.0	327.1	718.6
Lane LOS	A		A		F	F
Approach Delay (s)	0.4		1.1		327.1	718.6
Approach LOS					F	F

Intersection Summary			
Average Delay	49.1		
Intersection Capacity Utilization	74.7%	ICU Level of Service	D
Analysis Period (min)	15		

LSC, Inc. (BP) | HCM Unsignalized Intersection Capacity Analysis
Mammoth Lakes (LSC#084870) | Page 5
LSC, Inc.

HCM Unsignalized Intersection Capacity Analysis | Saturday Peak - Alternative 1
6: Main Street & Center Street | 10/12/2010

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	55	805	145	65	545	140	65	35	145	100	0	80
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	61	894	161	72	606	156	72	39	161	111	0	89
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)					1207							
pX, platoon unblocked												
vC, conflicting volume	761			1056			1633	2003	528	1578	2006	381
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	761			1056			1633	2003	528	1578	2006	381
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	93			89			0	20	67	0	100	86
cM capacity (veh/h)	847			655			50	49	495	15	48	617

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	61	596	459	72	404	357	272	200
Volume Left	61	0	0	72	0	0	72	111
Volume Right	0	0	161	0	0	156	161	89
cSH	847	1700	1700	655	1700	1700	106	26
Volume to Capacity	0.07	0.35	0.27	0.11	0.24	0.21	2.58	7.60
Queue Length 95th (ft)	6	0	0	9	0	0	623	Err
Control Delay (s)	9.6	0.0	0.0	11.2	0.0	0.0	802.0	Err
Lane LOS	A			B			F	F
Approach Delay (s)	0.5			1.0			802.0	Err
Approach LOS							F	F

Intersection Summary			
Average Delay	916.3		
Intersection Capacity Utilization	60.7%	ICU Level of Service	B
Analysis Period (min)	15		

LSC, Inc. (BP) | HCM Unsignalized Intersection Capacity Analysis
Mammoth Lakes (LSC#084870) | Page 6
LSC, Inc.

HCM Unsignalized Intersection Capacity Analysis
7: Main Street & Forest Trail

Saturday Peak - Alternative 1
10/12/2010

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	15	985	15	15	605	70	15	0	20	145	5	35
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	17	1094	17	17	672	78	17	0	22	161	6	39
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												1
Median type								None			None	
Median storage veh)												
Upstream signal (ft)					793							
pX, platoon unblocked												
vC, conflicting volume	750			1111			1508	1919	556	1347	1889	375
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	750			1111			1508	1919	556	1347	1889	375
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			97			76	100	95	0	92	94
cM capacity (veh/h)	855			624			70	63	475	101	66	623

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	17	730	381	17	448	302	39	206
Volume Left	17	0	0	17	0	0	17	161
Volume Right	0	0	17	0	0	78	22	39
cSH	855	1700	1700	624	1700	1700	137	118
Volume to Capacity	0.02	0.43	0.22	0.03	0.26	0.18	0.28	1.74
Queue Length 95th (ft)	1	0	0	2	0	0	27	395
Control Delay (s)	9.3	0.0	0.0	10.9	0.0	0.0	41.3	430.0
Lane LOS	A			B			E	F
Approach Delay (s)	0.1			0.2			41.3	430.0
Approach LOS							E	F

Intersection Summary			
Average Delay	42.2		
Intersection Capacity Utilization	49.3%	ICU Level of Service	A
Analysis Period (min)	15		

LSC, Inc. (BP)
Mammoth Lakes (LSC#084870)
LSC, Inc.

HCM Unsignalized Intersection Capacity Analysis
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HCM Unsignalized Intersection Capacity Analysis
8: Main Street & Laurel Mountain Road

Saturday Peak - Alternative 1
10/12/2010

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	915	175	20	595	100	30
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	1017	194	22	661	111	33
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)				505		
pX, platoon unblocked						
vC, conflicting volume			1211		1489	606
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1211		1489	606
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			96		0	92
cM capacity (veh/h)			572		110	440

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1
Volume Total	678	533	22	331	331	144
Volume Left	0	0	22	0	0	111
Volume Right	0	194	0	0	0	33
cSH	1700	1700	572	1700	1700	133
Volume to Capacity	0.40	0.31	0.04	0.19	0.19	1.08
Queue Length 95th (ft)	0	0	3	0	0	202
Control Delay (s)	0.0	0.0	11.6	0.0	0.0	167.0
Lane LOS			B			F
Approach Delay (s)	0.0		0.4			167.0
Approach LOS						F

Intersection Summary			
Average Delay	12.0		
Intersection Capacity Utilization	44.9%	ICU Level of Service	A
Analysis Period (min)	15		

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Mammoth Lakes (LSC#084870)
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HCM Unsignalized Intersection Capacity Analysis
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HCM Signalized Intersection Capacity Analysis | Saturday Peak - Alternative 1
9: Main Street & Old Mammoth Road | 10/12/2010

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1583	1770	3539	1770	1583
Flt Permitted	1.00	1.00	0.41	1.00	0.95	1.00
Satd. Flow (perm)	3539	1583	757	3539	1770	1583
Volume (vph)	340	585	100	255	325	75
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	378	650	111	283	361	83
RTOR Reduction (vph)	0	451	0	0	0	50
Lane Group Flow (vph)	378	199	111	283	361	33
Turn Type		Perm	pm+pt			Perm
Protected Phases	2		1	6	3	
Permitted Phases		2	6			3
Actuated Green, G (s)	16.5	16.5	25.1	25.1	22.3	22.3
Effective Green, g (s)	17.4	17.4	26.0	26.0	22.9	22.9
Actuated g/C Ratio	0.31	0.31	0.46	0.46	0.40	0.40
Clearance Time (s)	4.9	4.9	4.1	4.9	4.6	4.6
Vehicle Extension (s)	5.2	5.2	2.5	5.2	5.2	5.2
Lane Grp Cap (vph)	1082	484	428	1617	712	637
v/s Ratio Prot	0.11		c0.02	0.08	c0.20	
v/s Ratio Perm		c0.13	0.10			0.02
v/c Ratio	0.35	0.41	0.26	0.18	0.51	0.05
Uniform Delay, d1	15.4	15.7	9.2	9.1	12.8	10.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	1.3	0.2	0.1	2.6	0.2
Delay (s)	15.8	16.9	9.4	9.2	15.3	10.5
Level of Service	B	B	A	A	B	B
Approach Delay (s)	16.5			9.3	14.4	
Approach LOS	B			A	B	

Intersection Summary			
HCM Average Control Delay	14.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	56.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	48.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis | Saturday Peak - Alternative 1
10: Main Street & Sierra Park Boulevard | 10/12/2010

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	10	350	85	40	290	10	40	10	45	10	10	15
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	11	389	94	44	322	11	44	11	50	11	11	17
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)		544										
pX, platoon unblocked				0.96			0.96	0.96	0.96	0.96	0.96	
vC, conflicting volume	333			483			731	881	242	689	922	167
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	333			424			681	837	173	638	880	167
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			96			85	96	94	96	96	98
cM capacity (veh/h)	1223			1089			295	276	809	304	260	848

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	11	259	224	44	215	119	106	39
Volume Left	11	0	0	44	0	0	44	11
Volume Right	0	0	94	0	0	11	50	17
cSH	1223	1700	1700	1089	1700	1700	418	393
Volume to Capacity	0.01	0.15	0.13	0.04	0.13	0.07	0.25	0.10
Queue Length 95th (ft)	1	0	0	3	0	0	25	8
Control Delay (s)	8.0	0.0	0.0	8.4	0.0	0.0	16.5	15.2
Lane LOS	A			A			C	C
Approach Delay (s)	0.2			1.0			16.5	15.2
Approach LOS							C	C

Intersection Summary			
Average Delay	2.7		
Intersection Capacity Utilization	34.4%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis | Saturday Peak - Alternative 1
11: Tavern Road & Old Mammoth Road | 10/12/2010

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	25	10	45	5	10	25	55	425	10	15	710	45
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	28	11	50	6	11	28	61	472	11	17	789	50
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)											760	
pX, platoon unblocked												
vC, conflicting volume	1475	1453	814	1478	1472	478	839			483		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1475	1453	814	1478	1472	478	839			483		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	68	91	87	93	90	95	92			98		
cM capacity (veh/h)	86	118	378	78	115	588	796			1079		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	89	44	61	483	17	839
Volume Left	28	6	61	0	17	0
Volume Right	50	28	0	11	0	50
cSH	162	207	796	1700	1079	1700
Volume to Capacity	0.55	0.21	0.08	0.28	0.02	0.49
Queue Length 95th (ft)	70	20	6	0	1	0
Control Delay (s)	51.5	27.1	9.9	0.0	8.4	0.0
Lane LOS	F	D	A		A	
Approach Delay (s)	51.5	27.1	1.1		0.2	
Approach LOS	F	D				

Intersection Summary			
Average Delay	4.3		
Intersection Capacity Utilization	61.8%	ICU Level of Service	B
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis | Saturday Peak - Alternative 1
12: Sierra Nevada Road & Old Mammoth Road | 10/12/2010

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	20	15	85	20	20	30	70	410	5	45	625	45
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	22	17	94	22	22	33	78	456	6	50	694	50
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)								773				
pX, platoon unblocked	0.99	0.99		0.99	0.99	0.99				0.99		
vC, conflicting volume	1475	1436	719	1511	1458	458	744			461		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1478	1439	719	1514	1461	455	744			458		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	70	85	78	63	80	94	91			95		
cM capacity (veh/h)	75	115	428	61	111	601	863			1096		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	133	78	78	461	50	744
Volume Left	22	22	78	0	50	0
Volume Right	94	33	0	6	0	50
cSH	201	125	863	1700	1096	1700
Volume to Capacity	0.66	0.62	0.09	0.27	0.05	0.44
Queue Length 95th (ft)	100	80	7	0	4	0
Control Delay (s)	52.5	72.0	9.6	0.0	8.4	0.0
Lane LOS	F	F	A		A	
Approach Delay (s)	52.5	72.0	1.4		0.5	
Approach LOS	F	F				

Intersection Summary			
Average Delay	8.9		
Intersection Capacity Utilization	57.7%	ICU Level of Service	B
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis — Saturday Peak - Alternative 1

13: Meridian Boulevard & Majestic Pines Drive — 10/12/2010

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	60	455	225	70	50	40
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	67	506	250	78	56	44
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	328				675	164
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	328				675	164
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	95				85	95
cM capacity (veh/h)	1229				366	852

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	235	337	167	161	100
Volume Left	67	0	0	0	56
Volume Right	0	0	0	78	44
cSH	1229	1700	1700	1700	491
Volume to Capacity	0.05	0.20	0.10	0.09	0.20
Queue Length 95th (ft)	4	0	0	0	19
Control Delay (s)	2.6	0.0	0.0	0.0	14.2
Lane LOS	A				B
Approach Delay (s)	1.1		0.0		14.2
Approach LOS					B

Intersection Summary			
Average Delay	2.0		
Intersection Capacity Utilization	38.0%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis — Saturday Peak - Alternative 1

14: Meridian Boulevard & Minaret Road — 10/12/2010

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	0.94		1.00	0.98		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3408		1770	3311		1770	1826		1770	1817	
Flt Permitted	0.34	1.00		0.39	1.00		0.28	1.00		0.42	1.00	
Satd. Flow (perm)	629	3408		726	3311		524	1826		777	1817	
Volume (vph)	155	335	110	35	205	155	60	195	30	330	485	95
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	172	372	122	39	228	172	67	217	33	367	539	106
RTOR Reduction (vph)	0	34	0	0	135	0	0	6	0	0	8	0
Lane Group Flow (vph)	172	460	0	39	265	0	67	244	0	367	637	0
Turn Type	pm+pt			pm+pt			pm+pt			pm+pt		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	24.5	18.7		18.9	15.9		25.9	22.9		41.5	34.4	
Effective Green, g (s)	25.5	19.6		19.9	16.8		26.9	23.8		42.4	35.3	
Actuated g/C Ratio	0.33	0.25		0.26	0.22		0.35	0.31		0.55	0.46	
Clearance Time (s)	4.1	4.9		4.1	4.9		4.1	4.9		4.1	4.9	
Vehicle Extension (s)	2.5	5.0		2.5	5.0		2.5	5.0		2.5	5.0	
Lane Grp Cap (vph)	295	866		229	721		233	564		615	832	
v/s Ratio Prot	c0.04	0.13		0.01	0.08		0.01	0.13		c0.11	c0.35	
v/s Ratio Perm	c0.15			0.04			0.09			0.21		
v/c Ratio	0.58	0.53		0.17	0.37		0.29	0.43		0.60	0.77	
Uniform Delay, d1	19.5	24.8		21.8	25.6		17.4	21.3		10.6	17.5	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.4	1.1		0.3	0.7		0.5	1.1		1.3	5.0	
Delay (s)	21.9	25.9		22.0	26.3		17.9	22.4		11.9	22.5	
Level of Service	C	C		C	C		B	C		B	C	
Approach Delay (s)		24.9			25.9			21.4			18.6	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM Average Control Delay	22.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	77.1	Sum of lost time (s)	16.0
Intersection Capacity Utilization	68.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis — Saturday Peak - Alternative 1
15: Meridian Boulevard & Old Mammoth Road — 10/12/2010

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3457		1770	3444		1770	1863	1583	1770	1863	1583
Flt Permitted	0.34	1.00		0.17	1.00		0.27	1.00	1.00	0.47	1.00	1.00
Satd. Flow (perm)	635	3457		321	3444		511	1863	1583	879	1863	1583
Volume (vph)	185	680	125	110	365	80	145	245	55	125	345	60
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	206	756	139	122	406	89	161	272	61	139	383	67
RTOR Reduction (vph)	0	17	0	0	21	0	0	0	42	0	0	47
Lane Group Flow (vph)	206	878	0	122	474	0	161	272	19	139	383	20
Turn Type	pm+pt			pm+pt			pm+pt		Perm	pm+pt		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6			8		8	4		4
Actuated Green, G (s)	32.4	24.7		27.6	22.3		27.2	21.7	21.7	25.6	20.9	20.9
Effective Green, g (s)	33.4	25.6		28.6	23.2		28.2	22.6	22.6	26.6	21.8	21.8
Actuated g/C Ratio	0.45	0.34		0.38	0.31		0.38	0.30	0.30	0.36	0.29	0.29
Clearance Time (s)	4.1	4.9		4.1	4.9		4.1	4.9	4.9	4.1	4.9	4.9
Vehicle Extension (s)	2.5	3.7		2.5	3.8		2.5	3.8	3.8	2.5	3.8	3.8
Lane Grp Cap (vph)	404	1190		229	1074		288	566	481	372	546	464
v/s Ratio Prot	c0.05	c0.25		0.04	0.14		c0.04	0.15		0.02	c0.21	
v/s Ratio Perm	0.18			0.17			0.17		0.01	0.11		0.01
v/c Ratio	0.51	0.74		0.53	0.44		0.56	0.48	0.04	0.37	0.70	0.04
Uniform Delay, d1	13.2	21.4		16.1	20.4		16.8	21.1	18.2	16.8	23.4	18.8
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	2.5		1.8	0.4		1.9	0.8	0.0	0.5	4.3	0.0
Delay (s)	14.0	24.0		18.0	20.8		18.6	21.9	18.3	17.3	27.7	18.9
Level of Service	B	C		B	C		B	C	B	B	C	B
Approach Delay (s)		22.1			20.2			20.4			24.2	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	21.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	74.4	Sum of lost time (s)	16.0
Intersection Capacity Utilization	68.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

LSC, Inc. (BP) — HCM Signalized Intersection Capacity Analysis
Mammoth Lakes (LSC#084870) — Page 15
LSC, Inc.

HCM Unsignalized Intersection Capacity Analysis — Saturday Peak - Alternative 1
16: Meridian Boulevard & Sierra Park Road — 10/12/2010

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	50	160	5	5	155	15	25	5	5	15	5	80
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	56	178	6	6	172	17	28	6	6	17	6	89

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total (vph)	144	94	92	103	39	111
Volume Left (vph)	56	0	6	0	28	17
Volume Right (vph)	0	6	0	17	6	89
Hadj (s)	0.23	-0.01	0.06	-0.08	0.09	-0.42
Departure Headway (s)	5.3	5.1	5.2	5.0	5.1	4.5
Degree Utilization, x	0.21	0.13	0.13	0.14	0.06	0.14
Capacity (veh/h)	651	685	665	687	642	729
Control Delay (s)	8.5	7.6	7.8	7.7	8.4	8.3
Approach Delay (s)	8.2		7.7		8.4	8.3
Approach LOS	A		A		A	A

Intersection Summary			
Delay	8.1		
HCM Level of Service	A		
Intersection Capacity Utilization	27.7%	ICU Level of Service	A
Analysis Period (min)	15		

LSC, Inc. (BP) — HCM Unsignalized Intersection Capacity Analysis
Mammoth Lakes (LSC#084870) — Page 16
LSC, Inc.

HCM Unsignalized Intersection Capacity Analysis | Saturday Peak - Alternative 1
17: Chateau Road & Old Mammoth Road | 10/12/2010

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	35	35	10	10	20	60	10	325	10	110	395	85
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	39	39	11	11	22	67	11	361	11	122	439	94
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)											1037	
pX, platoon unblocked	0.95	0.95	0.95	0.95	0.95		0.95					
vC, conflicting volume	1192	1125	486	1103	1167	367	533			372		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1202	1132	459	1108	1175	367	509			372		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	66	77	98	92	86	90	99			90		
cM capacity (veh/h)	113	171	572	132	161	679	1004			1186		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	89	100	11	372	122	533
Volume Left	39	11	11	0	122	0
Volume Right	11	67	0	11	0	94
cSH	151	312	1004	1700	1186	1700
Volume to Capacity	0.59	0.32	0.01	0.22	0.10	0.31
Queue Length 95th (ft)	77	34	1	0	9	0
Control Delay (s)	58.4	21.9	8.6	0.0	8.4	0.0
Lane LOS	F	C	A		A	
Approach Delay (s)	58.4	21.9	0.3		1.6	
Approach LOS	F	C				

Intersection Summary			
Average Delay	6.9		
Intersection Capacity Utilization	50.3%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis | Saturday Peak - Alternative 1
18: Old Mammoth Road & Minaret Road | 10/12/2010

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	115	165	45	135	190	95	20	65	90	105	155	220
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	128	183	50	150	211	106	22	72	100	117	172	244
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									2			
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	317			233			1306	1081	208	1089	1053	264
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	317			233			1306	1081	208	1089	1053	264
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	90			89			0	58	88	0	4	68
cM capacity (veh/h)	1243			1334			12	174	832	98	180	775

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1	SB 2
Volume Total	128	233	150	317	194	117	417
Volume Left	128	0	150	0	22	117	0
Volume Right	0	50	0	106	100	0	244
cSH	1243	1700	1334	1700	212	98	328
Volume to Capacity	0.10	0.14	0.11	0.19	0.92	1.19	1.27
Queue Length 95th (ft)	9	0	9	0	187	197	481
Control Delay (s)	8.2	0.0	8.0	0.0	88.7	231.4	177.0
Lane LOS	A		A		F	F	F
Approach Delay (s)	2.9		2.6		88.7	188.9	
Approach LOS					F	F	

Intersection Summary			
Average Delay	77.3		
Intersection Capacity Utilization	53.8%	ICU Level of Service	A
Analysis Period (min)	15		

Future - Alternative 2
LOS Reports

HCM Unsignalized Intersection Capacity Analysis — Saturday Peak - Alternative 2

1: Forest Trail & Minaret Road

10/12/2010

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	20	35	100	20	20	15	75	190	35	90	730	110
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	22	39	111	22	22	17	83	211	39	100	811	122
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1497	1489	872	1600	1531	231	933			250		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1497	1489	872	1600	1531	231	933			250		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	68	62	68	38	77	98	89			92		
cM capacity (veh/h)	70	101	350	36	96	809	733			1316		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	172	61	333	1033
Volume Left	22	22	83	100
Volume Right	111	17	39	122
cSH	169	70	733	1316
Volume to Capacity	1.02	0.88	0.11	0.08
Queue Length 95th (ft)	205	107	10	6
Control Delay (s)	128.8	174.3	3.7	2.0
Lane LOS	F	F	A	A
Approach Delay (s)	128.8	174.3	3.7	2.0
Approach LOS	F	F		

Intersection Summary			
Average Delay	22.6		
Intersection Capacity Utilization	71.3%	ICU Level of Service	C
Analysis Period (min)	15		

LSC, Inc. (BP)
Mammoth Lakes (LSC#084870)
LSC, Inc.

HCM Unsignalized Intersection Capacity Analysis — Saturday Peak - Alternative 2

2: Lake Mary Road & Davidson

10/12/2010

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	95	15	90	95	45	10	0	70	70	0	5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	106	17	100	106	50	11	0	78	78	0	6
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									2			
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	156			122			450	469	114	483	453	131
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	156			122			450	469	114	483	453	131
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			93			98	100	92	82	100	99
cM capacity (veh/h)	1425			1465			489	458	939	429	468	919

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	122	256	89	83
Volume Left	0	100	11	78
Volume Right	17	50	78	6
cSH	1425	1465	1073	445
Volume to Capacity	0.00	0.07	0.08	0.19
Queue Length 95th (ft)	0	5	7	17
Control Delay (s)	0.0	3.3	9.6	14.9
Lane LOS		A	A	B
Approach Delay (s)	0.0	3.3	9.6	14.9
Approach LOS			A	B

Intersection Summary			
Average Delay	5.4		
Intersection Capacity Utilization	36.9%	ICU Level of Service	A
Analysis Period (min)	15		

LSC, Inc. (BP)
Mammoth Lakes (LSC#084870)
LSC, Inc.

