MAMMOTH LAKES
2005 PARKING STUDY

DRAFT REPORT

Prepared for the

Town of Mammoth Lakes

Prepared by

LSC Transportation Consultants, Inc.

TRANSPORTATION
CONSULTANTS, INC.

April 7, 2005

Mammoth Lakes 2005 Parking Study

DRAFT

Prepared for the

Town of Mammoth Lakes
437 Old Mammoth Road, Suite R
PO Box 1609
Mammoth Lakes, CA
760-934-8989

Prepared by

LSC Transportation Consultants
2690 Lake Forest Road
PO Box 5875
Tahoe City, CA 96145
530-583-4053

LSC#047760
April 7, 2005

TABLE OF CONTENTS

LIST OF TABLES

Table **Page**

LIST OF FIGURES

Figure **Page**

Chapter 1
INTRODUCTION

Providing the appropriate level and location of parking is important to any successful community, particularly a resort community such as Mammoth Lakes. While insufficient parking can result in impacts on properties and limit economic activity, providing too much parking is both expensive and can degrade the character of the community. This report updates the Mammoth Lakes Parking Study performed by LSC Transportation Consultants in 2000. The study is intended to evaluate parking demand versus supply for the commercial corridors along Old Mammoth Road, Main Street, and Minaret Road (including the new Village at Mammoth), and to identify recommended solutions to parking shortfalls. This study does not encompass other (largely residential) portions of the community, except in regards to park-and-ride demand.

First, existing parking supply and transportation conditions are discussed and a review of the Town of Mammoth Lakes parking code provided. The study area is then evaluated in 19 parking zones (15 zones from the previous study and 4 new zones which include the Village area). In addition to analyzing existing parking shortfalls, a "build out" scenario of parking issues in the 19 zones is presented. Next, an assessment of parking issues involving a shared parking analysis will be discussed. A review of public transit and park-and-ride activity parking needs is then provided. The final chapter presents conclusions and recommendations for a parking management plan.

Chapter 2
EXISTING CONDITIONS

Existing Transportation Conditions

This parking study area encompasses all commercial parcels located along Old Mammoth Road from Mammoth Creek Park north to Main Street, and on Main Street from Old Mammoth Road west to Canyon Boulevard, as seen in Figure 1. Build out of the Village at Mammoth project is assumed in the existing conditions portion of this study.

Roadways

Main Street (State Route 203), which runs east-west, is provided with two through lanes in each direction, with a center two-way left-turn lane from Sierra Park Road to the Post Office. Right turns are made from the outside through lanes. Traffic signals are provided at Old Mammoth Road on the east, Minaret Road, and a new signal is provided at Canyon Boulevard on the west; other intersections are controlled by Stop signs on the side street approaches. A two-way frontage road is provided along the majority of the roadway frontage on Main Street. The current speed limit is signed at 35 miles per hour in both directions.

Old Mammoth Road runs north-south and, like Main Street, provides access to much of the lodging and commercial development in the area. Old Mammoth Road has one travel lane in each direction and a two-way center continuous left-turn lane. The current speed limit is signed 25 miles per hour in both directions in the business district.

Public Transit

Public transit service already plays a very important role in the Mammoth Lakes area, providing a substantial proportion of the total access to the Mammoth Mountain Ski Area (MMSA). From approximately Thanksgiving to early May (depending on snow conditions), MMSA provides a fare-free general public fixed route transit service in the Town of Mammoth, providing service to MMSA facilities, all major lodging facilities, and the community's commercial zones. The service includes three different routes that operate during the day from approximately 7:00 A.M. to 5:30 P.M., seven days a week. The following routes are operated and shown in Figure 2:

- The **Red Line** serves Main Lodge, Minaret Road, The Village, Main Street, Old Mammoth Road and Chateau Road.

- The **Green Line** connects the downtown commercial core area with Eagle Lodge via Meridian Boulevard, and then travels along Majestic Pines Drive, Kelley Road, Lake Mary Road, and Canyon Boulevard to The Village.

- The **Orange Line** serves Tamarack Lodge and Lower Twin Lake. This route operates three times per day: 9:00 A.M., Noon, and 4:00 P.M. when Tamarack Lodge is open for skiing (approximately November 15th to April 1st).

FIGURE 1

MAMMOTH LAKES PARKING ANALYSIS ZONES

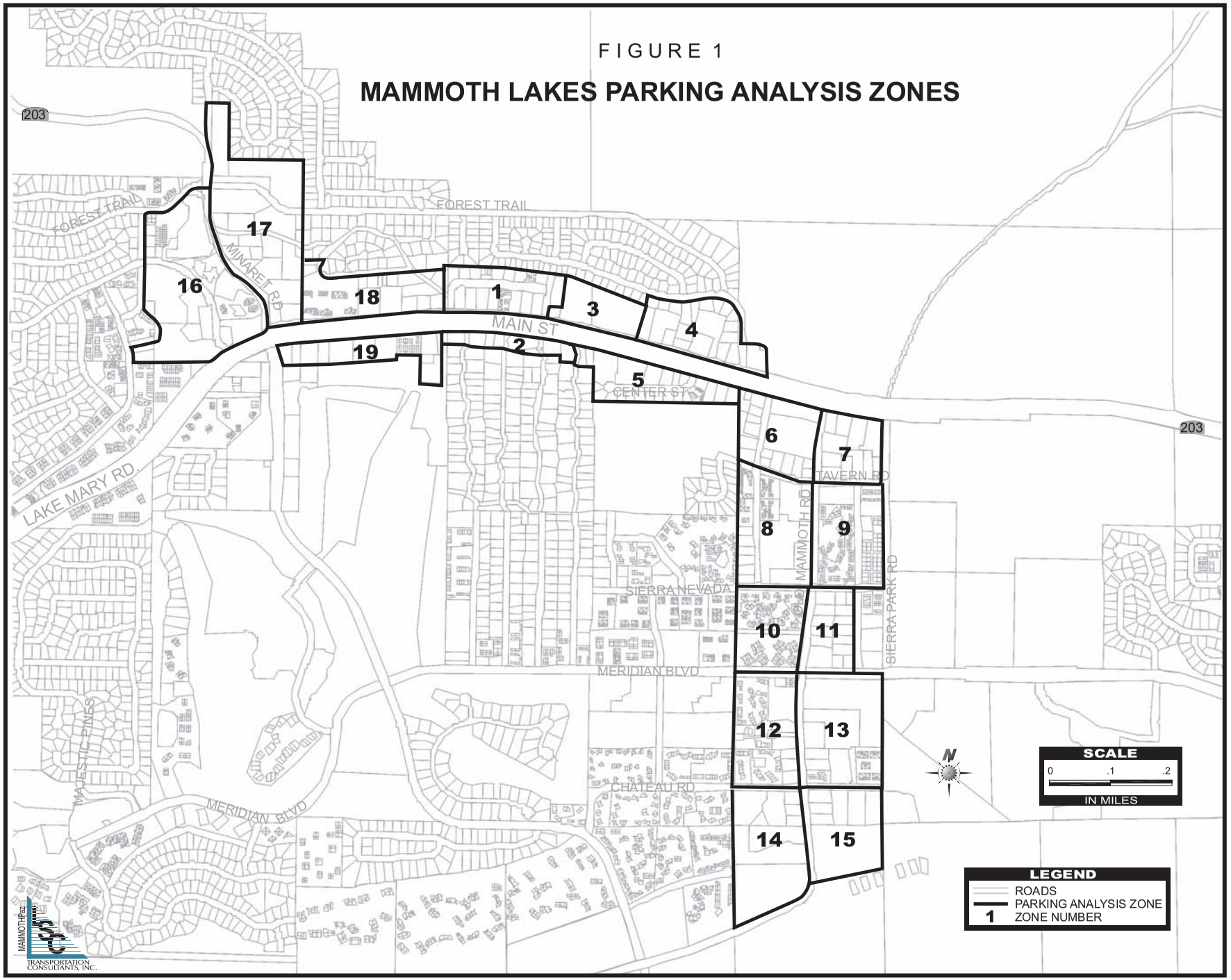
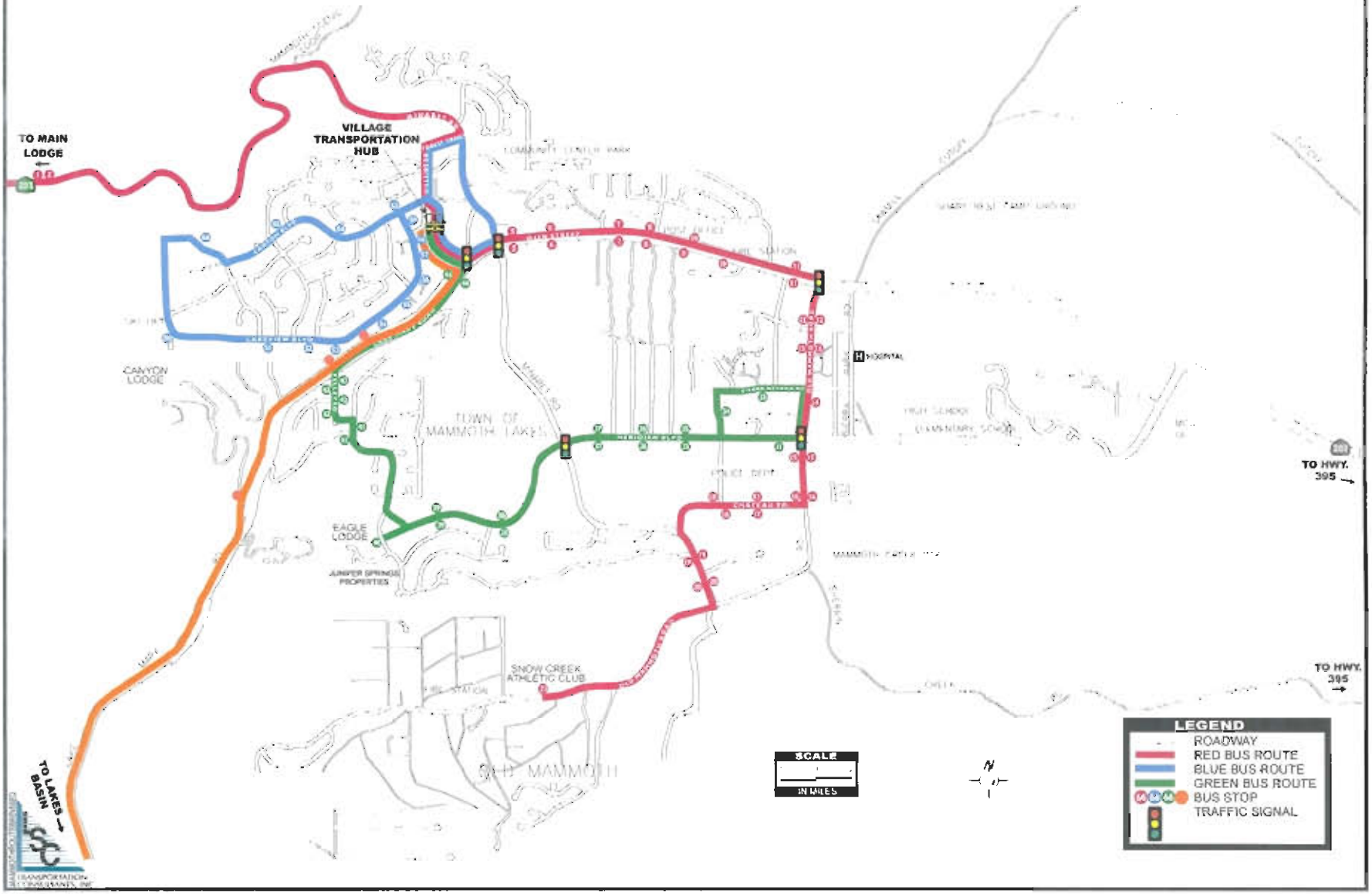


FIGURE 2

TOWN OF MAMMOTH LAKE BUS ROUTES



- Finally, the **Blue Line** serves the residential and lodging areas along Lakeview and Canyon Boulevard, connecting The Village with Canyon Lodge.

MMSA also operates winter evening transit service along the three shuttle routes (though the Red Route service is not operated between The Village and Main Lodge). Two buses are operated between 6:00 P.M. and 2:00 A.M.: one bus providing half-hourly service along the truncated Red Route and the second bus providing hourly service along both the Blue and Green Routes.

The Village Transportation hub, located on Minaret Road between Canyon Boulevard and Lake Mary Road serves as a transfer point for the three winter bus lines. Bays are provided for up to six buses at one time, as well as a passenger shelter. During the 2003-2004 ski season, 774,292 one-way passenger trips were made on the shuttle service of those trips 48,596 passenger trips were made on the evening transit service. Peak ridership occurs in the month of January with roughly 5,900 transit passenger-trips provided per day.

The Town contracts with Inyo Mono Transit for general public transit use. Inyo Mono Transit began operating a general public deviated fixed route service in the Town in May 2003. This bus route runs from May to November and is designed to compliment the existing winter shuttle service operated by MMSA. Buses operate on half-hour headways Monday through Friday (no service on weekends) from 7:00 A.M. to 7:00 P.M. During the 2002-2003 fiscal year, 9,372 passenger trips were carried on Inyo Mono Transit's Spring/Summer/Fall Mammoth route.

Inyo Mono Transit also operates the Mammoth Lakes Dial-A-Ride, providing on Mondays through Fridays between the hours of 7:30 A.M. and 5:00 P.M. The service area covers the majority of the Town, excluding the airport area and Main Lodge area. Fares are based on zones. Up to three vehicles are used for this service during peak times. A total of 16,246 passenger-trips were carried in Fiscal Year 2003-04.

Finally, the Town of Mammoth Lakes is currently planning to initiate a visitor shuttle program (operated by Inyo Mono Transit) starting in the summer of 2005. This service is planned to consist of a single theme vehicle operating largely along Main Street and Old Mammoth Road between the Village and Vons from 9:00 AM to 9:00 PM, seven days a week.

