LAKES BASIN
Special Study

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1970 Mammoth Lakes Basin Composite

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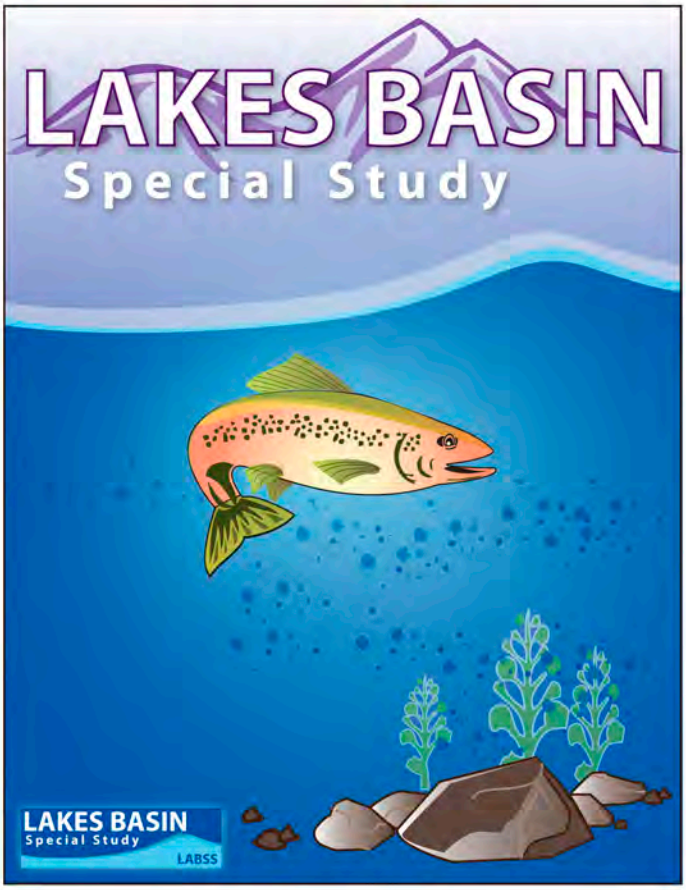

Lakes Basin Special Study

"1970 Mammoth Lakes Basin Composite" - Inyo National Forest

Management plan and preliminary master design
for the Mammoth Recreation Composite.

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Compiled August 12, 2010

LAKES BASIN
Special Study
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INYO NATIONAL FOREST RECREATION PLANNING TEAM

A PLAN

FOR THE MAMMOTH RECREATION

COMPOSITE

Prepared by the Inyo National Forest
Recreation Planning Team - September, 1970

Approved by: _____ _____
Forest Supervisor *Date*

Approved by: _____ _____
Acting Regional Forester *Date*

Mammoth

99

Inyo NF

2310 - Recreation Planning System October 12, 1970

Mammoth Recreation Management Composite Plan

Regional Forester

Enclosed are two copies of a management plan and preliminary master design for the Mammoth Recreation Composite. They have been tentatively approved by the Forest Supervisor. Previous to affixing any signatures however, we wanted your review.

This plan involves a significant departure from the traditional mode of recreation resource planning and the resulting recommendations reflect this change. We fully anticipate some of them will generate constructive debate. We do hope, however, that you agree new thinking and management direction are needed if we are to utilize yet preserve the unusually fine recreation resource that constitutes the Mammoth Composite.

The planning process led to some conclusions that more properly belong in the realm of Multiple Use Planning. This speaks well of the process used, which seems more ecologically oriented than our present method of Multiple Use zoning.

The land exchange recommendations are critical as the private lands involved are being rapidly developed. If we are to implement these recommendations, we must move quickly.

We would like to obtain both local community and the "visiting" public's thinking on this plan prior to its final approval. We feel now is the time to garner this input. If you agree, we will schedule a local public meeting for this winter.

RJM

RONALD J. McCORMICK
Recreation Officer

Enclosure

cc: Mammoth
Ronald J. McCormick

Dick-Art

This hasn't been approved, but I feel can be used, in service, for Rec. Mgt. direction in the meantime. I wouldn't make it available for public consumption until we get R.O. sanction.

RJM

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A PLAN FOR THE

MAMMOTH RECREATION COMPOSITE

I. INTRODUCTION

This plan involves an area bounded on the north by Crestview, the east by Little Antelope Valley, the south by Convict Lake and the wilderness boundary to the west. The planning procedure basically follows that outlined in Chapter 200 of the Recreation Planning Handbook.

In order to both expedite the process and obtain fresh ideas and concepts, the Forest hired a professional in the field of land use planning. The resulting report of Landscape Architect Porter, Chairman of the University of Virginia's School of Landscape Architecture, has been incorporated into this plan. The "landscape analysis" he performed constitutes a primary part of our situation statement, and leads eventually to many of our recommendations.

Plan Purpose

1. To identify the intrinsic values of the composite's recreational and scenic resources.

2. To clarify the various physical characteristics of the composite and translate them into landscape units.

3. To determine the suitability and capacity of these landscape units to provide outdoor recreation experiences, and define their development opportunities and limitations.

4. To recommend specific recreation development (or non-development) decisions and establish management direction for this unit.

II. THE SITUATION

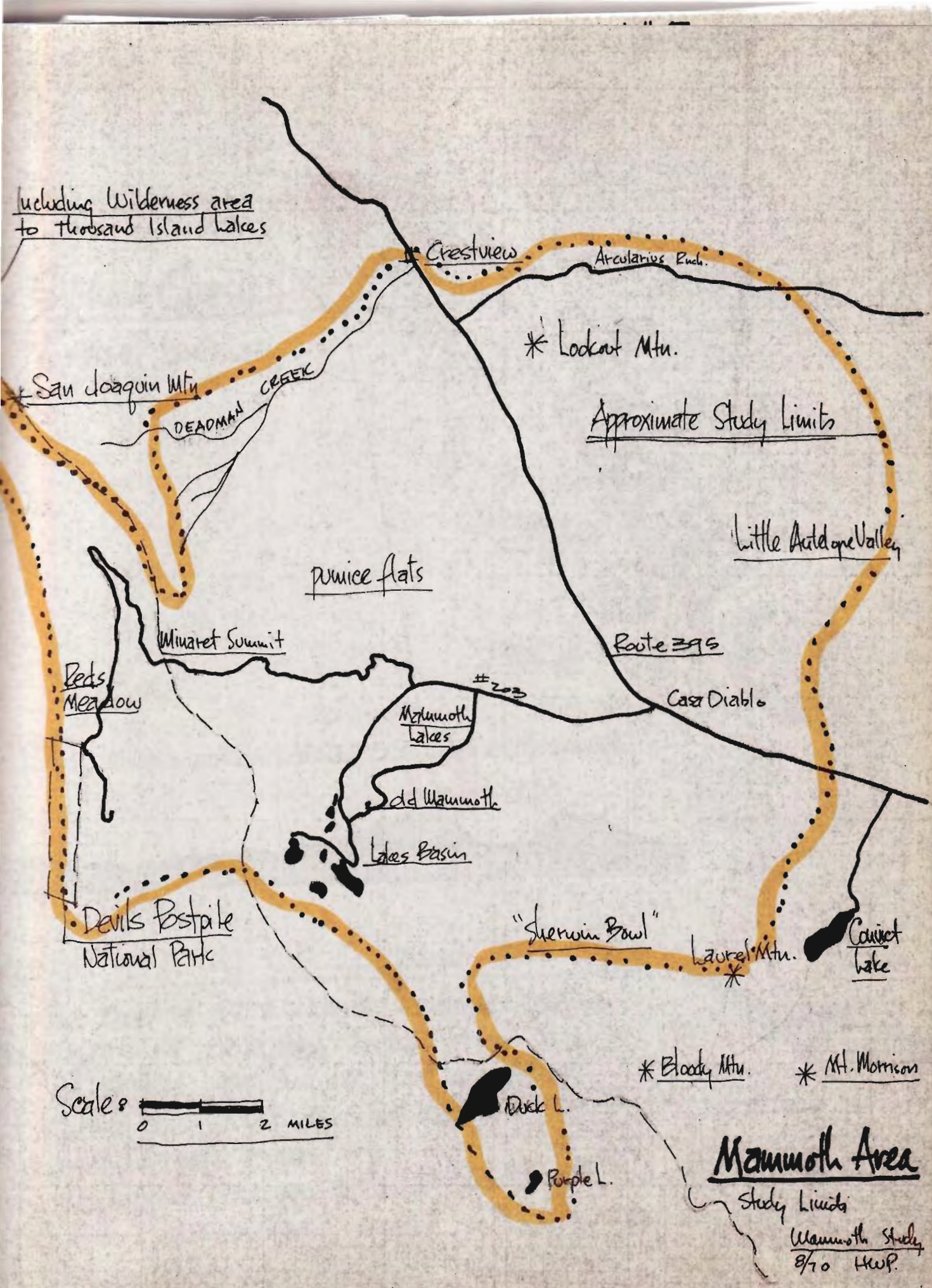
A. An Overview

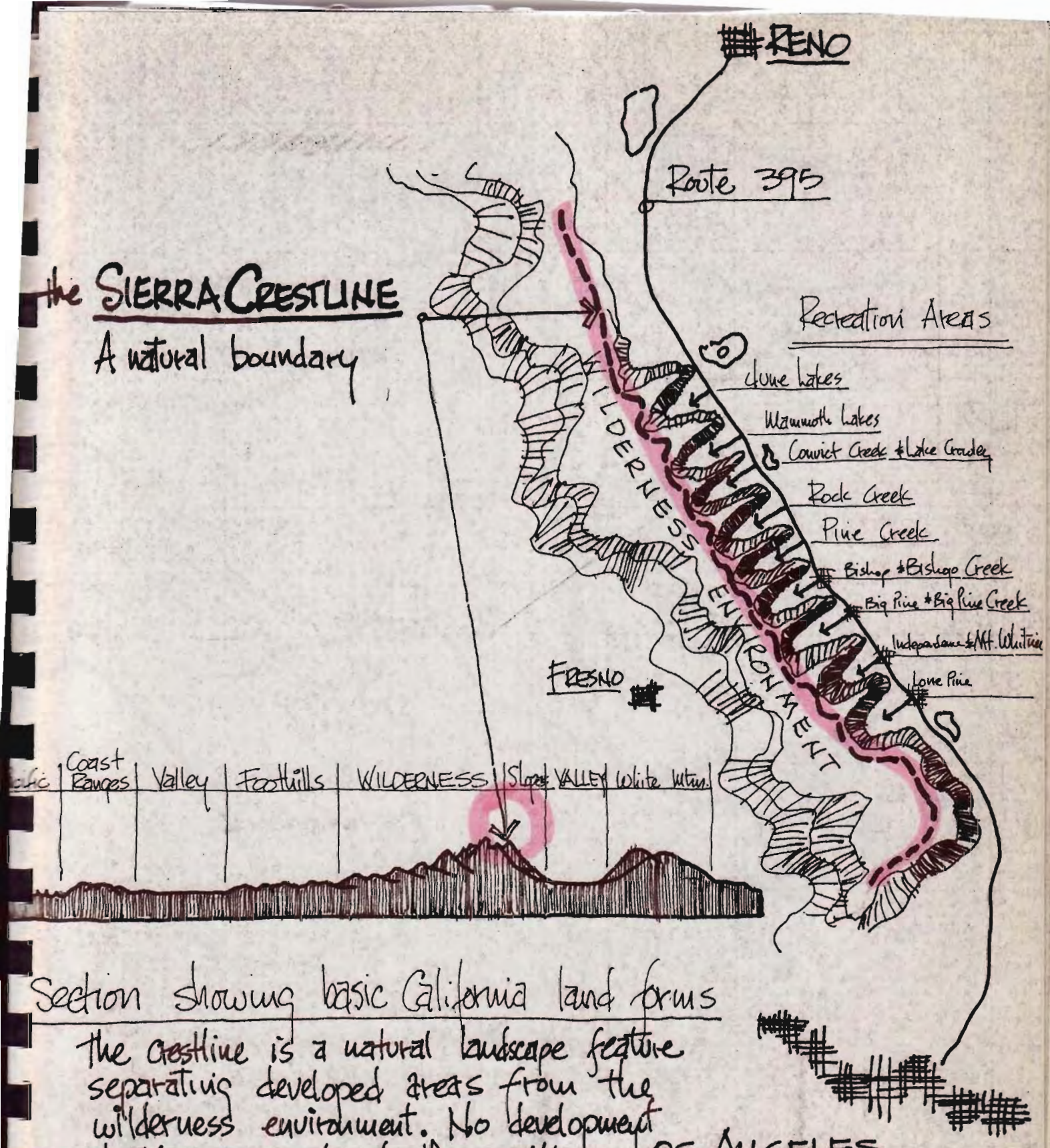
The Mammoth area is one of a series of indentations (See Illustration #1) in the eastern Sierra mountains which contains recreation developments and forest environments used primarily by the people of the Los Angeles area. (Over 90% of all visitors to Mammoth are from the nine county area of Los Angeles.) Along with June Lake, the Mammoth area is considered as a destination recreation area by most visitors to the area and as such provides a diversity of attractions for the recreation stay.

The planning composite is delineated on Illustrations #2 and #3. It comprises 68,000± acres of the 200,000 acre Mammoth Ranger District.

The District receives 2,500,000 visitor days of use each year. About two thirds of this use occurs within the composite boundary.

Special features of the Mammoth area, which have created this recreation attraction, include: (a) one of the world's best skiing conditions, (b) a Lakes Basin which contains classic High Sierra and alpine mountain lakes and particularly scenic beauty, (c) direct access to wilderness environments of the Sierra "back country," and (d) areas of unusual geological features, such as pumice flats, volcanic craters, hot springs and obsidian cliffs. The area includes the only significant stand of mature Jeffrey pine - through which scenic route 395 passes - between Reno, Nevada and Los Angeles, California. Few areas in the world have such a varied collection of outstanding recreation values within such a relatively small area. As a consequence, visitations to the Mammoth area rival Yosemite National Park in total numbers.


including Wilderness area
to thousand Island Lakes
Crestview
Arcularius Ranch.
* Lookout Mtn.
San Joaquin Mtn
DEADMAN CREEK
Approximate Study Limits
Little Antelope Valley
pumice flats
Minaret Summit
Route 395
Reds Meadow
#203
Mammoth Lakes
Casa Diablo
old Mammoth
Lakes Basin
Devils Postpile
National Park
"Sherwin Bowl"
Laurel Mtn.
Convict Lake
* Bloody Mtn.
* Mt. Morrison
Scale: 0 1 2 MILES
Duck L.
Purple L.
Mammoth Area
Study Limits
Mammoth Study
8/70 HWP



the SIERRA CRESTLINE

A natural boundary

Section showing basic California land forms

The crestline is a natural landscape feature separating developed areas from the wilderness environment. No development should occur west of the crestline in wilderness areas.

Special reference is made to the planning for Red's Meadow and the westerly slopes of Mammoth Mountain.


ROUTE 395
DRAINAGE
Albid interrupting drainage pattern with new construction. No development in wetland areas.
PUMICE FLATS
JEFFREY PINE
MINARET SUMMIT
MAMMOTH LAKES
MAMMOTH MOUNTAIN
MEADOW
Stream
Wetland/Meadow
MAMMOTH PASS
Lake
SHERWIN BOWL
LAKES BASIN
NORTH
0 MILES

The average length of stay for the visitor is decreasing. In 1959 the average was 8 days, in 1965 it was 6 days, and in 1970 the average stay for campers is apparently 2½ days. Similarly, in 1959 the average length of stay for those who owned their own recreation residence in the Mammoth area was 18 days, in 1965 it was 7 days. Today it is probably even less although final figures are not yet compiled. Length of stay for wilderness recreationists is also on the decline, from an average of 4 days in the back country in 1959 to 3 days in 1965 and probably less today. These figures may imply that even though Mammoth is considered a "destination" vacation area, the changing nature of the recreationist may create very different facilities than his counterpart of 5 or 10 years ago.