HCM Signalized Intersection Capacity Analysis — Saturday Peak - Alternative 2
3: Lake Mary Road & Canyon Boulevard — 10/12/2010

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.97	
Frt	1.00	1.00	1.00	0.85	1.00	
Flt Protected	0.95	1.00	1.00	1.00	0.95	
Satd. Flow (prot)	1770	1863	1863	1583	3435	
Flt Permitted	0.60	1.00	1.00	1.00	0.95	
Satd. Flow (perm)	1119	1863	1863	1583	3435	
Volume (vph)	20	200	230	240	515	10
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	22	222	256	267	572	11
RTOR Reduction (vph)	0	0	0	115	4	0
Lane Group Flow (vph)	22	222	256	152	579	0
Turn Type	Perm			Perm		
Protected Phases		2	6		4	
Permitted Phases	2			6		
Actuated Green, G (s)	25.0	25.0	25.0	25.0	11.3	
Effective Green, g (s)	25.6	25.6	25.6	25.6	11.4	
Actuated g/C Ratio	0.57	0.57	0.57	0.57	0.25	
Clearance Time (s)	4.6	4.6	4.6	4.6	4.1	
Vehicle Extension (s)	6.1	6.1	6.1	6.1	2.0	
Lane Grp Cap (vph)	637	1060	1060	901	870	
v/s Ratio Prot		0.12	c0.14		c0.17	
v/s Ratio Perm	0.02			0.10		
v/c Ratio	0.03	0.21	0.24	0.17	0.67	
Uniform Delay, d1	4.3	4.7	4.8	4.6	15.1	
Progression Factor	1.00	1.00	0.41	0.81	1.00	
Incremental Delay, d2	0.1	0.4	0.4	0.3	1.5	
Delay (s)	4.4	5.2	2.4	4.1	16.6	
Level of Service	A	A	A	A	B	
Approach Delay (s)		5.1	3.3		16.6	
Approach LOS		A	A		B	

Intersection Summary			
HCM Average Control Delay	9.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	45.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	38.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis — Saturday Peak - Alternative 2
4: Lake Mary Road & Minaret Road — 10/12/2010

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.90	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	3433	1672	
Flt Permitted	0.37	1.00	1.00	0.32	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	696	3539	1583	590	3539	1583	1770	1863	1583	3433	1672	
Volume (vph)	115	440	165	80	340	140	400	315	95	535	65	140
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	128	489	183	89	378	156	444	350	106	594	72	156
RTOR Reduction (vph)	0	0	84	0	0	123	0	0	73	0	86	0
Lane Group Flow (vph)	128	489	99	89	378	33	444	350	33	594	142	0
Turn Type	pm+pt		Perm	pm+pt		Perm	Split		Perm	Split		
Protected Phases	5	2		1	6		8	8		7	7	
Permitted Phases	2		2	6		6			8			
Actuated Green, G (s)	25.6	19.6	19.6	23.2	18.4	18.4	27.1	27.1	27.1	20.0	20.0	
Effective Green, g (s)	26.6	20.5	20.5	24.2	19.3	19.3	28.0	28.0	28.0	20.6	20.6	
Actuated g/C Ratio	0.30	0.23	0.23	0.27	0.21	0.21	0.31	0.31	0.31	0.23	0.23	
Clearance Time (s)	4.1	4.9	4.9	4.1	4.9	4.9	4.9	4.9	4.9	4.6	4.6	
Vehicle Extension (s)	2.5	4.7	4.7	2.5	4.6	4.6	5.2	5.2	5.2	6.2	6.2	
Lane Grp Cap (vph)	279	806	361	223	759	339	551	580	492	786	383	
v/s Ratio Prot	c0.03	c0.14		0.02	0.11		c0.25	0.19		c0.17	0.08	
v/s Ratio Perm	0.10		0.06	0.09		0.02			0.02			
v/c Ratio	0.46	0.61	0.27	0.40	0.50	0.10	0.81	0.60	0.07	0.76	0.37	
Uniform Delay, d1	24.3	31.1	28.6	25.6	31.1	28.4	28.5	26.3	21.8	32.4	29.2	
Progression Factor	0.81	0.82	0.86	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.7	2.9	1.6	0.9	2.3	0.6	11.9	4.6	0.3	6.7	2.7	
Delay (s)	20.5	28.5	26.3	26.4	33.4	29.0	40.4	30.9	22.1	39.0	32.0	
Level of Service	C	C	C	C	C	C	D	C	C	D	C	
Approach Delay (s)		26.7			31.3			34.6			37.1	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM Average Control Delay	32.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	64.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

5: Main Street & Mountain Boulevard

10/12/2010

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰↑↱			↰↑↱			✥			✥	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	25	1195	60	25	560	85	10	20	15	55	15	60
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	28	1328	67	28	622	94	11	22	17	61	17	67
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	717			1394			1858	2189	697	1472	2175	358
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	717			1394			1858	2189	697	1472	2175	358
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			94			58	46	96	0	60	90
cM capacity (veh/h)	880			486			26	41	383	45	42	638

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	692	731	339	406	50	144
Volume Left	28	0	28	0	11	61
Volume Right	0	67	0	94	17	67
cSH	880	1700	486	1700	50	78
Volume to Capacity	0.03	0.43	0.06	0.24	1.01	1.85
Queue Length 95th (ft)	2	0	5	0	109	315
Control Delay (s)	0.8	0.0	1.9	0.0	261.0	514.4
Lane LOS	A		A		F	F
Approach Delay (s)	0.4		0.9		261.0	514.4
Approach LOS					F	F

Intersection Summary			
Average Delay	37.5		
Intersection Capacity Utilization	73.1%	ICU Level of Service	D
Analysis Period (min)	15		

6: Main Street & Center Street

10/12/2010

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↱		↰	↑↱			✥			✥	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	55	795	140	65	540	140	65	35	140	100	0	80
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	61	883	156	72	600	156	72	39	156	111	0	89
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)					1207							
pX, platoon unblocked												
vC, conflicting volume	756			1039			1617	1983	519	1561	1983	378
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	756			1039			1617	1983	519	1561	1983	378
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	93			89			0	22	69	0	100	86
cM capacity (veh/h)	851			665			51	50	501	17	50	620

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	61	589	450	72	400	356	267	200
Volume Left	61	0	0	72	0	0	72	111
Volume Right	0	0	156	0	0	156	156	89
cSH	851	1700	1700	665	1700	1700	107	30
Volume to Capacity	0.07	0.35	0.26	0.11	0.24	0.21	2.50	6.75
Queue Length 95th (ft)	6	0	0	9	0	0	603	Err
Control Delay (s)	9.6	0.0	0.0	11.1	0.0	0.0	764.2	Err
Lane LOS	A			B			F	F
Approach Delay (s)	0.5			1.0			764.2	Err
Approach LOS							F	F

Intersection Summary			
Average Delay	920.9		
Intersection Capacity Utilization	60.0%	ICU Level of Service	B
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis — Saturday Peak - Alternative 2
7: Main Street & Forest Trail — 10/12/2010

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	15	970	15	15	595	70	15	0	20	145	5	35
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	17	1078	17	17	661	78	17	0	22	161	6	39
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												1
Median type								None			None	
Median storage veh)												
Upstream signal (ft)					793							
pX, platoon unblocked												
vC, conflicting volume	739			1094			1486	1892	547	1328	1861	369
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	739			1094			1486	1892	547	1328	1861	369
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			97			77	100	95	0	92	94
cM capacity (veh/h)	863			633			73	66	481	104	69	628

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	17	719	376	17	441	298	39	206
Volume Left	17	0	0	17	0	0	17	161
Volume Right	0	0	17	0	0	78	22	39
cSH	863	1700	1700	633	1700	1700	142	122
Volume to Capacity	0.02	0.42	0.22	0.03	0.26	0.18	0.27	1.68
Queue Length 95th (ft)	1	0	0	2	0	0	26	386
Control Delay (s)	9.3	0.0	0.0	10.8	0.0	0.0	39.6	402.9
Lane LOS	A			B			E	F
Approach Delay (s)	0.1			0.2			39.6	402.9
Approach LOS							E	F

Intersection Summary			
Average Delay	40.1		
Intersection Capacity Utilization	48.9%	ICU Level of Service	A
Analysis Period (min)	15		

LSC, Inc. (BP) — HCM Unsignalized Intersection Capacity Analysis
Mammoth Lakes (LSC#084870) — Page 7
LSC, Inc.

HCM Unsignalized Intersection Capacity Analysis — Saturday Peak - Alternative 2
8: Main Street & Laurel Mountain Road — 10/12/2010

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	940	140	15	610	80	25
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	1044	156	17	678	89	28
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)				505		
pX, platoon unblocked						
vC, conflicting volume			1200		1494	600
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1200		1494	600
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			97		20	94
cM capacity (veh/h)			577		110	444

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1
Volume Total	696	504	17	339	339	117
Volume Left	0	0	17	0	0	89
Volume Right	0	156	0	0	0	28
cSH	1700	1700	577	1700	1700	135
Volume to Capacity	0.41	0.30	0.03	0.20	0.20	0.87
Queue Length 95th (ft)	0	0	2	0	0	140
Control Delay (s)	0.0	0.0	11.4	0.0	0.0	108.4
Lane LOS			B			F
Approach Delay (s)	0.0		0.3			108.4
Approach LOS						F

Intersection Summary			
Average Delay	6.4		
Intersection Capacity Utilization	43.1%	ICU Level of Service	A
Analysis Period (min)	15		

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HCM Signalized Intersection Capacity Analysis — Saturday Peak - Alternative 2

9: Main Street & Old Mammoth Road — 10/12/2010

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1583	1770	3539	1770	1583
Flt Permitted	1.00	1.00	0.39	1.00	0.95	1.00
Satd. Flow (perm)	3539	1583	719	3539	1770	1583
Volume (vph)	365	510	85	270	280	65
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	406	567	94	300	311	72
RTOR Reduction (vph)	0	393	0	0	0	43
Lane Group Flow (vph)	406	174	94	300	311	29
Turn Type		Perm	pm+pt			Perm
Protected Phases	2		1	6	3	
Permitted Phases		2	6			3
Actuated Green, G (s)	16.6	16.6	25.2	25.2	22.4	22.4
Effective Green, g (s)	17.5	17.5	26.1	26.1	23.0	23.0
Actuated g/C Ratio	0.31	0.31	0.46	0.46	0.40	0.40
Clearance Time (s)	4.9	4.9	4.1	4.9	4.6	4.6
Vehicle Extension (s)	5.2	5.2	2.5	5.2	5.2	5.2
Lane Grp Cap (vph)	1085	485	413	1618	713	638
v/s Ratio Prot	c0.11		c0.02	0.08	c0.18	
v/s Ratio Perm		0.11	0.09			0.02
v/c Ratio	0.37	0.36	0.23	0.19	0.44	0.05
Uniform Delay, d1	15.5	15.4	9.2	9.2	12.4	10.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	1.0	0.2	0.1	1.9	0.1
Delay (s)	16.0	16.4	9.4	9.3	14.3	10.5
Level of Service	B	B	A	A	B	B
Approach Delay (s)	16.3			9.3	13.6	
Approach LOS	B			A	B	

Intersection Summary			
HCM Average Control Delay	14.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	57.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	43.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis — Saturday Peak - Alternative 2

10: Main Street & Sierra Park Boulevard — 10/12/2010

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	10	355	85	40	295	10	40	10	45	10	10	15
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	11	394	94	44	328	11	44	11	50	11	11	17
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)		544										
pX, platoon unblocked				0.95			0.95	0.95	0.95	0.95	0.95	
vC, conflicting volume	339			489			739	892	244	697	933	169
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	339			412			675	835	155	631	879	169
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			96			85	96	94	96	96	98
cM capacity (veh/h)	1217			1088			295	273	821	305	257	845

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	11	263	226	44	219	120	106	39
Volume Left	11	0	0	44	0	0	44	11
Volume Right	0	0	94	0	0	11	50	17
cSH	1217	1700	1700	1088	1700	1700	419	391
Volume to Capacity	0.01	0.15	0.13	0.04	0.13	0.07	0.25	0.10
Queue Length 95th (ft)	1	0	0	3	0	0	25	8
Control Delay (s)	8.0	0.0	0.0	8.4	0.0	0.0	16.5	15.2
Lane LOS	A			A			C	C
Approach Delay (s)	0.2			1.0			16.5	15.2
Approach LOS							C	C

Intersection Summary			
Average Delay	2.7		
Intersection Capacity Utilization	34.5%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis — Saturday Peak - Alternative 2
11: Tavern Road & Old Mammoth Road
10/12/2010

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	10	5	25	5	5	15	30	390	5	10	660	25
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	11	6	28	6	6	17	33	433	6	11	733	28
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)											760	
pX, platoon unblocked												
vC, conflicting volume	1289	1275	747	1289	1286	436	761			439		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1289	1275	747	1289	1286	436	761			439		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	91	97	93	95	96	97	96			99		
cM capacity (veh/h)	128	159	413	123	156	620	851			1121		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	44	28	33	439	11	761
Volume Left	11	6	33	0	11	0
Volume Right	28	17	0	6	0	28
cSH	235	258	851	1700	1121	1700
Volume to Capacity	0.19	0.11	0.04	0.26	0.01	0.45
Queue Length 95th (ft)	17	9	3	0	1	0
Control Delay (s)	23.8	20.6	9.4	0.0	8.2	0.0
Lane LOS	C	C	A		A	
Approach Delay (s)	23.8	20.6	0.7		0.1	
Approach LOS	C	C				

Intersection Summary			
Average Delay	1.5		
Intersection Capacity Utilization	46.3%	ICU Level of Service	A
Analysis Period (min)	15		

LSC, Inc. (BP)
Mammoth Lakes (LSC#084870)
LSC, Inc.

HCM Unsignalized Intersection Capacity Analysis

HCM Unsignalized Intersection Capacity Analysis — Saturday Peak - Alternative 2
12: Sierra Nevada Road & Old Mammoth Road
10/12/2010

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	20	15	80	20	20	30	70	390	5	45	590	45
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	22	17	89	22	22	33	78	433	6	50	656	50
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)								773				
pX, platoon unblocked												
vC, conflicting volume	1414	1375	681	1444	1397	436	706			439		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1414	1375	681	1444	1397	436	706			439		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	74	87	80	69	82	95	91			96		
cM capacity (veh/h)	85	127	451	72	123	620	893			1121		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	128	78	78	439	50	706
Volume Left	22	22	78	0	50	0
Volume Right	89	33	0	6	0	50
cSH	216	143	893	1700	1121	1700
Volume to Capacity	0.59	0.54	0.09	0.26	0.04	0.42
Queue Length 95th (ft)	83	67	7	0	3	0
Control Delay (s)	43.1	56.9	9.4	0.0	8.4	0.0
Lane LOS	E	F	A		A	
Approach Delay (s)	43.1	56.9	1.4		0.6	
Approach LOS	E	F				

Intersection Summary			
Average Delay	7.5		
Intersection Capacity Utilization	55.6%	ICU Level of Service	B
Analysis Period (min)	15		

LSC, Inc. (BP)
Mammoth Lakes (LSC#084870)
LSC, Inc.

HCM Unsignalized Intersection Capacity Analysis

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	60	435	220	70	50	40
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	67	483	244	78	56	44
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	322				658	161
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	322				658	161
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	95				85	95
cM capacity (veh/h)	1234				376	855

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	228	322	163	159	100
Volume Left	67	0	0	0	56
Volume Right	0	0	0	78	44
cSH	1234	1700	1700	1700	500
Volume to Capacity	0.05	0.19	0.10	0.09	0.20
Queue Length 95th (ft)	4	0	0	0	18
Control Delay (s)	2.7	0.0	0.0	0.0	14.0
Lane LOS	A				B
Approach Delay (s)	1.1		0.0		14.0
Approach LOS					B

Intersection Summary			
Average Delay	2.1		
Intersection Capacity Utilization	37.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	0.93		1.00	0.98		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3413		1770	3304		1770	1831		1770	1817	
Flt Permitted	0.35	1.00		0.42	1.00		0.33	1.00		0.41	1.00	
Satd. Flow (perm)	647	3413		781	3304		619	1831		770	1817	
Volume (vph)	140	320	100	35	195	155	55	200	25	330	455	90
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	156	356	111	39	217	172	61	222	28	367	506	100
RTOR Reduction (vph)	0	32	0	0	135	0	0	5	0	0	8	0
Lane Group Flow (vph)	156	435	0	39	254	0	61	245	0	367	598	0
Turn Type	pm+pt			pm+pt			pm+pt			pm+pt		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	24.2	18.4		18.6	15.6		25.2	22.2		40.9	33.8	
Effective Green, g (s)	25.2	19.3		19.6	16.5		26.2	23.1		41.8	34.7	
Actuated g/C Ratio	0.33	0.25		0.26	0.22		0.34	0.30		0.55	0.46	
Clearance Time (s)	4.1	4.9		4.1	4.9		4.1	4.9		4.1	4.9	
Vehicle Extension (s)	2.5	5.0		2.5	5.0		2.5	5.0		2.5	5.0	
Lane Grp Cap (vph)	301	864		241	715		260	555		615	827	
v/s Ratio Prot	c0.04	0.13		0.01	0.08		0.01	0.13		c0.12	c0.33	
v/s Ratio Perm	c0.13			0.04			0.07			0.21		
v/c Ratio	0.52	0.50		0.16	0.36		0.23	0.44		0.60	0.72	
Uniform Delay, d1	19.0	24.3		21.5	25.3		17.2	21.4		10.5	16.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.1	1.0		0.2	0.6		0.3	1.2		1.3	3.9	
Delay (s)	20.2	25.3		21.8	26.0		17.5	22.5		11.8	20.7	
Level of Service	C	C		C	C		B	C		B	C	
Approach Delay (s)		24.0			25.6			21.6			17.4	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM Average Control Delay	21.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	76.2	Sum of lost time (s)	16.0
Intersection Capacity Utilization	65.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis — Saturday Peak - Alternative 2
15: Meridian Boulevard & Old Mammoth Road — 10/12/2010

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3457		1770	3439		1770	1863	1583	1770	1863	1583
Flt Permitted	0.34	1.00		0.17	1.00		0.27	1.00	1.00	0.42	1.00	1.00
Satd. Flow (perm)	626	3457		320	3439		495	1863	1583	783	1863	1583
Volume (vph)	185	685	125	105	365	85	140	275	55	130	350	65
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	206	761	139	117	406	94	156	306	61	144	389	72
RTOR Reduction (vph)	0	17	0	0	22	0	0	0	42	0	0	51
Lane Group Flow (vph)	206	883	0	117	478	0	156	306	19	144	389	21
Turn Type	pm+pt			pm+pt			pm+pt		Perm	pm+pt		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6			8		8	4		4
Actuated Green, G (s)	32.7	24.9		27.7	22.4		27.3	21.8	21.8	25.7	21.0	21.0
Effective Green, g (s)	33.7	25.8		28.7	23.3		28.3	22.7	22.7	26.7	21.9	21.9
Actuated g/C Ratio	0.45	0.35		0.38	0.31		0.38	0.30	0.30	0.36	0.29	0.29
Clearance Time (s)	4.1	4.9		4.1	4.9		4.1	4.9	4.9	4.1	4.9	4.9
Vehicle Extension (s)	2.5	3.7		2.5	3.8		2.5	3.8	3.8	2.5	3.8	3.8
Lane Grp Cap (vph)	403	1194		228	1073		283	566	481	343	546	464
v/s Ratio Prot	c0.05	c0.26		0.04	0.14		c0.04	0.16		0.03	c0.21	
v/s Ratio Perm	0.18			0.16			0.17		0.01	0.12		0.01
v/c Ratio	0.51	0.74		0.51	0.45		0.55	0.54	0.04	0.42	0.71	0.05
Uniform Delay, d1	13.2	21.5		16.2	20.5		16.8	21.7	18.3	17.1	23.6	18.9
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.8	2.6		1.5	0.4		1.9	1.3	0.0	0.6	4.6	0.1
Delay (s)	14.0	24.1		17.6	20.9		18.7	22.9	18.4	17.7	28.2	19.0
Level of Service	B	C		B	C		B	C	B	B	C	B
Approach Delay (s)		22.2			20.3			21.1			24.6	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	22.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	74.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	68.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis — Saturday Peak - Alternative 2
16: Meridian Boulevard & Sierra Park Road — 10/12/2010

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	50	150	5	5	145	15	25	5	5	15	5	75
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	56	167	6	6	161	17	28	6	6	17	6	83

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total (vph)	139	89	86	97	39	106
Volume Left (vph)	56	0	6	0	28	17
Volume Right (vph)	0	6	0	17	6	83
Hadj (s)	0.23	-0.01	0.07	-0.09	0.09	-0.41
Departure Headway (s)	5.3	5.0	5.1	5.0	5.1	4.5
Degree Utilization, x	0.20	0.12	0.12	0.13	0.05	0.13
Capacity (veh/h)	664	690	669	692	653	737
Control Delay (s)	8.4	7.5	7.7	7.6	8.4	8.2
Approach Delay (s)	8.1		7.6		8.4	8.2
Approach LOS	A		A		A	A

Intersection Summary			
Delay	8.0		
HCM Level of Service	A		
Intersection Capacity Utilization	26.9%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis — Saturday Peak - Alternative 2
17: Chateau Road & Old Mammoth Road — 10/12/2010

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	30	30	10	10	20	55	10	285	10	95	345	70
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	33	33	11	11	22	61	11	317	11	106	383	78
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)											1037	
pX, platoon unblocked												
vC, conflicting volume	1044	983	422	967	1017	322	461			328		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1044	983	422	967	1017	322	461			328		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	79	85	98	94	90	91	99			91		
cM capacity (veh/h)	162	225	631	189	215	719	1100			1232		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	78	94	11	328	106	461
Volume Left	33	11	11	0	106	0
Volume Right	11	61	0	11	0	78
cSH	209	382	1100	1700	1232	1700
Volume to Capacity	0.37	0.25	0.01	0.19	0.09	0.27
Queue Length 95th (ft)	40	24	1	0	7	0
Control Delay (s)	32.0	17.5	8.3	0.0	8.2	0.0
Lane LOS	D	C	A		A	
Approach Delay (s)	32.0	17.5	0.3		1.5	
Approach LOS	D	C				

Intersection Summary				
Average Delay	4.7			
Intersection Capacity Utilization	45.8%	ICU Level of Service		A
Analysis Period (min)	15			

HCM Unsignalized Intersection Capacity Analysis — Saturday Peak - Alternative 2
18: Old Mammoth Road & Minaret Road — 10/12/2010

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	105	160	40	125	180	90	20	65	85	95	145	195
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	117	178	44	139	200	100	22	72	94	106	161	217
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									2			
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	300			222			1208	1011	200	1022	983	250
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	300			222			1208	1011	200	1022	983	250
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	91			90			36	63	89	10	20	73
cM capacity (veh/h)	1261			1347			35	195	841	117	202	789

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1	SB 2
Volume Total	117	222	139	300	189	106	378
Volume Left	117	0	139	0	22	106	0
Volume Right	0	44	0	100	94	0	217
cSH	1261	1700	1347	1700	266	117	353
Volume to Capacity	0.09	0.13	0.10	0.18	0.71	0.90	1.07
Queue Length 95th (ft)	8	0	9	0	122	140	339
Control Delay (s)	8.1	0.0	8.0	0.0	46.0	126.9	103.0
Lane LOS	A		A		E	F	F
Approach Delay (s)	2.8		2.5		46.0	108.3	
Approach LOS					E	F	

Intersection Summary				
Average Delay	43.5			
Intersection Capacity Utilization	51.6%	ICU Level of Service		A
Analysis Period (min)	15			

Future - Alternative 3
LOS Reports

HCM Unsignalized Intersection Capacity Analysis — Saturday Peak - Alternative 3
1: Forest Trail & Minaret Road — 10/12/2010

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	20	35	100	20	20	15	75	190	35	90	735	110
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	22	39	111	22	22	17	83	211	39	100	817	122
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1503	1494	878	1606	1536	231	939			250		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1503	1494	878	1606	1536	231	939			250		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	68	61	68	37	77	98	89			92		
cM capacity (veh/h)	69	101	347	35	95	809	730			1316		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	172	61	333	1039
Volume Left	22	22	83	100
Volume Right	111	17	39	122
cSH	168	69	730	1316
Volume to Capacity	1.03	0.89	0.11	0.08
Queue Length 95th (ft)	208	108	10	6
Control Delay (s)	132.1	179.2	3.7	2.0
Lane LOS	F	F	A	A
Approach Delay (s)	132.1	179.2	3.7	2.0
Approach LOS	F	F		

Intersection Summary			
Average Delay	23.0		
Intersection Capacity Utilization	71.5%	ICU Level of Service	C
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis — Saturday Peak - Alternative 3
2: Lake Mary Road & Davidson — 10/12/2010

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			↰	↱		✣	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	100	15	85	100	45	10	0	70	65	0	5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	111	17	94	111	50	11	0	78	72	0	6
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									2			
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	161			128			450	469	119	483	453	136
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	161			128			450	469	119	483	453	136
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			94			98	100	92	83	100	99
cM capacity (veh/h)	1418			1458			491	460	932	430	470	913

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	128	256	89	78
Volume Left	0	94	11	72
Volume Right	17	50	78	6
cSH	1418	1458	1065	447
Volume to Capacity	0.00	0.06	0.08	0.17
Queue Length 95th (ft)	0	5	7	16
Control Delay (s)	0.0	3.2	9.6	14.7
Lane LOS		A	A	B
Approach Delay (s)	0.0	3.2	9.6	14.7
Approach LOS			A	B

Intersection Summary			
Average Delay	5.1		
Intersection Capacity Utilization	36.6%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis — Saturday Peak - Alternative 3
3: Lake Mary Road & Canyon Boulevard
10/12/2010

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.97	
Frt	1.00	1.00	1.00	0.85	1.00	
Flt Protected	0.95	1.00	1.00	1.00	0.95	
Satd. Flow (prot)	1770	1863	1863	1583	3431	
Flt Permitted	0.59	1.00	1.00	1.00	0.95	
Satd. Flow (perm)	1108	1863	1863	1583	3431	
Volume (vph)	20	210	240	240	505	15
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	22	233	267	267	561	17
RTOR Reduction (vph)	0	0	0	115	6	0
Lane Group Flow (vph)	22	233	267	152	572	0
Turn Type	Perm			Perm		
Protected Phases		2	6		4	
Permitted Phases	2			6		
Actuated Green, G (s)	25.0	25.0	25.0	25.0	11.3	
Effective Green, g (s)	25.6	25.6	25.6	25.6	11.4	
Actuated g/C Ratio	0.57	0.57	0.57	0.57	0.25	
Clearance Time (s)	4.6	4.6	4.6	4.6	4.1	
Vehicle Extension (s)	6.1	6.1	6.1	6.1	2.0	
Lane Grp Cap (vph)	630	1060	1060	901	869	
v/s Ratio Prot		0.13	c0.14		c0.17	
v/s Ratio Perm	0.02			0.10		
v/c Ratio	0.03	0.22	0.25	0.17	0.66	
Uniform Delay, d1	4.3	4.8	4.9	4.6	15.1	
Progression Factor	1.00	1.00	0.43	0.83	1.00	
Incremental Delay, d2	0.1	0.5	0.4	0.3	1.4	
Delay (s)	4.4	5.3	2.5	4.2	16.4	
Level of Service	A	A	A	A	B	
Approach Delay (s)		5.2	3.3		16.4	
Approach LOS		A	A		B	