Existing Parking Supply

The first step in the analysis of a parking system is to collect data regarding the existing parking supply in the area. Except for the Village at Mammoth, where build out was assumed, any construction anticipated to be completed by the end of 2005 was considered to be existing land uses. The study area was divided into 19 different parking analysis zones, which are defined to roughly reflect how drivers would park on adjacent properties if any specific parking area is full, as shown in Figure 1. For instance, as drivers typically do not choose to park across a busy street from their destination, Main Street and Old Mammoth Road were used to define zone boundaries.

Land use data and parking space information for parcels located in Zones 1 through 15 was initially collected by LK Johnston and Associates for the Mammoth Lakes Parking Study in 2000. This information was updated by inventorying new building permits between 2000 to 2004 for any new developments within the original 15 zones. Parking space data for the new developments within these zones was collected by walking the parcels. The result of this data collection effort may be seen in Table 1-3 of Appendix A.

Tables 4 and 5 of Appendix A present existing parking supply for the new parking Zones 16 though 19. As the 2000 Mammoth Lakes Parking Study did not include any land use or parking data for these zones, original data was obtained from GIS maps, an aerial photo and by walking the study area. Portions of Zones 16 and 17 lie within the Village at Mammoth Specific Plan area. As the Village at Mammoth has been approved and is partially constructed, total buildout of the Village land uses according to the 2025 Existing General Plan was assumed within Zone 16 and 17 for this analysis. Table 4 of Appendix A summarizes data for buildout of the Village at Mammoth by Traffic Analysis Zone (TAZ) and lists land use data by parcel for all other development. A map of the TAZ's for the Mammoth Lakes area is shown in Figure 3. It should be noted that existing hotel units and parking spaces for the phase of the Village on the ground in 2005 were taken into account and are located in TAZ #234.

Several assumptions were made in determining land uses and parking supply at buildout of the Village at Mammoth.

- The 2025 Existing General Plan provides land uses in room equivalents. Per the Gondola Village Master Plan (1998), an average of 1.6 rooms per unit was assumed for all hotel/residential development in the Village.

- According to the Development Agreement between Intrawest and the Town, Intrawest is not required to provide parking for the commercial land uses in the Village. The elimination of the parking requirement was allowed because of the "captive" shoppers and visitors staying at the village plans to provide improved transit and air service in the future. For this study, it was assumed that Intrawest would only provide the number of hotel parking spaces required by the parking schedule for the Village at Mammoth Specific Plan area, presented in Table 1. In other words, parking supply for the future phases of the Village at Mammoth reflects only parking for hotel/residential uses and parking required reflects both hotel/residential and commercial uses.

- In determining required parking for future phases of the Village, it was assumed that the proportion of studio, one-bedroom and three bedroom units in the future phases of the Village would be similar to the proportion of types of units in the existing Village.

- It was assumed that the developer would provide the required amount of disabled spaces as per the Americans with Disabilities Act Accessibility Guidelines shown in Table 2.

The Town maintains a Park and Ride lot on Tavern Road and Sierra Manor Road (Zone 9). Including street parking on Tavern and Sierra Manor, 100 spaces are available. Parking is also available year round from 6:00 A.M. to 2:00 A.M. along the Main Street frontage road (65

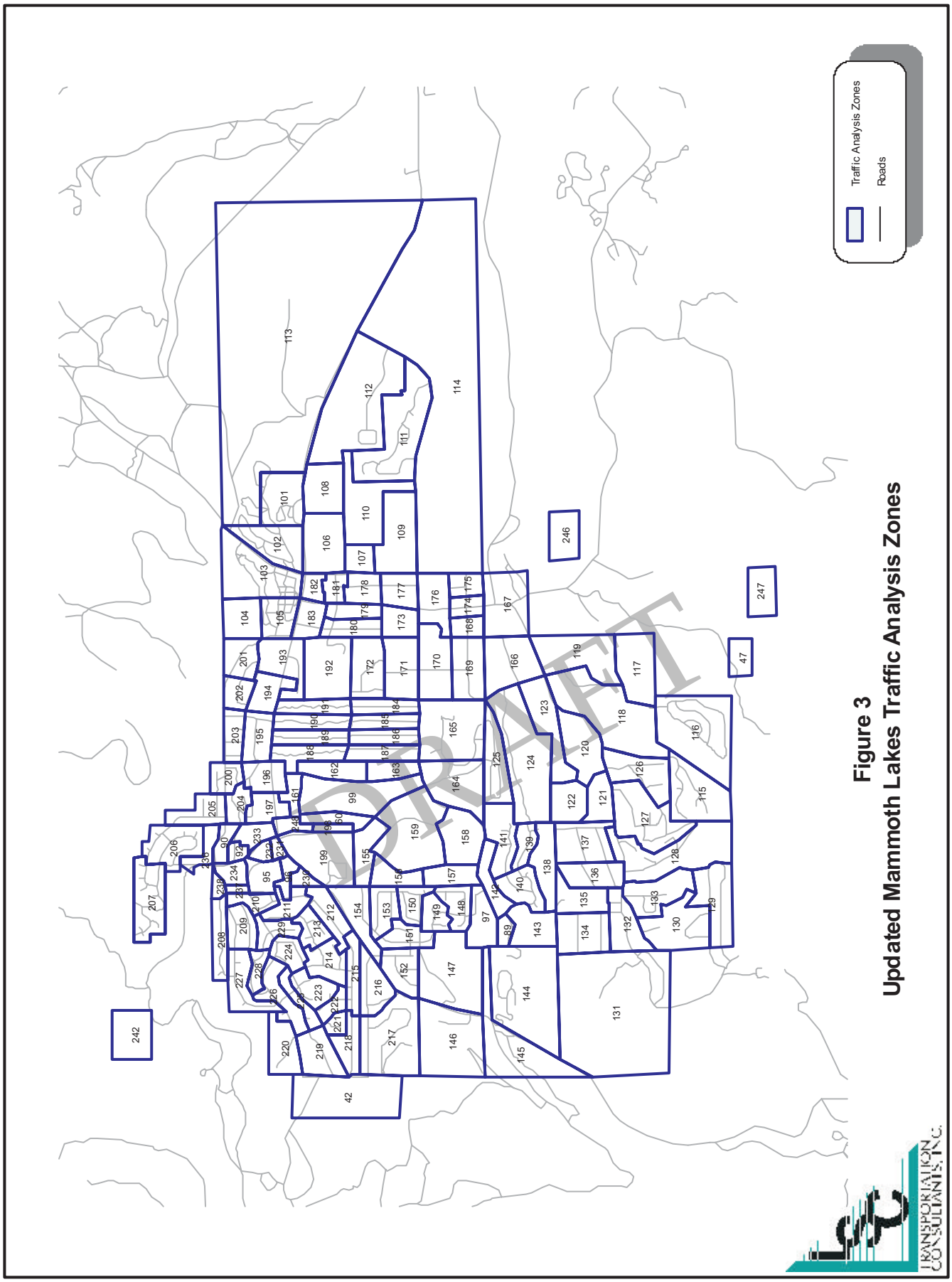


Figure 3
Updated Mammoth Lakes Traffic Analysis Zones

Table 1: Parking Schedule for the Village at Mammoth Specific Plan Area

Land Use	**# of spaces per unit**
Resort Condominiums, multi-family and transient uses of more than 50 units, which have a lobby or on-site management, common parking, and may have an accessory recreation amenity, meeting room(s), retail use, or restaurant which is oriented to the guest of the project	1 space per Studio/1 bedroom unit 1 space per 2 bedroom unit 1.5 spaces per 3+ bedroom unit[1]
Average required parking spaces per resort condo unit [2]	*1.0525 Spaces per Unit*
Affordable Housing	.25 spaces per bed in dorm unit 1 space per Studio/1 bedroom unit 1.5 spaces per 2 bedroom unit 2 spaces per 3 bedroom unit
Retail/Restaurant/Office/Conference/Theaters (includes employee parking) in Plaza Resort district	3.5 spaces per KSF excluding toilet rooms and mechanical rooms

Note 1: When 3 bedroom units make up less than 15% of the total number of units.

Note 2: Based on existing Village unit types.

Source: Parking Schedule for North Village Specific Plan Area

2004 TOML building footprint update v2.xls

Table 2: ADAAG Requirements for Accessibility of Parking Spaces*

*For most uses

Total Parking Spaces in Lot		Minimum Number of Accessible Spaces
1	25	1
26	50	2
51	75	3
76	100	4
101	150	5
151	200	6
201	300	7
301	400	8
401	500	9
501	1000	2 percent of total
1001	and over	20, plus 1 for each 100 over 1,000

Total Disabled Parking Spaces in Study Area:	106
Disabled Spaces Required in Study Area (1):	161
Disabled Spaces Deficit:	-55

Note 1: Required disabled spaces is based upon a per zone basis.

Source: Americans with Disabilities Act Accessibility Guidelines

2004 TOML building footprint update v2.xls

spaces in Zone 5 and 33 spaces in Zone 4). Eighteen 30-minute parking spaces are available on the west side of Minaret adjacent to the existing Village buildings. It is anticipated there will be an equivalent number of parking spaces on the east side of Minaret Road. These additional parking spaces were included in the existing parking analysis.

Based on the data presented in the Appendix A, the study area encompasses a total of 6,833 existing parking spaces. It should be noted that due to the timing of this study, the consultant performed the "walk through" of the parking zones in January; therefore the number of spaces could be underestimated due to snow coverage. Of these spaces only 106 or 1.6 percent, are designated as disabled spaces. The American with Disabilities Act Accessibility Guidelines (ADAAG) requirements for disabled parking accessibility is shown in Table 2. If these guidelines are followed for each individual parking analysis zone and its existing parking supply, a total of 161 spaces would be required, suggesting a disabled space shortfall of 55 spaces within the study area.

Review of Existing Town of Mammoth Lakes Parking Code

The Town of Mammoth Lakes parking requirements according to the Municipal Code is presented in Tables 3 - 5. As part of this study, LSC conducted a review of these existing requirements. In 1991, the American Planning Association (APA) compiled a survey of parking standards by land use throughout the United States. A comparison of parking requirements collected by APA and parking requirements according to the Town's municipal code yields the following:

- For the most part, Mammoth parking requirements are within the "ball park" of other municipalities parking codes, with a substantial number of other jurisdictions requiring either more or less parking.

- Parking requirements for single-family residences in Mammoth were slightly higher than those surveyed by APA. Most codes require only two spaces per dwelling units instead of three spaces per dwelling unit in Mammoth. Given the infeasibility of on-street parking during the winter months in Mammoth Lakes, however, the existing standard is appropriate.

- In some cases other parking codes use different specifications for determining parking requirements; for example: spaces per chair/seat for a beauty shop, dental office, or church instead of spaces per square foot or spaces per employee instead of or in addition to spaces per square foot. These methods may produce a more appropriate parking standard for these land uses.

- Town parking requirements for car washes and bowling alleys are at the low end of the range of the parking codes surveyed.

TABLE 3 : Mammoth Lakes Residential Parking Codes

Residential Land Use	# spaces per unit	unit [1,2]	notes
Single-family residences	3	residence	
	1	KSF > 3	
Multiple-family residences	1	one bedroom unit	
	2	two or three bedroom unit	
	3	four or more bedroom unit	plus
	2 guest	for each four units up to twelve units	plus
	1 guest	for each four units for the thirteenth to forty-eighth unit	plus
	1 guest	for each additional six units above forty-eight	
Hotels and motels	1	guest room	plus
	2	resident manager unit	plus
	1	20 units	
Commercial nursery	1	staff member	plus
	1	10 students	

Note 1: s.f. = square feet

Note 2: KSF = 1,000 square feet

2004 TOML building footprint update v2.xls

TABLE 4 : Mammoth Lakes Commercial Parking Codes

Commercial Land Use	# spaces per unit	unit [1,2]	notes
Churches and lodges	1	50 feet of gross floor area	
Places of assembly	1	50 s.f. floor area	
Vehicle sales or rental	1	500 s.f. sales and display area	no less than 5 spaces
Bank	1	200 s.f. floor area	
Barber or beauty shop	1	200 s.f. floor area	
Bowling alleys	3	alley	
Car wash	1	two bays	
Nursery school	2	school	plus
	1	every 5 students	
Food store or supermarket	1	150 s.f. floor area	
Furniture and appliance store	1	750 s.f. floor area	
Government uses	1	200 s.f. floor area	plus
	1	government vehicle on site	
Hospital	3	patient bed	
Libraries	2	library	plus
	1	300 s.f. floor area	
Medical or dental office	1	150 s.f. floor area	
Nightclubs	1	20 s.f.floor area	
Plant nursery	3	nursery	plus
	1	1,000 s.f. sales/display area	
Professional office	1	250 s.f floor area	
Real estate office	1	150 s.f. floor area	
Recreation, amusement	1	150 s.f. floor area	
Retail	1	250 s.f. floor area	
Restaurant	1	three seats	or
	1	50 s.f. seating area	
Restaurant - fast food	1	85 s.f. floor area	no less than 10 spaces
Self-service use, such as laudromat	1	200 s.f. floor area	
Service use such as catering or dry cleaning	1	400 s.f. floor area	
Service station, auto repair	5	bay	no less than 5 spaces
Specialty foods	1	150 s.f. business area	or (> of two)
	1	3 seats	
Warehouse, distribution, or storage	1	2,000 s.f. floor area	for first 20,000 s.f.
	1	4,000 s.f. floor area	thereafter

Note 1: s.f. = square feet

Note 2: KSF = 1,000 square feet

2004 TOML building footprint update v2.xls

TABLE 5 : Mammoth Lakes Industrial Parking Codes

Industrial Land Use	# spaces per unit	unit [1,2]	notes
Office and non-storage space	1	600 s.f. floor area	plus
	1	company vehicle	
Work/shop area	1	600 s.f. floor area	
Mini/personal storage	2	facility	plus
	1	20 units (above 1st 20)	unless 30' wide aisle
Business storage	1	2,000 square feet	
Outdoor Uses	1	3,000 s.f. of lot area	
Vehicle repair/storage	1	vehicle	plus
	1	employee	
Sales/display area	1	250 s.f. floor area	
All uses receiving regular deliveries	1	loading space	

Note 1: s.f. = square feet

Note 2: KSF = 1,000 square feet

2004 TOML building footprint update v2.xls

- For night club uses, the Town code had a substantially greater parking requirement than the other areas who responded to the survey. One space per 50 square feet open to the public or one space per every four seats are typical requirements. LSC would suggest that the existing requirement of one space per 20 square feet be changed to one space per 50 square feet.

