TECHNICAL APPENDICES
DRAFT ENVIRONMENTAL IMPACT REPORT

MAMMOTH CROSSING PROJECT

Lead Agency:
Town of Mammoth Lakes
Planning Department
PO Box 1609
Mammoth Lakes, CA 93546

SCH # 2007112002
August 1, 2008

TECHNICAL APPENDICES
MAMMOTH CROSSING PROJECT
DRAFT ENVIRONMENTAL IMPACT REPORT

Submitted to:

Town of Mammoth Lakes
Community Development Department
PO Box 1609
Mammoth Lakes, CA 93546

Attn: Sandra Moberly
Senior Planner

Submitted by:

In association with:

SWCA Environmental Consultants

August 1, 2008

This document is prepared on paper with 100% recycled content.

TECHNICAL APPENDICES
MAMMOTH CROSSING PROJECT
DRAFT ENVIRONMENTAL IMPACT REPORT

APPENDIX A:	NOTICE OF PREPARATION (NOP) AND INITIAL STUDY
APPENDIX B:	RESPONSES TO NOP AND COMMENTS FROM EIR SCOPING MEETINGS
APPENDIX C:	LETTERS FROM PUBLIC SERVICE AND UTILITY AGENCIES
APPENDIX D:	BIOLOGY DATA
APPENDIX E:	CULTURAL RESOURCES REPORT
APPENDIX F:	GEOTECHNICAL HAZARDS REPORTS
APPENDIX G:	HYDROLOGY DATA
APPENDIX H:	NOISE DATA
APPENDIX I:	TRAFFIC DATA
APPENDIX J:	TOWN OF MAMMOTH LAKES CURRENT FEE SCHEDULE
APPENDIX K:	AIR QUALITY DATA
APPENDIX L:	WATER SUPPLY ASSESSMENT
APPENDIX M:	TREE SURVEY FOR THE ADJACENT SIERRA STAR MASTER PLAN PROJECT
APPENDIX N:	NORTH VILLAGE SPECIFIC PLAN PROPOSED AMENDMENTS

APPENDIX A

NOTICE OF PREPARATION (NOP) AND INITIAL STUDY

STATE OF CALIFORNIA

GOVERNOR'S OFFICE *of* PLANNING AND RESEARCH

STATE CLEARINGHOUSE AND PLANNING UNIT

ARNOLD SCHWARZENEGGER
GOVERNOR

CYNTHIA BRYANT
DIRECTOR

Notice of Preparation

November 1, 2007

To: Reviewing Agencies

Re: Mammoth Crossing Project
SCH# 2007112002

Attached for your review and comment is the Notice of Preparation (NOP) for the Mammoth Crossing Project draft Environmental Impact Report (EIR).

Responsible agencies must transmit their comments on the scope and content of the NOP, focusing on specific information related to their own statutory responsibility, within 30 days of receipt of the NOP from the Lead Agency. This is a courtesy notice provided by the State Clearinghouse with a reminder for you to comment in a timely manner. We encourage other agencies to also respond to this notice and express their concerns early in the environmental review process.

Please direct your comments to:

Sandra Moberly
Town of Mammoth Lakes
P.O. Box 1609
Mammoth Lakes, CA 93546

with a copy to the State Clearinghouse in the Office of Planning and Research. Please refer to the SCH number noted above in all correspondence concerning this project.

If you have any questions about the environmental document review process, please call the State Clearinghouse at (916) 445-0613.

Sincerely,

for

Scott Morgan
Project Analyst, State Clearinghouse

Attachments
cc: Lead Agency

1400 10th Street P.O. Box 3044 Sacramento, California 95812-3044
(916) 445-0613 FAX (916) 323-3018 www.opr.ca.gov

Notice of Preparation of an Environmental Impact Report and Notice of Scoping Meeting

DATE: November 2, 2007

TO: Responsible Agencies, Agencies with Jurisdiction by Law, Trustee Agencies, Involved Federal Agencies, and Agencies/People Requesting Notice

FROM: Town of Mammoth Lakes
Community Development Department
Sandra Moberly, Senior Planner
P.O. Box 1609
Mammoth Lakes, CA 93546

RE: **Notice of Preparation (NOP) of an Environmental Impact Report (EIR) and Notice of Scoping Meeting for the Mammoth Crossing Project (Project)**

NOP: The Mammoth Crossing Project (Project) includes construction of up to approximately 1,020 residential rooms, consisting of a combination of hotel rooms/suites and affordable housing rooms, and some commercial uses, on three sites, totaling approximately 9.3 acres, at the northwest, southwest, and southeast corners of the intersection of Main Street, Lake Mary Road, and Minaret Road. The Project's fourth site, approximately 1.3 acres, proposes no new development. The fourth site, formerly part of the Lodestar project, is proposed to be incorporated into the North Village Specific Plan (NVSP) area. The Project would require a General Plan Amendment, and amendment of the NVSP, which would be prepared concurrently with the preparation of the Draft EIR for the Project. Additionally the Project would require rezoning to the "Mammoth Crossing" (MC) zoning. Each of these components are further described below.

The Project is designed to meet the overall intent of the NVSP, which is to facilitate the development of the area as a concentrated, pedestrian-oriented activity center with limited vehicular access. The NVSP area is adjacent to the base of the Mammoth Mountain Ski Area, a major winter and summer recreational destination. Development in the Specific Plan area is intended to be oriented toward year-round activity, and the strengthening of winter visitor activity. Architectural and landscaping guidelines are included in the NVSP and, as such, will be an integral part of the Project.

The Project seeks to create an intensely developed "Town Visitor Core" area and primary visitor oriented hub, with mixed uses proposed on the eastside locations. Major public places and commercial uses would be located on the ground level with visual access from streets and pedestrian linkage corridors. Accommodations would be located on upper floors. The southeast corner uses would be for accommodation and ancillary uses, such as a restaurant. Parking would be primarily underground for all sites, and would total approximately 750 spaces.

The following sections describe the principal uses and project components for each of the four sites comprising the Mammoth Crossing Project.

Site 1 (Whiskey Creek Restaurant) is located on the northwest corner of the Lake Mary Road-Main Street/Minaret Road intersection and consists of Assessor Parcel Numbers (APN) 33-044-07 and 33-044-10. Site 1 is a total of approximately 1.8 acres of which approximately .05 acres is a vacated right-of-way. A proposed pedestrian corridor would link the Project to the existing North Village and Gondola building. The existing Whiskey Creek Restaurant building may remain as an existing site feature familiar to long-time visitors. Proposed uses on Site 1 would include a hotel with up to 198 rooms, a public plaza, and various commercial businesses, with underground parking available. The hotel is proposed to be up to 103 feet above the average natural grade (8,035 elevation) which exceeds the existing 50 foot maximum height requirement. The proposed density for Site 1 would be approximately 110 rooms per acre (RPA), which exceeds the maximum allowed density of 55 RPA, and average aggregate density of 48 RPA,for the Resort General zoning within the North Village Specific Plan. Modifications to existing setback requirements as currently allowed under the NVSP are also proposed. The proposed "Mammoth Crossing" District zoning on Site 1 would provide approximately 11,250 sf of affordable housing (approximately 23 rooms) for up to 45 Full-time employee equivalents (FTEE). The required affordable housing may also be provided off-site. The proposed amenity and common areas would be approximately 14,390 square feet (sf); with commercial areas of approximately 22,000 sf; for a total of gross construction areas of approximately 174,350 sf.

Site 2 (Church Site) is located on the southwest corner of the Lake Mary Road-Main Street/Minaret Road intersection and consists of APN's 33-010-02 through -07, and 33-010-31, through -32. Site 2 is a total of approximately 4.5 acres of which approximately one acre is a vacated right-of-way. Proposed uses include a five star hotel with up to 364 rooms, and limited residential and commercial retail fronting Lake Mary Road. The hotel is proposed to be up to 130 feet above the average natural grade (8,040 elevation) which exceeds the existing 50 foot maximum height requirement. Modifications to existing setback requirements as currently allowed under the NVSP are also proposed. The proposed "Mammoth Crossing" District zoning on Site 2 would provide approximately 20,500 sf of affordable housing (approximately 41 rooms) for up to 82 FTEEs. The amenity and common areas would comprise approximately 24,700 sf; with commercial areas of approximately 18,000 sf. The proposed density for Site 2 would amount to 81 RPA, which exceeds the maximum allowed density of 48 RPA the Specialty

Lodging zoning within the North Village Specific Plan. Total of gross construction area would amount to approximately 283,400 sf.

Site 3 (Ullr Lodge/Whitestag Lodge) is located on the southeast corner and consists of APN's 33-100-14 though -18; for a total of approximately 3 acres. This site provides pedestrian and bicycle access from the Sierra Star Golf Course to the west, as well as the Main Street corridor and central Mammoth Lakes' area. Proposed uses include a moderate price, family-oriented motel and residential uses (301 rooms). The motel is proposed to be up to 98 feet above the average natural grade (8,000 elevation) which exceeds the existing 50 foot maximum height requirement. Underground parking is proposed. The proposed "Mammoth Crossing" District zoning on Site 3 would provide approximately 17,000 sf of affordable housing (approximately 34 rooms) for up to 68 FTEEs. The proposed density for Site 3 would amount to 102 RPA, which exceeds the maximum allowed density of 48 RPA for the Specialty Lodging zoning within the North Village Specific Plan. Modifications to existing setback requirements as currently allowed under the NVSP are also proposed. The amenity and common areas would total approximately 46,000 sf. Although no commercial uses are currently proposed, it is possible that the motel would include a restaurant, as well as meeting space. The total of gross building area as currently proposed would amount to approximately 274,250 sf.

Site 4 (Lodestar Parcel) is located on Minaret Road adjacent to Site 3 southeast of the Lake Mary Road-Main Street/Minaret Road intersection. The site is on APN 33-330-47 and consists of approximately 1.3 acres. There is no new development proposed on this site, and no changes to existing allowed land uses or density are proposed. The applicant is requesting a boundary change to the NVSP to incorporate the Site 4 parcel.

Project design would be in accordance with the North Village Specific Plan, as well as the Town of Mammoth Lakes Design Guidelines, and new design or development standards adopted as part of the proposed Specific Plan Amendment, applicable to the Mammoth Crossing District. Development at three of the four sites will involve multiple buildings ranging in height from one to approximately seven stories. On each site, the buildings would be oriented around a courtyard. The architecture and design of all three properties that comprise the Project site would be required to complement one another. The largest of the four sites, at the southwest corner of the intersection, would feature a large courtyard fronting Lake Mary Road and Canyon Boulevard. Landscaping, open space, and pedestrian access would be emphasized throughout the Project.

The Town of Mammoth Lakes is the Lead Agency for purposes of complying with CEQA and is the primary public agency responsible for approving projects on these properties. Several discretionary actions would be necessary for the Project, including, but not limited to: an amendment to the General Plan, North Village Specific Plan, Use Permit (including design review) and Tentative Tract Map. Additionally the Project will require rezoning. Under the current Town of Mammoth Lakes zoning regulations, project parcels within the North Village area were designated for Specialty Lodging (SL) and Resort General (RG). Under the proposed

North Village Specific Plan 2004, the proposed Mammoth Crossing development would be designated as the "Mammoth Crossing" (MC) zoning district, providing for a range of short-stay accommodation choices, affordable housing, retail and service uses of the types described above. Other approvals will be identified in accordance with applicable laws and regulations.

Based on the project description and the Lead Agency's understanding of the environmental issues associated with the project, the following topics will be analyzed in detail in the EIR:

- Aesthetics
- Air Quality
- Biological Resources
- Cultural Resources
- Geology & Soils
- Hazard & Hazardous Materials
- Hydrology & Water Quality
- Land Use
- Noise
- Population & Housing
- Public Services
- Recreation
- Transportation & Traffic
- Utilities and Service Systems

The Lead Agency solicits comments regarding the scope and content of the EIR from all interested parties requesting notice, responsible agencies, agencies with jurisdiction by law, trustee agencies, and involved agencies. Please send your written/typed comments (including a contact name) to the following:

Town of Mammoth Lakes
Community Development Department ATTN: Sandra Moberly
P.O. Box 1609
Mammoth Lakes, CA 93546
Phone: (760)934-8989 x251
Fax: (760) 934-8608
E-mail: smoberly@ci.mammoth-lakes.ca.us

Due to the time limits mandated by California law, written comments must be sent at the earliest possible date, but no later than 30 days from receipt of this notice.

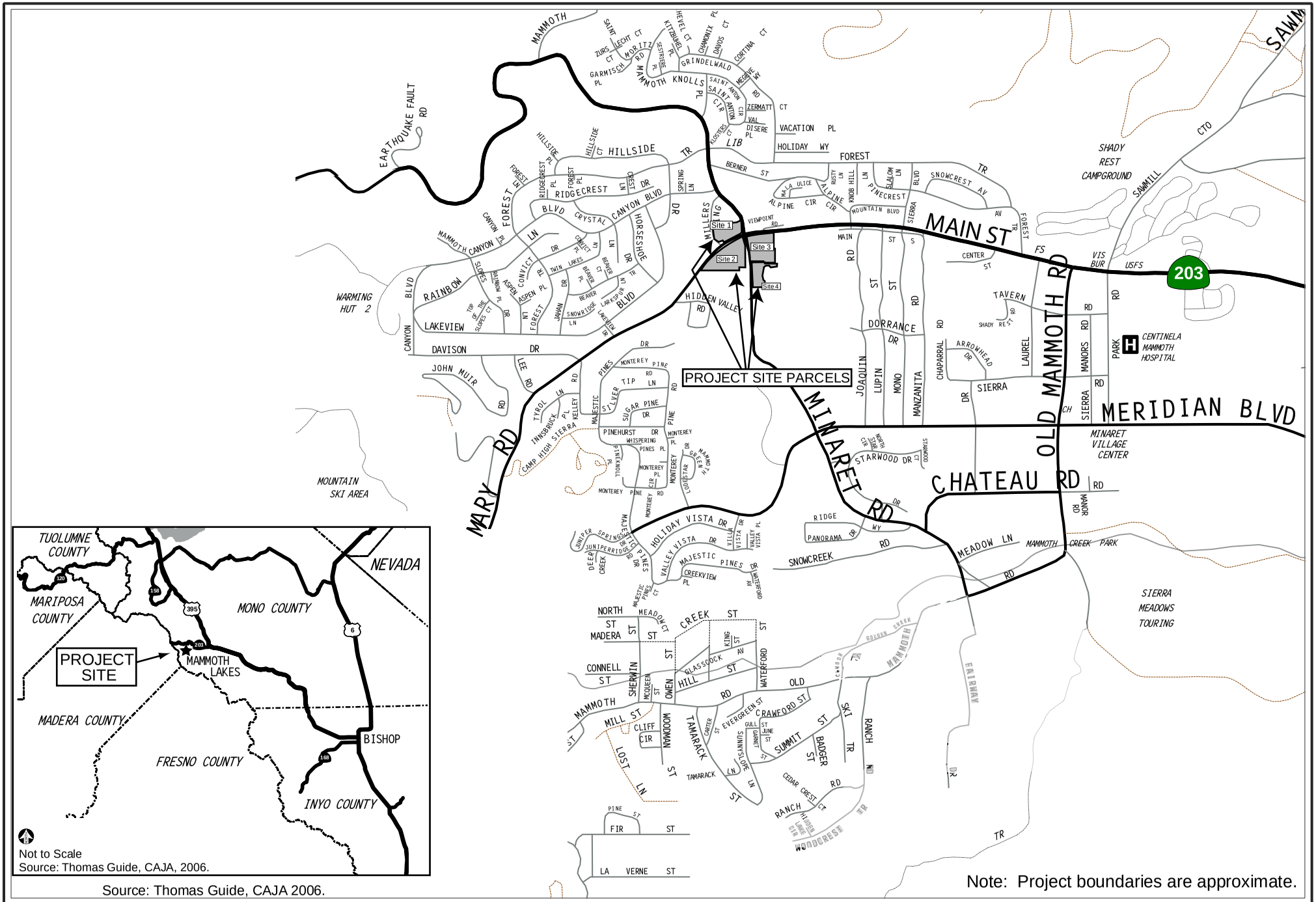
Notice of Scoping Meeting: Pursuant to California Public Resources Code §21081.7, 21083.9, and 21092.2, the Lead Agency will conduct a public scoping meeting for the same purpose of soliciting oral and written comments from interested parties requesting notice, responsible agencies, agencies with jurisdiction by law, trustee agencies, and involved federal agencies, as to the appropriate scope and content of the EIR. The scoping meeting will be held on **Tuesday, November 13, 2007 at 6:00 PM** at the following location:

Town of Mammoth Lakes
Council Chambers
Suite Z within the Minaret Village Shopping Center
437 Old Mammoth Road, Mammoth Lakes, CA 93546

For additional information, please contact Sandra Moberly at (760) 934-8989 x251

Sign: Sandra Moberly Date: 10·31·07

Sandra Moberly
Senior Planner



Source: Thomas Guide, CAJA 2006.

Note: Project boundaries are approximate.

CHRISTOPHER A. JOSEPH & ASSOCIATES
Environmental Planning and Research

NORTH Not to Scale

Figure 1
Regional & Vicinity Map

Source: Town of Mammoth Lakes Website, CAJA, 2006.

CHRISTOPHER A. JOSEPH & ASSOCIATES
Environmental Planning and Research

Figure 2
Project Site Map

Town of Mammoth Lakes

Community Development Department
P.O. Box 1609
Mammoth Lakes, CA 93546

INITIAL STUDY

This form and the descriptive information supplied by the applicant constitute the environmental Initial Study (IS) pursuant to Section 15063 of the California Environmental Quality Act (CEQA) Guidelines.

1. Project Title: Mammoth Crossing

2. Lead Agency Name and Address: Town of Mammoth Lakes
Community Development Department
P.O. Box 1609
Mammoth Lakes, CA 93546

3. Contact Person and Phone Number: Sandra Moberly, Senior Planner
(760) 934-8989 x251

4. Project Location: Northwest, southwest, and southeast corners of the at intersection of Main Street and Minaret Road:
Site 1: northwest corner (Whiskey Creek Restaurant/Old Inyo Mono Title Building)
Site 2: southwest corner (Church, Cabins)
Site 3: southeast corner (Ullr Lodge/Whitestag Lodge)
Site 4: south of site 3 on Minaret Road

5. Project Sponsor's Name and Address: Mammoth Crossing Ventures, LLC
Doug Regelous
Mammoth Crossing Development, LLC
PO Box 100- PMB 610
Mammoth Lakes, CA 93546

6. General Plan Designation: North Village Specific Plan

7. Zoning: Site 1: Resort General
Site 2 and 3: Specialty Lodging
Site 4: Resort

8. Description of the Project:

The Mammoth Crossing Project (Project) includes construction of up to approximately 1,020 residential rooms[1], consisting of a combination of hotel rooms/suites and affordable housing rooms, and some commercial uses, on three sites, totaling approximately 9.3 acres, at the northwest, southwest, and southeast corners of the intersection of Main Street, Lake Mary Road, and Minaret Road. The Project's fourth site, approximately 1.3

[1] *The NVSP defines density (rooms per acre [RPA]) standards in terms of rooms and not dwelling units. The NVSP defines a room as a 1 hotel room or 1 bedroom, loft or other sleeping area in residential uses. Sites 1-3 are located within the NVSP.*

acres, proposes no new development. The fourth site, formally part of the Lodestar project, is proposed to be included as part of the North Village Specific Plan (NVSP). The Project would require a General Plan Amendment, and amendment of the NVSP, which would be prepared concurrently with the preparation of the Draft EIR for the Project. Additionally the Project would require rezoning to the "Mammoth Crossing" (MC) zoning. Each of these components is further described below.

The Project is designed to meet the overall intent of the NVSP, which is to facilitate the development of the area as a concentrated, pedestrian-oriented activity center with limited vehicular access. The NVSP area is adjacent to the base of the Mammoth Mountain Ski Area, a major winter and summer recreational destination. Development in the Specific Plan area is intended to be oriented toward year-round activity, and the strengthening of winter visitor activity. Architectural and landscaping guidelines are included in the NVSP and, as such, will be an integral part of the Project.

The Project seeks to create an intensely developed “Town Visitor Core” area and primary visitor oriented hub, with mixed uses proposed on the eastside locations. Major public places and commercial uses would be located on the ground level with visual access from streets and pedestrian linkage corridors. Accommodations would be located on upper floors. The southeast corner uses would be for accommodation and ancillary uses, such as a restaurant. Parking would be primarily underground for all sites, and would total approximately 750 spaces.

The following sections describe the principal uses and project components for each of the four sites comprising the Mammoth Crossing Project.

Site 1 (Whiskey Creek Restaurant) is located on the northwest corner of the Lake Mary Road-Main Street/Minaret Road intersection and consists of Assessor Parcel Numbers (APN) 33-044-07 and 33-044-10. Site 1 is a total of approximately 1.8 acres of which approximately .05 acres is a vacated right-of-way. A proposed pedestrian corridor would link the Project to the existing North Village and Gondola building. The existing Whiskey Creek Restaurant building may remain as an existing site feature familiar to long-time visitors. Proposed uses on Site 1 would include a hotel with up to 198 rooms, a public plaza, and various commercial businesses, with underground parking available. The hotel is proposed to be up to 103 feet above the average natural grade (8,035 elevation) which exceeds the existing 50 foot maximum height requirement. The proposed density for Site 1 would be approximately 110 rooms per acre (RPA), which exceeds the maximum allowed density of 55 RPA, and 48 RPA aggregate density for the Resort General zoning within the North Village Specific Plan. Modifications to existing setback requirements as currently allowed under the NVSP are also proposed. The proposed “Mammoth Crossing” District zoning on Site 1 would provide approximately 11,250 sf of affordable housing (approximately 23 rooms) for up to 45 Full-time employee equivalents (FTEE). The required affordable housing may also be provided off-site. The proposed amenity and common areas would be approximately 14,390 square feet (sf); with commercial areas of approximately 22,000 sf; for a total of gross construction areas of approximately 174,350 sf.

Site 2 (Church Site) is located on the southwest corner of the Lake Mary Road-Main Street/Minaret Road intersection and consists of APN’s 33-010-02 through -07, and 33-010-31, through -32. Site 2 is a total of approximately 4.5 acres of which approximately one acre is a vacated right-of-way. Proposed uses include a five star hotel with up to 364 rooms, and limited residential and commercial retail fronting Lake Mary Road. The hotel is proposed to be up to 130 feet above the average natural grade (8,040 elevation) which exceeds the existing 50 foot maximum height requirement. Modifications to existing setback requirements as currently allowed under the NVSP are also proposed. The proposed “Mammoth Crossing” District zoning on Site 2 would provide approximately 20,500 sf of affordable housing (approximately 41 rooms) for up to 82 FTEEs. The amenity and common areas would comprise approximately 24,700 sf; with commercial areas of approximately 18,000 sf. The proposed density for Site 2 would amount to 81 RPA, which exceeds the existing

maximum allowed density of 48 RPA for the Specialty Lodging zoning within the North Village Specific Plan. Total of gross construction area would amount to approximately 283,400 sf.

Site 3 (Ullr Lodge/Whitestag Lodge) is located on the southeast corner and consists of APN's 33-100-14 though -18; for a total of approximately 3 acres. This site provides pedestrian and bicycle access from the Sierra Star Golf Course to the west, as well as the Main Street corridor and central Mammoth Lakes' area. Proposed uses include a moderate price, family-oriented motel and residential uses (301 rooms). The motel is proposed to be up to 98 feet above the average natural grade (8,000 elevation) which exceeds the existing 50 foot maximum height requirement. Modifications to existing setback requirements as currently allowed under the NVSP are also proposed. Underground parking is proposed. The proposed "Mammoth Crossing" District zoning on Site 3 would provide approximately 17,000 sf of affordable housing (approximately 34 rooms) for up to 68 FTEEs. The proposed density for Site 3 would amount to 102 RPA, which exceeds the existing maximum allowed density of 48 RPA for the Specialty Lodging zoning within the North Village Specific Plan. The amenity and common areas would total approximately 46,000 sf. Although no commercial uses are currently proposed, it is possible that the motel would include a restaurant, as well as meeting space. The total of gross building area as currently proposed would amount to approximately 274,250 sf.

Site 4 (Lodestar Parcel) is located on Minaret Road adjacent to Site 3 southeast of the Lake Mary Road-Main Street/Minaret Road intersection. The site is on APN 33-330-47 and consists of approximately 1.3 acres. There is no new development proposed on this site, and no changes to existing allowed land uses or densities are proposed for this parcel. The applicant is requesting a boundary change to the NVSP to incorporate the Site 4 parcel.

Project design would be in accordance with the North Village Specific Plan, as well as the Town of Mammoth Lakes Design Guidelines, and new design or development standards adopted as part of the proposed Specific Plan Amendment, applicable to the Mammoth Crossing District. Development at three of the four sites will involve multiple buildings ranging in height from one to approximately seven stories. On each site, the buildings would be oriented around a courtyard. The architecture and design of all three properties that comprise the Project's development areas would be required to complement one another. The largest of the four sites, at the southwest corner of the intersection, would feature a large courtyard fronting Lake Mary Road and Canyon Boulevard. Landscaping, open space, and pedestrian access would be emphasized throughout the Project.

The Town of Mammoth Lakes is the Lead Agency for purposes of complying with CEQA and is the primary public agency responsible for approving projects on these properties. Several discretionary actions would be necessary for the Project, including, but not limited to: an amendment to the General Plan, North Village Specific Plan, Use Permit (including design review) and Tentative Tract Map. Additionally the Project will require rezoning. Under the current Town of Mammoth Lakes zoning regulations, Project site parcels within the North Village area were designated as Specialty Lodging (SL) or Resort General (RG). Under the proposed North Village Specific Plan 2004, the proposed Mammoth Crossing development would be designated as the "Mammoth Crossing" (MC) zoning district, providing for a range of short-stay accommodation choices, affordable housing, retail and service uses of the types described above. Other approvals will be identified in accordance with applicable laws and regulations.

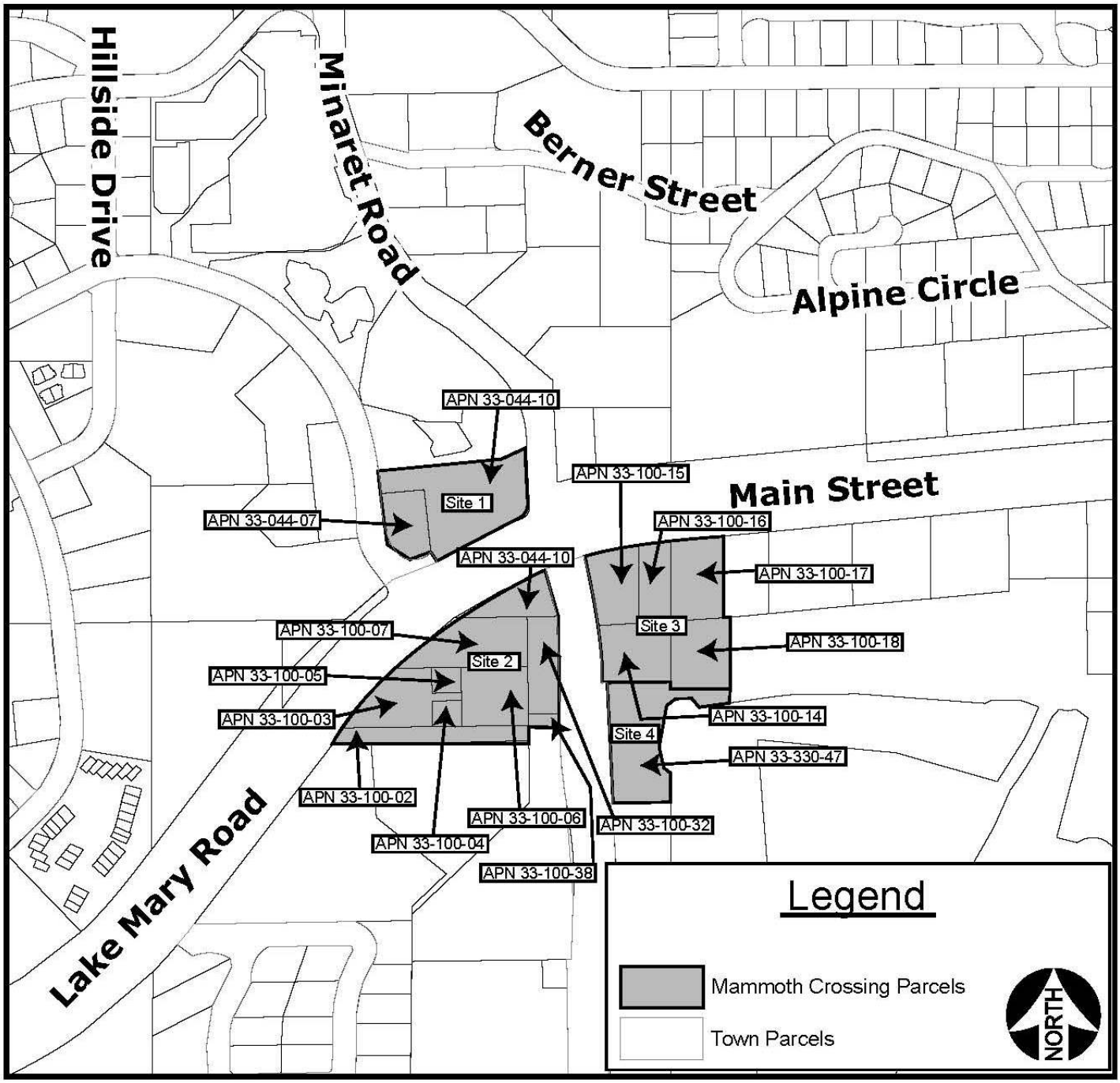
9. Surrounding Land Uses and Setting:

North:	Fireside Condominiums Gondola building North Village development, including mixed commercial and resort/condominium uses
East:	Canyon Blvd Hillside Hotel site resort/condominium development
South:	Undeveloped, resort/condominium and Multi-Family 2 Sierra Star Golf Course
West:	4th Corner (Novato's Restaurant) Hotel

10. Other public agencies from whom a permit or approval may be required:

US Army Corps of Engineers
Great Basin Unified Air Pollution Control District
Lahontan Regional Water Quality Control Board
Mammoth Lakes Fire Protection District
Mammoth Community Water District
California Department of Transportation (Caltrans)

Location Map



ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

The environmental factors checked below (✓) would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

✓	Aesthetics	✓	Hazards & Hazardous Materials	✓	Public Services
	Agricultural Resources	✓	Hydrology/Water Quality	✓	Recreation
✓	Air Quality	✓	Land Use/Planning	✓	Transportation/Traffic
✓	Biological Resources		Mineral Resources	✓	Utilities/Service Systems
✓	Cultural Resources	✓	Noise	✓	Mandatory Findings of Significance
✓	Geology/Soils	✓	Population/Housing		

DETERMINATION:
On the basis of this initial evaluation:

I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.	
I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.	
I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.	
I find that the proposed project MAY have a "potential significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect (1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and (2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.	✓
I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.	

Sandra Moberly — 10.31.07
Signature — Date

Sandra Moberly — Town of Mammoth Lakes
Printed Name — For

EVALUATION OF ENVIRONMENTAL IMPACTS

1) A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g. the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g. the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

2) All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.

3) Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.

4) "Negative Declaration: Potentially Significant Unless Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from Section 17, "Earlier Analysis," may be cross-referenced).

5) Earlier analysis may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063 (c) (3) (d). In this case, a brief discussion should identify the following:

   (a) Earlier Analysis Used. Identify and state where they are available for review.

   (b) Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.

   (c) Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

6) Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g. general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.

7) Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.

8) This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.

9) The analysis of each issue should identify: (a) the significance criteria or threshold used to evaluate each question; and (b) the mitigation measure identified, if any, to reduce the impact to less than significance.

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
1. **AESTHETICS.** Would the project:				
a) Have a substantial adverse effect on a scenic vista?	✓			
The Project site is situated in a generally urbanized and heavily accessed area of Town located on three corners of the Lake Mary Road-Main Street/Minaret Road intersection. The major vistas are from Minaret Road and Main Street, to the south down Minaret Road. The Project site is within the boundaries of the North Village Specific Plan (NVSP). The site is primarily developed with a mix of commercial and residential uses, including the Whiskey Creek restaurant, Ullr Lodge and Whitestag Lodge. Due to the Project's central and highly visible location, proposed intensification of uses and proposed building heights, which would exceed the maximum 50 foot height limit specified in the NVSP. Changes to allowed setbacks are also proposed, which may affect scenic views and vistas. The potential for the Project to have a substantial adverse effect on a scenic vista will be addressed in the EIR.				
b) Substantially damage scenic resources, including, but not limited to trees, rock outcroppings, and historic buildings within a state scenic highway?	✓			
In the vicinity of the Town of Mammoth Lakes, State Route 203 is an eligible State Scenic Highway (not officially designated) and U.S. Highway 395 is an officially designated State Scenic Highway.[2] The proposed Project would not be visible from any vantage point along U.S. Highway 395 due to intervening topography. Through the Town of Mammoth Lakes, State Route 203 is known as Main Street. The proposed Project has the potential to significantly impact views along Main Street at the intersection of Minaret Road and Main Street/Lake Mary Road. Thus, the EIR will address the potential for the Project to have a substantial adverse effect on a state scenic highway.				
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	✓			
The Project site is situated in a generally urbanized and heavily accessed area of Town located at the Minaret Road/Lake Mary Road/Main Street intersection. The Project site is within the boundaries of the North Village Specific Plan (NVSP). The site is primarily developed with a mix of commercial and residential uses, including the Whiskey Creek restaurant, Ullr Lodge and Whitestag Lodge. Due to the Project's central and highly visible location, proposed intensification of uses, and proposed building heights which would exceed the maximum 50 foot height limit, and proposed setbacks, implementation of the Project would alter the visual character of the site and surrounding areas. Thus, the EIR will address the potential for the proposed Project to substantially degrade the existing visual character or quality of the site and its surroundings.				
d) Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?	✓			
The Project site is primarily developed with a mix of commercial and residential uses and contains some existing sources of light and glare. All exterior lighting would be required to conform to the Town of Mammoth Lakes requirements for shielding, glare reduction, down-direction, and lumen level output as required by the Town's adopted Lighting Ordinance. The specific fixtures selected will be reviewed through the Town's Design Review and discretionary approval process. Implementation of the Project would introduce new sources of light and glare on the Project site and into the area. Thus, the EIR will address the potential for the Project to create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.				

[2] *California Department of Transportation California Scenic Highway Mapping System, website: http:// http://www.dot.ca.gov/hq/LandArch/scenic_highways/index.htm, June 12, 2006.*

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
2. **AGRICULTURE RESOURCES**: In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. Would the project?				
a) Convert Prime Farmland, Unique Farmland or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency to non-agricultural use?				✓
The Farmland Mapping and Monitoring Program (FMMP) designates the site as "other land" and no important farmland is identified. Therefore, the Project would not convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural uses. Thus there is no impact and no further analysis of this issue is required.[3]				
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?				✓
Generally, lands given the Land Use Designation of Agriculture (AG) may be eligible for a Williamson Act Contract, depending on the use of the land. The Project site is zoned Resort General (Site 1) and Specialty Lodging (Site 2 and 3) and as stated previously, there is no identified prime farmland on the Project site. Therefore, the Project would not conflict with existing zoning for agricultural use or Williamson Act Contract. Thus there is no impact and no further analysis of this issue is required.				
c) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?				✓
The Project site is in an urbanized setting and no agricultural land uses are located in proximity to the Project site. Therefore, the Project would not result in conversion of Farmland to non-agricultural use. Thus there is no impact and no further analysis of this issue is required.				
3. **AIR QUALITY:** Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	✓			
The long-term operation of the proposed Project could result in emissions that have not been accounted for in the Mammoth Lakes Air Quality Management Plan. Therefore, the EIR will address the potential for the project to result in significant impacts related to conflicting with or obstructing implementation of the Mammoth Lakes Air Quality Management Plan adopted by the Great Basin Unified Air Pollution Control District (GBUAPCD).				
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation.	✓			
Short-term construction emissions and long-term operation of the Project could result in the generation of criteria pollutant emissions that exceed thresholds established by the State of California and the Environmental Protection Agency (EPA). Therefore, the EIR will address the potential for the Project to result in significant impacts related to violation of air quality standards or substantial contribution to an existing or projected air quality violation.				
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	✓			

[3] *California Division of Land Resource Protection, Farmland Mapping and Monitoring Program Overview, website: http://www.consrv.ca.gov/dlrp/FMMP/overview/survey_area_map.htm, October 12, 2007.*

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
The Town of Mammoth Lakes is currently in non-attainment for ozone (O_3) and particulate matter 10 (PM_{10}). The emissions associated with long-term operation of the Project could contribute to cumulative air quality impacts related to these criteria pollutants. Therefore, the EIR will address the potential for the Project to contribute to a cumulatively considerable net increase of any criteria pollutant for which the Project region is in non-attainment.				
d) Expose sensitive receptors to substantial pollutant concentrations?	✓			
Sensitive receptors in proximity to the Project site or along roadways used by Project traffic could be exposed to criteria pollutant emissions generated by the Project that are in excess of state and federal thresholds. For example, traffic-congested roadways and intersections have the potential to generate localized high levels of carbon monoxide (CO). By generating additional traffic, the Project could potentially cause exceedances of the 1-hour or 8-hour Federal or State CO standards. Although the Mammoth Lakes Gateway Home Center monitoring station has not recorded any exceedances of the State or Federal CO standards, elevated CO concentrations due to heavy traffic volumes and congestion at specific intersections or roadway segments are generally localized and can lead to high levels of CO, or "hot spots." For this reason and for determining impacts resulting from CO exposure in the Project's proposed underground parking, CO modeling will be performed. CO modeling will include intersections or roadway segments currently operating at Level of Service (LOS) D, E, or F that would be affected by Project traffic, or for intersections that would decline to LOS D, E, or F as a result of the Project. Detailed surveys indicate that the central portion of the Long Valley Caldera has risen more than 30 inches since the late 1970s, possibly in response to the filling of a shallow magma chamber. In 1990, it was recognized that magmatic gasses were killing trees in certain portions of the caldera. The trees were killed by high carbon dioxide (CO_2) flux in the soil gasses surrounding their roots. The most well known location of high carbon dioxide soil gas is at the north end of Horseshoe Lake where scientists estimate between 50 and 150 tons of carbon dioxide is emitted daily. However, it should be noted that there have been no areas of high carbon dioxide flux identified in the Project vicinity. However, the Project would generate emissions of carbon dioxide (CO_2) primarily in the form of vehicle exhaust and in the consumption of natural gas for heating from onsite combustion. Therefore, the EIR will address the potential for the Project to result in significant impacts related to exposing sensitive receptors to substantial pollutant concentrations.				
e) Create objectionable odors affecting a substantial number of people?			✓	
The types of projects that commonly result in odor impacts include: wastewater treatment plant, sanitary landfills, transfer stations, composting facilities, petroleum refineries, asphalt batch plants, chemical manufacturing, fiberglass manufacturing, auto body shops, rendering plants, and coffee roasters. The Project does not include any of these types of uses and therefore the Project would not create objectionable odors that could affect a substantial number of people. Impacts related to objectionable odors would be less than significant.				
4. **BIOLOGICAL RESOURCES**. Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U. S. Fish and Wildlife Service?	✓			
The Project site supports natural and disturbed habitats. Impacts to sensitive species will be fully addressed in the EIR.				
b) Have a substantially adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U. S. Wildlife Service?				✓
No riparian vegetation or other sensitive communities exists within or adjacent to the Project site. There would be no impact on any riparian habitat or other sensitive natural community and no further analysis is required.				

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	✓			
Impacts to Section 404 jurisdictional features will be fully addressed in the EIR.				
d) Interfere substantially with the movement of any resident or migratory fish or wildlife species or with established native resident migratory wildlife corridors, or impede the use of native wildlife nursery sites?	✓			
A significant impact would occur if a project would interfere or remove access to a migratory wildlife corridor or impede the use of native wildlife nursery sites. The Project is unlikely to disrupt wildlife movement and will not impede the use of native wildlife nursery sites or migration corridors. Given that the Project site already consists of developed and/or disturbed habitats, and is nearly surrounded by residential or resort developments and busy Town streets, it is unlikely that the Project site is important for wildlife movement or nursery use. In addition, no major migratory routes for mule deer or other important migratory animals in the region occurs within the Urban Growth Boundary (UGB), which entirely encompasses the Project site. Therefore, it is anticipated that no significant impacts to wildlife movement, migration corridors, or nursery sites will occur from the Project; however impacts to biological resources will be fully analyzed in the EIR.				
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?		✓		
Portions of the Project site support various tree species. Tree removal must conform to the provisions of Title 17 of the Town of Mammoth Lakes Municipal Code. Impacts to biological resources that may conflict with a local policy or ordinance will be fully addressed in the EIR.				
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Conservation Community Plan, other approved local, regional, or state habitat conservation plan?				✓
The Project site and its vicinity are not located within an area covered by a Habitat Conservation Plan, Natural Community Conservation Plan, or other approved conservation plan; therefore, no impact would occur.				
5. **CULTURAL RESOURCES**. Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?	✓			
Historic resources on the Project site are unknown. Therefore, the potential for the Project to cause a substantial adverse change in the significance of a historical resource as defined in §15064.5 will be addressed in the EIR.				
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	✓			
An Archaeological Survey was prepared in 1990 by Jeffery F. Burton of Trans-Sierran Archaeological Research for the proposed North Village project area, which includes the Project site. Two archaeological sites and four isolates were located and recorded during the survey of the approximately 90-acre area. One of the sites was determined to be significant. Although no significant sites were found within the boundaries of the proposed Project, the potential for the Project to cause a substantial adverse change in the significance of an archaeological resource will be addressed in the EIR.				

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	✓			
The degree to which the Project would affect a unique paleontological resource or site or unique geological feature is unknown at this time. Thus, the EIR will address the potential for the Project to impact unique paleontological resources on the proposed Project site.				
d) Disturb any human remains, including those interred outside of formal cemeteries?	✓			
The Project site is primarily developed and there are no known human remains on the site. However, there is still the potential for human remains to be encountered during the grading and construction phase of the Project. Thus, the EIR will address the potential for the Project to disturb any human remains. See 5a above.				
6. **GEOLOGY AND SOILS**. Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury or death involving:				
(i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.			✓	
The Town of Mammoth Lakes is located near the southwest edge of the Long Valley Caldera, which overprints the Sierra Nevada boundary fault system. Persistent earthquake and volcanic activity over the past four million years have formed the eastern Sierra landscape in the vicinity of Long Valley Caldera and the Mono Basin. The Hartley Springs fault is located approximately 1.1 km west/northwest of the Project site, however, the project site not in Alquist-Priolo fault zone. Nonetheless, the EIR will address the potential for the Project to expose people or structures to potentially substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault.				
(ii) Strong seismic ground shaking?	✓			
Geotechnical constraints to development include the potential for moderate ground shaking (M_w~6.6) along the nearby Hartley Springs fault located approximately 1.1 km west/northwest of the Project site and the Hilton Creek fault, located approximately 11 km from the site could produce a magnitude 6.7 (Mw) earthquake resulting in a peak horizontal ground acceleration of 0.28g at the Project site. Therefore, impacts related to strong seismic ground shaking are potentially significant and will be addressed in the EIR.				
(iii) Seismic-related ground failure, including liquefaction?	✓			
Liquefaction of cohesionless soils can be caused by strong vibratory motion due to earthquakes. Research and historical data indicate that loose granular soils below a near-surface groundwater table are most susceptible to liquefaction. In order for the potential effects of liquefaction to be manifested at the ground surface, the soils generally have to be granular, loose to medium-dense and saturated relatively near the ground surface, and must be subjected to ground shaking of a sufficient magnitude and duration. Impacts of seismic-related ground failure, including liquefaction is currently unknown and will be fully addressed in the EIR.				
(b) Result in substantial soil erosion or the loss of topsoil?	✓			
Although the Project site is primarily developed, the degree to which the Project site could result in substantial erosion or loss of topsoil will be addressed in the EIR.				

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
(c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	✓			
See 6aiii above. Impacts related to unstable geologic units or soils will be addressed in the EIR.				
(d) Be located on expansive soil, as defined in Table 18-a-B of the Uniform Building Code (1994), creating substantial risks to life or property?	✓			
The soils on the Project site are currently unknown. A Geotechnical Report will be prepared for the Project site and the degree to which the Project site would be located on expansive soil, as defined in Table 18-a-B of the Uniform Building Code (1994), creating substantial risks to life or property will be addressed in the EIR.				
(e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?				✓
The proposed Project does not include the use of septic tanks. No further discussion of this issue is necessary.				
7. **HAZARDS AND HAZARDOUS MATERIALS.** Would the project?				
a) Create a significant hazard to the public or the environment through the routine transport, use or disposal of hazardous materials?				✓
The Project would not involve the routine transport, use or disposal of substantial quantities of hazardous materials. The Project would involve the development of residential (including hotel and affordable housing), retail, and commercial land uses and would only involve the use of common household and maintenance solvents typically associated with such activities. As such, no impact would occur.				
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the likely release of hazardous materials into the environment?			✓	
Implementation of the proposed Project would require the demolition of the existing buildings on the Project site. Given the estimated age of the buildings, there exists the potential for existing construction materials to contain either Asbestos-Containing Materials (ACM) or Lead-Based Paint (LBP). Generally, all untested materials are presumed to contain asbestos in buildings constructed prior to 1981. In 1978, the use of LBP was federally banned by the Consumer Product Safety Commission. Therefore, only buildings built before 1978 are presumed to contain LBP, as well as buildings built shortly thereafter, as the phase-out of LBP was gradual. Demolition impacts involving ACM or LBP in addition to other potential significant hazards resulting from demolition will be addressed in the EIR.				
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an exiting or proposed school?				✓
The Project site is not located within one-quarter mile of any existing or known proposed schools. Furthermore, the Project would not involve the routine transport, use, disposal, or accidental release of substantial quantities of hazardous materials. Therefore, the Project would not have the potential to emit substantial quantities of hazardous materials within one-quarter mile of an existing or proposed school and no impact would occur.				

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result would it create a significant hazard to the public or the environment?				✓
According to the California Department of Toxic Substances Control, Hazardous Waste and Substances Sites database, the Project site is not included on the list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. Therefore, the Project would not result in impacts related to being located on a site that is included on a list of hazardous materials sites. Thus, no further analysis of this issue is required.				
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?				✓
The Project site is not within an airport land use plan, nor is it within two miles of a public or private airport. The airport closest to the Project site is the Mammoth Yosemite Airport, located approximately ten miles to the east of the Project site. Therefore, the Project would not expose persons to safety hazards associated with an airport. Thus, no further analysis of this issue is required.				
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?				✓
The Project site is not within two miles of a public or private airport. The airport closest to the Project site is the Mammoth Yosemite Airport, located approximately ten miles to the east of the Project site. Therefore, the Project would not expose persons to safety hazards associated with an airport. Thus, no further analysis of this issue is required.				
g) Impair implementation of, or physically interfere with an adopted emergency response plan or emergency evacuation plan?			✓	
The Project would not affect an emergency response plan. While the Project would introduce new development to the Project site, such development would conform with all applicable local, county, regional, State, and federal regulations pertaining to emergency safety. As such, the Project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan and no impact would occur. The Emergency Response Plan may require amendments to accommodate the Project and the Project design will have to be consistent with the objectives of the plan.				
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?			✓	
The Project site is located near the center of the Town of Mammoth Lakes and, although the site contains existing forest, the site is an infill location and is not adjacent to wildlands. Therefore, the Project would not expose people or structures to a significant risk of loss, injury or death involving wildland fires and impacts would be less than significant.				
8. **HYDROLOGY AND WATER QUALITY**. Would the project:				
a) Violate any water quality standards or waste discharge requirements?	✓			
Increased traffic to and from the site as well as new development on site has the potential to violate water quality standards and/or waste discharge requirements. Because the Project has the potential to violate water quality standards or waste discharge requirements, the Project applicant is in the process of preparing a Hydrology Report specific to the Project. Water quality standards or waste discharge requirements will therefore be addressed in the EIR.				

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
b) Substantially degrade groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	✓			
Impacts related to groundwater supplies and recharge will be addressed in the EIR. (See 8a above)				
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	✓			
The potential for the Project to result in substantial erosion or siltation on- or off-site will be addressed in the EIR. (See 8a above)				
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or surface runoff in a manner which would result in flooding on- or off site?	✓			
The Project site is not located within a Federal Emergency Management Agency (FEMA) Flood Zone.[4] The Project site consists of both paved and unpaved areas; the degree to which the Project site could substantially alter the existing drainage pattern is currently under assessment. (See 8a above) The potential for the Project to result in flooding on- or off-site will be addressed in the EIR.				
e) Create or contribute runoff which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	✓			
The potential for the Project to create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff is under assessment. (See 8a above) This issue will be addressed in the EIR.				
f) Otherwise substantially degrade water quality?	✓			
The Project could potentially result in additional sources of polluted runoff. Therefore, the potential for the Project to otherwise substantially degrade water quality will be addressed in the EIR. (See 8a above)				
g) Place housing within a 100-year floodplain, as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	✓			
The Project site is not located within a FEMA Flood Zone. The degree to which the Project site could substantially alter the existing drainage pattern is currently under assessment. (See 8a above) The potential for the Project to result in flooding on- or off-site will be addressed in the EIR.				
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?			✓	
The Project site is not located within a FEMA identified flood zone. Therefore the Project would not place structures which would impede or redirect flood flows within a 100-year flood hazard. However, as previously stated, the potential for the Project to result in flooding on- or off-site will be fully addressed in the EIR.				

[4] *Federal Emergency Management Agency (FEMA), Flood Insurance Rate Map (FIRM) Mammoth Lakes, Mono County, http://msc.fema.gov, October 16, 2007.*

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?				✓
No dams or levees are located in the Project site area. Therefore, the Project would not expose people or structures to a significant risk or loss, injury or death involving flooding, as a result of the failure of a levee or dam. Thus, no further analysis of this issue is required.				
j) Inundation by seiche, tsunami, or mudflow?		✓		
The potential for seiches and tsunamis as the result of the design level earthquake in a nearby fault are considered non-existent, due to the distance of the ocean or large open bodies of water from the Project site. Therefore, no further discussion related to seiches and tsunamis is required. However, impacts related to mudflows will be addressed in the EIR.				
9. **LAND USE AND PLANNING**. Would the project:				
a) Physically divide an established community?				✓
Although the Project site is partially undeveloped, development and a roadway system already occur in the Project area. Implementation of the Project would not divide an established community and would not preclude the access or future use of any surrounding areas. Thus, no further analysis of this issue is required.				
b) Conflict with an applicable land use plan, policy or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	✓			
A significant impact may occur if the project is inconsistent with the General Plan or zoning designations currently applicable to the project site, and would therefore potentially cause adverse environmental effects which the General Plan and zoning ordinances are designed to avoid or mitigate. Several discretionary actions will be necessary for the Project, including, but not limited to: amendment to the North Village Specific Plan, Use Permit (including design review), Tentative Tract Map, and Development Agreement. Additionally the Project will require rezoning. Under the current Town of Mammoth Lakes zoning regulations, Project parcels within the North Village area were designated for Specialty Lodging (SL) and Resort General (RG). Under the proposed North Village Specific Plan 2004, approximately 9.3 acres would be designated as the "Mammoth Crossing" (MC) zoning district, providing for a range of short-stay accommodation choices, retail and service uses. Other approvals will be identified in accordance with applicable laws and regulations. It is possible that the Project could conflict with specific policies that govern the Project site. Thus, this issue will be addressed in the EIR.				
c) Conflict with any applicable habitat conservation plan or natural communities conservation plan?				✓
As stated previously in 4f above, the Project site and its vicinity are not located within an area covered by a Habitat Conservation Plan, Natural Community Conservation Plan, or other approved conservation plan. Therefore, development of the Project would not conflict with any habitat conservation plan and no further analysis of this issue is required.				
10. **MINERAL RESOURCES.** Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?				✓
There are no known mineral resources at or near the Project site. Thus, the Project would not result in the loss or availability of a known mineral resource that would be of value to the region and the residents or the state. No further analysis of this issue is required.				

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?				✓
See 10a above.				
11. **NOISE.** Would the project result in:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	✓			
During the Project's construction period, noise levels at and near the Project site would temporarily increase due to use of construction equipment. The Project will also result in increased traffic. The potential for the Project to result in exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies will be addressed in the EIR.				
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	✓			
Construction of the Project may require the use of pile drivers. Therefore, the Project has the potential to result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels. This issue will be addressed in the EIR.				
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	✓			
Development of the Project would increase the number of people and vehicles and the amount of activity at the Project site and in the area. Additionally, traffic generated by the Project would affect the noise levels along the roadways that would be used by Project traffic. Therefore, the potential for the project to result in a substantial permanent increase in ambient noise levels in the Project vicinity above levels existing without the project will be addressed in the EIR.				
d) A substantially temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	✓			
Demolition and construction activities associated with the proposed Project, particularly the use of heavy machinery, could generate temporary intermittent noise in excess of the Town's noise standards. Therefore, the potential for the Project to result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the Project will be addressed in the EIR.				
e) For a project located within an airport land use plan, or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?				✓
As stated previously in 7e above, the Project site is not within an airport land use plan, nor is it within two miles of a public or private airport. Therefore, the Project would not expose persons to safety hazards associated with an airport. Thus, no further analysis of this issue is required.				
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?				✓
See 11e above.				

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
12. **POPULATION AND HOUSING.** Would the project:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	✓			
The Project would induce direct population growth by introducing approximately 1,020 residential rooms (a combination of hotel rooms/suites and affordable housing rooms) to the Project site. The Project proposes density not foreseen in the General Plan or the North Village Specific Plan (NVSP), which both include 48 rooms per acre plus housing density bonus. The potential for the Project to induce growth will be addressed in the Growth Inducement section of the EIR.				
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	✓			
While the Project is proposing to construct new residential rooms, the Project has the potential to displace existing housing. This issue will be fully analyzed in the Population and Housing section of the EIR.				
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	✓			
See 12b above.				
13. **PUBLIC SERVICES**. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered government facilities, need for new or physically altered government facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
a) Fire protection?	✓			
The Mammoth Lakes Fire Protection District (MLFPD) provides fire protection and emergency response to the Project site. The MLFPD service area includes approximately 3,000 acres of mountain resort area in and around the Town and over 2,500 acres within the Town. The MLFPD currently responds to calls for service from two fire stations. Fire Station No. 1, the primary station, is located at 3150 Main Street and was recently replaced with a larger, more updated facility. This facility is located approximately 1 mile north of the Project site. Fire Station No. 2 is located at 1574 Old Mammoth Road and is located approximately 1 mile west of the Project site. While the Project could result in an increase in the quantity of emergency calls received by the MLFPD due to the increase in activity and use in the area, the Project would not result in development that is unique in the area. The Project would comply with the applicable provisions as set forth in the Town Municipal Code. The Project would be subject to review by the MLFPD to ensure that the Project complies with fire requirements. The Project would introduce approximately 1,020 residential rooms (a combination of hotel rooms/suites and affordable housing rooms) and therefore introduce new residents to the Project site, thereby increasing the demand for fire protection services at the site and potentially affecting service ratios and response times. The demand for fire protection services associated with the Project will be analyzed and mitigation measures proposed. The EIR will address the potential for the Project to result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities (e.g., fire stations), need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for fire protection services.				

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
b) Police protection?	✓			

Police protection and law enforcement in the Town of Mammoth Lakes are provided by the Mammoth Lakes Police Department (MLPD), the Mono County Sheriff's Department (MCSD), and the California Highway Patrol (CHP). The MLPD provides all non-traffic related services for the Project area. Criminal investigation calls, the primary job function of the MLPD, increase during the peak visitor months. MLPD is responsible for all traffic related offences within the Town except for along State Route 203 where CHP also provides traffic related services. While the increase in visitors resulting from development of the Project could result in a greater volume of emergency calls for police services, the Development Impact Fees paid by the applicant would most likely serve to mitigate potential impacts to police services.

The Project would introduce approximately 1,020 residential rooms (a combination of hotel rooms/suites and affordable housing rooms) and therefore introduce new residents to the Project site, thereby increasing the demand for police protection services at the site and potentially affecting service ratios and response times. The demand for police protection services associated with the Project will be analyzed and mitigation measures proposed. The EIR will address the potential for the Project to result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities (e.g., police stations), need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for police services.

c) Schools?	✓			

The Project would introduce approximately 1,020 residential rooms (a combination of hotel rooms/suites and affordable housing rooms) and therefore introduce new residents to the Project site, thereby increasing the demand for school services in the Mammoth Unified School District. It is possible that the demand for school services associated with the Project could require the need for new or physically altered school facilities. Development Impact Fees and School District Development Fees as authorized by the state are the available mitigation and would most likely mitigate this impact. However, the EIR will address the potential for the Project to result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities (e.g., school facilities), need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for school services.

d) Parks?	✓			

The Project would introduce approximately 1,020 residential rooms (a combination of hotel rooms/suites and affordable housing rooms) and therefore introduce new residents to the Project site, thus would generate the greatest users of parks and recreational facilities-families with children. The demand for parks associated with the project will be analyzed and mitigation measures proposed. The EIR will address the potential for the Project to result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities (e.g., park facilities), need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for park and recreation services.

e) Other public facilities?	✓			

Generally, the Town of Mammoth Lakes Public Works Department is responsible for snow removal on the majority of non-state and non-federal public roadways and Caltrans provides snow removal services on SR-203 from the junction of U.S. Highway 395 to the Caltrans Minaret Maintenance Station at postmile 2.4.

The Project would introduce approximately 1,020 residential rooms (a combination of hotel rooms/suites and affordable housing rooms) and therefore introduce new residents to the Project site, thereby increasing the demand for snow removal services. Therefore, the EIR will address the potential for the Project to result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities (e.g., snow removal service), need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for snow removal services.

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
14. **RECREATION.**				
a) Would the project increase the use of existing neighborhood or regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	✓			
The Project would introduce approximately 1,020 residential rooms (a combination of hotel rooms/suites and affordable housing rooms) and therefore introduce new residents to the Project site, thereby increasing the demand for recreational uses in the Town. A significant impact may occur if a project includes substantial employment or population growth which could generate a demand for park or recreational facilities that exceed the capacity of existing parks or recreational facilities and causes premature deterioration of the facilities. Maintenance of public parks and recreational facilities in Mammoth Lakes is funded largely through the Town general fund, through the Quimby Act and other park fees. Because the increase in population would exceed that foreseen in the General Plan the Project could potentially place an additional generation of demand on existing and future trails and public access systems, neighborhood and regional parks, and subsequent accelerated deterioration of the parks and trails. As demand for park services and trails by the Project is considered to be potentially significant, Project impacts on maintenance of those facilities and trails would likewise pose a potentially significant impact. Therefore, impacts to recreational facilities will be addressed in the EIR.				
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?			✓	
A significant impact may occur if a project includes the construction or expansion of park facilities and such construction would have a significant adverse effect on the environment. The Project is viewed as part of a resort recreation center with residential uses, outdoor use areas, swimming pools and access to multiple options for recreational amenities (e.g., Mammoth Mountain, trails and walkways and the Village area). As previously stated, the Project's recreational amenities in conjunction with the Town's current facilities and the collection of Developer Impact Fees that support the Town's park and recreation fund would be adequate to accommodate the Project's demand for parks and recreational services. The Project provides for on-site recreational amenities and would not involve the need for construction or expansion of off-site public recreational facilities. Therefore, impacts would be less than significant and no further analysis of this issue is required, however any impacts associated with park facilities will be addressed in the Public Services section of the EIR. See 13d above.				
15. **TRANSPORTATION/TRAFFIC.** Would the project:				
a) Cause an increase in the traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?	✓			
Implementation of the Project would create new vehicle trips traveling to and from the Project site. Therefore, the EIR will address the potential for the Project to cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system.				
b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?	✓			
Implementation of the Project and other reasonably-foreseeable development in the Project area would create new vehicle trips traveling to and from the Project site. Therefore, the EIR will address the potential for the Project to exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways.				

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?				✓
Due to the nature and scope of the Project, implementation of the Project would not have the potential to result in a change in air traffic patterns at any airport in the area. Therefore, no further discussion of this issue is required.				
d) Substantially increase hazards to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment)?	✓			
The Project would alter access to the Project site. Without proper design, the Project could result in traffic hazards. Therefore, the EIR will address the potential for the Project to substantially increase hazards due to a design feature. No agricultural land uses are located in proximity to the Project site. Therefore, the Project would not result in traffic hazards associated with incompatible uses, such as farm equipment. No further analysis related to this specific issue is required.				
e) Result in inadequate emergency access?	✓			
The Project would alter access to the Project site. Whether the Project would meet the Fire Department's standards for emergency access is unknown at this time. Thus, the EIR will address the potential for the project to result in inadequate emergency access.				
f) Result in inadequate parking capacity?	✓			
At this time, whether the proposed amount of parking spaces complies with the Town's Parking Code requirements is unknown. Therefore, the potential for the Project to result in inadequate parking capacity will be addressed in the EIR.				
g) Conflict with adopted policies or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	✓			
The EIR will address the potential for the Project to conflict with adopted policies, plans, or programs supporting alternative transportation and to provide appropriate facilities as mitigation if necessary (e.g., bus turnouts, bicycle racks). In addition, the EIR will address the potential for the Project to conflict with the adopted trails plan.				
16. **UTILITIES AND SERVICE SYSTEMS.** Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?				✓
This question would typically apply to properties served by private sewage disposal systems, such as septic tanks. Section 13260 of the California Water Code states that persons discharging or proposing to discharge waste that could affect the quality of the waters of the State, other than into a community sewer system, shall file a Report of Waste Discharge (ROWD) containing information which may be required by the appropriate Regional Water Quality Control Board (RWQCB). The RWQCB then authorizes a National Pollutant Discharge Elimination System (NPDES) permit that ensures compliance with wastewater treatment and discharge requirements. The Project site is not served by a private on-site wastewater treatment system, but instead conveys wastewater via municipal sewage infrastructure to a treatment plant operated by the Mammoth Community Water District. This treatment facility is a public facility and is therefore subject to the State's wastewater treatment requirements. Wastewater from the Project site is therefore treated according to the wastewater treatment requirements enforced by the California Regional Water Quality Control Board, Lahontan Region, and no significant impact would occur. Therefore, no further analysis related to this specific issue is required.				

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
b) Require or result in construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	✓			
Potable water, and wastewater treatment for Mammoth Lakes is provided by the Mammoth Community Water District (MCWD). The Project would introduce approximately 1,020 residential rooms (a combination of hotel rooms/suites and affordable housing rooms) and therefore introduce new residents to the Project site, thereby increasing the demand for water services to the MCWD. While the Project is not anticipated to require the construction or expansion of any water or wastewater treatment facilities other than what is proposed by the Project, the EIR will address the potential for the Project to require or result in construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.				
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	✓			
While the proposed Project is not anticipated to result in the construction of new off-site storm water drainage facilities, or the expansion of such facilities, the amount of post-Project runoff and available stormwater drainage capacities will be assessed in the EIR.				
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	✓			
Implementation of the Project would increase the demand for potable water. Whether the Project's demand for water can be accommodated is unknown at this time. Pursuant to State Bill 610, a Water Supply Assessment will be prepared for the Project by the Mammoth Community Water District. Therefore, the potential for the Project to require new water supply entitlements will be addressed in the EIR.				
e) Result in a determination by the wastewater treatment provider which services or may serve the project determined that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	✓			
Implementation of the Project would result in an increase in wastewater generation. Whether the Project's demand for wastewater treatment can be accommodated is unknown at this time. Therefore, the potential for the Project to result in a determination by the wastewater treatment provider which serves or may serve the Project that it has adequate capacity to serve the Project's projected demand in addition to the provider's existing commitments will be addressed in the EIR.				
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?			✓	
Solid waste disposal service for the Town of Mammoth Lakes is currently contracted to Mammoth Disposal Incorporated Solid waste is disposed at the Benton Crossing Landfill, which is located within Mono County. The landfill has a remaining capacity of 1.7 million cubic yards of compacted waste and is anticipated to have the capacity to accommodate the Town's waste generation and disposal needs for the next 20 years. In addition, the Town has an option for five years at the Pumice Valley Landfill. With the existing capacity in the Benton Crossing Landfill as well as the option for disposal for five years at the Pumice Valley Landfill, there is adequate landfill capacity for the Project population. While the Project will generate an increase in the amount of solid waste disposed of at the landfill, the Project would not result in the need to construct a new landfill or expand existing facilities. In addition, recycling will be required within the Project and the applicant will be required to comply with municipal laws and regulations regarding provision of recycling collection rooms.				

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
g) Comply with federal, state, and local statutes and regulations related to solid waste?				✓
The construction and operation of the Project would be required to adhere to all applicable federal, State, and local statues and regulations related to solid waste. Therefore, Project impacts regarding compliance with federal, State, and local statutes and regulations related to solid waste would be less than significant, and no further discussion of this issue is required.				
17. **MANDATORY FINDINGS OF SIGNIFICANCE.**				
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?				
Yes. As noted in this Initial Study, implementation of the Project could potentially degrade the quality of the environment.				
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of the past projects, the effects of other current projects, and the effects of probable future projects)?				
Yes. The Project could contribute to cumulative environmental impacts.				
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?				
Potentially. As noted in this Initial Study, implementation of the Project could cause substantial adverse effects on human beings, either directly or indirectly.				

APPENDIX B

RESPONSES TO THE NOP AND EIR SCOPING MEETING

COMMENTS RECEIVED IN RESPONSE TO NOTICE OF PREPARATION
AND AT EIR SCOPING MEETING HELD ON NOVEMBER 13, 2007.

SUMMARY OF COMMENTS	Project Description	Aesthetics	Air Quality	Biological Resources	Cultural Resources	Geology / Soils	Hazards / Hazardous Materials	Hydrology / Water Quality	Land Use Planning	Noise	Population / Housing	Public Services	Transportation / Traffic	Utilities / Service Systems	Construction Impacts	Alternatives	Other	NOTES
LETTERS RECEIVED IN RESPONSE TO THE NOTICE OF PREPARATION DATED NOVEMBER 2, 2007																		
Regional Agencies																		
Scott Morgan Project Analyst State Clearinghouse 1400 Tenth Street Sacramento, CA 95812-3044 November 1, 2007																	•	Confirmation of Notice of Preparation (NOP) posting.

COMMENTS RECEIVED IN RESPONSE TO NOTICE OF PREPARATION **AND AT EIR SCOPING MEETING HELD ON NOVEMBER 13, 2007.**																		
SUMMARY OF COMMENTS	Project Description	Aesthetics	Air Quality	Biological Resources	Cultural Resources	Geology / Soils	Hazards / Hazardous Materials	Hydrology / Water Quality	Land Use Planning	Noise	Population / Housing	Public Services	Transportation / Traffic	Utilities / Service Systems	Construction Impacts	Alternatives	Other	**NOTES**
Mack Hakakian, PG Engineering Geologist California Regional Water Quality Control Board, Lahontan Region 14440 Civic Drive, Suite 200 Victorville, CA 92392 November 19, 2007								•										Comments the Regional Board has adopted a Water Quality Control Plan for the Lahontan Region. Comments a number of activities associated with the project will require permits issued by the SWRCB which may include Land Disturbance and Discharge of fill material. Comments the project will alter the drainage patterns of rainfall absorption and surface runoff, causing increase in rates of stormwater discharge. Comments the potential adverse impacts of urban development projects on water quality include direct physical impacts to aquatic, wetland, and riparian habitat and other beneficial uses, generation of construction-related and post-construction urban pollutants, alteration of flow regimes and groundwater recharge as a result of impervious surfaces and storm drain collector systems, and disruption of watershed level aquatic functions including pollutant removal, floodwater retention, and habitat connectivity. Comments the EIR should describe how to avoid or minimize each potential cause of water quality degradation, what effects will remain unmitigated through project design, and the magnitude of the remaining adverse effects. Comments the EIR must address how hydro-modification may result in substantial additional sources of polluted runoff, and promote recharge of poorer quality water. Comments drainage channels should be avoided to minimize impacts, and any unavoidable impacts to these waters of the State must be mitigated. Requests the EIR completely evaluates the potential cumulative impacts of the project considering other existing and potential projects. Comments the EIR must specifically identify features for both the short-term and the post-construction periods that will control stormwater on-site or prevent pollutants from non-point sources from entering and degrading groundwater. States the foremost method of reducing impacts to watersheds from urban development is “Low Impact Development”.

COMMENTS RECEIVED IN RESPONSE TO NOTICE OF PREPARATION AND AT EIR SCOPING MEETING HELD ON NOVEMBER 13, 2007.																		
SUMMARY OF COMMENTS	Project Description	Aesthetics	Air Quality	Biological Resources	Cultural Resources	Geology / Soils	Hazards / Hazardous Materials	Hydrology / Water Quality	Land Use Planning	Noise	Population / Housing	Public Services	Transportation / Traffic	Utilities / Service Systems	Construction Impacts	Alternatives	Other	**NOTES**
																		Comments designs that use vegetated areas for stormwater management and infiltration on-site are preferred and most effective means of filtering sediment and pollution. Comments minimum-disturbance activities protect and preserve the natural drainage system. States that design features of future development should be incorporated to ensure runoff is not concentrated by the proposed project.
Gayle J. Rosander, IGR/CEQA Coordinator Department of Transportation District 9 500 South Main Street Bishop, CA 93514 November 26, 2007													•					Comments graphic scale bars would make reduced copies more meaningful and north arrows would be nice. Showing R/W lines splitting the Intersection might be helpful for Town and Caltrans. Asks if south side ped/bike path will be constructed as part of the Crossings project as noted. Concerned contemplated road modifications sheets need more detail as to what is proposed. South Side is not shown. Comments there should be no trucks parking in the middle of the road for unloading purposes. Asks if at Site 1, only existing things are plotted and if there are going to be any changes. Comments that the Caltrans drainage system along the northwest side of Minaret Rd. should be plotted. Asks if winter parking restrictions would be valid at Site 1/2 so that there is no parking. Asks if a raised island is proposed or striping to separate right turn movements. Asks if Site 2/3 lane configuration would need to be changed due to 36: DI on S. Minaret that drains west. Comments Site 3 south side path should be constructed with project. Asks whether or not the circle is some sort of retaining wall at the corner that the path loops around to make a more gradual grade to end up a door. Asks would cobble swale and "drain" west of swale be affected. Asks if Site 3 will have snow storage/removal.

COMMENTS RECEIVED IN RESPONSE TO NOTICE OF PREPARATION **AND AT EIR SCOPING MEETING HELD ON NOVEMBER 13, 2007.**																		
SUMMARY OF COMMENTS	Project Description	Aesthetics	Air Quality	Biological Resources	Cultural Resources	Geology / Soils	Hazards / Hazardous Materials	Hydrology / Water Quality	Land Use Planning	Noise	Population / Housing	Public Services	Transportation / Traffic	Utilities / Service Systems	Construction Impacts	Alternatives	Other	**NOTES**
Gayle J. Rosander, IGR/CEQA Coordinator Department of Transportation District 9 500 South Main Street Bishop, CA 93514 November 28, 2007													•					Requests the EIR traffic analysis includes vehicular, pedestrian and bicycle modes of travel and circulation, connectivity, and safety. Requests the EIR addresses consistency with the Minaret Road Alignment Study and the preliminary plans for a future pedestrian bicycle path within State right-of-way. Concerned about the possibility of a roundabout at the Intersection. No conclusions from the Town regarding feasibility have been seen. If feasible, R/W needs to be determined. Requests the EIR considers access/parking on Town roads must be designed/located not to interfere with safe operation of the Intersection. Requests the EIR addresses re-routing transit services off SR 203. By locating transit stops on private and local roads, safety could be improved for both the pedestrians utilizing transit and through-vehicles. Requests the EIR addresses construction circulation phase and maintenance of transportation facilities including snow removal/storage as it relates to mobility and sight distance. Requests the EIR addresses encroachment permits that would be needed for any construction activity within SR 203 R/W. Notes that except for Figure 1 map, the NOP does not mention that the project abuts SR 203.

COMMENTS RECEIVED IN RESPONSE TO NOTICE OF PREPARATION AND AT EIR SCOPING MEETING HELD ON NOVEMBER 13, 2007.

SUMMARY OF COMMENTS	Project Description	Aesthetics	Air Quality	Biological Resources	Cultural Resources	Geology / Soils	Hazards / Hazardous Materials	Hydrology / Water Quality	Land Use Planning	Noise	Population / Housing	Public Services	Transportation / Traffic	Utilities / Service Systems	Construction Impacts	Alternatives	Other	NOTES
Private Individuals and Organizations																		
John Walter Advocates for Mammoth P.O. Box 2005 Mammoth Lakes, CA 93546 November 19, 2007				•					•	•			•			•	•	Advocates for Mammoth request that the project is held in compliance with the General Plan and the existing North Village Specific Plan. They also request that the following issues are addressed in the EIR: Vehicle Miles Traveled reflect an updated study and not the early 90's Town Plan, the impact on nesting birds and cavity nesters (evaluated at the same level of discussion as found in the Snowcreek VIII EIR), the studies of operational noise need to include the noise of events, the traffic and circulation information study needs to study design alternatives for ingress/egress from the site, include alternatives that are not at the intersection of the Town's two busiest streets, and all models based on cumulative impacts that are more than two years old are updated so they reflect projects that were approved.

COMMENTS RECEIVED IN RESPONSE TO NOTICE OF PREPARATION AND AT EIR SCOPING MEETING HELD ON NOVEMBER 13, 2007.

SUMMARY OF COMMENTS	Project Description	Aesthetics	Air Quality	Biological Resources	Cultural Resources	Geology / Soils	Hazards / Hazardous Materials	Hydrology / Water Quality	Land Use Planning	Noise	Population / Housing	Public Services	Transportation / Traffic	Utilities / Service Systems	Construction Impacts	Alternatives	Other	NOTES
Chris Ricketts Fireside Board of Governors P.O. Box 7327 Mammoth Lakes, CA 93546 December 4, 2007		•							•				•		•		•	Requests that the EIR examine all phases of the project, which includes planning, construction, and operation. Also requests that the EIR include an economic analysis and address how the structure is compatible with the rest of the town. Requests this be a full EIR, not just a focused version on a few issues. Comments that impacts to aesthetics must be considered from all key viewpoints around town and outside of town. Requests the EIR address views from Fireside of the Sherwin Mountain Range and include a full sun/shadow study with the effects shown pictorially on an hourly basis for the Fireside Condominiums Site. Comments the Land Use and Planning section is not broad enough. Requests the EIR to include a larger Social Impact Assessment to analyze community cohesion, community character, community stability, community severance, and patterns and networks of community interaction. Requests a category examining the placement of incompatible land uses adjacent to existing uses. States that the project would divide an established community due to the height of structures located on Site 1. Requests a full traffic/transportation analysis to include trips by O-D zone (existing and future), computer model runs, computer model methodology and assumptions including number of iterations, and volume/capacity results for all Town roads (existing and future).
COMMENTS FROM NOVEMBER 13, 2007 EIR SCOPING MEETING																		
Private Individuals and Organizations																		
Speakers																		
John Wentworth									•									Requests that the project be connected to the General Plan (language). Also requests the project be physically connected to the Lake Mary Bike Path.

COMMENTS RECEIVED IN RESPONSE TO NOTICE OF PREPARATION AND AT EIR SCOPING MEETING HELD ON NOVEMBER 13, 2007.																		
SUMMARY OF COMMENTS	Project Description	Aesthetics	Air Quality	Biological Resources	Cultural Resources	Geology / Soils	Hazards / Hazardous Materials	Hydrology / Water Quality	Land Use Planning	Noise	Population / Housing	Public Services	Transportation / Traffic	Utilities / Service Systems	Construction Impacts	Alternatives	Other	**NOTES**
Chris Rickets		•							•				•				•	Concerned about the social impacts that could be created by the project which includes dividing a community. The project could become its own community. Requests that the EIR address impacts on the existing and potential community. Also concerned about fire access for Fireside residents. Requests that the Aesthetics section of the EIR include analysis of visual character from the Fireside site and includes shadow lines. Requests that the EIR analyze all phases of the project, which includes planning, construction, and operation. Requests transportation/traffic report with complete appendices, including models and trip generation. Concerned transportation/traffic method of analysis spreads traffic about the town, thus eliminating traffic impacts at the project site. Requests transportation/traffic impacts on Forest Trail and canyon side are addressed. Comments that under "Mandatory Findings" the findings should state that there is a potentially significant impact to humans.
Meeting Attendees																		
Tom Hodges MMSA P.O. Box 24 Mammoth Lakes, CA 93546																		No formal comment at scoping meeting.
Shalle Qenueve Advocates for Mammoth P.O. Box 5005 Mammoth Lakes, CA 93546																		No formal comment at scoping meeting.
John Wentworth MLTPA P.O. Box 100 Mammoth Lakes, CA 93546																		See comments above.

COMMENTS RECEIVED IN RESPONSE TO NOTICE OF PREPARATION **AND AT EIR SCOPING MEETING HELD ON NOVEMBER 13, 2007.**																			
SUMMARY OF COMMENTS	Project Description	Aesthetics	Air Quality	Biological Resources	Cultural Resources	Geology / Soils	Hazards / Hazardous Materials	Hydrology / Water Quality	Land Use Planning	Noise	Population / Housing	Public Services	Transportation / Traffic	Utilities / Service Systems	Construction Impacts	Alternatives	Other	**NOTES**
Peter Bernascom Town of Mammoth Lakes Resident																		No formal comment at scoping meeting.
Chris Rickets Town of Mammoth Lakes Resident																		See comments above.

COMMENT LETTERS

STATE OF CALIFORNIA

GOVERNOR'S OFFICE *of* PLANNING AND RESEARCH

STATE CLEARINGHOUSE AND PLANNING UNIT

ARNOLD SCHWARZENEGGER
GOVERNOR

CYNTHIA BRYANT
DIRECTOR

Notice of Preparation

November 1, 2007

To: Reviewing Agencies

Re: Mammoth Crossing Project
SCH# 2007112002

Attached for your review and comment is the Notice of Preparation (NOP) for the Mammoth Crossing Project draft Environmental Impact Report (EIR).

Responsible agencies must transmit their comments on the scope and content of the NOP, focusing on specific information related to their own statutory responsibility, within 30 days of receipt of the NOP from the Lead Agency. This is a courtesy notice provided by the State Clearinghouse with a reminder for you to comment in a timely manner. We encourage other agencies to also respond to this notice and express their concerns early in the environmental review process.

Please direct your comments to:

Sandra Moberly
Town of Mammoth Lakes
P.O. Box 1609
Mammoth Lakes, CA 93546

with a copy to the State Clearinghouse in the Office of Planning and Research. Please refer to the SCH number noted above in all correspondence concerning this project.

If you have any questions about the environmental document review process, please call the State Clearinghouse at (916) 445-0613.

Sincerely,

for

Scott Morgan
Project Analyst, State Clearinghouse

Attachments
cc: Lead Agency

1400 10th Street P.O. Box 3044 Sacramento, California 95812-3044
(916) 445-0613 FAX (916) 323-3018 www.opr.ca.gov

California Regional Water Quality Control Board
Lahontan Region

Linda S. Adams
Secretary for Environmental Protection

Victorville Office
14440 Civic Drive, Suite 200, Victorville, California 92392
(760) 241-6583 • Fax (760) 241-7308
http://www.waterboards.ca.gov/lahontan

Arnold Schwarzenegger
Governor

November 19, 2007

File: Environmental Doc Review
Mono County

Ms. Sandra Moberly, Senior Planner
Town of Mammoth Lakes Community Development Department
Post Office Box 1609
Mammoth Lakes, CA 93546
FAX (661) 723-5926

COMMENTS ON THE NOTICE OF PREPARATION FOR THE ENVIRONMENTAL IMPACT REPORT ON THE PROPOSED CONSTRUCTION OF UP TO APPROXIMATELY 1,020 RESIDENTIAL ROOMS TO INCLUDE HOTEL ROOMS, SUITES AND AFFORDABLE HOUSING ROOMS AND SOME COMMERCIAL USES ON THREE SITE LOCATIONS TOTALING 9.3 ACRES, LOCATED AT THE NORTHWEST, SOUTHWEST AND SOUTHEAST CORNERS OF THE INTERSECTION OF MAIN STREET, LAKE MARY ROAD AND MINARET ROAD, MAMMOTH LAKES

California Regional Water Quality Control Board, Lahontan Region (Water Board) staff has reviewed the Notice of Preparation dated November 2, 2007 for an Environmental Impact Report (EIR) on the above-referenced Project.

General Comments

The Regional Board has adopted a Water Quality Control Plan for the Lahontan Region (Basin Plan), which contains prohibitions, water quality standards, and policies for implementation of those standards. The Basin Plan is available on line at the Regional Board's Internet site at http//:www.waterboards.ca.gov/lahontan/. The Project must comply with all applicable water quality standards and prohibitions of the Basin Plan.

Our comments are submitted in compliance with California Environmental Quality Act (CEQA) Guidelines §15096, which requires CEQA responsible agencies to specify the scope and content of the environmental information germane to their statutory responsibilities and lead agencies to include that information in the environmental document for their project. The State Water Resources Control Board (SWRCB) and the Water Board regulate discharges which could affect the quality of water of the State in order to protect the chemical, physical, biological, bacteriological, radiological, and other properties and characteristics of water which affects its use.[1] A number of activities associated with the project will apparently require permits issued by the SWRCB. The required entitlements may include:

[1] Water Code section 13050(g)

- Discharge of fill material - Clean Water Act (CWA) §401 water quality certification for federal waters; or Waste Discharge Requirements for non-federal waters, and
- Land disturbance - CWA § 402(p) stormwater permit (Construction Stormwater Permit)

Hydrology and Water Quality

The proposed Project involves the development of commercial and residential uses on currently vacant and undeveloped land. This development will alter the existing drainage patterns of rainfall absorption and surface water runoff, causing an increase in rates of stormwater discharge.

Urban development degrades water quality through a complex of interrelated causes and effects, which, unmanaged, ultimately destroy the physical, chemical, and biological integrity of the watersheds in which they occur. The primary potential adverse impacts of urban development projects on water quality are:

- the direct physical impacts to aquatic, wetland, and riparian habitat and other beneficial uses;
- generation of construction-related and post-construction urban pollutants;
- alteration of flow regimes and groundwater recharge as a result of impervious surfaces and storm drain collector systems; and
- disruption of watershed level aquatic functions, including pollutant removal, floodwater retention, and habitat connectivity.

These factors have historically resulted in a cycle of destabilized stream channels, poor water quality, and engineered solutions to disrupted flow patterns, culminating in loss of natural functions and societal values in the affected basins. The number and variability of the pathways through which water quality degradation can occur complicates analysis, but understanding how these pathways operate within the specific circumstances of this project is essential to effectively mitigating the adverse effects.

In order to evaluate the project regarding the above potential impacts, the Project must describe how it will avoid or minimize each potential cause of water quality degradation, what effects will remain unmitigated through project design, and the magnitude of the remaining adverse effects.

It must also address how hydromodification may result in substantial additional sources of polluted runoff, and promote recharge of poorer quality water or otherwise substantially degrade groundwater quantity or quality. Drainage channels should be avoided to minimize impacts, and any unavoidable impacts to these waters of the State must be mitigated. Mitigation must be identified in the EIR including timing of construction. Mitigation must replace functions and values of drainages lost. It is not sufficient to state that mitigation will be accomplished through permits acquired and that appropriate governmental agencies will be notified.

Additionally, please be sure that the EIR completely evaluates the potential cumulative impacts of the project considering other existing and potential projects.

Effective Stormwater Management

The EIR for this project must specifically identify features for both the short-term (construction) and the post-construction periods that will control stormwater on-site or prevent pollutants from non-point sources from entering and degrading groundwater. The foremost method of reducing impacts to watersheds from urban development is "Low Impact Development" (LID), the goals of which are maintaining a landscape functionally equivalent to predevelopment hydrologic conditions and minimal generation of nonpoint source pollutants. LID results in less surface runoff and less pollution routed receiving waters. Principles of LID include:

- Maintaining natural drainage paths and landscape features to slow and filter runoff and maximize groundwater recharge,
- Reducing the impervious cover created by development and the associated transportation network, and
- Managing runoff as close to the source as possible.

We understand that LID development practices that would maintain aquatic values could also reduce local infrastructure requirements and could benefit energy conservation, air quality, open space, and habitat. Many planning tools exist to implement the above principles, and a number of recent reports and manuals provide specific guidance regarding LID. These principles can be incorporated into the proposed project design.

Natural drainage patterns must be maintained and/or restored to the extent feasible. Designs that use vegetated areas for stormwater management and infiltration on-site are preferable and are the most effective means of filtering sediment and pollution, and regulating the volume of runoff from land surfaces to adjacent washes.

Minimum-disturbance activities (such as preservation of vegetation and grade) protect and preserve the natural drainage system. They emulate and preserve the natural hydrologic cycle, moving stormwater slowly over large permeable surfaces to allow it to percolate into the ground. In addition, preservation and minimum-disturbance activities may be more cost effective than revegetation practices or structural controls, especially long-term. Design features of future development should be incorporated to ensure that runoff is not concentrated by the proposed project, thereby causing downstream erosion. Storm drain systems do not promote the same beneficial uses as a natural ecosystem.

Thank you for the opportunity to comment on your project. If you have any questions regarding our comments, please contact me at (760) 241-7376, or e-mail me at mhakakian@waterboards.ca.gov.

Sincerely,

Mack Hakakian

Mack Hakakian, PG
Engineering Geologist

MH/rc/CEQA comments/Mammoth Lakes Mammoth Crossing

Gayle Rosander/D09/Caltrans/CAGov

11/26/2007 11:36 AM

To

cc

bcc

Subject Mammoth Crossing Site Plan Observations

Graphic scale bars would make reduced copies more meaningful. North arrows would be nice too.

It might be helpful to show the R/W lines for Town and Caltrans since the R/W line splits the Intersection - west is Town's and east is Caltrans'.
(Don't know why this was done in the 1967 relinquishment to Mono (then to Town), but the roads were narrower then. John thinks we could get R/W back by some streets and hwys code if we need to, but I think some of it has been vacated by Mammoth (but w/ easement). But probably best/simplest if the Town and Caltrans can work toward the optimal intersection.)

Urban Space Sheet -
I am not quite sure what the yellow means but it looks like the south side ped/bike path is on it.
Will path be constructed as part of the Crossing project Site 3 as noted below?

Contemplated Road Modifications Sheet -
Need need more detail as to what is proposed. One cannot tell much except for the parking on Lake Mary Rd. (These are architect's plans, maybe the Traffic Consult will have something else.)
South side path is not shown (shows one to southwest though from Site 2).

Vehicle Movements/Loading -
At least there should be no trucks parking in the middle of the road for unloading purposes.

Site 1 -
Are just existing things plotted (retaining wall....) so no changes proposed here?
There is a Caltrans drainage system along the northwest side of Minaret. It should be plotted. It could be impacted if any changes are proposed to Site 1.
Label of "Existing" or "Proposed" would be helpful.

Site 1/2
On-street parking is proposed on Lake Mary between Canyon and the Intersection. Looks like back-in forward-out (except some sheets have direction wrong).
Would the winter parking restrictions be valid here so no parking Nov 1 to Apr 1 or whatever it is? If not they are taking away snow storage.
It seems better to not complicate the area with parking since it is between two signalized intersections. Parkers may not see who is coming around the corners. Is a raised island proposed or just striping to separate right turn movements (pedestrian refuge)?

Site 2/3
Should show directional arrows for lane configuration on Minaret approaching Intersection.
It appear that the 36" DI on S. Minaret Rd. drains to the west. Would this system need modification?

Site 3 -
South side path should be constructed w/ project.
Is the circle some sort of retaining wall at the corner that the path loops around to make a more gradual grade to end up a door?
Would cobble swale and "drain" west of swale be affected.
Snow storage/removal?

DEPARTMENT OF TRANSPORTATION
District 9
500 South Main Street
Bishop, CA 93514
PHONE (760) 872-0785
FAX (760) 872-0754
TTY 711 (760) 872-0785

Flex your power!
Be energy efficient!

November 28, 2007

Sandra Moberly
Mammoth Lakes Community Development Department
P.O. Box 1609
Mammoth Lakes, California 93546

File: 09-MNO
NOP EIR
SCH #: 2007112002

Dear Ms. Moberly:

Notice of Preparation (NOP) of an Environmental Impact Report (EIR) for the Mammoth Crossing Project (November 2007)

The California Department of Transportation (Caltrans) appreciates the opportunity to comment during the NOP phase of the Mammoth Crossing Project located at the northwest, southwest and southeast corners of State Route (SR) 203 (Minaret Road/Main Street)/ Lake Mary Road Intersection. We received project plans from Ellen Clark this week and will have plan-specific comments to share at the scheduled December 5 meeting.

Please consider the following in preparing the project EIR:

- Ensure the traffic analysis addresses vehicular, pedestrian and bicycle modes of travel including circulation, connectivity, and safety. Mitigate impacts via project design/ construction and other appropriate methods (e.g. impact fees).

- The Town and Caltrans collaborated on the Town's Minaret Road Alignment Study, which has not been finalized. Any project facilities along Minaret Road should be consistent with or improve upon that Alignment.

- The Town has preliminary plans for a future pedestrian/bicycle path within State right-of-way (R/W) that would roughly parallel SR 203 along Site 3. Construction of such a path should be a project condition.

- During meetings with the Town, the possibility of a roundabout at the Intersection had been discussed. We have not seen any conclusions from the Town regarding feasibility. If feasible, R/W needs must be determined.

- We appreciate that no project vehicular access is proposed for SR 203. However, access/parking on Town roads must be designed/located to not interfere with safe operation of the Intersection.

- Address re-routing transit services off SR 203. By locating transit stops on private and local roads, safety could be improved for both the pedestrians utilizing transit and through-vehicles.

- Address construction phase circulation.

- Address maintenance of transportation facilities including snow removal/storage as it relates to mobility and sight distance.

- Encroachment permits would be needed for any construction activity within SR 203 R/W.

Except for the Figure 1 map, which labels "Main St" as "203", the NOP does not mention that the project abuts SR 203 – a state highway. At least on the State Clearinghouse Data Base sheet Proximity to Highways section, "395" should be replaced with "State Route 203 – abutting."

Please continue to forward information relevant to Caltrans. We value a cooperative relationship with the Town in development and transportation issues. If you have any questions, I may be contacted at (760) 872-0785.

Sincerely,

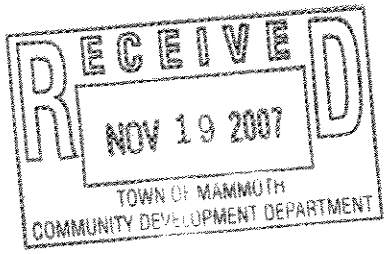
Gayle J. Rosander

GAYLE J. ROSANDER
IGR/CEQA Coordinator

c: State Clearinghouse
Steve Wisniewski, Caltrans

ADVOCATES FOR MAMMOTH

P. O. Box 2005, Mammoth Lakes, CA 93546
www.advocatesformammoth.org
email: about@advocatesformammoth.org



November 19, 2007

Town of Mammoth Lakes
Community Development Department
ATTN: Sandra Moberly
P. O. Box 1609
Mammoth Lakes, CA 93546

Dear Ms. Moberly,

These are comments from the Advocates for Mammoth on the Notice of Preparation of an Environmental Impact Report (EIR) for the Mammoth Crossing Project

The Mammoth Crossing Project must be held in compliance with the new General Plan (GP) adopted after many years of intense effort by the entire community of Mammoth Lakes and the existing North Village Specific Plan (NVSP). It should not be necessary to say any more.

However, from the information we have received to date, the following items need to be addressed in the EIR:

*The Vehicle Miles Traveled - needs to reflect an updated study, not the early 90's Town Plan.

*Impact on nesting birds and cavity nesters (bird and mammal) needs to be at the same level of discussion as found in the Snowcreek VIII EIR.

*The studies of operational noise need to include the noise of events, that of many additional people hanging around, etc., and not just operational traffic noise.

*The traffic and circulation information needs to study design alternatives for ingress/egress from the site, including alternatives that are not at the intersection of our two busiest streets.

*Include a project alternative within the current NVSP and also project alternatives that will come as a result of the District Plan. We feel, however, that the District Plan for the North Village already exists and it is the NVSP.

*Update all models based on cumulative impacts that are more than two years old so that they reflect the actual projects that were approved.

John Walter (934-1767) or Shalle Genevieve (934-9668)
Advocates for Mammoth

FIRESIDE
AT THE VILLAGE

December 4, 2007

Town of Mammoth Lakes
Community Development Department
ATTN: Sandra Moberly
P.O. Box 1609
Mammoth Lakes, CA 93546

By Email and FAX

RE: Scoping Additions to EIR for Mammoth Crossing Project

Dear Ms. Moberly,

On November 13, 2007, we attended the EIR Scoping Meeting for the project. Oral comments for the public record, and we would like to add the following written comments. These comments reflect the Board approved submission of the Fireside Home Owners Association, of which I am a Board Member. They also reflect my opinions as a Fireside owner, full time resident and home owner on Forest Trail in the vicinity of the project.

We understands that the purpose of the written and oral comments being solicited at this time for the Mammoth Crossing project are only in reference to the EIR component of the project. As such, we have not included comments in relation to the Town's discretionary actions including amendment to the General Plan, NVSP, Use Permit, and Tentative Tract Map. The related re-zoning, increase in height requirements and increase in density are the types of issues which we will reserve the right to comment on at the appropriate time in the process.

Comments on the EIR document titled 'Initial Study', dates 10.31.07

Reference to all categories. As part of the EIR the proponent must examine ALL phases of the project including planning, construction, and operation. Fireside Condominiums, as a directly adjacent property, is extremely concerned with all these phases and requests that the full analysis be included in the EIR.

Reference to missing category. ECONOMIC. There are compelling reasons to believe that an economic analysis should be conducted as part of the EIR as the apparent reason for considering 100+ feet heights and increased density is economic. Approval of this proposal may place in motion economic forces that could well result in more or even larger structures within the town with resultant environmental damage. The growth inducing effects that such an approval would have on future project applications and the cumulative impacts should be considered as they could be significant. Future development, with major negative impacts, will be hard to argue

against if the precedence is set with this project. How such a structure is compatible with the character of the town should be fully addressed.

Reference to page 6. The Determination states that 'An Environmental Impact Report is required, but it must analyze only the effects that remain to be addressed'. Project consultant Rob Carnachan, confirmed at the meeting that all effects remain to be addresses except Agricultural Resources and Mineral Resources.

This is a very large scale project, with great implications to the entire Town of Mammoth Lakes. As such, we request that this be a full EIR, not just a focused version on a few issues

Reference to page 8/1. AESTHETICS. Impacts must be considered from all key viewpoints around town and outside of town (e.g., airport, Sherwins, etc.). In particular, please include the visual character from the Fireside Condominiums, with special emphasis on views from Fireside of the Sherwin Mountain Range. Also please include a full sun/shadow study, with the effects shown pictorially on an hourly basis for the Fireside Condominium site.

Reference to page 16/9. LAND USE AND PLANNING. The 'Land Use and Planning' section is not broad enough for such a major and pivotal development in such a small town. This project has applied the standard Environmental Checklist from CEQA Appendix G. As part of that document it is stated that "This is only a suggested form, and lead agencies are free to use different formats, …". As such, the lead agency should consider the size and complexity of the project's impacts on the surrounding community, and the impacts of the proposed land uses. Therefore, we request that a larger Social Impact Assessment be included in this project. This would include criteria and analysis in the areas of community cohesion, community character, community stability, community severance, and patterns and networks of community interaction. These areas have evolved in the Social Impact Assessment (SIA) methodology in order to review the social effects of major infrastuture projects such as this one.

In addition, Land Use and Planning typically includes a category for the placement of incompatible land uses adjacent to existing uses. This criteria needs to be included since an amendment to the General Plan, NVSP, and Use Permit is requested and rezoning is planned. Since all these amendments are contemplated, an in-depth analysis must be included within item 9b.

The criterion "Physically divide an established community?" has been assessed as 'No Impact'. We would suggest that because Site 1 has a proposed building mass of up to 103 feet above the average natural grade, that this massing may divide the established community of the North Village. It could create, in essence, 2 villages. The existing North Village, as one area, being physically divided by a 103 foot linear boundary, from the future portions of the village. The impact of the massing can break the continuity of a single North Village.

FIRESIDE
AT THE VILLAGE

Reference to page 20/15. TRANSPORTATION/TRAFFIC. On reviewing the turning movement diagrams presented at the Traffic Workshop for this project, we noted major discrepancies in the assignment of future vs. existing movements. While the build-out population in Mammoth Lakes represents a large increase over the existing population, the relationship between existing and future Origin-Destination (O-D) pairings should be fairly consistent. They are not. Therefore, we request full traffic analysis, from first principles, to support any traffic impacts presented in the EIR. Specific impact analysis should be based on a detailed review of background data, including:

- -Trips by O-D zone (existing and future)
- -Computer model runs
- -Computer model methodology and assumptions including number of iterations (or to equilibrium?)
- -Volume/capacity results for all Town roads (existing and future)

We appreciate your careful review and incorporation of our feedback as this project is evaluated.

Sincerely,

Chris Ricketts

Fireside Board of Governors

P.O. Box 7327,
Mammoth Lakes, CA, 93546
Telephone 760 934-1884

SCOPING MEETING
DRAFT ENVIRONMENTAL IMPACT REPORT
MAMMOTH CROSSING PROJECT

PLEASE SIGN IN — Meeting: 6:00 P.M. 11/13/07

#	NAME	ORGANIZATION/AFFILIATION (IF ANY)	ADDRESS
1	JOHN WHITMORE	MLTPA	PO BOX 100 PMB# 432 MAMMOTH LAKES CA 93546
2	TOM HODGES	MMSA	PO BOX 24, ML CA 93546
3	Shulle Genevieve	Advocates	PO Box 5005 ML CA 93546
4	Peter Bernasconi	TML	
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			

APPENDIX C

LETTERS FROM PUBLIC SERVICES AND UTILITY AGENCIES

CHRISTOPHER A. JOSEPH & ASSOCIATES
Environmental Planning and Research

October 24, 2007

Jim Schmieder, General Manager
Mammoth Disposal
PO Box 237
Mammoth Lakes, CA 93546

RE: Town of Mammoth Lakes' Mammoth Crossing Project Environmental Impact Report (EIR) – Request for Information

Dear Mr. Schmieder:

Christopher A. Joseph & Associates (CAJA) is working with the Town of Mammoth Lakes (Town) Community Development Department to prepare an EIR for the proposed Mammoth Crossing Project. The Project site is located entirely within the Town. The Mammoth Crossing Project site is located on three of the four corners of the intersection of Main Street, Lake Mary Road, and Minaret Road. The properties at the northwest, southwest, and southeast corners of the intersection are part of the Project site; the property at the northeast corner is not part of the Project site. The northwest and southeast properties contain several structures and surface parking areas. The southwest property is mostly vacant. The Project site slopes gently towards the southeast. Trees and other vegetation are located throughout the Project site and surrounding area.

The Project would require a Specific Plan amendment to the North Village Specific Plan, which would be prepared concurrently with the preparation of the Draft EIR for the Project. Additionally the Project would require rezoning to the "Mammoth Crossing" (MC) zoning, as further described below in Discretionary Actions.

The Specific Plan has been designed to facilitate the development of the area as a concentrated, pedestrian-oriented activity center with limited vehicular access. Development in the Specific Plan area is oriented toward year-round activity, and the strengthening of winter visitor activity. Architectural and landscaping guidelines are emphasized in the Specific Plan and, as such, will be an integral part of the Project.

The Project would create an intensely developed Town Visitor Core area and primary hub, with mixed uses on the eastside locations positioned to best enhance the visitor experience, as well as preserve the Town's intimate small town character. Major public places and commercial uses would be located on the ground level with visual access from streets and pedestrian linkage corridors. Accommodations would be located on upper floors. Buildings and structures would be carefully detailed to create an intimate scale and texture, and contribute to a sense of landmark arrival experience. The southeast corner uses would be for accommodation and ancillary uses. Parking would be primarily underground for all sites, and would total approximately 750 spaces.

610 16th Street • Suite 514 • Oakland • CA 94612
Phone 510 452-5200 • Fax 510 452-5202 • E-mail info@cajaeir.com • Web www.cajaeir.com
Los Angeles • Santa Clarita • Agoura Hills • Petaluma • Oakland • Mammoth Lakes

The Project would involve the development of three sites on the northwest, southwest, and southeast corners of the intersection of Main Street, Lake Mary Road, and Minaret Road. The entire project area encompasses approximately 9.3 acres total.

Site 1 (Whiskey Creek Corner) is located on the northwest corner and consists of parcels APN 33-044-07, APN 33-044-10, and .0492 acres of abandoned right of way; comprising a total of approximately 1.8 acres. A proposed pedestrian corridor will link the project to the existing North Village and Gondola building. The existing Whiskey Restaurant building may remain as a "historical" landmark familiar to long time visitors. Proposed uses would include a 198-room hotel, a public plaza, and various commercial businesses, with underground parking available. The Mammoth Crossing District zoning on Site 1 provides for 68 affordable housing units required (22,750 sq. ft) but may be provided off-site. The amenity and common areas would be 14,390 sq. ft; with commercial areas of 22,000 sq. ft; for a total of gross construction areas at 174,350 sq. ft.

Site 2 (Church Site) is located on the southwest corner and consists of parcels APN 33-010-02 through -07, APN 33-010-31, & -32, and .968 acres of abandoned right of way, comprising a total of approximately 4.5 acres. Proposed uses include a five star hotel with up to 364 rooms, limited residential and commercial retail fronting Lake Mary Road. The Mammoth Crossing District zoning on Site 2 provides for 48 very low income affordable housing units required (30,250 sq. ft). The amenity and common areas would be 24,640 sq. ft; with commercial areas of 18,150 sq. ft; with a density bonus requested of 35% over 80 RPA; for a total of gross construction areas at 301,160 sq. ft.

Site 3 (Ullr Whitestag) is located on the southeast corner and consists of parcels APN 33-100-14 though -18; comprising a total of 2.9629 acres. This site provides pedestrian and bicycle access from the eastern golf course as well as the Main Street town core area. Proposed uses include a hotel and residential use (301 rooms), and will utilize underground parking. The Mammoth Crossing District zoning on Site 3 provides for 41 very low income affordable housing units required (25,500 sq. ft). The amenity and common areas would be 46,040 sq. ft; with no commercial use currently, however a restaurant may be proposed. The total of gross construction areas is currently at 274,250 sq. ft.

Project design would be in accordance with the North Village Specific Plan, as well as the Town and the new Mammoth Crossings District design standards. Development at each of the sites will involve multiple buildings ranging in height from one to approximately seven stories. On each site, the buildings would be oriented around a courtyard. The architecture and design of all three properties that comprise the Project site would complement one another. The largest of the three sites, at the southwest corner of the intersection, will feature a large courtyard fronting Lake Mary Road and Canyon Boulevard. Landscaping, open space, and pedestrian access will be emphasized throughout the Project.

Discretionary Actions

The Town is the Lead Agency for purposes of complying with CEQA and is the primary public agency responsible for approving projects on these properties. Several discretionary actions will be necessary for the Project, including, but not limited to: amendment to the North Village Specific Plan, Use Permit (including design review), Tentative Tract Map, and Development Agreement. Additionally the Project will require rezoning. Under the current Town zoning regulations, parcels within the North Village area were designated for Specialty Lodging (S-L), Resort General (RG), and Plaza Resort (P-R). Under the proposed North Village Specific Plan 2004, approximately 9.3 acres would be designated as the "Mammoth Crossing" (MC) zoning district, providing for a range of short-stay accommodation choices, retail and service uses. Other approvals will be identified in accordance with applicable laws and regulations.

To determine whether a project would have the potential to have a significant environmental effect related to **solid waste services**, the CEQA Guidelines asks the following:

- Would the Project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for solid waste services?

The purpose of the EIR is to assess the project's potential impacts to various environmental issue areas and public service and utility agencies, including Mammoth Disposal. The EIR will also provide recommendations that may be necessary to reduce such potential impacts to "less-than-significant" levels. Any assistance that you can provide with the following questions would be greatly appreciated (previous data is supplied in bold; please confirm or update):

1. What regional landfill does the Town currently transport its solid waste to?

   Benton Crossing Landfill

   1a. What is the total remaining capacity (in tons) of this landfill?

   695,047 cubic yards or 26.5% remaining capacity (CIWMB website)

   (http://www.ciwmb.ca.gov/Profiles/Facility/Landfill/LFProfile1.asp?COID=26&FACID=26-AA-0004)

   1b. What is the permitted daily capacity of this landfill?

   500 TPD (CIWMB website)

2. Do you have solid waste generation rates for residential, restaurant, commercial, retail, and industrial land uses? **Rates available for Commercial and construction needs for garbage and portable restroom**.

   2a. Would Mammoth Disposal be able to accommodate the Project's generation of solid waste? **Yes**

   2b. If not, what would be needed to accommodate the Project's generation of solid waste?

3. What recycling programs are available for the Project? **Mammoth Disposal offers: Recycling center for buyback (CA redemption beverage material), Drop locations available in our transfer station with Beverage container, coregated cardboard, paint, Oil, Antifreeze, batteries (car), Paper & Magazine stations. Sierra Conservation offers recycling in town for businesses and residential.**

   3a. How much diversion of solid waste does the recycling program average? **554 tons per year**

   3b. What is the percentage of reduction from the landfill that is created by the recycling program? **2.5%**

4. What steps or programs does the Town implement with respect to California Integrated Waste Management Act of 1989 (AB-939) that may involve the Project?

5. In addition to addressing Project-specific impacts to solid waste service, the EIR will also address cumulative impacts to solid waste service. We are in the process of compiling a list of reasonably-foreseeable development in the Town. Table 1 includes a list of some of the major, approved development in proximity to the Project's location. However, additional projects may be added to list as our research continues. Can Mammoth Disposal accommodate the demand for landfill capacity associated with these projects in conjunction with the Project? **Mammoth Disposal has the ability to increase service with growth**.

   5a. How does your agency address the growing demand for landfill capacity?

   County needs to comment on landfill capacity. If the landfill was to close, we would haul debris elsewhere.

   5b. Do you have any projections for future demand based on projected growth in the region?

   Our service and Company will expand as needed.

   5d. What would be needed to meet the cumulative demand for landfill capacity? **County response needed.**

6. Please provide any recommendations that could reduce the demand for landfill capacity created by the Project and cumulative development. **County response needed**.

Thank you for your assistance with the questions outlined above. Any response that you can provide will help us ensure that our analysis of project-specific **solid waste services** is accurate and complete. In order to attain a timely completion of our analysis, please provide your response (via mail, e-mail, or fax) no later than November 7, 2007. Should you have any questions, feel free to call me at (510) 452-5200. You may also reach me by email at andrew.waggoner@cajaeir.com and by fax at (510) 452-5202.

Sincerely,

Christopher A. Joseph & Associates

Andrew Waggoner

Enclosed:

Figure 1 Regional and Vicinity Map
Figure 2 Project Site Plan
Table 1 Future Reasonably-Foreseeable Development

Cc: Michelle Erwin, Office Manager, Mammoth Disposal

[excerpt containing info requested 11/01/07]

To determine whether a project would have the potential to have a significant environmental effect related to **other public services (in this case snow removal/snow storage services)**, the CEQA Guidelines asks the following:

- Would the Project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction which would cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for public facilities?

The purpose of the EIR is to assess the project's potential impacts to various environmental issue areas and public service and utility agencies, including Caltrans. The EIR will also provide recommendations that may be necessary to reduce such potential impacts to "less-than-significant" levels. Any assistance that you can provide with the following questions would be greatly appreciated (previous data received from Caltrans is supplied in bold; please confirm or update):

1. Is the existing information below describing the relationship between the Town Public Works Maintenance Division and Caltrans regarding snow removal accurate? If not, please indicate what the current status is.

   Snow removal is provided by Caltrans for State Highway 203 (Minaret Road and Main Street) from the junction of U.S. Highway 395 to the Caltrans Minaret Maintenance Station at postmile 2.4. Except where hauling is done by Town staff under an agreement, snow is stored within our right-of-way. You may wish to get a copy of the most recent (2007) Mammoth/Caltrans Maintenance Agreement from the Town.

   The Town of Mammoth Lakes Public Works Department Maintenance Division provides snow removal service for the sidewalks and all other publicly maintained roads. Roads and paved surface on private property are the responsibility of the landowner.

2. Please describe the sizes and capacities of existing snow storage land area utilized by Caltrans for snow removal from roads in the Town.

   As noted above, Caltrans is usually able to blow snow and store it with in our existing R/W. Large amounts of snow can accumulate in the Lake Mary/Minaret/Main intersection. This is currently pushed into the southeast quadrant of the intersection, on R/W we hold there for that purpose. In the Mammoth Crossings Project vicinity, some snow is blown/stored on the uphill (north) side but more is blown/stored on the downhill (south) side.

   You could roughly calculate the snow storage area adjacent to the Mammoth Crossings Project by utilizing an Assessors or other property map, calculating the R/W area then subtracting the area for the paved roadway, shoulder and access points. Snow is also sometimes hauled and stored east of Town and south of SR 203 adjacent to Forest Service Land.

3. Are there any existing snow removal/snow storage problems/deficiencies in the Project area? Usually not now.

   3a. If snow removal/snow storage problems/deficiencies exist, how would they affect the Project? If SR 203 is not plowed/open, vehicles could not get into or out of your Mammoth Crossings Project.

   3b. What measures could the project incorporate to minimize the affect these snow removal/snow storage problems/deficiencies on the project and surrounding uses?

   The Mammoth Project must plow/remove its own snow and include adequate open space for storage and keep any future paths cleared.

4. Are there any stormwater quality regulations governing snow storage in the Town?

   Caltrans activities fall under a National Pollution Discharge Elimination System (NPDES) Permit. Any activities under the Town's jurisdiction would be covered under their Memorandum of Understanding with California Regional Water Quality Control Board Lahontan Region. The Town should be able to provide you with the latest version (June 1983 we believe).

5. Please provide any recommendations that might reduce any potential snow removal/snow storage impacts associated with the Project.

   Minimizing development minimizes the need for snow removal activities.

Mammoth Crossings – Caltrans Transportation Concerns (other than snow) 11/01/07

Caltrans has provided responses to previous queries on the Mammoth Crossings Project (e.g. from Mark Deeds, Leslie Klusmire). We have been told preliminary layout does not exist. When available please provide us with a copy. We offer the following for your consideration:

Analysis for traffic impacts including vehicles, pedestrians and bicycles is needed. Address impacts via design/construction and other appropriate mitigation (e.g. impact fees).

Caltrans and the Town have considered a separate pedestrian/bike path that would roughly parallel Main Street (SR 203) on the south side. Connectivity and safe road crossing need to be provided (possible tunnel?). Path maintenance must be provided.

We have also discussed the possibility of a round about at the Mary/Minaret Main intersection. Although there is a grade, the Town has not yet shared any definite conclusions regarding feasibility. If this were to occur, right-of-way needs would be examined.

No vehicular access will be allowed onto SR 203 (Main/Minaret). Any project accesses on the Town roads must be designed/located such that they do not interfere with the safe operation of the Lake Mary/Main/Minaret intersection.

Circulation connectivity (vehicular/bicycle /pedestrian) with adjacent development will be a necessity.

Caltrans also has expressed that re-routing transit services off of SR 203 would improve safety and mobility in the corridor.

From: Gayle Rosander [gayle_rosander@dot.ca.gov]
Sent: Thursday, January 17, 2008 11:57 AM
To: Andrew Waggoner
Subject: RE: Mammoth Crossing EIR Information Response

Follow Up Flag: Follow up
Flag Status: Red

Hello,

I queried our Maintenance Dept. per your query.

No. In theory, our procedures would not change since the storage we currently utilize is within our R/W, but we can't say for sure until the Crossing Project is built out.

Gayle
872-0785

"Andrew Waggoner" <andrew.waggoner@cajaeir.com>
01/16/2008 03:29 PM

To: "'Gayle Rosander'" <gayle_rosander@dot.ca.gov>
cc:
Subject: RE: Mammoth Crossing EIR Information Response

Gayle,

Thank you for your earlier response to the Mammoth Crossing project information request. I realize it has been a while, but I have one follow up question. I have attached the original letter as well as your response for your review.

Do you anticipate any changes to snow removal procedures as a result of the project?

Thank you for your time,

Andy

Mammoth Lakes Fire Protection District
Post Office Box 5, 3150 Main Street
Mammoth Lakes, CA 93546
760-934-2300 Fax- 760-934-9210

November 11, 2007

Christopher A. Joseph & Associates
Mr. Andrew Waggoner, Assistant Environmental Planner
610 16th Street, Suite 514
Oakland, CA 94612

Re: Mammoth Crossing EIR Request for Information

Thank you for the opportunity to provide comments to the proposed project EIR. The project consists of a proposal to develop three sites, all in close proximity to the corner of Main Street and Minaret Road. The project details are:

Site 1 (Whiskey Creek Corner) is located on the northwest corner and consists of parcels APN 33-044-07, APN 33-044-10, and .0492 acres of abandoned right of way; comprising a total of approximately 1.8 acres. A proposed pedestrian corridor will link the project to the existing North Village and Gondola building. The existing Whiskey Restaurant building may remain as a "historical" landmark familiar to long time visitors. Proposed uses would include a 198-room hotel, a public plaza, and various commercial businesses, with underground parking available. The Mammoth Crossing District zoning on Site 1 provides for 68 affordable housing units required (22,750 sq. ft) but may be provided off-site. The amenity and common areas would be 14,390 sq. ft; with commercial areas of 22,000 sq. ft; for a total of gross construction areas at 174,350 sq. ft.

Site 2 (Church Site) is located on the southwest corner and consists of parcels APN 33-010-02 through -07, APN 33-010-31, & -32, and .968 acres of abandoned right of way, comprising a total of approximately 4.5 acres. Proposed uses include a five star hotel with up to 364 rooms, limited residential and commercial retail fronting Lake Mary Road. The Mammoth Crossing District zoning on Site 2 provides for 48 very low income affordable housing units required (30,250 sq. ft). The amenity and common areas would be 24,640 sq. ft; with commercial areas of 18,150 sq. ft; with a density bonus requested of 35% over 80 RPA; for a total of gross construction areas at 301,160 sq. ft.

Site 3 (Ullr/Whitestag) is located on the southeast corner and consists of parcels APN 33-100-14 though -18; comprising a total of 2.9629 acres. This site provides pedestrian and bicycle access from the eastern golf course as well as the Main Street town core area. Proposed uses include a hotel and residential use (301 rooms), and will utilize underground parking. The Mammoth Crossing District zoning on Site 3 provides for 41 very low income affordable housing units required (25,500 sq. ft). The amenity and common areas would be 46,040 sq. ft; with no commercial use currently, however a restaurant may be proposed. The total of gross construction areas is currently at 274,250 sq. ft.

1. There are two fire stations, the primary one located at 3150 Main Street, and the second at 1574 Old. Mammoth Road. Which station provides fire protection services to the Project site? **Both stations would provide incident response.**
2. The combined stations staff 45 volunteer personnel and six full time employees, including the chief. Two Mono County Paramedics are based at Station Number One. What are the types and numbers of staff at each station? **Approximately half of the department members are assigned to each station. The District's offices are located at Fire Station 1, which is the station located on Main Street.**

3. The MLFPD has the following vehicles: five engines, one aerial truck, one BLS ambulance, seven staff/officer vehicles, and one 3,000 gallon water tender. What are the types and numbers of equipment (e.g., fire trucks, engines, etc.) distributed at each of these stations? **The breakdown by station is as follows: Station 1 has three engines, the ladder truck, the ambulance, and the water tender. Station 2 has two engines. The staff vehicles vary depending on needs and the officer vehicles are assigned to officer personnel.**
4. Fire Station Number One is in the process of being replaced by an updated and expanded facility. The new building will be approximately 17,600 square feet with administrative offices in addition to housing for full time staff. The expansion was expected to be completed by the January of 2007. Has this project been completed? **With the exception of some minor finish work, the station has been completed.**
5. Are the existing staff levels at the stations discussed in answer to question 1 adequate to meet current demands for fire protection services in the Project area? **The answer depends on the type of construction proposed, height of structures, and the density of occupants.**

   5a. If not, what is needed to accommodate current demands? **The Fire District is planning on staffing a fulltime shift by the beginning of the summer of 2008. This will involve the addition of at least 6 more fulltime employees. This addition staffing will address the increase of incidents from this project as well as other that are either in construction or planning.**
6. Does MLFPD have an emergency evacuation plan or emergency response plan that the Project is a part of? **Yes, the plan was prepared in conjunction with the numerous agencies that provide services in the Town.**

6a. If so, how will the Project affect those plans? **The plan will need to be updated to take into consideration the development and density of the proposed project.**

7. Does the MLFPD have a preferred response time to calls for emergency service? **The response time goal for MLFPD is to have the first officer on scene in less than six minutes and an engine within eight minutes for all incidents within the private land boundary in our district; this goal is generally met. As the District boundary includes approximately 27,000 acres and much of the area may be inaccessible, response times can be significantly longer in the more remote locations. However, adverse weather conditions are the primary reason for not successfully having the first unit arriving within the first six minutes.**

7a. What is the MLFPD's record in meeting this preferred response time? **MLFPD has been successful in meeting the objectives that were previously established, but we are looking to set a new objective: that of getting the first engine on scene within the first six minutes. We feel that the establishment of a shift engine will give us the opportunity to meet our newly established goal.**

8. Does the MLFPD have a preferred ratio of fire fighters per population? **No.**

8a. What is the current ratio? **The answer varies, when considering our year-round population, MLFPD has 50 firefighters for 7500 citizens or a ratio of 1:150. At current maximum occupancy, MLFPD has 50 firefighters for 41,000 population or a ratio of 1:900.**

9. Is the MLFPD responsible for assessing hydrants and fire flow capability in for the Project? **Yes.**

9a. If so, what are the hydrant placement and fire flow requirements for the site? **Hydrants will need to be situated a maximum of every 500 feet surrounding and within the project area, unless the design warrants a greater frequency. Fire flow**

requirements are going to vary depending on construction type and design. For high-rise construction, MLFPD requires 1,000 gpm and a pressure of 100 psi at the roof.

10. What other agencies provide mutual aid to the Project site and surrounding areas? **The Long Valley and June Lake Fire Protection Districts provide mutual aid to the Mammoth Lakes Fire Protection District.**

11. Please describe the relationship between CDF and the Mammoth Lakes Fire Protection District. **The two agencies attend unified command planning meetings and retain the ability to respond under mutual aid requests, but as there are no CDF response lands in close proximity, the incident related interaction is limited.**

12. Would implementation of the Project require the MLFPD to construct new facilities or expand existing facilities to accommodate the increased demand for fire protection services created by the Project? **Depending on construction type, design, and density, there is a possibility that additional staffing/equipment may be needed.**

13. In addition to addressing project-specific impacts to fire protection service, the EIR will also address cumulative impacts to fire protection service. We are in the process of compiling a list of reasonably-foreseeable development in the TOML. Table 1 includes a list of some of the major, approved development in proximity to the Project's location. However, additional projects may be added to list as our research continues. Can the MLFPD accommodate the demand for fire protection services associated with these projects in conjunction with the Project? **In addition to the discussions**

provided above, the Fire District also deals with impacts of future development with construction code requirements and inspections. A project of this size, along with the other new development, will require additional inspection requirements and might drive the need for the establishment of a full-time inspection position.

13a. How does your agency address the growing demand for fire protection services? **Between the proposed additional staffing and inspection needs, the Fire District feels that it has addressed the development requirements for the foreseeable future. The Fire District will continue to seek additional volunteer (paid per call) staffing to provide additional resources.**

13b. Do you have any projections for future demand based on projected growth in the region? **MLFPD recognizes that the call volume and incident complexity will continue to increase as the population and unit numbers increase. As part of our strategic plan, we have identified an additional fire station located at Mammoth Mountain Main Lodge.**

13c. What would be needed to meet the cumulative demand for fire protection services? **Implementation of all of the above would provide a sound basis to provide adequate coverage for incidents into the future. There may need to be some additional resources added, but for the foreseeable future, a department as outline above would be capable of providing adequate protection to the community of Mammoth Lakes.**

14.Please provide recommendations that could reduce the demand for fire protection services created by the Project. **Adequate access, adequate building spacing, use of fire resistive building materials, adequate vegetative clearance around structures, and compliance with all applicable codes.**

In closing, just a couple of general items. The project will be subjected to the 2007 California amended Building/Fire Codes and any locally amended provisions. As the Whiskey Creek Restaurant is a non-conforming/non-compliant structure in town, any modifications to the structure will require that the structure's exiting be brought into compliance.

Thank you for the opportunity to comment on the proposed project and the request for information for the EIR. If you need any additional information or have any questions, please feel free to contact me at your convenience.

Sincerely,

THOM HELLER
Fire Marshal

From: Thom Heller [Thom@mammothlakesfd.com]
Sent: Monday, January 14, 2008 10:00 AM
To: Andrew Waggoner
Subject: RE: EIR comments

Follow Up Flag: Follow up
Flag Status: Red

Andrew, here are the responses that you requested:

-----Original Message-----
From: Andrew Waggoner [mailto:andrew.waggoner@cajaeir.com]
Sent: Friday, January 11, 2008 1:39 PM
To: Thom Heller
Subject: RE: EIR comments

Thom,

I've come up with a few more questions regarding the Mammoth Crossing project that you provided information for in November. I included your response for easy reference.

1) In your response to Question 2 you mentioned that there are 51 fire fighters currently staffed with the MLFPD, however you wrote that there are 50 firefighters in your response to Question 8a. Would you clarify which is the correct number?
The correct number today is 49.

2) Also in your response to question 8a, would you please update the fire fighters per population ratio based on any changes to your initial response?
With 49 firefighters the ratios are 1:153 with 7,500 residents and 1:837 with total population of 41,000 persons at one time.

3) In regards to Question 6, will the required changes to the emergency response plan be substantial?
Depending on the final building design, emergency access, and numbers of people on the site at any one time, the changes should not be substantial.

4) When we have consulted you in the past regarding other projects within the Town of Mammoth Lakes, you mentioned that the increase in staff and equipment is being provided for by increases in property tax and Development Impact Fees (DIFs), is that still accurate?
Yes.

5) You mentioned in November that the new fire facility was very near completion, is it now complete?
Yes.

Thank you for your time.

Andrew Waggoner
Associate Environmental Planner
andrew.waggoner@cajaeir.com
Christopher A. Joseph & Associates
Environmental Planning and Research
www.cajaeir.com

Oakland Office
610 16th Street, Suite 514
Oakland, CA 94612
Phone: (510) 452-5200, ext. 12
Fax: (510) 452-5202
Petaluma . Oakland . Los Angeles . Santa Clarita . Agoura Hills .Mammoth Lakes

-----Original Message-----
From: Thom Heller [mailto:theller@mammothlakesfd.com]
Sent: Tuesday, November 13, 2007 5:51 PM
To: Sandra Moberly; andrew.waggoner@cajaeir.com
Subject: EIR comments

Here are the Fire District's comments to the request for info on the EIR.

Thom Heller, Division Chief/Fire Marshal Mammoth Lakes Fire Protection District 3150 Main Street PO Box 5 Mammoth Lakes, Ca 93546
(760) 934-2300, fax (760) 934-9210, cell (760) 914-0194 theller@mammothlakesfd.com

<<EIR comments.doc>>

PUBLIC WORKS
ENGINEERING SERVICES DIVISION
P.O. Box 1609, Mammoth Lakes, CA 93546
(760) 934-8989, ext. 258 FAX (760) 934-8608
jmitchell@ci.mammoth-lakes.ca.us

November 21, 2007

Mr. Andrew Waggoner *DRAFT*
CAJA
61 16th Street, Suite 514
Oakland, CA 94612.

Via email and U.S. Mail

RE: Request for Information for the Mammoth Crossings EIR.

Dear Mr. Waggoner:

The following is in response to the questions posed in your letter dated October 24, 2007 requesting information with respect to snow removal in the North Village Specific Plan area:

1. That which was written about the existing snow removal operations is correct.
2. Caltrans has a 200-foot wide right of way along the Main Street portion of Highway 203. The State originally acquired this width because of the need for snow storage. Minaret Road north of Main Street is also a part of the Highway 203. That right of way varies in width but is typically 75 to 85 feet wide. The improvements required within that right of way will occupy the majority of the width leaving very little room for snow storage. Because of the limited right of way width there is little room for snow storage and therefore snow is required to be trucked to another location for storage. As a condition of an encroachment permit to construct fronting public street improvements within the project area and within State right of way Caltrans will require an agreement by and between the Town and Caltrans for the additional effort required for snow removal associated with the public improvements. On other similar projects the Town has established a maintenance district (benefit assessment district, or BAD) for snow removal, and other required maintenance of the public improvements including street lighting and landscaping. The cost of the maintenance is then spread to the adjacent property owners and collected with the property taxes. For that portion of Minaret Road south of Main Street and for Lake Mary Road, both being Town rights of way, the Town will also require the adjacent property owners to enter into a BAD for the additional effort required to maintain the improvements.
3. Snow storage land/area:
    a. I believe that Main Street currently has sufficient snow storage areas. Minaret Road south of Main Street has several vacant properties and currently there are no snow storage issues there. Lake Mary Road has vacant property on its

south side and the Town takes advantage of that vacant land for snow storage. Minaret Road north of Main Street is currently developed on both sides of the street. However, there are snow storage areas along the side of the road and Caltrans can use a portion of its right of way along Main Street.

b. As noted in 2 above project will be required to enter into a BAD for the additional snow removal required as development occurs. Also, as development occurs, each property will be required to set aside sufficient snow storage areas on-site for their own snow storage needs.

4. No: Snow trucking requires additional equipment and man-hours. The man-hours will be covered by the BAD.
5. How much additional equipment required (snow blowers and trucks) (I'll have to discuss this with Ray, the PW Director).
6. At the present, the PW Dept could not accommodate the future demands, even where required to be annexed into a BAD. As noted above there will be additional man-hours and equipment required. The BAD would cover the cost of the additional man-hours, however additional staff will be required to be hired. Also, additional snow blowers and tracks will be required.
   a. Where applicable, properties are required to be annexed into a BAD. These are properties generally located along arterial roadways. Smaller projects, in-fill projects on local street generally are not required to be annexed.
   b. (I'll have to answer that after I discuss this with the PW Director)
   c. Additional staff and equipment as noted above.
7. For larger projects with parking structures we require oil-water separators. Garages get dirty with oil and such, but they also accumulate road cinders as snow melts from under the vehicles. The road cinders turn then are washed into the drainage system for the garage. The oil-water separators will collect the cinders.
8. Snow melt systems (heat trace) will be required on garage ramp entrances, and in high pedestrian areas, stairways and some shaded areas. We will also require heat trace along the public sidewalks within the right of way. This is not intended to reduce the snow removal requirements as it would be too expensive. Heat trace is primarily for ice melt in problem areas. The energy costs for heat trace are included within the BAD. The Town currently requires adjacent properties to provide the additional boiler capacity, within the private development, to accommodate the needs for adjacent public sidewalks. That heat flow is metered and the development credited for the cost of the heat, but then portions of that cost is assessed back to the owners within the property through the BAD.

Sincerely,
TOWN OF MAMMOTH LAKES

Jeffrey L. Mitchell,
Supervising Administrative Engineer

Andrew,

Sorry for the delay in getting back to you but here is what I think you're looking for. I'm sending this to you as a word file, so you can paste the new information into the existing document. I do not have the email you sent so this was the best I could do.

Randy

Updated Answers to Questions that needed updating:

Question #1:

MLPD is now composed of 23 sworn personnel and five non-sworn employees; consisting of one chief, one lieutenant, five sergeants, one detective, two narcotic officers, 13 patrol officers (one serves as a school resource/DARE officer, one as a K-9 officer and one as a traffic officer). Non-sworn personnel include; one Administrative Assistant, one senior records clerk, one non-sworn investigator, one community service officer and one animal control officer.

Question #1a:

No changes.

Question #2:

MLPD remains the only law enforcement agency that is staffed 24/7 in Mono County, providing 24-hour coverage to the citizens of Mammoth Lakes. Staffed by 5 sergeants and 13 patrol officers working three shifts. In 2006 MLPD officers responded to 5212 dispatched calls for service, made 460 arrests and wrote 1906 reports.

Question #3:

The police department has 8 marked Ford Expedition patrol vehicles, one unmarked detective vehicle (Ford 500), two unmarked administration vehicles (Ford 500, Ford Explorer), one marked community service officer vehicle (Ford Truck), one animal control truck (Ford), two commuter vehicles (Dodge P/U, Ford Explorer), and one radar trailer.

Other equipment includes: 30 portable radios, 20 streamlight flashlights, 6 X26 Tasers with Cameras attached, Livescan machine, 13 computer stations, and 3 laptop computers. There are several other items owned by the police department, however these are the highlighted items.

Question #3a:

No changes

Question #4:

We still strive to maintain a 1000:1 ratio based on an average daily population (ADP). See previous answer for additional details regarding ADP.

Question #4a:

See above.

Question #5:

No changes.

Question #6:

We no longer have a Wildlife Management Officer and now have an officer assigned to Traffic Enforcement and Methamphetamine Enforcement. We also have a school resource officer that is not listed.

Everything else remains unchanged.

Question #7:

The project would definitely impact the overall demands placed upon the police department. Any project that increases the ADP and offers commercial opportunities, particularly late night entertainment, will have an impact. I would anticipate there will be an increase in calls for service not only during the construction phase, but once the project was completed an increase workload is also anticipated.

Question #8:

No changes.

Question #9:

As stated in Q#7, any project that increases ADP, density and commercial opportunities will have an impact on overall police service. Historically, using the Village as an example, a project of this magnitude has created a disproportionate demand on police services versus existing projects throughout the community. I would anticipate there will be a need for additional vehicles, personnel and equipment to address the demands placed on the police department by this project.

Question #10a:

In addition to the information previously provided, we have funded two new officer positions through the State of California CALMMET Grant and through the State of California Office of Traffic Safety.

Question #10b:

No changes.

Question #10c:

No changes

Question #10:

An on-site security staff could reduce the demands for police services. This security team would need to hired during the construction phase and should remain staffed until the impacts of the project can be better evaluated.

RE Mammoth Crossing EIR Information Request - Michael Grossblatt.txt
From: Michael Grossblatt [mgrossblatt@ci.mammoth-lakes.ca.us]
Sent: Tuesday, January 29, 2008 5:41 PM
To: Andrew Waggoner; Michelle Erwin
Subject: RE: Mammoth Crossing EIR Information Request

Follow Up Flag: Follow up
Flag Status: Red

Hi Andrew, my apologies for not responding immediately with the earlier e-mails. The Town has been approved for a 52% diversion rate for 2005. This was approved by the CIWMB in the fall 2007 (they operate about 2 years after the fact - the approval process takes forever). That establishes a new base year for us - for 2006 & 2007 were are hovering right around the 50% mark as well - but nothing has been approved as of yet by the CIWMB.

The confusion below is because there are many components that make up the diversion rate - recycling from plastic, cans, bottles is only one component and was about 3%. I will have to look at the reference you were refering to but it is misleading in relation to the entire diversion effort. The other diversion is from road asphalt regrindings, dirt and rock for alternative cover at the landfill, sludge from MCWD, and self haul from various construction projects with source separated materials that go directly to the landfil.

In response to the other question, Michelle basically answered it - we are currently in negotiations regarding the transfer station improvements.

I hope this helps - I can provide more detailed information if you like regarding diversion numbers...

Michael

Michael A. Grossblatt
Human Resources and Risk Management Director
Town of Mammoth Lakes
Mammoth Lakes, CA 93546
(760) 934-8989 ext. 266
(760) 934-7493 fax
mgrossblatt@ci.mammoth-lakes.ca.us

From: Andrew Waggoner [mailto:andrew.waggoner@cajaeir.com]
Sent: Tuesday, January 29, 2008 5:23 PM
To: 'Michelle Erwin'
Cc: Michael Grossblatt
Subject: RE: Mammoth Crossing EIR Information Request

Mike,

Do you know if the town has met the 50 percent diversion rate as specified in AB 939? If not, do you know the current diversion rate?

Thank you,

Andrew Waggoner
Associate Environmental Planner
andrew.waggoner@cajaeir.com

Christopher A. Joseph & Associates
Environmental Planning and Research
www.cajaeir.com

Oakland Office
610 16th Street, Suite 514
Oakland, CA 94612
Phone: (510) 452-5200, ext. 12
Fax: (510) 452-5202

Petaluma · Oakland · Los Angeles · Santa Clarita · Agoura Hills ·Mammoth Lakes

---

From: Michelle Erwin [mailto:MichelleE@WasteConnections.com]
Sent: Tuesday, January 22, 2008 5:17 PM
To: Andrew Waggoner
Cc: Michael Grossblatt (E-mail)
Subject: RE: Mammoth Crossing EIR Information Request

Hi Andrew,

I have included Mike Grossblatt from the Town. He can respond to where Steve Mercer arrived at these numbers. It maybe including self haul to the landfill. The numbers I included were from the buyback recycling center. All other landfill reductions from self haul on demolition projects would be reported from the Town. As far as the recycling center. We are in negotiations, which has plans to have built by Fall 2009. If I gave you a 2007 date, it was a mistake.

Do you have any idea when your construction will begin? I like to plan ahead for debris hauling and portable toilet services.

Please let me know if you have any other questions.

Regards,

Michelle Erwin

Mammoth Disposal

-----Original Message-----
From: Andrew Waggoner [mailto:andrew.waggoner@cajaeir.com]
Sent: Tuesday, January 22, 2008 2:37 PM
To: Michelle Erwin
Subject: RE: Mammoth Crossing EIR Information Request

Hi Michelle,

I know it has been a little while, but I have a couple questions to follow up on your response from November 14 regarding the Mammoth Crossing Project. I have attached the original questions with your responses for your review.

1) In your response to question 3b. you replied that there is a 2.5 percent reduction of waste from the landfill as a result of the recycling program. In the Town's general plan in 2005, Steve Mercer was cited as saying that the diversion rate for the Town was 38 percent. Do you know what the difference in numbers is attributed to?

2) A new recycling center located in the Town's industrial park was supposed to be completed in the summer of 2007, is it now operational?

Thank you for your time.

Andy

From: Michelle Erwin [mailto:MichelleE@WasteConnections.com]
Sent: Wednesday, November 14, 2007 9:48 AM
To: andrew.waggoner@cajaeir.com
Subject: FW: Mammoth Crossing EIR Information Request

Hi Andrew,

here are my responses.

Thanks

Michelle

Mammoth Disposal

-----Original Message-----

RE Mammoth Crossing EIR Information Request - Michael Grossblatt.txt

From: Andrew Waggoner [mailto:andrew.waggoner@cajaeir.com]
Sent: Tuesday, November 13, 2007 5:07 PM
To: Jim Spencer
Cc: Michelle Erwin
Subject: Re: Mammoth Crossing EIR Information Request

Hi Jim,

I'm writing to confirm that you received the request for service information regarding the Town of Mammoth Lakes' Mammoth Crossing Project EIR. If so, please let me know when you will provide a reply.

Thank you,

Andrew

From: Andrew Waggoner [mailto:andrew.waggoner@cajaeir.com]
Sent: Wednesday, October 24, 2007 4:06 PM
To: 'JimS@wcnx.org'
Cc: 'michellee@wcnx.org'
Subject: Mammoth Crossing EIR Information Request

Jim Schmeider:

The attached letter requests information from you in order to assure our complete analysis of the listed project.

I have also sent a hard copy of this letter via USPS.

Feel free to contact me with any questions.

Thank you,

Andrew Waggoner
Associate Environmental Planner
andrew.waggoner@cajaeir.com

Christopher A. Joseph & Associates
Environmental Planning and Research
www.cajaeir.com

Oakland Office
610 16th Street, Suite 514
Oakland, CA 94612
Phone: (510) 452-5200, ext. 12
Fax: (510) 452-5202

Petaluma · Oakland · Los Angeles · Santa Clarita · Agoura Hills ·Mammoth Lakes

Confidentiality Statement

From: Michelle Erwin [MichelleE@WasteConnections.com]
Sent: Tuesday, January 22, 2008 5:17 PM
To: Andrew Waggoner
Cc: Michael Grossblatt (E-mail)
Subject: RE: Mammoth Crossing EIR Information Request

Follow Up Flag: Follow up
Flag Status: Red

Hi Andrew,
I have included Mike Grossblatt from the Town. He can respond to where Steve Mercer arrived at these numbers. It maybe including self haul to the landfill. The numbers I included were from the buyback recycling center. All other landfill reductions from self haul on demolition projects would be reported from the Town. As far as the recycling center. We are in negotiations, which has plans to have built by Fall 2009. If I gave you a 2007 date, it was a mistake.