By virtue of several land exchanges, the "town" of Mammoth is growing rapidly. The following chart, derived from developer studies, indicates the probable growth of the community and predicted use of the surrounding National Forest land:

	1970	1980±
Resident Population	2,000	44,688
Living Units	2,125	23,947
Capacity (persons)	10,648	169,632
Overnight population	8,224	119,632
Winter Sports Capacity	7,000	43,200
Total Winter Visitor Days	544,000	3,673,000
Total Summer Visitor Days	1,045,000*	6,039,000
Total Visitor Days	1,089,000	9,712,000

*Includes campgrounds and recreation areas on Forest lands in the area.

There is little doubt that the Mammoth Lakes area is undergoing a development "boom." Not only are the pressures from the Los Angeles area for recreation being felt, but private development in the area has already reached impressive, if not frightening, proportions. For instance, at this moment Mammoth Lakes construction projects are the largest consumers of redwood lumber in the entire State and land is being sold for as much as $2.00 per square foot - ample evidence of the current high level of development activity at a time when development money is considered "tight."

Without question, this rapid growth is and will generate increasing pressures on the surrounding National Forest land and facilities. Even now, the developers are pushing for more lifts on Mammoth Mountain, and the issuance of a prospectus for a Sherwin Bowl Ski area. Existing solid waste and sewage disposal systems are rapidly becoming inadequate, and the domestic water supply may also be a limiting factor.

B. *Situation - Mammoth Lakes Basin*

This basin was created from a combination of volcanic and glacial processes. Nine beautiful mountains lakes in a High Sierra setting was the result. Five of the lakes are surrounded by heavy recreational development, including campgrounds, resorts, marinas, etc. These lakes and the surrounding countryside make up one of the favorite recreation areas for the large populations of Southern California. Recreation use in the basin is extremely heavy, particularly in July and August. Campgrounds, during this period, are consistently at or exceeding capacities. Some campgrounds have traffic control, others do not. Site deterioration is occurring in most campgrounds. This is evidenced by such indicators as depletion of cover, compaction of the soil, dying trees, dusty campsites, and exposed tree roots. The basin is served by a good two lane, paved county road. It is estimated that at any given moment during the summer season over 1,000 motor vehicles can be counted within the basin.

Recreation opportunities of the basin include camping, fishing, hunting, hiking, boating, horseback riding, sightseeing, snowmobiling and cross country skiing. Winter use, particularly snowmobiling, is on the increase.

The Mammoth Lakes Basin is the source of the domestic water supply for the ever growing town of Mammoth Lakes. This water at present is polluted in varying degrees as a result of the heavy recreation use surrounding the lakes. There is some speculation that the domestic water demands of the rapidly growing community may drastically lower the lake levels, especially in dry years.

There are 210 acres of private land in the basin, most of which is developable. The 160 acre Waterson Tract is undeveloped. The 50 acre Barrett property on Lake Mary has a small store and boat launching ramp on it.

Fishing is the most popular activity. The fishing can be considered "good" for hatchery raised and planted trout.

Existing campgrounds within the basin are:

Coldwater	78 units
Lake George	30 units
Lake Mary	77 units
Twin Lakes	108 units
	293 units or 1,465 PAOT

Other Facilities

	PAOT
Horseshoe Lake Swimming	100
Horseshoe Lake Group Camp	350
Twin Falls Picnic Area	30
	480

Resorts & Pack Stations	PAOT
Mammoth Lakes Pack Outfit	
Woods Lodge	
Tamarack Lodge	
Crystal Crag Lodge	
Whites Lodge	
Lake Mary Store	
Total PAOT	1,200

Recreation Residences	No.	Permit Status	PAOT
Lake George	9	Term and Annual	
Falls Tract	22	Term and Annual	
Twin Lakes	27	Term, Annual, 3 Term Tenure (1971)	
Lake Mary	29	Term and Annual	
Total	77		385

TOTAL EXISTING PAOT - 2,065

Woods Lodge, Whites Lodge and the Lake Mary Store seem to be providing a creditable public service and are in good condition. Crystal Crag Lodge is deteriorating from lakc of adequate maintenance.

All of the recreation residences occupy land that is either suitable for public recreation facility development, or more valuable as open space and scenic backdrop.

Three of the lakes were enlarged through dam construction by the Forest Service in 1933:

Rebuilt the old dam only!

Lake Mary	70 acres
Lake Mamie	9 "
Twin Lakes	70 "

Other natural lakes include:

McCloud	10 acres
Horseshoe	60 "
Crystal	20 "
T.J.	15 "
Barrett	8 "
Lake George	35 "

C. *Situation - Reds Meadow Area*

Reds Meadow is the local name for a glacier sculptured canyon on the westside of the Sierra Crest that cradles the Middle Fork San Joaquin River. This is the only heavily used portion of the Inyo National Forest on the westside. The canyon bottom area is a series of meadows and wooded flats through which the San Joaquin meanders. Though accessible by road only from the eastside, the area is more westside in character.

Reds Meadow is reached via several miles of rough, dusty road from Minarets Summit. The area is popular with recreationists who wish to gain a more rugged or primitive camping experience than is available in the Mammoth Lakes Basin or Shady Rest Campground complexes. This portion of the San Joaquin River is also favored by fishermen. The area is a convenient jumping-off place for the Minarets and John Muir Wilderness.

The south or "backside" of Mammoth Mountain Winter Sports Area leads to Reds Meadow. Though presently undeveloped, the permittees of Mammoth Mountain and Reds Meadow Pack Station wish to extend ski area development, with attendant lodge and resort facilities, into the Reds Meadow area.

A proposed Trans-Sierra Highway, if constructed, will traverse the Reds Meadow Basin replacing the existing low standard access road.

There is a pack station, store and cabins at Reds Meadow under Special Use Permit. The same permittee has another pack station at Agnew Meadow. There are no other resorts, nor are there any recreation residences in this area. Other developed sites and their capacity are listed below. The Reds Meadow Campground is the only improved campground with traffic control barriers.

RED's MEADOW CAPACITY

Developed Sites	*Capacity*	
Sotcher Lake Nature Trail	*200*	
Agnew Meadow Campground	*150*	30
Upper Soda Campground	*100*	20
Pumice Flat Campground	*100*	20
Minaret Falls Campground	*100*	20
Red's Meadow Campground	*270*	24
Agnew Meadow (Group Camp)	*150*	30
Pumice Flat (Group Camp)	*160*	32
Sotcher Lake (Picnic)	*25*	5
Red's Resort	*100*	
Agnew Meadows Pack Station	*75*	
Red's Meadow Pack Station	*110*	
TOTAL PAOT	***2,530 Persons***	

Post Pile N. Monument / Park Service 50+5=250

The 800 acre Devils Postpile National Monument lies within this unit. The area, although still National Forest land, was proclaimed a National Monument in 1911 by President Taft to forestall the construction of a hydro-electric dam.

The Park Service reports that in 1968 the Postpile received 107,284 visits for a total of 13,556 camper (24 hour) days.

Forest Service traffic counters tallied up to 13,000 cars crossing the counter at Minarets Summit during the 1968 season, 6/10-10/16. The Reds Meadows area received 95,700 visitor days that season.

D. Situation - Landscape Analysis of the Mammoth Area

To establish a basis for planning decisions a major effort of this study has been to analyze the area's physical environment as a means of illustrating a reasonable division of the area into land units for recreation use and physical development. This process has included extensive on-site investigations, interviews with specialists, literature reviews, base data interpretations, including topographic and aerial photo materials, and consultations with Forest Service personnel, including both the Forest District and Forest Supervisor's Staff.

This study has focused its attention on discovering and identifying units of land within the Mammoth landscape with characteristics and physical properties which suggest opportunities, and limitations, for use and development. A comprehensive analysis of the land units provided the basis for determining an appropriate allocation of land uses with a minimum of conflicts between the natural resource and the potential for recreation and physical development. Each land unit carries its "share of the load," but each has its own special role in the recreation experience of Mammoth, thus ensuring a wide choice of recreation activities for the visitor.

The land analysis which follows illustrates environmental factors which should be considered for any decision to modify the existing landscape. The main purpose of each illustration is to identify land areas which are suitable for "development", i.e., either for intensive development of recreation facilities, such as campgrounds, visitor facilities and vehicle orientated recreation, or for development of residential, commercial and resort facilities. Land areas which were determined unsuited for development exhibited such constraints as steep slopes, surface drainage, high scenic value, intolerant vegetation or soil condition, extreme winds or wildlife habitat.

Visual Consideration

The natural landscape of the eastern Sierra has a variety of visual interests, all with their special beauty - whether it be the long

expansive views of wilderness mountains or the detail intricacy of a tiny lichen on a rock fragment. Any "visual analysis" of an area like Mammoth must assume that people generally have a common appreciation for beauty, even allowing for individual differences and preferences. On this assumption, the visual analysis of the Mammoth area was conducted with the primary purpose of identifying the areas of special scenic value and the features which create special interest within each area.

The visual analysis also took into account the spacial organization of the area. The relationships between open space and enclosed or forested spaces, create a sense of order and are important to retain and reinforce. In like ways, the same principle applies to urbanized areas where spacial order and visual continuity help organize the city and make it possible to orient oneself and comprehend relationships between neighborhoods, community functions, circulation systems, urban "districts," etc.

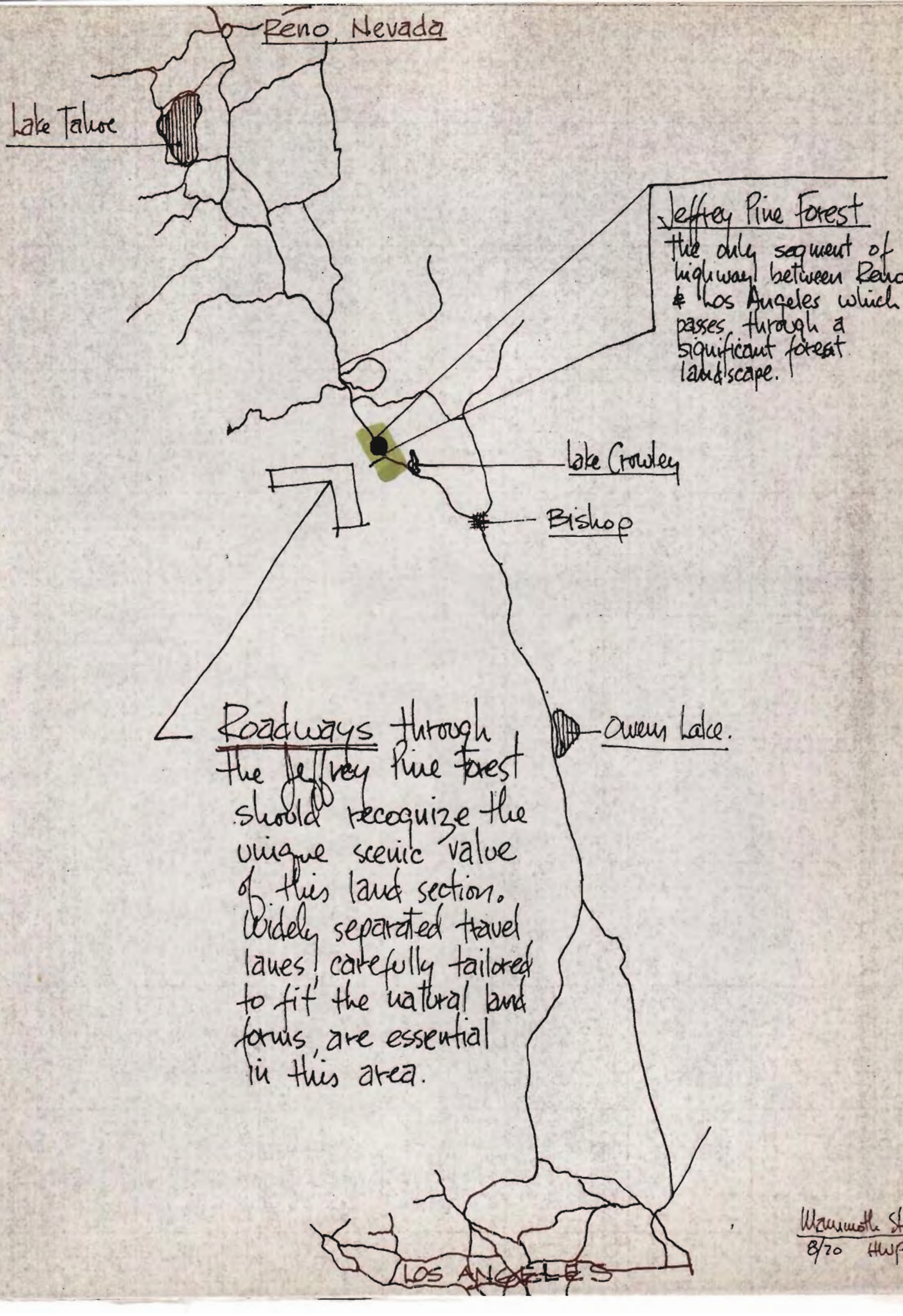
The visual analysis of this study does not attempt to communicate subtle beauties of the area. These must be dealt with on a small scale, individual project basis. However, where small, subtle features tend to add up to a large attraction, such as the meander of a stream through Agnew Meadow, the entire area has been identified in the analysis.

Visual entrances or gateways exist at several points in the area which should be carefully handled to ensure that the visual experience of "arriving" at Mammoth is retained. Breaking out into the open flat land from the southbound drive on Route 395 through the Jeffrey pine forest is one of the nicest experiences along the entire drive.

The "gateway" to the Mammoth area for northbound traffic is in the general area of the intersection of Route 395 and Convict Creek. It should also be noted that this area is the visual entrance to Crowley Lake for southbound travelers.

The location and design of the State Division of Highways building on the eastside of Route 395 in this area detracts considerably from this scenic event. Development of any sort along Route 395 from Convict Creek north to the Jeffrey pine stand above Casa Diablo Hot Springs should be restricted to be compatible with the primary recreation value of this stretch of land - scenic views of the mountains rising abruptly and spectaculary from the flat valley floor. The presence of overhead utility lines along Route 395 and parallel to Route 203 is not compatible with scenic highway standards.

The primary visual element which appears to organize the Mammoth area is the flat meadow land which extends west to the base of Mammoth Mountain, the outlet of Twin Lakes and the base of Mammoth Rock. This landscape feature which merges from dry sagebrush flats to wet, green meadow grassland is valuable as open space. In many respects



Mammoth Study
8/70 HWP

① Approaching pumice flat

② Breaking out into the open space

③ Approaching the forest corridor, or "slot-space"

ROUTE 395

The drive thru the Jeffrey pine forest.

Graphic notes on the sequence of enclosed forest roadways leading to open flat areas.

Note the framing of distant views by the large tree stands.

This sequence of enclosed slot-like spaces leading to open meadow lands occurs only in the area between June Lake and Mammoth Lakes along Route 395 - it should be retained in future plans.

④ View from within the forest corridor.

Mammoth Study
8/10 thru 9

it has the same value to the lower elevations of Mammoth that lakes as open space have to higher elevations.

By the same token, the pumice flat lands and meadow areas north of Mammoth and in Reds Meadow are valuable chiefly as open space and as a contrast with the enclosures of the surrounding forest stands. They are an integral part of the recreation experience.

The general appearance of existing development in the Mammoth area is less than favorable. Recreation areas are generally well maintained and well designed. Exceptions are those areas where overuse has created barking of trees, exposed roots, loss of ground cover vegetation and dying stands of hemlock, fir and pine due to heavy vehicular traffic and pedestrian use.

Private and commercial development in the Mammoth area suffers from many of the same development problems which characterize communites throughout the nation - a lack of visual order, signs cluttering the roadside, no apparent community focus or "theme," archectural styles which vary from "17th Century European Village" to 20th Century "McDonald Hamburger Modern." In view of the fact that Mammoth has an opportunity to exploit its unique setting, special climate factors and recreation oriented purpose, one would think that its prosperity would be better assured if it decided to develop a well planned, coordinated manner, which could result in one of the most beautiful communities in the nation, if not the world. It is distressing to see another example of unplanned sprawling development occurring in such a spectacular and inspiring location; particularly since the future prosperity of the area is so closely linked with the natural beauty of the land.