- In Mammoth Lakes, a real estate office is required to provide one parking space per 150 square feet of floor area. The APA survey did not include parking requirements for a real estate office specifically. Professional office requirements in Mammoth were within the wide range of parking codes surveyed by APA, but the largest parking requirement in the survey was 1 space per 200 square feet of office. LSC would suggest that the existing requirement of one space per 150 square feet be changed to one space per 200 square feet

As shown in Table 1, the Town has adopted a separate parking schedule for the Village Specific Plan Area. In 1998, Intrawest-Mammoth developed a study of parking requirements at other Intrawest resorts such as Whistler, Keystone, and Mont Tremblant. Requirements for condo/hotel units are in line with the other resorts with one space per small dwelling unit required up a maximum of two spaces per dwelling unit. Commercial/retail/restaurant parking requirements in Mammoth are also similar to these other resorts. The Village Specific Plan parking requirements therefore are appropriate.

Existing Parking Demand – Not Adjusted for Shared Parking

Using the existing Town parking requirements and the inventory of existing land use, the parking demand of each individual land use within each zone was calculated. Table 6 presents the results of this analysis, by zone. Note that this analysis identifies the total parking required at any time of day for each land use, and does not reflect the shared use of parking spaces.

Based upon the Mammoth Lakes Municipal Code (Tables 3-5) and the Parking Schedule for the Village at Mammoth (Table 1), 7,850 spaces are required for all commercial and residential land uses in the study area. In an effort to determine total demand for parking in the Village at Mammoth area, "required parking" includes both the number of residential/hotel spaces and commercial spaces required by the parking schedule for the Village at Mammoth Specific Plan area. Tables 1 and 2 in Appendix B summarize existing parking supply and parking required by code for each land use type. Of these total required spaces, 31.4 percent is generated by hotel/motel uses, 30.4 percent by retail uses, 14.4 percent by multi-family residences, 9.4 percent by restaurants, and 4 percent by professional offices. A closer look at multi-family residence parking demand shows that only 73 percent of required spaces is provided in the study area.

As shown in Table 6 and Figure 4, the majority of zones are lacking in adequate parking supply as determined by the Town's municipal code. The largest parking shortfall is in Zone 12, which lies on the west side of Old Mammoth Road between Meridian Boulevard and Chateau Road. The zone contains a mixture of retail, restaurant and office uses located in the Sierra Center Mall, most of which contribute to the parking shortfall. The next largest parking deficit occurs in Zones 16 and 17, which comprise the existing and future phases of the Village at Mammoth. As stated above, the developer is not required to provide parking spaces for commercial uses within the Village, so much of the parking shortfall in Zone 16 and 17 includes commercial parking. At present, a temporary parking lot, located east of Minaret, provides much of the parking needed for the existing retail uses in Zone 16. Because this lot will eventually be developed as part of future phases of the Village, parking spaces in this lot were not included in the parking supply for Zone 16. Zone 13 also shows a large parking deficit. This area contains the Sherwin Plaza III commercial building.

Please note that the described parking shortfalls do not take into account permitted adjustments, or shared parking agreements. Therefore, this study should not be used to determine the degree to which specific parcels or business owners are meeting the current code requirements. Instead this analysis is intended to determine the areas in Mammoth Lakes that are most lacking in parking supply and would most benefit from new parking facilities. In particular, this study intends to identify the number of spaces needed to accommodate the retail/commercial uses in the Village at Mammoth.

Existing Shared Parking Demand

In addition to assessing the total parking supply and demand of the study area, it is essential to understand the parking demands of individual land uses and how they relate to each other over the course of a peak day. This can be done with a "shared parking" analysis. Shared parking is

Insert Table 6

TABLE 6: Existing Parking Supply and Demand by Zone - Without Shared Parking Reduction

Parking Zone	Zone Description	Existing Parking: Striped Parking	Disabled Spaces	Loading Spaces	Other/ Undes-ignated	Total Parking	Parking Required by Code	Existing Minus Code	Percent of Code Provided
1	N. of Main, West	135	1	0	53	189	269	-80	70.3%
2	S. of Main, West	85	1	0	23	109	139	-30	78.4%
3	N. of Main, Central	179	11	0	3	193	183	10	105.5%
4	N. of Main, East	130	4	0	111	278	242	36	114.9%
5	Center Street Area	271	2	6	75	419	412	7	101.7%
6	Gateway Center Area	359	3	0	63	425	493	-68	86.2%
7	Main/Sierra Park/Tavern/OMR	108	4	0	123	275	268	7	102.6%
8	Tavern/OMR/Sierra Nevada/Laurel Mtn.	406	12	0	206	584	690	-106	84.6%
9	Tavern/Sierra Park/Sierra Nevada/OMR	80	0	0	183	363	204	159	177.9%
10	Sierra Nevada/OMR/Meridian/Laurel Mtn.	0	0	0	305	305	183	122	166.7%
11	Sierra Nevada/Sierra Manor/Meridian/OMR	641	19	8	97	765	818	-53	93.5%
12	Meridian/OMR/Chateau West	254	5	8	113	380	642	-262	59.2%
13	Meridian/OMR/Chateau East	257	8	1	75	341	507	-166	67.3%
14	Chateau/OMR/Mammoth Creek West	54	2	0	82	138	134	4	103.0%
15	Chateau/OMR/Mammoth Creek East	64	0	0	51	115	120	-5	95.8%
16	Village at Mammoth West of Minaret	928	18	3	45	994	1,245	-251	79.9%
17	Village at Mammoth East of Minaret	351	11	0	101	481	714	-233	67.4%
18	N. of Main, West of Mountain	60	1	1	220	282	288	-6	97.9%
19	N. of Sierra Star Golf, South of Main	85	4	1	125	215	299	-84	71.9%
Total		4,447	106	28	2,054	6,851	7,850	-999	87.3%
		64.9%	1.5%	0.4%	30.0%	100.0%			

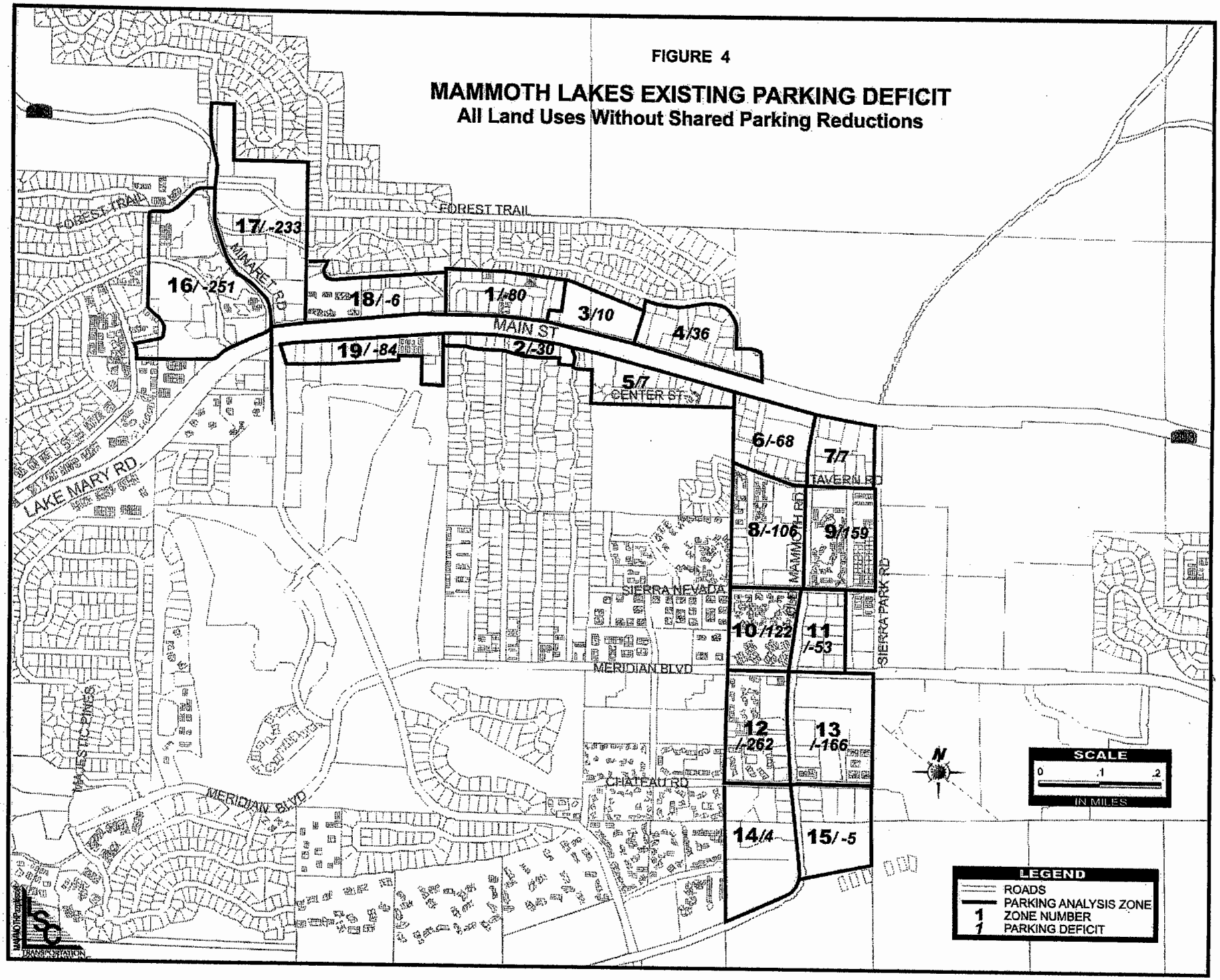
Source: LSC, Inc.

2004 TOML building footprint update.xls

FIGURE 4

MAMMOTH LAKES EXISTING PARKING DEFICIT

All Land Uses Without Shared Parking Reductions



defined as parking facilities that can be used to serve two or more individual land uses without conflict or encroachment. Shared parking may be implemented if there is variation in the peak accumulation of parked vehicles for different nearby land uses by hour, day, or season, or if people are attracted to two or more land uses on a single auto trip. For instance, office uses (with a peak in parking needs during the day) can share parking with a nightclub (with an evening peak in parking needs), thereby reducing the overall number of requires spaces.

Based upon accumulation data collected across the country, the Urban Land Institute has identified percentages of peak parking demand ratios by hour for the following land use types: Office, Retail, Restaurant, Cinema, and Residential. The percent of peak parking demand was determined for both weekdays and Saturdays by ULI. Since the percentages developed by ULI correspond to parking in urban areas, these percentages were adjusted to reflect hourly parking demand on a peak winter Saturday and peak winter weekday in Mammoth Lakes.

Percentages developed in previous LSC studies, specifically the "Snowmass Center Redevelopment" and "Mammoth Sierra Center Mall Shared Parking" projects, as well as LSC's knowledge of similar resort communities, were used to make these adjustments. The results are presented in Table 7.

The shared parking analysis included the following assumptions:

- Motels and hotels are not appropriate candidates for shared parking in Mammoth Lakes, as a substantial number of guests generally keep their vehicles parked at lodging properties during the day, preferring to use the transit system to access the ski area. As a result, they were not included in the shared parking analysis.

- For the same reason, residential land uses were not included in the shared parking analysis. Therefore, it is assumed that lodging and residential facilities are responsible for providing appropriate supply of parking spaces for individual land use needs.

- Other land uses such as Service Station/Auto Repair and institutional land uses such as Nursery Schools, Fire and Police Department were assumed to not include the possibility of shared parking.

- Separate accumulation data was used to represent weekday and Saturday parking accumulation.

- According to results of the ULI study, the percentage of peak restaurant parking accumulation is greater on a weekday morning than on a Saturday morning. Due to the nature of a primarily weekend resort town, restaurant parking accumulation in Mammoth is assumed to be greatest on a Saturday, so the larger percentages (restaurant weekday) were used for the Saturday shared parking analysis. Weekday restaurant parking accumulation in Mammoth is assumed to be 90 percent of Saturday parking accumulation.

- Weekday parking demand for both Specialty Food and Fast-Food Restaurants was assumed to be 90 percent of Saturday parking demand for these land uses.