Do you have any idea when your construction will begin? I like to plan ahead for debris hauling and portable toilet services.
Please let me know if you have any other questions.
Regards,

Michelle Erwin
Mammoth Disposal

-----Original Message-----
From: Andrew Waggoner [mailto:andrew.waggoner@cajaeir.com]
Sent: Tuesday, January 22, 2008 2:37 PM
To: Michelle Erwin
Subject: RE: Mammoth Crossing EIR Information Request

Hi Michelle,

I know it has been a little while, but I have a couple questions to follow up on your response from November 14 regarding the Mammoth Crossing Project. I have attached the original questions with your responses for your review.

1) In your response to question 3b. you replied that there is a 2.5 percent reduction of waste from the landfill as a result of the recycling program. In the Town's general plan in 2005, Steve Mercer was cited as saying that the diversion rate for the Town was 38 percent. Do you know what the difference in numbers is attributed to?

2) A new recycling center located in the Town's industrial park was supposed to be completed in the summer of 2007, is it now operational?

Thank you for your time.

Andy

From: Michelle Erwin [mailto:MichelleE@WasteConnections.com]
Sent: Wednesday, November 14, 2007 9:48 AM
To: andrew.waggoner@cajaeir.com
Subject: FW: Mammoth Crossing EIR Information Request

Hi Andrew,

here are my responses.

Thanks

Michelle

Mammoth Disposal

-----Original Message-----
From: Andrew Waggoner [mailto:andrew.waggoner@cajaeir.com]
Sent: Tuesday, November 13, 2007 5:07 PM
To: Jim Spencer
Cc: Michelle Erwin
Subject: Re: Mammoth Crossing EIR Information Request

Hi Jim,

I'm writing to confirm that you received the request for service information regarding the Town of Mammoth Lakes' Mammoth Crossing Project EIR. If so, please let me know when you will provide a reply.

Thank you,

Andrew

From: Andrew Waggoner [mailto:andrew.waggoner@cajaeir.com]
Sent: Wednesday, October 24, 2007 4:06 PM
To: 'JimS@wcnx.org'
Cc: 'michellee@wcnx.org'
Subject: Mammoth Crossing EIR Information Request

Jim Schmeider:

The attached letter requests information from you in order to assure our complete analysis of the listed project.

I have also sent a hard copy of this letter via USPS.

Feel free to contact me with any questions.

Thank you,

Andrew Waggoner
Associate Environmental Planner
andrew.waggoner@cajaeir.com

Christopher A. Joseph & Associates
Environmental Planning and Research
www.cajaeir.com

Oakland Office
610 16th Street, Suite 514
Oakland, CA 94612
Phone: (510) 452-5200, ext. 12
Fax: (510) 452-5202

From: Jim Maxey [jmaxey@mammothusd.org]
Sent: Thursday, January 17, 2008 4:21 PM
To: 'Andrew Waggoner'
Subject: RE: MUSD Student Generation Rates

I am sorry I don’t. Please use the numbers you have.

J. Maxey

From: Andrew Waggoner [mailto:andrew.waggoner@cajaeir.com]
Sent: Thursday, January 17, 2008 2:55 PM
To: 'Jim Maxey'
Subject: RE: MUSD Student Generation Rates

Do you have generation rates that are broken down by elementary school, middle school, and high school?

Thanks,

Andy

From: Jim Maxey [mailto:jmaxey@mammothusd.org]
Sent: Thursday, January 17, 2008 2:48 PM
To: 'Andrew Waggoner'
Subject: RE: MUSD Student Generation Rates

The last Developer Justification Study we had done in 6/06 had a State OPSC SGR rate of .7 K-12 student per unit.

J. Maxey

From: Andrew Waggoner [mailto:andrew.waggoner@cajaeir.com]
Sent: Tuesday, January 15, 2008 2:58 PM
To: jmaxey@mammothusd.org
Subject: MUSD Student Generation Rates

James,

I'm following up on a service letter I sent in October of 2007 regarding the Mammoth Crossing project in the Town of Mammoth Lakes. Christopher A. Joseph and Associates is in the process of writing an EIR for the project and I want to confirm that I have the most up to date school generation rates for MUSD. Would you please let me know if the following numbers need to be updated? Also, if available, would you please include any additional student generation rates for other land use types?

Table IV.K-4
Student Generation Rates for MUSD

Development Type	Single-Family
K-6 Elementary	.4002
7-8 Middle	.0294
9-12 High School	.0227

Thank you for your time.

Andrew Waggoner
Associate Environmental Planner
andrew.waggoner@cajaeir.com

Christopher A. Joseph & Associates
Environmental Planning and Research
www.cajaeir.com

Oakland Office
610 16th Street, Suite 514
Oakland, CA 94612
Phone: (510) 452-5200, ext. 12
Fax: (510) 452-5202

Petaluma · Oakland · Los Angeles · Santa Clarita · Agoura Hills ·Mammoth Lakes

Mammoth Community Water District
P.O. Box 597
Mammoth Lakes, CA 93546
(760) 934-2596; fax (760) 934-2143

March 18, 2008

RE: Mammoth Crossing Project EIR request for information

Andrew Waggoner
610 16th Street, Suite 514
Oakland, CA 94612

Mr. Waggoner:

The District has prepared the following responses to your request for information in your letter dated October 24, 2007. Data regarding unit counts and square footage of commercial space for the Mammoth Crossing Project was not made available until February 2008, which led to the delay in our response.

Water Service:

1. The size and location of water main lines serving the Mammoth Crossing Project area are noted in the attached map.

2. The existing design of the water distribution system is sufficient to handle the current demands. The distribution system surrounding the Project area consists of 12" ductile iron pipe on Lake Mary Road and Minaret Road to the south and 10" ductile iron pipe on Canyon Blvd and Minaret Road to the north. System pressures range from 50 to 150 pounds per square inch (psi).
    a. N/A
    b. N/A

3. Depending on the use period, the Project location will receive a mixture of treated surface water from the Lake Mary Water Treatment Plant and treated groundwater from Groundwater Treatment Plants #1 and #2. Water supplied to the community is chlorinated and consistently meets or exceeds EPA and State drinking water health standards.
    a. The District anticipates that the above described water treatment plants will be able to accommodate the Project's demand for treated water.

4. The District supplies water to the distribution system at the following pressures:

Flow Condition	Min. Pressure (psig)	Max. Pressure (psig)
No Flow	--	150
Normal Peak Flows	35	125
Hourly Peak Flows	30	125
Fire Demand Flows	20	125

   Fire pumps may be required per the Mammoth Lakes Fire Protection District to meet fire flow requirements for taller structures. Fire protection requirements will be determined by the Mammoth Lakes Fire Protection District.

5. The District currently anticipates that it will be able to accommodate the Project's demand for water service with existing water supplies. However, water supply may be limited during periods of drought or supply interruption. It is important to note that the District does anticipate a shortfall in supply as the Town approaches build out in 2025 in multiple dry-year scenarios based on the current rate of development. In addition, the increased demands proposed for this Project are beyond what was planned in the Town's General Plan and the District's Urban Water Management Plan. This increase in density results in an increase the volume of supply shortfall projected as the Town approaches build out.
   a. The District has described several projects, such as water loss reduction, that are currently being implemented as well as future water supply projects, such as recycled water and future groundwater development, that are being pursued. These projects will be used to address increased demands for water as the community approaches build out. Detailed information regarding these projects is included in the Mammoth Crossing Water Supply Assessment. It should also be noted that the District has a policy of year-round water conservation measures that must be observed by all customers on a rear-round basis. The Mammoth Crossing Project will be required to abide by these conservation measures, which include watering landscape irrigation between the hours of 5 p.m. and 10 a.m. only and the installation of water conservation fixtures such as showerheads and toilets. In addition, the District Board of Directors adopted enhanced water conservation measures, including every other day watering based on physical address, at the January 17, 2008, Board meeting.
   b. As described in the Urban Water Management Plan, the District is projecting 4,898 acre-feet of demand at build out of the community as described in the Town of Mammoth Lakes General Plan. However, with the increased density proposed for the Mammoth Crossing Project that was not accounted for in the UWMP or the Town's General Plan, demands at build out are now projected at close to 5,000 acre-feet. Additional information on future water demands is included in the Water Supply Assessment for this Project.
   c. Please see #5a above.

6. Please see the response in #3 and #3a above.

7. To minimize the Project's impacts on water supply, the District encourages the use of water efficient landscaping including drought resistant plants, drip irrigation, and little or no use of turf in the landscape design. The use of high efficiency water fixtures such as dual flush toilets, very low flow showerheads, faucet aerators, and high efficiency dishwashers and clothes washers is also encouraged. The development of a fewer number of units would also minimize the Project's impacts on water supply.

Sewer Service:

For the answers below, District engineering staff assumed that the Project would connect to existing sewer mains in the following locations:

- For Site 1, sewer flows will enter the 12" main in Lake Mary Road
- For Site 2, sewer flows will enter the 8" main on Minaret Road
- For Site 3, sewer flows will enter the 8" main behind Holiday Haus

1. The size and location of wastewater collection lines serving the Mammoth Crossing area are noted in the attached map.

2. There are currently no deficiencies in the wastewater collection system within the Project area shown on the attached map.
    a. N/A
    b. If fewer units were proposed as part of the Mammoth Crossing Project, this would lessen the impacts on the sewer collection system.

3. The District will be able to accommodate the Project's demand for sewer service with the existing infrastructure, but new sewer laterals will be required.

4. See answer #3

5. The District anticipates being able to accommodate the Project's demand for wastewater treatment service with the existing capacity of the wastewater treatment plant. The District currently experiences wastewater flows at the wastewater treatment plant of 1.6 million gpd (gallons per day) on average days and 2.6 gpd during peak holiday periods. The existing design capacity of the plant is about 4.9 million gallons per day (mgd), which should meet estimated demands at build out of the community.

6. The Distinct sewer collection system cannot accommodate the Project's demand for sewer service in conjunction with reasonably foreseeable development in the community.
    a. The District conducted a Connection Fee Study in 2005 to evaluate the need for future water and wastewater facilities and the costs associate with the construction of these facilities. Through this study, the District has identified a number of sewer collection system upgrades needed to accommodate future growth in the community. It is the policy of the District to provide capacity in the water and wastewater system on a first-come, first-serve basis.
    b. As part of the District's 2005 Connection Fee Study, a sewer model was created to develop projections for future wastewater demands. It should be noted that the

increased densities associated with this Project were not taken into account in this study or in the sewer model. If multiple projects near North Village Master Plan and Sierra Star Master Plan are granted density bonuses similar to what is proposed in the Mammoth Crossing Project, then future demands would need to be reassessed to determine the impacts on the sewer collection system. If specific flow data is requested, please identify the pipelines for which flow data is needed.

c. District engineering staff has identified three deficiencies in the sewer collection system that must be addressed as the community approaches build out. These projects are (1) a new sewer trunk line along Meridian Boulevard from Old Mammoth Road to the wastewater treatment plant, (2) increase the capacity of sewer lines on Center Street from Manzanita Road to Main Street/Highway 203, and (3) a new Shady Rest relief sewer through the Shady Rest Tract, located near the intersection of Laurel Mountain Road and Main Street/Highway 203. These three projects were accounted for in the 2005 Connection Fee Study. However, the third project identified above, the Shady Rest relief sewer, is required as part of a development that has not yet been constructed on that site. The District cannot build that project until the Shady Rest Tract developer has applied for a water/wastewater permit. If this project is not built prior to development of the Mammoth Crossing Project, then a different sewer upgrade project, increased capacity of sewer lines along Manzanita Road between Dorrance Road and Center Street will be required.

   Due to existing deficiencies in the sewer collection system, the Center Street capacity increase, identified at project #2 above, must be constructed prior to occupancy of the Mammoth Crossing Project.

   It should also be noted, as in #6b, if additional projects near the Project area are granted increased densities, the District may need to construct additional sewer collection facilities. The increased density Mammoth Crossing Project results in the use of between 10 to 60% of the excess capacity of pipes in the sewer collection system.

   While the projects identified above were included in the 2005 Connection Fee Study, the timeline of construction of these projects are subject to availability of connection fees that are collected and the schedule may change. Currently, however, long-term budget projections show that the Meridian trunk line will be built by 2010, the Center street capacity increase will occur by 2013, and the Shady Rest relief sewer will be built in 2010.

7. Please see the attached table, which summarizes wastewater demand factors for various billing classifications. Please note that the sewer peak figures are based on peak monthly demands. For the purposes of determining the project's impacts on the collection system, District engineering staff utilizes a peak hourly flow estimate, which generally equates to three times (3x) the peak daily demand.

8. Please see 2(b) above.

I hope this information is helpful and provides sufficient data for the preparation of the Mammoth Crossing Project EIR. Please feel free to contact me at extension 314 if you have any additional questions or would like any follow-up information regarding the information contained in this letter.

Sincerely,

Ericka Hegeman
Environmental Specialist
Mammoth Community Water District

Enclosures

APPENDIX D

BIOLOGY DATA

BIOLOGICAL SITE ASSESSMENT

Mammoth Crossing Project

Mammoth Lakes, California

Prepared by:

Christopher A. Joseph & Associates
179 H Street
Petaluma, CA 94952
Contact: Amy Parravano
Phone: (707) 676-1903

February 4, 2007

CHRISTOPHER A. JOSEPH & ASSOCIATES
Environmental Planning and Research

TABLE OF CONTENTS

APPENDICES

LIST OF FIGURES

1.0 INTRODUCTION

1.1 Project Site Location

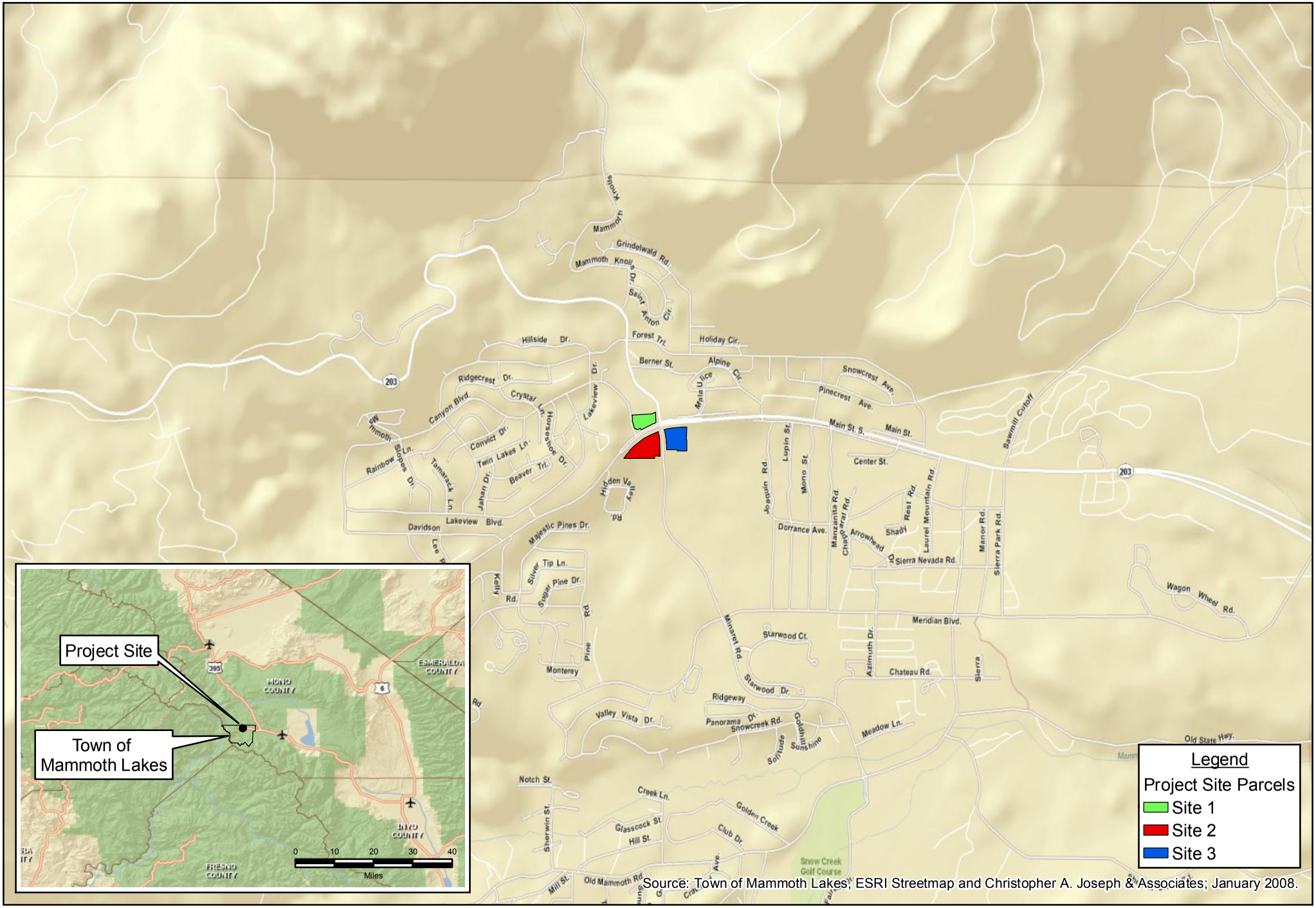
The Mammoth Crossing Project (Project) site is located in the Town of Mammoth Lakes, Mono County, California (Figure 1). The Town of Mammoth Lakes is located on the eastern slopes of the Sierra Nevada at an average elevation of approximately 7,900 feet above sea level within Section 34, Township 3 South, Range 27 East. The Town of Mammoth Lakes is located approximately 168 miles south of Reno, Nevada, and approximately 310 miles north of Los Angeles, California. Neighboring communities of the Town of Mammoth Lakes include June Lake to the northwest, Benton to the east, and Tom's Place to the southeast (refer to Figure II-1 and Figure II-2). Regional access is provided by US Highway 395 and California State Highway 203. Major arterials which provide access to the site include Minaret Road to the north and south, Main Street to the east, and Lake Mary Road to the west.

1.2 Proposed Project Description

The Project site comprises approximately nine acres and consists of three locations hereby referred to as Sites 1, 2, and 3. These sites include parcels at the northwest, southwest and southeast corners of the Main Street-Lake Mary Road/Minaret Road intersection (Figure 1). The Project proposes redevelopment of these sites with a combination of resort accommodations, retail commercial uses, and public spaces.

The Project is situated within the North Village Specific Plan Area, and includes a series of amendments to the North Village Specific Plan (NVSP), as well as amendments to the Town of Mammoth Lakes' General Plan, which would be required to accommodate the Project's proposed land uses. In total, the Project would include the construction of up to 863 hotel rooms, up to approximately 125,600 square feet of retail/commercial development, and 740 parking spaces. Affordable housing, totaling 48,750 square feet, would be required to be provided as part of the Project, some of which would be constructed off-site. Construction of affordable housing at off-site locations is will be implemented as a separate project; when these sites are identified, independent environmental review and analyses will be conducted accordingly.

Proposed development at Sites 1, 2, and 3 would involve construction of multiple buildings ranging in height from one to approximately seven stories. On each development site, the buildings would be oriented around a courtyard. All existing development on these sites, with the possible exception of the Whiskey Creek Restaurant on Site 1, would be demolished or relocated in order to implement the proposed redevelopment. On Site 1, the project would result in construction of a hotel and a series of associated common and amenity areas and uses; visitor-serving retail space; a public open space plaza; and underground parking. Development on Site 2 would include a five-star hotel and associated amenity areas, limited residential and commercial/retail facilities, underground parking and a small number of



CHRISTOPHER A. JOSEPH & ASSOCIATES
Environmental Planning and Research

NORTH

0 0.25 0.5 0.75 1
Miles

Figure 1
Regional and Vicinty Map

street parking spaces on Lake Mary Road. On Site 3, the project includes construction of a family-oriented hotel, associated amenity and common areas, employee housing, and underground parking facilities.

1.3 Study Objectives

The purpose of this study is to identify sensitive biological resources that are present or have the potential to occur within the Project site, to assess the potential significance of impacts to these resources from the proposed Project, and to recommend mitigation measures to avoid, minimize or reduce the significance of any such impacts.

2.0 METHODS

2.1 Data Compilation and Background Research

CAJA compiled and reviewed pertinent information regarding the Project site, including:

- *California Department of Fish and Game's (CDFG) California Natural Diversity Data Base (CNDDB) record search of the Old Mammoth, Mammoth Mountain, June Lake, Bloody Mountain, Crestview, Convict Lake, Dexter Canyon, Crystal Crag, and Whitmore Springs 7.5 minute U.S. Geological Survey (USGS) quadrangles*[1]*;*
- *California Native Plant Society's (CNPS) Electronic Inventory search for the Old Mammoth, Mammoth Mountain, June Lake, Bloody Mountain, Crestview, Convict Lake, Dexter Canyon, Crystal Crag, and Whitmore Springs 7.5 minute USGS quadrangles*[2]*;*
- *U.S. Fish and Wildlife Service (USFWS) Sacramento Office's online list of species for Mono County*[3]*;*

Other general resources consulted included:

- *Preliminary Descriptions of the Terrestrial Natural Communities of California*[4]*;*
- *A Manual of California Vegetation*[5]*;*

---

1 *California Department of Fish and Game. 2007. Natural Diversity Database. Commercial version.*

2 *California Native Plant Society. 2007. On-line Electronic Inventory of Rare and Endangered Plants of California. (http://cnps.web.aplus.net/cgi-bin/inv/inventory.cgi)*

3 *U.S. Fish and Wildlife Service, Sacramento Office. Endangered and Threatened Species List. (http://www.fws.gov/sacramento/es/spp_list.htm)*

4 *Holland. 1986. Preliminary Descriptions of the Terrestrial Natural Communities of California. California Department of Fish and Game.*

- *List of California Terrestrial Natural Communities Recognized by the California Natural Diversity Database*[6]*;*
- *The Jepson Manual, Higher Plants of California*[7]*;*
- *Sagebrush Country: A Wildflower Sanctuary*[8]*;*
- *A Sierra Nevada Flora*[9]*;*
- *National Geographic Field Guide to the Birds of North America*[10]*;*
- *Western Birds*[11]*;*
- *Vaux's Swift. The Birds of North America*[12]*;*
- *Woodpeckers: A Guide To The Woodpeckers Of The World*[13];
- *California's Wildlife, Volume I-III: Amphibians and Reptiles, Birds, Mammals. California Statewide Wildlife Habitat Relationships System, California Department of Fish and Game, Sacramento*[14]*;*
- *CDFG Special Animals List*[15];
- *Amphibian and Reptile Species of Special Concern in California*[16]*;*
- *CDFG California's Wildlife Notes*[17].

A list of special-status species and communities known from the region was compiled from this information review; the resulting list of species with the potential to occur within the Project site is presented in Appendix A.

---

5 *Sawyer & Keeler-Wolf. 1995. A Manual of California Vegetation. California Native Plant Society.*

6 *California Department of Fish and Game. 2003. List of California Terrestrial Natural Communities Recognized by the California Natural Diversity Database. September 2003.*

7 *Hickman, J., ed. 1993. The Jepson Manual – Higher Plants of California. University of California Press.*

8 *Taylor, R.J. 1992. Sagebrush Country: A Wildflower Sanctuary. Mountain Press Publishing Company.*

9 *Weeden, N.F. A Sierra Nevada Flora. Wilderness Press.*

10 *Fitzpatrick, J.W. 2003. National Geographic Field Guide to the Birds of North America. National Geographic Society, Forth edition.*

11 *Peterson, R.T. 1990. Western Birds. Houghton Mifflin Company.*

12 *Bull, E., C. Collins. 1993. Vaux's Swift. The Birds of North America, No. 77: 1-12.*

13 *Winkler, H., D. Christie, D. Nurney. 1995. Woodpeckers: A Guide To The Woodpeckers Of The World. New York: Houghton Mifflin Company.*

14 *Zeiner, D. C., W. F. Laudenslayer, Jr., K. E. Mayer, and M. White. 1990. California's Wildlife, Volume I-III: Amphibians and Reptiles, Birds, Mammals. California Statewide Wildlife Habitat Relationships System, California Department of Fish and Game, Sacramento.*

15 *California Department of Fish and Game. 2007. Special Animals List.*

16 *Jennings, M. and M. Hayes. 1994. Amphibian and Reptile Species of Special Concern in California. California Department of Fish and Game.*

17 *Zeiner, D.C., ed., et. al. 1988-1990. California's Wildlife. California Department of Fish and Game. http://www.dfg.ca.gov/whdab/html/cawildlife.html*

2.2 Field Survey

On July 26, 2006, a field survey of the Project site was conducted by biologists Shannon Lucas and Amy Parravano from Christopher A. Joseph & Associates (CAJA) and Bill Stagnaro from WRA, Inc. All portions of the Project site were traversed on foot and visually surveyed to note plant and animal species observed (including signs such as burrows or scat), map habitats, and assess the potential for special-status plant and animal species to be present on-site. Plant communities on-site were mapped in the field onto a 1:1800 scale color aerial photograph and digitized into ArcView Geographic Information System (GIS) shapefiles.

Sensitive Habitats and Aquatic Features

Plant communities identified within the Project site were evaluated to determine if they are considered sensitive under federal or state regulations or policies. The site inspection included an evaluation of on-site habitats to determine if any wetlands and "waters" potentially subject to jurisdiction by the U.S. Army Corps of Engineers (Corps), Regional Water Quality Control Board (RWQCB), or CDFG were present. The Project site was evaluated for the presence of wetland indicators including dominance by hydrophytic plant species and presence of wetland hydrology. The site was also inspected for the presence of drainages, streams, and other aquatic features, including those that support stream-dependent (riparian) plant species.

Special Status Plant and Wildlife Species

The field survey was conducted by biologists who have experience with identifying sensitive plant and animal species that could occur in the region. The types and conditions of the habitats observed within the Project site were evaluated to determine their potential to support special-status species and sensitive plant communities resulting from the data compilation and background research. The surveys corresponded to peak blooming periods for observing and accurately identifying rare plant species with potential to occur within the Project site vicinity. The surveys followed the CNPS protocol[18] and complied with the recommended resource agency guidelines from CNPS[19], CDFG[20], and USFWS[21]. All

[18] ***Error! Main Document Only.****Nelson, James R. 1987. Rare Plant Surveys: Techniques for Impact Assessment. From Proceedings of a California Conference on the Conservation and Management of Rare and Endangered Plants, Sacramento, California, November 1986. California Native Plant Society Publication.*

[19] *CNPS. June 2001. CNPS Botanical Survey Guidelines. California Native Plant Society.*

[20] ***Error! Main Document Only.****CDFG. May 2000. Guidelines for Assessing the Effects of Proposed Projects on Rare, Threatened, and Endangered Plants and Natural Communities. Stare of California, The Resources Agency, California Department of Fish and Game, Sacramento.*

[21] ***Error! Main Document Only.****U.S. Fish and Wildlife Service. September 1996. Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed and Candidate Plants. Sacramento Fish and Wildlife Office.*

plants were identified using *The Jepson Manual*[22], *Sagebrush Country: A Wildflower Sanctuary*[23], *and A Sierra Nevada Flora*[24] to the taxonomic level necessary to determine whether or not they were rare.

The potential for special-status plant and animal occurrence is classified according to the following criteria, and the results are given in Appendix A:

Not Expected: There is no suitable habitat present in the Project site (i.e., habitats in the Project site are uns**u**itable for the species requirements (e.g., foraging, breeding, cover, substrate, elevation, hydrology, plant community, disturbance regime, etc.) or the Project site has been surveyed during the proper time of year with negative results.

Low Potential: There are no known records of occurrence in the vicinity of the Project site and/or there is marginal or very limited suitable habitat present in the Project site;

Moderate Potential: There are known records of occurrence in the vicinity of the Project site and/or there is some suitable habitat present in the Project site.

High Potential: There is one or several known records of occurrence adjacent or in close proximity to the Project site and/or there is considerable and/or ideal suitable habitat present in the Project site.

Present: The species was observed in the Project site recently.

Plant and animal species observed during the survey were recorded and are presented in Appendix B. Site photographs taken during the site assessment are presented in Appendix C.

3.0 SITE DESCRIPTION

The Project site, approximately nine acres, consists of three locations: Sites 1, 2, and 3 (Figure 1). These sites include parcels at the northwest, southwest and southeast corners of the Main Street-Lake Mary Road/Minaret Road intersection. These sites are proposed for development and total approximately nine acres (Figure 2). Site 1 comprises approximately two acres, including an existing restaurant, several commercial buildings, and paved surface parking areas. Site 2 comprises a total of approximately five acres, consisting of a vacant church, paved parking areas, and office, retail, and storage buildings,. Site 3m located on the southeast corner of Main Street-Lake Mary Road/Minaret Road intersection, consists approximately three acres, including two hotel/lodges on the known as Ullr Lodge and the White Stag Inn, with paved parking areas and a series of small accessory structures. Portions of Sites 2 and 3

[22] *Hickman, J., ed. 1993. The Jepson Manual – Higher Plants of California. University of California Press.*
[23] *Taylor, R.J. 1992. Sagebrush Country: A Wildflower Sanctuary. Mountain Press Publishing Company.*
[24] *Weeden, N.F. A Sierra Nevada Flora. Wilderness Press.*

contain a mix of developed and undeveloped portions of parcels. Undeveloped or partially developed portions of these sites primarily support Jeffrey pine forest with a sparse understory. The Project site is entirely surrounded by major roads, golf course fairways, and residential and/or commercial development.

3.1 Physical Site Features

The Project Site is mapped in the northern portion of the Old Mammoth USGS 7.5-Minute Topographic Quadrangle. The site is located approximately one mile west of the main part of Town at the northwest, southwest and southeast corners of the Main Street-Lake Mary Road/Minaret Road intersection. The Project site is relatively level and ranges in elevation between approximately 8,050 to 7,960 feet above sea level (msl), sloping gently downward from northwest to southeast. The Project site is surrounded on all sides by residential and commercial development and is not directly connected to any large, contiguous open space areas.

The U.S. Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS) has mapped two soil types on the Project site: (1) Vitrandic Xerorthents, 15 to 30 percent slopes, mapped within Site 1 located on the north side of Lake Mary Road/Main Street; and (2) Chesaw family, 5 to 15 percent slopes [25], comprising the remainder of the Project site. The Chesaw series consists of very deep, somewhat excessively drained soils formed in glacial outwash and are typically found on terraces, terrace escarpments and eskers on slopes ranging from 0 to 65 percent. In a typical profile, the surface layer is dark gray, brown, and black gravelly loamy sand and is approximately 12 to18 inches thick, underlain by a variegated, very gravelly sand parent material. Vitrandic Xerorthents consists of deep, somewhat excessively drained soils formed in glacial moraine and are typically found on terraces, terrace escarpments and eskers on slopes ranging from 0 to 65 percent. In a typical profile, the surface layer is dark gray gravelly loamy sand and is approximately 12 to18 inches thick, underlain by a variegated, very gravelly sand parent material.[26]

---

[25] *U.S. Department of Agriculture, Natural Resources Conservation Service. Web Soil Survey 1.1, National Cooperative Soil Survey. Accessed on April 19, 2007. http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx*

[26] *Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. Official Soil Series Descriptions [Online WWW]. Available URL: "http://soils.usda.gov/technical/classification/osd/index.html".*

3.2 Natural Communities and other Features

Plant communities were classified based on existing descriptions given in *Preliminary Descriptions of the Terrestrial Natural Communities of California*[27] or *A Manual of California Vegetation*[28]. Due to the extensive level of disturbance on the Project site, however, in some cases it was necessary to identify variants of plant community types or to describe non-vegetated areas that are not described in the literature. Therefore, the following plant community classifications are based on shared observed characteristics for those areas, and are mapped on Figure 2.

Jeffrey Pine Forest

Jeffrey pine (*Pinus jeffreyi*) forest is the dominant plant community within the undeveloped portions of Site 2 and Site 3. This community is not identified as sensitive in local or regional plans, policies, regulations, or by the CDFG. This plant community generally has well-drained soils and is replaced by subalpine coniferous forest and lodgepole pine forest at its upper elevation limit[29]. All plant species observed in this community within the Project site are common to the region. Jeffrey pine forms an intermittent canopy, growing in association with occasional red fir (*Abies magnifica*) individuals. The forest understory is relatively sparse and homogenous, supporting low growing, scattered shrubs, and open, unvegetated areas covered by pine needle litter. Common understory species include Great Basin sagebrush (*Artemesia tridentata*), rabbit-brush (*Chrysothamnus viscidiflorus*), tobacco brush (*Ceanothus velutinus*), and creeping snowberry (*Symphoricarpos mollis*). Developed features such as roads, parking lots and structures are also present in portions of the Jeffrey pine forest on the Project site. Due to the proximity of nearby roads and buildings, much of the Jeffrey pine forest onsite provided disturbed habitat conditions, evidenced by low species diversity, low habitat complexity/structure, and the presence of weedy, invasive species such as Russian thistle (*Salsola tragus*).

Great Basin Sagebrush

A stand of Great Basin sagebrush (*Artemisia tridentata*) was mapped along a moderate slope on coarse, gravelly and well drained soils within the northeastern portion of Site 2. Great Basin sagebrush is found within a wide elevation range, mainly from 3,600 to 9,800 feet (1,098 to 2,990 meters) on the eastern

---

27 *Holland. 1986. Preliminary Descriptions of the Terrestrial Natural Communities of California. California Department of Fish and Game.*

28 *Sawyer & Keeler-Wolf. 1995. A Manual of California Vegetation. California Native Plant Society.*

29 *Ibid.*

CHRISTOPHER A. JOSEPH & ASSOCIATES
Environmental Planning and Research

NORTH

0 50 100 150 200
Feet

Figure 2
Plant Communities

slopes of the Sierras, in the northern Mojave and Great Basin deserts, the Modoc Plateau, and within isolated pockets of the inner South Coast Range[30]. Great Basin sagebrush occurs in the Project site in association with rabbitbrush (*Chrysothamnus viscidiflorus*), creeping snowberry, tobacco brush, and Greenleaf manzanita (*Arctostaphylos patula*), and a few scattered red fir saplings. The relatively dense and low-growing shrub canopy in this community includes occasional patches of bare ground with sparsely distributed herbaceous species such as western tansy mustard (*Descurania pinnata*), ranger's buttons (*Sphenosciadum capitatum*), and yellow salsify (*Tragopogon dubius*). This community is not identified as sensitive in local or regional plans, policies, regulations, or by the CDFG.

Barren

Landscapes generally devoid of vegetation are labeled on Figure 2 as Barren and include unpaved areas of exposed gravel and/or cobbles that appear to have been used as a borrow area and recently graded. Located on the southwest corner of the Lake Mary and Minaret Road intersection, this area is completely unvegetated and partially surrounded by chain link fencing.

Developed

Significant portions of the Project site consist of existing commercial and residential buildings with landscaping and parking areas. All of Site 1 and approximately 40% of Site 2 and 50% of Site 3 is developed and/or paved and regularly disturbed by vehicles and/or equipment. Vegetation within developed areas consists of scattered Jeffrey pines and non-native/ornamental vegetation planted for landscaping purposes.

3.5 Wildlife

The vegetation communities present in the Project site and within surrounding areas likely provide habitat for a wide variety of common wildlife species. Given the proximity of development to natural vegetation communities found in the Project site, many of the wildlife species found on the site tend to be less sensitive to human-related disturbances. Although Great Basin sagebrush generally provides important foraging habitat for larger mammals, the fragmented and disturbed condition of the stand found in the Project site would preclude it from providing significant winter-range habitat for migratory herds such as mule deer (*Odocoileus hemionus*). Several wildlife species may forage within Jeffrey pine forest and Great Basin sagebrush, but some require special habitat features, such as cliffs, caves, and ponds, that provide breeding, resting, and escape cover. Wildlife species occurring on the Project site are generally those that have adapted to, and are tolerant of, human activities, and are common in urban areas,

30 *Holland, R.F. 1986. Preliminary Descriptions of the Terrestrial Natural Communities of California. California Department of Fish and Game.*

including common species such as American Crow (*Corvus brachyrhynchos*) and Common Raven (*Corvus corax*).

Wildlife species observed in the Project site during the survey are common to the region and are generally tolerant to human disturbance. Wildlife species observed on-site are listed in Appendix B. Observed mammals include golden-manteled ground squirrel (*Spermophilus lateralis*), Nuttall's cottontail (*Sylvilagus nuttallii*), and Douglas's squirrel (*Tamiasciurus douglasii*). Evidence of black bear (*Ursus americanus*) (e.g., scat) was also observed. Twelve bird species were observed during the site reconnaissance, including Northern Flicker (*Colaptes auratus*), Western Wood Peewee (*Contopus sordidulus*), American Crow, Common Raven, Steller's Jay (*Cyanocitta stelleri*), Dark-eyed Junco (*Junco hyemalis*) Clark's Nutcracker (*Nucifraga columbiana*), Mountain Chickadee (*Poecile gambeli*), Red-breasted Nuthatch (*Sitta canadensis*), Pygmy Nuthatch (*Sitta pygmaea*), Red-breasted Sapsucker (*Sphyrapicus ruber*), and American Robin (*Turdus migratoriu*).

Amphibian presence was not observed and is not anticipated on-site, due to the lack of suitable aquatic features such as wetlands, streams, or ponds. Reptiles are potentially present on the Project site given the arid conditions, friable soils and patches of open vegetation that may provide opportunities for foraging and basking. However, due to the intensity and frequency of site disturbance, limited amount of refuge sites (such as dense vegetation cover or rock outcrops), the site's adjacency to roads and development and its isolation from other natural habitats, it is unlikely that the site supports a viable reptile population.

Some migratory songbirds may nest in trees and shrubs within the Project site. Other migratory birds may use the site to rest and forage. Due to the heavily and frequently disturbed nature of the site, and the level of human activity within and surrounding the site in adjacent residential and commercial developments, uncommon or sensitive bird species are generally not expected or are considered to have a moderate to low potential to nest on-site, as discussed in the following section.

4.0 SENSITIVE BIOLOGICAL RESOURCES

4.1 Plants and Vegetation

4.1.1 Protected Trees

The Project site contains trees which are considered "sensitive" if they meet the local jurisdiction's requirement of a "heritage tree" or other protected tree as specified in an ordinance or municipal code. The municipal code for the Town of Mammoth lakes includes zoning requirements for development in residential, commercial, and special use zones (which includes resorts) regarding the protection and/or replacement of certain trees. Under the Town's municipal code, the "resort" zone performance and environmental standards "shall be not less than those specified for similar uses in the residential or commercial zones" (17.28.250). The municipal code (Section 17) for residential and commercial zones

states that existing trees and vegetation shall be preserved to the maximum extent possible and that no live trees over six inches in diameter shall be removed without prior approval of the planning director.

4.1.2 Special Status Plants

Plant species that are listed as endangered or threatened under the Federal Endangered Species Act (FESA) or California Endangered Species Act (CESA), or plant species that are proposed or candidates for listing as endangered or threatened, are protected by law and are considered special-status species. Plant species which may not be listed as endangered, threatened, candidate, or proposed species under FESA or CESA, may be considered rare if assigned a rarity code by the California Native Plant Society (CNPS). The CNPS lists five categories of rarity (Lists 1A, 1B, 2, 3, and 4). Under CEQA, impact analyses are mandatory for List 1 and 2 species, but not for all List 3 and 4 species as some do not meet the definitions of the Federal Native Plant Protection Act or the California Endangered Species Act; however, List 3 and 4 impacts to these species are generally considered in most CEQA analyses and are recommended by the CNPS[31].

Based on the data compilation, background research and a botanical site survey, 33 special-status plant species were recorded to occur, or have the potential to occur, in the region. CAJA biologists conducted a focused survey for sensitive plant species on the Project site on July 26, 2006. Surveys were conducted throughout the entire Project site, including Sites 1, 2, 3. The survey was conducted according to CNPS protocol, including recording all plant species observed during the survey effort. The survey date encompassed the blooming periods of all sensitive plant species potentially occurring on-site, as determined by an assessment of the habitats present.

A table presenting all of the special-status plant species considered and evaluated for potential to occur on-site based on the data compilation and background research, is included in Appendix A. The requirements of these species were evaluated as compared to the conditions observed during the site survey to determine their potential to occur on-site. Based on this evaluation, all of these species were considered "not expected" to occur on-site due to varying reasons, including lack of observation during their reported blooming season, absence of suitable habitat on-site, and/or a high level of human-related disturbance. All of the 32 plant species observed within the Project site are common to the region and are not considered to be special-status. A complete list of observed species is provided in Appendix B.

---

[31] *California Native Plant Society. 2001. Inventory of Rare and Endangered Plants of California (sixth edition). Rare Plant Scientific Advisory Committee, David P. Tibor, Convening Editor. California Native Plant Society. Sacramento, CA. x + 388 pp.*

4.1.3 Sensitive Natural Communities

Although two sensitive plant communities have been recorded in the vicinity of the Project site, Mono Pumice Flat and Water Birch Riparian Scrub (Appendix A), no sensitive plant communities or habitats exist on the Project site. These sensitive plant communities require highly alkaline soils or direct hydrology via groundwater discharge, rivers or streams, or surface ponds; in addition, both require relatively undisturbed site conditions. Only disturbed and partially developed Jeffrey pine forest and Great Basin sagebrush scrub habitats were observed on the Project site, which are not identified as sensitive in local or regional plans, policies, regulations, or by the CDFG. Therefore, the Project site does not support sensitive natural communities.

4.2 Wildlife

4.2.1 Special Status Wildlife

Animal species that are listed as endangered or threatened under the FESA or CESA, or animal species that are proposed or candidates for listing as endangered or threatened, are protected by law and are considered special-status species. Animal species which may not be listed as endangered, threatened, candidate, or proposed species under FESA or CESA, may be considered rare if assigned a global or state sensitivity ranking by CDFG (1 though 5, with state rankings having an additional ranking of .1, .2, or .3). Migratory birds are also protected under the Federal Migratory Bird Treaty Act, which prohibits killing any migratory bird or disturbing or destroying an active nest of a migratory bird; this list contains hundreds of birds, including many of which are considered common or even nuisance or non-native species. Nesting birds are also protected under California Fish and Game Code 3503, 3503.5, and 3512, which prohibits the take of active bird nests.

Undeveloped portions of Jeffrey pine-fir forest and Great Basin sagebrush scrub have low structural diversity, likely resulting in relatively low animal species and numbers occupying these habitats. However, the Jeffrey pine seeds, bark and foliage are a valuable food source for many wildlife species, and pines may also provide nesting habitat for many common bird species[32]. Although the site is completely surrounded by development, natural habitats on-site provide suitable foraging habitat for common mammal, bird, reptile and other wildlife species such as mule deer, chipmunks, deer mice, and woodpeckers that have a low sensitivity to human-related disturbances.

Based on the data compilation, background research and site survey, 61 special-status wildlife species were recorded to occur, or have the potential to occur, in the region. All of the special-status wildlife

---

[32] *Final EIR Volumes I,II,III, Lodestar at Mammoth, EIP, Town of Mammoth Lakes, CA, February 1991.*

species evaluated are included in a table contained in Appendix A. The requirements of these species recorded in the region were evaluated as compared to the conditions observed during the site survey to determine their potential for occurrence. Of the 61 species evaluated, eight species have a "moderate potential" to occur within the Project site. The remaining 53 species were considered unlikely to occur because the Project site is surrounded by development and provides limited areas of suitable habitat. Fourteen wildlife species have "low potential" for occurrence and are not likely to be affected by the proposed Project. Although these species may occasionally disperse through or forage on-site, the fragmented areas of natural habitats are altered by regular disturbance from surrounding developments. On-site habitats provide limited opportunities for burrow or den occupation by sensitive mammal species or nesting by several special-status bird species. The remaining 39 species are "not expected" to occur on the site due to varying reasons, including a lack of suitable habitat on-site, the high disturbance and human activity level on the site, and/or the lack of known or recent documented occurrences in the area.

The eight species that have a moderate potential for occurrence and therefore may be impacted by the proposed development are discussed below:

Mammals

Long-eared myotis (*Myotis evotis).* Western Bat Working Group (WBWG) Medium Priority. Long-eared myotis is a bat species that primarily inhabits coniferous forest and woodland, including juniper, ponderosa pine, and spruce-fir. It typically forages over rivers, streams, and ponds within the forest-woodland environment. Water features on the Sierra Star Golf Course, situated less than ¼ mile from the site, may provide suitable foraging habitat for this species. During summer, the long-eared myotis roosts in a wide variety of structures, including cavities in snags, under loose bark, stumps, buildings, rock crevices, caves and abandoned mines. During winter, it typically hibernates primarily in caves and abandoned mines. Maternity colonies, hibernacula, and roosts are vulnerable to disturbance and destruction[33]. This species may roost in mature Jeffrey pine trees and unoccupied buildings on the Project site. According to CNDDB records, there is a documented occurrence of long-eared myotis approximately seven miles southwest of the Project site in Devils Postpile National Monument[34].

[33] *New Mexico Department of Game and Fish. 1997. Fish and Wildlife Information Exchange--VA Tech. Online. Available: http://www.fw.vt.edu/fishex/nm.htm. Accessed 14 April 1998, last update 29 October 1997.*

[34] *California Department of Fish and Game. 2007. Natural Diversity Database. Commercial version.*

Fringed myotis (*Myotis thysanodes).* WBWG High Priority. This bat species has been found in hot desert scrubland, grassland, xeric woodland, sage-grass steppe, mesic old-growth forest, and multi-aged subalpine coniferous and mixed-deciduous forest. Xeric woodlands (oak and pinyon-juniper) appear to be the most commonly used habitat. Where available, caves, buildings, underground mines, rock crevices in cliff faces and bridges are used most often for maternity and night roosts, while hibernation has only been documented in buildings and underground mines. Tree-roosting has also been documented in Oregon, New Mexico, and California. This species has potential to roost in large Jeffrey pine trees and unoccupied buildings on the Project site.

Long-legged myotis (*Myotis volans).* WBWG High Priority. Habitat for the long-legged myotis primarily consists of coniferous forests, but the species also occurs seasonally in riparian and desert habitats. They establish roosts in trees, rock crevices, fissures in stream banks, and buildings. This species may forage and roost in Project site. Mature Jeffrey pine trees and unoccupied buildings may provide suitable roosting habitat. According to CNDDB records, there is a documented occurrence of long-legged myotis approximately seven miles southwest of the Project site in Devils Postpile National Monument[35].

Yuma myotis *(Myotis yumanensis*), Western Bat Working Group (WBWG) Low-Medium Priority. The Yuma myotis is common in a wide variety of habitats including riparian, desert scrub, moist woodlands and forests, ranging from sea level to 3300 m (11,000 ft), but is uncommon to rare above 2560 m (8000 ft)[36]. This species roosts in buildings, mines, caves, or crevices and has also been observed roosting in abandoned swallow nests and under bridges. Separate night roosts may be used in more open areas. This bat species is known for its ability to survive in urbanized environments. It is also found in heavily forested settings. Day roosts are found in buildings, trees, mines, caves, bridges and rock crevices. Night roosts are associated with man-made structures. According to CNDDB records, there is a documented occurrence of Yuma myotis approximately seven miles southwest of the Project site in Devils Postpile National Monument[37]. The Yuma myotis is more closely associated with water than most other North American bats[38] and may forage over golf course water features located southeast of the Project site. Potentially suitable roosting habitat is available on site in large trees and unoccupied buildings.

---

[35] *California Department of Fish and Game. 2007. Natural Diversity Database. Commercial version.*

[36] *California Department of Fish and Game. California Interagency Wildlife Task Group. 2005. California Wildlife Habitat Relationships version 8.1 personal computer program. Sacramento, California.*

[37] *California Department of Fish and Game. 2007. Natural Diversity Database. Commercial version.*

[38] *NatureServe. 2007. NatureServe Explorer: An online encyclopedia of life [web application]. Version 6.1. NatureServe, Arlington, Virginia. Available at http://www.natureserve.org/explorer. (Accessed: January 2007)*

Birds

Cooper's Hawk (*Accipiter cooperi*), CDFG Species of Special Concern. This hawk is associated with woodland and forest habitats throughout California. Although nest sites are usually found in isolated areas, this species frequently occurs in urban habitats in winter and during migration. Mature trees in the Project site may provide nesting habitat for this species.

Olive-sided Flycatcher-nesting (*Contopus cooperi*, USFWS Bird of Conservation Concern (BCC). This species historically used recently burned areas, but now that most fires are suppressed, it often takes advantage of areas that have been logged, as well as other clearings and edges, which are superficially similar to post-fire stands. Suitable breeding and foraging habitat is available within Jeffrey pine forest habitat within the Project site.

Lewis' Woodpecker (*Melanerpes lewis*), USFWS BCC. Lewis' Woodpeckers prefer logged or burned out areas. They prefer old growth woodlands rather than dense forest. In winter they choose oak woodland or commercial orchards such as almond and walnut and pecan trees (Winkler et al. 1995). Suitable breeding and foraging habitat is available in the Project site.

White-headed Woodpecker (*Picoides albolarvatus*), USFWS BCC. White-headed Woodpecker requires mature ponderosa pine stands. They have also been found in ornamental gardens, mixed ponderosa pine/Douglas fir forest, Douglas fir forest, Engelmann spruce/lodgepole pine forest and black cottonwoods. Suitable breeding and foraging habitat is available in the Project site.

Other Migratory Birds and Raptors

Bird nesting activities are protected under the State Fish and Game Code, and if any are migratory birds they are also protected under the Federal Migratory Bird Treaty Act; therefore, these bird species are also considered to be special-status species. Under this legislation, destroying active nests, eggs, and young is illegal. Migratory birds and raptors forage and nest in a wide variety of habitats throughout Mono County. Typically, migratory birds and raptors nest within trees and other vegetation in areas that are removed from human disturbance; however, some species such as great horned owl (*Bubo virginianus*) and red-tailed hawk are known to nest in and adjacent to developed areas where there is nearby undeveloped lands supporting an abundance of prey. Although the habitats on-site are highly disturbed and support limited natural vegetation and/or habitat complexity generally desired by most birds for nesting, some birds may still nest on-site.

4.2.2 Wildlife Movement

The movement and migration of wildlife in urban and suburban areas has been substantially altered due to habitat fragmentation over the past century. This fragmentation is most commonly caused by

development, which can result in large patches of land becoming inaccessible and forming a virtual barrier between undeveloped areas, or resulting in additional roads which, although narrow, may result in barriers to smaller or less mobile wildlife species. Habitat fragmentation results in isolated "islands" of habitat, which prevents the exchange of genetic material within species populations in different geographic areas necessary to maintain the genetic variability to withstand major environmental disturbances such as fire or climate change[39]. A lack of genetic variability within a population may eventually lead to extinction, as it will not have the ability to evolve or adapt to changing conditions over time.

The exchange of genetic material within wildlife populations is accomplished through the dispersal of individuals. Animals disperse for different reasons, some following pre-programmed migratory routes while others disperse due to disturbances (development, fire) or scarcity of resources (food, water). In these situations, larger terrestrial species such as deer can often overcome considerable obstacles from urban development, including freeways, large building complexes and tall fences. Smaller, less mobile animals, however, are often confined to remaining fragments of isolated habitat. Generally areas less than several hundred square miles are considered too small to contain major wildlife movement or migratory corridors, but rather these areas may be located within such a route or be considered a secondary pathway. Corridors connect larger areas of land and allow for free genetic exchange within a species population, while pathways may allow for wildlife movement but may not serve to promote the larger exchange and viability of genetic variability between areas. Linkages are considered a type of corridor, as they provide some type of physical connection between habitat areas, such as drainage or freeway undercrossing; however, depending on the quality or size of the linkage, certain wildlife species may be unable or unlikely to use the linkage. For highly mobile or flying animals, linkages may exist as discontinuous patches of habitat which are close enough to act as "stepping stones" that facilitate movement between larger habitat areas.

Due to considerable residential and commercial development within and surrounding and the Project site, including a network of busy roadways bisecting the site, the Project site does not provide viable linkages or migration corridors between habitat areas. To the extent that small and fragmented patches of remnant habitats occur within the Project Site, they have become virtual islands of habitat and provide limited opportunity for wildlife movement and exchange of genetic material. Wildlife movement between the site and Inyo National Forest lands is likely to be very restricted (except for bird species) due to the lack of physical linkages and existing barriers (roads). Migration through the site may occasionally occur for only the most mobile terrestrial species such as mule deer or black bear as "accidental" incidents, possibly facilitated by disturbances causing an individual to panic and flee the site, and likely only at night when the considerable barriers of traffic and human disturbance activities in the surrounding urban environment are at

---

[39] *California Wilderness Coalition, et. al. Missing Linkages: Restoring Connectivity to the California Landscape. (http://www.calwild.org/resources/pubs/linkages/index.htm)*

their lowest levels. Such movement is sporadic and very unlikely to result in a significant exchange in genetic material or linkage of the site to core habitat areas beyond the Town limits. Therefore, the Project site does not act as a true wildlife corridor, movement pathway, or linkage of note between larger habitat areas for terrestrial wildlife.

4.3 Jurisdictional Features

The U.S. Army Corps of Engineers (Corps) regulates the placement of fill material into "waters of the U.S.", including wetlands, under Section 404 of the Federal Clean Water Act. California Department of Fish and Game (CDFG) also regulates the placement of material into, the dredging or use of material from, or the diversion of water from lakes or streambeds under Section 1600 of the State Fish and Game Code. The State Water Resources Control Board, through Regional Water Quality Control Boards (RWQCB) regulates impacts to water quality within "waters of the State" under Section 401 of the Federal Clean Water Act and the State's Porter-Cologne Act.

The Project site was examined for the presence of features that may be considered jurisdictional by the Corps, CDFG, and RWQCB. The Project site does not support any wetlands or water features such as ponds or steams; therefore, no jurisdictional features were found on the site.

5.0 POTENTIAL PROJECT IMPACTS

5.1 Significance Thresholds

In accordance with Appendix G of the CEQA Guidelines, the proposed Project could have a significant environmental impact on biological resources if it would:

(a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service;

(b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service;

(c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;

(d) Interfere substantially with the movement of any native resident or migratory fish and wildlife species or with established native resident or migratory wildlife corridors, or impede the use of a native wildlife nursery site;

(e) Conflict with an local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or

(f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

In addition, under the Mandatory Findings of Significance in Appendix G of the CEQA Guidelines, the proposed Project would have a significant environmental impact on biological resources if it would "have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory.",

5.2 Potential Impacts to Biological Resources

Potential impacts from the proposed Project to biological resources are discussed below, including general recommendations for avoiding, minimizing, or compensating for such impacts.

5.3 Plants and Vegetation

5.3.1 Protected Trees

Proposed development would conflict with the intent of some policies of the Town's Municipal Code regarding tree removal. The Jeffrey pine-fir forest plant community present on-site contains many trees that would meet the minimum size (six inches in diameter) to require approval from the Town prior to removal. The Project should be designed to conform with the municipal code such that existing trees and vegetation are preserved to the maximum extent possible. The removal of live trees over six inches in diameter may result in ***significant*** impacts; however, the implementation of **Mitigation Measure BIO-1,** involving preparation of an arborist study and obtaining a tree removal permit for trees over six inches in diameter, would reduce this impact to less than significant.

5.3.2 Special Status Plants

Although 33 special-status plant species were recorded to occur, or have the potential to occur, in the region, none are expected to occur on-site based on a lack of suitable habitat, disturbed conditions, and/or

lack of observation during a survey that coincided with peak blooming periods of all potentially present species. Therefore, the proposed Project is not anticipated to result in adverse impacts to special-status plants.

5.3.3 Sensitive Plant Communities

No sensitive plant communities were observed on the Project site and none are expected to occur on the site because of the disturbed and developed condition of the site; therefore, the proposed Project would not adversely impact sensitive plant communities.

5.4 Wildlife

5.4.1 Common Wildlife

Jeffrey pine forest and Great Basin scrub habitats within the Project site provide suitable habitat for many common smaller mammals including several squirrels, chipmunks, and a variety of rodents, along with larger mammals which may occasionally forage on the Project site, such as coyote, bobcat, black bear, and mule deer. Resident and migratory birds are also expected be found within the Project site.

Implementation of the proposed Project may result in harm, disturbance, displacement, or loss of some of the common wildlife species residing on-site, particularly the less mobile species such as reptiles or small mammals. These impacts may result during construction activities from physical habitat removal, noise, and other disturbances, or during post-construction operation from increased noise levels, lighting, and domestic animals. Although these impacts would be considered adverse, they would not be considered significant under CEQA as these species are considered common and widespread, particularly in developed areas.

5.4.2 Special Status Wildlife

Based on the results of the biological site assessment, 61 special-status wildlife species were recorded to occur, or have the potential to occur, in the region. Of these species, four bat and four bird species were considered to have a moderate potential to occur within the Project site and, therefore, may be adversely impacted by the proposed Project.

Sensitive Bird Species

Several sensitive bird species have a low to moderate potential to nest on-site; in addition, non special-status migratory and other bird species have a high potential to nest on the site. Construction activities including vegetation removal, noise and vibration have a potential to result in direct (i.e. death or physical

harm) and indirect (i.e., nest abandonment) adverse impacts to nesting birds; these impacts would be considered significant. However, implementation of **Mitigation Measure BIO-2** (see Section 6.0), involving either vegetation removal/initiation of construction activities before the nesting season or pre-construction surveys during the nesting season, would reduce this impact to a less than significant level.

The disturbed and ruderal habitats on-site may occasionally be used as foraging habitat for special-status raptors such as Coopers Hawk which could be transients on the site. However, the proposed Project would not substantially reduce or have a substantial adverse effect on the availability of foraging habitat in the vicinity, as there are more extensive habitats for foraging raptors in the region. Conversion of previously undeveloped lands on the Project site would result in the loss of potential foraging habitat for a number of special-status migratory bird species, such as Lewis' Woodpecker, White-headed Woodpecker, and Olive-sided Flycatcher. Project construction would convert a total of approximately 0.1 acre of Great Basin sagebrush and three acres of Jeffrey pine habitat. Though this loss would contribute to the local reduction of available foraging areas, potentially affecting individual birds using the site, the loss of foraging habitat onsite would not substantially reduce the number or restrict the range of special-status bird species in the Project vicinity. The plant communities potentially utilized by these species are widespread throughout the region. The proximity of the Project site to development areas and the level of human-related disturbances associated with these areas likely limits the use of these habitats within the Project site. Therefore, the proposed Project would not substantially reduce or have a substantial adverse effect on habitat as the region supports abundant suitable habitat for special-status bird species; the removal of potential foraging habitat for these species is considered a less-than-significant impact.

Bats

Potentially suitable roost habitat is present for four special-status bat species: long-eared myotis, long-legged myotis, fringed myotis, and Yuma myotis, including any mature (greater than 25-inch diameter at breast height) tree stand and any large snags or felled trees. Removal of roost habitat during the bat hibernation or maternity season has potential to result in harm, death, displacement and/or disruption of bats and/or nursery colony roosts; these impacts would be considered significant under CEQA. To avoid impacting breeding or hibernating bats, it is recommended that tree and snag removal occur in September and October, after the bat breeding season and before the bat hibernation season. If snag and tree removal is to take place outside of this time frame, a bat survey should be conducted. If no roosting bats are found during the survey, no further mitigation would be required. If bats are detected, a 50-foot buffer exclusion zone should be established around each occupied snag or tree until the roosting period has ended. Implementation of these impact avoidance measures would reduce potential impacts to roosting bats to a less than significant level.

Implementation of **Mitigation Measure BIO-3**, restricting tree and building removal activities during the maternity roost season or conducting preconstruction surveys, is recommended to reduce this impact to a less-than-significant level.

5.4.3 Wildlife Movement

The proposed project is unlikely to disrupt wildlife movement and will not impede the use of native wildlife nursery sites or migration corridors. Given that the Project site already consists of developed and/or disturbed habitats and is completely surrounded by residential or resort developments and busy Town streets, the site does not currently provide an open space buffer between developments adjacent to migration corridors. It is unlikely that the Project site is important for wildlife movement or nursery use. In addition, no major migratory routes for mule deer or other important migratory animals in the region, occur within the Urban Growth Boundary (UGB) which entirely encompasses the Project site.[40] Although wildlife may occasionally forage on the Project site, it does not act as a wildlife corridor, movement pathway, or linkage of note between larger habitat areas for terrestrial wildlife. In addition, the site conditions are heavily disturbed and degraded due to recent and past intensive uses; limited natural habitat exists on-site and it is isolated from other natural habitats in the region. Therefore, no significant impacts to wildlife movement, migration corridors, or nursery sites will occur from the Project.

5.5 Jurisdictional Features

No wetland, water, or riparian features potentially subject to regulation by the Corps, RWQCB, or CDFG are present within the Project site. The proposed project is not expected to impact jurisdictional features.

6.0 MITIGATION MEASURES

The following mitigation measures are prescribed for the significant Project impacts described above under Section 5.0. Following implementation of these mitigation measures, potential Project impacts would be reduced to less than significant levels.

[40] Draft Program EIR Town of Mammoth Lakes 2005 General Plan Update, Environscientists, Inc., Mammoth Lakes, CA, February 2005

Mitigation Measure BIO-1 – Tree Survey and Replacement Plan

Prior to the removal of any trees, a final analysis of the value of trees proposed for removal shall be prepared by a licensed forester or arborist and submitted to the Town for review and approval. The applicant shall also develop and implement a tree replacement plan based upon the value-for-value determination by the forester/arborist. Said tree replacement shall be within the Project site, or off-site; as may be approved by the Town.

Mitigation Measure BIO-2 – Nesting Bird Avoidance

To avoid impacting nesting birds and/or raptors, **one** of the following must be implemented:

- Conduct vegetation removal and other ground disturbance activities associated with construction during September through March, when birds are not nesting;

- OR -

- Conduct pre-construction surveys for nesting birds if construction is to take place during the nesting season. A qualified wildlife biologist shall conduct a pre-construction raptor survey no more than 30 days prior to initiation of grading to provide confirmation on presence or absence of active nests in the vicinity (at least 300 feet around the project site). If active nests are encountered, species-specific measures shall be prepared by a qualified biologist in consultation with the CDFG and implemented to prevent abandonment of the active nest. At a minimum, grading in the vicinity of the nest shall be deferred until the young birds have fledged. A minimum exclusion buffer of 25 feet is required by CDFG for songbird nests, and 200 to 500 feet for raptor nests, depending on the species and location. The perimeter of the nest-setback zone shall be fenced or adequately demarcated with staked flagging at 20-foot intervals, and construction personnel restricted from the area. A survey report by the qualified biologist verifying that the young have fledged shall be submitted to the Town prior to initiation of grading in the nest-setback zone.

Mitigation Measure BIO-3 – Bat Avoidance

To avoid impacting breeding or hibernating bats, tree and snag removal shall occur in September and October, after the bat breeding season and before the bat hibernation season. If snag and tree removal is to take place outside of this time frame, a pre-construction bat survey should be conducted. If no roosting bats are found during the survey, no further mitigation would be required. If bats are detected, a 50-foot buffer exclusion zone should be established around each occupied snag or tree until the roosting activities have ceased.

Appendix A

Special-status Species and Natural Communities Reported to Occur, or with Potential to Occur, in the Vicinity of the Project Site

Appendix A Special-status Plant Species Evaluated for Potential to Occur in the Project Site

Species[1]	Status[2]				Habitat/Blooming Period	Potential for Occurrence[3]
	FESA	CESA	CNDDB	CNPS/ CDFG		
Plants						
Arabis cobrensis (Masonic rock cress)	--	--	G5/S1S2	2.3	Sandy soils in Great Basin scrub and pinyon and juniper woodland; 4,510-10,190 feet (ft) (1,375-3,105 meters (m)); June-July.	**Not expected**. Species was not observed during July 2006 site visit and the Project site does not support suitable habitat.
Arabis pinzliae (Pinlz's rock cress)	--	--	G2/S1.3	1B.3	Alpine boulder and rock fields and scree or sandy soils in subalpine coniferous forest; 9,840-10,990 ft (3,000-3,350 m); July.	**Not expected**. Although there is an occurrence recorded approximately 7 miles (mi) northwest (NW) of the Project site, the site is below the typical elevation range for this species and it does not support suitable subalpine or alpine habitats. Furthermore, this species was not observed during the July 2006 survey.
Astragalus johannis-howellii (Long Valley milk-vetch)	--	R	G2/S2.2	1B.2	Sandy volcanic ash or pumice in Great Basin or sagebrush scrub; 6,690-8,300 ft (2,040-2,530 m); June-August.	**Not expected**. Although there is marginally suitable scrub habitat present in the Project site and the nearest occurrence is about 7 mi northeast (NE) of the site, sandy volcanic ash or pumice soils are not present. In addition, this species was not observed the July 2006 survey of the Project site.
Astragalus lemmonii (Lemmon's milk-vetch)	--	--	G3?/S2.2	1B.2	Great Basin scrub, meadows and seeps, and lake shore marshes and swamps; 4,200-7,220 ft (1,280-2,200 m); May-August.	**Not expected**. Although there is marginally suitable scrub habitat present in the Project site and the nearest occurrence is within approximately 12 mi, this species was not observed the July 2006 survey.

Appendix A Special-status Plant Species Evaluated for Potential to Occur in the Project Site

Species[1]	Status[2]				Habitat/Blooming Period	Potential for Occurrence[3]
	FESA	CESA	CNDDB	CNPS/ CDFG		
Astragalus monoensis var. *monoensis* (Mono milk-vetch)	--	R	G2T2/S2	1B.2	Pumice flats with sparse vegetative cover in Great Basin scrub and upper montane coniferous forest; 3,890-11,010 ft (2,110-3,355 m); June-August.	**Not expected**. Although there is marginally suitable scrub habitat present in the Project site and the nearest occurrence is approximately 3 mi NE of the site, sparsely vegetated pumice flats are not present. In addition, this species was not observed during the July 2006 survey conducted within the Project site.
Atriplex pusilla Smooth saltbush				2	Great basin scrub, meadows and seeps known from hot springs and alkali springs. 4,265-6,560 (1300-2000 m); June-September.	**Not expected**. Although there is marginally suitable scrub habitat present in the Project site and the nearest occurrence is located approximately xx mi to the NE, meadows and alkali springs are not present. In addition, this species was not observed during the July 2006 survey conducted within the Project site.
Botrychium ascendens (upswept moonwort)	--	--	G2G3/S1 .3?	2.3	Mesic lower montane coniferous forest; 4,920-7,500 ft (1,500-2,285 m); July-August.	**Not expected**. There is no suitable habitat present in the Project site. The site does not support habitats this species typically inhabits. Additionally, there are no occurrences recorded in the vicinity[3] of the Project site.
Botrychium crenulatum (scalloped moonwort)	--	--	G3/S2.2	2.2	Bogs and fens, lower montane coniferous forest, meadows and seeps, and freshwater marshes and swamps; moist meadows near creeks; 4,920-10,760 ft (1,500-3,280 m); June-September.	**Not expected**. Although there are no occurrences recorded in the vicinity of the Project site, there is not suitable wet meadow habitat.

Appendix A Special-status Plant Species Evaluated for Potential to Occur in the Project Site

Species[1]	Status[2]				Habitat/Blooming Period	Potential for Occurrence[3]
	FESA	CESA	CNDDB	CNPS/ CDFG		
Carex scirpoidea ssp. *pseudoscirpoidea* (single-spiked sedge)	--	--	G5T5/ S1.2	2.2	Mesic, often carbonate or limestone alpine boulder and rock fields, meadow and seeps, and subalpine coniferous forest; 10,500-12,140 ft (3,200-3,700 m); July-September.	**Not expected**. This species was not observed during the July 2006 survey conducted within the Project site. Furthermore, no suitable meadow or seep habitat is present.
Crepis runcinata ssp.*hallii* (Hall's meadow hawksbeard)	--	--	G5T3?/ S2?	2.1	Mesic, alkaline soils in Mojavean desert scrub and pinyon juniper woodland; 4,100-6,490 ft (1,250-1,978 m); May-July.	**Not expected**. Although there is an occurrence recorded approximately 9 mi NE of the Project site, the Project site does not support habitats this species typically inhabits and is above the elevation range occupied by this species.
Draba breweri var. *cana* (hoary draba)	--	--	G5T5/ S1.3	2.3	Carbonate soils in alpine boulder and rock fields, meadows and seeps, and subalpine coniferous forest; 9,840-11,500 ft (3,000-3,505 m); July.	**Not expected**. This species was not observed during the July 2006 survey conducted within the Project site. Although there are several occurrences recorded within approximately 8 mi, the site is situated below the elevation range occupied by this species. Species known from only two occurrences.

Appendix A Special-status Plant Species Evaluated for Potential to Occur in the Project Site

Species[1]	Status[2]				Habitat/Blooming Period	Potential for Occurrence[3]
	FESA	CESA	CNDDB	CNPS/ CDFG		
Draba incrassata (Sweetwater Mountains draba)	--	--	G3/ S3.3	1B.3	Rhyolitic talus in alpine boulder and rock fields; 8,200-13,010 ft (2,500-3,965 m); July-August.	**Not expected**. This species was not observed during the July 2006 survey conducted within the Project site. Although there is an occurrence recorded approximately 9 mi to the southeast (SE), the site does not support habitats this species typically inhabits and is situated below the elevation range occupied by this species. This species was not observed during the July 2006 survey conducted within the Project site.
Draba lonchocarpa var. *lonchocarpa* (spear-fruited draba)	--	--	G5T5/S1 .3	2.3	Carbonate/limestone, scree in alpine boulder and rock fields; 9,840-10,810 ft (3,000-3,295 m); June-July.	**Not expected**. Although there is an occurrence recorded approximately 7 mi SE of the Project site, the site does not support suitable alpine habitat and is situated below the typical elevation range of this species. Furthermore, this species was not observed during the July 2006 survey conducted within the Project site.
Draba praealta (subalpine draba)	--	--	G5/S2.3	2.3	Mesic meadows and seeps; 8,200-11,200 ft (2,500-3,415 m); July-August.	**Not expected**. Although there is an occurrence recorded approximately 7 mi SE of the Project site, support suitable meadow or seep habitat is not present. Furthermore, this species was not observed during the July 2006 survey conducted within the Project site.

Appendix A Special-status Plant Species Evaluated for Potential to Occur in the Project Site

Species[1]	Status[2]				Habitat/Blooming Period	Potential for Occurrence[3]
	FESA	CESA	CNDDB	CNPS/ CDFG		
Elymus scribneri (Scribner's wheat grass)	--	--	G5/S2?	2.3	Alpine boulder and rock fields, on rocky slopes; 9,510-13,780 ft (2,900-4,200 m); July-August.	**Not expected**. Although there is an occurrence recorded approximately 8 mi SE of the Project site, suitable alpine boulder and rock field habitats are not present and the site is situated below the elevation range occupied by this species. Furthermore, this species was not observed during the July 2006 survey conducted within the Project site.
Epilobium howellii (subalpine fireweed)	--	--	G2/S2.3	1B.3	Meadows and seeps and mesic subalpine coniferous forest; wet meadows and mossy seeps; 6,560-8,860 ft (2,000-2,700 m); July-August.	**Not expected**. Although the nearest documented occurrence is approximately 2 mi SW of the Project site, the site does not support suitable wet meadow habitat. Furthermore, this species was not observed during the July 2006 survey conducted within the Project site.

Appendix A Special-status Plant Species Evaluated for Potential to Occur in the Project Site

Species[1]	Status[2]				Habitat/Blooming Period	Potential for Occurrence[3]
	FESA	CESA	CNDDB	CNPS/ CDFG		
Helodium blandowii (Blandow's bog-moss)	--	--	G5/S1.3	2.3	Meadows and seeps and damp soils in subalpine coniferous forest; 6,560-8,860 ft (2,000-2,700 m).	**Not expected**. Although the nearest documented occurrence is approximately 14 mi SE of the Project site, the site does not support suitable habitat for this species. Furthermore, this species was not observed during the July 2006 survey conducted within the Project site.
Hulsea brevifolia (short-leaved hulsea)	--	--	G3/S3.2	1B.2	Granitic or volcanic, gravelly or sandy soils in lower montane coniferous forest and upper montane coniferous forest; 4,920-10,500 ft (1,500-3,200 m); May-August.	**Not expected**. Although there are two occurrences recorded within 6 mi, the Projects site supports marginal upper montane coniferous forest habitat. Furthermore, this species was not observed during the July 2006 survey conducted within the Project site.
Hulsea vestita ssp. *inyoensis* (Inyo hulsea)	--	--	G5T2T3/ S1.2	2.2	Rocky soils in chenopod scrub, Great Basin scrub, and pinyon pine-juniper woodland, in volcanic ash on steep slopes; 5,400-9,840 ft (1,645-3,000 m); April-June.	**Not expected**. Although a small, isolated patch Great Basin scrub is present in the Project site, no volcanic ash or rocky soils are present on steep slopes and there are no occurrences recorded in the vicinity.
Ivesia kingii var. *kingii* (alkali ivesia)	--	--	G3T2Q/ S2.2	1B.2	Mesic, alkaline clay soils in Great Basin scrub, meadows and seeps, and playas; 3,940-6,990 ft (1,200-2,130 m); May-August.	**Not expected**. Although there are several occurrences recorded within 11 mi of the Project site, poor to marginally suitable Great Basin scrub habitat is present. Furthermore, this species was not observed during the July 2006 survey conducted within the Project site.

Appendix A Special-status Plant Species Evaluated for Potential to Occur in the Project Site

Species[1]	Status[2]				Habitat/Blooming Period	Potential for Occurrence[3]
	FESA	CESA	CNDDB	CNPS/ CDFG		
Kobresia bellardii (seep kobresia)	--	--	G5/S1.3	2.3	Alpine boulder and rock fields, meadows and seeps, and subalpine coniferous forest; 9,690-10,600 ft (2,955-3,230 m); August.	**Not expected**. Although there is an occurrence recorded approximately 5 mi SE of the Project site, the site is situated below the typical elevation range for this species and does not support suitable habitat.
Lupinus duranii (Mono Lake lupine)	--	--	G2/S2.2	1B.2	Volcanic pumice, gravelly soils in Great Basin scrub, subalpine coniferous forest, and upper montane coniferous forest; 6,560-9,840 ft (2,000-3,000 m); May-August.	**Not expected**. Although there is marginally suitable Great Basin scrub habitat in the Project site and the nearest occurrence of this species is located within approximately 4 mi, volcanic pumice soils are not present. In addition, this species was not observed during the July 2006 surveys conducted within the Project site.
Lupinus lepidus var. *culbertsonii* (Hockett Meadows lupine)	--	--	G3?T1/S 1.3	1B.3	Meadows and seeps and mesic rocky soils in upper montane coniferous forest; 8,000-9,840 ft (2,440-3,000 m); July-August.	**Not expected**. The Project site does not support suitable wet meadow habitat that this species typically inhabits. Furthermore, this species was not observed during the July 2006 survey conducted within the Project site.
Micromomolepis pusilla Dwarf monolepis					Great Basin scrub and alkaline sites in canopy openings; 4,920-7,875 ft (1500-2400 m); July-August.	**Not expected**. Although there is marginally suitable Great Basin scrub habitat in the Project site and the nearest occurrence of this species is within approximately 1 mi, this species was not observed during the July 2006 surveys conducted within the Project site.

Appendix A Special-status Plant Species Evaluated for Potential to Occur in the Project Site

Species[1]	Status[2]				Habitat/Blooming Period	Potential for Occurrence[3]
	FESA	CESA	CNDDB	CNPS/ CDFG		
Pedicularis crenulata (scalloped-leaved lousewort)	--	--	G4/S1.2	2.2	Mesic meadows and seep; 6,890-7,550 ft (2,100-2,300 m); June-July.	**Not expected**. The Project site does not support suitable wet meadow habitat that this species typically inhabits. Furthermore, this species was not observed during the July 2006 survey conducted within the Project site.
Phacelia inyoensis (Inyo phacelia)	--	--	G3/S2.3	1B.2	Alkaline soils in meadows and seeps; 3,000-10,500 ft (915-3,200 m); April-August.	**Not expected**. Although there are two occurrences recorded within 2 mi of the Project site, there is no suitable habitat consisting of meadows and/or seeps on alkaline soils. Furthermore, this species was not observed during the July 2006 survey conducted within the Project site.
Potamogeton filiformis (slender-leaved pondweed)	--	--	G5/S1S2	2.2	Assorted shallow freshwater marshes and swamps; 980-7,050 ft (300-2,150 m); May-July.	**Not expected**. Although there is an occurrence recorded in the vicinity of the Project site, there is no suitable wetland habitat. This species was not observed during the July 2006 survey conducted within the Project site.

Appendix A Special-status Plant Species Evaluated for Potential to Occur in the Project Site

Species[1]	Status[2]				Habitat/Blooming Period	Potential for Occurrence[3]
	FESA	CESA	CNDDB	CNPS/ CDFG		
Potamogeton robbinsii (Robbins's pondweed)	--	--	G5/SG2.3	2.3	Deep water, lakes, marshes and swamps; 5,200-10,830 ft (1,585-3,300 m); July-August.	**Not expected**. Although, there is an occurrence recorded approximately 5 mi of the Project site, the site does not support suitable open water or marsh habitat. This species was not observed during the July 2006 survey conducted within the Project site.
Salix brachycarpa ssp.*brachycarpa* (short-fruited willow)	--	--	G5T5/S1.3	2.3	Carbonate alpine dwarf scrub, meadows and seeps, and subalpine coniferous forest; 9,840-11,490 ft (3,000-3,500 m); June-July.	**Not expected**. Although there are occurrences recorded within 9 mi of the Project site, the site is situated below the typical elevation range of this species and no suitable alpine habitat is present. This species was not observed during the July 2006 survey conducted within the Project site.
Salix nivalis (snow willow)	--	--	G5/S1.3	2.3	Alpine dwarf scrub; 10,170-11,490 ft (3,100-3,500 m); July-August.	**Not expected**. The Project site is below the elevation range occupied by this species and it does not support suitable habitat for this species. This species was not observed during the July 2006 survey conducted within the Project site.
Scirpus pumilus (dwarf bulrush)	--	--	G5/S1.2	2.2	Riverbanks, carbonate soils in bogs and fens, marshes and swamps, and riparian scrub; 9,430-10,660 ft (2,875-3,250 m); August.	**Not expected**. Although there are occurrences recorded within 9 mi of the Project site, the site is below the elevation range occupied by this species and does not support suitable wetland or riparian habitat for this species.

Appendix A Special-status Plant Species Evaluated for Potential to Occur in the Project Site

Species[1]	Status[2]				Habitat/Blooming Period	Potential for Occurrence[3]
	FESA	CESA	CNDDB	CNPS/ CDFG		
Sedum pinetorum (Pine City sedum)	--	--	GUGH/SH	3	Rocky, open forest; 8,690 ft (2,650 m); July.	**Not expected**. Suitable habitat is not present and this species was not observed during the July 2006 survey conducted within the Project site.
Sphaeromeria potentilloides var.*nitrophila* (alkali tansy-sage)	--	--	G5T4/S2.2	2.2	Usually alkaline meadows and seeps and playas; 6,890-7,870 ft (2,100-2,400 m); June-July.	**Not expected**. Although there are two occurrences recorded within approximately 13 mi of the Project site, no suitable alkaline meadow or seep habitat is present. This species was not observed during the July 2006 survey conducted within the Project site.
Plant Communities						
Mono Pumice Flat	--	--	G1/S1.2	--		**Not expected;** community not observed on-site.
Water Birch Riparian Scrub	--	--	G?/SNR	--		**Not expected;** community not observed on-site.

Appendix A-2. Special-status Animal Species Evaluated for Potential to Occur in the Project Site

Animal Species	Status[1]						Habitat	Potential for Occurrence[3]
	FESA	CESA	CNDDB	CDFG	USFS	WBWG[2]		
Invertebrates								
Ambrysus funebris (Nevares Spring naucorid bug)	C	--	G1/S1	--	--	--	Endemic to the Travertine-Nevares Springs Complex within the boundary of Death Valley National Park. Prefers stream riffles that are swift enough to keep sand and silt from accumulating, but not so fast that coarse, gravelly substrates are removed. Water velocity and substrate size play a significant role in the presence or absence of the naucorid.	**Not expected**. The Project site is outside of the naucorid's known distribution and the site does not contain suitable aquatic habitat for this species.
Hygrotus fontinalis (Travertine band-thigh diving beetle)	--	--	G1/S1	--	--	--	Aquatic; occurs in the run-off pools from hot springs in limestone outcrops.	**Not expected.** Suitable aquatic habitat is not present in the Project site.
Pyrgulopsis owensensis (Owens Valley springsnail)	--	--	G1G2/S1S2	--	S	--	Inhabit springs and short sections of spring brook located below 2,286 m (7,500 ft) with good water quality, a sand or gravel substrate and aquatic vegetation where water velocities are moderate.	**Not expected**. There is no suitable aquatic habitat present in the Project site. The site is situated above the elevation range typically occupied by this species. Additionally, there are no occurrences recorded in the vicinity of the Project site.
Pyrgulopsis wongi (Wong's springsnail)	--	--	G1G2/S1S2	--	S	--	Inhabit springs and short sections of spring brook located below 2,286 m (7,500 ft) with good water quality, a sand or gravel substrate and aquatic vegetation where water	**Not expected**. There is no suitable habitat present in the Project site. The site is situated above the elevation range occupied by this species. Additionally, there are no occurrences recorded in the

Appendix A-2. Special-status Animal Species Evaluated for Potential to Occur in the Project Site

Animal Species	Status[1]						Habitat	Potential for Occurrence[3]
	FESA	CESA	CNDDB	CDFG	USFS	WBWG[2]		
							velocities are moderate.	vicinity of the Project site.
Fish								
Catostomus fumeiventris (Owens sucker)	--	--	G3/S3	CSC	--	--	Widely distributed throughout Owens Valley, including Mammoth and Hot creeks. Most abundant in sections with long runs and few riffles, and a substrate consisting mostly of fine material, with lesser amounts of gravel and rubble.	**Not expected**. The Project site does not support suitable aquatic habitat such as streams or rivers.
Gila bicolor snyderi (Owen's tui chub)	E	E	G4T1/S1	--	--	--	Found in three known locations in Owens River drainage, including Hot Creek headsprings and Little Hot Creek. Primary habitat requirements include high quality, cool water with adequate cover in the form of rocks, undercut banks, or aquatic vegetation, and a sufficient insect food base.	**Not expected**. The Project site does not support suitable aquatic habitat such as streams or rivers
Oncorhynchus clarkii henshawi (Lahontan cutthroat trout)	T	--	G4T3/S2	--	--	--	Inhabit lakes and streams and require spawning and nursery habitat characterized by cool water, pools in close proximity to cover and velocity breaks, well vegetated and stable	**Not expected**. The Project site does not support suitable aquatic habitat such as streams or rivers

Appendix A-2. Special-status Animal Species Evaluated for Potential to Occur in the Project Site

Animal Species	Status[1]						Habitat	Potential for Occurrence[3]
	FESA	CESA	CNDDB	CDFG	USFS	WBWG[2]		
							stream banks, and relatively silt free rocky substrate in riffle-run areas.	
Oncorhynchus clarkii seleniris (Paiute cutthroat trout)	T	--	G4T1T2/S1S2	CSC	--	--	Requires cool, well-oxygenated waters. Prefer stream pool habitat in low gradient meadows with undercut or overhanging banks and abundant riparian vegetation.	**Not expected**. The Project site does not support suitable aquatic habitat such as streams or rivers
Rhinichthys osculus ssp. *2*[4] (Owens speckled dace)	--	--	G5T1T2Q/S1S2	CSC	--	--	Habitat generalist, able to occupy habitats as diverse as thermal springs, headwater, streams, and large rivers.	**Not expected**. The Project site does not support suitable aquatic habitat such as streams , rivers, or springs.
Amphibians/Reptiles								
Bufo canorus (Yosemite toad)	C	--	G1G2/S1S2	CSC	S	--	Frequents wet mountain meadows and forest borders in elevations ranging from 6,400-11,318 ft (1,950-3,450 m) mostly above 9,000 ft (2,740 m). Obtains shelter in rodent burrows as well as in dense vegetation. Breeds in shallow edges of snow melt pools and ponds or along margins of lakes and slow-moving streams.	**Not expected**. Although the nearest occurrence is within approximately 5 miles of the Project site, the site does not contain wet meadow habitat or other suitable wetland or open water features.

Appendix A-2. Special-status Animal Species Evaluated for Potential to Occur in the Project Site

Animal Species	Status[1]						Habitat	Potential for Occurrence[3]
	FESA	CESA	CNDDB	CDFG	USFS	WBWG[2]		
Rana sierrae (Sierra Nevada yellow-legged frog)	E[6]	--	G1/S1	CSC	S	--	Sunny riverbanks, meadow streams, isolated pools, and lake borders within the Sierra Nevada in elevations ranging from 600-12,000 ft (1,800-3,600 m). Seems to prefer sloping banks with rocks or vegetation to water's edge. Sierran frogs are most abundant in high elevation lakes and slow-moving portion of streams. Wintering sites include areas near shore under ledges and in deep underwater crevices.	**Not expected**. Although the nearest occurrence is within approximately 4 mi of the Project site, the site does not contain riverbanks, meadow streams or other suitable emergent wetland or open water features.
Birds								
Accipiter cooperii (Coopers Hawk) nesting and foraging				CSC	--	--	Inhabits areas with dense tree stands or patchy woodlands. Usually nests in deciduous riparian areas or second-growth conifer stands near streams.	**Moderate Potential.** Although the Project site is disturbed and surrounded by development and mature Jeffrey pines may provide suitable nesting habitat. Coopers Hawk may also occasionally forage within the Project site.
Accipiter gentilis (Northern Goshawk) Nesting and foraging	--	--	G5/S3	CSC	S	--	Nest and forage in a variety of habitats including deciduous, coniferous, and mixed forests. Has a complexity of habitat needs in the	**Low Potential**. Although there are several occurrences recorded within approximately 4 mi of the Project site, typical nesting habitat consisting of mature coniferous and deciduous forest

Appendix A-2. Special-status Animal Species Evaluated for Potential to Occur in the Project Site

Animal Species	Status[1]						Habitat	Potential for Occurrence[3]
	FESA	CESA	CNDDB	CDFG	USFS	WBWG[2]		
							breeding season, which vary among forest types and regions. Typically nests in mature or old-growth forests, and generally selects larger tracts of forest over smaller tracts. Forages in both heavily forested and relatively open habitats.	is not present on the site. Goshawks may occasionally forage in the Project site.
Accipiter striatus (Sharp-shinned Hawk) nesting				CSC	--	--	Generally associated with woodland habitats. Typically nests in isolated areas away from human disturbance.	**Not expected.** Project site is disturbed, partially developed, and is entirely surrounded by development. The site does not support suitable nesting habitat consisting of isolated woodlands.
Amphispiza belli belli (Bell's Sage Sparrow) nesting				CSC	--	--	Nests in chaparral with dense stands of chamise. Nests beneath shrubs.	**Not expected.** Project site does not provide suitable nesting habitat for this species. Chamise-dominated chaparral habitat is not present in the Project site.

Appendix A-2. Special-status Animal Species Evaluated for Potential to Occur in the Project Site

Animal Species	Status[1]						Habitat	Potential for Occurrence[3]
	FESA	CESA	CNDDB	CDFG	USFS	WBWG[2]		
Aquila chrysaetos (Golden Eagle) nesting and foraging	--	--	G5/S3	CSC, FP	--	--	Breeds in open and semi-open habitats (e.g., tundra, shrublands, grasslands, woodland-brushlands, and coniferous forest). Also, in farmlands and riparian. Nests on rock ledge of cliffs, but also in large trees. Pair may have several alternate nests; may use the same nest in consecutive years or shift to alternate nest used in different years. Typically forages in open habitats (e.g., grassland or steppe-like).	**Not expected**. There are no known occurrences in the vicinity of the Project site and proximity to human-related activities would likely preclude golden eagles from nesting in the Project site. Furthermore, Golden Eagle is not expected to forage in the Project site, as suitable open grassland or steppe habitat is not present.
Asio otus (Long-eared Owl)				CSC	--	--	Inhabit open woodlands, forest edges, riparian strips along rivers, hedgerows, juniper thickets, woodlots, and wooded ravines and gullies. Breeding habitat must include thickly wooded areas for nesting and roosting with nearby open spaces for hunting.	**Not expected.** Typical nesting and foraging habitat consisting of thickly wooded areas adjacent to open areas are not present in the Project Site.
Buteo regalis (Ferruginous Hawk) nesting				CSC	--	--	Frequents open grasslands, sagebrush flats, desert scrub, low foothills surrounding valleys and fringes of pinyon-juniper	**Not expected.** Suitable open grassland, sagebrush flats, or pinyon-juniper habitats suitable for nesting and foraging are not present within the Project site.

Appendix A-2. Special-status Animal Species Evaluated for Potential to Occur in the Project Site

Animal Species	Status[1]						Habitat	Potential for Occurrence[3]
	FESA	CESA	CNDDB	CDFG	USFS	WBWG[2]		
							habitats.	
Buteo swainsoni (Swainson's hawk) nesting	--	T	G5/S2	--	S	--	Require large, open grasslands with abundant prey in association with suitable nest trees. Suitable foraging habitat include native grasslands or lightly grazed pastures, alfalfa and other hay crops, certain grain and row croplands, sparse shrublands, and small, open woodlands. Suitable nest sites may be found in mature riparian forest, lone trees, or groves of oaks, other trees in agricultural fields, and mature roadside trees.	**Not expected**. The Project site does not contain suitable foraging habitat consisting of open grassland. In the Great Basin province, nests are usually in junipers[7]. The Project Site does not support juniper woodland nor open grassland habitat; therefore, Swainson's Hawk is not expected to nest in the Project site vicinity.
Centrocercus urophasianus (greater sage-grouse) nesting and leks	--	--	G4/S3	CSC	S	--	Adopted to a mosaic of sagebrush habitats including relatively tall sagebrush, relatively low sagebrush, forb-rich mosaics of low and tall sagebrush, riparian meadows, steppe dominated by native grasses and forbs, scrub willow and sagebrush savannas with juniper (*Juniperus* spp.),	**Low potential**. Although there is marginally suitable Great Basin scrub habitat present in the Project Site, the available habitat is disturbed and fragmented. Although there are occurrences recorded in the vicinity of the Project site, no grouse or leks have been documented on the site. There are several leks documented within the vicinity of the Project site. "Lek 7" is within the closest proximity,

Appendix A-2. Special-status Animal Species Evaluated for Potential to Occur in the Project Site

Animal Species	Status[1]						Habitat	Potential for Occurrence[3]
	FESA	CESA	CNDDB	CDFG	USFS	WBWG[2]		
							ponderosa pine (*Pinus ponderosa*), or quaking aspen (*Populus tremuloides*). Leks placed on sites surrounded by potential nesting habitat. Nest habitat, usually dominated by big sagebrush (*Artemisia tridentata* ssp. *tridentate* and *A.* ssp. *wyomingensis*).	identified by the Bureau of Land Management (BLM) to be located 1.25 mi north of the Mammoth Yosemite Airport, just to the north of Hot Creek. This lek has been inactive in the recent past. There are six other known leks on BLM-administrated lands situated between 2.5 and 4.5 mi form the airport. Other leks are located greater than 7 mi from the Project site.
Chaetura vauxi (Vaux's Swift)				CSC	--	--	Forages high in the air over most terrain and habitats but prefers rivers/lakes. Requires large hollow trees for nesting.	**Not expected.** Preferred foraging and nesting habitat not available on the Project site.
Circus cyaneus (northern harrier) nesting	--	--	G5S3	CSC	--	--	Marshes, meadows, grasslands, and cultivated fields. Perches on ground or on stumps or posts. Nests on the ground, commonly near low shrubs, in tall weeds or reeds, sometimes in bog; or on top of low bush above water, or on knoll of dry ground, or on higher shrubby ground near water, or on dry marsh	**Low potential**. Although there is suitable nesting and foraging habitat present in the Project site and Northern Harriers have been observed in the site vicinity, this species is not expected to nest in the Project site due to the proximity of human-related activities.

Appendix A-2. Special-status Animal Species Evaluated for Potential to Occur in the Project Site

Animal Species	Status[1]						Habitat	Potential for Occurrence[3]
	FESA	CESA	CNDDB	CDFG	USFS	WBWG[2]		
							vegetation.	
Coccyzus americanus occidentalis (western yellow-billed cuckoo) nesting	C	E	G5T2/S1	--	S	--	Prefers open woodland with clearings and low, dense, scrubby vegetation; often associated with watercourses. Nest placed in willows (*Salix* sp.), but cottonwood (*Populus* sp.) used extensively for foraging.	**Not expected**. The Project site is outside of the known breeding distribution of the western Yellow-billed Cuckoo. This species is likely found only along the upper Sacramento Valley portion of the Sacramento River, the Feather River in Sutter County, the south fork of the Kern River in Kern County, and along the Santa Ana, Amargosa, and lower Colorado rivers.
Contopus cooperi (Olive-sided Flycatcher)	FWS:BCC				--	--	Most often found in montane conifer forests where tall trees overlook canyons, meadows, lakes or other open terrain	**Moderate potential.** Possible summer resident. Jeffrey pine forest provides marginally suitable habitat, based on its proximity to development and other human-related disturbances.
Cypseloides niger (Black Swift)				CSC	--	--	Breeds in small colonies on cliffs behind or adjacent to waterfalls in deep canyons and sea-bluffs above surf. Forages widely.	**Not expected.** Suitable nesting habitat for breeding colonies is not present on the Project site.
Dendroica petechia (Yellow Warbler)				CSC	--	--	Prefers areas of scattered trees, dense shrubbery, and any other moist, shady areas	**Low potential.** Typical dense shrub habitat is not abundant in Project site, but Great Basin sagebrush stand may provide marginally suitable habitat.

Appendix A-2. Special-status Animal Species Evaluated for Potential to Occur in the Project Site

Animal Species	Status[1]						Habitat	Potential for Occurrence[3]
	FESA	CESA	CNDDB	CDFG	USFS	WBWG[2]		
Empidonax traillii (willow flycatcher) nesting	--	E[8]	G5/S1S2	--	S	--	In general, prefers moist, shrubby areas, often with standing or running water; e.g., in California restricted to thickets of willows, whether along streams in broad valleys, in canyon bottoms, around mountain-side seepages, or at the margins of ponds and lakes.	**Not expected**. Although there is an occurrence recorded approximately 11 mi of the Project site, no suitable riparian habitat is present. This species is not expected to nest or forage in the Project site.
Eremophila alpestris actia (California Horned Lark)				CSC	--	--	The Horned Lark inhabits open ground with short grass or scattered bushes	**Not expected.** Typical open habitat not present in the Project site
Falco mexicanus (prairie falcon) nesting	--	--	G5/S3	CSC	--	--	Primarily open habitats, especially in mountainous areas, steppe, plains or prairies. Typically nests in potholes or well-sheltered ledges on rocky cliffs or steep earth embankments, 10 to more than 100 m above the base. May nest in man-made excavations on otherwise unsuitable cliffs. Vertical cliffs with rock structure overhanging the site are preferred.	**Low potential**. There is no suitable nesting habitat present in the Project site. However, marginally suitable foraging habitat may be present within the low-profile vegetation communities. There are no occurrences recorded in the vicinity of the Project site.
Haliaeetus leucocephalus	PD T	E	G4/S2	FP	--	--	In winter may be found throughout most of	**Low potential**. Although there are known occurrences of

Appendix A-2. Special-status Animal Species Evaluated for Potential to Occur in the Project Site

Animal Species	Status[1]						Habitat	Potential for Occurrence[3]
	FESA	CESA	CNDDB	CDFG	USFS	WBWG[2]		
(bald eagle) nesting and wintering							California at lakes, reservoirs, rivers, and some rangelands and coastal wetlands. Breeding habitats are mainly in mountain and foothill forest and woodlands near reservoirs, lakes, and rivers. Most breeding territories are in northern California, but the eagles also nest in scattered locations in the central and southern Sierra Nevada mountains and foothills, in several locations from the central coast range to inland southern California, and on Santa Catalina Island.	wintering bald eagles in the vicinity of the Project site, the site does not support suitable breeding habitat and foraging habitat is very limited. Wintering eagles are known to forage along Convict Creek, Crowley Lake, Hot Creek, Upper Owens River, Hot Creek Hatchery, Lake Mary, Twin Lakes, and the alkali ponds and flats east of the Mammoth Yosemite Airport.
Icteria virens (Yellow-breasted Chat) nesting				CSC	--	--	Requires dense riparian thickets of willows, vine tangles, and dense brush associated with streams, swampy ground and the borders of small ponds	**Not expected.** Typical dense riparian shrub habitat not present in the Project site.
Lanius ludovicianus (Loggerhead Shrike)				CSC	--	--	Prefers open habitats with scattered shrubs, trees, pots, utility lines from which to forage for large insects. Nest well concealed above ground in	**Not expected.** Typical open habitat with scattered shrubs and trees is not abundant in the Project site

Appendix A-2. Special-status Animal Species Evaluated for Potential to Occur in the Project Site

Animal Species	Status[1]						Habitat	Potential for Occurrence[3]
	FESA	CESA	CNDDB	CDFG	USFS	WBWG[2]		
							densely-foliaged shrub or tree.	
Melanerpes lewis (Lewis' Woodpecker)	FWS:BCC				--	--	Found in riparian areas, nests in cavities excavated by other woodpeckers.	**Moderate potential.** Although this species may occasionally forage within the Project site, suitable nesting habitat consisting of tree cavities is not present.
Otus flammeolus (Flammulated Owl)				CSC	--	--	Prefers mature stands of ponderosa pines and Jeffrey pines with Douglas fir understory.	**Not expected.** Typical nesting and foraging habitat not present.
Pandion haliaetus (Osprey) nesting				CSC	--	--	Nests in tree tops near ocean shores, bays, fresh-water lakes, and larger streams.	**Not expected.** Suitable open water foraging habitat and adjacent tree tops for nesting are not available within the Project site vicinity.
Picoides albolarvatus (White-headed Woodpecker) nesting				CSC	--	--	Strongly associated with pine forests of the Transition and lower Canadian life zones. Breed primarily between 4000 to 7500 feet in elevation.	**Moderate potential.** Although this species may occasionally forage within Jeffrey pine stands within the Project site, suitable nesting habitat consisting of large tree cavities are not present.

Appendix A-2. Special-status Animal Species Evaluated for Potential to Occur in the Project Site

Animal Species	Status[1]						Habitat	Potential for Occurrence[3]
	FESA	CESA	CNDDB	CDFG	USFS	WBWG[2]		
Riparia riparia (bank swallow) nesting	--	T	G5/S2S3	--	--	--	Nests in erodible soils on vertical or near-vertical banks and bluffs in lowland areas dominated by rivers, streams, lakes, and oceans. Foraging habitat surrounding nesting colony include wetlands, open water, grasslands, riparian woodlands, agricultural areas, shrublands, and occasionally upland woodlands.	**Not expected**. There is no suitable nesting habitat present in the Project site. In addition, the Jeffrey pine and Great Basin sagebrush vegetation communities do not provide suitable foraging habitat for this species.
Spizella breweri (Brewer's Sparrow)				CSC	--	--	Prefers extensive, unbroken stands of sagebrush and bitterbrush.	**Low potential.** Typical extensive and intact sagebrush habitat is not present in the Project site. The fragmented and disturbed sagebrush scrub in the Project site provides limited suitable nesting habitat for this species.
Strix nebulosa (great gray owl) nesting	E	--	G5/S1	--	S	--	Dense deciduous or coniferous forest adjacent to montane meadows and other openings. Favors abandoned nests of other birds of prey, but will nest on the tops of broken trees or on artificial platforms.	**Low potential**. Although marginally suitable nesting habitat consisting of coniferous forest present in the Project site, there is no suitable foraging habitat consisting of wet meadow in the vicinity of the Project site.
Strix occidentalis occidentalis	--	--	G3T3/S3	CSC	S	--	At low elevations (sea level to 1,000 m (3,280 ft),	**Not expected**. There is no suitable hardwood forest habitat

Appendix A-2. Special-status Animal Species Evaluated for Potential to Occur in the Project Site

Animal Species	Status[1]						Habitat	Potential for Occurrence[3]
	FESA	CESA	CNDDB	CDFG	USFS	WBWG[2]		
(California spotted owl)							occupies habitats dominated by hardwoods, primarily oaks. At high elevations, owl habitats are increasingly dominated by conifers until, at the highest elevations, hardwoods are nearly or completely lacking. Nesting and roosting habitat are generally complex in structure (many trees in different diameter classes) with high canopy closure. A critical element of this complex forest structure is the presence of large trees (>90 cm diameter at breast height).	present in the Project site. Furthermore, the Project site is situated above the typical elevation range occupied by spotted owls.
Mammals								
Antrozous pallidus (pallid bat)			G5/S3	CSC	S	HP[41]	Found in a variety of low elevation habitats throughout California except for the high Sierra Nevada from Shasta to	**Not expected.** Project site is located above typical elevation occupied by this species and is outside of this species' known distribution. Furthermore, the pallid bat is not expected to roost

Appendix A-2. Special-status Animal Species Evaluated for Potential to Occur in the Project Site

Animal Species	Status[1]						Habitat	Potential for Occurrence[3]
	FESA	CESA	CNDDB	CDFG	USFS	WBWG[2]		
							Kern Counties. Selects a variety of day roosts including rock outcrops, mines, caves, hollow trees, buildings, and bridges. Night roosts are usually found under bridges, but also in caves, mines, and buildings. Highly sensitive to roost disturbance. Mature trees and unoccupied buildings may provide roost habitat for this species	on the Project site due to highly disturbed site conditions and proximity to development.
Aplodontia rufa californica (Sierra Nevada mountain beaver)	--	--	G5T3T4/ S3?	CSC	--	--	Dense growth of small deciduous trees and shrubs and soft soil for burrowing along streams or wet meadows.	**Not expected.** Although this species is known to inhabit riparian habitat along nearby Mammoth Creek, the Project site does not contain suitable dense riparian or meadow habitat.
Brachylagus idahoensis (Pygmy rabbit)			G4/S3	CSC	--	--	Requires tall, dense, large-shrub stages of sagebrush, rabbitbrush, bitterbrush and pinyon-juniper woodlands. Known from Mono, Modoc, and Lassen Counties.	**Not expected.** The Project site outside of known range and the patch of sagebrush on the site is too small, disturbed, and isolated to support this species.
Corynorhinus townsendii (Townsend's western big-eared bat)	--	--	G4/S2S3	CSC	S	HP	Reported in a wide variety of habitat types ranging from sea level to 3,300 m (9,840 ft). Habitat	**Not expected**. Although the bat's known distribution includes the Project site, there are no occurrences recorded in

Appendix A-2. Special-status Animal Species Evaluated for Potential to Occur in the Project Site

Animal Species	Status[1]						Habitat	Potential for Occurrence[3]
	FESA	CESA	CNDDB	CDFG	USFS	WBWG[2]		
							associations include: coniferous forests, mixed meso-phytic forests, deserts, native prairies, riparian communities, active agricultural areas, and coastal habitat types. Maternity and hibernation colonies typically are in caves and mine tunnels. Uses caves and buildings for night roost.	the vicinity of the site. Additionally, the Project site lacks typical roosting habitat, which the bat's distribution is strongly correlated to.
Euderma maculatum (spotted bat)			G4/S2S3	CSC	--	HP	Prefers ponderosa pine forest or marshland. Roosts in small cracks found in cliffs and stony outcrops.	**Not expected.** Project site lacks suitable roosting habitat consisting of rock outcrops or cliff crevices.
Eumops perotis californicus (western mastiff bat)			GST4/S3?	CSC	--	HP	Found in a wide variety of habitat. Distribution appears to be tied to large rock structures which provide suitable roosting sites, including cliff crevices and cracks in boulders.	**Not expected.** Project site lacks suitable roosting habitat consisting of rock outcrops or cliff crevices.
Gulo gulo (California wolverine)	--	--	G4/S2	FP	S	--	Alpine and arctic tundra, boreal and mountain forest (primarily coniferous). Usually in areas with snow on the ground in winter. Riparian areas may be important winter habitat.	**Low potential**. Although wolverine could disperse through the Project site during winter months, the site is surrounded by development and does not support the typical habitat used by the species.

Appendix A-2. Special-status Animal Species Evaluated for Potential to Occur in the Project Site

Animal Species	Status[1]						Habitat	Potential for Occurrence[3]
	FESA	CESA	CNDDB	CDFG	USFS	WBWG[2]		
							May disperse through atypical habitat. When inactive, occupies den in cave, rock crevice, under fallen tree, in thicket, or similar site.	There is a record of tracks observed approximately 8 mi SE of the Project site.
Lasionycteris noctivagans (silver-haired bat)	--	--	G5/S3S4	--	--	MP	Primarily a coastal & montane forest dweller feeding over streams, ponds and open brushy areas. Roosts in hollow trees, beneath exfoliating bark, abandoned woodpecker holes & rarely under rocks. Needs drinking water.	**Not expected**. Project site does not contain suitable foraging or roosting habitat for this species.
Lepus americanus tahoensis (Sierra Nevada snowshoe hare)			G5T3?/ S3?	CSC	--	--	Occurs in boreal zones of riparian communities. They typically occupy altitudes between 5000 and 8000 feet.	**Not expected.** Study Area is outside of known range.

Appendix A-2. Special-status Animal Species Evaluated for Potential to Occur in the Project Site

Animal Species	Status[1]						Habitat	Potential for Occurrence[3]
	FESA	CESA	CNDDB	CDFG	USFS	WBWG[2]		
Lupus townsendii townsendii (western white-tailed jackrabbit)	--	--	G5T3/S3?	CSC	--	--	Sagebrush, subalpine conifer, juniper, alpine dwarf-scrub, and perennial grassland. Also, use low sagebrush, wet meadow, and early successional stages of various coniferous communities. Within these communities prefers open areas with scattered scrubs and exposed flat-topped hills with stands of trees, brush, and herbaceous understory. Rests by day usually in shallow depression at base of bush or beside or in a cavity in the snow.	**Low potential.** Although two occurrences have been recorded within approximately 5 mi of the Project site, a limited area of marginally suitable sagebrush habitat present. The developed and fragmented nature of on-site habitats would likely preclude the presence of this species.
Martes americana sierrae (Sierra marten)	--	--	G5T3T4/ S3S4	--	S	--	Mature, dense conifer forest or mixed conifer-hardwood forests with woody debris on the forest floor.	**Low potential**. Although there are several occurrences recorded within approximately 1 mi of the Project site, there is limited suitable habitat present and the site is surrounded by development. The Jeffrey pine forest on the Project site is disturbed, appears to have been logged in the past 50 years, and provides limited to no woody debris in the understory.

Appendix A-2. Special-status Animal Species Evaluated for Potential to Occur in the Project Site

Animal Species	Status[1]						Habitat	Potential for Occurrence[3]
	FESA	CESA	CNDDB	CDFG	USFS	WBWG[2]		
Martes pennanti (pacifica) DPS (Pacific fisher)	C[10]	--	G5T3T4Q /S2S3	CSC	S	--	Use large areas of primarily coniferous forests with fairly dense canopies and large trees, snags, and downed logs.	**Low potential**. Although an occurrence was recorded within 3 mi of the Project site, there is limited suitable habitat present. Jeffrey pine forest within the Project site is fragmented, surrounded by development, and has a sparse understory comprised of a few scattered shrubs.
Myotis ciliolabrum (Western small-footed myotis)	--	--	G5/S2S3		--	MP	Commonly found in arid uplands of California. Feeds on a variety of small flying insects. Seeks cover in caves, buildings, mines, crevices, and occasionally under bridges.	**Not expected.** Project site lacks suitable roost habitat; disturbed site conditions would preclude the occurrence of this species.
Myotis evotis (long-eared myotis)			G5/S4?		--	MP	Primarily a forest associated species. Day roosts in hollow trees, under exfoliating bark, rock outcrop crevices and buildings. Other roosts include caves, mines and under bridges.	**Moderate Potential.** Study Area contains marginally suitable day roosts.
Myotis thysanodes (fringed myotis)			G4G5/S4		--	HP	Associated with a wide variety of habitats including mixed coniferous-deciduous forest and redwood/sequoia groves.	**Moderate Potential.** Study Area contains marginally suitable day roosts.

Appendix A-2. Special-status Animal Species Evaluated for Potential to Occur in the Project Site

Animal Species	Status[1]						Habitat	Potential for Occurrence[3]
	FESA	CESA	CNDDB	CDFG	USFS	WBWG[2]		
							Buildings, mines and large snags are important day and night roosts.	
Myotis volans (long-legged myotis)	--	--	G5/S4?		--	HP	Generally associated with woodlands and forested habitats. Large hollow trees, rock crevices and buildings are important day roosts. Other roosts include caves, mines and buildings.	**Moderate Potential.** Study Area contains marginally suitable day roosts.
Myotis yumanensis (Yuma myotis)	--	--	G5/S4?		--	MP	Known for its ability to survive in urbanized environments. Also found in heavily forested settings. Day roosts in buildings, trees, mines, caves, bridges and rock crevices. Night roosts associated with man-made structures.	**Moderate Potential.** Study Area contains marginally suitable day roosts and species is not as sensitive to disturbance as other bat species.
Ovis canadensis californiana (California bighorn sheep)	E	E	G4T1/S1	FP	S	--	Use habitats ranging from the highest elevations along the crest of the Sierra Nevada (13,120+ft (4,000+m) to winter ranges at the eastern base of the range as low as 1,450 m (4,760 ft). These habitats range from Great Basin sagebrush scrub to alpine. Within this range,	**Not expected**. Although populations of bighorn sheep occur in the vicinity of the Project site, the primary elements of the species preferred habitats are not present.

Appendix A-2. Special-status Animal Species Evaluated for Potential to Occur in the Project Site

Animal Species	Status[1]						Habitat	Potential for Occurrence[3]
	FESA	CESA	CNDDB	CDFG	USFS	WBWG[2]		
							primary elements of preferred habitats are visual openness and close proximity to steep rocky escape terrain.	
Sorex lyelli (Mount Lyell shrew)	--	--	G2G3/S2S3	CSC	--	--	Primarily found in wetland communities, near streams, in grassy areas, under willows, and in sagebrush steppe communities in elevations ranging from 6,900-10,350 ft (2,100-3,155 m).	**Not expected**. Although there are two occurrences recorded within 19 mi the Project site, suitable wetland or sagebrush steppe habitat is not present.
Taxidea taxus (American badger)	--	--	G5S4	CSC	--	--	Prefers open areas and may also frequent brushlands with little groundcover. When inactive, occupies underground burrow.	**Low potential**. Sagebrush scrub habitat on friable soils may provide suitable burrowing habitat for badgers. This species is known to occur in the vicinity of the Project site.

Appendix A-2. Special-status Animal Species Evaluated for Potential to Occur in the Project Site

Animal Species	Status[1]						Habitat	Potential for Occurrence[3]
	FESA	CESA	CNDDB	CDFG	USFS	WBWG[2]		
Vulpes vulpes necator (Sierra Nevada red fox)	--	T	G5T3/S1	--	S	--	Various habitats in alpine and subalpine zones; preferred habitat apparently red fir and lodgepole pine forests and alpine fell-fields; may hunt in forest openings, meadows, and barren rocky areas. Dens are likely to be in rock slides. Occurs above 4,000 ft (1,220 m), usually above 7,000 ft (2,130 m).	**Low potential**. Red fox could occasionally forage and disperse through the Project site. Although there is an occurrence recorded approximately 6 mi north of the Project site, the site is entirely surrounded by development. Red fox tend to inhabit remote areas where chance encounters with humans are uncommon.

[1] *Status Codes:*

ESA: Endangered Species Act of 1972, as amended

E Federally listed as Endangered
T Federally listed as Threatened
PD Federally proposed for delisting
C Federal candidate species (former Category 1 candidates)
-- No designation.

CESA: California Endangered Species Act

R State listed as Rare
E State listed as Endangered
T State listed as Threatened
-- No designation

CNDDB: California Natural Diversity Database

G,T,S-rank CNDDB element ranking. The global rank (G-rank) is a reflection of the overall condition of an element throughout its global range, with G1 being the most rare and G5 the least rare. Subspecies receive a T-rank attached to the G-rank. The state rank (S-rank) is a reflection of the overall condition of an element throughout California, sometimes with a threat designation attached, with S1being the most rare and S5 the least rare.

California Native Plant Society (CNPS):

1B Plants listed as rare, threatened, or endangered in California and elsewhere
*2 Plant**s rare, threatened, or endangered in California, but more common elsewhere***
***3* Plants** *about which more information is needed*
-- No designation

Appendix A-2. Special-status Animal Species Evaluated for Potential to Occur in the Project Site

Animal Species	Status[1]						Habitat	Potential for Occurrence[3]
	FESA	CESA	CNDDB	CDFG	USFS	WBWG[2]		

Recently, CNPS added a decimal threat rank to the List rank to parallel that used by the CNDDB. This extension replaces the E (Endangerment) value from the R-E-D Code. CNPS ranks therefore read like this: 1B.1, 1B.2, etc. New threat code extensions and their meanings are as follows:
.1 – Seriously endangered in California (over 80% of occurrences threatened / high degree of immediacy of threat)
.2 – Fairly endangered in California (20-80% occurrences threatened)
.3 – Not very endangered in California (<20% of occurrences threatened or no current threats known)
CDFG: California Department of Fish and Game
CSC species of special concern
FP fully protected
-- No designation
USFS: USDA Forest Service, Pacific Southwest Region
S Sensitive Species
-- No designation
WBWG: Western Bat Working Group
HP High Priority for Conservation
MP Medium Priority for Conservation

[2] *Conservation designations from Western Bat Working Group are intended to provide states, provinces, federal land management agencies, and interested organizations and individuals a better understanding of the overall status of a given bat species throughout its western North American range. Subsequently, the importance of a single region or multiple regions to the viability and conservation of each species becomes more apparent.*
[3] *The potential for occurrence is based on occurrences recorded in the CNDDB, knowledge of species requirements, and September 2006 field reconnaissance.*
[4] *Current taxonomy includes the Benton Valley speckled dance (formerly ssp. 4) with the Owens speckled dace.*

Appendix B

Plant and Wildlife Species Observed within the Project Site on July 26, 2006

Appendix B Plant and Wildlife Species Observed within the Project Site on July 26, 2006

SCIENTIFIC NAME	COMMON NAME
Mammals	
Spermophilus lateralis	golden-mantled ground squirrel
Sylvilagus nuttallii	Nuttall's cottontail
Tamias sp.	chipmunk
Tamiasciurus douglasii	Douglas's squirrel
Birds	
Sphyrapicus ruber	Red-breasted Sapsucker
Colaptes auratus	Northern Flicker
Contopus sordidulus	Western Wood Peewee
Cyanocitta stelleri	Steller's Jay
Nucifraga columbiana	Clark's Nutcracker
Corvus brachyrhynchos	American Crow
Corvus corax	Common Raven
Poecile gambeli	Mountain Chickadee
Sitta canadensis	Red-breasted Nuthatch
Sitta pygmaea	Pygmy Nuthatch
Junco hyemalis	Dark-eyed Junco
Turdus migratorius	American Robin
Plants	
Abies concolor	white fir
Abies magnifica	red fir
Arabis platysperma	broad-seeded rock cress
Arctostaphylos patula	green leaf manzanita

Appendix B Plant and Wildlife Species Observed within the Project Site on July 26, 2006

SCIENTIFIC NAME	COMMON NAME
Aster ascendens	long-leaved aster
Camomila suaveolens	pineapple weed
Ceanothus velutinus	tobacco bush
Chrysothamnus viscidiflorus	rabbit-brush
Descurania pinnata	western tansy mustard
Elymus elymoides	squirrel tail grass
Eriogonum nudum	slender buckwheat
Gayophytum diffusum var. *parviflorum*	diffuse gayophytum
Lepidium nitidum	common peppergrass
Leymus triticoides	rye grass
Linum perenne	western blue flax
Melilotus alba	white sweetclover
Minuartia douglasii	Douglas' sandwort
Pedicularis canadensis	wood betony
Penstemon eatonii	firecracker penstemon
Pinus jeffreyi	Jeffrey pine
Poa annua	bluegrass
Prunus emarginata	bitter cherry
Purshia tridentata	antelope bitterbrush
Ribes cereum	wax currant
Ribes nevadense	Sierra currant
Rumex paucifolius	alpine sheep sorrel
Salsola tragus	Russian thistle
Spenosciadum capitatum	Ranger's buttons
Symphoricarpos albus	common snowberry

Appendix B Plant and Wildlife Species Observed within the Project Site on July 26, 2006

SCIENTIFIC NAME	COMMON NAME
Tragopogon dubius	yellow salsify
Veratrum californicum	corn lily
Verbascum blattaria	Moth mullein

Appendix C

Representative Site Photographs

Photo 1: View of Site 1 situated at the northwest corner of the Main Street-Lake Mary and Minaret Boulevard intersection.

.

Photo 2: View of barren area in upper northeast corner of Site 2.

Photo 3: Patch of Great Basin sagebrush growing in association with red fir and rabbit brush, situated in eastern portion of Site 2.

Photo 4: Jeffrey pine forest mapped within southwest corner of Site 2.

Photo 5: View of existing development on western half of Site 3 from southeast corner of Main Street-Lake Mary Road and Minaret Boulevard intersection.

Photo 6: Jeffrey pine forest mapped in eastern portion of Site 3 adjacent to Sierra Star Golf Course.

APPENDIX E

CULTURAL RESOURCES

Cultural Resources Survey and Evaluation of Historic Built Resources for the Mammoth Crossing Project, Mammoth Lakes, Mono County, California

Prepared for

Town of Mammoth Lakes

Prepared by

SWCA Environmental Consultants

February 2008

CULTURAL RESOURCES SURVEY AND EVALUATION OF BUILT ENVIRONMENT RESOURCES FOR THE MAMMOTH CROSSING PROJECT, MAMMOTH LAKES, MONO COUNTY, CALIFORNIA

Prepared for

Christopher A. Joseph Associates
179 H Street
Petaluma, CA 94952

Prepared by

Robert S. Ramirez, M.A., RPA
and
Francesca Smith, M.S.

SWCA Environmental Consultants
625 Fair Oaks Avenue, Suite 190
South Pasadena, California 91030
(626) 240-0587
www.swca.com

USGS 7.5-Minute Quadrangle
Old Mammoth, California

SWCA Project No. 13539-191

SWCA Cultural Resources Report Database No. 2008-59

February 2008

Key Words: California, Mono County, USGS Old Mammoth, Town of Mammoth Lakes, cultural resources survey, built environment resources, St. Joseph's Church, Sartori Cabin/Mammoth Cable Television Building, Ullr Lodge.

MANAGEMENT SUMMARY/ABSTRACT

Purpose and Scope: Christopher A. Joseph Associates (CAJA) retained SWCA Environmental Consultants (SWCA) on behalf of the Town of Mammoth Lakes to conduct an intensive cultural resources survey of a 9.3-acre area as part of the California Environmental Quality Act (CEQA) review process for the proposed Mammoth Crossing project. The project proposes to intensely develop a "Town Visitor Core area and primary hub" incorporating commercial and residential uses with underground parking (Town of Mammoth Lakes 2007). The proposed project is located within the limits of the Town of Mammoth Lakes, Mono County, California. SWCA's services entailed performing a records and literature search, initial Native American consultation, and an intensive pedestrian survey of the proposed project for cultural resources. SWCA identified historic period built environment resources within the project area. As a result, the scope was expanded to include formal evaluations of California Register of Historical Resources eligibility for those resources. This report documents the results of the study.

Dates of Investigation: The Native American consultation and cultural resources records search for the project were initiated on November 5, 2007. The field survey was conducted on November 13, 2007. The historic built environment evaluation and archival research was conducted during January 2008. This report was completed in February 2008.

Findings of the Investigation: The records and literature search indicated that seven previously recorded cultural resources are located within a 0.5-mile radius of the project area, though each of these resources is located outside the proposed project area. Twenty-three cultural resource studies were previously conducted within a 0.5-mile radius of the project area, four of which overlap with the limits of the project area. Three historic period built environment resources were identified in the project area and formally evaluated for California Register of Historical Resources eligibility; each was recommended not eligible for listing on the California Register. No significant cultural resources were identified during the field survey.

Investigation Constraints: The archaeological survey of the project area was constrained by historic period and/or modern disturbance associated with brush removal. Ground visibility was generally good throughout the project area. No significant constraints were encountered in performing the built environment intensive survey.

Recommendations Summary: SWCA recommends no additional cultural resources tasks for this project at this time. However, in the event that cultural resources are discovered during construction grading, trenching, and/or excavation, project personnel should halt grading activities in the immediate area and notify a qualified archaeologist to evaluate the resource.

The discovery of human remains is always a possibility, with specific guidelines stipulated in the State of California Health and Safety Code Section 7050.5. This code section states that no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to Public Resources Code Section 5097.98. The County Coroner must be notified of the find immediately. If the human remains are determined to be prehistoric, the Coroner will notify the NAHC, which will determine and notify a Most Likely Descendent (MLD). The MLD shall complete the inspection of the site within 48 hours of notification and may recommend scientific removal and nondestructive analysis of human remains, and items associated with Native American burials.

Disposition of Data: This report will be filed with the Eastern Information Center located at the University of California, Riverside, at the Town of Mammoth Lakes, and SWCA. All field notes and records related to the proposed project are on file at the Pasadena Office of SWCA.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF PHOTOGRAPHS

APPENDICES

UNDERTAKING INFORMATION/INTRODUCTION

Contracting Data: Christopher A. Joseph Associates (CAJA) retained SWCA Environmental Consultants (SWCA) on behalf of the he Town of Mammoth Lakes to conduct an intensive cultural resources survey of a 9.3 acre area for the proposed Mammoth Crossing project. The project applicant proposes to develop a "Town Visitor Core area and primary hub" including mixed commercial and residential uses with underground parking (Town of Mammoth Lakes 2007). The objective of this report is to analyze whether historical resources exist within the proposed project area, and if so, whether those resources would be affected by the proposed project as defined in CEQA.

Purpose: This study was completed under the provisions of the California Environmental Quality Act (CEQA). *California Public Resources Code* (*PRC*) §5024.1, §15064.5 of the Guidelines, and §21083.2 and 21084.1 of the Statutes of *CEQA* also were used as guidelines for preparation of the cultural resources study (Governor's Office of Planning and Research 1998). *PRC* §5024.1 requires evaluation of properties that are expected to be affected by a proposed project to determine their eligibility for listing in the California Register of Historical Resources (CRHR or California Register).

Under CEQA, the lead agency must analyze proposed projects for the potential to cause significant effects on "historical resources." Historical resources are defined in *PRC* §21084.1 as:

> a resource listed in, or determined eligible for listing in, the California Register of Historical Resources. Historical resources included in a local register of historical resources..., or deemed significant pursuant to criteria set forth in subdivision (g) of Section 5024.1, [is] … presumed to be historically or culturally significant for purposes of this section, unless the preponderance of the evidence demonstrates that the resource is not historically or culturally significant.

Historical resources include archaeological resources and §21083.2 applies to other "unique" archaeological resources as well. CEQA equates a "substantial adverse change" in the significance of an historical resource with a significant effect on the environment (PRC §21084.1). Thresholds of substantial adverse change are established in PRC §5020.1 as: demolition, destruction, relocation, or "alteration activities that would impair the significance of the historic resource." Material impairment occurs when a project results in demolition, or materially alters in an adverse manner, the physical characteristics that convey a property's historic significance, or is the reason for that property's inclusion in an official register of historic resources (PRC §15064.5(b)(2.)). If a proposed project could be expected to cause substantial adverse change to an historical resource, environmental clearance for the project would require the evaluation of alternatives and/or implementation of mitigation measures to reduce or avoid impacts. If a project is expected to result in an effect on historical resources, CEQA Guidelines require analysis of a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain basic objectives of the proposed project and avoid or substantially lessen significant effects on the historical resource.

According to §15064.5(a)(3)(A–D) in the revised CEQA guidelines (Governor's Office of Planning and Research 1998), in order for a property to be considered eligible for listing in the California Register it must be found by the State Historical Resources Commission to be *significant* under at least one of the following four criteria. If the resource:

1) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
2) Is associated with the lives of persons important in our past;

3) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual or possesses high artistic values;
4) Has yielded, or may be likely to yield, information important in prehistory or history.

The format used in this report follows the "Archaeological Resource Management Reports: Recommended Contents and Format" (California Office of Historic Preservation 1990).

Undertaking: The proposed project entails the demolition of buildings, structures and objects on a 9.3-acre site for the construction of the Mammoth Crossing project.

Project Limits: The proposed project is located in the Town of Mammoth Lakes, Mono County, California. It is located on the U.S. Geological Survey (USGS) 7.5-Minute *Old Mammoth, California* Quadrangle within Township 3 South, Range 27 East, Section 34 (see Figure 1). The project would involve the development of three assemblages of parcels on the northwest, southwest, and southeast corners at the intersection of Main Street, Lake Mary and Minaret roads.

Personnel: SWCA archaeologist Robert S. Ramirez, M.A., RPA, conducted the field survey of the project area, assisted in project management, and is the primary author of this report. SWCA senior architectural historian Francesca Smith, M.S., prepared and authored the built environment evaluation. Edward J. Knell, Ph.D., RPA, served as cultural resources principal investigator, and SWCA cultural resources manager Kevin Hunt managed the project, assisted with the Native American consultation, and edited this report. SWCA GIS Specialist David Cao created the maps and figures used in the report, Russ Gatlin served as the technical editor, and administrator Nishon Tuff helped produce the report.

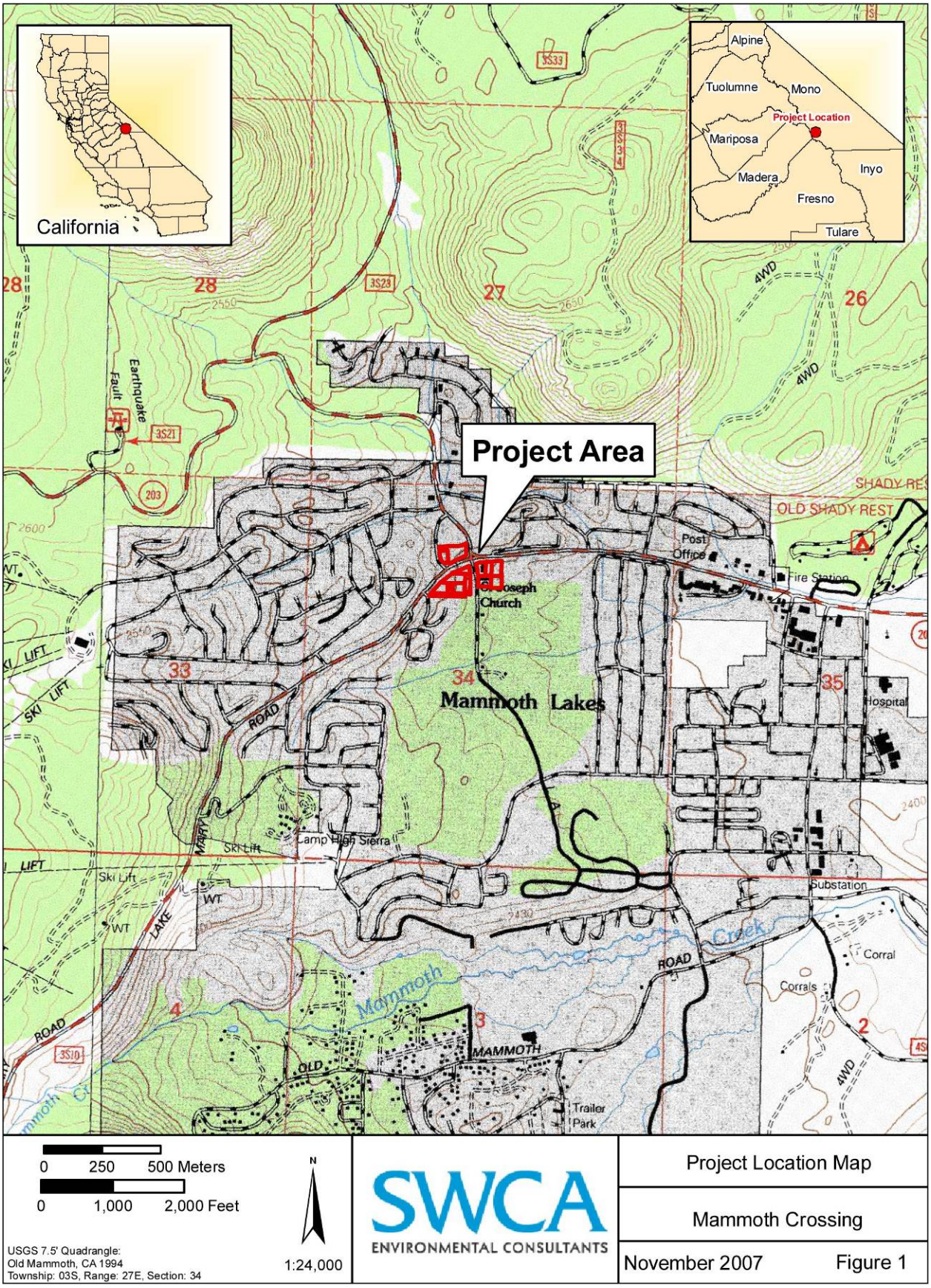


Figure 1. Project Location Map

ENVIRONMENTAL SETTING

The project area is situated at the intersection of Lake Mary Road and Minaret Road within the town of Mammoth Lakes, Mono County, California. There are streams generally flowing west-to-east, including Mammoth Creek, present within the town and surrounding valley. Mammoth Lakes is located on the southwestern edge of the Long Valley Caldera at the base of the Sierra Nevada Mountains, within the Sierra Nevada Range geomorphic province. The Sierra Nevada range abruptly rises to the west of town with the Glass and White Mountains visible to the east. Other major local landforms include Mammoth Mountain, Red Mountain, the Lakes Basin, Crystal Crag, and the Sierran crest. Sediment in the area is derived from Pleistocene glacial deposits, alluvium, and Holocene volcanic debris. Elevations range from approximately 2,410 to 2,460 meters (7,900 to 8,070 feet) above mean sea level. Precipitation varies between 15 and 20 inches annually, with most of the precipitation coming as snow.

The natural vegetation of the area is a Jeffery Pine Fir Forest community which includes Jeffrey Pine (*Pinus Jeffreyi*), lodgepole pine (*Pinus murrayana*), red fir (*Abies magnifica*), and white fir (*Abies concolor*). Common understory plants include montane chaparral species like Great Basin sagebrush (*Artemesia tridentata*) and whitethorn ceanothus (*ceanothus cordulatus*) (Holland 1986).

Fauna known to inhabit the area include mule deer (*Odocoileus hemionus)*, black bear *(Ursus americanus)*, mountain lion (*Felis Concolor)*, coyote *(Canis laterns)*, red fox (*Vulpes fulva)*, pine martin *(Martes Americana)*, and porcupine (*Erethizon dorsatum)*. A wide variety of birds also inhabit the area.

CULTURAL SETTING

The archaeological record of central California is traditionally divided into temporal units based largely on changes in artifact types, styles, and frequencies of occurrence. This record reflects an increasingly complex economic and technological adaptation in the way native cultures subsisted within the context of California's notably diverse environments. Along the Pacific Coast, native cultures developed maritime economies augmented by terrestrial plants and animals, while further inland they adapted to a series of altitude-sensitive biotic zones, including the sage scrub, chaparral, riparian, oak woodland, and pine forest communities. Settlement patterns, population movement, trade, and other modes of social culture provided behavioral matrices for the use of material culture to obtain and process natural resources.

PREHISTORIC OVERVIEW

Archaeological researchers in east-central California generally worked in isolation and gave localized names to the various archaeological periods they studied. The result was a plethora of names for each segment of the archaeological sequence, even though the same broad characteristics could be found over a large region.

Bettinger and Taylor (1974; also see Bettinger 1982:89–92) provided a generally accepted regional chronology for the area based mainly on time-sensitive projectile points. More recent studies by Gilreath and Hildebrandt (1997) correlated the Bettinger and Taylor cultural sequence with obsidian hydration data from numerous sites in the area. Based on these data, the five prehistoric periods proposed for the area include:

- Mojave Complex (pre-3500 B.C.; pre-5500 years before present [B.P.])
- Little Lake Period (3500–1500 B.C.; 5500–3500 B.P.)
- Newberry Period (1500 B.C.–A.D. 600; 3500–1275 B.P.), which is subdivided into:

  - Early Newberry Period (1500–800 B.C.; 3500–2800 B.P.)
  - Middle Newberry Period (800–300 B.C.; 2800–2300 B.P.)
  - Late Newberry Period (300 B.C.–A.D. 600; 2300–1275 B.P.)
- Haiwee Period (A.D. 600–1300; 1275–650 B.P.)
- Marana Period (A.D. 1300 to historic contact; 650 B.P. to historic contact)

The Mojave Complex, the earliest known human occupation in the region, is characterized by a variety of projectile points including Mojave, Silver Lake, and Great Basin Traverse. Known archaeological sites dating to the Mojave Complex are limited in the region, with a few sites documented in Long Valley, Mono Lake and Owens Lake, and isolated points found in surface contexts.

The Little Lake Period that follows is characterized by Little Lake and Pinto series projectile points, as well as Humboldt Concave-base bifaces. Archaeological sites attributed to the Little Lake Period are generally sparse, with temporary occupations scattered throughout the region and base camps frequently located near riparian areas. The available data suggest that human activity in the region during the Mojave Complex and Little Lake Periods was probably sporadic.

The Newberry Period, as characterized by Elko series projectile points, witnessed the intensification of obsidian quarrying and biface production, presumably for trade. Ground stone artifacts associated with the Newberry Period became more formalized and diverse, whereas flaked stone tools became more standardized. Many of the known sites represent temporary hunting or seasonal base camps.

Projectile points diagnostic of the Haiwee Period include Eastgate and Rose Spring series, as well as Humboldt Basal-notched bifaces. Casually flaked lithic tools and shaped ground stone artifacts dominate sites attributed to this period. The Marana Period is characterized by Cottonwood and Desert Side-notched projectile points, as well as Owens Valley Brown Ware ceramics.

During the Haiwee and Marana Periods the evidence suggests a decrease in biface production, and subsistence activities focused around riparian areas (Burton 1990). The intensification of resource use in the region concentrated primarily on seed collection and processing, with small game hunting playing a supplemental role in the subsistence strategy (Gilreath and Hildebrandt 1997). A partial abandonment of upland and desert scrub areas occurred after A.D. 1000 (Bettinger 1977).

ETHNOGRAPHIC OVERVIEW

The project area is located within an ethnographic boundary zone occupied by the Northern Paiute and the Owens Valley Paiute. Both groups are speakers of the Western Numic language family, with the Northern Paiute speaking the Northern Paiute language and the Owens Valley Paiute speaking the Mono language. Neighboring groups include the Monache to the west (who speak a dialect of Mono), the Southern Sierra Miwok to the northwest and the Western Shoshone to the east. Since the project area occupies a transitional zone between Northern Paiute and Owens Valley Paiute, it is necessary to consider both groups to fully understand the occupation history of the project area.

The Northern Paiute historically occupied an extremely large territory within the Great Basin in eastern California, western Nevada, and southeast Oregon (Fowler and Liljeblad 1986; Kroeber 1925). This territory, which measures approximately 70,000 square miles, contains a diverse environment with a variety of resources available for exploitation through hunting, gathering, and fishing (Fowler and Liljeblad 1986:437–439). Northern Paiute in the Walker River and Walker Lake area, for example, took advantage of the abundant fish such as the migrating cutthroat trout (*Salmo clarki henshawii*) and suckers (*Catastomus spp*.). In the Mono Basin, waterfowl were an important resource as were medium-size fauna

such as deer and bighorn sheep, and smaller fauna such as marmots in the foothills and mountains covered with piñon/juniper, Jeffrey pine, and lodgepole pine.