Intersection Summary			
HCM Average Control Delay	9.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	45.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	38.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis — Saturday Peak - Alternative 3
4: Lake Mary Road & Minaret Road
10/12/2010

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.90	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	3433	1672	
Flt Permitted	0.37	1.00	1.00	0.31	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	686	3539	1583	581	3539	1583	1770	1863	1583	3433	1672	
Volume (vph)	115	445	160	80	345	145	395	315	95	545	65	140
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	128	494	178	89	383	161	439	350	106	606	72	156
RTOR Reduction (vph)	0	0	81	0	0	126	0	0	73	0	86	0
Lane Group Flow (vph)	128	494	97	89	383	35	439	350	33	606	142	0
Turn Type	pm+pt		Perm	pm+pt		Perm	Split		Perm	Split		
Protected Phases	5	2		1	6		8	8		7	7	
Permitted Phases	2		2	6		6			8			
Actuated Green, G (s)	25.6	19.6	19.6	23.2	18.4	18.4	27.1	27.1	27.1	20.0	20.0	
Effective Green, g (s)	26.6	20.5	20.5	24.2	19.3	19.3	28.0	28.0	28.0	20.6	20.6	
Actuated g/C Ratio	0.30	0.23	0.23	0.27	0.21	0.21	0.31	0.31	0.31	0.23	0.23	
Clearance Time (s)	4.1	4.9	4.9	4.1	4.9	4.9	4.9	4.9	4.9	4.6	4.6	
Vehicle Extension (s)	2.5	4.7	4.7	2.5	4.6	4.6	5.2	5.2	5.2	6.2	6.2	
Lane Grp Cap (vph)	276	806	361	221	759	339	551	580	492	786	383	
v/s Ratio Prot	c0.03	c0.14		0.02	0.11		c0.25	0.19		c0.18	0.08	
v/s Ratio Perm	0.11		0.06	0.09		0.02			0.02			
v/c Ratio	0.46	0.61	0.27	0.40	0.50	0.10	0.80	0.60	0.07	0.77	0.37	
Uniform Delay, d1	24.3	31.2	28.6	25.6	31.1	28.4	28.4	26.3	21.8	32.5	29.2	
Progression Factor	0.82	0.83	0.87	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.8	3.0	1.6	0.9	2.4	0.6	11.4	4.6	0.3	7.2	2.7	
Delay (s)	20.8	28.9	26.4	26.5	33.5	29.0	39.8	30.9	22.1	39.7	32.0	
Level of Service	C	C	C	C	C	C	D	C	C	D	C	
Approach Delay (s)		27.1			31.4			34.2			37.6	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM Average Control Delay	32.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	64.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis — Saturday Peak - Alternative 3

5: Main Street & Mountain Boulevard — 10/12/2010

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	25	1215	65	25	570	85	10	25	20	60	15	60
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	28	1350	72	28	633	94	11	28	22	67	17	67
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	728			1422			1889	2225	711	1503	2214	364
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	728			1422			1889	2225	711	1503	2214	364
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			94			54	29	94	0	58	89
cM capacity (veh/h)	872			475			24	39	375	31	39	633

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	703	747	344	411	61	150
Volume Left	28	0	28	0	11	67
Volume Right	0	72	0	94	22	67
cSH	872	1700	475	1700	49	56
Volume to Capacity	0.03	0.44	0.06	0.24	1.23	2.67
Queue Length 95th (ft)	2	0	5	0	139	384
Control Delay (s)	0.8	0.0	1.9	0.0	338.3	910.4
Lane LOS	A		A		F	F
Approach Delay (s)	0.4		0.9		338.3	910.4
Approach LOS					F	F

Intersection Summary			
Average Delay	65.6		
Intersection Capacity Utilization	74.7%	ICU Level of Service	D
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis — Saturday Peak - Alternative 3

6: Main Street & Center Street — 10/12/2010

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	70	940	95	40	635	55	40	10	90	40	0	35
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	78	1044	106	44	706	61	44	11	100	44	0	39
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)					1207							
pX, platoon unblocked												
vC, conflicting volume	767			1150			1733	2108	575	1608	2131	383
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	767			1150			1733	2108	575	1608	2131	383
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	91			93			4	74	78	0	100	94
cM capacity (veh/h)	843			603			46	43	461	39	41	615

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	78	696	454	44	470	296	156	83
Volume Left	78	0	0	44	0	0	44	44
Volume Right	0	0	106	0	0	61	100	39
cSH	843	1700	1700	603	1700	1700	108	69
Volume to Capacity	0.09	0.41	0.27	0.07	0.28	0.17	1.44	1.21
Queue Length 95th (ft)	8	0	0	6	0	0	279	165
Control Delay (s)	9.7	0.0	0.0	11.4	0.0	0.0	313.9	282.0
Lane LOS	A			B			F	F
Approach Delay (s)	0.6			0.6			313.9	282.0
Approach LOS							F	F

Intersection Summary			
Average Delay	32.3		
Intersection Capacity Utilization	51.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	20	1055	15	15	650	65	15	0	20	130	5	35
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	22	1172	17	17	722	72	17	0	22	144	6	39
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												1
Median type								None			None	
Median storage veh)												
Upstream signal (ft)					793							
pX, platoon unblocked												
vC, conflicting volume	794			1189			1622	2053	594	1444	2025	397
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	794			1189			1622	2053	594	1444	2025	397
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			97			70	100	95	0	90	94
cM capacity (veh/h)	823			583			56	52	448	84	54	602

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	22	781	407	17	481	313	39	189
Volume Left	22	0	0	17	0	0	17	144
Volume Right	0	0	17	0	0	72	22	39
cSH	823	1700	1700	583	1700	1700	113	101
Volume to Capacity	0.03	0.46	0.24	0.03	0.28	0.18	0.35	1.88
Queue Length 95th (ft)	2	0	0	2	0	0	34	389
Control Delay (s)	9.5	0.0	0.0	11.4	0.0	0.0	52.9	500.1
Lane LOS	A			B			F	F
Approach Delay (s)	0.2			0.2			52.9	500.1
Approach LOS							F	F

Intersection Summary			
Average Delay	43.1		
Intersection Capacity Utilization	50.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	945	150	15	615	85	25
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	1050	167	17	683	94	28
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)				505		
pX, platoon unblocked						
vC, conflicting volume			1217		1508	608
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1217		1508	608
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			97		13	94
cM capacity (veh/h)			569		108	439

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1
Volume Total	700	517	17	342	342	122
Volume Left	0	0	17	0	0	94
Volume Right	0	167	0	0	0	28
cSH	1700	1700	569	1700	1700	130
Volume to Capacity	0.41	0.30	0.03	0.20	0.20	0.94
Queue Length 95th (ft)	0	0	2	0	0	157
Control Delay (s)	0.0	0.0	11.5	0.0	0.0	127.2
Lane LOS			B			F
Approach Delay (s)	0.0		0.3			127.2
Approach LOS						F

Intersection Summary			
Average Delay	7.7		
Intersection Capacity Utilization	43.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↱	↰	↑↑	↰	↱
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1583	1770	3539	1770	1583
Flt Permitted	1.00	1.00	0.39	1.00	0.95	1.00
Satd. Flow (perm)	3539	1583	728	3539	1770	1583
Volume (vph)	360	490	85	265	270	65
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	400	544	94	294	300	72
RTOR Reduction (vph)	0	377	0	0	0	43
Lane Group Flow (vph)	400	167	94	294	300	29
Turn Type		Perm	pm+pt			Perm
Protected Phases	2		1	6	3	
Permitted Phases		2	6			3
Actuated Green, G (s)	16.6	16.6	25.2	25.2	22.3	22.3
Effective Green, g (s)	17.5	17.5	26.1	26.1	22.9	22.9
Actuated g/C Ratio	0.31	0.31	0.46	0.46	0.40	0.40
Clearance Time (s)	4.9	4.9	4.1	4.9	4.6	4.6
Vehicle Extension (s)	5.2	5.2	2.5	5.2	5.2	5.2
Lane Grp Cap (vph)	1087	486	417	1620	711	636
v/s Ratio Prot	c0.11		c0.02	0.08	c0.17	
v/s Ratio Perm		0.11	0.08			0.02
v/c Ratio	0.37	0.34	0.23	0.18	0.42	0.05
Uniform Delay, d1	15.4	15.3	9.1	9.1	12.3	10.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	1.0	0.2	0.1	1.8	0.1
Delay (s)	15.9	16.3	9.3	9.3	14.1	10.5
Level of Service	B	B	A	A	B	B
Approach Delay (s)	16.1			9.3	13.4	
Approach LOS	B			A	B	

Intersection Summary			
HCM Average Control Delay	14.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	57.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	42.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↱		↰	↑↱			✣			✣	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	10	350	85	40	290	10	40	10	45	10	10	15
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	11	389	94	44	322	11	44	11	50	11	11	17
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)		544										
pX, platoon unblocked				0.95			0.95	0.95	0.95	0.95	0.95	
vC, conflicting volume	333			483			731	881	242	689	922	167
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	333			411			670	827	157	626	871	167
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			96			85	96	94	96	96	98
cM capacity (veh/h)	1223			1092			299	277	821	308	261	848

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	11	259	224	44	215	119	106	39
Volume Left	11	0	0	44	0	0	44	11
Volume Right	0	0	94	0	0	11	50	17
cSH	1223	1700	1700	1092	1700	1700	422	396
Volume to Capacity	0.01	0.15	0.13	0.04	0.13	0.07	0.25	0.10
Queue Length 95th (ft)	1	0	0	3	0	0	24	8
Control Delay (s)	8.0	0.0	0.0	8.4	0.0	0.0	16.3	15.1
Lane LOS	A			A			C	C
Approach Delay (s)	0.2			1.0			16.3	15.1
Approach LOS							C	C

Intersection Summary			
Average Delay	2.7		
Intersection Capacity Utilization	34.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥		↰	↱		↰	↱	
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	20	5	35	5	5	15	45	365	5	10	650	35
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	22	6	39	6	6	17	50	406	6	11	722	39
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)											760	
pX, platoon unblocked												
vC, conflicting volume	1289	1275	742	1294	1292	408	761			411		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1289	1275	742	1294	1292	408	761			411		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	82	96	91	95	96	97	94			99		
cM capacity (veh/h)	126	156	416	117	152	643	851			1148		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	67	28	50	411	11	761
Volume Left	22	6	50	0	11	0
Volume Right	39	17	0	6	0	39
cSH	218	252	851	1700	1148	1700
Volume to Capacity	0.31	0.11	0.06	0.24	0.01	0.45
Queue Length 95th (ft)	31	9	5	0	1	0
Control Delay (s)	28.6	21.0	9.5	0.0	8.2	0.0
Lane LOS	D	C	A		A	
Approach Delay (s)	28.6	21.0	1.0		0.1	
Approach LOS	D	C				

Intersection Summary			
Average Delay	2.3		
Intersection Capacity Utilization	49.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥		↰	↱		↰	↱	
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	20	15	80	20	20	30	70	385	5	45	595	45
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	22	17	89	22	22	33	78	428	6	50	661	50
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)								773				
pX, platoon unblocked												
vC, conflicting volume	1414	1375	686	1444	1397	431	711			433		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1414	1375	686	1444	1397	431	711			433		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	74	87	80	69	82	95	91			96		
cM capacity (veh/h)	85	127	447	71	123	625	888			1126		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	128	78	78	433	50	711
Volume Left	22	22	78	0	50	0
Volume Right	89	33	0	6	0	50
cSH	216	143	888	1700	1126	1700
Volume to Capacity	0.59	0.55	0.09	0.25	0.04	0.42
Queue Length 95th (ft)	83	67	7	0	3	0
Control Delay (s)	43.3	57.0	9.4	0.0	8.3	0.0
Lane LOS	E	F	A		A	
Approach Delay (s)	43.3	57.0	1.4		0.5	
Approach LOS	E	F				

Intersection Summary			
Average Delay	7.5		
Intersection Capacity Utilization	55.9%	ICU Level of Service	B
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis | Saturday Peak - Alternative 3
13: Meridian Boulevard & Majestic Pines Drive | 10/12/2010

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	60	435	220	70	50	40
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	67	483	244	78	56	44
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	322				658	161
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	322				658	161
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	95				85	95
cM capacity (veh/h)	1234				376	855

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	228	322	163	159	100
Volume Left	67	0	0	0	56
Volume Right	0	0	0	78	44
cSH	1234	1700	1700	1700	500
Volume to Capacity	0.05	0.19	0.10	0.09	0.20
Queue Length 95th (ft)	4	0	0	0	18
Control Delay (s)	2.7	0.0	0.0	0.0	14.0
Lane LOS	A				B
Approach Delay (s)	1.1		0.0		14.0
Approach LOS					B

Intersection Summary			
Average Delay	2.1		
Intersection Capacity Utilization	37.3%	ICU Level of Service	A
Analysis Period (min)	15		

LSC, Inc. (BP) | HCM Unsignalized Intersection Capacity Analysis
Mammoth Lakes (LSC#084870) | Page 13
LSC, Inc.

HCM Signalized Intersection Capacity Analysis | Saturday Peak - Alternative 3
14: Meridian Boulevard & Minaret Road | 10/12/2010

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	0.93		1.00	0.98		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3411		1770	3305		1770	1830		1770	1816	
Flt Permitted	0.36	1.00		0.43	1.00		0.33	1.00		0.43	1.00	
Satd. Flow (perm)	668	3411		796	3305		620	1830		799	1816	
Volume (vph)	140	315	100	35	190	150	55	190	25	320	450	90
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	156	350	111	39	211	167	61	211	28	356	500	100
RTOR Reduction (vph)	0	33	0	0	131	0	0	5	0	0	8	0
Lane Group Flow (vph)	156	428	0	39	247	0	61	234	0	356	592	0
Turn Type	pm+pt			pm+pt			pm+pt			pm+pt		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	24.2	18.4		18.6	15.6		25.3	22.3		40.6	33.5	
Effective Green, g (s)	25.2	19.3		19.6	16.5		26.3	23.2		41.5	34.4	
Actuated g/C Ratio	0.33	0.25		0.26	0.22		0.35	0.31		0.55	0.45	
Clearance Time (s)	4.1	4.9		4.1	4.9		4.1	4.9		4.1	4.9	
Vehicle Extension (s)	2.5	5.0		2.5	5.0		2.5	5.0		2.5	5.0	
Lane Grp Cap (vph)	307	867		245	718		262	559		620	823	
v/s Ratio Prot	c0.04	0.13		0.01	0.07		0.01	0.13		c0.11	c0.33	
v/s Ratio Perm	c0.13			0.03			0.07			0.21		
v/c Ratio	0.51	0.49		0.16	0.34		0.23	0.42		0.57	0.72	
Uniform Delay, d1	18.9	24.1		21.4	25.1		17.0	21.0		10.4	16.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.0	0.9		0.2	0.6		0.3	1.1		1.1	3.8	
Delay (s)	19.8	25.1		21.6	25.7		17.3	22.0		11.4	20.6	
Level of Service	B	C		C	C		B	C		B	C	
Approach Delay (s)		23.7			25.3			21.1			17.2	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM Average Control Delay	20.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	75.9	Sum of lost time (s)	16.0
Intersection Capacity Utilization	65.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

LSC, Inc. (BP) | HCM Signalized Intersection Capacity Analysis
Mammoth Lakes (LSC#084870) | Page 14
LSC, Inc.

HCM Signalized Intersection Capacity Analysis — Saturday Peak - Alternative 3
15: Meridian Boulevard & Old Mammoth Road — 10/12/2010

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3461		1770	3448		1770	1863	1583	1770	1863	1583
Flt Permitted	0.35	1.00		0.18	1.00		0.32	1.00	1.00	0.49	1.00	1.00
Satd. Flow (perm)	660	3461		337	3448		597	1863	1583	920	1863	1583
Volume (vph)	175	670	115	105	360	75	130	230	50	120	310	55
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	194	744	128	117	400	83	144	256	56	133	344	61
RTOR Reduction (vph)	0	16	0	0	19	0	0	0	39	0	0	44
Lane Group Flow (vph)	194	856	0	117	464	0	144	256	17	133	344	17
Turn Type	pm+pt			pm+pt			pm+pt		Perm	pm+pt		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6			8		8	4		4
Actuated Green, G (s)	31.7	24.2		27.3	22.0		26.2	20.7	20.7	24.6	19.9	19.9
Effective Green, g (s)	32.7	25.1		28.3	22.9		27.2	21.6	21.6	25.6	20.8	20.8
Actuated g/C Ratio	0.45	0.34		0.39	0.31		0.37	0.30	0.30	0.35	0.29	0.29
Clearance Time (s)	4.1	4.9		4.1	4.9		4.1	4.9	4.9	4.1	4.9	4.9
Vehicle Extension (s)	2.5	3.7		2.5	3.8		2.5	3.8	3.8	2.5	3.8	3.8
Lane Grp Cap (vph)	412	1192		237	1083		313	552	469	379	532	452
v/s Ratio Prot	c0.05	c0.25		0.04	0.13		c0.04	0.14		0.02	c0.18	
v/s Ratio Perm	0.16			0.15			0.14		0.01	0.10		0.01
v/c Ratio	0.47	0.72		0.49	0.43		0.46	0.46	0.04	0.35	0.65	0.04
Uniform Delay, d1	12.8	20.8		15.5	19.8		16.3	20.9	18.2	16.7	22.8	18.8
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	2.2		1.2	0.4		0.8	0.8	0.0	0.4	2.9	0.0
Delay (s)	13.4	23.0		16.7	20.2		17.0	21.7	18.3	17.1	25.8	18.9
Level of Service	B	C		B	C		B	C	B	B	C	B
Approach Delay (s)		21.3			19.5			19.8			22.8	
Approach LOS		C			B			B			C	

Intersection Summary			
HCM Average Control Delay	20.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	72.9	Sum of lost time (s)	16.0
Intersection Capacity Utilization	64.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

LSC, Inc. (BP) — HCM Signalized Intersection Capacity Analysis
Mammoth Lakes (LSC#084870) — Page 15
LSC, Inc.

HCM Unsignalized Intersection Capacity Analysis — Saturday Peak - Alternative 3
16: Meridian Boulevard & Sierra Park Road — 10/12/2010

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	45	145	5	5	140	15	25	5	5	15	5	75
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	50	161	6	6	156	17	28	6	6	17	6	83

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total (vph)	131	86	83	94	39	106
Volume Left (vph)	50	0	6	0	28	17
Volume Right (vph)	0	6	0	17	6	83
Hadj (s)	0.23	-0.01	0.07	-0.09	0.09	-0.41
Departure Headway (s)	5.2	5.0	5.1	5.0	5.0	4.5
Degree Utilization, x	0.19	0.12	0.12	0.13	0.05	0.13
Capacity (veh/h)	666	692	671	695	659	744
Control Delay (s)	8.3	7.5	7.6	7.5	8.3	8.1
Approach Delay (s)	8.0		7.6		8.3	8.1
Approach LOS	A		A		A	A

Intersection Summary			
Delay	7.9		
HCM Level of Service	A		
Intersection Capacity Utilization	26.5%	ICU Level of Service	A
Analysis Period (min)	15		

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HCM Unsignalized Intersection Capacity Analysis — Saturday Peak - Alternative 3
17: Chateau Road & Old Mammoth Road — 10/12/2010

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	30	30	10	10	20	55	10	275	10	95	335	70
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	33	33	11	11	22	61	11	306	11	106	372	78
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)											1037	
pX, platoon unblocked												
vC, conflicting volume	1022	961	411	944	994	311	450			317		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1022	961	411	944	994	311	450			317		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	80	86	98	94	90	92	99			92		
cM capacity (veh/h)	168	232	641	197	222	729	1110			1243		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	78	94	11	317	106	450
Volume Left	33	11	11	0	106	0
Volume Right	11	61	0	11	0	78
cSH	217	393	1110	1700	1243	1700
Volume to Capacity	0.36	0.24	0.01	0.19	0.08	0.26
Queue Length 95th (ft)	39	23	1	0	7	0
Control Delay (s)	30.6	17.0	8.3	0.0	8.2	0.0
Lane LOS	D	C	A		A	
Approach Delay (s)	30.6	17.0	0.3		1.6	
Approach LOS	D	C				

Intersection Summary			
Average Delay	4.7		
Intersection Capacity Utilization	45.3%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis — Saturday Peak - Alternative 3
18: Old Mammoth Road & Minaret Road — 10/12/2010

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	105	160	45	135	185	90	20	65	90	100	155	200
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	117	178	50	150	206	100	22	72	100	111	172	222
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									2			
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	306			228			1250	1042	203	1053	1017	256
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	306			228			1250	1042	203	1053	1017	256
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	91			89			0	61	88	0	10	72
cM capacity (veh/h)	1255			1340			21	185	838	108	191	783

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1	SB 2
Volume Total	117	228	150	306	194	111	394
Volume Left	117	0	150	0	22	111	0
Volume Right	0	50	0	100	100	0	222
cSH	1255	1700	1340	1700	243	108	333
Volume to Capacity	0.09	0.13	0.11	0.18	0.80	1.03	1.18
Queue Length 95th (ft)	8	0	9	0	151	167	414
Control Delay (s)	8.2	0.0	8.0	0.0	60.9	170.1	143.4
Lane LOS	A		A		F	F	F
Approach Delay (s)	2.8		2.6		60.9	149.3	
Approach LOS					F	F	

Intersection Summary			
Average Delay	59.6		
Intersection Capacity Utilization	51.9%	ICU Level of Service	A
Analysis Period (min)	15		

Future - Alternative 4
LOS Reports

HCM Unsignalized Intersection Capacity Analysis — Saturday Peak - Alternative 4

1: Forest Trail & Minaret Road — 10/12/2010

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	20	30	95	20	20	15	75	185	35	85	720	105
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	22	33	106	22	22	17	83	206	39	94	800	117
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1467	1458	858	1561	1497	225	917			244		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1467	1458	858	1561	1497	225	917			244		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	70	69	70	48	78	98	89			93		
cM capacity (veh/h)	75	107	356	42	101	814	744			1322		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	161	61	328	1011
Volume Left	22	22	83	94
Volume Right	106	17	39	117
cSH	178	80	744	1322
Volume to Capacity	0.91	0.77	0.11	0.07
Queue Length 95th (ft)	170	94	9	6
Control Delay (s)	97.1	132.6	3.7	1.9
Lane LOS	F	F	A	A
Approach Delay (s)	97.1	132.6	3.7	1.9
Approach LOS	F	F		

Intersection Summary			
Average Delay	17.2		
Intersection Capacity Utilization	69.2%	ICU Level of Service	C
Analysis Period (min)	15		

LSC, Inc. (BP)
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HCM Unsignalized Intersection Capacity Analysis
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HCM Unsignalized Intersection Capacity Analysis — Saturday Peak - Alternative 4

2: Lake Mary Road & Davidson — 10/12/2010

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	100	15	85	100	45	10	0	70	70	0	5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	111	17	94	111	50	11	0	78	78	0	6
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									2			
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	161			128			450	469	119	483	453	136
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	161			128			450	469	119	483	453	136
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			94			98	100	92	82	100	99
cM capacity (veh/h)	1418			1458			491	460	932	430	470	913

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	128	256	89	83
Volume Left	0	94	11	78
Volume Right	17	50	78	6
cSH	1418	1458	1065	446
Volume to Capacity	0.00	0.06	0.08	0.19
Queue Length 95th (ft)	0	5	7	17
Control Delay (s)	0.0	3.2	9.6	14.9
Lane LOS		A	A	B
Approach Delay (s)	0.0	3.2	9.6	14.9
Approach LOS			A	B

Intersection Summary			
Average Delay	5.2		
Intersection Capacity Utilization	36.9%	ICU Level of Service	A
Analysis Period (min)	15		

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HCM Unsignalized Intersection Capacity Analysis
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HCM Signalized Intersection Capacity Analysis — Saturday Peak - Alternative 4
3: Lake Mary Road & Canyon Boulevard — 10/12/2010