Table 7: Estimated Percent of Peak Parking Ratio by Hour

Land Use		6 AM	7 AM	8 AM	9 AM	10 AM	11 AM	Noon	1 PM	2 PM	3 PM	4 PM	5 PM	6 PM	7 PM	8 PM	9 PM	10 PM	11 PM	Midnight
Office	Weekday	3.3%	20.0%	63.3%	93.3%	100.0%	100.0%	90.0%	90.0%	96.7%	93.3%	76.7%	46.7%	23.3%	6.7%	6.7%	3.3%	3.3%	0.0%	0.0%
	Weekend	0.0%	6.7%	21.1%	31.1%	33.3%	33.3%	30.0%	30.0%	32.2%	31.1%	25.6%	15.6%	7.8%	2.2%	2.2%	0.0%	0.0%	0.0%	0.0%
Retail	Weekday	0.0%	7.9%	18.4%	35.0%	60.0%	68.0%	75.0%	75.0%	75.0%	75.0%	65.0%	60.0%	63.0%	68.0%	63.0%	40.0%	25.0%	13.2%	0.0%
	Sat <500 KSF	0.0%	7.9%	18.4%	35.0%	60.0%	75.0%	85.0%	90.0%	100.0%	100.0%	90.0%	70.0%	63.0%	68.0%	63.0%	40.0%	37.5%	12.5%	0.0%
Restaurant	Weekday	0.0%	2.3%	4.5%	9.0%	18.0%	27.0%	45.0%	63.0%	54.0%	54.0%	45.0%	63.0%	81.0%	90.0%	90.0%	90.0%	81.0%	63.0%	45.0%
	Weekend	0.0%	2.5%	5.0%	10.0%	20.0%	30.0%	50.0%	70.0%	60.0%	60.0%	50.0%	70.0%	90.0%	100.0%	100.0%	100.0%	90.0%	70.0%	50.0%
Real Estate	Weekday	3.3%	20.0%	63.3%	85.0%	100.0%	100.0%	100.0%	100.0%	100.0%	93.3%	76.7%	46.7%	23.3%	6.7%	6.7%	3.3%	0.0%	0.0%	0.0%
	Saturday	3.3%	20.0%	63.3%	85.0%	100.0%	100.0%	100.0%	100.0%	100.0%	93.3%	76.7%	46.7%	23.3%	6.7%	6.7%	3.3%	0.0%	0.0%	0.0%
Specialty Food	Weekday	0.0%	4.5%	13.5%	40.5%	58.5%	72.0%	90.0%	72.0%	58.5%	36.0%	45.0%	90.0%	90.0%	72.0%	54.0%	36.0%	27.0%	9.0%	0.0%
	Saturday	0.0%	5.0%	15.0%	45.0%	65.0%	80.0%	100.0%	80.0%	65.0%	40.0%	50.0%	100.0%	100.0%	80.0%	60.0%	40.0%	30.0%	10.0%	0.0%
Industrial Office/	Weekday	3.3%	20.0%	63.3%	93.3%	100.0%	100.0%	90.0%	90.0%	96.7%	93.3%	76.7%	46.7%	23.3%	6.7%	6.7%	3.3%	3.3%	0.0%	0.0%
	Saturday	1.7%	10.0%	31.7%	46.7%	50.0%	50.0%	45.0%	45.0%	48.3%	46.7%	38.3%	23.3%	11.7%	3.3%	3.3%	1.7%	1.7%	0.0%	0.0%
Dry Clean	Weekday	0.0%	0.0%	18.4%	35.0%	60.0%	68.0%	75.0%	75.0%	75.0%	75.0%	65.0%	60.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Saturday	0.0%	0.0%	18.4%	35.0%	60.0%	68.0%	75.0%	75.0%	75.0%	75.0%	65.0%	60.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Plant Nursery	Weekday	0.0%	7.9%	18.4%	35.0%	60.0%	68.0%	75.0%	75.0%	75.0%	75.0%	65.0%	60.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Saturday	0.0%	7.9%	18.4%	35.0%	60.0%	75.0%	85.0%	90.0%	100.0%	100.0%	90.0%	70.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Bank	Weekday	0.0%	5.0%	20.0%	93.3%	100.0%	100.0%	90.0%	90.0%	96.7%	93.3%	76.7%	46.7%	5.0%	5.0%	5.0%	5.0%	5.0%	0.0%	0.0%
	Saturday	0.0%	5.0%	10.0%	30.0%	45.0%	60.0%	66.6%	66.6%	60.0%	40.0%	10.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	0.0%	0.0%
Fast-Food	Weekday	0.0%	4.5%	13.5%	40.5%	58.5%	72.0%	90.0%	72.0%	58.5%	36.0%	45.0%	90.0%	90.0%	72.0%	54.0%	36.0%	27.0%	9.0%	0.0%
	Saturday	0.0%	5.0%	15.0%	45.0%	65.0%	80.0%	100.0%	80.0%	65.0%	40.0%	50.0%	100.0%	100.0%	80.0%	60.0%	40.0%	30.0%	10.0%	0.0%
Laundry	Weekday	0.0%	7.9%	18.4%	35.0%	60.0%	68.0%	75.0%	75.0%	75.0%	75.0%	65.0%	60.0%	63.0%	68.0%	63.0%	40.0%	25.0%	13.2%	0.0%
	Saturday	0.0%	7.9%	18.4%	35.0%	60.0%	75.0%	85.0%	90.0%	100.0%	100.0%	90.0%	70.0%	63.0%	68.0%	63.0%	40.0%	37.5%	12.5%	0.0%
Medical/Dental	Weekday	0.0%	10.0%	63.3%	93.3%	100.0%	100.0%	90.0%	90.0%	96.7%	93.3%	76.7%	46.7%	23.3%	5.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Saturday	0.0%	2.5%	15.8%	23.3%	25.0%	25.0%	22.5%	22.5%	24.2%	23.3%	19.2%	11.7%	5.8%	1.3%	0.0%	0.0%	0.0%	0.0%	0.0%
Church	Weekday	0.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Saturday	0.0%	0.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Theater	Weekday	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	8.5%	28.1%	38.3%	38.3%	38.3%	38.3%	70.8%	70.8%	85.0%	85.0%	85.0%	70.8%	56.7%
	Saturday	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	10.0%	33.0%	45.0%	45.0%	45.0%	45.0%	83.3%	83.3%	100.0%	100.0%	100.0%	83.3%	66.7%
Barber/Beauty	Weekday	0.0%	0.0%	18.4%	35.0%	60.0%	68.0%	75.0%	75.0%	75.0%	75.0%	65.0%	60.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Saturday	0.0%	0.0%	18.4%	35.0%	60.0%	75.0%	85.0%	90.0%	100.0%	100.0%	90.0%	70.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Government Uses	Weekday	3.3%	20.0%	63.3%	93.3%	100.0%	100.0%	90.0%	90.0%	96.7%	93.3%	76.7%	46.7%	23.3%	6.7%	6.7%	3.3%	3.3%	0.0%	0.0%
	Saturday	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Library/Community Center	Weekday	0.0%	0.0%	35.0%	45.0%	55.0%	68.0%	75.0%	75.0%	75.0%	75.0%	65.0%	60.0%	63.0%	35.0%	10.0%	0.0%	0.0%	0.0%	0.0%
	Saturday	0.0%	0.0%	20.0%	35.0%	60.0%	75.0%	85.0%	90.0%	100.0%	85.0%	65.0%	60.0%	45.0%	25.0%	10.0%	0.0%	0.0%	0.0%	0.0%
Park	Weekday	2.5%	5.0%	12.5%	17.5%	25.0%	37.5%	50.0%	50.0%	37.5%	25.0%	17.5%	7.5%	2.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Saturday	5.0%	10.0%	25.0%	35.0%	50.0%	75.0%	100.0%	100.0%	75.0%	50.0%	35.0%	15.0%	5.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Source: "Shared Parking", Urban Land Institute, 1983, "Snowmass Center Redevelopment", "Mammoth Sierra Center Mall Shared Parking", LSC.

- Very few adjustments from the ULI data were made to the percentage of retail peak parking demand in Mammoth. The peak hour for retail parking occurs between 2 PM and 3 PM.

- Peak parking demand for dry cleaning establishments was assumed to equal weekday retail parking demand between the hours of 8:00 A.M. and 5:00 P.M. on both weekdays and Saturdays. Parking accumulation at self-service laundromats was assumed to be the same as retail parking accumulations for both weekdays and Saturdays.

- It was assumed that a plant nursery would follow the same parking accumulation patterns as retail uses between the hours of 7:00 AM and 5:00 PM and barber/beauty shops would follow retail parking accumulation between the hours of 8:00 AM and 5:00 PM. No parking accumulation was assumed for these land uses in other hours.

- The ULI data indicates that Saturday peak parking needs of professional office space is one-sixth that of a weekday. Because Mammoth is a weekend resort community, it was assumed that the percentage of peak parking demand for office uses on a Saturday would be one-third that of peak weekday demand.

- Weekday and Saturday parking accumulation for a real estate office was assumed to be very similar to professional office weekday accumulations.

- Parking demand in the industrial office land use category was assumed to be the same as professional office weekday demand. Saturday parking demand for industrial offices was assumed to be half of weekday demand. These percent peak parking accumulations were also used for the warehouse, distribution, storage land use category.

- Bank peak parking accumulation is assumed to be similar to professional office parking accumulation during normal weekday banking hours. Because residents of resort communities and local merchants tend to do their banking during the week when business is slower, it is assumed for this analysis that only two-thirds of typical peak bank parking accumulation will occur during the noon and 1 PM hour on Saturday. It was also assumed that ATM patrons would demand 5 percent of peak bank parking during the 7:00 A.M. hour and after the bank closes until 10:00 P.M.

- Weekday parking demand for medical/dental offices was assumed to be similar to professional office parking demand. Saturday parking demand was assumed to be one quarter of weekday demand.

- The government uses in Sierra Center Mall include courtrooms and associated offices that would rarely be in use on a Saturday, therefore zero percent of peak parking demand is assumed for this use on a Saturday. Professional office weekday demand is assumed for government uses during the week.

- The Mammoth Lakes Lutheran Church closes two thirds of their parking lot from 7:30 A.M to 5:30 P.M. on weekdays, as it serves as the playground for the preschool.

- It was assumed that evening theater parking accumulation for Mammoth would be very similar to parking accumulation stated in the ULI report, with 100% of the peak parking ratio occurring between the hours of 8 PM and 10 PM on a Saturday. However, morning theater peak percentages were reduced due to the fact that outdoor sports are the main attraction in Mammoth, so it can be assumed that relatively few tourists spend the winter daylight hours in a movie theater. As per the ULI report, weekday theater parking accumulation was assumed to be 85 percent of Saturday parking accumulation.

- As ULI did not survey public parks, libraries, or community centers, peak parking accumulation was estimated based on the hours of operation and types of activities at the site.

- In zones where certain land use relationships such as a hotel and a nearby restaurant or an apartment building and a nearby laundromat potentially produce a reduction in parking demand, a five percent reduction in the effective size of the land use was taken. This is referred to as a "captive market" reduction. A 30 percent "captive market" reduction was applied to the retail uses in the Village at Mammoth, as it was assumed that many of the Village condo residents would walk to the shops and restaurants in the Village. This figure was based upon an evaluation of the relative traffic generation of the residential vs. commercial portions of the Village, and the expected level of patronage of Village commercial development by residents of the development.

- In addition, the Village is effectively the center of the local transit program. In light of the relatively high proportion of total travel carried by transit in the peak winter season, it is conservatively estimated that 10 percent of non-walk trips are made to and from the Village commercial land uses by transit.

The results of the shared parking analysis may be seen in Figure 5 and Table 8. The shared parking analysis for each parking analysis zone may be seen in greater detail in Appendix C. The results show that much of the study area has adequate parking, so long as different land uses are willing to share parking spaces. Of course, in order to establish shared parking agreements, they would have to meet town code requirements or an amendment would be needed. Therefore, the shared parking analysis is a "best case scenario".

It should also be noted that the shared parking analysis summarized in Table 8 and Figure 5 considers only those land uses (largely commercial) for which shared parking is a feasible option. It therefore excludes both parking supply and parking demand for land uses such as residential, lodging, and fire/police stations for which shared parking is not feasible.

The shared parking analysis tables in Appendix C demonstrate that the parking demand in Mammoth is greatest on a Saturday. This is due to the high number of tourists visiting the ski resort on weekends. As demonstrated in Table 8, the shared parking effectively "generates" 934 new spaces in the period of peak parking need, giving the total study area a parking surplus of 183 spaces. The area that most benefits from shared parking is Zone 12 (includes the Sierra Center Mall) where shared parking reduces the overall parking need by 216 spaces.

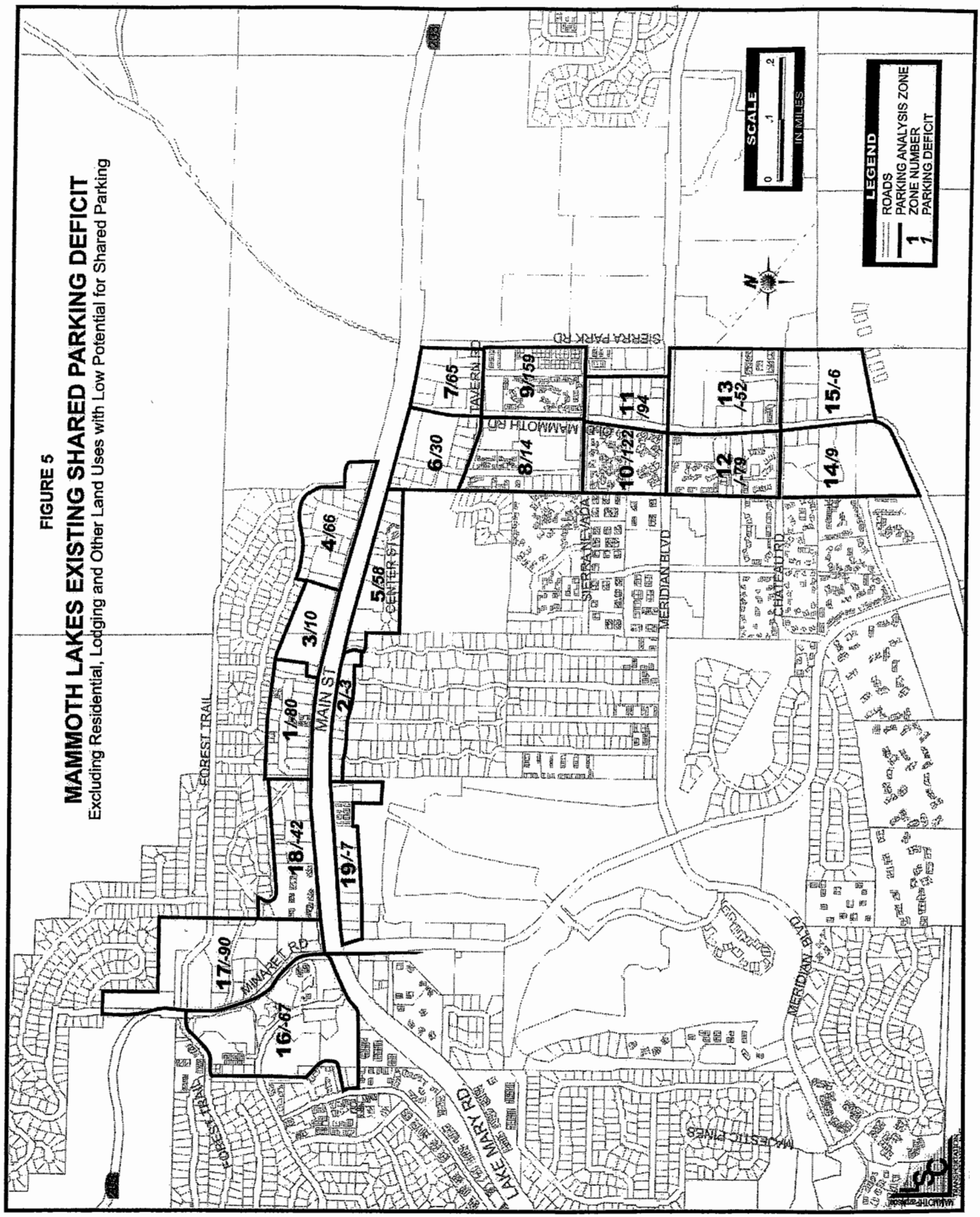


FIGURE 5
MAMMOTH LAKES EXISTING SHARED PARKING DEFICIT
Excluding Residential, Lodging and Other Land Uses with Low Potential for Shared Parking
LEGEND
ROADS
PARKING ANALYSIS ZONE
1 ZONE NUMBER
1 PARKING DEFICIT
SCALE
0 .1 .2
IN MILES
N
1/-80
2/3
3/10
4/66
5/58
6/30
7/65
8/14
9/159
10/122
11/94
12/-79
13/-52
14/9
15/-6
16/-67
17/-90
18/-42
19/-7
MAIN ST
CENTER ST
TAVERN RD
MAMMOTH RD
SIERRA PARK RD
SIERRA NEVADA
MERIDIAN BLVD
CHATEAU RD
FOREST TRAIL
MINARET RD
LAKE MARY RD
MAJESTIC PINES
MERIDIAN BLVD
LSC