Subsistence was heavily influenced by the seasonal availability of resources. The Northern Paiute were semi-nomadic and separated into small groups for resource gathering, hunting, and fishing (Fowler and Liljeblad 1986:436–437). Groups seasonally occupied foraging districts, the borders of which were relatively fluid. Small groups clustered together some of the year, with larger clusters comprised of multiple, closely related families. Shelters varied seasonally and by area (Fowler and Liljeblad 1986:443). Trade between groups was very important, with most such activity occurring during the warm summer months when the high mountain passes were open (Burton 1990). Commonly traded items included piñon nuts, seeds, obsidian, baskets, pigments, salt, pumice stones, acorns, arrows, and shell money (Hall 1983).

In contrast, the Owens Valley Paiute occupied the Owens Valley on a year-round basis with semi-permanent settlements located on major rivers and streams along the valley's west side (Furnis 2004). These settlements were occupied from year to year, usually by the same families and functioned as places for ceremonial, religious, and recreational activities (Liljeblad and Fowler 1986). The distribution of these settlements within Owens Valley varied with available water resources. In the southern portion of the valley, each settlement functioned as a self-supporting unit situated on a creek or rivulet near the mouth of a canyon. In the northern portion of the valley, where watercourses were larger and included many branches, settlements were more numerous and widely dispersed (Liljeblad and Fowler 1986).

Subsistence relied heavily on the gathering of wild seed and root crops. Paramount among these foodstuffs is the pine nut (*Pinus monophylla*) and acorn. Owens Valley Paiute obtained acorns primarily through trans-Sierra trade networks, trading salt and pine nuts to their Monach neighbors to the west for acorns and acorn flour (Liljeblad and Fowler 1986). Other harvested plant resources include basin wildrye (*Leymus cinereus*), desert needlegrass (*Stipa speciosa*), blazingstar (*Mentzelia laevicaulis* or *M. dispersa*), nutgrass (*Cyperus rotundus L.*) and Hyacinth (*Hyacinthus L.*). Fishing was a minor part of the subsistence economy, though species such as the sucker, cyprinodont, and pupfish were harvested. Although saline, Owens Lake provided an additional source of food in the form of the larvae and pupae of the brine fly (*Ephydra hians*). Both the larvae and pupae were prepared as different kinds of foods (Liljeblad and Fowler 1986).

HISTORIC OVERVIEW

Post-contact history for the state of California is divided into three specific periods: the Spanish Period (1769–1822), the Mexican Period (1822–1848), and the American Period (1848–present).

Spanish Period (1769–1822)

The beginning of Spanish settlement in California, which marked the devastating disruption of the culture of indigenous Californians, occurred in the spring of 1769. Despite being sited within the territory claimed by Spain, exploration of Alta (upper) California between 1529 and 1769 was limited. During this nearly 250-year span, there were only brief visits by Spanish, Russian, and British explorers. Portolá continued north, reaching San Francisco Bay on October 31, 1769. Pedro Fages, who sought a site for a mission, and Lt. Colonel Juan Bautista De Anza, a Spanish military officer from Tubac, Arizona, who surveyed an overland trail from the Mexican interior to San Francisco Bay, made later expeditions to Alta California in 1772 and 1774, respectively (Grunsky 1989:2–3).

In 1808, Spanish Lieutenant Gabriel Moraga led the first expedition into the Sacramento Valley and traveled northward along the Sacramento River. The expedition was scouting for new mission locations

and also searching for runaway Indian neophytes from the coastal missions. They traveled south as far as the Merced River and also explored parts of the American, Calaveras, Cosumnes, Feather, Mokelumne, and Stanislaus Rivers to the north. In 1817, the final Spanish expedition into the interior of Alta California was lead by Luis Arguello, who traveled up the Sacramento River, past the future site of the City of Sacramento to the mouth of the Feather River, before returning to the coast (Beck and Haase 1974:18, 20; Grunsky 1989:3–4).

Mexican Period (1822–1848)

After the end of the Mexican Revolution (1810–1821) against the Spanish crown, all Spanish holdings in North America (including both Alta and Baja California) became part of the new Mexican republic. With the Mexican Period, an era of extensive land grants was begun, in contrast to the Spanish colonization through missions and presidios. Most of the land grants to Mexican citizens in California (*Californios*) were in the interior, granted to increase the population away from the more settled coastal areas where the Spanish had concentrated their settlements.

With the opening by Mexico of California to Americans after the Mexican Revolution, the fur trappers, also known as "mountain men," began exploring west of the Sierra Nevada mountains. The first trapper to enter California was Jedediah Smith, whose small party trapped and explored along the Sierra Nevada's in 1826. Between 1830 and 1833, large numbers of the indigenous population in the Central Valley died from disease, likely introduced by the American trappers and/or the local Mexican population (Cook 1955). The disease exterminated whole tribes along the American, Merced, Tuolumne, and Yuba Rivers. In 1837, the Valley was hit by a second epidemic, which further decimated indigenous Californians. The issuance of numerous land grants, accompanied by population increases, contributed to the continuing introduction of foreign diseases for which Native Americans had no immunity.

A number of land grants were issued in the Sacramento area, starting in 1833 with John Rogers Cooper, a British sea captain who married into an established *Californio* family (Grunsky 1989:14). John Sutter received the two largest land grants in the Sacramento Valley. In 1839 he founded a trading and agricultural empire called *New Helvetia*, which was headquartered at Sutter's Fort near the divergence of the Sacramento and American Rivers in Valley Nisenan territory. The closest Mexican land grants to the current project were issued to the west within Mariposa County (Las Mariposas, Yosemite, and Big Tree).

American Period (1848–present)

Victory in the Mexican-American War (1846–1848) resulted in Mexico releasing its northern territories (now the states of California, Arizona, Colorado, New Mexico, and part of Utah) to the United States under the Treaty of Guadalupe Hidalgo in 1848. Even though California became a territory of the United States, the full impact of "Americanization" would not occur until the discovery of gold in 1848. The discovery of gold on the American River at Sutter's Mill had a devastating impact on the lives of indigenous Californians in the Central Valley and all along the foothills of the Sierra Nevadas (Chartkoff and Chartkoff 1984:296). The mass introduction and concentration of diseases, the loss of land and territory, including traditional hunting and gathering locales, violence, malnutrition, and starvation accompanied the tens of thousands of gold seekers (Grunsky 1989).

One year after the discovery of gold, nearly 90,000 people had journeyed to the gold fields of California, and a portion of Sutter's Mexican land grant became the bustling Gold Rush boomtown of Sacramento. Largely as a result of the Gold Rush, California became the 31st state in 1850. By 1853, the population of the state exceeded 300,000 and in 1854, Sacramento became the state capital.

Mono County

Mono County was originally created in 1861 as a result of a division of Calaveras County (Beck and Haase 1974:63). The name Mono likely refers to Mono Lake, named by Lt. Tredwell Moore in the summer of 1852; the name appears on maps by 1853 (Gudde 1998:244). The first settlers crossing Mono County were the Bidwell-Bartleson overland emigrant party who followed what came to be known as the Sonora Trail, crossing Mono County in 1841 and entering the San Joaquin Valley (Marschner 2001:253). In 1844, John Frémont and Kit Carson explored the region and camped near Bridgeport Valley. The first settlement in Mono County, Monoville, was established in late 1850s (Mono County Historical Society 2002). The population of the county blossomed overnight with the discoveries of gold at Dogtown, Monoville, Bodie, and Aurora in the late 1850s. It was not until gold was discovered in Bodie in 1859 that many settlers moved to Mono County. The town of Aurora was the original county seat; however, in 1863 it was determined that Aurora was actually within the boundary of the state of Nevada (Marschner 2001:249). Following this discovery, the county seat was moved to Bridgeport in 1864, where it has remained.

Town of Mammoth Lakes

European settlement of the project area began with the arrival of prospectors searching for gold strikes in the area. In 1877 four prospectors searching for the Lost Cement Mine organized the Lakes Mining District on Mineral Hill near Lake Mary. The following year General George Dodge of Civil War and Union Pacific fame bought the claims and organized the Mammoth Mining Company (City Concierge 2008). People began to arrive on news that the company was running four tunnels into Mineral Hill and constructing a tramway and a 20-stamp mill. Rumors also abounded that this was the "largest bonanza outside Virginia City." In 1878 several mining camps were established in the Lakes Basin including Mammoth City, Pine City, Mineral Hill, Mill City, and Mineral Park (Furnis 2004, Mammoth Mountain 2008). By the summer, over a thousand people had arrived in Mammoth City and approximately 1,500 the following year. The bonanza did not materialize, however, and in 1880 the Mammoth Mining Company shut down. After the Mammoth Mines closed, most of the mining camps were abandoned. A few settlers remained in Mineral Park (now known as Old Mammoth) and took up occupations as mill workers supplying lumber to the community of Bishop and cowhands driving cattle from Owens Valley into the mountain meadows for summer and fall grazing (City Concierge 2008). During the early 1900's, Old Mammoth began to be promoted as a tourist destination and resort community, and tourism became the most important industry in the region (Burton 1990). The completion of a modern highway in 1937 made the area accessible to great numbers of people who continue to use the area for both summer and winter outdoor recreational activities. McGee (now Mammoth) Mountain became a downhill ski destination in 1941 with the establishment of a portable rope tow, the most primitive of modern ski lifts. The first chair lift was installed in 1955; the resort currently has 32 lifts.

The Town of Mammoth Lakes was established in 1984. Presently, the community has an estimated population of more than 7,000 persons. Mammoth Mountain is a year-round ski resort, encompassing more than 3,500 acres (City Concierge 2008). The proposed project is located in the area of Mammoth Lakes now known as "North Village".

BACKGROUND RESEARCH

LITERATURE SEARCH

A cultural resources records search for the Mammoth Crossing project was performed by California Historical Resources Information System (CHRIS) Eastern Information Center (EIC) staff on October 23,

2007 (Appendix A). Other than official maps and records, the following sources of information at the EIC were consulted as part of the record search:

- National Register of Historic Places – Listed Properties (2006, updated to present)
- California Register of Historical Resources (2006, and review of minutes from State Historic Resources Commission meetings thereafter)
- California Inventory of Historical Resources (1976)
- California State Historical Landmarks (1996 and updates)
- California Points of Historical Interest (1992 and updates)
- Office of Historic Preservation Historic Property Directory and Determinations of Eligibility (2006)

The records search performed by the EIC indicated that twenty-three (23) cultural resources studies have been conducted within a one-half mile radius of the proposed project (Table 1). Three (3) of these surveys included the proposed project area, and three additional surveys are immediately adjacent to the project area.

Table 1. Previously Conducted Cultural Resources Studies within 0.5 Mile of the Proposed Project

EIC Report #	Report Title	Author(s)	Within or Adjacent to Current Project
MN29	Final Report on the Intensive Archaeological Survey of the Sawmill Timber Sale Compartment, Mono County, California	Turner, A.L., J.P. King, R. Becker, R.H. Brooks (1978)	Outside
MN82	Archaeological Reconnaissance Report-Forest Service Forty Land Exchange	Taylor, W. (1980)	Outside
MN84	Archaeological Reconnaissance Report-Mono County Park/Rayson	Taylor, W. (1980)	Outside
MN86	Archaeological Reconnaissance Report-Exchange-Corporation Yard/Woodstock for Monache Meadows	Witters, R. (1977)	Outside
MN87	Archaeological Reconnaissance Report-Woodstock Parcel/Tanner Exchange	Taylor, W. (1980)	Outside
MN241	An Archaeological Reconnaissance of Mammoth Mountain, Mono and Madera Counties, California	Bettinger, R.L., M.E. Basgal, M.G. Delacorte (1983)	Outside
MN352	Assessment of Prehistoric Cultural Resources at Two Proposed Water Storage Facilities at Mammoth Lakes, Mono County, California	Wilke, P.J. (1985)	Outside
MN463	An Archaeological Survey of the North Village Project Area Mammoth Lakes, California	Burton, J.F. (1990)	Within
MN464	An Archaeological Survey of the Lodestar Property Mammoth Lakes, California	Burton, J.F. (1990)	Adjacent
MN465	An Archaeological Survey of the Minaret Road Extension, Mammoth Lakes, California	Burton, J.F. (1989)	Outside
MN466	Archaeological Testing at the Minaret Road Site (CA-MNO-2482), Mammoth Lakes, California	Burton, J.F. (1990)	Outside
MN476	Archaeological Testing Procedures at Six Sites in Mammoth Lakes, CA; The Lodestar Project	Kautz, R.R. (1991)	Outside

Table 1. Previously Conducted Cultural Resources Studies within 0.5 Mile of the Proposed Project

EIC Report #	Report Title	Author(s)	Within or Adjacent to Current Project
MN533	Cultural Resources Report: Contel Electric Telephone Carrier System	Woolfenden, W.B. (1991)	Outside
MN566	Written in Bedrock: Prehistoric Acorn Use in the Eastern Sierra Nevada	Haney, J.W. (1992)	Overview
MN809	An Archaeological Survey Report for "The Bungalows", Mono County, California	Early, D.E. (2006)	Within
MN810	Archaeological Survey Report: Snowdrift Circuit, Southern California Edison Mammoth Lakes, Mono County, California Inyo National Forest	Duke, C., K. Russell (2003)	Outside
MN830	Cultural Resource Assessment for the Mammoth Lakes Family Apartments II, Mammoth Lakes, Mono County, California	Peak and Associates, Inc. (2005)	Outside
MN831	An Archaeological Survey Report for the Mammoth Hillside Resort, Mono County, California	Early, D.E. (2005)	Adjacent
MN832	An Archaeological Survey Report for the Intrawest and Town Timber Harvesting Plan, Mono County, California	Early, D.E. (2004)	Outside
MN842	Letter Report: Sierra Star Historic Site Evaluation	Burton, J. (2004)	Outside
MN853	An Archaeological Survey Report for the Fairway 4/5 Town Homes	Early, D.E. (2005)	Within
MN855	Archaeological Excavations at CA-MNO-2480 (North Village #2), Mammoth Lakes, California	Hall, S.W. (2005)	Outside
MN893	An Archaeological Reconnaissance and Testing Report for the Lake Mary Road Bike Route, Mammoth Lakes, Mono County, California	Furnis, C.L. (2004)	Adjacent
MN900	Cultural Resource Assessment for the Mammoth Lakes Family Apartments II, Mammoth Lakes, Mono County, California	Peak and Associates (2006)	Outside

Seven (7) cultural resources have been previously recorded within a one-half mile radius of the proposed project (Table 2). These resources include: two historic period refuse deposits (26-3575 and 29-4357), and four lithic scatters (26-3727, CA-MNO-2480, CA-MNO-2481, and CA-MNO-2482). No cultural resources have been previously recorded within the proposed project limits.

Table 2. Previously Recorded Cultural Resources within 0.5 Mile of the Proposed Project

Primary Number	Other Identifier	Resource Description	Recorded by / Date	Within or Adjacent to Current Project
26-3575		Historic Period Refuse Deposit	Burton J. and D. Burton (2004)	Outside
26-3727	CA-MNO-3497	Lithic Scatter	Hall, S.W. (2001)	Outside
29-4357	CA-MNO-3834	Historic Period Refuse Deposit	Early, D.E. (2001)	Outside
	CA-MNO-2480	Lithic Scatter	Burton, J. (1989)	Outside

Table 2. Previously Recorded Cultural Resources within 0.5 Mile of the Proposed Project

Primary Number	Other Identifier	Resource Description	Recorded by / Date	Within or Adjacent to Current Project
	CA-MNO-2481	Lithic Scatter	Burton, J. (1989)	Outside
	CA-MNO-2482	Lithic Scatter	Burton, J. (1990)	Outside

INITIAL NATIVE AMERICAN CONSULTATION

Concurrent with the Town of Mammoth Lakes efforts to conduct government-to-government Native American consultation in compliance with Senate Bill 18 of 2005 (SB 18), SWCA initiated its own initial Native American consultation for the project on November 5, 2007. SWCA contacted the California Native American Heritage Commission (NAHC) by letter to request a review of the Sacred Lands File, which revealed that no Native American cultural resources were known in the project area. The NAHC also provided a list of the Native American groups or individual contacts for the Mammoth Lakes vicinity, to which SWCA mailed letters on October 16, 2007.

SWCA received one response by telephone from Bill Helmer, Tribal Historic Preservation Officer (THPO) for the Big Pine Band of Owens Valley. He asked about the SB 18 consultation and why SWCA was conducting additional consultation. Mr. Helmer did not provide information regarding cultural resources within the Mammoth Crossing project area but seemed pleased that SWCA conducted the additional consultation. The Native American consultation correspondence is presented in Appendix A.

METHODS

PEDESTRIAN SURVEY

SWCA archaeologist Robert S. Ramirez conducted an intensive pedestrian survey of the proposed project area on November 13, 2007. The proposed project encompasses 9.3 acres and is divided into three assemblages of parcels which comprise the area of potential effect (designated herein as Sites 1, 2, and 3), and which are located on the northwest, southwest, and southeast corners of the intersection of Main Street, Lake Mary, and Minaret roads, respectively (Figure 1 and Figure 2). Each site was intensively surveyed by walking linear transects spaced 10 meters apart. In areas of existing buildings and pavement, the survey consisted of checking planters, pathways, cut backs, and other open spaces where the ground surface was exposed. The ground surface was examined for the presence of prehistoric artifacts (e.g., flaked stone tools, tool-making debris, stone milling tools), historic artifacts (e.g., metal, glass, ceramics), sediment discoloration that might indicate the presence of a cultural midden, depressions and other features indicative of the former presence of structures or buildings (e.g., postholes, foundations). All buildings and structures in the project area sites were photographed during the survey using a 4.0 megapixel digital camera, and notes were made regarding field observations.

Figure 2. Aerial Photograph Showing Development Site Locations

ARCHITECTURAL SURVEY AND EVALUATION PROCEDURES

Following the field survey, SWCA's architectural historian evaluated the built environment at an intensive level for California Register eligibility. This included obtaining data from local repositories and using various local sources, augmented by internet research and telephone interviews. Eligibility for local landmark designation was not addressed as it lies beyond the purview of this report and the project scope, and does not necessarily equate to historical significance under CEQA.

Properties containing buildings which retain "substantial integrity," or if reasons exist to believe the property might possess overriding significance, were intensively evaluated for California Register eligibility. Besides possessing one of the previously-listed significance characteristics, to be eligible for listing in the California Register resources must retain substantial integrity to their period of significance. The California Office of Historical Preservation guidance on the subject asserts "resources must retain enough of their historic character or appearance to be recognizable as historical resources and to convey the reasons for their significance" (California Office of Historical Preservation 2002).

As set forth in the National Park Service publication *How to Apply the National Register [of Historic Places] Criteria for Evaluation* (n.d.), the seven aspects or qualities that, in various combinations, define integrity are: location, design, setting, materials, workmanship, feeling and association. To retain its historic integrity, a property must possess several, and usually most, of these aspects. Properties judged not to retain requisite integrity were not evaluated for historic significance. Buildings constructed after the mid-1960s were not evaluated for historic significance.

The proposed project area includes 16 parcels, of which four properties containing buildings constructed in or before 1962 were inspected. The investigation established whether or not improvements were still extant, or if alterations had reduced their integrity as defined in the California Register guidance. In addition, all properties were surveyed by vehicle, digitally photographed, and notes were made regarding alterations. Only properties which were found to possess sufficient integrity to qualify for California Register consideration were recorded on DPR 523 forms.

RESULTS

The survey revealed that at least portions of each of the three project sites (Figure 1) within the area of potential effect have been previously developed. No prehistoric or historic archaeological resources were identified within the proposed project area during the intensive-level pedestrian survey. The survey did reveal 16 buildings or structures in the project area (Table 3), three of which were found to possess sufficient integrity to qualify for the California Register and were recorded on DPR 523 forms (Appendix C). The following discussion is broken down by project site.

PROJECT SITE 1

Nearly the entire surface area of Site 1 has been previously developed, with two buildings occupying the northwestern and southeastern corners of the property and a paved parking lot in between. The building located at 60 Lake Mary Road is a commercial office building that was built less than 45 years ago. This building was not intensively evaluated for CRHR eligibility, and is not eligible for listing in the CRHR. The second building, located at 24 Lake Mary Road, is the Whiskey Creek restaurant. It was built less than 45 years ago, and is not eligible for listing in the CRHR. Open space within the project site consists of small planter areas along the side of both buildings, and along the retaining wall located on the northern border of the site.

PROJECT SITE 2

Site 2 is partially developed with building fronts on Lake Mary Road. The 10 buildings in this project site include the former St. Joseph's Church, a two-story office building, a log building (Sartori Cabin/Mammoth Cable Television), and several buildings which comprise the North Village Inn (Table 3). Two of these buildings—St. Joseph's Church/Mammoth Cable Television office and the Sartori Cabin/Mammoth Cable Television office—were evaluated for listing in the CRHR and DPR 523 forms filled out (Appendix C); however, neither building is eligible for listing in the CRHR as described below. None of the other buildings in this project site are eligible for listing in the CRHR either as they were built less than 45 years ago are of unknown age.

St. Joseph's Church

This small former church building is a single story in height and is configured in a T-shaped plan (see Photograph 1). The simple vernacular building is utilitarian in style and faces Lake Mary Road. The raised entrance consists of a small vestibule protected by a lower gabled roof. At the narthex or vestibule, doors open on one side, and are served by a utilitarian side stairwell. A schoolbell-type, four-sided, hip-roofed fixture punctuates the roof. Set on a slope, the building is on a raised foundation, and is clad in painted shiplap joint clapboard. The cross-gabled, front-facing roof is medium-pitched and is finished in painted corrugated metal. The marginally overhanging, plain eaves have extended rafter tails and simple fascia boards. The side walls of the nave contain sets of three equal-sized windows, each of which is a fixed rectangle with small, operable lower lights. At the transept there are lower intersecting roofs and a side entrance with a single-leaf, slab door. The end wall contains an in-filled door, with a central small, sliding window, which may be aluminum-framed. The church is in a sloped, wooded setting, surrounded by brush and mature trees.

The baptismal record for this building, which was originally a Roman Catholic parish, St. Joseph's Church, was established by Fr. Dale McGinnis, S.J., in 1939. Fr. James Kelly, S.J., who succeeded him, was responsible for later organization of the parish. After 1962, the parish was under the aegis of the newly established Stockton Diocese (St. Joseph's). Through the 1970s and 1980s, the parish priest was Fr. Thomas V. "Tom" Savage, S.J. who was likely born in 1913 and died in 1988 (Manning 2008, California Social Security Death Index n.d.). No other information was located on the lives of Frs. McGinnis, Kelly, or Savage (sources included the Dioceses of Stockton and Sacramento, California Social Security Death Index and Jesuits of the California Province).

The remaining, small church building was built in the early 1950s (St. Joseph's, all dates are approximate). According to his widow, local resident Henry J. Warta relocated the building "inboard" of the street in the early 1970s and converted its use to a television studio (refer to Sartori Cabin/Mammoth Cable Television). A neighbor recalls "a Basque contractor from Reno" performing the relocation (Manning 2008). The small rectory was demolished circa 1983, before the new church was completed (Manning 2008). In 1986, alterations to the building included the addition of the front entrance porch, stairs and rear side wings (Building Permit #85-117). Eventually, the church was replaced by a new complex at 58 Ranch Road, which was completed in 1992.

Photograph 1. St. Joseph's Church; view to south.

Although it is possible for a relocated building that was once associated with a religious group to be eligible for listing in the California Register, the altered building is not eligible for California Register listing, either separately or as a contributor to a district. The building lacks integrity and it has no known associations with significant patterns of events (Criterion 1); there are no direct associations with persons significant in our past (Criterion 2); the altered building does not possess high artistic values (Criterion 3); and it does not seem likely that the property would yield important prehistoric or historic information (Criterion 4).

Sartori Cabin/Mammoth Cable Television Building

The subject property contains two buildings, a small, log constructed office building near the street (Building 1), and a setback, two story office building (Building 2). Each building is described separately.

Building 1

Building 1 is notably constructed of logs, is symmetrical, is one and one-half stories in height, and is configured in an irregular T-shaped plan (Photograph 2). The rustic building was built elsewhere in Old Mammoth, around the 1920s using traditional log construction methods; it has a log-sided exterior with corner notches. The exterior perimeter walls are made from hewn logs, in-filled with chinking and daubing. The building was relocated to its current location from a larger, nearby complex of other log buildings and was altered at that time. It has a steeply pitched, intersecting, side-gabled roof, with a central, front facing gable and attached shed roofed extension. The porch and main roof are clad in corrugated metal and are supported on large, peeled logs. The central entrance is a narrow porch, with a central, cross-buck door flanked by multi-light, rectangular windows. The building is three bays wide, with side bays containing two sets of windows on each bay with three-over-three multi-lights. The windows have natural wood surrounds and are deeply set in the thick log walls. The front gable is finished in painted or stained log siding with painted, block letters spelling out "Mammoth Cable

Television," concentrically arranged around a painted sign. A utilitarian lamp punctuates the apex of the steep gable. The building is set on a low, natural stone, uncoursed foundation.

Photograph 2. Sartori Cabin/Mammoth Cable Television Building; view to southeast.

Building 1 was constructed in about 1920 as a component of nearby Valentine Camp. It was relocated to the subject property by local resident Henry J. "Jim" Warta in the mid-to-late 1960s. Jim Warta was born in Colorado in 1923 and died in San Luis Obispo in 1990. Mr. Warta served in World War II, received a degree in mechanical engineering, and settled in Mammoth in 1949 with his new wife, the former Kathleen O'Brien (Mammoth Times, n.d.). Mr. Warta was given the building by the then-owners of the Valentine Camp shortly before the camp was converted to use as a university research facility. After Mr. Warta relocated the log building, he is said to have single-handedly constructed the foundation and reassembled the log building according to a complex numbering system (Warta 2008). Warta established the local cable television station at approximately the same time as he relocated the log building, and it served as headquarters for Mammoth Cable television until recently. According to the Mono County Tax Assessor's records, Kathleen Warta and Fairway US III (a corporation), transferred the property to the current owners, Mammoth Crossing LLC, in 2003 by a deed of trust.

The nearby donor site, Valentine Camp (now Valentine Reserve), currently contains three remaining original log buildings from what was once a complex of at least five such buildings (Valentine 2008). Building 1 was initially the cabin of Joseph Sartori, in what was a rustic compound of similar log buildings owned by a group of influential Los Angeles businessmen. The owners of Valentine Camp, beginning in 1916 (with major business affiliations listed in parentheses) were: Michael Connell (Bellridge Oil), Ira Copley (San Diego *Union-Tribune*), William Kerchoff (Kerchoff Lumber and Southern California Gas Company), Henry O'Melveny (O'Melveny & Meyers), Joseph Sartori (Security Bank) and William L. Valentine (Fullerton Oil Company, Robinson's department store). In 1972, the extraordinary camp and its surrounding acreage were donated to the University of California, and became the Valentine Eastern Sierra Reserve for use as the Natural Reserve System (Valentine 2008).

The original owner or steward of Building 1, Joseph F. Sartori (1858-1945), was a powerful German-American banker and civic leader. Sartori notably established Security Bank and was outspoken in

Republican politics. Mr. Valentine's wife, Carol, described the original cabin and its owner in "A History of the Valentine Camp:" "physically he was a very small man… Everything in his cabin was built on a small scale, including the bathtub which appeared to be for a child" (Valentine 2008:4). The Sartori cabin was the smallest of the rustic log residences; it "had three very small rooms and the [aforementioned] *minute* bathtub" (Valentine 2008:4). Mrs. Valentine's perspective may have been skewed, however, as she was extremely tall. The small cabin was "offered to Jim Warta… [who] dismantled it, moved it to his property, and rebuilt it for his workshop. It… [was] then used as… the Mammoth cable TV office" (Valentine 2008:7).

Building 1 is locally referred to as the Warta Cabin; however, the correct common name is Mammoth Cable Television as the Warta family never occupied the building as a residence. The Warta family offered the building to Southern Mono Historical Society for relocation to Old Mammoth Village, but funds to carry out that move have not been identified.

Although Building 1 was directly associated with Joseph Sartori, a person important in our past, its relocation and adaptive use as an office diminish its direct association with Sartori as well as strongly decreases its integrity. The integrity of its location, the connection to its original setting, its materials have been compromised by the addition of modern metal spikes (for seismic retrofit), the original archaic workmanship was changed, its design was altered in the relocation, and ultimately the original feeling of the building when it was part of the camp and its associations have been reduced or lost. Relocation from the Valentine Camp setting negates what was a connection between its original pastoral landscape and other related buildings in the camp. In addition, that relocation likely changed its appearance, as it no longer exhibits the characteristics of a building from the 1920s. Sufficient time has not passed to allow evaluation of the accomplishments of the Warta family against those of their peers, while they are obviously important in the recent development of the community of Mammoth Lakes. Because of these factors, Building 1 is not eligible for listing in the California Register as a separate property or as a contributor to a historic district. The altered, relocated building has no known associations with significant patterns of events (Criterion 1); it does not retain the integrity of its direct association with Joseph Sartori, a person significant in our past (Criterion 2); the altered building no longer possesses high artistic values because of the alterations (Criterion 3); and it is not likely to yield important prehistoric or historic information (Criterion 4).

Building 2

Building 2 is a vernacular office building, set back from the street. It is two stories in height with a flat roof. The simple elevation is utilitarian in style and has punched windows. The lower level is finished in painted slumpstone, the second floor is clad in painted board and batten. The asymmetrical composition has two pedestrian doors at the lower level, balanced by a large side bay. The second floor is slightly stepped out, and has fixed, three-part windows, punctuated by a central, paired window. The building is set on a low sloping hillside, with an informal parking lot on the front elevation, surrounded by mature trees. Because of its recent construction date and lack of demonstrable overriding significance, building 2 does not warrant evaluation for California Register eligibility.

PROJECT SITE 3

Project site 3 occupies 2.9 acres and is partially developed with two motel buildings located along the western edge of the site. Both are two-story buildings surrounded by paved parking lots. The hotels are called the Ullr Lodge, and the White Stag Inn. The White Stag was built less than 45 years ago, and is not eligible for listing in the CRHR. The Ullr Lodge was constructed in 1963, and is described and evaluated below.

Ullr Lodge

This former motel building is two and one half stories in height, and is configured in a rectangular plan (Photograph 3). The end wall of the long, narrow rectangle has a polychromatic faux chalet façade which faces Minaret Road. Its chalet characteristics include its use of "exposed and decorative use of structural members… [and] balconies" (Harris 1975). Aside from its large size, and simple form beyond the façade, its features that do not follow the chalet style include the upper floor not projecting beyond the story below and the lack of exposed exterior stairs. Notably, the chalet façade embellishment is the only such ornamentation on the building. The lower floor is plastered and the upper floors are finished in stained, milled wood, affixed horizontally. A central porch at the entrance was removed, but the projecting two-thirds length, rustic balcony remains. All front facing windows are paired casement-type, multi-light (2-2-2), with heavy, rustic false shutters. The upper story of the main elevation contains a picturesque, multi-light door, and four sets of two each, paired windows. At the very top of the gable, a paired casement window has a decorative, stenciled flower box below. The front-facing, medium pitched, gabled roof extends to cover the entire building volume. The deeply overhanging eaves feature scalloped vergeboards, and are supported on heavy, stepped knee braces. The interstitial area between the attic and upper floor is embellished with decorative Scandinavian- and Northern European-themed cartouches. The side elevations have various punched openings (windows, garage doors) that are finished in wood on the second floor and plaster below. The building is on a nearly flat lot, surrounded at the street by mature trees.

Photograph 3. Ullr Lodge; view to east.

Ullr Lodge was built in four segments. The first segment of the building includes the picturesque façade and was completed in 1963, the contiguous second section in 1967, the third was built in 1969 and the final portion, the manager's house, was completed in 1979 (all dates approximate, Manning 2008). The first three phases of the Ullr Lodge were built by area plastering contractor, Robert Briggs Robinson with his father, John C. Robinson. The younger Robinson (b. 1938) was a colorful local, whose small motel was one of the first dormitory-style motels in Mammoth. Robinson operated the motel in a *laissez faire*,

pay-as-you-go fashion. The property address was originally Summer Home Road, which was widened, extended and renamed Minaret Road sometime before 1976. In late 1979, Caltrans Engineer, Dennis Manning and his wife, Melissa acquired the property. The Mannings operated the facility with a more formal business plan, while raising a family and added the manager's residence at the far end of the building. Since the Mannings sold the property, the front porch was removed from the main elevation. When the building recently closed, it was one of the last remaining dormitory-style motels in Mammoth. At the height of dorms' popularity, there were more than 12 "affordable" dorm-style motels in the small skiing community. No other consequential information was located on the building or its former owners.

Ullr Lodge was named for the Norse mythological character Ullr, "the god of snow shoes, hunting, the bow and the shield" (Encyclopedia Britannica 2008). In the mid-twentieth century when the lodge was built, Ullr pins and charms were good luck wishes for skiers in honor of the "handsome stepson of the thunder god, Thor" (Encyclopedia Britannica 2008). Numerous other ski facilities are named for Ullr as well.

The altered building is not eligible for listing in the California Register separately or as a contributor to a district. It has are no known associations with significant patterns of events (Criterion 1); there are no direct associations with persons significant in our past (Criterion 2); the altered buildings do not possess high artistic values (Criterin 3); and it is not likely to yield important prehistoric or historic information (Criterion 4).

Table 3. Overview of California Register Evaluations for Historic Significance

Site	Address	Assessors Parcel Number	Name or Use	Date of Construction	Conclusion
1	60 Lake Mary Road	33-04-07	60 Lake Mary Road building, commercial (office)	1980	Not intensively evaluated, built less than 45 years ago Not eligible for California Register listing
	24 Lake Mary Road	33-04-10	Whiskey Creek, commercial (restaurant)	1981	Not intensively evaluated, built less than 45 years ago Not eligible for California Register listing
2	106 Lake Mary Road	33-010-02	vacant	n/a	n/a
	103 Lake Mary Road	33-010-03	Laurel Lodge/ North Village Inn, commercial (motel)	building 1- 1958, large rear addition c. 1970s	Not intensively evaluated- lacks sufficient integrity Not eligible for California Register listing
	n/a	33-010-04	Laurel Lodge/ North Village Inn, commercial (motel)	building 2- c. 1970s	Not intensively evaluated, built less than 45 years ago Not eligible for California Register listing
	n/a	33-010-05	Laurel Lodge/ North Village Inn, commercial (motel)	n/a	n/a
	n/a	33-010-06	Laurel Lodge/ North Village Inn, commercial (motel)	n/a	n/a
	63 Lake Mary	33-100-07	St Joseph's	c. 1950s,	Not eligible for California

Table 3. Overview of California Register Evaluations for Historic Significance

Site	Address	Assessors Parcel Number	Name or Use	Date of Construction	Conclusion
	Road/ 3943 Main Street		Church/Mammoth Cable Television Studio	relocated c.1970s	Register listing
	63 Lake Mary Road/ 3943 Main Street	33-100-07	Sartori Cabin/ Mammoth Cable Television, commercial (office)	building 1- circa 1920, relocated c. 1970s building 2- c. late 1970s	Not eligible for California Register listing
	southwest corner of Lake Mary and Minaret roads	33-010-31	vacant	n/a	n/a
	n/a	33-010-32	vacant	n/a	n/a
	5010 Minaret Road	33-010-38	garage/shack, utilitarian	unknown	Not intensively evaluated, likely built less than 45 years ago Not eligible for California Register listing
3		33-10-14	Ullr Lodge, commercial (motel)	1963	Not eligible for California Register listing
		33-10-15	White Stag Inn commercial (motel)	c. 1970s	Not intensively evaluated, likely built less than 45 years ago Not eligible for California Register listing
		33-10-16	vacant	n/a	n/a
		33-10-18	vacant	n/a	n/a

In summary, of the 15 properties[1] (differentiated by Mono County Tax Assessor's Parcel Numbers) in the proposed area of potential effects:

- Three properties were intensively evaluated for California Register eligibility;
- Six properties were not intensively evaluated either because improvements were completed after 1963 (four properties) or the improvements lacked sufficient integrity to warrant California Register evaluation (two properties); and
- Seven properties were vacant.

None of the 15 properties in the project area of potential effect is eligible for listing in the California Register; therefore, none is an historical resource under CEQA.

[1] Table 3 contains 16 properties; however, Assessor's Parcel Number, 33-100-07 contains improvements which were separately evaluated, St. Joseph's Church/Mammoth Cable Television Studio and Sartori Cabin/ Mammoth Cable Television and office building.

RECOMMENDATIONS

GENERAL

The pedestrian survey did not identify any prehistoric, historic cultural or archaeological resources in the proposed project area of potential effects. Based on the paucity of previously recorded cultural resources in the literature search area and lack of identified prehistoric and historic archaeological resources within the project area, SWCA recommends that no archaeological monitoring of the construction activities is necessary. If previously unrecorded archaeological materials are identified during construction grading, work in the area should be temporarily halted or redirected and a qualified archaeologist notified to evaluate the cultural find. Further recommendations should be made at that time.

BUILT ENVIRONMENT

None of the properties in the proposed project area are separately eligible for listing in the California Register. Furthermore, none of the properties in the proposed project area are eligible for listing in the California Register as historic districts or as contributors to historic districts. The appropriate California Historical Resource Status Codes (California Office of Historic Preservation 2003) for each of these properties is "6Z- Found ineligible for…California Register… designation through survey evaluation." No local landmark eligibility finding was made as part of this evaluation. Because the properties in the project area were not found eligible for listing in the California Register, they would not, at this time, qualify for National Register of Historic Places listing.[2]

Because none of the properties in the proposed project area of potential effects is eligible for listing in the California Register, the proposed project is not expected to result in the physical demolition, destruction, relocation, or alteration of any historical resources. Consequently, SWCA recommends no further evaluation of the historic built environment.

HUMAN REMAINS

The discovery of human remains is always a possibility, with specific guidelines stipulated in the State of California Health and Safety Code Section 7050.5. This code section states that no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to Public Resources Code Section 5097.98. The County Coroner must be notified of the find immediately. If the human remains are determined to be prehistoric, the Coroner will notify the NAHC, which will determine and notify a Most Likely Descendent (MLD). The MLD shall complete the inspection of the site within 48 hours of notification and may recommend scientific removal and nondestructive analysis of human remains, and items associated with Native American burials.

[2] National Register of Historic Places guidance has a 50-year cut-off for evaluation of buildings, structures or objects, unless the improvements possess "exceptional importance at the national, State, or local level" (Criteria Consideration G).

REFERENCES

Beck, Warren A.., and Ynez D. Haase
1974 *Historical Atlas of California*. University of Oklahoma Press, Norman, Oklahoma.

Bettinger, R. L.
1977 Aboriginal Human Ecology in Owens Valley, Eastern California: Prehistoric Change in the Great Basin. *American Antiquity* 43:3-17.

1982 Archaeology East of the Range of light: Aboriginal Human Ecology of the Inyo-Mono Region in Central-Eastern California. *Monographs in California and Great Basin Anthropology 1*. Davis, California.

Bettinger, Robert. L. and Robert.E. Taylor
1974 Suggested Revisions in Archaeological Swquences of the Great Basin and Interior Southern California. *Nevada Archaeological Survey Research Paper* 5:1-26.

Burton, Jeffery F.
1990 *An Archaeological Survey of the Lodestar Property, Mammoth Lakes, California.* Trans-Sierran Archaeological Research Contributions to Trans-Sierran Archaeology No.20.

California Office of Historic Preservation
1990 Archaeological Resource Management Reports (ARMR): Recommended Contents and Format. Department of Parks and Recreation. Office of Historic Preservation: Sacramento, California.

2002 "What is the California Register…" Electronic document online at: http://ohp.parks.ca.gov/default.asp?page_id=21724.

2003 *California Historical Resource Status Codes.* Electronic document online at http://ohp.parks.ca.gov/pages/1069/files/tab8.pdf

California Social Security Death Index (CSS)
n.d. Electronic document accessed January 24, 2008. Online at www.ancestry.com.

Chartkoff, Joseph L., and Kerry K. Chartkoff
1984 *The Archaeology of California*. Stanford University Press, Palo Alto, California.

Cohan, Al
2008 Telephone interview with Francesca Smith, January 10, 2008.

Cook, Sherburne A.
1955 *The Epidemic of 1830-1833 in California and Oregon*. University of California Publications in American Archaeology and Ethnology Vol. 43, No. 3. Berkeley.

City Concierge
2008 Town of Mammoth Lakes History. Electronic document, http://www.cityconcierge.com/mammoth-lakes/community/Mammoth-history.asp, accessed January 9, 2008.

Diocese of Stockton, Receptionist
2008 Telephone interview with Francesca Smith, January 24, 2008.

Encyclopedia Brittanica
2008 Electronic encyclopedia accessed January 24, 2008. Online at www.encyclopediabritanica.com.

Fowler, Catherine S., and Sven Liljeblad
1986 Northern Paiute. In *Great Basin*, edited by Warren d'Azevedo, pp. 435-465. Handbook of North American Indians, Great Basin, Vol. 11, William G. Sturtevant, general editor, Smithsonian Institution, Washington, D.C.

Furnis, C. Lynn
2004 *An Archaeological Reconnaissance and Testing Report for the Lake Mary Road Bike Route, Mammoth Lakes, Mono County, California.* Submitted to The Town of Mammoth Lakes, Mammoth Lakes, California.

Gilreath Amy J., and William R. Hildebrandt
1997 *Prehistoric Use of the Coso Volcanic Field*. Contributions of the University of California Archaeological Research Facility No. 56.

Governor's Office of Planning and Research
1998 CEQA, California Environmental Quality Act Statutes and Guidelines. Governor's Office of Planning and Research, Sacramento, California. http://ceres.ca.gov/ceqa/rev/approval.html

Grunsky, F.R.
1989 *Pathfinders of the Sacramento Region: The Were There Before Sutter*. Sacramento County Historical Society.

Gudde, Erwin G.
1998 *California Place Names: The Origin and Etymology of Current Geographical Names.* University of California Press, Berkeley.

Hall, M.C.
1983 *Late Holocene Hunger-Gatherers and Volcanism in the Long Valley-Mono Basin Region: Prehistoric Culture Change in the Eastern Sierra Nevada*. Unpublished Ph.D. Dissertation, Department of Anthropology, University of California, Riverside.

Harris, Cyril
1975 *Dictionary of Architecture and Construction*. McGraw-Hill Ryerson, Limited, Whitby, Ontario, Canada.

Holland, R.F.,
1986 *Preliminary Descriptions of the Terrestrial Natural Communities of California*. State of California, The Resources Agency, Nongame Heritage Program, Dept. Fish & Game, Sacramento, California.

Kreober, Alfred J.
1925 *Handbook of the Indians of Califiornia*. Bulletin 78, Bureau of American Ethnology, Smithsonian Institution. Government Printing Office, Washington, D.C. Reprinted 1976 by Dover Publications, Inc., New York.

Liljeblad, Sven and Catherine S. Fowler
1986 Owens Valley Paiute. In *Great Basin*, edited by Warren d'Azevedo, pp. 412-434. Handbook of North American Indians, Great Basin, Vol. 11, William G. Sturtevant, general editor, Smithsonian Institution, Washington, D.C.

Marschner, Janice
2001 *California 1850: A Snapshot in Time*. Coleman Ranch Press, Sacramento.

Mammoth Mountain
2008 *Mammoth Mountain Environment*. Electronic document, http://www.mammoth mountain.com/company_info/environment/pdf/TMPL_history4.pdf, accessed January 9, 2008.

Mammoth Times
n.d. "Mammoth Locals Reunion." *Mammoth Times*. Electronic document accessed January 9, 2008. Online at www.mammothtimes.com/context/view/58152/196.

Manning, Dennis
2008 Telephone interview with Francesca Smith. January 29, 2008.

Mono County Historical Society
2002 *History of Bridgeport*. Mono County Historical Society 2002 Newsletter. Electronic document, http://www.cagemweb.com/mono/historicalsociety/2002newsletter.txt, accessed July 8, 2007.

National Park Service
n.d. *How to Apply the National Register Criteria for Evaluation*. Electronic document online at http://www.nps.gov/nr/publications/bulletins/nrb15/nrb15_2.htm.

St. Joseph's Church
2008 *Welcome to St. Joseph's Church*. Electronic document accessed January 29, 2008. Online at http://www.mammothcatholicchurch.org.

Town of Mammoth Lakes, Building Department
1985 "Application for Permit to Construct." Building Permit #85-117, October 18, 1985. On file at Town of Mammoth Lakes.

2007 Initial Study for the Mammoth Crossing Project. On file at the Town of Mammoth Lakes.

Valentine, Carol
2008 *A History of the Valentine Camp.* Electronic document accessed January 24, 2008. Online at www.vesr.ucrns.org.

Warta, Kathleen
2008 Telephone interview with Francesca Smith. January 24, 2008.

APPENDIX A:
Native American Consultation

SWCA Environmental Consultants
Pasadena Office
625 Fair Oaks Avenue, Suite 190
Tel 626 240-0587 Fax 626 240-0607

SWCA
Environmental Consultants

Fax

To:	Dave Singleton- California Native American Heritage Commission	**From:**	Kevin Hunt
Fax:	(916) 657-5390	**Pages:**	2
Phone:	(916) 653-6251	**Date:**	11/5/2007
Re:	Sacred lands file search request for a project in Mono County	**CC:**	

☐ **Urgent** ☐ **For Review** ☑ **Please Comment** ☑ **Please Reply** ☐ **Please Recycle**

• **Comments:**

Dear Mr. Singleton,

SWCA Environmental Consultants (SWCA) is representing the Town of Mammoth Lakes in an amendment to the Specific Plan. Since this project invokes the requirements of SB 18, I am requesting a list of interested individuals who would like to receive a letter from the Town regarding the project. Known as the "Mammoth Crossing," the project falls within the *Old Mammoth, California* USGS 7.5 minute quadrangle and is depicted on the attached figure. The project area is proposed for residential and resort development. Specifically, the project is located in Township 3S, Range 27E Section 34. study area includes the entire 9.3 acres outlined (see enclosed).
I am requesting the following information:

- Groups or individuals listed by the NAHC as contacts within vicinity of Project Area.
- Identification by the NAHC of any sacred lands in the area that are listed within the Sacred Lands File.

Thank you for your attention to this request.

Sincerely,

Kevin Hunt
Project Manager – Cultural Resources
SWCA Environmental Consultants

SWCA Environmental Consultants
Pasadena Office
625 Fair Oaks Avenue, Suite 190
Tel 626 240-0587 Fax 626 240-0607

SWCA
Environmental Consultants

Fax

To:	Dave Singleton- California Native American Heritage Commission	**From:**	Kevin Hunt
Fax:	(916) 657-5390	**Pages:**	2
Phone:	(916) 653-6251	**Date:**	11/15/2007
Re:	Sacred lands file search request for a project in Mono County	**CC:**	

☐ **Urgent** ☐ **For Review** ☑ **Please Comment** ☑ **Please Reply** ☐ **Please Recycle**

- **Comments:**

Dear Mr. Singleton,

I am requesting a records search of the Sacred Lands File, and a list of appropriate Native American contacts for the Mammoth Crossing Project located within Mono County, California. We are aware that the Town of Mammoth Lakes is conducting its own Native American consultations in compliance with SB 18 requirements; however, SWCA would like to obtain an additional NAHC Sacred Lands File Search to ensure that enough interested parties have been contacted.

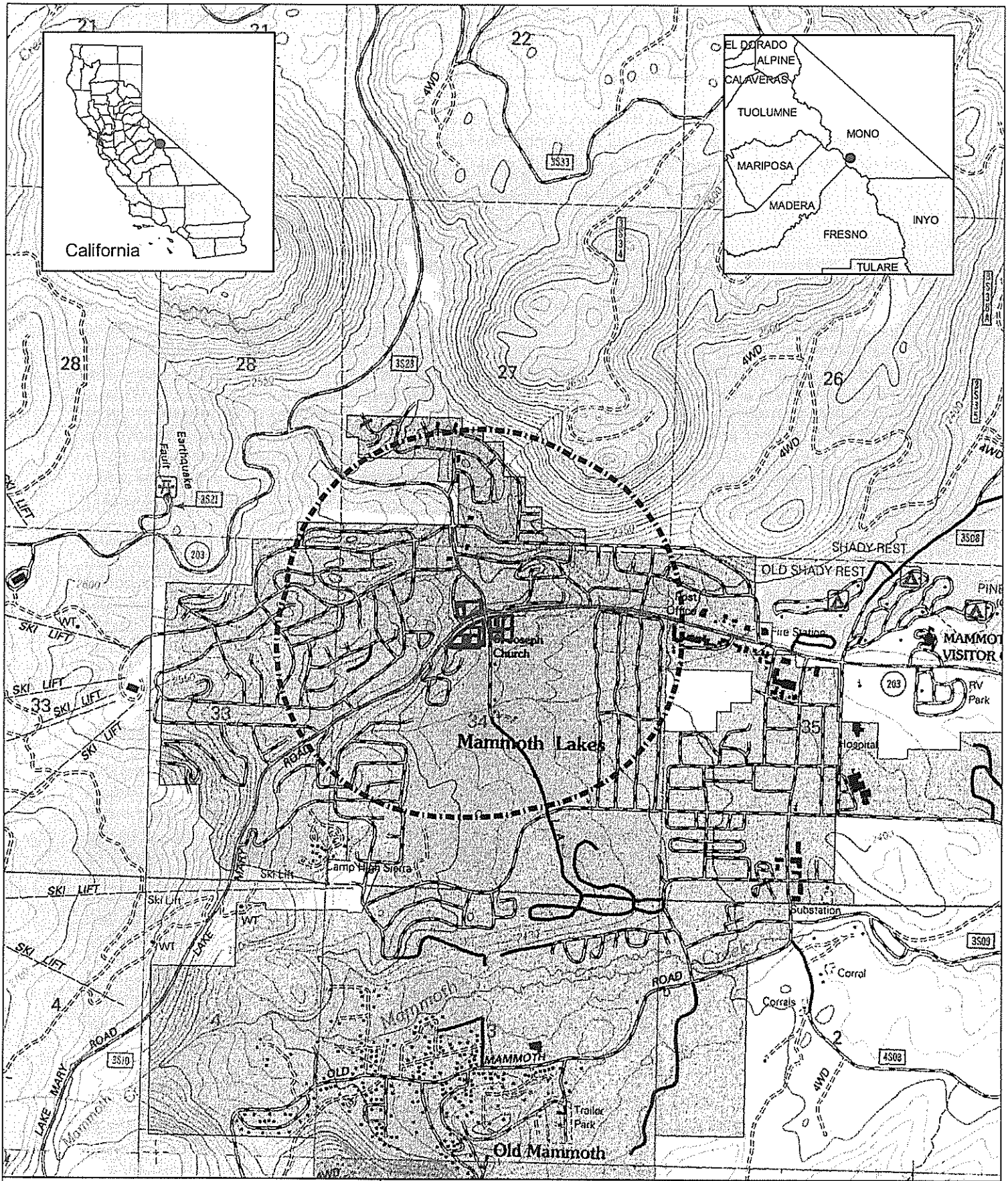
The study area falls within the USGS 7.5-minute *Old Mammoth,* CA quadrangle. Specifically, the project is located in Township 3 South, Range 27 East, Section 34. The study area includes the entire 9.3 acres outlined on the enclosed map.
I am requesting the following information:

- Groups or individuals listed by the NAHC as contacts within the vicinity of the project area.
- Identification by the NAHC of any sacred lands in the area that are listed within the Sacred Lands File.

Thank you for your attention to this request.

Sincerely,

Kevin Hunt
Project Manager – Cultural Resources
SWCA Environmental Consultants



0 250 500 Meters

0 1,000 2,000 Feet

N

1:24,000

USGS 7.5' Quadrangle:
Old Mammoth, CA 1994
Township: 03S, Range: 27E, Section: 34

Legend

Project Area

1/2 Mile Buffer

SWCA ENVIRONMENTAL CONSULTANTS

Project Location Map

Mammoth Crossing

October 2007 Figure 1

STATE OF CALIFORNIA Arnold Schwarzenegger, Governor

NATIVE AMERICAN HERITAGE COMMISSION
915 CAPITOL MALL, ROOM 364
SACRAMENTO, CA 95814
(916) 653-6251
Fax (916) 657-5390
Web Site www.nahc.ca.gov
e-mail: ds_nahc@pacbell.net

November 8, 2007

Mr. Kevin Hunt, Project Manager – Cultural Resources
SWCA Environmental Consultants *for the*
TOWN OF MAMMOTH LAKES
625 Fair Oaks Avenue, Suite 190
South Pasadena, CA 91016

Sent by FAX to: 626-240-0607
Number of pages: 2

Re: Tribal Consultation Per SB 18/Sacred Lands File Search for Project- **Mammoth Crossing Project;** Town of Mammoth Lakes; Mono County, California

Dear Mr. Hunt:

Government Code §65352.3 and .5 requires local governments to consult with California Native American tribes identified by the Native American Heritage Commission (NAHC) for the purpose of protecting, and/or mitigating impacts to cultural places. Attached is a Native American Tribal Consultation list of tribes with traditional lands or cultural places located within the requested plan boundaries

As a part of consultation, the NAHC recommends that local governments conduct record searches through the NAHC and California Historic Resources Information System (CHRIS) to determine if any cultural places are located within the area(s) affected by the proposed action.

A NAHC Sacred Lands File search was conducted based on the township, range, and section information included in your request and no sites were found within the area of potential effect you identified. However, local governments should be aware that records maintained by the NAHC and CHRIS are not exhaustive, and a negative response to these searches does not preclude the existence of a cultural place. A tribe may be the only source of information regarding the existence of a cultural place. I suggest you consult with all of those on the accompanying Native American Contacts list, which has been included separately. If they cannot supply information, they might recommend others with specific knowledge about cultural resources in your plan area. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from Tribes, please notify me. With your assistance we are able to assure that our consultation list contains current information.

If you have any questions, please contact me at (916) 653-6251.

Sincerely,

Dave Singleton
Program Analyst

Attachment: Native American Tribal Consultation List

Native American Contacts
Mono County
November 7, 2007

Benton Paiute Reservation
Joseph C. Saulque, Chairperson
Star Route 4, Box 56-A Paiute
Benton , CA 93512
numic@gnet.com
(760) 933-2321
(760)933-2412

Big Pine Band of Owens Valley THPO
Bill Helmer, Tribal Historic Preservation Officer
P.O. Box 700 Paiute
Big Pine , CA 93513
amargosa@aol.com
(760) 938-2003
(760) 938-2942 fax

Big Pine Band of Owens Valley
David Moose, Chairperson
P. O. Box 700 Owens Valley Paiute
Big Pine , CA 93513
bigpinetribaladmin@earthlink.
(760) 938-2003
(760) 938-2942-FAX

Bishop Paiute Tribe THPO
Theresa Stone-Yanez, Tribal Historic Preservation
50 Tu Su Lane Paiute-Shoshone
Bishop , CA 93514
(760) 873-3584, Ext 250
(760) 873-4143 - FAX

Bridgeport Paiute Indian Colony
Charlotte Baker, Chairperson
P.O. Box 37 Paiute
Bridgeport , CA 93517
bicgovadm@yahoo.com
(760) 932-7083
(760) 932-7846 Fax

Mono Lake Indian Community
Charlotte Lange, Chairperson
P.O. Box 117 Mono
Big Pine , CA 93513 Northern Pauite
(760) 938-1190

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native American with regard to cultural resources for the proposed Mammoth Lakes Crossing Specific Plan of the Town of Mammoth Lakes; Mono County, California for which a Sacred Lands File search and Native American Contacts list were requested.

SWCA®
ENVIRONMENTAL CONSULTANTS
Sound Science. Creative Solutions.

Pasadena Office
625 Fair Oaks Avenue, Suite 190
South Pasadena, CA 91030
Tel 626.240.0587 Fax 626.240.0607
www.swca.com

November 19 , 2007

Bill Helmer
Big Pine Band of Owens Valley
P.O. Box 700
Big Pine, CA 93513

Dear Bill Helmer,

SWCA Environmental Consultants has been retained by the Town of Mammoth Lakes to conduct a cultural resources study for the Mammoth Crossing Project located within the Town of Mammoth Lakes, Mono County, California.

As part of the process of identifying cultural resources issues for this project, SWCA requested the Native American Heritage Commission (NAHC) conduct a Sacred Lands File search and to provide a list of Native American individuals and/or tribal organizations that may have knowledge of cultural resources in or near the project area.

The NAHC search failed to indicate the presence of Native American Sacred Lands in the immediate vicinity of the project area, but did request that we consult with you directly regarding your knowledge of the presence of cultural resources that may be impacted by this project.

We are aware that the Town of Mammoth Lakes is conducting its own Native American consultation for this project in compliance with Senate Bill 18 of 2005 (SB 18). SWCA is conducting a separate consultation to ensure any cultural resources with Native American heritage value located within or near the project area are considered in the cultural resources study.

This project comprises approximately 9.3 acres of land, including assessor parcel numbers (APNs): APN 33-044-07, 33-044-10, 33-100-02, -03, -05, -06, -07, -10, 14, -15, -16, -17, -18, -32 and -38. The study area falls within portions of the USGS 7.5-minute *Old Mammoth, CA* quadrangle within Township 3 South, Range 27 East, Section 34 (see enclosed map).

If you have any knowledge of cultural resources that may exists within or near the project area and wish to have your concerns considered, please contact Robert Ramirez at (626)

SWCA
ENVIRONMENTAL CONSULTANTS

240-0587, rramirez@swca.com, or at the above address at your earliest convenience.

We would greatly appreciate hearing from you if you know of any cultural resources or have other concerns that might be within the proposed project area. Thank you for your assistance.

Sincerely,

Robert S. Ramirez, M.A., RPA
SWCA Environmental Consultants
Assistant Project Manager – Cultural Resources

Enclosure: Map

SWCA
ENVIRONMENTAL CONSULTANTS

CONVERSATION RECORD

DATE 11-26-2007 **TIME** 2:12 ☐ A.M. ☒ P.M.

NAME OF CONTACT Bill Helmer, THPO
COMPANY/AGENCY Big Pine Band of Owens Valley
PHONE NUMBER 760-938-2003
PROJECT NAME Mammoth Crossing **PROJECT NO.** 13539-191

Notes:

I received a call from Bill Helmer inquiring about the SB-18 consultation from the Town of Mammoth Lakes (town) regarding the Mammoth Crossing Project. He had received SWCA's letter, but stated that he has not received any correspondence from the Town yet and thought SB 18 consultation was required. I informed him that Town should be contacting him soon, but that the correspondence from SWCA was to help insure that everyone on the NAHC list was consulted and that the results of those effrts was included in our study. Mr. Helmer seemed pleased that SWCA conducted the additional search, and would be in touch in the future. He did not provide any specific information regarding Native American cultural resources within the Mammoth Crossing Project area.

RECORDED BY: Robert Ramirez

APPENDIX B:
Records Search Results

EASTERN INFORMATION CENTER

CALIFORNIA HISTORICAL RESOURCES INFORMATION SYSTEM
Department of Anthropology, University of California, Riverside, CA 92521-0418
(951) 827-5745 - Fax (951) 827-5409 - eickw@ucr.edu
Inyo, Mono, and Riverside Counties

October 23, 2007
RS #4082

Kevin Hunt
SWCA Environmental Consultants
625 Fair Oaks Avenue, Suite 190
South Pasadena, CA 91030

Re: Cultural Resources Records Search for the Mammoth Crossing Project (13539-191)

Dear Mr. Hunt,

We received your request on October 17, 2007, for a cultural resources records search for the Mammoth Crossing project, which is compromised of APN 33-044-07, 33-044-10, 33-010-02 through -07, 33-010-31 &32, and APN 33-100-14 through -18; located in Section 34, T.3S, R.27E, MDBM, in the Mammoth Lakes area of Mono County. We have reviewed our site records, maps, and manuscripts against the location map you provided.

Our records indicate that 23 cultural resources studies have been conducted within a half-mile radius of your project area. Three of these studies involved a portion of the project area. One additional study provides an overview of cultural resources in the general project vicinity. All of these reports are listed on the attachment entitled "Eastern Information Center Report Listing" and are available upon request at 15¢/page plus $40/hour.

No cultural resources properties are recorded within the boundaries of the project area. Our records indicate that seven properties have been recorded within a half-mile radius of the project area. Copies of the records are included for your reference.

The above information is reflected on the enclosed map. Areas that have been surveyed are highlighted in yellow. Numbers marked in blue ink refer to the report number in our manuscript files (MN #). Cultural resources properties are marked in red; numbers in black refer to Trinomial designations, those in green to Primary Number designations. National Register properties are indicated in light blue.

Additional sources of information consulted are identified below.

National Register of Historic Places: no listed properties are located within the boundaries of the project area.

Office of Historic Preservation (OHP), Archaeological Determinations of Eligibility (ADOE): no listed properties are located within the boundaries of the project area.

Office of Historic Preservation (OHP), Directory of Properties in the Historic Property Data File (HPD): no listed properties are located within the boundaries of the project area.

Note: not all properties in the California Historical Resources Information System are listed in the OHP ADOE and HPD; the ADOE and HPD comprise lists of properties submitted to the OHP for review.

A copy of the relevant portions of the 1953 USGS Mt. Morrison 15' topographic map is included for your reference.

As the Information Center for Mono County, it is necessary that we receive a copy of all cultural resources reports and site information pertaining to this county in order to maintain our map and manuscript files. Confidential information provided with this records search regarding the location of cultural resources outside the boundaries of your project area should not be included in reports addressing the project area.

Sincerely,

Rachel Williams

Rachel Williams
Information Officer

Enclosures

Eastern Information Center Report Listing

Report No.	Year	Author(s)	Title	Affiliation	Pages	Resources	----- Acreage ----- Survey	Monitoring
MN-00029	1978	TURNER, A.L; J.P. KING; R. BECKER; R.H. BROOKS	FINAL REPORT ON THE INTENSIVE ARCHAEOLOGICAL SURVEY OF THE SAWMILL TIMBER SALE COMPARTMENT, MONO COUNTY, CALIFORNIA	ARCHAEOLOGICAL RESEARCH CENTER	139	29	6530	0
MN-00082	1980	TAYLOR, WILLIAM T.	ARCHAEOLOGICAL RECONNAISSANCE REPORT - FOREST SERVICE FORTY LAND EXCHANGE	INYO NATIONAL FOREST--MAMMOTH RANGER DISTRICT	199	1	40	0
MN-00084	1980	TAYLOR, WILLIAM	ARCHAEOLOGICAL RECONNAISSANCE REPORT - MONO COUNTY PARK/RAYSON	INYO NATIONAL FOREST	5	0	4	0
MN-00086	1977	WITTERS, RANDY	ARCHAEOLOGICAL RECONNAISSANCE REPORT - EXCHANGE - CORPORATION YARD/ WOODSTOCK FOR MONACHE MEADOWS	INYO NATIONAL FOREST	15	0	5	0
MN-00087	1980	TAYLOR, WILLIAM	ARCHAEOLOGICAL RECONNAISSANCE REPORT - WOODSTOCK PARCEL/TANNER EXCHANGE	INYO NATIONAL FOREST	5	0	5	0
MN-00241	1983	BETTINGER, ROBERT L.; MARK E. BASGAL; M.G. DELACORTE	AN ARCHAEOLOGICAL RECONNAISSANCE OF MAMMOTH MOUNTAIN, MONO AND MADERA COUNTIES, CALIFORNIA	FAR WESTERN ANTHROPOLOGICAL RESEARCH GROUP	44	2	2000	0
MN-00352	1985	WILKE, PHILIP J.	ASSESSMENT OF PREHISTORIC CULTURAL RESOURCES AT TWO PROPOSED WATER STORAGE FACILITIES AT MAMMOTH LAKES, MONO COUNTY, CALIFORNIA	ARCHAEOLOGICAL RESEARCH UNIT, U.C. RIVERSIDE	7	0	40	0
MN-00463	1990	BURTON, JEFFREY F.	AN ARCHAEOLOGICAL SURVEY OF THE NORTH VILLAGE PROJECT AREA MAMMOTH LAKES, CALIFORNIA	TRANS-SIERRAN ARCHAEOLOGICAL RESEARCH (#19)	34	2	90	0
MN-00464	1990	BURTON, JEFFREY F.	AN ARCHAEOLOGICAL SURVEY OF THE LODESTAR PROPERTY MAMMOTH LAKES, CALIFORNIA	TRANS-SIERRAN ARCHAEOLOGICAL RESEARCH (#20)	30	6	200	0
MN-00465	1989	BURTON, JEFFREY F.	AN ARCHAEOLOGICAL SURVEY OF THE MINARET ROAD EXTENSION MAMMOTH LAKES, CALIFORNIA	TRANS-SIERRAN ARCHAEOLOGICAL RESEARCH (#17)	25	1	10	0
MN-00466	1990	BURTON, JEFFERY F.	ARCHAEOLOGICAL TESTING AT THE MINARET ROAD SITE (CA-RIV-2482) MAMMOTH LAKES, CALIFORNIA	TRANS-SIERRAN ARCHAEOLOGICAL RESEARCH (#25)	44	1	0	0
MN-00467	1991	KAUTZ, ROBERT R.	ARCHAEOLOGICAL TESTING PROCEDURES AT SIX SITES IN MAMMOTH LAKES, CA; THE LODESTAR PROJECT	MARIAH ASSOCIATES (MAMMOTH LAKES, CA)	40	7	0	0
MN-00533	1991	WOOLFENDEN, WALLACE B.	CULTURAL RESOURCES REPORT: CONTEL ELECTRONIC TELEPHONE CARRIER SYSTEM	INYO NATIONAL FOREST	6	0	1	0

Eastern Information Center Report Listing

Report No.	Year	Author(s)	Title	Affiliation	Pages	Resources	----- Acreage ----- Survey	Monitoring
MN-00566	1992	HANEY, JEFFERSON W.	WRITTEN IN BEDROCK: PREHISTORIC ACORN USE IN THE EASTERN SIERRA NEVADA		229	0	0	0
MN-00809	2006	Early, David E.	An Archaeological Survey Report for the "The Bungalows" Mono County, California	Independent Registered Forester	20	0	1	0
MN-00810	2003	Duke, Curt; Korene Russell	Archaeological Survey Report: Snowdrift Circuit, Southern California Edison Mammoth Lakes, Mono County, California Inyo National Forest	LSA Associates, Inc.	17	3	21	0
MN-00830	2005	Peak and Associates, Inc.	Cultural Resource Assessment for the Mammoth Lakes Family Apartments II, Mammoth Lakes, Mono County, California	Peak and Associates, Inc.	17	0	1	0
MN-00831	2005	Early, David E.	An Archaeological Survey Report for the Mammoth Hillside Resort Mono County, California	Author	45	0	4	0
MN-00832	2004	Early, David E.	An Archaeological Survey Report for the Intrawest and Town Timber Harvesting Plan Mono County, California	Author	19	0	6	0
MN-00842	2004	Burton, Jeff	Letter Report: Sierra Star Historic Site Evaluation	Trans-Sierran Archaeological Research	7	1	0	0
MN-00853	2005	Early, David E.	An Archaeological Survey Report for the Fairway 4/5 Town Homes Timber Harvest Plan Mono County, California	Author	19	0	6	0
MN-00855	2005	Hall, Sarah Workman	Archaeological Excavations at CA-MNO-2480 (North Village #2), Mammoth Lakes, California	Summit Environsolutions, Inc.	85	1	90	0
MN-00893	2004	Furnis, C. Lynn	An Archaeological Reconnaisance and Testing Report for the Lake Mary Road Bike Route, Mammoth Lakes, Mono County, California	Summit Envirosolutions, Inc.	49	7	57	0
MN-00900	2006	Peak and Associates	Cultural Resource Assessment, for the Mammoth Lakes Family, Apartments II, Mammoth Lakes, Mono County, California.	Peak and Associates, Inc	18	0	~5	0

APPENDIX C:
California Department of Parks & Recreation
Series 523 Forms

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code
Other Listings
Review Code Reviewer Date

 ***Resource Name or #:** St. Joseph's Church/Mammoth Cable TV Studio

P1. Other Identifier:

***P2. Location:** ☐ **Not for Publication** ■ **Unrestricted** ***a. County:** Mono

and (P2b and P2c or P2d. Attach a Location Map as necessary.)

***b. USGS 7.5' Quad:** Old Mammoth, CA **Date:** 1994 **T** 3S ; **R** 27E ; NW ¼ **of** NE ¼ **of Sec** 34 **;** M.D. **B.M.**

c. Address: City: Mammoth Zip:

d. UTM: Zone: 10 ; mE/ mN (G.P.S.)

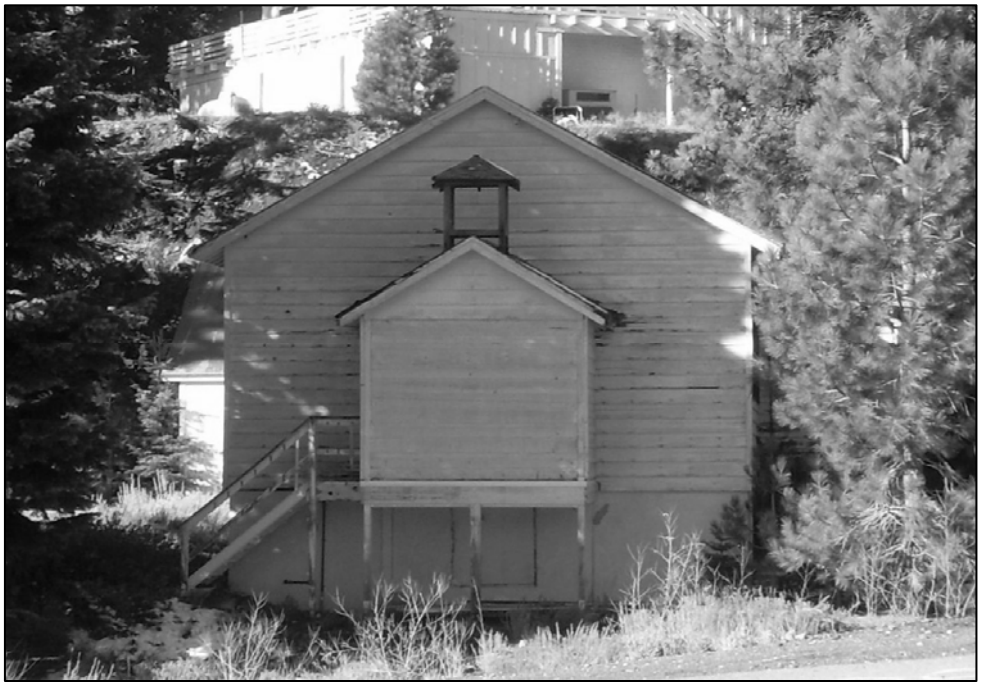
e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate) Elevation:
Southwest corner of Lake Mary and Minaret roads, Assessor's Parcel Number # 33-100-07.

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

This small former church building is a single story in height and is configured in a **T** in plan. The simple vernacular building is utilitarian in style and faces Lake Mary Road. The raised entrance consists of a small vestibule protected by a lower gabled roof. At the narthex or vestibule, doors open on one side and are served by a utilitarian, side stairwell. A schoolbell-type, 4-sided, hip roofed fixture punctuates the roof. Set on a slope, the building is on a raised foundation, and is clad in painted, shiplap joint clapboard. The cross-gabled, front-facing roof is medium-pitched and is finished in painted, corrugated metal. The marginally overhanging, plain eaves have extended rafter tails and simple fascia boards. The side walls of the nave contain sets of three equal-sized windows, each of which is a fixed rectangle with small, operable lower lights. At the transcept there are lower intersecting roofs and a side entrance with a single-leaf, slab door. The end wall contains an infilled door, with a central small, sliding window, which may be aluminum-framed. The church is in a sloped, wooded setting, surrounded by brush and mature trees.

***P3b. Resource Attributes:** (List attributes and codes) HP 16. Religious building, HP6. 1-3 story commercial building

***P4. Resources Present:** ■Building ☐Structure ☐Object ☐Site ☐District ☐Element of District ☐Other (Isolates, etc.)



P5b. Description of Photo: (View, date, accession #): Photograph #15; front elevation- view east; photo taken 11/14/2007

***P6. Date Constructed/Age and Sources:** ■Historic ☐Prehistoric ☐Both
c. 1950s (St. Joseph's website)

***P7. Owner and Address:**
Mammoth Crossing Condo LLC
5023 Parkway Calabasas
Calabasas, CA 91302-1421

***P8. Recorded by:** (Name, affiliation, and address)
Robert Ramirez and Francesca Smith
SWCA Environmental Consultants
625 Fair Oaks Ave., Suite 190
Soouth Pasadena, CA 91030

***P9. Date Recorded:** January 24, 2008

***P10. Survey Type:** (Describe)
Intensive

*P11. Report Citation: **(Cite survey report and other sources, or enter "none.")** Cultural Resources Survey and Evaluation of Historic Built Resources for the Mammoth Crossing Project, Mammoth Lakes, Mono County, California (SWCA Environmental Consultants, 2008)

***Attachments:** ☐NONE ☐Location Map ☐Sketch Map ☐Continuation Sheet ■Building, Structure, and Object Record ☐Archaeological Record ☐District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record ☐Artifact Record ☐Photograph Record ☐ Other (List):

BUILDING, STRUCTURE, AND OBJECT RECORD

***NRHP Status Code** 6L

***Resource Name or #** (Assigned by recorder) St. Joseph's Church/Mammoth Cable TV Studio

B1. Historic Name: St. Joseph's Church
B2. Common Name: Mamoth Cable Television Studio
B3. Original Use: church
B4. Present Use: community meeting house

***B5. Architectural Style:** Vernacular

***B6. Construction History:** (Construction date, alterations, and date of alterations)
Church built circa early 1950s. Church relocated on same lot, farther from street, circa early 1970s. Rectory demolished circa 1983. Front entrance porch and side wings added in 1986.

***B7. Moved?** ☐No ■Yes ☐Unknown **Date:** c. early 1970s **Original Location:** nearby, closer to street

***B8. Related Features:** Rectory (demolished, circa 1983)

B9a. Architect: unknown
b. Builder: unknown

***B10. Significance: Theme:** **Area:**
Period of Significance: Property Type: Applicable Criteria:
(Discuss importance in terms of historical or architectural context as defined by theme, period and geographic scope. Also address integrity.)

The baptismal record for this building, which was originally a Roman Catholic parish, St. Joseph's Church was established by Fr. Dale McGinnis, S.J., in 1939. Fr. James Kelly, S.J., who succeeded him, was responsible for later organization of the parish. After 1962, the parish was under the aegis of the newly established Stockton Diocese (St. Joseph's). Through the 1970s and 80s, the parish priest was Fr. Thomas V. "Tom" Savage, S.J. who was likely born in 1913 and died in 1988 (Manning, CSSDI). No other information was located on the lives of Frs. McGinnis, Kelly, or Savage (sources included the Dioceses of Stockton and Sacramento, California Social Security Death Index and Jesuits of the California Province).

The remaining, small church building was built in the early 1950s (St. Joseph's, all dates are approximate). According to his widow, local resident Henry J. Warta relocated the building "inboard" of the street in the early 1970s and converted its use to a television studio (refer to DRR 523 forms for Sartori Cabin/Mammoth Cable Television). A neighbor recalls "a Basque contractor from Reno" performing the relocation (Manning). The small rectory was demolished before the new church was completed (c. 1983, Manning). In 1986, alterations to the building included addition of the front entrance porch, stairs and rear side wings (Building Permit #85-117). Eventually, the church was replaced by a new complex at 58 Ranch Road, which was completed in 1992. Although it is possible for a relocated building that was once associated with a religious group to be eligible for listing in the California Register, the altered building is not eligible for California Register listing, either separately or as a contributor to a district. The building lacks integrity and it has no known associations with significant patterns of events (criterion 1); there are no direct associations with persons significant in our past (2); the altered building does not possess high artistic values (3); and it does not seem likely that the property would yield important prehistoric or historic information (4).

B11. Additional Resource Attributes: (List attributes and codes)

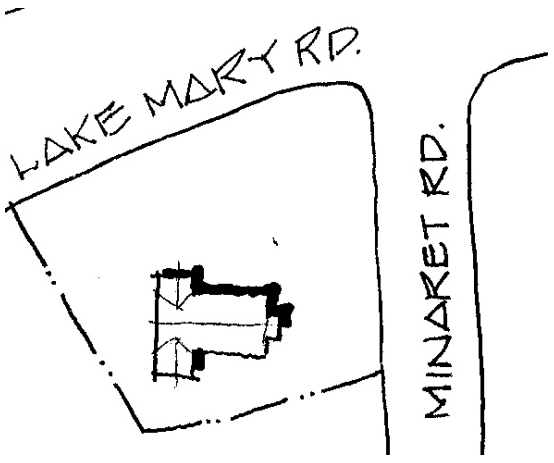
***B12. References:**
California Social Security Death Index (CSSDI)
Dennis Manning and Kathleen Warta, telephone interviews with Francesca Smith, 29 and 24 January, 2008 (respectively).
Receptionist, Diocese of Stockton, telephone interview with Francesca Smith, 24 January, 2008.
St. Joseph's website "Welcome to St. Joseph's Church" <http://www.mammothcatholicchurch.org>
Bill Sauser, telephone interview with Francesca Smith, 24 January, 2008
Town of Mammoth Lakes, Building Department "Application for Permit to Construct" Building Permit #85-117, 18 October, 1985.

B13. Remarks: None

***B14. Evaluator:** Francesca Smith, SWCA Environmental Consulatants

***Date of Evaluation:** January 24, 2008

(Sketch Map with north arrow required.)



(This space reserved for official comments.)

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code

Other Listings
Review Code | Reviewer | Date

***Resource Name or #:** Sartori Cabin/Mammoth Cable Televison and office building

P1. Other Identifier: None

***P2. Location:** ☐**Not for Publication** ■ **Unrestricted** ***a. County:** Mono

and (P2b and P2c or P2d. Attach a Location Map as necessary.)

***b. USGS 7.5' Quad:** Old Mammoth, CA **Date:** 1994 **T** 3S ; **R** 27E; NW ¼ **of** NE ¼ **of Sec** 34**;** M.D. **B.M.**

c. Address: 63 Lake Mary Road/3943 Main Street City: Mammoth Lakes Zip:

d. UTM: Zone: ; mE/ mN (G.P.S.)

e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate) Elevation:
nearby southwest corner of Lake Mary and Minaret roads, Assessor's Parcel Number # 33-100-07

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)
The subject property contains two buildings, a small, log constructed office building near the street (building 1), and a setback, two story office building (building 2). Building 1 is notably constructed of logs, it is symmetrical, one and one-half stories in height and is configured in an irregular **T** in plan. The rustic building was built elsewhere in Old Mammoth, around the 1920s using traditional log construction methods; it has a log-sided exterior with corner notches. The exterior perimeter walls are made from hewn logs, infilled with chinking and daubing. The building was relocated to its current location from a larger, nearby complex of other log buildings and was altered at that time. It has a steeply pitched, intersecting, side-gabled roof, with a central, front facing gable and attached shed roofed extension. The porch and main roof are clad in corrugated metal and are supported on large, peeled logs. The central entrance is a narrow porch, with a central, cross-buck door flanked by multi-light, rectangular windows. The building is three bays wide, with side bays containing two sets of windows on each bay with 3-over-3 multi-lights. The windows have natural wood surrounds and are deeply set in the thick log walls. The front gable is finished in painted or stained log siding with painted, block letters spelling out "Mammoth Cable Television," concentrically arranged around a painted sign. A utilitarian lamp punctuates the apex of the steep gable. The building is set on a low, natural stone, uncoursed foundation.
Refer to Continuation Sheet

***P3b. Resource Attributes:** (List attributes and codes) HP6: 1-3 story commercial building; HP 39: Other (log construction)

***P4. Resources Present:** ■Building ☐Structure ☐Object ☐Site ☐District ☐Element of District ☐Other (Isolates, etc.)

P5b. Description of Photo: (View, date, accession #): Photograph #20; Building 1- view south, photo taken 11/24/2007

***P6. Date Constructed/Age and Sources:** ■Historic
☐Prehistoric ☐Both
Building 1- c. 1920 (Valentine)
Building 2- late 1970s (Sauser)

***P7. Owner and Address:**
Mammoth Crossing LLC
5023 Parkway Calabasas
Calabasas, CA 91302

***P8. Recorded by:** (Name, affiliation, and address)
Robert Ramirez and Francesca Smith
SWCA Environmental Consultants
625 Fair Oaks Ave, Suite 190
South Pasadena, CA 91030

***P9. Date Recorded:**
January 24, 2008

***P10. Survey Type:** (Describe)
Intensive Pedestrian Survey

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.")
Cultural Resources Survey and Evaluation of Historic Built Resources for the Mammoth Crossing Project, Mammoth Lakes, Mono County, California (SWCA Environmental Consultants, 2008)

***Attachments:** ☐NONE ☐Location Map ☐Sketch Map ■Continuation Sheet ■Building, Structure, and Object Record ☐Archaeological Record ☐District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record ☐Artifact Record ☐Photograph Record ☐ Other (List):

BUILDING, STRUCTURE, AND OBJECT RECORD

 ***NRHP Status Code** 6L

***Resource Name or #** (Assigned by recorder) Sartori Cabin/Mammoth Cable Televison and office building

B1. Historic Name: Sartori Cabin
B2. Common Name: Mammoth Cable Televison and office
B3. Original Use: vacation residence B4. Present Use: none

***B5. Architectural Style:** log building

***B6. Construction History:** (Construction date, alterations, and date of alterations)
Building 1- Built circa 1920s, relocated to current site in early 1970s and converted from vacation residence to office building. Building 2- Built circa late 1970s.

***B7. Moved?** ☐No ■Yes ☐Unknown **Date:** c. late 1970s **Original Location:** Valentine Camp (Old Mammoth)

***B8. Related Features:**

B9a. Architect: unknown b. Builder: unknown

***B10. Significance: Theme:** **Area:**
Period of Significance: Property Type: Applicable Criteria:
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.)

Building 1 was constructed in about 1920 as a component of nearby Valentine Camp. It was relocated to the subject property by local resident Henry J. "Jim" Warta in the mid-to-late 1960s. Jim Warta was born in Colorado in 1923 and died in San Luis Obispo in 1990. Mr. Warta served in World War II, received a degree in mechanical engineering, and settled in Mammoth in 1949 with his new wife, the former Kathleen O'Brien (*Mammoth Times*, n.d.). Mr. Warta was given the building by the then-owners of the Valentine Camp shortly before the camp was converted to use as a university research facility. After Mr. Warta relocated the log building, he is said to have single-handedly constructed the foundation and reassembled the log building according to a complex numbering system (Warta). Warta established the local cable television station at approximately the same time as he relocated the log building, and it served as the headquarters for Mammoth Cable television until recently. According to Mono County Tax Assessor's records, Kathleen Warta and Fairway US III (a corporation) transferred the property to the current owners, Mammoth Crossing LLC, in 2003 by a deed of trust.

The nearby donor site, Valentine Camp (now Valentine Reserve), currently contains three remaining original log buildings from what was once a complex of at least five such buildings (www.vesr.ucrns.org). Building 1was initially the cabin of Joseph Sartori, in what was a rustic compound of similar log buildings owned by a group of influential Los Angeles businessmen. The owners of Valentine Camp, beginning in 1916 (with major business affiliations listed in parentheses) were: Michael Connell (Bellridge Oil), Ira Copley (San Diego *Union-Tribune*), William Kerchoff (Kerchoff Lumber and Southern California Gas Company), Henry O'Melveny (O'Melveny & Meyers), Joseph Sartori (Security Bank) and William L. Valentine (Fullerton Oil Company, Robinson's department store).

Refer to Continuation Sheets

11. Additional Resource Attributes: (List attributes and codes)

***B12. References:**

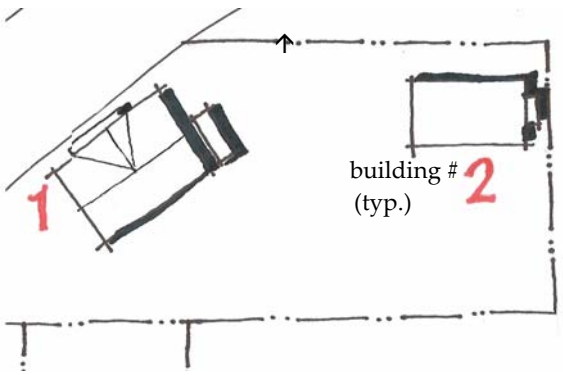
"Banker & Civic Leader Sartori Succumbs at 87" *Los Angeles Times.* 7 October, 1956, 1.
"Mammoth Locals Reunion" *Mammoth Times*, n.d. <www.mammothtimes.com/context/view/58152/196>
Bill Sauser, telephone interview with Francesca Smith, 24 January, 2008.
Carol Valentine, "A History of the Valentine Camp" <www.vesr.ucrns.org>
Kathleen Warta, telephone interview with Francesca Smith, 24 January, 2008.

B13. Remarks: None

***B14. Evaluator:** Francesca Smith, SWCA Environmental Consultants

***Date of Evaluation:** January 24, 2008

(Sketch Map with north arrow required.)



(This space reserved for official comments.)

***P3a. Description:**
Building 2 is a vernacular office building, set back from the street. It is two stories in height with a flat roof. The simple elevation is utilitarian in style and has punched windows. The lower level is finished in painted slumpstone, the second floor is clad in painted board and batten. The asymmetrical composition has two pedestrian doors at the lower level, balanced by a large side bay. The second floor is slightly stepped out, and has fixed, three-part windows, punctuated by a central, paired window. The building is set on a low sloping hillside, with an informal parking lot on the front elevation, surrounded by mature trees.

Photo 2: Office building- view east. Photograph #21, November 24, 2007

***B10. Significance:**
In 1972, the extraordinary camp and its surrounding acreage was donated to the University of California, and became the Valentine Eastern Sierra Reserve for use as the Natural Reserve System (Valentine, 3).

The original owner or steward of building 1, Joseph F. Sartori (1858-1945), was a powerful German-American banker and civic leader. Sartori notably established Security Bank and was outspoken in Republican politics. Mr. Valentine's wife, Carol, described the original cabin and its owner in "A History of the Valentine Camp": "physically he was a very small man… Everything in his cabin was built on a small scale, including the bathtub which appeared to be for a child" (Valentine, 4). The Sartori cabin was the smallest of the rustic log residences; it "had three very small rooms and the [aforementioned] *minute* bathtub" (Valentine, 4). Mrs. Valentine's perspective may have been skewed, however, as she was extremely tall. The small cabin was "offered to Jim Warta… [who] dismantled it, moved it to his property, and rebuilt it for his workshop. It… [was then used as… the Mammoth cable TV office" (Valentine, 7).

Building 1 is locally referred to as the Warta Cabin; however, the correct common name is Mammoth Cable Television, as the Warta family never occupied the building as a residence. The Warta family offered the building to the Southern Mono Historical Society for relocation to Old Mammoth Village, but funds to carry out that move have not materialized.

Although building 1 was directly associated with Joseph Sartori, a person important in our past, its relocation and adaptive use as an office diminish its direct association with Sartori as well as strongly decreases its integrity. The integrity of its location, the connection to its original setting, its materials have been compromised by the addition of modern metal spikes (for seismic retrofit, Sauser), the original archaic workmanship was changed, its design was altered in the relocation, and ultimately the original feeling of the building when it was part of the camp and its associations have been reduced or lost. Relocation from the Valentine Camp setting negates what was a connection between its original pastoral landscape and other related buildings in the camp. In addition, that relocation likely changed its appearance, as it no longer exhibits the characteristics of a building from the 1920s. Sufficient time has not passed to allow evaluation of the accomplishments of the Warta family against those of their peers, while they are obviously important in the recent development of the community of Mammoth Lakes.

***B10. Significance:**

Because of these factors, building 1 is not eligible for listing in the California Register as a separate property or as a contributor to a historic district. The altered, relocated building has no known associations with significant patterns of events (Criterion 1); it does not retain the integrity of its direct association with Joseph Sartori, a person significant in our past (Criterion 2); the altered building no longer possesses high artistic values because of the alterations (Criterion 3); and it is not likely to yield important prehistoric or historic information (Criterion 4).

Because of its recent construction date and lack of demonstrable overriding significance, building 2 does not warrant evaluation for California Register eligibility.

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code

Other Listings
Review Code | Reviewer | Date

Page 1 **of** 2 *__Resource Name or #:__ Ullr Lodge

P1. Other Identifier: None

***P2. Location:** ☐ **Not for Publication** ■ **Unrestricted** ***a. County:** Mono

and (P2b and P2c or P2d. Attach a Location Map as necessary.)

***b. USGS 7.5' Quad:** Old Mammoth, CA **Date:** 1994 **T** 3S ; **R** 27E SE ¼ **of** NW ¼ **of Sec** 34 M.D. **B.M.**

c. Address: 5890-5920 Minaret Road City: Mammoth Lakes Zip: 93546

d. UTM: Zone:

e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate) Elevation: nearby southeast corner of Minaret and Lake Mary roads, Assessor's Parcel Number # 33-10-014

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

This former motel building is two-and-one-half stories in height, and is configured in a rectanglar plan. The endwall of the long, narrow rectangle has a polychromatic faux chalet façade which faces Minaret Road. Its chalet characteristics include its use of "exposed and decorative use of structural members… [and] balconies" (Harris). Aside from its large size, and simple form beyond the façade, its features that do not follow the chalet style include the upper floor not projecting beyond the story below and the lack of exposed exterior stairs. Notably, the chalet façade embellishment is the only such ornamentation on the building. The lower floor is plastered and the upper floors are finished in stained, milled wood, affixed horizontally. A central porch at the entrance was removed, but the projecting 2/3rds length, rustic balcony remains. All front facing windows are paired casement-type, multi-light (2-2-2), with heavy, rustic false shutters. The upper story of the main elevation contains a picturesque, multi-light door, and four sets of two each, paired windows. At the very top of the gable, a paired casement window has a decorative, stenciled flower box below. The front-facing, medium pitched, gabled roof extends to cover the entire building volume. The deeply overhanging eaves feature scalloped vergeboards, and are supported on heavy, stepped knee braces. The interstitial area between the attic and upper floor is embellished with decorative Scandinavian- and Northern European-themed cartouches. The side elevations have various punched openings (windows, garage doors) that are finished in wood on the second floor and plaster below. The building is on a nearly flat lot, surrounded at the street by mature trees.

***P3b. Resource Attributes:** (List attributes and codes) HP5: hotel/motel, HP6: 1-3 story commercial building

P4. Resources Present: ■Building ☐Structure ☐Object ☐Site ☐District ☐Element of District ☐Other (Isolates, etc.)

P5b. Description of Photo: (View, date, accession #) Photograph # 12; façade, view north; 11/24/2007

***P6. Date Constructed/Age and Sources:** ■Historic ☐Prehistoric ☐Both
1963 (Dennis Manning, former owner)

***P7. Owner and Address:**
Mammoth White Stag LLC
5023 Parkway Calabasas
Calabasas, CA 91302-1421

***P8. Recorded by:** (Name, affiliation, and address)
Robert Ramirez and Francesca Smith
SWCA Environmental Consultants
625 Fair Oaks Ave., Suite 190
South Pasadena, CA 91030

***P9. Date Recorded:** January 24, 2008

***P10. Survey Type:** (Describe)
Intensive

*P11. Report Citation: (Cite survey report and other sources, or enter "none.") Cultural Resources Survey and Evaluation of Historic Built Resources for the Mammoth Crossing Project, Mammoth Lakes, Mono County, California (SWCA Environmental Conultants, 2008)

***Attachments:** ☐NONE ☐Location Map ☐Sketch Map ☐Continuation Sheet ■Building, Structure, and Object Record ☐Archaeological Record ☐District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record ☐Artifact Record ☐Photograph Record ☐ Other (List):

BUILDING, STRUCTURE, AND OBJECT RECORD

***NRHP Status Code** 6L

***Resource Name or #** (Assigned by recorder) Ullr Lodge

B1. Historic Name: Ullr Lodge
B2. Common Name:
B3. Original Use: motel
B4. Present Use: vacant

***B5. Architectural Style:** Swiss Chalet/vernacular motel

***B6. Construction History:** (Construction date, alterations, and date of alterations)

Building was constructed in 4 sections: 1- front section built c. 1963, 2- interconnected 2nd section completed c. 1967, 3- completed c. 1969; 3- 4th section, manager's house completed c. 1979. Liquid propane gas tanks installed on property (1997). Garage remodeled (2001). Stairway reconstructed following fire (1999). Front porch removed and door replaced with interior slab door (dates unknown).

***B7. Moved?** ■No ☐Yes ☐Unknown **Date:** **Original Location:**

***B8. Related Features:**

B9a. Architect: unknown
b. Builder: unknown

***B10. Significance: Theme:** **Area:**

Period of Significance: **Property Type:** **Applicable Criteria:**

(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.)

Ullr Lodge was built in four segments. The first segment of the building including the picturesque façade was completed in 1963, the contiguous 2nd section in 1967, the 3rd was built in 1969 and the final portion, the manager's house was completed in 1979 (all dates approximate, Manning). The first 3 phases of the Ullr Lodge were built by area plastering contractor, Robert Briggs Robinson with his father, John C. Robinson. The younger Robinson (b. 1938) was a colorful local, whose small motel was one of the first dormitory-style motels in Mammoth. Robinson operated the motel in a *laissez faire*, pay-as-you-go fashion. The property address was originally Summer Home Road, which was widened, extended and renamed Minaret Road sometime before 1976. In late 1979, Caltrans Engineer, Dennis Manning and his wife, Melissa acquired the property. The Manning's operated the facility with a more formal business plan, while raising a family and added the manager's residence at the far end of the building. Since the Manning's sold the property, the front porch was removed from the main elevation. When the building recently closed, it was one of the last remaining dormitory-style motels in Mammoth. At the height of dorms' popularity, there were more than 12 "affordable" dorm-style motels in the small skiing community. No other consequential information was located on the building or its former owners.

Ullr Lodge was named for Norse mythological character, Ullr (pronounced OO-LUR) "the god of snow shoes, hunting, the bow and the shield" (*Brittanica*). In the mid-20th century when the lodge was built , Ullr pins and charms were good luck wishes for skiers, in honor of the "handsome stepson of the thunder god Thor" (*Brittanica*). Numerous other ski facilities are named for Ullr as well.

The altered building is not eligible for listing in the California Register separately or as a contributor to a district. It has are no known associations with significant patterns of events (Criterion 1); there are no direct associations with persons significant in our past (Criterion 2); the altered buildings do not possess high artistic values (Criterion 3); and it is not likely to yield important prehistoric or historic information (Criterion 4).

B11. Additional Resource Attributes: (List attributes and codes)

***B12. References:**

Al Cohan, telephone interview with Francesca Smith, 10 January, 2008.
Cyril M. Harris, *Dictionary of Architecture and Construction*, 1975.
Encyclopedia Brittanica, 2008 <encyclopedia britanica.com>
Dennis Manning, former owner, telephone interview with Francesca Smith, 29 January, 2008.

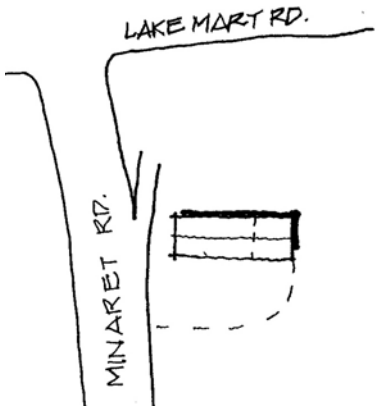
B13. Remarks: None

***B14. Evaluator:** Francesca Smith, SWCA Environmental Consultants

***Date of Evaluation:** January 24, 2008

(This space reserved for official comments.)

(Sketch Map with north arrow required.)



no scale

↑ N

COMMUNITY DEVELOPMENT
Planning Division
P.O. Box 1609, Mammoth Lakes, CA 93546
(760) 934-8989 ext. 269, fax (760) 934-8608

November 27, 2007

Joseph C. Saulque
Chairperson
Benton Paiute Reservation
Star Route 4, Box 56-A
Benton, CA 93512

Re: Mammoth Crossing Project; Native American Cultural Resources Consultation; Township 3S, Range 27E, Section 34 M.D.B.M.

Dear Mr. Saulque

The Town of Mammoth Lakes, California (Town), requests your participation in the review process for the Mammoth Crossing Project. This project proposes a mixed-use development of three areas of potential effect (sites) on the northwest, southwest, and southeast corners of the intersection of Main Street, Lake Mary Road, and Minaret Road. The Mammoth Crossing Project is subject to the California Environmental Quality Act (CEQA) and Section 65352.3 of the Government Code (Senate Bill 18 [2004]).

The Town contacted the California Native American Heritage Commission (NAHC), who requested that we consult with you directly regarding the potential for the presence of Native American cultural resources that may be impacted by this project. The project is currently in the process of environmental review, and as such, a cultural resources study is currently being completed to assess the presence or absence of cultural resources.

The Town feels that your comments regarding decisions that may affect ancestral tribal sites are very important. Any information you have regarding cultural places will be kept strictly confidential and will not be divulged to the public. Please forward any comments regarding this project to Ellen Clark by Monday, February 25, 2008.

If you have any questions, you can reach me at (760) 934-8989 x269.

Sincerely,

Ellen Clark
Senior Planner

Attachment: Project Location Map

Cc: Doug Regelous, Mammoth Crossing
Chuck Brook, Brook Development
Leslie Klusmire
Sandra Moberly, Town of Mammoth Lakes
Terri McCracken, Christopher A. Joseph Associates

COMMUNITY DEVELOPMENT
Planning Division
P.O. Box 1609, Mammoth Lakes, CA 93546
(760) 934-8989 ext. 269, fax (760) 934-8608

November 27, 2007

Big Pine Band of Owens Valley
David Moose
Chairperson
P.O. Box 700
Big Pine, CA 93513

Re: Mammoth Crossing Project; Native American Cultural Resources Consultation; Township 3S, Range 27E, Section 34 M.D.B.M.

Dear Mr. Moose

The Town of Mammoth Lakes, California (Town), requests your participation in the review process for the Mammoth Crossing Project. This project proposes a mixed-use development of three areas of potential effect (sites) on the northwest, southwest, and southeast corners of the intersection of Main Street, Lake Mary Road, and Minaret Road. The Mammoth Crossing Project is subject to the California Environmental Quality Act (CEQA) and Section 65352.3 of the Government Code (Senate Bill 18 [2004]).

The Town contacted the California Native American Heritage Commission (NAHC), who requested that we consult with you directly regarding the potential for the presence of Native American cultural resources that may be impacted by this project. The project is currently in the process of environmental review, and as such, a cultural resources study is currently being completed to assess the presence or absence of cultural resources.

The Town feels that your comments regarding decisions that may affect ancestral tribal sites are very important. Any information you have regarding cultural places will be kept strictly confidential and will not be divulged to the public. Please forward any comments regarding this project to Ellen Clark by Monday, February 25, 2008.

If you have any questions, you can reach me at (760) 934-8989 x269.

Sincerely,

Ellen Clark
Senior Planner

Attachment: Project Location Map

Cc: Doug Regelous, Mammoth Crossing
Chuck Brook, Brook Development
Leslie Klusmire
Sandra Moberly, Town of Mammoth Lakes
Terri McCracken, Christopher A. Joseph Associates

COMMUNITY DEVELOPMENT
Planning Division
P.O. Box 1609, Mammoth Lakes, CA 93546
(760) 934-8989 ext. 269, fax (760) 934-8608

November 27, 2007

Big Pine Band of Owens Valley THPO
Bill Helmer
Tribal Historic Preservation Officer
P.O. Box 700
Big Pine, CA 93513

Re: Mammoth Crossing Project; Native American Cultural Resources Consultation; Township 3S, Range 27E, Section 34 M.D.B.M.

Dear Mr. Helmer

The Town of Mammoth Lakes, California (Town), requests your participation in the review process for the Mammoth Crossing Project. This project proposes a mixed-use development of three areas of potential effect (sites) on the northwest, southwest, and southeast corners of the intersection of Main Street, Lake Mary Road, and Minaret Road. The Mammoth Crossing Project is subject to the California Environmental Quality Act (CEQA) and Section 65352.3 of the Government Code (Senate Bill 18 [2004]).

The Town contacted the California Native American Heritage Commission (NAHC), who requested that we consult with you directly regarding the potential for the presence of Native American cultural resources that may be impacted by this project. The project is currently in the process of environmental review, and as such, a cultural resources study is currently being completed to assess the presence or absence of cultural resources.

The Town feels that your comments regarding decisions that may affect ancestral tribal sites are very important. Any information you have regarding cultural places will be kept strictly confidential and will not be divulged to the public. Please forward any comments regarding this project to Ellen Clark by Monday, February 25, 2008.

If you have any questions, you can reach me at (760) 934-8989 x269.

Sincerely,

Ellen Clark
Senior Planner

Attachment: Project Location Map

Cc: Doug Regelous, Mammoth Crossing
Chuck Brook, Brook Development
Leslie Klusmire
Sandra Moberly, Town of Mammoth Lakes
Terri McCracken, Christopher A. Joseph Associates

COMMUNITY DEVELOPMENT
Planning Division
P.O. Box 1609, Mammoth Lakes, CA 93546
(760) 934-8989 ext. 269, fax (760) 934-8608

November 27, 2007

Bishop Paiute Tribe THPO
Theresa Stone-Yanez
Tribal Historic Preservation Officer
50 Tu Su Lane
Bishop, CA 93514

Re: Mammoth Crossing Project; Native American Cultural Resources Consultation; Township 3S, Range 27E, Section 34 M.D.B.M.

Dear Ms. Stone-Yanez

The Town of Mammoth Lakes, California (Town), requests your participation in the review process for the Mammoth Crossing Project. This project proposes a mixed-use development of three areas of potential effect (sites) on the northwest, southwest, and southeast corners of the intersection of Main Street, Lake Mary Road, and Minaret Road. The Mammoth Crossing Project is subject to the California Environmental Quality Act (CEQA) and Section 65352.3 of the Government Code (Senate Bill 18 [2004]).

The Town contacted the California Native American Heritage Commission (NAHC), who requested that we consult with you directly regarding the potential for the presence of Native American cultural resources that may be impacted by this project. The project is currently in the process of environmental review, and as such, a cultural resources study is currently being completed to assess the presence or absence of cultural resources.

The Town feels that your comments regarding decisions that may affect ancestral tribal sites are very important. Any information you have regarding cultural places will be kept strictly confidential and will not be divulged to the public. Please forward any comments regarding this project to Ellen Clark by Monday, February 25, 2008.

If you have any questions, you can reach me at (760) 934-8989 x269.

Sincerely,

Ellen Clark
Senior Planner

Attachment: Project Location Map

Cc: Doug Regelous, Mammoth Crossing
Chuck Brook, Brook Development
Leslie Klusmire
Sandra Moberly, Town of Mammoth Lakes
Terri McCracken, Christopher A. Joseph Associates

COMMUNITY DEVELOPMENT
Planning Division
P.O. Box 1609, Mammoth Lakes, CA 93546
(760) 934-8989 ext. 269, fax (760) 934-8608

November 27, 2007

Bridgeport Paiute Indian Colony
Charlotte Baker
Chairperson
P.O. Box 37
Bridgeport, CA 93517

Re: Mammoth Crossing Project; Native American Cultural Resources Consultation; Township 3S, Range 27E, Section 34 M.D.B.M.

Dear Ms. Baker

The Town of Mammoth Lakes, California (Town), requests your participation in the review process for the Mammoth Crossing Project. This project proposes a mixed-use development of three areas of potential effect (sites) on the northwest, southwest, and southeast corners of the intersection of Main Street, Lake Mary Road, and Minaret Road. The Mammoth Crossing Project is subject to the California Environmental Quality Act (CEQA) and Section 65352.3 of the Government Code (Senate Bill 18 [2004]).

The Town contacted the California Native American Heritage Commission (NAHC), who requested that we consult with you directly regarding the potential for the presence of Native American cultural resources that may be impacted by this project. The project is currently in the process of environmental review, and as such, a cultural resources study is currently being completed to assess the presence or absence of cultural resources.

The Town feels that your comments regarding decisions that may affect ancestral tribal sites are very important. Any information you have regarding cultural places will be kept strictly confidential and will not be divulged to the public. Please forward any comments regarding this project to Ellen Clark by Monday, February 25, 2008.

If you have any questions, you can reach me at (760) 934-8989 x269.

Sincerely,

Ellen Clark
Senior Planner

Attachment: Project Location Map

Cc: Doug Regelous, Mammoth Crossing
Chuck Brook, Brook Development
Leslie Klusmire
Sandra Moberly, Town of Mammoth Lakes
Terri McCracken, Christopher A. Joseph Associates

COMMUNITY DEVELOPMENT
Planning Division
P.O. Box 1609, Mammoth Lakes, CA 93546
(760) 934-8989 ext. 269, fax (760) 934-8608

November 27, 2007

Mono Lake Indian Community
Charlotte Lange
Chairperson
P.O. Box 117
Big Pine, CA 93513

Re: Mammoth Crossing Project; Native American Cultural Resources Consultation; Township 3S, Range 27E, Section 34 M.D.B.M.

Dear Ms. Lange

The Town of Mammoth Lakes, California (Town), requests your participation in the review process for the Mammoth Crossing Project. This project proposes a mixed-use development of three areas of potential effect (sites) on the northwest, southwest, and southeast corners of the intersection of Main Street, Lake Mary Road, and Minaret Road. The Mammoth Crossing Project is subject to the California Environmental Quality Act (CEQA) and Section 65352.3 of the Government Code (Senate Bill 18 [2004]).

The Town contacted the California Native American Heritage Commission (NAHC), who requested that we consult with you directly regarding the potential for the presence of Native American cultural resources that may be impacted by this project. The project is currently in the process of environmental review, and as such, a cultural resources study is currently being completed to assess the presence or absence of cultural resources.

The Town feels that your comments regarding decisions that may affect ancestral tribal sites are very important. Any information you have regarding cultural places will be kept strictly confidential and will not be divulged to the public. Please forward any comments regarding this project to Ellen Clark by Monday, February 25, 2008.

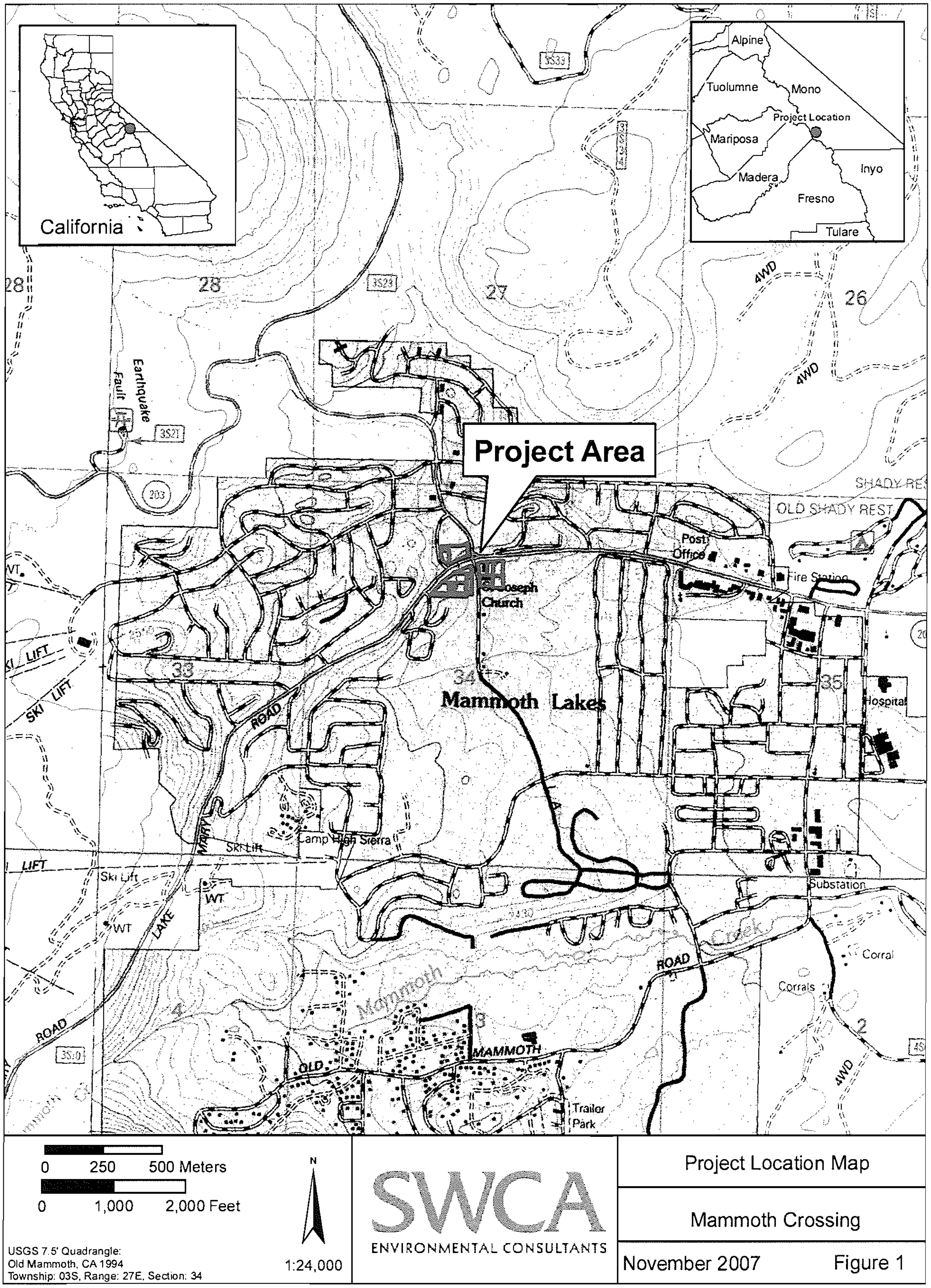
If you have any questions, you can reach me at (760) 934-8989 x269.

Sincerely,

Ellen Clark
Senior Planner

Attachment: Project Location Map

Cc: Doug Regelous, Mammoth Crossing
Chuck Brook, Brook Development
Leslie Klusmire
Sandra Moberly, Town of Mammoth Lakes
Terri McCracken, Christopher A. Joseph Associates


California
Alpine
Tuolumne
Mono
Project Location
Mariposa
Inyo
Madera
Fresno
Tulare
Project Area
Earthquake Fault
St. Joseph Church
Post Office
Fire Station
Hospital
Mammoth Lakes
OLD SHADY REST
Camp High Sierra
Ski Lift
Substation
Corral
Corrals
Trailer Park
0 250 500 Meters
0 1,000 2,000 Feet
N
USGS 7.5' Quadrangle:
Old Mammoth, CA 1994
Township: 03S, Range: 27E, Section: 34
1:24,000
SWCA
ENVIRONMENTAL CONSULTANTS
Project Location Map
Mammoth Crossing
November 2007
Figure 1

APPENDIX F

GEOTECHNICAL/HAZARDS REPORTS

November 30, 2007 Project No. 3.01764.3

Mammoth Crossing Development LLC
c/o George Petrie
Goodman Real Estate, Inc.
2801 Alaskan Way, Suite 310
Seattle, Washington 98121

Attention: Ms. Melissa Koenig

Subject: **PRELIMINARY GEOTECHNICAL INVESTIGATION**
Mammoth Crossing - 3 Corners
Mammoth Lakes, California

Dear Ms. Koenig:

In accordance with your authorization of our proposal for services, dated October 23, 2007, we herein submit the results of our preliminary geotechnical investigation of the subject property. It is our understanding that the proposed project is in the planning stages and that our report will be included as part of Environmental Impact Report and will also be used to satisfy the conditions for TTM approval for the 9.27-acre subject area. Therefore this report does **not** include foundation nor earthwork and grading recommendations.

Based on the results of this study, future construction on the subject site is feasible from a geotechnical standpoint. The primary geologic and geotechnical constraint to development of the subject property is the potential seismic hazard associated with strong ground shaking.

A detailed geotechnical investigation which will include foundation design criteria as well as earthwork and grading recommendations should be provided for the proposed project(s) once the designs have been further established.

We appreciate the opportunity to be of service to you. Should you have any questions regarding this report, please do not hesitate to contact us.

Respectfully,

SIERRA GEOTECHNICAL SERVICES, INC.

Thomas A. Platz
President
PE C41039

Joseph A. Adler
Principal Geologist
CEG 2198

jaa:tap

(3) Addressee

PRELIMINARY GEOTECHNICAL INVESTIGATION

FOR

MAMMOTH CROSSING
MAMMOTH LAKES, CALIFORNIA

NOVEMBER 30, 2007
PROJECT NO. 3.01764.3

Prepared By:

SIERRA GEOTECHNICAL SERVICES, INC.
P.O. Box 5024
Mammoth Lakes, California 93546
(760) 934-3992

www.sierrageotechnicalinc.com

TABLE OF CONTENTS

LIST OF ATTACHMENTS

1. PURPOSE AND SCOPE

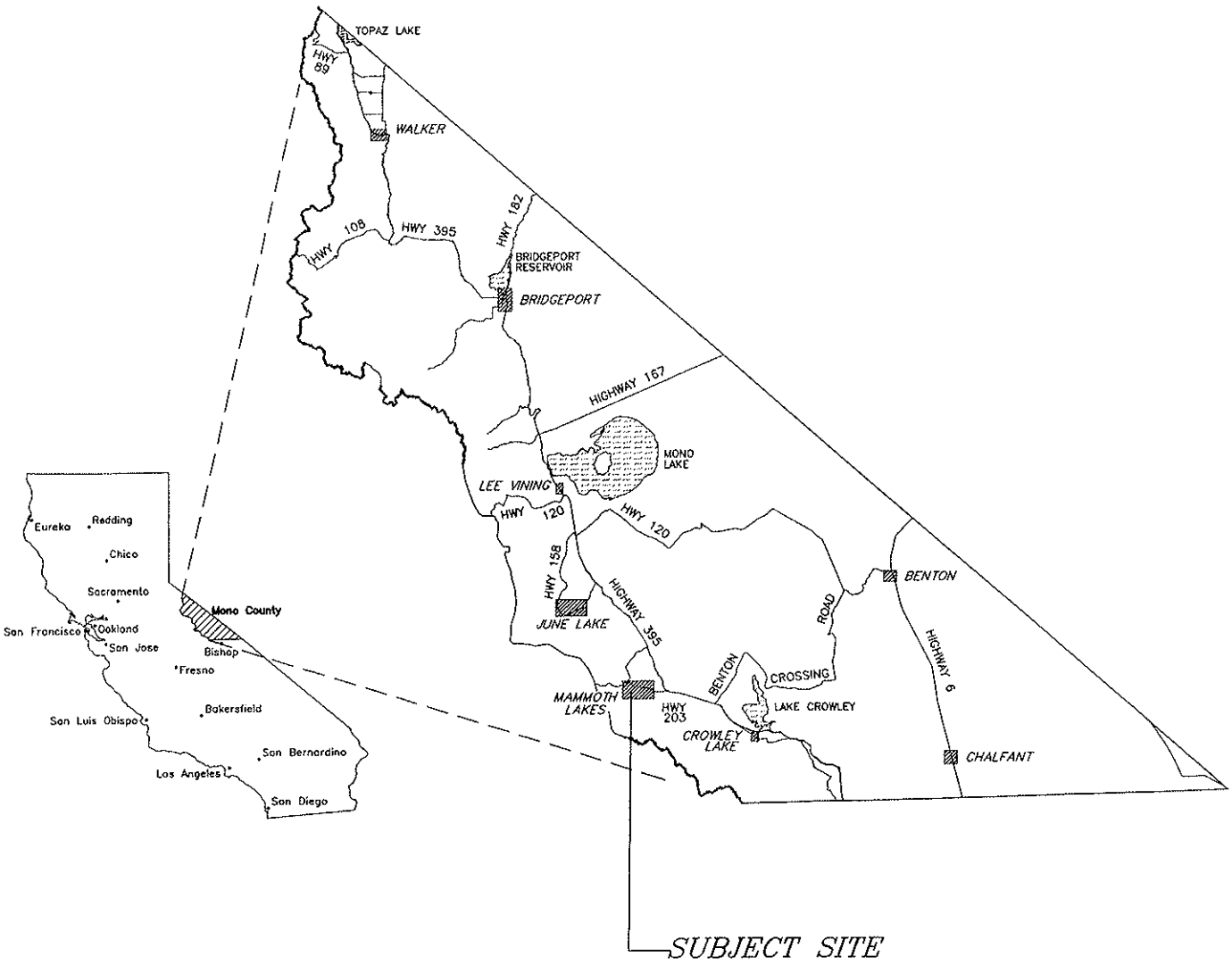
This report presents the results of a preliminary geotechnical investigation for the Mammoth Crossing project to be located on three corners adjacent the intersection of Lake Mary Road and Minaret Road in Mammoth Lakes, California (Figure 1). This report addresses the geologic and geotechnical conditions on-site as required to satisfy the conditions for the EIR and tentative tract map approval. This report does not include foundation nor earthwork and grading recommendations.

The scope of this investigation included a review of stereoscopic aerial photographs, readily available published and unpublished geologic literature, geologic and geotechnical evaluation and analysis of the collected data, and preparation of this report presenting the results of our findings. A subsurface field investigation was performed on November 5th, 2007 and included the excavation of eight exploratory test pits within the site areas. A geologist from our office logged the excavations as they were advanced. Approximate locations of the exploratory test pits are shown on the Subsurface Geotechnical Plan (Figure 3).

After the test pits were excavated and logged, they were loosely backfilled with the excavated soil and not compacted to the requirements typically specified for engineered fill. Prior to construction the test pit backfill material should be removed and compacted in accordance with the earthwork recommendations contained within this report. If the backfill materials are left "as-is" structures located over these areas may experience some degree of settlement.

2. SITE DESCRIPTION

The Mammoth Crossing project is regionally located in east-central California, in the southwest portion of Mono County, south of Mono Lake and west of Crowley Lake (Figure 1), and it is centered on the approximate map coordinates of latitude 37.6485° north and longitude 118.9837° west. More specifically Mammoth Crossing is part of the North Village District Plan and occupies approximately 9.27-acres on the northwest, southwest, and southeast corners of the intersection of State Highway 203 and Minaret Road in Mammoth Lakes, California (Figures 1 and 2).



NOT TO SCALE

PROJECT: **REGIONAL MAP** MAMMOTH CROSSING	
SCALE: NTS	DATE: 11/2007
DRAWING: FIG1.DWG	DRAWN BY: JAA
JOB NO.: 3.01764.3	FIGURE: FIGURE 1

Sierra Geotechnical Services

Presently, all three corners of the project are developed. The northwest corner includes Whiskey Creek restaurant, residential buildings, and a paved parking lot. The southwest corner contains several existing buildings with paved and dirt roads. The southeast corner includes Ullr and White Stag accommodations, which presently act as employee housing for Mammoth Mountain.

Mammoth Crossing is intended to be developed as mixed use. The northwest corner (Whiskey Creek) will feature a boutique hotel, a public plaza with space for entertainment and events, and e underground parking. The southwest corner (church site) will feature a large luxury brand hotel, some residential development, and commercial space. The site will also include all some underground parking. The southeast corner (Ullr/White Stag) will include a motel with underground parking.

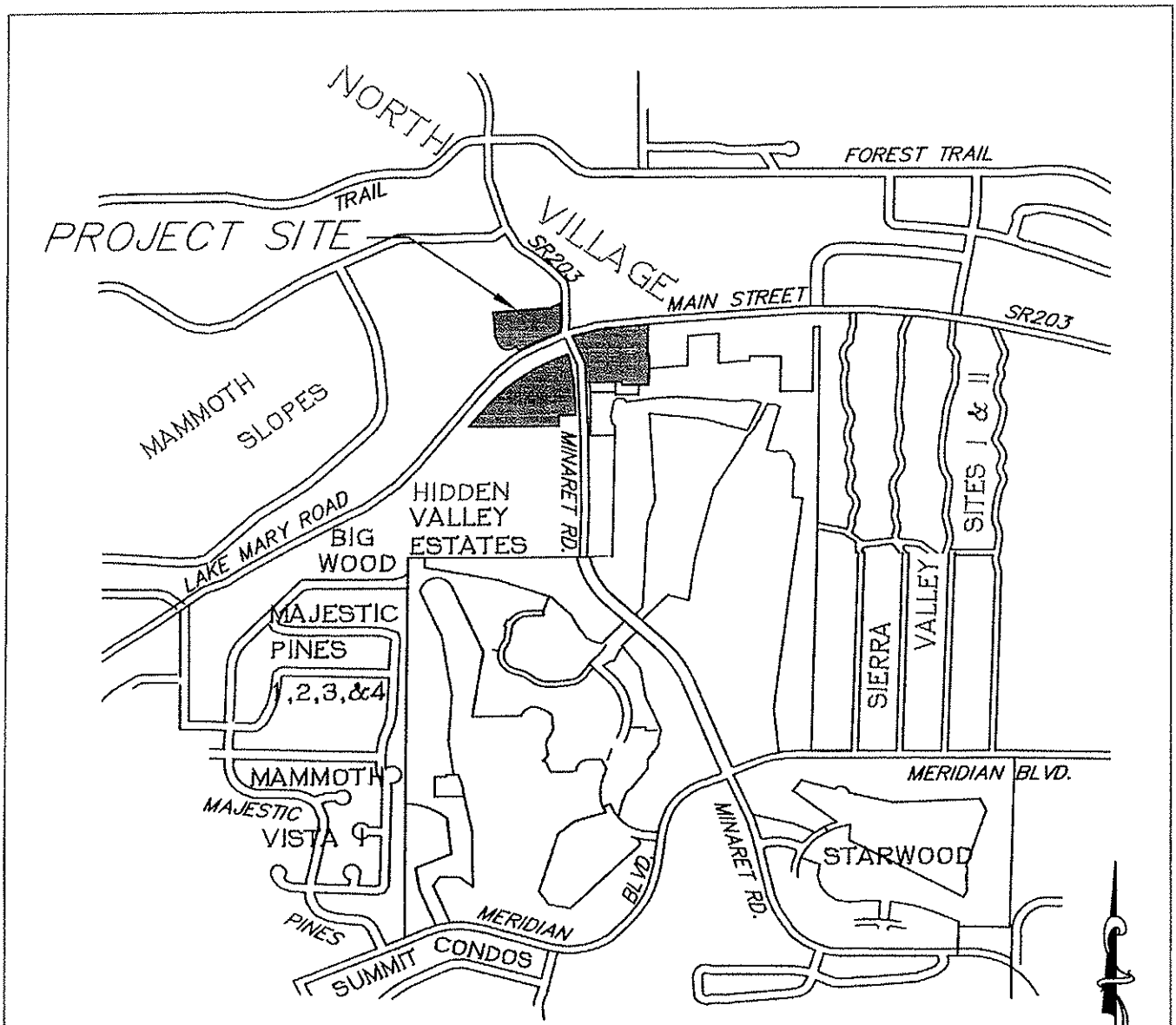
3. AERIAL PHOTOGRAPHIC REVIEW

Aerial photographs were acquired and reviewed to assist in our evaluation of geomorphic features that could be indicative of geologic hazards at the property. Details from the earliest available photographs (1944) did not show any evidence of lineations, scarps, or other ground-surface fault, landslide, or recent avalanche related features.

4. GEOLOGY AND SUBSURFACE CONDITIONS

The project site(s) are located within the Sierra Nevada province, a generally north to northwesterly trending, asymmetric, and tilted fault-block, bordered on the east by the Sierra Nevada frontal-fault system. Predominant basement rock types of the Sierra Nevada include Cretaceous granitics with associated Paleozoic roof pendants along the west margin of Mono Basin, and to a lesser degree, Paleozoic meta-sedimentary formations mantled by Pleistocene glacial tills.

More specifically, the site(s) is located in the western portion of the Long Valley caldera between the western margin of the caldera's resurgent dome and the eastern flank of the Sierra Nevada fault escarpment. The project area is located entirely on a debris-avalanche deposit formed by a rock avalanche off the northeast face of Lincoln Peak that dates approximately 50,000 years B.P.



VICINITY MAP

NOT TO SCALE

PROJECT: *VICINITY MAP* MAMMOTH CROSSING	
SCALE: NTS	DATE: 11/2007
DRAWING: FIG1.DWG	DRAWN BY: JAA
JOB NO.: 3.01764.3	FIGURE: FIGURE 2

Sierra Geotechnical Services

As observed during the subsurface investigations, 3 general soil types underlie the site, consisting of Colluvium, Alluvium, and Pyroclastic Tephra Fall Deposits. Logs of the subsurface conditions encountered in exploratory test pits are provided in Appendix A. Generalized descriptions of the materials encountered during this investigation follow.

4.1 Fill

Undocumented fill soils were encountered in test pits TP-1, 2, 3, 5 and 8. Where observed, fill thickness ranged from approximately 2 to 7½-feet. In general, the fill soils consisted of a light to medium brown, and mottled brown to mottled grayish-brown, moist, loose to medium dense, silty, very fine to coarse-grained SAND (Unified Soil Classification Symbols: SM, and SP-SM), with few cobbles, boulders, few to abundant roots and debris.

4.2 Colluvium

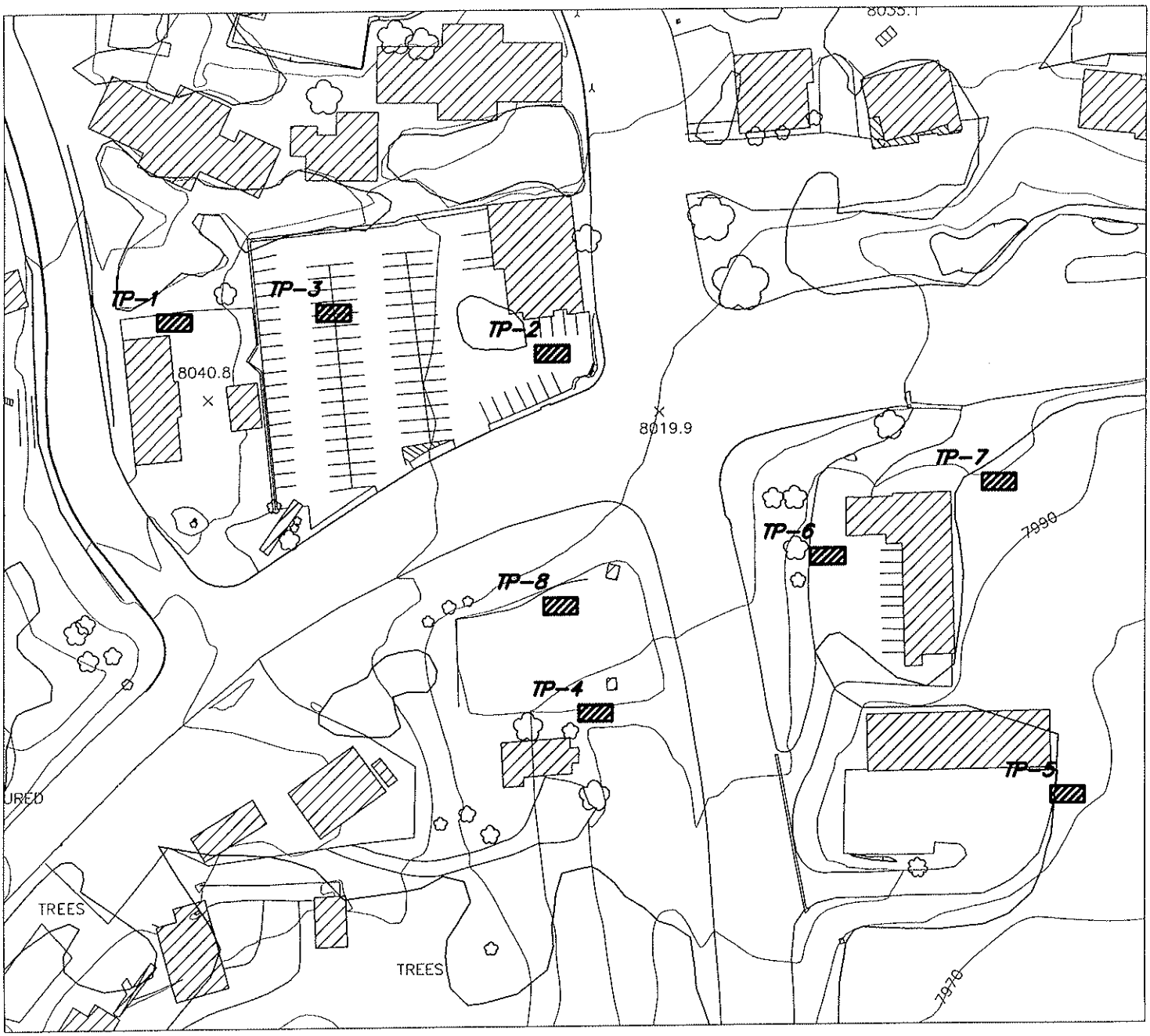
Colluvium was encountered test pit TP-4 to an approximate depth of 3½-foot below existing grades. In general, the Colluvium consisted of a light brown, moist, loose to medium dense, silty, very fine to medium-grained SAND (SM) with few gravels, and abundant roots.

4.3 Alluvium

Alluvial deposits were encountered in test pits TP-6 and TP-7 to an approximate depth of 3½-foot below existing grades. In general, the alluvium consisted of light-brown, moist, loose to medium dense, very fine to medium SAND (SM) with few to abundant cobble, few boulders to approximately 18-inches diameter, and few to abundant roots.

4.4 Pyroclastic Tephra Fall Deposits

Pyroclastic deposits were encountered in all the test pits at depth. In general, the Pyroclastics consisted of light to medium brown and light gray to light grayish-brown, moist, loose to dense, massive, very fine to coarse SAND and ASH (SM and SP-SM) with abundant gravels, cobble clasts and boulders to approximately



LEGEND

TP-8 — APPROXIMATE LOCATION OF EXPLORATORY TEST PIT

Sierra Geotechnical Services

PROJECT: SUBSURFACE GEOTECHNICAL MAP MAMMOTH CROSSING	
SCALE: NTS	DATE: 11/2007
DRAWING: FIG1.DWG	DRAWN BY: JAA
JOB NO.: 3.01764.3	FIGURE: FIGURE 3

48-inches diameter. These deposits were weakly to well cemented, and massive. Rock contents generally ranged 30 to 50-percent of the deposit. The thickness of the Pyroclastics was not determined during this investigation.

4.5 Groundwater

According to California Department of Water Resources, Southern District, Mammoth Basin Water Resources Environmental Study Final Report (California Department of Water Resources, 1973), the generalized static groundwater level is approximately 100-feet below the ground surface with a gradient dipping due east. Furthermore, the Mammoth Community Water District /U.S. Geological Survey (USGS) production water Well No. 17 located in proximity to the subject site has a mean static water depth of 375-feet below the ground surface.

Groundwater was not encountered during our field investigation. Groundwater is not anticipated to be encountered during site development due to the location of the site with respect to overall drainage. Minor amounts of seepage may be encountered if the site is graded during the peak snow-melt runoff period between April and May.

4.5.1 Hydrologic Setting

A review of the CDWR report (CWDR, 1973) indicates that surface waters on the site are regionally confined to the 71 square mile east-draining Mammoth Hydrologic Basin, which contains six distinct major watersheds, all of which are ultimately tributaries to the Owens River and Crowley Lake.

According to the Flood Insurance Rate Map for the Town of Mammoth Lakes (FEMA, 1992), the site has been determined to be within "Other Areas Zone X," which are areas determined to be outside the 500-year flood plain boundary. The nearest 100- and 500-year special flood zone hazard areas are located along Mammoth Creek to the south.

5. GEOLOGIC AND GEOTECHNICAL SITE CONSTRAINTS

Geotechnical constraints to development include thepotential for moderate to high ground shaking from an earthquake event along the nearby Hartley Springs fault (M_w~6.6) located approximately 0.7 mi (1.7 km) west/northwest of the subject site.

6. FAULTING

Our discussion of faults on the site is prefaced with a discussion of California legislation and state policies concerning the classification and land-use criteria associated with faults. By definition of the California Geological Survey, an "active fault" is a fault that has had surface displacement within Holocene time (about the last 11,000 years); hence constituting a potential hazard to structures that might be located across it. This definition is used in delineating Earthquake Fault Zones as mandated by the Alquist-Priolo Geologic Hazards Zones Act of 1972, which is detailed in the California Geological Survey Special Publication SP-42 (Hart and Bryant, 1999). The intent of this act is to assure that unwise urban development does not occur across the traces of active faults. Based on our review, the site is **not** located within any "Earthquake Fault Zones" or Alquist-Priolo Hazard Zones as identified in this document.

7. SITE SEISMICITY

The nearest known active regional fault is the Hartley Springs fault located approximately 0.7 mi (1.7 km) west of the subject site. The Hartley Springs fault is classified as a Type "B" seismic source capable of producing a magnitude 6.6 (Mw) earthquake (Uniform Building Code, 1997).

8. SECONDARY EARTHQUAKE EFFECTS

Secondary effects that can be associated with severe ground shaking following a relatively large earthquake include shallow ground rupture, soil lurching, faulting, liquefaction, seiches, and avalanches. These secondary effects of seismic shaking are discussed in the following sections.

8.1 Shallow Ground Rupture

Ground surface rupture results when the movement along a fault is sufficient to cause a gap or break along the upper edge of the fault zone on the surface. Our review of available geologic literature indicated that there are no known active, potentially active, or inactive faults that transect the subject site. The nearest known active regional fault is the Hartley Springs Fault. The closest projected trace for this fault zone is located approximately 0.7 mi (1.7 km) west of the site.

8.2 Soil Lurching

Soil lurching refers to the rolling motion on the ground surface by the passage of seismic surface waves. Effects of this nature are likely to be most severe where the thickness of soft sediments varies appreciably under structures. In its present condition, the potential for lurching below the proposed structures is considered low to moderate due to the existence of potentially compressible soils within the upper few feet of material below existing grades.

8.3 Liquefaction

Liquefaction of cohesionless soils can be caused by strong vibratory motion due to earthquakes. Research and historical data indicate that loose granular soils below a near-surface groundwater table are most susceptible to liquefaction. Liquefaction is characterized by a loss of shear strength in the affected soil layers, thereby causing the soil to behave as a viscous liquid. This effect may be manifested at the ground surface by settlement and, possibly, sand boils where insufficient confining overburden is present over layers. In order for the potential effects of liquefaction to be manifested at the ground surface, the soils generally have to be granular, loose to medium-dense and saturated relatively near the ground surface, and must be subjected to ground shaking of a sufficient magnitude and duration. The potential for liquefaction to occur is considered non-existent, given the lack of a static or permanently perched water table and the dense nature of bearing soils present on site.

8.4 Seiches

The potential for seiches as the result of the design level earthquake in a nearby fault are considered non-existent, due to the distance of large open bodies of water from the project site.

8.5 Avalanches (Rockfall and Snow)

Avalanches can occur as a result of moderate to large earthquakes in Alpine terrain, which can cause rock and snow to move vertically and laterally downslope. These hazards typically affect structures which are located at the base of slopes or within close proximity to the area of flow. The potential for rockfall or snow avalanches to affect the future structure are considered remote, given the proximity of the site to a relatively steep slope area located south of the site.

9. LANDSLIDES

Evidence of past landslides was not observed either during aerial photographic review or in the field.

10. VOLCANIC HAZARDS

The Mammoth Lakes area is surrounded by territory having shown evidence of volcanic activity during the Pleistocene and Holocene (approximately 1.8 ma through the present). At least nineteen episodes of volcanism during the past approximately 3,000 years have been determined by radiocarbon dating methods (Kilbourne, Chesterman, and Wood, 1980). The most significant potential sources of volcanic activity are the Mono-Inyo Craters and the resurgent dome within the Long Valley caldera. Basaltic, rhyolitic, and phreatic volcanism can be anticipated throughout the region. Basaltic eruptions tend to be least violent while rhyolitic and phreatic eruptions can be very explosive and are associated with large volumes of ejecta that can travel great distances. The Plinian eruption of the Long Valley caldera about 764,000 years ago is one such example where over 500 km^3 of ash and debris were sent hundreds of kilometers away (Bailey, 1989).

Explosive eruptions along the Inyo Craters volcanic chain occurred as recently as approximately 550 to 600 years ago (Miller, 1985). The most recent regional volcanic eruptions occurred between approximately 550 and 800 years ago along the Inyo Craters fracture zone (Rinehart and Huber, 1965; Miller, 1985; Sieh and Bursik, 1986). Historic non-eruptive volcanic activity occurred during the 1980 Mammoth Lakes earthquake sequence and during the 1989 Mammoth Mountain earthquake sequence (Sorey et al., 1999). Magmatic gas emissions associated with fumarolic activity have been documented on Mammoth Mountain and at Horseshoe Meadows (Sorey et al., 1999), approximately 6.5 km to the west. Fumarolic activity is also located near Shady Rest Campgrounds (1.5 km to the north) and at Casa Diablo geothermal area (4 km to the east).