The Lake Basin area is a very special land area. Its value to the recreation experience for visitors to Mammoth is probably higher than any other land unit in the area. The two primary features of this unit are, (1) the proximity of several lakes within a relatively small area, each with its own "character," and (2) the scenic spectacle of the Twin Lakes, particularly as seen from above the falls, and Lake George, a "classic" alpine lake.

Maximizing the recreation values of the Lakes Basin area is dependent largely upon eliminating the present, and potential, conflicts between the scenic beauty and the encroachment of private vehicular and recreation paraphernalia. The aluminum siding of a camper vehicle does not enhance the beauty of an alpine lake, not to mention the damage it causes to the ground, vegetation, etc.

Reds Meadow, the valley area west of Minaret Summit, is another especially scenic area characterized by meadow lands and the dramatic valley walls of the wilderness environment. The sequence of moving through forest stands and abruptly coming upon an open meadow is delightful. Few opportunities exist in the entire Sierra range for the public to experience the qualities of a high Sierra valley without extensive hiking efforts or riding into back country areas.

The basic problem of recreation development in Reds Meadow will be how to provide the public with the most meaningful recreation experience, i.e., how to ensure that each user can experience the sequence of spaces, views, and find delight in suddenly coming upon a clear mountain stream, unadulterated by overuse or marred by someone's private "staking out" of the streamside with vehicles, camp gear and transistor radio broadcasts. The solution lies in the method of providing access to the meadow.

Refer to the drawings, "Land Analysis Summary," "Landscape Units" and "Summary-Land Use" for a summary of the implications of the visual analysis to development goals.

Back country field trips were made to experience the area of wilderness environment which would be affected by the development of the Mammoth area. Any development, construction of buildings or roads, clearing of vegetation or excavations, which occur west of the Mammoth Crest and above elevations of 9,200', approximately, will be visible from wilderness areas as far as 10 miles away and will substantially affect the quality of the wilderness experience in those areas.

On the basis of visual considerations alone, west of the Mammoth Crest is part of a wilderness environment. In fact, this study indicates that land west of Mammoth Crest may logically belong within the wilderness boundary.

Recognizing the existing use and development in Reds Meadow and Agnew Meadow - a compromise policy would be to prohibit any further construction of roads west of the Crest, (the cuts and fills would be visible throughout miles of wilderness area), prohibit construction of any structures on the Crest or west of it, restrict any clearing of vegetation for recreation purposes to "selected thinning," i.e., "ski-ways" rather than ski runs or trails should be designed for the west slope of Mammoth Mountain - if skiing is to be permitted, and restrict any buildings to heights substantially below crown height of the mature tree stands to ensure that they are hidden from view. No development should occur in open spaces.

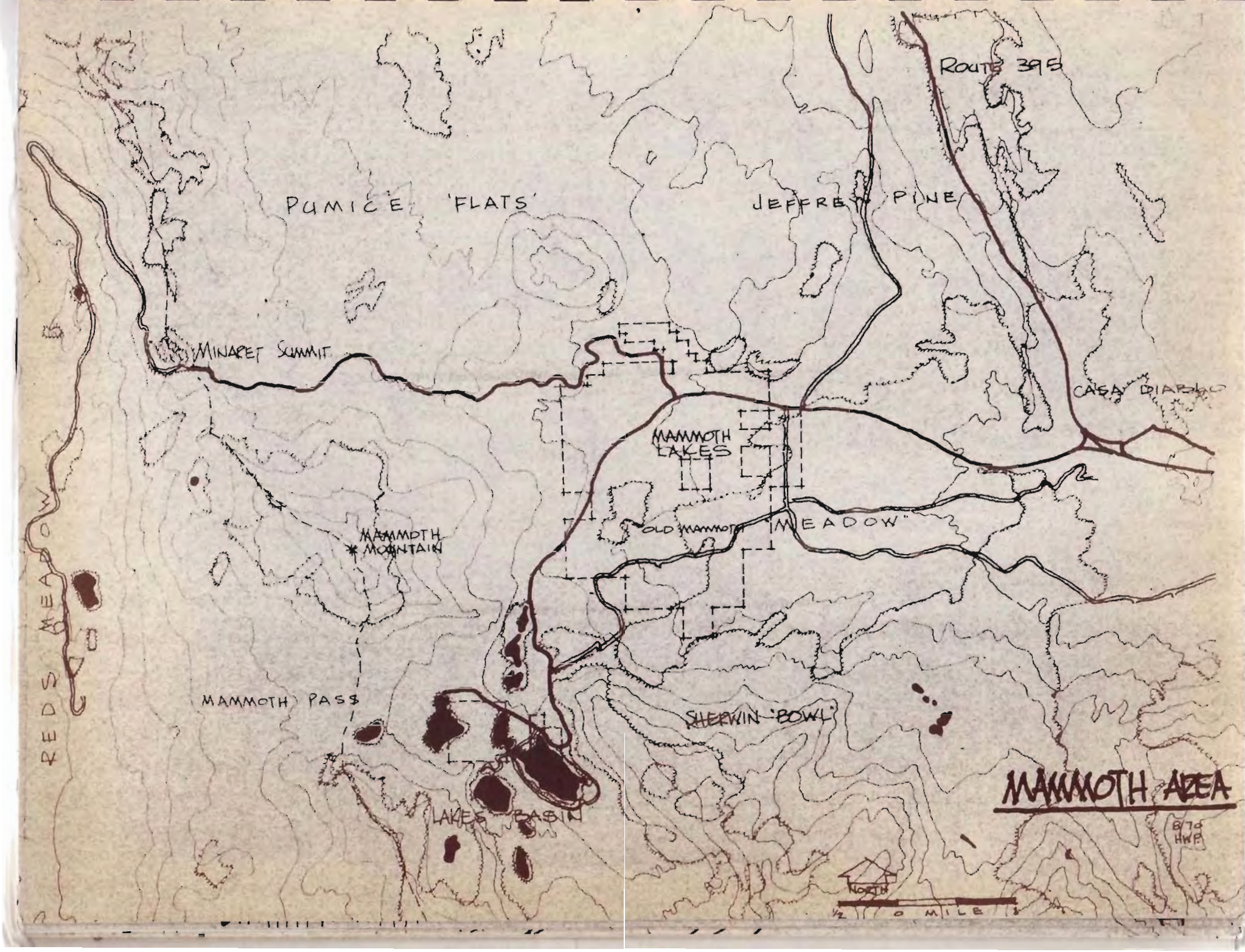
Topography and Drainage Consideration

This is a complex subject because of the varied conditions of land forms and geologic formations in the Mammoth area. In many respects it is part of the visual analysis of the area. The accompanying illustrations of topography and drainage patterns are simplified diagrams which extract those features of large scale significance to land uses.

Slope areas indicated on the drawing are those which have a greater than 25% gradient and are not considered lands suitable for development.

Drainage area indicated include those which would affect any physical development proposal or recreation use.

It is recommended that first rate, high quality aerial photo/ topographic maps be made of the Mammoth areas being considered for "development" to a scale of one inch equals one hundred feet and a contour interval of five feet, especially the Sherwin Bowl Ski Area, Reds Meadow, Deadman Creek, Lakes Basin and the area north of the Shady Rest Campground.


ROUTE 395
PUMICE 'FLATS'
JEFFREY PINE
MINARET SUMMIT
CASA DIABLO
MAMMOTH LAKES
OLD MAMMOTH MEADOW
MAMMOTH MOUNTAIN
RED'S MEADOW
MAMMOTH PASS
SHERWIN 'BOWL'
LAKES BASIN
MAMMOTH AREA
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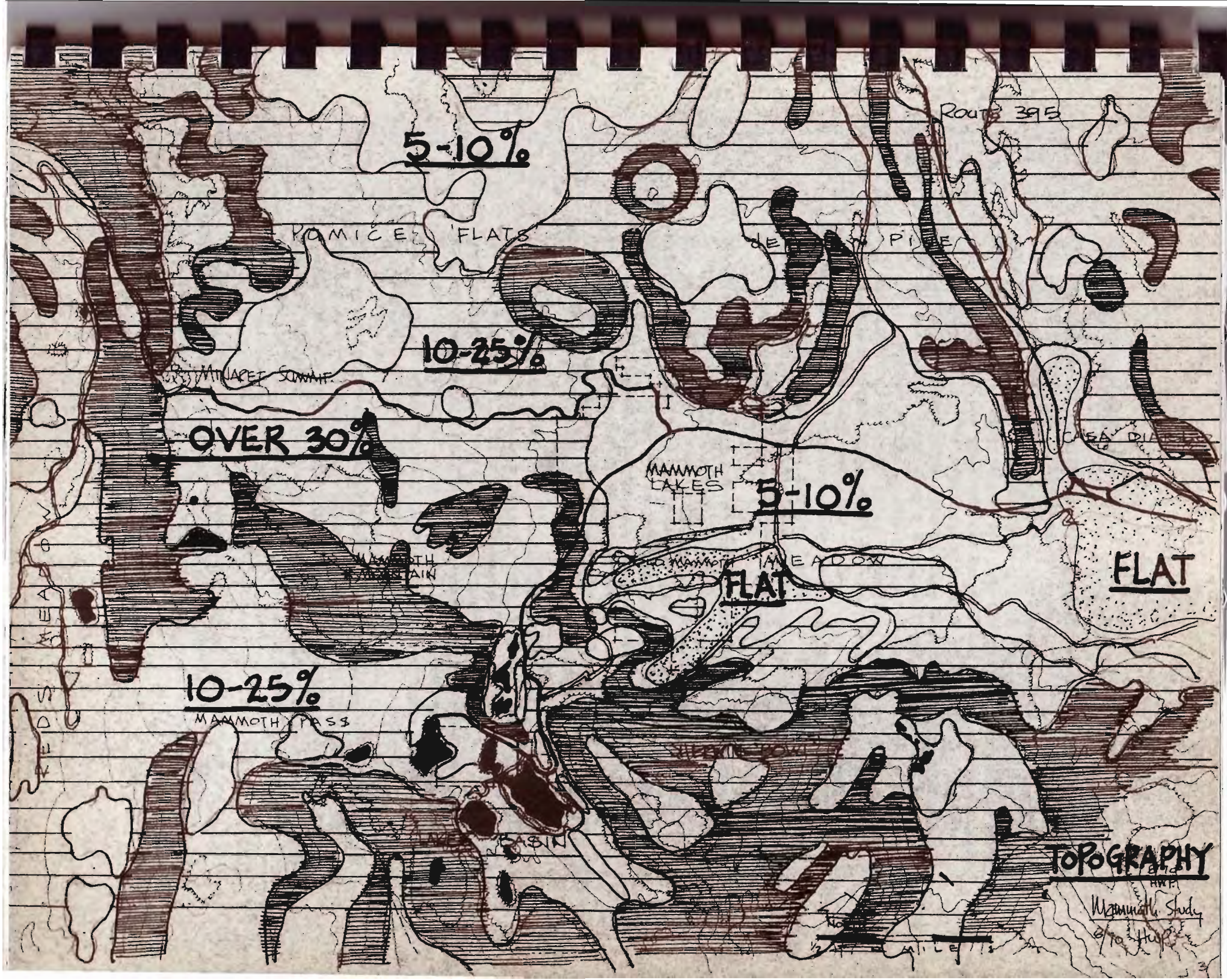

5-10%
POMICE FLATS
ROUTE 395
10-25%
OVER 30%
MAMMOTH LAKES
5-10%
FLAT
FLAT
10-25%
MAMMOTH PASS
TOPOGRAPHY
Mammoth Study
8/10 Hwy

Wildlife Considerations

The importance of wildlife to the recreation opportunities and development potentials of the Mammoth area is difficult to quantify and even more difficult to present in convincing terms. We can reasonably assume that wildlife is a very important part of the outdoor experience. Most people who use the National Forests, Parks, etc., anticipate the presence of animals and birds as being a part of "camping out." The sighting of a deer or a bear or catching a large trout is remembered more vividly and for a longer period of time by the forest user than a tree, bush or sunset. This in itself is a problem as the relationship between the forest wildlife and the forest is not yet fully recognized. The wildlife is present because the habitat (the trees, shrubs, water, etc.,) is able to sustain the birds and animals. This study may be presumptious in assuming that the value of wildlife to the ecology of an area is basically understood and appreciated, even to the extent that it should not be necessary to justify maintaining habitats for deer herds, sage grouse, bighorn sheep and all those "little" creatures.

It is acknowledged that one of the primary roles of the Forest Service is to manage wildlife habitat so as to encourage the continuation of the various species to be found in the Sierra mountain landscape. Naturally this includes maintaining and even creating wildlife habitat and protecting these habitats from uses which conflict with their natural capacities to support wildlife. The Mammoth area has a long time functioned as a migration route or corridor for the Casa Diablo and Sherwin deer herds migrating between their summer and winter ranges as the accompanying drawing illustrates.

Oddly enough, the newly constructed Route 395 interchange with its accompanying wire fencing, metal reflectors and "underpass redeer" lies directly in the middle of a meadow area which is or was a resting-feeding area for the deer herds awaiting the mountain passes to open sufficiently to allow them access to the back country summer ranges. The effect of this construction on the deer herds themselves has yet to be measured, but certainly is an example of rather unsympathetic handling of the wildlife resources involved.

Highway construction across traditional deer migration routes is nothing new - it has occurred in other areas in the past and will no doubt occur in the future. It does, however, raise an issue. Preliminary planning apparently is completed with insufficient consideration for the wildlife values that will be disturbed, disrupted, shuffled or lost due to the construction.

Apparently, deer ranges and migration routes doe not yet run into conflicts with development of recreation facilities or private development proposals in the Mammoth area, with the exception of the above.

(A special note is included here to mention one critical area where the Sherwin Deer Herd migration route is threatened by development and is almost being shut off. This is the area immediately west of the Sky Meadow Ranch development. If sufficient open area between the development and the steep slopes of the mountain side is not retained, the migration route will be cut off, the consequences of which are probably the gradual decline and finally the disappearance of the deer herd.)

The sage grouse associated with the Mammoth area is apparently threatened. Already two of the nine "strutting grounds" in the area have been abandoned by the bird and the entire group which winters in a range area northeast of Crowley Lake at the base of Glass Mountain range is threatened to be wiped out by the possible construction of an airport near Benton Crossing. In fact, should a jet port be constructed in that area, game biologists are convinced that the sage grouse population in the Crowley Lake area will disappear. Any further discussion of the feasibility of expanding air services to the Mammoth area by means of an airport in this area "particularly an airport capable of handling jet airplanes which require runways of 7,000 feet and longer" should include a consideration of the sage grouse resource. The unique characteristics of the sage grouse, the largest of the North American grouse, create rather special management requirements. The most critical requirement and the one which determines whether the species survives is its total reliance on the sagebrush habitat. It is incapable, as some wildlife are, of adapting itself to any other ecological condition. Another factor which is of major significance in weighing the consequences of any proposals which may affect this species is the fact that it is found in very few areas of California - only Modoc, Lassen and Mono Counties contain sage grouse ranges of significance.