Table 8: Shared Parking Analysis by Zone

Weekend (Peak) - Only Considers Land Uses That Could Potentially Share Parking

Parking Zone	Zone Description	Shared Parking			No Shared Parking			Gain in Parking as Shared
		Parking Required	Parking Available	Parking Surplus[2]	Parking Required	Parking Provided	Parking Surplus[2]	
1	N. of Main, West [1]	269	189	-80	269	189	-80	0
2	S. of Main, West	49	46	-3	52	46	-6	3
3	N. of Main, Central	21	31	10	22	31	9	1
4	N. of Main, East	57	123	66	67	123	56	10
5	Center Street Area	328	386	58	363	386	23	35
6	Gateway Center Area	318	348	30	397	348	-49	79
7	Main/Sierra Park/Tavern/OMR	78	143	65	100	143	43	22
8	Tavern/OMR/Sierra Nevada/Laurel Mtn.	242	256	14	293	256	-37	51
9	Tavern/Sierra Park/Sierra Nevada/OMR[1]	204	363	159	204	363	159	0
10	Sierra Nevada/OMR/Meridian/Laurel Mtn.[1]	183	305	122	183	305	122	0
11	Sierra Nevada/Sierra Manor/Meridian/OMR	573	667	94	733	667	-66	160
12	Meridian/OMR/Chateau West	365	286	-79	581	286	-295	216
13	Meridian/OMR/Chateau East	255	203	-52	355	203	-152	100
14	Chateau/OMR/Mammoth Creek West	69	78	9	100	78	-22	31
15	Chateau/OMR/Mammoth Creek East	85	79	-6	85	79	-6	0
16	Village at Mammoth West of Minaret	206	139	-67	356	139	-217	150
17	Village at Mammoth East of Minaret	238	148	-90	301	148	-153	63
18	N. of Main, West of Mountain	115	73	-42	123	73	-50	8
19	N. of Sierra Star Golf, South of Main	97	90	-7	102	90	-12	5
	Total	3,752	3,953	201	4,686	3,953	-733	934

Note 1: Shared parking not possible

Note 2: Negative #'s represent parking deficit.

Source: LSC, Inc.

Reviewing Table 8 and Figures 6 through 10 reveals the following findings:

- When the study area is divided into its parking analysis zones, the following areas still have parking shortfalls: Zone 1, 2, 12, 13, and 15-19.

- The largest deficit occurs in Zone 17, the Village at Mammoth East of Minaret. As the next phases of the Village are constructed in Zone 17, there will be an estimated parking shortfall of 90 spaces during the peak parking hour, even if shared parking is applied. As shown in Figure 9, shared parking demand exceeds supply from Noon until 4:00 P.M, then again at 7:00 P.M.

- Zone 16, the Village at Mammoth west of Minaret, is very similar to Zone 17 with peak parking demand occurring between 2:00 PM and 3:00 PM. The maximum shortfall of parking spaces is 67 spaces in this zone. Figure 8 graphically presents those results.

- Another area of concern is Zone 12. Despite 216 spaces being saved by shared parking, Figure 6 demonstrates that parking demand exceeds supply between noon and 9:00 PM, with a maximum shortfall of 79 spaces.

- Zone 13 on the other (east) side of Old Mammoth Road also shows a parking deficit of up to 52 spaces, mainly between the hours of 1:00 PM and 4 PM (Figure 7).

- As seen in Figure 10, Zone 18 north of Main Street and west of Mountain Street has a parking deficit of 42 spaces mainly during the evening hours due to the many restaurants in the zone. Interestingly, Table 6 shows that Zone 18 only has a six parking space deficit when total parking supply is compared to total parking required for all land uses.

- Only small parking deficits occur in Zones 2, 15, and 19.

However, the arbitrary division of zones can paint a false picture, as spaces may be shared with lots in zones within a close proximity. An analysis was done to account for the sharing between parking zones as shown in Table 9. It was assumed for this analysis that parking cannot be shared across arterials, except that parking can be shared across Minaret Avenue for the Village area. This means that no parking areas may be shared across Main Street, Old Mammoth Road, and Meridian Boulevard. The total required shared parking and total parking available was compared for the sum of each adjacent zone pair. If parking were shared between Zone 2 and 5, the small parking deficit in Zone 2 would be eliminated. As there are parking deficits in all other adjacent zone pairs, sharing between zones would not prove beneficial to the remainder of the study area. As the only land uses in Zone 1 are hotel/motel, residential, and service station, shared parking is not possible. A parking deficit of 70 spaces remains in Zone 1. Therefore, Zones 1, 12, 13, 16, 17,and 18 are the parking zones in the greatest need of additional parking.

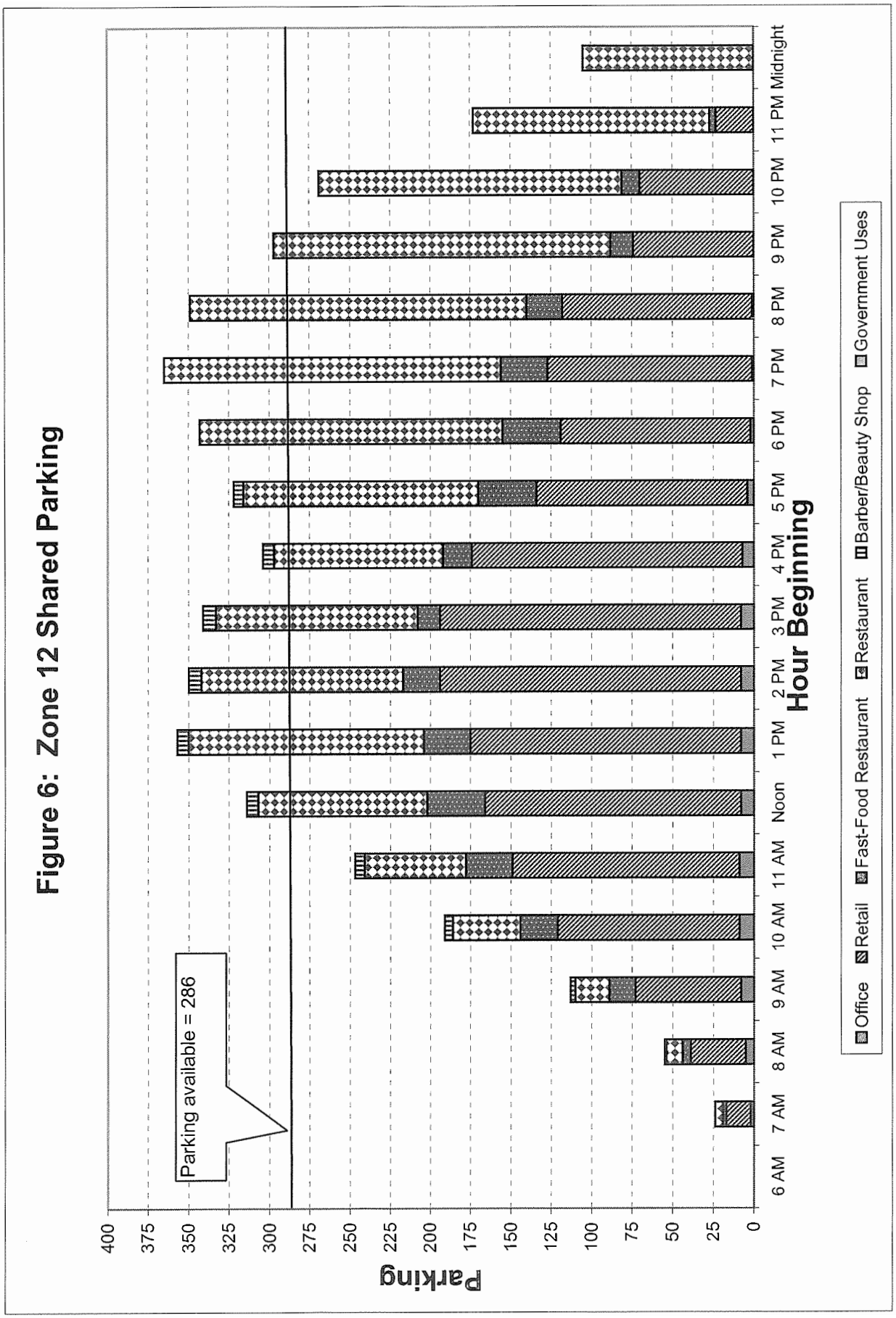


Figure 6: Zone 12 Shared Parking
Parking available = 286
Parking
400
375
350
325
300
275
250
225
200
175
150
125
100
75
50
25
0
6 AM
7 AM
8 AM
9 AM
10 AM
11 AM
Noon
1 PM
2 PM
3 PM
4 PM
5 PM
6 PM
7 PM
8 PM
9 PM
10 PM
11 PM
Midnight
Hour Beginning
Office
Retail
Fast-Food Restaurant
Restaurant
Barber/Beauty Shop
Government Uses

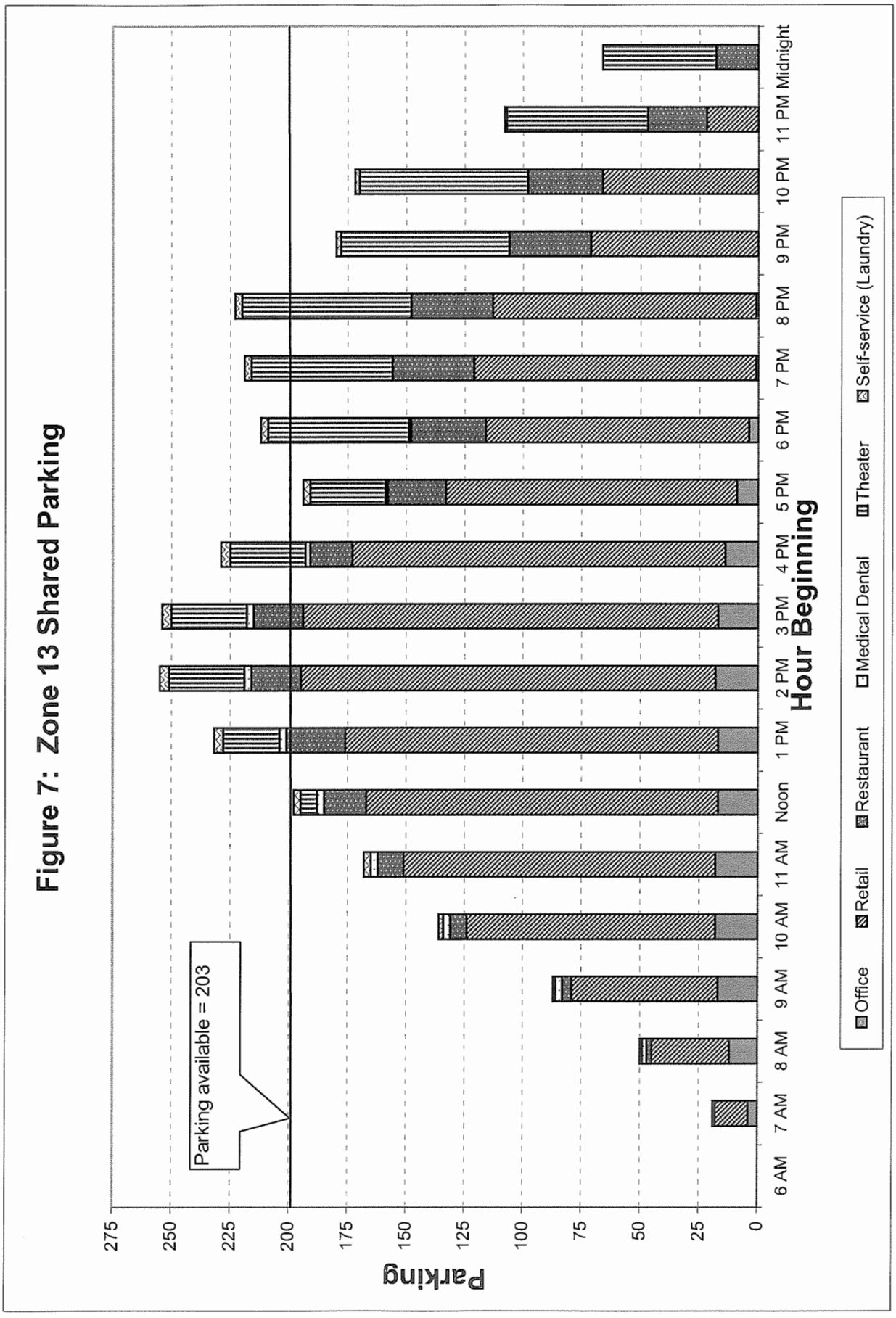


Figure 7: Zone 13 Shared Parking
Parking
Hour Beginning
Parking available = 203
275
250
225
200
175
150
125
100
75
50
25
0
6 AM
7 AM
8 AM
9 AM
10 AM
11 AM
Noon
1 PM
2 PM
3 PM
4 PM
5 PM
6 PM
7 PM
8 PM
9 PM
10 PM
11 PM
Midnight
Office
Retail
Restaurant
Medical Dental
Theater
Self-service (Laundry)