The Mono Lake-Long Valley region is currently being monitored by several agencies and institutions to detect signs of any magmatic unrest and approaching eruptions. Future eruptions in the Mammoth Lakes area are certain to occur like those in the past, but they can be neither reliably predicted nor prevented at this time. Future volcanic eruptions are more likely to occur along the Mono-Inyo Craters volcanic chain than from the resurgent dome or south moat area of the Long Valley caldera. The odds of an eruption occurring in any given year along the chain are one in a few hundred, and the odds that a small eruption at one location on the chain will have a significant impact on any specified place on or near the chain are roughly one in a thousand in any given year (Miller, 1985; 1989). Massive eruptions of the size similar to that of the Long Valley caldera are extremely rare, and current research shows no evidence that an eruption of such catastrophic proportions are brewing beneath the caldera (Miller, 1985; 1989).

11. CONCLUSIONS

Based on the results of this investigation, it is our opinion that future construction on the subject site(s) is feasible from a geotechnical standpoint. The primary geologic and geotechnical constraint to development of the subject property is the potential seismic hazard associated with strong ground shaking.

- There are no known active, potentially active, or inactive faults that transect the subject site. Evidence of past soil failures, landslides, or active faulting on the site was not encountered. Seismic hazards at the site may be caused by ground shaking during seismic events on regional active faults. The nearest known active regional fault is the Hartley Springs Fault located

approximately 0.7 mi (1.7 km) west of the site.

- A volcanic eruption could occur somewhere along Mono-Inyo Craters volcanic chain producing pyroclastic flows and surges, as well as volcanic ash and pumice fallout, which could significantly impact the subject site. The odds however, of such an eruption are roughly one in a thousand in a given year (Miller, 1985; 1989).

- Site soils encountered during our field investigation generally consisted of loose to dense, silty, very fine to coarse-grained sands, with abundant cobble clasts and boulders to approximately 48-inches diameter. Expansive clayey soils were not encountered.

- No groundwater was encountered within the test pit excavations. Minor to moderate amounts of seepage may be encountered if the site is graded during the snowmelt runoff period between April and July.

12. RECOMMENDATIONS

This report does **not** include foundation nor earthwork and grading recommendations. A detailed geotechnical investigation which will include foundation design criteria as well as earthwork and grading recommendations should be provided for the proposed project(s) once the designs have been further established.

13. LIMITATIONS

This report has been prepared for the sole use and benefit of our client. The conclusions of this report pertain only to the site(s) investigated. The intent of the report is to advise our client of the geologic and geotechnical recommendations relative to the future development of the proposed project. It should be understood that the consulting provided and the contents of this report are not perfect. Any errors or omissions noted by any party reviewing this report, and/or any other geotechnical aspects of the project, should be reported to this office in a timely fashion. The client is the only party intended by this office to directly receive this advice. Unauthorized use of or reliance on this report constitutes an agreement to defend and indemnify Sierra Geotechnical Services Incorporated from and against any liability, which may arise as a result of such use or reliance, regardless of any fault, negligence, or strict liability of Sierra Geotechnical Services Incorporated.

Conclusions presented herein are based upon the evaluation of technical information gathered, experience, and professional judgment. Other consultants could arrive at different conclusions. Final decisions on matters presented are the responsibility of the client and/or the governing agencies. No warranties in any respect are made as to the performance of the project.

The findings of this report are valid as of the present date. However, changes in the conditions of a property can occur with the passage of time, whether they are due to natural processes or the works of man on this or adjacent properties. In addition, changes in applicable or appropriate standards may occur, whether they result from legislation or the broadening of knowledge. Accordingly, the findings within this report may be invalidated wholly or partially by changes outside our control. Therefore, this report is subject to review and should not be relied upon after a period of three years.

14. REFERENCES

Bailey, R.A., (1989). Geologic Map of the Long Valley Caldera, Mono-Inyo Craters Volcanic Chain, and Vicinity, Eastern California: U.S. Geological Survey, Map I-1933, 1:1,000,000.

Blake, T.F., (2000). EQFAULT, Computer Program Version 3.0: Deterministic Estimation of Peak Acceleration from Digitized Faults.

California Geological Survey, (1997). Guidelines for Evaluating and Mitigating Seismic Hazards in California, Special Publication 117, 74p.

CWDR (1973). Mammoth Basin water resources environmental study: California Department of Water Resources and Mammoth County Water District, p. 41, 44, 69, 70.

FEMA (1992). Flood insurance rate map, Town of Mammoth Lakes, California, Mono County: Federal Emergency Management Agency, National Flood Insurance Program, Community-Panel Number 060724 0002 & 0005 B, Panels 2 and 5 of 5, Revised September 30, 1:6,000 scale and 1:12,000, respectively.

Hart, Earl W., and Bryant, William A (1999). Fault-rupture Hazard Zones in California, California Geological Survey Special Publication 42, 38p.

Hill, D.P., D. Dzurisin, W.L. Ellsworth, E.T. Endo, D.L. Galloway, T.M. Gerlach, M.J.S. Johnston, J. Langbein, K.A. McGee, C.D. Miller, D. Oppenheimer, and M.L. Sorey, 2002, Response plan for volcano hazards in the Long Valley caldera and Mono Craters region, California: U.S. Geological Survey Bulletin 2185, 58 p.

Howle, J.F., and C.D. Farrar, 2001, Hydrologic data for Long Valley caldera, Mono County, California, 1994-96: U.S. Geological Survey Open-File Report 00-230, 155 p.

Miller, C.D., 1985, Holocene eruptions at the Inyo volcanic chain, California: Implications for possible eruptions in Long Valley caldera: Geology, v. 13, pp. 14-17.

Miller, C.D., 1989, Potential hazards from future volcanic eruptions in California: U.S. Geological Survey Bulletin 1847, 17 p.

Jennings, C.W., 1994, Fault activity map of California and adjacent areas: California Division of Mines and Geology Geologic Data Map No. 6, 1:750,000 scale.

Kilbourne, R.T., C.W. Chesterman and S.H. Wood, 1980, Recent volcanism in the Mono Basin-Long Valley region of Mono County, California, *in* Sherburne, R.W., ed., Mammoth Lakes, California earthquakes of May 1980: California Geological Survey Special Report 150, p. 7-22.

Sieh, K.E., and M.I. Bursik, 1986, Most recent eruption of the Mono Craters, eastern central California: Journal of Geophysical Research, v. 91, n. B12, p. 12539-12571.

Stereoscopic Aerial Photographs

OV, FL-1, 7-84 & 85; Dated 10/19/1944, 1:24,000
GS-QN, FL-3, 65 & 66; Dated 8/10/1951, 1:47,200
United States Department of Agriculture, Stereoscopic Aerial Photographs: EAD –19-131 to EAD-19-132; Dated 8/23/56, 1:24,000.
United States Department of Agriculture, Stereoscopic Aerial Photographs: EMG-7-147 to EMG-7-148; Dated 9/10/63, 1:12,500
United States Department of Agriculture, Stereoscopic Aerial Photographs: FL-7, 483-36&39; Dated 8/06/84, 1:12,000
United States Department of Agriculture, Stereoscopic Aerial Photographs: 615040: 501-86 to 501-87; Dated 7/14/01, 1:12,500.

APPENDIX A

EXPLORATORY TEST PIT LOGS

The field investigation was performed on November 5th, 2007 and included the excavation of eight test pits in the site areas. The test pit excavations were performed with a CAT backhoe equipped with a 24-inch bucket. A geologist from our office logged the excavations as they were advanced. Approximate locations of the exploratory test pits are shown on the Subsurface Geotechnical Map (Figure 3).

SIERRA GEOTECHNICAL SERVICES INC.
P.O. BOX 5024
MAMMOTH LAKES, CA 93546
(760) 934-3992

TEST PIT LOGS

JOB NO: 3.01764.3
DATE: 11/5/2007

PROJECT: Mammoth Crossing
LOGGED BY: PS

TEST PIT	DEPTH (FT)	U.S.C.S. GROUP SYMBOL	SAMPLE DEPTH	PERCENT MOISTURE	DRY DENSITY (pcf)	DESCRIPTION
1	0 - 2½	SP-SM				**Fill** Light to medium brown, moist, loose to medium dense, silty, very fine to coarse grained SAND with few cobbles and small boulders to approximately 13-inches diameter. Moderate asphalt and organic debris.
	2½ - 5	SP-SM				**Pyroclastic Tephra Fall Deposits** Light brown, moist, loose to medium dense, silty, very fine to medium grained SAND and ASH, with few cobbles and boulders to 15-inches in diameter. Moderate to abundant roots.
	5 - 8					Abundant boulders to 18-inches diameter, few roots. --- *Total depth = 8-feet. No groundwater encountered. Belling and caving observed below 5-feet. Backfilled 11/5/07.*
2						**Asphalt Concrete** - 5"
	5"- 7½	SP-SM				**Fill** Mottled brown to grayish-brown, moist, loose to medium dense, silty, very fine to coarse SAND with gravels, cobbles and boulders to 30-inches in diameter. Rock content comprising 25% of deposit. Debris and roots to 4½-feet.
	7½ - 9	SP-SM				**Pyroclastic Tephra Fall Deposits** Light to medium brown, moist, medium dense, silty, fine to coarse SAND and ASH, with cobbles and boulders to 48-inches diameter. --- *Total depth = 9-feet. No groundwater encountered. Belling and caving observed below 5-feet. Backfilled 11/5/2007.*

SIERRA GEOTECHNICAL SERVICES INC.
P.O. BOX 5024
MAMMOTH LAKES, CA 93546
(760) 934-3992

TEST PIT LOGS

JOB NO: 3.01764.3
DATE: 11/5/2007

PROJECT: Mammoth Crossing
LOGGED BY: PS

TEST PIT	DEPTH (FT)	U.S.C.S. GROUP SYMBOL	SAMPLE DEPTH	PERCENT MOISTURE	DRY DENSITY (pcf)	DESCRIPTION
3						**Asphalt Concrete** - 5"
	5" - 1	SM				**Fill** Mottled grayish-brown, moist, loose to medium dense, silty, fine to coarse SAND with gravels.
	1 - 5½	SP-SM				**Pyroclastic Tephra Deposits** Light brown, moist, medium dense, silty, fine to coarse SAND and ASH, with gravels, cobbles, and boulders to 18-inches diameter. Rock content comprising 20-25% of deposit. --- *Total depth = 5½-feet. No groundwater encountered. Backfilled 11/5/2007.*
4						
	0 - 3½	SM				**Colluvium** Light brown, moist, loose to medium dense, silty, very fine to medium SAND, few gravels. Abundant roots.
	3½ - 7	SP-SM				**Pyroclastic Tephra Deposits** Light brown, moist, medium dense, silty, fine to coarse SAND and ASH, with gravels, cobbles, and boulders to 24-inches diameter. Rock content comprising 40-50% of deposit. --- *Total depth = 7-feet. No groundwater encountered. Belling and caving observed below 2-feet. Backfilled 11/5/2007.*

SIERRA GEOTECHNICAL SERVICES INC.
P.O. BOX 5024
MAMMOTH LAKES, CA 93546
(760) 934-3992

TEST PIT LOGS

JOB NO: 3.01764.3
DATE: 11/5/2007

PROJECT: Mammoth Crossing
LOGGED BY: PS

TEST PIT	DEPTH (FT)	U.S.C.S. GROUP SYMBOL	SAMPLE DEPTH	PERCENT MOISTURE	DRY DENSITY (pcf)	DESCRIPTION
5						
	0 - 1½	SM				**Fill** Mottled grayish-brown, moist, medium dense, silty, very fine to coarse SAND with gravels and debris.
	1½ - 5	SM				**Pyroclastic Tephra Fall Deposits** Light brown, moist, loose, silty, very fine to medium grained SAND and ASH, with abundant cobbles and boulders to 18-inches in diameter. Rock content comprises 20 to 30% of the deposit. Abundant roots.
	5 - 5½	SP-SM				Light gray to brown, moist, medium dense to dense, silty, fine to coarse SAND, with abundant gravels and cobbles. Weakly cemented.
						Total depth = 5½-feet. No groundwater encountered. Backfilled 11/5/2007.
6						
	0 - 2	SM				**Alluvium** Light brown, moist, loose to medium dense, silty, very fine to medium SAND, few cobbles and boulders to 18-inches diameter.
	2 - 5½	SM				**Pyroclastic Tephra Deposits** Light brown, moist, loose to medium dense, silty, very fine to medium SAND, few to abundant cobbles and boulders to 18-inches diameter. Rock content comprising 20-25% of deposit.
	5½ - 7	SP-SM				Light gray to light grayish-brown, moist, medium dense, silty, fine to coarse SAND, with few cobbles and boulders.
						Total depth = 7-feet. No groundwater encountered. Belling and caving observed below 2-feet. Backfilled 11/5/2007.

SIERRA GEOTECHNICAL SERVICES INC.
P.O. BOX 5024
MAMMOTH LAKES, CA 93546
(760) 934-3992

TEST PIT LOGS

JOB NO: 3.01764.3
DATE: 11/5/2007

PROJECT: Mammoth Crossing
LOGGED BY: PS

TEST PIT	DEPTH (FT)	U.S.C.S. GROUP SYMBOL	SAMPLE DEPTH	PERCENT MOISTURE	DRY DENSITY (pcf)	DESCRIPTION
7						
	0 - 3½	SM				**Alluvium** Light brown, moist, loose to medium dense, silty, very fine to medium SAND, abundant cobbles and roots.
	3½ - 5½	SM				**Pyroclastic Tephra Fall Deposits** Light brown, moist, loose, silty, very fine to medium grained SAND and ASH, with abundant cobbles and boulders to 24-inches in diameter. Rock content comprises 35 to 45% of the deposit.
	5½ - 7	SP-SM				Light gray to light grayish-brown, moist, medium dense, silty, fine to coarse SAND, with few cobbles and boulders.
						Total depth = 7-feet. No groundwater encountered. Backfilled 11/5/2007.
8						
	0 - 2	SM				**Fill** Mottled grayish-brown, moist, medium dense, silty, very fine to coarse SAND with gravels and debris.
	2 - 5½	SM				**Pyroclastic Tephra Deposits** Medium brown to reddish-brown, moist, dense, silty, very fine to coarse SAND, abundant gravels. Well cemented.
						Total depth = 5½-feet. No groundwater encountered. Belling and caving observed below 2-feet. Backfilled 11/5/2007.

APPENDIX B

SEISMIC ANALYSIS

EQFAULT: The program **EQFAULT** was used to develop the deterministic peak ground acceleration parameters summarized herein. The Fault Location Map, which depicts active faults within a 62.1 mi (100 km) radius of the site, is also presented herein.

```
**********
*        *
*  E Q F A U L T  *
*        *
*  Version 3.00  *
*        *
**********
```

DETERMINISTIC ESTIMATION OF
PEAK ACCELERATION FROM DIGITIZED FAULTS

JOB NUMBER: 3.01764.3

DATE: 11-28-2007

JOB NAME: Mammoth Crossing

CALCULATION NAME: Test Run Analysis

FAULT-DATA-FILE NAME: CDMGFLTE.DAT

SITE COORDINATES:
SITE LATITUDE: 37.6485
SITE LONGITUDE: 118.9837

SEARCH RADIUS: 62.1 mi (100 km)

ATTENUATION RELATION: 2) Boore et al. (1997) Horiz. - NEHRP C (520)
UNCERTAINTY (M=Median, S=Sigma): M Number of Sigmas: 0.0
DISTANCE MEASURE: cd_2drp
SCOND: 0
Basement Depth: 5.00 km Campbell SSR: Campbell SHR:
COMPUTE PEAK HORIZONTAL ACCELERATION

FAULT-DATA FILE USED: CDMGFLTE.DAT

MINIMUM DEPTH VALUE (km): 0.0

EQFAULT SUMMARY

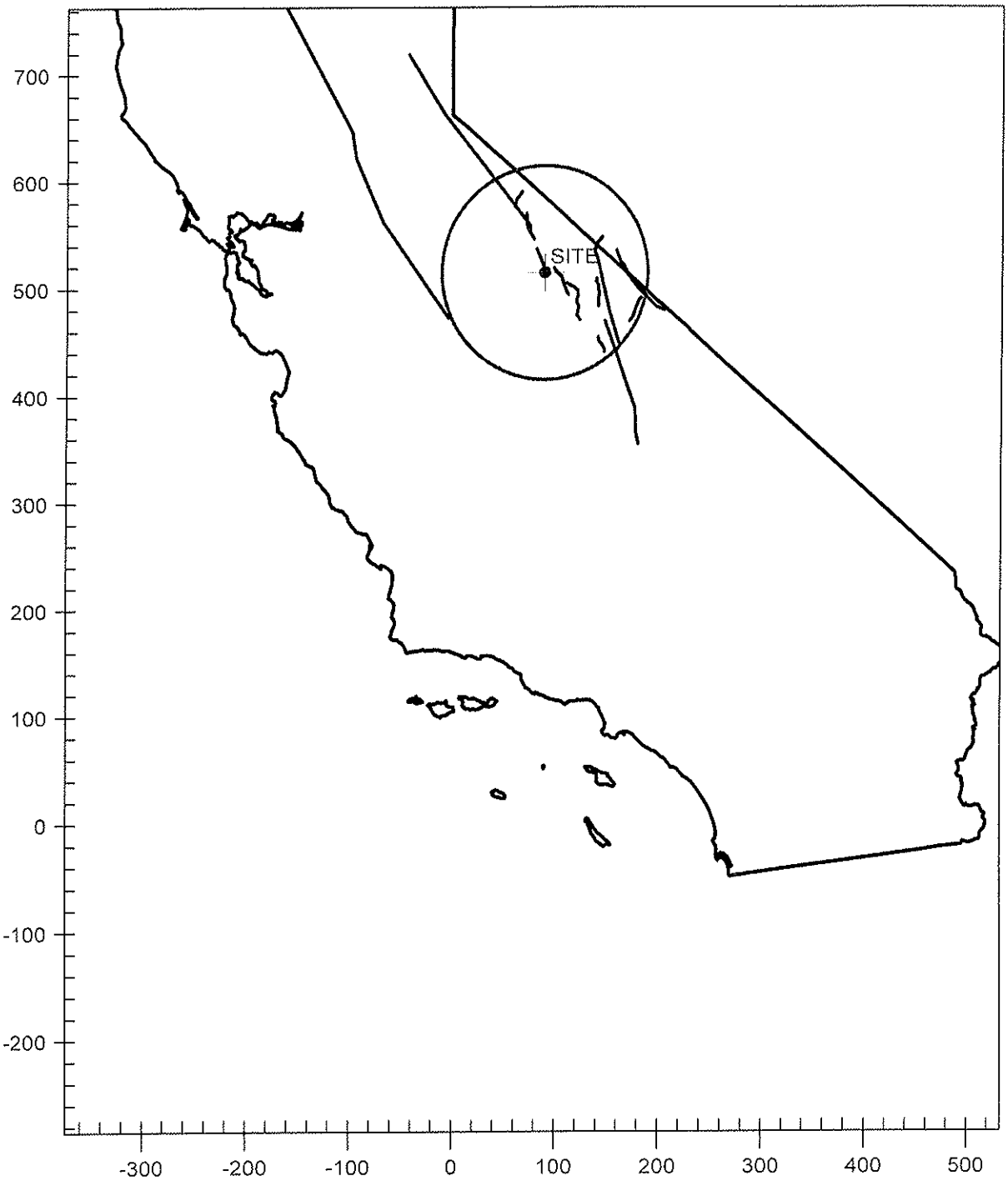
DETERMINISTIC SITE PARAMETERS

ABBREVIATED FAULT NAME	APPROXIMATE DISTANCE mi (km)	ESTIMATED MAX. EARTHQUAKE EVENT: MAXIMUM EARTHQUAKE MAG.(Mw)	PEAK SITE ACCEL. g	EST. SITE INTENSITY MOD.MERC.
HARTLEY SPRINGS	0.7(1.2)	6.6	0.463	X
HILTON CREEK	6.2(9.9)	6.7	0.280	IX
ROUND VALLEY	14.5(23.3)	6.8	0.165	VIII
MONO LAKE	20.8(33.5)	6.6	0.113	VII
MOHWAK - HONEY LAKE ZONE	24.3(39.1)	7.3	0.120	VII
FISH SLOUGH	26.5(42.7)	6.6	0.094	VII
WHITE MOUNTAINS	32.7(52.6)	7.1	0.086	VII
ROBINSON CREEK	39.5(63.6)	6.4	0.062	VI
DEATH VALLEY (N. of Cucamongo)	45.1(72.6)	7.0	0.064	VI
OWENS VALLEY	45.8(73.7)	7.6	0.086	VII
BIRCH CREEK	49.5(79.6)	6.4	0.052	VI
FOOTHILLS FAULT SYSTEM	51.7(83.2)	6.5	0.053	VI
DEEP SPRINGS	53.7(86.4)	6.6	0.055	VI

-END OF SEARCH- 13 FAULTS FOUND WITHIN THE SPECIFIED SEARCH RADIUS.
THE HARTLEY SPRINGS FAULT IS CLOSEST TO THE SITE.
IT IS ABOUT 0.7 MILES (1.2 km) AWAY.
LARGEST MAXIMUM-EARTHQUAKE SITE ACCELERATION: 0.4628 g

CALIFORNIA FAULT MAP

Mammoth Crossing



TBV
CRO

STATE OF CALIFORNIA – THE RESOURCES AGENCY Gray Davis, *Governor*

Department of Conservation
Division of Mines & Geology
801 K Street, MS 12-31
Sacramento, CA 95814-3531

Robert H. Sydnor
RG 3267, CHG 6, CEG 968
Senior Engineering Geologist

Office Phone: (916) 323-4399
State e-mail: RSydnor@consrv.ca.gov
Office fax: (916) 322-4765
CDMG home page: www.consrv.ca.gov/dmg

September 29, 1999

Ms. Karen Johnson, *Senior Planner*
Planning Division
Community Development Department
Town of Mammoth Lakes
437 Old Mammoth Road
Post Office Box 1609
Mammoth Lakes, CA 93546
telephone (619) 934-8989

Subject: Carbon Dioxide Hazard at Mammoth Mountain
Town of Mammoth Lakes, Mono County

Dear Ms. Johnson:

The California Division of Mines & Geology is the state's geological survey and the publisher of *California Geology* magazine. In the current September/October 1999 issue of California Geology is a report by an interdisciplinary team of five federal geologists, geochemists, atmospheric physicists, and ecologists regarding the hazard of carbon dioxide at Mammoth Mountain, on the southwest side of the Town of Mammoth Lakes.

The principal government agency that performed this research is the U.S. Geological Survey, with assistance from the University of California national laboratories (sponsored by the U.S. Department Energy) at Livermore and Berkeley. The chief scientist at the Long Valley Caldera is Dr. David P. Hill, a U.S. Geological Survey seismologist stationed at 345 Middlefield Road, Menlo Park, CA 94025. It is recommended that you be in periodic contact with Dr. Hill by mail, e-mail < hill@andreas.wr.usgs.gov >, and telephone (650-329-4795) regarding volcanic hazards, seismology hazards, and carbon dioxide hazards associated with the Long Valley Caldera. Dr. Hill has been studying the Mammoth Lakes – Long Valley area for about 25 years, so he is very experienced with the recent history of this active volcanic area and its geologic hazards.

The California Division of Mines & Geology and the U.S. Geological Survey jointly advise you that there is a significant health-and-safety issue outlined in this report. It is recommended that this report and related USGS reports be used and cited for planning documents prepared under the California Environmental Quality Act (CEQA). There is both an "air quality" aspect to carbon

dioxide and a "geologic hazard" aspect to this volcanic gas, so it should be repeated twice in any CEQA document for the Town of Mammoth Lakes. The bibliography in the back of the report will lead you to pertinent geology and seismology publications by the U.S. Geological Survey and academia regarding the Long Valley Caldera. You can also download pertinent seismology information about Long Valley Caldera and the Mammoth Lakes area from the USGS website at: < www.quake.wr.usgs.gov/volcanoes/Long Valley/index.html > Dr. Hill will be pleased to put your town planning office on his quarterly mailing list for the USGS Long Valley Caldera report.

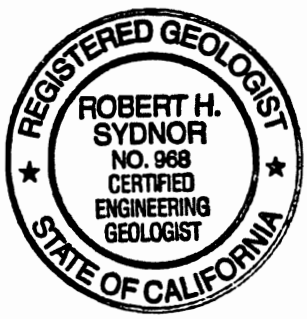
In addition to the *California Geology* publication we are sending the following USGS Fact Sheets that pertain to the Town of Mammoth Lakes:

USGS Fact Sheet 172-96
Invisible CO_2 Gas Killing Trees at Mammoth Mountain, California

USGS Fact Sheet 108-96 (revised 1997)
Living With a Restless Caldera – Long Valley, California
Please use and cite this in all your CEQA documents.

USGS Fact Sheet 073-97
Future Eruptions in California's Long Valley Area – What's Likely?
Please use and cite this in all your CEQA documents.

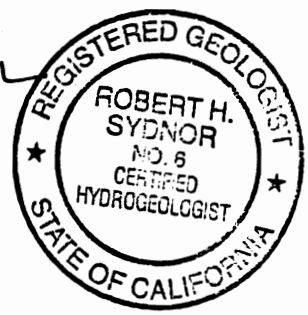
We trust that the USGS Fact Sheets and the USGS report published in *California Geology* on the hazard of carbon dioxide will be *used and cited* for Environmental Impact Reports pertaining to current and future projects within the Town of Mammoth Lakes. All of these reports contain ready-made figures, maps, and diagrams that can be spliced directly into your CEQA documents for quick, efficient, and reliable graphics at no cost. Proper scientific credit should be given to the USGS for all graphics used in environmental documents by the Town of Mammoth. Simply put the authors, USGS, year, and document number in the corner of each illustration. If you have further questions, please call me at 916-323-4399.



Sincerely yours,

Robert H. Sydnor

Robert H. Sydnor
Senior Engineering Geologist
RG 3267, CHG 6, CEG 968



Cc:
Dr. David P. Hill, *USGS Menlo Park*

Attachments:
3 copies of Sept/Oct 1999 issue of *California Geology*
USGS Fact Sheets (colored original versions are available by mail from the USGS at no charge)

(1/28/2000)

In Brief

USDA Forest Service • Pacific Southwest Region • Inyo National Forest

Horseshoe Lake And Vicinity C02 Phenomenon

Overview

Since 1990, carbon dioxide gas (CO2) has been discharging through the soil in six areas on the flanks of Mammoth Mountain. One of the largest of these areas is located on the northwest side to Horseshoe Lake. Other areas where gas discharge is currently significant are scattered around Mammoth Mountain, generally outside of the Mammoth Mountain Ski Area boundary. Mammoth Mountain Ski Area implements a winter closure for the few small areas where C02 concentrations are potentially dangerous within the ski area boundary. Areas of gas discharge are also located outside the groomed trails of Tamarack Cross-country Ski Center. The most noticeable effect of this discharge has been tree mortality. Approximately 120 acres of trees have died, 30 of those acres are near Horseshoe Lake. The source of the C02 is located deep underground and is related to long-term magmatic degassing beneath Mammoth Mountain. Measurements show that since 1995 there has been no additional spread of C02 discharge. Although it is widely reported in the media that this discharge is a sign of an impending eruption, U.S. Geological Survey (USGS) scientists believe that the CO2 is being released from a large gas reservoir that has existed for much longer than the current period of unrest in the Mammoth region. This conclusion, combined with the current lack of seismic activity directly beneath Mammoth Mountain indicating magmatic movement, shows there is little scientific evidence to support the prediction of an imminent eruption.

Present Status

The first priority for the Forest Service is to evaluate the potential for public health and safety concerns in the areas of discharge. This involves working with the USGS and the Mammoth Mountain Ski Area to monitor gas discharge around Horseshoe Lake and the Mammoth Mountain Ski Area, and their facilities. In May and June 1998, U.S. Geological Survey scientists measured C02 concentrations that were at unhealthy levels in depressions surrounding tree wells and one restroom. Prior to this time, it was thought the largest areas of danger were enclosed areas beneath the snow such as basements, snow caves, and inside restrooms. When C02 discharges from the ground, it normally mixes with the air and dissipates rapidly. C02 is heavier than air, however, and can collect at high concentrations in depressions and enclosures, posing a potential danger to people. Poorly ventilated areas above and below ground can be dangerous in areas of C02 discharge. Where thick snowpacks accumulate in winter,

the C02 moves from the ground surface through the snow. Dangerous levels of C02 have been measured in pits dug in the snowpack in tree kill areas. The C02 concentrations are highly variable depending on wind and weather conditions and a variety of other factors, making the area subject to unpredictable changes. Concentrations of C02 measured in depressions, around trees, restrooms and natural snowdrifts have contained up to 60% concentrations of C02, making these areas extremely dangerous. Breathing C02 at such concentrations can cause death within minutes. Consequently, the Forest Service recommends staying out of the tree-kill area during the winter months due to the possibility of inadvertently falling face-first or entering holes and depressions where there are high concentrations of C02. The Forest Service is taking a stronger, educational approach to signing the area to the C02 hazards in the vicinity of Horseshoe Lake. Currently, the Horseshoe Lake vicinity is signed during the winter requesting winter users "keep out" of the highest affected areas. During the summer, we are advised by USGS that it is safe to pass through the tree-kill area whether on foot or biking. However, the Forest Service does not recommended spending any appreciable amount of time near the ground such as while picnicking or sunbathing on the northwest shore of Horseshoe Lake. Young children and dogs should be closely supervised in the tree-kill area and are not advised to dig holes or play in holes where gas concentrations might be high.

The second priority for the Forest Service is to dispose of the hazardous trees, those trees that might cause injury or property damage if they fall. The three remaining campsites in the Horseshoe Group Campground were closed in September of 1998 for this reason. Although summertime C02 concentrations in the campground were not at unhealthy levels, tree mortality was encroaching into every site except one. As the trees die, they become a hazard, potentially falling unexpectedly on people and/or vehicles. Since it was not economically feasible to open the campground for the one remaining site, it was closed to use.

The third priority for the Forest Service is to answer questions from the visiting public and the media on the situation in the area. Considerable media interest has resulted from this phenomenon. The USGS and the Forest Service have prepared displays and handouts to explain this unusual situation to visitors.

(1/28/2000)

Questions and Answers

USDA Forest Service • Pacific Southwest Region • Inyo National Forest

Horseshoe Lake And Vicinity C02 Phenomenon

Is it safe to recreate in the Lakes Basin during the winter?

Yes, with the specific exception of the tree-kill area along the northwest shore of Horseshoe Lake, the Lakes Basin is safe for cross-country skiing, snowmobiling (during the open time period), sledding, snowshoeing, and other winter activities. Within the tree-kill area near Horseshoe Lake, no winter activities should be considered safe due to the potential of falling or inadvertently entering holes and depressions where high concentrations of C02 exist. Unsafe activities include cross-country skiing, snowplay of any sort, snowmobiling and snowshoeing. Young children and dogs should be closely supervised and not allowed to enter the tree-kill area, or any roped-off or signed area adjacent to the tree-kill area.

Is Mammoth Mountain Ski Area and Tamarack Cross-country Ski Center affected?

Areas where gas discharge is currently significant are generally located outside of the Mammoth Mountain Ski Area boundary. Mammoth Mountain has closed a few small areas within the ski area where C02 concentration are potentially dangerous. Areas of gas discharge are outside the groomed trails of Tamarack Cross-country Ski Center.

Why is C02 present?

C02 has been discharging from the ground in the vicinity of Horseshoe Lake and around other parts of the flanks of Mammoth Mountain since 1990. The most noticeable effect of the discharge has been tree mortality. Although the source of these emissions is deep underground and related to long term magmatic degassing, the rate of gas reaching the surface increased significantly following a period of earthquakes beneath Mammoth Mountain in 1989. Measurements show that since 1995 there has been no additional spread of the area of C02 discharge. Although it is widely reported in the media that the discharge is a sign of a pending eruption, U.S. Geological Survey (USGS) scientists believe that the C02 is being released from a large gas reservoir that has existed for much longer than the current period of unrest in the Mammoth region. This conclusion, combined with the current lack of seismic activity directly beneath Mammoth Mountain indicating magmatic movement, shows that there is currently no scientific evidence to support that an eruption is imminent.

Have there been any deaths related to the C02 at Horseshoe Lake?
In May of 1998, a death occurred in the Horseshoe Lake area. The extent to which C02 played a role in this death cannot be adequately determined. The Mono County Coroner's report cites Pulmonary Edema as the cause of the death secondary to asphyxiation or airway obstruction by snow or possible C02 toxicity. More information on this accident can be obtained from the Mono County Sheriff's Department.

Why is the Forest Service taking stronger precautionary measures now?
Although the area has been monitored since the phenomenon began, it wasn't until testing by USGS during May and June 1998 that potentially dangerous levels of C02 were detected in and around tree wells and one restroom while snow was on the ground. Prior to this time, it was thought the largest areas of danger were enclosed areas beneath the snow such as basements, snow caves, and inside restrooms.

Is the Lakes Basin safe to recreate during the summer?
Yes, with the specific exception of the tree-kill area and a small area of ground cracks along the northwest shore of Horseshoe Lake, the Lakes Basin is safe for camping, hiking, horseback riding, fishing, boating and other summer activities. The tree-kill area is safe for adults to walk, bike, and pass through in the summer but activities that occur close to the ground such as sunbathing and picnicking should not be considered safe. The Forest Service does not recommend that small children, dogs, or other small pets enter the tree-kill area or adjacent roped-off areas at all as they are closer to the ground where C02 concentrations are most dense. Caution signs and interpretive signs explaining the situation and advising visitors of the presence of the C02 gas, its potential effects and how to avoid the hazards are posted in the tree-kill area in the summer months.

How will I know if C02 gas is affecting me?
The symptoms are similar to high altitude sickness and include dizziness, shortness of breath, and rapid pulse. C02 is odorless, colorless, tasteless, and is heavier than air. During the winter, discharge of C02 can cause high concentrations around restrooms, tree wells, and natural depressions. The levels of C02 vary depending on wind and weather and a variety of other factors, making the area subject to unpredictable changes. Concentrations as high as 60% were measured in some depressions in June of 1998 when 5-10 feet of snow was still on the ground. Such conditions are extremely dangerous and could cause death within minutes.

APPENDIX G

HYDROLOGY DATA

Mammoth Crossing
Mammoth Lakes, California

Preliminary Drainage Study

Project 655.17.1

December 2007

Prepared for:
Mammoth Crossing Dev. LLC
535 Thurlow Street, Suite 410
Vancouver, BC Canada V6E 3L2

Engineer:
triad/holmes associates

Post Office Box 1570
Mammoth Lakes, Ca 93546
Phone: (760) 934-7588
Fax: (760) 934-5619
triad@triadholmes.com
David Laverty, LS, Principal
Tom Platz, RCE, Principal

REGISTERED PROFESSIONAL ENGINEER
PAUL EDWARD ROTEN
No. 56891
Exp. 6/30/09
CIVIL
STATE OF CALIFORNIA

Paul E. Roten, P.E. C56891

Dec. 2007
Date

Preliminary Drainage Study

Mammoth Crossing
Mammoth Lakes, California

INDEX

APPENDIX

- The Town of Mammoth Lakes 2005 Storm Drain Master Plan Update, 2005
- Design Manual, Mammoth Lakes Storm Drainage and Erosion Control, Prepared for Mono County Public Works Department, July 1984, Brown and Caldwell and Triad Engineering
- Water Quality Control Plan for the Lahontan Region, North and South Basins, prepared by the State of California, Regional Water Quality Control Board, Lahontan Region

Preliminary Drainage Study
Mammoth Crossing

1 - Project

This preliminary drainage study is for a proposed Mammoth Crossing located at the three developing corners of Main Street and Minaret Road in the Town of Mammoth Lakes, Mono County, California (see Figures 1.1 and 1.2 below).

Figure 1.1

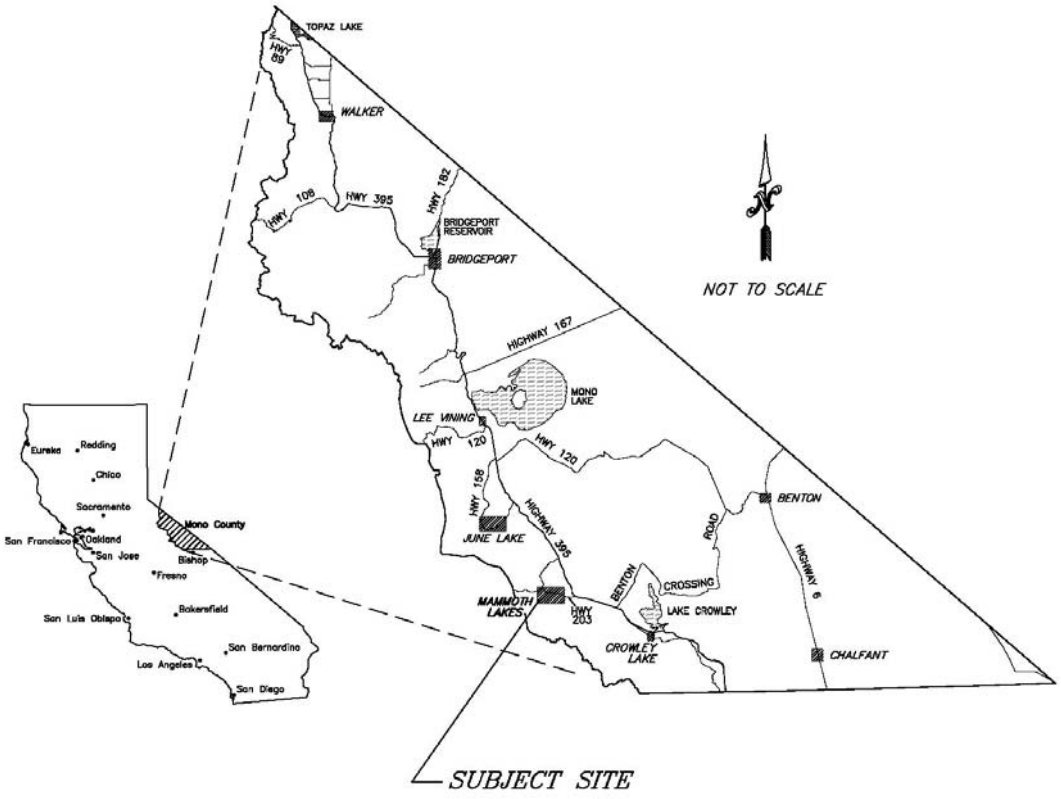
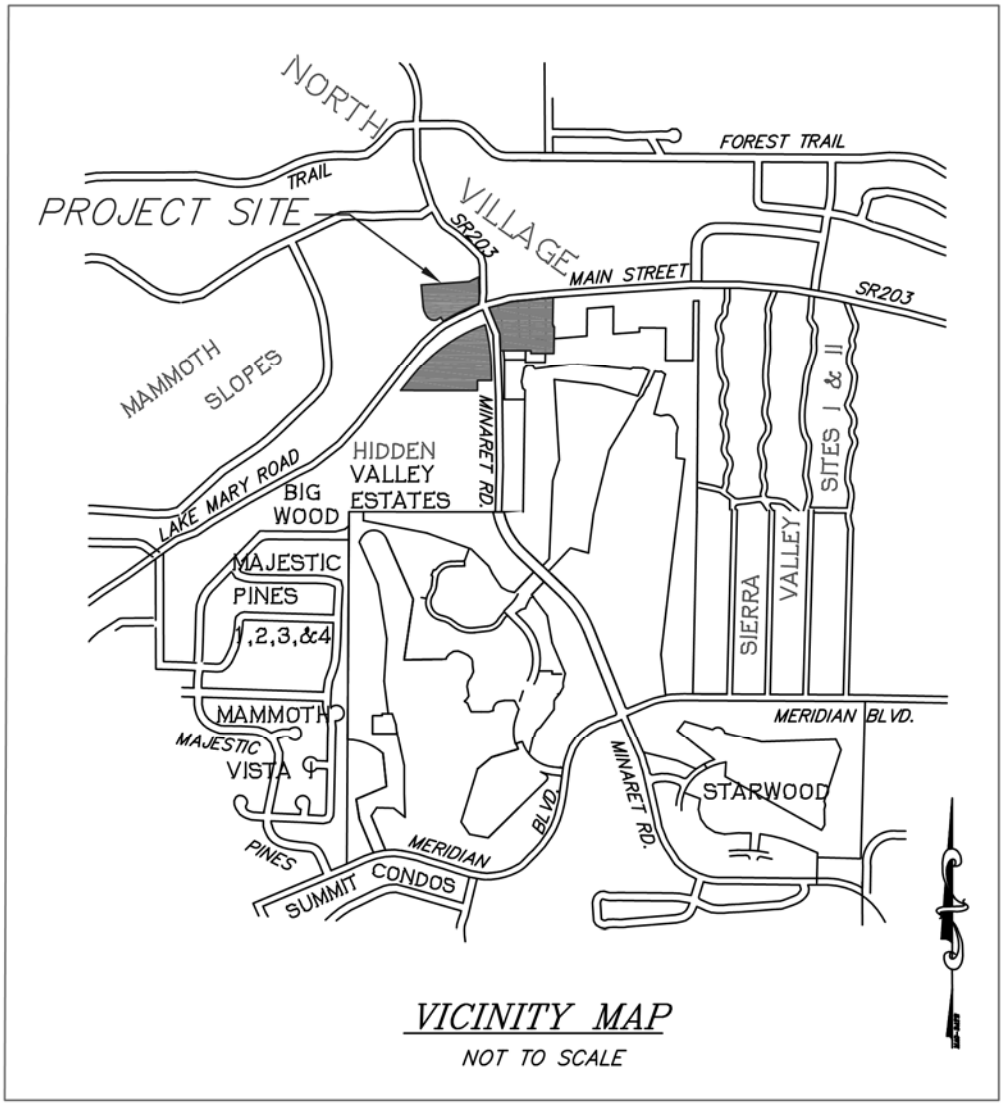


Figure 1.2



The Mammoth Crossing is intended to be intensely developed in a mix of uses. Site 1 (Whiskey Creek corner) will feature a major pedestrian public space oriented to the intersection of Main Street (203) and Minaret Road and generally continuing diagonally northwest through the site. This site will integrate one or two landmark towers, a boutique hotel, a public plaza with space for entertainment and events and extensive underground parking.

Site 2 (Church site) will feature a large luxury brand hotel, residential development, and Lake Mary Road fronting commercial shops. With the exception of small scale on street

parking for the Lake Mary shops and restaurants, the site will include all underground parking. Existing trees will be preserved on the southern site edge to create a buffer between the existing Hillside project and the Site 2 corner. The older buildings on-site, which have community importance, will be made available to groups who wish to move them off-site.

Site 3 (Ullr/White Stag) will include a motel. This site provides pedestrian and bicycle linkage from the eastern golf course Lodestar area and Main Street town core to the 3 Corners and North Village. The site will include all underground parking.

2 - Objective

The objective of this study is to determine the expected hydrologic runoff quantities and appropriate drainage facilities for the project site.

3 - Assumptions

Off-site and onsite runoff rate calculations for the 100- and 20-year intensity storms are based on the Town of Mammoth Lakes 2005 Master Plan Update[1] (Master Plan), Procedure A. Off-site drainage facilities will be designed to handle a storm of 100-year intensity. On-site drainage facilities will be designed for the 20-year storm intensity. Hydrologic calculations are included in Appendix B.

Retention facilities will be designed to contain 1 hour of a 20 year intensity storm, which is assumed to be 1 inch (0.83 feet) * Area (square feet) * C (infiltration coefficient). Infiltration coefficient is weighted based on the percentage of the impervious surface on the project site.

4 – Project Background and Observations

Presently, all three corners of the project are developed. Site 1 includes Whiskey Creek restaurant, residential buildings, and a paved parking lot. Site 2 contains several existing buildings with paved and dirt roads. Site 3 includes Ullr and White Stag accommodations which presently act as employee housing for Mammoth Mountain.

Existing facilities in the vicinity of the project include a storm drain system along Lake Mary Road, Main Street, and Canyon Boulevard. Site 1 is tributary to an existing storm drain inlet at the southwest corner of the site. An existing natural swale is located along the south side of Main Street, within the Site 3 property. Another natural swale is located on the west side of Minaret Road, within the Site 2 property. Refer to Appendix A, Figure D1 for the locations of existing facilities.

The project proposes approximately 266,660 sf of impervious surfaces including 171,000 sf of roof area and 95,650 sf of pavement areas. The remaining area of the site (137,460 sf) is to be landscaped or left in a natural state. See Appendix A, Figure D2 for the plan view of proposed improvements. The proposed development will decrease the impervious surface for Site 1 by approximately 8%, and increase the impervious surface for Site 2 and 3 by 44 and 29%, respectively.

Soils are granular, typical of SCS Type "B" based on Figure 1-7 in the Town of Mammoth Lakes Design Manual[2]. Native vegetation where not developed includes pine trees and brush.

5 – Off-site/On-site Drainage

Runoff quantity calculations have been prepared using Excel Spreadsheets. Drainage facilities have been preliminary designed Autodesk Hydrology Calculator. These calculations are included in Appendix B.

It is important to note that the drainage boundary has been defined based on the existing and proposed conditions. Property lines do not play a major role is establishing the drainage boundaries. Drainage area A1 encompasses the entire Site 1. Drainage area 2B is based on the existing conditions of Site 2 and Area 2A is added due to the proposed developments to Site 2. Site 3 has 5 drainage areas: 3A, 3B, 3C, 3D, and 3E.

Off-Site Drainage

Site 1 is bounded by Canyon Boulevard on the west, Project 8050 on the north, Main Street on the east, and Lake Mary Road on the south. Due to the topography of the area, the

direction of the runoff flow is from northwest to southeast and the only possible drainage entrance for Site 1 is located along the west and north boundary lines. Canyon Boulevard collects and conveys runoff from the west via curb and gutter to an existing storm drain system, Project 8050 has its own drainage collection system which outlets to existing storm drain along Main Street.

The only possible offsite drainage entrance for Site 2 is along the south and southwest side of Lake Mary Road. As part of Lake Mary Bike Path project, future curb and gutter are proposed along Lake Mary Road, which will prevent offsite drainage entering Site 2.

Site 3 is bounded by Main Street on the north and Minaret Road on the west. There is a small area (0.29 acres) between Main Street and Site 3, Area 3A, which is tributary to the site. The runoff from this area is included in onsite drainage and retention/infiltration design. An existing curb, inlet, slotted drain, and natural channel along the south side of Minaret Road prevent offsite runoff from the northwest to enter Site 3. Minaret Road slopes towards the south conveying runoff in the street.

On-Site Drainage

All of the three sites will include the Lahontan required retention/infiltration systems at the downstream of the drainage area. These systems are discussed in more detail in Section 6 of this report.

Onsite runoff values are calculated for the storms of 20- and 100-year intensity. Refer to Appendix D, Runoff Calculations, for the storm runoff values for each area.

Site 1

On-site runoff in the vicinity of Site 1 (Area 1A) will be directed to an existing 36" storm drain inlet located at the southeast corner of Site 1. Since Site 1 is already developed and there will an actual decrease in impervious surface due to the proposed conditions, runoff rate will not be increased and the existing capacity of the inlet and the connecting storm drain system will not be affected.

The total runoff rates for Site 1 are as follows:

Area	Conditions	Q_{20}	Q_{100}
Site 1	Existing	3.1 cfs	4.9 cfs
	Proposed	3.1 cfs	4.9 cfs

Site 2

Site 2 (Areas 2A and 2B) runoff will be directed to an existing off-site swale located just southeast of the site via a proposed onsite as shown in Appendix A, Figure D2. The runoff from the natural and undisturbed areas will be allowed to continue in historic sheet flow.

On-site swale – This swale is proposed as close to the proposed buildings as practicable, on the back (south) side of the buildings. Total runoff rate from Site 2 during a storm of 20-year intensity is 8.9 cfs. A graded swale with a bottom width of 1' and side slopes of 3:1 is adequate to convey the required flow as shown in Appendix B.

Off-site swale - This off-site swale conveys runoff to the existing 36" CMP under Minaret road, approximately 400' south of Site 2, which eventually outlets to the Sierra Star Golf Course, the historic destination for this runoff. The depth of the swale varies from approximately 12" to 24" and the depth of the flow during a 100-year storm is calculated to be 7.8". Thus, the capacity of the swale is adequate to convey the required runoff during a storm of 100-year intensity.

Off-site 36" CMP – This 36" CMP (ID 3525700) is located in the subarea 3.6.5 as shown in Exhibit 8.13, Master Plan[1], attached in Appendix D. Based on the Master Plan[1], the 20-year runoff entering the storm drain is 14 cfs. To obtain 100-year runoff value, 20- and 100-year cfs/acre ratios from Appendix B of the Master Plan[1] are used. Factor of 0.31 and 0.60 cfs/acre are applied to 20- and 100-year intensity storms, respectively. To convert from the 20- to 100-year storm, the following equation was used:

$$Q_{100} = Q_{20} / \text{20-year factor} * \text{100-year factor}$$

$$Q_{100} = 14 / 0.31 * 0.60$$

The runoff rate for the 100-year intensity storm entering the 36" CMP is 27 cfs. Based on the inventory of existing storm drain pipe from the Master Plan[1], the capacity of the

pipe at 94% full is 145 cfs. The development at Site 2 will increase the runoff by 0.2 cfs, producing 27.2 cfs entering the existing 36" CMP. Since the capacity of the drain is 145 cfs, it is adequate to handle the additional flow.

The total runoff rates for Site 2 are as follows:

Area	Conditions	Q_{20}	Q_{100}
Site 2	Existing	5.4 cfs	8.9 cfs
	Proposed	5.7 cfs	9.1 cfs

Site 3

Site 3 is divided into five drainage subareas: Area 3A, 3B, 3C, 3D, and 3E. Areas 3A and 3C are tributary to a future inlet at the east property line as shown in Appendix A, Figure D2. That inlet was designed as part of IQ at the Grove project. Calculations included in Appendix B show that the inlet is adequate to convey the required flow.

Runoff from Area 3B and 3E will exit the site as sheet flow, in a historic manner. The increase in runoff for area 3B is only 0.2 cfs, an insignificant addition to the existing flow. There is no increase in runoff for area 3E.

Area 3D encompasses the future 7B Road from Minaret Road to IQ at the Grove project. Runoff from 7B Road is taken care by the drainage system for IQ at the Grove project.

Adjustments can be made to these proposed facilities and locations as long as these changes stay within the intent of this study.

The total runoff rates for Site 3 are as follows:

Area	Conditions	Q_{20}	Q_{100}
Site 3	Existing	3.4 cfs	3.9 cfs
	Proposed	5.4 cfs	6.1 cfs

6 – Street Drainage

Lake Mary Road, Canyon Boulevard, Main Street (HW 203), and Minaret Road are adjacent to the project site. Street parking is proposed for Sites 1 and 2 on north and south sides of Lake Mary Road. If the impervious surface is increased, retention/infiltration basins will be added as required. Parking spaces along the south side of Lake Mary Road are included in retention/infiltration calculations for Site 2.

We do not anticipated major grading of the roads adjacent to the project site. Street drainage will continue to flow as in present conditions. Curb and gutter are proposed along the east side of Minaret Road, which will convey the runoff south along the Minaret Road. Existing 36" storm drain along the east side of Minaret Road will need to be relocated into Town's right-of-way as shown in Appendix A, Figure D2.

Based on the Master Plan[1], there are no recommended improvements to the Town's storm drain system in the vicinity of the project site. The improvements proposed in 1984 Design Manual[2] have been addressed by previous projects.

7 – Retention / Infiltration Facilities

To infiltrate on-site runoff into the ground, infiltration basins for each site have been designed, in conformance with the Water Quality Control Plan for the Lahontan Region[3], to contain a 20 year intensity storm for 1 hour, which is assumed to be 1 inch (0.83 feet) * Area (square feet) * C (infiltration coefficient). Retention / infiltration facility sizing calculations are included in Appendix C. These infiltration basins shall act as level spreaders during a large storm event. It should be noted that these ponds are temporary drainage solutions and final design of retention / infiltration facilities will be based on input from the Town of Mammoth Lakes.

At this preliminary stage, we have provided Rainstore3 underground retention systems for on-site storm water mitigation. We will select final retention facilities and locations based on soils, drainage and specific site conditions during the design stage.

Site Area, Runoff Coefficient, and Retention Volume For Sites 1, 2 and 3

Site 1
Surface Area ..... 78,142 square feet
Runoff Coefficient after construction 0.88
Retention Volume ..... 5,708 cubic feet

Based on the calculations in Appendix C, a 36' x 33' x 5.3' Rainstore3 system would be required.

Site 2
Surface Area ..... 196,913 square feet
Runoff Coefficient after construction 0.69
Retention Volume ..... 11,248 cubic feet

Based on the calculations in Appendix C, a 104' x 20' x 5.9' Rainstore3 system would be required.

Site 3
Surface Area ..... 129,064 square feet
Runoff Coefficient after construction 0.55
Retention Volume ..... 5,962 cubic feet

Based on the calculations in Appendix C, a 36' x 36' x 4.9' Rainstore3 system would be required.

8- Conclusions

The proposed conditions are very similar to the existing conditions. Flows are conveyed through the sites to existing and proposed drainage facilities and then allowed to continue as close to historic conditions as practicable. This construction will have no significant impacts on the neighboring properties.

As a result of the proposed development, Site 1 impervious area will decrease by approximately 8%. The proposed infiltration system on Site 1 will further limit the amount of runoff entering the existing storm drain system. Site 2 impervious areas will increase by approximately 44%. This increase will be limited in short duration and small storms by the proposed infiltration systems and will outflow to an existing swale in historic manner. The existing swale and storm drain system are adequate to handle the increase in runoff due to

development of Site 2. The majority of runoff from Site 3 is directed toward the future IQ at the Grove project. The storm drain system designed for IQ at the Grove is adequate to handle the development flows from Site 3.

The retention / infiltration systems preliminary selected uses underground Rainstore3 units and have the capacity to contain the first inch of runoff as required by Lahontan Regional Basin Plan[3]. Final detention facilities and locations will be selected based on soils, drainage and specific site conditions during the design phase.

The design and location of the on-site and off-site drainage facilities included in this preliminary report are for planning purposes. The final location and details of drainage facilities will be determined during the design process in preparation of the improvement plans and will be in accordance with Town of Mammoth Lakes requirements in place at that time. The criteria followed during the design process should address issues such as safety, erosion protection and water quality, as well as conforming to the requirements of the Clean Water Act and the Lahontan Regional Water Quality Control Board.

Storm drainage facilities must be maintained to continue to work as designed. Particular items requiring maintenance include, but are not limited to, cleaning of the grates, removal of foreign materials from storm drainage pipes, maintenance as necessary to outlet facilities, and repairs as necessary to damaged facilities. Additionally, snow removal must be performed in a way so as not to restrict drainage collection in gutters, inlets, and flow paths. Snow Deposition shall not be placed where it will melt across traveled surfaces.

The area of disturbance for this project is greater than 1 acre, so this project is subject to the requirements of the National Pollution Discharge Elimination System (NPDES) requirements for construction projects, General Permit number CAS000002, enforced by the State Water Quality Control Board – Lahontan Region. The Owner must submit a Notice of Intent to associate this project with the General Permit, then prepare, have on site and conform to a Storm Water Pollution Prevention Plan (SWPPP) during construction. Though the requirements of permits are not anticipated, work shall conform to conditions of the Army Corp of Engineers, Lahontan Regional Quality Control Board, and State of California Fish and Game.

Any work done in this area shall conform to Federal, State, and local permit requirements.

The designs and calculations included in this preliminary report are for planning purposes. Final facility design shall be completed during final design in accordance with Town of Mammoth Lakes and Caltrans requirements in place at that time.

[1]The Town of Mammoth Lakes 2005 Storm Drain Master Update, May 2005, Boyle Engineering Corporation.

[2]Design Manual, Mammoth Lakes Storm Drainage and Erosion Control, Prepared for Mono County Public Works Department, July 1984, Brown and Caldwell and Triad Engineering.

[3]Water Quality Control Plan for the Lahontan Region, North and South Basins, prepared by the State of California, Regional Water Quality Control Board, Lahontan Region.

Preliminary Drainage Study
Mammoth Crossing

Appendix A
Figures

AREA		Q20 (cfs)	Q100 (cfs)
1A	2.52 AC	3.1	4.9
2A	0.39 AC	0.5	0.8
2B	4.28 AC	4.9	8.1
3A	0.29 AC	0.4	0.6
3B	0.16 AC	0.04	0.1
3C	2.37 AC	2.9	4.6
3D	0.33 AC	0.1	0.1
3E	0.14 AC	0.03	0.1

LEGEND

PROPERTY BOUNDARY

FLOW DIRECTION

DRAINAGE BOUNDARY

8025 EXISTING CONTOUR

EXISTING 12" SD

EXISTING SWALE

EXISTING INLET

EXISTING 2'X3.5' INLET

EXISTING 4'X3.5' INLET

EXISTING INLET

EXISTING 36" INLET

EXISTING 24" SD

AREA 1A

SITE 1 (WHISKEY CREEK)

EXISTING 24" SD

EXISTING 24" SD

EXISTING 24" SD

EXISTING 18" SD

AREA 2A

FUTURE CURB AND GUTTER PER LAKE MARY PROJECT

AREA 2B

SITE 2 (CHURCH)

MINARET ROAD

EXISTING AC SWALE

EXISTING SWALE

EXISTING OUTLET

EXISTING INLET

EXISTING SLOTTED DRAIN

EXISTING SWALE

AREA 3A

EXISTING 24" SD

EXISTING 36" SDMH

AREA 3B

AREA 3C

SITE 3 (ULLR)

DIRT PATH

AREA 3D

AREA 3E

WEST EDGE FAIRWAY 6

CONTROL VALVE MCWD COMP

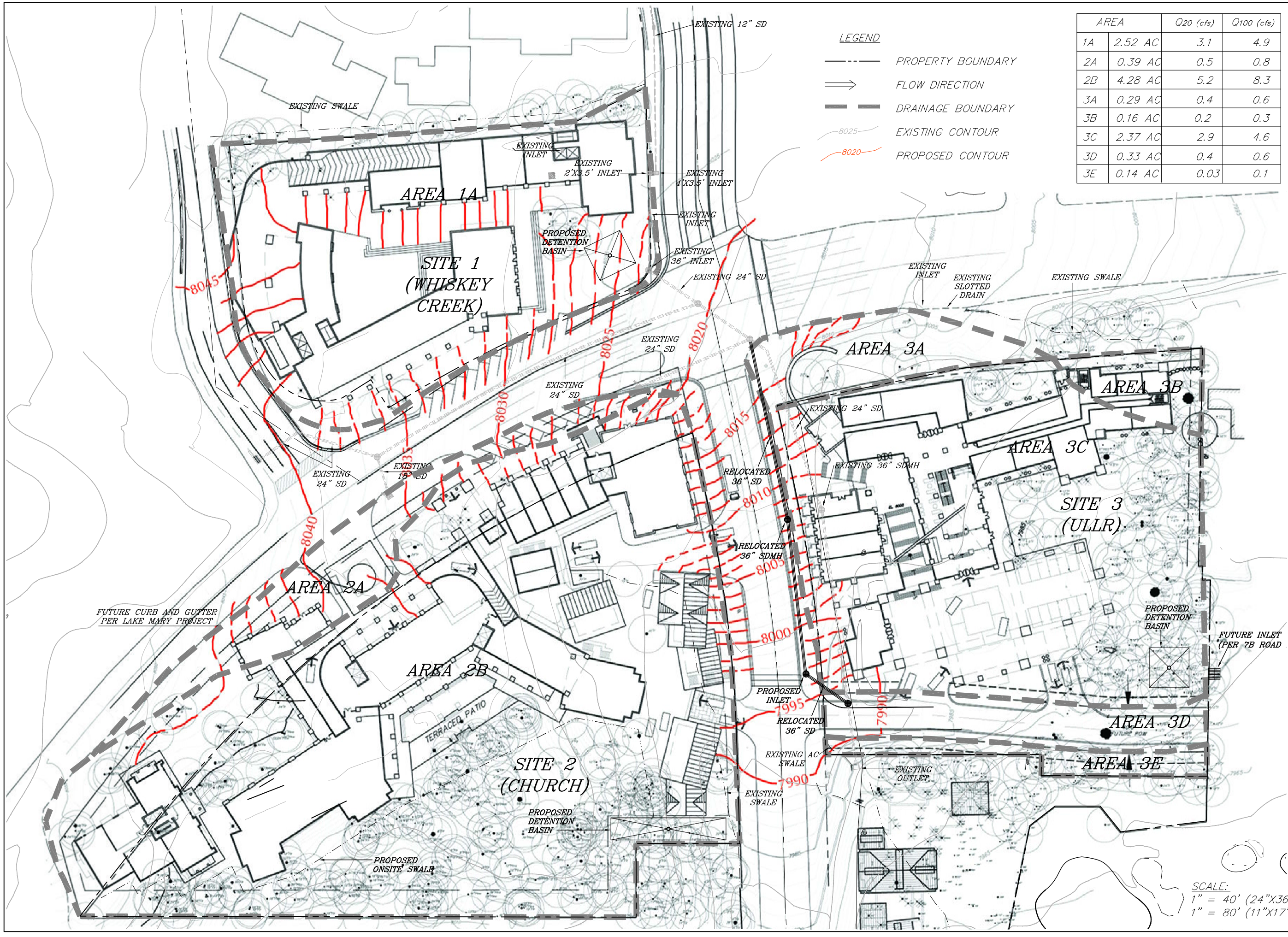
SCALE:
1" = 40' (24"X36")
- 1" = 80' (11"X17")

triad/holmes assoc.
civil engineering
land surveying
MAMMOTH LAKES
BISHOP
NAPA
PLEASANTON
REDWOOD CITY
SAN LUIS OBISPO

PREPARED FOR:
Mammoth Crossing Dev. LLC
535 Thurlow Street,
Suite 410
Vancouver, BC Canada
V6E 3L2

DRAINAGE STUDY
MAMMOTH CROSSING
EXISTING CONDITIONS

DATE 11/13/07
SCALE 1"=40'
DRAWN MP
JOB NO. 655.17.1
DWG D1
SHEET 1 OF 2



AREA		Q20 (cfs)	Q100 (cfs)
1A	2.52 AC	3.1	4.9
2A	0.39 AC	0.5	0.8
2B	4.28 AC	5.2	8.3
3A	0.29 AC	0.4	0.6
3B	0.16 AC	0.2	0.3
3C	2.37 AC	2.9	4.6
3D	0.33 AC	0.4	0.6
3E	0.14 AC	0.03	0.1

triad/holmes assoc.
civil engineering
land surveying
MAMMOTH LAKES
BISHOP
NAPA
PLEASANTON
REDWOOD CITY
SAN LUIS OBISPO

PREPARED FOR:
Mammoth Crossing Dev. LLC
535 Thurlow Street,
Suite 410
Vancouver, BC Canada
V6E 3L2

DRAINAGE STUDY
MAMMOTH CROSSING
PROPOSED CONDITIONS

DATE 11/13/07
SCALE 1"=40'
DRAWN MP
JOB NO. 655.17.1
DWG D2
SHEET 2 OF 2

Preliminary Drainage Study
Mammoth Crossing

Appendix B
Hydrologic Calculations

Mammoth Crossing

Runoff Calculations

20 and 100-Year Intensity Storm

PROCEDURE A

				PROPOSED CONDITIONS			EXISTING CONDITIONS			
	Area	Exceedence Interval for Design	Acres	Land Use Type	Inensity (cfs/acre)	Design Q (cfs)	Land Use Type	Inensity (cfs/acre)	Design Q (cfs)	Comments
WHISKEY CREEK	AREA 1A	Q20	2.52	C	1.22	**3.1**	C	1.22	**3.1**	
		Q100	2.52	C	1.93	**4.9**	C	1.93	**4.9**	Tributary to 36" inlet at the southeast corner of the site.
CHURCH	AREA 2A	Q20	0.39	C	1.22	**0.5**	C	1.22	**0.5**	
		Q100	0.39	C	1.93	**0.8**	C	1.93	**0.8**	Tributary to AREA 2B.
	AREA 2B	Q20	4.28	C	1.22	**5.2**	H	1.14	**4.9**	Runoff exits the site in existing offsite swale locate in the southeast portion of the property in historic manner.
		Q100	4.28	C	1.93	**8.3**	H	1.90	**8.1**	
ULLR	AREA 3A	Q20	0.29	C	1.22	**0.4**	C	1.22	**0.4**	
		Q100	0.29	C	1.93	**0.6**	C	1.93	**0.6**	Tributary to AREA 3B.
	AREA 3B	Q20	0.16	C	1.22	**0.2**	N	0.23	**0.04**	
		Q100	0.16	C	1.93	**0.3**	N	0.43	**0.1**	Runoff exist the site in historic manner.
	AREA 3C	Q20	2.37	C	1.22	**2.9**	C	1.22	**2.9**	
		Q100	2.37	C	1.93	**4.6**	C	1.93	**4.6**	Drainage area is tributary to a future inlet as indicated in 7B Road Drainage Study.
	AREA 3D	Q20	0.33	C	1.22	**0.4**	N	0.23	**0.1**	
		Q100	0.33	C	1.93	**0.6**	N	0.43	**0.1**	Runoff is take care of by the 7B Road Drainage Study.
	AREA 3E	Q20	0.14	N	0.23	**0.03**	N	0.23	**0.03**	
		Q100	0.14	N	0.43	**0.1**	N	0.43	**0.1**	Runoff exist the site in historic manner.

Land Use Type		20-Year	100-Year
Commercial	C	1.22	1.93
High Density Residence	H	1.14	1.90
Natural	N	0.23	0.43
Single Family Residence	S	0.65	1.30

Mammoth Crossing
Catch Basin Inlet Capacity

			Size						
Inlet	Q(cfs) capacity required		Width	Length	SIDES	clogging factor	Inlet Capacity (y<0.4 feet), $Q=3Py^{3/2}$	y=depth of flow at inlet, ft	Capacity Greater than Q
Site 3 - Area 3A and 3C	**5.20**	Rect	24	36	4	1	5.43	0.32	**yes**

These calculations are based on the Hydraulic Engineering Circular No. 12, Chapter 8.1. Generally, under 0.4 feet of depth it is assumed that a catch basin operates under weir conditions. At depths over 1.4 feet catch basins operate under orifice conditions. In between, the typical assumption is to calculate both considerations and use the more conservative. Under sump conditions, the perimeter is the entire perimeter of the catch basin. Under non sump conditions, the perimeter is the leading edge, and the sides reduced by a side flow efficiency factor.

Basins shown as 4 sided are located in sumps. Basins shown with 1, 2 or three sides are those that storm water runoff enters basin on less than all sides.

*Inlets with this designation have been designed to take all of the runoff from their area, even though there are other basins in that area also designed for full runoff.

These inlets will be depressed approximately 0.1 foot. Side flow efficiency is based on chart 8 from HEC 12. This side flow efficiency is as a factor to reduce the perimeter, applied to the length of the basin. Round basins in non sump conditions are only considered to accept runoff on the leading edge.

Site 2 Swale Calculator

Given Input Data:

Shape	Trapezoidal
Solving for	Depth of Flow
Flowrate	8.9000 cfs
Slope	0.0400 ft/ft
Manning's n	0.0300
Height	12.0000 in
Bottom width	48.0000 in
Left slope	0.2000 ft/ft (V/H)
Right slope	0.2000 ft/ft (V/H)

Computed Results:

Depth	4.3763 in
Velocity	4.1907 fps
Full Flowrate	65.7930 cfs
Flow area	2.1238 ft2
Flow perimeter	92.6295 in
Hydraulic radius	3.3015 in
Top width	91.7628 in
Area	9.0000 ft2
Perimeter	170.3765 in
Percent full	36.4690 %

Critical Information

Critical depth	5.3076 in
Critical slope	0.0193 ft/ft
Critical velocity	3.2395 fps
Critical area	2.7474 ft2
Critical perimeter	102.1272 in
Critical hydraulic radius	3.8738 in
Critical top width	101.0761 in
Specific energy	0.6376 ft
Minimum energy	0.6635 ft
Froude number	1.4019
Flow condition	Supercritical

Preliminary Drainage Study

Mammoth Crossing

Appendix C

Retention / Infiltration Calculations

triad/holmes associates
civil engineering
land surveying
mammoth lakes • bishop • redwood city • ncpa
san luis obispo • lompoc • pleasanton

Calc'd By:	**mp**
Job No.:	**655.17.1**
Date:	**10/30/2007**

Storage Requirement and Rainstore3 Sizing

Mammoth Crossing

Site 1 - Whiskey Creek

Input:

Rainfall Intensity	1	in/hr =	0.083 ft/hr
Percolation Rate	0	in/hr =	0.00 ft/hr

Tributary Area:

	Area			Runoff Coefficient	
Roof Area	37,118	sf	48%	0.95	
Pavement Area	34,874	sf	45%	0.90	
Landscaping Area	6,151	sf	8%	0.30	
Total Area	78,142	sf		**0.88**	**Average Coefficient**

Retention Volume = Total Area * Average Runoff Coefficient * Rainfall Intensity * 1 Hour

Retention Volume Required	**5708**	**cf**

Given:

Rainstore3 unit/cell	(1.0 m) x (1.0 m) x (0.1 m high) (3.28 ft) x (3.28 ft) x (0.328 ft high)
Volume of unit	3.53 cf
Void space per unit	94%
Runoff storage per unit	3.32 cf

Units for retention:

Number units (height)	16	units	5.25	ft
Number units (length)	11	units	36	ft
Number units (width)	10	units	33	ft

Total Units **1760**

Storage Volume Provided	**5838**	**cf**

Adequate Storage? **YES**

triad/holmes associates
civil engineering
land surveying
mammoth lakes • bishop • redwood city • napa
san luis obispo • lompoc • pleasanton

Calc'd By:	**mp**
Job No.:	**655.17.1**
Date:	**10/30/2007**

Storage Requirement and Rainstore3 Sizing

Mammoth Crossing
Site 2 - Church

Input:

Rainfall Intensity	1	in/hr =	0.083 ft/hr
Percolation Rate	0	in/hr =	0.00 ft/hr

Tributary Area:

	Area			Runoff Coefficient	
Roof Area	75,811	sf	39%	0.95	
Pavement Area	44,365	sf	23%	0.90	
Landscaping Area	76,737	sf	39%	0.30	
Total Area	196,913	sf		**0.69**	**Average Coefficient**

Retention Volume = Total Area * Average Runoff Coefficient * Rainfall Intensity * 1 Hour

Retention Volume Required	**11248**	**cf**

Given:

Rainstore3 unit/cell	(1.0 m) x (1.0 m) x (0.1 m high)
	(3.28 ft) x (3.28 ft) x (0.328 ft high)
Volume of unit	3.53 cf
Void space per unit	94%
Runoff storage per unit	3.32 cf

Units for retention:

Number units (high)	18	units	5.90	ft
Number units (length)	32	units	104	ft
Number units (width)	6	units	20	ft

Total Units = 3456

Storage Volume Provided	**11464**	**cf**

Adequate Storage? YES

triad/holmes associates
civil engineering
land surveying
mammoth lakes • bishop • redwood city • napa
san luis obispo • lompoc • pleasanton

Calc'd By:	**mp**
Job No.:	**655.17.1**
Date:	**10/30/2007**

Storage Requirement and Rainstore3 Sizing

Mammoth Crossing

Site 3 - Ullr

Input:

Rainfall Intensity	1	in/hr =	0.083	ft/hr
Percolation Rate	0	in/hr =	0.00	ft/hr

Tributary Area:

	Area			Runoff Coefficient	
Roof Area	58,079	sf	45%	0.95	
Pavement Area	16,413	sf	13%	0.90	
Landscaping Area	54,572	sf	42%	0.30	
Total Area	129,064	sf		**0.55**	**Average Coefficient**

Retention Volume = Total Area * Average Runoff Coefficient * Rainfall Intensity * 1 Hour

Retention Volume Required	**5962**	**sf**

Given:

Rainstore3 unit/cell	(1.0 m) x (1.0 m) x (0.1 m high)
	(3.28 ft) x (3.28 ft) x (0.328 ft high)
Volume of unit	3.53 cf
Void space per unit	94%
Runoff storage per unit	3.32 cf

Units for retention:

Volume required 5962 cf

Number units (high)	15	units	4.92	ft
Number units (length)	11	units	36	ft
Number units (width)	11	units	36	ft

Total Units = 1815

Storage Volume Provided	**6020**	**cf**

Adequate Storage? YES

Preliminary Drainage Study
Mammoth Crossing

Appendix D
References

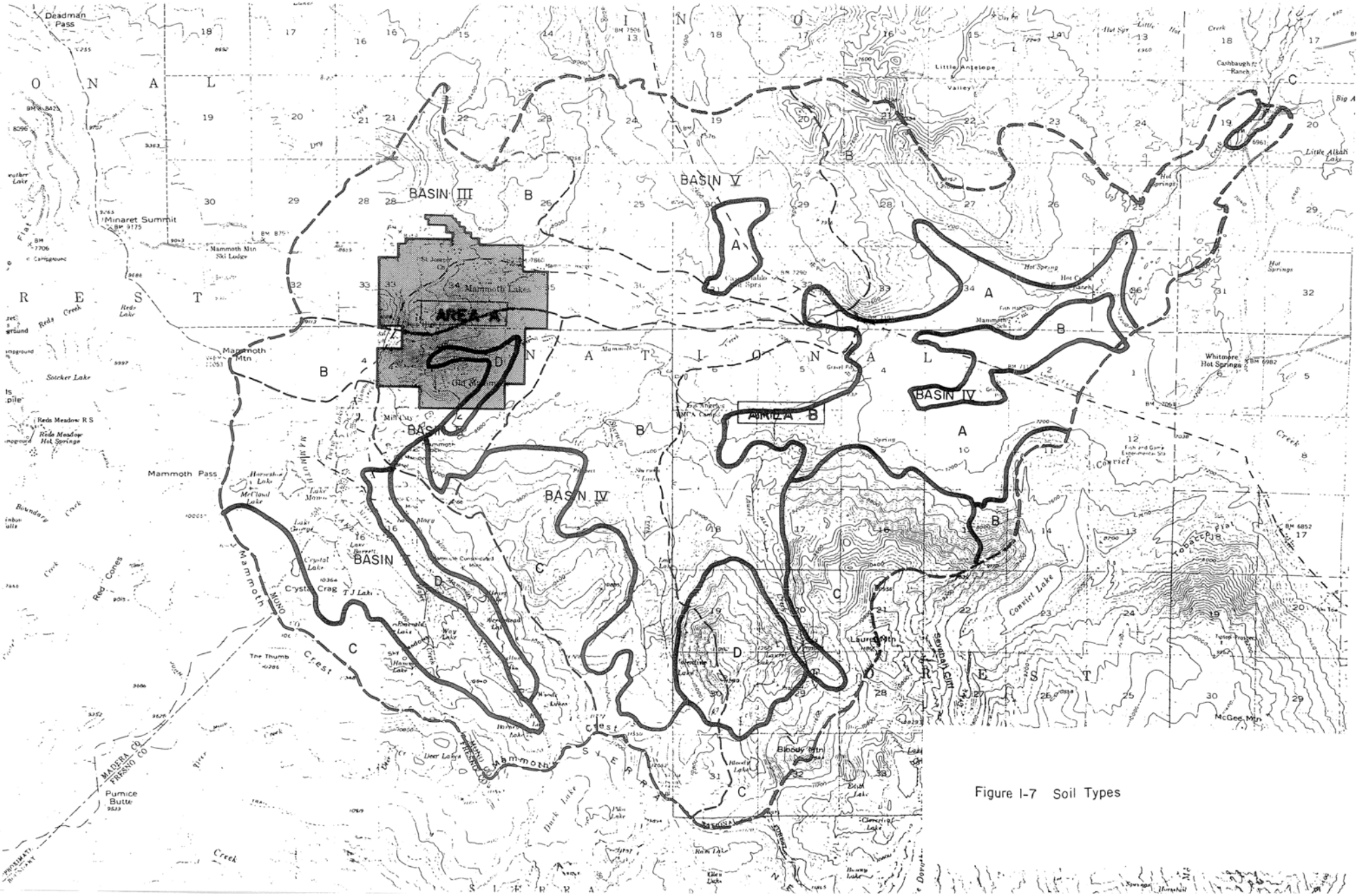


Figure I-7 Soil Types

4.8 LAND DEVELOPMENT

The construction and maintenance of urban and commercial developments can impact water quality in many ways. Construction activities inherently disturb soil and vegetation, often resulting in accelerated erosion and sedimentation. Stormwater runoff from developed areas can also contain petroleum products, nutrients, and other contaminants.

This section contains a discussion of the potential water quality impacts expected to result from land development activities, followed by control measures to reduce or offset water quality impacts from such activities.

Construction Activities and Guidelines

Construction activities often produce erosion by disturbing the natural ground surface through scarifying, grading, and filling. Floodplain and wetland disturbances often reduce the ability of the natural environment to retain sediment and assimilate nutrients. Construction materials such as concrete, paints, petroleum products, and other chemicals can contaminate nearby water bodies. Construction impacts such as these are typically associated with subdivisions, commercial developments, and industrial developments.

Control Measures for Construction Activities

The Regional Board regulates the construction of subdivisions, commercial developments, industrial developments, and roadways based upon the level of threat to water quality. The Regional Board will request a Report of Waste Discharge and consider the issuance of an appropriate permit for any proposed project where water quality concerns are identified in the California Environmental Quality Act (CEQA) review process. Any construction activity whose land disturbance activities exceed five acres must also comply with the statewide general NPDES permit for stormwater discharges (see "Stormwater" section of this Chapter).

The following are guidelines for construction projects regulated by the Regional Board, particularly for projects located in portions of the Region where erosion and stormwater threaten sensitive watersheds. The Regional Board recommends that each county within the Region adopt a grading/erosion control ordinance to require implementation of these same guidelines for all soil disturbing activities:

1. Surplus or waste material should not be placed in drainageways or within the 100-year floodplain of any surface water.

2. All loose piles of soil, silt, clay, sand, debris, or other earthen materials should be protected in a reasonable manner to prevent any discharge to waters of the State.

3. Dewatering should be performed in a manner so as to prevent the discharge of earthen material from the site.

4. All disturbed areas should be stabilized by appropriate soil stabilization measures by October 15th of each year.

5. All work performed during the wet season of each year should be conducted in such a manner that the project can be winterized (all soils stabilized to prevent runoff) within 48 hours if necessary. The wet season typically extends from October 15th through May 1st in the higher elevations of the Lahontan Region. The season may be truncated in the desert areas of the Region.

6. Where possible, existing drainage patterns should not be significantly modified.

7. After completion of a construction project, all surplus or waste earthen material should be removed from the site and deposited in an approved disposal location.

8. Drainage swales disturbed by construction activities should be stabilized by appropriate soil stabilization measures to prevent erosion.

9. All non-construction areas should be protected by fencing or other means to prevent unnecessary disturbance.

10. During construction, temporary protected gravel dikes, protected earthen dikes, or sand bag dikes should be used as necessary to prevent discharge of earthen materials from the site during periods of precipitation or runoff.

11. Impervious areas should be constructed with infiltration trenches along the downgradient sides to dispose of all runoff greater than background levels of the undisturbed site. Infiltration trenches are not recommended in areas where infiltration poses a risk of ground water contamination.

12. Infiltration trenches or similar protection facilities should be constructed on the downgradient side of all structural drip lines.

13. Revegetated areas should be continually maintained in order to assure adequate growth and root development. Physical erosion control facilities should be placed on a routine maintenance and inspection program to provide continued erosion control integrity.

14. Waste drainage waters in excess of that which can be adequately retained on the property should be collected before such waters have a chance to degrade. Collected water shall be treated, if necessary, before discharge from the property.

15. Where construction activities involve the crossing and/or alteration of a stream channel, such activities should be timed to occur during the period in which stream flow is expected to be lowest for the year.

16. Use of materials other than potable water for dust control (i.e., reclaimed wastewater, chemicals such as magnesium chloride, etc.) is strongly encouraged but must have prior Regional Board approval before its use.

Specific Policy and Guidelines for Mammoth Lakes Area

To control erosion and drainage in the Mammoth Lakes watershed at an elevation above 7,000 feet (Figure 4.8-1), the following policy and guidelines apply:

Policy:

A Report of Waste Discharge is required not less than 90 days before the intended start of construction activities of a **new development** of either (a) six or more dwelling units, or (b) commercial developments involving soil disturbance on one-quarter acre or more.

The Report of Waste Discharge shall contain a description of, and time schedule for implementation, for both the **interim erosion control measures** to be applied during project construction, and **short- and long-term erosion control measures** to be employed after the construction phase of the project. The descriptions shall include appropriate engineering drawings, criteria, and design calculations.

Guidelines:

1. Drainage collection, retention, and infiltration facilities shall be constructed and maintained to prevent transport of the runoff from a 20-year, 1-hour design storm from the project site. A 20-year, 1-hour design storm for the Mammoth Lakes area is equal to 1.0 inch (2.5 cm) of rainfall.

2. Surplus or waste materials shall not be placed in drainageways or within the 100-year flood plain of surface waters.

3. All loose piles of soil, silt, clay, sand, debris, or earthen materials shall be protected in a reasonable manner to prevent any discharge to waters of the State.

4. Dewatering shall be done in a manner so as to prevent the discharge of earthen materials from the site.

5. All disturbed areas shall be stabilized by appropriate soil stabilization measures by October 15 of each year.

6. All work performed between October 15th and May 1st of each year shall be conducted in such a manner that the project can be winterized within 48 hours.

7. Where possible, existing drainage patterns shall not be significantly modified.

8. After completion of a construction project, all surplus or waste earthen material shall be removed from the site and deposited at a legal point of disposal.

9. Drainage swales disturbed by construction activities shall be stabilized by the addition of crushed rock or riprap, as necessary, or other appropriate stabilization methods.

10. All nonconstruction areas shall be protected by fencing or other means to prevent unnecessary disturbance.

11. During construction, temporary erosion control facilities (e.g., impermeable dikes, filter fences, hay bales, etc.) shall be used as necessary to prevent discharge of earthen materials from the site during periods of precipitation or runoff.

12. Revegetated areas shall be regularly and continually maintained in order to assure adequate growth and root development. Physical erosion control facilities shall be placed on a routine maintenance and inspection program to provide continued erosion control integrity.

13. Where construction activities involve the crossing and/or alteration of a stream channel, such activities shall be timed to occur during the period in which streamflow is expected to be lowest for the year.

Land Development/Urban Runoff Control Actions for Susan River Watershed

1. To protect riparian vegetation and wetlands from land disturbance activities, the Regional Board shall recommend that Lassen County and the City of Susanville require new development or any land disturbing activities to include buffer strips of undisturbed land, especially along the Susan River and its tributaries.

2. The Regional Board, with assistance from the City of Susanville and the California Department of Transportation (Caltrans), should conduct monitoring of the Susan River and Piute Creek within the City of Susanville to assess impacts from urban runoff. Control measures should be planned and implemented based on the results of the monitoring. The monitoring plan should be developed to identify nonpoint sources needing control. Monitoring proposals will be submitted by the Regional Board, and work will be conducted as resources allow and as the Susan River gains priority.

3. The Regional Board shall encourage and assist other agencies in watershed restoration efforts along the Susan River.

4. The Regional Board shall encourage the City of Susanville and Lassen County to adopt a comprehensive grading ordinance. These ordinances should require, for all proposed land disturbing activities, the use of Best Management Practices to reduce erosion and stormwater runoff, including but not limited to temporary and permanent erosion control measures.

5. The Regional Board shall encourage the City of Susanville, Lassen County and Caltrans to implement Best Management Practices to reduce erosion and stormwater runoff when constructing and maintaining roads, both paved and unpaved, under their jurisdiction.

Road Construction and Maintenance

Road construction activities often involve extensive earth moving, including clearing, scarifying, excavating for bridge abutments, disturbing or modifying floodplains, cutting, and filling. Additionally, the potential for land disturbance exists from construction materials, equipment maintenance, fuel storage facilities, and general equipment use.

Once constructed, impervious road surfaces create another source of water pollution. Oils, greases, and other petroleum products, along with such toxic materials as battery acid, antifreeze, etc., may be deposited along the road surfaces. These contaminants become suspended or dissolved in any stormwater runoff that is generated on the road surfaces. Unless otherwise treated, these contaminants will flow toward local surface or ground waters. (See "Stormwater" section of this Chapter.)

Road maintenance can be potentially threatening to water quality in a number of ways. Below-grade culverts slowly fill with sediment and are cleaned out periodically, sometimes by flushing accumulated sediment into downstream drainageways. Grading of shoulders and drainageways can detach sediments and increase the risk of erosion into nearby surface waters. Road surfaces may be repainted or resealed

with materials that harden quickly, but which can be washed off while still fresh by stormwater runoff.

In the winter, roads are often snowy, icy, or wet. To reduce winter road hazards, maintenance crews may remove the snow or ice, apply sand to provide added traction, and/or apply deicing chemicals to melt the snow and ice. Sand is rapidly dissipated or crushed by the traffic, and must be replaced frequently. Great quantities of sediment enter drainageways and/or surface waters due to this practice. Snow may be removed mechanically via snowplow or snowblower. This practice is not particularly detrimental to water quality in itself, but the snow often carries substances from the roadway when removed. Sediments, chemical deicers, and vehicle fluids may travel much farther than they would otherwise, possibly reaching area surface waters. Ice and small accumulations of snow may be removed with chemical deicers. The deicer in widest use is rock salt (sodium chloride), due to its low cost, high availability, and predictable results.

Winter road maintenance was brought to the forefront in 1989 when significant numbers of roadside trees in the Lake Tahoe Basin suddenly started dying. The public outcry caused many environmental groups and regulatory agencies, including the Regional Board, to look more closely at what had been a more or less unscrutinized, unregulated process in the past. Data began to show that Caltrans was using very high amounts of salt each winter, and the figure seemed to increase from one year to the next. The consensus of the various regulatory agencies was that Caltrans should reduce salt use, explore various alternate deicers, and monitor the impacts of salt applications on soil, water, and vegetation. Salt use decreased significantly from 1989-1992, due to more careful application procedures and to drought conditions.

At least three alternate deicers have been explored: calcium magnesium acetate, potassium acetate, and magnesium chloride with corrosion inhibitors. These products have shown some promise, but further study is required. The cost to switch to an alternate deicer will be significant. The road departments are unwilling to make the switch unless an alternate deicer is demonstrably better environmentally, will not require too much adjustment on the part of the maintenance crews and equipment, and will actually do an effective and predictable job when applied.

However, Caltrans' monitoring of vegetation showed minimal and temporary salt accumulation within the vegetation. During the spring, any salt that had accumulated in the vegetation was flushed out from the plant material. The impacts of chemical deicers on fish and wildlife within the Lahontan Region have not been studied.

Control Measures for Road Construction and Maintenance

(Additional control measures for roads are included in the "Stormwater" section of this Chapter.)

The Regional Board regulates road construction and maintenance projects within the Lahontan Region, concentrating efforts on major construction and construction in sensitive areas. Major construction projects and those projects in sensitive areas are most often regulated under individual WDRs, and are routinely inspected. Less significant projects may be issued conditional waivers of WDRs. The Regional Board has also adopted road maintenance waste discharge requirements for some county governments in the Region. Road construction and maintenance in the Lake Tahoe Basin is also regulated under municipal NPDES Stormwater Permits (see Chapter 5).

For all road projects, the Board requires that construction be conducted in a manner which is protective to water quality, and that, at the end of a given project, the site be restabilized and revegetated. These requirements are detailed in a Management Agency Agreement with Caltrans regarding the implementation of BMPs. Additionally, all road projects are to be in compliance with the Caltrans Statewide 208 Plan (CA Dept. of Transportation 1980), which was approved by the State Board in 1979. This Plan contains a commitment to implement BMPs, but does not include great detail on the BMPs themselves. The State Board should encourage Caltrans to update its 208 plan to provide such detail, with particular attention to:

- stormwater/erosion control along existing highways
- erosion control during highway construction and maintenance

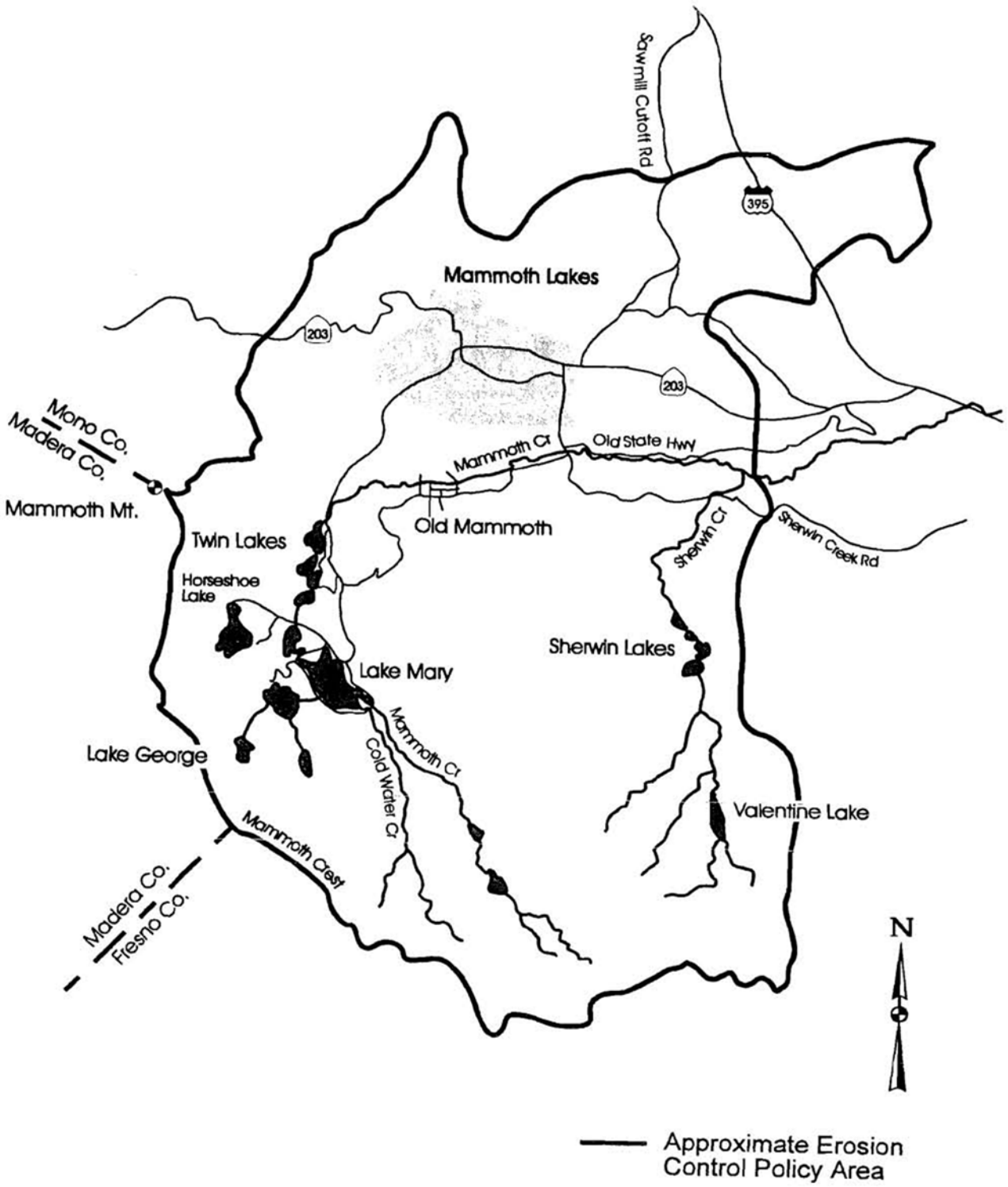
- reduction of direct discharges (e.g., through culverts)
- reduction of runoff velocity
- infiltration, detention and retention practices
- management of deicing compounds, fertilizer, and herbicide use
- spill cleanup measures
- treatment of toxic stormwater pollutants

Since much of the implementation of BMPs on highways is done by Caltrans' contractors, the selection of qualified contractors and ongoing education of construction and maintenance personnel on BMP techniques are particularly important.

In the Lake Tahoe Basin, all governmental agencies assigned to maintain roads are required to bring all roads in the Lake Tahoe Basin into compliance with current "208" standards within a specified time schedule. That is, all existing facilities must be retrofitted to handle the stormwater runoff from the 20-year, 1-hour storm, and to restabilize all eroding slopes. The twenty-year time frame for this compliance process ends in 2008.

The Regional Board should allow salt use to continue as one component of a comprehensive winter maintenance program. However, the Regional Board should continue to require that it be applied in a careful, well-planned manner, by competent, trained crews. Should even the "proper" application of salt be shown to cause adverse water quality impacts, the Regional Board should then require that it no longer be used in environmentally sensitive areas, such as the Lake Tahoe Basin. Similarly, should an alternate deicer be shown to be effective, environmentally safe, and economically feasible, its use should be encouraged in lieu of salt.

Figure 4.8-1
OWENS HYDROLOGIC UNIT



THE TOWN OF MAMMOTH LAKES CALIFORNIA

2005 STORM DRAIN Master Plan Update

May 26, 2005
(Revision 0D)

VT-M01-100-01

BOYLE
ENGINEERING CORPORATION

B. Procedure A Development

Two types of rare event precipitation-runoff conditions pertain to the meteorological characteristics of the Town and need to be considered jointly. They are subject to two physically distinct events: a rainfall-only condition and the rainfall-on-snow condition, referred to as the summer and winter conditions, respectively. The idea that one should consider each condition separately and then choose the most extreme result is a sound one and will be adopted in this study as well.

The methodology used to determine peak flows is based on the Rational Formula

$$Q = CiA$$

Where:

Q	=	the discharge measured in cfs
C	=	the runoff coefficient, having no physical dimensions
i	=	the rainfall intensity measured in inches per hour
A	=	the area of the watershed basin measured in acres

The above formula is simply a version of the "continuity equation" in the study of hydraulics. Any consistent set of units may be chosen, however the customary units for Q, i, and A are cubic feet per second (cfs), inches per hour (in/hr), and acres (ac) respectively. For this particular choice of units, the product CiA is to be multiplied by a small correction factor of 1.008, which is often neglected in view of the probabilistic nature of hydrologic calculations mentioned above.

It was observed from the 1984 study that flows within the local storm drains experience little attenuation. In other words, individual hydrographs from individual storm drains have nearly coincidental (in time) peaks when a flow confluence occurs. This finding from the 1984 study helps to provide a simple way to determine peak discharge values. Additionally, the assumption of no attenuation is a conservative one.

While it is true that any point on a stream has a watershed area associated with it, one should not compare watersheds having widely ranging area values. Former procedures specified in the 1984 study allow for areas within the town to have an area anywhere between 0 and 1,600 acres, which is too much of a variation. Problems with

comparing a 10 acre subarea with a 1000 acre subarea are obvious in that calculated times of concentrations (t_c) would be vastly different. Hence for this updated study a standard of 40-80 acres is taken as the range of watershed size used to apply cfs/acre peak values[3]. In practice, developers within subareas (if more than one subarea is involved a weighted average should be taken) of this order of magnitude can design systems for their projects using the cfs/acre values that are called out in this study (see **Table 3-1A**).

Another fact that applies to storm drains in the Town is that peak flows within the local storm drain system occur at a time much earlier than offsite flows in major streams. Hence, storm drain design in the Town is mainly independent of offsite drainage and drainage methodology (with the exception of conveyance structures that route large offsite watersheds). For those properties that are affected by large offste watersheds, a reduction factor may be applied, as shown in **Table 3-1B**.

In order to develop a "cfs/acre" approach in lieu of a detailed hydrograph for storm drain flows, a lower bound for cfs/acre value within the Mammoth Basin was first established for comparative purposes. By the term "lower bound", we mean that the estimates made by the following analysis are expected to be less than cfs/acre values that actually apply within the Town for the purpose of pipe design. Such an estimate has some value, since it acts as a safeguard against the use of values that would result in the design of conveyance systems that are inadequate for a given return period.

From the Federal Emergency Management Agency (FEMA) Flood Insurance study [6], it was estimated that the 100-year[4] discharge rate for Mammoth Creek was 640 cubic feet per second (cfs) for a tributary watershed area of 13.12 square miles (8,397 acres) at a stream location taken 650 feet downstream of Old Mammoth Road. Hence for this

---

[3] This standard is used in several communities within the State of California, including Los Angeles [5] and Ventura Counties.

[4] A 10-year storm is defined as a storm event that is equaled or exceeded every 10 years on average. Another way to define a 10-year storm is to say that the probability of an event of having a 10-year magnitude or more has a 1/10 chance in a given year. Likewise, a 100-year storm is defined as a storm that is equaled or exceeded every 100 years on average. The 100-year storm can alternatively be defined by saying that the probability of an event of having a 100-year magnitude or more has a 1/100 chance in a given year [7].

watershed, a cfs/acre ratio is equal to 640/8397 ≈ 0.076 cfs/acre for 100-year conditions. This value is clearly low since it includes an extremely large and predominantly natural watershed (consisting of subareas including portions of the Town) subject to the attenuation process. From the same study, it was estimated that the 100-year discharge rate for Mammoth Creek increased from 350 cfs to 610 cfs between Waterford Street upstream and a point 650 feet upstream of Minaret Road downstream. The increase in the watershed area between these two stations is given as 0.49 square miles (314 acres) and lies within the Town. For this watershed from Waterford Street to 650 feet upstream of Minaret Road, the cfs/acre ratio is equal to (610 – 350)/314 ≈ 0.828 cfs/acre for 100-year conditions.

Next, a statistical analysis was made of the cfs/acre data contained in the 1984 study. Not surprisingly, a strong dependence (on cfs/acre rates) was found on the degree of natural land cover. This data was applied to the individual subareas delineated in this study for the purpose of obtaining a reasonable estimate of cfs/acre value for particular land use types, and were adjusted for consistency. These values were conservatively estimated to be those as given in **Table 3-1** below:

Table 3-1A. Applicable cfs/acre Values by Land Use Type

Land Use Type	20-Year	100-Year
Natural	0.23	0.43
Single Family Residence	0.65	1.30
High Density Residence	1.14	1.90
Commercial	1.22	1.93

Table 3-1B. Reduction Factors for Large Basins

Drainage Area (acres)	Reduction Factor
80	1.00
100	0.97
200	0.88
500	0.77
1,000	0.69
2,000	0.63
5,000	0.55
7,744	0.52

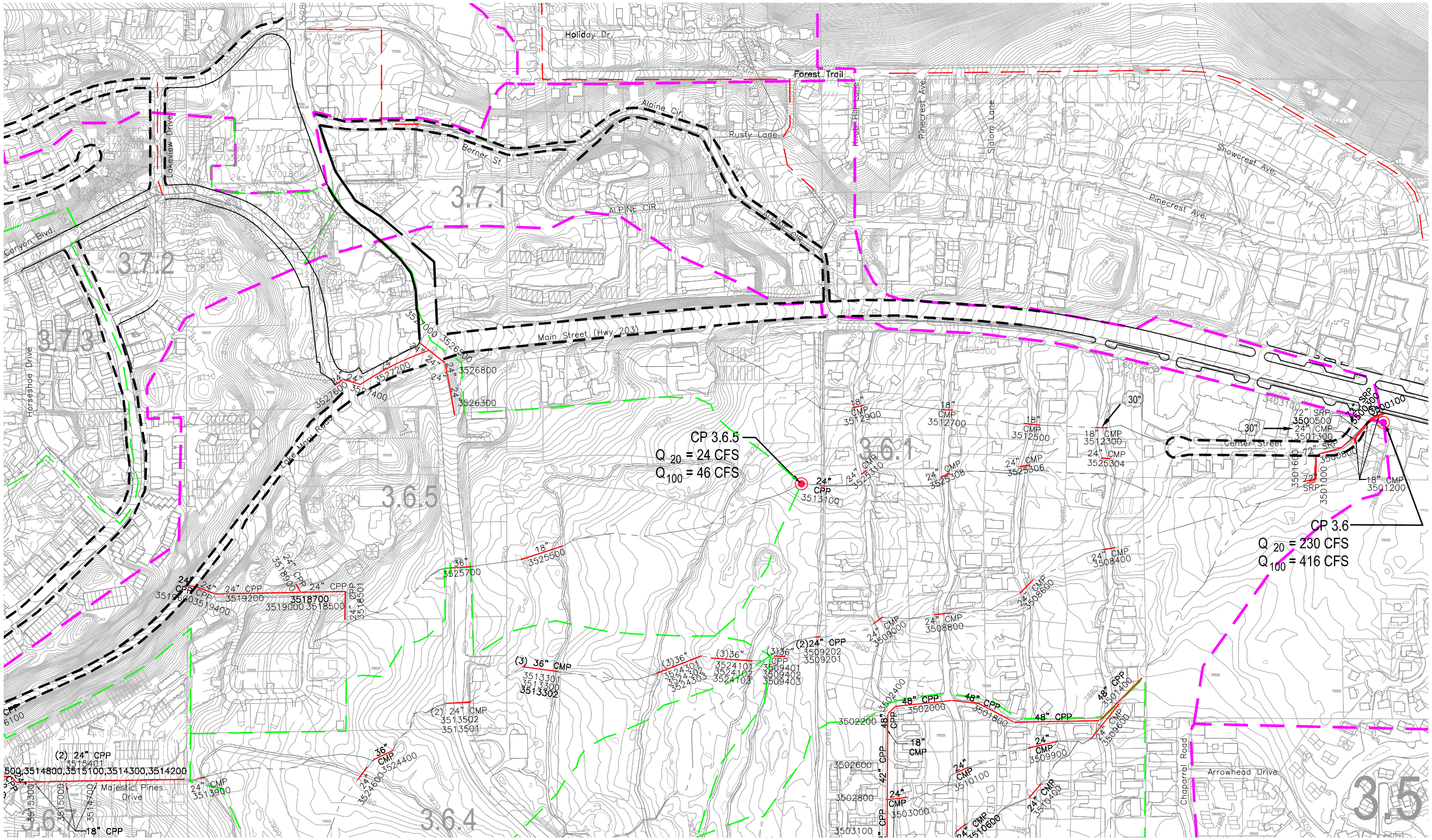
The values for the tables above were determined primarily for the purpose of determining the discharge values within the elements of the storm drain system as outlined in Section 5.

C. Procedure B Development

Procedure B is intended for use in larger, natural areas. A flow-frequency analysis approach was adopted, based on the flow data available and the ease with which it could be applied. Sufficient concurrent precipitation and runoff data were not available to develop a hydrograph method with reasonable accuracy.

The flow out of a large, natural basin in the Mammoth Lakes area has two principal components--snowmelt and rain flood flows. In general, flow records indicate that the peak flows in Mammoth Creek at Highway 395 are produced by snowmelt. Extreme rainfall events may produce short-term peaks on an annual hydrograph, which is dominated by flows produced by snowmelt. This situation is typical of major basins on the eastern side of the Sierra Nevada.

The mean daily flow records for Hot Creek at Highway 395 were used to develop the flow-frequency relationships. Snowmelt flows were segregated from rain flood flows by plotting flow-frequency relationships separately for rainy and non-rainy periods.



NOTES:

1. FLOWS SHOWN ARE TOTALS FOR FUTURE BUILD OUT CONDITIONS.

LEGEND

- MAJOR WATERSHED BOUNDARY
- DETAILED DRAINAGE WATERSHED BOUNDARIES
- FLOWLINE
- STORM DRAIN, EXISTING
- STORM DRAIN, RECOMMENDED
- CURB AND GUTTER, EXISTING
- CURB AND GUTTER, RECOMMENDED
- WATERSHED COLLECTION POINT, CP
- 30" RECOMMENDED PIPE REPLACEMENT OR NEW PIPE. (RED SHADING = PRIORITY 1, YELLOW SHADING = PRIORITY 2)
- 10 NEW PIPE ID

200' 100' 0 200' 400'
SCALE IN FEET

REV	DATE	DESCRIPTION	APPR
6			
5			
4			
3			
2			
1	–		

BOYLE

TOWN OF MAMMOTH LAKES

AREAS 3.6.1 AND 3.6.5 PLAN

VT-M01-100-01 | MAY 2005 | EXHIBIT 8.13

DWG: F:\wilson\M0110001 – Mammoth Storm\CAD\Exhibits\Area 3.6.1 and 3.6.5.dwg
DATE: Jun 10, 2005 4:57pm
XREFS: basemap 2162p3 BLDG ONLY USERS: kmorin 2162p3 TOPO ONLY Xref System pipe ID Basins-Hatch (Sub Areas) Mammoth New Construction

Analysis of Pipe Capacities: Existing Conditions, 20-Year Event

Basin	Pipe ID	Length (ft)	Section Size (in)	Calculated Capacity 94% full	Total Basin Q	% of Basin	Basin Q at Pipe	Contibuting Basins				Contributing Q	Required Capacity	Pipe Meets Required Capacity
3.6.10	3518000	20	36	227	21	3%	1					0	1	Yes
3.6.10	3518100	540	24	55	21	92%	20					0	20	Yes
3.6.10	3518300	38	36	116	21	20%	4					0	4	Yes
3.6.5	3518500	84	24	56	24	25%	6					0	6	Yes
3.6.5	3518501	60	24	12	24	20%	5					0	5	Yes
3.6.5	3518700	96	24	75	24	25%	6					0	6	Yes
3.6.5	3518900	39	24	128	24	10%	2					0	2	Yes
3.6.5	3519000	123	24	75	24	20%	5					0	5	Yes
3.6.5	3519200	225	24	92	24	15%	4					0	4	Yes
3.6.5	3519400	83	24	160	24	10%	2					0	2	Yes
3.6.5	3519600	44	24	119	24	10%	2					0	2	Yes
3.6.3	3520600	65	24	78	11	55%	6					0	6	Yes
3.6.3	3520800	71	24	89	11	30%	3					0	3	Yes
3.6.4	3521300	73	24	49	10	5%	1					0	1	Yes
3.6.7	3521500	55	24	57	30	15%	5					0	5	Yes
3.6.9	3521600	122	24	22	52	50%	26					0	26	No
2.3.1	3521700	38	24	28	27	5%	1					0	1	Yes
2.3.1	3521800	72	18	13	27	5%	1					0	1	Yes
3.6.6	3522000	21	30	96	13	10%	1					0	1	Yes
3.6.6	3522200	63	30	56	13	20%	3					0	3	Yes
3.6.6	3522400	22	30	93	13	20%	3					0	3	Yes
3.6.6	3522500	78	12	5	13	10%	1					0	1	Yes
3.6.6	3522501	47	12	6	13	10%	1					0	1	Yes
3.6.6	3522600	55	18	8	13	10%	1					0	1	Yes
3.6.6	3522800	276	18	14	13	20%	3					0	3	Yes
3.6.6	3523000	158	18	24	13	20%	3					0	3	Yes
3.6.6	3523200	166	18	26	13	20%	3					0	3	Yes
3.6.6	3523400	53	18	18	13	20%	3					0	3	Yes
3.6.6	3523600	119	18	21	13	20%	3					0	3	Yes
3.6.4	3524101	173	36	164	10	33%	3	3.6.7				42	46	Yes
3.6.4	3524102	173	36	164	10	33%	3	3.6.7				42	46	Yes
3.6.4	3524103	173	36	164	10	33%	3	3.6.7				42	46	Yes
3.6.4	3524301	199	36	144	10	90%	9	3.6.7				42	17	Yes
3.6.4	3524302	199	36	144	10	90%	9	3.6.7				42	17	Yes
3.6.4	3524303	199	36	144	10	90%	9	3.6.7				42	17	Yes
3.6.4	3524400	90	36	6753	10	40%	4	3.6.7				42	46	Yes
3.6.4	3524600	63	24	60	10	40%	4	3.6.7				42	46	Yes
3.6.4	3524900	188	24	59	10	5%	1					0	1	Yes
3.6.5	3525500	183	18	24	24	60%	14					0	14	Yes
3.6.5	3525700	86	36	145	24	60%	14					0	14	Yes
3.6.5	3526300	174	24	64	24	50%	12					0	12	Yes
3.6.5	3526500	5	24	109	24	50%	12					0	12	Yes
3.6.5	3526800	37	24	57	24	50%	12					0	12	Yes
3.6.5	3527000	133	24	42	24	40%	10					0	10	Yes
3.6.5	3527200	318	24	49	24	10%	2					0	2	Yes
3.6.5	3527400	73	24	46	24	30%	7					0	7	Yes
3.6.5	3527600	41	24	65	24	30%	7					0	7	Yes
3.8	3527800	88	36	132	34	40%	13					0	13	Yes
3.8	3528000	39	24	39	34	40%	13					0	13	Yes
3.8	3528200	202	18	29	34	5%	2					0	2	Yes
3.8	3528400	51	18	32	34	5%	2					0	2	Yes
3.6.8	3540100	70	24	96	21	5%	1					0	1	Yes
3.6.8	3540200	231	24	66	21	5%	1					0	1	Yes
3.6.8	3540300	225	24	86	21	5%	1					0	1	Yes
3.6.8	3540400	108	18	69	21	2%	0					0	0	Yes
3.6.8	3540500	183	18	65	21	2%	0					0	0	Yes
3.7.1	3600100	144	30	384	31	10%	3	3.9				19	23	Yes
3.7.1	3600300	166	30	59	31	8%	2	3.9				19	22	Yes
3.9	3600400	84	36	235	19	100%	19					0	19	Yes
3.9	3600600	73	24	40	19	98%	19					0	19	Yes
3.9	3600800	162	36	218	19	98%	19					0	19	Yes
3.9	3601000	89	36	108	19	95%	19					0	19	Yes
3.9	3601200	77	18	16	19	40%	8					0	8	Yes
3.9	3601300	65	24	67	19	15%	3					0	3	Yes
3.9	3601500	58	24	32	19	10%	2					0	2	Yes
3.9	3601600	44	18	17	19	5%	1					0	1	Yes
3.7.1	3700100	156	60	2374	31	10%	3	3.7.2				165	168	Yes

APPENDIX H

NOISE DATA

OFF-SITE TRAFFIC NOISE LEVELS AND NOISE CONTOURS

Project: Mammoth Crossings

Background Information

Model Description: FHWA Highway Noise Prediction Model (FHWA-RD-77-108) with California Vehicle Noise (CALVENO) Emission Levels.

Analysis Scenario(s): Existing and Future Traffic Volumes

Source of Traffic Volumes: Overland Traffic Engineers, Inc.

Assumed 24-Hour Traf	Day	Evening	Night
Total ADT Volume	77.70%	12.70%	9.60%
Medium-Duty Truc	87.43%	5.05%	7.52%
Heavy-Duty Truck	89.10%	2.84%	8.06%

Community Noise Descriptor: L_{dn}: X CNEL: 0

Analysis Condition Roadway Name Roadway Segment	Land Use	Lanes	Median Width	Peak Hour Volume	ADT Volume	Posted Speed (mph)	Dist. from Center tc Receptor	Alpha Factor	Barrier Attn. dB(A)	Vehicle Mix Medium Trucks	Vehicle Mix Heavy Trucks	Peak Hour dB(A) L_{eq}	24-Hour dB(A) Ldn
Existing (Winter 2008)Traffic Volumes													
Minaret Road													
north of Meridian Road	Rural	4	0	741	5,928	35	75	0.5	0	1.8%	0.7%	61.7	57.9
south of Meridian Road	Rural	4	0	408	3,264	35	75	0.5	0	1.8%	0.7%	59.1	55.3
north of Lake Mary Road/Main St	Hotel	5	0	1,110	8,880	35	75	0.5	0	1.8%	0.7%	63.6	59.8
south of Lake Mary Road/Main S	Rural	4	0	802	6,416	35	75	0.5	0	1.8%	0.7%	62.1	58.2
north of 7B Road	Rural	2	0	802	6,416	35	75	0.5	0	1.8%	0.7%	61.9	58.0
south of 7B Raod	Rural	2	0	802	6,416	35	75	0.5	0	1.8%	0.7%	61.9	58.0
north of Forest Trail	Rural	2	0	742	5,936	35	75	0.5	0	1.8%	0.7%	61.6	57.7
south of Forest Trail	Commercial	2	0	923	7,384	35	75	0.5	0	1.8%	0.7%	62.5	58.7
Meridian Road													
west of Minaret Road	Rural	5	0	573	4,584	35	75	0.5	0	1.8%	0.7%	60.8	56.9
east of Minaret Road	Rural	5	0	686	5,488	35	75	0.5	0	1.8%	0.7%	61.5	57.7
Lake Mary Road													
west of Minaret Road	Hotel	6	0	1,382	11,056	45	75	0.5	0	1.8%	0.7%	67.5	63.5
west of Kelly Road	Rural	2	0	360	2,880	35	75	0.5	0	1.8%	0.7%	58.4	54.6

east of Kelly Road	Rural	2	0	465	3,720	35	75	0.5	0	1.8%	0.7%	59.5	55.7
west of Lakeview Boulevard	Residential	2	0	543	4,344	35	75	0.5	0	1.8%	0.7%	60.2	56.4
east of Lakeview Boulevard	Residential	2	0	599	4,792	35	75	0.5	0	1.8%	0.7%	60.6	56.8
west of Canyon Boulevard	Residential	2	0	611	4,888	35	75	0.5	0	1.8%	0.7%	60.7	56.9
east of Canyon Boulevard	Residential	3	0	1,254	10,032	35	75	0.5	0	1.8%	0.7%	63.9	60.1
Main Street													
east of Minaret Road	Residential	6	0	1,532	12,256	45	75	0.5	0	1.8%	0.7%	68.0	63.9
west of Mountain Boulevard	Residential	4	0	1,592	12,736	45	75	0.5	0	1.8%	0.7%	67.8	63.7
east of Mountain Boulevard	Residential	4	0	1,573	12,584	45	75	0.5	0	1.8%	0.7%	67.7	63.7
west of Center Street	Commercial	4	12	1,620	12,960	45	75	0.5	0	1.8%	0.7%	68.0	63.9
east of Center Street	Commercial	4	12	1,619	12,952	45	75	0.5	0	1.8%	0.7%	68.0	63.9
west of Old Mammoth Road	Commercial	4	12	1,445	11,560	45	75	0.5	0	1.8%	0.7%	67.5	63.4
east of Old Mammoth Road	Commercial	4	12	761	6,088	45	75	0.5	0	1.8%	0.7%	64.7	60.7
Forest Trail													
west of Minaret Road	Hotel	2	0	319	2,552	35	75	0.5	0	1.8%	0.7%	57.9	54.0
east of Minaret Road	Residential	2	0	136	1,088	35	75	0.5	0	1.8%	0.7%	54.2	50.3
Kelly Road													
south of Lake Mary Road	Rural	2	0	235	1,880	35	75	0.5	0	1.8%	0.7%	56.6	52.7
Lakeview Boulevard													
north of Lake Mary Road	Rural	2	0	168	1,344	35	75	0.5	0	1.8%	0.7%	55.1	51.3
Canyon Boulevard													
north of Lake Mary Road	Hotel	3	0	709	5,672	35	75	0.5	0	1.8%	0.7%	61.4	57.6
Mountain Boulevard													
north of Main Street	Residential	2	0	133	1,064	35	75	0.5	0	1.8%	0.7%	54.1	50.2
south of Main Street	Residential	2	0	72	576	35	75	0.5	0	1.8%	0.7%	51.4	47.6
Center Street													
north of Main Street	Commercial	2	0	147	1,176	35	75	0.5	0	1.8%	0.7%	54.5	50.7
south of Main Street	Commercial	2	0	198	1,584	35	75	0.5	0	1.8%	0.7%	55.8	52.0
Old Mammoth Road													
south of Main Street	Commercial	3	0	1,052	8,416	35	75	0.5	0	1.8%	0.7%	63.1	59.3

Existing Plus Project (Winter 2008)Traffic Volumes

Minaret Road													
north of Meridian Road	Rural	4	0	802	6,416	35	75	0.5	0	1.8%	0.7%	61.9	58.0
south of Meridian Road	Rural	4	0	419	3,352	35	75	0.5	0	1.8%	0.7%	59.1	55.2
north of Lake Mary Road/Main St	Hotel	5	0	1,145	9,160	35	75	0.5	0	1.8%	0.7%	63.4	59.6

south of Lake Mary Road/Main S	Rural	4	0	866	6,928	35	75	0.5	0	1.8%	0.7%	62.2	58.4
north of 7B Road	Rural	2	0	870	6,960	35	75	0.5	0	1.8%	0.7%	62.2	58.4
south of 7B Raod	Rural	2	0	865	6,920	35	75	0.5	0	1.8%	0.7%	62.2	58.4
north of Forest Trail	Rural	2	0	777	6,216	35	75	0.5	0	1.8%	0.7%	61.8	57.9
south of Forest Trail	Commercial	2	0	958	7,664	35	75	0.5	0	1.8%	0.7%	62.7	58.8
Meridian Road													
west of Minaret Road	Rural	5	0	584	4,672	35	75	0.5	0	1.8%	0.7%	60.5	56.7
east of Minaret Road	Rural	5	0	725	5,800	35	75	0.5	0	1.8%	0.7%	61.4	57.6
Lake Mary Road													
west of Minaret Road	Hotel	6	0	1,478	11,824	45	75	0.5	0	1.8%	0.7%	67.3	63.2
west of Kelly Road	Rural	2	0	371	2,968	35	75	0.5	0	1.8%	0.7%	58.5	54.7
east of Kelly Road	Rural	2	0	488	3,904	35	75	0.5	0	1.8%	0.7%	59.7	55.9
west of Lakeview Boulevard	Residential	2	0	567	4,536	35	75	0.5	0	1.8%	0.7%	60.4	56.5
east of Lakeview Boulevard	Residential	2	0	623	4,984	35	75	0.5	0	1.8%	0.7%	60.8	57.0
west of Canyon Boulevard	Residential	2	0	615	4,920	35	75	0.5	0	1.8%	0.7%	60.7	56.9
east of Canyon Boulevard	Residential	3	0	1,349	10,792	35	75	0.5	0	1.8%	0.7%	64.1	60.3
Main Street													
east of Minaret Road	Residential	6	0	1,611	12,888	45	75	0.5	0	1.8%	0.7%	67.7	63.6
west of Mountain Boulevard	Residential	4	0	1,671	13,368	45	75	0.5	0	1.8%	0.7%	67.8	63.7
east of Mountain Boulevard	Residential	4	0	1,652	13,216	45	75	0.5	0	1.8%	0.7%	67.8	63.7
west of Center Street	Commercial	4	12	1,687	13,496	45	75	0.5	0	1.8%	0.7%	67.9	63.8
east of Center Street	Commercial	4	12	1,686	13,488	45	75	0.5	0	1.8%	0.7%	67.9	63.8
west of Old Mammoth Road	Commercial	4	12	1,513	12,104	45	75	0.5	0	1.8%	0.7%	67.4	63.3
east of Old Mammoth Road	Commercial	4	12	789	6,312	45	75	0.5	0	1.8%	0.7%	64.6	60.5
Forest Trail													
west of Minaret Road	Hotel	2	0	319	2,552	35	75	0.5	0	1.8%	0.7%	57.9	54.0
east of Minaret Road	Residential	2	0	136	1,088	35	75	0.5	0	1.8%	0.7%	54.2	50.3
Kelly Road													
south of Lake Mary Road	Rural	2	0	247	1,976	35	75	0.5	0	1.8%	0.7%	56.8	52.9
Lakeview Boulevard													
north of Lake Mary Road	Rural	2	0	168	1,344	35	75	0.5	0	1.8%	0.7%	55.1	51.3
Canyon Boulevard													
north of Lake Mary Road	Hotel	3	0	780	6,240	35	75	0.5	0	1.8%	0.7%	61.8	57.9
Mountain Boulevard													
north of Main Street	Residential	2	0	133	1,064	35	75	0.5	0	1.8%	0.7%	54.1	50.2
south of Main Street	Residential	2	0	72	576	35	75	0.5	0	1.8%	0.7%	51.4	47.6
Center Street													

north of Main Street	Commercial	2	0	147	1,176	35	75	0.5	0	1.8%	0.7%	54.5	50.7
south of Main Street	Commercial	2	0	198	1,584	35	75	0.5	0	1.8%	0.7%	55.8	52.0
Old Mammoth Road													
south of Main Street	Commercial	3	0	1,092	8,736	35	75	0.5	0	1.8%	0.7%	63.2	59.4
Cumulative Baseline (Winter 2009)Traffic Volumes													
Minaret Road													
north of Meridian Road	Rural	4	0	1,004	8,032	35	75	0.5	0	1.8%	0.7%	62.9	59.0
south of Meridian Road	Rural	4	0	760	6,080	35	75	0.5	0	1.8%	0.7%	61.7	57.8
north of Lake Mary Road/Main St	Hotel	5	0	1,284	10,272	35	75	0.5	0	1.8%	0.7%	63.9	60.1
south of Lake Mary Road/Main S	Rural	4	0	1,146	9,168	35	75	0.5	0	1.8%	0.7%	63.4	59.6
north of 7B Road	Rural	2	0	1,164	9,312	35	75	0.5	0	1.8%	0.7%	63.5	59.7
south of 7B Raod	Rural	2	0	1,114	8,912	35	75	0.5	0	1.8%	0.7%	63.3	59.5
north of Forest Trail	Rural	2	0	741	5,928	35	75	0.5	0	1.8%	0.7%	61.5	57.7
south of Forest Trail	Commercial	2	0	1,004	8,032	35	75	0.5	0	1.8%	0.7%	62.9	59.0
Meridian Road													
west of Minaret Road	Rural	5	0	876	7,008	35	75	0.5	0	1.8%	0.7%	62.3	58.4
east of Minaret Road	Rural	5	0	840	6,720	35	75	0.5	0	1.8%	0.7%	62.1	58.2
Lake Mary Road													
west of Minaret Road	Hotel	6	0	1,522	12,176	45	75	0.5	0	1.8%	0.7%	67.4	63.3
west of Kelly Road	Rural	2	0	448	3,584	35	75	0.5	0	1.8%	0.7%	59.4	55.5
east of Kelly Road	Rural	2	0	531	4,248	35	75	0.5	0	1.8%	0.7%	60.1	56.3
west of Lakeview Boulevard	Residential	2	0	608	4,864	35	75	0.5	0	1.8%	0.7%	60.7	56.8
east of Lakeview Boulevard	Residential	2	0	646	5,168	35	75	0.5	0	1.8%	0.7%	60.9	57.1
west of Canyon Boulevard	Residential	2	0	654	5,232	35	75	0.5	0	1.8%	0.7%	61.0	57.2
east of Canyon Boulevard	Residential	3	0	1,412	11,296	35	75	0.5	0	1.8%	0.7%	64.3	60.5
Main Street													
east of Minaret Road	Residential	6	0	1,624	12,992	45	75	0.5	0	1.8%	0.7%	67.7	63.6
west of Mountain Boulevard	Residential	4	0	1,685	13,480	45	75	0.5	0	1.8%	0.7%	67.9	63.8
east of Mountain Boulevard	Residential	4	0	1,684	13,472	45	75	0.5	0	1.8%	0.7%	67.8	63.8
west of Center Street	Commercial	4	12	1,675	13,400	45	75	0.5	0	1.8%	0.7%	67.8	63.8
east of Center Street	Commercial	4	12	1,667	13,336	45	75	0.5	0	1.8%	0.7%	67.8	63.7
west of Old Mammoth Road	Commercial	4	12	1,577	12,616	45	75	0.5	0	1.8%	0.7%	67.6	63.5
east of Old Mammoth Road	Commercial	4	12	804	6,432	45	75	0.5	0	1.8%	0.7%	64.6	60.6
Forest Trail													
west of Minaret Road	Hotel	2	0	481	3,848	35	75	0.5	0	1.8%	0.7%	59.7	55.8

east of Minaret Road	Residential	2	0	242	1,936	35	75	0.5	0	1.8%	0.7%	56.7	52.8
Kelly Road													
south of Lake Mary Road	Rural	2	0	321	2,568	35	75	0.5	0	1.8%	0.7%	57.9	54.1
Lakeview Boulevard													
north of Lake Mary Road	Rural	2	0	234	1,872	35	75	0.5	0	1.8%	0.7%	56.5	52.7
Canyon Boulevard													
north of Lake Mary Road	Hotel	3	0	846	6,768	35	75	0.5	0	1.8%	0.7%	62.1	58.3
Mountain Boulevard													
north of Main Street	Residential	2	0	179	1,432	35	75	0.5	0	1.8%	0.7%	55.4	51.5
south of Main Street	Residential	2	0	72	576	35	75	0.5	0	1.8%	0.7%	51.4	47.6
Center Street													
north of Main Street	Commercial	2	0	147	1,176	35	75	0.5	0	1.8%	0.7%	54.5	50.7
south of Main Street	Commercial	2	0	273	2,184	35	75	0.5	0	1.8%	0.7%	57.2	53.4
Old Mammoth Road													
south of Main Street	Commercial	3	0	1,193	9,544	35	75	0.5	0	1.8%	0.7%	63.6	59.8
Cumulative Plus Project (Winter 2009)Traffic Volumes													
Minaret Road													
north of Meridian Road	Rural	4	0	1,065	8,520	35	75	0.5	0	1.8%	0.7%	63.1	59.3
south of Meridian Road	Rural	4	0	571	4,568	35	75	0.5	0	1.8%	0.7%	60.4	56.6
north of Lake Mary Road/Main St	Hotel	5	0	1,329	10,632	35	75	0.5	0	1.8%	0.7%	64.1	60.2
south of Lake Mary Road/Main S	Rural	4	0	1,245	9,960	35	75	0.5	0	1.8%	0.7%	63.8	60.0
north of 7B Road	Rural	2	0	1,232	9,856	35	75	0.5	0	1.8%	0.7%	63.8	59.9
south of 7B Raod	Rural	2	0	1,177	9,416	35	75	0.5	0	1.8%	0.7%	63.6	59.7
north of Forest Trail	Rural	2	0	776	6,208	35	75	0.5	0	1.8%	0.7%	61.7	57.9
south of Forest Trail	Commercial	2	0	1,039	8,312	35	75	0.5	0	1.8%	0.7%	63.0	59.2
Meridian Road													
west of Minaret Road	Rural	5	0	887	7,096	35	75	0.5	0	1.8%	0.7%	62.3	58.5
east of Minaret Road	Rural	5	0	879	7,032	35	75	0.5	0	1.8%	0.7%	62.3	58.4
Lake Mary Road													
west of Minaret Road	Hotel	6	0	1,635	13,080	45	75	0.5	0	1.8%	0.7%	67.7	63.6
west of Kelly Road	Rural	2	0	379	3,032	35	75	0.5	0	1.8%	0.7%	58.6	54.8
east of Kelly Road	Rural	2	0	474	3,792	35	75	0.5	0	1.8%	0.7%	59.6	55.8
west of Lakeview Boulevard	Residential	2	0	632	5,056	35	75	0.5	0	1.8%	0.7%	60.9	57.0
east of Lakeview Boulevard	Residential	2	0	670	5,360	35	75	0.5	0	1.8%	0.7%	61.1	57.3
west of Canyon Boulevard	Residential	2	0	679	5,432	35	75	0.5	0	1.8%	0.7%	61.2	57.3

east of Canyon Boulevard	Residential	3	0	1,507	12,056	35	75	0.5	0	1.8%	0.7%	64.6	60.8
Main Street													
east of Minaret Road	Residential	6	0	1,719	13,752	45	75	0.5	0	1.8%	0.7%	67.9	63.9
west of Mountain Boulevard	Residential	4	0	1,764	14,112	45	75	0.5	0	1.8%	0.7%	68.1	64.0
east of Mountain Boulevard	Residential	4	0	1,763	14,104	45	75	0.5	0	1.8%	0.7%	68.0	64.0
west of Center Street	Commercial	4	12	1,783	14,264	45	75	0.5	0	1.8%	0.7%	68.1	64.0
east of Center Street	Commercial	4	12	1,734	13,872	45	75	0.5	0	1.8%	0.7%	68.0	63.9
west of Old Mammoth Road	Commercial	4	12	1,645	13,160	45	75	0.5	0	1.8%	0.7%	67.7	63.7
east of Old Mammoth Road	Commercial	4	12	832	6,656	45	75	0.5	0	1.8%	0.7%	64.8	60.7
Forest Trail													
west of Minaret Road	Hotel	2	0	481	3,848	35	75	0.5	0	1.8%	0.7%	59.7	55.8
east of Minaret Road	Residential	2	0	242	1,936	35	75	0.5	0	1.8%	0.7%	56.7	52.8
Kelly Road													
south of Lake Mary Road	Rural	2	0	333	2,664	35	75	0.5	0	1.8%	0.7%	58.1	54.2
Lakeview Boulevard													
north of Lake Mary Road	Rural	2	0	234	1,872	35	75	0.5	0	1.8%	0.7%	56.5	52.7
Canyon Boulevard													
north of Lake Mary Road	Hotel	3	0	917	7,336	35	75	0.5	0	1.8%	0.7%	62.5	58.6
Mountain Boulevard													
north of Main Street	Residential	2	0	179	1,432	35	75	0.5	0	1.8%	0.7%	55.4	51.5
south of Main Street	Residential	2	0	72	576	35	75	0.5	0	1.8%	0.7%	51.4	47.6
Center Street													
north of Main Street	Commercial	2	0	147	1,176	35	75	0.5	0	1.8%	0.7%	54.5	50.7
south of Main Street	Commercial	2	0	314	2,512	35	75	0.5	0	1.8%	0.7%	57.8	54.0
Old Mammoth Road													
south of Main Street	Commercial	3	0	1,233	9,864	35	75	0.5	0	1.8%	0.7%	63.8	59.9

ON-SITE TRAFFIC NOISE LEVELS AND NOISE CONTOURS

Project Name: Mammoth Crossing

Background Information

Model Description: FHWA Highway Noise Prediction Model (FHWA-RD-77-108) with California Vehicle Noise (CALVENO) Emission Level
Source of Traffic Volumes: LSA,2007
Community Noise Descriptor: L_{dn}: X CNEL:

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.70%	12.70%	9.60%
Medium-Duty Trucks	87.43%	5.05%	7.52%
Heavy-Duty Trucks	89.10%	2.84%	8.06%

Analysis Condition / Roadway Name / Roadway Segment	Lanes	Median Width	ADT Volume	Design Speed (mph)	Alpha Factor	Vehicle Mix: Medium Trucks	Vehicle Mix: Heavy Trucks	Distance from Centerline of Roadway: Ldn at 100 Feet	Distance to Contour: 70 Ldn	65 Ldn	60 Ldn
Existing (Winter 2007) Conditions											
Minaret Road											
North of Lake Mary Road	2	0	8,880	35	0.5	0.5%	1.0%	57.2	14	30	65
South of Lake Mary Roac	2	0	6,416	35	0.5	0.5%	1.0%	55.8	-	24	52
Lake Mary Road											
West of Minaret Road	6	0	11,056	35	0.5	0.5%	1.0%	58.4	-	37	79
Main Street											
East of Minaret Road	6	0	12,256	35	0.5	0.5%	1.0%	58.9	-	39	84
Existing Plus Project (Winter 2008) Conditions											
Minaret Road											
North of Lake Mary Road	2	0	9,160	35	0.5	0.5%	1.0%	57.3	14	31	66
South of Lake Mary Roac	2	0	6,928	35	0.5	0.5%	1.0%	56.1	-	26	55
Lake Mary Road											
West of Minaret Road	6	0	11,824	35	0.5	0.5%	1.0%	58.7	-	38	82
Main Street											
East of Minaret Road	6	0	12,888	35	0.5	0.5%	1.0%	59.1	-	40	87

[1] Distance is from the centerline of the roadway segment to the receptor location.
"-" = contour is located within the roadway lanes.

APPENDIX I

TRAFFIC DATA

TRAFFIC IMPACT ANALYSIS

MAMMOTH CROSSINGS

TOWN OF MAMMOTH LAKES, CALIFORNIA

This traffic impact analysis has been prepared under the supervision of
Leslie E. Card, P.E.

Signed Leslie E. Card

LSA

April 9, 2008
(Revised May 21, 2008)

TRAFFIC IMPACT ANALYSIS

MAMMOTH CROSSINGS

TOWN OF MAMMOTH LAKES, CALIFORNIA

Submitted to:

Goodman Real Estate
2801 Alaska Way, Suite 310
Seattle, Washington 98121

Prepared by:

LSA Associates, Inc.
20 Executive Park, Suite 200
Irvine, California 92614-4731
(949) 553-0666

LSA Project No. WRP430A

LSA

April 9, 2008
(Revised May 21, 2008)

TABLE OF CONTENTS

APPENDICES

FIGURES AND TABLES

FIGURES

TABLES

MAMMOTH CROSSINGS
TRAFFIC IMPACT ANALYSIS

INTRODUCTION

The purpose of this Traffic Impact Analysis (TIA) is to assess potential circulation impacts associated with the development of the Mammoth Crossings project on the existing circulation system of the Town of Mammoth Lakes (Town).

This report will focus on the short-range (2009/near-term) and the long-range (Adopted General Plan build out) impacts of the Mammoth Crossings project. A General Plan analysis will document the increase in traffic generation between the Adopted General Plan (current density) and the Proposed Mammoth Crossing General Plan Amendment (GPA). The existing typical winter Saturday condition will be considered to be the baseline condition in this TIA. This analysis provides an assessment of Mammoth Crossings traffic impacts, parking requirements, and the determination of traffic mitigation as required for California Environmental Quality Act (CEQA) compliance.

PROJECT DESCRIPTION

Mammoth Crossings project is located on the northwest, southwest, and southeast corners of the intersection of Minaret Road and Lake Mary Road. The project consists of 432 traffic-generating units (536 keys) and 40,500 square feet (sf) of commercial uses on three corners, comprising the following:

- Site 1 (northwest corner of Minaret Road/Lake Mary Road) – 198 hotel rooms
  - 24 one-bedroom resort/hotel units
  - 66 two-bedroom resort/hotel units (132 keys)
  - 14 three-bedroom resort/hotel units
  - 22,000 sf of commercial (5,500 sf restaurant and 16,500 sf retail)
  - 14,390 sf of hotel/visitor amenities (offices, meeting space and common areas)
  - Public Plaza (special events may be conducted but not considered in typical winter Saturday traffic demand)
- Site 2 (southwest corner of Minaret Road/Lake Mary Road) – 364 hotel rooms
  - 6 one-bedroom resort/hotel units
  - 41 one-bedroom workforce housing units
  - 99 two-bedroom resort/hotel units (137 keys)
  - 40 three-bedroom resort/hotel units
  - 10 four-bedroom resort/hotel units

  - 18,500 sf of commercial (4,626 sf restaurant, 10,875 sf retail, and 3,000 sf market)
  - 24,640 sf of hotel/visitor amenities (offices, meeting space and common areas)
- Site 3 (southeast corner of Minaret Road/Lake Mary Road) – 180 hotel rooms
  - 48 one-bedroom resort/hotel units
  - 27 one-bedroom workforce housing units
  - 39 two-bedroom resort/hotel units
  - 18 three-bedroom resort/hotel units
  - 56,600 sf of hotel/visitor amenities (offices, meeting space and common areas)

The location of Mammoth Crossings project site is shown in Figure 1. The project site plan is illustrated in Figure 2. Primary access to the three corners of the Mammoth Crossings project site will be provided as shown in Figure 3. A focused analysis of these intersections will be included. It should be noted that all turn movements will be provided on the west side of Minaret Road (south of the right-turn in/out driveway) for loading and service vehicles. It should be noted that Driveway C (the right-turn in/out driveway) will be designed per Town Standard Plan No. 114, Figure B, to provide a channelizing island to prevent left-turn egress and ingress maneuvers and appropriate signage noting restricted left-turn egress.

On-street parking is proposed on Lake Mary Road to serve the ground-level retail uses on both sides of the street. Back-in angle (45 degrees) parking is proposed, although the conventional back-out design can also be accommodated. The angle is also flexible at this time. For a 45-degree design, the outside lane (including the parking) should provide a minimum of 38.5 feet (ft) (20.5 ft for vehicle projection and 18 ft for driving lane). This rationale is similar to a parallel parking requirement, where an 8 ft parking lane and 12 ft driving lane would typically be provided for a total of 20 ft. This is shown on Figure 4.