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.97	
Frt	1.00	1.00	1.00	0.85	1.00	
Flt Protected	0.95	1.00	1.00	1.00	0.95	
Satd. Flow (prot)	1770	1863	1863	1583	3432	
Flt Permitted	0.59	1.00	1.00	1.00	0.95	
Satd. Flow (perm)	1092	1863	1863	1583	3432	
Volume (vph)	25	220	255	255	535	15
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	28	244	283	283	594	17
RTOR Reduction (vph)	0	0	0	124	6	0
Lane Group Flow (vph)	28	244	283	159	605	0
Turn Type	Perm			Perm		
Protected Phases		2	6		4	
Permitted Phases	2			6		
Actuated Green, G (s)	24.7	24.7	24.7	24.7	11.6	
Effective Green, g (s)	25.3	25.3	25.3	25.3	11.7	
Actuated g/C Ratio	0.56	0.56	0.56	0.56	0.26	
Clearance Time (s)	4.6	4.6	4.6	4.6	4.1	
Vehicle Extension (s)	6.1	6.1	6.1	6.1	2.0	
Lane Grp Cap (vph)	614	1047	1047	890	892	
v/s Ratio Prot		0.13	c0.15		c0.18	
v/s Ratio Perm	0.03			0.10		
v/c Ratio	0.05	0.23	0.27	0.18	0.68	
Uniform Delay, d1	4.4	5.0	5.1	4.8	15.0	
Progression Factor	1.00	1.00	0.45	0.85	1.00	
Incremental Delay, d2	0.1	0.5	0.5	0.3	1.6	
Delay (s)	4.6	5.5	2.8	4.4	16.6	
Level of Service	A	A	A	A	B	
Approach Delay (s)		5.4	3.6		16.6	
Approach LOS		A	A		B	

Intersection Summary			
HCM Average Control Delay	9.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	45.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	43.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

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HCM Signalized Intersection Capacity Analysis
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HCM Signalized Intersection Capacity Analysis — Saturday Peak - Alternative 4
4: Lake Mary Road & Minaret Road — 10/12/2010

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.90	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	3433	1675	
Flt Permitted	0.36	1.00	1.00	0.29	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	665	3539	1583	539	3539	1583	1770	1863	1583	3433	1675	
Volume (vph)	120	465	175	85	355	145	430	315	100	545	70	145
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	133	517	194	94	394	161	478	350	111	606	78	161
RTOR Reduction (vph)	0	0	84	0	0	126	0	0	76	0	83	0
Lane Group Flow (vph)	133	517	110	94	394	35	478	350	35	606	156	0
Turn Type	pm+pt		Perm	pm+pt		Perm	Split		Perm	Split		
Protected Phases	5	2		1	6		8	8		7	7	
Permitted Phases	2		2	6		6			8			
Actuated Green, G (s)	25.6	19.6	19.6	23.2	18.4	18.4	27.1	27.1	27.1	20.0	20.0	
Effective Green, g (s)	26.6	20.5	20.5	24.2	19.3	19.3	28.0	28.0	28.0	20.6	20.6	
Actuated g/C Ratio	0.30	0.23	0.23	0.27	0.21	0.21	0.31	0.31	0.31	0.23	0.23	
Clearance Time (s)	4.1	4.9	4.9	4.1	4.9	4.9	4.9	4.9	4.9	4.6	4.6	
Vehicle Extension (s)	2.5	4.7	4.7	2.5	4.6	4.6	5.2	5.2	5.2	6.2	6.2	
Lane Grp Cap (vph)	271	806	361	212	759	339	551	580	492	786	383	
v/s Ratio Prot	c0.03	c0.15		0.02	0.11		c0.27	0.19		c0.18	0.09	
v/s Ratio Perm	0.11		0.07	0.10		0.02			0.02			
v/c Ratio	0.49	0.64	0.30	0.44	0.52	0.10	0.87	0.60	0.07	0.77	0.41	
Uniform Delay, d1	24.4	31.4	28.8	25.7	31.2	28.4	29.2	26.3	21.8	32.5	29.5	
Progression Factor	0.82	0.84	0.86	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.9	3.3	1.8	1.1	2.5	0.6	16.7	4.6	0.3	7.2	3.2	
Delay (s)	21.0	29.6	26.5	26.8	33.8	29.0	46.0	30.9	22.1	39.7	32.7	
Level of Service	C	C	C	C	C	C	D	C	C	D	C	
Approach Delay (s)		27.5			31.6			37.5			37.7	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM Average Control Delay	33.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	67.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

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HCM Signalized Intersection Capacity Analysis
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HCM Unsignalized Intersection Capacity Analysis — Saturday Peak - Alternative 4

5: Main Street & Mountain Boulevard

10/12/2010

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	30	1330	70	30	620	95	10	25	20	65	20	65
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	33	1478	78	33	689	106	11	28	22	72	22	72
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	794			1556			2078	2444	778	1650	2431	397
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	794			1556			2078	2444	778	1650	2431	397
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	96			92			0	0	93	0	20	88
cM capacity (veh/h)	823			422			8	27	339	0	28	602

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	772	817	378	450	61	167
Volume Left	33	0	33	0	11	72
Volume Right	0	78	0	106	22	72
cSH	823	1700	422	1700	25	0
Volume to Capacity	0.04	0.48	0.08	0.26	2.40	Err
Queue Length 95th (ft)	3	0	6	0	188	Err
Control Delay (s)	1.1	0.0	2.5	0.0	962.2	Err
Lane LOS	A		A		F	F
Approach Delay (s)	0.5		1.2		962.2	Err
Approach LOS					F	F

Intersection Summary			
Average Delay	Err		
Intersection Capacity Utilization	82.5%	ICU Level of Service	E
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis — Saturday Peak - Alternative 4

6: Main Street & Center Street

10/12/2010

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	75	1055	0	95	45	715	45	10	95	45	0	35
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	83	1172	0	106	50	794	50	11	106	50	0	39
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)					1207							
pX, platoon unblocked												
vC, conflicting volume	844			1172			1614	2394	586	1522	1997	422
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	844			1172			1614	2394	586	1522	1997	422
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	89			82			3	54	77	0	100	93
cM capacity (veh/h)	788			592			51	24	453	32	44	580

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	83	781	391	106	33	811	167	89
Volume Left	83	0	0	106	0	0	50	50
Volume Right	0	0	0	0	0	794	106	39
cSH	788	1700	1700	592	1700	1700	100	55
Volume to Capacity	0.11	0.46	0.23	0.18	0.02	0.48	1.66	1.61
Queue Length 95th (ft)	9	0	0	16	0	0	327	206
Control Delay (s)	10.1	0.0	0.0	12.4	0.0	0.0	411.3	463.1
Lane LOS	B			B			F	F
Approach Delay (s)	0.7			1.4			411.3	463.1
Approach LOS							F	F

Intersection Summary			
Average Delay	45.5		
Intersection Capacity Utilization	53.8%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis — Saturday Peak - Alternative 4
7: Main Street & Forest Trail — 10/12/2010

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	20	1175	20	15	720	70	20	0	25	145	5	35
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	22	1306	22	17	800	78	22	0	28	161	6	39
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												1
Median type								None			None	
Median storage veh)												
Upstream signal (ft)					793							
pX, platoon unblocked												
vC, conflicting volume	878			1328			1797	2272	664	1597	2244	439
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	878			1328			1797	2272	664	1597	2244	439
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			97			44	100	93	0	86	93
cM capacity (veh/h)	765			516			40	37	403	63	39	566

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	22	870	457	17	533	344	50	206
Volume Left	22	0	0	17	0	0	22	161
Volume Right	0	0	22	0	0	78	28	39
cSH	765	1700	1700	516	1700	1700	80	75
Volume to Capacity	0.03	0.51	0.27	0.03	0.31	0.20	0.63	2.76
Queue Length 95th (ft)	2	0	0	2	0	0	71	505
Control Delay (s)	9.8	0.0	0.0	12.2	0.0	0.0	106.6	912.8
Lane LOS	A			B			F	F
Approach Delay (s)	0.2			0.2			106.6	912.8
Approach LOS							F	F

Intersection Summary			
Average Delay	77.4		
Intersection Capacity Utilization	54.7%	ICU Level of Service	A
Analysis Period (min)	15		

LSC, Inc. (BP) — HCM Unsignalized Intersection Capacity Analysis
Mammoth Lakes (LSC#084870) — Page 7
LSC, Inc.

HCM Unsignalized Intersection Capacity Analysis — Saturday Peak - Alternative 4
8: Main Street & Laurel Mountain Road — 10/12/2010

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	1010	0	190	20	110	30
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	1122	0	211	22	122	33
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)				505		
pX, platoon unblocked						
vC, conflicting volume			1122		1556	561
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1122		1556	561
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			66		0	93
cM capacity (veh/h)			618		68	471

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1
Volume Total	748	374	211	11	11	156
Volume Left	0	0	211	0	0	122
Volume Right	0	0	0	0	0	33
cSH	1700	1700	618	1700	1700	84
Volume to Capacity	0.44	0.22	0.34	0.01	0.01	1.86
Queue Length 95th (ft)	0	0	38	0	0	334
Control Delay (s)	0.0	0.0	13.8	0.0	0.0	513.7
Lane LOS			B			F
Approach Delay (s)	0.0		12.5			513.7
Approach LOS						F

Intersection Summary			
Average Delay	54.8		
Intersection Capacity Utilization	56.4%	ICU Level of Service	B
Analysis Period (min)	15		

LSC, Inc. (BP) — HCM Unsignalized Intersection Capacity Analysis
Mammoth Lakes (LSC#084870) — Page 8
LSC, Inc.

HCM Signalized Intersection Capacity Analysis
9: Main Street & Old Mammoth Road

Saturday Peak - Alternative 4
10/12/2010

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1583	1770	3539	1770	1583
Flt Permitted	1.00	1.00	0.37	1.00	0.95	1.00
Satd. Flow (perm)	3539	1583	690	3539	1770	1583
Volume (vph)	385	495	90	285	275	70
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	428	550	100	317	306	78
RTOR Reduction (vph)	0	381	0	0	0	47
Lane Group Flow (vph)	428	169	100	317	306	31
Turn Type		Perm	pm+pt			Perm
Protected Phases	2		1	6	3	
Permitted Phases		2	6			3
Actuated Green, G (s)	16.6	16.6	25.2	25.2	22.4	22.4
Effective Green, g (s)	17.5	17.5	26.1	26.1	23.0	23.0
Actuated g/C Ratio	0.31	0.31	0.46	0.46	0.40	0.40
Clearance Time (s)	4.9	4.9	4.1	4.9	4.6	4.6
Vehicle Extension (s)	5.2	5.2	2.5	5.2	5.2	5.2
Lane Grp Cap (vph)	1085	485	402	1618	713	638
v/s Ratio Prot	c0.12		c0.02	0.09	c0.17	
v/s Ratio Perm		0.11	0.09			0.02
v/c Ratio	0.39	0.35	0.25	0.20	0.43	0.05
Uniform Delay, d1	15.6	15.4	9.2	9.2	12.3	10.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	1.0	0.2	0.1	1.9	0.1
Delay (s)	16.2	16.3	9.5	9.4	14.2	10.5
Level of Service	B	B	A	A	B	B
Approach Delay (s)	16.3			9.4	13.5	
Approach LOS	B			A	B	

Intersection Summary			
HCM Average Control Delay	14.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	57.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	42.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

LSC, Inc. (BP)
Mammoth Lakes (LSC#084870)
LSC, Inc.

HCM Unsignalized Intersection Capacity Analysis
10: Main Street & Sierra Park Boulevard

Saturday Peak - Alternative 4
10/12/2010

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	10	375	85	40	310	10	40	10	50	10	10	15
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	11	417	94	44	344	11	44	11	56	11	11	17
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)		544										
pX, platoon unblocked				0.94			0.94	0.94	0.94	0.94	0.94	
vC, conflicting volume	356			511			769	931	256	731	972	178
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	356			422			696	866	151	654	911	178
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			96			84	96	93	96	95	98
cM capacity (veh/h)	1200			1070			282	259	819	288	244	835

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	11	278	233	44	230	126	111	39
Volume Left	11	0	0	44	0	0	44	11
Volume Right	0	0	94	0	0	11	56	17
cSH	1200	1700	1700	1070	1700	1700	414	374
Volume to Capacity	0.01	0.16	0.14	0.04	0.14	0.07	0.27	0.10
Queue Length 95th (ft)	1	0	0	3	0	0	27	9
Control Delay (s)	8.0	0.0	0.0	8.5	0.0	0.0	16.9	15.7
Lane LOS	A			A			C	C
Approach Delay (s)	0.2			0.9			16.9	15.7
Approach LOS							C	C

Intersection Summary			
Average Delay	2.8		
Intersection Capacity Utilization	35.3%	ICU Level of Service	A
Analysis Period (min)	15		

LSC, Inc. (BP)
Mammoth Lakes (LSC#084870)
LSC, Inc.

HCM Unsignalized Intersection Capacity Analysis — Saturday Peak - Alternative 4
11: Tavern Road & Old Mammoth Road — 10/12/2010

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	30	10	55	5	10	15	65	375	5	10	710	50
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	33	11	61	6	11	17	72	417	6	11	789	56
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)											760	
pX, platoon unblocked												
vC, conflicting volume	1422	1406	817	1442	1431	419	844			422		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1422	1406	817	1442	1431	419	844			422		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	65	91	84	93	91	97	91			99		
cM capacity (veh/h)	95	125	377	80	121	634	792			1137		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	106	33	72	422	11	844
Volume Left	33	6	72	0	11	0
Volume Right	61	17	0	6	0	56
cSH	176	177	792	1700	1137	1700
Volume to Capacity	0.60	0.19	0.09	0.25	0.01	0.50
Queue Length 95th (ft)	82	17	8	0	1	0
Control Delay (s)	52.4	29.9	10.0	0.0	8.2	0.0
Lane LOS	F	D	B		A	
Approach Delay (s)	52.4	29.9	1.5		0.1	
Approach LOS	F	D				

Intersection Summary				
Average Delay	4.9			
Intersection Capacity Utilization	63.8%	ICU Level of Service		B
Analysis Period (min)	15			

HCM Unsignalized Intersection Capacity Analysis — Saturday Peak - Alternative 4
12: Sierra Nevada Road & Old Mammoth Road — 10/12/2010

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	20	15	85	20	20	35	75	445	5	45	685	45
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	22	17	94	22	22	39	83	494	6	50	761	50
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)								773				
pX, platoon unblocked	0.96	0.96		0.96	0.96	0.96				0.96		
vC, conflicting volume	1597	1553	786	1628	1575	497	811			500		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1620	1574	786	1652	1597	478	811			481		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	58	82	76	49	75	93	90			95		
cM capacity (veh/h)	53	90	392	44	88	566	815			1041		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	133	83	83	500	50	811
Volume Left	22	22	83	0	50	0
Volume Right	94	39	0	6	0	50
cSH	158	101	815	1700	1041	1700
Volume to Capacity	0.84	0.83	0.10	0.29	0.05	0.48
Queue Length 95th (ft)	142	115	9	0	4	0
Control Delay (s)	91.7	123.9	9.9	0.0	8.6	0.0
Lane LOS	F	F	A		A	
Approach Delay (s)	91.7	123.9	1.4		0.5	
Approach LOS	F	F				

Intersection Summary				
Average Delay	14.3			
Intersection Capacity Utilization	61.3%	ICU Level of Service		B
Analysis Period (min)	15			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	60	440	220	75	50	40
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	67	489	244	83	56	44
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	328				664	164
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	328				664	164
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	95				85	95
cM capacity (veh/h)	1229				372	852

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	230	326	163	165	100
Volume Left	67	0	0	0	56
Volume Right	0	0	0	83	44
cSH	1229	1700	1700	1700	497
Volume to Capacity	0.05	0.19	0.10	0.10	0.20
Queue Length 95th (ft)	4	0	0	0	19
Control Delay (s)	2.7	0.0	0.0	0.0	14.1
Lane LOS	A				B
Approach Delay (s)	1.1		0.0		14.1
Approach LOS					B

Intersection Summary			
Average Delay	2.1		
Intersection Capacity Utilization	37.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	0.94		1.00	0.98		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3417		1770	3311		1770	1831		1770	1816	
Flt Permitted	0.34	1.00		0.40	1.00		0.34	1.00		0.42	1.00	
Satd. Flow (perm)	629	3417		751	3311		637	1831		777	1816	
Volume (vph)	145	335	100	35	205	155	55	195	25	335	450	90
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	161	372	111	39	228	172	61	217	28	372	500	100
RTOR Reduction (vph)	0	30	0	0	135	0	0	5	0	0	8	0
Lane Group Flow (vph)	161	453	0	39	265	0	61	240	0	372	592	0
Turn Type	pm+pt			pm+pt			pm+pt			pm+pt		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	24.3	18.5		18.7	15.7		25.0	22.0		40.9	33.8	
Effective Green, g (s)	25.3	19.4		19.7	16.6		26.0	22.9		41.8	34.7	
Actuated g/C Ratio	0.33	0.25		0.26	0.22		0.34	0.30		0.55	0.45	
Clearance Time (s)	4.1	4.9		4.1	4.9		4.1	4.9		4.1	4.9	
Vehicle Extension (s)	2.5	5.0		2.5	5.0		2.5	5.0		2.5	5.0	
Lane Grp Cap (vph)	297	869		235	720		263	550		620	826	
v/s Ratio Prot	c0.04	0.13		0.01	0.08		0.01	0.13		c0.12	c0.33	
v/s Ratio Perm	c0.14			0.04			0.07			0.21		
v/c Ratio	0.54	0.52		0.17	0.37		0.23	0.44		0.60	0.72	
Uniform Delay, d1	19.1	24.5		21.5	25.4		17.3	21.5		10.6	16.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.6	1.1		0.2	0.7		0.3	1.2		1.4	3.7	
Delay (s)	20.7	25.5		21.8	26.1		17.7	22.7		12.0	20.5	
Level of Service	C	C		C	C		B	C		B	C	
Approach Delay (s)		24.3			25.7			21.7			17.2	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM Average Control Delay	21.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	76.3	Sum of lost time (s)	16.0
Intersection Capacity Utilization	66.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
15: Meridian Boulevard & Old Mammoth Road

Saturday Peak - Alternative 4
10/12/2010

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3459		1770	3446		1770	1863	1583	1770	1863	1583
Flt Permitted	0.34	1.00		0.17	1.00		0.27	1.00	1.00	0.44	1.00	1.00
Satd. Flow (perm)	626	3459		309	3446		499	1863	1583	822	1863	1583
Volume (vph)	190	700	125	110	375	80	145	260	55	125	345	65
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	211	778	139	122	417	89	161	289	61	139	383	72
RTOR Reduction (vph)	0	16	0	0	20	0	0	0	43	0	0	51
Lane Group Flow (vph)	211	901	0	122	486	0	161	289	18	139	383	21
Turn Type	pm+pt			pm+pt			pm+pt		Perm	pm+pt		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6			8		8	4		4
Actuated Green, G (s)	33.5	25.7		28.5	23.2		27.2	21.7	21.7	25.6	20.9	20.9
Effective Green, g (s)	34.5	26.6		29.5	24.1		28.2	22.6	22.6	26.6	21.8	21.8
Actuated g/C Ratio	0.46	0.35		0.39	0.32		0.37	0.30	0.30	0.35	0.29	0.29
Clearance Time (s)	4.1	4.9		4.1	4.9		4.1	4.9	4.9	4.1	4.9	4.9
Vehicle Extension (s)	2.5	3.7		2.5	3.8		2.5	3.8	3.8	2.5	3.8	3.8
Lane Grp Cap (vph)	406	1220		226	1101		281	558	474	350	539	458
v/s Ratio Prot	c0.05	c0.26		0.04	0.14		c0.04	0.16		0.03	c0.21	
v/s Ratio Perm	0.18			0.17			0.17		0.01	0.11		0.01
v/c Ratio	0.52	0.74		0.54	0.44		0.57	0.52	0.04	0.40	0.71	0.05
Uniform Delay, d1	13.1	21.4		16.1	20.3		17.3	21.9	18.7	17.4	24.0	19.3
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.8	2.5		1.9	0.4		2.3	1.0	0.0	0.5	4.6	0.1
Delay (s)	13.9	23.8		18.0	20.7		19.6	22.9	18.7	17.9	28.6	19.4
Level of Service	B	C		B	C		B	C	B	B	C	B
Approach Delay (s)		22.0			20.2			21.4			25.0	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	22.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	75.4	Sum of lost time (s)	16.0
Intersection Capacity Utilization	69.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

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HCM Signalized Intersection Capacity Analysis
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HCM Unsignalized Intersection Capacity Analysis
16: Meridian Boulevard & Sierra Park Road

Saturday Peak - Alternative 4
10/12/2010

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	45	145	5	5	140	15	25	5	5	15	5	75
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	50	161	6	6	156	17	28	6	6	17	6	83

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total (vph)	131	86	83	94	39	106
Volume Left (vph)	50	0	6	0	28	17
Volume Right (vph)	0	6	0	17	6	83
Hadj (s)	0.23	-0.01	0.07	-0.09	0.09	-0.41
Departure Headway (s)	5.2	5.0	5.1	5.0	5.0	4.5
Degree Utilization, x	0.19	0.12	0.12	0.13	0.05	0.13
Capacity (veh/h)	666	692	671	695	659	744
Control Delay (s)	8.3	7.5	7.6	7.5	8.3	8.1
Approach Delay (s)	8.0		7.6		8.3	8.1
Approach LOS	A		A		A	A

Intersection Summary			
Delay	7.9		
HCM Level of Service	A		
Intersection Capacity Utilization	26.5%	ICU Level of Service	A
Analysis Period (min)	15		

LSC, Inc. (BP)
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HCM Unsignalized Intersection Capacity Analysis
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HCM Unsignalized Intersection Capacity Analysis — Saturday Peak - Alternative 4
17: Chateau Road & Old Mammoth Road — 10/12/2010

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣		↰	↱		↰	↱	
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	30	35	10	10	20	60	10	305	10	105	375	75
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	33	39	11	11	22	67	11	339	11	117	417	83
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)											1037	
pX, platoon unblocked	0.97	0.97	0.97	0.97	0.97		0.97					
vC, conflicting volume	1131	1064	458	1047	1100	344	500			350		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1135	1066	441	1049	1103	344	484			350		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	75	80	98	93	88	90	99			90		
cM capacity (veh/h)	131	193	597	152	183	698	1045			1209		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	83	100	11	350	117	500
Volume Left	33	11	11	0	117	0
Volume Right	11	67	0	11	0	83
cSH	176	345	1045	1700	1209	1700
Volume to Capacity	0.47	0.29	0.01	0.21	0.10	0.29
Queue Length 95th (ft)	57	29	1	0	8	0
Control Delay (s)	42.7	19.6	8.5	0.0	8.3	0.0
Lane LOS	E	C	A		A	
Approach Delay (s)	42.7	19.6	0.3		1.6	
Approach LOS	E	C				

Intersection Summary			
Average Delay	5.7		
Intersection Capacity Utilization	48.1%	ICU Level of Service	A
Analysis Period (min)	15		

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HCM Unsignalized Intersection Capacity Analysis
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HCM Unsignalized Intersection Capacity Analysis — Saturday Peak - Alternative 4
18: Old Mammoth Road & Minaret Road — 10/12/2010

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱		↰	↱			↰	⇢	↰	↱	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	110	175	45	135	200	95	20	65	90	105	155	200
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	122	194	50	150	222	106	22	72	100	117	172	222
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									2			
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	328			244			1294	1092	219	1100	1064	275
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	328			244			1294	1092	219	1100	1064	275
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	90			89			0	58	88	0	3	71
cM capacity (veh/h)	1232			1322			10	171	820	96	178	764

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1	SB 2
Volume Total	122	244	150	328	194	117	394
Volume Left	122	0	150	0	22	117	0
Volume Right	0	50	0	106	100	0	222
cSH	1232	1700	1322	1700	207	96	313
Volume to Capacity	0.10	0.14	0.11	0.19	0.94	1.22	1.26
Queue Length 95th (ft)	8	0	10	0	194	201	456
Control Delay (s)	8.2	0.0	8.1	0.0	95.1	243.8	174.1
Lane LOS	A		A		F	F	F
Approach Delay (s)	2.7		2.5		95.1	190.0	
Approach LOS					F	F	

Intersection Summary			
Average Delay	76.0		
Intersection Capacity Utilization	53.2%	ICU Level of Service	A
Analysis Period (min)	15		

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HCM Unsignalized Intersection Capacity Analysis
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Future - Alternative 5
LOS Reports

HCM Unsignalized Intersection Capacity Analysis | Saturday Peak - Alternative 5
1: Forest Trail & Minaret Road | 10/12/2010