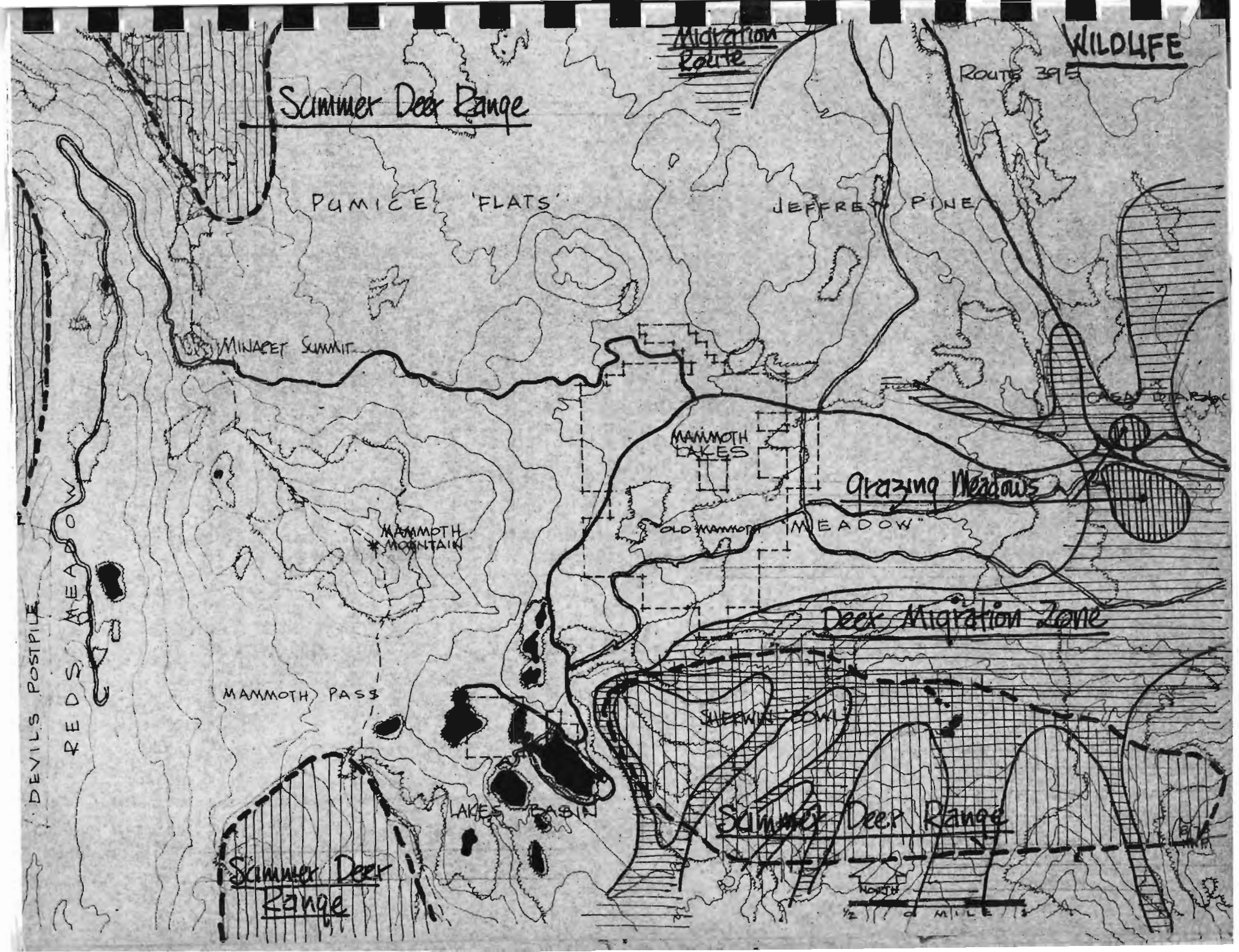
The management of fish has reached the point where stocking programs can be manipulated to control the intensity of recreation use in a given area. A prospect which indicates possibilities for special sorts of "people user controls" or encouragements in which the intensity of use desired is correlated with the fish stocking program.

If it were possible to create additional water features in the Mammoth area fishing opportunities could be expanded. An area which appears possible for development as a pond or lake is the site of an extinct lake bed immediately east and north of Old Mammoth. (See Soils and Geology Analysis).

The potential for a full square mile of new lake surface area and its long length of shoreline in an area which is separate from the Lakes Basin and convenient to the Mammoth development appears worth further investigation.

It is difficult to evaluate the long term effect of the Mammoth Lakes expansion on the native wildlife, however, we can safely assume that

there will be a definite impact on all the species, big and little, within this sphere of influence. Any modification we do to a land area always effects the other creatures who live in the land. These effects may be felt by increased hunting pressures, more people invading more habitat, air pollution, water pollution, noise pollution, etc.


WILDLIFE
Migration Route
Summer Deer Range
ROUTE 395
PUMICE 'FLATS'
JEFFREY PINE
MINARET SUMMIT
MAMMOTH LAKES
Grazing Meadows
OLD MAMMOTH MEADOW
MAMMOTH MOUNTAIN
REDS MEADOW
DEVILS POSTPILE
Deer Migration Zone
MAMMOTH PASS
SHEEPWIN TOWN
LAKES BASIN
Summer Deer Range
Summer Deer Range
NORTH
½ 0 MILE 1

Vegetation Considerations

The analysis of vegetation in the Mammoth area has consisted primarily of on-site investigations, study of aerial photographs and mapping of tree stands based on available "Forest type surveys."

The value of the existing trees to the scenic quality of the Mammoth area should need little justification. Without them the recreation experience would not exist. Tree stands in the Mammoth area include fir, pine, hemlock and some aspen. Basically, these tree stands are the first line of defense against extensive erosion, and in the case of the townsite of Mammoth, high winds during the winter. Any attemps to clear areas for development or construction purposes must recognize that the trees are rooted in only about 12 to 18 inches of the top soil layer and if exposed will easily blow over. Red fir stands, most of which are "over-mature," are particularly intolerant to root disturbance and quickly weaken and become infested with engraver beetles, causing them to deteriorate rapidly. Residences in the newly developed Mammoth area are already endangered by tree die-off due to excessive undercutting and clearing involved in current construction practices in that area.

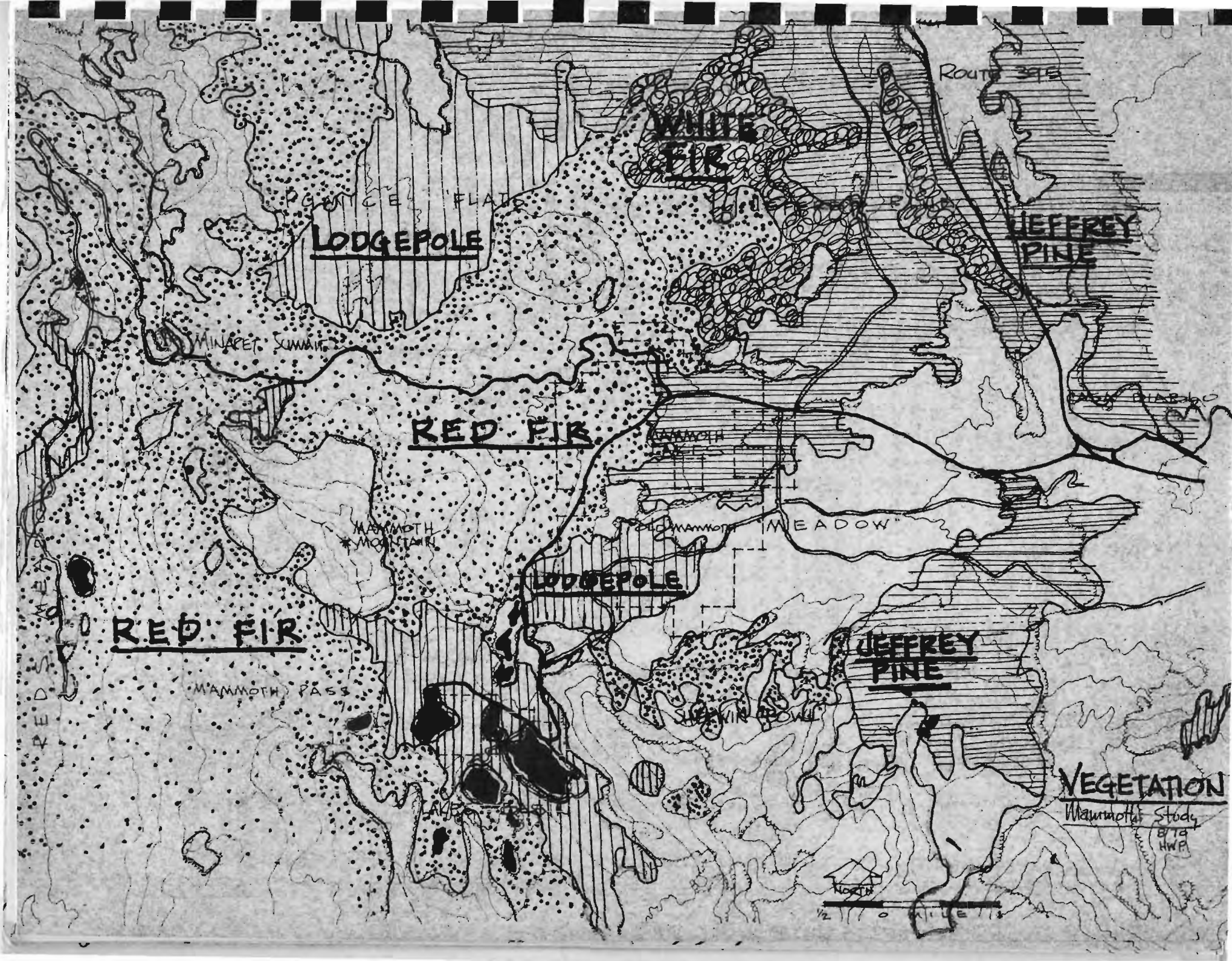
Of the several large tree stands in the area, the Jeffrey pine has special interest because of its great height and size. Pine needle litter covers the ground beneath these trees. They occur in gentle sloping areas and consequently they create excellent opportunities for recreation use, such as campgrounds.

Special attention should be given to the prospects of maintaining and enhancing the unique experience of driving through the Jeffrey pine forest. The sequence of flat open areas connected by the narrow slot like spaces within the forest, which periodically frame vistas of the distant Mt. Morrison and Laurel Mountain peaks, is unlike any other stretch of highway between Reno, Nevada and Los Angeles, California. Efforts should be made to maintain the present pavement with and locate any new road alignment separate from the existing sufficiently to preserve the scale of the slot like spaces, the minimum cut and fill areas and the graceful curvature of the alignment. A suggested "improvement" for the route is indicated on the following drawing.

On slopes greater than 25% within the Mammoth area it can be safely assumed that the stands of existing trees are essential to preventing erosion and debris avalanches. For this reason, the vegetation analysis generally coincides with the topographic analysis and indicates the same areas for development potential. It should be noted that in the area generally north of Mammoth the soils are droughty, pumice-like and very low in water holding capacity. Consequently, steps should be taken to preserve as much of the forest floor litter deposition as possible. In areas where timber cutting is disturbing this layer of litter, it is suggested that slash cutting chipped and spread in the disturbed area to assist in the maintenance of whatever ground moisture remains.

Basically, because of the extremely dry conditions prevelant in the Mammoth area, any existing vegetation, whether bitterbrush, mountain daisy or pine, is worth trying to retain since it takes such a long time for plants to establish themselves. In fact, attempts to establish plantings in any portion of the Mammoth area will be a very delicate and expensive proposition, witness the efforts by Dave McCoy to control erosion with grasses on Mammoth Mountain and the efforts to retain the exotic plantings around the Visitor Center. One is impressed by the individual effort by Willards Art Studio at Twin Lakes in establishing native vegetation in an ornamental fashion.

A special effort should be initiated to experiment with large scale transplanting of native shrubs, ground covers and trees - probably using rather specialized machinery such as "tree-spades" which dig and move vegetation in one operation.


ROUTE 395
WHITE FIR
JEFFREY PINE
LODGEPOLE
PUMICE FLAT
MINARET SUMMIT
RED FIR
MAMMOTH
MAMMOTH MOUNTAIN
OLD MAMMOTH
MEADOW
LODGEPOLE
RED FIR
JEFFREY PINE
MAMMOTH PASS
LAKE
NORTH
1/2 0 1 MILE
VEGETATION
Mammoth Study
8/79
HWP

Climate Considerations

The area is typically dry eastern Sierra slope land. Precipitation occurs mostly in the form of winter snowfall, which means droughty conditions prevail throughout the summer. The significance of this to development plans is that first of all recovery of areas disturbed by construction is not going to be easy. Establishing vegetative cover will no doubt require substantial amount of watering and yet the addition of abnormal amounts of water to the root system of the existing pines and firs is very likely to cause them to die, or at least make them more susceptible to windfall and snow damage because of a change in root pattern.

Secondly, water sources sufficient to support an increase in the Mammoth person-at-one-time figure, especially of the magnitude proposed (from a capacity of 10,000± now to a capacity of 150,000± in the next ten to fifteen years) may be an impossibility, although facts and figures on the precise quantities of water available from the immediate area, such as the Lakes Basin, have not yet been finalized. It is said there is sufficient run off from winter snows to produce the amounts required if only a means of storing it can be discovered. This alone is complicated by the fact that precious little land seems suited to provide the area needed for water storage.

A 1961 study of the water and sewage problems at Mammoth suggested the use of an underground gallery system to collect available ground water in the area of the meadow between Mammoth Lakes and Old Mammoth. The feasibility of this has apparently yet to be confirmed. From the standpoint of the value of a green meadow to the general recreation quality of the area, it is suggested that draining the meadow or altering its present ground water table would be a mistake. There is some talk of exploring the possibilities of obtaining water from Crowley Lake.

As one effort within this study to explore the potentials for creating impoundments for water in the area, a preliminary plan for the Lakes Basin area (on file in the Office of the Forest Supervisor), shows Lake Mary converted to a reservoir with the water level raised 10 feet above the existing level with minimal change required of the existing land use patterns adjacent to the lake. This possibility may warrant further study.

The fact that Mammoth Mountain is noted for having one of the longest skiing seasons in the world is ample evidence that the climate conditions gives rise to some particular development constraints. Basically, two factors have the greatest effect on the area during the winter months. Snow fall accumulations and wind intensities.

Snow fall depths over 10 feet are not uncommon in the intense snowfall areas meaning that snow removal of roadways and pedestrian areas is a large, expensive item. Snow loads on buildings create special structural problems and cause extensive damage to small structures, such as the chalets adjacent to the Mammoth Mountain Inn which were damaged considerably extensively during the 1968-69 and 1969-70 winter seasons. Maintenance efforts to keep the parking areas at the base of Mammoth Mountain ski lifts clear during winter months has resulted in extensive damage to the forest stands adjacent to the road because of the accumulation of snow around the trunks of these trees blown there by "snowgos."