The site plan also provides for a bus pull out adjacent to Site 2 just east of the entrance to Site 2. The pull out provides for 89 ft of storage, 11 ft less than the standard 100 ft. To obtain the additional 11 ft it would be necessary to drop one of the on street angled parking spaces.

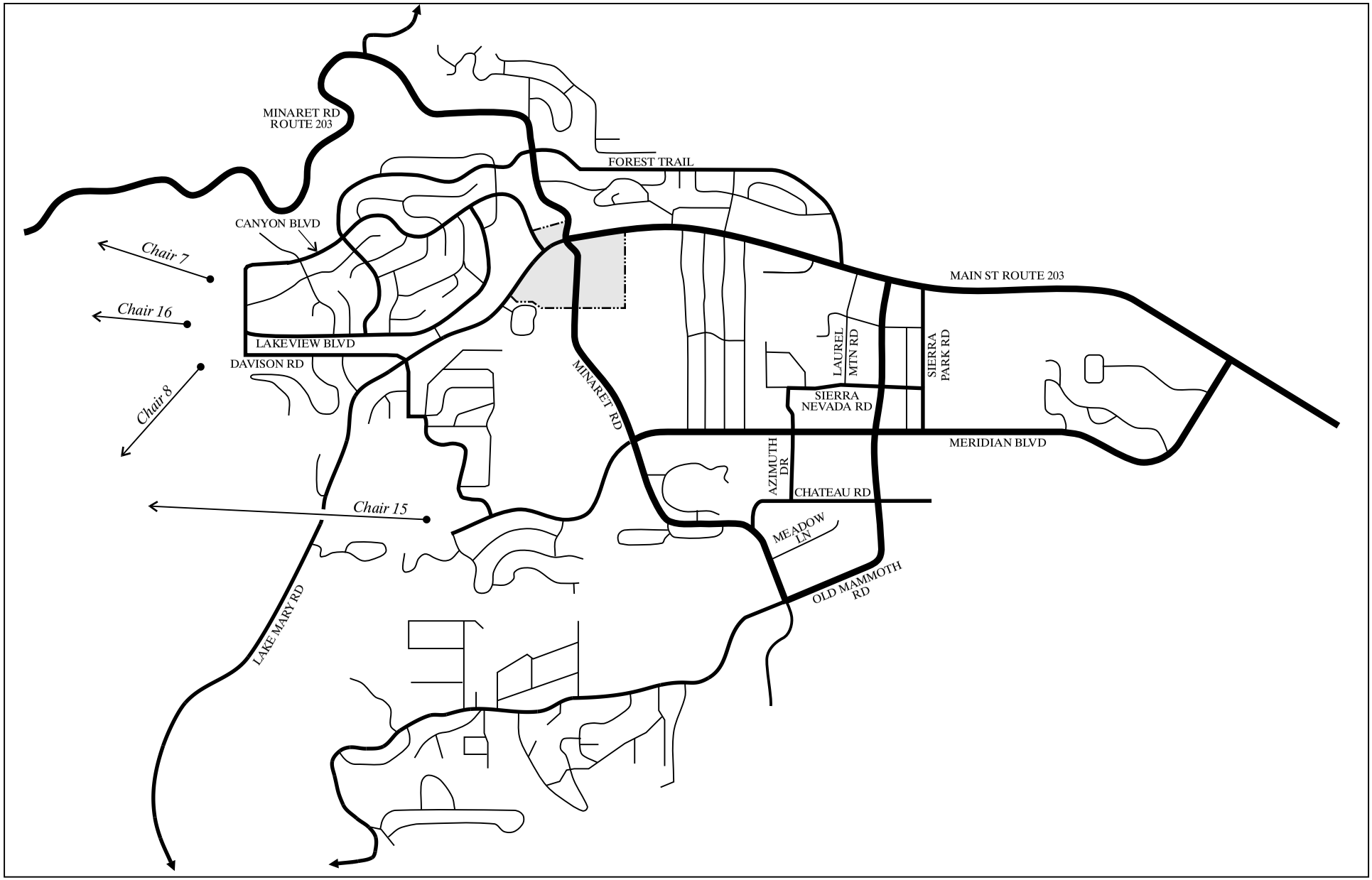
Truck service areas are provided for all three sites off Minaret Road, Lake Mary Road, and Canyon Boulevard. These service areas do not necessarily require access to structured parking garages that may otherwise discourage their use.

The project has committed the following transit enhancement to and from the site. This enhancement includes:

1. An exclusive shuttle service provided for hotel guests to local areas of attraction, ski lifts, a gondola, and the airport.

METHODOLOGY

The analysis of traffic impacts examines the following conditions:



LSA

LEGEND

- Project Site

N

NOT TO SCALE

FIGURE 1

Mammoth Crossings

Project Site Location

I:\WRP430A\G\Location.cdr (3/11/08)

LSA

FIGURE 2

N

SOURCE: Merrick Architecture

I:\WRP430A\G\Overall Site Plan.cdr (4/8/08)

Mammoth Crossings

Overall Site Plan

LSA

FIGURE 3

LEGEND

A - Project Driveway

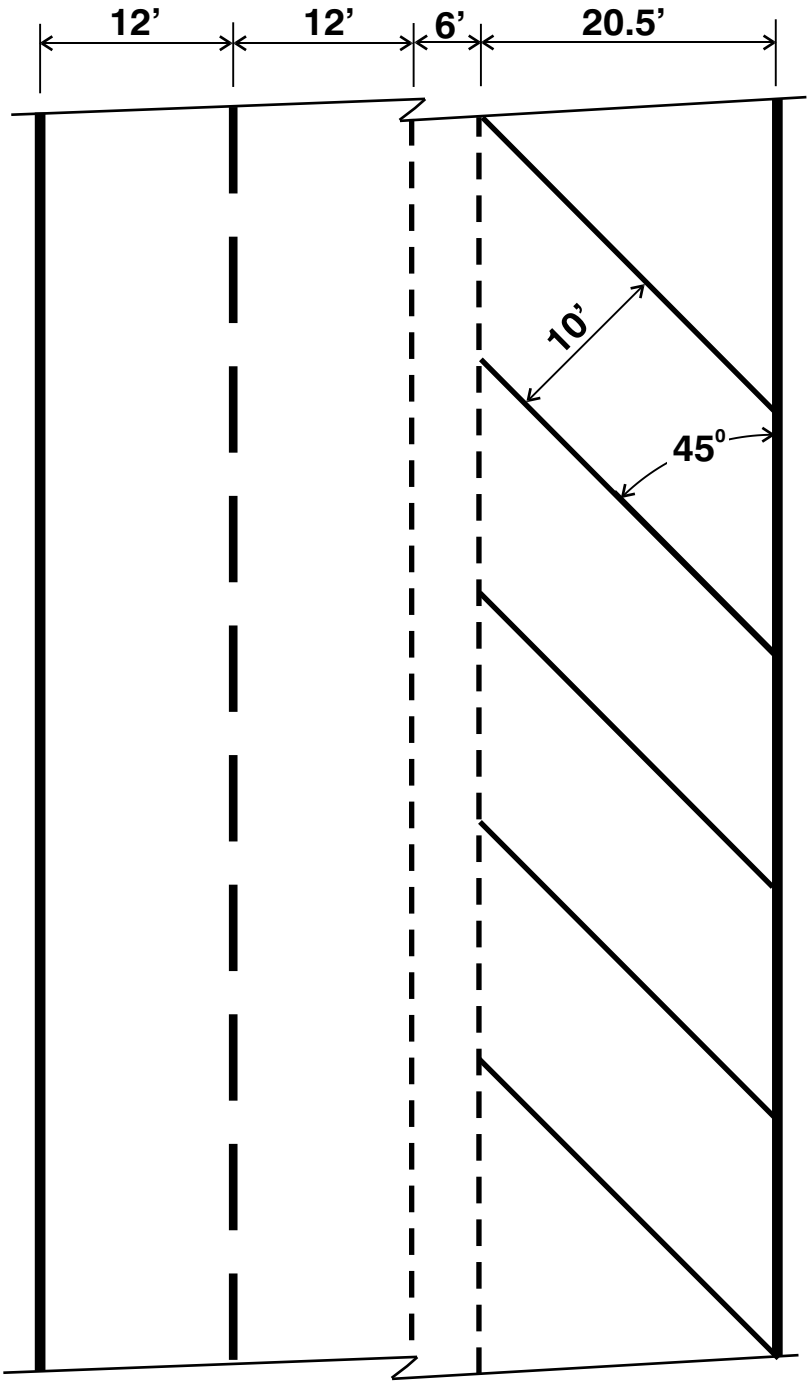
N

Mammoth Crossings

Project Access Locations

SOURCE: Merrick Architecture

I:\WRP430A\G\Access Locations.cdr (3/26/08)



LSA

FIGURE 4

Mammoth Crossings

Lake Mary Road Westbound Angled Parking Typical Section

I:\WRP430A\G\Angled Parking.cdr (4/8/08)

1. Existing conditions (2008)
2. Cumulative baseline (existing plus cumulative projects) conditions (2009)
3. Existing plus Mammoth Crossings project conditions
4. Cumulative plus Mammoth Crossings project conditions
5. Adopted Town General Plan
6. Adopted Town General Plan plus Mammoth Crossings project

To develop the traffic volume data for cumulative and General Plan conditions, the Town's traffic modeling consultant (LSC Consultants) prepared specific applications of the traffic model. The Town's model, originally developed in 1995, was recently updated and utilized in the General Plan Update process completed in 2007. The following is a brief description and overview of the modeling process.

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," which 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. The specific data proposed for use in this project are discussed more fully below.

Land use quantities are represented in a series of Traffic Analysis Zones (TAZs) that together encompass the entire traffic 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 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.

The Tranplan software was used as the program platform in the development and operation of the travel demand model for Mammoth Lakes. The code file, input file, and output file were also analyzed in Tranplan. The LSC team used the Viper software as the interface program for the editing of model files, including editing the network, coding the job stream, and reviewing the output. The land use input files and production and attraction estimates were developed in Excel and converted into text files so that they could be read by Tranplan.

Typical winter Saturday peak-hour baseline conditions were used to analyze traffic impacts for the existing, cumulative (existing plus cumulative projects) and General Plan conditions. The design day used in this study is a typical winter Saturday, which occurs 15–20 times a year. In the context of standard engineering practice, even the typical winter Saturday represents a conservative approach to traffic planning and mitigation.

The recently adopted General Plan EIR addressed the issue of the design day versus the absolute peak conditions and the impact of severe winter or snow conditions on the assumed highway capacities. The following italicized text is from the response to written comments in the Final General Plan EIR:

> *As indicated in Section 4.13.2 of the Revised Draft Program EIR, 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."*
>
> *Level of service (LOS) is defined in terms of delay in Table 4.13.2 in the Revised Draft Program EIR. As indicated in Section 4.13.1 of the Revised Draft Program EIR, the following LOS thresholds were applied in the Revised Draft Program EIR 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. This same threshold was applied to roundabouts.

2. For Unsignalized Intersections: 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 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 road], 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 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. No 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 the 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 5, 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.)*

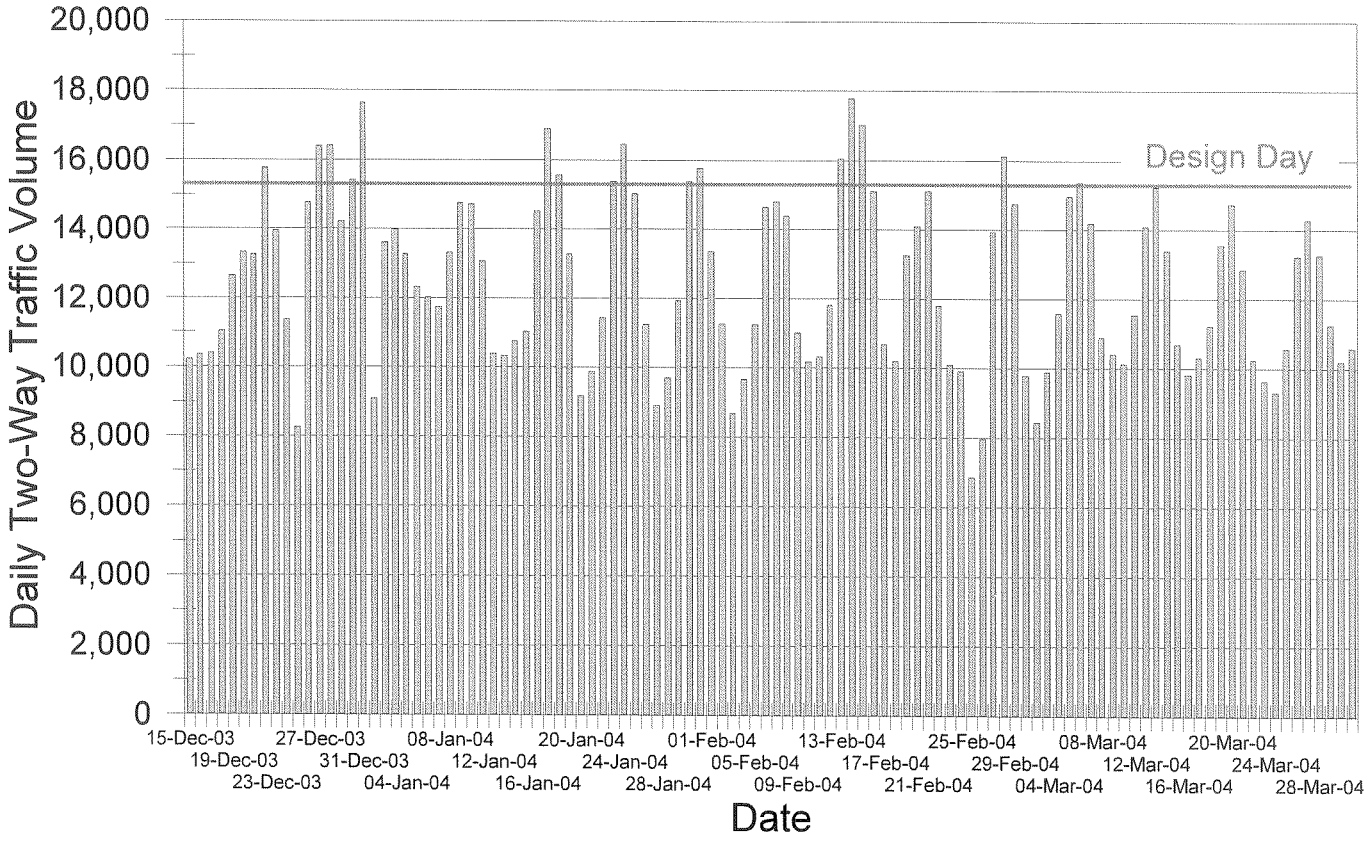
However, in general, peak-hour traffic volumes are generally highest Town-wide during the winter season.

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 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 highest 16th highest

Table 2: 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	Westbound	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	7,766	7,596	15,362	<--"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	5,860	13,265	
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	4,864	4,225	9,089	
103	Tuesday	27-Jan-04	4,582	4,336	8,918	
104	Tuesday	03-Feb-04	4,554	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%**	

Figure 3: Daily Traffic Volumes Along Main East of Minaret (December 15, 2003 - March 31, 2004)



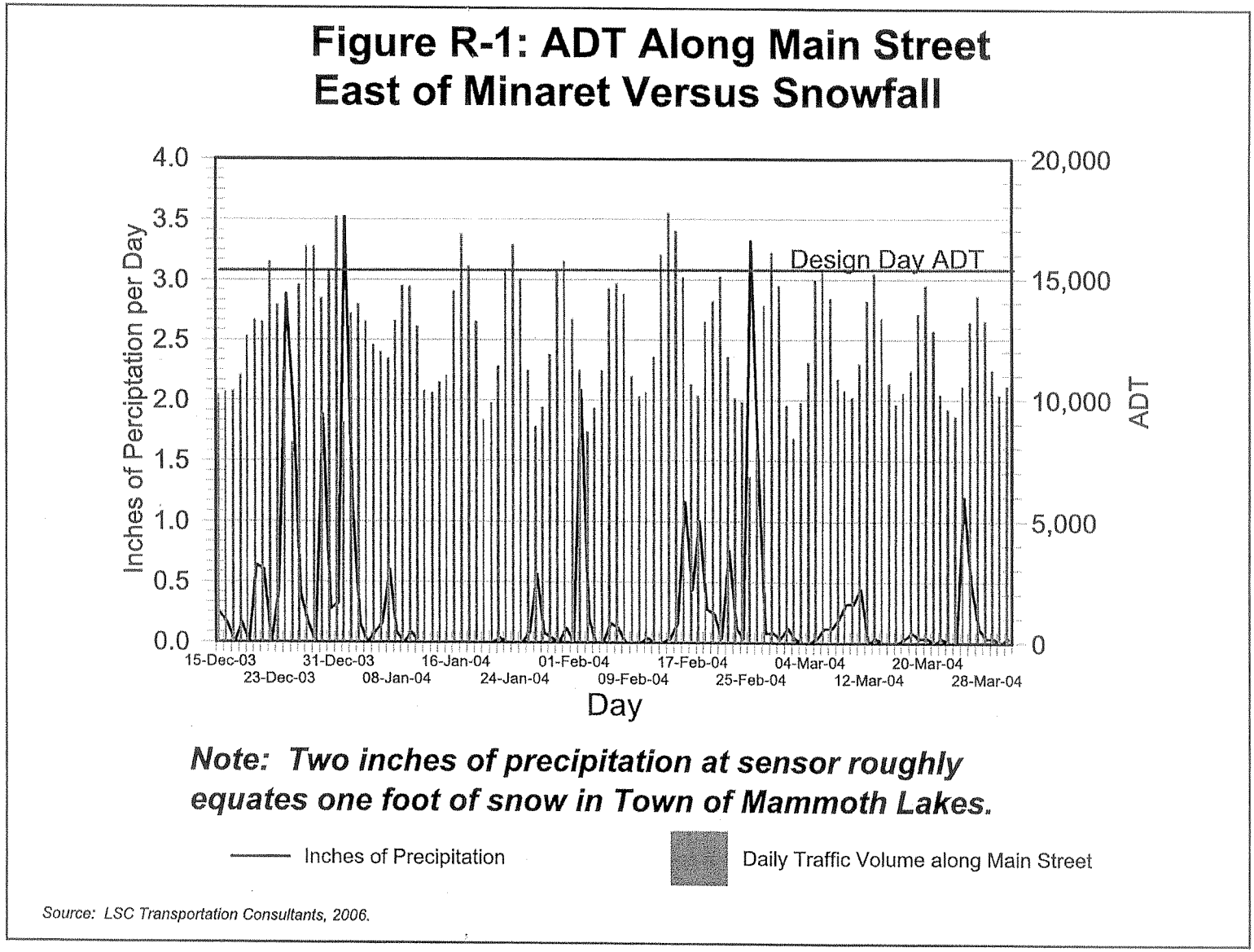


Figure 11 ADT Along Main Street East of Minaret Versus Snowfall

winter peak-hour traffic volumes occur. Taking into account summer traffic volumes, the design day roughly 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 intersections, 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 as 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 11 on page 287, ADT Along Main Street East of Minaret Versus Snowfall, in these responses to comments provides an analysis of the correlation between the traffic volumes along Main Street east of Minaret Road and precipitation at Mammoth Pass as reported by the California Department of Water Resources. As the figure indicates, for all winter days that the 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. 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.

As previously discussed, 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 should be terminated. Consistent with Section 15145, since it would be to speculative to analyze the effects of high traffic volumes during heavy snowfall periods, additional design analysis during such conditions is not appropriate. Please see Response to Comment No. 011-209 for a discussion of the rationale for analyzing traffic impacts on a typical winter Saturday, as established by Policy 1.7 in the Town of Mammoth Lakes General Plan Transportation Element.

Typical winter Saturday peak-hour traffic counts at all study area intersections were conducted by National Data & Surveying Services on Saturday, February 2, 2008. Observations showed that winter weather conditions prevailed and below-average rates for skiers and occupancy (11,796 total skiers and 76 percent occupancy) were reported on February 2. As such, traffic counts were retaken at the control intersections of Minaret Boulevard/Main Street and Old Mammoth Road/Main Street on Saturday, February 9, 2008, by Triad/Holmes Associates. The total reported skiers and occupancy on February 9th was 17,559 and 98 percent, respectively. Counts at these two locations resulted in an average increase of 43 percent from the previous count data. The measured 43 percent growth was then applied to the intersections not recounted to represent typical winter Saturday conditions. The existing count data are provided in Appendix A.

The study area intersections as prescribed by the Town are as follows:

1. Minaret Road/Meridian Boulevard
2. Minaret Road/Lake Mary Road-Main Street
3. Minaret Road/7B Road
4. Minaret Road/Forest Trail

5. Kelly Road/Lake Mary Road
6. Lakeview Road/Lake Mary Road
7. Canyon Boulevard/Lake Mary Road
8. Mountain Boulevard/Main Street
9. United States Post Office (USPO) Driveway/Main Street
10. Center Street/Main Street
11. Old Mammoth Road/Main Street

Figure 5 shows the location of the 11 study area intersections as well as the Town's General Plan Roadway Classifications for the surrounding circulation system.

A cumulative scenario has been included in this analysis to account for traffic from cumulative development projects that would be added to the existing circulation system. A list of cumulative projects was supplied by the Town staff. A total of 33 development projects have been identified by the Town as anticipated to be developed within the near future. These cumulative projects are listed in the cumulative section of the analysis.

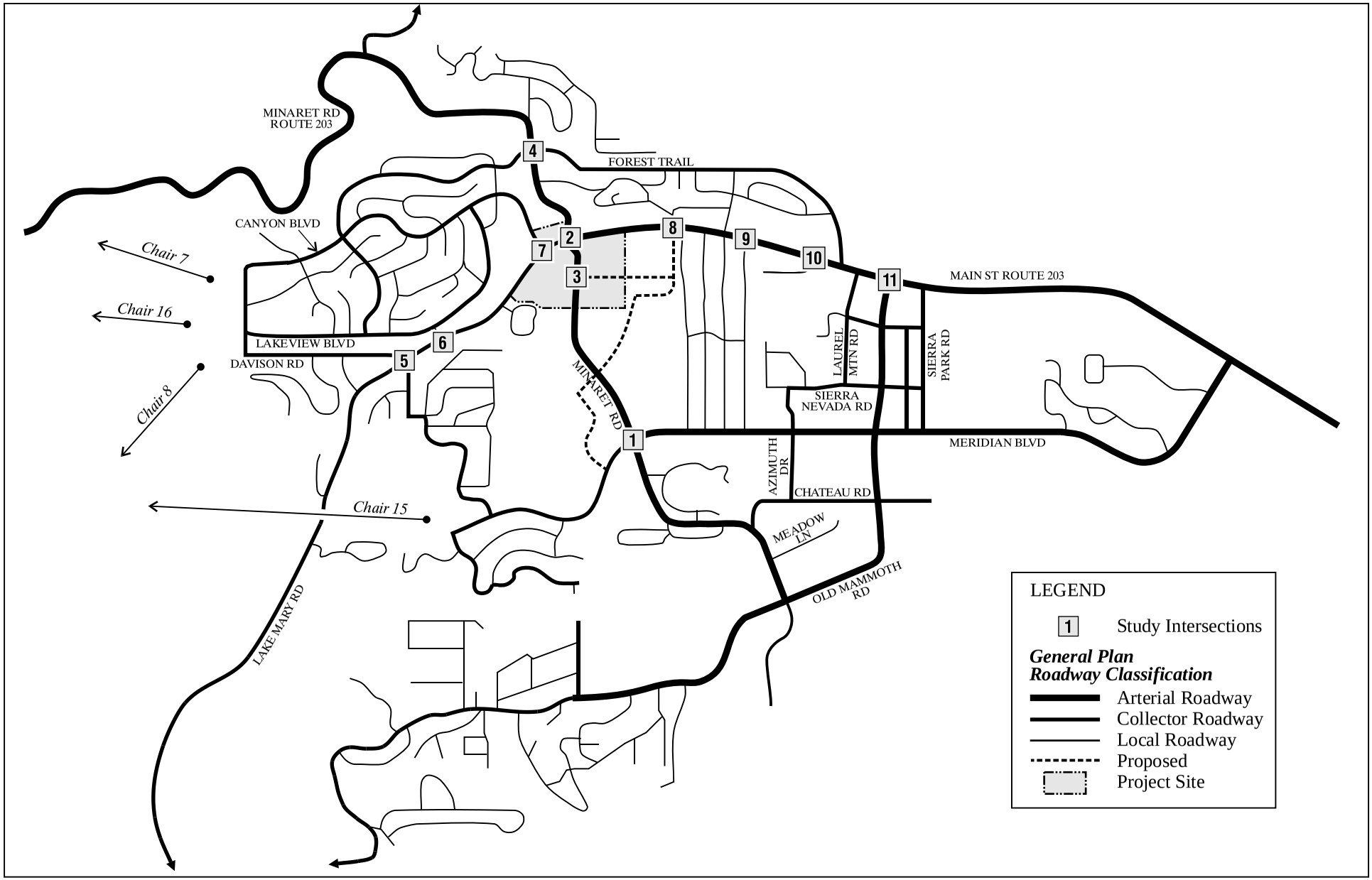
Typical winter Saturday daily and p.m. peak-hour trips were generated for the Mammoth Crossings project using standard trip rates from the Town and the Institute of Transportation Engineers (ITE), *Trip Generation Manual,* 7th Edition, observed rates from the Village Lodges (Grand Sierra, White Mountain, and Lincoln House), and confirmed by counts from the Westin Hotel. Trip distribution and assignment were determined by the relationship of prominent attractions to the project.

LEVEL OF SERVICE STANDARDS

The Town's level of service (LOS, which is defined using letter grades A–F) maximum threshold for intersections is LOS D, which corresponds to a volume-to-capacity (v/c) ratio of 0.90 for signalized intersections. An intersection is considered satisfactory when it operates at LOS A–D. An unsignalized intersection would be considered deficient if an individual minor street movement operates at LOS E or F and a total minor approach delay exceeds four vehicle-hours for a single-lane approach and five vehicle-hours for a multilane approach, consistent with the General Plan Update Traffic Analysis.

Methodology

Roadway operations and the relationship between capacity and traffic volumes are generally expressed in terms of LOS. These levels recognize that, while an absolute limit exists regarding the amount of traffic traveling through a given intersection (the absolute capacity), the conditions that motorists experience rapidly deteriorate as traffic approaches the absolute capacity. Under such conditions, congestion is experienced. There is general instability in the traffic flow, which means that relatively small incidents (e.g., momentary engine stalls) can cause considerable fluctuations in speeds and delays. This near-capacity situation is labeled LOS E. Beyond LOS E, capacity has been exceeded, and arriving traffic will exceed the ability of the intersection to accommodate it. An



LSA

N

NOT TO SCALE

FIGURE 5

Mammoth Crossings
Study Area Intersections
and Circulation System

I:\WRP430A\G\Study Ints.cdr (3/24/08)

upstream queue will then form and continue to expand in length until the demand volume again declines.

A complete description of the meaning of LOS can be found in the Transportation Research Board Special Report 209, *Highway Capacity Manual*. The Manual establishes LOS A–F. Brief descriptions of the six LOS, as abstracted from the Manual, are shown in Table A. The LOS criteria for unsignalized and signalized intersections are shown in Table B.

Table A: Intersection LOS Descriptions

LOS	Description
A	No approach phase is fully utilized by traffic, and no vehicle waits longer than one red indication. Typically, the approach appears quite open, turns are made easily, and nearly all drivers find freedom of operation.
B	This service level represents stable operation, where an occasional approach phase is fully utilized and a substantial number are approaching full use. Many drivers begin to feel restricted within platoons of vehicles.
C	This level still represents stable operating conditions. Occasionally, drivers may have to wait through more than one red signal indication, and backups may develop behind turning vehicles. Most drivers feel somewhat restricted but not objectionably so.
D	This level encompasses a zone of increasing restriction approaching instability at the intersection. Delays to approaching vehicles may be substantial during short peaks within the peak period; however, enough cycles with lower demand occur to permit periodic clearance of developing queues, thus preventing excessive backups.
E	Capacity occurs at the upper end of this service level. It represents the most vehicles that any particular intersection approach can accommodate. Full utilization of every signal cycle is seldom attained no matter how great the demand.
F	This level describes forced-flow operations at low speeds, where volumes exceed capacity. These conditions usually result from queues of vehicles backing up from a restriction downstream. Speeds are reduced substantially, and stoppages may occur for short or long periods of time due to the congestion. In the extreme case, both speed and volume can drop to zero.

Source: 2000 Highway Capacity Manual

Table B: Level of Service Parameters

Level of Service	Signalized Intersections	Unsignalized Intersections
	Delay (seconds)	Delay (seconds)[1]
A	≤ 10.0	≤ 10.0
B	> 10.0 and ≤ 20.0	> 10.0–15.0
C	> 20.0 and ≤ 35.0	> 15.0–25.0
D	> 35.0 and ≤ 55.0	> 25.0–35.0
E	> 55.0 and ≤ 80.0	> 35.0 seconds/vehicle and > 4.0 hour cumulative delay for single lane or >5.0 hour cumulative delay for two-lane approach
F	> 80.0	

Source: 2000 Highway Capacity Manual

[1] If the intersection exceeds the LOS D criteria, the hourly total criteria (four vehicle-hours for a single-lane approach and five vehicle-hours for a multilane approach) standard applies.

For all study area intersections, the *2000 Highway Capacity Manual* (2000 HCM) analysis methodologies were used to determine intersection LOS. All LOS were calculated using the Traffix Version 7.8 software, which uses the 2000 HCM methodologies.

Signalized Intersections and Unsignalized Intersections

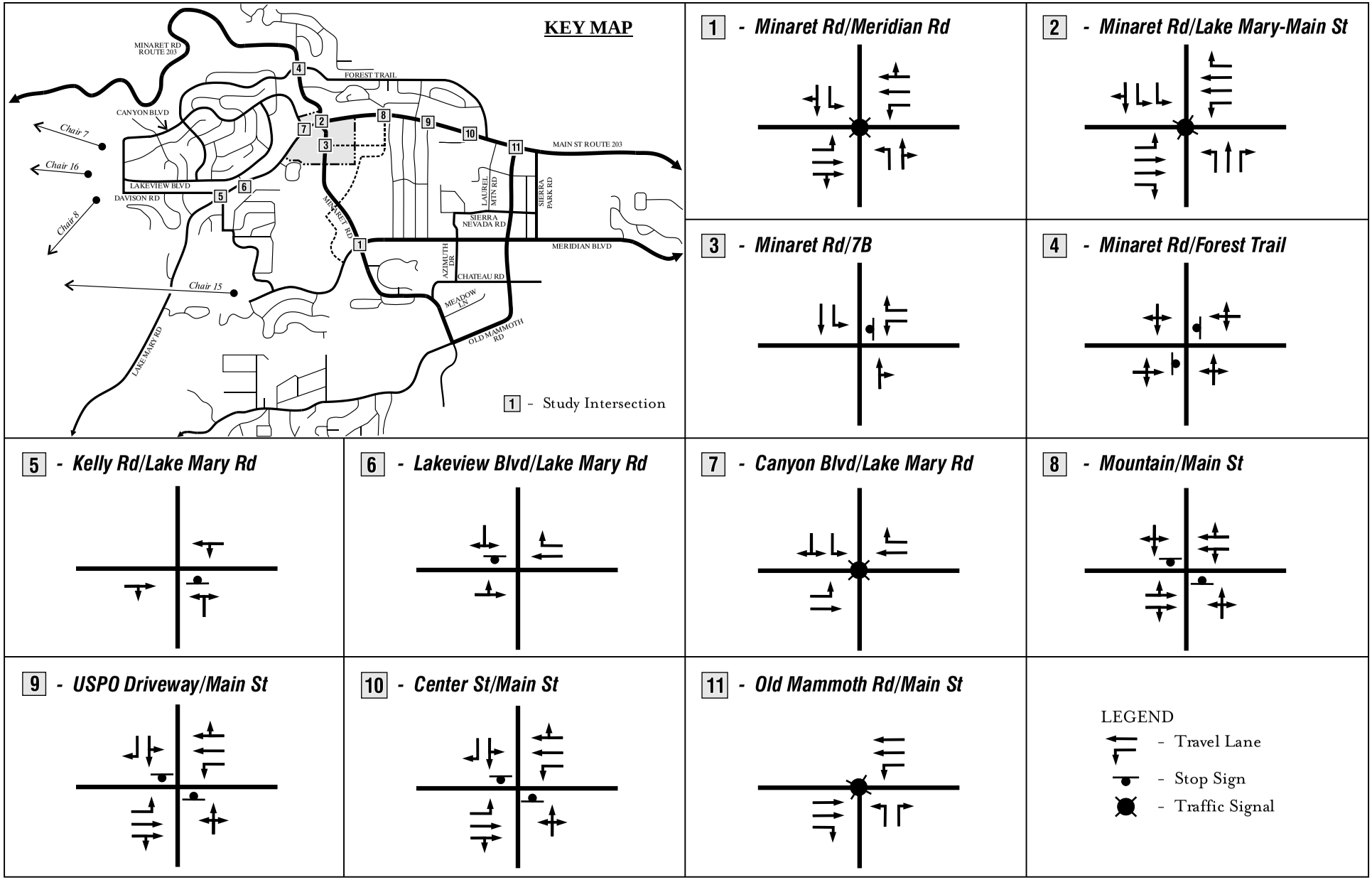
LOS for signalized and unsignalized intersections are determined using the methodology set forth in the 2000 HCM, where the calculation of LOS is dependent on the occurrence of gaps in the through traffic flow of the major street. Using data collected that describe the intersection configuration and traffic volumes at the study area intersections, the delay (in seconds per vehicle) of each minor street or major street conflicting movement is estimated. These delays are used to calculate the intersection's average delay per vehicle, which is used to determine the intersection LOS. It should be noted that at two-way, stop-controlled intersections, the intersection delay refers only to the delay experienced by vehicles on the stop-controlled minor street. As a result, at locations where a higher volume of through traffic is experienced on the major street, fewer gaps will be experienced in the through traffic flow of the major street. As a result, the addition of only one or two vehicles to the stop-controlled minor street could result in the rapid deterioration of LOS at that intersection, although most vehicles at the intersection do not experience any delay.

It should be noted that the LOS threshold at unsignalized intersections can be easily exceeded when only a few vehicles experience a delay greater than 50 seconds. Furthermore, application of this threshold would substantially increase the frequency of identified failure of intersections, along with the need for intersection improvements. For these reasons, the Town has identified unsignalized intersection LOS standards that allow greater delay on low-volume approaches. These thresholds of significance identify a deficiency if the approach delay exceeds four vehicle-hours for a single-lane approach and five vehicle-hours for a multilane approach. This threshold has the advantage of being relatively easy to calculate as well as to explain to the public. For example, it could be summarized as follows: "A deficiency is only found for a side street with two approach lanes when the cumulative total delay exceeds five hours." Therefore, as delay exceeds the 35-second threshold, the four vehicle-hour and five vehicle-hour standard applies.

EXISTING (WINTER 2008) CONDITIONS

Figure 6 presents the existing number of lanes and intersection control for the study area intersections. Figure 7 shows the existing typical winter Saturday peak-hour traffic volumes at each study area intersection. Existing LOS at study area intersections are shown in Table C. Existing LOS worksheets are presented in Appendix B.

As shown in Table C, all study area intersections currently operate at satisfactory LOS (LOS D or better) in the existing condition with the exception of USPO Driveway/Main Street. The Town is planning the installation of a traffic signal at this time.



LSA

N

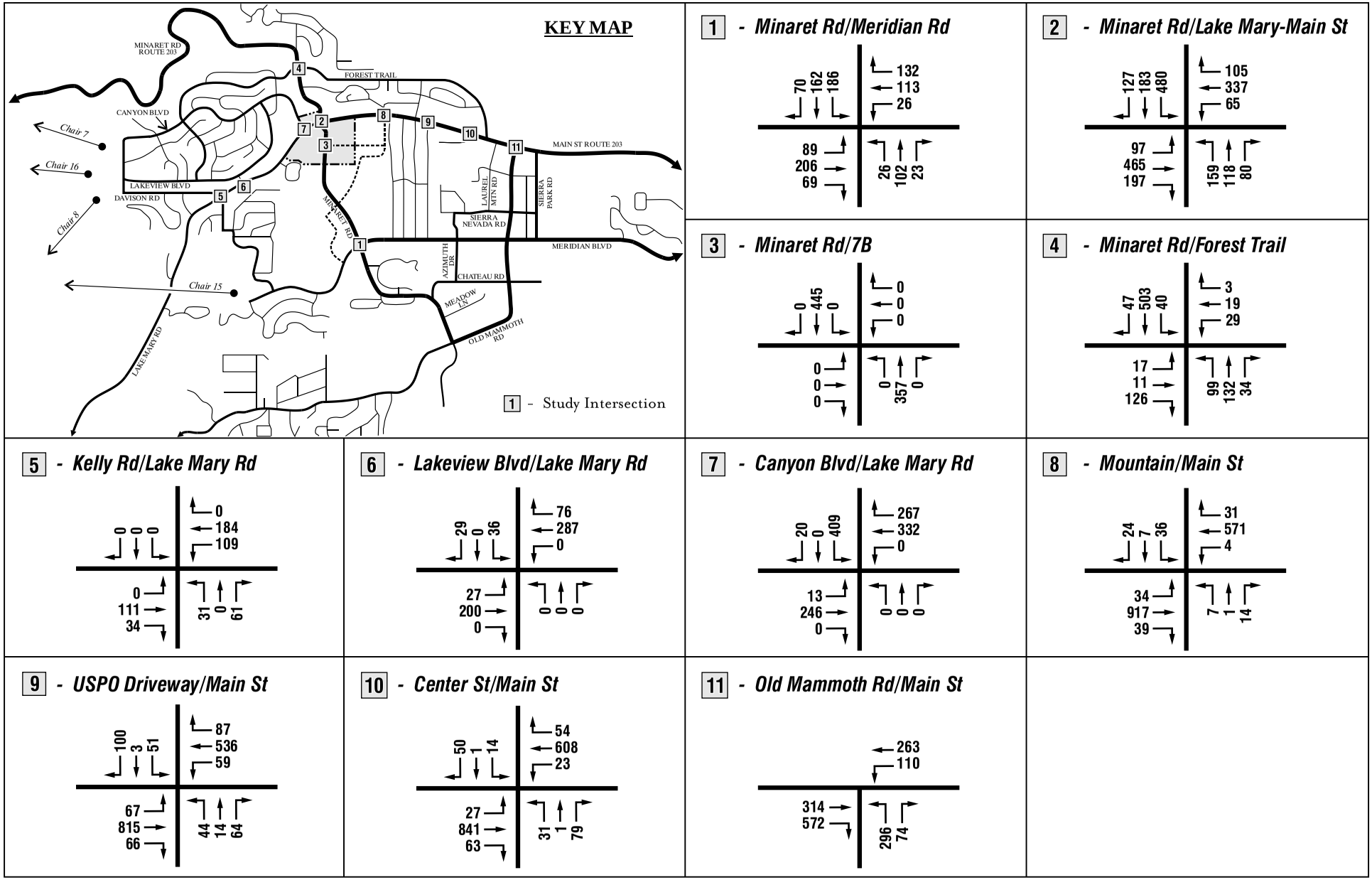
NOT TO SCALE

FIGURE 6

Mammoth Crossings

Study Area Intersection Geometrics and Control Devices

I:\WRP430A\G\Geometrics.cdr (5/9/08)



LSA

N

NOT TO SCALE

FIGURE 7

Mammoth Crossings
Existing Condition Typical Winter Saturday
Peak Hour Traffic Volumes

I:\WRP430A\G\Ex Vols.cdr (3/24/08)

Table C: Existing (2008) Typical Winter Saturday Intersection LOS

Intersection	Control[1]	Delay (seconds)	LOS
1. Minaret Road/Meridian Boulevard	Signal	19.9	B
2. Minaret Road/Lake Mary Road-Main Street	Signal	21.9	C
3. Minaret Road/7B Road	TWSC	*Future Intersection*	-
4. Minaret Road/Forest Trail	TWSC	>35.0 seconds but <4.0 hour cumulative delay on minor street approach	F
5. Kelly Road/Lake Mary Road	TWSC	11.3	B
6. Lakeview Road/Lake Mary	TWSC	10.5	B
7. Canyon Boulevard/Lake Mary Road	Signal	12.1	B
8. Mountain Boulevard/Main Street	TWSC	>35.0 seconds but <4.0 hour cumulative delay on minor street approach	F
9. USPO Driveway/Main Street	TWSC	***>35.0 seconds and >4.0 hour cumulative delay on minor street approach***	***F***
10. Center Street/Main Street	TWSC	>35.0 seconds but <4.0 hour cumulative delay on minor street approach	F
11. Old Mammoth/Main Street	Signal	14.1	B

[1] TWSC – two-way stop controlled; AWSC – all-way stop controlled
Italic and Bold = unsatisfactory LOS and exceeds four vehicle-hour criteria
LOS = level of service
USPO = United States Post Office

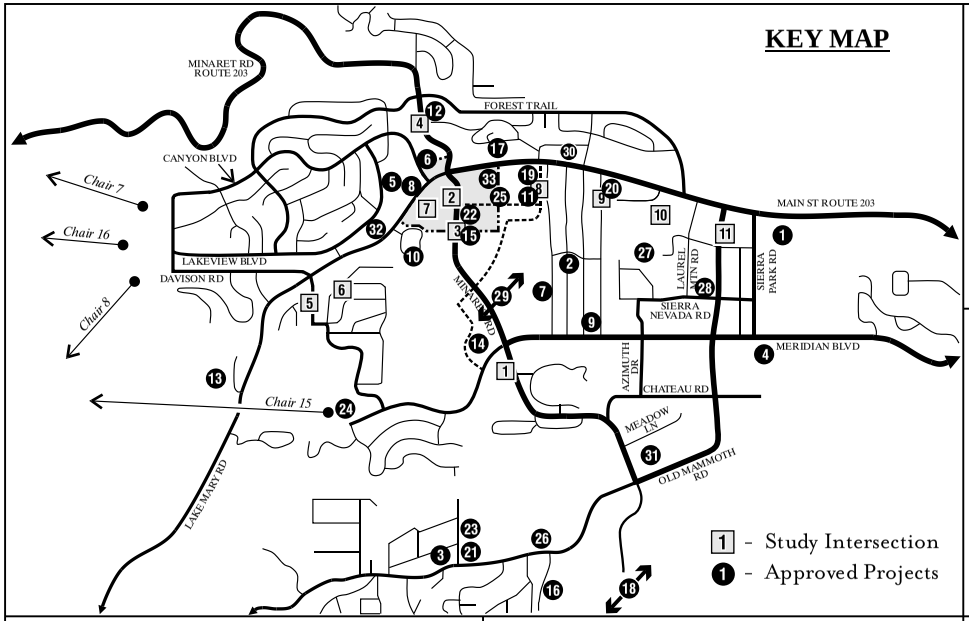
CUMULATIVE (EXISTING PLUS CUMULATIVE PROJECTS) CONDITIONS

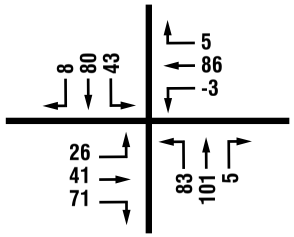
A list of cumulative projects was provided by the Town. Projects that are 10 units or less or an equivalent trip generation are not shown. The following projects in the vicinity of the Mammoth Crossings project are included:

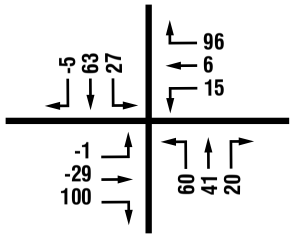
1. Tavern Road Park-n-Ride: 31 high-density dwelling units
2. The Jeffries: 14 high-density dwelling units
3. Tosca/Big Air Mountain: 11 high-density dwelling units
4. Mammoth Lakes Foundation: 74 high-density student housing units
5. Westin Hotel (The Monache): 230-room resort hotel with 4,000 sf of restaurant use
6. 8050 A/B/C Timeshare Condominiums: 44 high-density dwelling units
7. Tallus Timeshare Condominiums: 19 high-density dwelling units
8. Mammoth Hillside: 193 resort hotel units and 37 employee units
9. Mammoth Lakes Family Housing (Meridian Court): 24 high-density dwelling units
10. Fairway 4/5 (Woodwinds): 28 high-density dwelling units
11. Sierra Star 4b Housing: 40 high-density dwelling units

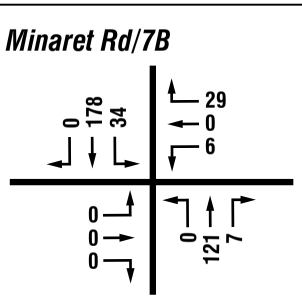
12. Intrawest South Hotel: 251 high-density dwelling units
13. Altis: 24 high-density dwelling units
14. Fairway 16 (Solstice): 58 high-density dwelling units
15. Stonegate: 14 medium-density dwelling units
16. Snowcreek VI (The Lodges at Snowcreek): 120 high-density dwelling units (106 units actually built)
17. Mammoth View: 106 condominium/hotel units and 92 private residence club units
18. Snowcreek VIII: 770 condominium units, 80 affordable housing units, 400 hotel/private residence units, and 6,100 sf of commercial uses
19. Mammoth Gateway Village: 11 high-density dwelling units
20. Manzanita Apartments: 14 high-density dwelling units
21. Aspen Village Phase I: 48 affordable housing units
22. Mammoth Crossings (Lodestar): 45 condominium/hotel units
23. Aspen Village Phase II: 24 high-density dwelling units
24. Eagle Lodge: 180 condominium/hotel dwelling units, 5,000 sf ice skating rink, 4,000 sf convenience market, 8,000 sf day spa, 4,000 sf restaurant, a food court, ski school/day care, and skier commercial services
25. Gaylon Teslaa (3599 Main Street): 3,600 sf veterinary clinic
26. Snowcreek VII: 118 high-density dwelling units
27. Hidden Creek Crossing/Shady Rest: 405 high-density units and 3,000 sf commercial
28. Clearwater Mammoth: 339 high-density units and 28,205 sf commercial
29. Sierra Star Master Plan: 800 high-density units, 29,000 sf commercial, and 30,000 sf conference center
30. Grey Eagle: 12 high-density units
31. The Sherwin: 108 condominium/hotel units
32. Town of Mammoth Lakes Multi-Use Facility/Ice Rink: municipal ice/in-line skating rink
33. Holiday Haus: 74 condominium/hotel units

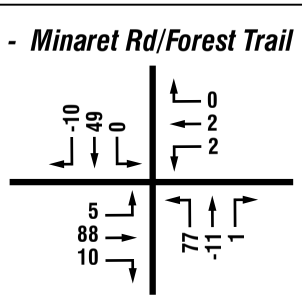
The cumulative projects plus existing conditions were developed by LSC Transportation Consultants utilizing the Town's traffic model. The growth in volumes from the existing modeled volumes to the 2009 cumulative baseline volumes were then determined and added to the existing ground counts to provide a 2009 cumulative baseline condition without project. The location of the cumulative projects, along with the traffic volumes contributed to study area intersections by the cumulative projects, is illustrated in Figure 8. The cumulative baseline traffic volumes at each intersection are illustrated in Figure 9. An LOS analysis at study area intersections was prepared for the cumulative baseline condition. The cumulative baseline LOS are shown in Table D, and the LOS worksheets are presented in Appendix C.

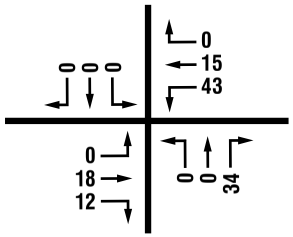


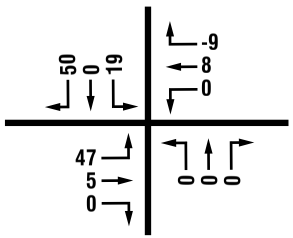


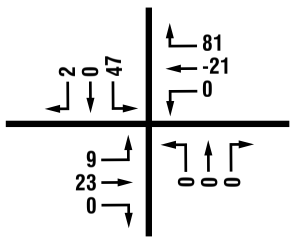


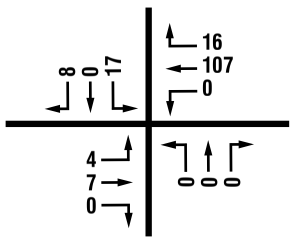


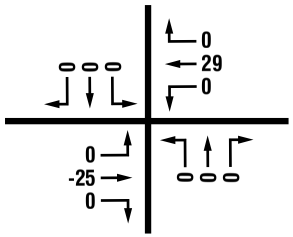


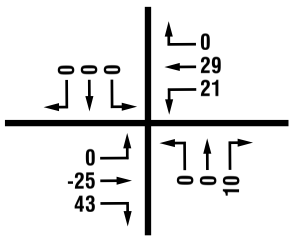


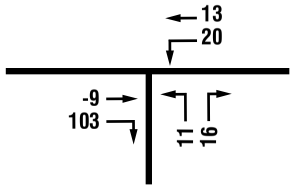












LSA

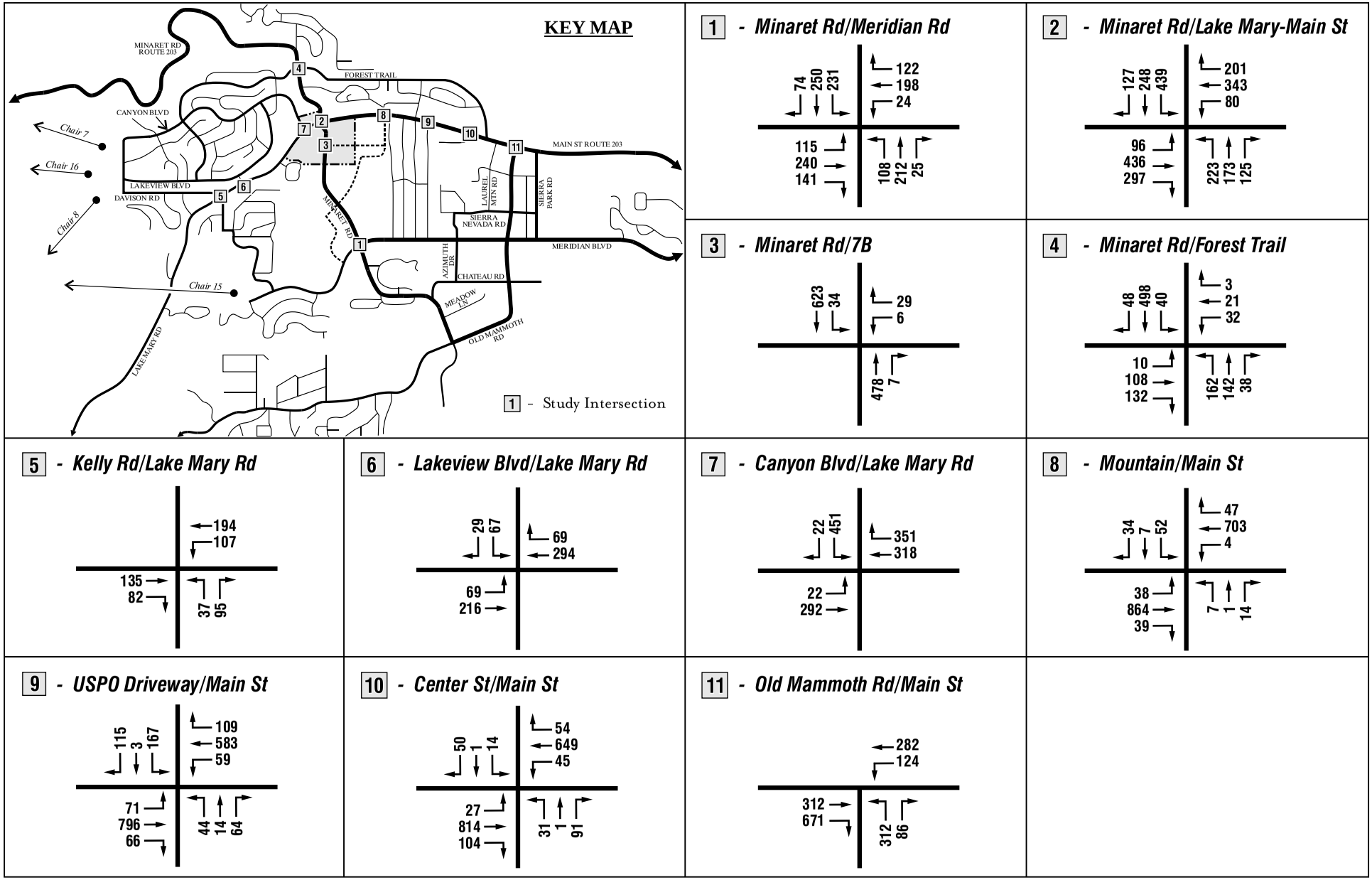
NOT TO SCALE

1. Tavern Road Park and Ride
2. The Jeffries
3. Tosca/Big Air Mountain
4. Mammoth Lakes Foundation
5. Monache (Westin)
6. 80/50 Timeshare Condos
7. Tallus Timeshare Condos
8. Mammoth Hillside
9. Mammoth Lakes Family Housing
10. Fairway 4/5 (Woodwinds)
11. Sierra Star 4b Housing
12. Intrawest South Hotel
13. Altis
14. Fairway 16 (Solstice)
15. Stonegate
16. Snowcreek VI
17. Mammoth View
18. Snowcreek VIII
19. Mammoth Gateway
20. Manzanita Apartments
21. Aspen Village Phase I
22. Mammoth Crossing (Lodestar)
23. Aspen Village Phase II
24. Eagle Lodge
25. 3599 Main Street
26. Snowcreek VII
27. Shady Rest
28. Clearwater Mammoth
29. Sierra Star Master Plan
30. Grey Eagle
31. The Sherwin
32. Ice Rink
33. Holiday Haus

FIGURE 8

Mammoth Crossings
Approved Project Locations and Trip Assignment

I:\WRP430A\G\Appvd Projects.cdr (3/24/08)



LSA

N

NOT TO SCALE

FIGURE 9

Mammoth Crossings

Cumulative Baseline Typical Winter Saturday Peak Hour Traffic Volumes

I:\WRP430A\G\Cumulative Baseline Vols.cdr (5/9/08)

Table D: 2009 Cumulative Typical Winter Saturday Intersection LOS

Intersection	Control[1]	Delay (seconds)	LOS	With Improvement	
				Delay	LOS
1. Minaret/Meridian Blvd.	Signal	31.6	C		
2. Minaret Rd./Main St.	Signal	30.0	C		
3. Minaret Rd/.7B Rd.	TWSC	14.3	B		
4. Minaret Rd./Forest Trail[2]	TWSC	***>35.0 seconds and >4.0 hour cumulative delay on minor street approach***	***F***	5.3	A
5. Kelly Rd./Lake Mary Rd.	TWSC	11.8	B		
6. Lakeview Rd./Lake Mary	TWSC	11.4	B		
7. Canyon Blvd./Lake Mary	Signal	12.2	B		
8. Mountain Blvd./Main St.	TWSC	>35.0 seconds but <4.0 hour cumulative delay on minor street approach	F		
9. USPO Driveway/Main St.[3]	TWSC	***>35.0 seconds and >4.0 hour cumulative delay on minor street approach***	***F***	30.5	D
10. Center St./Main St.[4]	TWSC	***>35.0 seconds and >4.0 hour cumulative delay on minor street approach***	***F***	22.1	C
11. Old Mammoth/Main St.	Signal	16.1	B		

1 TWSC – two-way stop controlled; AWSC – all-way stop controlled
2 Roundabout implemented as an improvement since it is required by cumulative project.
3 Left turns onto Main Street from both directions will be prohibited as the improvement with installation of a traffic signal at Center/Main.
4 Traffic signal planned to be installed per the Town's CIP.

Italic and Bold = unsatisfactory LOS and exceeds four vehicle-hour criteria
CIP = Capital Improvement Plan
LOS = level of service
USPO = United States Post Office

This procedure to develop the cumulative baseline traffic volumes is consistent with the procedures applied for the Eagle Lodge impact analysis as well as the General Plan. These procedures allow for the interaction of the numerous (33 projects) and significant (Westin Hotel, Mammoth Hillside, South Hotel, Snowcreek VI and VIII, Sierra Star Master Plan, Eagle Lodge, Shady Rest, Clearwater and Sherwin) cumulative projects, recognizing that trips produced at one cumulative project may be attracted to another. This process contrasts with the procedure applied in the Clearwater, Snowcreek VIII, and Sherwin impact studies, where the traffic from each cumulative project was individually added manually to the roadway system.

While either procedure is an acceptable technical method, the latter results in higher traffic volumes due to double-counting (i.e., a trip from "Snowcreek" to the Clearwater restaurant is one trip, and a trip attracted to "Clearwater" restaurant from Snowcreek is considered two trips, when they are actually the same trip). In short, the technical methods used in the three studies noted will result in higher traffic volumes than presented in this report.

As shown in Table D, all the study area intersections with improvements are forecast to operate at satisfactory LOS in the cumulative condition. The Adopted General Plan included a mitigation of traffic signal installation at the Center Street/Main Street intersection. This mitigation is included in the Development Impact Fee (DIF) program. The traffic signal at the Post Office, currently planned to be installed next year, would be removed at that time, and left turns onto Main Street from the north and south directions would need to be prohibited.

TRANSIT SERVICE

Winter transit service within the vicinity of the project site is currently served by Mammoth Mountain Transit Red Line, Night Trolley, Blue Line, Yellow Line, Orange Line, Purple Line, and the Rainbow Evening Line.

Red Line

The Red Line provides bus stops adjacent to the project site and provides service to North Village, Snowcreek Athletic Club, and the Main Lodge via Old Mammoth Road, Minaret Road, Chateau Road, Main Street, and Canyon Boulevard. The Red Line operates from late November through mid-April. The Red Line service operates every 15 minutes from 7:00 a.m. to 5:30 p.m., 7 days a week.

Night Trolley

The Night Trolley provides bus stops adjacent to the project site and provides service to North Village and Snowcreek Athletic Club via Old Mammoth Road, Minaret Road, Chateau Road, Main Street, and Canyon Boulevard. The Night Trolley operates from late November through mid-April. The Night Trolley service operates every 15 minutes from 5:30 p.m. to 1:00 a.m., 7 days a week.

Blue Line

The Blue Line provides bus stops adjacent to the project site and provides service to the Canyon Lodge area via Hillside Drive, Minaret Road, Lakeview Boulevard, Lake Mary Road, and Canyon Boulevard. The Blue Line operates from late November through mid-April. The Blue Line service operates every 15 minutes from 7:00 a.m. to 5:30 p.m., 7 days a week.

Yellow Line

The Yellow Line provides bus stops adjacent to the project site and provides service to Eagle Lodge and the Village via Hillside Drive, Forest Trail, Minaret Road, Lakeview Boulevard, Lake Mary Road, Kelly Road, Majestic Pines Drive, Meridian Boulevard, and Canyon Boulevard. The Yellow Line operates from late November through mid-April. The Yellow Line service operates every 15 minutes from 7:30 a.m. to 5:30 p.m., 7 days a week.

Orange Line

The Orange Line provides bus stops adjacent to the project site and provides service to the Village and Tamarack Cross Country Ski Center via Hillside Drive, Forest Trail, Minaret Road, Lakeview Boulevard, Lake Mary Road, and Canyon Boulevard. The Orange Line operates from late November through mid-April. The Orange Line service operates from the Village to Tamarack every 15 minutes from 8:30 a.m. to 4:30 p.m., 7 days a week, and from Tamarack to the Village every hour from 9:00 a.m. to 5:00 p.m., 7 days a week.

Purple Line (Proposed)

The Purple Line is planned to provide bus stops adjacent to the project site and provides service from the Village to Main Street and mid-Mammoth via Hillside Drive, Forest Trail, Minaret Road, Lake Mary Road, Canyon Boulevard, Main Street, Lupin Street, Dorrance Drive, Manzanita Road, and Meridian Boulevard. The Purple Line operates from late November through mid-April. The Purple Line service operates every 30 minutes from 7:00 a.m. to 6:00 p.m., Monday through Friday, and every 30 minutes from 9:00 a.m. to 6:00 p.m., Saturday and Sunday.

Rainbow Evening Line

The Rainbow Evening Line provides bus stops adjacent to the project site and provides service from the Village to Canyon Lodge, Eagle Lodge, Meridian Boulevard, and Old Mammoth Road via Hillside Drive, Forest Trail, Minaret Road, Lakeview Boulevard, Lake Mary Road, Kelly Road, Majestic Pines Drive, Meridian Boulevard, Azimuth, Sierra Nevada Road, and Canyon Boulevard. The Rainbow Evening Line operates late November through mid-April. The Rainbow Evening Line service operates every 60 minutes from 6:00 p.m. to 12:00 a.m., 7 days a week.

Year-Round Transit Service

The Town has recently implemented a year-round Mammoth Lakes Transit system in the vicinity of the project site. The Town Trolley provides bus stops on Old Mammoth Road and provides service to The Village via Old Mammoth Road and Main Street every 30 minutes from 9:00 a.m. to 10:00 p.m. The Midtown Lift provides bus stops on Chateau Road and also provides service to The Village via mid-Mammoth every 30 minutes Monday through Friday from 7:00 a.m. to 6:00 p.m. and on weekends from 9:00 a.m. to 6:00 p.m.

Forest Trail Traffic Monitoring Program Report

The potential diversion of traffic coming from the Main Lodge area and using Forest Trail to avoid going through The Village was addressed during the approval of the Intrawest North Village Specific Plan EIR. There is an adopted requirement to conduct an annual monitoring program to measure the cut-through traffic on Forest Trail east of Minaret Road, continuing all the way to Main Street. If specified thresholds are exceeded, there is a menu of alternative mitigation measures required to be implemented. These annual reports have been prepared starting in 2000 and have continued through 2006. In summary, the established thresholds have not been exceeded, and not until 2006 has the baseline (32 vehicles cutting through), established in 2000 (prior to construction of The Village) been

exceeded (44 vehicles cutting through). Any additional cut-through traffic caused by the Crossings project can be adequately addressed by the monitoring program requirements.

PROJECT TRIP GENERATION

Trip Generation Rates

The trip generation characteristics for the proposed project as well as other similar uses within the North Village are unique to the Town of Mammoth Lakes. The ability to walk to the gondola and access Canyon Lodge, the immediate accessibility of retail and restaurant uses, and access to a transit hub with all bus routes available make it possible to park the car and leave it for the duration of a trip. These characteristics are consistent with the North Village Specific Plan goals and objectives and are being borne out by the very low Village hotel unit peak-hour trip generation (0.28 trip per unit) compared to typical vehicular trip generation rates (0.83 trip per unit). The Village rate is approximately one-third of a typical resort hotel rate.

While the measured hotel rate is very low in comparison to a typical resort hotel unit, it also reflects a lower rate and therefore a liberal internal capture for the retail and restaurant uses since they are being supported (attracted) by pedestrians from the hotel uses.

The trip generation rate for the proposed resort hotel units, specifically in the Saturday p.m. peak hour, was based upon recent (February 9, 2008) vehicular count data (inbound and outbound) at the Village Lodges (Grand Sierra, White Mountain, and Lincoln House) parking garage. The count was conducted on Saturday, February 9, 2008. It should be noted that the Mammoth Mountain Ski Area (MMSA) reported a total of 17,559 skiers and occupancy of 98 percent of the Village Lodges during the count day, which is closely representative of a typical winter Saturday and even approaching a peak Saturday.

The basis for using an observed/measured rate from the Village Lodges is that the data reflects the net vehicular trip generation while recognizing the proximity of its resort hotel units to the Gondola and other retail and restaurant attractions in the North Village area. This measured rate was applied to the Mammoth Crossings resort hotel units in recognition of similar characteristics, specifically having a walking distance of less than 1,200 ft to the Gondola attraction. As such, the resultant Saturday p.m. peak-hour rate for the proposed resort hotel units reflects an accurate assessment of mode split (vehicular trips vs. nonvehicular trips). It should also be noted that the rate has been confirmed with subsequent counts on Saturday, March 1, at The Village Lodges (190 units) and Westin Hotel (130 occupied units). These counts reflected rates of 0.24 and 0.18, respectively. If these additional counts were factored into the recommended rate, it would be 0.24 trip per occupied unit, or 15 percent lower. It is also important to be aware that this study assumes 100 percent occupancy of all project hotel units, which would be 15–20 percent higher than a typical winter Saturday condition.

The trip generation for the commercial components of the proposed project (restaurant, retail and market uses) was reduced by 50 percent to reflect internal capture and transit capture, as it is expected that 50 percent of the restaurant, retail and market trips would be generated by a combination of persons already on site from either the project or other North Village developments or transit riders It should also be noted that this includes pedestrians from surrounding developments in the North Village less than 1,000 ft away (Westin Hotel, Ritz Carlton, Hillside, Village Lodges, and One Hotel).

The internal capture is also supported by the measured hotel unit rate being 60 percent less than the typical ITE rate. In addition, for the market use, it is also expected that a portion of the remaining vehicular trips will be pass-by and able to use the on-street parking on Lake Mary Road without additional turning movements for access. The ITE rate of 36 percent was applied to the market trips only.

All other existing and proposed land uses were generated using the appropriate rates from the ITE Trip Generation Manual, 7th Edition (2003). The trip rates for Residential Condominium/Townhouse (Land Use Code 230), Quality Restaurant (Land Use Code 931), High-Turnover (Sit-Down) Restaurant (Land Use Code 932), Specialty Retail (Land Use Code 814), and Market (Land Use Code 850) were used to calculate trips generated by the workforce housing and commercial components of the proposed project. The ADT trip rate for the proposed resort/hotel units (referenced from Land Use Code 310) was proportionately decreased to reflect the observed peak-hour rate discussed previously.

Existing Trip Generation

Per the observation of Town staff, the existing Old Inyo Mono Title Building and existing residential units on Lake Mary Road are partially occupied. As such, the trip generation of these existing land uses has been reduced by 50 percent to provide a more conservative analysis. With respect to the Whiskey Creek restaurant, the existing trip generation was reduced by 25 percent to account for pedestrians walking to and from the Village. All other existing land uses are assumed to be fully occupied, except the Ullr and White Stag Lodge, which are not occupied. The traffic generation of the existing uses is subtracted from the traffic generation of the proposed project, resulting in a net traffic generation for the Mammoth Crossings project.

Transit

Mammoth Crossings will provide private shuttle service that is estimated to serve the project site three times during the Saturday peak hour. Furthermore, the Red Line bus route is expected to serve within the proximity of the project site on Minaret Road and Lake Mary Road-Main Street every half-hour from 5:00 p.m. to 12:00 a.m. As such, transit trips are accounted for in the trip generation table.

The project trip rates and trip generation are shown in Table E. As shown in Table E, the Mammoth Crossings project generates approximately 2,683 daily trips and 244 peak-hour trips.

Pedestrians

Pedestrian traffic will increase as a direct result of guests within the project and pedestrians attracted to the retail and restaurant uses. These pedestrian increases will be most notable on the south and west leg of Main Street/Minaret Road and the east leg of Lake Mary Road/Canyon Boulevard. Pedestrians crossing the south and west legs on Main Street/Minaret Road have crossing distances of 48 feet and 72 feet, respectively. Pedestrians crossing the east leg of Lake Mary Road/Canyon Boulevard have a crossing distance of 48 feet. Pedestrians are assumed to cross at a rate of 3 feet per second, lower than the standard of 4 feet per second, due to typical winter snow conditions. These two intersections were specifically analyzed with respect to pedestrian crossing impacts by inputting pedestrian crossings on

Table E - Mammoth Crossings Trip Generation (Site 1)

			Saturday Peak Hour			
Land Use	**Size**	**Units**	**ADT**	**In**	**Out**	**Total**
Trip Rates						
Resort Hotel[1]		DU	3.185	0.151	0.129	0.280
Condominium/Townhouse[2]		DU	5.670	0.254	0.216	0.470
Quality Restaurant[3]		TSF	94.360	6.384	4.436	10.820
High-Turnover (Sit-Down) Restaurant[4]		TSF	158.370	12.600	7.400	20.000
Retail[5]		TSF	49.970	2.381	2.381	4.762
Market[6]		TSF	177.590	5.488	5.272	10.760
Office[7]		TSF	2.370	0.221	0.189	0.410
Site 1 (Northwest corner of Minaret Road/Lake Mary Road)						
Existing Trip Generation						
Whiskey Creek Restaurant[8]	10.070	TSF	713	48	34	82
Old Inyo Mono Title Building[9]	5.100	TSF	6	1	0	1
Total Existing Trip Generation			**719**	**49**	**34**	**83**
Project Trip Generation						
Resort Hotel	170	DU	541	26	22	48
Hotel/Visitor Amenities[10]	14.390	TSF	-	-	-	-
Total Site 1 Residential Trip Generation			**541**	**26**	**22**	**48**
Quality Restaurant	2.750	TSF	259	18	12	30
High-Turnover Restaurant	2.750	TSF	436	35	20	55
Retail	16.500	TSF	825	39	39	79
Total Site 1 Commercial Trip Generation			**1,520**	**91**	**72**	**163**
Internal Capture (50%)[11]			(760)	(46)	(36)	(82)
Net Site 1 Commercial Trip Generation			760	46	36	82
Net Site 1 Trip Generation (Residential + Commercial)			1,301	71	58	129
Total Site 1 Trip Generation (Proposed - Existing)			**583**	**23**	**24**	**47**

Notes:

ADT = Average Daily Traffic

DU = Dwelling Unit

TSF = Thousand Square Feet

[1] Daily trip rate for Resort Hotel units referenced from the Institute of Transportation Engineers (ITE), Trip Generation Manual, 7th Edition (2003) Land Use Code (310) - Hotel. Peak hour trip rate referenced from observed Intrawest North Village (Grand

[2] Trip rate referenced from the Institute of Transportation Engineers (ITE), Trip Generation Manual, 7th Edition (2003) Land Use Code (230) - Residential Condominium/Townhouse.

[3] Trip rate referenced from the ITE, Trip Generation Manual, 7th Edition (2003) Land Use Code (931) - Quality Restaurant

[4] Trip rate referenced from the ITE, Trip Generation Manual, 7th Edition (2003) Land Use Code (932) - High-Turnover (Sit-Down) Restaurant

[5] Trip rate referenced from the ITE, Trip Generation Manual, 7th Edition (2003) Land Use Code (814) - Specialty Retail

[6] Trip rate referenced from the ITE, Trip Generation Manual, 7th Edition (2003) Land Use Code (850) - Supermarket

[7] Trip rate referenced from the ITE, Trip Generation Manual, 7th Edition (2003) Land Use Code (710) - General Office Building

[8] Based on the proximity of Whiskey Creek to the Village and other attractions, the existing trip generation for this land use has been reduced by 25 percent to account for pedestrian trips.

[9] Existing use is observed to be 50 percent occupied. As such the trip generation has been reduced by 50 percent.

[10] Hotel/Visitor Amenities consist of offices, meeting space and common areas associated with lodging uses. Trip generation is included in the Resort Hotel rate. Public plaza may be used for special events but not considered in typical winter Saturday traffic demand.

[11] It is expected that approximately 50 percent of the restaurant and commercial retail are generated by a combination of persons within walking distance. It should also be noted that this includes pedestrians from surrounding developments in the North Village less than 1000 feet away (Westin Hotel, Ritz Carlton, Hillside, Grand Sierra, White Mountain, Lincoln House and One Hotel).

[12] Pass-by trip reduction based on an average pass-by trip percentage per Table 5.10 of the ITE Trip Generation Handbook, 2nd Edition (2004) Land Use Code (850) - Supermarket. Pass-by trips are assigned to on-street parking only on Lake Mary Road.

[13] Existing uses currently not occupied. As such, no trips are generated for these existing uses.

[14] Mammoth Crossings shuttle service is estimated to serve the project site three times during the Saturday peak hour.

[15] The Red Line bus route is expected to serve within the proximity of the Mammoth Crossings project on Minaret Road and Lake Mary Road-Main Street every half hour from 5:00p.m. - 12:00a.m. As such, no Red Line bus trips into and out of the project site are expected.

* Some totals may not add due to rounding.

Table E - Mammoth Crossings Trip Generation (Site 2)

Site 2 (Southwest corner of Minaret Road/Lake Mary Road)			Saturday Peak Hour			
Existing Trip Generation	**Size**	**Units**	**ADT**	**In**	**Out**	**Total**
North Village Inn[9]	17.000	DU	48	2	2	4
63 Lake Mary Road	1.000	DU	6	0	0	0
The White Church	-	DU	-	-	-	-
Total Existing Trip Generation			**54**	**2**	**2**	**4**
Project Trip Generation						
Resort Hotel[16]	193	DU	615	29	25	54
Hotel/Visitor Amenities[10]	24.640	TSF	-	-	-	-
Condominiums (Employee Housing)	41	DU	232	10	9	19
Total Site 2 Residential Trip Generation			**847**	**40**	**34**	**73**
Quality Restaurant	2.313	TSF	218	15	10	25
High-Turnover Restaurant	2.313	TSF	366	29	17	46
Retail	10.875	TSF	543	26	26	52
Market	3.000	TSF	533	16	16	32
Total Site 2 Commercial Trip Generation			**1,661**	**86**	**69**	**155**
Internal Capture (50%)[11]			(830)	(43)	(35)	(78)
Pass-By Trip Reduction for Market (36%)[12]			(96)	(3)	(3)	(6)
Net Site 2 Commercial Trip Generation			734	40	32	72
Net Site 2 Trip Generation (Residential + Commercial)			1,582	80	65	145
Total Site 2 Trip Generation (Proposed - Existing)			**1,528**	**77**	**63**	**141**

Notes:

ADT = Average Daily Traffic

DU = Dwelling Unit

TSF = Thousand Square Feet

[1] Daily trip rate for Resort Hotel units referenced from the Institute of Transportation Engineers (ITE), Trip Generation Manual, 7th Edition (2003) Land Use Code (310) - Hotel. Peak hour trip rate referenced from observed Intrawest North Village (Grand

[2] Trip rate referenced from the Institute of Transportation Engineers (ITE), Trip Generation Manual, 7th Edition (2003) Land Use Code (230) - Residential Condominium/Townhouse.

[3] Trip rate referenced from the ITE, Trip Generation Manual, 7th Edition (2003) Land Use Code (931) - Quality Restaurant

[4] Trip rate referenced from the ITE, Trip Generation Manual, 7th Edition (2003) Land Use Code (932) - High-Turnover (Sit-Down) Restaurant

[5] Trip rate referenced from the ITE, Trip Generation Manual, 7th Edition (2003) Land Use Code (814) - Specialty Retail

[6] Trip rate referenced from the ITE, Trip Generation Manual, 7th Edition (2003) Land Use Code (850) - Supermarket

[7] Trip rate referenced from the ITE, Trip Generation Manual, 7th Edition (2003) Land Use Code (710) - General Office Building

[8] Based on the proximity of Whiskey Creek to the Village and other attractions, the existing trip generation for this land use has been reduced by 25 percent to account for pedestrian trips.

[9] Existing use is observed to be 50 percent occupied. As such the trip generation has been reduced by 50 percent.

[10] Hotel/Visitor Amenities consist of offices, meeting space and common areas associated with lodging uses. Trip generation is included in the Resort Hotel rate.

[11] It is expected that approximately 50 percent of the restaurant and commercial retail are generated by a combination of persons within walking distance. It should also be noted that this includes pedestrians from surrounding developments in the North Village less than 1000 feet away (Westin Hotel, Ritz Carlton, Hillside, Grand Sierra, White Mountain, Lincoln House and One Hotel).

[12] Pass-by trip reduction based on an average pass-by trip percentage per Table 5.10 of the ITE Trip Generation Handbook, 2nd Edition (2004) Land Use Code (850) - Supermarket. Pass-by trips are assigned to on-street parking only on Lake Mary Road.

[13] Existing uses currently not occupied. As such, no trips are generated for these existing uses.

[14] Mammoth Crossings shuttle service is estimated to serve the project site three times during the Saturday peak hour.

[15] The Red Line bus route is expected to serve within the proximity of the Mammoth Crossings project on Minaret Road and Lake Mary Road-Main Street every half hour from 5:00p.m. - 12:00a.m. As such, no Red Line bus trips into and out of the project site are expected.

[16] A portion of hotel rooms may include up to 24 two-bedroom condominium units in a stand alone building. These units would accommodate year-round residents and employee housing or sold as fractional units. The difference in traffic generation would be an increase of 5 additional trips from Site 2 which would not impact the conclusions of the TIA.

* Some totals may not add due to rounding.

Table E - Mammoth Crossings Trip Generation (Site 3)

Site 3 (Southeast corner of Minaret Road/Lake Mary Road)			Saturday Peak Hour			
Existing Trip Generation	**Size**	**Units**	**ADT**	**In**	**Out**	**Total**
White Stag Inn[13]	21.000	DU	-	-	-	-
Ullr Lodge[13]	19.000	DU	-	-	-	-
Total Existing Trip Generation			0	0	0	0
Project Trip Generation						
Resort/Hotel	105	DU	334	16	14	29
Hotel/Visitor Amenities[10]	46.040	TSF	-	-	-	-
Condominiums (Employee Housing)	27	DU	153	7	6	13
Total Site 3 Residential Trip Generation			488	23	19	42
Total Site 3 Trip Generation (Proposed - Existing)			**488**	**23**	**19**	**42**
Mammoth Crossings Transit Shuttle[14]			6	3	3	6
Red Line Bus Route[15]			-	-	-	-
Net Transit Trip Generation			6	3	3	6
Total Net Project Trip Generation (Site 1 + Site 2 + Site 3) - Existing Uses			**2,604**	**126**	**110**	**235**

Notes:

ADT = Average Daily Traffic

DU = Dwelling Unit

TSF = Thousand Square Feet

[1] Daily trip rate for Resort Hotel units referenced from the Institute of Transportation Engineers (ITE), Trip Generation Manual, 7th Edition (2003) Land Use Code (310) - Hotel. Peak hour trip rate referenced from observed Intrawest North Village (Grand

[2] Trip rate referenced from the Institute of Transportation Engineers (ITE), Trip Generation Manual, 7th Edition (2003) Land Use Code (230) - Residential Condominium/Townhouse.

[3] Trip rate referenced from the ITE, Trip Generation Manual, 7th Edition (2003) Land Use Code (931) - Quality Restaurant

[4] Trip rate referenced from the ITE, Trip Generation Manual, 7th Edition (2003) Land Use Code (932) - High-Turnover (Sit-Down) Restaurant

[5] Trip rate referenced from the ITE, Trip Generation Manual, 7th Edition (2003) Land Use Code (814) - Specialty Retail

[6] Trip rate referenced from the ITE, Trip Generation Manual, 7th Edition (2003) Land Use Code (850) - Supermarket

[7] Trip rate referenced from the ITE, Trip Generation Manual, 7th Edition (2003) Land Use Code (710) - General Office Building

[8] Based on the proximity of Whiskey Creek to the Village and other attractions, the existing trip generation for this land use has been reduced by 25 percent to account for pedestrian trips.

[9] Existing use is observed to be 50 percent occupied. As such the trip generation has been reduced by 50 percent.

[10] Hotel/Visitor Amenities consist of offices, meeting space and common areas associated with lodging uses. Trip generation is included in the Resort Hotel rate.

[11] It is expected that approximately 50 percent of the restaurant and commercial retail are generated by a combination of persons within walking distance. It should also be noted that this includes pedestrians from surrounding developments in the North Village less than 1000 feet away (Westin Hotel, Ritz Carlton, Hillside, Grand Sierra, White Mountain, Lincoln House and One Hotel).

[12] Pass-by trip reduction based on an average pass-by trip percentage per Table 5.10 of the ITE Trip Generation Handbook, 2nd Edition (2004) Land Use Code (850) - Supermarket. Pass-by trips are assigned to on-street parking only on Lake Mary Road.

[13] Existing uses currently not occupied. As such, no trips are generated for these existing uses.

[14] Mammoth Crossings shuttle service is estimated to serve the project site three times during the Saturday peak hour.

[15] The Red Line bus route is expected to serve within the proximity of the Mammoth Crossings project on Minaret Road and Lake Mary Road-Main Street every half hour from 5:00p.m. - 12:00a.m. As such, no Red Line bus trips into and out of the project site are expected.

* Some totals may not add due to rounding.

those locations at a frequency of 30 calls per hour in the cumulative plus project scenario. It is important to note that each crossing represents an opportunity for a platoon of pedestrians to cross the street, not just a single walker. The results of this analysis indicate that this volume and frequency of pedestrian crossings can be accommodated without causing significant impacts. The LOS worksheets are included in Appendix D.

It should also be noted that the pedestrian crossings of Minaret in the Village area will be addressed by the adopted North Village Pedestrian Monitoring Program triggered with development on the east side of Minaret Road, specifically the South Hotel.

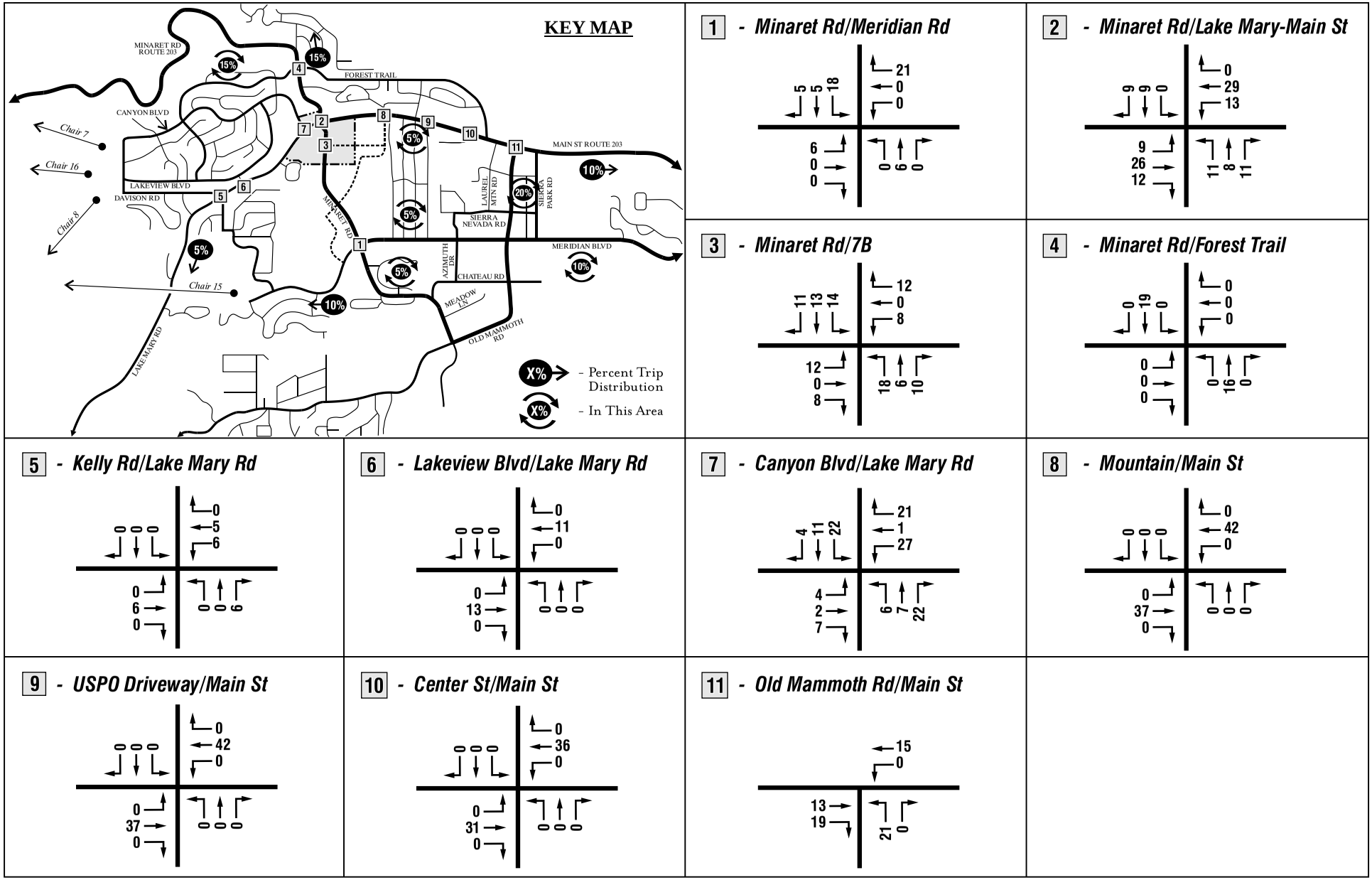
EXISTING PLUS PROJECT CONDITIONS

The project trips were distributed to the surrounding circulation system based on the location of activity centers in the Town and the location of the proposed project in relation to the Town's recreational and commercial areas. The trip distribution and project trips at study area intersections are illustrated in Figure 10. Existing plus project traffic volumes are shown in Figure 11. LOS at study area intersections were analyzed and are shown in Table F. The LOS worksheets for the existing plus project conditions are presented in Appendix E.

Table F: Existing Plus Project Typical Winter Saturday Intersection LOS

Intersection	Control[1]	Delay (seconds)	LOS	With Improvement	
				Delay	LOS
1. Minaret/Meridian Blvd.	Signal	28.6	C		
2. Minaret Rd./Main St.	Signal	27.5	C		
3. Minaret Rd/.7B Rd.	TWSC	17.3	C		
4. Minaret Rd./Forest Trail	TWSC	>35.0 seconds but <4.0 hour cumulative delay on minor street approach	F		
5. Kelly Rd./Lake Mary Rd.	TWSC	11.5	B		
6. Lakeview Rd./Lake Mary	TWSC	10.6	B		
7. Canyon Blvd./Lake Mary	Signal	13.8	B		
8. Mountain Blvd./Main St.	TWSC	>35.0 seconds but <4.0 hour cumulative delay on minor street approach	F		
9. USPO Driveway/Main St.[2]	TWSC	***>35.0 seconds and >4.0 hour cumulative delay on minor street approach***	***F***	22.3	C
10. Center St./Main St.	TWSC	>35.0 seconds but <4.0 hour cumulative delay on minor street approach	E		
11. Old Mammoth/Main St.	Signal	14.8	B		

[1] TWSC – two-way stop controlled; AWSC – all-way stop controlled
[2] Traffic signal planned to be installed per the Town's CIP.
Italic and Bold = unsatisfactory LOS and exceeds four vehicle-hour criteria
CIP = Capital Improvement Plan
LOS = level of service
USPO = United States Post Office



LSA

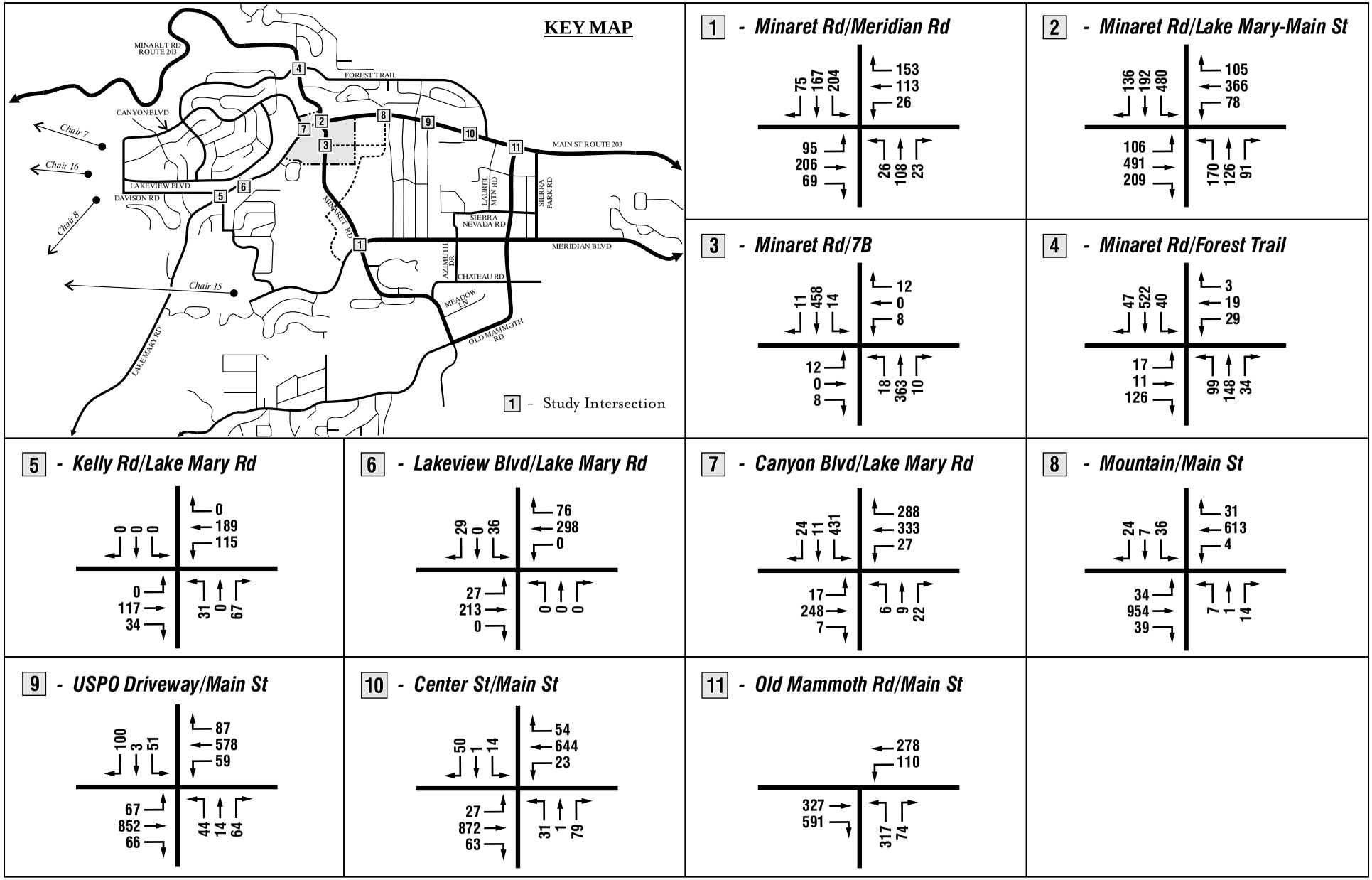
N

NOT TO SCALE

FIGURE 10

Mammoth Crossings
Project Trip Distribution and Assignment

I:\WRP430A\G\Trip Dist.cdr (5/9/08)



LSA

N

NOT TO SCALE

FIGURE 11

Mammoth Crossings
Existing Plus Project Typical Winter Saturday
Peak Hour Traffic Volumes

I:\WRP430A\G\Ex+Proj Vols.cdr (5/9/08)

As shown in Table F, all of the study area intersections are forecast to operate at a satisfactory LOS in the existing plus project condition with the exception of USPO Driveway/Main Street.

Existing Plus Project Mitigation Measures

Although the intersection of USPO Driveway/Main Street is deficient in the existing condition and will continue to operate at an unacceptable LOS with the addition of the project to existing conditions, the Town is proceeding with plans to install a traffic signal at this location per the Town's Capital Improvement Program (CIP). Therefore, no mitigation measures are required.

CUMULATIVE PLUS PROJECT CONDITIONS

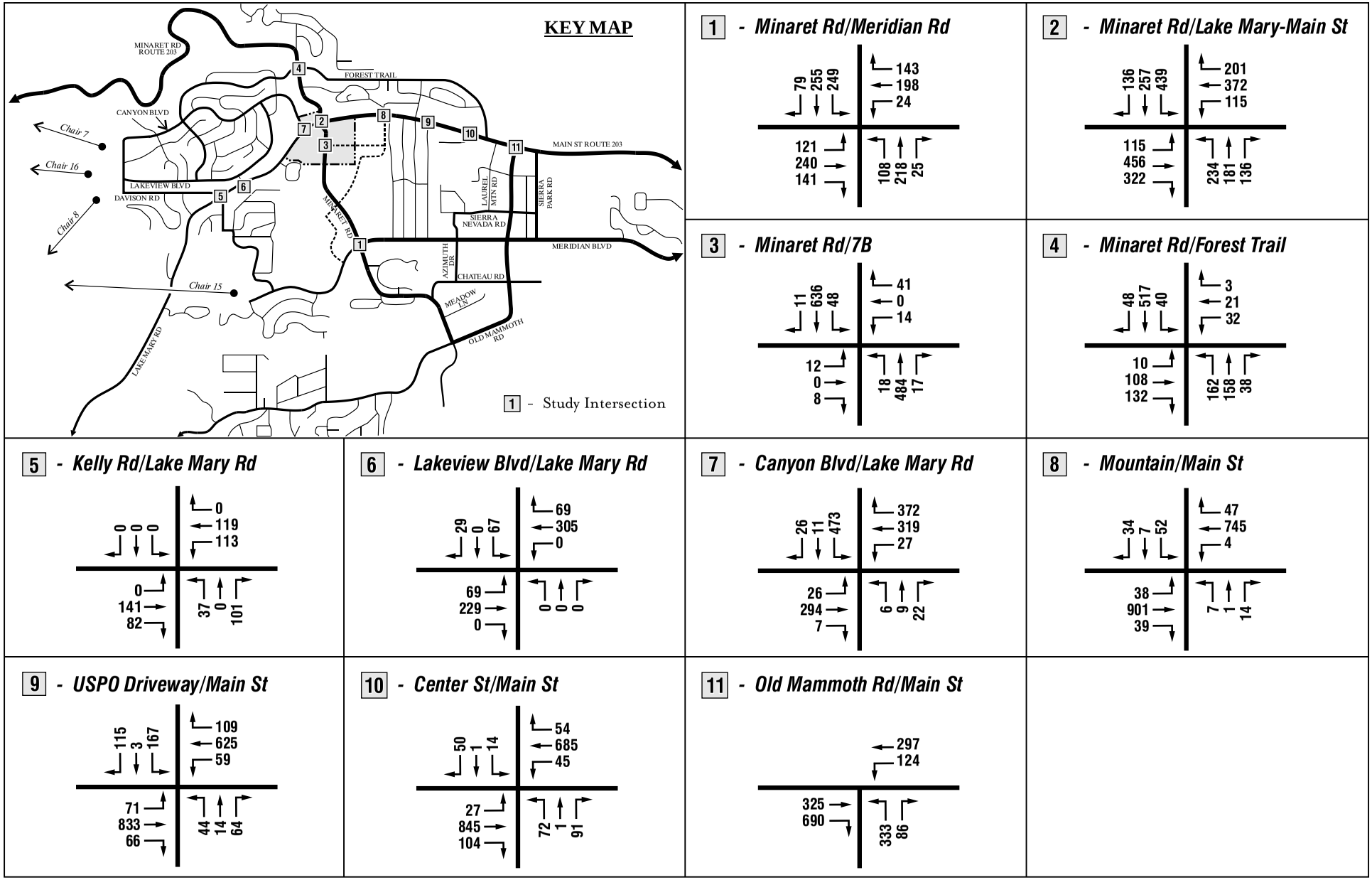
The trip distribution and project trips at study area intersections in the previously referenced Figure 10 were added to the cumulative baseline condition. Cumulative plus project traffic volumes are shown in Figure 12. LOS at study area intersections were analyzed and are shown in Table G. The LOS worksheets for the cumulative plus project conditions are presented in Appendix F.

Table G: Cumulative Plus Project Typical Winter Saturday Intersection LOS

Intersection	Control[1]	Delay (seconds)	LOS	With Improvement	
				Delay	LOS
1. Minaret/Meridian Blvd.	Signal	32.0	C		
2. Minaret Rd./Main St.	Signal	31.6	C		
3. Minaret Rd/.7B Rd.	TWSC	29.9	D		
4. Minaret Rd./Forest Trail[2]	TWSC	***>35.0 seconds and >4.0 hour cumulative delay on minor street approach***	***F***	5.5	A
5. Kelly Rd./Lake Mary Rd.	TWSC	12.0	B		
6. Lakeview Rd./Lake Mary	TWSC	11.5	B		
7. Canyon Blvd./Lake Mary	Signal	13.9	B		
8. Mountain Blvd./Main St.	TWSC	>35.0 seconds but <4.0 hour cumulative delay on minor street approach	F		
9. USPO Driveway/Main St.[3]	TWSC	***>35.0 seconds and >4.0 hour cumulative delay on minor street approach***	***F***	34.7	D
10. Center St./Main St.[4]	TWSC	***>35.0 seconds and >4.0 hour cumulative delay on minor street approach***	***F***	26.9	C
11. Old Mammoth/Main St.	Signal	17.2	B		

[1] TWSC – two-way stop controlled; AWSC – all-way stop controlled
[2] Roundabout implemented as an improvement since it is required by cumulative project.
[3] Left turns onto Main Street from both directions will be prohibited as the improvement with installation of a traffic signal at Center/Main.
[4] Traffic signal planned to be installed per the Town's DIF program.

Italic and Bold = unsatisfactory LOS and exceeds four vehicle-hour criteria
CIP = Capital Improvement Plan
LOS = level of service
USPO = United States Post Office



LSA

N

NOT TO SCALE

FIGURE 12

Mammoth Crossings
Cumulative Plus Project Typical Winter Saturday
Peak Hour Traffic Volumes

I:\WRP430A\G\Cumulative+Proj Vols.cdr (5/9/08)

As shown in Table G, all of the study area intersections are forecast with improvements to operate at a satisfactory LOS in the cumulative plus project condition with the exception of Center Street/Main Street. This location was also deficient in the without project condition.

Cumulative Plus Project Mitigation Measures

Evaluation of intersection LOS shows that the addition of Mammoth Crossings project traffic to the cumulative traffic will contribute to the cumulative deficiency and therefore significantly impact the following study area intersection in the cumulative plus project scenario, according to the Town's criteria:

- Center Street/Main Street

The following improvements would be required for the cumulative plus project condition to mitigate the intersection to LOS D or better.

Center Street/Main Street. Installation of a traffic signal consistent with the Town's Adopted General Plan Update and adopted mitigation measures would be required. All costs for the implementation of this improvement should be eligible for DIF credit. The planned signal at the Post Office would be removed with the Center Street installation, and left turns onto Main Street from both directions would be prohibited. Traffic requiring this movement has been reassigned to the Center Street intersection.

In light of the unique trip generation applied to the hotel units, it is recommended that a monitoring program be implemented on an annual (typical winter Saturday) basis to document effective hotel unit trip generation.

If hotel unit trip generation is significantly higher than documented in this report, the project may be required to provide additional buses/shuttles and/or a bus stop on the easterly side of Minaret Road at the 7B Road (for a future transit route).

CUMULATIVE PLUS PROJECT ALTERNATIVE

100 Parking Spaces on Site 3

The following technical approach has been developed to analyze the potential traffic impacts of placing 100 additional parking spaces on Site 3.

Through negotiations with the Town, it has been suggested that a public benefit defined as 100 public parking spaces on Site 3 be considered. These 100 spaces would serve/benefit the North Village retail uses. This parking would be over and above the standard requirements for the project. This technical analysis will estimate the potential additional traffic impacts as a result of these 100 additional spaces.

To analyze this additional project alternative, the 100 parking spaces will be converted into a 3-to-1 mix of retail and restaurant uses using the parking requirements (PR) of North Village as follows:

21.4 TSF Retail x 3.5 spaces/TSF = 75 spaces
7.1 TSF Restaurant x 3.5 spaces/TSF = 25 spaces
100 spaces

Converting this retail/restaurant square footage into trip generation results in the following:

21.4 TSF retail @ 4.762 peak hour trips/TSF = 102 trips split 50/50 in and out
7.1 TSF restaurant @ 15 peak hour trips/TSF = 107 trips split 60/40 in and out (this is a blended rate for a quality/high-turnover sit-down restaurant)

Total potential demand = 115 inbound and 94 outbound during the peak hour.

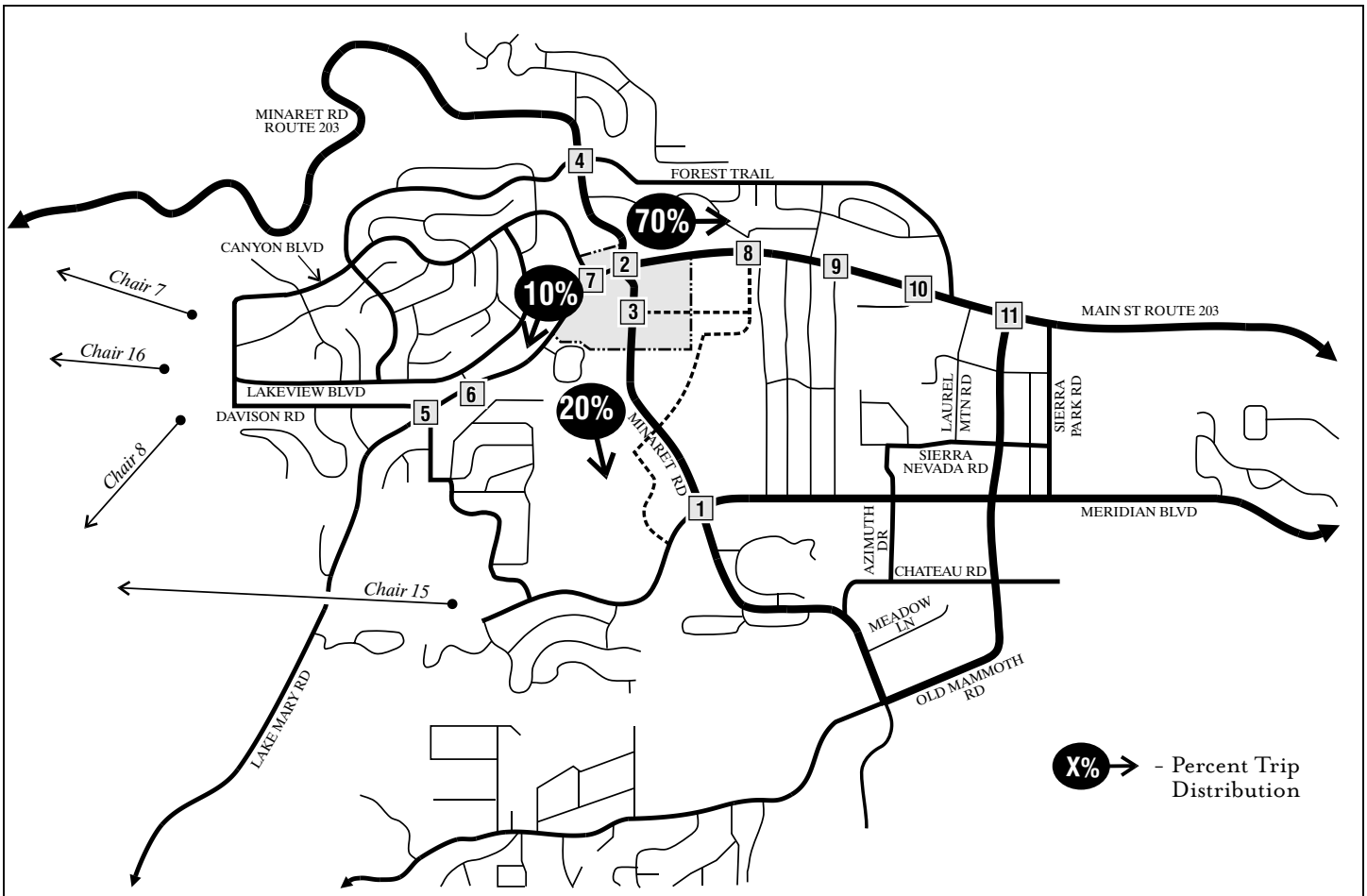
Since this is not new additional land use demand but just a reassignment of where the retail/restaurant demand previously was (up in the Village), a reassignment of traffic volumes is a reasonable method. The analysis focuses on reassignment of most of the demand from the Main/Minaret intersection to the parking access into Site 3. An example would be to take a majority of the demand from the westbound right (inbound) and southbound left (outbound) and change them to a westbound left (inbound) and a northbound right (outbound). The technical analysis will focus on the Main/Minaret and Minaret/Site 3 (7B Road) intersections since they are the most impacted. Figure 13 illustrates how the traffic movements were adjusted. Inbound traffic was assigned 70 percent from Main Street, 10 percent from Lake Mary and 20 percent from Minaret south of the site. Outbound traffic was assigned 20 percent south on Minaret, 70 percent east on Main, and 10 percent west on Lake Mary. These assignments are rough but give some assessment of the issues that will result on Minaret south of Main Street.

Table H displays these delays and subsequent LOS. Minaret Road/7B Road is shown to have an acceptable LOS because, while the delay for the eastbound approach exceeds 35 seconds, only 13 eastbound left-turning vehicles and 35 westbound left-turning vehicles experience this delay. All other approaches function acceptably.

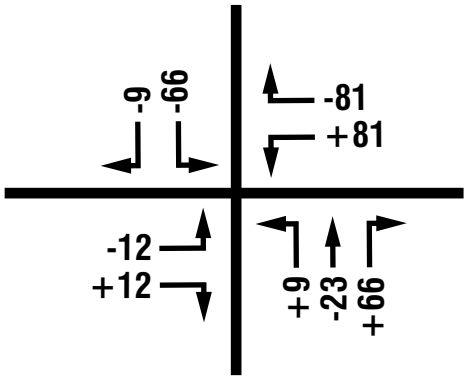
Table H: Cumulative Plus Project Plus 100 Space Parking Garage Typical Winter Saturday Intersection LOS

Intersection	Control[1]	Delay (seconds)	LOS
2. Minaret Rd./Main St.	Signal	37.3	D
3. Minaret Rd/.7B Rd.	TWSC	*>35.0 seconds but <4.0 hour cumulative delay on minor street approach*	F

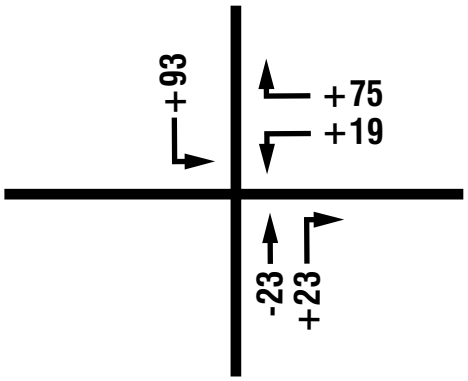
1 TWSC – two-way stop controlled; AWSC – all-way stop controlled
2 Roundabout implemented as an improvement since it is required by cumulative project.
Italic and Bold = unsatisfactory LOS and exceeds four vehicle-hour criteria
LOS = level of service



2 - *Minaret Rd/Lake Mary-Main St*



3 - *Minaret Rd/7B*



LSA

FIGURE 13

N

NOT TO SCALE

Mammoth Crossings

100 Space Parking Garage

Trip Redistribution and Assignment

I:\WRP430A\G\Garage Trip Assign.cdr (5/8/08)

GENERAL PLAN BUILD-OUT CONDITIONS

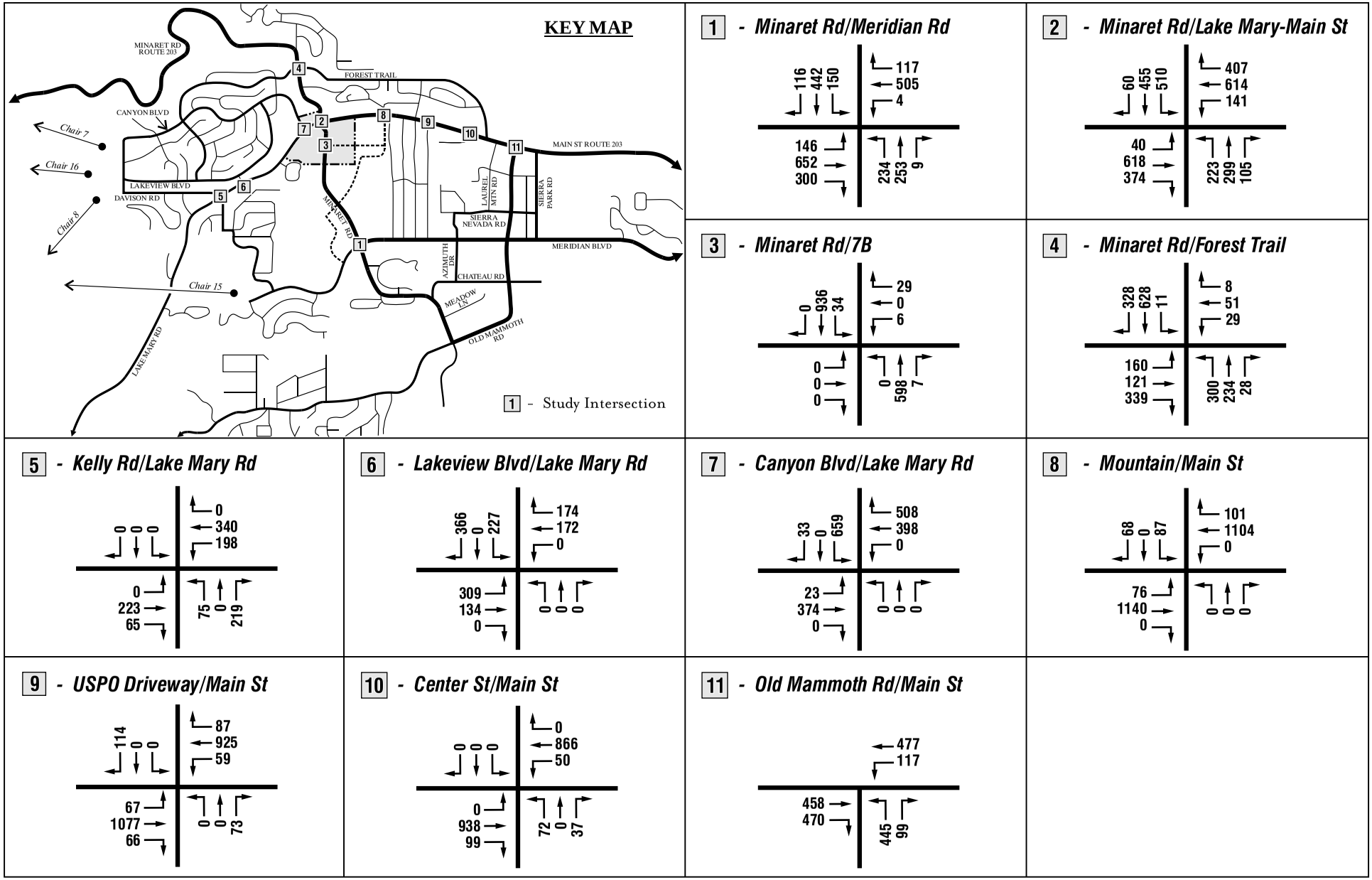
A General Plan analysis was conducted to document the increase in traffic generation between the Adopted General Plan (current density) and the Proposed Mammoth Crossings General Plan Amendment. The Adopted General Plan data as modified by the Town and LSC Transportation Consultants in Traffic Analysis Zones (TAZs) 114 and 199 will be used as the current General Plan condition.

To reflect the proposed project GPA land uses in the three affected TAZs, the following land uses will be added to each respective adopted General Plan TAZ (these added uses take into consideration the adopted General Plan uses already in each respective TAZ):

- Site 1 (TAZ 231)
  - Current rooms allowed without Affordable Housing (AH): 86
  - Proposed room allowed without AH: 198
  - Increased rooms without AH: 112 plus 12,000 sf commercial (restaurant) increase (10,000 sf already in TAZ)
- Site 2 (TAZ 199)
  - Current rooms allowed without AH: 217
  - Proposed rooms allowed without AH: 364
  - Increased rooms without AH: 147
- Site 3 (TAZ 248)
  - Current rooms allowed without AH: 142
  - Proposed rooms allowed without AH: 180
  - Increased rooms without AH: 38
- Project Total
  - Current rooms allowed without AH: 445
  - Proposed rooms allowed w/o AH: 742
  - Increased rooms without AH: 297

In the plan to ground analysis (existing conditions plus cumulative projects plus project), the full proposed project, including the AH units, has been evaluated and will provide an adequate CEQA analysis. The Adopted General Plan assumed affordable housing units throughout the Town, and those units assigned to this project area will not be added in the GPA analysis.

Adopted General Plan traffic volumes are shown in Figure 14. LOS at study area intersections were analyzed and are shown in Table I. The LOS worksheets for the Adopted General Plan conditions are presented in Appendix G.



LSA

N

NOT TO SCALE

FIGURE 14

Mammoth Crossings
Adopted General Plan Typical Winter Saturday
Peak Hour Traffic Volumes

I:\WRP430A\G\GP Vols.cdr (5/12/08)

Table I: Adopted General Plan Typical Winter Saturday Intersection LOS (with Adopted Mitigations)

Intersection	Control[1]	Delay (seconds)	LOS	W/Mitigation[2]	
				Delay	LOS
1. Minaret Rd./Meridian Blvd.	Signal	50.9	D		
2. Minaret Rd./ Main St.	Signal	41.6	D		
3. Minaret Rd/.7B Rd.	TWSC	>35.0 seconds but <4.0 hour cumulative delay on minor street approach	F		
4. Minaret Rd./Forest Trail[3]	TWSC	***>35.0 seconds and >4.0 hour cumulative delay on minor street approach***	***F***	21.4	C
5. Kelly Rd/Lake Mary Rd	TWSC	33.2	D		
6. Lakeview Rd/Lake Mary[4]	TWSC	***>35.0 seconds and >4.0 hour cumulative delay on minor street approach***	***F***	31.5	D
7. Canyon Blvd/Lake Mary	Signal	14.3	B		
8. Mountain Blvd/Main St[5]	TWSC	***>35.0 seconds and >4.0 hour cumulative delay on minor street approach***	***F***	13.4	B
9. USPO Driveway/Main St.[6]	TWSC	***>35.0 seconds and >4.0 hour cumulative delay on minor street approach***	C	15.6	B
10. Center St./Main St.[7]	TWSC	***>35.0 seconds and >4.0 hour cumulative delay on minor street approach***	***F***	17.8	B
11. Old Mammoth/Main St.	Signal	16.3	B		

1 TWSC – two-way stop controlled; AWSC – all-way stop controlled
2 Mitigation measures as prescribed by the Adopted General Plan
3 Roundabout implemented consistent with Adopted General Plan mitigation
4 Provision of separate southbound left- and right-turn lanes and an eastbound acceleration lane along Lake Mary Road (to accommodate two-stage left turns from Lakeview to Lake Mary) consistent with Adopted General Plan mitigation
5 Traffic signal to be installed consistent with Adopted General Plan mitigation
6 Left turns onto Main Street from both directions will be prohibited with installation of a traffic signal at Center/Main. Left turns prohibited would be diverted to the intersection at Center Street.
7 Traffic signal to be installed consistent with Adopted General Plan mitigation.

Italic and Bold = unsatisfactory LOS and exceeds four vehicle-hour criteria
LOS = level of service
USPO = United States Post Office

As shown in Table I, all study area intersections continue to operate at satisfactory LOS (LOS D or better) in Adopted General Plan conditions with the exception of the unsignalized intersections of Lakeview Road/Lake Mary Road, Mountain Boulevard/Main Street, and Center Street/Main Street. These three intersection deficiencies were previously disclosed in the Adopted General Plan Environmental Impact Report (EIR) and have mitigation measures prescribed in the Adopted General Plan. No additional mitigation is required.

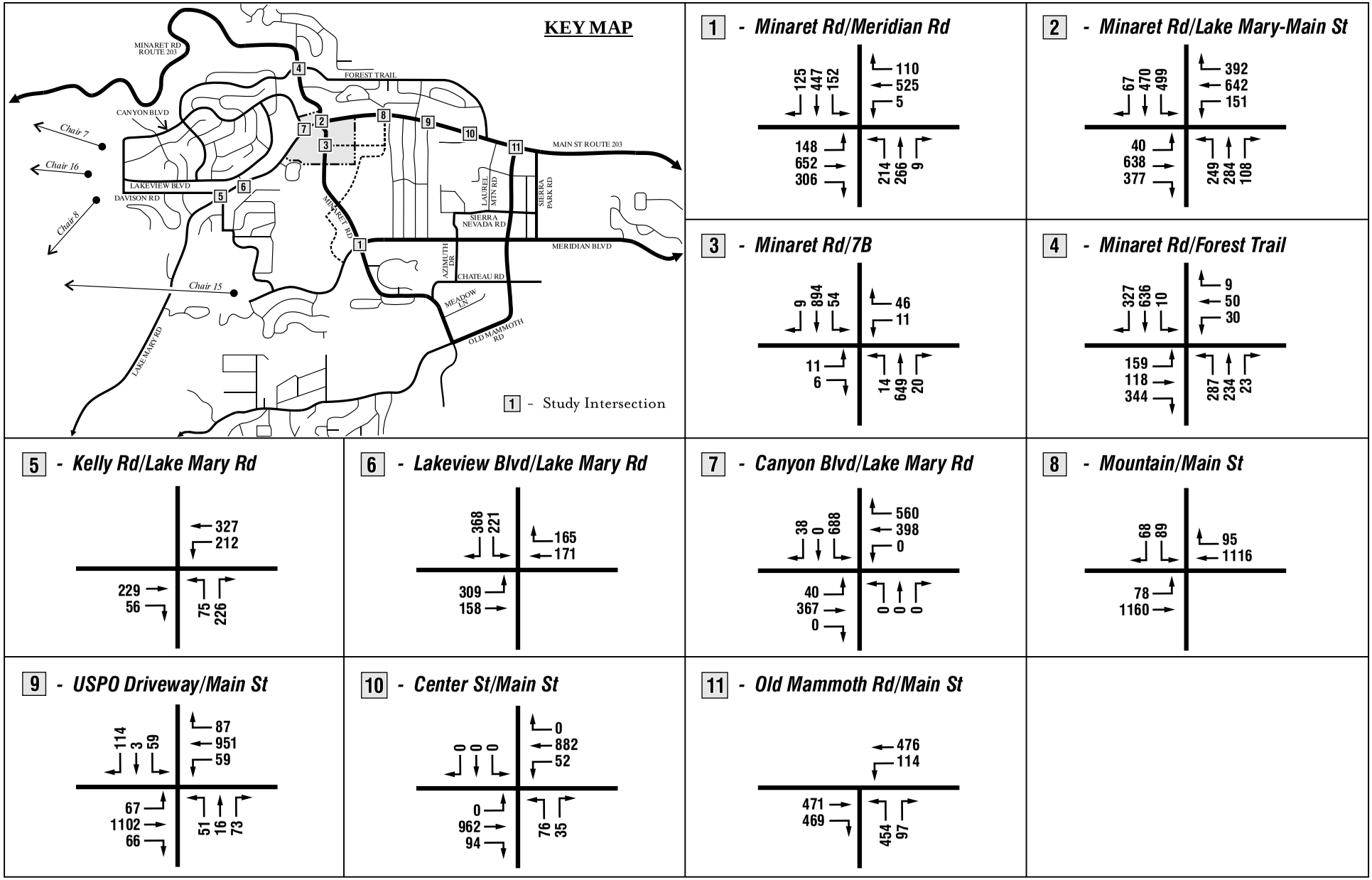
Adopted General Plan plus Mammoth Crossings project traffic volumes are shown in Figure 15. The LOS at study area intersections were analyzed and are shown in Table J. The LOS worksheets for the Adopted General Plan plus project conditions are presented in Appendix H.

Table J: Adopted General Plan plus Project Typical Winter Saturday Intersection LOS (with Adopted Mitigations)

Intersection	Control[1]	Delay (seconds)	LOS	W/Mitigation[2]	
				Delay	LOS
1. Minaret Rd./Meridian Blvd.	Signal	50.8	D		
2. Minaret Rd./ Main St.	Signal	44.5	D		
3. Minaret Rd/.7B Rd.	TWSC	>35.0 seconds but <4.0 hour cumulative delay on minor street approach	F		
4. Minaret Rd./Forest Trail[3]	TWSC	***>35.0 seconds and >4.0 hour cumulative delay on minor street approach***	***F***	26.8	D
5. Kelly Rd/Lake Mary Rd	TWSC	>35.0 seconds but <4.0 hour cumulative delay on minor street approach	E		
6. Lakeview Rd/Lake Mary[4]	TWSC	***>35.0 seconds and >4.0 hour cumulative delay on minor street approach***	***F***	30.2	D
7. Canyon Blvd/Lake Mary	Signal	15.1	B		
8. Mountain Blvd/Main St[5]	TWSC	***>35.0 seconds and >4.0 hour cumulative delay on minor street approach***	***F***	13.5	B
9. USPO Driveway/Main St.[6]	TWSC	***>35.0 seconds and >4.0 hour cumulative delay on minor street approach***	***F***	15.9	B
10. Center St./Main St.[7]	TWSC	***>35.0 seconds and >4.0 hour cumulative delay on minor street approach***	***F***	17.7	B
11. Old Mammoth/Main St.	Signal	16.5	B		

1 TWSC – two-way stop controlled; AWSC – all-way stop controlled
2 Mitigation measures as prescribed by the Adopted General Plan
3 Roundabout implemented consistent with Adopted General Plan mitigation
4 Provision of separate southbound left- and right-turn lanes and an eastbound acceleration lane along Lake Mary Road (to accommodate two-stage left turns from Lakeview to Lake Mary) consistent with Adopted General Plan mitigation
5 Traffic signal to be installed consistent with Adopted General Plan mitigation
6 Left turns onto Main Street from both directions will be prohibited with installation of a traffic signal at Center/Main. Left turns prohibited would be diverted to the intersection at Center Street.
7 Traffic signal to be installed consistent with Adopted General Plan mitigation.

Italic and Bold = unsatisfactory LOS and exceeds four vehicle-hour criteria
LOS = level of service
USPO = United States Post Office



LSA

N

NOT TO SCALE

FIGURE 15

Mammoth Crossings
Adopted General Plan Plus Project Typical Winter Saturday
Peak Hour Traffic Volumes

I:\WRP430A\G\GP+Proj Vols.cdr (5/12/08)

As shown in Table J, all study area intersections continue to operate at satisfactory LOS (LOS D or better) in Adopted General Plan plus project conditions. It should be noted that the mitigation measures prescribed by the Adopted General Plan (as reported in Table I) are implemented in the Adopted General Plan plus project scenario.

Adopted General Plan plus Project Mitigation Measures

No additional improvements outside of the prescribed mitigation measures of the Adopted General plan are required based on the evaluation of LOS at the study area intersections in the Adopted General Plan plus project scenario.

Roadway Segment Analysis

A peak-hour roadway segment analysis was conducted in the adopted General Plan and General Plan plus Project scenarios. The peak-hour roadway volumes and v/c ratios for both scenarios are presented in Table K. As this table indicates, none of the study area roadway segments within the study area are forecast to exceed the Town's peak-hour capacity criteria. As such, no improvements to study area roadway segments are required.

Vehicle Miles of Travel (VMT)

Daily project trips on the study area roadway segments were calculated in addition to the peak-hour volume. Table L displays the average daily traffic (on a typical winter Saturday) for each of the study area roadway segments. Because the length of each roadway segment is known, Table L also calculates an estimate for the daily VMT generated by the proposed project. As the table reports, the project is estimated to generate 6,450 vehicle-miles.

Table K: Traffic Loads Selected Roadway Segments

No.	Segment	Capacity[1] (V/H/PD)	Adopted General Plan			Adopted General Plan plus Project		
			V/H/PD	V/C	Capacity Exceeded?	V/H/L	V/C	Capacity Exceeded?
1	Main St. immediately west of Old Mammoth Rd.	2,600	921	0.35	No	929	0.36	No
2	Main St. immediately east of Minaret Rd.	2,600	1,191	0.46	No	1212	0.47	No
3	Lake Mary Rd. immediately west of Canyon Blvd.	1,600	409	0.26	No	431	0.27	No
4	Lake Mary Rd. immediately west of Kelly Rd.	1,600	349	0.22	No	351	0.22	No
5	Minaret Rd immediately north of Forest Trail	1,600	687	0.43	No	712	0.44	No
6	Minaret Rd - Main Street to Forest Trail	1,300	891	0.69	No	890	0.68	No
7	Minaret Rd immediately south of Main St	1,600	781	0.49	No	800	0.50	No
8	Minaret Rd immediately north of Meridian Blvd	1,600	598	0.37	No	619	0.39	No
9	Minaret Rd immediately south of Meridian Blvd	1,600	622	0.39	No	621	0.39	No
10	Old Mammoth Rd immediately south of Main St	1,600	564	0.35	No	571	0.36	No
11	Meridian Blvd immediately east of Minaret Rd	2,600	717	0.28	No	722	0.28	No
12	Meridian Blvd immediately west of Minaret Rd	2,600	979	0.38	No	973	0.37	No
13	Forest Trail immediately east of Minaret Rd	800	126	0.16	No	126	0.16	No
14	Lakeview Dr immediately north of Lake Mary Rd	800	522	0.65	No	537	0.67	No
15	Kelly Rd immediately south of Lake Mary Rd	800	278	0.35	No	289	0.36	No
16	Center St immediately south of Main St	800	130	0.16	No	125	0.16	No
17	Canyon Blvd immediately north of Lake Mary Rd	1,000	615	0.61	No	653	0.65	No
18	Lake Mary Rd. west of Minaret Rd.	2,600	1,027	0.40	No	1,054	0.41	No

[1] Capacity values obtained from the adopted General Plan Update.
V = vehicles/volume; H = hour; L = lane; PD = per direction; v/c = volume-to-capacity ratio

Table L: Mammoth Crossings Estimated Vehicle Miles of Travel (VMT) on Study Roadway Segments

Segment	Description	Length (Miles)	Mammoth Crossings ADT	Mammoth Crossings VMT
Main Street Segment 1	Between Meridian and Sierra Park	1.03	472	486
Main Street Segment 2	Between Sierra Park and Old Mammoth	0.12	516	62
TOTAL	Between Old Mammoth and Mono	0.48	1,403	673
Main Street Segment 3	Between Mono and Minaret	0.45	1,403	631
Lake Mary Road (Old Main Street Segment 5)	Between Minaret and Lakeview	0.49	370	181
Lake Mary Road Segment 1	Between Lakeview and Juniper	0.46	236	109
Lake Mary Road Segment 2	South of Juniper	1.20	236	283
Meridian Boulevard Segment 1	SR 203 to Sierra Park	1.09	471	513
Meridian Boulevard Segment 2	Sierra Park to Old Mammoth	0.14	427	60
Meridian Boulevard Segment 3	Old Mammoth to Minaret	0.58	837	485
Meridian Boulevard Segment 4	Minaret to Majestic Pines	0.66	337	222
Old Mammoth Road Segment 1	Main to Meridian	0.45	517	233
Old Mammoth Road Segment 2	Meridian to Sherwin Creek	0.36	0	0
Old Mammoth Road Segment 3	Sherwin to Minaret	0.29	0	0
Old Mammoth Road Segment 4	Minaret to Club	0.47	0	0
Old Mammoth Road Segment 5	Club Drive to Waterford	0.26	0	0
Old Mammoth Road Segment 6	West of Sherwin	0.71	0	0
Forest Trail	Entire Length of Road	1.06	0	0
Canyon Boulevard	Lake Mary to Lakeview	0.32	683	219
Lakeview Drive	Canyon to Davison	0.93	0	0
Kelly Road and Majestic Pines	Lake Mary to Meridian	0.60	135	81
SR 203 Segment 1 (Minaret North of Main)	Lake Mary to Forest Trail	0.26	707	184
SR 203 Segment 2	Forest Trail to 1.0 Mile North	1.00	707	707
Minaret Road Segment 1	Main to Meridian	0.64	1,749	1,119
Minaret Road Segment 2	Meridian to Chateau	0.51	236	120
Minaret Road Segment 3	Chateau to Old Mammoth	0.21	236	50
Fairway Drive	Immediately South of Old Mammoth	0.13	236	31
TOTAL VMT				**6,450**

Source: 2004 Mammoth TranPLAN Transportation Demand Model

INTERNAL CIRCULATION/LOCAL ACCESS

Proposed Project

The operation of the ingress and egress locations of the project site along Canyon Boulevard, Lake Mary Road, and Minaret has also been evaluated. As illustrated in Figure 16, four access driveways (Driveway A on Canyon Boulevard north of Lake Mary, Driveway B on Lake Mary Road/Canyon Boulevard, Driveway C on Minaret Road south of Lake Mary, and Driveway D on Minaret south of Driveway C) will be provided at the project site.

A 2000 HCM analysis was prepared for the four access driveways in the cumulative plus project scenario, as illustrated in Table M. Project trips were distributed based on the regional distribution patterns discussed previously and were assigned to each driveway based on logical travel corridors and minimum time paths. Figure 16 shows the project trip assignment at the access locations for the proposed project.

Table M: Cumulative plus Project and Cumulative plus Project with 100 Space Garage Typical Winter Saturday Intersection LOS at Study Area Access Locations

Intersection	Cumulative plus Project		Cumulative plus Project with 100 space garage	
	Delay (seconds)	LOS	Delay (seconds)	LOS
Driveway A	21.3	C	21.3	C
Driveway B	13.9	B	13.9	B
Driveway C	13.5	B	13.8	B
Driveway D	29.9	D	>35.0 seconds but <4.0 hour cumulative delay on minor street approach	F

As shown in Table M, all study area access driveways are forecast to operate at acceptable LOS in the Cumulative plus Project scenario. The LOS worksheets for cumulative plus project access locations are contained in Appendix I.

Proposed Project Queuing Analysis

A queuing analysis was conducted to determine whether queuing from adjacent signalized intersections would impact access into the project driveways. The southbound left-turn queue at the signalized intersection of Canyon Boulevard/Lake Mary Road and the northbound left-turn queue at the intersection of Minaret Road/Main Street were evaluated. This analysis was conducted applying a 95th percentile confidence level (i.e., the queue might occur during three minutes of the peak hour).

The maximum southbound left-turn queue at Canyon Boulevard/Lake Mary Road is nine vehicles. Applying the standard vehicle length of 25 ft per car, nine vehicles are equivalent to 225 ft. The project driveway on Canyon Boulevard (Driveway A) will be limited to 30 ft in width with a provision of rolled or mountable curbs at locations for delivery vehicles. There will be clear delineation between vehicles and pedestrians and this will be provided through pavement treatment.

LSA

LEGEND

A - Project Driveway

- Project Trip Assignment

- Project Trip Assignment with 100 Additional Parking Spaces

FIGURE 16

Mammoth Crossings

Project Trip Assignment at Access Locations

SOURCE: Merrick Architecture

I:\WRP430A\G\Project Trip AAL.cdr (5/9/08)

This driveway is not impacted by the access into the Hillside project to the north. The northbound left-turn queue into the Hillside project is expected to be no more than one vehicle. The LOS worksheet is included in Appendix I. Vehicles entering from the north will turn into Site 1 from southbound Canyon Boulevard in the Lake Mary Road left-turn queue. Drivers exiting Site 1 may be required to wait until the left-turn queue is reduced to turn out onto southbound Canyon Boulevard.

Applying the existing lane geometry and signal phasing/cycle length of Main Street/Minaret Road in the Cumulative plus Project scenario, the maximum northbound left-turn is 15 vehicles with the proposed project. Applying the standard vehicle length of 25 ft per car, 15 vehicles are equivalent to 375 ft of queuing. The maximum southbound left-turn queue at Minaret Road/Driveway D is one vehicle. The total queue for the back-to-back left-turn lanes is therefore 400 ft with the proposed project. The project driveway at Minaret/7B (Driveway D) is measured to be approximately 300 ft south of the intersection of Minaret/Main. As such, queues from the northbound left turn at Main/Minaret Road may interfere during short periods with southbound left-turning vehicles entering Site 3 via Driveway D.

This operational issue results from a conservative analysis that assumes 100 percent occupancy of the project and that sufficient storage capacity is needed to meet or exceed peak demand for 95 percent of the peak hour. Operational issues that may occur would exist for only brief periods. Suggestions for addressing these short-term issues include having a patrol officer direct traffic at the site exit on peak winter Saturdays. This suggestion could be explored in greater detail if operational issues do occur and their magnitude and duration are known.

In summary, applying the 95th percentile criteria identifies a potential stacking/queuing operational issue that may occur for very short periods of time during design peak winter Saturday conditions with or without the Mammoth Crossings project. Recommendations have been developed to minimize the northbound queue for Minaret Road at Main Street.

100 Parking Space Garage Alternative

The operation of the ingress and egress locations of the project site at the previously referenced access driveways has also been evaluated with the 100 Parking Space Garage Alternative. Figure 16 illustrates the alternative trip assignment at Driveways C and D (denoted in blue). As shown in Table M, all study area access driveways are forecast to operate at acceptable LOS. Although Driveway D (Minaret Road/7B Road) is forecast to operate at LOS F, this intersection does not exceed the four vehicle-hour criteria and therefore is not considered significant. The LOS worksheets for cumulative plus project plus 100 space garage alternative access locations are contained in Appendix J.

100 Parking Space Garage Alternative Queuing Analysis

A queuing analysis was also conducted including the 100 Parking Space Garage Alternative. This alternative does not affect the queue at Canyon Boulevard/Lake Mary Road.

Applying the existing lane geometry and signal phasing/cycle length of Main Street/Minaret Road in the Cumulative plus Project scenario, the maximum northbound left-turn is 17 vehicles with the 100

additional parking space alternative. Applying the standard vehicle length of 25 ft per car, 17 vehicles are equivalent to 425 ft. The maximum southbound left-turn queue at Minaret Road/Driveway D is one vehicle. The total queue for the back-to-back left-turn lanes is therefore 450 ft with the project alternative. The project driveway at Minaret/7B (Driveway D) is measured to be approximately 300 ft south of the intersection of Minaret/Main. As such, queues from the northbound left turn at Main/ Minaret Road may interfere during short periods with southbound left-turning vehicles entering Site 3 via Driveway D.

As was mentioned previously, this potential for an operational issue results from a conservative analysis. The 100 Parking Space Garage Alternative is anticipated to add two vehicles to the northbound left-turn queue at Main Street/Minaret Road in addition to the queue projected for the proposed project. Suggestions for addressing these short-term issues include: having a patrol officer direct traffic at the site exit at peak periods, pricing programs, and dedicating some portion of the spaces to longer-term parking uses. These mechanisms could be explored in greater detail if operational issues do occur and their magnitude and duration are known.

In summary, applying the 95th percentile criteria identifies a potential stacking/queuing operational issue that may occur for very short periods of time during the design peak winter Saturday conditions with or without the Mammoth Crossings project. Recommendations have been developed to minimize the northbound queue for Minaret Road at Main Street.

BICYCLE FACILITIES

Figure 17 illustrates the accommodation of bicycle trails and lanes throughout the project. All lanes are standard on-street facilities with the exception of the off-street trail on the south side of Lake Mary Road. Bicycle traffic will be able to utilize the typical pedestrian crossings at the signalized intersections.