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥			✥			✥	
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	20	30	90	20	20	15	70	175	30	80	665	100
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	22	33	100	22	22	17	78	194	33	89	739	111
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1367	1356	794	1456	1394	211	850			228		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1367	1356	794	1456	1394	211	850			228		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	76	73	74	60	81	98	90			93		
cM capacity (veh/h)	92	126	388	56	119	829	788			1340		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	156	61	306	939
Volume Left	22	22	78	89
Volume Right	100	17	33	111
cSH	203	101	788	1340
Volume to Capacity	0.76	0.60	0.10	0.07
Queue Length 95th (ft)	130	72	8	5
Control Delay (s)	64.1	83.7	3.4	1.7
Lane LOS	F	F	A	A
Approach Delay (s)	64.1	83.7	3.4	1.7
Approach LOS	F	F		

Intersection Summary			
Average Delay	12.1		
Intersection Capacity Utilization	65.1%	ICU Level of Service	C
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis | Saturday Peak - Alternative 5
2: Lake Mary Road & Davidson | 10/12/2010

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥			↰	↱		✥	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	95	15	80	95	45	10	0	65	65	0	5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	106	17	89	106	50	11	0	72	72	0	6
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									2			
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	156			122			428	447	114	458	431	131
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	156			122			428	447	114	458	431	131
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			94			98	100	92	84	100	99
cM capacity (veh/h)	1425			1465			509	476	939	451	486	919

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	122	244	83	78
Volume Left	0	89	11	72
Volume Right	17	50	72	6
cSH	1425	1465	1083	468
Volume to Capacity	0.00	0.06	0.08	0.17
Queue Length 95th (ft)	0	5	6	15
Control Delay (s)	0.0	3.1	9.6	14.2
Lane LOS		A	A	B
Approach Delay (s)	0.0	3.1	9.6	14.2
Approach LOS			A	B

Intersection Summary			
Average Delay	5.0		
Intersection Capacity Utilization	36.1%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis — Saturday Peak - Alternative 5
3: Lake Mary Road & Canyon Boulevard — 10/12/2010

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.97	
Frt	1.00	1.00	1.00	0.85	1.00	
Flt Protected	0.95	1.00	1.00	1.00	0.95	
Satd. Flow (prot)	1770	1863	1863	1583	3431	
Flt Permitted	0.59	1.00	1.00	1.00	0.95	
Satd. Flow (perm)	1103	1863	1863	1583	3431	
Volume (vph)	20	210	245	230	490	15
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	22	233	272	256	544	17
RTOR Reduction (vph)	0	0	0	109	7	0
Lane Group Flow (vph)	22	233	272	147	554	0
Turn Type	Perm			Perm		
Protected Phases		2	6		4	
Permitted Phases	2			6		
Actuated Green, G (s)	25.2	25.2	25.2	25.2	11.1	
Effective Green, g (s)	25.8	25.8	25.8	25.8	11.2	
Actuated g/C Ratio	0.57	0.57	0.57	0.57	0.25	
Clearance Time (s)	4.6	4.6	4.6	4.6	4.1	
Vehicle Extension (s)	6.1	6.1	6.1	6.1	2.0	
Lane Grp Cap (vph)	632	1068	1068	908	854	
v/s Ratio Prot		0.13	c0.15		c0.16	
v/s Ratio Perm	0.02			0.09		
v/c Ratio	0.03	0.22	0.25	0.16	0.65	
Uniform Delay, d1	4.2	4.7	4.8	4.5	15.1	
Progression Factor	1.00	1.00	0.42	0.81	1.00	
Incremental Delay, d2	0.1	0.5	0.5	0.3	1.3	
Delay (s)	4.3	5.2	2.5	3.9	16.4	
Level of Service	A	A	A	A	B	
Approach Delay (s)		5.1	3.2		16.4	
Approach LOS		A	A		B	

Intersection Summary			
HCM Average Control Delay	9.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	45.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	37.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

LSC, Inc. (BP) — HCM Signalized Intersection Capacity Analysis
Mammoth Lakes (LSC#084870) — Page 3
LSC, Inc.

HCM Signalized Intersection Capacity Analysis — Saturday Peak - Alternative 5
4: Lake Mary Road & Minaret Road — 10/12/2010

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.90	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	3433	1670	
Flt Permitted	0.37	1.00	1.00	0.31	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	696	3539	1583	581	3539	1583	1770	1863	1583	3433	1670	
Volume (vph)	110	445	155	75	340	135	370	290	90	520	60	135
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	122	494	172	83	378	150	411	322	100	578	67	150
RTOR Reduction (vph)	0	0	78	0	0	118	0	0	69	0	89	0
Lane Group Flow (vph)	122	494	94	83	378	32	411	322	31	578	128	0
Turn Type	pm+pt		Perm	pm+pt		Perm	Split		Perm	Split		
Protected Phases	5	2		1	6		8	8		7	7	
Permitted Phases	2		2	6		6			8			
Actuated Green, G (s)	25.6	19.6	19.6	23.2	18.4	18.4	27.1	27.1	27.1	20.0	20.0	
Effective Green, g (s)	26.6	20.5	20.5	24.2	19.3	19.3	28.0	28.0	28.0	20.6	20.6	
Actuated g/C Ratio	0.30	0.23	0.23	0.27	0.21	0.21	0.31	0.31	0.31	0.23	0.23	
Clearance Time (s)	4.1	4.9	4.9	4.1	4.9	4.9	4.9	4.9	4.9	4.6	4.6	
Vehicle Extension (s)	2.5	4.7	4.7	2.5	4.6	4.6	5.2	5.2	5.2	6.2	6.2	
Lane Grp Cap (vph)	279	806	361	221	759	339	551	580	492	786	382	
v/s Ratio Prot	c0.03	c0.14		0.02	0.11		c0.23	0.17		c0.17	0.08	
v/s Ratio Perm	0.10		0.06	0.08		0.02			0.02			
v/c Ratio	0.44	0.61	0.26	0.38	0.50	0.09	0.75	0.56	0.06	0.74	0.33	
Uniform Delay, d1	24.2	31.2	28.5	25.5	31.1	28.3	27.8	25.8	21.8	32.2	29.0	
Progression Factor	0.83	0.84	0.87	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.7	3.0	1.5	0.8	2.3	0.6	8.9	3.8	0.2	6.1	2.3	
Delay (s)	20.9	29.1	26.4	26.3	33.4	28.9	36.7	29.6	22.0	38.2	31.3	
Level of Service	C	C	C	C	C	C	D	C	C	D	C	
Approach Delay (s)		27.2			31.3			32.2			36.3	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM Average Control Delay	31.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	62.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

LSC, Inc. (BP) — HCM Signalized Intersection Capacity Analysis
Mammoth Lakes (LSC#084870) — Page 4
LSC, Inc.

5: Main Street & Mountain Boulevard

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰↑↑↱			↰↑↑↱			↰↑↱			↰↑↱	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	30	1280	65	30	600	95	10	25	20	60	20	60
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	33	1422	72	33	667	106	11	28	22	67	22	67
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	772			1494			2003	2364	747	1600	2347	386
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	772			1494			2003	2364	747	1600	2347	386
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	96			93			11	10	94	0	30	89
cM capacity (veh/h)	839			445			13	31	355	14	32	612

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	744	783	367	439	61	156
Volume Left	33	0	33	0	11	67
Volume Right	0	72	0	106	22	67
cSH	839	1700	445	1700	33	28
Volume to Capacity	0.04	0.46	0.07	0.26	1.85	5.64
Queue Length 95th (ft)	3	0	6	0	171	Err
Control Delay (s)	1.0	0.0	2.4	0.0	662.8	Err
Lane LOS	A		A		F	F
Approach Delay (s)	0.5		1.1		662.8	Err
Approach LOS					F	F

Intersection Summary			
Average Delay	626.5		
Intersection Capacity Utilization	80.4%	ICU Level of Service	D
Analysis Period (min)	15		

6: Main Street & Center Street

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↑↱		↰	↑↑↱			↰↑↱			↰↑↱	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	75	1025	0	95	40	695	45	10	95	40	0	35
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	83	1139	0	106	44	772	50	11	106	44	0	39
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)					1207							
pX, platoon unblocked												
vC, conflicting volume	817			1139			1578	2333	569	1489	1947	408
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	817			1139			1578	2333	569	1489	1947	408
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	90			83			9	59	77	0	100	93
cM capacity (veh/h)	807			609			55	27	465	37	47	592

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	83	759	380	106	30	787	167	83
Volume Left	83	0	0	106	0	0	50	44
Volume Right	0	0	0	0	0	772	106	39
cSH	807	1700	1700	609	1700	1700	108	65
Volume to Capacity	0.10	0.45	0.22	0.17	0.02	0.46	1.55	1.28
Queue Length 95th (ft)	9	0	0	16	0	0	310	171
Control Delay (s)	10.0	0.0	0.0	12.1	0.0	0.0	357.4	311.5
Lane LOS	A			B			F	F
Approach Delay (s)	0.7			1.4			357.4	311.5
Approach LOS							F	F

Intersection Summary			
Average Delay	36.6		
Intersection Capacity Utilization	53.1%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis | Saturday Peak - Alternative 5
7: Main Street & Forest Trail | 10/12/2010

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	20	1140	20	15	700	70	20	0	20	140	5	35
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	22	1267	22	17	778	78	22	0	22	156	6	39
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												1
Median type								None			None	
Median storage veh)												
Upstream signal (ft)					793							
pX, platoon unblocked												
vC, conflicting volume	856			1289			1747	2211	644	1550	2183	428
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	856			1289			1747	2211	644	1550	2183	428
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			97			50	100	95	0	87	93
cM capacity (veh/h)	780			534			44	41	415	70	43	575

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	22	844	444	17	519	337	44	200
Volume Left	22	0	0	17	0	0	22	156
Volume Right	0	0	22	0	0	78	22	39
cSH	780	1700	1700	534	1700	1700	80	83
Volume to Capacity	0.03	0.50	0.26	0.03	0.31	0.20	0.56	2.42
Queue Length 95th (ft)	2	0	0	2	0	0	61	467
Control Delay (s)	9.7	0.0	0.0	12.0	0.0	0.0	96.4	755.4
Lane LOS	A			B			F	F
Approach Delay (s)	0.2			0.2			96.4	755.4
Approach LOS							F	F

Intersection Summary			
Average Delay	64.2		
Intersection Capacity Utilization	52.7%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis | Saturday Peak - Alternative 5
8: Main Street & Laurel Mountain Road | 10/12/2010

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	1000	0	165	20	95	30
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	1111	0	183	22	106	33
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)				505		
pX, platoon unblocked						
vC, conflicting volume			1111		1489	556
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1111		1489	556
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			71		0	93
cM capacity (veh/h)			624		81	475

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1
Volume Total	741	370	183	11	11	139
Volume Left	0	0	183	0	0	106
Volume Right	0	0	0	0	0	33
cSH	1700	1700	624	1700	1700	101
Volume to Capacity	0.44	0.22	0.29	0.01	0.01	1.37
Queue Length 95th (ft)	0	0	31	0	0	249
Control Delay (s)	0.0	0.0	13.1	0.0	0.0	294.9
Lane LOS			B			F
Approach Delay (s)	0.0		11.7			294.9
Approach LOS						F

Intersection Summary			
Average Delay	29.8		
Intersection Capacity Utilization	53.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↱	↰	↑↑	↰	↱
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1583	1770	3539	1770	1583
Flt Permitted	1.00	1.00	0.37	1.00	0.95	1.00
Satd. Flow (perm)	3539	1583	690	3539	1770	1583
Volume (vph)	385	515	90	285	285	70
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	428	572	100	317	317	78
RTOR Reduction (vph)	0	397	0	0	0	47
Lane Group Flow (vph)	428	175	100	317	317	31
Turn Type		Perm	pm+pt			Perm
Protected Phases	2		1	6	3	
Permitted Phases		2	6			3
Actuated Green, G (s)	16.6	16.6	25.2	25.2	22.4	22.4
Effective Green, g (s)	17.5	17.5	26.1	26.1	23.0	23.0
Actuated g/C Ratio	0.31	0.31	0.46	0.46	0.40	0.40
Clearance Time (s)	4.9	4.9	4.1	4.9	4.6	4.6
Vehicle Extension (s)	5.2	5.2	2.5	5.2	5.2	5.2
Lane Grp Cap (vph)	1085	485	402	1618	713	638
v/s Ratio Prot	c0.12		c0.02	0.09	c0.18	
v/s Ratio Perm		0.11	0.09			0.02
v/c Ratio	0.39	0.36	0.25	0.20	0.44	0.05
Uniform Delay, d1	15.6	15.4	9.2	9.2	12.4	10.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	1.0	0.2	0.1	2.0	0.1
Delay (s)	16.2	16.5	9.5	9.4	14.4	10.5
Level of Service	B	B	A	A	B	B
Approach Delay (s)	16.3			9.4	13.6	
Approach LOS	B			A	B	

Intersection Summary			
HCM Average Control Delay	14.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	57.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	43.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↱		↰	↑↱			✥			✥	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	10	375	85	40	310	10	40	10	50	10	10	15
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	11	417	94	44	344	11	44	11	56	11	11	17
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)		544										
pX, platoon unblocked				0.94			0.94	0.94	0.94	0.94	0.94	
vC, conflicting volume	356			511			769	931	256	731	972	178
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	356			422			696	866	151	654	911	178
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			96			84	96	93	96	95	98
cM capacity (veh/h)	1200			1070			282	259	819	288	244	835

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	11	278	233	44	230	126	111	39
Volume Left	11	0	0	44	0	0	44	11
Volume Right	0	0	94	0	0	11	56	17
cSH	1200	1700	1700	1070	1700	1700	414	374
Volume to Capacity	0.01	0.16	0.14	0.04	0.14	0.07	0.27	0.10
Queue Length 95th (ft)	1	0	0	3	0	0	27	9
Control Delay (s)	8.0	0.0	0.0	8.5	0.0	0.0	16.9	15.7
Lane LOS	A			A			C	C
Approach Delay (s)	0.2			0.9			16.9	15.7
Approach LOS							C	C

Intersection Summary			
Average Delay	2.8		
Intersection Capacity Utilization	35.3%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis — Saturday Peak - Alternative 5
11: Tavern Road & Old Mammoth Road — 10/12/2010

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	20	5	40	5	5	15	50	400	5	10	710	40
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	22	6	44	6	6	17	56	444	6	11	789	44
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)											760	
pX, platoon unblocked												
vC, conflicting volume	1408	1394	811	1417	1414	447	833			450		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1408	1394	811	1417	1414	447	833			450		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	78	96	88	94	96	97	93			99		
cM capacity (veh/h)	103	130	379	92	127	611	800			1110		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	72	28	56	450	11	833
Volume Left	22	6	56	0	11	0
Volume Right	44	17	0	6	0	44
cSH	192	211	800	1700	1110	1700
Volume to Capacity	0.38	0.13	0.07	0.26	0.01	0.49
Queue Length 95th (ft)	41	11	6	0	1	0
Control Delay (s)	34.6	24.6	9.8	0.0	8.3	0.0
Lane LOS	D	C	A		A	
Approach Delay (s)	34.6	24.6	1.1		0.1	
Approach LOS	D	C				

Intersection Summary			
Average Delay	2.6		
Intersection Capacity Utilization	54.3%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis — Saturday Peak - Alternative 5
12: Sierra Nevada Road & Old Mammoth Road — 10/12/2010

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	20	15	85	20	20	35	75	430	5	45	660	45
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	22	17	94	22	22	39	83	478	6	50	733	50
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)								773				
pX, platoon unblocked	0.98	0.98		0.98	0.98	0.98				0.98		
vC, conflicting volume	1553	1508	758	1583	1531	481	783			483		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1566	1521	758	1598	1544	468	783			471		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	63	83	77	56	77	93	90			95		
cM capacity (veh/h)	60	99	407	50	96	581	835			1065		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	133	83	83	483	50	783
Volume Left	22	22	83	0	50	0
Volume Right	94	39	0	6	0	50
cSH	174	112	835	1700	1065	1700
Volume to Capacity	0.77	0.74	0.10	0.28	0.05	0.46
Queue Length 95th (ft)	125	102	8	0	4	0
Control Delay (s)	73.0	97.7	9.8	0.0	8.5	0.0
Lane LOS	F	F	A		A	
Approach Delay (s)	73.0	97.7	1.4		0.5	
Approach LOS	F	F				

Intersection Summary			
Average Delay	11.8		
Intersection Capacity Utilization	60.0%	ICU Level of Service	B
Analysis Period (min)	15		

13: Meridian Boulevard & Majestic Pines Drive

10/12/2010

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	60	425	210	70	50	40
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	67	472	233	78	56	44
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	311				642	156
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	311				642	156
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	95				86	95
cM capacity (veh/h)	1246				385	862

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	224	315	156	156	100
Volume Left	67	0	0	0	56
Volume Right	0	0	0	78	44
cSH	1246	1700	1700	1700	511
Volume to Capacity	0.05	0.19	0.09	0.09	0.20
Queue Length 95th (ft)	4	0	0	0	18
Control Delay (s)	2.7	0.0	0.0	0.0	13.8
Lane LOS	A				B
Approach Delay (s)	1.1		0.0		13.8
Approach LOS					B

Intersection Summary			
Average Delay	2.1		
Intersection Capacity Utilization	36.8%	ICU Level of Service	A
Analysis Period (min)	15		

14: Meridian Boulevard & Minaret Road

10/12/2010

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	0.94		1.00	0.98		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3417		1770	3313		1770	1828		1770	1816	
Flt Permitted	0.34	1.00		0.47	1.00		0.37	1.00		0.44	1.00	
Satd. Flow (perm)	635	3417		881	3313		688	1828		816	1816	
Volume (vph)	140	320	95	30	195	145	50	180	25	315	420	85
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	156	356	106	33	217	161	56	200	28	350	467	94
RTOR Reduction (vph)	0	29	0	0	126	0	0	6	0	0	8	0
Lane Group Flow (vph)	156	433	0	33	252	0	56	222	0	350	553	0
Turn Type	pm+pt			pm+pt			pm+pt			pm+pt		
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	25.4	19.5		17.4	15.5		24.4	21.3		39.2	32.0	
Effective Green, g (s)	26.4	20.4		18.4	16.4		25.4	22.2		40.1	32.9	
Actuated g/C Ratio	0.35	0.27		0.25	0.22		0.34	0.30		0.54	0.44	
Clearance Time (s)	4.1	4.9		4.1	4.9		4.1	4.9		4.1	4.9	
Vehicle Extension (s)	2.5	5.0		2.5	5.0		2.5	5.0		2.5	5.0	
Lane Grp Cap (vph)	316	936		241	729		281	545		617	802	
v/s Ratio Prot	c0.04	0.13		0.00	0.08		0.01	0.12		c0.11	c0.30	
v/s Ratio Perm	c0.14			0.03			0.06			0.20		
v/c Ratio	0.49	0.46		0.14	0.35		0.20	0.41		0.57	0.69	
Uniform Delay, d1	17.4	22.5		21.5	24.5		16.8	20.9		10.5	16.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.9	0.8		0.2	0.6		0.3	1.0		1.0	3.2	
Delay (s)	18.3	23.3		21.7	25.1		17.1	21.9		11.4	19.9	
Level of Service	B	C		C	C		B	C		B	B	
Approach Delay (s)		22.0			24.9			21.0			16.6	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM Average Control Delay	20.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	74.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	63.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis — Saturday Peak - Alternative 5
15: Meridian Boulevard & Old Mammoth Road — 10/12/2010

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3458		1770	3445		1770	1863	1583	1770	1863	1583
Flt Permitted	0.34	1.00		0.17	1.00		0.27	1.00	1.00	0.45	1.00	1.00
Satd. Flow (perm)	632	3458		315	3445		511	1863	1583	839	1863	1583
Volume (vph)	190	690	125	105	370	80	140	255	55	125	340	60
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	211	767	139	117	411	89	156	283	61	139	378	67
RTOR Reduction (vph)	0	17	0	0	20	0	0	0	43	0	0	48
Lane Group Flow (vph)	211	889	0	117	480	0	156	283	18	139	378	19
Turn Type	pm+pt			pm+pt			pm+pt		Perm	pm+pt		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6			8		8	4		4
Actuated Green, G (s)	33.2	25.4		28.2	22.9		27.0	21.5	21.5	25.4	20.7	20.7
Effective Green, g (s)	34.2	26.3		29.2	23.8		28.0	22.4	22.4	26.4	21.6	21.6
Actuated g/C Ratio	0.46	0.35		0.39	0.32		0.37	0.30	0.30	0.35	0.29	0.29
Clearance Time (s)	4.1	4.9		4.1	4.9		4.1	4.9	4.9	4.1	4.9	4.9
Vehicle Extension (s)	2.5	3.7		2.5	3.8		2.5	3.8	3.8	2.5	3.8	3.8
Lane Grp Cap (vph)	409	1214		228	1095		285	557	473	355	537	457
v/s Ratio Prot	c0.05	c0.26		0.04	0.14		c0.04	0.15		0.03	c0.20	
v/s Ratio Perm	0.18			0.16			0.16		0.01	0.11		0.01
v/c Ratio	0.52	0.73		0.51	0.44		0.55	0.51	0.04	0.39	0.70	0.04
Uniform Delay, d1	13.0	21.2		15.9	20.3		17.1	21.7	18.6	17.2	23.8	19.2
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.8	2.4		1.5	0.4		1.7	0.9	0.0	0.5	4.4	0.0
Delay (s)	13.8	23.7		17.4	20.6		18.8	22.6	18.7	17.8	28.2	19.2
Level of Service	B	C		B	C		B	C	B	B	C	B
Approach Delay (s)		21.8			20.0			20.9			24.7	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	21.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	74.9	Sum of lost time (s)	16.0
Intersection Capacity Utilization	67.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis — Saturday Peak - Alternative 5
16: Meridian Boulevard & Sierra Park Road — 10/12/2010

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	45	145	5	5	140	15	25	5	5	15	5	75
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	50	161	6	6	156	17	28	6	6	17	6	83

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total (vph)	131	86	83	94	39	106
Volume Left (vph)	50	0	6	0	28	17
Volume Right (vph)	0	6	0	17	6	83
Hadj (s)	0.23	-0.01	0.07	-0.09	0.09	-0.41
Departure Headway (s)	5.2	5.0	5.1	5.0	5.0	4.5
Degree Utilization, x	0.19	0.12	0.12	0.13	0.05	0.13
Capacity (veh/h)	666	692	671	695	659	744
Control Delay (s)	8.3	7.5	7.6	7.5	8.3	8.1
Approach Delay (s)	8.0		7.6		8.3	8.1
Approach LOS	A		A		A	A

Intersection Summary			
Delay	7.9		
HCM Level of Service	A		
Intersection Capacity Utilization	26.5%	ICU Level of Service	A
Analysis Period (min)	15		

17: Chateau Road & Old Mammoth Road
10/12/2010

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	30	35	10	10	20	60	10	300	10	105	365	75
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	33	39	11	11	22	67	11	333	11	117	406	83
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)											1037	
pX, platoon unblocked	0.98	0.98	0.98	0.98	0.98		0.98					
vC, conflicting volume	1114	1047	447	1031	1083	339	489			344		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1116	1048	435	1031	1085	339	478			344		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	76	80	98	93	88	91	99			90		
cM capacity (veh/h)	137	199	608	159	190	703	1061			1215		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	83	100	11	344	117	489
Volume Left	33	11	11	0	117	0
Volume Right	11	67	0	11	0	83
cSH	183	355	1061	1700	1215	1700
Volume to Capacity	0.46	0.28	0.01	0.20	0.10	0.29
Queue Length 95th (ft)	54	28	1	0	8	0
Control Delay (s)	40.3	19.1	8.4	0.0	8.3	0.0
Lane LOS	E	C	A		A	
Approach Delay (s)	40.3	19.1	0.3		1.6	
Approach LOS	E	C				

Intersection Summary			
Average Delay	5.5		
Intersection Capacity Utilization	47.6%	ICU Level of Service	A
Analysis Period (min)	15		

18: Old Mammoth Road & Minaret Road
10/12/2010

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	105	170	40	125	195	90	20	65	85	100	145	190
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	117	189	44	139	217	100	22	72	94	111	161	211
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									2			
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	317			233			1231	1039	211	1050	1011	267
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	317			233			1231	1039	211	1050	1011	267
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	91			90			27	61	89	0	17	73
cM capacity (veh/h)	1243			1334			30	187	829	110	194	772

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1	SB 2
Volume Total	117	233	139	317	189	111	372
Volume Left	117	0	139	0	22	111	0
Volume Right	0	44	0	100	94	0	211
cSH	1243	1700	1334	1700	251	110	338
Volume to Capacity	0.09	0.14	0.10	0.19	0.75	1.01	1.10
Queue Length 95th (ft)	8	0	9	0	134	163	354
Control Delay (s)	8.2	0.0	8.0	0.0	52.7	161.9	114.9
Lane LOS	A		A		F	F	F
Approach Delay (s)	2.7		2.4		52.7	125.7	
Approach LOS					F	F	

Intersection Summary			
Average Delay	49.3		
Intersection Capacity Utilization	52.4%	ICU Level of Service	A
Analysis Period (min)	15		

Town of Mammoth Lakes Travel Demand Model
Description of Model Design Volume Methodology

The following is an excerpt from the General Plan Final Environmental Impact Report (FEIR) Volume II: Response to Comments (Responses 11-209, 11-210, and 11-212) that describes the travel model design volume development and the rationale for the use of the "typical winter Saturday" peak-hour conditions as a basis for analyzing traffic impacts and Level of Service (LOS) in the Town of Mammoth Lakes.