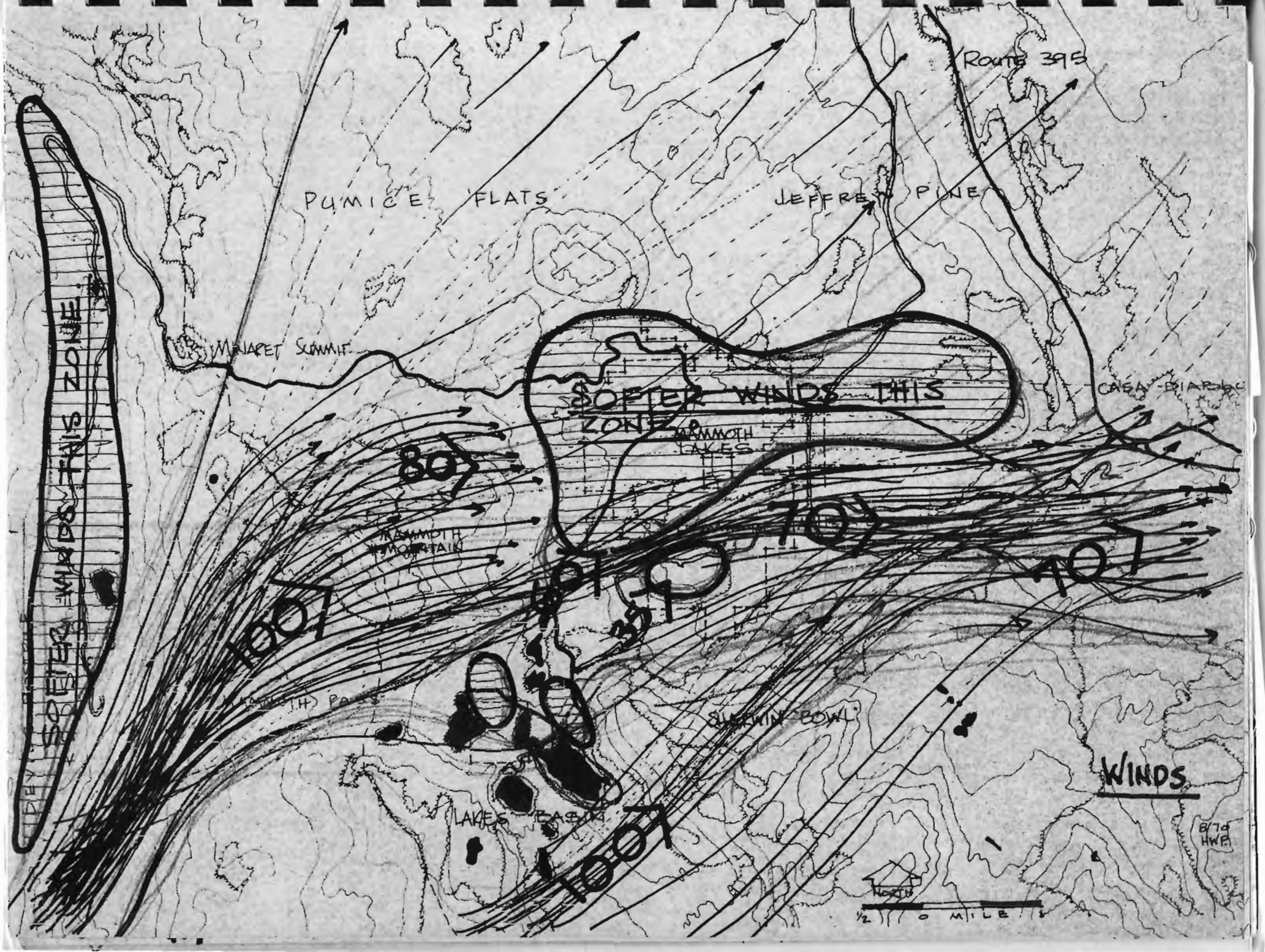
The implication of the heavy snowfall in some areas of Mammoth is that it would be better to limit private vehicles to zones of moderate snowfall (and reasonable snow removal efforts) and provide a controlled access system of public transportation to the ski area.

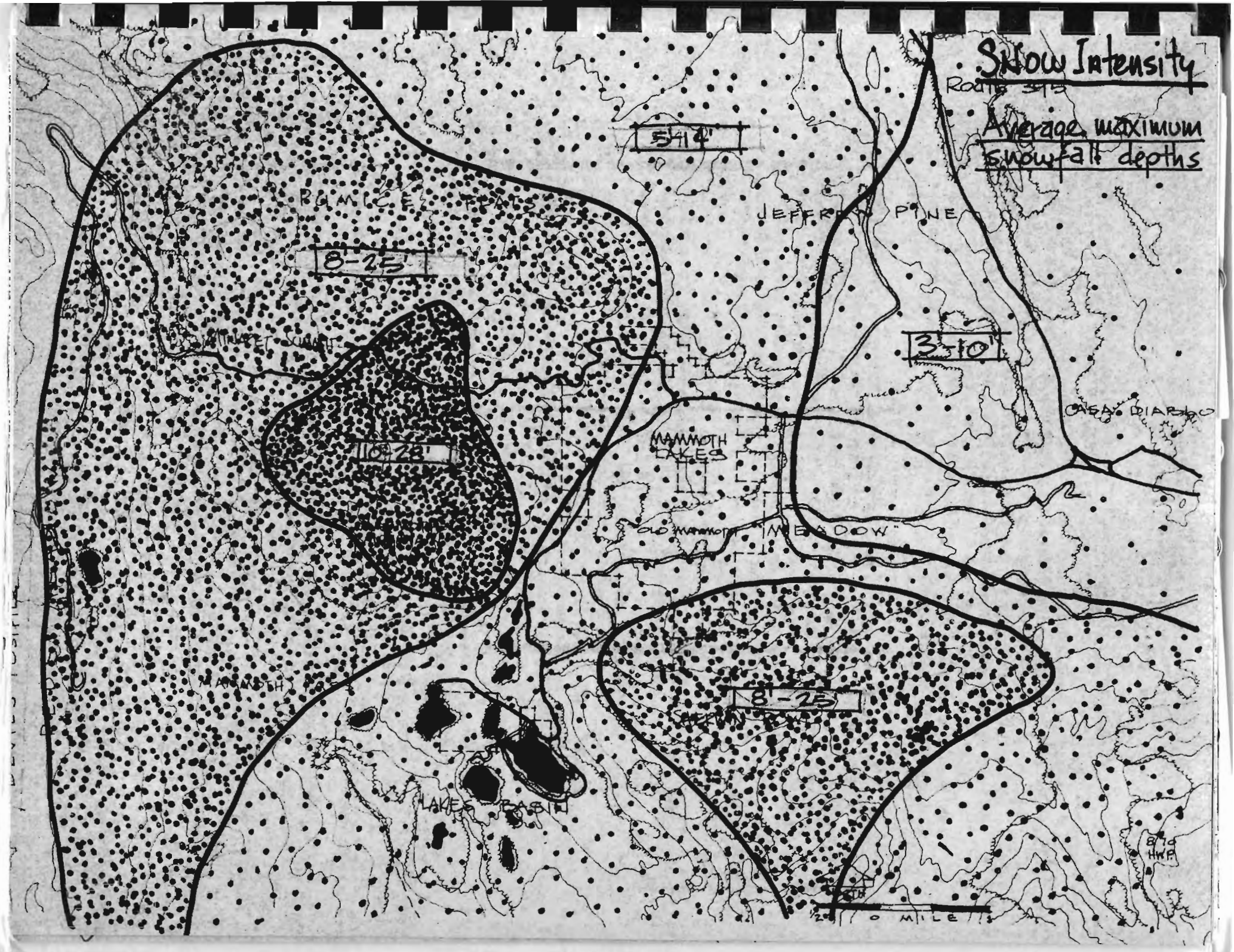
Winds commonly reach velocities in excess of 100 mph through Mammoth Pass and along the Mammoth Crest. Slower winds, 70 to 80 mph, zip through the open meadow east and below Twin Lakes. This area was until recently known as "Windy Flats." Again, development of residential, commercial or recreational facilities in this open flat area is undesirable. Even in summer months strong winds effect the area and would create uncomfortable conditions.

There are several areas which are protected from winds and intense snowfall. These are Reds Meadow, an area within the Lakes Basin, Old Mammoth and the general area of Mammoth townsite above the levels of the meadow.

Summertime temperature ranges are particularly suitable for outdoor recreation. Little needs be said about this factor, other than the fact that in general the climate is cooler and more pleasant during the summer than the large urban areas of the state, and thus the continual pressures for increased use.

The following drawing indicates the general patterns of intense snowfall and high winds which create areas not considered desirable for either recreation development or private development.


ROUTE 395
PUMICE FLATS
JEFFREY PINE
MINARET SUMMIT
SOFTER WINDS THIS ZONE
MAMMOTH LAKES
CASA DIABLO
80
MAMMOTH MOUNTAIN
100
SUNSHINE VALLEY
SOFTER WINDS THIS ZONE
SILVERWING BOWL
LAKES BASIN
WINDS
8/76 HWP
NORTH
½ 0 MILE


Snow Intensity
Route 395
Average maximum snowfall depths
5-14"
8-25"
3-10"
8-25"
10-28"
JEFFREY PINE
MAMMOTH LAKES
OLD MAMMOTH
MEADOW
LAKES BASIN
0 MILES

Geology and Soil Considerations

The analysis of soils and geology for the Mammoth area conducted for the purposes of study has, of necessity, been preliminary and general in nature. It is obvious from even such a quick reconnaissance of the area that detailed soil survey information is needed in order to establish definite recommendations for specific development projects; however, several points can be made at this time which indicate the overall potentials, and limitations, for development in the Mammoth area, particularly with reference to large scale land areas.

For the most part, the lands in the Mammoth area are overlaid with loose, non-cohesive soils, much of which is pumice. These soils present droughty, "low-productivity" conditions which are slow to recover from construction disturbances and quick to deteriorate from heavy use. Much depends on whether an overburden of pumice is present and the depth of overlay. Usually pumice, sand and gravel are greater than one foot deep. Irrigation water will be required in greater quantities to support lawns and ornamental plants in such areas.

Development, whether recreation oriented or private residential and commercial development, is best suited for those areas which are characterized by alluvial depositions, such as occur in the area of the existing Mammoth Lakes and Old Mammoth, plus an area which extends eastward from Mammoth Lakes to Route 395, and an area generally located in the region of the Sherwin Lakes basin and toe slopes. Other pockets of potentially developable land occur just north of the Mammoth Ranger Station, southeast of Lake Mary, and portions of the Reds Meadow valley. (Refer to Soils and Geology Analysis drawing for an illustration of these zones.)

Large expanses of pumice deposits characterize most of the area around and north of Mammoth Lakes townsite and County Road 203. These pumice areas will not support recreation or development uses which disturb the loose, non-cohesive soils. The pumice gravels tend to roll when disturbed, thus tearing shallow roots of grasses and forbs and creating ruts which expose more area for moisture evaporation.

The natural vegetation density indicates the ability of these soils to produce under natural conditions. However, under the dry conditions which exist in the Mammoth area, the natural vegetation density in the pumice areas is probably due to development of the climax vegetation which shades and protects the ground from loss of moisture due to evaporation. This situation, and process, requires many years to establish under natural conditions and without irrigation it will be extremely slow in repeating itself when disturbed by recreation use and development.

The bearing value of pumice deposits is low for it tends to crush and roll under pressure. Dune buggies and vehicular traffic on the pumice areas just west of Inyo Craters has already destroyed the small ground cover plants and marred the scenic quality of the area. One vehicle trip through "virgin" ground area leaves tracks which remain for several years.

Breaking open the surface of pumice creates an evaporation increase affecting a substantial area adjacent to the disturbed zone, the opening in the surface acting much as a "wick", drawing moisture from all directions for a considerable distance. The implications of this "wick" phenomenon are that any construction or vehicular traffic on the pumice areas will affect an area about twice the size of the actual disturbed area, causing loss of ground cover, weakening of tree stands, reduction of wildlife habitat and marring of scenic values.

Since these areas are primarily valued for their scenic qualities, access should be provided but limited to narrow, surfaced roads constructed "on top" of the ground and probably designed on the basis of a one-way circulation system, thus requiring no greater than 14' pavement width. Turn-outs, parking niches and overlook areas should be provided periodically to enhance the visitor's appreciation of the natural features.

A scenic drive through this area is proposed for further consideration. Basically, the characteristics of soils and geology which have a bearing on whether or not to consider development are as follows:

Glacial deposits have a moderate to high erosion potential and low water holding capacity, (.4 to .8 inches per foot of depth). Development is feasible in these area is provision is made for handling surface run-off to prevent erosion. Bearing capacities and slope stability are generally good in these soil conditions provided they have no pumice overburden.

Recovery of excavated areas will be slow and require irrigation of any new plantings, which may cause damage to the existing tree stands which are conditioned to dryness.

Granitic rock formations have a high erosion hazard where they occur in a decomposed state. Slopes greater than 50% will be characterized by debris slides and soil avalanche hazards. Where granitic boulders overlay decomposed granitic rocks, such as the Sherwin Bowl area, construction of any new development should recognize the high potential for erosion and slides.

The finer textured soils derived from basalt and andesite usually have a high water holding capacity, provided they have sufficient depths of two to three feet. These soils can prevent problems of compaction around developments.

Tuff breccia often weathers to fine textured soils creating problems for leach fields, compaction, and they have low bearing strengths.

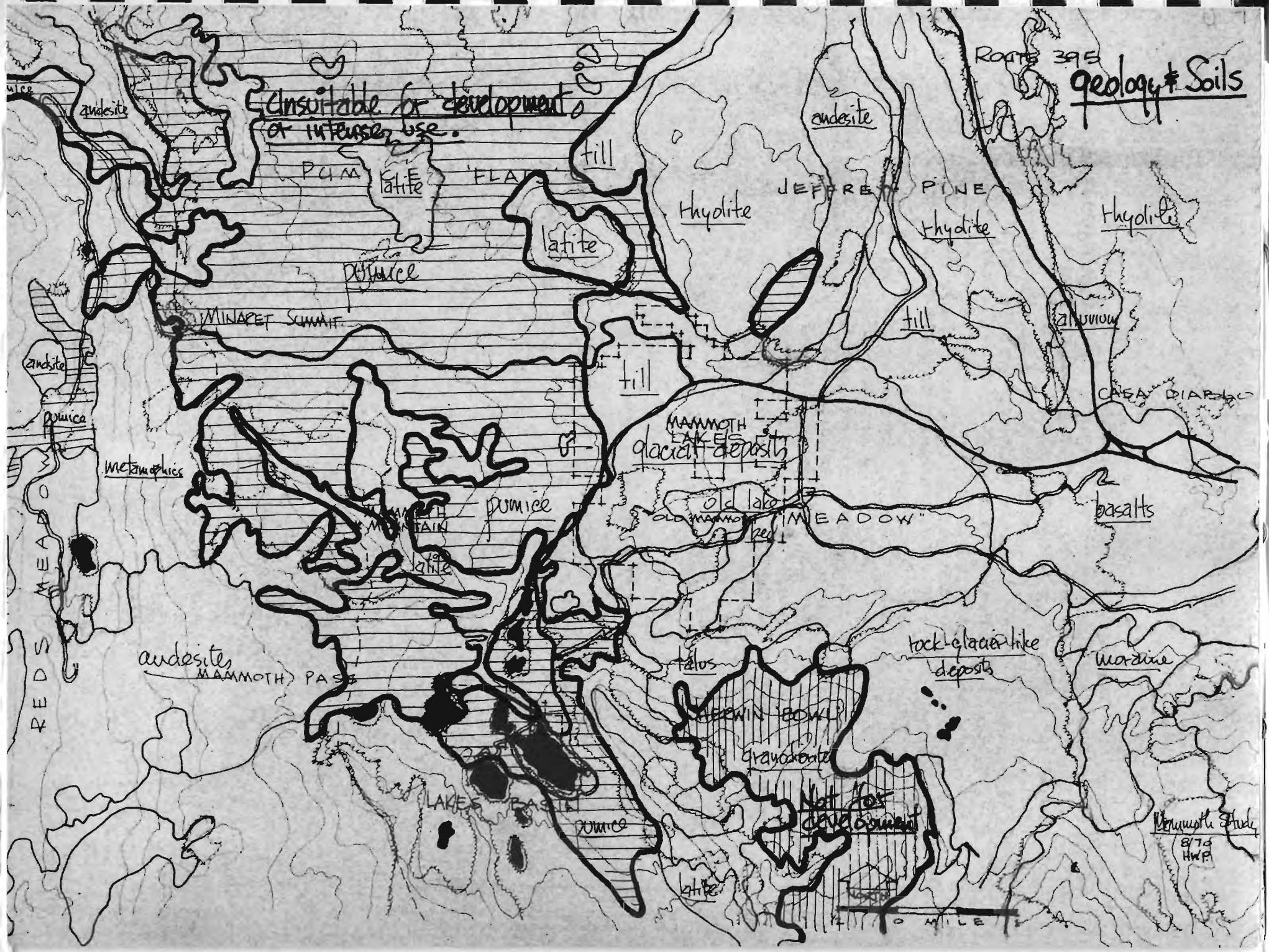
Ash soils are permeable and thus make good leach fields if the slope is not great. Water well contamination in these soils is not a problem. Erosion may be a problem, however, Ash has low bearing strength and resists compaction.

Fault lines in the Mammoth area should definitely be investigated for they are usually permeable zones of water downward. Leach fields located on them can contaminate what would otherwise be a valuable source of domestic water.