PARKING

The parking requirement has been calculated based on standard code requirements and is outlined in Table N:

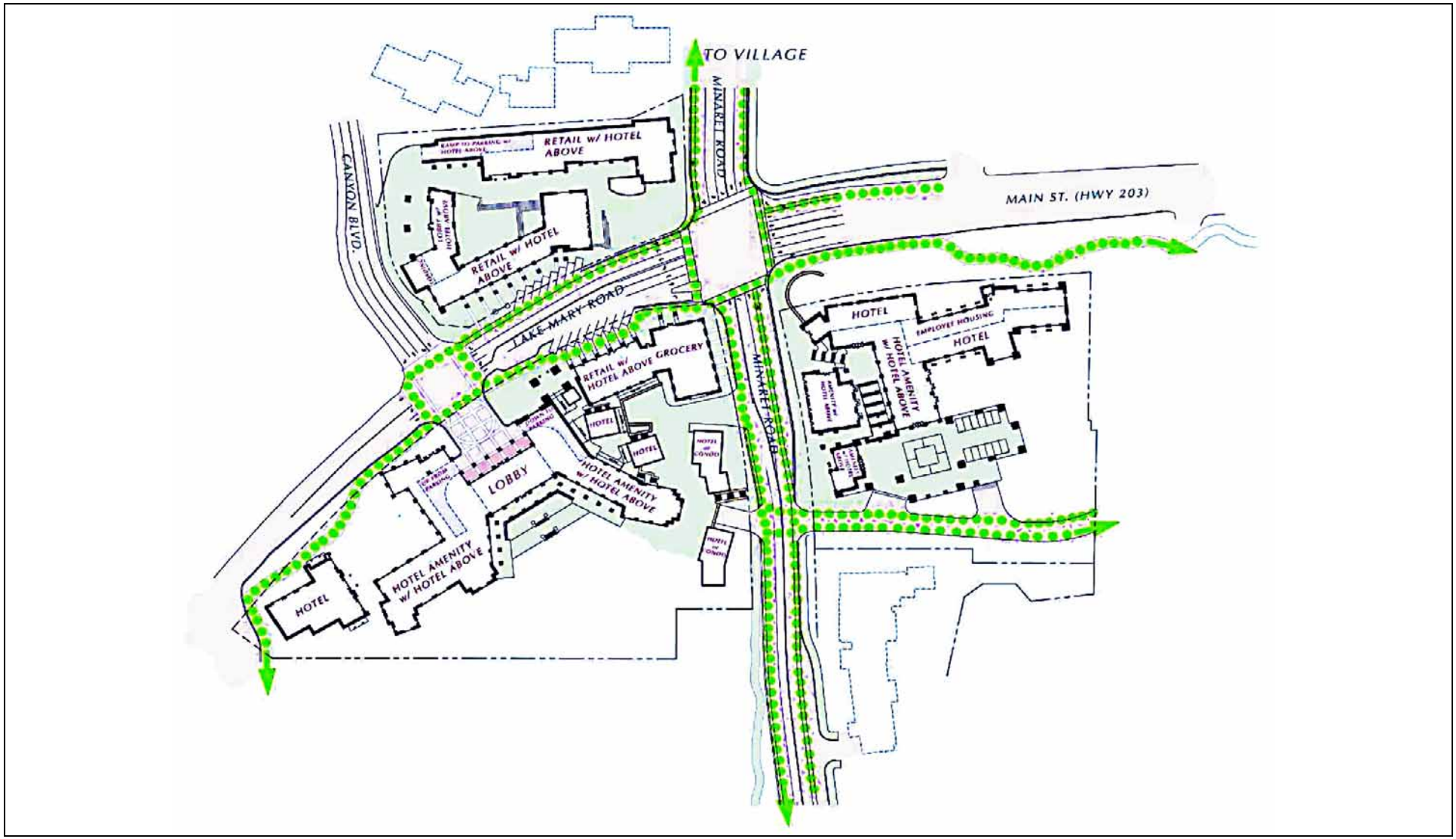
Table N: Mammoth Crossings Parking Requirement

Parking requirements consistent with the North Village Specific Plan are calculated as follows:

Site 1

Quantity	Unit Type	Parking Required	Total Spaces
24	1 bedroom	1 space	24
66	2 bedroom w/lock-off	1.75 spaces	115.5
14	3 bedroom (<15%)	1.5 spaces	21
22.0	TSF retail	3.5 spaces/TSF	77.0
Total Site 1 Parking Spaces Required			**237.5 + 3 check-in spaces**

TSF = thousand square foot



LSA

FIGURE 17

LEGEND

●●●● - Bike Path

N

Mammoth Crossings

Bike Path Network

SOURCE: Merrick Architecture

I:\WRP430A\G\BikepathNT.cdr (3/25/08)

"Minimum three check-in spaces required for all resort condominiums with lobby or on-site management, common parking and may have accessory recreational amenities, meeting rooms…."(North Village Specific Plan 2000).

Site 2

Quantity	Unit Type	Parking Required	Total Spaces
6	1 bedroom	1 space	6
61	2 bedroom	1 space	61
38	2 bedroom w/lock-off	1.75 spaces	66.5
40	3 bedroom (>15%)	1.75 spaces	70
10	4 bedroom	1.75 spaces	17.5
41	1 bedroom (workforce housing)	1 space	41
18.5	TSF retail	3.5 spaces/TSF	64.75
Total Site 2 Parking Spaces Required			**326.75 + 3 check-in spaces**

TSF = thousand square foot

Site 3

Quantity	Unit Type	Parking Required	Total Spaces
48	1 bedroom	1 space	48
39	2 bedroom	1 space	39
18	3 bedroom (>15%)	1.75 spaces	31.5
27	1 bedroom (workforce housing)	1 space	27
	Total Site 3 Parking Spaces Required		**145.5 + 3 check-in spaces**

Total project off-street parking requirements are 711 spaces plus 9 check-in spaces. It should also be noted that approximately 17 on-street angled parking spaces are not being counted toward required parking.

MITIGATION MEASURES

Existing Plus Project

No mitigation measures in the existing plus project scenario are required.

Cumulative Plus Project

- **Center Street/Main Street.** Installation of a traffic signal consistent with the Town's Adopted General Plan Update and adopted mitigation measures. All applicable costs for the implementation of this improvement should be eligible for Development Impact Fee (DIF) credit in accordance with DIF schedule and ordinance.

- In light of the unique trip generation applied to the hotel units, it is recommended that a monitoring program be implemented on an annual (typical winter Saturday) basis to document effective hotel unit trip generation.

  If hotel unit trip generation is significantly higher than documented in this report, the project may be required to provide additional buses/shuttles and/or a bus stop on the easterly side of Minaret Road at the 7B Road (for a future transit route).

Adopted General Plan Plus Project

No mitigation measures in the Adopted General Plan plus project scenario are required.

CONCLUSIONS

Based on results of this analysis, the traffic impacts as a result of the Mammoth Crossings development of 432 traffic-generating units (i.e., 536 keys) and 40,500 sf of commercial uses on the three corners of Minaret Road/Lake Mary Road can be mitigated with the measures identified previously, resulting in no significant remaining impacts.

In light of the unique trip generation applied to the hotel units it is recommended that a monitoring program be implemented on an annual (typical winter Saturday) basis to document effective hotel unit trip generation.

If hotel unit trip generation is significantly higher than documented in this report, the project may be required to provide additional buses/shuttles and/or a bus stop on the easterly side of Minaret Road at the 7B Road (for a future transit route).

Applying the 95th percentile criteria identifies a potential stacking/queuing operational issue that may occur for very short periods of time during peak winter Saturday conditions at the northbound queue for Minaret Road at Main Street. If an operational issue does occur, a possible solution to address this short-term issue, recommended by the Town, would be to have a patrol officer direct traffic at the site exit. If the 100 Parking Space Garage Alternative is selected, additional solutions would include pricing programs and dedicating some portion of the spaces to longer-term parking uses.

APPENDIX A

EXISTING COUNT DATA

EXISTING COUNT DATA

Hotel Trip Generation Counts

Traffic counts were conducted on Saturday, February 9, 2008, and March 1, 2008, at the Forest Trail Entrance of The Lodges (Grand Sierra, White Mountain, and Lincoln House) from 3:30 p.m. to 5:30 p.m. and on Saturday, March 1, 2008, at the Hillside Drive entrance to the Westin Hotel from 3:30 p.m. to 5:30 p.m. Detailed count sheets are provided following this page.

Data used in this study is derived from the February 9, 2008, count at The Lodges. The peak hour is from 4:30 p.m. to 5:30 p.m., with 54 peak-hour trips, 25 inbound and 29 outbound. Data from MMSA indicated that there were 190 occupied hotel units (98 percent occupancy) that day and 17,559 skiers. This closely represents a peak winter Saturday condition. The resultant occupied hotel unit p.m. peak hour trip generation is 0.28 trips per unit. The breakdown of the 190 units is as follows:

The Lodges (Grand Sierra, White Mountain, and Lincoln House)

- 88 studios/one-bedroom units (46 percent)
- 88 two-bedroom units (46 percent)
- 11 three-bedroom units (6 percent)
- 3 four-bedroom units (2 percent)

  190 units

Additional counts were taken on March 1, 2008, at The Lodges and Westin Hotel. The occupancy was 98 percent (188 units) at The Lodges and 92 percent at the Westin Hotel (130 units), with 11,582 skiers. These counts reflect a lower per-unit trip generation of 0.24 and 0.18 trip per occupied unit at The Lodges and Westin, respectively. The breakdown of the units at the Westin is as follows:

The Westin Hotel

- 117 studios/one-bedroom units (83 percent)
- 24 two-bedroom units (17 percent)

  141 units

It should also be noted that the Westin trips attributed to the restaurant were isolated (4 inbound and 3 outbound), and if added to the hotel unit rate would be 0.23 trip per hotel plus restaurant.

It should further be noted that both The Lodges and The Westin have comparable amenities to The Crossings, such as offices, reception/check-in facilities, meeting spaces, and common areas.

Walking distances are also similar and within acceptable ranges. Distances from the Grand Sierra Lodge are approximately 700 ft, which are comparable to Site 1. Walking distances from Sites 2 and 3 range up to approximately 1,200 ft, but are still within acceptable lengths considering the time and expense of attempting to drive this same distance.

For comparison, the Mammoth Crossings unit mix is as follows:

Mammoth Crossings

- 319 one-bedroom units, 2 bedrooms with lock-offs units (59 percent)
- 126 two-bedroom units (23 percent)
- 84 three-bedroom units (16 percent)
- 10 four-bedroom units (2 percent)

539 units (including lock-offs)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Minaret Rd DATE: 02/02/2008 LOCATION: City of Mammoth Lakes

E-W STREET: Lake Mary Rd-Main St DAY: SATURDAY PROJECT# 08-8016-001

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	1	0	1	2	1	1	2	1	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM	22	16	13	53	40	24	6	69	25	7	45	29	349
3:45 PM	24	17	15	62	33	25	4	60	25	12	37	22	336
4:00 PM	27	16	15	72	25	33	7	59	35	15	48	32	384
4:15 PM	19	19	14	70	21	27	10	72	37	9	48	27	373
4:30 PM	24	19	13	77	23	32	9	58	46	6	44	32	383
4:45 PM	22	13	17	81	19	22	11	86	27	4	70	24	396
5:00 PM	20	14	20	83	25	24	15	51	30	5	59	45	391
5:15 PM	18	16	16	84	27	21	17	50	31	7	68	41	396
5:30 PM													
5:45 PM													
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													
TOTAL VOLUMES =	NL 176	NT 130	NR 123	SL 582	ST 213	SR 208	EL 79	ET 505	ER 256	WL 65	WT 419	WR 252	TOTAL 3008

PM Peak Hr Begins at: 430 PM

PEAK VOLUMES =	84	62	66	325	94	99	52	245	134	22	241	142	1566
PEAK HR. FACTOR:		0.946			0.981			0.869			0.873		0.989

CONTROL: Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Minaret Rd | DATE: 02/02/2008 | LOCATION: City of Mammoth Lakes

E-W STREET: Forest Trail | DAY: SATURDAY | PROJECT# 08-8016-002

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	0	1	0	0	1	0	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM	14	35	6	3	87	12	2	3	22	2	0	2	188
3:45 PM	24	26	5	6	76	14	3	2	18	1	2	1	178
4:00 PM	17	18	0	8	82	12	2	2	25	2	1	0	169
4:15 PM	16	17	5	5	80	2	3	1	26	3	2	1	161
4:30 PM	13	24	5	7	100	6	3	1	18	3	0	0	180
4:45 PM	25	20	9	10	89	13	3	1	22	7	7	0	206
5:00 PM	15	31	5	6	83	12	3	5	22	7	4	1	194
5:15 PM	22	15	5	3	42	6	2	4	18	5	2	4	128
5:30 PM													
5:45 PM													
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													
TOTAL VOLUMES =	NL 146	NT 186	NR 40	SL 48	ST 639	SR 77	EL 21	ET 19	ER 171	WL 30	WT 18	WR 9	TOTAL 1404

PM Peak Hr Begins at: 415 PM

PEAK VOLUMES =	69	92	24	28	352	33	12	8	88	20	13	2	741
PEAK HR. FACTOR:		0.856			0.914			0.900			0.625		0.899

CONTROL: 2 Way Stop

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Minaret Rd | DATE: 02/02/2008 | LOCATION: City of Mammoth Lakes

E-W STREET: Meridian Blvd. | DAY: SATURDAY | PROJECT# 08-8016-003

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	1	1	1	1	1	1	1	0	1	1	0	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM	4	17	1	29	33	4	16	26	9	3	16	17	175
3:45 PM	5	16	5	25	24	12	9	29	6	2	24	21	178
4:00 PM	6	14	2	27	38	11	20	24	13	3	23	21	202
4:15 PM	5	18	3	31	22	13	14	41	10	3	19	30	209
4:30 PM	5	20	4	37	30	11	16	39	13	3	21	20	219
4:45 PM	2	19	7	35	23	14	12	40	12	9	16	21	210
5:00 PM	3	13	2	29	26	7	8	36	10	5	37	25	201
5:15 PM	0	14	3	36	20	13	11	34	7	9	16	25	188
5:30 PM													
5:45 PM													
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													
TOTAL VOLUMES =	NL 30	NT 131	NR 27	SL 249	ST 216	SR 85	EL 106	ET 269	ER 80	WL 37	WT 172	WR 180	TOTAL 1582

PM Peak Hr Begins at: 400 PM

PEAK VOLUMES =	18	71	16	130	113	49	62	144	48	18	79	92	840
PEAK HR. FACTOR:		0.905			0.936			0.934			0.909		0.959

CONTROL: Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Canyon Blvd | DATE: 02/02/2008 | LOCATION: City of Mammoth Lakes

E-W STREET: Lake Mary Rd | DAY: SATURDAY | PROJECT# 08-8016-005

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	0	1	0	0	1	0	0	1	0	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM				54		1	1	47			51	43	197
3:45 PM				50		2	2	39			50	39	182
4:00 PM				56		3	1	44			56	49	209
4:15 PM				73		2	1	46			58	37	217
4:30 PM				70		1	2	42			57	45	217
4:45 PM				87		8	5	40			61	56	257
5:00 PM				64		5	4	31			54	49	207
5:15 PM				61		4	3	37			53	55	213
5:30 PM													
5:45 PM													
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													
TOTAL VOLUMES =	NL 0	NT 0	NR 0	SL 515	ST 0	SR 26	EL 19	ET 326	ER 0	WL 0	WT 440	WR 373	TOTAL 1699

PM Peak Hr Begins at: 400 PM

PEAK VOLUMES =	0	0	0	286	0	14	9	172	0	0	232	187	900
PEAK HR. FACTOR:		0.000			0.789			0.963			0.895		0.875

CONTROL: 1 Way Stop (SB)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Mountain Blvd | DATE: 02/02/2008 | LOCATION: City of Mammoth Lakes

E-W STREET: Main St | DAY: SATURDAY | PROJECT# 08-8016-006

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	0	2	0	0	2	0	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM	2	0	2	2	1	1	6	135	5	1	102	2	259
3:45 PM	4	2	2	6	0	2	3	135	6	0	94	6	260
4:00 PM	1	0	0	5	1	3	8	132	5	2	96	9	262
4:15 PM	2	1	1	6	0	2	7	154	12	0	84	4	273
4:30 PM	0	0	4	11	0	7	12	142	4	2	100	7	289
4:45 PM	2	0	1	3	3	5	2	186	6	1	102	4	315
5:00 PM	1	0	4	5	2	3	3	159	5	0	113	7	302
5:15 PM	2	0	3	7	0	11	5	116	3	3	105	9	264
5:30 PM													
5:45 PM													
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													
TOTAL VOLUMES =	NL 14	NT 3	NR 17	SL 45	ST 7	SR 34	EL 46	ET 1159	ER 46	WL 9	WT 796	WR 48	TOTAL 2224

PM Peak Hr Begins at: 415 PM

PEAK VOLUMES =	5	1	10	25	5	17	24	641	27	3	399	22	1179
PEAK HR. FACTOR:		0.800			0.653			0.892			0.883		0.936

CONTROL: 2 Way Stop (N/S)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Old Mammoth Rd DATE: 02/02/2008 LOCATION: City of Mammoth Lakes

E-W STREET: Main St DAY: SATURDAY PROJECT# 08-8016-007

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	0	1	0	0	0	0	2	1	1	2	0	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM	46		17					44	83	19	53		262
3:45 PM	62		13					56	71	20	49		271
4:00 PM	72		16					64	79	16	50		297
4:15 PM	48		14					39	101	21	42		265
4:30 PM	62		19					42	90	31	48		292
4:45 PM	79		17					48	108	24	46		322
5:00 PM	82		15					54	92	28	60		331
5:15 PM	63		15					39	102	27	50		296
5:30 PM													
5:45 PM													
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													

TOTAL	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
VOLUMES =	514	0	126	0	0	0	0	386	726	186	398	0	2336

PM Peak Hr Begins at: 430 PM

PEAK													
VOLUMES =	286	0	66	0	0	0	0	183	392	110	204	0	1241
PEAK HR. FACTOR:		0.907			0.000			0.921			0.892		0.937

CONTROL: Signalized;

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Lakeview Rd | DATE: 02/02/2008 | LOCATION: City of Mammoth Lakes

E-W STREET: Lake Mary Rd | DAY: SATURDAY | PROJECT# 08-8016-008

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	0	1	0	0	1	0	0	1	1	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM				21		7	2	23			41	12	106
3:45 PM				31		7	12	15			39	13	117
4:00 PM				12		8	7	30			45	8	110
4:15 PM				5		4	4	41			43	17	114
4:30 PM				8		2	2	33			47	11	103
4:45 PM				6		3	3	36			65	10	123
5:00 PM				6		11	10	30			46	15	118
5:15 PM				7		2	2	34			42	16	103
5:30 PM													
5:45 PM													
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													
TOTAL VOLUMES =	NL 0	NT 0	NR 0	SL 96	ST 0	SR 44	EL 42	ET 242	ER 0	WL 0	WT 368	WR 102	TOTAL 894

PM Peak Hr Begins at: 415 PM

PEAK VOLUMES =	0	0	0	25	0	20	19	140	0	0	201	53	458
PEAK HR. FACTOR:		0.000			0.662			0.883			0.847		0.931

CONTROL: 1 Way Stop (SB)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: US Post Office Frontage Rd DATE: 02/02/2008 LOCATION: City of Mammoth Lakes

E-W STREET: Main St DAY: SATURDAY PROJECT# 08-8016-009

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	0	2	0	0	2	0	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM	3	1	9	7	0	8	11	121	17	8	91	14	290
3:45 PM	3	0	10	2	0	10	11	138	11	13	89	17	304
4:00 PM	3	0	11	2	0	10	11	118	11	13	111	17	307
4:15 PM	6	0	10	5	0	10	12	139	12	9	97	10	310
4:30 PM	4	2	4	9	0	18	10	136	10	5	96	15	309
4:45 PM	14	5	20	17	2	23	19	162	10	19	84	19	394
5:00 PM	7	3	11	5	0	19	6	133	14	8	98	17	321
5:15 PM	1	2	10	10	0	16	7	105	9	5	108	5	278
5:30 PM													
5:45 PM													
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													
TOTAL VOLUMES =	NL 41	NT 13	NR 85	SL 57	ST 2	SR 114	EL 87	ET 1052	ER 94	WL 80	WT 774	WR 114	TOTAL 2513

PM Peak Hr Begins at: 415 PM

PEAK VOLUMES =	31	10	45	36	2	70	47	570	46	41	375	61	1334
PEAK HR. FACTOR:		0.551			0.643			0.868			0.970		0.846

CONTROL: 2 Way Stop (N/S)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Center St | DATE: 02/02/2008 | LOCATION: City of Mammoth Lakes

E-W STREET: Main St | DAY: SATURDAY | PROJECT# 08-8016-010

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	0	2	0	0	2	0	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM	3	0	5	3	0	6	6	127	7	9	108	7	281
3:45 PM	4	0	10	4	0	4	6	133	8	12	97	8	286
4:00 PM	1	1	12	2	0	5	2	115	6	10	128	7	289
4:15 PM	5	0	7	1	0	7	4	137	11	4	104	7	287
4:30 PM	6	1	19	3	1	9	6	133	9	3	99	11	300
4:45 PM	6	0	18	1	0	11	4	179	16	7	109	12	363
5:00 PM	5	0	11	5	0	8	5	139	8	2	113	8	304
5:15 PM	9	0	15	1	0	3	1	129	7	14	93	2	274
5:30 PM													
5:45 PM													
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													
TOTAL VOLUMES =	NL 39	NT 2	NR 97	SL 20	ST 1	SR 53	EL 34	ET 1092	ER 72	WL 61	WT 851	WR 62	TOTAL 2384

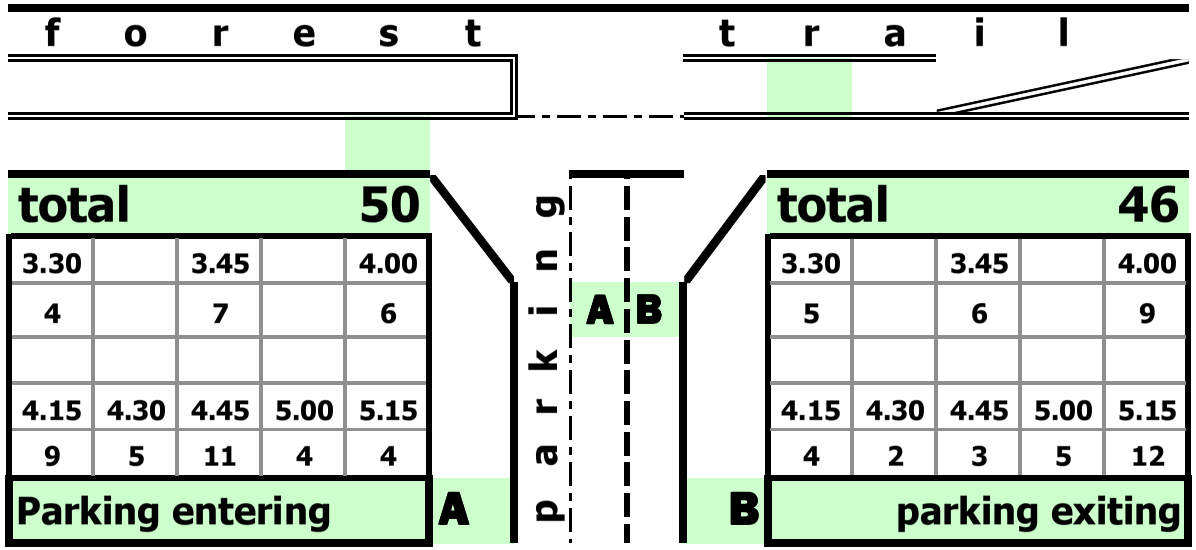
PM Peak Hr Begins at: 415 PM

PEAK VOLUMES =	22	1	55	10	1	35	19	588	44	16	425	38	1254
PEAK HR. FACTOR:		0.750			0.885			0.818			0.936		0.864

CONTROL: 2-Way Stop Sign (NS)

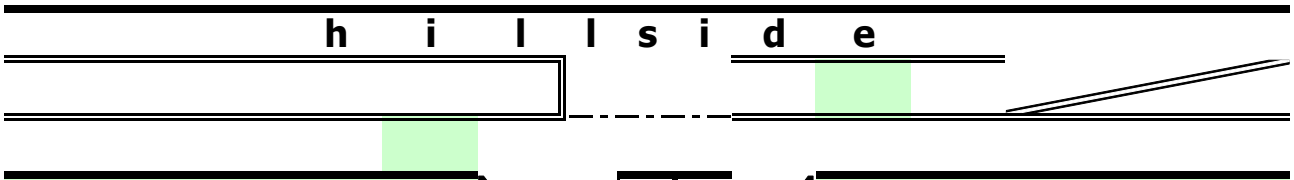
Village Parking summary pm (15 minute time interval)

Saturday, March 1, 2008



Westin Valet summary pm (15 minute time interval)

Saturday, March 1, 2008



total				34
3.30		3.45		4.00
4		2		5
4.15	4.30	4.45	5.00	5.15
5	3	3	4	8
Park entering total				

A

p a r k i n g

A B

B

total				19
3.30		3.45		4.00
3		2		1
4.15	4.30	4.45	5.00	5.15
1	0	0	5	7
Park exiting total				

3.30		3.45		4.00
2		1		1
4.15	4.30	4.45	5.00	5.15
2	1	1	1	1
Park enter hotel valet				

3.30		3.45		4.00
1				
4.15	4.30	4.45	5.00	5.15
			1	4
Park exit hotel valet				

3.30		3.45		4.00
4.15	4.30	4.45	5.00	5.15
1		1	1	2
Enter restaurant valet				

3.30		3.45		4.00
4.15	4.30	4.45	5.00	5.15
			2	1
exit restaurant valet				

3.30		3.45		4.00
2		1		4
4.15	4.30	4.45	5.00	5.15
2	2	1	2	5
Park enter self park				

3.30		3.45		4.00
2		2		1
4.15	4.30	4.45	5.00	5.15
1			2	2
Park exit self park				

APPENDIX B

EXISTING
LEVEL OF SERVICE WORKSHEETS

Mammoth Crossings
Existing Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #1 Minaret Rd/ Meridian Blvd

Cycle (sec):	60	Critical Vol./Cap.(X):	0.453
Loss Time (sec):	16 (Y+R=4.0 sec)	Average Delay (sec/veh):	19.9
Optimal Cycle:	43	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0	0 1	0	1	0 0 1	0	1	0 1 1	0	1	0 1 0
Volume Module:												
Base Vol:	18	71	16	130	113	49	62	144	48	18	79	92
Growth Adj:	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43
Initial Bse:	26	102	23	186	162	70	89	206	69	26	113	132
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	26	102	23	186	162	70	89	206	69	26	113	132
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	29	113	25	207	180	78	99	229	76	29	126	146
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	29	113	25	207	180	78	99	229	76	29	126	146
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	29	113	25	207	180	78	99	229	76	29	126	146
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.97	0.97	0.95	0.96	0.96	0.95	0.91	0.91	0.95	0.87	0.87
Lanes:	1.00	0.82	0.18	1.00	0.70	0.30	1.00	1.50	0.50	1.00	1.00	1.00
Final Sat.:	1805	1507	340	1805	1266	549	1805	2607	869	1805	1659	1659
Capacity Analysis Module:												
Vol/Sat:	0.02	0.07	0.07	0.11	0.14	0.14	0.05	0.09	0.09	0.02	0.08	0.09
Crit Moves:		****		****			****					****
Green/Cycle:	0.04	0.17	0.17	0.25	0.38	0.38	0.12	0.27	0.27	0.05	0.19	0.19
Volume/Cap:	0.38	0.45	0.45	0.45	0.38	0.38	0.45	0.33	0.33	0.33	0.39	0.45
Delay/Veh:	31.1	23.7	23.7	19.6	14.0	14.0	26.0	17.9	17.9	29.8	21.4	21.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	31.1	23.7	23.7	19.6	14.0	14.0	26.0	17.9	17.9	29.8	21.4	21.9
LOS by Move:	C	C	C	B	B	B	C	B	B	C	C	C
HCM2kAvgQ:	1	3	3	4	4	4	2	3	3	1	3	3

Note: Queue reported is the number of cars per lane.

Mammoth Crossings
Existing Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 Minaret Rd/Main St-Lake Mary Rd

Cycle (sec):	60	Critical Vol./Cap.(X):	0.612
Loss Time (sec):	16 (Y+R=4.0 sec)	Average Delay (sec/veh):	21.9
Optimal Cycle:	52	Level Of Service:	C

Street Name:	Minaret Rd						Main St-Lake Mary Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0	1 0 1	2	0	0 1 0	1	0	2 0 1	1	0	2 0 1
Volume Module:												
Base Vol:	159	118	80	480	183	127	97	465	197	65	337	105
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	159	118	80	480	183	127	97	465	197	65	337	105
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	159	118	80	480	183	127	97	465	197	65	337	105
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	167	124	84	505	193	134	102	489	207	68	355	111
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	167	124	84	505	193	134	102	489	207	68	355	111
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	167	124	84	505	193	134	102	489	207	68	355	111
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	1.00	0.85	0.92	0.94	0.94	0.95	0.95	0.85	0.95	0.95	0.85
Lanes:	1.00	1.00	1.00	2.00	0.59	0.41	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1805	1900	1615	3502	1053	731	1805	3610	1615	1805	3610	1615
Capacity Analysis Module:												
Vol/Sat:	0.09	0.07	0.05	0.14	0.18	0.18	0.06	0.14	0.13	0.04	0.10	0.07
Crit Moves:	****			****			****			****		
Green/Cycle:	0.15	0.15	0.15	0.30	0.30	0.30	0.10	0.22	0.22	0.06	0.18	0.48
Volume/Cap:	0.61	0.43	0.34	0.48	0.61	0.61	0.55	0.61	0.58	0.61	0.55	0.14
Delay/Veh:	27.9	24.2	23.6	17.6	20.2	20.2	28.9	22.5	23.3	37.1	23.4	8.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	27.9	24.2	23.6	17.6	20.2	20.2	28.9	22.5	23.3	37.1	23.4	8.8
LOS by Move:	C	C	C	B	C	C	C	C	C	D	C	A
HCM2kAvgQ:	4	3	2	4	6	6	3	5	4	2	4	1

Note: Queue reported is the number of cars per lane.

Mammoth Crossings
Existing Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #1003 Minaret Rd/7B

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: A[0.0]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Lanes:	0	0	1	0 0	0	0	1	0 0	0	1	0	0 1	0	0	1!	0 0
Volume Module:																
Base Vol:	0	357	0		0	445	0		0	0	0		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	357	0		0	445	0		0	0	0		0	0	0	
Added Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	357	0		0	445	0		0	0	0		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.95	0.95	0.95		0.95	0.95	0.95		0.95	0.95	0.95		0.95	0.95	0.95	
PHF Volume:	0	376	0		0	468	0		0	0	0		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
FinalVolume:	0	376	0		0	468	0		0	0	0		0	0	0	
Critical Gap Module:																
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	6.5	6.2	6.4	6.5	6.2				
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	4.0	3.3	3.5	4.0	3.3				
Capacity Module:																
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	844	844	468	844	844	376				
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	336	302	599	336	302	675				
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	336	302	599	336	302	675				
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.00	0.00	0.00	0.00	0.00	0.00				
Level Of Service Module:																
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx				
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
LOS by Move:	*	*	*	*	*	*	*	*	*	*	*	*				
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT				
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0	xxxx	xxxxx	xxxx	0	xxxxx				
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*				
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			xxxxxx						
ApproachLOS:	*			*			*			*						

Note: Queue reported is the number of cars per lane.

Mammoth Crossings
Existing Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #1004 Minaret Road/Forest Trail

Average Delay (sec/veh): 6.7 Worst Case Level Of Service: E[47.6]

Street Name:	Minaret Road								Forest Trail							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Lanes:	0	0	1!	0 0	0	0	1!	0 0	0	0	1!	0 0	0	0	1!	0 0
Volume Module:																
Base Vol:	69	92	24		28	352	33		12	8	88		20	13	2	
Growth Adj:	1.43	1.43	1.43		1.43	1.43	1.43		1.43	1.43	1.43		1.43	1.43	1.43	
Initial Bse:	99	132	34		40	503	47		17	11	126		29	19	3	
Added Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	99	132	34		40	503	47		17	11	126		29	19	3	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90	
PHF Volume:	110	146	38		44	559	52		19	13	140		32	21	3	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
FinalVolume:	110	146	38		44	559	52		19	13	140		32	21	3	
Critical Gap Module:																
Critical Gp:	4.1	xxxx	xxxxx		4.1	xxxx	xxxxx		7.1	6.5	6.2		7.1	6.5	6.2	
FollowUpTim:	2.2	xxxx	xxxxx		2.2	xxxx	xxxxx		3.5	4.0	3.3		3.5	4.0	3.3	
Capacity Module:																
Cnflict Vol:	612	xxxx	xxxxx		184	xxxx	xxxxx		1071	1078	586		1135	1085	165	
Potent Cap.:	977	xxxx	xxxxx		1403	xxxx	xxxxx		200	220	514		181	218	884	
Move Cap.:	977	xxxx	xxxxx		1403	xxxx	xxxxx		162	187	514		111	185	884	
Volume/Cap:	0.11	xxxx	xxxx		0.03	xxxx	xxxx		0.12	0.07	0.27		0.29	0.11	0.00	
Level Of Service Module:																
2Way95thQ:	0.4	xxxx	xxxxx		0.1	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx	
Control Del:	9.1	xxxx	xxxxx		7.7	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
LOS by Move:	A	*	*		A	*	*		*	*	*		*	*	*	
Movement:	LT -	LTR -	RT		LT -	LTR -	RT		LT -	LTR -	RT		LT -	LTR -	RT	
Shared Cap.:	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	375	xxxxx		xxxx	138	xxxxx	
SharedQueue:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	2.3	xxxxx		xxxxx	1.7	xxxxx	
Shrd ConDel:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	22.5	xxxxx		xxxxx	47.6	xxxxx	
Shared LOS:	*	*	*		*	*	*		*	C	*		*	E	*	
ApproachDel:	xxxxxx				xxxxxx				22.5				47.6			
ApproachLOS:	*				*				C				E			

Note: Queue reported is the number of cars per lane.

Mammoth Crossings
Existing Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #1005 Kelly Rd/Lake Mary Rd

Average Delay (sec/veh): 3.6 Worst Case Level Of Service: B[11.3]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Rights:	Include				Include				Include				Include			
Lanes:	0	0	1!	0 0	0	0	0	0 0	0	0	0	1 0	0	1	0	0 0
Volume Module:																
Base Vol:	31	0	61	0	0	0	0	111	34	109	184	0				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	31	0	61	0	0	0	0	111	34	109	184	0				
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0				
Initial Fut:	31	0	61	0	0	0	0	111	34	109	184	0				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90				
PHF Volume:	34	0	68	0	0	0	0	123	38	121	204	0				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
FinalVolume:	34	0	68	0	0	0	0	123	38	121	204	0				
Critical Gap Module:																
Critical Gp:	6.4	6.5	6.2	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx				
FollowUpTim:	3.5	4.0	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx				
Capacity Module:																
Cnflict Vol:	589	589	142	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	161	xxxx	xxxxx				
Potent Cap.:	474	423	911	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1430	xxxx	xxxxx				
Move Cap.:	440	384	911	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1430	xxxx	xxxxx				
Volume/Cap:	0.08	0.00	0.07	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.08	xxxx	xxxx				
Level Of Service Module:																
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.3	xxxx	xxxxx				
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.7	xxxx	xxxxx				
LOS by Move:	*	*	*	*	*	*	*	*	*	A	*	*				
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT				
Shared Cap.:	xxxx	670	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx				
SharedQueue:	xxxxx	0.5	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.3	xxxx	xxxxx				
Shrd ConDel:	xxxxx	11.3	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.7	xxxx	xxxxx				
Shared LOS:	*	B	*	*	*	*	*	*	*	A	*	*				
ApproachDel:	11.3			xxxxxx			xxxxxx			xxxxxx						
ApproachLOS:	B			*			*			*						

Note: Queue reported is the number of cars per lane.

Mammoth Crossings
Existing Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #1006 Lakeview/Lake Mary Road

Average Delay (sec/veh): 1.4 Worst Case Level Of Service: B[10.5]

Street Name:	Lakeview								Lake Mary Road							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Rights:	Include				Include				Include				Include			
Lanes:	0	0	0	0 0	1	0	0	0 1	0	1	0	0 0	0	0	1	0 1
Volume Module:																
Base Vol:	0	0	0	25	0	20	19	140	0	0	201	53				
Growth Adj:	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43				
Initial Bse:	0	0	0	36	0	29	27	200	0	0	287	76				
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0				
Initial Fut:	0	0	0	36	0	29	27	200	0	0	287	76				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90				
PHF Volume:	0	0	0	40	0	32	30	222	0	0	319	84				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
FinalVolume:	0	0	0	40	0	32	30	222	0	0	319	84				
Critical Gap Module:																
Critical Gp:	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
FollowUpTim:	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
Capacity Module:																
Cnflict Vol:	xxxx	xxxx	xxxxx	602	xxxx	319	404	xxxx	xxxxx	xxxx	xxxx	xxxxx				
Potent Cap.:	xxxx	xxxx	xxxxx	466	xxxx	726	1166	xxxx	xxxxx	xxxx	xxxx	xxxxx				
Move Cap.:	xxxx	xxxx	xxxxx	456	xxxx	726	1166	xxxx	xxxxx	xxxx	xxxx	xxxxx				
Total Cap:	559	541	xxxxx	671	594	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx				
Volume/Cap:	xxxx	xxxx	xxxx	0.06	xxxx	0.04	0.03	xxxx	xxxx	xxxx	xxxx	xxxx				
Level Of Service Module:																
2Way95thQ:	xxxx	xxxx	xxxxx	0.2	xxxx	0.1	0.1	xxxx	xxxxx	xxxx	xxxx	xxxxx				
Control Del:	xxxxx	xxxx	xxxxx	10.7	xxxx	10.2	8.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
LOS by Move:	*	*	*	B	*	B	A	*	*	*	*	*				
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT				
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx				
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
Shared LOS:	*	*	*	*	*	*	A	*	*	*	*	*				
ApproachDel:	xxxxxx			10.5			xxxxxx			xxxxxx						
ApproachLOS:	*			B			*			*						

Note: Queue reported is the number of cars per lane.

Mammoth Crossings
Existing Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #1007 Canyon/Lake Mary Road

Cycle (sec): 60 Critical Vol./Cap.(X): 0.394
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 12.1
Optimal Cycle: 33 Level Of Service: B

Street Name:	Canyon						Lake Mary Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0	0 1	0	1! 0	0	1	0 1	0 0	0	0 1	0 1
Volume Module:												
Base Vol:	0	0	0	286	0	14	9	172	0	0	232	187
Growth Adj:	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43
Initial Bse:	0	0	0	409	0	20	13	246	0	0	332	267
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	409	0	20	13	246	0	0	332	267
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	0	0	0	431	0	21	14	259	0	0	349	281
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	431	0	21	14	259	0	0	349	281
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	431	0	21	14	259	0	0	349	281
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	0.95	1.00	0.95	0.52	1.00	1.00	1.00	1.00	0.85
Lanes:	1.00	1.00	0.00	1.91	0.00	0.09	1.00	1.00	0.00	0.00	1.00	1.00
Final Sat.:	1900	1900	0	3443	0	161	979	1900	0	0	1900	1615
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.13	0.00	0.13	0.01	0.14	0.00	0.00	0.18	0.17
Crit Moves:						****					****	
Green/Cycle:	0.00	0.00	0.00	0.33	0.00	0.33	0.47	0.47	0.00	0.00	0.47	0.47
Volume/Cap:	0.00	0.00	0.00	0.38	0.00	0.39	0.03	0.29	0.00	0.00	0.39	0.37
Delay/Veh:	0.0	0.0	0.0	15.4	0.0	15.6	8.7	10.1	0.0	0.0	10.7	10.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	15.4	0.0	15.6	8.7	10.1	0.0	0.0	10.7	10.6
LOS by Move:	A	A	A	B	A	B	A	B	A	A	B	B
HCM2kAvgQ:	0	0	0	3	0	4	0	3	0	0	4	4

Note: Queue reported is the number of cars per lane.

Mammoth Crossings
Existing Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #1008 Mountain Blvd/Main Street

Average Delay (sec/veh): 2.1 Worst Case Level Of Service: E[38.0]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0	0 1!	0	0	0 1!	0	0	1 0	1	1	0	1 0 1 1 0
Volume Module:												
Base Vol:	5	1	10	25	5	17	24	641	27	3	399	22
Growth Adj:	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43
Initial Bse:	7	1	14	36	7	24	34	917	39	4	571	31
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	7	1	14	36	7	24	34	917	39	4	571	31
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	8	2	15	38	8	26	36	965	41	5	601	33
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	8	2	15	38	8	26	36	965	41	5	601	33
Critical Gap Module:												
Critical Gp:	7.5	6.5	6.9	7.5	6.5	6.9	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	3.5	4.0	3.3	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	1371	1700	503	1182	1704	317	634	xxxx	xxxxx	1006	xxxx	xxxxx
Potent Cap.:	107	93	519	148	93	685	959	xxxx	xxxxx	697	xxxx	xxxxx
Move Cap.:	93	89	519	137	88	685	959	xxxx	xxxxx	697	xxxx	xxxxx
Volume/Cap:	0.08	0.02	0.03	0.28	0.09	0.04	0.04	xxxx	xxxx	0.01	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.1	xxxx	xxxxx	0.0	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.9	xxxx	xxxxx	10.2	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	B	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	190	xxxxx	xxxx	178	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	0.4	xxxxx	xxxxx	1.8	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	26.7	xxxxx	xxxxx	38.0	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	D	*	*	E	*	*	*	*	*	*	*
ApproachDel:		26.7			38.0			xxxxxx			xxxxxx	
ApproachLOS:		D			E			*			*	

Note: Queue reported is the number of cars per lane.

Mammoth Crossings
Existing Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #1009 Post Office Frontage/Main St

Average Delay (sec/veh): 15.1 Worst Case Level Of Service: F[155.4]

Street Name:	Post Office Frontage						Main Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1! 0 0			0 1 0 0 1			1 0 1 1 0			1 0 1 1 0		
Volume Module:												
Base Vol:	31	10	45	36	2	70	47	570	46	41	375	61
Growth Adj:	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43
Initial Bse:	44	14	64	51	3	100	67	815	66	59	536	87
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	44	14	64	51	3	100	67	815	66	59	536	87
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	47	15	68	54	3	105	71	858	69	62	564	92
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	47	15	68	54	3	105	71	858	69	62	564	92
Critical Gap Module:												
Critical Gp:	7.5	6.5	6.9	7.5	6.5	6.9	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	3.5	4.0	3.3	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	1441	1814	464	1312	1803	328	656	xxxx	xxxxx	927	xxxx	xxxxx
Potent Cap.:	95	79	551	118	80	673	941	xxxx	xxxxx	746	xxxx	xxxxx
Move Cap.:	68	67	551	76	68	673	941	xxxx	xxxxx	746	xxxx	xxxxx
Volume/Cap:	0.68	0.22	0.12	0.71	0.04	0.16	0.08	xxxx	xxxx	0.08	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	0.6	0.2	xxxx	xxxxx	0.3	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	11.3	9.1	xxxx	xxxxx	10.3	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	B	A	*	*	B	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	126	xxxxx	76	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	7.2	xxxxx	3.6	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	155	xxxxx	135.8	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	F	*	F	*	*	*	*	*	*	*	*
ApproachDel:	155.4			55.1			xxxxxx			xxxxxx		
ApproachLOS:	F			F			*			*		

Note: Queue reported is the number of cars per lane.

Mammoth Crossings
Existing Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #1010 Center St/Main St

Average Delay (sec/veh): 3.2 Worst Case Level Of Service: E[36.2]

Street Name:	Center St						Main St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1! 0 0			0 1 0 0 1			1 0 1 1 0			1 0 1 1 0		
Volume Module:												
Base Vol:	22	1	55	10	1	35	19	588	44	16	425	38
Growth Adj:	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43
Initial Bse:	31	1	79	14	1	50	27	841	63	23	608	54
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	31	1	79	14	1	50	27	841	63	23	608	54
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	33	2	83	15	2	53	29	885	66	24	640	57
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	33	2	83	15	2	53	29	885	66	24	640	57
Critical Gap Module:												
Critical Gp:	7.5	6.5	6.9	7.5	6.5	6.9	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	3.5	4.0	3.3	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	1344	1721	476	1217	1725	348	697	xxxx	xxxxx	951	xxxx	xxxxx
Potent Cap.:	112	90	541	139	90	653	909	xxxx	xxxxx	730	xxxx	xxxxx
Move Cap.:	97	85	541	111	84	653	909	xxxx	xxxxx	730	xxxx	xxxxx
Volume/Cap:	0.34	0.02	0.15	0.14	0.02	0.08	0.03	xxxx	xxxx	0.03	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	0.3	0.1	xxxx	xxxxx	0.1	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	11.0	9.1	xxxx	xxxxx	10.1	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	B	A	*	*	B	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	229	xxxxx	107	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	2.7	xxxxx	0.5	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	36.2	xxxxx	44.5	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	E	*	E	*	*	*	*	*	*	*	*
ApproachDel:	36.2			19.0			xxxxxx			xxxxxx		
ApproachLOS:	E			C			*			*		

Note: Queue reported is the number of cars per lane.

Mammoth Crossings
Existing Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #1011 Old Mammoth Rd/ Main St

Cycle (sec):	60	Critical Vol./Cap.(X):	0.701	
Loss Time (sec):	12 (Y+R=4.0 sec)	Average Delay (sec/veh):	14.1	
Optimal Cycle:	52	Level Of Service:	B	

Street Name:	Old Mammoth Rd						Main St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R
Control:	Protected			Protected			Prot+Permit			Prot+Permit		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	0	0 1	0	0 0	0 0	0	0 2	0 1	1	0 2	0 0
Volume Module:												
Base Vol:	296	0	74	0	0	0	0	314	572	110	263	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	296	0	74	0	0	0	0	314	572	110	263	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	296	0	74	0	0	0	0	314	572	110	263	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	312	0	78	0	0	0	0	331	602	116	277	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	312	0	78	0	0	0	0	331	602	116	277	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	312	0	78	0	0	0	0	331	602	116	277	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	1.00	0.85	1.00	1.00	1.00	1.00	0.95	0.98	0.95	0.95	1.00
Lanes:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	2.00	1.00	1.00	2.00	0.00
Final Sat.:	1805	0	1615	0	0	0	0	3610	1857	1805	3610	0
Capacity Analysis Module:												
Vol/Sat:	0.17	0.00	0.05	0.00	0.00	0.00	0.00	0.09	0.32	0.06	0.08	0.00
Crit Moves:	****								****	****		
Green/Cycle:	0.25	0.00	0.25	0.00	0.00	0.00	0.00	0.46	0.46	0.62	0.55	0.00
Volume/Cap:	0.70	0.00	0.20	0.00	0.00	0.00	0.00	0.20	0.70	0.18	0.14	0.00
Delay/Veh:	25.6	0.0	18.2	0.0	0.0	0.0	0.0	9.6	15.4	4.9	6.5	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	25.6	0.0	18.2	0.0	0.0	0.0	0.0	9.6	15.4	4.9	6.5	0.0
LOS by Move:	C	A	B	A	A	A	A	A	B	A	A	A
HCM2kAvgQ:	7	0	1	0	0	0	0	2	10	1	1	0

Note: Queue reported is the number of cars per lane.

APPENDIX C

CUMULATIVE BASELINE LEVEL OF SERVICE WORKSHEETS

Mammoth Crossings
Existing plus Approved Projects Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #1 Minaret Rd/ Meridian Blvd

Cycle (sec): 95 Critical Vol./Cap.(X): 0.550
Loss Time (sec): 16 (Y+R=4.0 sec) Average Delay (sec/veh): 31.6
Optimal Cycle: 52 Level Of Service: C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0	0 1	0	1	0 0 1	0	1	0 1 1	0	1	0 1 0
Volume Module:												
Base Vol:	18	71	16	130	113	49	62	144	48	18	79	92
Growth Adj:	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43
Initial Bse:	26	102	23	186	162	70	89	206	69	26	113	132
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	82	110	2	45	88	4	26	34	72	-2	85	-10
Initial Fut:	108	212	25	231	250	74	115	240	141	24	198	122
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	120	235	28	257	277	82	127	267	156	26	220	135
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	120	235	28	257	277	82	127	267	156	26	220	135
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	120	235	28	257	277	82	127	267	156	26	220	135
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.98	0.98	0.95	0.97	0.97	0.95	0.90	0.90	0.95	0.90	0.90
Lanes:	1.00	0.89	0.11	1.00	0.77	0.23	1.00	1.26	0.74	1.00	1.24	0.76
Final Sat.:	1805	1673	197	1805	1415	420	1805	2151	1261	1805	2109	1295
Capacity Analysis Module:												
Vol/Sat:	0.07	0.14	0.14	0.14	0.20	0.20	0.07	0.12	0.12	0.01	0.10	0.10
Crit Moves:		****		****			****				****	
Green/Cycle:	0.13	0.26	0.26	0.26	0.38	0.38	0.13	0.28	0.28	0.03	0.19	0.19
Volume/Cap:	0.51	0.55	0.55	0.55	0.51	0.51	0.55	0.44	0.44	0.44	0.55	0.55
Delay/Veh:	40.4	32.0	32.0	31.9	23.1	23.1	41.7	28.1	28.1	50.0	35.9	35.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	40.4	32.0	32.0	31.9	23.1	23.1	41.7	28.1	28.1	50.0	35.9	35.9
LOS by Move:	D	C	C	C	C	C	D	C	C	D	D	D
HCM2kAvgQ:	4	7	7	7	8	8	4	6	6	1	6	6

Note: Queue reported is the number of cars per lane.

Mammoth Crossings
Existing plus Approved Projects Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 Minaret Rd/Main St-Lake Mary Rd

Cycle (sec): 80 Critical Vol./Cap.(X): 0.763
Loss Time (sec): 16 (Y+R=4.0 sec) Average Delay (sec/veh): 30.0
Optimal Cycle: 73 Level Of Service: C

Street Name:	Minaret Rd						Main St-Lake Mary Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0	1 0 1	2	0	0 1 0	1	0	2 0 1	1	0	2 0 1
Volume Module:												
Base Vol:	159	118	80	480	183	127	97	465	197	65	337	105
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	159	118	80	480	183	127	97	465	197	65	337	105
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	64	55	45	-41	65	0	9	-35	113	37	6	96
Initial Fut:	223	173	125	439	248	127	106	430	310	102	343	201
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	235	182	132	462	261	134	112	453	326	107	361	212
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	235	182	132	462	261	134	112	453	326	107	361	212
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	235	182	132	462	261	134	112	453	326	107	361	212
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	1.00	0.85	0.92	0.95	0.95	0.95	0.95	0.85	0.95	0.95	0.85
Lanes:	1.00	1.00	1.00	2.00	0.66	0.34	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1805	1900	1615	3502	1192	611	1805	3610	1615	1805	3610	1615
Capacity Analysis Module:												
Vol/Sat:	0.13	0.10	0.08	0.13	0.22	0.22	0.06	0.13	0.20	0.06	0.10	0.13
Crit Moves:	****				****				****	****		
Green/Cycle:	0.17	0.17	0.17	0.29	0.29	0.29	0.13	0.26	0.26	0.08	0.21	0.50
Volume/Cap:	0.76	0.56	0.48	0.46	0.76	0.76	0.47	0.47	0.76	0.76	0.47	0.26
Delay/Veh:	42.4	32.7	31.3	23.8	32.7	32.7	33.7	25.1	35.0	57.7	28.1	11.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	42.4	32.7	31.3	23.8	32.7	32.7	33.7	25.1	35.0	57.7	28.1	11.7
LOS by Move:	D	C	C	C	C	C	C	C	D	E	C	B
HCM2kAvgQ:	7	5	4	5	11	11	3	5	9	4	5	3

Note: Queue reported is the number of cars per lane.

Mammoth Crossings
Existing plus Approved Projects Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #1003 Minaret Rd/7B

Average Delay (sec/veh): 0.7 Worst Case Level Of Service: B[14.3]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Lanes:	0	0	0	1 0	0	1	0	0 0	0	1	0	0 1	0	0	1!	0 0
Volume Module:																
Base Vol:	0	478	7		34	623	0		0	0	0		6	0	29	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	478	7		34	623	0		0	0	0		6	0	29	
Added Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	478	7		34	623	0		0	0	0		6	0	29	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.95	0.95	0.95		0.95	0.95	0.95		0.95	0.95	0.95		0.95	0.95	0.95	
PHF Volume:	0	503	7		36	656	0		0	0	0		6	0	31	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
FinalVolume:	0	503	7		36	656	0		0	0	0		6	0	31	
Critical Gap Module:																
Critical Gp:	xxxxx	xxxx	xxxxx		4.1	xxxx	xxxxx		7.1	6.5	6.2		6.4	6.5	6.2	
FollowUpTim:	xxxxx	xxxx	xxxxx		2.2	xxxx	xxxxx		3.5	4.0	3.3		3.5	4.0	3.3	
Capacity Module:																
Cnflict Vol:	xxxx	xxxx	xxxxx		511	xxxx	xxxxx		1249	1238	656		1234	1234	507	
Potent Cap.:	xxxx	xxxx	xxxxx		1065	xxxx	xxxxx		151	177	469		197	178	570	
Move Cap.:	xxxx	xxxx	xxxxx		1065	xxxx	xxxxx		139	171	469		192	172	570	
Volume/Cap:	xxxx	xxxx	xxxx		0.03	xxxx	xxxx		0.00	0.00	0.00		0.03	0.00	0.05	
Level Of Service Module:																
2Way95thQ:	xxxx	xxxx	xxxxx		0.1	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx	
Control Del:	xxxxx	xxxx	xxxxx		8.5	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
LOS by Move:	*	*	*		A	*	*		*	*	*		*	*	*	
Movement:	LT -	LTR -	RT		LT -	LTR -	RT		LT -	LTR -	RT		LT -	LTR -	RT	
Shared Cap.:	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		0	xxxx	xxxxx		xxxx	426	xxxxx	
SharedQueue:	xxxxx	xxxx	xxxxx		0.1	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	0.3	xxxxx	
Shrd ConDel:	xxxxx	xxxx	xxxxx		8.5	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	14.3	xxxxx	
Shared LOS:	*	*	*		A	*	*		*	*	*		*	B	*	
ApproachDel:	xxxxxx				xxxxxx				xxxxxx				14.3			
ApproachLOS:	*				*				*				B			

Note: Queue reported is the number of cars per lane.

Mammoth Crossings
Existing plus Approved Projects Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #1004 Minaret Road/Forest Trail

Average Delay (sec/veh): 73.3 Worst Case Level Of Service: F[724.3]

Street Name:	Minaret Road								Forest Trail							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Lanes:	0	0	1!	0 0	0	0	1!	0 0	0	0	1!	0 0	0	0	1!	0 0
Volume Module:																
Base Vol:	69	92	24		28	352	33		12	8	88		20	13	2	
Growth Adj:	1.43	1.43	1.43		1.43	1.43	1.43		1.43	1.43	1.43		1.43	1.43	1.43	
Initial Bse:	99	132	34		40	503	47		17	11	126		29	19	3	
Added Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
PasserByVol:	63	10	4		0	-5	1		-7	97	6		3	2	0	
Initial Fut:	162	142	38		40	498	48		10	108	132		32	21	3	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90	
PHF Volume:	180	157	43		44	554	54		11	120	146		35	23	3	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
FinalVolume:	180	157	43		44	554	54		11	120	146		35	23	3	
Critical Gap Module:																
Critical Gp:	4.1	xxxx	xxxxx		4.1	xxxx	xxxxx		7.1	6.5	6.2		7.1	6.5	6.2	
FollowUpTim:	2.2	xxxx	xxxxx		2.2	xxxx	xxxxx		3.5	4.0	3.3		3.5	4.0	3.3	
Capacity Module:																
Cnflict Vol:	607	xxxx	xxxxx		200	xxxx	xxxxx		1220	1229	581		1341	1234	179	
Potent Cap.:	981	xxxx	xxxxx		1384	xxxx	xxxxx		158	179	518		131	178	870	
Move Cap.:	981	xxxx	xxxxx		1384	xxxx	xxxxx		113	137	518		20	136	870	
Volume/Cap:	0.18	xxxx	xxxx		0.03	xxxx	xxxx		0.10	0.88	0.28		1.79	0.17	0.00	
Level Of Service Module:																
2Way95thQ:	0.7	xxxx	xxxxx		0.1	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx	
Control Del:	9.5	xxxx	xxxxx		7.7	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
LOS by Move:	A	*	*		A	*	*		*	*	*		*	*	*	
Movement:	LT -	LTR -	RT		LT -	LTR -	RT		LT -	LTR -	RT		LT -	LTR -	RT	
Shared Cap.:	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	220	xxxxx		xxxx	31	xxxxx	
SharedQueue:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	14.5	xxxxx		xxxxx	7.0	xxxxx	
Shrd ConDel:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	195	xxxxx		xxxxx	724	xxxxx	
Shared LOS:	*	*	*		*	*	*		*	F	*		*	F	*	
ApproachDel:	xxxxxx				xxxxxx				194.6				724.3			
ApproachLOS:	*				*				F				F			

Note: Queue reported is the number of cars per lane.

Mammoth Crossings
Existing plus Approved Projects Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #1005 Kelly Rd/Lake Mary Rd

Average Delay (sec/veh): 3.7 Worst Case Level Of Service: B[11.8]

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
Control:	Stop Sign						Stop Sign						Uncontrolled						Uncontrolled					
Rights:	Include						Include						Include						Include					
Lanes:	0	0	1!	0	0		0	0	0	0	0		0	0	0	1	0		0	1	0	0	0	
Volume Module:																								
Base Vol:	31		0		61		0		0		0		0		111		34		109		184		0	
Growth Adj:	1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Initial Bse:	31		0		61		0		0		0		0		111		34		109		184		0	
Added Vol:	0		0		0		0		0		0		0		0		0		0		0		0	
PasserByVol:	6		0		34		0		0		0		0		24		48		-2		10		0	
Initial Fut:	37		0		95		0		0		0		0		135		82		107		194		0	
User Adj:	1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
PHF Adj:	0.95		0.95		0.95		0.95		0.95		0.95		0.95		0.95		0.95		0.95		0.95		0.95	
PHF Volume:	39		0		100		0		0		0		0		142		86		113		204		0	
Reduct Vol:	0		0		0		0		0		0		0		0		0		0		0		0	
FinalVolume:	39		0		100		0		0		0		0		142		86		113		204		0	
Critical Gap Module:																								
Critical Gp:	6.4		6.5		6.2	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		4.1	xxxx	xxxxx									
FollowUpTim:	3.5		4.0		3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		2.2	xxxx	xxxxx									
Capacity Module:																								
Cnflict Vol:	615		615		185	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx		228	xxxx	xxxxx									
Potent Cap.:	458		409		862	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx		1352	xxxx	xxxxx									
Move Cap.:	426		372		862	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx		1352	xxxx	xxxxx									
Volume/Cap:	0.09		0.00		0.12	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx		0.08	xxxx	xxxx									
Level Of Service Module:																								
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx		0.3	xxxx	xxxxx											
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		7.9	xxxx	xxxxx											
LOS by Move:	*	*	*	*	*	*	*	*	*		A	*	*											
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT				LT - LTR - RT													
Shared Cap.:	xxxx	670	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx											
SharedQueue:	xxxxx	0.8	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		0.3	xxxx	xxxxx											
Shrd ConDel:	xxxxx	11.8	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		7.9	xxxx	xxxxx											
Shared LOS:	*	B	*	*	*	*	*	*	*		A	*	*											
ApproachDel:	11.8			xxxxxx			xxxxxx				xxxxxx													
ApproachLOS:	B			*			*				*													

Note: Queue reported is the number of cars per lane.

Mammoth Crossings
Existing plus Approved Projects Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #1006 Lakeview/Lake Mary Road

Average Delay (sec/veh): 2.2 Worst Case Level Of Service: B[11.4]

Street Name:	Lakeview												Lake Mary Road											
Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
Control:	Stop Sign						Stop Sign						Uncontrolled						Uncontrolled					
Rights:	Include						Include						Include						Include					
Lanes:	0	0	0	0	0		1	0	0	0	1		0	1	0	0	0		0	0	1	0	1	
Volume Module:																								
Base Vol:	0		0		0		25		0		20		19		140		0		0		201		53	
Growth Adj:	1.43		1.43		1.43		1.43		1.43		1.43		1.43		1.43		1.43		1.43		1.43		1.43	
Initial Bse:	0		0		0		36		0		29		27		200		0		0		287		76	
Added Vol:	0		0		0		0		0		0		0		0		0		0		0		0	
PasserByVol:	0		0		0		31		0		0		42		16		0		0		7		-7	
Initial Fut:	0		0		0		67		0		29		69		216		0		0		294		69	
User Adj:	1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
PHF Adj:	0.90		0.90		0.90		0.90		0.90		0.90		0.90		0.90		0.90		0.90		0.90		0.90	
PHF Volume:	0		0		0		74		0		32		77		240		0		0		327		76	
Reduct Vol:	0		0		0		0		0		0		0		0		0		0		0		0	
FinalVolume:	0		0		0		74		0		32		77		240		0		0		327		76	
Critical Gap Module:																								
Critical Gp:	xxxxx	xxxx	xxxxx				6.4	xxxx		6.2			4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx						
FollowUpTim:	xxxxx	xxxx	xxxxx				3.5	xxxx		3.3			2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx						
Capacity Module:																								
Cnflict Vol:	xxxx	xxxx	xxxxx				721	xxxx		327			404	xxxx	xxxxx		xxxx	xxxx	xxxxx					
Potent Cap.:	xxxx	xxxx	xxxxx				397	xxxx		719			1166	xxxx	xxxxx		xxxx	xxxx	xxxxx					
Move Cap.:	xxxx	xxxx	xxxxx				376	xxxx		719			1166	xxxx	xxxxx		xxxx	xxxx	xxxxx					
Total Cap:	494	482	xxxxx				598	530	xxxxx				xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx					
Volume/Cap:	xxxx	xxxx	xxxx				0.12	xxxx		0.04			0.07	xxxx	xxxx		xxxx	xxxx	xxxx					
Level Of Service Module:																								
2Way95thQ:	xxxx	xxxx	xxxxx				0.4	xxxx		0.1			0.2	xxxx	xxxxx		xxxx	xxxx	xxxxx					
Control Del:	xxxxx	xxxx	xxxxx				11.9	xxxx		10.2			8.3	xxxx	xxxxx		xxxx	xxxx	xxxxx					
LOS by Move:	*	*	*				B	*		B			A	*	*		*	*	*					
Movement:	LT - LTR - RT						LT - LTR - RT						LT - LTR - RT				LT - LTR - RT							
Shared Cap.:	xxxx	xxxx	xxxxx				xxxx	xxxx	xxxxx				xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx					
SharedQueue:	xxxxx	xxxx	xxxxx				xxxxx	xxxx	xxxxx				0.2	xxxx	xxxxx		xxxxx	xxxx	xxxxx					
Shrd ConDel:	xxxxx	xxxx	xxxxx				xxxxx	xxxx	xxxxx				8.3	xxxx	xxxxx		xxxxx	xxxx	xxxxx					
Shared LOS:	*	*	*				*	*	*				A	*	*		*	*	*					
ApproachDel:	xxxxxx						11.4						xxxxxx				xxxxxx							
ApproachLOS:	*						B						*				*							

Note: Queue reported is the number of cars per lane.

Mammoth Crossings
Existing plus Approved Projects Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #1007 Canyon/Lake Mary Road

Cycle (sec): 60 Critical Vol./Cap.(X): 0.467
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 12.2
Optimal Cycle: 36 Level Of Service: B

Street Name:	Canyon									Lake Mary Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Split Phase			Split Phase			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0	0	1	0	1!	0	0	0	1	0	1	0	0	0	0	0	1	0	1
Volume Module:																				
Base Vol:	0	0	0	286	0	14	9	172	0	0	232	187
Growth Adj:	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43
Initial Bse:	0	0	0	409	0	20	13	246	0	0	332	267
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	42	0	2	9	46	0	0	-14	84
Initial Fut:	0	0	0	451	0	22	22	292	0	0	318	351
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	0	0	0	475	0	23	23	307	0	0	334	370
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	475	0	23	23	307	0	0	334	370
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	475	0	23	23	307	0	0	334	370
Saturation Flow Module:																				
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	0.95	1.00	0.95	0.54	1.00	1.00	1.00	1.00	0.85
Lanes:	1.00	1.00	0.00	1.91	0.00	0.09	1.00	1.00	0.00	0.00	1.00	1.00
Final Sat.:	1900	1900	0	3443	0	160	1020	1900	0	0	1900	1615
Capacity Analysis Module:																				
Vol/Sat:	0.00	0.00	0.00	0.14	0.00	0.14	0.02	0.16	0.00	0.00	0.18	0.23
Crit Moves:						****						****
Green/Cycle:	0.00	0.00	0.00	0.31	0.00	0.31	0.49	0.49	0.00	0.00	0.49	0.49
Volume/Cap:	0.00	0.00	0.00	0.45	0.00	0.47	0.05	0.33	0.00	0.00	0.36	0.47
Delay/Veh:	0.0	0.0	0.0	16.9	0.0	17.0	8.0	9.5	0.0	0.0	9.7	10.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	16.9	0.0	17.0	8.0	9.5	0.0	0.0	9.7	10.5
LOS by Move:	A	A	A	B	A	B	A	A	A	A	A	B
HCM2kAvgQ:	0	0	0	4	0	4	0	4	0	0	4	5

Note: Queue reported is the number of cars per lane.

Mammoth Crossings
Existing plus Approved Projects Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #1008 Mountain Blvd/Main Street

Average Delay (sec/veh): 4.0 Worst Case Level Of Service: F[66.4]

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Rights:	Include					Include					Include					Include				
Lanes:	0	0	1!	0	0	0	0	1!	0	0	1	0	1	1	0	1	0	1	1	0
Volume Module:																				
Base Vol:	5	1	10	25	5	17	24	641	27	3	399	22
Growth Adj:	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43
Initial Bse:	7	1	14	36	7	24	34	917	39	4	571	31
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	16	0	10	4	-53	0	0	132	16
Initial Fut:	7	1	14	52	7	34	38	864	39	4	703	47
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	8	2	15	54	8	36	40	909	41	5	740	50
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	8	2	15	54	8	36	40	909	41	5	740	50
Critical Gap Module:																				
Critical Gp:	7.5	6.5	6.9	7.5	6.5	6.9	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	3.5	4.0	3.3	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:																				
Cnflict Vol:	1393	1809	475	1310	1804	395	790	xxxx	xxxxx	950	xxxx	xxxxx
Potent Cap.:	103	80	542	119	80	610	839	xxxx	xxxxx	731	xxxx	xxxxx
Move Cap.:	86	75	542	109	76	610	839	xxxx	xxxxx	731	xxxx	xxxxx
Volume/Cap:	0.09	0.02	0.03	0.50	0.10	0.06	0.05	xxxx	xxxx	0.01	xxxx	xxxx
Level Of Service Module:																				
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.2	xxxx	xxxxx	0.0	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	9.5	xxxx	xxxxx	10.0	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	A	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	178	xxxxx	xxxx	149	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	0.5	xxxxx	xxxxx	3.7	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	28.3	xxxxx	xxxxx	66.4	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	D	*	*	F	*	*	*	*	*	*	*
ApproachDel:	28.3			66.4			xxxxxx			xxxxxx		
ApproachLOS:	D			F			*			*		

Note: Queue reported is the number of cars per lane.

Mammoth Crossings
Existing plus Approved Projects Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #1009 Post Office Frontage/Main St

Average Delay (sec/veh): 84.4 Worst Case Level Of Service: F[535.0]

Street Name:	Post Office Frontage						Main Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1! 0 0			0 1 0 0 1			1 0 1 1 0			1 0 1 1 0		
Volume Module:												
Base Vol:	31	10	45	36	2	70	47	570	46	41	375	61
Growth Adj:	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43
Initial Bse:	44	14	64	51	3	100	67	815	66	59	536	87
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	116	0	15	4	-19	0	0	47	22
Initial Fut:	44	14	64	167	3	115	71	796	66	59	583	109
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	47	15	68	176	3	121	75	838	69	62	614	115
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	47	15	68	176	3	121	75	838	69	62	614	115
Critical Gap Module:												
Critical Gp:	7.5	6.5	6.9	7.5	6.5	6.9	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	3.5	4.0	3.3	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	1454	1875	454	1371	1852	364	729	xxxx	xxxxx	907	xxxx	xxxxx
Potent Cap.:	93	73	559	107	75	638	884	xxxx	xxxxx	759	xxxx	xxxxx
Move Cap.:	64	61	559	67	63	638	884	xxxx	xxxxx	759	xxxx	xxxxx
Volume/Cap:	0.73	0.25	0.12	2.62	0.05	0.19	0.08	xxxx	xxxx	0.08	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	0.7	0.3	xxxx	xxxxx	0.3	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	12.0	9.4	xxxx	xxxxx	10.2	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	B	A	*	*	B	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	118	xxxxx	67	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	7.7	xxxxx	17.8	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	184	xxxxx	888.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	F	*	F	*	*	*	*	*	*	*	*
ApproachDel:	183.5			535.0			xxxxxx			xxxxxx		
ApproachLOS:	F			F			*			*		

Note: Queue reported is the number of cars per lane.

Mammoth Crossings
Existing plus Approved Projects Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #1010 Center St/Main St

Average Delay (sec/veh): 14.8 Worst Case Level Of Service: F[160.3]

Street Name:	Center St						Main St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1! 0 0			0 1 0 0 1			1 0 1 1 0			1 0 1 1 0		
Volume Module:												
Base Vol:	22	1	55	10	1	35	19	588	44	16	425	38
Growth Adj:	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43
Initial Bse:	31	1	79	14	1	50	27	841	63	23	608	54
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	41	0	12	0	0	0	0	-27	41	22	41	0
Initial Fut:	72	1	91	14	1	50	27	814	104	45	649	54
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	76	2	95	15	2	53	29	857	109	47	683	57
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	76	2	95	15	2	53	29	857	109	47	683	57
Critical Gap Module:												
Critical Gp:	7.5	6.5	6.9	7.5	6.5	6.9	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	3.5	4.0	3.3	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	1405	1803	483	1292	1829	370	740	xxxx	xxxxx	966	xxxx	xxxxx
Potent Cap.:	101	80	535	122	77	633	876	xxxx	xxxxx	721	xxxx	xxxxx
Move Cap.:	84	73	535	92	70	633	876	xxxx	xxxxx	721	xxxx	xxxxx
Volume/Cap:	0.90	0.02	0.18	0.16	0.02	0.08	0.03	xxxx	xxxx	0.07	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	0.3	0.1	xxxx	xxxxx	0.2	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	11.2	9.2	xxxx	xxxxx	10.3	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	B	A	*	*	B	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	157	xxxxx	89	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	9.1	xxxxx	0.6	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	160	xxxxx	54.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	F	*	F	*	*	*	*	*	*	*	*
ApproachDel:	160.3			21.5			xxxxxx			xxxxxx		
ApproachLOS:	F			C			*			*		

Note: Queue reported is the number of cars per lane.

Mammoth Crossings
Existing plus Approved Projects Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #1011 Old Mammoth Rd/ Main St

Cycle (sec):	60	Critical Vol./Cap.(X):	0.793
Loss Time (sec):	12 (Y+R=4.0 sec)	Average Delay (sec/veh):	16.1
Optimal Cycle:	62	Level Of Service:	B

Street Name:	Old Mammoth Rd						Main St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R
Control:	Protected			Protected			Prot+Permit			Prot+Permit		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	0	0 1	0	0 0	0 0	0	0 2	0 1	1	0 2	0 0
Volume Module:												
Base Vol:	296	0	74	0	0	0	0	314	572	110	263	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	296	0	74	0	0	0	0	314	572	110	263	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	16	0	12	0	0	0	0	-2	99	14	19	0
Initial Fut:	312	0	86	0	0	0	0	312	671	124	282	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	328	0	91	0	0	0	0	328	706	131	297	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	328	0	91	0	0	0	0	328	706	131	297	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	328	0	91	0	0	0	0	328	706	131	297	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	1.00	0.85	1.00	1.00	1.00	1.00	0.95	0.98	0.95	0.95	1.00
Lanes:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	2.00	1.00	1.00	2.00	0.00
Final Sat.:	1805	0	1615	0	0	0	0	3610	1857	1805	3610	0
Capacity Analysis Module:												
Vol/Sat:	0.18	0.00	0.06	0.00	0.00	0.00	0.00	0.09	0.38	0.07	0.08	0.00
Crit Moves:	****								****	****		
Green/Cycle:	0.23	0.00	0.23	0.00	0.00	0.00	0.00	0.48	0.48	0.64	0.57	0.00
Volume/Cap:	0.79	0.00	0.24	0.00	0.00	0.00	0.00	0.19	0.79	0.19	0.14	0.00
Delay/Veh:	31.9	0.0	19.2	0.0	0.0	0.0	0.0	9.0	18.1	4.5	6.1	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	31.9	0.0	19.2	0.0	0.0	0.0	0.0	9.0	18.1	4.5	6.1	0.0
LOS by Move:	C	A	B	A	A	A	A	A	B	A	A	A
HCM2kAvgQ:	8	0	2	0	0	0	0	2	13	1	1	0

Note: Queue reported is the number of cars per lane.

Mammoth Crossings
Existing plus Approved Projects Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #1009 Post Office Frontage/Main St

Average Delay (sec/veh): 2.8 Worst Case Level Of Service: D[30.5]

Street Name:	Post Office Frontage						Main Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1!	0	0	0 1	0	0 1	1 0	1	1 0	1 0	1	1 0
Volume Module:												
Base Vol:	31	10	45	36	2	70	47	570	46	41	375	61
Growth Adj:	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43
Initial Bse:	44	14	64	51	3	100	67	815	66	59	536	87
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	-44	0	0	-51	0	15	4	-19	0	0	47	22
Initial Fut:	0	14	64	0	3	115	71	796	66	59	583	109
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	0	15	68	1	3	121	75	838	69	62	614	115
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	15	68	1	3	121	75	838	69	62	614	115
Critical Gap Module:												
Critical Gp:	7.5	6.5	6.9	7.5	6.5	6.9	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	3.5	4.0	3.3	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	1454	1875	454	1371	1852	364	729	xxxx	xxxxx	907	xxxx	xxxxx
Potent Cap.:	93	73	559	107	75	638	884	xxxx	xxxxx	759	xxxx	xxxxx
Move Cap.:	64	61	559	67	63	638	884	xxxx	xxxxx	759	xxxx	xxxxx
Volume/Cap:	0.01	0.25	0.12	0.01	0.05	0.19	0.08	xxxx	xxxx	0.08	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	0.7	0.3	xxxx	xxxxx	0.3	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	12.0	9.4	xxxx	xxxxx	10.2	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	B	A	*	*	B	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	223	xxxxx	64	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	1.6	xxxxx	0.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	30.5	xxxxx	64.9	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	D	*	F	*	*	*	*	*	*	*	*
ApproachDel:		30.5			13.5			xxxxxx			xxxxxx	
ApproachLOS:		D			B			*			*	

Note: Queue reported is the number of cars per lane.

Mammoth Crossings
Existing plus Approved Projects Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #1010 Center St/Main St

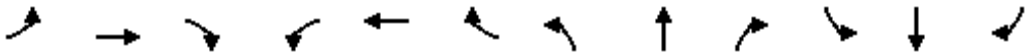
Cycle (sec):	100	Critical Vol./Cap.(X):	0.552
Loss Time (sec):	16 (Y+R=4.0 sec)	Average Delay (sec/veh):	22.1
Optimal Cycle:	53	Level Of Service:	C

Street Name:	Center St						Main St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	0 1	0 0	1	1 0	1 1	0	1 0	1 1	0
Volume Module:												
Base Vol:	22	1	55	10	1	35	19	588	44	16	425	38
Growth Adj:	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43
Initial Bse:	31	1	79	14	1	50	27	841	63	23	608	54
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	85	0	12	51	0	0	0	-27	41	22	41	0
Initial Fut:	116	1	91	65	1	50	27	814	104	45	649	54
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	123	2	95	69	2	53	29	857	109	47	683	57
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	123	2	95	69	2	53	29	857	109	47	683	57
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	123	2	95	69	2	53	29	857	109	47	683	57
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.92	0.92	0.95	0.95	0.85	0.95	0.93	0.93	0.95	0.94	0.94
Lanes:	0.56	0.01	0.43	0.98	0.02	1.00	1.00	1.77	0.23	1.00	1.85	0.15
Final Sat.:	972	12	756	1772	39	1615	1805	3147	402	1805	3291	276
Capacity Analysis Module:												
Vol/Sat:	0.13	0.13	0.13	0.04	0.04	0.03	0.02	0.27	0.27	0.03	0.21	0.21
Crit Moves:			****		****			****		****		
Green/Cycle:	0.23	0.23	0.23	0.07	0.07	0.07	0.04	0.49	0.49	0.05	0.50	0.50
Volume/Cap:	0.55	0.55	0.55	0.55	0.55	0.46	0.41	0.55	0.55	0.55	0.41	0.41
Delay/Veh:	35.7	35.7	35.7	50.1	50.1	47.7	50.9	18.0	18.0	54.1	15.8	15.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	35.7	35.7	35.7	50.1	50.1	47.7	50.9	18.0	18.0	54.1	15.8	15.8
LOS by Move:	D	D	D	D	D	D	D	B	B	D	B	B
HCM2kAvgQ:	7	7	7	3	3	2	1	11	11	2	7	7

Note: Queue reported is the number of cars per lane.

APPENDIX D

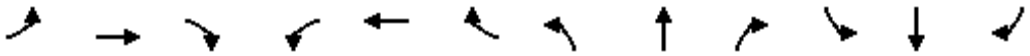
MAIN/MINARET AND CANYON/LAKE MARY LEVEL OF SERVICE WORKSHEETS WITH PEDESTRIANS



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	115	456	322	115	372	201	234	181	136	439	257	136
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	
Frpb, ped/bikes	1.00	1.00	0.93	1.00	1.00	1.00	1.00	1.00	0.95	1.00	0.98	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.95	
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	1469	1770	3539	1583	1770	1863	1500	3433	1734	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	3539	1469	1770	3539	1583	1770	1863	1500	3433	1734	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	121	480	339	121	392	212	246	191	143	462	271	143
RTOR Reduction (vph)	0	0	236	0	0	160	0	0	112	0	15	0
Lane Group Flow (vph)	121	480	103	121	392	52	246	191	31	462	399	0
Confl. Peds. (#/hr)			30	30			30		30			30
Turn Type	Prot		Perm	Prot		Over	Split		Perm	Split		
Protected Phases	7	4		3	8	6	2	2		6	6	
Permitted Phases			4						2			
Actuated Green, G (s)	13.7	37.9	37.9	13.7	37.9	30.5	26.9	26.9	26.9	30.5	30.5	
Effective Green, g (s)	13.7	37.9	37.9	13.7	37.9	30.5	26.9	26.9	26.9	30.5	30.5	
Actuated g/C Ratio	0.11	0.30	0.30	0.11	0.30	0.24	0.22	0.22	0.22	0.24	0.24	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	194	1073	445	194	1073	386	381	401	323	838	423	
v/s Ratio Prot	c0.07	c0.14		0.07	0.11	0.03	c0.14	0.10		0.13	c0.23	
v/s Ratio Perm			0.07						0.02			
v/c Ratio	0.62	0.45	0.23	0.62	0.37	0.13	0.65	0.48	0.10	0.55	0.94	
Uniform Delay, d1	53.2	35.1	32.6	53.2	34.1	36.9	44.7	42.9	39.3	41.3	46.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	6.1	1.4	1.2	6.1	0.2	0.2	8.2	4.0	0.6	0.8	29.6	
Delay (s)	59.3	36.5	33.8	59.3	34.3	37.1	52.9	46.9	39.9	42.1	76.0	
Level of Service	E	D	C	E	C	D	D	D	D	D	E	
Approach Delay (s)		38.5			39.3			47.7			58.1	
Approach LOS		D			D			D			E	

Intersection Summary			
HCM Average Control Delay	45.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	125.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	84.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	26	294	7	27	319	372	6	9	22	473	11	26
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	1.00			1.00	1.00	1.00	1.00		0.95	0.95	
Frpb, ped/bikes	1.00	1.00			1.00	0.93	1.00	0.97		1.00	1.00	
Flpb, ped/bikes	1.00	1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00			1.00	0.85	1.00	0.89		1.00	0.98	
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00		0.95	0.96	
Satd. Flow (prot)	1770	1857			1852	1470	1770	1611		1681	1671	
Flt Permitted	0.29	1.00			0.94	1.00	0.12	1.00		0.95	0.96	
Satd. Flow (perm)	538	1857			1738	1470	226	1611		1681	1671	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	27	309	7	28	336	392	6	9	23	498	12	27
RTOR Reduction (vph)	0	1	0	0	0	277	0	15	0	0	5	0
Lane Group Flow (vph)	27	315	0	0	364	115	6	17	0	269	263	0
Confl. Peds. (#/hr)				30		30			30	30		
Turn Type	Perm			Perm		Perm	Perm			Split		
Protected Phases		4			8			2		6	6	
Permitted Phases	4			8		8	2					
Actuated Green, G (s)	27.8	27.8			27.8	27.8	32.9	32.9		22.3	22.3	
Effective Green, g (s)	27.8	27.8			27.8	27.8	32.9	32.9		22.3	22.3	
Actuated g/C Ratio	0.29	0.29			0.29	0.29	0.35	0.35		0.23	0.23	
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	157	543			509	430	78	558		395	392	
v/s Ratio Prot		0.17						0.01		c0.16	0.16	
v/s Ratio Perm	0.05				c0.21	0.08	c0.03					
v/c Ratio	0.17	0.58			0.72	0.27	0.08	0.03		0.68	0.67	
Uniform Delay, d1	25.0	28.6			30.1	25.8	20.9	20.5		33.1	33.0	
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.5	1.6			4.7	0.3	1.9	0.1		4.8	4.5	
Delay (s)	25.6	30.2			34.8	26.1	22.8	20.6		37.9	37.5	
Level of Service	C	C			C	C	C	C		D	D	
Approach Delay (s)		29.8			30.3			21.0			37.7	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM Average Control Delay	32.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	95.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	74.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

APPENDIX E

EXISTING PLUS PROJECT
LEVEL OF SERVICE WORKSHEETS

Mammoth Crossings
Existing plus Project Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #1 Minaret Rd/ Meridian Blvd

Cycle (sec): 95 Critical Vol./Cap.(X): 0.439
Loss Time (sec): 16 (Y+R=4.0 sec) Average Delay (sec/veh): 28.6
Optimal Cycle: 45 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Lanes:	1	0	0	1	0	1	0	0	1	0	1	1	0	1	0	1	1	0
Volume Module:																
Base Vol:	18	71		16	130	113		49	62	144		48	18	79		92
Growth Adj:	1.43	1.43		1.43	1.43	1.43		1.43	1.43	1.43		1.43	1.43	1.43		1.43
Initial Bse:	26	102		23	186	162		70	89	206		69	26	113		132
Added Vol:	0	6		0	18	5		5	6	0		0	0	0		21
PasserByVol:	0	0		0	0	0		0	0	0		0	0	0		0
Initial Fut:	26	108		23	204	167		75	95	206		69	26	113		153
User Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
PHF Adj:	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90		0.90
PHF Volume:	29	119		25	227	185		83	105	229		76	29	126		170
Reduct Vol:	0	0		0	0	0		0	0	0		0	0	0		0
Reduced Vol:	29	119		25	227	185		83	105	229		76	29	126		170
PCE Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
MLF Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
FinalVolume:	29	119		25	227	185		83	105	229		76	29	126		170
Saturation Flow Module:																
Sat/Lane:	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900		1900
Adjustment:	0.95	0.97		0.97	0.95	0.95		0.95	0.95	0.91		0.91	0.95	0.87		0.87
Lanes:	1.00	0.82		0.18	1.00	0.69		0.31	1.00	1.50		0.50	1.00	1.00		1.00
Final Sat.:	1805	1526		325	1805	1248		562	1805	2607		869	1805	1650		1650
Capacity Analysis Module:																
Vol/Sat:	0.02	0.08		0.08	0.13	0.15		0.15	0.06	0.09		0.09	0.02	0.08		0.10
Crit Moves:		****			****				****							****
Green/Cycle:	0.04	0.18		0.18	0.29	0.42		0.42	0.13	0.31		0.31	0.06	0.23		0.23
Volume/Cap:	0.35	0.44		0.44	0.44	0.35		0.35	0.44	0.28		0.28	0.28	0.32		0.44
Delay/Veh:	46.7	35.7		35.7	28.3	19.1		19.1	39.2	24.9		24.9	44.5	30.4		31.5
User DelAdj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
AdjDel/Veh:	46.7	35.7		35.7	28.3	19.1		19.1	39.2	24.9		24.9	44.5	30.4		31.5
LOS by Move:	D	D		D	C	B		B	D	C		C	D	C		C
HCM2kAvgQ:	1	4		4	6	5		5	3	4		4	1	3		5

Note: Queue reported is the number of cars per lane.

Mammoth Crossings
Existing plus Project Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 Minaret Rd/Main St-Lake Mary Rd

Cycle (sec): 80 Critical Vol./Cap.(X): 0.602
Loss Time (sec): 16 (Y+R=4.0 sec) Average Delay (sec/veh): 27.5
Optimal Cycle: 55 Level Of Service: C

Street Name:	Minaret Rd								Main St-Lake Mary Rd							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Split Phase				Split Phase				Protected				Protected			
Rights:	Include				Include				Include				Ovl			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Lanes:	1	0	1	0	1	2	0	0	1	0	1	0	2	0	1	1	0	2	0	1
Volume Module:																
Base Vol:	159	118		80	480	183		127	97	465		197	65	337		105
Growth Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
Initial Bse:	159	118		80	480	183		127	97	465		197	65	337		105
Added Vol:	11	8		11	0	9		9	9	26		12	13	29		0
PasserByVol:	0	0		0	0	0		0	0	0		0	0	0		0
Initial Fut:	170	126		91	480	192		136	106	491		209	78	366		105
User Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
PHF Adj:	0.95	0.95		0.95	0.95	0.95		0.95	0.95	0.95		0.95	0.95	0.95		0.95
PHF Volume:	179	133		96	505	202		143	112	517		220	82	385		111
Reduct Vol:	0	0		0	0	0		0	0	0		0	0	0		0
Reduced Vol:	179	133		96	505	202		143	112	517		220	82	385		111
PCE Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
MLF Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
FinalVolume:	179	133		96	505	202		143	112	517		220	82	385		111
Saturation Flow Module:																
Sat/Lane:	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900		1900
Adjustment:	0.95	1.00		0.85	0.92	0.94		0.94	0.95	0.95		0.85	0.95	0.95		0.85
Lanes:	1.00	1.00		1.00	2.00	0.59		0.41	1.00	2.00		1.00	1.00	2.00		1.00
Final Sat.:	1805	1900		1615	3502	1043		739	1805	3610		1615	1805	3610		1615
Capacity Analysis Module:																
Vol/Sat:	0.10	0.07		0.06	0.14	0.19		0.19	0.06	0.14		0.14	0.05	0.11		0.07
Crit Moves:	****					****				****			****			
Green/Cycle:	0.16	0.16		0.16	0.32	0.32		0.32	0.11	0.24		0.24	0.08	0.20		0.52
Volume/Cap:	0.60	0.42		0.36	0.45	0.60		0.60	0.54	0.60		0.57	0.60	0.54		0.13
Delay/Veh:	34.4	30.9		30.5	21.8	24.6		24.6	36.2	28.3		29.0	43.2	29.6		10.0
User DelAdj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
AdjDel/Veh:	34.4	30.9		30.5	21.8	24.6		24.6	36.2	28.3		29.0	43.2	29.6		10.0
LOS by Move:	C	C		C	C	C		C	D	C		C	D	C		A
HCM2kAvgQ:	5	3		2	5	8		8	3	7		6	3	5		1

Note: Queue reported is the number of cars per lane.

Mammoth Crossings
Existing plus Project Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #1003 Minaret Rd/7B

Average Delay (sec/veh): 1.0 Worst Case Level Of Service: C[17.3]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Lanes:	0	0	1! 0	0	1	0	0	1 0	0	1	0	0 1	0	1	0	0 1
Volume Module:																
Base Vol:	0	357	0		0	445	0		0	0	0		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	357	0		0	445	0		0	0	0		0	0	0	
Added Vol:	18	6	10		14	13	11		12	0	8		8	0	12	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	18	363	10		14	458	11		12	0	8		8	0	12	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.95	0.95	0.95		0.95	0.95	0.95		0.95	0.95	0.95		0.95	0.95	0.95	
PHF Volume:	19	382	11		15	482	12		13	0	8		8	0	13	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
FinalVolume:	19	382	11		15	482	12		13	0	8		8	0	13	
Critical Gap Module:																
Critical Gp:	4.1	xxxx	xxxxx		4.1	xxxx	xxxxx		7.1	6.5	6.2		7.1	6.5	6.2	
FollowUpTim:	2.2	xxxx	xxxxx		2.2	xxxx	xxxxx		3.5	4.0	3.3		3.5	4.0	3.3	
Capacity Module:																
Cnflict Vol:	494	xxxx	xxxxx		393	xxxx	xxxxx		949	948	488		947	948	387	
Potent Cap.:	1080	xxxx	xxxxx		1177	xxxx	xxxxx		242	263	584		243	263	665	
Move Cap.:	1080	xxxx	xxxxx		1177	xxxx	xxxxx		232	255	584		234	255	665	
Volume/Cap:	0.02	xxxx	xxxx		0.01	xxxx	xxxx		0.05	0.00	0.01		0.04	0.00	0.02	
Level Of Service Module:																
2Way95thQ:	0.1	xxxx	xxxxx		0.0	xxxx	xxxxx		xxxx	xxxx	0.0		xxxx	xxxx	0.1	
Control Del:	8.4	xxxx	xxxxx		8.1	xxxx	xxxxx		xxxxx	xxxx	11.3		xxxxx	xxxx	10.5	
LOS by Move:	A	*	*		A	*	*		*	*	B		*	*	B	
Movement:	LT -	LTR -	RT		LT -	LTR -	RT		LT -	LTR -	RT		LT -	LTR -	RT	
Shared Cap.:	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		232	xxxx	xxxxx		234	xxxx	xxxxx	
SharedQueue:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		0.2	xxxx	xxxxx		0.1	xxxx	xxxxx	
Shrd ConDel:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		21.4	xxxx	xxxxx		20.9	xxxx	xxxxx	
Shared LOS:	*	*	*		*	*	*		C	*	*		C	*	*	
ApproachDel:	xxxxxx				xxxxxx				17.3				14.7			
ApproachLOS:	*				*				C				B			

Note: Queue reported is the number of cars per lane.

Mammoth Crossings
Existing plus Project Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #1004 Minaret Road/Forest Trail

Average Delay (sec/veh): 6.9 Worst Case Level Of Service: F[52.7]

Street Name:	Minaret Road								Forest Trail							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Lanes:	0	0	1! 0	0	0	0	1! 0	0	0	0	1! 0	0	0	0	1! 0	0
Volume Module:																
Base Vol:	69	92	24		28	352	33		12	8	88		20	13	2	
Growth Adj:	1.43	1.43	1.43		1.43	1.43	1.43		1.43	1.43	1.43		1.43	1.43	1.43	
Initial Bse:	99	132	34		40	503	47		17	11	126		29	19	3	
Added Vol:	0	16	0		0	19	0		0	0	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	99	148	34		40	522	47		17	11	126		29	19	3	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90	
PHF Volume:	110	164	38		44	580	52		19	13	140		32	21	3	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
FinalVolume:	110	164	38		44	580	52		19	13	140		32	21	3	
Critical Gap Module:																
Critical Gp:	4.1	xxxx	xxxxx		4.1	xxxx	xxxxx		7.1	6.5	6.2		7.1	6.5	6.2	
FollowUpTim:	2.2	xxxx	xxxxx		2.2	xxxx	xxxxx		3.5	4.0	3.3		3.5	4.0	3.3	
Capacity Module:																
Cnflict Vol:	633	xxxx	xxxxx		202	xxxx	xxxxx		1110	1117	607		1174	1124	183	
Potent Cap.:	960	xxxx	xxxxx		1382	xxxx	xxxxx		188	209	500		170	207	865	
Move Cap.:	960	xxxx	xxxxx		1382	xxxx	xxxxx		151	177	500		102	175	865	
Volume/Cap:	0.11	xxxx	xxxx		0.03	xxxx	xxxx		0.13	0.07	0.28		0.31	0.12	0.00	
Level Of Service Module:																
2Way95thQ:	0.4	xxxx	xxxxx		0.1	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx	
Control Del:	9.2	xxxx	xxxxx		7.7	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
LOS by Move:	A	*	*		A	*	*		*	*	*		*	*	*	
Movement:	LT -	LTR -	RT		LT -	LTR -	RT		LT -	LTR -	RT		LT -	LTR -	RT	
Shared Cap.:	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	359	xxxxx		xxxx	129	xxxxx	
SharedQueue:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	2.5	xxxxx		xxxxx	1.9	xxxxx	
Shrd ConDel:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	23.9	xxxxx		xxxxx	52.7	xxxxx	
Shared LOS:	*	*	*		*	*	*		*	C	*		*	F	*	
ApproachDel:	xxxxxx				xxxxxx				23.9				52.7			
ApproachLOS:	*				*				C				F			

Note: Queue reported is the number of cars per lane.

Mammoth Crossings
Existing plus Project Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #1005 Kelly Rd/Lake Mary Rd

Average Delay (sec/veh): 3.7 Worst Case Level Of Service: B[11.5]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Rights:	Include				Include				Include				Include			
Lanes:	0	0	1!	0 0	0	0	0	0 0	0	0	0	1 0	0	1	0	0 0
Volume Module:																
Base Vol:	31	0	61	0	0	0	0	111	34	109	184	0				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	31	0	61	0	0	0	0	111	34	109	184	0				
Added Vol:	0	0	6	0	0	0	0	6	0	6	5	0				
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0				
Initial Fut:	31	0	67	0	0	0	0	117	34	115	189	0				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90				
PHF Volume:	34	0	74	0	0	0	0	130	38	128	210	0				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
FinalVolume:	34	0	74	0	0	0	0	130	38	128	210	0				
Critical Gap Module:																
Critical Gp:	6.4	6.5	6.2	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx				
FollowUpTim:	3.5	4.0	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx				
Capacity Module:																
Cnflict Vol:	614	614	149	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	168	xxxx	xxxxx				
Potent Cap.:	458	410	903	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1422	xxxx	xxxxx				
Move Cap.:	423	369	903	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1422	xxxx	xxxxx				
Volume/Cap:	0.08	0.00	0.08	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.09	xxxx	xxxx				
Level Of Service Module:																
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.3	xxxx	xxxxx				
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.8	xxxx	xxxxx				
LOS by Move:	*	*	*	*	*	*	*	*	*	A	*	*				
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT				
Shared Cap.:	xxxx	665	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx				
SharedQueue:	xxxxx	0.6	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.3	xxxx	xxxxx				
Shrd ConDel:	xxxxx	11.5	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.8	xxxx	xxxxx				
Shared LOS:	*	B	*	*	*	*	*	*	*	A	*	*				
ApproachDel:	11.5			xxxxxx			xxxxxx			xxxxxx						
ApproachLOS:	B			*			*			*						

Note: Queue reported is the number of cars per lane.

Mammoth Crossings
Existing plus Project Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #1006 Lakeview/Lake Mary Road

Average Delay (sec/veh): 1.3 Worst Case Level Of Service: B[10.6]

Street Name:	Lakeview								Lake Mary Road							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Rights:	Include				Include				Include				Include			
Lanes:	0	0	0	0 0	1	0	0	0 1	0	1	0	0 0	0	0	1	0 1
Volume Module:																
Base Vol:	0	0	0	25	0	20	19	140	0	0	201	53				
Growth Adj:	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43				
Initial Bse:	0	0	0	36	0	29	27	200	0	0	287	76				
Added Vol:	0	0	0	0	0	0	0	13	0	0	11	0				
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0				
Initial Fut:	0	0	0	36	0	29	27	213	0	0	298	76				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90				
PHF Volume:	0	0	0	40	0	32	30	237	0	0	332	84				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
FinalVolume:	0	0	0	40	0	32	30	237	0	0	332	84				
Critical Gap Module:																
Critical Gp:	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
FollowUpTim:	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
Capacity Module:																
Cnflict Vol:	xxxx	xxxx	xxxxx	629	xxxx	332	416	xxxx	xxxxx	xxxx	xxxx	xxxxx				
Potent Cap.:	xxxx	xxxx	xxxxx	449	xxxx	715	1154	xxxx	xxxxx	xxxx	xxxx	xxxxx				
Move Cap.:	xxxx	xxxx	xxxxx	440	xxxx	715	1154	xxxx	xxxxx	xxxx	xxxx	xxxxx				
Total Cap:	548	533	xxxxx	660	585	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx				
Volume/Cap:	xxxx	xxxx	xxxx	0.06	xxxx	0.04	0.03	xxxx	xxxx	xxxx	xxxx	xxxx				
Level Of Service Module:																
2Way95thQ:	xxxx	xxxx	xxxxx	0.2	xxxx	0.1	0.1	xxxx	xxxxx	xxxx	xxxx	xxxxx				
Control Del:	xxxxx	xxxx	xxxxx	10.8	xxxx	10.3	8.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
LOS by Move:	*	*	*	B	*	B	A	*	*	*	*	*				
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT				
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx				
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
Shared LOS:	*	*	*	*	*	*	A	*	*	*	*	*				
ApproachDel:	xxxxxx			10.6			xxxxxx			xxxxxx						
ApproachLOS:	*			B			*			*						

Note: Queue reported is the number of cars per lane.

Mammoth Crossings
Existing plus Project Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #1007 Canyon/Lake Mary Road

Cycle (sec): 60 Critical Vol./Cap.(X): 0.465
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 13.8
Optimal Cycle: 36 Level Of Service: B

Street Name:	Canyon									Lake Mary Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Split Phase			Split Phase			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0	0	1	0	1	0	1!	0	0	1	0	0	1	0	0	1	0	0	1
Volume Module:																				
Base Vol:	0	0	0	286	0	14	9	172	0	0	232	187
Growth Adj:	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43
Initial Bse:	0	0	0	409	0	20	13	246	0	0	332	267
Added Vol:	6	9	22	22	11	4	4	2	7	27	1	21
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	6	9	22	431	11	24	17	248	7	27	333	288
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	6	9	23	454	12	25	18	261	7	28	350	304
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	6	9	23	454	12	25	18	261	7	28	350	304
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	6	9	23	454	12	25	18	261	7	28	350	304
Saturation Flow Module:																				
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.89	0.89	0.95	0.95	0.95	0.44	1.00	1.00	0.97	0.97	0.85
Lanes:	1.00	0.29	0.71	1.86	0.04	0.10	1.00	0.97	0.03	0.08	0.92	1.00
Final Sat.:	1805	493	1205	3352	79	173	830	1840	52	138	1696	1615
Capacity Analysis Module:																				
Vol/Sat:	0.00	0.02	0.02	0.14	0.15	0.15	0.02	0.14	0.14	0.21	0.21	0.19
Crit Moves:		****				****					****	
Green/Cycle:	0.04	0.04	0.04	0.31	0.31	0.31	0.44	0.44	0.44	0.44	0.44	0.44
Volume/Cap:	0.08	0.47	0.47	0.43	0.47	0.47	0.05	0.32	0.32	0.47	0.47	0.42
Delay/Veh:	28.2	32.9	32.9	16.6	16.8	16.8	9.5	11.0	11.0	12.1	12.1	11.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	28.2	32.9	32.9	16.6	16.8	16.8	9.5	11.0	11.0	12.1	12.1	11.8
LOS by Move:	C	C	C	B	B	B	A	B	B	B	B	B
HCM2kAvgQ:	0	1	1	4	4	4	0	3	3	5	5	4

Note: Queue reported is the number of cars per lane.

Mammoth Crossings
Existing plus Project Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #1008 Mountain Blvd/Main Street

Average Delay (sec/veh): 2.3 Worst Case Level Of Service: E[44.2]

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
Control:	Stop Sign						Stop Sign						Uncontrolled						Uncontrolled					
Rights:	Include						Include						Include						Include					
Lanes:	0	0	1!	0	0		0	0	1!	0	0		1	0	1	1	0		1	0	1	1	0	
Volume Module:																								
Base Vol:	5	1	10				25	5	17				24	641	27				3	399	22			
Growth Adj:	1.43	1.43	1.43				1.43	1.43	1.43				1.43	1.43	1.43				1.43	1.43	1.43			
Initial Bse:	7	1	14				36	7	24				34	917	39				4	571	31			
Added Vol:	0	0	0				0	0	0				0	37	0				0	42	0			
PasserByVol:	0	0	0				0	0	0				0	0	0				0	0	0			
Initial Fut:	7	1	14				36	7	24				34	954	39				4	613	31			
User Adj:	1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00			
PHF Adj:	0.95	0.95	0.95				0.95	0.95	0.95				0.95	0.95	0.95				0.95	0.95	0.95			
PHF Volume:	8	2	15				38	8	26				36	1004	41				5	645	33			
Reduct Vol:	0	0	0				0	0	0				0	0	0				0	0	0			
FinalVolume:	8	2	15				38	8	26				36	1004	41				5	645	33			
Critical Gap Module:																								
Critical Gp:	7.5	6.5	6.9				7.5	6.5	6.9				4.1	xxxx	xxxxx				4.1	xxxx	xxxxx			
FollowUpTim:	3.5	4.0	3.3				3.5	4.0	3.3				2.2	xxxx	xxxxx				2.2	xxxx	xxxxx			
Capacity Module:																								
Cnflict Vol:	1432	1783	522				1245	1787	339				678	xxxx	xxxxx				1044	xxxx	xxxxx			
Potent Cap.:	97	83	505				132	82	663				923	xxxx	xxxxx				674	xxxx	xxxxx			
Move Cap.:	83	79	505				122	78	663				923	xxxx	xxxxx				674	xxxx	xxxxx			
Volume/Cap:	0.09	0.02	0.03				0.31	0.10	0.04				0.04	xxxx	xxxx				0.01	xxxx	xxxx			
Level Of Service Module:																								
2Way95thQ:	xxxx	xxxx	xxxxx				xxxx	xxxx	xxxxx				0.1	xxxx	xxxxx				0.0	xxxx	xxxxx			
Control Del:	xxxxx	xxxx	xxxxx				xxxxx	xxxx	xxxxx				9.1	xxxx	xxxxx				10.4	xxxx	xxxxx			
LOS by Move:	*	*	*				*	*	*				A	*	*				B	*	*			
Movement:	LT	-	LTR	-	RT		LT	-	LTR	-	RT		LT	-	LTR	-	RT		LT	-	LTR	-	RT	
Shared Cap.:	xxxx	173	xxxxx				xxxx	160	xxxxx				xxxx	xxxx	xxxxx				xxxx	xxxx	xxxxx			
SharedQueue:	xxxxx	0.5	xxxxx				xxxxx	2.0	xxxxx				xxxxx	xxxx	xxxxx				xxxxx	xxxx	xxxxx			
Shrd ConDel:	xxxxx	29.2	xxxxx				xxxxx	44.2	xxxxx				xxxxx	xxxx	xxxxx				xxxxx	xxxx	xxxxx			
Shared LOS:	*	D	*				*	E	*				*	*	*				*	*	*			
ApproachDel:	29.2						44.2						xxxxxx						xxxxxx					
ApproachLOS:	D						E						*						*					

Note: Queue reported is the number of cars per lane.

Mammoth Crossings
Existing plus Project Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #1009 Post Office Frontage/Main St

Average Delay (sec/veh): 18.7 Worst Case Level Of Service: F[203.4]

Street Name:	Post Office Frontage						Main Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1! 0 0			0 1 0 0 1			1 0 1 1 0			1 0 1 1 0		
Volume Module:												
Base Vol:	31	10	45	36	2	70	47	570	46	41	375	61
Growth Adj:	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43
Initial Bse:	44	14	64	51	3	100	67	815	66	59	536	87
Added Vol:	0	0	0	0	0	0	0	37	0	0	42	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	44	14	64	51	3	100	67	852	66	59	578	87
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	47	15	68	54	3	105	71	897	69	62	609	92
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	47	15	68	54	3	105	71	897	69	62	609	92
Critical Gap Module:												
Critical Gp:	7.5	6.5	6.9	7.5	6.5	6.9	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	3.5	4.0	3.3	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	1502	1897	483	1376	1886	350	701	xxxx	xxxxx	966	xxxx	xxxxx
Potent Cap.:	86	70	535	106	71	652	906	xxxx	xxxxx	721	xxxx	xxxxx
Move Cap.:	61	59	535	66	60	652	906	xxxx	xxxxx	721	xxxx	xxxxx
Volume/Cap:	0.77	0.25	0.13	0.82	0.05	0.16	0.08	xxxx	xxxx	0.09	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	0.6	0.3	xxxx	xxxxx	0.3	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	11.6	9.3	xxxx	xxxxx	10.5	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	B	A	*	*	B	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	113	xxxxx	66	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	8.1	xxxxx	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	203	xxxxx	180.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	F	*	F	*	*	*	*	*	*	*	*
ApproachDel:	203.4			71.0			xxxxxx			xxxxxx		
ApproachLOS:	F			F			*			*		

Note: Queue reported is the number of cars per lane.

Mammoth Crossings
Existing plus Project Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #1010 Center St/Main St

Average Delay (sec/veh): 3.4 Worst Case Level Of Service: E[41.1]

Street Name:	Center St						Main St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1! 0 0			0 1 0 0 1			1 0 1 1 0			1 0 1 1 0		
Volume Module:												
Base Vol:	22	1	55	10	1	35	19	588	44	16	425	38
Growth Adj:	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43
Initial Bse:	31	1	79	14	1	50	27	841	63	23	608	54
Added Vol:	0	0	0	0	0	0	0	31	0	0	36	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	31	1	79	14	1	50	27	872	63	23	644	54
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	33	2	83	15	2	53	29	918	66	24	678	57
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	33	2	83	15	2	53	29	918	66	24	678	57
Critical Gap Module:												
Critical Gp:	7.5	6.5	6.9	7.5	6.5	6.9	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	3.5	4.0	3.3	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	1396	1791	492	1271	1796	367	735	xxxx	xxxxx	984	xxxx	xxxxx
Potent Cap.:	103	82	528	127	81	635	880	xxxx	xxxxx	710	xxxx	xxxxx
Move Cap.:	88	76	528	100	76	635	880	xxxx	xxxxx	710	xxxx	xxxxx
Volume/Cap:	0.38	0.02	0.16	0.15	0.02	0.08	0.03	xxxx	xxxx	0.03	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	0.3	0.1	xxxx	xxxxx	0.1	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	11.2	9.2	xxxx	xxxxx	10.2	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	B	A	*	*	B	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	212	xxxxx	97	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	3.0	xxxxx	0.6	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	41.1	xxxxx	49.5	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	E	*	E	*	*	*	*	*	*	*	*
ApproachDel:	41.1			20.3			xxxxxx			xxxxxx		
ApproachLOS:	E			C			*			*		

Note: Queue reported is the number of cars per lane.

Mammoth Crossings
Existing plus Project Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #1011 Old Mammoth Rd/ Main St

Cycle (sec): 60 Critical Vol./Cap.(X): 0.730
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 14.8
Optimal Cycle: 55 Level Of Service: B

Street Name:	Old Mammoth Rd						Main St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R
Control:	Protected			Protected			Prot+Permit			Prot+Permit		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	0	1	0 0	0	0	0 0	2	0 1	1 0	2	0 0
Volume Module:												
Base Vol:	296	0	74	0	0	0	0	314	572	110	263	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	296	0	74	0	0	0	0	314	572	110	263	0
Added Vol:	21	0	0	0	0	0	0	13	19	0	15	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	317	0	74	0	0	0	0	327	591	110	278	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	334	0	78	0	0	0	0	344	622	116	293	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	334	0	78	0	0	0	0	344	622	116	293	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	334	0	78	0	0	0	0	344	622	116	293	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	1.00	0.85	1.00	1.00	1.00	1.00	0.95	0.98	0.95	0.95	1.00
Lanes:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	2.00	1.00	1.00	2.00	0.00
Final Sat.:	1805	0	1615	0	0	0	0	3610	1857	1805	3610	0
Capacity Analysis Module:												
Vol/Sat:	0.18	0.00	0.05	0.00	0.00	0.00	0.00	0.10	0.33	0.06	0.08	0.00
Crit Moves:	****								****	****		
Green/Cycle:	0.25	0.00	0.25	0.00	0.00	0.00	0.00	0.46	0.46	0.61	0.55	0.00
Volume/Cap:	0.73	0.00	0.19	0.00	0.00	0.00	0.00	0.21	0.73	0.18	0.15	0.00
Delay/Veh:	26.4	0.0	17.8	0.0	0.0	0.0	0.0	9.8	16.4	5.1	6.7	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	26.4	0.0	17.8	0.0	0.0	0.0	0.0	9.8	16.4	5.1	6.7	0.0
LOS by Move:	C	A	B	A	A	A	A	A	B	A	A	A
HCM2kAvgQ:	7	0	1	0	0	0	0	2	11	1	1	0

Note: Queue reported is the number of cars per lane.

Mammoth Crossings
Existing plus Project Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

****

Intersection #1009 Post Office Frontage/Main St

****

Cycle (sec):	100	Critical Vol./Cap.(X):	0.529
Loss Time (sec):	16 (Y+R=4.0 sec)	Average Delay (sec/veh):	22.3
Optimal Cycle:	51	Level Of Service:	C

****

Street Name:	Post Office Frontage						Main Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1!	0 0	0	1 0	0 1	1	0 1	1 0	1	0 1	1 0
Volume Module:												
Base Vol:	31	10	45	36	2	70	47	570	46	41	375	61
Growth Adj:	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43
Initial Bse:	44	14	64	51	3	100	67	815	66	59	536	87
Added Vol:	0	0	0	0	0	0	0	37	0	0	42	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	44	14	64	51	3	100	67	852	66	59	578	87
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	47	15	68	54	3	105	71	897	69	62	609	92
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	47	15	68	54	3	105	71	897	69	62	609	92
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	47	15	68	54	3	105	71	897	69	62	609	92
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.91	0.91	0.91	0.96	0.96	0.85	0.95	0.94	0.94	0.95	0.93	0.93
Lanes:	0.36	0.12	0.52	0.95	0.05	1.00	1.00	1.86	0.14	1.00	1.74	0.26
Final Sat.:	625	202	907	1719	96	1615	1805	3314	256	1805	3074	464
Capacity Analysis Module:												
Vol/Sat:	0.07	0.07	0.07	0.03	0.03	0.07	0.04	0.27	0.27	0.03	0.20	0.20
Crit Moves:		****				****		****		****		
Green/Cycle:	0.14	0.14	0.14	0.12	0.12	0.12	0.10	0.51	0.51	0.06	0.48	0.48
Volume/Cap:	0.53	0.53	0.53	0.26	0.26	0.53	0.41	0.53	0.53	0.53	0.41	0.41
Delay/Veh:	42.1	42.1	42.1	40.3	40.3	43.8	44.2	16.7	16.7	49.8	17.0	17.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	42.1	42.1	42.1	40.3	40.3	43.8	44.2	16.7	16.7	49.8	17.0	17.0
LOS by Move:	D	D	D	D	D	D	D	B	B	D	B	B
HCM2kAvgQ:	4	4	4	2	2	4	3	11	11	3	7	7

****

Note: Queue reported is the number of cars per lane.

****

Mammoth Crossings
Existing plus Project plus Approved Projects Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

****

Intersection #1009 Post Office Frontage/Main St

****

Average Delay (sec/veh): 2.9 Worst Case Level Of Service: D[34.7]

****

Street Name:	Post Office Frontage						Main Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1!	0 0		0 1	0 0	1	1 0	1 1	0	1 0	1 1	0
Volume Module:												
Base Vol:	31	10	45	36	2	70	47	570	46	41	375	61
Growth Adj:	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43
Initial Bse:	44	14	64	51	3	100	67	815	66	59	536	87
Added Vol:	0	0	0	0	0	0	0	37	0	0	42	0
PasserByVol:	-44	0	0	-51	0	15	4	-19	0	0	47	22
Initial Fut:	0	14	64	0	3	115	71	833	66	59	625	109
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	0	15	68	1	3	121	75	877	69	62	658	115
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	15	68	1	3	121	75	877	69	62	658	115
Critical Gap Module:												
Critical Gp:	7.5	6.5	6.9	7.5	6.5	6.9	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	3.5	4.0	3.3	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	1515	1958	473	1435	1935	387	773	xxxx	xxxxx	946	xxxx	xxxxx
Potent Cap.:	84	64	543	96	67	618	851	xxxx	xxxxx	734	xxxx	xxxxx
Move Cap.:	56	54	543	58	56	618	851	xxxx	xxxxx	734	xxxx	xxxxx
Volume/Cap:	0.01	0.28	0.12	0.01	0.05	0.20	0.09	xxxx	xxxx	0.08	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	0.7	0.3	xxxx	xxxxx	0.3	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	12.2	9.6	xxxx	xxxxx	10.4	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	B	A	*	*	B	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	202	xxxxx	56	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	1.9	xxxxx	0.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	34.7	xxxxx	73.7	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	D	*	F	*	*	*	*	*	*	*	*
ApproachDel:		34.7			14.0			xxxxxx			xxxxxx	
ApproachLOS:		D			B			*			*	

****

Note: Queue reported is the number of cars per lane.

****

APPENDIX F

CUMULATIVE PLUS PROJECT LEVEL OF SERVICE WORKSHEETS

Mammoth Crossings
Existing plus Project plus Approved Projects Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #1 Minaret Rd/ Meridian Blvd

Cycle (sec): 95 Critical Vol./Cap.(X): 0.581
Loss Time (sec): 16 (Y+R=4.0 sec) Average Delay (sec/veh): 32.0
Optimal Cycle: 55 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0		0	0	0		0	0	0		0	0	0		0	0
Lanes:	1	0	0	1 0	1	0	0	1 0	1	0	1	1 0	1	0	1	1 0
Volume Module:																
Base Vol:	18		71	16	130		113	49	62		144	48	18		79	92
Growth Adj:	1.43		1.43	1.43	1.43		1.43	1.43	1.43		1.43	1.43	1.43		1.43	1.43
Initial Bse:	26		102	23	186		162	70	89		206	69	26		113	132
Added Vol:	0		6	0	18		5	5	6		0	0	0		0	21
PasserByVol:	82		110	2	45		88	4	26		34	72	-2		85	-10
Initial Fut:	108		218	25	249		255	79	121		240	141	24		198	143
User Adj:	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
PHF Adj:	0.90		0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90
PHF Volume:	120		242	28	277		283	88	134		267	156	26		220	158
Reduct Vol:	0		0	0	0		0	0	0		0	0	0		0	0
Reduced Vol:	120		242	28	277		283	88	134		267	156	26		220	158
PCE Adj:	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
MLF Adj:	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
FinalVolume:	120		242	28	277		283	88	134		267	156	26		220	158
Saturation Flow Module:																
Sat/Lane:	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900
Adjustment:	0.95		0.99	0.99	0.95		0.96	0.96	0.95		0.90	0.90	0.95		0.89	0.89
Lanes:	1.00		0.90	0.10	1.00		0.76	0.24	1.00		1.26	0.74	1.00		1.16	0.84
Final Sat.:	1805		1679	192	1805		1398	434	1805		2151	1261	1805		1966	1416
Capacity Analysis Module:																
Vol/Sat:	0.07		0.14	0.14	0.15		0.20	0.20	0.07		0.12	0.12	0.01		0.11	0.11
Crit Moves:			****		****				****						****	
Green/Cycle:	0.13		0.25	0.25	0.26		0.39	0.39	0.13		0.29	0.29	0.03		0.19	0.19
Volume/Cap:	0.53		0.58	0.58	0.58		0.53	0.53	0.58		0.43	0.43	0.43		0.58	0.58
Delay/Veh:	41.1		33.3	33.3	32.2		23.3	23.3	42.7		27.9	27.9	49.9		36.2	36.2
User DelAdj:	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
AdjDel/Veh:	41.1		33.3	33.3	32.2		23.3	23.3	42.7		27.9	27.9	49.9		36.2	36.2
LOS by Move:	D		C	C	C		C	C	D		C	C	D		D	D
HCM2kAvgQ:	4		8	8	8		9	9	5		6	6	1		6	6

Note: Queue reported is the number of cars per lane.

Mammoth Crossings
Existing plus Project plus Approved Projects Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 Minaret Rd/Main St-Lake Mary Rd

Cycle (sec): 80 Critical Vol./Cap.(X): 0.804
Loss Time (sec): 16 (Y+R=4.0 sec) Average Delay (sec/veh): 31.6
Optimal Cycle: 80 Level Of Service: C

Street Name:	Minaret Rd								Main St-Lake Mary Rd							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Split Phase				Split Phase				Protected				Protected			
Rights:	Include				Include				Include				Ovl			
Min. Green:	0		0	0	0		0	0	0		0	0	0		0	0
Lanes:	1	0	1	0 1	2	0	0	1 0	1	0	2	0 1	1	0	2	0 1
Volume Module:																
Base Vol:	159		118	80	480		183	127	97		465	197	65		337	105
Growth Adj:	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
Initial Bse:	159		118	80	480		183	127	97		465	197	65		337	105
Added Vol:	11		8	11	0		9	9	9		26	12	13		29	0
PasserByVol:	64		55	45	-41		65	0	9		-35	113	37		6	96
Initial Fut:	234		181	136	439		257	136	115		456	322	115		372	201
User Adj:	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
PHF Adj:	0.95		0.95	0.95	0.95		0.95	0.95	0.95		0.95	0.95	0.95		0.95	0.95
PHF Volume:	246		191	143	462		271	143	121		480	339	121		392	212
Reduct Vol:	0		0	0	0		0	0	0		0	0	0		0	0
Reduced Vol:	246		191	143	462		271	143	121		480	339	121		392	212
PCE Adj:	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
MLF Adj:	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
FinalVolume:	246		191	143	462		271	143	121		480	339	121		392	212
Saturation Flow Module:																
Sat/Lane:	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900
Adjustment:	0.95		1.00	0.85	0.92		0.95	0.95	0.95		0.95	0.85	0.95		0.95	0.85
Lanes:	1.00		1.00	1.00	2.00		0.65	0.35	1.00		2.00	1.00	1.00		2.00	1.00
Final Sat.:	1805		1900	1615	3502		1178	623	1805		3610	1615	1805		3610	1615
Capacity Analysis Module:																
Vol/Sat:	0.14		0.10	0.09	0.13		0.23	0.23	0.07		0.13	0.21	0.07		0.11	0.13
Crit Moves:	****							****				****	****			
Green/Cycle:	0.17		0.17	0.17	0.29		0.29	0.29	0.13		0.26	0.26	0.08		0.21	0.50
Volume/Cap:	0.80		0.59	0.52	0.46		0.80	0.80	0.51		0.51	0.80	0.80		0.51	0.26
Delay/Veh:	46.2		33.5	32.1	23.8		35.4	35.4	34.2		25.7	38.3	62.0		28.4	11.7
User DelAdj:	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
AdjDel/Veh:	46.2		33.5	32.1	23.8		35.4	35.4	34.2		25.7	38.3	62.0		28.4	11.7
LOS by Move:	D		C	C	C		D	D	C		C	D	E		C	B
HCM2kAvgQ:	8		5	4	5		12	12	3		6	10	5		5	3

Note: Queue reported is the number of cars per lane.

Mammoth Crossings
Existing plus Project plus Approved Projects Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #1003 Minaret Rd/7B

Average Delay (sec/veh): 1.7 Worst Case Level Of Service: D[29.9]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Lanes:	0	0	1! 0	0	1	0	0	1 0	0	1	0	0 1	0	1	0	0 1
Volume Module:																
Base Vol:	0	478	7		34	623	0		0	0	0		6	0	29	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	478	7		34	623	0		0	0	0		6	0	29	
Added Vol:	18	6	10		14	13	11		12	0	8		8	0	12	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	18	484	17		48	636	11		12	0	8		14	0	41	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.95	0.95	0.95		0.95	0.95	0.95		0.95	0.95	0.95		0.95	0.95	0.95	
PHF Volume:	19	509	18		51	669	12		13	0	8		15	0	43	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
FinalVolume:	19	509	18		51	669	12		13	0	8		15	0	43	
Critical Gap Module:																
Critical Gp:	4.1	xxxx	xxxxx		4.1	xxxx	xxxxx		7.1	6.5	6.2		7.1	6.5	6.2	
FollowUpTim:	2.2	xxxx	xxxxx		2.2	xxxx	xxxxx		3.5	4.0	3.3		3.5	4.0	3.3	
Capacity Module:																
Cnflict Vol:	681	xxxx	xxxxx		527	xxxx	xxxxx		1354	1342	675		1337	1338	518	
Potent Cap.:	921	xxxx	xxxxx		1050	xxxx	xxxxx		128	154	457		132	154	561	
Move Cap.:	921	xxxx	xxxxx		1050	xxxx	xxxxx		112	143	457		122	144	561	
Volume/Cap:	0.02	xxxx	xxxx		0.05	xxxx	xxxx		0.11	0.00	0.02		0.12	0.00	0.08	
Level Of Service Module:																
2Way95thQ:	0.1	xxxx	xxxxx		0.2	xxxx	xxxxx		xxxx	xxxx	0.1		xxxx	xxxx	0.2	
Control Del:	9.0	xxxx	xxxxx		8.6	xxxx	xxxxx		xxxxx	xxxx	13.0		xxxxx	xxxx	11.9	
LOS by Move:	A	*	*		A	*	*		*	*	B		*	*	B	
Movement:	LT -	LTR -	RT		LT -	LTR -	RT		LT -	LTR -	RT		LT -	LTR -	RT	
Shared Cap.:	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		112	xxxx	xxxxx		122	xxxx	xxxxx	
SharedQueue:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		0.4	xxxx	xxxxx		0.4	xxxx	xxxxx	
Shrd ConDel:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		41.2	xxxx	xxxxx		38.4	xxxx	xxxxx	
Shared LOS:	*	*	*		*	*	*		E	*	*		E	*	*	
ApproachDel:	xxxxxx				xxxxxx				29.9				18.7			
ApproachLOS:	*				*				D				C			

Note: Queue reported is the number of cars per lane.

Mammoth Crossings
Existing plus Project plus Approved Projects Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #1004 Minaret Road/Forest Trail

Average Delay (sec/veh): 99.6 Worst Case Level Of Service: F[1242.3]

Street Name:	Minaret Road								Forest Trail							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Lanes:	0	0	1! 0	0	0	0	1! 0	0	0	0	1! 0	0	0	0	1! 0	0
Volume Module:																
Base Vol:	69	92	24		28	352	33		12	8	88		20	13	2	
Growth Adj:	1.43	1.43	1.43		1.43	1.43	1.43		1.43	1.43	1.43		1.43	1.43	1.43	
Initial Bse:	99	132	34		40	503	47		17	11	126		29	19	3	
Added Vol:	0	16	0		0	19	0		0	0	0		0	0	0	
PasserByVol:	63	10	4		0	-5	1		-7	97	6		3	2	0	
Initial Fut:	162	158	38		40	517	48		10	108	132		32	21	3	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90	
PHF Volume:	180	175	43		44	575	54		11	120	146		35	23	3	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
FinalVolume:	180	175	43		44	575	54		11	120	146		35	23	3	
Critical Gap Module:																
Critical Gp:	4.1	xxxx	xxxxx		4.1	xxxx	xxxxx		7.1	6.5	6.2		7.1	6.5	6.2	
FollowUpTim:	2.2	xxxx	xxxxx		2.2	xxxx	xxxxx		3.5	4.0	3.3		3.5	4.0	3.3	
Capacity Module:																
Cnflict Vol:	628	xxxx	xxxxx		218	xxxx	xxxxx		1259	1268	602		1380	1273	196	
Potent Cap.:	963	xxxx	xxxxx		1364	xxxx	xxxxx		149	170	504		123	169	850	
Move Cap.:	963	xxxx	xxxxx		1364	xxxx	xxxxx		105	129	504		13	128	850	
Volume/Cap:	0.19	xxxx	xxxx		0.03	xxxx	xxxx		0.11	0.94	0.29		2.72	0.18	0.00	
Level Of Service Module:																
2Way95thQ:	0.7	xxxx	xxxxx		0.1	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx	
Control Del:	9.6	xxxx	xxxxx		7.7	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
LOS by Move:	A	*	*		A	*	*		*	*	*		*	*	*	
Movement:	LT -	LTR -	RT		LT -	LTR -	RT		LT -	LTR -	RT		LT -	LTR -	RT	
Shared Cap.:	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	209	xxxxx		xxxx	21	xxxxx	
SharedQueue:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	15.5	xxxxx		xxxxx	7.9	xxxxx	
Shrd ConDel:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	224	xxxxx		xxxxx	1242	xxxxx	
Shared LOS:	*	*	*		*	*	*		*	F	*		*	F	*	
ApproachDel:	xxxxxx				xxxxxx				224.2				1242.3			
ApproachLOS:	*				*				F				F			

Note: Queue reported is the number of cars per lane.

Mammoth Crossings
Existing plus Project plus Approved Projects Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #1005 Kelly Rd/Lake Mary Rd

Average Delay (sec/veh): 3.8 Worst Case Level Of Service: B[12.0]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Rights:	Include				Include				Include				Include			
Lanes:	0	0	1!	0 0	0	0	0	0 0	0	0	0	1 0	0	1	0	0 0
Volume Module:																
Base Vol:	31	0	61	0	0	0	0	111	34	109	184	0				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	31	0	61	0	0	0	0	111	34	109	184	0				
Added Vol:	0	0	6	0	0	0	0	6	0	6	5	0				
PasserByVol:	6	0	34	0	0	0	0	24	48	-2	10	0				
Initial Fut:	37	0	101	0	0	0	0	141	82	113	199	0				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95				
PHF Volume:	39	0	106	0	0	0	0	148	86	119	209	0				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
FinalVolume:	39	0	106	0	0	0	0	148	86	119	209	0				
Critical Gap Module:																
Critical Gp:	6.4	6.5	6.2	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx				
FollowUpTim:	3.5	4.0	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx				
Capacity Module:																
Cnflict Vol:	639	639	192	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	235	xxxx	xxxxx				
Potent Cap.:	443	397	855	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1344	xxxx	xxxxx				
Move Cap.:	410	358	855	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1344	xxxx	xxxxx				
Volume/Cap:	0.09	0.00	0.12	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.09	xxxx	xxxx				
Level Of Service Module:																
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.3	xxxx	xxxxx				
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.9	xxxx	xxxxx				
LOS by Move:	*	*	*	*	*	*	*	*	*	A	*	*				
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT						
Shared Cap.:	xxxx	663	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx				
SharedQueue:	xxxxx	0.8	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.3	xxxx	xxxxx				
Shrd ConDel:	xxxxx	12.0	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.9	xxxx	xxxxx				
Shared LOS:	*	B	*	*	*	*	*	*	*	A	*	*				
ApproachDel:	12.0			xxxxxx			xxxxxx			xxxxxx						
ApproachLOS:	B			*			*			*						

Note: Queue reported is the number of cars per lane.

Mammoth Crossings
Existing plus Project plus Approved Projects Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #1006 Lakeview/Lake Mary Road

Average Delay (sec/veh): 2.2 Worst Case Level Of Service: B[11.5]

Street Name:	Lakeview								Lake Mary Road							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Rights:	Include				Include				Include				Include			
Lanes:	0	0	0	0 0	1	0	0	0 1	0	1	0	0 0	0	0	1	0 1
Volume Module:																
Base Vol:	0	0	0	25	0	20	19	140	0	0	201	53				
Growth Adj:	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43				
Initial Bse:	0	0	0	36	0	29	27	200	0	0	287	76				
Added Vol:	0	0	0	0	0	0	0	13	0	0	11	0				
PasserByVol:	0	0	0	31	0	0	42	16	0	0	7	-7				
Initial Fut:	0	0	0	67	0	29	69	229	0	0	305	69				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90				
PHF Volume:	0	0	0	74	0	32	77	255	0	0	339	76				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
FinalVolume:	0	0	0	74	0	32	77	255	0	0	339	76				
Critical Gap Module:																
Critical Gp:	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
FollowUpTim:	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
Capacity Module:																
Cnflict Vol:	xxxx	xxxx	xxxxx	748	xxxx	339	416	xxxx	xxxxx	xxxx	xxxx	xxxxx				
Potent Cap.:	xxxx	xxxx	xxxxx	383	xxxx	708	1154	xxxx	xxxxx	xxxx	xxxx	xxxxx				
Move Cap.:	xxxx	xxxx	xxxxx	362	xxxx	708	1154	xxxx	xxxxx	xxxx	xxxx	xxxxx				
Total Cap:	484	474	xxxxx	588	521	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx				
Volume/Cap:	xxxx	xxxx	xxxx	0.13	xxxx	0.04	0.07	xxxx	xxxx	xxxx	xxxx	xxxx				
Level Of Service Module:																
2Way95thQ:	xxxx	xxxx	xxxxx	0.4	xxxx	0.1	0.2	xxxx	xxxxx	xxxx	xxxx	xxxxx				
Control Del:	xxxxx	xxxx	xxxxx	12.0	xxxx	10.3	8.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
LOS by Move:	*	*	*	B	*	B	A	*	*	*	*	*				
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT						
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx				
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
Shared LOS:	*	*	*	*	*	*	A	*	*	*	*	*				
ApproachDel:	xxxxxx			11.5			xxxxxx			xxxxxx						
ApproachLOS:	*			B			*			*						

Note: Queue reported is the number of cars per lane.

Mammoth Crossings
Existing plus Project plus Approved Projects Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #1007 Canyon/Lake Mary Road

Cycle (sec): 60 Critical Vol./Cap.(X): 0.527
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 13.9
Optimal Cycle: 39 Level Of Service: B

Street Name:	Canyon						Lake Mary Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R
Control:	Split Phase			Split Phase			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 0	1 0	1	0 1! 0	0	1	0 0	1 0	0	1 0	0 1
Volume Module:												
Base Vol:	0	0	0	286	0	14	9	172	0	0	232	187
Growth Adj:	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43
Initial Bse:	0	0	0	409	0	20	13	246	0	0	332	267
Added Vol:	6	9	22	22	11	4	4	2	7	27	1	21
PasserByVol:	0	0	0	42	0	2	9	46	0	0	-14	84
Initial Fut:	6	9	22	473	11	26	26	294	7	27	319	372
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	6	9	23	498	12	27	27	309	7	28	336	392
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	6	9	23	498	12	27	27	309	7	28	336	392
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	6	9	23	498	12	27	27	309	7	28	336	392
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.89	0.89	0.95	0.95	0.95	0.46	1.00	1.00	0.96	0.96	0.85
Lanes:	1.00	0.29	0.71	1.86	0.04	0.10	1.00	0.98	0.02	0.08	0.92	1.00
Final Sat.:	1805	493	1205	3360	72	171	872	1850	44	143	1685	1615
Capacity Analysis Module:												
Vol/Sat:	0.00	0.02	0.02	0.15	0.16	0.16	0.03	0.17	0.17	0.20	0.20	0.24
Crit Moves:		****				****						****
Green/Cycle:	0.04	0.04	0.04	0.30	0.30	0.30	0.46	0.46	0.46	0.46	0.46	0.46
Volume/Cap:	0.10	0.53	0.53	0.49	0.53	0.53	0.07	0.36	0.36	0.43	0.43	0.53
Delay/Veh:	28.6	36.6	36.6	17.4	17.9	17.9	9.1	10.7	10.7	11.3	11.3	12.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	28.6	36.6	36.6	17.4	17.9	17.9	9.1	10.7	10.7	11.3	11.3	12.2
LOS by Move:	C	D	D	B	B	B	A	B	B	B	B	B
HCM2kAvgQ:	0	1	1	5	5	5	0	4	4	5	5	6

Note: Queue reported is the number of cars per lane.

Mammoth Crossings
Existing plus Project plus Approved Projects Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #1008 Mountain Blvd/Main Street

Average Delay (sec/veh): 4.7 Worst Case Level Of Service: F[83.3]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Rights:	Include				Include				Include				Include			
Lanes:	0	0 1! 0	0		0	0 1! 0	0		1	0 1	1 0		1	0 1	1 0	
Volume Module:																
Base Vol:	5	1	10		25	5	17		24	641	27		3	399	22	
Growth Adj:	1.43	1.43	1.43		1.43	1.43	1.43		1.43	1.43	1.43		1.43	1.43	1.43	
Initial Bse:	7	1	14		36	7	24		34	917	39		4	571	31	
Added Vol:	0	0	0		0	0	0		0	37	0		0	42	0	
PasserByVol:	0	0	0		16	0	10		4	-53	0		0	132	16	
Initial Fut:	7	1	14		52	7	34		38	901	39		4	745	47	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.95	0.95	0.95		0.95	0.95	0.95		0.95	0.95	0.95		0.95	0.95	0.95	
PHF Volume:	8	2	15		54	8	36		40	948	41		5	784	50	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
FinalVolume:	8	2	15		54	8	36		40	948	41		5	784	50	
Critical Gap Module:																
Critical Gp:	7.5	6.5	6.9		7.5	6.5	6.9		4.1	xxxx	xxxxx		4.1	xxxx	xxxxx	
FollowUpTim:	3.5	4.0	3.3		3.5	4.0	3.3		2.2	xxxx	xxxxx		2.2	xxxx	xxxxx	
Capacity Module:																
Cnflict Vol:	1454	1892	494		1373	1887	417		834	xxxx	xxxxx		989	xxxx	xxxxx	
Potent Cap.:	93	71	526		107	71	590		808	xxxx	xxxxx		707	xxxx	xxxxx	
Move Cap.:	76	67	526		97	67	590		808	xxxx	xxxxx		707	xxxx	xxxxx	
Volume/Cap:	0.10	0.02	0.03		0.56	0.11	0.06		0.05	xxxx	xxxx		0.01	xxxx	xxxx	
Level Of Service Module:																
2Way95thQ:	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		0.2	xxxx	xxxxx		0.0	xxxx	xxxxx	
Control Del:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		9.7	xxxx	xxxxx		10.1	xxxx	xxxxx	
LOS by Move:	*	*	*		*	*	*		A	*	*		B	*	*	
Movement:	LT -	LTR -	RT		LT -	LTR -	RT		LT -	LTR -	RT		LT -	LTR -	RT	
Shared Cap.:	xxxx	161	xxxxx		xxxx	134	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx	
SharedQueue:	xxxxx	0.5	xxxxx		xxxxx	4.2	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
Shrd ConDel:	xxxxx	31.3	xxxxx		xxxxx	83.3	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
Shared LOS:	*	D	*		*	F	*		*	*	*		*	*	*	
ApproachDel:		31.3				83.3				xxxxxx				xxxxxx		
ApproachLOS:		D				F				*				*		

Note: Queue reported is the number of cars per lane.

Mammoth Crossings
Existing plus Project plus Approved Projects Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #1009 Post Office Frontage/Main St

Average Delay (sec/veh): 100.8 Worst Case Level Of Service: F[659.1]

Street Name:	Post Office Frontage						Main Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1! 0 0			0 1 0 0 1			1 0 1 1 0			1 0 1 1 0		
Volume Module:												
Base Vol:	31	10	45	36	2	70	47	570	46	41	375	61
Growth Adj:	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43
Initial Bse:	44	14	64	51	3	100	67	815	66	59	536	87
Added Vol:	0	0	0	0	0	0	0	37	0	0	42	0
PasserByVol:	0	0	0	116	0	15	4	-19	0	0	47	22
Initial Fut:	44	14	64	167	3	115	71	833	66	59	625	109
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	47	15	68	176	3	121	75	877	69	62	658	115
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	47	15	68	176	3	121	75	877	69	62	658	115
Critical Gap Module:												
Critical Gp:	7.5	6.5	6.9	7.5	6.5	6.9	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	3.5	4.0	3.3	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	1515	1958	473	1435	1935	387	773	xxxx	xxxxx	946	xxxx	xxxxx
Potent Cap.:	84	64	543	96	67	618	851	xxxx	xxxxx	734	xxxx	xxxxx
Move Cap.:	56	54	543	58	56	618	851	xxxx	xxxxx	734	xxxx	xxxxx
Volume/Cap:	0.83	0.28	0.12	3.04	0.05	0.20	0.09	xxxx	xxxx	0.08	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	0.7	0.3	xxxx	xxxxx	0.3	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	12.2	9.6	xxxx	xxxxx	10.4	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	B	A	*	*	B	*	*
Movement:	LT	-	LTR - RT	LT	-	LTR - RT	LT	-	LTR - RT	LT	-	LTR - RT
Shared Cap.:	xxxx	105	xxxxx	58	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	8.7	xxxxx	18.8	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	239	xxxxx	1096	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	F	*	F	*	*	*	*	*	*	*	*
ApproachDel:	239.1			659.1			xxxxxx			xxxxxx		
ApproachLOS:	F			F			*			*		

Note: Queue reported is the number of cars per lane.