<u>Typical Winter Saturday Peak-Hour</u>
To avoid the development or expansion of facilities that are needed only a relatively few days per year, or hours per year, it is standard practice to use a design volume level that is slightly less than the absolute peak traffic volume. In order to accomplish this, the Town of Mammoth Lakes uses the concept of the "typical winter Saturday peak hour" as the basis for the design of facilities. While daily traffic volumes in Mammoth Lakes are sometimes the highest in the summer months, the highest peak-hour volumes are typically experienced on winter Saturdays, during the afternoon hours when skiers "download" from the Mammoth Mountain Ski Area.

The Town of Mammoth Lakes General Plan Transportation Element currently contains the following Policy:

> *"Policy 1.7: Establish and maintain a Level of Service D or better on a typical winter Saturday peak-hour for signalized intersections and for primary through movements for unsignalized intersections along arterial and collector roads. This standard is expressly not applied to absolute peak conditions, as it would result in construction of roadway improvements that are warranted only a limited number of days per year and that would unduly impact pedestrian and visual conditions."*

The LOS thresholds utilized in the General Plan FEIR are defined in terms of delay and are as follows:

1. <u>For Signalized Intersections:</u> Total intersection LOS D or better must be maintained. Therefore, if a signalized intersection is found to operate at a total intersection LOS E or F, mitigation is required. This same threshold was applied to roundabouts.

2. <u>For Unsignalized Intersections:</u> In order to avoid the identification of a LOS failure for intersections that result in only a few vehicles experiencing a delay greater than 50 seconds (such as at a driveway serving a few homes that accesses onto a busy street), a LOS deficiency is not identified for all intersections which approach LOS E or F. Instead, a LOS deficiency is assumed to occur at an unsignalized intersection only if an individual local street movement operates at LOS E or F and total minor approach delay exceeds 4 vehicle hours for a single lane approach and 5 vehicle hours for a multilane approach. In other words, a

deficiency is found to occur if the average number of vehicles queued over the peak-hour exceeds 4 at a single lane approach, or exceeds 5 at a multilane approach. A vehicle hour is calculated by multiplying the average delay per vehicle during the peak hour by the number of vehicles experiencing that delay. For example, if 100 vehicles exit a roadway and experience an average delay of 20 seconds per vehicle, the vehicle hours of delay for that approach would be 0.6 vehicle hours (100 vehicles X 20 seconds of delay per vehicle / 3600 seconds per hour). Therefore, this threshold not only considers the average delay per vehicle, but also considers how many vehicles experience the delay. As the Town has adopted a standard that applies the LOS D threshold to a typical winter Saturday standard, the exceedance of LOS D on peak winter days during which traffic volumes are higher than the typical winter Saturday would not result in a significant LOS impact. This is typically done to avoid the need to build facilities that are only needed a few hours per year. Areas with uses that have typical peak hours not on Saturday shall be analyzed for the mid-week peak hours.

According to *A Policy on Geometric Design of Highways and Streets* (American Association of State Highway and Transportation Officials, 2004):

> *"There are roadways for which there are unusual or highly seasonal fluctuations in traffic flow, such as resort roads on which weekend traffic during a few months of the year far exceeds the traffic during the rest of the year. [For such roads], a design that results in somewhat less satisfactory traffic operation during seasonal periods than on rural roads with normal traffic fluctuations, will generally be acceptable to the public. On the other hand, design should not be so economical that severe congestion results during the peak hours. It may be desirable, therefore, to choose an hourly volume for design, which is about 50 percent of the volumes expected to occur during a few highest hours of the design year…"*

Applying LOS thresholds to a typical winter Saturday, which result in traffic volumes that are roughly 86 percent of the peak day traffic volumes, is a far more conservative approach than suggested by the *American Association of State Highway and Transportation Officials* in this nationally recognized document. In addition, the level of improvements that would be required by more restrictive LOS standards (such as those based upon a peak day analysis) would result in wider roads, more pavement, and would not fit within the existing character of the Town. Not only would these improvements create a more urban environment, but wider roads make for a less pedestrian friendly environment.

Regardless, a limited quantitative evaluation of peak traffic days is provided here. As discussed below, the Town of Mammoth Lakes' use of a typical winter Saturday is consistent with but more conservative (i.e., results in higher design volumes) than the 30th highest hour design period recommended by the American Association of State Highway and Transportation Officials. Figure 1, Daily Variation in Traffic Volumes

Along Main Street East of Minaret, in the Mammoth Lakes Transportation Model and LOS Analysis Methodology Paper, prepared by LSC Transportation Consultants, dated May 13, 2005, depicts the variation of traffic volumes along Main Street east of Minaret by day of the week. The Background Paper is contained in Appendix F, Traffic Study, of the Revised Draft Program EIR. As Figure 1 indicates, Saturdays consistently represent the day during which the peak traffic conditions occur. However, on some holiday weekends high traffic volumes may occur on days other than Saturday. For example, as shown in Table 3, 2003/2004 Winter Daily Traffic Volumes Along Main Street East of Minaret Sorted Highest to Lowest, of the Background Paper, the highest traffic volumes usually occur around the Christmas, New Years, President's Day, and Martin Luther King Jr. holidays. Figure 2, Peak-Hour Traffic Volumes Main Street East of Minaret (March 6, 2004), in the Background Paper presents the hourly traffic volume variation along Main Street east of Minaret Road on the day in the 2003/2004 winter season which most closely reflects the design day traffic volume. As Figure 2 indicates, the P.M. peak-hour traffic volumes are usually significantly higher than the A.M. peak-hour traffic volumes. This is mostly attributed to the fact that skiers generally leave the ski area during a smaller time period than they arrive. Therefore, it can be concluded that designing for the P.M. peak hour is appropriate.

According to 2003 peak-hour count data provided by Caltrans, some summer days also result in very high traffic volumes throughout Mammoth Lakes. The following summer days ranked within the 30 highest peak-hour traffic volume days along Main Street East of Minaret Road:

- July 5, 2003 (three peak hours: 12:00 P.M., 2:00 P.M., and 4:00 P.M.)
- August 8, 2003 (two peak hours: 11:00 A.M. and 4:00 P.M.)
- August 15, 2003 (4:00 P.M.)
- August 30, 2003 (two peak hours: 11:00 A.M. and 12:00 P.M.)

However, in general, peak hour traffic volumes are generally highest townwide during the winter season. It is assumed that approximately ten of the 30 highest peak-hour volumes throughout the year on Main Street in Mammoth Lakes occur during the summer, which is a conservative estimate based upon the eight peak hours identified above. It is also assumed that during the winter the P.M. peak-hour traffic volumes are significantly higher than any other hour of the day. Referring to Table 2 and Figure 3, Daily Traffic Volumes along Main Street East of Minaret, in the Background Paper, it can be seen that the design day roughly represents the day during which the 16th highest winter peak-hour traffic volumes occur. Taking into account summer traffic volumes, the design day roughly represents the day during which the 26th highest peak-hour traffic volumes occur, which is more conservative (i.e., results in higher design volumes) than the 30th highest hour design period recommended by the *American Association of State Highway and Transportation Officials*.

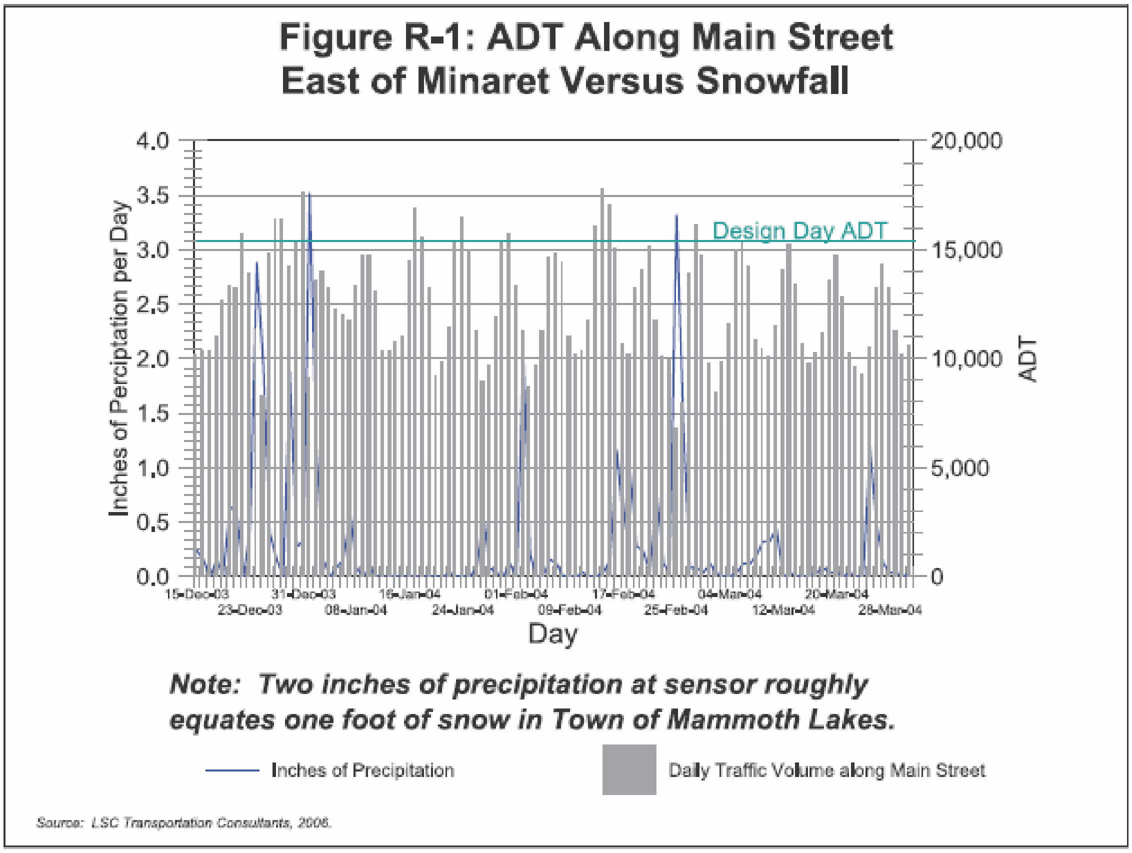
During these approximately 25 highest hours per year, the design day traffic volumes are exceeded, and LOS may drop below the Town standards. These 25 hours represent 0.3 percent of the hours in a year. Therefore, although the capacity of the roadway may be exceeded for 0.3 percent of the time during the year, traffic volumes will be accommodated by the roadway capacity 99.7 percent of the time.

In order to demonstrate traffic conditions that might occur during the 25 hours that result in higher traffic volumes than the design day, some additional LOS analyses were conducted. Referring to Table 2 in the Background Paper, the peak day winter average daily traffic (ADT) is approximately 16 percent higher than the design day ADT. Assuming a similar relationship occurs between the peak hours at all study intersection, it was estimated that on the peak day the peak-hour volume was 16 percent higher than the design day peak-hour volume. Intersection LOS was re-run for the traffic volumes that were 16 percent higher than those generated by the Draft General Plan Update during the design day peak-hour. The results of the analysis indicate that the implementation of the intersection LOS mitigation measures would result in adequate LOS (LOS D or better) at all intersections in the study area under the winter highest peak-hour conditions, with the exception of the US 395/Main Street, Meridian Boulevard/Majestic Pines, Minaret Road/Old Mammoth Road, and US 395 Northbound/Hot Creek Hatchery Road intersections, which would fail under peak conditions. However, these conditions would likely occur for no more than 26 hours per year, or 0.3 percent of the total year.

Also, consistent with standard analysis procedures applied in other high snowfall communities, such a Lake Tahoe and the Town of Truckee, LOS and capacity were not adjusted to account for snow conditions. The occurrence of stormy/snowy weather conditions and snow on the roadways actually occurs over a relatively small proportion of the winter. Furthermore, as traffic capacity varies with the specific conditions of a storm, as well as "incidences" such as drivers stopping in travel lanes to adjust chains, identifying a "design condition" to reflect winter storms would largely be speculative. In accordance with Section 15145 in the CEQA Guidelines, if a thorough investigation is unable to resolve an issue and the answer remains purely speculative, then the discussion of the effects of the issue should be terminated. Consistent with Section 15145, since it would be too speculative to analyze the effects of high traffic volumes during heavy snowfall periods, additional design analysis during such conditions is not appropriate. In addition, this approach is consistent with other traffic analyses that LSC has prepared in areas with high annual snowfall, such as the Lake Tahoe region, Park City, Utah, and Aspen, Colorado.

Regardless, Figure 1 on the following page (Figure 11 on page 5 of the GPFEIR: Volume II), illustrates the provides an analysis of the correlation between traffic volumes along Main Street east of Minaret Road and precipitation at Mammoth Pass as reported by the California Department of Water Resources.

Figure 1 ADT along Main Street East of Minaret Versus Snowfall



As the figure indicates, for all the winter days that the Average Daily Traffic (ADT) along Main Street was higher than the design day ADT, the inches of precipitation on Mammoth Pass was less than 0.32 inches, which equates to approximately two inches of snow.[1] In addition, during the top five snow days, the daily traffic volumes along Main Street were at least 26 percent less than those occurring on the design day. Although it cannot be concluded from this data that high traffic volumes will never occur during days when there is heavy snowfall, it can be concluded that such an event would be rare and it is not appropriate to design for such conditions.

[1] *Peter Bernasconi, Town of Mammoth Lakes Associate Civil Engineer, two inches of precipitation at the weather station at Mammoth Pass equates to approximately one foot of snow in the Town of Mammoth Lakes.*

Mammoth Lakes Transportation Model and LOS Analysis Methodology Background Paper

LSC Transportation Consultants, Inc.
May 13, 2005

This paper is intended to provide a concise summary of the procedures and assumptions used in evaluating traffic conditions in Mammoth Lakes, specifically for the General Plan update and Capital Improvement Programs. First, a general discussion of Level Of Service (LOS) concepts is presented as applied in Mammoth Lakes , followed by a discussion of the transportation modeling process.

LEVEL OF SERVICE

Definition of LOS

The concept of level of service is defined as a qualitative measure describing operational conditions within a traffic stream, and their perception by motorists and/or passengers. A level-of-service definition generally describes these conditions in terms of such factors as speed and travel time, freedom to maneuver, traffic interruptions, comfort and convenience, and safety. Six levels of service are defined for each type of roadway facility. They are given letter designations, from A to F, with Level of Service A representing the best operating conditions and Level of Service F the worst.

In general, the various levels of service are defined as follows for roadways (away from intersections):

- **Level of Service A** represents free flow. Individual drivers are virtually unaffected by the presence of others in the traffic stream. Freedom to select desired speeds and to maneuver within the traffic stream is extremely high. The general level of comfort and convenience provided to the motorist, passenger, or pedestrian is excellent.

- **Level of Service B** is in the range of stable flow, but the presence of other users in the traffic stream begins to be noticeable. Freedom to select desired speeds is relatively unaffected, but there is a slight decline in the freedom to maneuver within the traffic stream from LOS A. The level of comfort and convenience provided is somewhat less than at LOS A, because the presence of others in the traffic stream begins to affect individual behavior.

- **Level of Service C** is in the range of stable flow, but marks the beginning of the range of flow in which the operation of individual drivers becomes significantly affected by interactions with others in the traffic stream. The selection of speed is now affected by the presence of others, and maneuvering within the traffic stream requires substantial vigilance on the part of the user. The general level of comfort and convenience declines noticeably at this level.

- **Level of Service D** represents high-density, but stable, flow. Speed and freedom to maneuver are severely restricted, and the driver experiences a generally poor level of comfort and convenience. Small increases in traffic flow will generally cause operational problems at this level.

- **Level of Service E** represents operating conditions at or near the capacity level. All speeds are reduced to a low, but relatively uniform value. Freedom to maneuver within the traffic stream is extremely difficult, and it is generally accomplished by forcing a vehicle or pedestrian to "give way" to accommodate such maneuvers. Comfort and convenience levels are extremely poor, and driver or pedestrian frustration is generally high. Operations at this level are usually unstable, because small increases in flow or minor perturbations within the traffic stream will cause breakdowns.

- **Level of Service F** is used to define forced or breakdown flow. This condition exists wherever the amount of traffic approaching a point exceeds the amount which can traverse the point. Queues form behind such locations. Operations within the queue are characterized by stop-and-go waves, and they are extremely unstable. Vehicles may progress at reasonable speeds for several hundred feet or more, then be required to stop in a cyclic fashion. Level of Service F is used to describe the operating conditions within the queue, as well as the point of the breakdown. It should be noted, however, that in many cases operating conditions of vehicles or pedestrians discharged from the queue may be quite good. Nevertheless, it is the point at which arrival flow exceeds discharge flow which causes the queue to form, and Level of Service F is an appropriate designation for such points.

The LOS resulting from different levels of vehicle control delay, as identified in the Highway Capacity Manual, are shown in Table 1. Control delay is the total time that elapses between the vehicle joining the queue and its departure from the head of the queue plus the time required to decelerate to a stop and to accelerate to free-flow speed. The delays identified in the table relate the perception of the driver in the amount they are delayed at an intersection to LOS.

LOS Standards

The Town of Mammoth Lakes General Plan Transportation Element, adopted in 2001, currently contains the following Policy:

> ***Policy 1.7:*** *Establish and maintain a Level of Service D or better on a typical winter Saturday peak-hour for signalized intersections and for primary through movements for unsignalized intersections along arterial and collector roads. This standard is expressly not applied to absolute peak conditions, as it would result in construction of roadway improvements that are warranted only a limited number of days per year and that would unduly impact pedestrian and visual conditions.*

Therefore, the following LOS thresholds were applied in the General Plan traffic analysis:

1. *For Signalized Intersections:* Total intersection LOS D or better must be maintained. Therefore, if a signalized intersection is found to operate at a total intersection LOS E or F, mitigation is required. It is assumed that this same threshold applies to roundabouts.

2. *For Unsignalized Intersections:* In order to avoid intersection the identification of a LOS failure for intersections that result in only a few vehicles experience a delay greater than 50 seconds (such as at a driveway serving a few homes that accesses onto a busy street), a LOS deficiency is not identified for all intersections with approach LOS E or F. Instead, a LOS deficiency is assumed to occur at an unsignalized intersection only if an individual minor street movement operates at LOS E or F and total minor approach delay exceeds 4

vehicle hours for a single lane approach and 5 vehicle hours for a multi lane approach. In other words, a deficiency is found to occur if the average number of vehicles queued over the peak-hour exceeds 4 at a single lane approach, or exceeds 5 at a multilane approach.

Comparison with Other Jurisdiction LOS Standards

As shown in Table 2, Mammoth Lakes LOS policy is in line with many jurisdictions within California. Some more rural areas (such have Amador and Siskiyou Counties) have a "higher" LOS C standard, while other areas have a lower LOS E standard in some areas. The Town of Mammoth Lakes is probably most comparable to the Town of Truckee in its population and its high level of tourist visitation during both the summer and winter: Mammoth Lake's LOS D thresholds are more stringent than the Town of Truckee's in that a LOS E is permitted in the Truckee downtown area.

Impacts Associated with a More Restrictive (Higher) LOS

In considering an appropriate LOS standard, it is useful to identify how changing the standard would impact the need for roadway improvements (with the attendant impacts on community character). The impact of the Town changing their LOS policy to a more restrictive (higher) LOS would be that more intersections and roadways would require improvements by 2025, and those already identified as needing improvements by 2025 would require improvements sooner. For comparison purposes, assume the Town adopted a LOS B standard. The following intersections, which are currently identified to operate at adequate LOS under 2004 conditions, would need to be expanded to attain a LOS B standard:

- Lakeview Road/Lake Mary Road
- Minaret Road/Main Street
- Old Mammoth Road/Main Street
- US 395 Northbound/Main Street (SR 203)
- Minaret Road/Old Mammoth Road
- Minaret Road/Meridian Road

In addition, the following intersections, which are currently forecast to operate at adequate LOS by 2025, would need to be expanded to attain a LOS B standard:

- Old Mammoth Road/Main Street
- Sierra Park Road/Main Street
- US 395 Northbound/Main Street (SR 203)
- Old Mammoth Road/Meridian Boulevard
- US 395 Southbound/Hot Creek Fish Hatchery Road

As for those intersections that have already been identified as requiring mitigation by 2025, additional improvements would be required to maintain a LOS B over the next 20 years. For example, the Minaret Road/Main Street intersection would need the following additional lanes by 2024 if the LOS B standard were adopted:

- Northbound Approach: Add Second Through Lane.
- Southbound Approach: Add Two Through Lanes and Separate Right-Turn Lane and Remove Shared Through/Right Lane.

- Eastbound Approach: Add Second Left-Turn Lane and Second Through Lane.
- Westbound Approach: Add Second Left-Turn Lane and Second Through Lane.

In total, Main Street through this intersection would need to be expanded by one through lane in each direction, and Minaret Road expanded by one though lane in each direction.

As another example, the Minaret Road/Meridian Boulevard intersection would need the following additional lanes by 2024 if the LOS B standard were adopted:

- Northbound Approach: Add Two Through Lanes and a Separate Right-Turn Lane and Remove Through/Right Shared Lane.
- Southbound Approach: Add Two Through Lanes and a Separate Right-Turn Lane and Remove Through/Right Shared Lane.
- Eastbound Approach: Add Second Left-Turn Lane, Second Through Lane, Separate Right-Turn Lane and Remove Through/Right Shared Lane.
- Westbound Approach: Add Second Through Lane, Separate Right-Turn Lane and Remove Through/Right Shared Lane.

This would add a total of one through lane in each direction on Minaret Road. Furthermore, Minaret Road through the Village area would need to be widened to a total of four lanes (two lanes in each direction).

The level of improvements that would be required by more restrictive LOS standards would result in wider roads, more pavement, and would not fit within the existing character of the Town. Not only would these improvements create an urban environment, but wider roads make for a less pedestrian-friendly environment. The substantial impacts of roadway improvements needed to attain a high LOS is the reason why the majority of urban and resort communities have adopted LOS standards at or near D.

TRAFFIC MODEL

Model Design Day

A crucial step in development of a traffic model is collecting and refining a comprehensive set of existing design volumes. The existing Town of Mammoth Lakes Transportation Demand Model is based upon a typical winter Saturday P.M. peak-hour design period, defined as the average winter Saturday peak hour. The traffic volumes throughout the Town of Mammoth Lakes vary greatly by time of day, day of week and, more importantly, by season. Particularly in areas with these high variation in traffic levels, it is important to decide what hourly traffic volumes should be used as the basis of design.

To avoid the development of facilities that are only needed a relatively few days per year, the traffic engineering profession has adopted a standard procedure of basing roadway design on volumes slightly below the absolute peak volumes. For this reason the Town of Mammoth Lakes, for example, has focused most of its design policies on a typical Winter Saturday peak hour, rather than the highest winter peak hour. A Policy on Geometric Design of Highways and Streets (American Association of State Highway and Transportation Officials, 2001) indicates "*The design hourly volume for rural highways ... should generally be the 30th highest volume of the future year chosen for design.*" (P 61). It is true that during winter peak periods, traffic volumes occasionally exceed the intersection and roadway capacity. However, to avoid the development of facilities that are only needed a relatively few days per year, the typical winter Saturday peak hour was analyzed, which is consistent with standard engineering design practice.

The use of a 10th or 30th highest design hour is common practice in many resort communities. For example, in the Town of Truckee the 10th highest summer peak hour is used. In addition, in Truckee, peak ski traffic volumes occurring during the winter are not designed for at all. In Placer County, the winter design day represents the 30th highest winter peak hour. As part of a recent traffic analysis prepared the development of Kings Beach, the 10th highest summer peak hour was used, which was determined appropriate by Caltrans, Placer County, and the Tahoe Regional Planning Agency.