Metamorphic rock soils have a low to moderate erosion hazard. Unfortunately, the presence of these soils in the study area is extremely limited and where it does occur it is usually overlaid with pumice or glacial deposits or else it occurs on steep slopes which are primarily assessed as scenic features unsuitable for development.

Miscellaneous Notes:

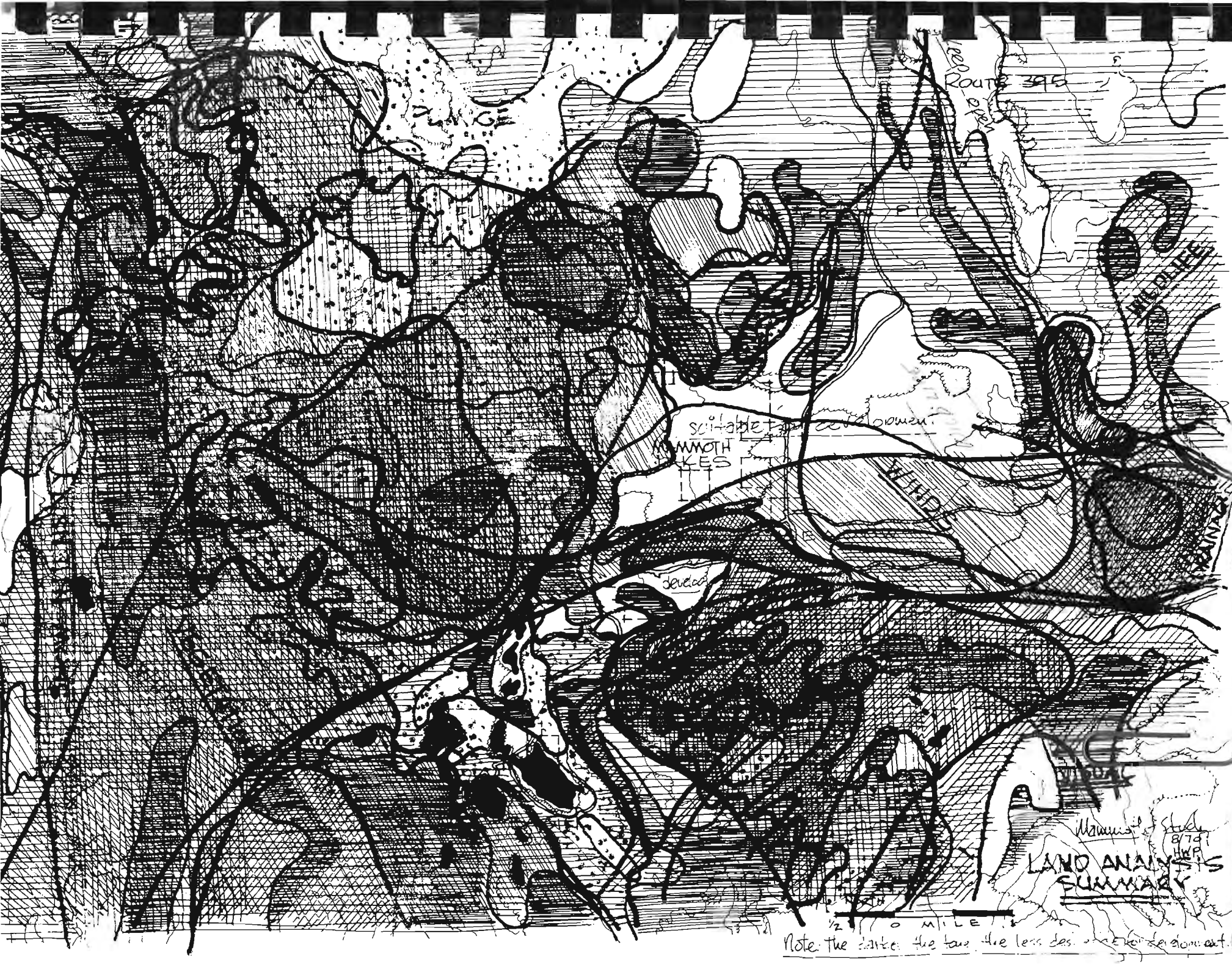
Older rhyolite areas can present problems for septic tank leach fields. Pumice tuff often weathers to a medium textured soil which is suitable for development if there is sufficient depth to underlying rock and the land is relatively flat. Bearing strength should be good, compaction is often a problem, and erosion may be a problem on slopes greater than 15%.


Geology & Soils
Unsuitable for development or intense use.
ROUTE 395
andesite
latite
pumice
MINARET SUMMIT
rhyolite
till
JEFFREY PINE
alluvium
CASA DIABLO
MAMMOTH LAKES
glacial deposits
old lake beds
MEADOW
basalts
metamorphics
MAMMOTH MOUNTAIN
talus
rock-glacier-like deposits
moraine
MAMMOTH PASS
CRESTA
graywackes
LAKES BASIN
Not for development
Mammoth Study
8/74
HWP
0 MILE

LAND ANALYSIS IMPLICATIONS

To determine the implications of the various aspects of the Mammoth environment for general recreation and development purposes the analysis drawings were superimposed to reveal the patterns of land areas which provide opportunities for development with a minimum of conflict with the natural conditions, as well as those areas unsuited for restricted for development. The accompanying "Land Analysis Summary" drawing illustrates the results of the process and indicates that development opportunities for Mammoth range from "impossible in some areas" to "preferred for development" in other areas. In converting this information into a general land use scheme for the Mammoth area, it should be noted that a degree of subjective judgment is employed since, obviously, all factors should not be considered with equal weight, i.e., a steep slope condition is considered undesirable for development even though soils and geology classifications might indicate a possibility for development; therefore the area involved would be indicated as "not for development." Likewise, where scenic qualities and wildlife habitat may indicate development should be limited, and soils and geology indicate potential for development, the judgment may be that the recreation value of the views and wildlife outweigh gains from physical development of the area, in which case the zone would be identified as "not for development."

Although these judgments may be subject to question, a serious effort has been made to make sure that sufficient evidence existed to make a rational evaluation of the consequences of the decision. In this respect it is felt that the conclusions indicated on the drawings are meaningful and can serve as guidelines for further decision-making.


ROUTE 395
suitable
developed
½ 0 MILE
LAND ANALYSIS
SUMMARY

III. SOME ASSUMPTIONS

Previous to arriving at conclusions and formulating recommendations, it was necessary to make some assumptions:

1. *County zoning of private land will be minimal, and essentially innocuous.*

2. *A domestic water supply crisis and corresponding conflict with recreation oriented water will develop.*

3. *Private land in the Lakes Basin will be developed for resort and year-around private residences.*

4. *Public sentiment will permanently forestall the Minaret Summit-Trans Sierra road.*

5. *Administration of the Devils Postpile will eventually be returned to the Forest Service.*

6. *Opportunities for a high quality recreation experience will diminish, and the rate of site deterioration will accelerate unless a significant departure from present recreation management practices is made.*

7. *There will continue to be a shortage of appropriated funds for recreation facility improvement and new construction.*

8. *Pressure from developers for: (a) more lifts on Mammoth Mountain, (b) development of the Reds Meadow side of Mammoth Mountain, and (c) development of a Sherwin Bowl Winter Sports Area will mount.*

9. *The recreationists preference for the use of self-contained recreation vehicles will intensify.*

10. *Demand for use of Forest Service summer recreation facilities and permittee winter sports areas will continue to outpace the supply.*

11. *Due to a rapidly evolving "environmental conscious," the public will accept stringent measures to protect the ecology and beauty of mountain recreation areas.*

IV. CONCLUSIONS

1. *There are ample land areas of diverse characteristics to support a wide range of recreation activities without reducing the essential quality of the natural areas and their potential for high level recreation enjoyment. An appropriate allocation of recreation uses can be made.*

2. *There is presently a conflict between private development proposals and the suitability of some land areas for physical development and recreation use.*

3. *The extensive use of recreation vehicles in several portions of the area is rapidly destroying the natural environment which attracts people there in the first place. Resolving the problems of access to areas of exceptional beauty and value without damaging them to the point where they lose their recreation values is a task of first priority.*

4. *It will be necessary to regulate the numbers of people at one time using the Mammoth Lakes Basin and Reds Meadow area.*

V. EVALUATION CRITERIA

1. *Environmental degradation resulting from recreational use must be reduced to within a narrow range of acceptable limits.*

2. *The scenic resource must be preserved.*

3. *Solutions must contain provision for firm controls on numbers of people using recreation complexes and regulation of vehicle use within the composite.*

4. *Administrators must be able to implement the initial phase or increments of the solutions immediately.*

5. *Solutions should provide for a variety of recreation experience levels, and diversity of opportunities.*

6. *Solutions should be practical and achievable.*

7. *Recreation vehicle users should be provided overnight camping areas within the composite.*

VI. DISCUSSION OF ALTERNATIVES

Several development schemes were proposed during the course of this planning effort. The closest any single concept came to meeting most of our evaluation criteria was the oft proposed decision to limit the Lakes Basin to day use only. But this didn't solve the problems associated with traffic congestion in the basin and Reds Meadow. It didn't solve the problem of the ever present pall of dust that hangs over Reds Meadow. And it didn't resolve the situation wherein automobiles, trailers and campers are occupying about one-fourth of the available land in these two key recreation areas.

VII. TWO KEY DECISIONS - AND THE BALANCE OF THE RECOMMENDATIONS

Two Decisions - (Management Direction)

To: D.R. - Mammoth

Dick -

Lets talk to Everett about this the first time we're all together.

Ron

JW

2310 Recreation Systems Planning July 29, 1971

Mammoth Recreation Composite Plan
(Yours 10/12/70)

Forest Supervisor, Inyo N.F.

The Mammoth Recreation Composite Plan has been reviewed and the management direction and recommendations on pages 25 - 28 are approved subject to the following comments:

1. Recommendation A-1 limits use of some lakes in Mammoth Lakes Basin to day use only. This is approved with the understanding that it applies only to Forest Service development sites adjacent to these lakes, and does not include Coldwater Campground nor private sector developments. Conversion of several campgrounds to day-use sites might stimulate additional campground development of private lands within the Basin, and thus complicate acquisiton of these properties. For this reason a gradual conversion to day-use might be more appropriate than a sudden full-scale conversion.

2. Recommendation A-4 proposes elimination of all recreation residences in the Lakes Basin. I cannot approve this proposal based on the information presented in the plan. An analysis that discusses the problem should be treated as a supplement to this plan. Under present guidelines, we can plan for recreation residence termination only when the site is needed for public development. Termination of residences that has already been approved should proceed as planned.

3. Recommendation A-5, A-6, A-18, A-20 and A-21 all relate to kinds of facilities and services to be provided by private concessionairs. The desirability of these recommendations is not fully supported by the plan narrative. For this reason I cannot approve these recommendations until a more complete analysis has been made of the public service needs of the visitors to the Basin. That portion of recommendation A-20 that relates to development of bicycle paths is approved to the extent that these are needed to supplement the road system. It is only the bicycle rental concessions that should be considered in the service need analysis.

We suggest that this analysis give careful consideration to the desirability of providing horse rental services, and even permitting horseback riding in the Mammoth Lakes Basin. The plan generally describes a relatively high-density area, with many facilities and services related to visitor comfort and

convenience. Horseback riding, which seems quite appropriate in the "lower-key" developments in Red's Meadow area might be an inappropriate activity in the Basin.

4. Recommendations A-12, A-13, and A-14 all relate to eliminating private vehicles in the Basin. I agree with the general concept but feel that this should be the final step in the area rehabilitation program for the Basin. Implementation of these three recommendations should follow total land acquisition and have strong public support.

5. To eliminate possible misunderstanding, please delete the words "within the Basin" from Recommendation #8.

6. Recommendation A-16 is approved on the condition that permit termination will be discussed upon the basis of the analysis called for in comments #2 and 3 above.

7. Recommendation B-1 discusses the mini-bus concession for Red's Meadow. The idea is good, but again implementation must be delayed until we have strong local support for the concept. The recommendation suggests that this concession might be a logical addition to the Mammoth Mountain Inn permit. I cannot completely agree, but the idea can be considered when the proper time arrives.

8. The second sentence in Recommendation B-2 describes specific design standards which appear to be unnecessary. Paving of the existing road to eliminate dust problems and to serve the public transportation system is approved.

9. The general concept of Recommendation B-3 is approved, but implementation should be deferred until a more specific number of tent sites has been determined. This should be related to the general level of experience that you plan to provide here.

10. Recommendation B-6 is not approved. We do agree that no new roads are needed for recreation purposes and will recognize this in any additional studies of Forest Highway 100. ✓

11. Recommendations C-1 and C-2 deal with land ownership adjustments related to but not essential in the execution of the recreation plan. These are not approved as a part of the recreation management plan. This subject should be treated separately as an amendment to the subordinate land exchange plan for the Mammoth Area.

12. Recommendation D discusses a scenic easement adjacent to Route 203. Our maps show this as National Forest land. Travel Influence Zone management direction appears adequate. If lands are disposed of by exchange, I agree that a scenic easement would be desirable and this too should be discussed, and approved separately, as a part of the land ownership adjustment.

13. Recommendation E is approved except that provision of supply stores, snack bars, bicycle trails and bridle paths in the campground is not approved. We feel that supplies and services are readily available in the nearby town of Mammoth Lakes. The interior campground roads should be adequate for bicycle use. Bridle trail development in the management composite is fine, but this should not be done in sites used for camping as the recommendation suggests.

14. The study of winter sports development on the west side of Mammoth Mountain should recognize that Wilderness is considered as "self-buffering." This means, for example, that despite the fact that a development can be seen from a Wilderness we will not consider this visibility in our decision to make, or not make the development.

15. Recommendation G is not approved at this time. This narrative shows that there is land suitable for development along Sherwin Creek but does not describe <u>why</u> another development almost identical to that planned for the Shady Rest area is necessary. We agree that the lands along Sherwin Creek should be treated as a potential campground but suggest a more detailed analysis of the desirability of retaining the existing campground. It might be far more efficient to concentrate camping in the enlarged Shady Rest area and defer any decisions about Sherwin Creek until a future date.

16. Recommendations H-1 and H-2 propose facilities for trail bikes, and similar "off road vehicles." I do not feel that these two recommendations should be approved at this time. These developments would attract even more visitors to the Mammoth area - an effect that appears undesirable. A later, more intensive study might indicate that the proposals are consistent with our overall objectives. Until then, let's hold off on these two.

17. This is good direction but, recommendations I-1, I-2, I-3 and I-4 are items that would be more appropriate in the District Multiple Use Plan. Approval of these recommendations by the

Regional Forester would erode authority currently delegated to the Forest Supervisor (i.e. approval of multiple use plans).

The rest of the plan was reviewed, but was treated only as "back-up material" for the specific items on pages 25 - 28. Any stated or implied recommendations other than on pages 25 - 28 are not approved. My reluctance to approve some of the recommendations does not mean that I disagree with the general concepts presented in the plan, which is one of the best efforts the Inyo has produced in recent years. The plan does describe a desirable future situation. I am sure that you recognize that some of these changes may take years to consummate. Knowing which way we want to go with Mammoth is an important first step.

I'll be glad to discuss this further with you when you are in the Regional Office during August 16 - 18.