Mammoth Crossings
Existing plus Project plus Approved Projects Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #1010 Center St/Main St

Average Delay (sec/veh): 17.6 Worst Case Level Of Service: F[199.2]

Street Name:	Center St						Main St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1! 0 0			0 1 0 0 1			1 0 1 1 0			1 0 1 1 0		
Volume Module:												
Base Vol:	22	1	55	10	1	35	19	588	44	16	425	38
Growth Adj:	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43
Initial Bse:	31	1	79	14	1	50	27	841	63	23	608	54
Added Vol:	0	0	0	0	0	0	0	31	0	0	36	0
PasserByVol:	41	0	12	0	0	0	0	-27	41	22	41	0
Initial Fut:	72	1	91	14	1	50	27	845	104	45	685	54
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	76	2	95	15	2	53	29	889	109	47	721	57
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	76	2	95	15	2	53	29	889	109	47	721	57
Critical Gap Module:												
Critical Gp:	7.5	6.5	6.9	7.5	6.5	6.9	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	3.5	4.0	3.3	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	1457	1874	499	1346	1900	389	778	xxxx	xxxxx	999	xxxx	xxxxx
Potent Cap.:	92	73	522	112	70	615	848	xxxx	xxxxx	701	xxxx	xxxxx
Move Cap.:	77	65	522	83	63	615	848	xxxx	xxxxx	701	xxxx	xxxxx
Volume/Cap:	0.99	0.02	0.18	0.18	0.02	0.09	0.03	xxxx	xxxx	0.07	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	0.3	0.1	xxxx	xxxxx	0.2	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	11.4	9.4	xxxx	xxxxx	10.5	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	B	A	*	*	B	*	*
Movement:	LT	-	LTR - RT	LT	-	LTR - RT	LT	-	LTR - RT	LT	-	LTR - RT
Shared Cap.:	xxxx	144	xxxxx	81	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	10.1	xxxxx	0.7	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	199	xxxxx	60.9	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	F	*	F	*	*	*	*	*	*	*	*
ApproachDel:	199.2			23.2			xxxxxx			xxxxxx		
ApproachLOS:	F			C			*			*		

Note: Queue reported is the number of cars per lane.

Mammoth Crossings
Existing plus Project plus Approved Projects Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #1011 Old Mammoth Rd/ Main St

Cycle (sec):	60	Critical Vol./Cap.(X):	0.822
Loss Time (sec):	12 (Y+R=4.0 sec)	Average Delay (sec/veh):	17.2
Optimal Cycle:	67	Level Of Service:	B

Street Name:	Old Mammoth Rd						Main St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R
Control:	Protected			Protected			Prot+Permit			Prot+Permit		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 0	1	0	0 0	0 0	0	0 2	0 1	1	0 2	0 0
Volume Module:												
Base Vol:	296	0	74	0	0	0	0	314	572	110	263	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	296	0	74	0	0	0	0	314	572	110	263	0
Added Vol:	21	0	0	0	0	0	0	13	19	0	15	0
PasserByVol:	16	0	12	0	0	0	0	-2	99	14	19	0
Initial Fut:	333	0	86	0	0	0	0	325	690	124	297	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	351	0	91	0	0	0	0	342	726	131	313	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	351	0	91	0	0	0	0	342	726	131	313	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	351	0	91	0	0	0	0	342	726	131	313	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	1.00	0.85	1.00	1.00	1.00	1.00	0.95	0.98	0.95	0.95	1.00
Lanes:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	2.00	1.00	1.00	2.00	0.00
Final Sat.:	1805	0	1615	0	0	0	0	3610	1857	1805	3610	0
Capacity Analysis Module:												
Vol/Sat:	0.19	0.00	0.06	0.00	0.00	0.00	0.00	0.09	0.39	0.07	0.09	0.00
Crit Moves:	****								****	****		
Green/Cycle:	0.24	0.00	0.24	0.00	0.00	0.00	0.00	0.48	0.48	0.63	0.56	0.00
Volume/Cap:	0.82	0.00	0.24	0.00	0.00	0.00	0.00	0.20	0.82	0.20	0.15	0.00
Delay/Veh:	33.8	0.0	18.9	0.0	0.0	0.0	0.0	9.2	19.8	4.7	6.3	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	33.8	0.0	18.9	0.0	0.0	0.0	0.0	9.2	19.8	4.7	6.3	0.0
LOS by Move:	C	A	B	A	A	A	A	A	B	A	A	A
HCM2kAvgQ:	9	0	2	0	0	0	0	2	14	1	1	0

Note: Queue reported is the number of cars per lane.

Mammoth Crossings
Existing Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 Minaret Rd/Main St-Lake Mary Rd

Cycle (sec): 80 Critical Vol./Cap.(X): 0.872
Loss Time (sec): 16 (Y+R=4.0 sec) Average Delay (sec/veh): 37.3
Optimal Cycle: 94 Level Of Service: D

Street Name:	Minaret Rd						Main St-Lake Mary Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 1	0 1	2	0 0	1 0	1	0 2	0 1	1	0 2	0 1
Volume Module:												
Base Vol:	234	181	136	439	257	136	115	456	322	115	372	201
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	234	181	136	439	257	136	115	456	322	115	372	201
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
100spGarage:	9	-23	66	-66	0	-9	-12	0	12	81	0	-81
Initial Fut:	243	158	202	373	257	127	103	456	334	196	372	120
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	256	166	213	393	271	134	108	480	352	206	392	126
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	256	166	213	393	271	134	108	480	352	206	392	126
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	256	166	213	393	271	134	108	480	352	206	392	126
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	1.00	0.85	0.92	0.95	0.95	0.95	0.95	0.85	0.95	0.95	0.85
Lanes:	1.00	1.00	1.00	2.00	0.67	0.33	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1805	1900	1615	3502	1208	597	1805	3610	1615	1805	3610	1615
Capacity Analysis Module:												
Vol/Sat:	0.14	0.09	0.13	0.11	0.22	0.22	0.06	0.13	0.22	0.11	0.11	0.08
Crit Moves:	****				****				****	****		
Green/Cycle:	0.16	0.16	0.16	0.26	0.26	0.26	0.14	0.25	0.25	0.13	0.25	0.50
Volume/Cap:	0.87	0.54	0.81	0.44	0.87	0.87	0.44	0.53	0.87	0.87	0.44	0.16
Delay/Veh:	56.3	32.6	49.3	25.2	44.9	44.9	33.1	26.6	47.1	61.9	25.9	10.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	56.3	32.6	49.3	25.2	44.9	44.9	33.1	26.6	47.1	61.9	25.9	10.9
LOS by Move:	E	C	D	C	D	D	C	C	D	E	C	B
HCM2kAvgQ:	9	4	7	5	13	13	3	6	12	8	5	2

Note: Queue reported is the number of cars per lane.

Mammoth Crossings
Existing Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #1003 Minaret Rd/7B

Average Delay (sec/veh): 4.4 Worst Case Level Of Service: F[51.8]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0	0 1! 0	0	1	0 0 1	0	0	1 0	0	0	1 0	0 1
Volume Module:												
Base Vol:	18	484	17	48	636	11	12	0	8	14	0	41
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	18	484	17	48	636	11	12	0	8	14	0	41
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
100spGarage:	0	-23	23	93	0	0	0	0	0	19	0	75
Initial Fut:	18	461	40	141	636	11	12	0	8	33	0	116
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	19	485	42	148	669	12	13	0	8	35	0	122
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	19	485	42	148	669	12	13	0	8	35	0	122
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx	7.1	6.5	6.2	7.1	6.5	6.2
FollowUpTim:	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx	3.5	4.0	3.3	3.5	4.0	3.3
Capacity Module:												
Cnflict Vol:	681	xxxx	xxxxx	527	xxxx	xxxxx	1577	1537	675	1521	1522	506
Potent Cap.:	921	xxxx	xxxxx	1050	xxxx	xxxxx	90	117	457	98	119	570
Move Cap.:	921	xxxx	xxxxx	1050	xxxx	xxxxx	62	98	457	85	100	570
Volume/Cap:	0.02	xxxx	xxxx	0.14	xxxx	xxxx	0.20	0.00	0.02	0.41	0.00	0.21
Level Of Service Module:												
2Way95thQ:	0.1	xxxx	xxxxx	0.5	xxxx	xxxxx	xxxx	xxxx	0.1	xxxx	xxxx	0.8
Control Del:	9.0	xxxx	xxxxx	9.0	xxxx	xxxxx	xxxxx	xxxx	13.0	xxxxx	xxxx	13.0
LOS by Move:	A	*	*	A	*	*	*	*	B	*	*	B
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	62	xxxx	xxxxx	85	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.7	xxxx	xxxxx	1.7	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	77.6	xxxx	xxxxx	74.5	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	F	*	*	F	*	*
ApproachDel:	xxxxxx			xxxxxx			51.8			26.6		
ApproachLOS:	*			*			F			D		

Note: Queue reported is the number of cars per lane.

Mammoth Crossings
Existing plus Project plus Approved Projects Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #1010 Center St/Main St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.643
Loss Time (sec):	16 (Y+R=4.0 sec)	Average Delay (sec/veh):	26.9
Optimal Cycle:	62	Level Of Service:	C

Street Name:	Center St						Main St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	0 1	0 0	1	1 0	1	1 0	1 0	1	1 0
Volume Module:												
Base Vol:	22	1	55	10	1	35	19	588	44	16	425	38
Growth Adj:	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43
Initial Bse:	31	1	79	14	1	50	27	841	63	23	608	54
Added Vol:	0	0	0	0	0	0	0	31	0	0	36	0
PasserByVol:	85	0	12	167	0	0	0	-27	41	22	41	0
Initial Fut:	116	1	91	181	1	50	27	845	104	45	685	54
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	123	2	95	191	2	53	29	889	109	47	721	57
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	123	2	95	191	2	53	29	889	109	47	721	57
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	123	2	95	191	2	53	29	889	109	47	721	57
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.92	0.92	0.95	0.95	0.85	0.95	0.93	0.93	0.95	0.94	0.94
Lanes:	0.56	0.01	0.43	0.99	0.01	1.00	1.00	1.78	0.22	1.00	1.85	0.15
Final Sat.:	972	12	756	1797	14	1615	1805	3163	389	1805	3308	262
Capacity Analysis Module:												
Vol/Sat:	0.13	0.13	0.13	0.11	0.11	0.03	0.02	0.28	0.28	0.03	0.22	0.22
Crit Moves:			****		****			****		****		
Green/Cycle:	0.20	0.20	0.20	0.17	0.17	0.17	0.03	0.44	0.44	0.04	0.45	0.45
Volume/Cap:	0.64	0.64	0.64	0.64	0.64	0.20	0.49	0.64	0.64	0.64	0.49	0.49
Delay/Veh:	41.1	41.1	41.1	43.7	43.7	36.4	53.9	22.9	22.9	65.0	19.9	19.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	41.1	41.1	41.1	43.7	43.7	36.4	53.9	22.9	22.9	65.0	19.9	19.9
LOS by Move:	D	D	D	D	D	D	D	C	C	E	B	B
HCM2kAvgQ:	7	7	7	7	7	2	2	13	13	3	9	9

Note: Queue reported is the number of cars per lane.

APPENDIX G

ADOPTED GENERAL PLAN LEVEL OF SERVICE WORKSHEETS

Mammoth Crossings
Final General Plan Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #1 Minaret Rd/ Meridian Blvd

Cycle (sec):	95	Critical Vol./Cap.(X):	0.951
Loss Time (sec):	16 (Y+R=4.0 sec)	Average Delay (sec/veh):	50.9
Optimal Cycle:	120	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0	0 1	0	1	0 0 1	0	1	0 1 1	0	1	0 1 0
Volume Module:												
Base Vol:	236	250	7	141	438	117	136	652	304	8	512	113
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	236	250	7	141	438	117	136	652	304	8	512	113
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	-2	3	2	9	4	-1	10	0	-4	-4	-7	4
Initial Fut:	234	253	9	150	442	116	146	652	300	4	505	117
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	260	281	10	167	491	129	162	724	333	4	561	130
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	260	281	10	167	491	129	162	724	333	4	561	130
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	260	281	10	167	491	129	162	724	333	4	561	130
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	1.00	1.00	0.95	0.97	0.97	0.95	0.91	0.91	0.95	0.92	0.92
Lanes:	1.00	0.97	0.03	1.00	0.79	0.21	1.00	1.37	0.63	1.00	1.62	0.38
Final Sat.:	1805	1826	65	1805	1458	383	1805	2356	1084	1805	2849	660
Capacity Analysis Module:												
Vol/Sat:	0.14	0.15	0.15	0.09	0.34	0.34	0.09	0.31	0.31	0.00	0.20	0.20
Crit Moves:	****				****			****			****	
Green/Cycle:	0.15	0.32	0.32	0.19	0.35	0.35	0.10	0.32	0.32	0.00	0.22	0.22
Volume/Cap:	0.95	0.49	0.49	0.49	0.95	0.95	0.88	0.95	0.95	0.95	0.88	0.88
Delay/Veh:	81.0	26.9	26.9	35.5	53.6	53.6	77.2	47.9	47.9	426.1	46.9	46.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	81.0	26.9	26.9	35.5	53.6	53.6	77.2	47.9	47.9	426.1	46.9	46.9
LOS by Move:	F	C	C	D	D	D	E	D	D	F	D	D
HCM2kAvgQ:	12	7	7	5	23	23	8	21	21	1	14	14

Note: Queue reported is the number of cars per lane.

Mammoth Crossings
Final General Plan Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 Minaret Rd/Main St-Lake Mary Rd

Cycle (sec):	80	Critical Vol./Cap.(X):	0.978
Loss Time (sec):	16 (Y+R=4.0 sec)	Average Delay (sec/veh):	41.6
Optimal Cycle:	120	Level Of Service:	D

Street Name:	Minaret Rd						Main St-Lake Mary Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0	1 0 1	2	0	0 1 0	1	0	2 0 1	1	0	2 0 1
Volume Module:												
Base Vol:	223	301	88	515	462	54	40	626	361	126	617	410
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	223	301	88	515	462	54	40	626	361	126	617	410
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	9	-2	17	-5	-7	6	0	-8	13	15	-3	-3
Initial Fut:	232	299	105	510	455	60	40	618	374	141	614	407
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	244	315	111	537	479	63	42	651	394	148	646	428
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	244	315	111	537	479	63	42	651	394	148	646	428
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	244	315	111	537	479	63	42	651	394	148	646	428
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	1.00	0.85	0.92	0.98	0.98	0.95	0.95	0.85	0.95	0.95	0.85
Lanes:	1.00	1.00	1.00	2.00	0.88	0.12	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1805	1900	1615	3502	1648	217	1805	3610	1615	1805	3610	1615
Capacity Analysis Module:												
Vol/Sat:	0.14	0.17	0.07	0.15	0.29	0.29	0.02	0.18	0.24	0.08	0.18	0.27
Crit Moves:		****				****			****	****		
Green/Cycle:	0.17	0.17	0.17	0.30	0.30	0.30	0.04	0.25	0.25	0.08	0.29	0.59
Volume/Cap:	0.80	0.98	0.40	0.52	0.98	0.98	0.61	0.72	0.98	0.98	0.61	0.45
Delay/Veh:	45.7	77.0	30.6	23.8	60.3	60.3	52.4	30.4	68.6	102.7	25.2	9.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	45.7	77.0	30.6	23.8	60.3	60.3	52.4	30.4	68.6	102.7	25.2	9.4
LOS by Move:	D	E	C	C	E	E	D	C	E	F	C	A
HCM2kAvgQ:	8	13	3	6	19	19	2	9	15	7	8	6

Note: Queue reported is the number of cars per lane.

Mammoth Crossings
Final General Plan Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #1003 Minaret Rd/7B

Average Delay (sec/veh): 2.4 Worst Case Level Of Service: F[58.4]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0 1 0			0 0 1! 0 0			0 1 0 0 1			0 0 1! 0 0		
Volume Module:												
Base Vol:	0	646	7	34	885	0	0	0	0	6	0	29
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	646	7	34	885	0	0	0	0	6	0	29
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	13	20	0	10	11	0	7	11	0	17
Initial Fut:	0	646	20	54	885	10	11	0	7	17	0	46
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	0	680	21	57	932	11	12	0	7	18	0	48
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	680	21	57	932	11	12	0	7	18	0	48
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx	7.1	6.5	6.2	7.1	6.5	6.2
FollowUpTim:	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx	3.5	4.0	3.3	3.5	4.0	3.3
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	701	xxxx	xxxxx	1765	1752	937	1745	1746	691
Potent Cap.:	xxxx	xxxx	xxxxx	905	xxxx	xxxxx	66	86	324	68	87	448
Move Cap.:	xxxx	xxxx	xxxxx	905	xxxx	xxxxx	56	81	324	64	81	448
Volume/Cap:	xxxx	xxxx	xxxx	0.06	xxxx	xxxx	0.21	0.00	0.02	0.28	0.00	0.11
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	0.2	xxxx	xxxxx	xxxx	xxxx	0.1	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	9.2	xxxx	xxxxx	xxxxx	xxxx	16.4	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	A	*	*	*	*	C	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	56	xxxx	xxxxx	xxxx	170	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.7	xxxx	xxxxx	xxxxx	1.7	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	85.2	xxxx	xxxxx	xxxxx	39.1	xxxxx
Shared LOS:	*	*	*	*	*	*	F	*	*	*	E	*
ApproachDel:	xxxxxx			xxxxxx			58.4			39.1		
ApproachLOS:	*			*			F			E		

Note: Queue reported is the number of cars per lane.

Mammoth Crossings
Final General Plan Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #1004 Minaret Road/Forest Trail

Average Delay (sec/veh): OVERFLOW Worst Case Level Of Service: F[xxxxx]

Street Name:	Minaret Road						Forest Trail					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1! 0 0			0 0 1! 0 0			0 0 1! 0 0			0 0 1! 0 0		
Volume Module:												
Base Vol:	295	239	25	11	634	315	166	127	325	33	48	8
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	295	239	25	11	634	315	166	127	325	33	48	8
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	5	-5	3	0	-6	13	-6	-6	14	-4	3	0
Initial Fut:	300	234	28	11	628	328	160	121	339	29	51	8
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	316	246	29	12	661	345	168	127	357	31	54	8
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	316	246	29	12	661	345	168	127	357	31	54	8
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx	7.1	6.5	6.2	7.1	6.5	6.2
FollowUpTim:	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx	3.5	4.0	3.3	3.5	4.0	3.3
Capacity Module:												
Cnflict Vol:	1006	xxxx	xxxxx	276	xxxx	xxxxx	1781	1764	834	1992	1922	261
Potent Cap.:	696	xxxx	xxxxx	1299	xxxx	xxxxx	65	85	371	46	68	782
Move Cap.:	696	xxxx	xxxxx	1299	xxxx	xxxxx	0	34	371	0	27	782
Volume/Cap:	0.45	xxxx	xxxx	0.01	xxxx	xxxx	xxxx	3.79	0.96	xxxx	2.00	0.01
Level Of Service Module:												
2Way95thQ:	2.4	xxxx	xxxxx	0.0	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	14.4	xxxx	xxxxx	7.8	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	B	*	*	A	*	*	*	*	*	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	0	xxxxx	xxxx	0	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:	*			*			F			F		

Note: Queue reported is the number of cars per lane.

Mammoth Crossings
Final General Plan Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #1005 Kelly Rd/Lake Mary Rd

Average Delay (sec/veh): 10.2 Worst Case Level Of Service: D[33.2]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Rights:	Include				Include				Include				Include			
Lanes:	0	0	1!	0 0	0	0	0	0 0	0	0	0	1 0	0	1	0	0 0
Volume Module:																
Base Vol:	73	0	218	0	0	0	0		225	67	197	333	0			
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00			
Initial Bse:	73	0	218	0	0	0	0		225	67	197	333	0			
Added Vol:	0	0	0	0	0	0	0		0	0	0	0	0			
PasserByVol:	2	0	1	0	0	0	0		-2	-2	1	7	0			
Initial Fut:	75	0	219	0	0	0	0		223	65	198	340	0			
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00			
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90		0.90	0.90	0.90	0.90	0.90			
PHF Volume:	83	0	243	0	0	0	0		248	72	220	378	0			
Reduct Vol:	0	0	0	0	0	0	0		0	0	0	0	0			
FinalVolume:	83	0	243	0	0	0	0		248	72	220	378	0			
Critical Gap Module:																
Critical Gp:	6.4	6.5	6.2	xxxxx	xxxx	xxxxx	xxxxx		xxxx	xxxxx	4.1	xxxx	xxxxx			
FollowUpTim:	3.5	4.0	3.3	xxxxx	xxxx	xxxxx	xxxxx		xxxx	xxxxx	2.2	xxxx	xxxxx			
Capacity Module:																
Cnflict Vol:	1102	1102	284	xxxx	xxxx	xxxxx	xxxx		xxxx	xxxxx	320	xxxx	xxxxx			
Potent Cap.:	236	214	760	xxxx	xxxx	xxxxx	xxxx		xxxx	xxxxx	1251	xxxx	xxxxx			
Move Cap.:	198	168	760	xxxx	xxxx	xxxxx	xxxx		xxxx	xxxxx	1251	xxxx	xxxxx			
Volume/Cap:	0.42	0.00	0.32	xxxx	xxxx	xxxx	xxxx		xxxx	xxxx	0.18	xxxx	xxxx			
Level Of Service Module:																
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx		xxxx	xxxxx	0.6	xxxx	xxxxx			
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx		xxxx	xxxxx	8.5	xxxx	xxxxx			
LOS by Move:	*	*	*	*	*	*	*		*	*	A	*	*			
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -		LTR -	RT	LT -	LTR -	RT			
Shared Cap.:	xxxx	441	xxxxx	xxxx	xxxx	xxxxx	xxxx		xxxx	xxxxx	xxxx	xxxx	xxxxx			
SharedQueue:	xxxxx	6.0	xxxxx	xxxxx	xxxx	xxxxx	xxxxx		xxxx	xxxxx	0.6	xxxx	xxxxx			
Shrd ConDel:	xxxxx	33.2	xxxxx	xxxxx	xxxx	xxxxx	xxxxx		xxxx	xxxxx	8.5	xxxx	xxxxx			
Shared LOS:	*	D	*	*	*	*	*		*	*	A	*	*			
ApproachDel:	33.2			xxxxxx			xxxxxx				xxxxxx					
ApproachLOS:	D			*			*				*					

Note: Queue reported is the number of cars per lane.

Mammoth Crossings
Final General Plan Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #1006 Lakeview/Lake Mary Road

Average Delay (sec/veh): 137.9 Worst Case Level Of Service: F[316.8]

Street Name:	Lakeview								Lake Mary Road							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Rights:	Include				Include				Include				Include			
Lanes:	0	0	0	0 0	0	0	1!	0 0	0	1	0	0 0	0	0	1	0 1
Volume Module:																
Base Vol:	0	0	0	217	0	353	299	144	0	0	178	175				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	0	0	0	217	0	353	299	144	0	0	178	175				
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
PasserByVol:	0	0	0	10	0	13	10	-10	0	0	-6	-1				
Initial Fut:	0	0	0	227	0	366	309	134	0	0	172	174				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95				
PHF Volume:	0	0	0	239	0	385	325	141	0	0	181	183				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
FinalVolume:	0	0	0	239	0	385	325	141	0	0	181	183				
Critical Gap Module:																
Critical Gp:	xxxxx	xxxx	xxxxx	6.4	6.5	6.2	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
FollowUpTim:	xxxxx	xxxx	xxxxx	3.5	4.0	3.3	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
Capacity Module:																
Cnflict Vol:	xxxx	xxxx	xxxxx	973	973	181	364	xxxx	xxxxx	xxxx	xxxx	xxxxx				
Potent Cap.:	xxxx	xxxx	xxxxx	282	254	867	1206	xxxx	xxxxx	xxxx	xxxx	xxxxx				
Move Cap.:	xxxx	xxxx	xxxxx	203	162	867	1206	xxxx	xxxxx	xxxx	xxxx	xxxxx				
Volume/Cap:	xxxx	xxxx	xxxx	1.18	0.00	0.44	0.27	xxxx	xxxx	xxxx	xxxx	xxxx				
Level Of Service Module:																
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1.1	xxxx	xxxxx	xxxx	xxxx	xxxxx				
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	9.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
LOS by Move:	*	*	*	*	*	*	A	*	*	*	*	*				
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT				
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	385	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx				
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	36.4	xxxxx	1.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	317	xxxxx	9.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
Shared LOS:	*	*	*	*	F	*	A	*	*	*	*	*				
ApproachDel:	xxxxxx			316.8			xxxxxx			xxxxxx						
ApproachLOS:	*			F			*			*						

Note: Queue reported is the number of cars per lane.

Mammoth Crossings
Final General Plan Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #1007 Canyon/Lake Mary Road

Cycle (sec): 60 Critical Vol./Cap.(X): 0.679
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 14.3
Optimal Cycle: 50 Level Of Service: B

Street Name:	Canyon									Lake Mary Road								
Approach:	North Bound				South Bound				East Bound				West Bound					
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Split Phase					Split Phase					Permitted					Permitted				
Rights:	Include					Include					Include					Include				
Min. Green:	0	0	0			0	0	0			0	0	0			0	0	0		
Lanes:	1	0	0	1	0	1	0	1!	0	0	1	0	1	0	0	0	0	1	0	1
Volume Module:																				
Base Vol:	0	0	0	657	0	29	33	370	0	0	385	510								
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
Initial Bse:	0	0	0	657	0	29	33	370	0	0	385	510								
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0								
PasserByVol:	0	0	0	2	0	4	-10	4	0	0	13	-2								
Initial Fut:	0	0	0	659	0	33	23	374	0	0	398	508								
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95								
PHF Volume:	0	0	0	694	0	35	24	394	0	0	419	535								
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0								
Reduced Vol:	0	0	0	694	0	35	24	394	0	0	419	535								
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
FinalVolume:	0	0	0	694	0	35	24	394	0	0	419	535								
Saturation Flow Module:																				
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900								
Adjustment:	1.00	1.00	1.00	0.95	1.00	0.95	0.46	1.00	1.00	1.00	1.00	0.85								
Lanes:	1.00	1.00	0.00	1.91	0.00	0.09	1.00	1.00	0.00	0.00	1.00	1.00								
Final Sat.:	1900	1900	0	3440	0	164	868	1900	0	0	1900	1615								
Capacity Analysis Module:																				
Vol/Sat:	0.00	0.00	0.00	0.20	0.00	0.21	0.03	0.21	0.00	0.00	0.22	0.33								
Crit Moves:						****						****								
Green/Cycle:	0.00	0.00	0.00	0.31	0.00	0.31	0.49	0.49	0.00	0.00	0.49	0.49								
Volume/Cap:	0.00	0.00	0.00	0.65	0.00	0.68	0.06	0.42	0.00	0.00	0.45	0.68								
Delay/Veh:	0.0	0.0	0.0	19.1	0.0	19.8	8.1	10.2	0.0	0.0	10.4	14.2								
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
AdjDel/Veh:	0.0	0.0	0.0	19.1	0.0	19.8	8.1	10.2	0.0	0.0	10.4	14.2								
LOS by Move:	A	A	A	B	A	B	A	B	A	A	B	B								
HCM2kAvgQ:	0	0	0	7	0	7	0	5	0	0	5	9								

Note: Queue reported is the number of cars per lane.

Mammoth Crossings
Final General Plan Conditions

Level Of Service Computation Report
1994 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #1008 Mountain Blvd/Main Street

Cycle (sec): 1 Critical Vol./Cap.(X): 1.838
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 95.2
Optimal Cycle: 0 Level Of Service: F

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Stop Sign					Stop Sign				
Rights:	Include					Include					Include					Include				
Lanes:	0	0	1!	0	0	0	0	1!	0	0	1	0	2	0	0	1	0	1	1	0
Volume Module:																				
Base Vol:	0	0	0	87	0	66	84	1132	0	0	1085	96								
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
Initial Bse:	0	0	0	87	0	66	84	1132	0	0	1085	96								
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0								
PasserByVol:	0	0	0	0	0	2	-8	8	0	0	19	5								
Initial Fut:	0	0	0	87	0	68	76	1140	0	0	1104	101								
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95								
PHF Volume:	0	0	0	92	0	72	80	1200	0	0	1162	106								
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0								
Reduced Vol:	0	0	0	92	0	72	80	1200	0	0	1162	106								
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
FinalVolume:	0	0	0	92	0	72	80	1200	0	0	1162	106								
Saturation Flow Module:																				
Sat/Lane:	59	59	59	162	162	162	359	359	359	345	345	345								
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
Lanes:	0.00	1.00	0.00	0.56	0.00	0.44	1.00	2.00	0.00	1.00	1.83	0.17								
Final Sat.:	0	59	0	91	0	71	359	718	0	345	632	58								
Capacity Analysis Module:																				
Vol/Sat:	0.00	0.00	0.00	1.01	0.00	1.01	0.22	1.67	0.00	0.00	1.84	1.84								
Crit Moves:			****	****				****			****									
ApproachV/S:		0.00			1.01				1.19				1.23							
Delay/Veh:	0.0	0.0	0.0	45.9	0.0	45.9	2.3	573	0.0	0.0	1081	1081								
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
AdjDel/Veh:	0.0	0.0	0.0	45.9	0.0	45.9	2.3	573	0.0	0.0	1081	1081								
LOS by Move:	*	*	*	F	*	F	A	F	*	*	F	F								
ApproachDel:		1.0			45.9				91.5				105.3							
Delay Adj:		1.00			1.00				1.00				1.00							
ApprAdjDel:		1.0			45.9				91.5				105.3							
LOS by Appr:		A			F				F				F							

Mammoth Crossings
Final General Plan Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #1009 Post Office Frontage/Main St

Average Delay (sec/veh): 117.2 Worst Case Level Of Service: F[1151.0]

Street Name:	Post Office Frontage						Main Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1! 0 0			0 1 0 0 1			1 0 1 1 0			1 0 1 1 0		
Volume Module:												
Base Vol:	31	10	45	36	2	70	67	1077	66	59	925	87
Growth Adj:	1.63	1.63	1.63	1.63	1.63	1.63	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	51	16	73	59	3	114	67	1077	66	59	925	87
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	51	16	73	59	3	114	67	1077	66	59	925	87
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	53	17	77	62	3	120	71	1134	69	62	974	92
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	53	17	77	62	3	120	71	1134	69	62	974	92
Critical Gap Module:												
Critical Gp:	7.5	6.5	6.9	7.5	6.5	6.9	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	3.5	4.0	3.3	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	1922	2499	602	1860	2488	533	1065	xxxx	xxxxx	1203	xxxx	xxxxx
Potent Cap.:	41	29	448	46	30	497	662	xxxx	xxxxx	587	xxxx	xxxxx
Move Cap.:	24	23	448	13	24	497	662	xxxx	xxxxx	587	xxxx	xxxxx
Volume/Cap:	2.24	0.73	0.17	4.64	0.14	0.24	0.11	xxxx	xxxx	0.11	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	0.9	0.4	xxxx	xxxxx	0.4	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	14.5	11.1	xxxx	xxxxx	11.9	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	B	B	*	*	B	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	47	xxxxx	14	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	16.0	xxxxx	9.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	1151	xxxxx	2258	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	F	*	F	*	*	*	*	*	*	*	*
ApproachDel:	1151.0			804.1			xxxxxx			xxxxxx		
ApproachLOS:	F			F			*			*		

Note: Queue reported is the number of cars per lane.

Mammoth Crossings
Final General Plan Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #1010 Center St/Main St

Average Delay (sec/veh): 5.8 Worst Case Level Of Service: F[101.4]

Street Name:	Center St						Main St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1! 0 0			0 1 0 0 1			1 0 1 1 0			1 0 1 1 0		
Volume Module:												
Base Vol:	73	0	37	14	1	50	27	934	95	54	852	54
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	73	0	37	14	1	50	27	934	95	54	852	54
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	-1	0	0	-14	-1	-50	-27	-16	4	-4	-36	-54
Initial Fut:	72	0	37	0	0	0	0	918	99	50	816	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	76	0	39	0	0	0	0	966	104	53	859	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	76	0	39	0	0	0	0	966	104	53	859	0
Critical Gap Module:												
Critical Gp:	6.8	6.5	6.9	7.5	6.5	6.9	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	3.5	4.0	3.3	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	1553	1983	535	1447	2035	429	xxxx	xxxx	xxxxx	1071	xxxx	xxxxx
Potent Cap.:	106	62	495	94	58	579	xxxx	xxxx	xxxxx	659	xxxx	xxxxx
Move Cap.:	100	57	495	81	53	579	xxxx	xxxx	xxxxx	659	xxxx	xxxxx
Volume/Cap:	0.76	0.00	0.08	0.00	0.00	0.00	xxxx	xxxx	xxxx	0.08	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.3	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	10.9	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	B	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	137	xxxxx	0	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	5.3	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	101	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	F	*	*	*	*	*	*	*	*	*	*
ApproachDel:	101.4			xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:	F			*			*			*		

Note: Queue reported is the number of cars per lane.

Mammoth Crossings
Final General Plan Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #1011 Old Mammoth Rd/ Main St

Cycle (sec):	60	Critical Vol./Cap.(X):	0.743
Loss Time (sec):	12 (Y+R=4.0 sec)	Average Delay (sec/veh):	16.3
Optimal Cycle:	56	Level Of Service:	B

Street Name:	Old Mammoth Rd						Main St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R
Control:	Protected			Protected			Prot+Permit			Prot+Permit		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	0	1	0 0	0	0	0 0	2	0 1	1 0	2	0 0
Volume Module:												
Base Vol:	445	0	98	0	0	0	0	457	468	116	471	0
Growth Adj:	1.00 1.00		1.00	1.00 1.00		1.00	1.00 1.00		1.00	1.00 1.00		1.00
Initial Bse:	445	0	98	0	0	0	0	457	468	116	471	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	1	0	0	0	0	1	2	1	6	0
Initial Fut:	445	0	99	0	0	0	0	458	470	117	477	0
User Adj:	1.00 1.00		1.00	1.00 1.00		1.00	1.00 1.00		1.00	1.00 1.00		1.00
PHF Adj:	0.95 0.95		0.95	0.95 0.95		0.95	0.95 0.95		0.95	0.95 0.95		0.95
PHF Volume:	468	0	104	0	0	0	0	482	495	123	502	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	468	0	104	0	0	0	0	482	495	123	502	0
PCE Adj:	1.00 1.00		1.00	1.00 1.00		1.00	1.00 1.00		1.00	1.00 1.00		1.00
MLF Adj:	1.00 1.00		1.00	1.00 1.00		1.00	1.00 1.00		1.00	1.00 1.00		1.00
FinalVolume:	468	0	104	0	0	0	0	482	495	123	502	0
Saturation Flow Module:												
Sat/Lane:	1900 1900		1900	1900 1900		1900	1900 1900		1900	1900 1900		1900
Adjustment:	0.95 1.00		0.85	1.00 1.00		1.00	1.00 0.95		0.98	0.95 0.95		1.00
Lanes:	1.00 0.00		1.00	0.00 0.00		0.00	0.00 2.00		1.00	1.00 2.00		0.00
Final Sat.:	1805	0	1615	0	0	0	0	3610	1857	1805	3610	0
Capacity Analysis Module:												
Vol/Sat:	0.26 0.00		0.06	0.00 0.00		0.00	0.00 0.13		0.27	0.07 0.14		0.00
Crit Moves:	****								****	****		
Green/Cycle:	0.35 0.00		0.35	0.00 0.00		0.00	0.00 0.36		0.36	0.52 0.45		0.00
Volume/Cap:	0.74 0.00		0.18	0.00 0.00		0.00	0.00 0.37		0.74	0.27 0.31		0.00
Delay/Veh:	21.9	0.0	13.7	0.0	0.0	0.0	0.0	14.4	21.3	8.2	10.6	0.0
User DelAdj:	1.00 1.00		1.00	1.00 1.00		1.00	1.00 1.00		1.00	1.00 1.00		1.00
AdjDel/Veh:	21.9	0.0	13.7	0.0	0.0	0.0	0.0	14.4	21.3	8.2	10.6	0.0
LOS by Move:	C	A	B	A	A	A	A	B	C	A	B	A
HCM2kAvgQ:	9	0	1	0	0	0	0	4	10	2	3	0

Note: Queue reported is the number of cars per lane.

Mammoth Crossings
Final General Plan Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

****

Intersection #1006 Lakeview/Lake Mary Road

****

Average Delay (sec/veh): 15.5 Worst Case Level Of Service: D[31.5]

****

Street Name:	Lakeview						Lake Mary Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0	0 0		1 0 0	0 1		0 1 0	0 0		0 0 1	0 1	
Volume Module:												
Base Vol:	0	0	0	217	0	353	299	144	0	0	178	175
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	217	0	353	299	144	0	0	178	175
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	10	0	13	10	-10	0	0	-6	-1
Initial Fut:	0	0	0	227	0	366	309	134	0	0	172	174
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	0	0	0	239	0	385	325	141	0	0	181	183
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	239	0	385	325	141	0	0	181	183
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	973	xxxx	181	364	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	282	xxxx	867	1206	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	203	xxxx	867	1206	xxxx	xxxxx	xxxx	xxxx	xxxxx
Total Cap:	0	239	xxxxx	280	252	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.85	xxxx	0.44	0.27	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	7.2	xxxx	2.3	1.1	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	62.2	xxxx	12.4	9.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	F	*	B	A	*	*	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	1.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	9.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	A	*	*	*	*	*
ApproachDel:	xxxxxx			31.5			xxxxxx			xxxxxx		
ApproachLOS:	*			D			*			*		

****

Note: Queue reported is the number of cars per lane.

****

Mammoth Crossings
Final General Plan Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #1008 Mountain Blvd/Main Street

Cycle (sec): 100 Critical Vol./Cap.(X): 0.588
Loss Time (sec): 16 (Y+R=4.0 sec) Average Delay (sec/veh): 13.4
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	0 0	1! 0	0	1 0	2 0	0	1 0	1	1 0
Volume Module:												
Base Vol:	0	0	0	87	0	66	84	1132	0	0	1085	96
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	87	0	66	84	1132	0	0	1085	96
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	2	-8	8	0	0	19	5
Initial Fut:	0	0	0	87	0	68	76	1140	0	0	1104	101
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	0	0	0	92	0	72	80	1200	0	0	1162	106
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	92	0	72	80	1200	0	0	1162	106
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	92	0	72	80	1200	0	0	1162	106
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	0.92	1.00	0.92	0.95	0.95	1.00	1.00	0.94	0.94
Lanes:	0.00	1.00	0.00	0.56	0.00	0.44	1.00	2.00	0.00	1.00	1.83	0.17
Final Sat.:	0	1900	0	976	0	763	1805	3610	0	1900	3264	299
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.09	0.00	0.09	0.04	0.33	0.00	0.00	0.36	0.36
Crit Moves:						****	****				****	
Green/Cycle:	0.00	0.00	0.00	0.16	0.00	0.16	0.08	0.68	0.00	0.00	0.61	0.61
Volume/Cap:	0.00	0.00	0.00	0.59	0.00	0.59	0.59	0.49	0.00	0.00	0.59	0.59
Delay/Veh:	0.0	0.0	0.0	42.3	0.0	42.3	51.3	7.8	0.0	0.0	12.5	12.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	42.3	0.0	42.3	51.3	7.8	0.0	0.0	12.5	12.5
LOS by Move:	A	A	A	D	A	D	D	A	A	A	B	B
HCM2kAvgQ:	0	0	0	6	0	6	3	9	0	0	13	13

Note: Queue reported is the number of cars per lane.

Mammoth Crossings
Final General Plan Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #1009 Post Office Frontage/Main St

Average Delay (sec/veh): 1.7 Worst Case Level Of Service: C[15.6]

Street Name:	Post Office Frontage						Main Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	1! 0	0	0 1	0 0	1	1 0	1 1	0	1 0	1 1	0
Volume Module:												
Base Vol:	31	10	45	36	2	70	67	1077	66	59	925	87
Growth Adj:	1.63	1.63	1.63	1.63	1.63	1.63	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	51	16	73	59	3	114	67	1077	66	59	925	87
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	-51	-16	0	-59	-3	0	0	0	0	0	0	0
Initial Fut:	0	0	73	0	0	114	67	1077	66	59	925	87
User Adj:	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.00	0.95	0.95	0.00	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	0	0	77	0	0	120	71	1134	69	62	974	92
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	77	0	0	120	71	1134	69	62	974	92
Critical Gap Module:												
Critical Gp:	7.5	6.5	6.9	7.5	6.5	6.9	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	3.5	4.0	3.3	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	1921	2499	602	1852	2488	533	1065	xxxx	xxxxx	1203	xxxx	xxxxx
Potent Cap.:	42	29	448	47	30	497	662	xxxx	xxxxx	587	xxxx	xxxxx
Move Cap.:	26	23	448	32	24	497	662	xxxx	xxxxx	587	xxxx	xxxxx
Volume/Cap:	0.00	0.01	0.17	0.00	0.01	0.24	0.11	xxxx	xxxx	0.11	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	0.9	0.4	xxxx	xxxxx	0.4	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	14.5	11.1	xxxx	xxxxx	11.9	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	B	B	*	*	B	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	417	xxxxx	24	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	0.7	xxxxx	0.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	15.6	xxxxx	158.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	C	*	F	*	*	*	*	*	*	*	*
ApproachDel:		15.6			14.9			xxxxxx			xxxxxx	
ApproachLOS:		C			B			*			*	

Note: Queue reported is the number of cars per lane.

Mammoth Crossings
Final General Plan Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #1010 Center St/Main St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.560
Loss Time (sec):	16 (Y+R=4.0 sec)	Average Delay (sec/veh):	17.8
Optimal Cycle:	54	Level Of Service:	B

Street Name:	Center St						Main St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	0 1	0 0	1	1 0	1	1 0	1 0	1	1 0
Volume Module:												
Base Vol:	73	0	37	14	1	50	27	934	95	54	852	54
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	73	0	37	14	1	50	27	934	95	54	852	54
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	50	16	0	45	2	-50	-27	-16	4	-4	-36	-54
Initial Fut:	123	16	37	59	3	0	0	918	99	50	816	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	129	17	39	62	3	0	0	966	104	53	859	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	129	17	39	62	3	0	0	966	104	53	859	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	129	17	39	62	3	0	0	966	104	53	859	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.94	0.94	0.94	0.96	0.96	1.00	1.00	0.94	0.94	0.95	0.95	0.95
Lanes:	0.70	0.09	0.21	0.95	0.05	1.00	1.00	1.81	0.19	1.00	2.00	0.00
Final Sat.:	1247	162	375	1727	88	1900	1900	3210	346	1805	3610	0
Capacity Analysis Module:												
Vol/Sat:	0.10	0.10	0.10	0.04	0.04	0.00	0.00	0.30	0.30	0.03	0.24	0.00
Crit Moves:		****		****				****		****		
Green/Cycle:	0.19	0.19	0.19	0.06	0.06	0.00	0.00	0.54	0.54	0.05	0.59	0.00
Volume/Cap:	0.56	0.56	0.56	0.56	0.56	0.00	0.00	0.56	0.56	0.56	0.40	0.00
Delay/Veh:	39.2	39.2	39.2	51.4	51.4	0.0	0.0	15.6	15.6	53.7	11.1	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	39.2	39.2	39.2	51.4	51.4	0.0	0.0	15.6	15.6	53.7	11.1	0.0
LOS by Move:	D	D	D	D	D	A	A	B	B	D	B	A
HCM2kAvgQ:	6	6	6	3	3	0	0	12	12	2	7	0

Note: Queue reported is the number of cars per lane.

APPENDIX H

ADOPTED GENERAL PLAN PLUS PROJECT LEVEL OF SERVICE WORKSHEETS

Mammoth Crossings
Future plus Crossings Project Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #1 Minaret Rd/ Meridian Blvd

Cycle (sec):	95	Critical Vol./Cap.(X):	0.951
Loss Time (sec):	16 (Y+R=4.0 sec)	Average Delay (sec/veh):	50.8
Optimal Cycle:	120	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0	0 1	0	1	0 0 1	0	1	0 1 1	0	1	0 1 0
Volume Module:												
Base Vol:	216	261	8	150	447	121	146	656	300	10	506	113
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	216	261	8	150	447	121	146	656	300	10	506	113
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	-2	5	1	2	0	4	2	-4	6	-5	19	-3
Initial Fut:	214	266	9	152	447	125	148	652	306	5	525	110
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	238	296	10	169	497	139	164	724	340	6	583	122
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	238	296	10	169	497	139	164	724	340	6	583	122
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	238	296	10	169	497	139	164	724	340	6	583	122
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	1.00	1.00	0.95	0.97	0.97	0.95	0.90	0.90	0.95	0.93	0.93
Lanes:	1.00	0.97	0.03	1.00	0.78	0.22	1.00	1.36	0.64	1.00	1.65	0.35
Final Sat.:	1805	1829	62	1805	1436	402	1805	2339	1098	1805	2907	609
Capacity Analysis Module:												
Vol/Sat:	0.13	0.16	0.16	0.09	0.35	0.35	0.09	0.31	0.31	0.00	0.20	0.20
Crit Moves:	****				****			****			****	
Green/Cycle:	0.14	0.32	0.32	0.18	0.36	0.36	0.10	0.33	0.33	0.00	0.23	0.23
Volume/Cap:	0.95	0.51	0.51	0.51	0.95	0.95	0.89	0.95	0.95	0.95	0.89	0.89
Delay/Veh:	83.9	27.0	27.0	36.2	52.7	52.7	78.4	47.7	47.7	384.7	47.3	47.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	83.9	27.0	27.0	36.2	52.7	52.7	78.4	47.7	47.7	384.7	47.3	47.3
LOS by Move:	F	C	C	D	D	D	E	D	D	F	D	D
HCM2kAvgQ:	11	8	8	5	23	23	8	21	21	1	14	14

Note: Queue reported is the number of cars per lane.

Mammoth Crossings
Future plus Crossings Project Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 Minaret Rd/Main St-Lake Mary Rd

Cycle (sec):	80	Critical Vol./Cap.(X):	0.993
Loss Time (sec):	16 (Y+R=4.0 sec)	Average Delay (sec/veh):	44.5
Optimal Cycle:	120	Level Of Service:	D

Street Name:	Minaret Rd						Main St-Lake Mary Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0	1 0 1	2	0	0 1 0	1	0	2 0 1	1	0	2 0 1
Volume Module:												
Base Vol:	237	296	95	502	459	71	41	637	376	137	642	411
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	237	296	95	502	459	71	41	637	376	137	642	411
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	12	-12	13	-3	11	-4	-1	1	1	14	0	-19
Initial Fut:	249	284	108	499	470	67	40	638	377	151	642	392
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	262	299	114	525	495	71	42	672	397	159	676	413
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	262	299	114	525	495	71	42	672	397	159	676	413
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	262	299	114	525	495	71	42	672	397	159	676	413
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	1.00	0.85	0.92	0.98	0.98	0.95	0.95	0.85	0.95	0.95	0.85
Lanes:	1.00	1.00	1.00	2.00	0.88	0.12	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1805	1900	1615	3502	1631	233	1805	3610	1615	1805	3610	1615
Capacity Analysis Module:												
Vol/Sat:	0.15	0.16	0.07	0.15	0.30	0.30	0.02	0.19	0.25	0.09	0.19	0.26
Crit Moves:		****				****			****	****		
Green/Cycle:	0.16	0.16	0.16	0.31	0.31	0.31	0.04	0.25	0.25	0.09	0.30	0.60
Volume/Cap:	0.92	0.99	0.44	0.49	0.99	0.99	0.63	0.75	0.99	0.99	0.63	0.42
Delay/Veh:	65.3	83.5	31.7	23.1	63.5	63.5	55.1	31.5	73.1	105.4	25.4	8.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	65.3	83.5	31.7	23.1	63.5	63.5	55.1	31.5	73.1	105.4	25.4	8.7
LOS by Move:	E	F	C	C	E	E	E	C	E	F	C	A
HCM2kAvgQ:	10	13	3	6	21	21	2	10	16	8	8	6

Note: Queue reported is the number of cars per lane.

Mammoth Crossings
Future plus Crossings Project Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #1003 Minaret Rd/7B

Average Delay (sec/veh): 1.9 Worst Case Level Of Service: F[66.4]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1! 0		0	1 0	0	1 0	0 1	0	0 1	0 1	0	0 1
Volume Module:												
Base Vol:	0	646	7	34	885	0	0	0	0	0	0	29
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	646	7	34	885	0	0	0	0	0	0	29
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	14	3	13	20	9	9	11	0	6	11	0	17
Initial Fut:	14	649	20	54	894	9	11	0	6	11	0	46
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	15	683	21	57	941	9	12	0	6	12	0	48
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	15	683	21	57	941	9	12	0	6	12	0	48
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx	7.1	6.5	6.2	7.1	6.5	6.2
FollowUpTim:	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx	3.5	4.0	3.3	3.5	4.0	3.3
Capacity Module:												
Cnflict Vol:	951	xxxx	xxxxx	704	xxxx	xxxxx	1807	1793	946	1786	1787	694
Potent Cap.:	731	xxxx	xxxxx	903	xxxx	xxxxx	62	82	320	64	82	446
Move Cap.:	731	xxxx	xxxxx	903	xxxx	xxxxx	52	75	320	59	75	446
Volume/Cap:	0.02	xxxx	xxxx	0.06	xxxx	xxxx	0.22	0.00	0.02	0.20	0.00	0.11
Level Of Service Module:												
2Way95thQ:	0.1	xxxx	xxxxx	0.2	xxxx	xxxxx	xxxx	xxxx	0.1	xxxx	xxxx	0.4
Control Del:	10.0	xxxx	xxxxx	9.3	xxxx	xxxxx	xxxxx	xxxx	16.5	xxxxx	xxxx	14.0
LOS by Move:	B	*	*	A	*	*	*	*	C	*	*	B
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	52	xxxx	xxxxx	59	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.8	xxxx	xxxxx	0.7	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	93.7	xxxx	xxxxx	80.6	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	F	*	*	F	*	*
ApproachDel:	xxxxxx			xxxxxx			66.4			26.9		
ApproachLOS:	*			*			F			D		

Note: Queue reported is the number of cars per lane.

Mammoth Crossings
Future plus Crossings Project Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #1004 Minaret Road/Forest Trail

Average Delay (sec/veh): OVERFLOW Worst Case Level Of Service: F[xxxxx]

Street Name:	Minaret Road						Forest Trail					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1! 0		0	0 0	1!	0 0	0 0	1!	0 0	0 0	1!	0 0
Volume Module:												
Base Vol:	289	236	30	8	637	330	165	127	328	30	49	8
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	289	236	30	8	637	330	165	127	328	30	49	8
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	-2	-2	-7	2	-1	-3	-6	-9	16	0	1	1
Initial Fut:	287	234	23	10	636	327	159	118	344	30	50	9
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	302	246	24	11	669	344	167	124	362	32	53	9
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	302	246	24	11	669	344	167	124	362	32	53	9
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx	7.1	6.5	6.2	7.1	6.5	6.2
FollowUpTim:	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx	3.5	4.0	3.3	3.5	4.0	3.3
Capacity Module:												
Cnflict Vol:	1014	xxxx	xxxxx	271	xxxx	xxxxx	1756	1737	842	1968	1897	258
Potent Cap.:	692	xxxx	xxxxx	1305	xxxx	xxxxx	67	88	367	48	70	785
Move Cap.:	692	xxxx	xxxxx	1305	xxxx	xxxxx	0	38	367	0	30	785
Volume/Cap:	0.44	xxxx	xxxx	0.01	xxxx	xxxx	xxxx	3.31	0.99	xxxx	1.76	0.01
Level Of Service Module:												
2Way95thQ:	2.2	xxxx	xxxxx	0.0	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	14.2	xxxx	xxxxx	7.8	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	B	*	*	A	*	*	*	*	*	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	0	xxxxx	xxxx	0	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:	*			*			F			F		

Note: Queue reported is the number of cars per lane.

Mammoth Crossings
Future plus Crossings Project Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #1005 Kelly Rd/Lake Mary Rd

Average Delay (sec/veh): 11.3 Worst Case Level Of Service: E[36.1]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Rights:	Include				Include				Include				Include			
Lanes:	0	0	1!	0 0	0	0	0	0 0	0	0	0	1 0	0	1	0	0 0
Volume Module:																
Base Vol:	80	0	222	0	0	0	0	226	61	207	325	0				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	80	0	222	0	0	0	0	226	61	207	325	0				
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
PasserByVol:	-5	0	4	0	0	0	0	3	-5	5	2	0				
Initial Fut:	75	0	226	0	0	0	0	229	56	212	327	0				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90				
PHF Volume:	83	0	251	0	0	0	0	254	62	236	363	0				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
FinalVolume:	83	0	251	0	0	0	0	254	62	236	363	0				
Critical Gap Module:																
Critical Gp:	6.4	6.5	6.2	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx				
FollowUpTim:	3.5	4.0	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx				
Capacity Module:																
Cnflict Vol:	1120	1120	286	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	317	xxxx	xxxxx				
Potent Cap.:	231	208	758	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1255	xxxx	xxxxx				
Move Cap.:	190	160	758	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1255	xxxx	xxxxx				
Volume/Cap:	0.44	0.00	0.33	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.19	xxxx	xxxx				
Level Of Service Module:																
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.7	xxxx	xxxxx				
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.5	xxxx	xxxxx				
LOS by Move:	*	*	*	*	*	*	*	*	*	A	*	*				
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT				
Shared Cap.:	xxxx	434	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx				
SharedQueue:	xxxxx	6.6	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.7	xxxx	xxxxx				
Shrd ConDel:	xxxxx	36.1	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.5	xxxx	xxxxx				
Shared LOS:	*	E	*	*	*	*	*	*	*	A	*	*				
ApproachDel:	36.1			xxxxxx			xxxxxx			xxxxxx						
ApproachLOS:	E			*			*			*						

Note: Queue reported is the number of cars per lane.

Mammoth Crossings
Future plus Crossings Project Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #1006 Lakeview/Lake Mary Road

Average Delay (sec/veh): 14.9 Worst Case Level Of Service: D[30.2]

Street Name:	Lakeview								Lake Mary Road							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Rights:	Include				Include				Include				Include			
Lanes:	0	0	0	0 0	1	0	0	0 1	0	1	0	0 0	0	0	1	0 1
Volume Module:																
Base Vol:	0	0	0	233	0	359	305	143	0	0	173	177				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	0	0	0	233	0	359	305	143	0	0	173	177				
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
PasserByVol:	0	0	0	-12	0	9	4	2	0	0	-2	-12				
Initial Fut:	0	0	0	221	0	368	309	145	0	0	171	165				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95				
PHF Volume:	0	0	0	233	0	387	325	153	0	0	180	174				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
FinalVolume:	0	0	0	233	0	387	325	153	0	0	180	174				
Critical Gap Module:																
Critical Gp:	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
FollowUpTim:	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
Capacity Module:																
Cnflict Vol:	xxxx	xxxx	xxxxx	983	xxxx	180	354	xxxx	xxxxx	xxxx	xxxx	xxxxx				
Potent Cap.:	xxxx	xxxx	xxxxx	278	xxxx	868	1216	xxxx	xxxxx	xxxx	xxxx	xxxxx				
Move Cap.:	xxxx	xxxx	xxxxx	201	xxxx	868	1216	xxxx	xxxxx	xxxx	xxxx	xxxxx				
Total Cap:	0	239	xxxxx	278	250	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx				
Volume/Cap:	xxxx	xxxx	xxxx	0.84	xxxx	0.45	0.27	xxxx	xxxx	xxxx	xxxx	xxxx				
Level Of Service Module:																
2Way95thQ:	xxxx	xxxx	xxxxx	6.9	xxxx	2.3	1.1	xxxx	xxxxx	xxxx	xxxx	xxxxx				
Control Del:	xxxxx	xxxx	xxxxx	59.9	xxxx	12.4	9.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
LOS by Move:	*	*	*	F	*	B	A	*	*	*	*	*				
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT				
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx				
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	1.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	9.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
Shared LOS:	*	*	*	*	*	*	A	*	*	*	*	*				
ApproachDel:	xxxxxx			30.2			xxxxxx			xxxxxx						
ApproachLOS:	*			D			*			*						

Note: Queue reported is the number of cars per lane.

Mammoth Crossings
Future plus Crossings Project Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #1007 Canyon/Lake Mary Road

Cycle (sec): 60 Critical Vol./Cap.(X): 0.735
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 15.1
Optimal Cycle: 55 Level Of Service: B

Street Name:	Canyon									Lake Mary Road					
Approach:	North Bound			South Bound			East Bound			West Bound					
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Split Phase			Split Phase			Permitted			Permitted					
Rights:	Include			Include			Include			Include					
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0	0	1	0	1	0	1!	0	0	1	0	1	0	0	0	0	1	0	1
Volume Module:																				
Base Vol:	0	0	0	680	0	40	42	374	0	0	406	544								
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
Initial Bse:	0	0	0	680	0	40	42	374	0	0	406	544								
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0								
PasserByVol:	0	0	0	8	0	-2	-2	-7	0	0	-8	16								
Initial Fut:	0	0	0	688	0	38	40	367	0	0	398	560								
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95								
PHF Volume:	0	0	0	724	0	40	42	386	0	0	419	589								
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0								
Reduced Vol:	0	0	0	724	0	40	42	386	0	0	419	589								
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
FinalVolume:	0	0	0	724	0	40	42	386	0	0	419	589								
Saturation Flow Module:																				
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900								
Adjustment:	1.00	1.00	1.00	0.95	1.00	0.95	0.46	1.00	1.00	1.00	1.00	0.85								
Lanes:	1.00	1.00	0.00	1.90	0.00	0.10	1.00	1.00	0.00	0.00	1.00	1.00								
Final Sat.:	1900	1900	0	3421	0	179	876	1900	0	0	1900	1615								
Capacity Analysis Module:																				
Vol/Sat:	0.00	0.00	0.00	0.21	0.00	0.22	0.05	0.20	0.00	0.00	0.22	0.36								
Crit Moves:						****						****								
Green/Cycle:	0.00	0.00	0.00	0.30	0.00	0.30	0.50	0.50	0.00	0.00	0.50	0.50								
Volume/Cap:	0.00	0.00	0.00	0.70	0.00	0.74	0.10	0.41	0.00	0.00	0.44	0.74								
Delay/Veh:	0.0	0.0	0.0	20.4	0.0	21.5	8.1	9.8	0.0	0.0	10.1	15.6								
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
AdjDel/Veh:	0.0	0.0	0.0	20.4	0.0	21.5	8.1	9.8	0.0	0.0	10.1	15.6								
LOS by Move:	A	A	A	C	A	C	A	A	A	A	B	B								
HCM2kAvgQ:	0	0	0	8	0	8	0	5	0	0	5	10								

Note: Queue reported is the number of cars per lane.

Mammoth Crossings
Future plus Crossings Project Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #1008 Mountain Blvd/Main Street

Average Delay (sec/veh): 39.2 Worst Case Level Of Service: F[644.8]

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Rights:	Include					Include					Include					Include				
Lanes:	0	0	1!	0	0	0	0	1!	0	0	1	0	2	0	0	1	0	1	1	0
Volume Module:																				
Base Vol:	0	0	0	92	0	71	81	1144	0	0	1117	104								
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
Initial Bse:	0	0	0	92	0	71	81	1144	0	0	1117	104								
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0								
PasserByVol:	0	0	0	-3	0	-3	-3	16	0	0	-1	-9								
Initial Fut:	0	0	0	89	0	68	78	1160	0	0	1116	95								
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95								
PHF Volume:	0	0	0	94	0	72	82	1221	0	0	1175	100								
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0								
FinalVolume:	0	0	0	94	0	72	82	1221	0	0	1175	100								
Critical Gap Module:																				
Critical Gp:	7.5	6.5	6.9	6.8	6.5	6.9	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
FollowUpTim:	3.5	4.0	3.3	3.5	4.0	3.3	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Capacity Module:																				
Cnflict Vol:	1973	2660	611	1999	2610	637	1275	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Potent Cap.:	38	23	442	53	25	425	552	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Move Cap.:	28	20	442	47	21	425	552	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Volume/Cap:	0.00	0.00	0.00	1.98	0.00	0.17	0.15	xxxx	xxxx	xxxx	xxxx	xxxx								
Level Of Service Module:																				
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.5	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	12.7	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
LOS by Move:	*	*	*	*	*	*	B	*	*	*	*	*								
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT								
Shared Cap.:	xxxx	0	xxxxx	xxxx	77	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx								
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	15.1	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	645	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Shared LOS:	*	*	*	*	F	*	*	*	*	*	*	*								
ApproachDel:	xxxxxx			644.8			xxxxxx			xxxxxx										
ApproachLOS:	*			F			*			*										

Note: Queue reported is the number of cars per lane.

Mammoth Crossings
Future plus Crossings Project Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #1009 Post Office Frontage/Main St

Average Delay (sec/veh): 139.5 Worst Case Level Of Service: F[1290.8]

Street Name:	Post Office Frontage						Main Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1! 0		0	0	1 0	0 1	1 0	1	1 0	1 0	1	1 0
Volume Module:												
Base Vol:	31	10	45	36	2	70	67	1077	66	59	925	87
Growth Adj:	1.63	1.63	1.63	1.63	1.63	1.63	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	51	16	73	59	3	114	67	1077	66	59	925	87
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	25	0	0	26	0
Initial Fut:	51	16	73	59	3	114	67	1102	66	59	951	87
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	53	17	77	62	3	120	71	1160	69	62	1001	92
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	53	17	77	62	3	120	71	1160	69	62	1001	92
Critical Gap Module:												
Critical Gp:	7.5	6.5	6.9	7.5	6.5	6.9	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	3.5	4.0	3.3	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	1962	2553	615	1901	2542	546	1093	xxxx	xxxxx	1229	xxxx	xxxxx
Potent Cap.:	39	27	439	43	27	487	646	xxxx	xxxxx	574	xxxx	xxxxx
Move Cap.:	22	21	439	10	22	487	646	xxxx	xxxxx	574	xxxx	xxxxx
Volume/Cap:	2.46	0.80	0.18	5.95	0.16	0.25	0.11	xxxx	xxxx	0.11	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	1.0	0.4	xxxx	xxxxx	0.4	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	14.8	11.3	xxxx	xxxxx	12.0	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	B	B	*	*	B	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	43	xxxxx	11	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	16.4	xxxxx	9.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	1291	xxxxx	2992	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	F	*	F	*	*	*	*	*	*	*	*
ApproachDel:	1290.8			1062.4			xxxxxx			xxxxxx		
ApproachLOS:	F			F			*			*		

Note: Queue reported is the number of cars per lane.

Mammoth Crossings
Future plus Crossings Project Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #1010 Center St/Main St

Average Delay (sec/veh): 8.2 Worst Case Level Of Service: F[150.8]

Street Name:	Center St						Main St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1! 0		0	0	1 0	0 1	1 0	1	1 0	1 0	1	1 0
Volume Module:												
Base Vol:	74	0	36	14	1	50	27	946	89	49	882	54
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	74	0	36	14	1	50	27	946	89	49	882	54
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	2	0	-1	-14	-1	-50	-27	16	5	3	0	-54
Initial Fut:	76	0	35	0	0	0	0	962	94	52	882	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	80	0	37	0	0	0	0	1013	99	55	928	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	80	0	37	0	0	0	0	1013	99	55	928	0
Critical Gap Module:												
Critical Gp:	6.8	6.5	6.9	7.5	6.5	6.9	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	3.5	4.0	3.3	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	1636	2100	556	1544	2149	464	xxxx	xxxx	xxxxx	1112	xxxx	xxxxx
Potent Cap.:	94	52	480	80	49	550	xxxx	xxxx	xxxxx	636	xxxx	xxxxx
Move Cap.:	87	48	480	69	45	550	xxxx	xxxx	xxxxx	636	xxxx	xxxxx
Volume/Cap:	0.92	0.00	0.08	0.00	0.00	0.00	xxxx	xxxx	xxxx	0.09	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.3	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	11.2	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	B	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	118	xxxxx	0	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	6.6	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	151	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	F	*	*	*	*	*	*	*	*	*	*
ApproachDel:	150.8			xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:	F			*			*			*		

Note: Queue reported is the number of cars per lane.

Mammoth Crossings
Future plus Crossings Project Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

****

Intersection #1011 Old Mammoth Rd/ Main St

****

Cycle (sec):	60	Critical Vol./Cap.(X):	0.746	
Loss Time (sec):	12 (Y+R=4.0 sec)	Average Delay (sec/veh):	16.5	
Optimal Cycle:	57	Level Of Service:	B	

****

Street Name:	Old Mammoth Rd							Main St							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Prot+Permit					Prot+Permit				
Rights:	Include					Include					Include					Include				
Min. Green:	0	0	0			0	0	0			0	0	0			0	0	0		
Lanes:	1	0	0	0	1	0	0	0	0	0	0	0	2	0	1	1	0	2	0	0
Volume Module:																				
Base Vol:	454		0		95	0		0		0	0		457		473	120		474		0
Growth Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
Initial Bse:	454		0		95	0		0		0	0		457		473	120		474		0
Added Vol:	0		0		0	0		0		0	0		0		0	0		0		0
PasserByVol:	0		0		2	0		0		0	0		14		-4	-6		2		0
Initial Fut:	454		0		97	0		0		0	0		471		469	114		476		0
User Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
PHF Adj:	0.95	0.95		0.95		0.95	0.95		0.95		0.95	0.95		0.95		0.95	0.95		0.95	
PHF Volume:	478		0		102	0		0		0	0		496		494	120		501		0
Reduct Vol:	0		0		0	0		0		0	0		0		0	0		0		0
Reduced Vol:	478		0		102	0		0		0	0		496		494	120		501		0
PCE Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
MLF Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
FinalVolume:	478		0		102	0		0		0	0		496		494	120		501		0
Saturation Flow Module:																				
Sat/Lane:	1900	1900		1900		1900	1900		1900		1900	1900		1900		1900	1900		1900	
Adjustment:	0.95	1.00		0.85		1.00	1.00		1.00		1.00	0.95		0.98		0.95	0.95		1.00	
Lanes:	1.00	0.00		1.00		0.00	0.00		0.00		0.00	2.00		1.00		1.00	2.00		0.00	
Final Sat.:	1805		0		1615	0		0		0	0		3610		1857	1805		3610		0
Capacity Analysis Module:																				
Vol/Sat:	0.26	0.00		0.06		0.00	0.00		0.00		0.00	0.14		0.27		0.07	0.14		0.00	
Crit Moves:	****													****		****				
Green/Cycle:	0.35	0.00		0.35		0.00	0.00		0.00		0.00	0.36		0.36		0.51	0.45		0.00	
Volume/Cap:	0.75	0.00		0.18		0.00	0.00		0.00		0.00	0.39		0.75		0.27	0.31		0.00	
Delay/Veh:	21.8		0.0		13.5	0.0		0.0		0.0	0.0		14.6		21.6	8.4		10.8		0.0
User DelAdj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
AdjDel/Veh:	21.8		0.0		13.5	0.0		0.0		0.0	0.0		14.6		21.6	8.4		10.8		0.0
LOS by Move:	C		A		B	A		A		A	A		B		C	A		B		A
HCM2kAvgQ:	10		0		1	0		0		0	0		4		10	2		3		0

****

Note: Queue reported is the number of cars per lane.

****

Mammoth Crossings
Future plus Crossings Project Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

****

Intersection #1006 Lakeview/Lake Mary Road

****

Average Delay (sec/veh): 14.9 Worst Case Level Of Service: D[30.2]

****

Street Name:	Lakeview						Lake Mary Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0	0 0		1 0	0 0	1	0 1	0 0	0	0 0	1 0	1
Volume Module:												
Base Vol:	0	0	0	233	0	359	305	143	0	0	173	177
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	233	0	359	305	143	0	0	173	177
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	-12	0	9	4	2	0	0	-2	-12
Initial Fut:	0	0	0	221	0	368	309	145	0	0	171	165
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	0	0	0	233	0	387	325	153	0	0	180	174
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	233	0	387	325	153	0	0	180	174
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	983	xxxx	180	354	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	278	xxxx	868	1216	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	201	xxxx	868	1216	xxxx	xxxxx	xxxx	xxxx	xxxxx
Total Cap:	0	239	xxxxx	278	250	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.84	xxxx	0.45	0.27	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	6.9	xxxx	2.3	1.1	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	59.9	xxxx	12.4	9.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	F	*	B	A	*	*	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	1.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	9.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	A	*	*	*	*	*
ApproachDel:	xxxxxx			30.2			xxxxxx			xxxxxx		
ApproachLOS:	*			D			*			*		

****

Note: Queue reported is the number of cars per lane.

****

Mammoth Crossings
Future plus Crossings Project Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #1008 Mountain Blvd/Main Street

Cycle (sec): 100 Critical Vol./Cap.(X): 0.593
Loss Time (sec): 16 (Y+R=4.0 sec) Average Delay (sec/veh): 13.5
Optimal Cycle: 57 Level Of Service: B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	0 0	1! 0	0	1 0	2 0	0	1 0	1	1 0
Volume Module:												
Base Vol:	0	0	0	92	0	71	81	1144	0	0	1117	104
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	92	0	71	81	1144	0	0	1117	104
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	-3	0	-3	-3	16	0	0	-1	-9
Initial Fut:	0	0	0	89	0	68	78	1160	0	0	1116	95
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	0	0	0	94	0	72	82	1221	0	0	1175	100
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	94	0	72	82	1221	0	0	1175	100
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	94	0	72	82	1221	0	0	1175	100
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	0.92	1.00	0.92	0.95	0.95	1.00	1.00	0.94	0.94
Lanes:	0.00	1.00	0.00	0.57	0.00	0.43	1.00	2.00	0.00	1.00	1.84	0.16
Final Sat.:	0	1900	0	986	0	753	1805	3610	0	1900	3287	280
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.09	0.00	0.09	0.05	0.34	0.00	0.00	0.36	0.36
Crit Moves:				****			****				****	
Green/Cycle:	0.00	0.00	0.00	0.16	0.00	0.16	0.08	0.68	0.00	0.00	0.60	0.60
Volume/Cap:	0.00	0.00	0.00	0.59	0.00	0.59	0.59	0.50	0.00	0.00	0.59	0.59
Delay/Veh:	0.0	0.0	0.0	42.4	0.0	42.4	51.4	7.9	0.0	0.0	12.7	12.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	42.4	0.0	42.4	51.4	7.9	0.0	0.0	12.7	12.7
LOS by Move:	A	A	A	D	A	D	D	A	A	A	B	B
HCM2kAvgQ:	0	0	0	6	0	6	3	10	0	0	13	13

Note: Queue reported is the number of cars per lane.

Mammoth Crossings
Future plus Crossings Project Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

****

Intersection #1009 Post Office Frontage/Main St

****

Average Delay (sec/veh): 1.7 Worst Case Level Of Service: C[15.9]

****

Street Name:	Post Office Frontage						Main Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	1! 0	0	0 1	0 0	1	1 0	1 1	0	1 0	1 1	0
Volume Module:												
Base Vol:	31	10	45	36	2	70	67	1077	66	59	925	87
Growth Adj:	1.63	1.63	1.63	1.63	1.63	1.63	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	51	16	73	59	3	114	67	1077	66	59	925	87
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	-51	-16	0	-59	-3	0	0	25	0	0	26	0
Initial Fut:	0	0	73	0	0	114	67	1102	66	59	951	87
User Adj:	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.00	0.95	0.95	0.00	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	0	0	77	0	0	120	71	1160	69	62	1001	92
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	77	0	0	120	71	1160	69	62	1001	92
Critical Gap Module:												
Critical Gp:	7.5	6.5	6.9	7.5	6.5	6.9	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	3.5	4.0	3.3	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	1961	2553	615	1892	2542	546	1093	xxxx	xxxxx	1229	xxxx	xxxxx
Potent Cap.:	39	27	439	44	27	487	646	xxxx	xxxxx	574	xxxx	xxxxx
Move Cap.:	24	21	439	30	22	487	646	xxxx	xxxxx	574	xxxx	xxxxx
Volume/Cap:	0.00	0.01	0.18	0.00	0.01	0.25	0.11	xxxx	xxxx	0.11	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	1.0	0.4	xxxx	xxxxx	0.4	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	14.8	11.3	xxxx	xxxxx	12.0	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	B	B	*	*	B	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	407	xxxxx	22	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	0.7	xxxxx	0.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	15.9	xxxxx	172.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	C	*	F	*	*	*	*	*	*	*	*
ApproachDel:		15.9			15.2			xxxxxx			xxxxxx	
ApproachLOS:		C			C			*			*	

****

Note: Queue reported is the number of cars per lane.

****

Mammoth Crossings
Future plus Crossings Project Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #1010 Center St/Main St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.575
Loss Time (sec):	16 (Y+R=4.0 sec)	Average Delay (sec/veh):	17.7
Optimal Cycle:	55	Level Of Service:	B

Street Name:	Center St						Main St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1!	0	0 0	1	0	0 1	1	0	1 1	0	1 0
Volume Module:												
Base Vol:	74	0	36	14	1	50	27	946	89	49	882	54
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	74	0	36	14	1	50	27	946	89	49	882	54
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	53	16	-1	45	2	-50	-27	16	5	3	0	-54
Initial Fut:	127	16	35	59	3	0	0	962	94	52	882	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	134	17	37	62	3	0	0	1013	99	55	928	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	134	17	37	62	3	0	0	1013	99	55	928	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	134	17	37	62	3	0	0	1013	99	55	928	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.94	0.94	0.94	0.96	0.96	1.00	1.00	0.94	0.94	0.95	0.95	0.95
Lanes:	0.71	0.09	0.20	0.95	0.05	1.00	1.00	1.82	0.18	1.00	2.00	0.00
Final Sat.:	1274	161	351	1727	88	1900	1900	3246	317	1805	3610	0
Capacity Analysis Module:												
Vol/Sat:	0.10	0.10	0.10	0.04	0.04	0.00	0.00	0.31	0.31	0.03	0.26	0.00
Crit Moves:	****				****			****			****	
Green/Cycle:	0.18	0.18	0.18	0.06	0.06	0.00	0.00	0.54	0.54	0.05	0.60	0.00
Volume/Cap:	0.58	0.58	0.58	0.58	0.58	0.00	0.00	0.58	0.58	0.58	0.43	0.00
Delay/Veh:	39.9	39.9	39.9	52.6	52.6	0.0	0.0	15.6	15.6	54.6	11.2	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	39.9	39.9	39.9	52.6	52.6	0.0	0.0	15.6	15.6	54.6	11.2	0.0
LOS by Move:	D	D	D	D	D	A	A	B	B	D	B	A
HCM2kAvgQ:	6	6	6	3	3	0	0	12	12	3	8	0

Note: Queue reported is the number of cars per lane.

APPENDIX I

CUMULATIVE PLUS PROJECT LEVEL OF SERVICE WORKSHEETS FOR ACCESS LOCATIONS

Mammoth Crossings
Existing plus Project plus Approved Projects Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

****

Intersection #107 Canyon Boulevard/Driveway A

****

Average Delay (sec/veh): 1.4 Worst Case Level Of Service: C[21.3]

****

Street Name:	Canyon Boulevard						Driveway A					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0 1 0			0 1 0 0 0			0 0 0 0 0			0 0 1! 0 0		
Volume Module:												
Base Vol:	0	370	39	10	478	0	0	0	0	27	0	7
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	370	39	10	478	0	0	0	0	27	0	7
Added Vol:	0	13	20	4	15	0	0	0	0	21	0	4
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	383	59	14	493	0	0	0	0	48	0	11
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	0	426	66	16	548	0	0	0	0	53	0	12
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	426	66	16	548	0	0	0	0	53	0	12
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	6.5	6.2
FollowUpTim:	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	4.0	3.3
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	491	xxxx	xxxxx	xxxx	xxxx	xxxxx	1037	1037	458
Potent Cap.:	xxxx	xxxx	xxxxx	1083	xxxx	xxxxx	xxxx	xxxx	xxxxx	258	233	607
Move Cap.:	xxxx	xxxx	xxxxx	1083	xxxx	xxxxx	xxxx	xxxx	xxxxx	255	230	607
Volume/Cap:	xxxx	xxxx	xxxx	0.01	xxxx	xxxx	xxxx	xxxx	xxxx	0.21	0.00	0.02
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	0.0	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	8.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	A	*	*	*	*	*	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	286	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	0.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.9	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	8.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	21.3	xxxxx
Shared LOS:	*	*	*	A	*	*	*	*	*	*	C	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			21.3		
ApproachLOS:	*			*			*			C		

****

Note: Queue reported is the number of cars per lane.

****

Mammoth Crossings
Existing plus Project plus Approved Projects Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #106 Minaret Road/Driveway C

Average Delay (sec/veh): 0.1 Worst Case Level Of Service: B[13.5]

Street Name:	Minaret Road						Driveway C					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	1 0 0 1 0			1 0 0 1 0			0 0 0 0 1			0 0 0 0 0		
Volume Module:												
Base Vol:	0	507	0	0	650	0	0	0	0	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	507	0	0	650	0	0	0	0	0	0	0
Added Vol:	0	30	0	0	30	4	0	0	7	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	537	0	0	680	4	0	0	7	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	0	565	0	0	716	4	0	0	7	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	565	0	0	716	4	0	0	7	0	0	0
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	6.2	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	718	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	432	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	432	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.02	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	0.1	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	13.5	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	B	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			13.5			xxxxxx		
ApproachLOS:	*			*			B			*		

Note: Queue reported is the number of cars per lane.

Mammoth Crossings
Existing plus Project plus Approved Projects Conditions

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

****

Intersection #1007 Canyon/Lake Mary Road

****

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.04	0.04	0.04	0.30	0.30	0.30	0.46	0.46	0.46	0.46	0.46	0.46
ArrivalType:		3			3			3			3	
ProgFactor:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q1:	0.1	0.5	0.5	3.6	4.0	4.0	0.3	3.4	3.4	4.1	4.1	4.7
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	0.1	0.9	0.9	0.9	1.1	1.1	0.1	0.6	0.6	0.8	0.8	1.1
HCM2KQueue:	0.2	1.4	1.4	4.6	5.1	5.1	0.3	4.0	4.0	4.8	4.8	5.7
70th%Factor:	1.20	1.20	1.20	1.19	1.19	1.19	1.20	1.19	1.19	1.19	1.19	1.19
HCM2k70thQ:	0.2	1.7	1.7	5.4	6.0	6.0	0.4	4.7	4.7	5.8	5.8	6.8
85th%Factor:	1.60	1.59	1.59	1.56	1.55	1.55	1.60	1.56	1.56	1.56	1.56	1.55
HCM2k85thQ:	0.3	2.3	2.3	7.1	7.9	7.9	0.5	6.2	6.2	7.5	7.5	8.9
90th%Factor:	1.80	1.77	1.77	1.72	1.71	1.71	1.79	1.73	1.73	1.71	1.71	1.70
HCM2k90thQ:	0.4	2.5	2.5	7.9	8.7	8.7	0.6	6.9	6.9	8.3	8.3	9.8
95th%Factor:	2.09	2.05	2.05	1.97	1.95	1.95	2.09	1.98	1.98	1.96	1.96	1.94
HCM2k95thQ:	0.4	2.9	2.9	9.0	9.9	9.9	0.7	7.9	7.9	9.5	9.5	11.1
98th%Factor:	2.68	2.60	2.60	2.40	2.38	2.38	2.68	2.44	2.44	2.39	2.39	2.34
HCM2k98thQ:	0.6	3.7	3.7	11.0	12.0	12.0	0.9	9.7	9.7	11.6	11.6	13.5

Mammoth Crossings
Existing plus Project plus Approved Projects Conditions

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

****

Intersection #2 Minaret Rd/Main St-Lake Mary Rd

****

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.17	0.17	0.17	0.29	0.29	0.29	0.13	0.26	0.26	0.08	0.21	0.50
ArrivalType:		3			3			3			3	
ProgFactor:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q1:	5.3	3.9	2.9	4.4	8.5	8.5	2.5	4.8	7.0	2.6	4.0	2.7
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	2.9	1.3	1.0	0.8	3.3	3.3	1.0	1.0	3.1	2.5	1.0	0.4
HCM2KQueue:	8.2	5.2	3.9	5.2	11.8	11.8	3.5	5.8	10.2	5.1	5.0	3.1
70th%Factor:	1.18	1.19	1.19	1.19	1.17	1.17	1.19	1.19	1.18	1.19	1.19	1.19
HCM2k70thQ:	9.7	6.2	4.7	6.2	13.8	13.8	4.1	6.9	12.0	6.1	6.0	3.7
85th%Factor:	1.53	1.55	1.56	1.55	1.50	1.50	1.57	1.55	1.51	1.55	1.55	1.57
HCM2k85thQ:	12.5	8.1	6.1	8.1	17.7	17.7	5.4	9.0	15.4	7.9	7.8	4.8
90th%Factor:	1.67	1.71	1.73	1.71	1.62	1.62	1.74	1.70	1.64	1.71	1.71	1.74
HCM2k90thQ:	13.7	9.0	6.8	8.9	19.1	19.1	6.0	9.8	16.7	8.7	8.6	5.3
95th%Factor:	1.88	1.95	1.98	1.95	1.81	1.81	1.99	1.93	1.84	1.95	1.95	2.01
HCM2k95thQ:	15.4	10.2	7.8	10.1	21.3	21.3	6.9	11.2	18.8	10.0	9.8	6.2
98th%Factor:	2.23	2.37	2.44	2.37	2.10	2.10	2.47	2.34	2.16	2.38	2.38	2.49
HCM2k98thQ:	18.3	12.4	9.6	12.3	24.8	24.8	8.6	13.5	22.0	12.1	12.0	7.6

Mammoth Hillside(11-8-05)

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

****

Intersection #40 Canyon/Mammoth Hillside Access#1

****

Average Delay (sec/veh): 12.4 Worst Case Level Of Service: B[14.3]

****

Street Name:	Canyon						Mammoth Hillside Access#1					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	1 0 0	1 0		0 0	1! 0 0		0 0	1! 0 0		0 0	1! 0 0	
Volume Module:												
Base Vol:	0	319	20	12	345	0	0	0	0	20	0	16
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	319	20	12	345	0	0	0	0	20	0	16
Added Vol:	62	0	0	0	0	10	9	0	52	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	62	319	20	12	345	10	9	0	52	20	0	16
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	62	319	20	12	345	10	9	0	52	20	0	16
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	62	319	20	12	345	10	9	0	52	20	0	16
Critical Gap Module:												
Critical Gp:	7.1	6.5	6.2	7.1	6.5	6.2	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	3.5	4.0	3.3	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	270	100	26	262	118	8	16	xxxx	xxxxx	52	xxxx	xxxxx
Potent Cap.:	687	794	1056	695	776	1080	1615	xxxx	xxxxx	1567	xxxx	xxxxx
Move Cap.:	434	779	1056	458	762	1080	1615	xxxx	xxxxx	1567	xxxx	xxxxx
Volume/Cap:	0.14	0.41	0.02	0.03	0.45	0.01	0.01	xxxx	xxxx	0.01	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	0.5	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.0	xxxx	xxxxx	0.0	xxxx	xxxxx
Control Del:	14.7	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.2	xxxx	xxxxx	7.3	xxxx	xxxxx
LOS by Move:	B	*	*	*	*	*	A	*	*	A	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	791	xxxx	751	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	2.2	xxxxx	2.7	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	12.9	xxxxx	14.3	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	B	*	B	*	*	*	*	*	*	*
ApproachDel:	13.2			14.3			xxxxxx			xxxxxx		
ApproachLOS:	B			B			*			*		

****

Note: Queue reported is the number of cars per lane.

APPENDIX J

CUMULATIVE PLUS PROJECT PLUS 100 SPACE GARAGE ALTERNATIVE LEVEL OF SERVICE WORKSHEETS FOR ACCESS LOCATIONS

Mammoth Crossings

Existing plus Project plus Approved Projects Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

****

Intersection #106 Minaret Road/Driveway C

****

Average Delay (sec/veh): 0.1 Worst Case Level Of Service: B[13.8]

****

Street Name:	Minaret Road									Driveway C								
Approach:	North Bound				South Bound				East Bound				West Bound					
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R		
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign					
Rights:	Include				Include				Include				Include					
Lanes:	1	0	0	1 0	1	0	0	1 0	0	0	0	0 1	0	0	0	0 0		
Volume Module:																		
Base Vol:	0	507	0		0	650	4		0	0	7		0	0	0			
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00			
Initial Bse:	0	507	0		0	650	4		0	0	7		0	0	0			
Added Vol:	0	0	0		0	0	0		0	0	0		0	0	0			
100spGarage:	0	52	0		0	93	0		0	0	0		0	0	0			
Initial Fut:	0	559	0		0	743	4		0	0	7		0	0	0			
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00			
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00			
PHF Volume:	0	559	0		0	743	4		0	0	7		0	0	0			
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0			
FinalVolume:	0	559	0		0	743	4		0	0	7		0	0	0			
Critical Gap Module:																		
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	6.2	xxxxx	xxxx	xxxxx						
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx						
Capacity Module:																		
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	745	xxxx	xxxx	xxxxx						
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	417	xxxx	xxxx	xxxxx						
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	417	xxxx	xxxx	xxxxx						
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.02	xxxx	xxxx	xxxx						
Level Of Service Module:																		
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	0.1	xxxx	xxxx	xxxxx						
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	13.8	xxxxx	xxxx	xxxxx						
LOS by Move:	*	*	*	*	*	*	*	*	B	*	*	*						
Movement:	LT - LTR - RT				LT - LTR - RT				LT - LTR - RT				LT - LTR - RT					
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx						
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx						
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx						
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*						
ApproachDel:	xxxxxx			xxxxxx			13.8			xxxxxx								
ApproachLOS:	*			*			B			*								

****

Note: Queue reported is the number of cars per lane.

****

Mammoth Crossings

Existing plus Project plus Approved Projects Conditions

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

****

Intersection #2 Minaret Rd/Main St-Lake Mary Rd

****

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.16	0.16	0.16	0.26	0.26	0.26	0.14	0.25	0.25	0.13	0.25	0.50
ArrivalType:		3			3			3			3	
ProgFactor:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q1:	5.5	3.4	4.6	3.8	8.6	8.6	2.2	4.9	7.5	4.5	3.9	1.5
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	3.8	1.1	2.9	0.8	4.3	4.3	0.8	1.1	4.1	3.5	0.8	0.2
HCM2KQueue:	9.3	4.5	7.5	4.5	12.9	12.9	3.0	6.0	11.6	8.0	4.7	1.7
70th%Factor:	1.18	1.19	1.18	1.19	1.17	1.17	1.19	1.19	1.17	1.18	1.19	1.20
HCM2k70thQ:	11.0	5.3	8.8	5.4	15.1	15.1	3.5	7.1	13.7	9.5	5.5	2.0
85th%Factor:	1.52	1.56	1.53	1.56	1.50	1.50	1.57	1.55	1.50	1.53	1.56	1.58
HCM2k85thQ:	14.2	7.0	11.5	7.0	19.3	19.3	4.7	9.2	17.5	12.3	7.2	2.7
90th%Factor:	1.65	1.72	1.68	1.72	1.61	1.61	1.74	1.70	1.62	1.67	1.72	1.77
HCM2k90thQ:	15.4	7.7	12.5	7.8	20.8	20.8	5.2	10.1	18.9	13.4	8.0	3.0
95th%Factor:	1.86	1.97	1.90	1.97	1.79	1.79	2.01	1.93	1.81	1.88	1.96	2.05
HCM2k95thQ:	17.3	8.8	14.2	8.9	23.1	23.1	6.0	11.5	21.1	15.1	9.1	3.5
98th%Factor:	2.19	2.41	2.26	2.41	2.07	2.07	2.50	2.33	2.11	2.24	2.40	2.58
HCM2k98thQ:	20.4	10.8	16.9	10.9	26.7	26.7	7.4	13.9	24.5	18.0	11.2	4.4

APPENDIX J

TOWN OF MAMMOTH LAKES CURRENT FEE SCHEDULE

COMMUNITY DEVELOPMENT
Building Division
P.O. Box 1609, Mammoth Lakes, CA 93546
(760) 934-8989 ext. 240, fax (760) 934-8608

FEE SCHEDULE

BUILDING VALUATION

The valuation to be used in computing permit fees under any of the provisions of this Fee Schedule shall be determined by the Building Official. The valuation shall be the total of all construction work for which the permit is issued including all finish work, painting, roofing, electrical, plumbing, heating, air conditioning, elevator, fire extinguishing systems, and any other permanent equipment. Valuation shall be taken at the contract price or adopted edition of "Building Valuation Data."

DISTRIBUTION OF FEES

	Percent of Total Fee
Building	45%
Plan Review	25%
Electrical	10%
Plumbing	10%
Mechanical	10%
	100% = Total Fee

PLAN REVIEW FEE

Upon submittal for plan review, a fee or adequate deposit as determined by the Building Official shall be collected. When the permit is issued, the balance of the total permit fee will be due. This fee pays for the initial plan check and one back check of corrections. The standard deposit shall be as follows:

PLAN CHECK DEPOSIT

BUILDING OR CONSTRUCTION VALUATION	FEE
$500.00 -50,000.00	$ 50.00
$50,001.00 -100,000.00	$200.00
$100,001.00 -500,000.00	$500.00
$501,000 – 2,000,000.00	$1,000.00
$2,000,001 – 5,000,000.00	$3,000.00
$5,000,001 – 10,000,000.00	$5,000.00
$10,000,001 +	$10,000.00

Where plans are incomplete or changed so as to require additional plan review, an additional plan review fee shall be charged at an hourly rate not to exceed the latest published hourly rate schedule of the Building Official.

1. PERMIT FEES FOR PROJECTS REQUIRING A FULL PLAN REVIEW

This may include new buildings, additions, fire repairs, solar, and similar projects.

VALUATION	FEE	
$1.00 to $1,000	$205.00	
$1,001 to $2,000	$308.00	
$2,001 to $50,000	$308.00	+ .0128 x valuation over $2,000
$50,001 to $100,000	$923.00	+ .0118 x valuation over $50,000
$100,001 to $200,000	$1,512.00	+ .0113 x valuation over $100,000
$200,001 to $500,000	$2,639.00	+ .0108 x valuation over $200,000
$500,001 to $2,000,000	$5,868.00	+ .0100 x valuation over $500,000
$2,000,000 to $3,000,000	$20,936.00	+ .0092 x valuation over $2,000,000
$3,000,001 and greater	$30,161.00	+ .0084 x valuation over $3,000,000

2. PERMIT FEES FOR PROJECTS REQUIRING A MINIMAL PLAN REVIEW

This may include, decks, patio covers, fences, additions, alterations, fill-in/T.I. remodels, fire repairs, and solar.

VALUATION	FEE	
$1.00 to $1,000	$89.00	
$1,001 to $10,000	$89.00	+ .0127 x valuation over $1,000
$10,001 and greater	$203.00	+ .0064 x valuation over $10,000

3. PERMIT FEES FOR PROJECTS NOT REQUIRING A PLAN REVIEW, PLUMBING, ELECTRICAL OR MECHANICAL PERMIT

VALUATION	FEE	
$1.00 to $1,000	$45.00	
$1,001 to $10,000	$45.00	+ .0127 x valuation over $1,000
$10,001 and greater	$159.00	+ .0064 x valuation over $10,000

4. MOBILE HOME INSTALLATION/TEMPORARY STRUCTURE PERMIT

1. Conventional Installation (< 2 modules)
   Installation permit fee $144.00

2. Mobile home on a permanent foundation:
   Permit fees for mobile home installation on a permanent foundation system shall be those fees shown in (1) above plus permit and plan review fees as calculated for structures requiring a minimal plan review. Valuation to be used in calculation shall be taken as 15% of that valuation established for new buildings of similar use.

5. REROOFING PERMIT

Fee based on job size (1 Square = 100 Square Feet)

SQUARES	FEE
Less than 2	No permit required
2 - 5	$25.00
6 - 25	$50.00
26 - 50	$75.00
51 - 100	$100.00
100 and over	$125.00

If plan review is required, a plan review fee shall be charged at an hourly rate not to exceed the latest hourly rate schedule.

6. PREFABRICATED SWIMMING POOL/SPA PERMIT

VALUATION	FEE
$1.00 to $3,000	$46.00
$3,001 and greater	$46.00 + .0127 x valuation over $3,000

Fee does not include buildings, roof covers, structural supports, or similar accessory structures.

7. SPECIAL SERVICE FEES

Inspection Permit	$25.00 per inspection
Temporary Power Pole	$25.00
Air Quality Ordinance Inspection	$25.00
Reinspection Fee	$35.00
Inspection Outside Normal Business Hours	Published Hourly Rate x 1.5
Demolition Permit	$50.00 < $3,000 (demo valuation)
	$100.00 $3,001 - 10,000
	$150.00 >$10,000
Relocation Permit	$144.00 Plus fees for new construction
Appeals Board Application	$50.00
Historical Building Statement	$50.00
Records Management	
Issuance of Duplicate C of O or Final Letter	$22.00
Permit Research	Published Hourly Rate/ $25.00 Min
Transfer of Permit	$25.00
Miscellaneous Requested Services	Published Hourly Rate

8. ADDITIONAL FEES

SMIP (Strong Motion Instrumentation Program, State of California)
Residential $.00010 x construction valuation
Commercial $.00021 x construction valuation

MC422 Fees (New Construction Fees, Planning Department)
$.20 x square footage of habitable area

ARCHIVE/AUTOMATION FEE
The new fee assessment will be calculated by multiplying 0.001 (one tenth of one percent) times the valuation of the construction project.

DEVELOPMENT IMPACT FEE SCHEDULE

Facility	Single family Non-transient ***	Single family Transient	Mobile Home	Multi-unit Non Transient	Multi Unit Transient	Commercial and Office	Industrial
Law Enforcement	$655.00	$1,092.00	$655.00	$655.00	$1,092.00	$819.52	$153.92
Fire	$1,066.00	$1,402.96	$1,064.96	$673.92	$1,402.96	$1,828.32	$893.36
Streets and traffic signals	$3,262.00	$1674.00	$1,645.00	$2,071.00	$1,339.20	$3,088.80	$3,862.56
Transit and Trails **	$5,770.00	$9,617.00	$5,770.00	$5,770.00	$7,212.75	$16,083.60	$3,016.00
Storm Drainage **	$13,656.00	$13,181.00	$7,695.00	$4,633.00	$2,885.25	$4,711.20	$17,365.92
General Facilities **	$1,913.00	$3,188.00	$1,913.00	$1,913.00	$2,391.00	$5,866.64	$1,100.32
Library	$2,696.72	$465.92	$2,324.40	$2,324.40	$465.92	$0	$0
Child Care	$55.12	$91.52	$55.12	$55.12	$91.52	$0	$0
Parkland and Recreation	$5,228.00	$8,713.00	$5,228.00	$5,228.00	$8,713.00	$0	$0
Airport	$226.00	$377.00	$226.00	$226.00	$226.00	$0	$0
TOTAL	**$30,710.00 per unit ***	**$37,842.00 per unit**	**$23,132.00 per unit**	**$20,496.00 per unit ******	**$23,859.20 per unit ********	**$20.39 per square foot**	**$9.29 per square foot**
Public Art	Exempt	Exempt	Exempt	½% of valu	½% of valu	1% of valuation	1% of valu
Single Family Work Force Housing *	0-2000 sf, .00006 FTEE per sf. 2001-4000 sf, .00009 FTEE per sf. 4001-6000 sf, .00012 FTEE per sf. 6001-8000 sf, .00015 FTEE per sf. SF over 8000, .00018 FTEE per sf.				First 2000 SF, $2.26 2001 to 4000 SF, $3.38 4001 to 6000 SF, $4.51 6001 to 8000 SF, $5.65 8001 SF and over, $6.78		per sq. ft.

** May be partially deferred through Mello Roos District

*** 1,500 square feet or less = 1/3 of fees
1,501 to 3,000 square feet or less = 2/3 of fees
3,001 square feet and over 100% of fees

**** Studio or one-bedroom unit = ½ unit

APPENDIX K

AIR QUALITY DATA

7/2/2008 09:35:09 AM

Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: \\.host\Shared Folders\Bryan On My Mac\Desktop\Current Projects\Mammoth Crossing\URBEMIS\program files\Site 1 Grading Unmitigated.urb924

Project Name: Mammoth Crossing Site 1 Grading

Project Location: California State-wide

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2011 TOTALS (lbs/day unmitigated)	7.86	98.12	38.43	0.11	9.41	4.00	13.40	2.01	3.68	5.69	13,809.59
2011 TOTALS (lbs/day mitigated)	7.86	98.12	38.43	0.11	3.73	4.00	7.72	0.83	3.68	4.50	13,809.59

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 1/3/2011-3/1/2011 Active Days: 42	**7.86**	**98.12**	**38.43**	**0.11**	**9.41**	**4.00**	**13.40**	**2.01**	**3.68**	**5.69**	**13,809.59**
Mass Grading 01/01/2011-03/01/2011	7.86	98.12	38.43	0.11	9.41	4.00	13.40	2.01	3.68	5.69	13,809.59
Mass Grading Dust	0.00	0.00	0.00	0.00	9.00	0.00	9.00	1.88	0.00	1.88	0.00
Mass Grading Off Road Diesel	2.83	23.44	11.96	0.00	0.00	1.17	1.17	0.00	1.08	1.08	2,247.32
Mass Grading On Road Diesel	5.00	74.62	25.46	0.11	0.40	2.82	3.22	0.13	2.60	2.73	11,460.08
Mass Grading Worker Trips	0.03	0.06	1.02	0.00	0.00	0.00	0.01	0.00	0.00	0.00	102.19

Phase Assumptions

Phase: Mass Grading 1/1/2011 - 3/1/2011 - Grading

Total Acres Disturbed: 1.79

Maximum Daily Acreage Disturbed: 0.45

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 2846.51

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

7/2/2008 09:35:09 AM

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 1/3/2011-3/1/2011 Active Days: 42	**7.86**	**98.12**	**38.43**	**0.11**	3.73	**4.00**	7.72	0.83	**3.68**	4.50	**13,809.59**
Mass Grading 01/01/2011-03/01/2011	7.86	98.12	38.43	0.11	3.73	4.00	7.72	0.83	3.68	4.50	13,809.59
Mass Grading Dust	0.00	0.00	0.00	0.00	3.32	0.00	3.32	0.69	0.00	0.69	0.00
Mass Grading Off Road Diesel	2.83	23.44	11.96	0.00	0.00	1.17	1.17	0.00	1.08	1.08	2,247.32
Mass Grading On Road Diesel	5.00	74.62	25.46	0.11	0.40	2.82	3.22	0.13	2.60	2.73	11,460.08
Mass Grading Worker Trips	0.03	0.06	1.02	0.00	0.00	0.00	0.01	0.00	0.00	0.00	102.19

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Mass Grading 1/1/2011 - 3/1/2011 - Grading

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 30% PM25: 30%

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 15% PM25: 15%

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 34% PM25: 34%

For Soil Stablizing Measures, the Cover stockpiles with tarp mitigation reduces emissions by:

PM10: 9.5% PM25: 9.5%

For Unpaved Roads Measures, the Reduce speed on unpaved roads to less than 15 mph mitigation reduces emissions by:

PM10: 40% PM25: 40%

For Unpaved Roads Measures, the Manage haul road dust 2x daily watering mitigation reduces emissions by:

PM10: 30% PM25: 30%

4/9/2008 06:13:11 PM

Urbemis 2007 Version 9.2.4

Detail Report for Summer Construction Unmitigated Emissions (Pounds/Day)

File Name: Y:\AQ\Projects\Mammoth Crossing\Site 1 Const Unmitigated.urb924

Project Name: Mammoth Crossing Construction Site 1 construction

Project Location: California State-wide

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

CONSTRUCTION EMISSION ESTIMATES (Summer Pounds Per Day, Unmitigated)

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10 Total	PM2.5 Dust	PM2.5 Exhaust	PM2.5 Total	CO2
Time Slice 3/2/2011-12/30/2011 Active	1.48	10.00	**14.39**	**0.01**	**0.05**	0.61	0.66	**0.02**	0.55	0.57	1,997.45
Building 03/02/2011-09/01/2013	1.48	10.00	14.39	0.01	0.05	0.61	0.66	0.02	0.55	0.57	1,997.45
Building Off Road Diesel	1.11	8.51	4.68	0.00	0.00	0.54	0.54	0.00	0.50	0.50	893.39
Building Vendor Trips	0.08	1.02	0.88	0.00	0.01	0.04	0.05	0.00	0.04	0.04	218.58
Building Worker Trips	0.28	0.48	8.83	0.01	0.04	0.02	0.07	0.02	0.02	0.03	885.49
Time Slice 1/2/2012-12/31/2012 Active	1.36	9.22	13.57	**0.01**	**0.05**	0.54	0.60	**0.02**	0.50	0.52	1,997.76
Building 03/02/2011-09/01/2013	1.36	9.22	13.57	0.01	0.05	0.54	0.60	0.02	0.50	0.52	1,997.76
Building Off Road Diesel	1.03	7.87	4.56	0.00	0.00	0.49	0.49	0.00	0.45	0.45	893.39
Building Vendor Trips	0.08	0.91	0.82	0.00	0.01	0.04	0.04	0.00	0.03	0.04	218.59
Building Worker Trips	0.26	0.44	8.18	0.01	0.04	0.02	0.07	0.02	0.02	0.03	885.78
Time Slice 1/1/2013-8/30/2013 Active	1.26	8.50	12.81	**0.01**	**0.05**	0.48	0.53	**0.02**	0.44	0.46	**1,998.08**
Building 03/02/2011-09/01/2013	1.26	8.50	12.81	0.01	0.05	0.48	0.53	0.02	0.44	0.46	1,998.08
Building Off Road Diesel	0.95	7.29	4.48	0.00	0.00	0.43	0.43	0.00	0.39	0.39	893.39
Building Vendor Trips	0.07	0.81	0.76	0.00	0.01	0.03	0.04	0.00	0.03	0.03	218.61
Building Worker Trips	0.23	0.40	7.57	0.01	0.04	0.02	0.07	0.02	0.02	0.03	886.07
Time Slice 9/2/2013-11/1/2013 Active	1.72	**10.27**	8.36	0.00	0.01	**0.84**	**0.85**	0.00	**0.78**	**0.78**	1,180.99
Asphalt 09/02/2013-11/01/2013	1.72	10.27	8.36	0.00	0.01	0.84	0.85	0.00	0.78	0.78	1,180.99
Paving Off-Gas	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	1.61	10.07	6.79	0.00	0.00	0.83	0.83	0.00	0.77	0.77	979.23
Paving On Road Diesel	0.01	0.12	0.04	0.00	0.00	0.00	0.01	0.00	0.00	0.00	22.81
Paving Worker Trips	0.05	0.08	1.53	0.00	0.01	0.00	0.01	0.00	0.00	0.01	178.95
Time Slice 11/4/2013-12/31/2013 Active	**65.94**	0.04	0.67	0.00	0.00	0.00	0.01	0.00	0.00	0.00	78.66
Coating 11/02/2013-01/01/2014	65.94	0.04	0.67	0.00	0.00	0.00	0.01	0.00	0.00	0.00	78.66
Architectural Coating	65.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.02	0.04	0.67	0.00	0.00	0.00	0.01	0.00	0.00	0.00	78.66
Time Slice 1/1/2014-1/1/2014 Active	65.93	0.03	0.62	0.00	0.00	0.00	0.01	0.00	0.00	0.00	78.69
Coating 11/02/2013-01/01/2014	65.93	0.03	0.62	0.00	0.00	0.00	0.01	0.00	0.00	0.00	78.69
Architectural Coating	65.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.02	0.03	0.62	0.00	0.00	0.00	0.01	0.00	0.00	0.00	78.69

Phase Assumptions

Phase: Paving 9/2/2013 - 11/1/2013 - Area Asphalting

Acres to be Paved: 0.86

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day
1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Phase: Building Construction 3/2/2011 - 9/1/2013 - Building Construction
Off-Road Equipment:
1 Cranes (399 hp) operating at a 0.43 load factor for 4 hours per day
2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day
1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

Phase: Architectural Coating 11/2/2013 - 1/1/2014 - Painting and Coatings
Rule: Residential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250
Rule: Residential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250
Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250
Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Urbemis 2007 Version 9.2.4

Detail Report for Summer Construction Mitigated Emissions (Pounds/Day)

File Name: Y:\AQ\Projects\Mammoth Crossing\Site 1 Const Unmitigated.urb924
Project Name: Mammoth Crossing Site II Construction
Project Location: California State-wide
On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006
Off-Road Vehicle Emissions Based on: OFFROAD2007

CONSTRUCTION EMISSION ESTIMATES (Summer Pounds Per Day, Mitigated)

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10 Total	PM2.5 Dust	PM2.5 Exhaust	PM2.5 Total	CO2
Time Slice 3/2/2011-12/30/2011 Active Days: 218	1.48	10.00	**14.39**	**0.01**	**0.05**	0.61	0.66	**0.02**	0.55	0.57	1,997.45
Building 03/02/2011-09/01/2013	1.48	10.00	14.39	0.01	0.05	0.61	0.66	0.02	0.55	0.57	1,997.45
Building Off Road Diesel	1.11	8.51	4.68	0.00	0.00	0.54	0.54	0.00	0.50	0.50	893.39
Building Vendor Trips	0.08	1.02	0.88	0.00	0.01	0.04	0.05	0.00	0.04	0.04	218.58
Building Worker Trips	0.28	0.48	8.83	0.01	0.04	0.02	0.07	0.02	0.02	0.03	885.49
Time Slice 1/2/2012-12/31/2012 Active Days: 261	1.36	9.22	13.57	**0.01**	**0.05**	0.54	0.60	**0.02**	0.50	0.52	1,997.76
Building 03/02/2011-09/01/2013	1.36	9.22	13.57	0.01	0.05	0.54	0.60	0.02	0.50	0.52	1,997.76
Building Off Road Diesel	1.03	7.87	4.56	0.00	0.00	0.49	0.49	0.00	0.45	0.45	893.39
Building Vendor Trips	0.08	0.91	0.82	0.00	0.01	0.04	0.04	0.00	0.03	0.04	218.59
Building Worker Trips	0.26	0.44	8.18	0.01	0.04	0.02	0.07	0.02	0.02	0.03	885.78
Time Slice 1/1/2013-8/30/2013 Active Days: 174	1.26	8.50	12.81	**0.01**	**0.05**	0.48	0.53	**0.02**	0.44	0.46	**1,998.08**
Building 03/02/2011-09/01/2013	1.26	8.50	12.81	0.01	0.05	0.48	0.53	0.02	0.44	0.46	1,998.08
Building Off Road Diesel	0.95	7.29	4.48	0.00	0.00	0.43	0.43	0.00	0.39	0.39	893.39
Building Vendor Trips	0.07	0.81	0.76	0.00	0.01	0.03	0.04	0.00	0.03	0.03	218.61
Building Worker Trips	0.23	0.40	7.57	0.01	0.04	0.02	0.07	0.02	0.02	0.03	886.07
Time Slice 9/2/2013-11/1/2013 Active Days: 45	1.72	**10.27**	8.36	0.00	0.01	**0.84**	**0.85**	0.00	**0.78**	**0.78**	1,180.99
Asphalt 09/02/2013-11/01/2013	1.72	10.27	8.36	0.00	0.01	0.84	0.85	0.00	0.78	0.78	1,180.99
Paving Off-Gas	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	1.61	10.07	6.79	0.00	0.00	0.83	0.83	0.00	0.77	0.77	979.23
Paving On Road Diesel	0.01	0.12	0.04	0.00	0.00	0.00	0.01	0.00	0.00	0.00	22.81
Paving Worker Trips	0.05	0.08	1.53	0.00	0.01	0.00	0.01	0.00	0.00	0.01	178.95
Time Slice 11/4/2013-12/31/2013 Active Days: 42	64.44	0.04	0.67	0.00	0.00	0.00	0.01	0.00	0.00	0.00	78.66
Coating 11/02/2013-01/01/2014	64.44	0.04	0.67	0.00	0.00	0.00	0.01	0.00	0.00	0.00	78.66
Architectural Coating	64.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.02	0.04	0.67	0.00	0.00	0.00	0.01	0.00	0.00	0.00	78.66
Time Slice 1/1/2014-1/1/2014 Active Days: 1	1.52	0.03	0.62	0.00	0.00	0.00	0.01	0.00	0.00	0.00	78.69
Coating 11/02/2013-01/01/2014	1.52	0.03	0.62	0.00	0.00	0.00	0.01	0.00	0.00	0.00	78.69
Architectural Coating	1.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.02	0.03	0.62	0.00	0.00	0.00	0.01	0.00	0.00	0.00	78.69

Phase Assumptions

Phase: Paving 9/2/2013 - 11/1/2013 - Area Asphalting

3/12/2008 09:26:12 AM
Acres to be Paved: 0.86
Off-Road Equipment:
4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day
1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day
1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day
1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Phase: Building Construction 3/2/2011 - 9/1/2013 - Building Construction
Off-Road Equipment:
1 Cranes (399 hp) operating at a 0.43 load factor for 4 hours per day
2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day
1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

Phase: Architectural Coating 11/2/2013 - 1/1/2014 - Painting and Coatings
Rule: Residential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250
Rule: Residential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250
Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250
Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

7/2/2008 09:36:20 AM

Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: \\.host\Shared Folders\Bryan On My Mac\Desktop\Current Projects\Mammoth Crossing\URBEMIS\program files\Site 2 Grading Unmitigated.urb924

Project Name: Mammoth Crossing Site II Grading

Project Location: California State-wide

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2017 TOTALS (lbs/day unmitigated)	3.81	36.02	18.60	0.07	31.45	1.46	32.91	6.60	1.34	7.94	9,287.22
2017 TOTALS (lbs/day mitigated)	3.81	36.02	18.60	0.07	11.76	1.46	13.22	2.49	1.34	3.83	9,287.22

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 1/2/2017-3/1/2017 Active Days: 43	**3.81**	**36.02**	**18.60**	**0.07**	**31.45**	**1.46**	**32.91**	**6.60**	**1.34**	**7.94**	**9,287.22**
Mass Grading 01/01/2017-03/01/2017	3.81	36.02	18.60	0.07	31.45	1.46	32.91	6.60	1.34	7.94	9,287.22
Mass Grading Dust	0.00	0.00	0.00	0.00	31.20	0.00	31.20	6.52	0.00	6.52	0.00
Mass Grading Off Road Diesel	2.03	14.69	9.80	0.00	0.00	0.68	0.68	0.00	0.62	0.62	2,247.32
Mass Grading On Road Diesel	1.76	21.30	8.15	0.06	0.24	0.78	1.02	0.08	0.72	0.80	6,937.55
Mass Grading Worker Trips	0.02	0.03	0.64	0.00	0.00	0.00	0.01	0.00	0.00	0.00	102.35

Phase Assumptions

Phase: Mass Grading 1/1/2017 - 3/1/2017 - Mass Site Grading Description

Total Acres Disturbed: 4.52

Maximum Daily Acreage Disturbed: 1.56

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 1723.18

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

7/2/2008 09:36:20 AM

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 1/2/2017-3/1/2017 Active Days: 43	**3.81**	**36.02**	**18.60**	**0.07**	11.76	**1.46**	13.22	2.49	**1.34**	3.83	**9,287.22**
Mass Grading 01/01/2017-03/01/2017	3.81	36.02	18.60	0.07	11.76	1.46	13.22	2.49	1.34	3.83	9,287.22
Mass Grading Dust	0.00	0.00	0.00	0.00	11.51	0.00	11.51	2.40	0.00	2.40	0.00
Mass Grading Off Road Diesel	2.03	14.69	9.80	0.00	0.00	0.68	0.68	0.00	0.62	0.62	2,247.32
Mass Grading On Road Diesel	1.76	21.30	8.15	0.06	0.24	0.78	1.02	0.08	0.72	0.80	6,937.55
Mass Grading Worker Trips	0.02	0.03	0.64	0.00	0.00	0.00	0.01	0.00	0.00	0.00	102.35

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Mass Grading 1/1/2017 - 3/1/2017 - Mass Site Grading Description

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 30% PM25: 30%

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 15% PM25: 15%

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 34% PM25: 34%

For Soil Stablizing Measures, the Cover stockpiles with tarp mitigation reduces emissions by:

PM10: 9.5% PM25: 9.5%

For Unpaved Roads Measures, the Reduce speed on unpaved roads to less than 15 mph mitigation reduces emissions by:

PM10: 40% PM25: 40%

For Unpaved Roads Measures, the Manage haul road dust 2x daily watering mitigation reduces emissions by:

PM10: 30% PM25: 30%

3/12/2008 09:25:46 AM

Urbemis 2007 Version 9.2.4

Detail Report for Summer Construction Unmitigated Emissions (Pounds/Day)

File Name: Y:\AQ\Projects\Mammoth Crossing\Site 2 Const Unmitigated.urb924

Project Name: Mammoth Crossing Site II Construction

Project Location: California State-wide

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

CONSTRUCTION EMISSION ESTIMATES (Summer Pounds Per Day, Unmitigated)

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10 Total	PM2.5 Dust	PM2.5 Exhaust	PM2.5 Total	CO2
Time Slice 3/2/2017-12/29/2017 Active	2.33	**11.69**	**19.39**	**0.02**	**0.09**	0.67	**0.76**	**0.03**	0.61	**0.65**	3,459.62
Building 03/02/2017-09/01/2019	2.33	11.69	19.39	0.02	0.09	0.67	0.76	0.03	0.61	0.65	3,459.62
Building Off Road Diesel	1.98	10.41	9.21	0.00	0.00	0.60	0.60	0.00	0.55	0.55	1,621.20
Building Vendor Trips	0.08	0.81	0.95	0.00	0.01	0.03	0.05	0.00	0.03	0.03	363.65
Building Worker Trips	0.27	0.47	9.23	0.01	0.07	0.04	0.11	0.03	0.03	0.06	1,474.77
Time Slice 1/1/2018-12/31/2018 Active	2.10	10.81	18.45	**0.02**	**0.09**	0.59	0.68	**0.03**	0.54	0.57	3,459.85
Building 03/02/2017-09/01/2019	2.10	10.81	18.45	0.02	0.09	0.59	0.68	0.03	0.54	0.57	3,459.85
Building Off Road Diesel	1.78	9.66	9.01	0.00	0.00	0.52	0.52	0.00	0.48	0.48	1,621.20
Building Vendor Trips	0.07	0.72	0.89	0.00	0.01	0.03	0.04	0.00	0.03	0.03	363.68
Building Worker Trips	0.25	0.43	8.55	0.01	0.07	0.04	0.11	0.03	0.03	0.06	1,474.97
Time Slice 1/1/2019-8/30/2019 Active	1.92	10.00	17.61	**0.02**	**0.09**	0.52	0.60	**0.03**	0.47	0.50	**3,460.06**
Building 03/02/2017-09/01/2019	1.92	10.00	17.61	0.02	0.09	0.52	0.60	0.03	0.47	0.50	3,460.06
Building Off Road Diesel	1.62	8.96	8.86	0.00	0.00	0.45	0.45	0.00	0.41	0.41	1,621.20
Building Vendor Trips	0.07	0.65	0.83	0.00	0.01	0.03	0.04	0.00	0.02	0.03	363.71
Building Worker Trips	0.22	0.39	7.92	0.01	0.07	0.04	0.11	0.03	0.03	0.06	1,475.15
Time Slice 9/2/2019-11/1/2019 Active	1.68	9.50	9.73	0.00	0.01	**0.68**	0.69	0.00	**0.62**	0.63	1,545.22
Asphalt 09/02/2019-11/01/2019	1.68	9.50	9.73	0.00	0.01	0.68	0.69	0.00	0.62	0.63	1,545.22
Paving Off-Gas	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	1.48	9.28	8.57	0.00	0.00	0.66	0.66	0.00	0.61	0.61	1,272.04
Paving On Road Diesel	0.01	0.17	0.07	0.00	0.00	0.01	0.01	0.00	0.01	0.01	68.43
Paving Worker Trips	0.03	0.05	1.10	0.00	0.01	0.01	0.02	0.00	0.00	0.01	204.75
Time Slice 11/4/2019-12/31/2019 Active	**109.63**	0.03	0.70	0.00	0.01	0.00	0.01	0.00	0.00	0.01	130.96
Coating 11/02/2019-01/01/2020	109.63	0.03	0.70	0.00	0.01	0.00	0.01	0.00	0.00	0.01	130.96
Architectural Coating	109.61	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.02	0.03	0.70	0.00	0.01	0.00	0.01	0.00	0.00	0.01	130.96
Time Slice 1/1/2020-1/1/2020 Active	109.63	0.03	0.65	0.00	0.01	0.00	0.01	0.00	0.00	0.01	130.98
Coating 11/02/2019-01/01/2020	109.63	0.03	0.65	0.00	0.01	0.00	0.01	0.00	0.00	0.01	130.98
Architectural Coating	109.61	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.02	0.03	0.65	0.00	0.01	0.00	0.01	0.00	0.00	0.01	130.98

Phase Assumptions

Phase: Paving 9/2/2019 - 11/1/2019 - Paving

Acres to be Paved: 2.58

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

1 Paving Equipment (104 hp) operating at a 0.53 load factor for 8 hours per day
1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day
1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Phase: Building Construction 3/2/2017 - 9/1/2019 - Building Construction
Off-Road Equipment:
1 Cranes (399 hp) operating at a 0.43 load factor for 6 hours per day
2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day
1 Generator Sets (49 hp) operating at a 0.74 load factor for 8 hours per day
1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day
3 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Phase: Architectural Coating 11/2/2019 - 1/1/2020 - Arch Coatings
Rule: Residential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250
Rule: Residential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250
Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250
Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

3/12/2008 09:26:12 AM

Urbemis 2007 Version 9.2.4

Detail Report for Summer Construction Mitigated Emissions (Pounds/Day)

File Name: Y:\AQ\Projects\Mammoth Crossing\Site 2 Const Unmitigated.urb924

Project Name: Mammoth Crossing Site II Construction

Project Location: California State-wide

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

CONSTRUCTION EMISSION ESTIMATES (Summer Pounds Per Day, Mitigated)

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10 Total	PM2.5 Dust	PM2.5 Exhaust	PM2.5 Total	CO2
Time Slice 3/2/2017-12/29/2017 Active	2.33	**11.69**	**19.39**	**0.02**	**0.09**	0.67	**0.76**	**0.03**	0.61	**0.65**	3,459.62
Building 03/02/2017-09/01/2019	2.33	11.69	19.39	0.02	0.09	0.67	0.76	0.03	0.61	0.65	3,459.62
Building Off Road Diesel	1.98	10.41	9.21	0.00	0.00	0.60	0.60	0.00	0.55	0.55	1,621.20
Building Vendor Trips	0.08	0.81	0.95	0.00	0.01	0.03	0.05	0.00	0.03	0.03	363.65
Building Worker Trips	0.27	0.47	9.23	0.01	0.07	0.04	0.11	0.03	0.03	0.06	1,474.77
Time Slice 1/1/2018-12/31/2018 Active	2.10	10.81	18.45	**0.02**	**0.09**	0.59	0.68	**0.03**	0.54	0.57	3,459.85
Building 03/02/2017-09/01/2019	2.10	10.81	18.45	0.02	0.09	0.59	0.68	0.03	0.54	0.57	3,459.85
Building Off Road Diesel	1.78	9.66	9.01	0.00	0.00	0.52	0.52	0.00	0.48	0.48	1,621.20
Building Vendor Trips	0.07	0.72	0.89	0.00	0.01	0.03	0.04	0.00	0.03	0.03	363.68
Building Worker Trips	0.25	0.43	8.55	0.01	0.07	0.04	0.11	0.03	0.03	0.06	1,474.97
Time Slice 1/1/2019-8/30/2019 Active	1.92	10.00	17.61	**0.02**	**0.09**	0.52	0.60	**0.03**	0.47	0.50	**3,460.06**
Building 03/02/2017-09/01/2019	1.92	10.00	17.61	0.02	0.09	0.52	0.60	0.03	0.47	0.50	3,460.06
Building Off Road Diesel	1.62	8.96	8.86	0.00	0.00	0.45	0.45	0.00	0.41	0.41	1,621.20
Building Vendor Trips	0.07	0.65	0.83	0.00	0.01	0.03	0.04	0.00	0.02	0.03	363.71
Building Worker Trips	0.22	0.39	7.92	0.01	0.07	0.04	0.11	0.03	0.03	0.06	1,475.15
Time Slice 9/2/2019-11/1/2019 Active	1.68	9.50	9.73	0.00	0.01	**0.68**	0.69	0.00	**0.62**	0.63	1,545.22
Asphalt 09/02/2019-11/01/2019	1.68	9.50	9.73	0.00	0.01	0.68	0.69	0.00	0.62	0.63	1,545.22
Paving Off-Gas	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	1.48	9.28	8.57	0.00	0.00	0.66	0.66	0.00	0.61	0.61	1,272.04
Paving On Road Diesel	0.01	0.17	0.07	0.00	0.00	0.01	0.01	0.00	0.01	0.01	68.43
Paving Worker Trips	0.03	0.05	1.10	0.00	0.01	0.01	0.02	0.00	0.00	0.01	204.75
Time Slice 11/4/2019-12/31/2019 Active	96.43	0.03	0.70	0.00	0.01	0.00	0.01	0.00	0.00	0.01	130.96
Coating 11/02/2019-01/01/2020	96.43	0.03	0.70	0.00	0.01	0.00	0.01	0.00	0.00	0.01	130.96
Architectural Coating	96.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.02	0.03	0.70	0.00	0.01	0.00	0.01	0.00	0.00	0.01	130.96
Time Slice 1/1/2020-1/1/2020 Active	2.26	0.03	0.65	0.00	0.01	0.00	0.01	0.00	0.00	0.01	130.98
Coating 11/02/2019-01/01/2020	2.26	0.03	0.65	0.00	0.01	0.00	0.01	0.00	0.00	0.01	130.98
Architectural Coating	2.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.02	0.03	0.65	0.00	0.01	0.00	0.01	0.00	0.00	0.01	130.98

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Architectural Coating 11/2/2019 - 1/1/2020 - Arch Coatings

For Residential Architectural Coating Measures, the Residential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Residential Architectural Coating Measures, the Residential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

3/12/2008 09:26:12 AM

For Nonresidential Architectural Coating Measures, the Nonresidential Exterior: Use Low VOC Coatings mitigation reduces emissions by:
ROG: 10%
For Nonresidential Architectural Coating Measures, the Nonresidential Interior: Use Low VOC Coatings mitigation reduces emissions by:
ROG: 10%

Phase Assumptions

Phase: Paving 9/2/2019 - 11/1/2019 - Paving
Acres to be Paved: 2.58
Off-Road Equipment:
4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day
1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day
1 Paving Equipment (104 hp) operating at a 0.53 load factor for 8 hours per day
1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day
1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Phase: Building Construction 3/2/2017 - 9/1/2019 - Building Construction
Off-Road Equipment:
1 Cranes (399 hp) operating at a 0.43 load factor for 6 hours per day
2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day
1 Generator Sets (49 hp) operating at a 0.74 load factor for 8 hours per day
1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day
3 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Phase: Architectural Coating 11/2/2019 - 1/1/2020 - Arch Coatings
Rule: Residential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250
Rule: Residential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250
Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250
Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

7/2/2008 09:33:59 AM

Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: \\.host\Shared Folders\Bryan On My Mac\Desktop\Current Projects\Mammoth Crossing\URBEMIS\program files\Site 3 Grading Unmitigated 060208.urb924

Project Name: Mammoth Crossing Site III Grading

Project Location: California State-wide

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2017 TOTALS (lbs/day unmitigated)	3.40	31.08	16.70	0.05	27.79	1.28	29.07	5.83	1.17	7.00	7,678.61
2017 TOTALS (lbs/day mitigated)	3.40	31.08	16.70	0.05	12.00	1.28	13.28	2.53	1.17	3.70	7,678.61

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 1/2/2017-3/1/2017 Active Days: 43	**3.40**	**31.08**	**16.70**	**0.05**	**27.79**	**1.28**	**29.07**	**5.83**	**1.17**	**7.00**	**7,678.61**
Mass Grading 01/02/2017-03/01/2017	3.40	31.08	16.70	0.05	27.79	1.28	29.07	5.83	1.17	7.00	7,678.61
Mass Grading Dust	0.00	0.00	0.00	0.00	27.60	0.00	27.60	5.76	0.00	5.76	0.00
Mass Grading Off Road Diesel	2.03	14.69	9.80	0.00	0.00	0.68	0.68	0.00	0.62	0.62	2,247.32
Mass Grading On Road Diesel	1.36	16.36	6.26	0.05	0.19	0.60	0.78	0.06	0.55	0.61	5,328.94
Mass Grading Worker Trips	0.02	0.03	0.64	0.00	0.00	0.00	0.01	0.00	0.00	0.00	102.35

Phase Assumptions

Phase: Mass Grading 1/2/2017 - 3/1/2017 - Site Grading

Total Acres Disturbed: 5.51

Maximum Daily Acreage Disturbed: 1.38

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 1323.63

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

7/2/2008 09:33:59 AM

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 1/2/2017-3/1/2017 Active Days: 43	**3.40**	**31.08**	**16.70**	**0.05**	12.00	**1.28**	13.28	2.53	**1.17**	3.70	**7,678.61**
Mass Grading 01/02/2017-03/01/2017	3.40	31.08	16.70	0.05	12.00	1.28	13.28	2.53	1.17	3.70	7,678.61
Mass Grading Dust	0.00	0.00	0.00	0.00	11.81	0.00	11.81	2.47	0.00	2.47	0.00
Mass Grading Off Road Diesel	2.03	14.69	9.80	0.00	0.00	0.68	0.68	0.00	0.62	0.62	2,247.32
Mass Grading On Road Diesel	1.36	16.36	6.26	0.05	0.19	0.60	0.78	0.06	0.55	0.61	5,328.94
Mass Grading Worker Trips	0.02	0.03	0.64	0.00	0.00	0.00	0.01	0.00	0.00	0.00	102.35

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Mass Grading 1/2/2017 - 3/1/2017 - Site Grading

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 30% PM25: 30%

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 15% PM25: 15%

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 34% PM25: 34%

For Soil Stablizing Measures, the Cover stockpiles with tarp mitigation reduces emissions by:

PM10: 9.5% PM25: 9.5%

For Unpaved Roads Measures, the Manage haul road dust 2x daily watering mitigation reduces emissions by:

PM10: 30% PM25: 30%

6/2/2008 09:57:24 AM

Urbemis 2007 Version 9.2.4

Detail Report for Summer Construction Unmitigated Emissions (Pounds/Day)

File Name: C:\Documents and Settings\bryan.chen\Desktop\Site 3 Const Unmitigated 060208.urb924

Project Name: Mammoth Crossing Site III Construction

Project Location: California State-wide

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

CONSTRUCTION EMISSION ESTIMATES (Summer Pounds Per Day, Unmitigated)

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10 Total	PM2.5 Dust	PM2.5 Exhaust	PM2.5 Total	CO2
Time Slice 3/2/2017-12/29/2017 Active	2.17	**11.09**	**14.64**	**0.01**	**0.05**	0.64	**0.69**	**0.02**	0.59	0.60	2,602.06
Building 03/02/2017-09/01/2019	2.17	11.09	14.64	0.01	0.05	0.64	0.69	0.02	0.59	0.60	2,602.06
Building Off Road Diesel	1.98	10.41	9.21	0.00	0.00	0.60	0.60	0.00	0.55	0.55	1,621.20
Building Vendor Trips	0.04	0.43	0.51	0.00	0.01	0.02	0.03	0.00	0.02	0.02	194.02
Building Worker Trips	0.14	0.25	4.93	0.01	0.04	0.02	0.06	0.01	0.02	0.03	786.84
Time Slice 1/1/2018-12/31/2018 Active	1.95	10.27	14.04	**0.01**	**0.05**	0.56	0.61	**0.02**	0.51	0.53	2,602.18
Building 03/02/2017-09/01/2019	1.95	10.27	14.04	0.01	0.05	0.56	0.61	0.02	0.51	0.53	2,602.18
Building Off Road Diesel	1.78	9.66	9.01	0.00	0.00	0.52	0.52	0.00	0.48	0.48	1,621.20
Building Vendor Trips	0.04	0.39	0.47	0.00	0.01	0.02	0.02	0.00	0.01	0.02	194.04
Building Worker Trips	0.13	0.23	4.56	0.01	0.04	0.02	0.06	0.01	0.02	0.03	786.95
Time Slice 1/1/2019-8/30/2019 Active	1.78	9.51	13.53	**0.01**	**0.05**	0.49	0.53	**0.02**	0.44	0.46	**2,602.29**
Building 03/02/2017-09/01/2019	1.78	9.51	13.53	0.01	0.05	0.49	0.53	0.02	0.44	0.46	2,602.29
Building Off Road Diesel	1.62	8.96	8.86	0.00	0.00	0.45	0.45	0.00	0.41	0.41	1,621.20
Building Vendor Trips	0.04	0.35	0.44	0.00	0.01	0.01	0.02	0.00	0.01	0.02	194.05
Building Worker Trips	0.12	0.21	4.23	0.01	0.04	0.02	0.06	0.01	0.02	0.03	787.05
Time Slice 9/2/2019-11/1/2019 Active	1.60	9.42	9.70	0.00	0.01	**0.67**	0.68	0.00	**0.62**	**0.62**	1,513.39
Asphalt 09/02/2019-11/01/2019	1.60	9.42	9.70	0.00	0.01	0.67	0.68	0.00	0.62	0.62	1,513.39
Paving Off-Gas	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	1.48	9.28	8.57	0.00	0.00	0.66	0.66	0.00	0.61	0.61	1,272.04
Paving On Road Diesel	0.01	0.09	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	36.60
Paving Worker Trips	0.03	0.05	1.10	0.00	0.01	0.01	0.02	0.00	0.00	0.01	204.75
Time Slice 11/4/2019-12/31/2019 Active	**58.49**	0.02	0.38	0.00	0.00	0.00	0.01	0.00	0.00	0.00	69.87
Coating 11/02/2019-01/01/2020	58.49	0.02	0.38	0.00	0.00	0.00	0.01	0.00	0.00	0.00	69.87
Architectural Coating	58.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.01	0.02	0.38	0.00	0.00	0.00	0.01	0.00	0.00	0.00	69.87
Time Slice 1/1/2020-1/1/2020 Active Days:	58.49	0.02	0.35	0.00	0.00	0.00	0.01	0.00	0.00	0.00	69.88
Coating 11/02/2019-01/01/2020	58.49	0.02	0.35	0.00	0.00	0.00	0.01	0.00	0.00	0.00	69.88
Architectural Coating	58.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.01	0.02	0.35	0.00	0.00	0.00	0.01	0.00	0.00	0.00	69.88

Phase Assumptions

Phase: Paving 9/2/2019 - 11/1/2019 - Paving

Acres to be Paved: 1.38

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

1 Paving Equipment (104 hp) operating at a 0.53 load factor for 8 hours per day
1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day
1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Phase: Building Construction 3/2/2017 - 9/1/2019 - Building Construction
Off-Road Equipment:
1 Cranes (399 hp) operating at a 0.43 load factor for 6 hours per day
2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day
1 Generator Sets (49 hp) operating at a 0.74 load factor for 8 hours per day
1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day
3 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Phase: Architectural Coating 11/2/2019 - 1/1/2020 - Arch Coatings
Rule: Residential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250
Rule: Residential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250
Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250
Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

6/2/2008 09:57:34 AM

Urbemis 2007 Version 9.2.4

Detail Report for Summer Construction Mitigated Emissions (Pounds/Day)

File Name: C:\Documents and Settings\bryan.chen\Desktop\Site 3 Const Unmitigated 060208.urb924

Project Name: Mammoth Crossing Site III Construction

Project Location: California State-wide

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

CONSTRUCTION EMISSION ESTIMATES (Summer Pounds Per Day, Mitigated)

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10 Total	PM2.5 Dust	PM2.5 Exhaust	PM2.5 Total	CO2
Time Slice 3/2/2017-12/29/2017 Active	2.17	**11.09**	**14.64**	**0.01**	**0.05**	0.64	**0.69**	**0.02**	0.59	0.60	2,602.06
Building 03/02/2017-09/01/2019	2.17	11.09	14.64	0.01	0.05	0.64	0.69	0.02	0.59	0.60	2,602.06
Building Off Road Diesel	1.98	10.41	9.21	0.00	0.00	0.60	0.60	0.00	0.55	0.55	1,621.20
Building Vendor Trips	0.04	0.43	0.51	0.00	0.01	0.02	0.03	0.00	0.02	0.02	194.02
Building Worker Trips	0.14	0.25	4.93	0.01	0.04	0.02	0.06	0.01	0.02	0.03	786.84
Time Slice 1/1/2018-12/31/2018 Active	1.95	10.27	14.04	**0.01**	**0.05**	0.56	0.61	**0.02**	0.51	0.53	2,602.18
Building 03/02/2017-09/01/2019	1.95	10.27	14.04	0.01	0.05	0.56	0.61	0.02	0.51	0.53	2,602.18
Building Off Road Diesel	1.78	9.66	9.01	0.00	0.00	0.52	0.52	0.00	0.48	0.48	1,621.20
Building Vendor Trips	0.04	0.39	0.47	0.00	0.01	0.02	0.02	0.00	0.01	0.02	194.04
Building Worker Trips	0.13	0.23	4.56	0.01	0.04	0.02	0.06	0.01	0.02	0.03	786.95
Time Slice 1/1/2019-8/30/2019 Active	1.78	9.51	13.53	**0.01**	**0.05**	0.49	0.53	**0.02**	0.44	0.46	**2,602.29**
Building 03/02/2017-09/01/2019	1.78	9.51	13.53	0.01	0.05	0.49	0.53	0.02	0.44	0.46	2,602.29
Building Off Road Diesel	1.62	8.96	8.86	0.00	0.00	0.45	0.45	0.00	0.41	0.41	1,621.20
Building Vendor Trips	0.04	0.35	0.44	0.00	0.01	0.01	0.02	0.00	0.01	0.02	194.05
Building Worker Trips	0.12	0.21	4.23	0.01	0.04	0.02	0.06	0.01	0.02	0.03	787.05
Time Slice 9/2/2019-11/1/2019 Active	1.60	9.42	9.70	0.00	0.01	**0.67**	0.68	0.00	**0.62**	**0.62**	1,513.39
Asphalt 09/02/2019-11/01/2019	1.60	9.42	9.70	0.00	0.01	0.67	0.68	0.00	0.62	0.62	1,513.39
Paving Off-Gas	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	1.48	9.28	8.57	0.00	0.00	0.66	0.66	0.00	0.61	0.61	1,272.04
Paving On Road Diesel	0.01	0.09	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	36.60
Paving Worker Trips	0.03	0.05	1.10	0.00	0.01	0.01	0.02	0.00	0.00	0.01	204.75
Time Slice 11/4/2019-12/31/2019 Active	51.45	0.02	0.38	0.00	0.00	0.00	0.01	0.00	0.00	0.00	69.87
Coating 11/02/2019-01/01/2020	51.45	0.02	0.38	0.00	0.00	0.00	0.01	0.00	0.00	0.00	69.87
Architectural Coating	51.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.01	0.02	0.38	0.00	0.00	0.00	0.01	0.00	0.00	0.00	69.87
Time Slice 1/1/2020-1/1/2020 Active Days:	1.21	0.02	0.35	0.00	0.00	0.00	0.01	0.00	0.00	0.00	69.88
Coating 11/02/2019-01/01/2020	1.21	0.02	0.35	0.00	0.00	0.00	0.01	0.00	0.00	0.00	69.88
Architectural Coating	1.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.01	0.02	0.35	0.00	0.00	0.00	0.01	0.00	0.00	0.00	69.88

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Architectural Coating 11/2/2019 - 1/1/2020 - Arch Coatings

For Residential Architectural Coating Measures, the Residential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Residential Architectural Coating Measures, the Residential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

6/2/2008 09:57:34 AM

For Nonresidential Architectural Coating Measures, the Nonresidential Exterior: Use Low VOC Coatings mitigation reduces emissions by:
ROG: 10%
For Nonresidential Architectural Coating Measures, the Nonresidential Interior: Use Low VOC Coatings mitigation reduces emissions by:
ROG: 10%

Phase Assumptions

Phase: Paving 9/2/2019 - 11/1/2019 - Paving
Acres to be Paved: 1.38
Off-Road Equipment:
4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day
1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day
1 Paving Equipment (104 hp) operating at a 0.53 load factor for 8 hours per day
1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day
1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Phase: Building Construction 3/2/2017 - 9/1/2019 - Building Construction
Off-Road Equipment:
1 Cranes (399 hp) operating at a 0.43 load factor for 6 hours per day
2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day
1 Generator Sets (49 hp) operating at a 0.74 load factor for 8 hours per day
1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day
3 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Phase: Architectural Coating 11/2/2019 - 1/1/2020 - Arch Coatings
Rule: Residential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250
Rule: Residential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250
Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250
Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

7/24/2008 05:07:28 PM

Urbemis 2007 Version 9.2.4

Combined Winter Emissions Reports (Pounds/Day)

File Name: \\.host\Shared Folders\Bryan On My Mac\Desktop\Current Projects\Mammoth Crossing\URBEMIS\program files\Operations Site 1.urb924