Figure 1 depicts the variation of traffic volumes along Main Street east of Minaret by day of the week. As the figure indicate, Saturdays consistently represent the day during which the peak traffic conditions occur. Of course, on some holiday weekends high traffic volumes may occur on days other than Saturday. As shown in Table 3, for example, the highest traffic volumes usually occur around the Christmas, New Years, President's Day, and Martin Luther King Jr. holidays. Figure 2 presents the hourly traffic volume variation along Main Street east of Minaret Road on the day in the 2003/2004 winter season which most closely reflects the design day traffic volume. As the figure indicates, the P.M. peak-hour traffic volumes are usually significantly higher than the A.M. peak-hour traffic volumes. This is mostly attributed to the fact that skiers generally leave the ski area during a smaller time frame than they arrive. Therefore, it can be concluded that designing for the P.M. peak hour is appropriate.

According to 2003 peak-hour count data provided by Caltrans, some summer days also result in very high traffic volumes throughout Mammoth Lakes. In fact, the following days ranked within the 30 highest peak-hour traffic volume days along Main Street East of Minaret Road:

- July 5, 2003 (three peak hours: 12:00 P.M., 2:00 P.M., and 4:00 P.M.)
- August 8, 2003 (two peak hours: 11:00 A.M. and 4:00 P.M.)
- August 15, 2003 (4:00 P.M.)
- August 30, 2003 (two peak hours: 11:00 A.M. and 12:00 P.M.)

However, in general, traffic volumes are generally highest Townwide during the winter season.

It can be assumed that approximately 10 of the highest peak-hour volumes on Main Street in Mammoth Lakes occur during the summer. It is also assumed that during the winter the P.M. peak-hour traffic volume is significantly higher than any other hour of the day. Referring to Table 3 and Figure 3, it can be seen that the design day roughly represents the day during which the 16th highest winter peak-hour traffic volumes occur. Taking into account summer traffic volumes, the design day roughly represents the day during which the 26th highest peak-hour traffic volumes occur. Therefore, the Town of Mammoth Lakes' use of a typical winter Saturday is consistent with but more conservative (i.e., results in higher design volumes) than AASHTO's recommended 30th highest hour.

In addition, it can be said that during approximately 25 hours per year, the design day traffic volumes are exceeded, and LOS may drop below the Town standards. These 25 hours represent 0.3 percent of the hours in a year. Therefore, although the capacity of the roadway may be exceeded for 0.3 percent of the time during the year, traffic volumes will be accommodated by the roadway capacity 99.7 percent of the time.

It should also be noted that, consistent with standard analysis procedures elsewhere, Level of Service and capacity was not adjusted to account for snow conditions. The occurrence of stormy/snowy weather conditions and snow on the roadways actually occurs over a relatively small proportion of the winter (though the last winter might make it seem otherwise). Furthermore, as traffic capacity varies with the specific conditions of a storm as well as "incidences" such as drivers stopping in travel lanes to adjust chains, identifying a "design condition" to reflect winter storms would largely be conjecture. This approach is consistent with other traffic analyses that LSC has prepared in areas with high annual snowfall, such as the Lake Tahoe region, Park City Utah, and Aspen Colorado.

Overview of Traffic Model

A transportation demand model is a computerized representation of a transportation system. A model is useful for comparing the impacts of various growth assumptions and for evaluating alternative transportation improvement programs. Although it would also be possible to use growth factors based on the recent trends to project future traffic volumes, a model allows the use of better projections of growth within the region, accounting for subarea development. Computerized transportation models are also the best means by which to evaluate the interchange of traffic between various land uses and to consider the effects of traffic congestion on travel times and driver route choice.

Transportation models, by definition, are representations of travel choices made by individuals across a geographic area, impacting physical structures such as roads, bridges, parking areas, and intersections. Each model should rely on sound behavioral theory of how individuals make travel choices. The structure of choice sequences suggested by the model and the variables used in the model should reflect a logical process of decision-making followed by travelers in deciding when, where, and how to travel.

The travel choices of individuals are most commonly represented in the United States by what is referred to as the "four-step process." These four steps represent the thought processes of the individual. The individual makes four travel decisions, as follows: (1) the decision that a trip is necessary to fulfill some need or purpose (generation), (2) the decision where that need/purpose is best fulfilled (distribution), (3) the decision of which means is best to get there (mode choice), and (4) the decision of which route to take (trip assignment).

Geographic patterns are represented in the model by data considered to be at the heart of individual travel decisions: where people live, where people work, and where people recreate, shop, or otherwise interact. Land use quantities are represented in a series of Traffic Analysis Zones (TAZs), that together encompass the entire traffic model area. A total of 152 TAZs were defined to encompass the model area. TAZs were generally defined to follow property lines and to accurately reflect vehicular access to/from the roadway network. As discussed in detail below, land use quantities were developed to reflect existing uses within each TAZ.

The physical structures of travel are represented through a combination of links (paths) and nodes (intersections or transfer points). Zone centroids are special types of nodes associated with both the TAZ data mentioned above and the origins and destinations of an individual's trips.

The links typically have a travel time associated with them, either explicitly given or inferred from speed and distance information.

Trip Generation

Trip ends are classified as being either a production (defined as either end of a home-based trip or origin of a non-home based trip) or an attraction (the non-home end of a home-based trip or the destination end of a non-home based trip). Separate models are typically used to predict productions and attractions. Variables used as predictors of trip productions usually include information regarding household income, auto ownership, number of workers per household, residential density, and distance of zone from the central business district. Trip attraction predictors usually include zonal employment levels, zonal floor space, and/or accessibility to the work force.

Trip Distribution

Trip distribution is the process of connecting the trip ends which have been generated for each of the analysis areas or TAZs. It is during this step that the linkage is made between all the trip productions and attractions. Trip distribution is a significant element of the process because the trips between zones (trip interchanges) must eventually be accommodated by the transportation system. The distribution of trips is essential to estimating the traffic volumes on individual links and determining a level of service.

Mode Split

Mode split is the process that converts person trips into different modes. The Mammoth Lake Traffic Model mode split is used to turn person trips into vehicle or transit trips. The mode split estimates by the model is shown in Table 4. As the table indicates, 8 to 11 percent of the model-generated trips are assumed to occur on transit over the course of a typical winter Saturday. Note that mode split for skiers traveling to and from the Mammoth Mountain portals is substantially higher – on the order of 30 percent – which is also reflected in the model.

Trip Assignment

Trip assignment models are used to estimate traffic flow on the network, using the origin-destination pairs generated in trip distribution. The assignment of trips to the network relies on the determination of routes through the network based on the impedance or travel time of each link.

Model Validation

As with any representation of a real system, there are associated limitations. To minimize the effects of these limitations, the updated model has been "validated" so that it matches reality for all critical links in the system. In other words, adjustments were made until the modeled traffic volumes approximated existing traffic volumes, often referred to as "ground counts." Once the model was validated, then and only then can the model be used to estimate future travel patterns and volumes.

To validate the model, the results of the model traffic assignments were compared to the observed traffic volumes. The approach to the validation process is to conduct a point validation analysis. Point validation represents a higher standard for calibration than is typically used. Not only are overall flows of traffic volumes compared, but also site-specific volumes. A calibrated model should provide results which are reasonably close for major links in the street network. Table 5 shows the two-way volume error range which was used in validating the model. For low-volume links, a larger error range is acceptable because of the lack of congestion. A difference of 100 percent for volumes less than 100 vehicles per hour has little effect on congestion because less roadway capacity is being used. For higher volume roadways, the percentage error must be much smaller. The traffic model was validated for all 36 locations evaluated.

Caltrans has established several standards for the validation of traffic models, as established in Travel Forecasting Guidelines (California Department of Transportation, November 1992). Two examples of these standards are applied to the Mammoth Lakes Model as follows:

- A minimum of 75 percent of the roadway links should be within their maximum desirable deviation, which ranges from approximately 5 to 60 percent depending on total volume. As the Caltrans standards are meant to be applied to models which generally do not contain local collectors, such as the Mammoth Model does, the maximum percent desirable deviation identified in Table 5 was assumed to be more appropriate than those identified in the Caltrans model. *Using these percent deviations, the Mammoth Lakes Model results indicate that 100 percent of the link volumes evaluated are within the acceptable error ranges, substantially exceeding Caltrans' 75 percent standard.*

- The model-wide correlation coefficient should be greater than 0.88. *The Mammoth Lakes Model traffic model results indicate a correlation coefficient of 0.99, substantially exceeding Caltrans' standard.*

- The maximum acceptable Root Mean Square Error (RMSE) should not exceed 40 percent. *The Mammoth Lakes Model model results in a RSME equal to 11 percent, substantially exceeding Caltrans's 40 percent standard.*

Future Model Assumptions

The land uses assumptions that were used in the model runs were developed by Mammoth Lakes Transportation Planning Staff. Four 2024 land use alternatives were evaluated. No new roadways were assumed to be built between 2004 and 2024.

It should be noted that any community-wide traffic model is a planning level "tool" and necessarily reflects a simplification of the roadway network, individual property access, and land uses. Detailed evaluation of individual roadway elements based upon specific project site plans, therefore, may yield differing results. The model, however, is more than adequate for purposes of overall planning for Mammoth Lakes transportation network, and meets or exceeds the standards of the traffic engineering profession.

Table 1: Level of Service Delay Criteria for Signalized and Unsignalized Intersections

Level Of Service	Control Delay per Vehicle (seconds)	
	Signalized Intersections	Unsignalized Intersections
A	<= 10	<= 10
B	> 10 and <= 20	> 10 and <= 15
C	> 20 and <= 35	> 15 and <= 25
D	> 35 and <= 55	> 25 and <= 35
E	> 55 and <= 80	> 35 and <= 50
F	> 80	> 50

Shading indicates Town of Mammoth Lakes LOS Standard

Source: 2000 Highway Capacity Manual.

Table 2: Level of Service Standards for Rural Jurisdictions by Roadway Classification

Roadway Classification	Minimum Level of Service Standard								
	Mammoth Lakes	Tuolumne County	Amador County (1)	Lake County	Siskiyou County	El Dorado County	Nevada County	Town of Truckee	TRPA (3)
State Highways	D	E	C/D	C	C	E (urban) D (rural)	D (urban) C (rural)	D, except E within Downtown area.	D
Arterial	D	C (2)	C/D	C	C	E (urban) D (rural)	D (urban) C (rural)	D, except E within Downtown area.	D
Collector	D	B (2)	C	C	C	E (urban) D (rural)	D (urban) C (rural)	D, except E within Downtown area.	D
Local Roads	D	B (2)	C	C	C	E (urban) D (rural)	D (urban) C (rural)	D, except E within Downtown area.	D

Note 1: Major intersections with a 15 minute peak period of LOS D is allowed. Certain state highway road segments are also allowed LOS D.

Note 2: One LOS standard lower is allowed within 1/2 mile of intersections with major collectors and arterial highways. For example, in Tuolumne County LOS B is required along all collectors, excepting those within 1/2 mile of a major collector or arterial highway, for which a LOS C must be maintained.

Note 3: LOS E is allowed at signalized intersections for no more than 4 hours per day.

Source: County planning documents.

Table 3: 2003/2004 Winter Daily Traffic Volumes Along Main Street East of Minaret Sorted from Highest to Lowest

Winter Rank	Day of Week	Date	Daily Traffic Volume: Eastbound	Daily Traffic Volume: Westbound	Daily Traffic Volume: Total	
1	Saturday	14-Feb-04	8,743	9,042	17,785	
2	Wednesday	31-Dec-03	8,842	8,804	17,646	
3	Sunday	15-Feb-04	8,969	8,054	17,023	
4	Saturday	17-Jan-04	8,293	8,614	16,907	
5	Saturday	24-Jan-04	8,163	8,289	16,452	
6	Sunday	28-Dec-03	8,493	7,913	16,406	
7	Saturday	27-Dec-03	8,192	8,203	16,395	
8	Saturday	28-Feb-04	8,018	8,118	16,136	
9	Friday	13-Feb-04	7,458	8,593	16,051	
10	Saturday	31-Jan-04	7,868	7,890	15,758	
11	Monday	22-Dec-03	8,051	7,702	15,753	
12	Sunday	18-Jan-04	8,370	7,200	15,570	
13	Tuesday	30-Dec-03	7,985	7,434	15,419	
14	Friday	30-Jan-04	7,379	8,012	15,391	
15	Friday	23-Jan-04	7,229	8,157	15,386	
16	Saturday	06-Mar-04	[illegible]	[illegible]	[illegible]	<--"Design Day"
17	Saturday	13-Mar-04	7,650	7,597	15,247	
18	Saturday	21-Feb-04	7,631	7,500	15,131	
19	Monday	16-Feb-04	8,517	6,596	15,113	
20	Sunday	25-Jan-04	8,405	6,615	15,020	
21	Friday	05-Mar-04	7,185	7,789	14,974	
22	Saturday	07-Feb-04	7,354	7,473	14,827	
23	Friday	26-Dec-03	7,207	7,585	14,792	
24	Friday	09-Jan-04	7,187	7,574	14,761	
25	Sunday	29-Feb-04	8,552	6,196	14,748	
26	Saturday	20-Mar-04	7,393	7,342	14,735	
27	Saturday	10-Jan-04	7,382	7,337	14,719	
28	Friday	06-Feb-04	6,833	7,812	14,645	
29	Friday	16-Jan-04	6,694	7,829	14,523	
30	Sunday	08-Feb-04	8,143	6,252	14,395	
31	Saturday	27-Mar-04	7,105	7,181	14,286	
32	Monday	29-Dec-03	7,341	6,889	14,230	
33	Sunday	07-Mar-04	8,137	6,073	14,210	
34	Friday	12-Mar-04	6,755	7,353	14,108	
35	Friday	20-Feb-04	6,909	7,198	14,107	
36	Saturday	03-Jan-04	7,572	6,414	13,986	
37	Tuesday	23-Dec-03	7,212	6,743	13,955	
38	Friday	27-Feb-04	6,542	7,393	13,935	
39	Friday	02-Jan-04	7,249	6,355	13,604	
40	Friday	19-Mar-04	6,476	7,080	13,556	
41	Sunday	14-Mar-04	7,616	5,767	13,383	
42	Sunday	01-Feb-04	7,650	5,708	13,358	
43	Saturday	20-Dec-03	6,409	6,909	13,318	
44	Thursday	08-Jan-04	6,688	6,629	13,317	
45	Monday	19-Jan-04	7,712	5,556	13,268	
46	Sunday	28-Mar-04	7,405	5,880	13,285	
47	Sunday	04-Jan-04	7,326	5,939	13,265	
48	Thursday	19-Feb-04	6,584	6,677	13,261	
49	Sunday	21-Dec-03	6,700	6,556	13,256	
50	Friday	26-Mar-04	6,329	6,910	13,239	
51	Sunday	11-Jan-04	7,255	5,804	13,059	
52	Sunday	21-Mar-04	7,338	5,502	12,840	
53	Friday	19-Dec-03	6,089	6,553	12,642	
54	Monday	05-Jan-04	6,329	5,982	12,311	
55	Tuesday	06-Jan-04	6,133	5,876	12,009	
56	Thursday	29-Jan-04	5,699	6,219	11,918	
57	Thursday	12-Feb-04	5,773	6,035	11,808	
58	Sunday	22-Feb-04	6,774	5,016	11,790	
59	Wednesday	07-Jan-04	6,030	5,714	11,744	
60	Thursday	04-Mar-04	5,637	5,928	11,565	
61	Thursday	11-Mar-04	5,670	5,864	11,534	
62	Thursday	22-Jan-04	5,480	5,945	11,425	
63	Wednesday	24-Dec-03	5,670	5,689	11,359	
64	Monday	02-Feb-04	6,011	5,244	11,255	
65	Thursday	05-Feb-04	5,475	5,769	11,244	
66	Monday	29-Mar-04	5,888	5,354	11,242	
67	Monday	26-Jan-04	5,994	5,243	11,237	
68	Thursday	18-Mar-04	5,579	5,637	11,216	
69	Thursday	18-Dec-03	5,531	5,515	11,046	
70	Thursday	15-Jan-04	5,499	5,519	11,018	
71	Monday	09-Feb-04	5,917	5,094	11,011	
72	Monday	08-Mar-04	5,762	5,126	10,888	
73	Wednesday	14-Jan-04	5,503	5,245	10,748	
74	Monday	15-Mar-04	5,620	5,085	10,705	
75	Tuesday	17-Feb-04	5,409	5,264	10,673	
76	Wednesday	31-Mar-04	5,420	5,163	10,583	
77	Thursday	25-Mar-04	5,243	5,314	10,557	
78	Tuesday	09-Mar-04	5,364	5,049	10,413	
79	Wednesday	17-Dec-03	5,293	5,102	10,395	
80	Monday	12-Jan-04	5,439	4,953	10,392	
81	Tuesday	16-Dec-03	5,267	5,090	10,357	
82	Tuesday	13-Jan-04	5,295	5,037	10,332	
83	Wednesday	11-Feb-04	5,254	5,070	10,324	
84	Wednesday	17-Mar-04	5,234	5,071	10,305	
85	Monday	22-Mar-04	5,416	4,833	10,249	
86	Monday	15-Dec-03	5,197	5,031	10,228	
87	Wednesday	18-Feb-04	5,153	5,054	10,207	
88	Tuesday	30-Mar-04	5,299	4,906	10,205	
89	Tuesday	10-Feb-04	5,233	4,950	10,183	
90	Wednesday	10-Mar-04	5,223	4,917	10,140	
91	Monday	23-Feb-04	5,327	4,777	10,104	
92	Tuesday	24-Feb-04	5,168	4,751	9,919	
93	Wednesday	03-Mar-04	5,025	4,871	9,896	
94	Wednesday	21-Jan-04	4,988	4,894	9,882	
95	Tuesday	16-Mar-04	5,078	4,755	9,833	
96	Monday	01-Mar-04	5,211	4,593	9,804	
97	Wednesday	28-Jan-04	4,925	4,787	9,712	
98	Wednesday	04-Feb-04	4,941	4,729	9,670	
99	Tuesday	23-Mar-04	5,010	4,626	9,636	
100	Wednesday	24-Mar-04	4,768	4,548	9,316	
101	Tuesday	20-Jan-04	4,681	4,502	9,183	
102	Thursday	01-Jan-04	4,884	4,225	9,069	
103	Tuesday	27-Jan-04	4,582	4,338	8,918	
104	Tuesday	03-Feb-04	4,654	4,128	8,682	
105	Tuesday	02-Mar-04	4,264	4,178	8,442	
106	Thursday	25-Dec-03	3,961	4,297	8,258	
107	Thursday	26-Feb-04	3,922	4,049	7,971	
108	Wednesday	25-Feb-04	3,512	3,339	6,851	

Percent Difference Between Design Day and Peak Day Traffic Volume **86%**

Table 4: Transit Mode Split Estimated by Mammoth Model by Land Use Alternative

Alternative	Off-Peak Transit Trips	Peak-Hour Transit Trips	Total Daily		
			Bus Person Trips	Total Person Trips	Mode Split (% Using Bus)
2004	10,988	1,680	12,668	165,626	7.65%
2025 Build Out of Alternative 1	20,620	3,328	23,948	295,360	8.11%
2025 Build Out of Alternative 2	28,209	4,845	33,054	316,288	10.45%
2025 Build Out of Alternative 3	22,509	3,619	26,128	315,401	8.28%
2025 Build Out of Alternative 4	18,913	3,040	21,953	267,040	8.22%

Note: This mode split represents the mode split for all trips in the Mammoth Transportation Demand Model and not just skier trips.

Mode Split.wb3

Table 5
Point Validation Error Range

Peak Hour Two-Way Traffic Volumes	Error Range + (-)
<100	100%
100-399	50%
400-999	25%
1,000-1,500	15%
>1,500	10%

Figure 1: Daily Variation in Traffic Volumes Along Main East of Minaret

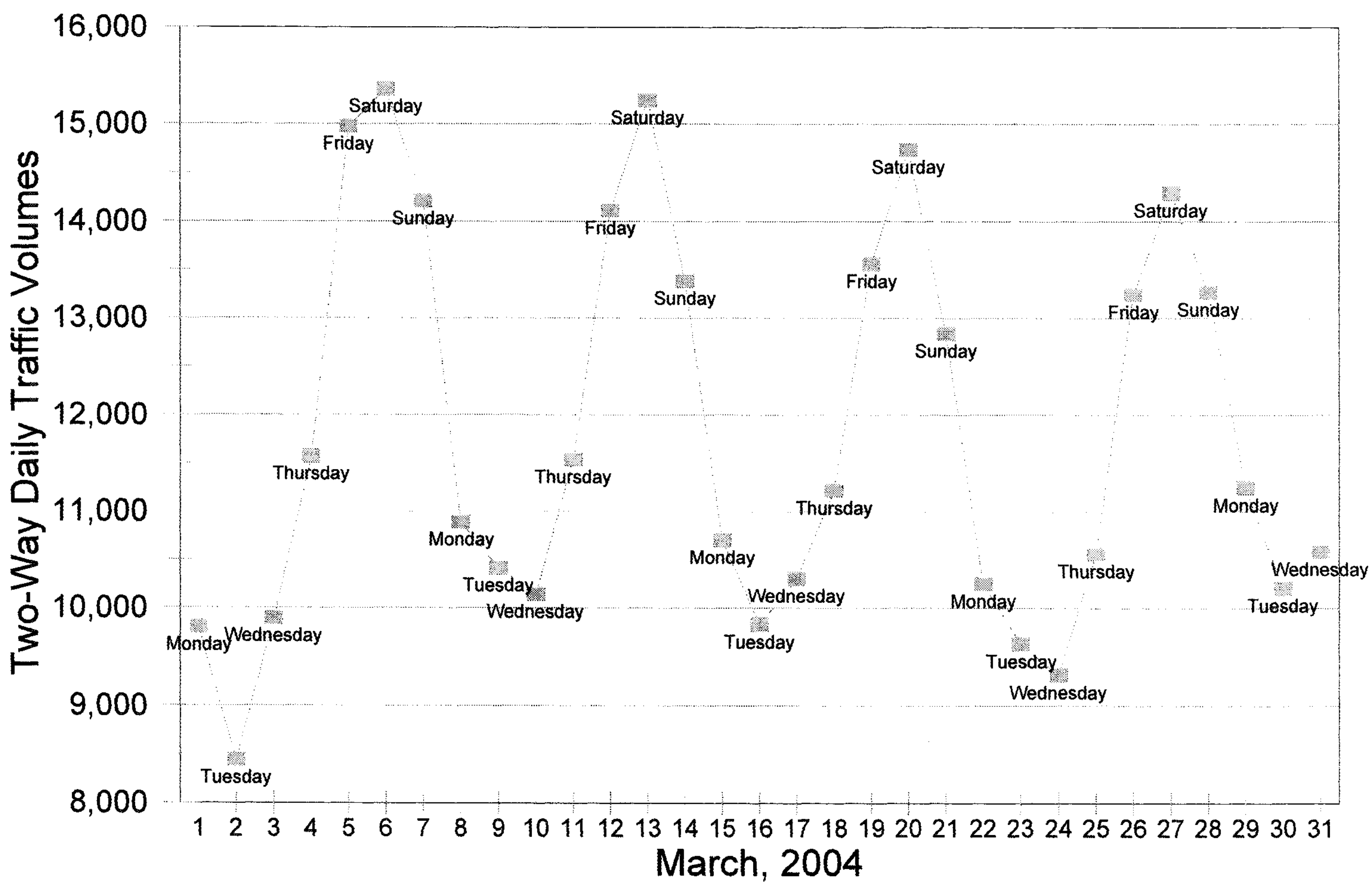


Figure 2: Peak-Hour Traffic Volumes
Main East of Minaret (March 6, 2004)