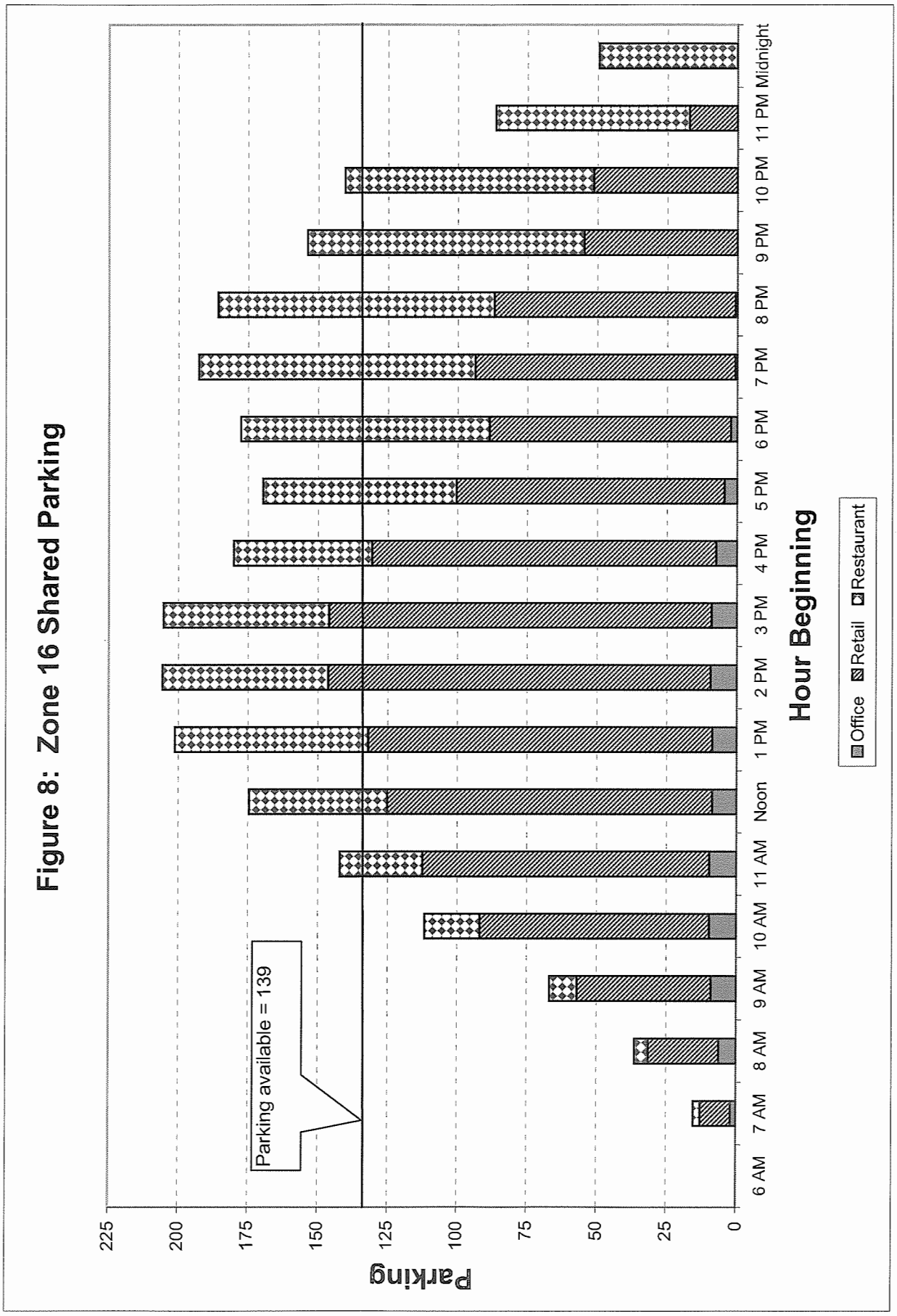


Figure 8: Zone 16 Shared Parking
Parking
225
200
175
150
125
100
75
50
25
0
Parking available = 139
6 AM
7 AM
8 AM
9 AM
10 AM
11 AM
Noon
1 PM
2 PM
3 PM
4 PM
5 PM
6 PM
7 PM
8 PM
9 PM
10 PM
11 PM
Midnight
Hour Beginning
Office
Retail
Restaurant

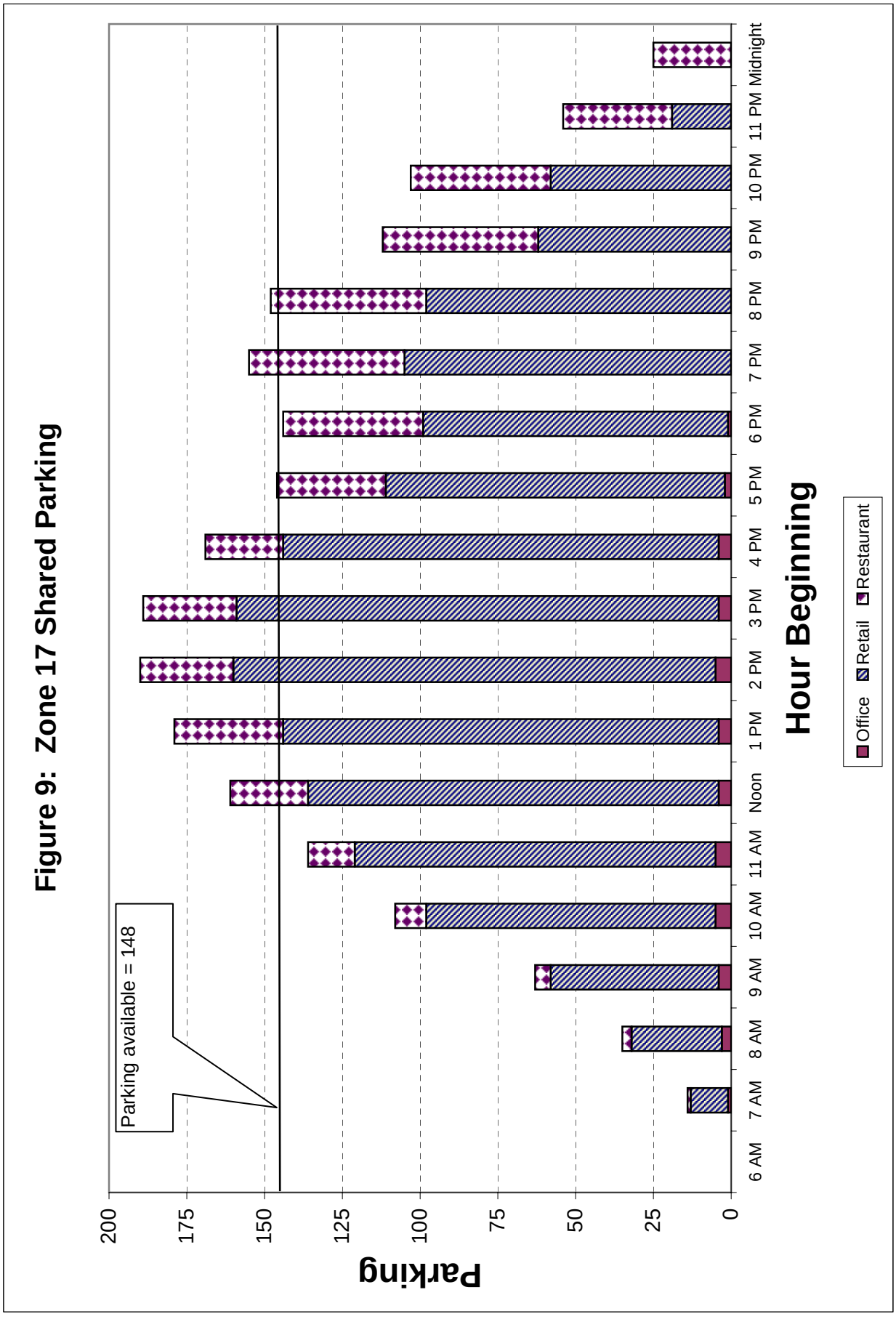


Figure 9: Zone 17 Shared Parking
Parking
200
175
150
125
100
75
50
25
0
Parking available = 148
6 AM
7 AM
8 AM
9 AM
10 AM
11 AM
Noon
1 PM
2 PM
3 PM
4 PM
5 PM
6 PM
7 PM
8 PM
9 PM
10 PM
11 PM
Midnight
Hour Beginning
Office
Retail
Restaurant

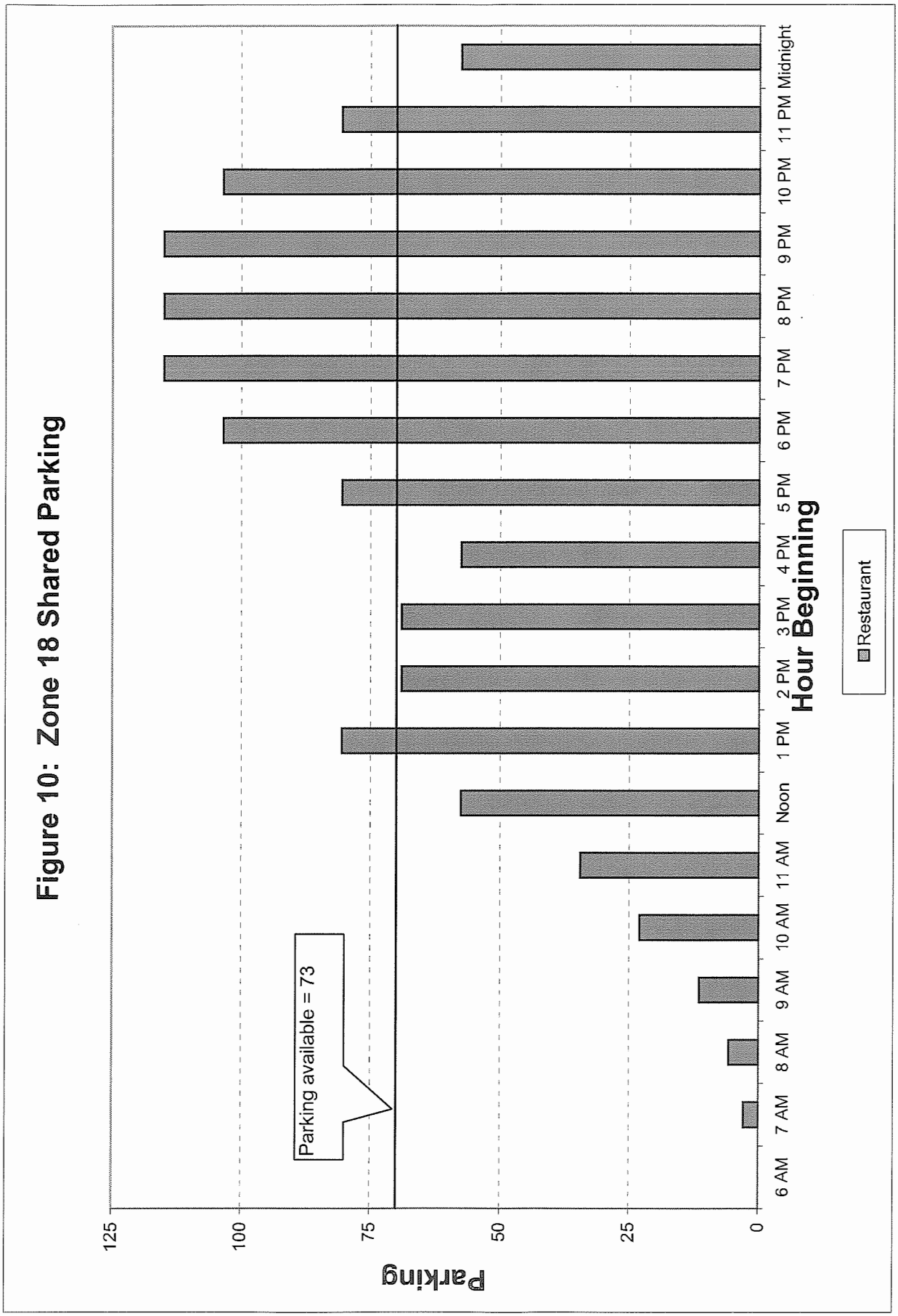


Figure 10: Zone 18 Shared Parking
Parking
125
100
75
50
25
0
Parking available = 73
6 AM
7 AM
8 AM
9 AM
10 AM
11 AM
Noon
1 PM
2 PM
3 PM
4 PM
5 PM
6 PM
7 PM
8 PM
9 PM
10 PM
11 PM
Midnight
Hour Beginning
Restaurant

Table 9: Shared Parking Balance by Adjacent Zones

Adjacent Zones	Parking Required	Parking Available	Parking Surplus
1 and 3	290	220	-70
2 and 5	377	432	55
3 and 4	78	154	76
5 and 6	646	734	88
6 and 8	560	604	44
7 and 9	282	506	224
8 and 10	425	561	136
9 and 11	777	1,030	253
12 and 14	434	364	-70
13 and 15	340	282	-58
18 and 1	384	262	-122
19 and 2	146	136	-10
16 and 17	444	287	-157

Source: LSC, Inc.
Note: Negative #'s reflect deficit.