NORMAN WEEDEN

W. S. DAVIS, Chief
Division of Recreation

1. *Allocate recreation uses on the basis that specific landscape units are best suited for and can best exploit specific recreation opportunities. Retain and enhance the distinct varities of land form characteristics.*

2. *Strive toward an ultimate goal of eliminating private vehicles from the Mammoth Lakes Basin and the Reds Meadow area. Provide for public access by implementing a public transportation system.*

A. *Mammoth Lakes Basin*

1. *Limit the use of the Twin Lakes, Lake Mary, Lake Mamie and Lake George to day use only.*

2. *Develop Horseshoe Lake for intensive use, including overnight camping. Permit tent camping at Coldwater Campground.*

3. *Acquire all private lands (210 acres) in the Lakes Basin.*

4. *Eliminate all recreation residences in the Lakes Basin.*

5. *Upgrade the following resorts:*

   a. *Lake Mary Store*
   b. *Woods Lodge*
   c. *Whites Lodge*
   d. *Mammoth Pack Outfit (may need to relocate)*

6. *Eliminate the following Resorts:*

   a. *Crystal Crag Lodge (South shore of Lake Mary)*
   b. *Tamarack Lodge (East shore of Lower Twin Lake)*
   c. *Twin Lakes store*

7. *Prohibit motor boating on the Twin Lakes group and Horseshoe Lake. Limit motor boat use on Lake Mamie and George to trolling speeds.*

8. *Do not develop any winter sports or snowplay areas ~~within the basin~~ with the possible exception of ice skating.*

9. *Maintain the levels of Lake Mary and Mamie for recreation purposes.*

10. *Do not construct roads, and prohibit mechanized travel to the McCloud, Crystal, T.J. and Barrett Lake areas. Manage as a hike in "Frontier" area. Limit to day use only.*

11. *Develop large overnight campground complexes in the area north of the existing Shady Rest Campground and the Sherwin Creek area.*

12. *Construct 500 car parking lot near outlet of Twin Lakes and modify road alignments to facilitate restricted access for private vehicles.*

13. *Implement a mini-bus concession (Yosemite Valley type or equal) for the entire Lakes area and restrict access to service vehicles and emergency vehicles. It will be important to the success of this venture to use a vehicle type which is "fun" to ride, comfortable, slow moving and convenient. It should stop at each recreation area, store, summer residence area and fishing spot. Allow for transporting of camping gear to existing campsites.*

14. *Construct Forest Service information booth at the new parking lot to inform the public of the concept of limited access to the Lakes Basin, to administer the transportation system, and to facilitate regulation of numbers entering the basin.*

15. *Phase out campsites in the Twin Lakes area and convert to picnic and day use.*

16. *Conduct early conferences with existing landowners, permittees and summer residents to gain support for the concept, illustrate the advantages to all concerned and begin to develop a schedule for termination of permits and private land exchanges.*

17. *Rehabilitate the Twin Lakes. Clean out water plants, mulch grounds around perimeter of lakes to improve condition of trees, and lower the water level approximately six inches.*

18. *Construct bath house facilities at Horseshoe Lake and provide for a small snack bar concession.*

19. *Develop group camping sites north of Horseshoe Lake.*

20. *Construct bicycle paths and implement bicycle concessions at Horseshoe Lake, Lake Mamie and Outlet from Twin Lakes.*

21. *Implement platform tent and overnight cabins concession west side of Horseshoe Lake.*

22. *Increase number of bridle trails throughout the Lakes Basin.*

B. *Reds Meadow*

1. *Implement mini-bus concession for entire meadow valley, provide for parking at Minaret Summit or Mammoth Mountain Inn. Be sure that the vehicle type is an attraction in itself otherwise dissatisfied people will jeopardize the potential for such a system to succeed. Provide for transporting camping gear to*

valley campsites. This concession might be a logical addition to the Mammoth Mountain Inn business.

2. Pave existing road from Minaret Summit to Reds Meadow Resort sufficiently to eliminate the dust problem. Eventually pave entire road to a 14 ft. pavement width ± leaving existing large trees in the roadway where they now occur.

3. Add substantially more tenting sites in the valley appropriately set back from streamsides, lakeshores and meadows.

4. Establish riding trails throughout the valley.

5. Establish bicycle trails throughout the valley. Avoid conflicts between tenting areas and bicycle paths to preserve the solitude of the camping experience.

6. Prohibit the construction of any new roads west of the divide known as the Mammoth Crest.

C. Land Exchange Areas

1. Confer with present owners of land identified as not recommended for private development to apprise them of opportunities for land exchange at Sherwin, Mammoth Mountain and Mammoth Lakes east area.

2. Implement exchanges and encourage development of these areas for high density residential, commercial and service facilities.

D. Route 203 "Corridor"

Establish scenic easement setbacks along Route 203 from Route 395 to the Visitor Center to insure that the approach to Mammoth is visually attractive and in conformance with the recreation purposes of the area. (200 ft. minimum setbacks on both sides of the road would not be unreasonable.)

E. Camping Area North of Shady Rest Campground

Construct recreation vehicle oriented, high density campground facilities in this area with provision for supply stores, snack bars, fuel and water. Incorporate bridle paths and bicycle trails in this development.

F. Winter Sports

1. Develop the north and east slopes of Mammoth Mountain to accommodate a maximum of 10,000 skiiers at one time. Ensure that the appropriate, corresponding base and support facilities accompany expansion of lift and run capacity.

2. *Issue a prospectus for the development of Sherwin Bowl Winter Sports Area, including a snowplay area at the base. Insure that the area is carefully and sensitively developed.*

3. *After the above is accomplished, re-study the impact of lift and ski run development on the Reds Meadow side of Mammoth Mountain. If it is developed at all, it should be with a minimum of uphill lifts and should utilize a ski-way concept. Base facilities would be of a day lodge nature. From the standpoint of visual amenities from the wilderness, it would be preferable not to develop this side of the mountain.*

G. *Camping Area at Base of Sherwin Creek*

Expand the existing campground area north and east with recreation vehicle oriented high density camping, including provision for supply stores, snack bars, fuel and water. Utilize rolling land forms and forest cover to create an attractive setting. Incorporate bridle trails and bicycle paths in this development.

H. *Pumice Flats and Lookout Mountain Area*

1. *Install trail signs for dune buggy, motor bike and ATV touring routes and rally areas.*

2. *Provide overnight camping sites in this area to serve the vehicle oriented recreationer.*

3. *Construct a paved one-way road system for automobile sightseeing through the pumice flats north of Mammoth with appropriate turnouts, view areas and parking niches.*

I. *Other Decisions Concerning Visual Amenities*

1. *Preserve the two key gateways to Mammoth on north and south 395, as identified in the Visual Considerations section of this plan.*

2. *Work towards placing utility lines along 395 underground.*

3. *Work towards the retention of the large meadow south of Mammoth in its present natural form. Insure that deer migration routes through this area are protected.*

4. *Do not permit development in the open pumice flats north of Mammoth. Implement restrictions on off road vehicular travel in this area.*

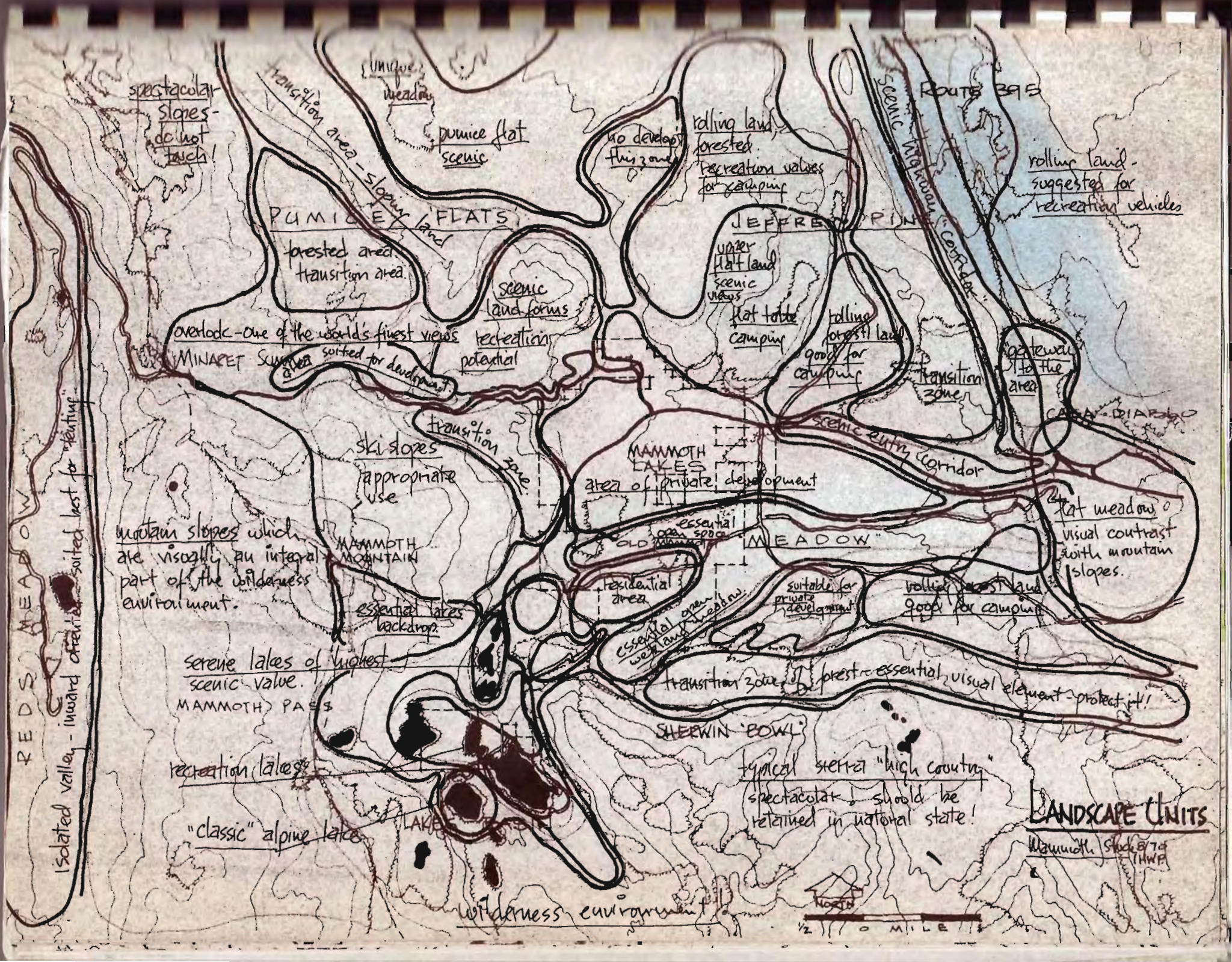
IX. *PRELIMINARY MASTER DESIGN*

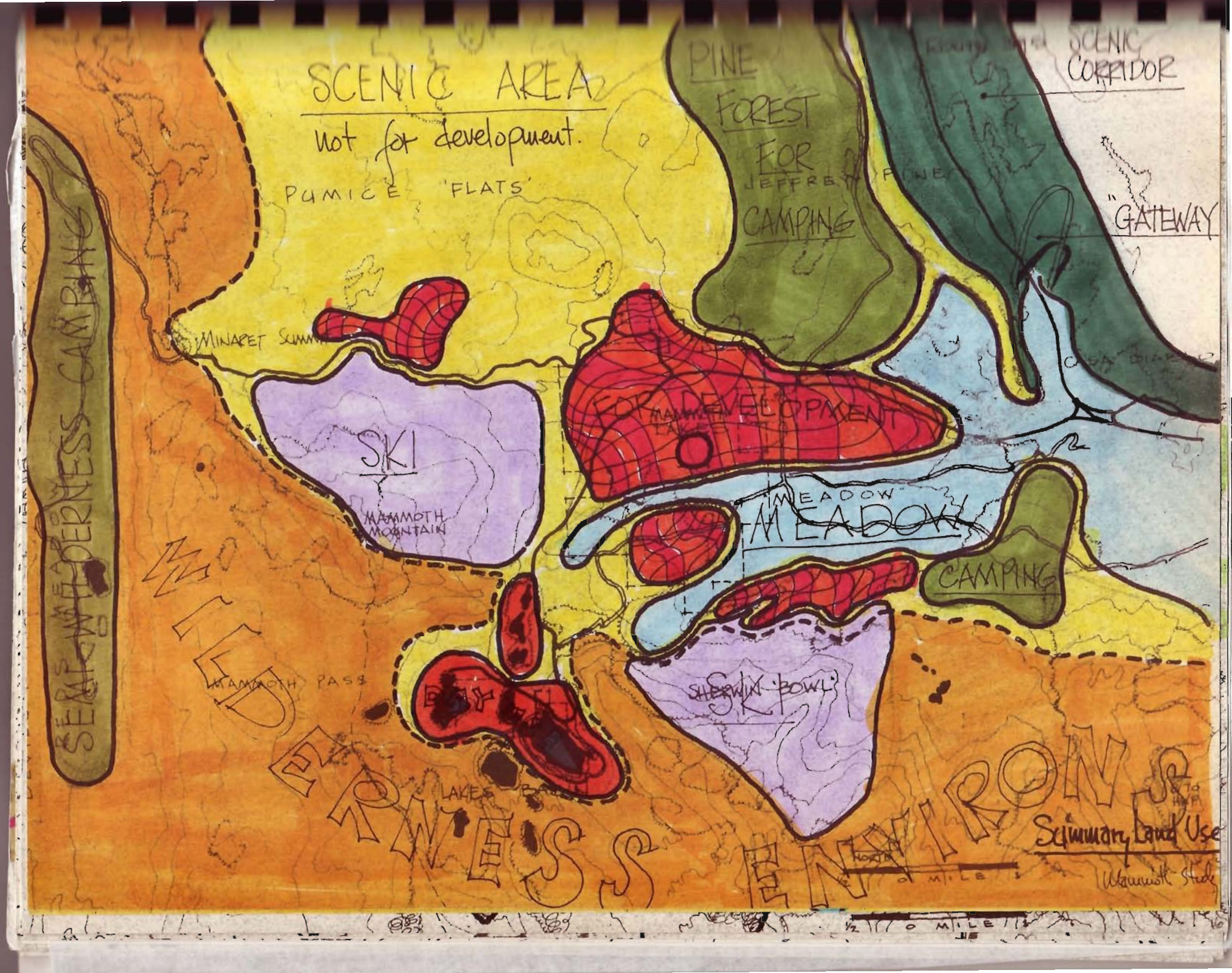
A graphic representation and further explanation of the planning decisions.

On the basis of: (a) composite interpretation of landscape factors, (b) existing conditions, (c) the primary decision to eliminate private vehicles from the Lakes Basin and Reds Meadow, and (3) growth potentials for recreation and private development in the Mammoth area, an overall recreation use plan has been derived. This plan includes indications for developed recreation areas for private land development and/or primary circulation systems for open space and for wilderness areas.