Project Name: Mammoth Crossing Operations site

Project Location: California State-wide

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5
TOTALS (lbs/day, unmitigated)	1.39	8.23	6.91	0.00	0.01	0.01

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5
TOTALS (lbs/day, unmitigated)	11.37	17.45	131.10	0.17	35.13	6.72

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5
TOTALS (lbs/day, unmitigated)	12.76	25.68	138.01	0.17	35.14	6.73

Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5
Natural Gas	0.60	8.23	6.91	0.00	0.01	0.01
Hearth						
Landscaping - No Winter Emissions						
Consumer Products	0.00					

Architectural Coatings	0.79					
TOTALS (lbs/day, unmitigated)	1.39	8.23	6.91	0.00	0.01	0.01

Area Source Changes to Defaults

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25
Hotel	6.72	10.31	77.45	0.10	20.75	3.97
Regnl shop. center	3.90	5.97	44.85	0.06	12.01	2.30
Office park	0.75	1.17	8.80	0.01	2.37	0.45
TOTALS (lbs/day, unmitigated)	11.37	17.45	131.10	0.17	35.13	6.72

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2020 Temperature (F): 30 Season: Winter

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Hotel		8.17	rooms	198.00	1,617.66	12,063.70
Regnl shop. center		42.94	1000 sq ft	22.00	944.68	6,984.02
Office park		11.42	1000 sq ft	14.39	164.33	1,377.45
					2,726.67	20,425.17

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	48.2	0.0	100.0	0.0

Light Truck < 3750 lbs	10.8	0.0	97.2	2.8
Light Truck 3751-5750 lbs	22.0	0.0	100.0	0.0
Med Truck 5751-8500 lbs	9.8	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	1.7	0.0	76.5	23.5
Lite-Heavy Truck 10,001-14,000 lbs	0.7	0.0	57.1	42.9
Med-Heavy Truck 14,001-33,000 lbs	1.0	0.0	20.0	80.0
Heavy-Heavy Truck 33,001-60,000 lbs	0.9	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.1	0.0	0.0	100.0
Motorcycle	3.6	38.9	61.1	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	1.0	0.0	90.0	10.0

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	10.8	7.3	7.5	9.5	7.4	7.4
Rural Trip Length (miles)	16.8	7.1	7.9	14.7	6.6	6.6
Trip speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Hotel				5.0	2.5	92.5
Regnl shop. center				2.0	1.0	97.0
Office park				48.0	24.0	28.0

7/24/2008 05:09:03 PM

Urbemis 2007 Version 9.2.4

Combined Winter Emissions Reports (Pounds/Day)

File Name: \\.host\Shared Folders\Bryan On My Mac\Desktop\Current Projects\Mammoth Crossing\URBEMIS\program files\Operations Site 2.urb924

Project Name: Mammoth Crossing Operations site2

Project Location: California State-wide

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5
TOTALS (lbs/day, unmitigated)	2.40	14.90	12.52	0.00	0.03	0.03

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5
TOTALS (lbs/day, unmitigated)	16.92	25.98	195.16	0.26	52.31	10.02

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5
TOTALS (lbs/day, unmitigated)	19.32	40.88	207.68	0.26	52.34	10.05

Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5
Natural Gas	1.08	14.90	12.52	0.00	0.03	0.03
Hearth						
Landscaping - No Winter Emissions						
Consumer Products	0.00					
Architectural Coatings	1.32					
TOTALS (lbs/day, unmitigated)	2.40	14.90	12.52	0.00	0.03	0.03

7/24/2008 05:09:03 PM

Area Source Changes to Defaults

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25
Hotel	12.36	18.95	142.37	0.19	38.15	7.31
Regnl shop. center	3.28	5.02	37.72	0.05	10.10	1.93
Office park	1.28	2.01	15.07	0.02	4.06	0.78
TOTALS (lbs/day, unmitigated)	16.92	25.98	195.16	0.26	52.31	10.02

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2020 Temperature (F): 30 Season: Winter

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Hotel		8.17	rooms	364.00	2,973.88	22,177.71
Regnl shop. center		42.94	1000 sq ft	18.50	794.39	5,872.93
Office park		11.42	1000 sq ft	24.64	281.39	2,358.60
					4,049.66	30,409.24

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	48.2	0.0	100.0	0.0
Light Truck < 3750 lbs	10.8	0.0	97.2	2.8
Light Truck 3751-5750 lbs	22.0	0.0	100.0	0.0
Med Truck 5751-8500 lbs	9.8	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	1.7	0.0	76.5	23.5
Lite-Heavy Truck 10,001-14,000 lbs	0.7	0.0	57.1	42.9

Med-Heavy Truck 14,001-33,000 lbs	1.0	0.0	20.0	80.0
Heavy-Heavy Truck 33,001-60,000 lbs	0.9	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.1	0.0	0.0	100.0
Motorcycle	3.6	38.9	61.1	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	1.0	0.0	90.0	10.0

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	10.8	7.3	7.5	9.5	7.4	7.4
Rural Trip Length (miles)	16.8	7.1	7.9	14.7	6.6	6.6
Trip speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Hotel				5.0	2.5	92.5
Regnl shop. center				2.0	1.0	97.0
Office park				48.0	24.0	28.0

7/24/2008 05:09:54 PM

Urbemis 2007 Version 9.2.4

Combined Winter Emissions Reports (Pounds/Day)

File Name: \\.host\Shared Folders\Bryan On My Mac\Desktop\Current Projects\Mammoth Crossing\URBEMIS\program files\Operations Site 3 060208.urb924

Project Name: Mammoth Crossing Operations site 3

Project Location: California State-wide

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5
TOTALS (lbs/day, unmitigated)	1.24	7.40	6.22	0.00	0.01	0.01

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5
TOTALS (lbs/day, unmitigated)	7.68	11.83	88.82	0.12	23.83	4.56

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5
TOTALS (lbs/day, unmitigated)	8.92	19.23	95.04	0.12	23.84	4.57

Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5
Natural Gas	0.54	7.40	6.22	0.00	0.01	0.01
Hearth						
Landscaping - No Winter Emissions						
Consumer Products	0.00					
Architectural Coatings	0.70					
TOTALS (lbs/day, unmitigated)	1.24	7.40	6.22	0.00	0.01	0.01

7/24/2008 05:09:54 PM

Area Source Changes to Defaults

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25
Hotel	6.11	9.37	70.40	0.09	18.87	3.61
Office park	1.57	2.46	18.42	0.03	4.96	0.95
TOTALS (lbs/day, unmitigated)	7.68	11.83	88.82	0.12	23.83	4.56

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2020 Temperature (F): 30 Season: Winter

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Hotel		8.17	rooms	180.00	1,470.60	10,967.00
Office park		11.42	1000 sq ft	30.12	343.97	2,883.16
					1,814.57	13,850.16

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	48.2	0.0	100.0	0.0
Light Truck < 3750 lbs	10.8	0.0	97.2	2.8
Light Truck 3751-5750 lbs	22.0	0.0	100.0	0.0
Med Truck 5751-8500 lbs	9.8	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	1.7	0.0	76.5	23.5
Lite-Heavy Truck 10,001-14,000 lbs	0.7	0.0	57.1	42.9
Med-Heavy Truck 14,001-33,000 lbs	1.0	0.0	20.0	80.0
Heavy-Heavy Truck 33,001-60,000 lbs	0.9	0.0	0.0	100.0

Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.1	0.0	0.0	100.0
Motorcycle	3.6	38.9	61.1	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	1.0	0.0	90.0	10.0

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	10.8	7.3	7.5	9.5	7.4	7.4
Rural Trip Length (miles)	16.8	7.1	7.9	14.7	6.6	6.6
Trip speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Hotel				5.0	2.5	92.5
Office park				48.0	24.0	28.0

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Title: Mammoth Lakes Crossing

Background Information

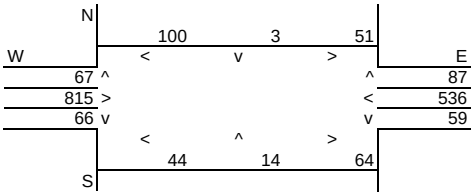
Nearest Air Monitoring Station measuring CO:	Gateway Home Center
Background 1-hour CO Concentration (ppm):	3.8
Background 8-hour CO Concentration (ppm):	1.8
Persistence Factor:	0.6
Analysis Year:	2008

Roadway Data

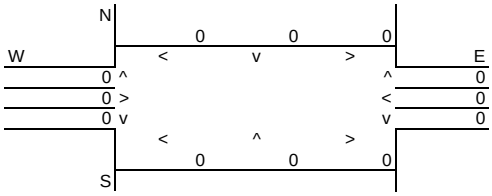
Intersection:	USPO Driveway & Main St
Analysis Condition:	Existing 2008

		Roadway Type	No. of Lanes	Average Speed A.M.	Average Speed P.M.
North-South Roadway:	USPO Driveway	At Grade	4	5	5
East-West Roadway:	Main St	At Grade	6	5	5

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	322	N-S Road:	0
E-W Road:	1,628	E-W Road:	0

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

Roadway	A_1 E.O.R.	A_2 Reference CO Concentrations 25 Feet	A_3 Reference CO Concentrations 50 Feet	A_4 Reference CO Concentrations 100 Feet	B Traffic Volume	C Emission Factors[2]	Estimated CO Concentrations E.O.R.	Estimated CO Concentrations 25 Feet	Estimated CO Concentrations 50 Feet	Estimated CO Concentrations 100 Feet
A.M. Peak Traffic Hour										
North-South Road	3.3	2.6	2.2	1.7	322	9.44	0.10	0.08	0.07	0.05
East-West Road	9.5	6.1	4.9	3.5	1,628	9.44	1.46	0.94	0.75	0.54
P.M. Peak Traffic Hour										
North-South Road	11.9	7.0	5.4	3.8	0	9.44	0.00	0.00	0.00	0.00
East-West Road	2.8	2.3	2.0	1.7	0	9.44	0.00	0.00	0.00	0.00

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2002 (2003).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	5.4	3.8	2.7
25 Feet from Roadway Edge	4.8	3.8	2.4
50 Feet from Roadway Edge	4.6	3.8	2.3
100 Feet from Roadway Edge	4.4	3.8	2.2

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Title: Mammoth Lakes Crossing

Background Information

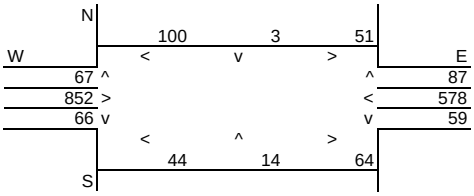
Nearest Air Monitoring Station measuring CO:	Gateway Home Center
Background 1-hour CO Concentration (ppm):	3.8
Background 8-hour CO Concentration (ppm):	1.8
Persistence Factor:	0.6
Analysis Year:	2008

Roadway Data

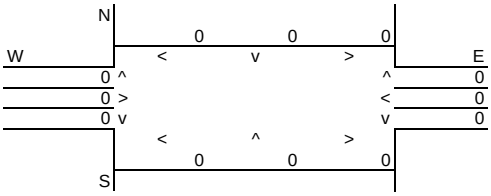
Intersection:	USPO Driveway & Main St
Analysis Condition:	Existing with Project

		Roadway Type	No. of Lanes	Average Speed A.M.	Average Speed P.M.
North-South Roadway:	USPO Driveway	At Grade	4	5	5
East-West Roadway:	Main St	At Grade	6	5	5

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	322	N-S Road:	0
E-W Road:	1,707	E-W Road:	0

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

Roadway	A_1 E.O.R.	A_2 Reference CO Concentrations 25 Feet	A_3 Reference CO Concentrations 50 Feet	A_4 Reference CO Concentrations 100 Feet	B Traffic Volume	C Emission Factors[2]	Estimated CO Concentrations E.O.R.	Estimated CO Concentrations 25 Feet	Estimated CO Concentrations 50 Feet	Estimated CO Concentrations 100 Feet
A.M. Peak Traffic Hour										
North-South Road	3.3	2.6	2.2	1.7	322	9.44	0.10	0.08	0.07	0.05
East-West Road	9.5	6.1	4.9	3.5	1,707	9.44	1.53	0.98	0.79	0.56
P.M. Peak Traffic Hour										
North-South Road	11.9	7.0	5.4	3.8	0	9.44	0.00	0.00	0.00	0.00
East-West Road	2.8	2.3	2.0	1.7	0	9.44	0.00	0.00	0.00	0.00

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2002 (2003).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	5.4	3.8	2.8
25 Feet from Roadway Edge	4.9	3.8	2.4
50 Feet from Roadway Edge	4.7	3.8	2.3
100 Feet from Roadway Edge	4.4	3.8	2.2

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Title: Mammoth Lakes Crossing

Background Information

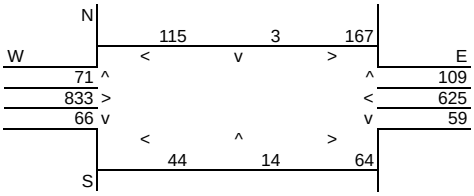
Nearest Air Monitoring Station measuring CO:	Gateway Home Center
Background 1-hour CO Concentration (ppm):	3.8
Background 8-hour CO Concentration (ppm):	1.8
Persistence Factor:	0.6
Analysis Year:	2009

Roadway Data

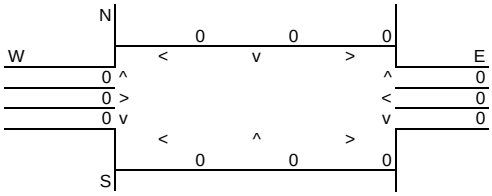
Intersection:	USPO Driveway & Main St
Analysis Condition:	Cumulative with Project

			No. of	Average Speed	
		Roadway Type	Lanes	A.M.	P.M.
North-South Roadway:	USPO Driveway	At Grade	4	5	5
East-West Roadway:	Main St	At Grade	6	5	5

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	479	N-S Road:	0
E-W Road:	1,857	E-W Road:	0

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

	A_1	A_2	A_3	A_4	B	C				
	Reference CO Concentrations				Traffic	Emission	Estimated CO Concentrations			
Roadway	E.O.R.	25 Feet	50 Feet	100 Feet	Volume	Factors[2]	E.O.R.	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	3.3	2.6	2.2	1.7	479	8.56	0.14	0.11	0.09	0.07
East-West Road	9.5	6.1	4.9	3.5	1,857	8.56	1.51	0.97	0.78	0.56
P.M. Peak Traffic Hour										
North-South Road	11.9	7.0	5.4	3.8	0	8.56	0.00	0.00	0.00	0.00
East-West Road	2.8	2.3	2.0	1.7	0	8.56	0.00	0.00	0.00	0.00

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2002 (2003).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	5.4	3.8	2.8
25 Feet from Roadway Edge	4.9	3.8	2.4
50 Feet from Roadway Edge	4.7	3.8	2.3
100 Feet from Roadway Edge	4.4	3.8	2.2

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Title: Mammoth Lakes Crossing

Background Information

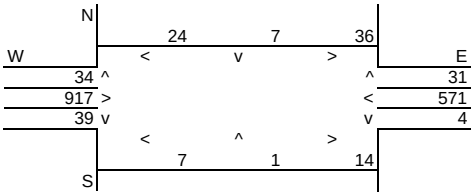
Nearest Air Monitoring Station measuring CO:	Gateway Home Center
Background 1-hour CO Concentration (ppm):	3.8
Background 8-hour CO Concentration (ppm):	1.8
Persistence Factor:	0.6
Analysis Year:	2008

Roadway Data

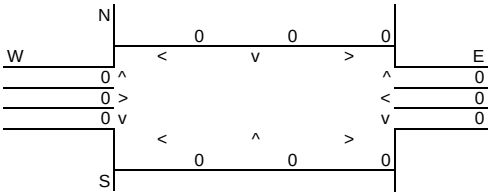
Intersection:	Mountain & Main St
Analysis Condition:	Existing 2008

		Roadway Type	No. of Lanes	Average Speed A.M.	Average Speed P.M.
North-South Roadway:	Mountain St	At Grade	2	5	5
East-West Roadway:	Main St	At Grade	4	5	5

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	133	N-S Road:	0
E-W Road:	1,592	E-W Road:	0

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

Roadway	A_1 E.O.R.	A_2 Reference CO Concentrations 25 Feet	A_3 50 Feet	A_4 100 Feet	B Traffic Volume	C Emission Factors[2]	Estimated CO Concentrations E.O.R.	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	3.7	2.7	2.2	1.7	133	9.44	0.05	0.03	0.03	0.02
East-West Road	11.9	7.0	5.4	3.8	1,592	9.44	1.79	1.05	0.81	0.57
P.M. Peak Traffic Hour										
North-South Road	14.0	7.6	5.7	4.0	0	9.44	0.00	0.00	0.00	0.00
East-West Road	3.3	2.6	2.2	1.7	0	9.44	0.00	0.00	0.00	0.00

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2002 (2003).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	5.6	3.8	2.9
25 Feet from Roadway Edge	4.9	3.8	2.5
50 Feet from Roadway Edge	4.6	3.8	2.3
100 Feet from Roadway Edge	4.4	3.8	2.2

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Title: Mammoth Lakes Crossing

Background Information

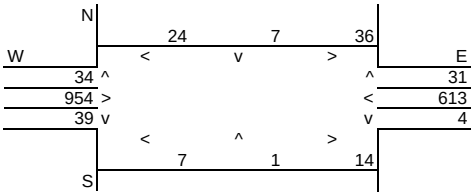
Nearest Air Monitoring Station measuring CO:	Gateway Home Center
Background 1-hour CO Concentration (ppm):	3.8
Background 8-hour CO Concentration (ppm):	1.8
Persistence Factor:	0.6
Analysis Year:	2008

Roadway Data

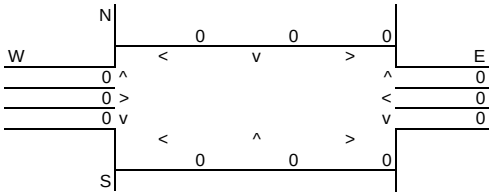
Intersection:	Mountain & Main St
Analysis Condition:	Existing with Project

		Roadway Type	No. of Lanes	Average Speed A.M.	Average Speed P.M.
North-South Roadway:	Mountain St	At Grade	2	5	5
East-West Roadway:	Main St	At Grade	4	5	5

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	133	N-S Road:	0
E-W Road:	1,671	E-W Road:	0

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

Roadway	A_1 E.O.R.	A_2 Reference CO Concentrations 25 Feet	A_3 Reference CO Concentrations 50 Feet	A_4 Reference CO Concentrations 100 Feet	B Traffic Volume	C Emission Factors[2]	Estimated CO Concentrations E.O.R.	Estimated CO Concentrations 25 Feet	Estimated CO Concentrations 50 Feet	Estimated CO Concentrations 100 Feet
A.M. Peak Traffic Hour										
North-South Road	3.7	2.7	2.2	1.7	133	9.44	0.05	0.03	0.03	0.02
East-West Road	11.9	7.0	5.4	3.8	1,671	9.44	1.88	1.10	0.85	0.60
P.M. Peak Traffic Hour										
North-South Road	14.0	7.6	5.7	4.0	0	9.44	0.00	0.00	0.00	0.00
East-West Road	3.3	2.6	2.2	1.7	0	9.44	0.00	0.00	0.00	0.00

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2002 (2003).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	5.7	3.8	3.0
25 Feet from Roadway Edge	4.9	3.8	2.5
50 Feet from Roadway Edge	4.7	3.8	2.3
100 Feet from Roadway Edge	4.4	3.8	2.2

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Title: Mammoth Lakes Crossing

Background Information

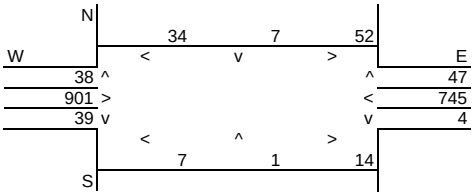
Nearest Air Monitoring Station measuring CO:	Gateway Home Center
Background 1-hour CO Concentration (ppm):	3.8
Background 8-hour CO Concentration (ppm):	1.8
Persistence Factor:	0.6
Analysis Year:	2009

Roadway Data

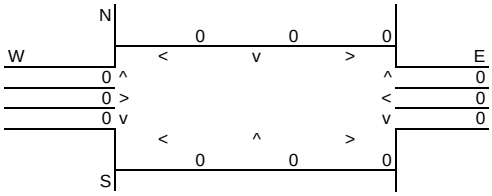
Intersection:	Mountain & Main St
Analysis Condition:	Cumulative with Project

		Roadway Type	No. of Lanes	Average Speed A.M.	Average Speed P.M.
North-South Roadway:	Mountain St	At Grade	2	5	5
East-West Roadway:	Main St	At Grade	4	5	5

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	179	N-S Road:	0
E-W Road:	1,764	E-W Road:	0

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

Roadway	A_1 E.O.R.	A_2 Reference CO Concentrations 25 Feet	A_3 Reference CO Concentrations 50 Feet	A_4 Reference CO Concentrations 100 Feet	B Traffic Volume	C Emission Factors[2]	Estimated CO Concentrations E.O.R.	Estimated CO Concentrations 25 Feet	Estimated CO Concentrations 50 Feet	Estimated CO Concentrations 100 Feet
A.M. Peak Traffic Hour										
North-South Road	3.7	2.7	2.2	1.7	179	8.56	0.06	0.04	0.03	0.03
East-West Road	11.9	7.0	5.4	3.8	1,764	8.56	1.80	1.06	0.82	0.57
P.M. Peak Traffic Hour										
North-South Road	14.0	7.6	5.7	4.0	0	8.56	0.00	0.00	0.00	0.00
East-West Road	3.3	2.6	2.2	1.7	0	8.56	0.00	0.00	0.00	0.00

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2002 (2003).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	5.7	3.8	2.9
25 Feet from Roadway Edge	4.9	3.8	2.5
50 Feet from Roadway Edge	4.6	3.8	2.3
100 Feet from Roadway Edge	4.4	3.8	2.2

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Title: Mammoth Lakes Crossing

Background Information

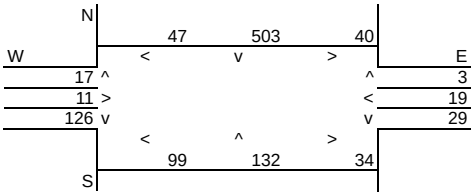
Nearest Air Monitoring Station measuring CO:	Gateway Home Center
Background 1-hour CO Concentration (ppm):	3.8
Background 8-hour CO Concentration (ppm):	1.8
Persistence Factor:	0.6
Analysis Year:	2008

Roadway Data

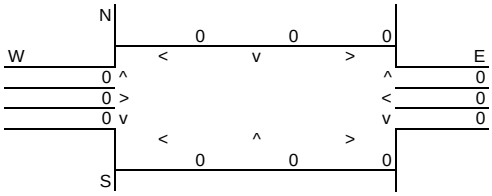
Intersection:	Minaret Rd & Forest Trail
Analysis Condition:	Existing 2008

		Roadway Type	No. of Lanes	Average Speed A.M.	Average Speed P.M.
North-South Roadway:	Minaret Rd	At Grade	2	5	5
East-West Roadway:	Forest Trail	At Grade	2	5	5

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	923	N-S Road:	0
E-W Road:	319	E-W Road:	0

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

Roadway	A_1 E.O.R.	A_2 Reference CO Concentrations 25 Feet	A_3 Reference CO Concentrations 50 Feet	A_4 Reference CO Concentrations 100 Feet	B Traffic Volume	C Emission Factors[2]	Estimated CO Concentrations E.O.R.	Estimated CO Concentrations 25 Feet	Estimated CO Concentrations 50 Feet	Estimated CO Concentrations 100 Feet
A.M. Peak Traffic Hour										
North-South Road	14.0	7.6	5.7	4.0	923	9.44	1.22	0.66	0.50	0.35
East-West Road	3.7	2.7	2.2	1.7	319	9.44	0.11	0.08	0.07	0.05
P.M. Peak Traffic Hour										
North-South Road	14.0	7.6	5.7	4.0	0	9.44	0.00	0.00	0.00	0.00
East-West Road	3.7	2.7	2.2	1.7	0	9.44	0.00	0.00	0.00	0.00

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2002 (2003).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	5.1	3.8	2.6
25 Feet from Roadway Edge	4.5	3.8	2.2
50 Feet from Roadway Edge	4.4	3.8	2.1
100 Feet from Roadway Edge	4.2	3.8	2.0

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Title: Mammoth Lakes Crossing

Background Information

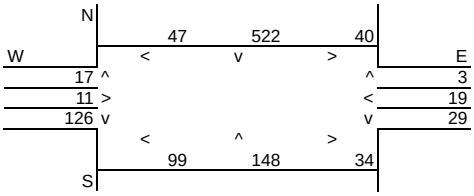
Nearest Air Monitoring Station measuring CO:	Gateway Home Center
Background 1-hour CO Concentration (ppm):	3.8
Background 8-hour CO Concentration (ppm):	1.8
Persistence Factor:	0.6
Analysis Year:	2008

Roadway Data

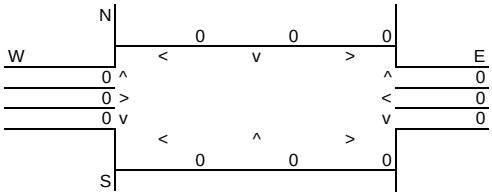
Intersection:	Minaret Rd & Forest Trail
Analysis Condition:	Existing with Project

		Roadway Type	No. of Lanes	Average Speed A.M.	Average Speed P.M.
North-South Roadway:	Minaret Rd	At Grade	2	5	5
East-West Roadway:	Forest Trail	At Grade	2	5	5

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	958	N-S Road:	0
E-W Road:	319	E-W Road:	0

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

Roadway	A_1 E.O.R.	A_2 Reference CO Concentrations 25 Feet	A_3 Reference CO Concentrations 50 Feet	A_4 Reference CO Concentrations 100 Feet	B Traffic Volume	C Emission Factors[2]	Estimated CO Concentrations E.O.R.	Estimated CO Concentrations 25 Feet	Estimated CO Concentrations 50 Feet	Estimated CO Concentrations 100 Feet
A.M. Peak Traffic Hour										
North-South Road	14.0	7.6	5.7	4.0	958	9.44	1.27	0.69	0.52	0.36
East-West Road	3.7	2.7	2.2	1.7	319	9.44	0.11	0.08	0.07	0.05
P.M. Peak Traffic Hour										
North-South Road	14.0	7.6	5.7	4.0	0	9.44	0.00	0.00	0.00	0.00
East-West Road	3.7	2.7	2.2	1.7	0	9.44	0.00	0.00	0.00	0.00

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2002 (2003).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	5.2	3.8	2.6
25 Feet from Roadway Edge	4.6	3.8	2.3
50 Feet from Roadway Edge	4.4	3.8	2.1
100 Feet from Roadway Edge	4.2	3.8	2.0

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Title: Mammoth Lakes Crossing

Background Information

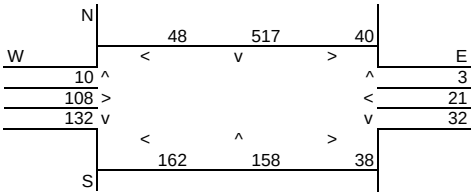
Nearest Air Monitoring Station measuring CO:	Gateway Home Center
Background 1-hour CO Concentration (ppm):	3.8
Background 8-hour CO Concentration (ppm):	1.8
Persistence Factor:	0.6
Analysis Year:	2009

Roadway Data

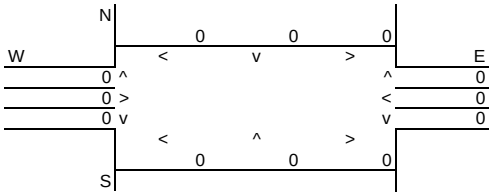
Intersection:	Minaret Rd & Forest Trail
Analysis Condition:	Cumulative with Project

		Roadway Type	No. of Lanes	Average Speed A.M.	Average Speed P.M.
North-South Roadway:	Minaret Rd	At Grade	2	5	5
East-West Roadway:	Forest Trail	At Grade	2	5	5

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	1,039	N-S Road:	0
E-W Road:	481	E-W Road:	0

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

Roadway	A_1 E.O.R.	A_2 Reference CO Concentrations 25 Feet	A_3 Reference CO Concentrations 50 Feet	A_4 Reference CO Concentrations 100 Feet	B Traffic Volume	C Emission Factors[2]	Estimated CO Concentrations E.O.R.	Estimated CO Concentrations 25 Feet	Estimated CO Concentrations 50 Feet	Estimated CO Concentrations 100 Feet
A.M. Peak Traffic Hour										
North-South Road	14.0	7.6	5.7	4.0	1,039	8.56	1.25	0.68	0.51	0.36
East-West Road	3.7	2.7	2.2	1.7	481	8.56	0.15	0.11	0.09	0.07
P.M. Peak Traffic Hour										
North-South Road	14.0	7.6	5.7	4.0	0	8.56	0.00	0.00	0.00	0.00
East-West Road	3.7	2.7	2.2	1.7	0	8.56	0.00	0.00	0.00	0.00

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2002 (2003).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	5.2	3.8	2.6
25 Feet from Roadway Edge	4.6	3.8	2.3
50 Feet from Roadway Edge	4.4	3.8	2.2
100 Feet from Roadway Edge	4.2	3.8	2.1

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Title: Mammoth Lakes Crossing

Background Information

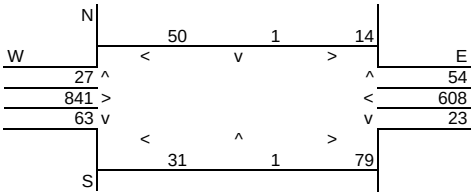
Nearest Air Monitoring Station measuring CO:	Gateway Home Center
Background 1-hour CO Concentration (ppm):	3.8
Background 8-hour CO Concentration (ppm):	1.8
Persistence Factor:	0.6
Analysis Year:	2008

Roadway Data

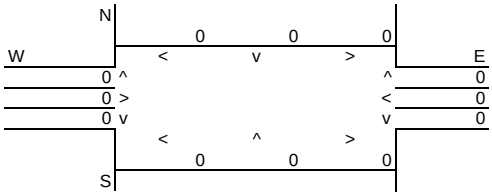
Intersection:	Center ST & Main St
Analysis Condition:	Existing 2008

		Roadway Type	No. of Lanes	Average Speed A.M.	Average Speed P.M.
North-South Roadway:	Center St	At Grade	4	5	5
East-West Roadway:	Main St	At Grade	6	5	5

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	198	N-S Road:	0
E-W Road:	1,620	E-W Road:	0

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

Roadway	A_1 E.O.R.	A_2 Reference CO Concentrations 25 Feet	A_3 Reference CO Concentrations 50 Feet	A_4 Reference CO Concentrations 100 Feet	B Traffic Volume	C Emission Factors[2]	Estimated CO Concentrations E.O.R.	Estimated CO Concentrations 25 Feet	Estimated CO Concentrations 50 Feet	Estimated CO Concentrations 100 Feet
A.M. Peak Traffic Hour										
North-South Road	3.3	2.6	2.2	1.7	198	9.44	0.06	0.05	0.04	0.03
East-West Road	9.5	6.1	4.9	3.5	1,620	9.44	1.45	0.93	0.75	0.54
P.M. Peak Traffic Hour										
North-South Road	11.9	7.0	5.4	3.8	0	9.44	0.00	0.00	0.00	0.00
East-West Road	2.8	2.3	2.0	1.7	0	9.44	0.00	0.00	0.00	0.00

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2002 (2003).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	5.3	3.8	2.7
25 Feet from Roadway Edge	4.8	3.8	2.4
50 Feet from Roadway Edge	4.6	3.8	2.3
100 Feet from Roadway Edge	4.4	3.8	2.1

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Title: Mammoth Lakes Crossing

Background Information

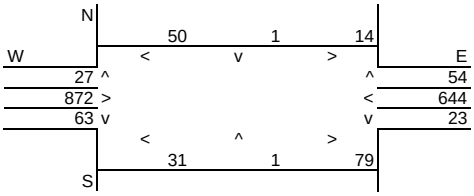
Nearest Air Monitoring Station measuring CO:	Gateway Home Center
Background 1-hour CO Concentration (ppm):	3.8
Background 8-hour CO Concentration (ppm):	1.8
Persistence Factor:	0.6
Analysis Year:	2008

Roadway Data

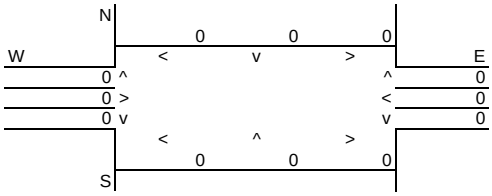
Intersection:	Center ST & Main St
Analysis Condition:	Existing with Project

		Roadway Type	No. of Lanes	Average Speed A.M.	Average Speed P.M.
North-South Roadway:	Center St	At Grade	4	5	5
East-West Roadway:	Main St	At Grade	6	5	5

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	198	N-S Road:	0
E-W Road:	1,687	E-W Road:	0

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

Roadway	A_1 E.O.R.	A_2 Reference CO Concentrations 25 Feet	A_3 Reference CO Concentrations 50 Feet	A_4 Reference CO Concentrations 100 Feet	B Traffic Volume	C Emission Factors[2]	Estimated CO Concentrations E.O.R.	Estimated CO Concentrations 25 Feet	Estimated CO Concentrations 50 Feet	Estimated CO Concentrations 100 Feet
A.M. Peak Traffic Hour										
North-South Road	3.3	2.6	2.2	1.7	198	9.44	0.06	0.05	0.04	0.03
East-West Road	9.5	6.1	4.9	3.5	1,687	9.44	1.51	0.97	0.78	0.56
P.M. Peak Traffic Hour										
North-South Road	11.9	7.0	5.4	3.8	0	9.44	0.00	0.00	0.00	0.00
East-West Road	2.8	2.3	2.0	1.7	0	9.44	0.00	0.00	0.00	0.00

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2002 (2003).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	5.4	3.8	2.7
25 Feet from Roadway Edge	4.8	3.8	2.4
50 Feet from Roadway Edge	4.6	3.8	2.3
100 Feet from Roadway Edge	4.4	3.8	2.2

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Title: Mammoth Lakes Crossing

Background Information

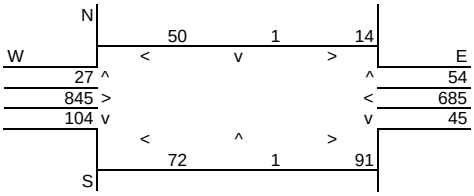
Nearest Air Monitoring Station measuring CO:	Gateway Home Center
Background 1-hour CO Concentration (ppm):	3.8
Background 8-hour CO Concentration (ppm):	1.8
Persistence Factor:	0.6
Analysis Year:	2009

Roadway Data

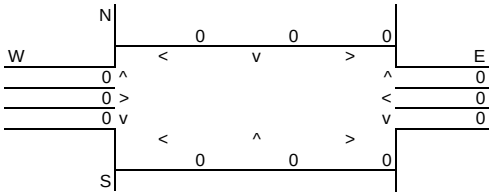
Intersection:	Center ST & Main St
Analysis Condition:	Cumulative with Project

		Roadway Type	No. of Lanes	Average Speed A.M.	Average Speed P.M.
North-South Roadway:	Center St	At Grade	4	5	5
East-West Roadway:	Main St	At Grade	6	5	5

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	314	N-S Road:	0
E-W Road:	1,783	E-W Road:	0

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

Roadway	A_1 E.O.R.	A_2 Reference CO Concentrations 25 Feet	A_3 Reference CO Concentrations 50 Feet	A_4 Reference CO Concentrations 100 Feet	B Traffic Volume	C Emission Factors[2]	Estimated CO Concentrations E.O.R.	Estimated CO Concentrations 25 Feet	Estimated CO Concentrations 50 Feet	Estimated CO Concentrations 100 Feet
A.M. Peak Traffic Hour										
North-South Road	3.3	2.6	2.2	1.7	314	8.56	0.09	0.07	0.06	0.05
East-West Road	9.5	6.1	4.9	3.5	1,783	8.56	1.45	0.93	0.75	0.53
P.M. Peak Traffic Hour										
North-South Road	11.9	7.0	5.4	3.8	0	8.56	0.00	0.00	0.00	0.00
East-West Road	2.8	2.3	2.0	1.7	0	8.56	0.00	0.00	0.00	0.00

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2002 (2003).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	5.3	3.8	2.7
25 Feet from Roadway Edge	4.8	3.8	2.4
50 Feet from Roadway Edge	4.6	3.8	2.3
100 Feet from Roadway Edge	4.4	3.8	2.1

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

EMISSIONS OF GREENHOUSE GAS EMISSIONS FROM MOTOR VEHICLES

Project Name: Mammoth Crossing
Analysis Year: 2017
Analysis Scenario: Project

Vehicle Miles Per Day: 6,450.00
Days of Operation Per Year: 365

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel	Assumed mpg
Light Auto	55.67%	1.30%	98.40%	0.30%	27.5
Light Truck <3,750 lbs	12.38%	2.60%	95.40%	2.00%	21.4
Light Truck 3,751-5,750	24.65%	1.20%	98.10%	0.70%	21.4
Medium Truck 5,751-8,500	1.20%	1.40%	95.90%	2.70%	17.6
Light Heavy 8,501-10,000	0.20%	0.00%	81.80%	18.20%	14.3
Light Heavy 10,001-14,000	0.08%	0.00%	66.70%	33.30%	10.5
Med-Heavy 14,001-33,000	0.13%	0.00%	20.00%	80.00%	8.0
Heavy-Heavy 33,001-60,000	0.11%	0.00%	11.10%	88.90%	5.7
Line Haul >60,000 lbs	0.13%	0.00%	0.00%	100.00%	5.7
Urban Bus	0.23%	0.00%	50.00%	50.00%	5.7
Motorcycle	3.98%	75.00%	25.00%	0.00%	27.5
School Bus	0.11%	0.00%	0.00%	100.00%	14.3
Motor Home	1.14%	7.10%	85.70%	7.20%	8.0

Mobile Source Emision Factors

	Carbon Dioxide (kg/gallon)		Methane (g/mile)		Nitrous Oxide (g/mile)	
Vehicle Type	Gasoline	Diesel	Gasoline	Diesel	Gasoline	Diesel
Light Auto	8.55	9.96	0.04	0.01	0.04	0.02
Light Truck <3,750 lbs	8.55	9.96	0.05	0.01	0.06	0.03
Light Truck 3,751-5,750	8.55	9.96	0.05	0.01	0.06	0.03
Medium Truck 5,751-8,500	8.55	9.96	0.12	0.06	0.20	0.05
Light Heavy 8,501-10,000	8.55	9.96	0.12	0.06	0.20	0.05
Light Heavy 10,001-14,000	8.55	9.96	0.12	0.06	0.20	0.05
Med-Heavy 14,001-33,000	8.55	9.96	0.12	0.06	0.20	0.05
Heavy-Heavy 33,001-60,000	8.55	9.96	0.12	0.06	0.20	0.05
Line Haul >60,000 lbs	8.55	9.96	0.12	0.06	0.20	0.05
Urban Bus	8.55	9.96	0.12	0.06	0.20	0.05
Motorcycle	8.55	9.96	0.09	0.00	0.01	0.00
School Bus	8.55	9.96	0.12	0.06	0.20	0.05
Motor Home	8.55	9.96	0.12	0.06	0.20	0.05

Greenhouse Gas Emissions (metric tons per year)

	Carbon Dioxide		Methane		Nitrous Oxide	
Vehicle Type	Gasoline	Diesel	Gasoline	Diesel	Gasoline	Diesel
Light Auto	406.25	1.42	0.00	0.00	0.00	0.00
Light Truck <3,750 lbs	114.15	2.71	0.00	0.00	0.00	0.00
Light Truck 3,751-5,750	230.27	1.89	0.00	0.00	0.00	0.00
Medium Truck 5,751-8,500	13.33	0.43	0.00	0.00	0.00	0.00
Light Heavy 8,501-10,000	2.32	0.60	0.00	0.00	0.00	0.00
Light Heavy 10,001-14,000	0.97	0.56	0.00	0.00	0.00	0.00
Med-Heavy 14,001-33,000	0.63	2.96	0.00	0.00	0.00	0.00
Heavy-Heavy 33,001-60,000	0.44	4.15	0.00	0.00	0.00	0.00
Line Haul >60,000 lbs	-	5.19	-	0.00	-	0.00
Urban Bus	4.01	4.67	0.00	0.00	0.00	0.00
Motorcycle	29.11	-	0.00	-	0.00	-
School Bus	-	1.86	-	0.00	-	0.00
Motor Home	26.53	2.40	0.00	0.00	0.00	0.00
Total Emissions by Fuel Type:	828.01	28.86	0.00	0.00	0.01	0.00
Total Emissions by Pollutant:	856.87		0.0050		0.00561	
CO_2 Equivalency Factors	1.00		23.00		296.00	
CO_2 Equivalent Emissions:	856.87		0.12		1.66	
Total Emissions (CO_2e):	858.64					

Source of vehicle miles per day and vehicle fleet mix: URBEMIS 2002 For Windows 8.7.0 model results for this analysis.
Sources of assumed mpg: National Highway Traffic Safety Administration Summary of Fuel Economy Performance (for passenger vehicles and light trucks) (web site accessed July 11, 2007); U.S. Department of Energy Truck Fuel Economy by Size Class (web site accessed July 11, 2007).
Source of greenhouse gas emission factors: *California Climate Action Registry General Reporting Protocol*, March 2007.

EMISSIONS OF GREENHOUSE GAS EMISSIONS FROM NATURAL GAS CONSUMPTION

Project Name: Mammoth Crossing
Analysis Year: 2017
Analysis Scenario: Project

NATURAL GAS DEMAND

Land Use	Units	Consumption Rate (cubic feet/ unit/month)	Natural Gas Demand (cubic feet/ month)
Single Residential Units:	0	6,665.0	-
Multi-Family Residential Units:	742	12,034.5	8,929,599.0
Industrial (parcels):		241,611.0	-
Hotel/Motel (square feet):	69150	14.4	995,760.0
Retail/Shopping (square feet):	40,500	8.7	352,350.0
Office (square feet):		2.0	-
		Total Natural Gas Demand:	10,277,709.0

Heating Value of Natural Gas (Btu/cubic foot):	1,020.0
Monthly BTU:	10,483,263,180.0
Monthly Million Btu (MMBtu):	10,483.3

GREENHOUSE GAS EMISSIONS

Emissions	Emission Factors (kg/MMBtu)	Emissions (metric tons/year)	CO_2 Equivalency Factors	CO_2 Equivalent Emissions (tons per year)
Carbon Dioxide	52.78	6,639.68	1	6,639.68
Methane	0.006	0.742	23	17.07
Nitrous Oxide	0.000	0.01258	296	3.72
	Total Emissions:	6,640.43		6,660.47

Source of natural gas consumption rates: South Coast Air Quality Management District *CEQA Air Quality Handbook,* April 1993 and modified to account for increase heating use during winter months.
Based on vendor observations, winter months require approximately five times more heating; therefore the annualized consumption rate is three times the reported consumption rate in the 1993 document.
Source of greenhouse gas emission factors: *California Climate Action Registry General Reporting Protocol*, March 2007.

APPENDIX L

WATER SUPPLY ASSESSMENT

SB 610 Water Supply Assessment

For The

Mammoth Crossing Project

DRAFT

Prepared by the Mammoth Community Water District

March 14, 2008

Table of Contents

Table of Tables

Table of Figures

Executive Summary

This water supply assessment covers the anticipated water demand associated with the Mammoth Crossing Project. It covers the requirements of Senate Bill 610 that are described in Water Code sections 10910 – 10915. This document was prepared referencing the District's 2005 Urban Water Management Plan.

The District's projections herein rely on the following supplies to meet water demands in the future: existing groundwater supplies, existing surface water supplies, future groundwater well development, and recycled water. The District also anticipates utilizing techniques to reduce demands by implementing water conservation in drought periods in addition to ongoing water conservation education and rebate programs and continuing to pursue water loss reduction by replacing water main pipelines.

This water assessment has found that existing groundwater and surface water resources are insufficient to meet future anticipated water demands in multiple dry year conditions and in single dry year conditions. The development of additional groundwater supplies and the use of recycled water would create sufficient supplies to meet demands, including those from the Mammoth Crossing. The remaining small shortfalls seen after the implementation of these projects in single dry years could be met through irrigation restrictions. There are uncertainties regarding existing water supplies and the implementation of the future water supplies discussed in this assessment. As with the development of any water supply, the District will need to evaluate and respond to any environmental concerns associated with the projects, obtain any applicable governmental approvals, and address other considerations that may surround these projects. In addition, other currently undefined water supply projects may be used to replace and/or supplement those described in this assessment.

In conclusion, this water supply assessment shows that with the inclusion of several additional water supply projects, the District would have sufficient supplies through the next 20 years to meet the demands of the Mammoth Crossing Project in addition to other projected development in Mammoth Lakes.

Introduction

Senate Bill 610 (SB 610) requires that water supply assessments be furnished to local governments for inclusion in any environmental documentation for certain projects subject to the California Environmental Quality Act. The purpose of such an assessment is to determine if the water supplier will have sufficient supplies available during normal, dry, and multiple dry water years during a 20-year projection to meet the projected water demand of the proposed Project, in addition to existing and other planned future uses.

The Town of Mammoth Lakes is planning to prepare an Environmental Impact Report for the Mammoth Crossing Project, which addresses development of three corners of the intersection of Main Street and Minaret Road. The three sites, named Whiskey Creek,

Church, and Ullr/White Stag, include various combinations of new residential and commercial development. The Town of Mammoth Lakes formally requested a SB 610 water supply assessment for this Project in a letter dated October 30, 2007. On February 5, 2007, the District received detailed unit count information that enabled the preparation of this water supply assessment to begin.

The Mammoth Crossing Project proposes to construct 940 residential rooms and 125,570 square feet of commercial space and other amenity areas. For the purposes of the water supply assessment, the residential uses were split into hotel uses and condominium uses. The 48 condominium rooms were converted into 24 two-bedroom condominium units to coincide with the District's meter record data. The Project description states that 892 condo-hotel rooms will be constructed. For the purposes of the WSA, all condo-hotel rooms were counted as hotel rooms and were assumed separate units for a worst-case scenario assessment of the potential Project impacts. The commercial/amenity space, pool/spa, conference center, restaurant, and general commercial uses were split out of the total square footage. The remainder of the commercial/amenity areas has been considered non-water usage since they are wrapped up into typical condominium and hotel demand estimates.

The Mammoth Crossing Project may be considered a project under SB 610 because it fits the definition of a "project" under Water Code section 10912 (a) (6). This section states that a "project" means a mixed-use project that includes one or more of the projects specified in section 10912 (a). The Mammoth Crossing Project qualifies as a "project" under Water Code section 10912 (a) (4) which states, "A proposed hotel or motel, or both, having more than 500 rooms." The Mammoth Crossing Project includes 892 condo-hotel rooms in addition to several other uses. In addition, since the Town has requested a SB 610 analysis, the District has prepared this document.

Table 1: Mammoth Crossing estimated water demands

Unit Type	Unit Count	Gallons Per Day	Annual Gallons	Annual AF
Residential				
Condo-Hotel	892	71,360	26,046,400	80
Condo	24	4,080	1,489,200	5
Commercial/Amenity Areas (square feet)				
Pool/Spa	4,500	1,958	714,488	2
Conference Center	9,000	1,125	410,625	1
Restaurant	22,125	12,833	4,683,863	14
General Commercial	13,492	2,024	738,687	2
Non Water Use	76,453			
		93,379	**34,083,262**	**105**

The District updated its Urban Water Management Plan in December of 2005 to include proposed development associated with the Town of Mammoth Lakes 2005 General Plan Update. The Town of Mammoth Lakes adopted the revisions contained in the 2005 General Plan Update on August 15, 2007. The development proposed in the Mammoth Crossing Project was only partially accounted for in the Town's General Plan update and thus, the Urban Water Management Plan. The information used in the Urban Water Management Plan was utilized for the WSA, but changes have been made in the estimated future demands for the community based upon the increased density proposed for the Mammoth Crossing Project. The Project is proposing to more than double the allowable densities beyond the densities allowed in the North Village Master Plan, which is set at from 48 rooms per acre. Based upon the proposed and current zoning for the Project site, the District estimates that the proposed Project will result in an increase annual demand of 65 acre-feet over the existing zoning for the site.

Table 2: Additional demands for Project beyond existing zoning

Current Zoning	**RPA[1]**	**Acres**	**Allowable "rooms"**	**Estimated Demands (acre-feet per year)**
Site 1 (Whiskey Creek)	48	1.7939	86	7.72
Site 2 (Church)	48	4.5205	217	19.44
Site 3 (Ullr, White Stag)	48	2.9629	142	12.74
TOTAL		**9.2773**	**445**	**40[2]**
Proposed Project				
Site 1 (Whiskey Creek)	157	1.7939	282	25.19
Site 2 (Church)	111	4.5205	502	44.38
Site 3 (Ullr, White Stag)	148	2.9629	439	35.03
TOTAL		**9.2773**	**1222[3]**	**105**
Estimated demand difference between proposed Project and current zoning limits				**65**

[1] RPA = rooms per acre
[2] Estimated demands using existing zoning assumes all rooms are hotel rooms
[3] RPA (Proposed Project) includes proposed commercial uses at 450 square feet of commercial space equivalent to one room per existing zoning. The Project does not include commercial in the RPA calculation, but it is included here to fully compare water demands between the proposed Project and what could have been built under the existing zoning

The District's 2005 Urban Water Management Plan was used as the primary reference for the preparation of this water supply assessment. As per Water Code section 10910(c)(3), the assessment must be prepared based on either information contained within the UWMP and / or information available from other sources and reports. The District's Board of Directors approved this completed water supply assessment prepared pursuant to Water Code Section 10910 at regular meeting held on March 20, 2008.

Documenting Water Supply

Subsections (d) and (e) of Water Code section 10910 state that a water supply assessment must identify and quantify existing and planned sources of water available to the water supplier in 5-year increments for a 20-year projection. The following information regarding existing and planned sources of water is taken from the District's 2005 Urban Water Management Plan with some revisions.

Table 3: Existing water supplies
Annual amounts of water for each entitlement and right under normal year conditions

Supply	Acre-Feet per Year	Entitlement	Right	Ever Used
Local surface	2760	X		Yes
Groundwater	4000		X	Yes

Note: While the District currently has surface water rights that total a maximum of 2,760 acre-feet annually, the bypass flow requirements that the District operates under have not been permanently established and the final bypass requirements that are eventually established could potentially result in less surface water being available to the District. In addition, the volume of groundwater noted in this table is the maximum amount of groundwater that the District has projected to pump in any given year and does not necessarily represent the safe yield of the aquifer.

Surface Water

The District currently has the right, through two licenses and one permit, to divert a total of 2,760 acre-feet of water annually from Lake Mary, located in the Mammoth Lakes Basin. The authorized amount of water that the District can divert under its surface water rights is set at a maximum instantaneous diversion of 5.039 cubic feet per second (cfs) with a maximum annual diversion of 2,760 acre-feet (AF). As part of this total, the District is allowed to store 606 acre-feet from April 1 to June 30 and an additional 54 acre-feet from September 1 to September 30 of each year.

The District's water rights are restricted by several management constraints that influence the amount of surface water that can be diverted. These include the bypass flow requirements in Mammoth Creek and lake level management of Lake Mary. The primary influence upon the amount of water that the District may store or divert are the bypass flow requirements in Mammoth Creek that are included as part of the District's water rights. The District measures Mammoth Creek flows at its Old Mammoth Road gage located near Mammoth Creek Park. The District is allowed to directly divert natural flows entering Lake Mary and divert natural flows to storage only when the flows, as measured at the Old Mammoth Road gage, exceed the bypass flow requirements. When the flows at the District's Old Mammoth Road gage are equal to or less than the bypass flow requirements, no water may be directly diverted or diverted to storage, and the District must bypass all incoming flows to Lake Mary.

Pursuant to a court order, the current bypass flow requirements are interim until the State Water Resources Control Board adopts long-term bypass flow requirements. The District

is currently preparing an EIR that evaluates the environmental effects of proposed bypass flow requirements for Mammoth Creek. The outcome of this EIR and the resulting decision by the State Water Resources Control Board could modify the existing interim bypass flows to a different regime that could result in less surface water being available to the District depending upon the precipitation year type.

Surface water supply volumes used in the preparation of this water supply assessment assume that the existing bypass flow requirements will remain as they are currently established. Potential reductions in surface water supplies in the future are a possibility, but the amount of these reductions is currently unknown.

Table 4: Past, Current, Projected Water Supplies

Water Supply Sources	**1995**	**2000**	**2007 (Actual)**	**Current Projected Maximum**	**2010**	**2015**	**2020**	**2025**
Lake Mary	1725	1971	1108	2760	2760	2760	2760	2760
Well #1	47	19	185	500	500	500	500	500
GWTP #1	890	672	1573	2000	2000	2000	2000	2000
GWTP #2	230	574	668	1500	1500	1500	1500	1500
Future Wells						1000	1000	1000
Recycled Water					360	360	360	360
Total	**2892**	**3236**	**3535**	**6760**	**7120**	**8120**	**8120**	**8120**

Units of Measure: acre-feet per year
Note: Projected water supplies (2010 to 2025) represent maximum supplies that may be available in normal water years. The projected maximum supplies column represents the maximum supplies available in normal water years. Actual water supplies in 1995, 2000, and 2007 represent supplies that were made available to the community based upon demand and the existing bypass flow requirements. Groundwater pumpage reflects the metered amount of water pumped from individual wells, which tends to vary slightly from the flow measured through the treatment plants.

Future Water Sources

The District has identified groundwater as being a significant source of future water supplies for the community. These supplies would be extracted from either the Mammoth Basin watershed or the Dry Creek Basin watershed to the north of the Mammoth Basin, with the Mammoth Basin as the current priority project for future well development. Additional groundwater production wells in the Mammoth Basin would require environmental review and hydrogeology analysis to ensure that additional volumes of water can be safely extracted from the basin. Well development in the Dry Creek Basin would also require environmental review and hydrogeology analysis prior to

utilizing this water source. The District has budgeted $1,965,198 through 2025 for the development of additional groundwater resources.

The District also has identified recycled water as an additional water supply source for the community, which would primarily serve large turf irrigators, such as golf courses and parks. The 2006 Recycled Water Distribution Project EIR addresses Sierra Star Golf Course, Snowcreek Golf Course, and Shady Rest Park (operated by the Town of Mammoth Lakes) as customers for this project. The District Board of Directors certified a final EIR for this project at its March 15, 2007, meeting and has budgeted $10,662,162 through 2010 for the development of this project. In August 2007, representatives from Sierra Star Golf Course signed an agreement with the District committing to purchase recycled water for golf course irrigation for the next 30 years.

More detailed information regarding future water supplies are included on page 19 of this assessment.

Groundwater

Water sources that will serve the Mammoth Crossing Project include groundwater; therefore, according to Water Code section 10910 (f) detailed groundwater information must be included in the water supply assessment. The following information is taken from the District's 2005 Urban Water Management Plan.

The District completed a Groundwater Management Plan (GWMP) in 2005 that describes a monitoring and operation plan for the long-term use of local groundwater and surface water resources. The intent of the GWMP is to ensure that groundwater resources are managed in a manner that ensures sufficient, high quality groundwater resources while minimizing potential environmental impacts. The GWMP was adopted by the District Board of Directors in July 2005.

The District pumps groundwater from the Mammoth Basin watershed, which is located within the Long Valley Groundwater Basin identified by the Department of Water Resources as part of the South Lahontan Hydrologic Region. The Mammoth Basin is located on the eastern side of the Sierra Nevada Mountain Range. Surface elevations range from a high of about 12,000 feet at Mammoth Crest to 7,000 feet at the downstream easterly extremity. Mammoth Basin is the watershed of Mammoth Creek and is bounded on the south by the drainage divide of Convict Creek; on the west by the Mammoth Crest; on the north by the drainage divide of Dry Creek; and on the east extending along the watershed of Hot Creek. The area of the Mammoth Basin is about 71 square miles and extends approximately 13 miles west to east and 9 miles north to south.

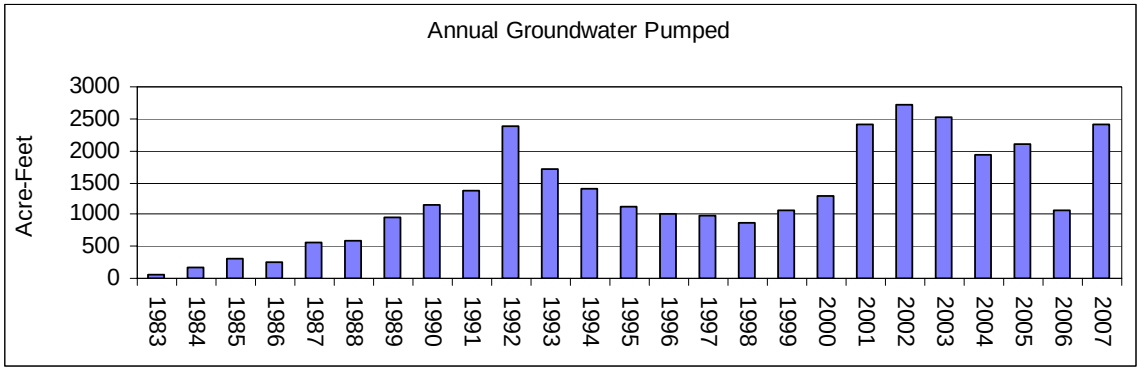
Elevated areas on the north and west that are comprised largely of extrusive igneous rocks generally form the Mammoth Basin; a central trough filled with alluvial and glacial

debris; and an abrupt southern flank of igneous intrusive and metamorphic rocks. The central trough area opens and drains to the east to the Owens River and Lake Crowley.

The District maintains an extensive groundwater and surface water monitoring system. Groundwater levels are monitored in 8 production wells and in over 20 shallow and deep monitor wells. Water level sensors are located on all production wells and are connected to the District's supervisory control and data acquisition (SCADA) system to allow for continuous monitoring. Surface water levels and flow rates are monitored at twelve locations throughout the basin watershed. The District prepares an annual groundwater monitoring report that provides an evaluation of groundwater levels, surface flows, and water quality monitoring data accumulated throughout the year.

During the past 5-year period (2003 to 2007) the District pumped a total of 10,040 acre-feet of groundwater, averaging 2,008 acre-feet per year. The maximum historic volume pumped occurred in 2002 and amounted to 2,717 acre-feet. Groundwater was pumped from the District's eight (8) production wells located within the boundaries of the District's service area serving the Town of Mammoth Lakes. Production volumes of groundwater in any one year are dependent on the type of precipitation year experienced, the consequent availability of surface water, and the amount of demand from the community. The following graph shows annual groundwater volumes provided to District customers.

Figure 1: Annual volume of drinking water produced from District production wells 1983-2007



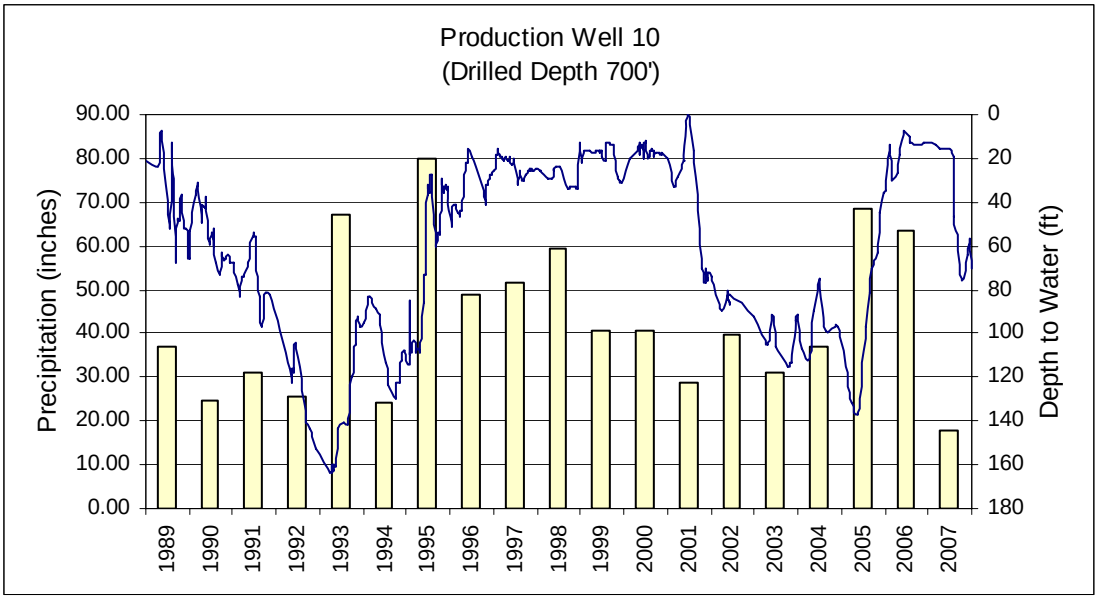
The following table shows detailed volumes of water pumped from each well over the past five years.

Table 5: Historical volumes (acre-feet) of groundwater pumped from individual production wells

Well No.	2003	2004	2005	2006	2007
1	184	71	188	297	185
6	454	347	554	1	473
10	602	500	577	135	335
15	807	381	244	390	706
16	107	239	55	0	144
17	172	138	100	229	277
18	114	58	226	1	59
20	80	187	167	13	247
Total	2520	1921	2111	1066	2426
Note: Groundwater pumpage reflects the metered amount of water pumped from individual wells, which tends to vary slightly from the flow measured through the treatment plants.					

During dry-year periods, groundwater levels within the Mammoth Basin tend to decrease due to increased pumping and less recharge. During normal and above-normal precipitation years, groundwater levels increase and tend to recover after about two years of normal precipitation. The following graph depicts historical groundwater levels in one of the District's production wells and shows the variability of groundwater levels based on pumping and type of recharge year.

Figure 2: Variability of groundwater levels in a District production well



Future groundwater production rates have been projected based on community growth projections and on type of climatic conditions. The following tables describe projected volumes of groundwater that will be pumped under normal and multiple dry-year water year conditions.

Table 6: Groundwater pumping projections (acre-feet) to meet demands in a normal water year

Well No.	2010	2015	2020	2025
1	130	150	200	240
6	175	200	250	290
10	140	160	210	240
15	225	250	300	365
16	40	65	85	115
17	225	250	300	365
18	10	25	35	65
20	130	150	200	240
Future Well(s)	0	150	220	280
Total	1075	1400	1800	2200
Note: Groundwater projections are based on utilizing 2760 ac-ft of surface water in normal years to meet projected demand. In 2010, 2,600 acre-feet of surface water is utilized due to lower demand levels anticipated at that time.				

Table 7: Groundwater pumping projections (acre-feet) to meet demands in multiple dry year conditions

Well No.	2010	2015	2020	2025
1	328	330	365	410
6	433	435	470	510
10	328	330	365	410
15	533	535	570	610
16	154	155	175	210
17	433	435	570	610
18	48	50	90	110
20	333	335	370	410
Future Well(s)	0	455	500	600
Total	2590	3060	3475	3880

Note: Groundwater projections are based on utilizing about1084 ac-ft of surface water in multiple dry years to meet projected demand. The volume of 1084 ac-ft is derived from the actual available surface water that could have been available in 1992, the last year of a six-year drought and assumes existing bypass flow requirements. If the District's bypass flow requirements were revert to those set forth in the District's water right permit, there would be substantial reductions in the availability of surface water available to the District in multiple dry years, which would increase the need for additional groundwater supplies.

Documenting Projected Demand

The projected water demand associated with the Mammoth Crossing Project was only partially accounted for in the District's most recently adopted Urban Water Management Plan (UWMP) dated December 2005. As shown in Table 2, the Mammoth Crossing Project is expected to produce 65 acre-feet additional demand for the Project area beyond what was accounted for in the UWMP. The analysis of the water demand from the proposed Project may utilize data from the UWMP. The following table describes past, current, and projected future water demands taken from the District's Urban Water Management Plan. That data has been modified to include the additional demands from the proposed Project.

Table 8: Past, current, and projected water use (acre-feet)

Water Use Sector	2000	2005	2010	2015	2020	2025
Single Family Residential	515	549	586	623	659	696
Condominium	961	948	960	976	988	1000
Multi-Family Residential	144	140	211	282	353	424
Commercial/Industrial/ Public	217	257	374	519	615	710
Motel / Hotel	112	111	304	508	701	893
Public Sector	170	296	Included in commercial	Included in commercial	Included in commercial	Included in commercial
Golf Course**	297	263	400	400	400	400
Other*	53	107	80	80	80	80
Unaccounted	486	752	760	760	760	760
Total	**2955**	**3423**	**3674**	**4147**	**4555**	**4963**

Note: Existing hotel/motel water-use sector includes only those units that are separately metered and does not include units that share water meters with commercial. Commercial includes mixed uses such as restaurants, condo/hotel, retail, etc. Public sector is included in the commercial water-use sector for future projections for consistency with data from the Town of Mammoth Lakes General Plan EIR (2005).
*Other = treatment plant process water, fire fighting, line cleaning, etc.
** Golf course water use based on existing demand from Sierra Star and Snowcreek Golf Courses. This value may be reduced by recycled water use in the future.
Groundwater data in this table is based upon metered flows from the District's groundwater treatment plants, which varies slightly from amounts measured from individual wells.

Documenting Dry-Year Supply

The Mammoth Community Water District's existing sources of water supply consist of surface water and groundwater, both derived from the Mammoth Basin watershed. The area is susceptible to drought and both of these sources of supply are impacted to various degrees. Surface water supplies are immediately impacted following a drought season whereas groundwater supplies tend to be affected by an extended drought period of several years.

Over the past thirty years, below average precipitation conditions have been experienced 50% of the years. In 30% of the years, seasons with less than 70% of average precipitation have been experienced.

Table 9 provides water supply volumes for average, single dry, and multiple dry water years based on current supplies.

Table 9: Existing water supply reliability

			Multiple Dry Years			
Supply	**Normal Water Year**	**Single Dry Water Year**	**Year 1**	**Year 2**	**Year 3**	**Year 4**
Projected Surface	2760	0	1780	1500	1100	1084
Projected Wells	4000	3410	3410	3408	3408	3408
Projected Total	**6760**	**3410**	**5190**	**4908**	**4508**	**4492**

Units of Measure: acre-feet per year
Note: While the District currently has surface water rights that total a maximum of 2,760 acre-feet annually, the bypass flow requirements that the District operates under have not been permanently established and the final bypass requirements that are eventually established could potentially result in less surface water being available to the District depending upon the precipitation year type.

The following table describes how each water year type was derived in the 2005 Urban Water Management Plan.

Table 10: Basis of water year data

Water Year Type	Year(s) Data is Based Upon	Base Year(s)	Historical Sequence
Normal Water Year	Normal water year based upon 10% deviation from April 1 average snowpack of 43 inches, or 38.7 to 47.3 inches on April 1. Normal water years have historically occurred about every nine years, or seven times in the last 62 years. Surface water supplies are based upon the maximum quantity of surface water available through the District's surface water rights.	1997 1996 1984 1971 1954 1949 1946	Every nine years
Single Dry Water Year	Single dry years are generally considered the lowest annual runoff for a watershed since the water-year beginning in 1903. For the Mammoth watershed, the year with the lowest April 1 snowpack is 12.3 inches of snow water equivalent on April 1, 1977. Groundwater data is based upon driest year that production wells were in use (1992 for wells #1, 6, 10, and 15 and 2001 for wells #16, 17, 18, and 20).	1977 1992 2001	
Multiple Dry Water Years	Multiple dry years are generally considered the lowest average runoff for a consecutive multiple year period (three years or more) for a watershed since 1903. The driest multiple year period in the Mammoth watershed was the six-year period from 1987 to 1992, which averaged 28.7 inches of snow water content at Mammoth Pass.	1987 through 1992	

Is the Projected Water Supply Sufficient or Insufficient for the Proposed Project?

In comparing projected future water demand estimates with current supply data, it is projected that water supply deficiencies would occur after the first year of a multiple year drought and in single dry year conditions. The following table compares current supply and future demands in normal, single dry and multiple dry years. This table shows that shortfalls in supply would occur if the District were to continue to utilize existing water supplies to meet demands at build out of the community, including the Mammoth Crossing Project.

Table 11: Comparison of current supply and demand for normal, single dry, and multiple dry years

Current Supply			Multiple Dry Water Years			
	Average/ Normal Water Year	Single Dry Water Year	Year 1	Year 2	Year 3	Year 4
Supply Total	6760	3410	5190	4908	4508	4492
Demand Total (without MC)	4858	4858	4858	4858	4858	4858
Difference (without MC)	**1902**	**-1448**	**332**	**50**	**-350**	**-366**
Demand Total (including MC)	4963	4963	4963	4963	4963	4963
Difference (including MC)	**1797**	**-1553**	**227**	**-55**	**-455**	**-471**
Units of Measure: Acre-feet per year						

As can be seen by the above supply versus demand comparison table, the current available water supply is considered insufficient to meet demands from build-out of the community during dry water years. Deficiencies of over 1,500 acre-feet would occur in a single dry year, which is considered the lowest historical runoff for the watershed. However, this shortfall in supply would likely be reduced through landscape watering restrictions, which have historically reduced demands by about 15% during summer irrigation periods. These landscape restrictions are part of the District's water shortage contingency plans, which are included in the District's 2005 UWMP. The extent of the insufficiency in multiple dry years depends on the duration of dry year periods, but would generally occur after the first year of a multiple year drought. It should also be noted that demands from the Mammoth Crossing (MC) Project increase the amount of deficiency of existing supplies in single dry and multiple dry year conditions, but not to a significant extent. In addition, since 65 acre-feet of the estimated demands from the proposed Project were not included in the UWMP; overall deficiencies in supply are greater than deficiencies described in the UWMP.

Table 12 describes future supply projections with demand totals anticipated at build out of the community according to the 2005 Town of Mammoth Lakes General Plan. These demand projections include the additional demands estimated from the Mammoth Crossing (MC) Project. Supply projections are based upon planned future well development and the use of recycled water in the community.

Table 12: Comparison of 20-year projection of supply and demand for normal, single dry, and multiple dry years (Includes Recycled Water Use and Future Wells)

2025 Supply			Multiple Dry Water Years			
	Normal Water Year	Single Dry Water Year	Year 1	Year 2	Year 3	Year 4
Supply Totals	8120	4770	6550	6268	5868	5852
Demand Totals (without MC)	4858	4858	4858	4858	4858	4858
Difference (without MC)	**3262**	**-88**	**1692**	**1410**	**1010**	**994**
Demand Totals (including MC)	4963	4963	4963	4963	4963	4963
Difference (including MC)	**3157**	**-193**	**1587**	**1305**	**905**	**889**

Units of Measure: Acre-feet per year
Note: The supply totals on this table assume 1000 acre-feet of future groundwater well water and about 400 acre-feet of recycled water would be utilized in normal water years

The analysis of future demand as modified from the District's Urban Water Management Plan shows that sufficient supplies should be available in the future during normal and multiple dry year scenarios assuming recycled water use, future well development, and existing bypass flow requirements for Mammoth Creek. There are uncertainties regarding the implementation of each of these water supplies. As with the development of any water supply, the District will need to evaluate and respond to any environmental concerns associated with the projects, obtain any applicable governmental approvals, and address other considerations that may surround these projects. In addition, other currently undefined water supply projects may be used to replace or supplement those described in this assessment. The District is also currently working on a loss reduction program and the demand savings, estimated at a loss rate of 10 to 15%, from this program are not included in this table. It should again be noted that shortfalls seen in this table in single dry years would be met through landscape watering restrictions, which have historically reduced demands by about 15% during summer irrigation periods.

Plan for Acquiring Additional Future Water Supplies

Under Water Code 10911 it is required, that if, as a result of its assessment, the public water system concludes that its water supplies are, or will be, insufficient, the public water system shall provide to the city or county its plans for acquiring additional water supplies. Since existing supplies are insufficient and future water supplies still result in a shortfall in single dry years, the District has developed the following plans regarding implementation of water conservation measures, use of recycled water, and development of new supplies.

Implementation of Water Conservation Measures

Source of Supply

During the summer of 2007, the Board of Directors implemented a revised set of water restrictions, which may be utilized during times of drought of water shortage. These restrictions were implemented during the months of August and September and resulted in average demand reductions of 15%. At build-out of the community under the 2005 General Plan, with the addition of increased demands from the Mammoth Crossing Project, the projected savings from implementation of the same water conservation measures amounts to about 500 acre-feet annually.

Estimated Timeframes for Implementation

Projections of available water supply are prepared each year after final snowpack measurements are made on April 1. At that time, if projections indicate possible water supply insufficiencies, the District's Board of Directors may declare the existence or threatened existence of a drought and may then implement any level of restrictions as deemed necessary.

Estimated Total Costs and Proposed Method of Financing

Reductions in water use would affect District revenues during the months of June through September. It is estimated that the decrease in revenue during this period would amount to approximately $300,000 to $600,000 depending upon the level of restrictions implemented. The District maintains an operating reserve in its budget to compensate for conditions, such as lost revenue due to emergencies.

Federal, State, and Local Permits, Approvals or Entitlements

Water conservation measures are included in the District's Water Code. Therefore, the implementation of measures, such as landscape irrigation restrictions, would occur by action of the Board of Directors. The Board recently adopted enhanced permanent water

restrictions of every other day watering with unknown impacts until summer water use data can be collected. It is estimated that such measures may result in 5 to 10% savings in summer months regardless of water year type.

Utilization of Recycled Water

Source of Supply

The source of supply would come from the District's wastewater treatment facility. Although the facility can produce recycled water, there are some upgrades necessary to meet current State Department of Health standards which upgrades would be capable of producing up to 1.55 million gallons per day of recycled water. Parallel recycled water pipelines would be installed from the wastewater treatment plant to the Sierra Star Golf Course and the Snowcreek Golf Course. A third pipeline may be installed at some point in the future from the wastewater treatment plant to Shady Rest Park.

The District currently supplies untreated groundwater for irrigation of the Snowcreek and Sierra Star Golf Courses and supplies potable water to Shady Rest Park. The volume of groundwater supplied to the Sierra Star Golf Course over the past eight years (2000 to 2007) has averaged 242 acre-feet per year. The volume of groundwater supplied to the Snowcreek Golf Course over the past eight years has averaged 93 acre-feet per year. Water supplied to Shady Rest Park over the past five years averaged about 30 acre-feet per year. The maximum water supplied to these locations in dry water years has totaled about 440 acre-feet.

The Recycled Water Project plans for providing recycled water to both golf courses and, at some point in the future, Shady Rest Park. Recycled water use at Shady Rest Park and Sierra Star Golf Course would result in a direct offset of potable water. Recycled water provided to the Snowcreek Golf Course would be provided to a portion of the existing nine holes and possibly the entire additional nine holes planned for development. Recycled water provided to the additional nine holes planned at the Snowcreek Golf Course would not offset any current demands for potable water. Overall, it is anticipated that the amount of potable water that could be made available through the implementation of this project is about 400 acre-feet annually. However, depending upon customer demands, the recycled water project could potentially supply about 550 acre-feet annually to large turf irrigators in the community during the summer irrigation season.

In August 2007, representatives from Sierra Star Golf Course signed an agreement with the District committing to purchase recycled water for golf course irrigation for the next 30 years.

Estimated Timeframes for Implementation

It is currently estimated that the total project would take three construction seasons to fully complete. Therefore, recycled water is projected to be available for use by the summer of 2010.

Estimated Total Costs and Proposed Method of Financing

The total estimated cost of a recycled water project for the purpose of golf course irrigation amounts to approximately $11,000,000. This project would provide the capability to produce 1.55 million gallons per day of recycled water. The Mammoth Mountain Ski Area (Sierra Star Golf Course) has already paid a connection fee for their portion of recycled water once it is made available. The remaining costs of the project would be paid through additional connection fees and through the District's water capital expansion program budget. The District has also calculated a preliminary rate for recycled water, which would cover the operating and maintenance costs, as well as for facility and equipment depreciation. This rate amounts to $1.55 per 1,000 gallons.

Federal, State, and Local Permits, Approvals or Entitlements

Permits that would be required to provide recycled water for irrigation include revisions to the District's existing waste discharge permit from the Regional Water Quality Control Board and a design and use permit from the State Department of Health Services.

Water System Loss Reduction

Source of Supply

The District has been implementing an aggressive main water pipeline replacement program to replace old leaking water pipes since 2001. Over the past several years, an average of 10,000 feet of pipeline per year has been replaced. As a result of the completion of this replacement work, the District expects to achieve a reduction in water loss within the system of approximately 300 acre-feet.

Estimated Timeframes for Implementation

It is estimated that replacement of existing old pipelines in the entire system will occur over the next 8-year period. District water line staff will be focusing their efforts on installing the recycled water pipelines over the next two years with lesser amounts of water lines being replaced during this timeframe. Once the recycled water pipelines are installed, approximately 10,000 feet of water pipeline per year will be replaced.

Estimated Total Costs and Proposed Method of Financing

This project is budgeted for approximately $950,000 each year for the next two years and then $1,900,000 per year until 2015. The District funds water line replacement projects through its capital replacement program, which is derived from primarily property tax revenues.

Federal, State, and Local Permits, Approvals or Entitlements

The District prepares CEQA documentation on an annual basis for these projects.

Development of New Supplies

Source of Supply

Overall, depending upon supplies needed, about 1,000 acre-feet of additional groundwater supplies may be developed in the future from either the Mammoth Basin watershed or the Dry Creek watershed. The District Board of Directors has placed the Mammoth Basin as the priority location for additional groundwater extractions in the future.

The District is evaluating whether or not there is additional water available to be pumped from the Mammoth Basin without causing environmental impacts. Continued monitoring of the Mammoth Basin over the next two years should provide sufficient data to evaluate the potential of additional groundwater that could be safely pumped from the basin.

Estimated Timeframes for Implementation

Evaluation of the potential for increased withdrawal from the Mammoth Basin should be completed within two years. Extractions of groundwater from the Dry Creek Basin would only be pursued if modeling and data collection showed that additional volumes are not available from the Mammoth Basin.

Estimated Total Costs and Proposed Method of Financing

Currently, about $2,000,000 is budgeted for the development of additional wells in the Mammoth Basin. This project is budgeted in the District capital expansion fund, which is funded by new water connection charges.

Federal, State, and Local Permits, Approvals or Entitlements

The development of additional groundwater sources would require permits and approvals from the State Department of Health Services and the U.S. Forest Service where potential

well sites are located on federal land. This project also would require both State of California and federal environmental review if USFS lands were utilized.

Summary of Additional Water Supplies

Table 13: Summary of future water supply projects

Project Name	Demand Reduction (acre-feet)	Supply Increase (acre-feet)	Projected Completion Date
Recycled Water Project		400 acre-feet	2010 (depends upon customer commitments)
Water Conservation	About 500 acre-feet at build out with irrigation restriction enforced		N/A
Water Pipeline Replacement (reduce water losses)	10-15% loss rate goal (about 300 ac-ft at build out)		Ongoing, full implementation anticipated by 2011
New groundwater development		1000 ac-ft (or amount needed to meet demands)	As needed

Conclusion

This water supply assessment shows that with the inclusion of several additional water supply projects, the District would have sufficient supplies in normal and wet water years through the next 20 years to meet the demands of the Mammoth Crossing Project in addition to other projected development in Mammoth Lakes. However, as noted in this assessment, there are uncertainties regarding existing supplies and the implementation of these additional supplies. It is essential that additional water supplies are developed and demand reductions are utilized to their full potential to ensure that future demands can be met, especially in dry year conditions.

APPENDIX M

TREE SURVEY FOR THE ADJACENT SIERRA STAR MASTER PLAN PROJECT

Study of Average Tree Heights Within The

Sierra Star Master Plan Development Area 5

Mammoth Lakes, California

January 2007

Prepared by:
Integrated Design Studio

Overview

The following study was implemented to estimate the average tree height within Development Area 5 of the Sierra Star Master Plan, in the Town of Mammoth Lakes, California (see Figures 3.1 and 3.2).

Two methods were used to estimate average tree heights, each based on a set of data provided by Triad/Holmes Associates. This report includes a description of the two methodologies, including the limitations inherent in each. Both of the methods employed were based on estimated growth rates and limited sampling; thus, they *do not represent an actual measurement of all trees in the area.* See "limitations" at the end of each section for specific limitations related to each method.

The calculations presented herein indicate an estimated average tree height of approximately 75-76 feet within Development Area 5. It is important to note that *average tree height is not necessarily equivalent to the visual tree canopy.* The visual tree canopy varies greatly, due to density and distribution of tree heights. It is strongly recommended that site specific visual confirmations be made when it is necessary to assess visual impact in relation to tree canopy.

Method 1

In late 2005, IDS studied tree heights based on estimated tree height calculations done by Triad/Holmes Associates on January 16, 2003. This study compared tree diameters to tree heights for Pine, Lodge Pole, and Fir Trees. Each tree type was represented in a separate bar graph (see Figures 1.1 - 1.3). These graphs listed a minimum, maximum, and average tree height for each specific trunk diameter.

In order to use this information for 3D modeling purposes five tree diameter categories were created. These categories included 0-12", 13-24", 25-36", 37-48", and 49"+.

The average tree height for each category was then determined by adding the average height of each specific diameter within the category and dividing by the total number of examples within that category.

Example: Pine tree heights based on diameter:

14"dia = 60'
16"dia = 64'
18"dia = 55'
20"dia = 64'
22"dia = 65'
24"dia = 74'

To determine an average height for pine trees 13"-24", the following formula was utilized:

(60' + 64' + 55' + 64' + 65' + 74') / 6 = 64' average

Total average heights were then compiled based on the average height of each category.

Example using pines:

0-12" = No Data
13-24" = 64' average
25-36" = 83' average
37-48" = No Data
49"+ = 82' average

Result: (64' + 83' + 82') / 3 = 76' total average

Using the process described above, the following total average tree heights were calculated:

Pine: 76' total average
Fir: 93' total average
Lodge Pole: 58.5' total average

Therefore the estimated overall average tree height is (76' + 93' + 58.5') /3 = 76 feet *

* As mentioned earlier, it is important to note that *average tree height is not necessarily equivalent to the visual tree canopy.* The visual tree canopy varies greatly, due to density and distribution of tree heights. It is strongly recommended that site specific visual confirmations be made when it is necessary to assess visual impact in relation to tree canopy.

Limitations of Method 1:
1) Study did not use consistent diameters for each tree type.
2) No trees below 14" in diameter were measured for pine or fir trees.
3) This method was based solely on the tree information in figures 1.1-1.3 and does not take into consideration the number and/or distribution of tree types across area 5A.

Method 2

On November 2, 2006, IDS received an updated tree survey from Triad/Holmes Associates. This survey includes the diameter and location of each tree located within Development Area 5 of Sierra Star (see Figures 3.1. and 3.2). In addition, the engineers measured actual tree heights for a sampling of trees (55 pine trees and 27 fir trees).

Using the survey data, an average tree height for each specific diameter was calculated for both pine and fir trees (see Figures 2.1 - 2.2).

Example using pines:
16"dia = 53', 54', 56', 60', 60'
(53' + 54' + 56' + 60' + 60') / 5 = 57' average

Five tree diameter categories were then created, identical to those used in Method 1, and then the average height for each diameter category was determined.

Example using 0-12" pines:
10"dia = 64' average
12"dia = 46' average
(64' + 46') / 2 = 55' average

Next, the total average height was created based on the average height of each category.

Example using pines:
0-12" = 55' average
13-24" = 62' average
25-36" = 80' average
37-48" = No Data
49"+ = 126' average

(55' + 62' + 80' + 126') / 4 = 80.75' total average

Using the process delineated above, the following total average tree heights were calculated for Pines and Firs:

Pine: 80.75' total average
Fir: 65.25' total average

Next a weighted average was calculated based on the number and distribution of pines and firs across Area 5A:

There were a total of 3100 trees surveyed, 63% Pine (1951) and 37% Fir (1145).

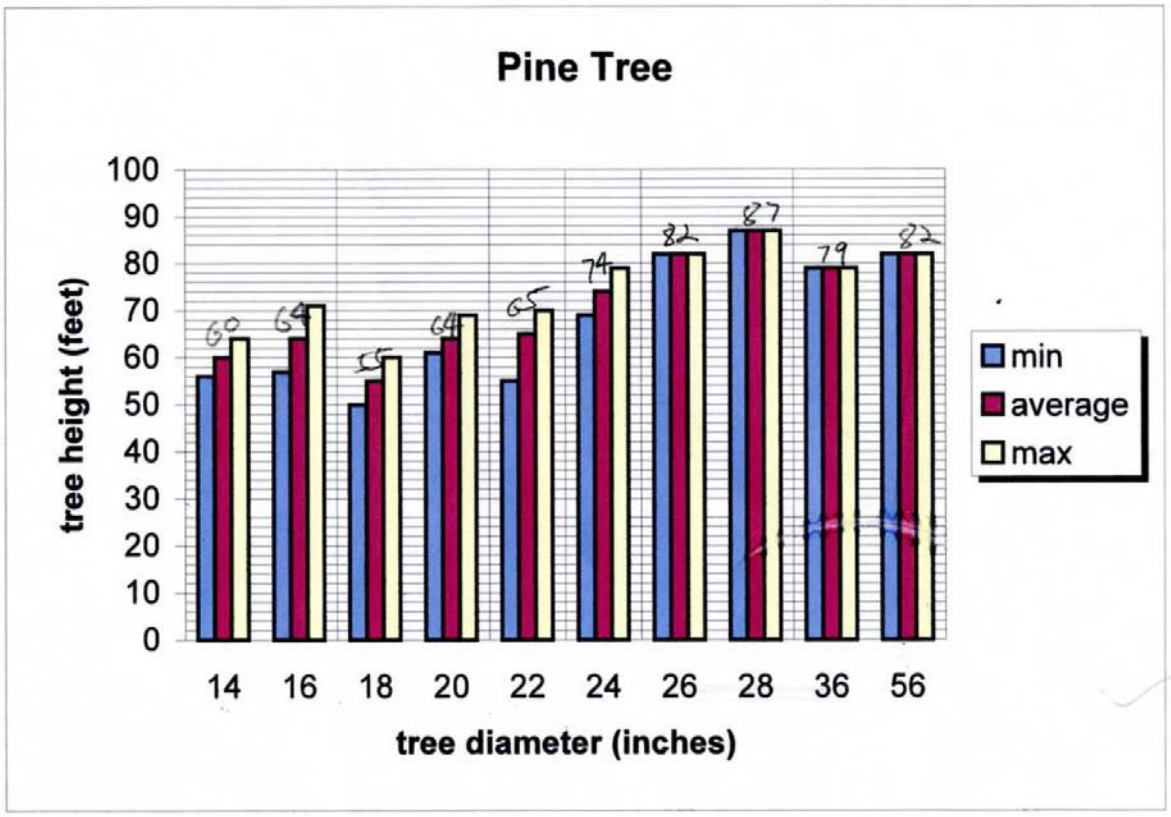
Estimated Overall Avg Tree Height = (80.75' x 0.63)+(65.25' x 0.37)/2 = 75 feet **

** As mentioned earlier, it is important to note that *average tree height is not necessarily equivalent to the visual tree canopy.* The visual tree canopy varies greatly, due to density and distribution of tree heights. It is strongly recommended that site specific visual confirmations be made when it is necessary to assess visual impact in relation to tree canopy.

Limitations of Method 2:

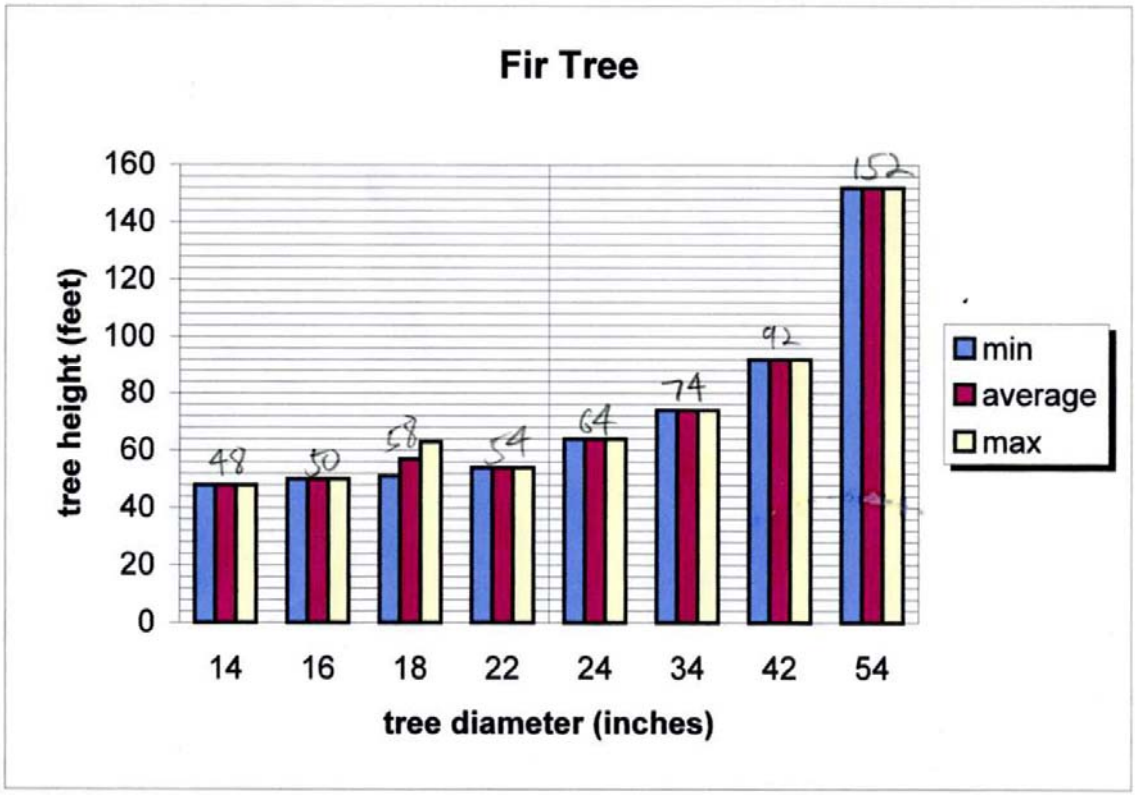
1) Survey did not sample an equal number of trees of each diameter size, thus creating inconsistent averages (for example the average height for an 18" pine was determined from 14 specimens whereas the average height for a 10" pine was determined from only 2 specimens).

Figure 1.1



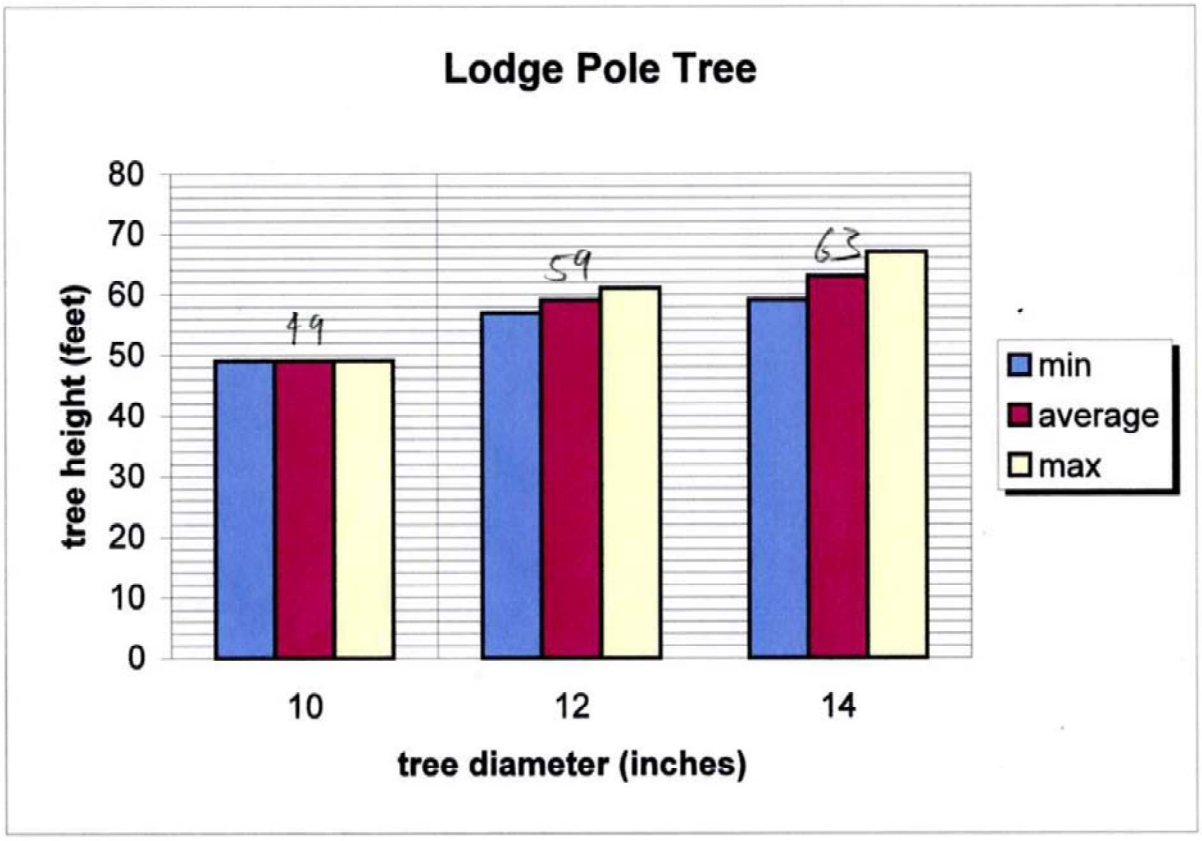
Average Pine Tree Height in Relation to Diameter.
Provided by Triad/Holmes Associates - 01/16/2003

Figure 1.2



Average Fir Tree Height in Relation to Diameter.
Provided by Triad/Holmes Associates - 01/16/2003

Figure 1.3



Average Lodge Pole Tree Height in Relation to Diameter.
Provided by Triad/Holmes Associates - 01/16/2003

Figure 2.1

PINE

TRUNK DIA.	HEIGHT (IN FEET)															AVERAGE
10"PINE	62	66														64
12" PINE	40	41	57													46
14" PINE	54	55														55
16" PINE	53	54	56	60	60											57
18" PINE	46	49	56	57	59	60	60	60	61	61	62	65	68	75		60
20" PINE	55	59	60	62	62	65										61
22" PINE	58	67	68													64
24" PINE	57	63	67	71	75	83	103									74
28" PINE	71															71
30" PINE	77															77
32" PINE	79	80	87	87	104											87
34" PINE	84															84
36" PINE	68	82	85	87												81
60" PINE	126															126

CATAGORY	HEIGHT (IN FEET)															AVERAGE
0-12" PINE	71	64	46													60
13-24" PINE	55	57	60	61	64	74										62
25-36" PINE	71	77	87	84	81											80
37-48" PINE																NO DATA
49"+ PINE	126															126

Tree Heights from Sierra Star Area 5 Tree Survey by Triad/Holmes Associates 11/02/06. (See also Figures 3.1 and 3.2)

Figure 2.2

FIR

TRUNK DIA.	HEIGHT (IN FEET)								AVERAGE
12" FIR	44	55							50
14" FIR	50	53	62						55
18" FIR	59	60	62	72	76				66
20" FIR	62								62
24" FIR	60	60	60	71	72	77	80		69
26" FIR	67								67
28" FIR	65								65
30" FIR	61								61
32" FIR	78								78
36" FIR	73	86							80
40" FIR	50	98							74
44" FIR	81								81

CATAGORY	HEIGHT (IN FEET)								AVERAGE
0-12" FIR	50								50
13-24" FIR	55	66	62	69					63
25-36" FIR	67	65	61	78	80				70
37-48" FIR	74	81							78
49"+ FIR									NO DATA

Tree Heights from Sierra Star Area 5 Tree Survey by Triad/Holmes Associates 11/02/06. (See also Figures 3.1 and 3.2)

Figure 3.1

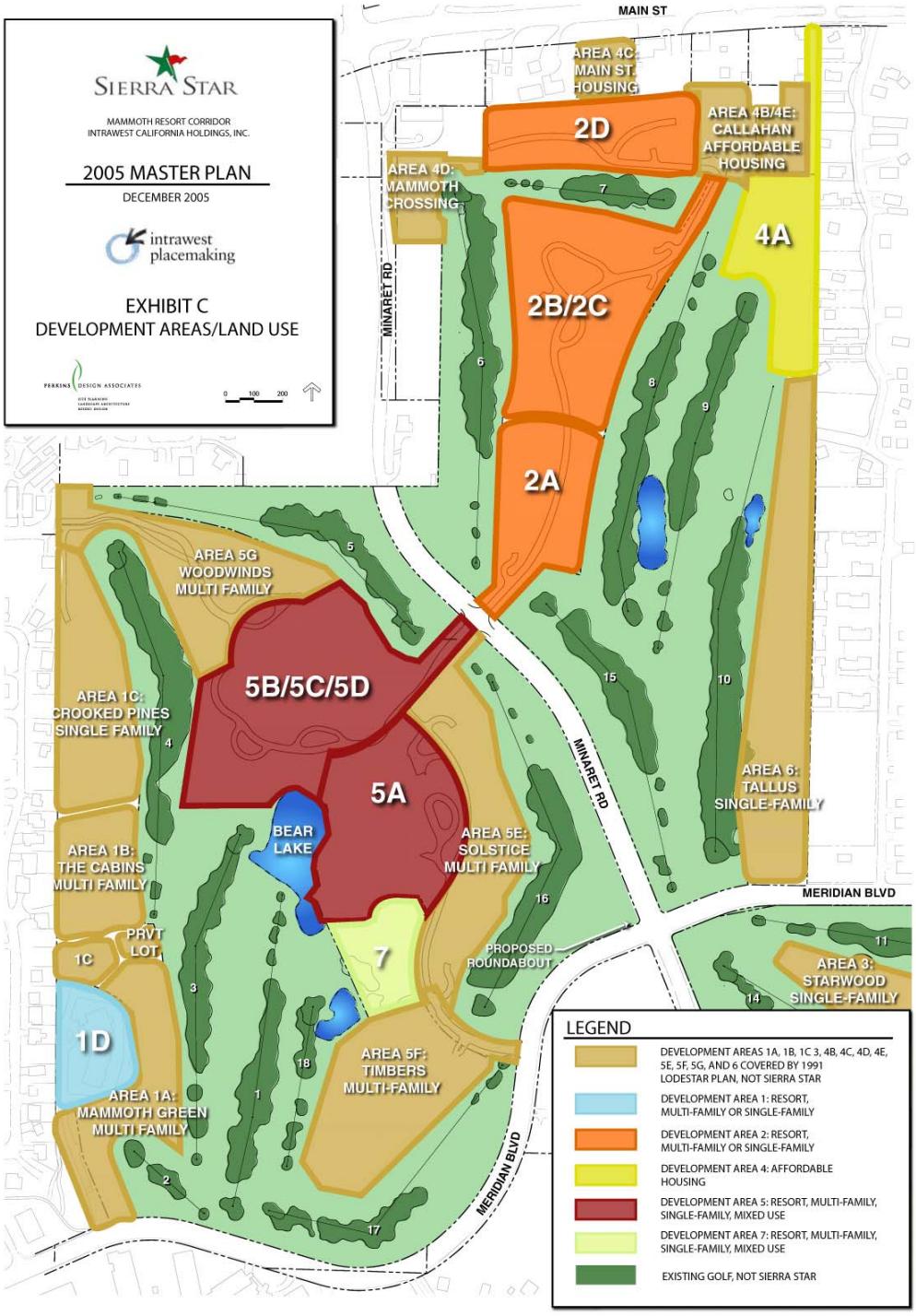
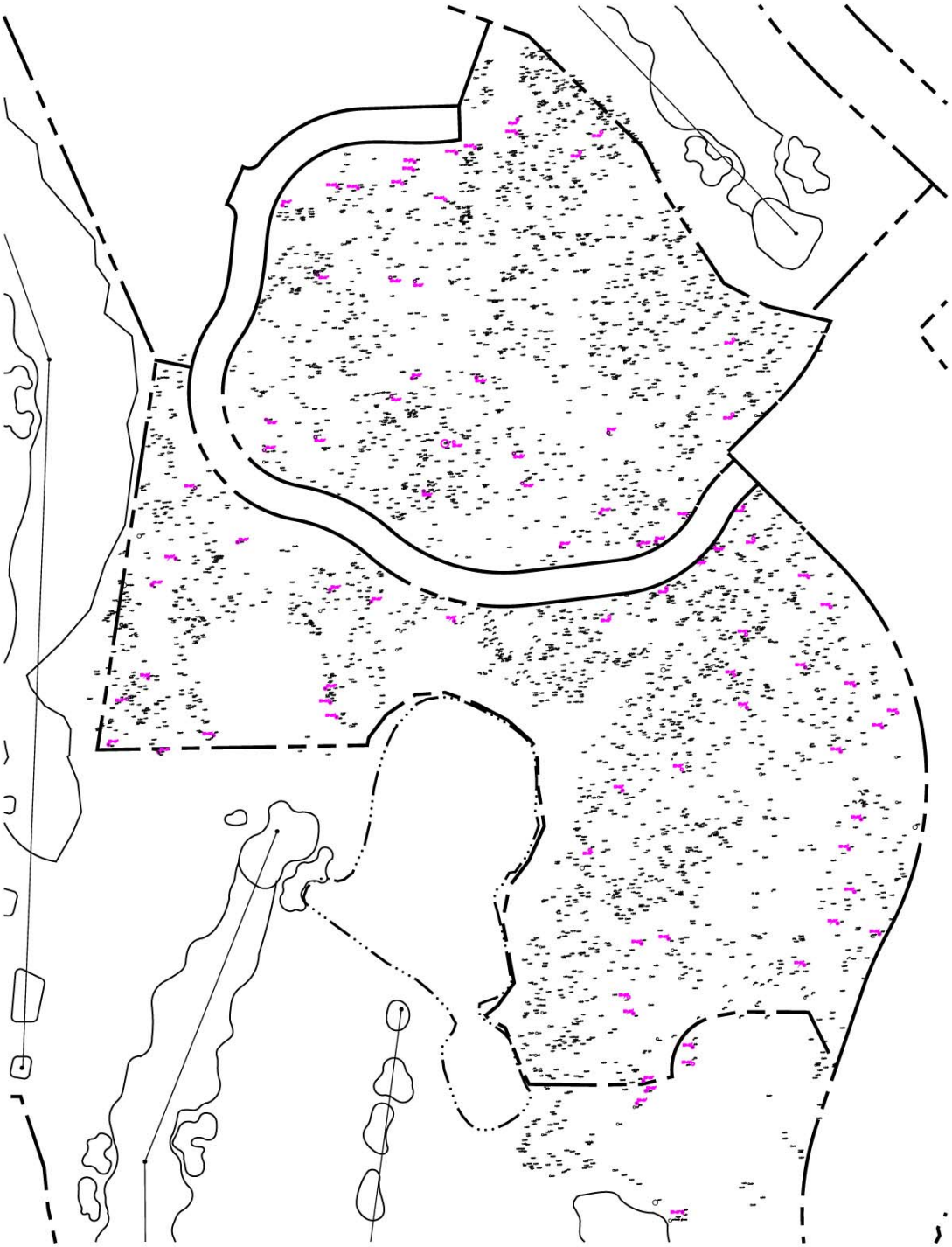

SIERRA STAR
MAMMOTH RESORT CORRIDOR
INTRAWEST CALIFORNIA HOLDINGS, INC.
2005 MASTER PLAN
DECEMBER 2005
intrawest placemaking
EXHIBIT C
DEVELOPMENT AREAS/LAND USE
PERKINS DESIGN ASSOCIATES
0 100 200
MAIN ST
AREA 4C: MAIN ST. HOUSING
2D
AREA 4B/4E: CALLAHAN AFFORDABLE HOUSING
AREA 4D: MAMMOTH CROSSING
4A
2B/2C
MINARET RD
2A
AREA 5G WOODWINDS MULTI FAMILY
5B/5C/5D
AREA 1C: CROOKED PINES SINGLE FAMILY
5A
BEAR LAKE
AREA 5E: SOLSTICE MULTI FAMILY
AREA 6: TALLUS SINGLE-FAMILY
AREA 1B: THE CABINS MULTI FAMILY
MERIDIAN BLVD
PRVT LOT
1C
7
PROPOSED ROUNDABOUT
AREA 3: STARWOOD SINGLE-FAMILY
1D
AREA 5F: TIMBERS MULTI-FAMILY
AREA 1A: MAMMOTH GREEN MULTI FAMILY
MERIDIAN BLVD
LEGEND
DEVELOPMENT AREAS 1A, 1B, 1C 3, 4B, 4C, 4D, 4E, 5E, 5F, 5G, AND 6 COVERED BY 1991 LODESTAR PLAN, NOT SIERRA STAR
DEVELOPMENT AREA 1: RESORT, MULTI-FAMILY OR SINGLE-FAMILY
DEVELOPMENT AREA 2: RESORT, MULTI-FAMILY OR SINGLE-FAMILY
DEVELOPMENT AREA 4: AFFORDABLE HOUSING
DEVELOPMENT AREA 5: RESORT, MULTI-FAMILY, SINGLE-FAMILY, MIXED USE
DEVELOPMENT AREA 7: RESORT, MULTI-FAMILY, SINGLE-FAMILY, MIXED USE
EXISTING GOLF, NOT SIERRA STAR

Figure 3.2

Sierra Star Master Plan Development Area 5 Tree Survey
by Triad/Holmes Associates.
Magenta dots indicate trees surveyed for specific height information.



APPENDIX N

NORTH VILLAGE SPECIFIC PLAN PROPOSED AMENDMENTS

REV 1/05

NORTH VILLAGE SPECIFIC PLAN

~~2000~~

2008

ADOPTED BY THE TOWN COUNCIL

DECEMBER 2000

AMENDED JANUARY 19, 2005

PROPOSED AMENDMENTS BY MAMMOTH CROSSING, L.L.C.
FOR 3 CORNERS (NORTHWEST, SOUTHWEST AND
SOUTHEAST) OF THE INTERSECTION OF MAIN AND MINARET

Notes in Italics
Proposed Deletions in ~~Strikeout~~
Proposed additions in Underline

INTRODUCTION

No proposed amendments

NORTH VILLAGE SPECIFIC PLAN
RELATIONSHIP TO TOWN OF MAMMOTH LAKES GENERAL PLAN
No proposed amendments

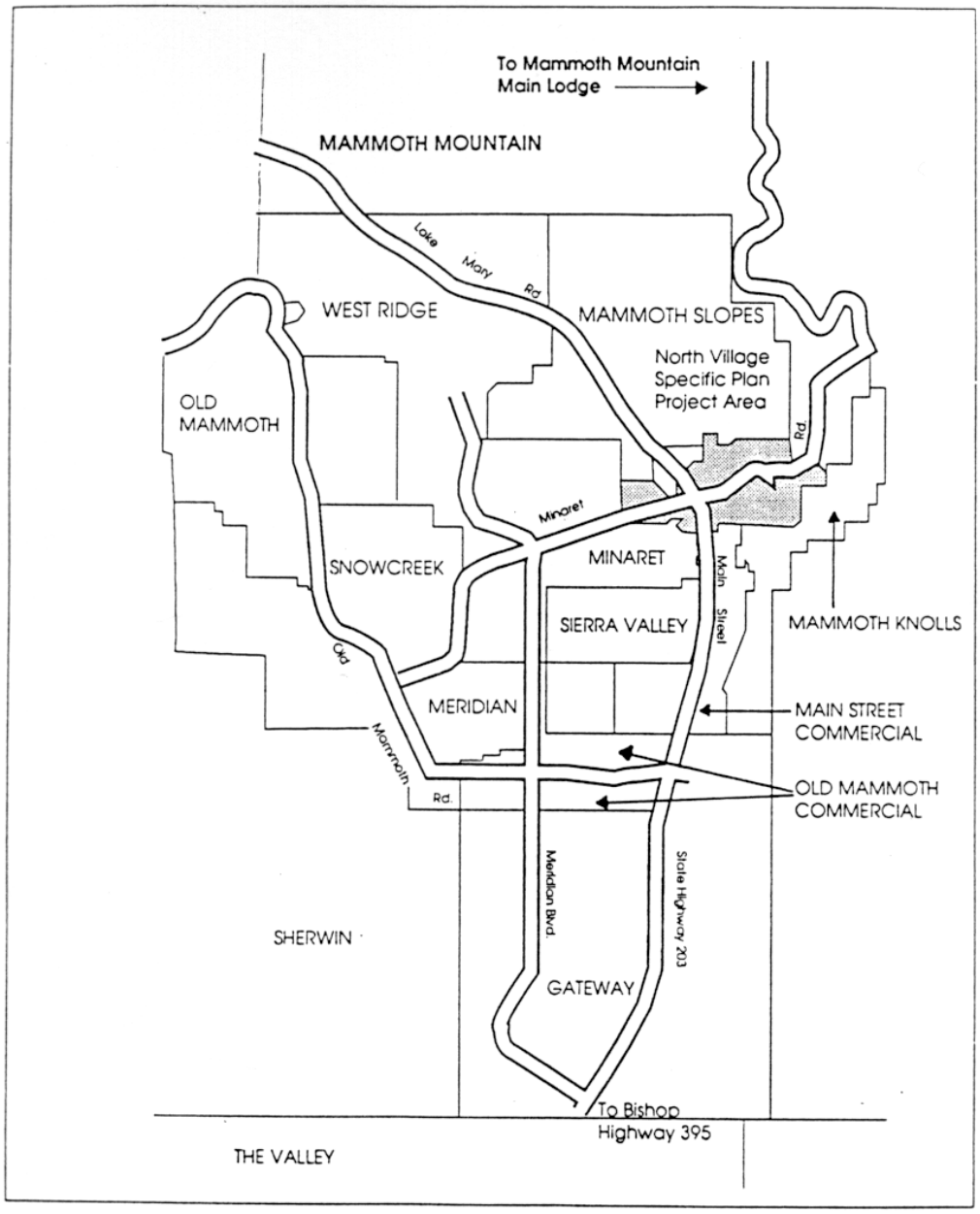
EXISTING SETTING

No proposed amendments

North Village Specific Plan Area

MC proposes to add "Tanavista/Lodestar" site to North Village Specific Plan area

The North Village Specific Plan Area is located in the northwest portion of the Town of Mammoth Lakes (see Exhibit A - Existing Zoning) and consists of ~~41~~ 42 separate parcels totaling approximately ~~64~~ 66 acres. Since the Specific Plan was adopted in 1991, some consolidation of ownership has occurred, but the majority of land remains under multiple ownerships. The Specific Plan Area is located adjacent to Main Street, Lake Mary Road and Minaret Road.


To Mammoth Mountain
Main Lodge
MAMMOTH MOUNTAIN
Lake Mary Rd
WEST RIDGE
MAMMOTH SLOPES
North Village
Specific Plan
Project Area
OLD
MAMMOTH
Rd
Minaret
SNOWCREEK
MINARET
Main Street
SIERRA VALLEY
MAMMOTH KNOLLS
Old
MERIDIAN
MAIN STREET
COMMERCIAL
Mammoth
Rd
OLD MAMMOTH
COMMERCIAL
Meridian Blvd
State Highway 203
SHERWIN
GATEWAY
To Bishop
Highway 395
THE VALLEY

….An analysis of existing land uses within the ~~64~~ 66-acre North Village Specific Plan Area is included in Table 1.

TABLE 1. EXISTING LAND USES IN NORTH VILLAGE

(outdated - will need amendment to bring to current conditions)

Land Use	Acreage
Vacant	25.20
Commercial/Lodging	10.60
Restaurant	4.80
Resort Commercial	.25
General Commercial	1.20
Non-Resort*	13.95
Open Space	3.00
Quasi-Public	5.10
Total	~~64.10~~ 65.5 acres

*Non-resort uses include industrial uses, private home sites, and non-visitor oriented commercial operations such as office buildings.

SPECIFIC PLAN DESCRIPTION

Specific Plan Objectives

….

Amendments to the Exhibits are required in order to accommodate the proposed NVSP revisions. Those are included at the back of this document.

Concept

No proposed amendments

SPECIFIC PLAN ELEMENTS

No proposed amendments

LAND USE ELEMENT

No proposed amendments

Land Use Designations

Plaza Resort (PR)

MC proposes to add 9.2773 acres to the Plaza Resort Zone, including the 3 corners and the Tanavista/Lodestar site(1.3 acres).

> This designation has been applied to ~~12~~ 13 existing land ownerships totaling approximately ~~19.75~~ 29.25 acres which comprise the central focus of the North Village Specific Plan Area. The Plaza Resort designation applies to areas within the Pedestrian Core Overlay area and establishes uses and development guidelines which are designed to support concentrated pedestrian oriented development. Allowable uses in the Plaza Resort district are oriented toward visitors and include full service and moderate level hotels, lodges, resort condominiums, specialty retail shops, restaurants, conference facilities, and public recreation facilities. Employee housing and residential uses are also permitted in this land use designation.

Resort General (RG)

MC proposes to remove 9.3 acres (the 3 Corners) from the Resort General Zone and add it to the Plaza Resort Zone..

> This designation has been assigned to parcels adjacent to and easily accessible to the plaza, but still within the Pedestrian Core Overlay area. Resort General uses are also intended to provide visitor oriented resort services, although with lesser intensity than PR parcels. The Resort General designation differs from the Plaza Resort designation in that retail uses are limited to multi-tenant complexes or within full-service hotels. Restaurants are generally the only freestanding uses permitted in the RG district. Allowable uses in the Resort General district include hotels, resort condominiums, restaurants, residential, and employee housing facilities. ~~Six~~ ?? parcels totaling ~~10.4~~ 1.3 acres have been designated RG.

Tanavista (T)
MC proposes to add the existing Tanavista subdivision parcel to the NVSP. It would be incorporated as is at 45 units. According to Town documents, each unit equals 3 bedrooms.[1]

Land Use Objectives

The MC proposal requires an updated number in Objective #3 and an addition to the Plaza Resort Zone objectives..

3. To create a pattern of land use designations and a system of standards for the North Village Specific Plan Area which will enable development of concentrated resort, support commercial and residential uses dependent upon a functional pedestrian circulation system. The central focus of the

[1] Letter from Karen Johnston to Ward Jones, June 25, 2002 - paragraph 2

pedestrian system will be on the public plaza areas and the ski lift. The maximum overall project development density within the entire Specific Plan area is ~~52~~ [??] rooms per acre (inclusive of open space).

Plaza Resort

1. To increase the commercial potential of the North Village Specific Plan Area through the creation of a pedestrian-oriented core.
2. To provide resort oriented lodging and commercial facilities in a pedestrian setting.
3. To provide opportunities for visitors to take part in non-ski oriented activities.
4. To provide pedestrians a direct link to MMSA facilities through the construction of a lift and ski-return area.
5. To provide appropriately sized public spaces to accommodate summertime activities, including festivals, concerts, art shows, etc.
6. To provide the intensity of development that creates a sense of arrival to the main visitor core.

MC proposes to include 9.3 acres to the Pedestrian Core/Plaza Resort Zone purpose with the following text amendments.

Within the **Pedestrian Core area**, designs and site plans shall achieve the following objectives, in addition to the above:

1. **develop varied public spaces** - to accommodate a range of seasonal events, cultural and recreational programs
2. **encourage street level activity** - provide shops at road level on either side of Minaret and Lake Mary where appropriate; bring pedestrian activity and human scale to the street. Allow views of storefronts and plaza areas.
3. **preserve views** - allow gaps between shops permitting views of trees, landscape, and of inner pedestrian spaces. Maintain views from Minaret Road edges to the south.
4. **facilitate easy pedestrian access** - provide for safe and continuous pedestrian movements utilizing the skier bridge over Forest Trail, pedestrian crossing(s) mid-block on Minaret and Lake Mary, and pedestrian crossings at the Main Street and Forest Trail intersections. Public places on each side of Minaret are connected by sidewalks, and paths for continuous pedestrian circulation within the pedestrian core and throughout North Village. These walks and pathways, along with the bicycle lanes on Minaret Road and Lake Mary, connect to the community-wide trail and bikeway systems. Provide covered and uncovered bus drop off zones at the base of the gondola and along Minaret Road or to accommodate the transit system.
5. **create an appropriate building scale** - create mixed-use buildings with of one to five levels to define the edges of the plazas, two to seven at

entry areas and outer edges, ~~and~~ in scale with the public spaces. Each building should have an individual design personality and should create the scale and life appropriate to a small town.

6. **locate higher density at edges of the pedestrian core** - allow larger scale lodges, resort condominiums, and hotels at the outer edges of the Pedestrian Core, set in larger spaces, and in proximity to larger and more dense tree groupings to create a village atmosphere.
7. **organize spaces around focal points** - feature the gondola building and pond on the west side and the pedestrian plazas on the east. Each is to have distinctive architectural elements, such as towers, to convey their importance as major public destinations. At the Main and Minaret intersection, feature towers and public plazas to create the sense of arrival and visitor core vitality.
8. **develop distinctive character in public spaces** - provide distinct differences in the plazas so that the visitor, while walking, will continually discover places varying in size, character and environment.

West side: The pedestrian plaza is higher than Minaret Road, yet connected to the road by landscaped stairs and large, sloped and stepped terraces and storefronts. The shops and/or landscaping within the Pedestrian Core screen the understructure parking facility. The gondola plaza is sized to accommodate the peak volumes of people using the gondola and has the capacity for large cultural events and shows. Perimeter terraces border the plaza providing places for sitting and outdoor dining, as well as planters featuring seasonal landscapes. The mountain pond adds a contrasting landscape environment and a relaxed recreation destination. The shopping lane connects to the pedestrian walk along Minaret Road and to the skier bridge over Forest Trail. The skier bridge provides direct access to the ski back trail linking North Village to existing ski area facilities.

East side: The plaza is virtually level with Minaret Road so shops and people activities have greater visibility from the road than those on the west. As many trees as practical are preserved at the perimeter of the development to frame the plaza. The east side plaza extends alongside Minaret Road to the south, past the Alpenhof, to a mixed-use complex on Lot 38, which, because of the magnificent views is an exciting southern terminus to the Pedestrian Core area.

Main and Minaret: The positioning of entry plazas, building massing, retail animation and pedestrian linkage corridors will be placed to create a sense of arrival for the North Village while respecting the existing topography. The intersection development must perform the dual roles of: 1) establishing the visual arrival guest experience, and 2) enhancinig and invigorating the North Village as the vital and essential visitor experience.

Land Use Policies

Overall

No amendments proposed to Land Use Policies

Land Use Standards and Implementation Measures

All development within the Specific Plan boundaries shall be subject to the following requirements and standards and shall be in general conformance with Exhibits A, D, E and F *(proposed MC revisions to exhibits are included in this document)*. Except as specified herein, all requirements of the Mammoth Lakes Municipal Code shall apply.

Individual Site Requirements

The MC proposal requires the addition of an "area" as follows:

Gondola Building/Skier Services area

Pedestrian Oriented Mixed Use area

Commercial/Retail Use area

Resort Lodging area

Main and Minaret Arrival Intersection

PR PLANNING AREAS

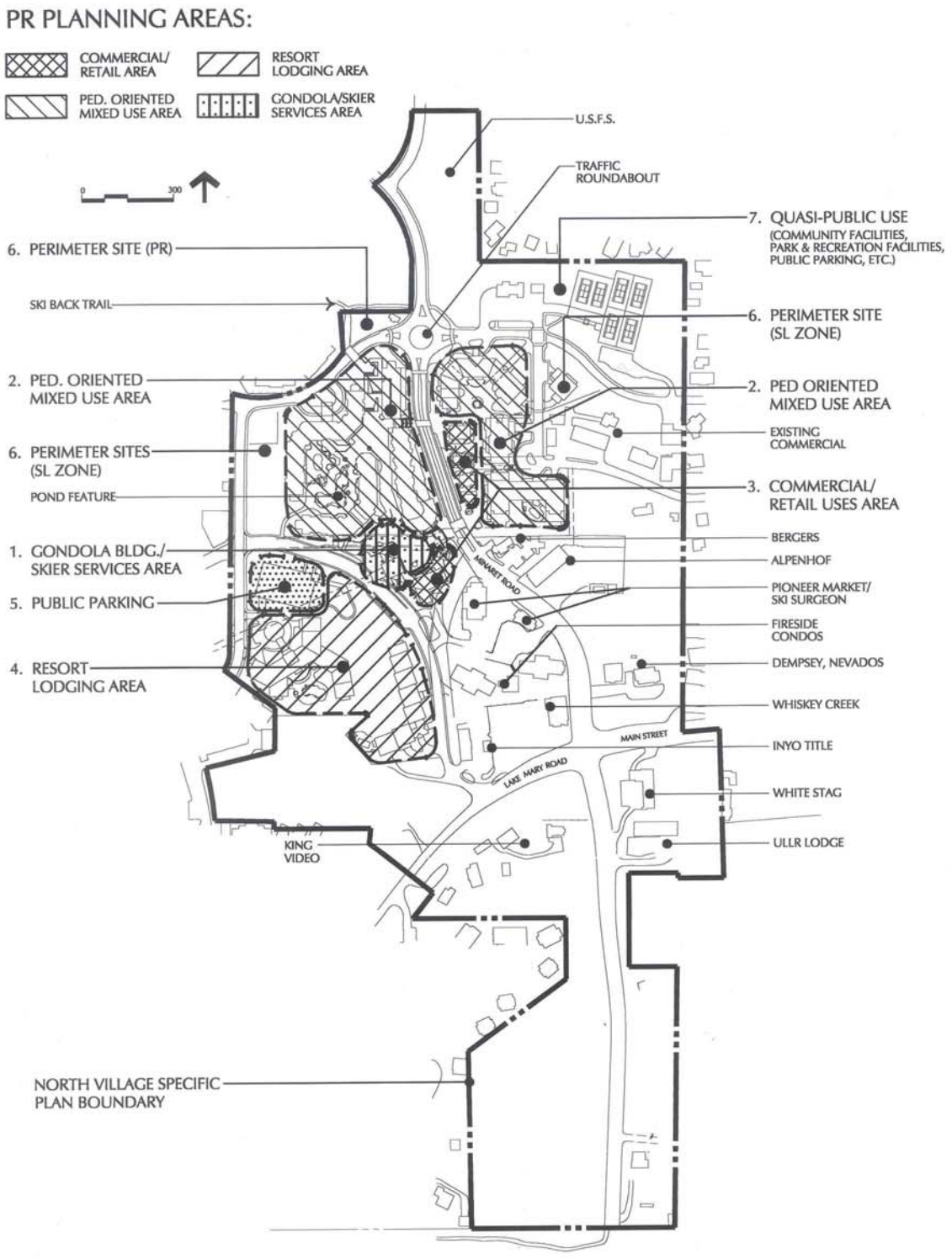


FIGURE 1

The land use descriptions for the PR Planning Areas and for other site-specific uses within the Specific Plan Area are set forth below.

MC proposes the following changes and renumberings of subsequent areas:

11. Mammoth Crossing Site 1 (Parcel 16 & 17 (PZ)) - Site 1 (1.7939 acres) includes an entry plaza linked to a major pedestrian thoroughfare traversing diagonally through the site lined with shops and restaurants, public art and accommodation entries. The site will be the most intensely developed of the planning areas. Allowable land uses include hotel, commercial retail, entertainment, child care, personal services and public plaza. Notable site features include a major public plaza with public art, pedestrian walkway/corridor with public art, landmark towers, retail enhancements to North Village, major pedestrian corridor connectivity, retail animation for Lake Mary Road with on-street parking, transit stops and alternative transporation facilities, as well as significant underground parking. The existing Whiskey Restaurant will remain as a "historical" landmark familiar to long time visitors. The pedestrian thoroughfare links to the existing North Village and Gondola building.

~~Inyo Mono Title (Parcel 16 (RG)) - This parcel currently contains approximately 1925 SF of office commercial uses. It can remain as a stand-alone use or be developed with a mix of first floor commercial or restaurant uses, with or without accommodations or residential uses. Building heights would be 1 to 4 levels.~~

~~12. Whiskey Creek (Parcel 17 (RG)) - This site presently has an approximate 10,000 SF restaurant with associated parking. It can remain as a stand-alone use or be developed with a mix of first floor commercial and restaurant uses in conjunction with accommodation or residential uses above. Building heights would be 1 to 4 levels.~~

12. Mammoth Crossing Site 2 (Parcel 3, 4, 5 plus(PR)) - Site 2 (4.5205 acres) will feature a large luxury brand hotel with spectacular views over the Mammoth Lakes basin to Crowley Lake, select residential, and Lake Mary Road fronting commercial shops. Commercial shops may include a specialty market offering gourmet groceries and spirits. With the exception of small scale on street parking for the Lake Mary shops and restaurants, the site will include all underground parking. The older buildings on-site which have community importance will be made available to groups who wish to move them off-site. Site 2 Planning Area's notable site features include the 5 Star Flag Hotel, major pedestrian corridor connectivity with public art, landmark tower(s), retail animation for Lake Mary Road including on-street parking.

13. Mammoth Crossing Site 3- (Parcel 6, 7, 8, 9 (PR)) - **Site 3** (2.9629 acres) includes a hotel and is capable of accommodating tour and larger groups. Meeting space and an ancillary restaurant could be accommodated on this site. This site provides pedestrian and bicycle linkage from the eastern golf course Lodestar area and Main Street town core to the 3 Corners and North Village. The site will include underground parking and a public parking.

14. Mammoth Crossing Site 4 – (Tanavista (PR)) – An approved 45 unit (98 room) residential condominium is approved for the site. The building includes two underground parking levels and common interior recreation area, a maximum ridge height of 72 feet plus 2 feet for appurtenances, setbacks from arterial streets of 30 feet.
15. Fireside Condos (Parcel 18 (RG)) -
16. Pioneer Market/Ski Surgeon (Parcel 19 (RG)) -
17. Other Specialty Lodging Sites (Parcels ~~1 – 14~~ *(exclude the MC parcels)* (SL)) -

Development and Design Standards

1. Land Uses

No amendments proposed to Land Uses

2. Density

The Town has requested that we include the following revision in this amendment. This revision was identified by the Town as necessary to encourage retail development.

c. For purposes of development area calculations, the following density conversions shall apply throughout North Village.

1 "room" equals any of the following types of development:

- 1 hotel room
- 1 bedroom, loft or other sleeping area in residential uses
- ~~450 square feet of commercial or restaurant space~~

TABLE 3. DENSITY SUMMARY

Revisions to Table 3 are necessary to accommodate the MC proposal.

Land Use Designation	Size	Maximum Yield	Total Rooms	S.F.	Estimated ~~Com/Ret~~ (~~Rm. Eq.~~)	Estimated Accom. Rms
Plaza Resort	29.03~~19.75~~ ac	80 rms/ac	~~1580~~[2]		85,000?(~~189~~)[3]	1391[4]
Resort General	1.12~~10.40~~ ac	48 rms/ac	~~498~~[5]		50,000?(~~111~~)[6]	387[7]

[2] Increase total (needs to be updated before MC's 742 rooms are added)
[3] Increase total (needs to be updated before MC's 40,500 sq. ft. retail added)
[4] Increase total (needs to be updated before MC's 742 rooms are added)
[5] Decrease total by rooms allocated to MC site (9.28 acres x 48 rooms)

Spec. Lodging	25.85 ac	48 rms/ac	1242(revise)	0	~~0~~	1242
Tanavista	1.3631	45 units[8]	135	0		98[9]
Other (P,QP,OS)	8.10 ac	0	0	0	0	0
Overall Total[10]	~~65.40~~ ac	~~52~~ rms/ac	~~3320~~	135,000?~~(300)~~		~~3020~~

3. Site Coverage

No amendments proposed.

4. Building Area

No amendments proposed.

5. Building Heights

a. Figure 1 shows eight ~~four~~ specific locations (PR Planning Areas) within the PR district. Within these eight ~~four~~ PR Planning Areas, building heights shall comply with the heights as shown on Table 4 below and the designated land uses locations as referenced in Figure 1.

b. Developments outside the Pedestrian Core need only comply with the height table below.

c. For buildings that cross a land use district boundary after merging parcels, the highest permitted and projected heights shall apply to the entire building, providing the majority of building area is within the most liberal district, subject to design review considerations as applied through the design review process.

TABLE 4. BUILDING HEIGHTS

MC proposes the following revisions to the height table and exceptions.

Land Use Area	Building Levels	Maximum Permitted Ht.*	Maximum Projected Ht.*
PR Planning Areas(Figure 1)			
-Commercial /Retail Areas	1-2	25’	35’
-Gondola Building/ Skier Service	1-3	50’	85’
-Mixed Use Area	1-5	60’	80’
-Resort Lodging Area	1-7	75’	90’
-Mammoth Crossing Site 1[11]	1-7	68’	93’

[6] May need updating
[7] Decrease total by rooms allocated to MC site (9.28 acres x 48 rooms)
[8] Maximum rooms calculated at 3 rooms per unit, per Letter from Karen Johnston to Ward Jones, June 25, 2002
[9] Approved Tanavista/Lodestar TTM/Use Permit in 07
[10] All overall totals need updating

-Mammoth Crossing Site 2[12]	1-8	75’	95’’
-Mammoth Crossing Site 3[13]	1-7	76’	85’
-Mammoth Crossing Site 4[14]	1-6	65’	74’
Plaza Resort area (excluding PR Planning Areas)	1-4	50’	80’
RG-Resort General area	1-4	40’	50’
SL-Specialty Lodging area	1-4	40’	50’

* **e**.The plaza and parking garages shall be no more than 20 feet above natural grade at any point and shall be stepped, faced with storefronts or similarly treated to diminish the exposed height. A freestanding parking garage shall have a maximum building face height of 35 feet, with projections permitted up to 15 feet, subject to the Design Review process.

g. A single tower feature on the plaza on both the west and east side of the Pedestrian Core may exceed the maximum projected height and shall not be required to be balanced by a roughly equivalent reduction in building height, subject to approval through the Design Review process.

h. A single tower feature toward the southwest corner of Mammoth Crossing Site 1, as well as a single tower feature near the center of the south property line of Mammoth Crossing Site 1, as well as a single tower feature at the northeast corner of Mammoth Crossing Site 1 at the Whiskey Creek location may exceed the maximum projected height and shall not be required to be balanced by a roughly equivalent reduction in building height, subject to approval through the Design Review process.

i. A single tower feature toward the northwest corner of Mammoth Crossing Site 2, as well as a double tower feature on either site of the hotel entrance near the center of the north property line of Mammoth Crossing Site 2, as well as a double tower feature on either side of the hotel wings approximately the center of Mammoth Crossing Site 2, and a single tower over the retail buildings at the northwest corner of Mammoth Crossing Site 2 may exceed the maximum projected height and shall not be required to be balanced by a roughly equivalent reduction in building height, subject to approval through the Design Review process.

j. A single tower feature at the northwest corner of Mammoth Crossing Site 3, as well as a chimney feature near the center of Mammoth Crossing Site 3 may exceed the maximum projected height and shall not be required to be balanced by a roughly equivalent reduction in building height, subject to approval through the Design Review process.

k. Mammoth Crossing Site 4 may be constructed to approved heights (2007 Tanavista TTM/Use Permit).

[11] Whiskey Creek Site
[12] Church Site
[13] Ullr/White Stag Site
[14] Tanavista Site

6. Building Setbacks

MC proposes to add the following exceptions to section f:

f. Exceptions to the setbacks requirements in Table 5 are described as follows. The final determination for permitting exceptions shall be made by the Community Development Director if a supportable design rationale, such as an enhanced relationship to the street frontage, enhanced retail environment, enhanced pedestrian spaces, enhanced tree and landscaping provisions, offsetting building heights and setbacks in the vicinity or other design factors are provided along with the request for the exception.

a. For the area north of the Realigned Canyon Boulevard extending from 160 feet east of the Hillside Drive centerline to 260 feet east of the Hillside Drive centerline, setbacks shall be reduced 50%.

b. For the area west of Minaret Road, extending from 100 feet south of the existing Forest Trail centerline to 450 feet south of the centerline, setbacks for building heights over 24 feet shall be 15 feet.

c. For the area west of the realigned Berner Street, setbacks may be reduced by 50% along no more than 90 feet of contiguous road frontage.

d. <u>For Mammoth Crossing Site 1, setbacks along Lake Mary Road may range from 10' to 15' to allow street retail; setbacks along Canyon Road may range from 10 to 15 feet; setbacks along Minaret Road may remain at 0'[15]; and an 8' setback must be maintained along the northern property line.</u>

e. <u>For Mammoth Crossing Site 2, the setback along Lake Mary Road is 10' to allow street retail; the setback along Minaret Road is 10' to allow street retail and accommodation/residential; and a 25' setback must be maintained along the southern property line.</u>

f. <u>For Mammoth Crossing Site 3, the setback along Minaret is 12'; the setbacks along Main Street may range from 10' to 13'; the setback along the eastern property line is 24', and the setback along the eastern property line to the south of the new ROW is 40'.</u>

g. <u>For Mammoth Crossing Site 4, setbacks may be constructed as approved (2007 Tanavista TTM/Use Permit).</u>

TABLE 5: BUILDING SETBACKS FROM ROADWAYS AND SPECIFIC PLAN BOUNDARIES

Building Height	0-24'	25-34'	35-54'	55+
Setbacks from:				

[15] The existing Whiskey Creek building has a 0' setback.

Minaret	10’	20’	30’	40’
Lake Mary/Main	10’	20’	30’	40’
Canyon Blvd Realignment	10’	20’	30’	40’
Forest Trail	10’	20’	30’	40’
Hillside/Lakeview	10’	20’	30’	40’
Berner	10’	10’	20’	40’
Spec. Plan Boundaries	10’	10’	20’	40’

7. Driveway Access and Gradients

No amendments proposed

8. Minimum Parcel Size

No amendments proposed

9. Building Design

No amendments proposed

10. Roof Form and Ridge Alignment

No amendments proposed

11. Roof Design

No amendments proposed

12. Roof Materials

No amendments proposed to

13. Roof Appurtenances

No amendments proposed

14. Wall Surfaces

No amendments proposed

15. Doors and Windows

No amendments proposed

16. Wall Appurtenances

No amendments proposed

17. Color Palette

No amendments proposed

18. Signs

No amendments proposed

19. Pedestrian Walkways and Plaza Areas

No amendments proposed

20. Snow/Ice Removal and Storage

No amendments proposed

21. Lighting

No amendments proposed

22. Gates and Entrances

No amendments proposed

23. Walls and Fences

No amendments proposed

24. Site Furnishings

No amendments proposed

25. Pedestrian and Skier Bridges

No amendments proposed

26. Art/Events

No amendments proposed

27. Additional Development Standards

No amendments proposed

Grading Standards

No amendments proposed

Landscaping and Revegetation Standards

No amendments proposed

PUBLIC FACILITIES ELEMENT

No amendments proposed

TRANSPORTATION AND CIRCULATION ELEMENT

MC proposes the following amendments to Circulation policies

Circulation Policies

1. On-street parking shall be eliminated, except for chain-up zones, short-term parking, transit stops and service pullouts, and where on street parking is directly adjacent to a retail shopping area. Adequate off-street, structured parking will be required for each proposed development within North Village.

Proposed Circulation Improvements

MC is in accord with circulations improvements as directed by the TOML staff and approved by the Town. Amendments to the current NVSP Exhibits have been incorporated in the proposed exhibits at the end of this document.

TABLE 6: PARKING SCHEDULE FOR NORTH VILLAGE

No amendments proposed

9. Traffic Management and Signing

No amendments proposed

Circulation Standards

No amendments proposed

Specific Street Standards

TOML changes subsequent to the approval of this specific plan may need to be incorporated into this section.

Parking

No amendments proposed

Transit

No amendments proposed

Pedestrian, Bicycle, Skier Circulation

No amendments proposed

HOUSING ELEMENT

No amendments proposed

CONSERVATION AND OPEN SPACE ELEMENT

No amendments proposed

SAFETY ELEMENT

No amendments proposed

NOISE ELEMENT

No amendments proposed

PARKS AND RECREATION ELEMENT

No amendments proposed

Phasing

No amendments proposed

PROJECT IMPLEMENTATION AND FINANCING

No amendments proposed

PROJECT MAINTENANCE

No amendments proposed

ADMINISTRATIVE PROCEDURES

No amendments proposed

APPENDIX 1

DEFINITIONS

No amendments proposed