Chapter 3
PARKING ANALYSIS OF LAND USE BUILD OUT SCENARIO

To determine future parking needs, an estimate of total parking spaces required in the study area for build out of the Town of Mammoth Lakes was developed. Land use data at build out was obtained from the 2025 Existing General Plan and the Mammoth Transportation Model. Existing 2005 land use data was subtracted from build out data to identify estimated growth. As the model provides data by TAZ rather than parking zone, the TAZ's were allocated to the 19 parking zones. In many cases, parking zones did not exactly correspond to TAZ's, so the percentage of growth that would occur in each parking zone was estimated by Town staff. Table 10 presents the resulting growth in land use by parking zone.

Parking required for the estimated growth by zone was obtained using the existing Town parking codes. The parking required for retail/commercial uses was assumed to be the retail parking code requirement of 1 space per 250 square feet. As shown in Table 10, total parking spaces required to accommodate land use growth of the study area is 2,625 spaces over current demand

Table 11 presents additional parking needed to accommodate build out of the 2025 Existing General Plan in the study area. These figures were found by subtracting the existing shared parking surplus from total future growth in parking demand at build out. It should be noted that most (if not all) spaces required by future growth will be provided on-site as part of the private development.

The greatest number of additional spaces required at buildout, as shown in Table 11, will occur in Zones 12, 13, and 14 along Old Mammoth Road south of Meridian Boulevard, with a total increase in demand of 728. Other key areas of parking demand growth consist of the northern end of Old Mammoth Road (Zones 6-9, with a total of 534 spaces) and the Village area (Zones 16 and 17, with a total of 360 spaces). If developers provide the number of on-site parking spaces required by the code, then the parking deficit will remain the same as in the existing shared parking analysis.

- Zone 7 has a parking surplus in both the existing shared and non-shared parking analysis. All growth in this zone occurs in the Retail/Commercial land use. Assuming that future growth will include a mixture of restaurants, offices, and retail shops, shared parking could reduce the number of spaces required at build out. Zone 7 is also adjacent to the existing Park-and-Ride lot. According to Town staff, this lot is typically 65 to 70 percent full during the winter. With all these factors in mind, it can be assumed that Zone 7 will not be a future area of concern.

- Zone 11 is in a similar situation as Zone 7: the existing shared parking surplus, potential for shared parking and adjacency to the existing Park and Ride lot indicates that additional parking will not be needed in this zone.

Table 10: Estimated Growth in Parking Demand by Parking Zone

	Land Use							Parking Spaces Required							
Parking Zone	Lodging/ Hotel Rooms	Resort Hotel Rooms	High Density SF Resident	High Density MF Resident	High Density MF Visitor	High Density SF Visitor	Retail/ Commercial (KSF)	Lodging/ Hotel Rooms	Resort Hotel Rooms	High Density SF Resident	High Density MF Resident	High Density MF Visitor	High Density SF Visitor	Retail/ Commercial	**Total Parking Required by Growth**
1	0	0	0	0	0	0	0	*0*	*0*	*0*	*0*	*0*	*0*	*0*	**0**
2	0	0	0	0	0	0	0	*0*	*0*	*0*	*0*	*0*	*0*	*0*	**0**
3	116	0	0	0	0	0	0	*122*	*0*	*0*	*0*	*0*	*0*	*0*	**122**
4	0	0	0	0	0	0	1	*0*	*0*	*0*	*0*	*0*	*0*	*4*	**4**
5	0	0	0	0	0	0	13	*0*	*0*	*0*	*0*	*0*	*0*	*52*	**52**
6	0	0	0	2	5	0	2	*0*	*0*	*0*	*4*	*12*	*0*	*8*	**24**
7	0	0	0	0	0	0	88	*0*	*0*	*0*	*0*	*0*	*0*	*352*	**352**
8	0	0	0	38	0	0	42	*0*	*0*	*0*	*82*	*0*	*0*	*168*	**250**
9	0	0	0	0	0	0	44	*0*	*0*	*0*	*0*	*0*	*0*	*176*	**176**
10	0	0	0	0	0	0	0	*0*	*0*	*0*	*0*	*0*	*0*	*0*	**0**
11	0	0	0	0	0	0	87	*0*	*0*	*0*	*0*	*0*	*0*	*348*	**348**
12	0	0	0	0	0	0	37	*0*	*0*	*0*	*0*	*0*	*0*	*148*	**148**
13	0	0	0	0	0	0	94	*0*	*0*	*0*	*0*	*0*	*0*	*376*	**376**
14	0	0	0	16	0	0	11	*0*	*0*	*0*	*38*	*0*	*0*	*44*	**82**
15	0	0	0	0	0	0	33	*0*	*0*	*0*	*0*	*0*	*0*	*132*	**132**
16	0	437	0	-10	-41	0	-41	*0*	*287*	*0*	*-22*	*-86*	*0*	*-164*	**15**
17	0	268	0	0	0	0	3	*0*	*176*	*0*	*0*	*0*	*0*	*12*	**188**
18	293	0	0	-19	-21	-15	0	*308*	*0*	*0*	*-42*	*-44*	*-45*	*0*	**177**
19	274	0	0	-13	-16	-15	0	*288*	*0*	*0*	*-30*	*-34*	*-45*	*0*	**179**
Total by Land Use	**683**	**705**	**0**	**14**	**-73**	**-30**	**414**	**718**	**463**	**0**	**30**	**-152**	**-90**	**1,656**	**2,625**

Note 1: Municipal parking code for Hotel/Motel. Two manager parking spaces per hotel not included.
Note 2: Village Parking Code
Note 3: Municipal parking code.
Note 4: Muncipal parking code for retail land use.
Source: Mammoth Transportation Model (LSC), Town of Mammoth Lakes.

TABLE 11: Estimated 2025 Existing General Plan Buildout Parking Need by Zone

Parking Zone	Zone Description	Existing		Future Growth in Parking Demand			Additional Parking Needed to Accommodate Build Out
		Total Parking Available as of 2005	Existing Shared Parking Surplus	Lodging/Res. Uses	Commercial Uses	Total (1)	
1	N. of Main, West	189	-80	0	0	0	80
2	S. of Main, West	109	-3	0	0	0	3
3	N. of Main, Central	193	10	122	0	122	112
4	N. of Main, East	278	66	0	4	4	-62
5	Center Street Area	419	58	0	52	52	-6
6	Gateway Center Area	425	30	16	8	24	-6
7	Main/Sierra Park/Tavern/OMR	275	65	0	352	352	287
8	Tavern/OMR/Sierra Nevada/Laurel Mtn.	584	14	82	168	250	236
9	Tavern/Sierra Park/Sierra Nevada/OMR	363	159	0	176	176	17
10	Sierra Nevada/OMR/Meridian/Laurel Mtn.	305	122	0	0	0	-122
11	Sierra Nevada/Sierra Manor/Meridian/OMR	765	94	0	348	348	254
12	Meridian/OMR/Chateau West	380	-79	0	148	148	227
13	Meridian/OMR/Chateau East	341	-52	0	376	376	428
14	Chateau/OMR/Mammoth Creek West	138	9	38	44	82	73
15	Chateau/OMR/Mammoth Creek East	115	-6	0	132	132	138
16	Village at Mammoth West of Minaret	994	-67	179	-164	15	82
17	Village at Mammoth East of Minaret	481	-90	176	12	188	278
18	N. of Main, West of Mountain	282	-42	177	0	177	219
19	N. of Sierra Star Golf, South of Main	215	-7	179	0	179	186
		6,851	**201**	**969**	**1,656**	**2,625**	**2,424**

Source: Mammoth Transportation Model (LSC), Town of Mammoth Lakes.

Note 1: Most if not all spaces would be provided on -site as part of private development.

- Growth in Zone 8 will occur in both the retail/commercial uses and residential multi-family uses. In the existing shared parking analysis, Zone 8 only has a small parking surplus. It is assumed for this study that commercial patrons would not be willing to cross a major arterial on foot to reach their destination, therefore Zone 8 would not make use of the current Park-and-Ride lot and could be a future area of concern.

- Both Zones 12 and 13 have a large parking deficits in the existing shared parking analysis. Although shared parking could be possible with most growth occurring in the retail/commercial category, it is likely that both Zones 12 and 13 will remain parking problems at build out.

- The majority of growth expected in Zones 16 and 17 at build out will occur in the resort/hotel category. For the purposes of this study, it is assumed that hotels will provide sufficient on-site parking. It can therefore be expected that future growth in demand will not significantly worsen the existing parking shortage.

In summary, it is estimated that Zones 8, 12, and 13 will have the greatest need for additional parking at build out of the Town.

Chapter 4
PARK-AND-RIDE ANALYSIS

A key transportation strategy in Mammoth Lakes is the expansion of transit ridership. One way that the Town of Mammoth Lakes can potentially increase its transit ridership is by providing park and ride lots for skiers attempting to access the ski mountain. While park-and-ride facilities are not typically attractive for relatively short trips within a community, the limited parking supply at the Mammoth Mountain Ski Area base areas will make driving to transit services attractive for some portions of the community that are not readily able to walk to a convenient transit stop.

Recently the Town constructed a Park-and-Ride facility at the corner of Tavern Road and Sierra Manor Road. This study is intended to assess the need for additional park-and-ride parking within the Town of Mammoth Lakes to support the public transit system, and to identify locations for additional parking. In an effort to identify all potential park-and-ride users, the study area for the park-and-ride analysis encompasses the entire Town of Mammoth Lakes.

This chapter first presents a review of the existing transportation system as a whole, and then discussing the parking conditions in further detail. A demand analysis for park-and-ride lots is then presented. Finally, conclusions and recommendations are presented.

Park-and-Ride Lot Demand Analysis

Mammoth Lakes transportation strategy is focused on the enhancement of public transit service. An important element of a successful transit system is the provision, where appropriate, of park-and-ride parking areas. The Town of Mammoth is well serviced by an extensive, no-fare bus system. According to the draft *Mammoth Lakes Transit Plan* (LSC, Inc., 2004), existing peak-day ski area transit ridership is 14,200 passenger-trips. With the expansion of Mammoth Mountain Ski Area, increased ridership is expected. The *Transit Plan* also indicates that this peak-day ski area transit ridership will need to reach 15,212 passenger-trips, in order to adequate accommodate the future growth in the ski area. This indicates that ridership will need to increase by 1,012 one-way passenger-trips per day.

One way to accommodate this increased ridership is the provision of park-and-ride lots, to allow residents, visitors, and employees residing or lodged in areas not within walking distance of the transit routes to make short auto trips to access the transit services. Park-and-ride lots are an element of the transit system that, if implemented, will mitigate the need for investment of public funds for street widening by limiting the increase in vehicle trips.

As part of this study, it is assumed that the park-and-ride program will be designed to generate the required growth in transit ridership needed to address growth in the activity level at the ski area. Dividing the 1,012 one-way passenger-trips per day by 2 (to convert to round-trips) and by 2.5 transit riders per vehicle, total park-and-ride demand is forecast to equal 202 spaces.

It should be noted that the required number of park-and-ride spaces could increase over this figure, if the Town pursues an active policy of limiting parking at the ski area portals. Short of

forcing a portion of drivers to use park-and-ride lots rather than lots within walk distance of the ski lifts, however, the 202 space figure is appropriate.

It is next necessary to analyze where the demand for park-and-ride spaces will be generated, as the basis for siting the lots. It was also assumed that all people who live farther than 500 feet from the Blue, Green, and Red bus routes would be potential park-and-ride lot users (this relatively short walking distance to access transit service reflects the difficulty associated with walking with ski or snowboarding gear). As the Orange Line only runs three times a day and serves a very small number of residential units that are not served by the other routes, the Orange Line was not included in the park-and-ride analysis. Figure 11 depicts the portions of Mammoth Lakes more than 500 feet from the Blue, Green, and Red transit routes, along with the Traffic Analysis Zone network.

As shown in Table 12, there are a total of 4,039 dwelling units (including lodging units) in Mammoth Lakes that are beyond a 500-foot walk distance of an existing MMSA transit route. This represents 39 percent of all dwelling units in Mammoth Lakes. These units were summarized into a series of general zones around the community. The 202 park-and-ride spaces were allocated to these zones based on the proportion of dwelling units not served by transit.

It was also necessary to adjust these figures to reflect future use of the existing available spaces at the existing Park-and-Ride lot. This 100-space facility is roughly 70 percent utilized during peak periods, leaving 30 spaces that could be used for future park-and-ride activity. These 30 spaces were allocated to the nearest zones (Old Mammoth Road commercial, The Trails, and Sierra Valley).

The resulting number of required park-and-ride spaces by zone is shown in the right-most column of Table 12 and presented in Figure 12. As shown, the zone with the largest demand is the Mammoth Camp / Snow Creek area in the southern portion of the community, with 39 spaces. Other areas with relatively high demand are the Sierra Valley area (28 spaces) and the Snowcreek Crest/Starwood area (22 spaces).

While Figure 12 presents the general location of demand for park-and-ride spaces, there are specific factors that also will impact the decision regarding lot location. The following factors should be considered before deciding the best location for a park-and-ride lot:

- In general, park-and-ride lot users tend to desire to park on the side of the road on which the bus travels on its way to the ski mountain. Of course, the users of the lots would have to cross the street on the way home, but in general people tend to park on the side of the road closest to the bus stop, in order to avoid having to cross the road to initially access the bus.

- It would be beneficial to traffic flow if drivers did not have to cross busy streets in order to reach park-and-ride lot.