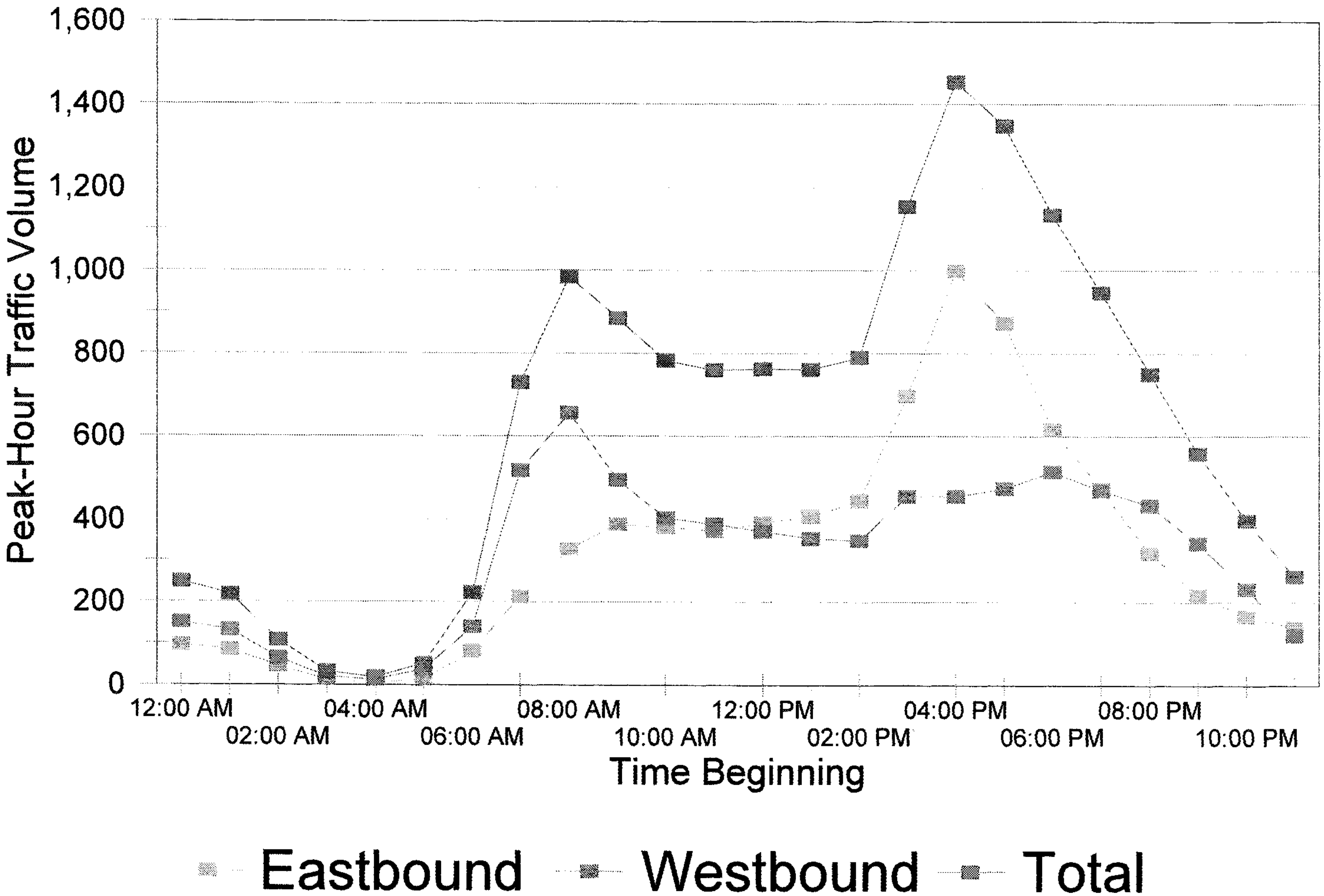
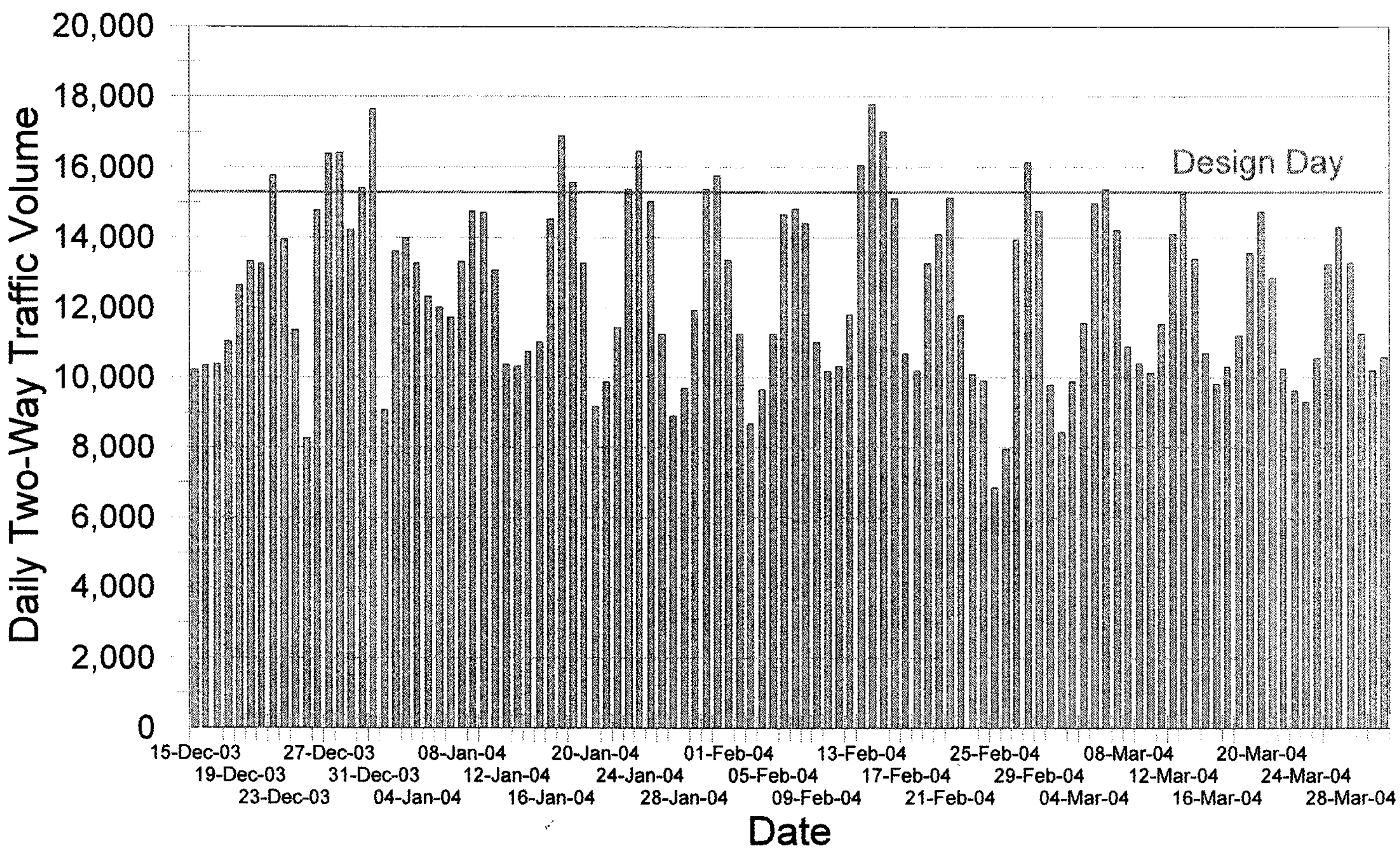


Figure 3: Daily Traffic Volumes Along Main East of Minaret (December 15, 2003 - March 31, 2004)



Appendix F: Implementation Table

Table of Contents:

Implementation Table Abbreviations of Organizations

ATD – Airport and Transportation Department

Caltrans – California Department of Transportation

CDD – Community Development Department

COC – Chamber of Commerce

ESTA – Eastern Sierra Transit Authority

Mono – Mono County

MC – Mobility Commission

MCWD – Mammoth Community Water District

MH – Mammoth Hospital

MLFPD – Mammoth Lakes Fire Protection District

MLPD – Mammoth Lakes Police Department

MLT – Mammoth Lakes Tourism

MLTPA – Mammoth Lakes Trails and Public Access

MMSA – Mammoth Mountain Ski Area

MUSD – Mammoth Unified School District

PWD – Public Works Department

RD – Recreation Department

USFS – United States Forest Service – Inyo National Forest

Action	Mobility Element Implementation Action Item	Lead and Participating Staff and Agencies	1 year	2 - 5 years	5 + years
Complete Streets					
M.1.3.1.	Establish design guidelines, management tools, and performance measures for the Town's transportation system that reflect Mobility Element goals and policies and further "complete streets" and "feet-first" concepts.	CDD, PWD	x	x	
	- Develop design guidelines and management tools for all Town streets, so that each street supports the land uses along it and provides an optimal accommodation for all modes of transportation.	CDD, PWD	x	x	
	- Develop Level of Service guidelines and California Environmental Quality Act thresholds for pedestrian, bicycle, and transit modes.	CDD, PWD	x	x	
	- Develop transportation system performance measures, regularly track performance, report results to the public, and adjust resources to address issues and align with community priorities as necessary. Measures should not only consider the performance of the Town's transportation system as whole, but also the performance of each type of street according to its function.	CDD, PWD	x	x	x
	- Apply transportation system performance measures to evaluate the contribution of an individual project to General Plan goals and its impact (positive or negative) on the transportation network.	CDD, PWD	x	x	
M.1.3.2.	Develop and implement a townwide wayfinding system to guide visitors and residents to and from their destinations.	CDD, COC, CT, MLT, MLTPA, PWD, USFS	x	x	x
M.1.4.1.	Work with Mammoth Lakes Fire Protection District and Mammoth Lakes Police Department to plan for and ensure appropriate emergency access and response times.	CDD, MLFPD, MLPD, PWD	x		
M.1.5.1.	Require individual development projects to minimize the width and number of driveways and consolidate existing driveways along arterial roads as is feasible and practical.	CDD, PWD	x	x	x
M.1.5.2.	Work with Caltrans to improve access management on State Route 203.	CDD, CT, MLFD, PWD	x	x	x
M.2.2.1.	Maintain all roadways, paths, sidewalks, and trails in a good state of repair and meet defined Level of Service guidelines for each facility type.	PWD	x	x	x
M.2.2.2.	Design and construct new transportation facilities to reduce long-term maintenance costs in a harsh climate.	PWD	x	x	x
M.3.1.1.	Monitor and implement traffic calming solutions in residential and commercial areas through measures such as the installation of roundabouts, chicanes, medians, and landscaping, as well as the reduction of the number and width of traffic lanes as appropriate.	CDD, CT, PWD	x	x	x

Action	Mobility Element Implementation Action Item	Lead and Participating Staff and Agencies	1 year	2 - 5 years	5 + years
M.3.1.2.	Establish and develop design guidelines for shared streets in residential neighborhoods where rights-of-way are constrained, ensuring autos travel slowly enough to mix with people – including pedestrians and cyclists.	CDD, PWD	x		
M.3.2.1.	Continue to hold traffic management workshops and work with neighborhood groups as necessary to address traffic concerns and explore traffic calming solutions by following the approved traffic management procedures established in the Town's Traffic Management Plan.	CDD, MC, PWD	x	x	x
M.3.2.2.	Continue to work with Caltrans to plan and implement traffic-calming measures on State Route 203.	CDD, CT, PWD	x	x	x
M.4.1.1.	Update the Town's snow management policy to support "feet-first" objectives, while continuing to maintain public safety as the primary priority, by establishing a townwide maintenance, grooming and/or snow removal program for streets, sidewalks, trails, and bicycle facilities to increase year-round accessibility.	CDD, CT, MLFPD, MLPD, PWD	x		
M.4.1.2.	Work with property owners to develop or expand assessment districts in commercial and pedestrian-oriented districts to provide improved snow management and maintenance services in those districts.	CDD, COC, CT, PWD	x	x	x
M.4.1.3.	Work with Caltrans to develop an effective snow and ice management plan for State Route 203 that establishes maintenance standards and assigns responsibilities, including standards that will allow all lanes to be open during snow storms and snow removal operations.	CDD, CT, PWD	x	x	
M.4.2.1.	Explore alternate traction materials for roadways in lieu of cinders and/or explore the feasibility of limiting cinder use to arterials and collectors only. Incorporate snow removal technologies or methods into transportation plans and capital improvement projects.	PWD	x	x	x
Vehicle					
M.5.1.1.	Construct new streets and/or reroute existing streets to achieve circulation objectives in conjunction with new development.	CDD, CT, MLFPD, MLPD, PWD			x
M.5.1.2.	Update roadway design typical sections and development standards and ensure that existing and future facilities take Mammoth Lakes' climatic conditions into account.	CDD, PWD	x		
M.5.3.1.	Install traffic control and safety operational improvements at intersections on arterial roads as required to meet Levels of Service standards.	CT, PWD	x	x	x
M.5.4.1.	Work with Caltrans to evaluate the installation of roundabouts on State Route 203 as appropriate.	CDD, CT, PWD	x	x	

Action	Mobility Element Implementation Action Item	Lead and Participating Staff and Agencies	1 year	2 - 5 years	5 + years
M.5.5.1.	Annually review and update the Town's Capital Improvement Program (CIP) to include plans for improvements to be completed within the five-year timeframe of the CIP. As part of the CIP process, identify and update timeframes for implementation of circulation system improvements and identify the "triggers" that will initiate the need for a particular improvement.	CDD, PWD	x	x	x
M.5.5.2.	Update the Town's traffic model analysis periodically to reflect changes in land use, local and regional traffic conditions, and the roadway network. As a result of the updated analysis, review timelines and "triggers" for circulation system improvements and amend the CIP as necessary to address changing conditions.	CDD, PWD		x	
M.5.5.3.	Continue to perform transportation monitoring activities, including vehicle trip monitoring on local streets throughout town as necessary.	CDD, PWD	x	x	x
M.5.6.1.	Develop and adopt criteria and procedures for the preparation of traffic impact analyses for development projects to identify existing and potential cumulative impacts, including parking and construction-related impacts.	CDD, CT, PWD	x	x	
M.5.7.1.	Secure needed rights-of-way for future roadway improvements as part of relevant project approvals and through the Municipal Code.	CDD, CT, PWD		x	x
M.5.7.2.	Work with Caltrans to evaluate and implement relinquishment of right-of-way on Highway 203 to the Town, including the identification of potential funding opportunities.	CDD, CT, PWD	x	x	x
M.6.5.1.	Require construction management plans to be developed and implemented for all new private development. Construction management plans shall be subject to standards for non-conformance and for schedule delays as determined by the Town.	CDD, PWD	x	x	x
M.6.6.1.	Establish delivery and loading area standards, as well as recommended schedules and routes, to be met as part of the planning approval process.	CDD, PWD	x		
Pedestrian					
M.8.1.1.	As large blocks are developed or redeveloped, increase connectivity by requiring direct and safe pedestrian connections to be provided where practical and feasible, via public sidewalks, paths, trails or mid-block connectors.	CDD, PWD	x	x	x
M.8.1.2.	Update the Sidewalk Master Plan to reflect recommended measures and facilities, including "priority investment," and "strategic improvement" pedestrian routes, which include areas where there are existing infrastructure gaps.	CDD, CT, PWD	x		
M.8.1.3.	Implement trail system improvements recommended in the Trail System Master Plan.	CDD, MLTPA, PWD, RD, USFS	x	x	x

Action	Mobility Element Implementation Action Item	Lead and Participating Staff and Agencies	1 year	2 - 5 years	5 + years
M.8.2.1.	Work with property owners to develop or expand assessment districts in commercial and pedestrian-oriented districts to leverage pedestrian improvement funds and implement improvements in those districts.	CDD, COC, CT, PWD	x	x	x
M.8.2.2.	Apply for Federal and State grant funds to complete priority pedestrian facilities.	CDD, PWD	x	x	x
M.8.3.1.	Work with Caltrans to improve pedestrian safety along State Route 203, including the installation of sidewalks and enhanced pedestrian crossings in accordance with State Highway standards. This may necessitate roadway or shoulder modifications and grade changes or rerouting.	CDD, CT, PWD	x	x	x
M.8.3.2.	Develop a priority list for improved trail and pedestrian crossings, with a focus on arterials. Construct enhancements as funding becomes available.	CDD, COC, CT, MLTPA, MUSD, PWD	x	x	x
M.9.1.1.	Develop townwide pedestrian and streetscape design guidelines that encourage walking and improve accessibility.	CDD, CT, PWD	x	x	
Bicycle					
M.10.1.1.	As large blocks are developed or redeveloped, increase connectivity by requiring direct and safe bicycle connections to be provided where practical and feasible via bike lanes, routes, paths, or trails.	CDD, PWD	x	x	x
M.10.1.2.	Update the General Bikeway Plan to reflect recommended measures and facilities, such as expanding the system of multiuse paths, bike lanes, and bike routes, converting some exiting bike routes to lanes, and filling key infrastructure gaps.	CDD, CT, PWD	x		
M.10.1.3.	Identify opportunities to improve connections between the in-town bicycle network and the trail system outside the urban boundary, as well as regional bicycle routes.	CDD, PWD	x	x	x
M.10.1.4.	Study the designation of “Bicycle Boulevards” on certain residential streets, as appropriate, to encourage bicycle travel.	CDD, PWD	x	x	
M.10.1.5.	Identify key locations for bicycle racks and/or storage.	CDD, PWD	x	x	
M.10.1.6.	Require major new commercial and residential development or redevelopment to provide covered and secure bicycle parking and shower and locker facilities for bicycle commuters as appropriate, or to assist in funding bicycle improvements in nearby locations.	CDD, PWD	x	x	x
M.10.1.7.	Establish a program to work with existing local business owners, commercial property owners, and multi-family residential properties to install secure bicycle racks and/or storage.	CDD, RD	x	x	
M.10.2.1.	Maintain pavement (i.e. fix potholes and cracks) on streets and paths and provide appropriate striping so that they are bicycle-friendly.	CT, PWD	x	x	x
M.10.2.2.	Establish design standards for safely accommodating bicyclists at intersections, and as funding becomes available, upgrade existing intersections to the new standard.	CDD, CT, PWD	x	x	x

Action	Mobility Element Implementation Action Item	Lead and Participating Staff and Agencies	1 year	2 - 5 years	5 + years
M.10.2.3.	To the extent possible, widen shoulders to accommodate bike lanes or routes as part of street maintenance (paving) and reconstruction projects.	CDD, CT, PWD	x	x	x
M.10.2.4.	Install additional signage as necessary to denote bicycle lanes, routes, and areas where vehicles "share the road" with bicyclists and other users.	CT, PWD	x	x	
M.10.2.5.	Work with Caltrans to make State Route 203 a complete street by providing improved bicycle facilities and improved safety, including the installation of bike lanes, pavement markings, signage, and crossings.	CDD, CT, PWD	x	x	x
M.10.3.1.	Work with transit partners, such as the Eastern Sierra Transit Authority and the Mammoth Mountain Ski Area, to improve bicycle access to transit, and to increase the capacity to carry bicycles on transit by providing additional bike racks and trailers.	CDD, CT, ESTA, MMSA, PWD	x	x	
M.11.1.1.	Work with Mammoth Lakes Tourism, local businesses, Mammoth Unified School District, and local bicycling groups to provide information on safe bicycling and bicycle route selection.	CDD, MLT, MLTPA, RD, PWD	x	x	x
M.11.1.2.	Continue to promote and support bicycle programs to increase bicycle safety awareness and encourage bicycle travel, such as "Bike-to-Work Day."	CDD, RD, PWD	x	x	x
Transit					
M.12.1.1.	Develop a transit plan that identifies community transit needs and update regularly.	ATD, CDD, ESTA, MLT, MMSA, PWD, RD	x	x	x
	- Continue to hold community transit workshops each summer and winter as necessary to identify transit needs and opportunities to improve service in the short and long-term for residents, visitors, and the workforce.	ATD, ESTA, MC, MMSA, PWD	x	x	x
	- Consider the transit needs of seniors, children, the disabled, low-income, and transit-dependent persons in making decisions regarding transit services and compliance with the Americans with Disabilities Act.	ATD, ESTA, MMSA, PWD	x	x	x
	- Identify short and long-term needs for transit fleet storage, maintenance, and replacement, including potential expansion or consolidation of existing transit fleet facilities owned by Mammoth Mountain Ski Area, the Town, and ESTA.	ATD, ESTA, MMSA, PWD	x	x	x

Action	Mobility Element Implementation Action Item	Lead and Participating Staff and Agencies	1 year	2 - 5 years	5 + years
M.12.1.2.	Increase availability of transit services by working collaboratively with other agencies and organizations.	ATD, CDD, ESTA, MMSA, PWD	x	x	x
	- Continue to collaborate with other agencies and organizations to achieve seamless transfers between systems, including scheduling between regional transit services, such as the Yosemite Area Regional Transportation System.	ATD, CDD, ESTA, MMSA, PWD	x	x	x
	- Work with Eastern Sierra Transit Authority and Mammoth Mountain Ski Area to improve transit ridership data collection for use in evaluating transit priorities and investment areas.	ATD, CDD, ESTA, MMSA, PWD		x	
	- Work with other agencies and organizations to explore implementation of rapid transit buses on key corridors or to key destinations.	ATD, CDD, ESTA, MMSA, PWD		x	x
	- Explore development of a transit center and secondary transit hubs.	ATD, CDD, ESTA, MMSA,		x	x
M.12.1.3	Expand or extend transit service to areas that are currently unserved or underserved by transit, including Mammoth Yosemite Airport, Whitemore Pool, Shady Rest Park, and other areas as funding and demand allow.	ATD, CDD, ESTA, MMSA, PWD, RD		x	
M.12.2.1	Encourage transit use by requiring development and facility improvements to incorporate features such as shelters, safe routes to transit stops, and year-round accessibility. Other improvements may include wider sidewalks, concrete bus pads, benches, changeable message signs, secure bike parking, trash receptacles, and where applicable, striping and signs for bus lanes and signal prioritization equipment.	ATD, CDD, ESTA, MMSA, PWD	x	x	x
M.12.2.2	Work with Caltrans to improve and manage transit facilities on State Route 203, including shelters, turnouts, and multimodal access.	ATD, CDD, CT, ESTA, MMSA, PWD	x		
M.12.3.1	Work with other agencies and organizations to explore the potential for implementation of more environmentally-friendly and fuel-efficient transit vehicles.	ATD, CDD, CT, ESTA, MMSA, PWD		x	x
M.12.3.2	To the extent practical and based on funding availability, reduce transit delay and improve transit reliability through physical and technological improvements, such as signal prioritization at signalized intersections, automated bus tracking, and queue-jump lanes.	ATD, CDD, CT, ESTA, MMSA, PWD		x	x
M.12.3.3	Work with other agencies and organizations to implement real-time information systems so that passengers will know when their bus is expected to arrive. Such technologies include web-based or telecommunications-based applications and changeable message signs at major bus stops.	ATD, CDD, CT, ESTA, MMSA, PWD		x	x
M.12.3.4	Work with other organizations and agencies to publicize the transit system and to increase availability of transit information, including through Town communications, and at popular tourist destinations and lodging.	ATD, CDD, ESTA, MMSA, MLT, RD	x	x	x

Action	Mobility Element Implementation Action Item	Lead and Participating Staff and Agencies	1 year	2 - 5 years	5 + years
M.13.1.1.	Continue to support transit service and programs through Measure T and the "new development" transit fee.	ATD, CDD, PWD	x	x	x
M.13.1.2.	Continue to work with transit partners and other agencies to explore opportunities for grants and the sharing of resources.	ATD, CDD, ESTA, MMSA, RD	x	x	x
Parking					
M.14.1.1.	Develop and implement comprehensive parking strategies through the Zoning Code and Public Works Standards.	CDD, PWD	x		
M.14.3.1.	Develop and implement an in-lieu fee parking program.	CDD, PWD	x	x	
M.15.2.1.	Develop and implement understructure/underground parking incentives and surface parking disincentives through the Zoning Code and Public Works Standards.	CDD, PWD	x		
M.15.3.1.	Develop and implement parking design standards through the Zoning Code and Public Works Standards.	CDD, PWD	x		
Travel Demand Management					
M.16.2.1.	Develop and implement TDM strategies and incentives through programs, guidelines, and the Zoning Code.	CDD, PWD	x		
M.16.3.1.	Work with Mammoth Unified School District, Mammoth Mountain Ski Area, Mammoth Hospital, and others to develop and implement incentives to encourage vehicle trip reductions.	CDD, MMSA, MUSD, PWD	x	x	x
Regional and Interregional Transportation					
M.18.2.1.	Continue to work with and support the Local Transportation Commission to identify and program regionally significant transportation projects update the Regional Transportation Plan (RTP) as required, including identification of regionally significant streets for inclusion in the RTP.	CDD, CT, MC, PWD		x	
M.18.2.2.	Work with Caltrans and Mono County to coordinate transportation systems during high traffic flow events and weather emergencies. Adjustments include traffic control officers, message signs and temporary barriers.	CDD, CT, Mono, PWD		x	