Figure 11: Area Within 500 Feet of Mammoth Lakes Bus Routes

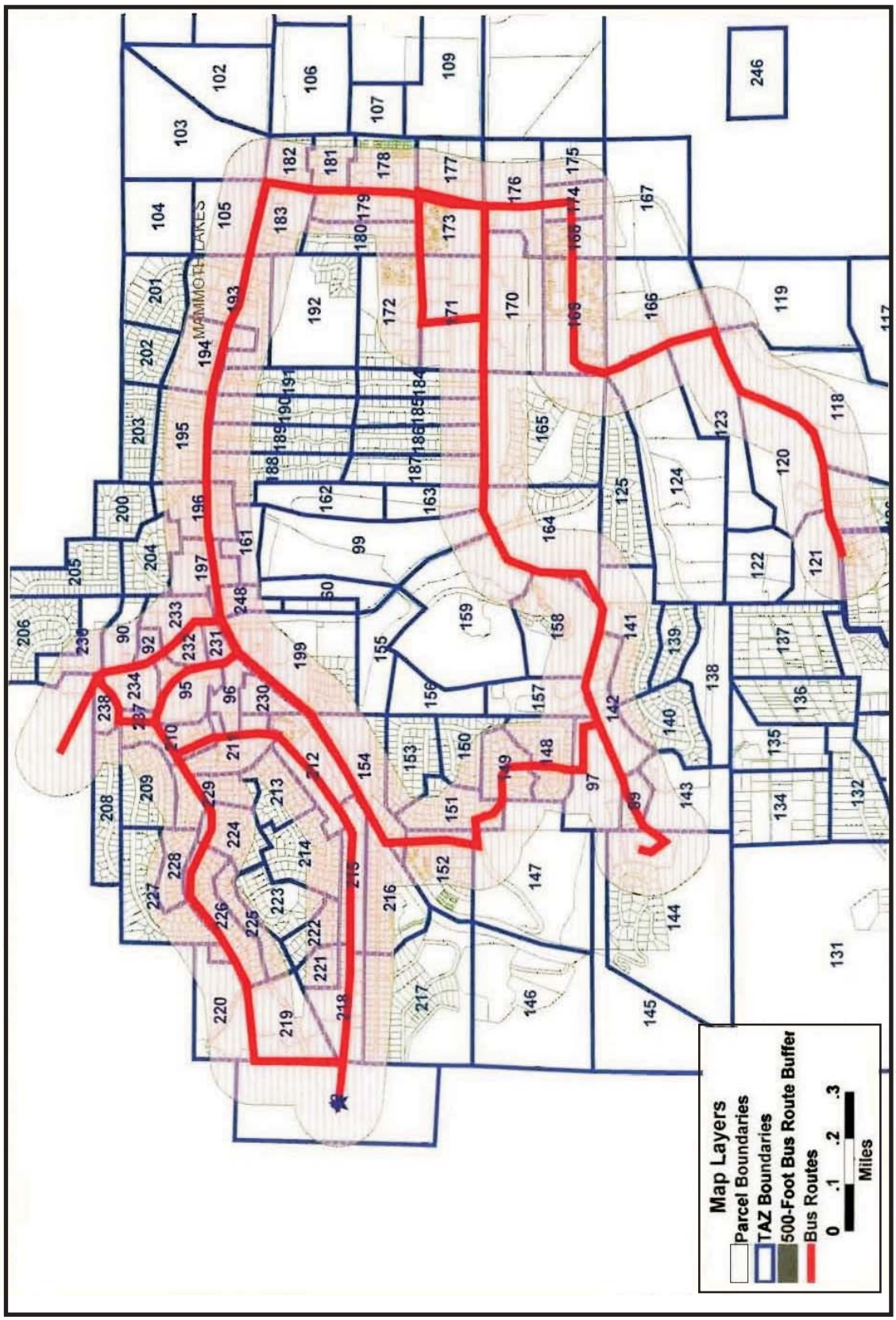


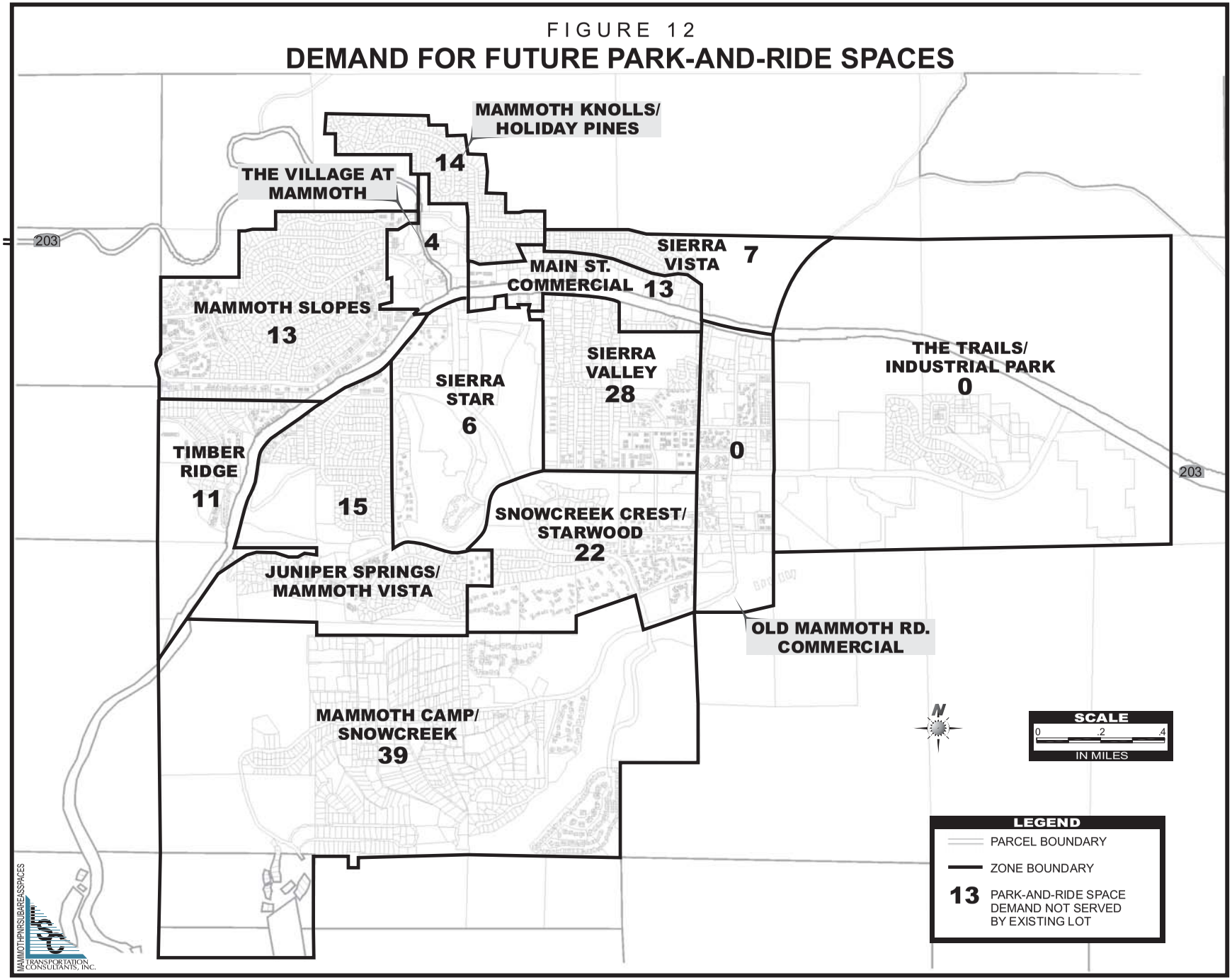
TABLE 12: Analysis of Park-and-Ride Demand

Existing Peak Winter Saturday Ski Area Transit Ridership	14,200
Required Peak-Day Transit Ridership	15,212
Required Peak-Day Transit Ridership	1,012
Park-and-Ride Spaces Required	202

Park-and-Ride Spaces by Subarea	Dwelling Units More Than 500 Feet From Transit #	%	Allocated PnR Demand	Adjusting for Existing PnR Lot Capacity	Required Future Spaces
Mammoth Camp/ Snow Creek	786	19.45%	39	0	39
Old Mammoth Road Commercial	151	3.73%	8	(8)	0
The Trails and Industrial Park	272	6.73%	14	(14)	0
Main Street Commercial	259	6.41%	13	0	13
Mammoth Knolls/ Holiday Pines/ Mammoth Heights	282	6.98%	14	0	14
Sierra Vista Estates	135	3.34%	7	0	7
The Village at Mammoth	88	2.17%	4	0	4
Mammoth Slopes	265	6.56%	13	0	13
Timber Ridge	216	5.35%	11	0	11
Juniper Springs/ Mammoth Vista	308	7.62%	15	0	15
Sierra Star	118	2.91%	6	0	6
Snowcreek Crest/Starwood/Condos	441	10.91%	22	0	22
Sierra Valley	721	17.84%	36	(8)	28
	4,039	100.00%	202	(30)	173

FIGURE 12

DEMAND FOR FUTURE PARK-AND-RIDE SPACES



- Constructing a multi-level parking structure at the existing Park-and Ride lot on Tavern Road and Sierra Manor Road would serve some parking demand (not already served by the lot) generated in Sierra Valley and Snowcreek. However, this would require out-of-direction travel, and would impact Old Mammoth Road. Overall, park-and-ride demand would be better served at new locations to the south and to the west.

- Discussions are also underway with Mammoth Mountain Ski Area to provide diagonal parking on both sides of Meridian Boulevard between Majestic Pines and Lodestar Drive in the Juniper Springs/ Mammoth Vista subarea. A total of 250 spaces with the possibility of a parking structure has been proposed. This new structure could alleviate much of the demand for a park-and-ride facility for residents of the Juniper Springs/ Mammoth Vista, Timber Ridge and Snowcreek Crest/ Starwood subareas. However, this would not achieve the goal of the park-and-ride program to reduce traffic near the ski area portals.

- According to Town staff, the following parking zones have vacant lots which could potentially be converted to a parking lot or structure: Zone 2, 14, 16, and 17.

- The Sierra Valley subarea has a large demand for park-and-ride spaces in both the existing and build out scenarios. The two Town-owned parcels in Parking Zone 2 on Main Street would be a good candidate for a park-and-ride lot as they would not require Sierra Valley residents to drive across any major roadways to reach the lot. This location is also close to the Sierra Star subarea which has a large park-and-ride demand at buildout, although it would require residents to backtrack slightly on their way to the ski area. The disadvantage of the Zone 2 location is that it would require passengers to walk across Main Street in the morning to reach the bus stop, at an unprotected location. This location would therefore benefit through provision of a signal or roundabout to aid crossing Main Street.

- Zones 12 and 13 have been identified as having large parking deficits. The only vacant lot nearby is a half acre parcel in Zone 14. This lot could serve as a park-and-ride lot for the Snowcreek Crest / Starwood area as well as the Mammoth Camp/Snowcreek area, as it would "intercept" trips before they impact the more congested section of Old Mammoth Road to the north. Additional public parking at this location would also serve some of the excess evening parking demand generated in Zone 12, and (to the degree not needed for park-and-ride activity) the daytime excess parking demand generated in both Zones 12 and 13.

- Zones 16 and 17 were also identified as parking problem zones in the Mammoth Parking Study 2004. Due to the proximity to the new Gondola, the Village at Mammoth subarea has the lowest demand for park-and-ride spaces. In addition, a park-and-ride location at this point would only increase traffic on the busy streets adjacent to the Village.

Chapter 5
CONCLUSIONS AND RECOMMENDATIONS

Considering the observations of the estimated parking supply, parking utilization, and the analysis of future demands, the following parking control measures are recommended to address parking conditions in the commercial portions of the Town of Mammoth Lakes, as well as to provide park-and-ride parking:

- Shared parking should be encouraged in the study area, particularly in the zones along Old Mammoth Road. Cooperation between business owners and the Town could help to accommodate a large amount of additional parking.

- The commercial uses in the Village at Mammoth area (parking zones 16 and 17) have a current parking shortage of 157 spaces if shared parking is applied. This figure is forecast to increase to 360 at build out, assuming that no additional parking is constructed as part of new development throughout these zones. Therefore, a minimum 157 spaces are recommended to be constructed, and more could be provided if desired (and probably funded) by developers of commercial property. While it may be physically possible to provide these spaces in a single structure southwest of the Village, the Village would best be served by providing two smaller parking facilities. The walk distance from this structure to the northeastern commercial property of the Village would be on the order of 900 feet, and require crossing two streets. Many customers (in particular) bound to these northeastern commercial properties would find this to be an onerous walk, and would be tempted to find illegal parking east of Minaret Road. Therefore, providing a smaller number of spaces to the southwest and the remainder under the community center tennis courts would both be more convenient for employees and customers of the Village, would reduce the need for pedestrians to cross Minaret Boulevard, and would also tend to reduce traffic circulating through the Village area.

- Zones 12 and 13 along Old Mammoth Road between Chateau Road and Meridian Boulevard have also been identified as parking problem areas. In the shared parking analysis, a total of 131 spaces are needed between the two zones. According to Town staff, there may be an opportunity to partner with a developer on parking at Oak Tree Place in Zone 12, however, it is unclear how many spaces this could generate. There is also an undeveloped parcel on the corner of Old Mammoth Road and Chateau Road in Zone 14. A public parking facility in this area could also serve as a park-and-ride lot for the southern portion of the community.

- Although most of the zones along Main Street have a parking deficit in the no-shared parking analysis, only Zone 1 and 18 remain a problem if shared parking is practiced. As Zone 1 contains only lodging/residential uses and a service station, no shared parking is possible. Between the two zones a total of 122 spaces would be required. As parcels are redeveloped, potential locations for a public parking lot should be considered on the north side of Main Street. This could also serve as a feasible park-and-ride lot location for the Sierra Valley Sierra Vista areas.

- The existing Park-and Ride lot is adequate to accommodate the park-and-ride demand of the Old Mammoth Road commercial area, The Trails area, as well as a portion of the demand generated by Sierra Valley. In light of the low level of additional demand that could be conveniently served at this location and the fact that it would generate additional traffic in this relatively busy location, expansion in park-and-ride lots in other locations is recommended over expansion of parking supply at this location (through construction of a structure).

- A relatively small (30 space) public parking lot could be beneficial in serving existing and future parking needs in the Zone 2 area on the south side of Main Street between Joaquin Road and Manzanita Road. Providing up to roughly 40 additional spaces to serve as a park-and-ride lot in this area (or on the opposite side of Main Street) would also be beneficial. Provision of park-and-ride spaces along Main Street would benefit greatly from a roundabout or traffic signal to aid pedestrian crossings.

- The Town should also consider provision of one or two smaller (20 to 40 space) park-and-ride lots along the Red Route in the Mammoth Camp / Snowcreek / Starwood areas to serve these neighborhoods. Keeping the lots relatively small would minimize the parking and visual impacts, and providing these spaces close to residential locations would minimize traffic throughout the community.