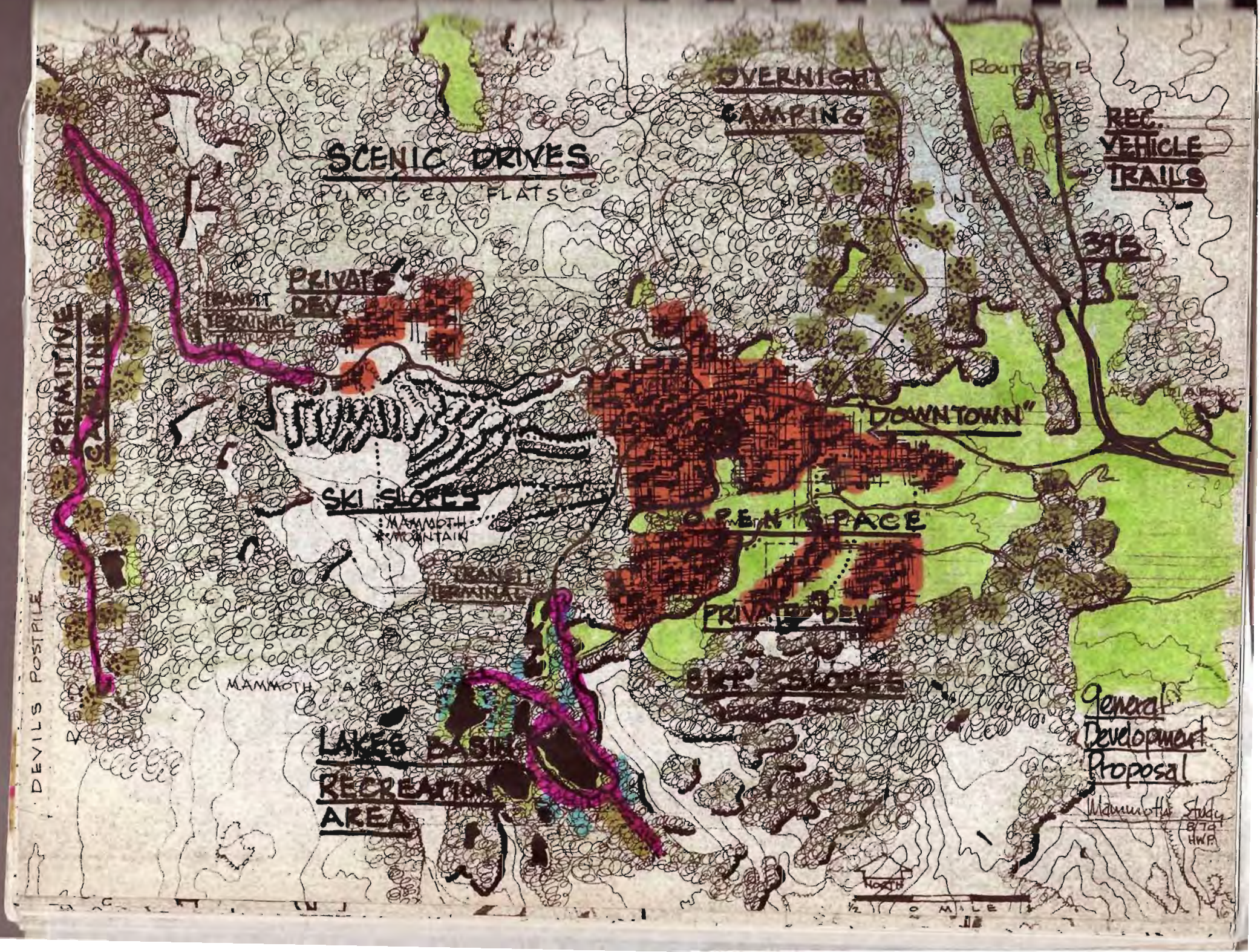
The "Landscape Unit" drawing illustrates the major units dealt with in this report. Within each category it is expected that sub-categories can be identified through detailed on-site investigations. These sub-units provide further clues to the proper organization and allocation of uses within the unit. Detail "project" design, such as a camping site or recreation facility within a unit should be based on a thorough analysis of the full range of environmental aspects in much the same manner as the overall area plan has been prepared. The design process has application on all scales. See the preliminary study of Reds Meadow and Lakes Basins included in this report.

Basically, the land use proposal resolves existing and anticipated conflicts between landscape and use and attempts to maximize the potentials of the land areas for recreation use for public enjoyment. Private land areas are included in this proposal since there is an integral relationship between recreation use and service facilities such as housing, restaurant, transportation, etc. (See "Summary Land Use," "Schematic Land Use" and "General Development Proposal" drawings which follow.)


spectacular slopes - do not touch!
transition area - sloping land
unique meadow
pumice flat scenic
no develop this zone
rolling land forested recreation values for camping
ROUTE 395
scenic highway corridor
rolling land - suggested for recreation vehicles
PUMICE FLATS
forested area transition area
JEFFREY PINE
upper flat land scenic views
flat table camping
rolling forest land good for camping
gateway to the area
transition zone
overlook - one of the world's finest views
MINARET SUMMIT
scenic land forms recreation potential
suited for development
transition zone
scenic auto corridor
CASA DIABLO
ski slopes appropriate use
MAMMOTH LAKES area of private development
flat meadow visual contrast with mountain slopes.
mountain slopes which are visually an integral part of the wilderness environment.
MAMMOTH MOUNTAIN
essential open space
OLD MEADOW
residential area
suitable for private development
rolling forest land good for camping
essential lakes backdrop
essential open meadow
essential wetland
transition zone
forest - essential visual element - protect it!
serene lakes of highest scenic value.
MAMMOTH PASS
SHERWIN BOWL
typical sierra "high country" spectacular - should be retained in natural state!
recreation lakes
"classic" alpine lakes
LAKE
wilderness environment
LANDSCAPE UNITS
Mammoth Study 8/74 IHWP
REDS MEADOW
isolated valley - inward orientation - suited best for "venture"
NORTH
½ 0 MILE


SCENIC AREA
not for development.
PUMICE 'FLATS'
PINE FOREST
FOR
JEFFREY PINE
CAMPING
SCENIC CORRIDOR
"GATEWAY
SEMI-WILDERNESS CAMPING
MINARET SUMMIT
SKI
MAMMOTH MOUNTAIN
FOR DEVELOPMENT
MEADOW
MEADOW
CAMPING
SHERWIN BOWL
SKI
MAMMOTH PASS
LAKES
WILDERNESS ENVIRONS
Summary Land Use
HALF
0 MILE
1/2 0 MILE


Low intensity recreation
PUMICE FLATS
Campground
DEVELOPMENT
SKI
MAMMOTH MOUNTAIN
Wilderness environment
Campground
OPEN SPACE
MAMMOTH PASS
Day Use
SHERWIN BOWL
SKI
WILDERNESS ENVIRONMENT
Schematic Land Use
P = Parking area for private vehicles
= Public transportation route.
LAKES
Tent
REDS MEADOW
Semi-Wilderness
DEVILS POSTPILE
0 MILE
½ 0 MILE


OVERNIGHT CAMPING
ROUTE 395
REC. VEHICLE TRAILS
SCENIC DRIVES
PUMICE FLATS
DEER RANGE
395
PRIVATE DEV.
TRANSIT TERMINAL
PRIMITIVE CAMPING
"DOWNTOWN"
SKI SLOPES
MAMMOTH MOUNTAIN
OPEN SPACE
TRANSIT TERMINAL
PRIVATE DEV.
SKI SLOPES
DEVILS POSTPILE
MAMMOTH PASS
LAKES BASIN RECREATION AREA
General Development Proposal
Mammoth Study
8/74
HWP
NORTH
½ 0 MILE

Recreation Uses

Still another goal of the general land use proposal is to provide for a broad range of recreation opportunities in the Mammoth area in order to accommodate the variety of user requirements and recreation expectations. As stated earlier in this report, the Mammoth area is endowed with many different landscape situations and with its special potential for recreation use and development, in fact, the richness of the recreation experience at Mammoth will depend in large measure on the degree to which the individual differences and landscape type can be retained and even enhanced. Implied in this statement is the necessity of seeing to it that the allocation of recreation use or development type is consistent with the primary properties of the land unit. Each land unit will be unable to support a full complement of recreation uses, rather, recreation uses need to be sorted out and distributed "according to land" which may not, obviously, coincide with the present practice of permitting several types of recreation to co-exist in the same area.

The Primary example of this conflict between landscape type and multiple recreation uses is the Twin Lakes and Lakes Basin area where the scenic quality of these "classic" High Sierra lakes has to compete with a full complement of camper vehicles of every description, laundry hanging between the trees, and automobiles, trucks, camper vehicles and trailers in just about every nook and cranny along the lake shores during the day. Multitudes of people fishing shoulder to shoulder at the inlets, outlets and along the shores.

It is doubtful whether few of the present users of the Lakes Basin actually appreciate the spectacular beauty and unique serenity of the High Sierra landscape under chaotic conditions. So much effort is probably needed to protect oneself from the encroachment of other people on individual "territory" that precious little opportunity exists to find refreshment and inspiration in the magnificence of the natural environment.

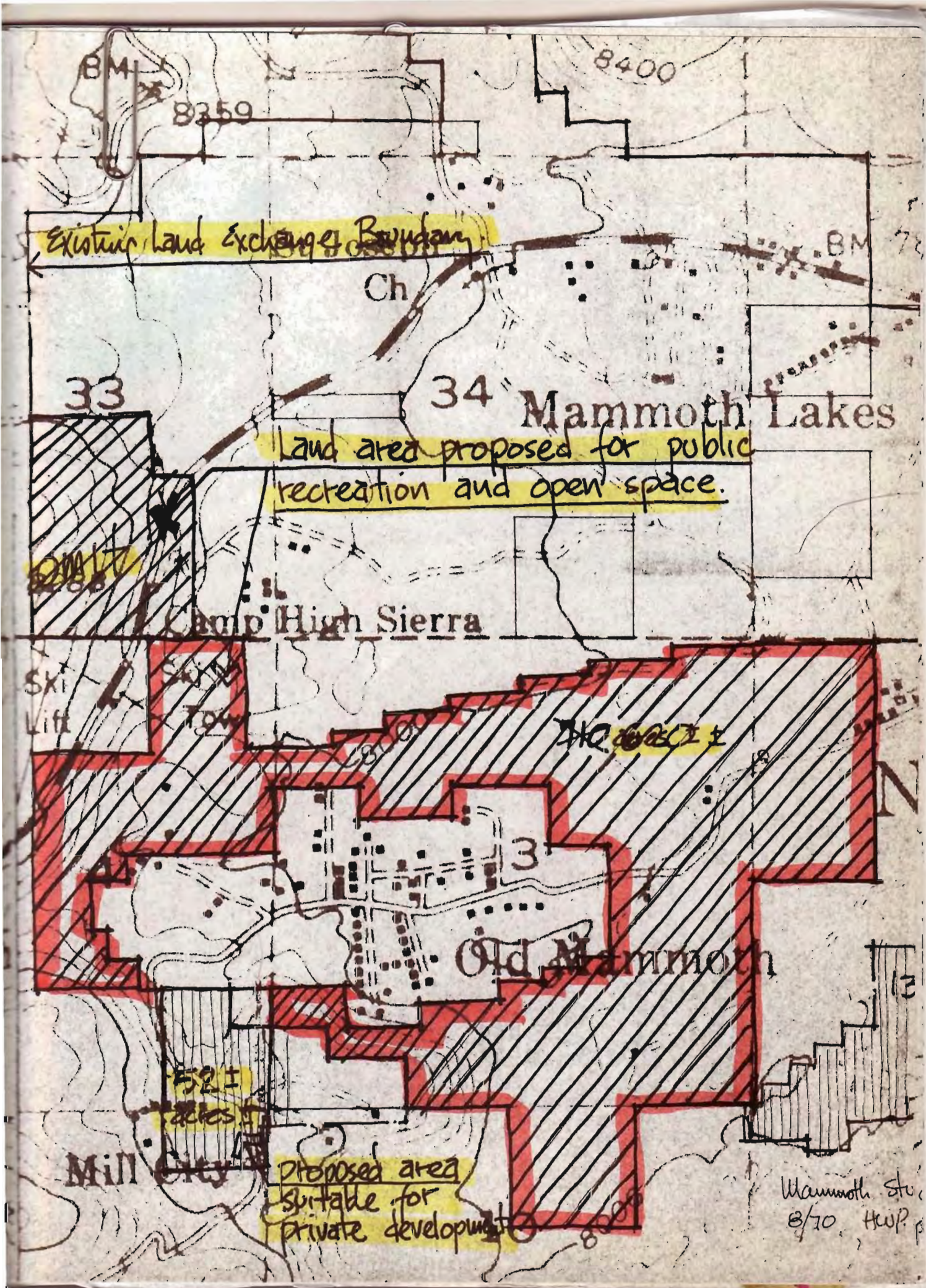
In view of these conflicts, the solution proposed in the land use plan allocates different kinds of recreation use to specific landscape units which best exploit the recreation opportunities within each area. As the drawing indicates, the Lakes Basin is developed primarily as a day use area, including boating, fishing, swimming, riding, hiking, nature trails, tenting (at Coldwater Campground only), bicycling and scenic tours via public conveyance systems. Major overnight, long term camping is proposed in expanded campground north of Shady Rest among the Jeffrey pine forest, and in the area at the foot of Sherwin Lakes eastward toward Route 395 in another pine forest, which will provide accommodations for the complete range of camper units, tents, camper vehicles, trailers, busses, etc. Additional "non-restricted" overnight camping areas are proposed for the Deadman Creek area and the Lookout Mountain area.

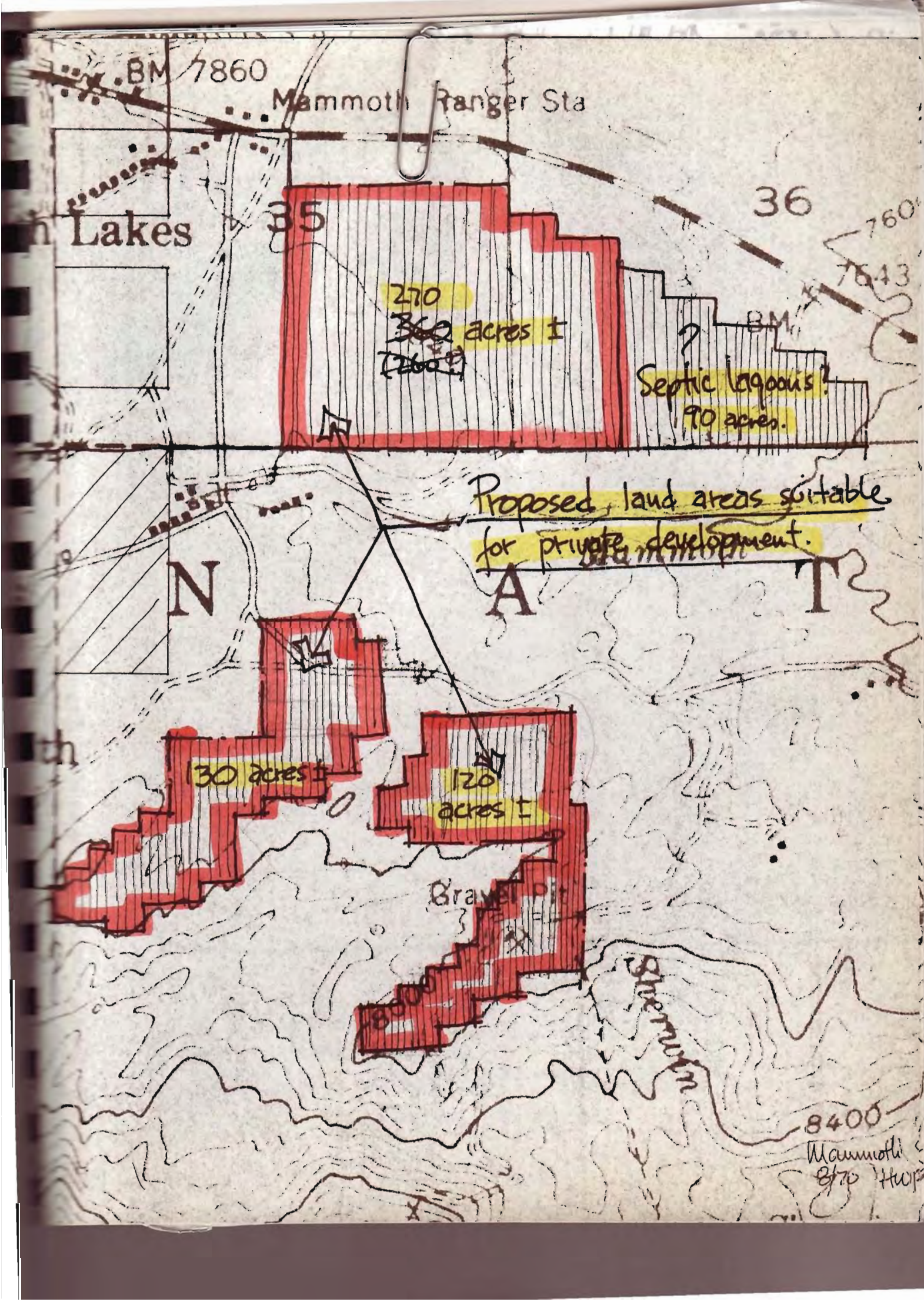
Tent camping opportunities are provided at Coldwater Campground and Reds Meadow which will be serviced by the public conveyor - the conveyor units would be provided with detachable units capable of pulling the camping gear for transportation to the campsites.

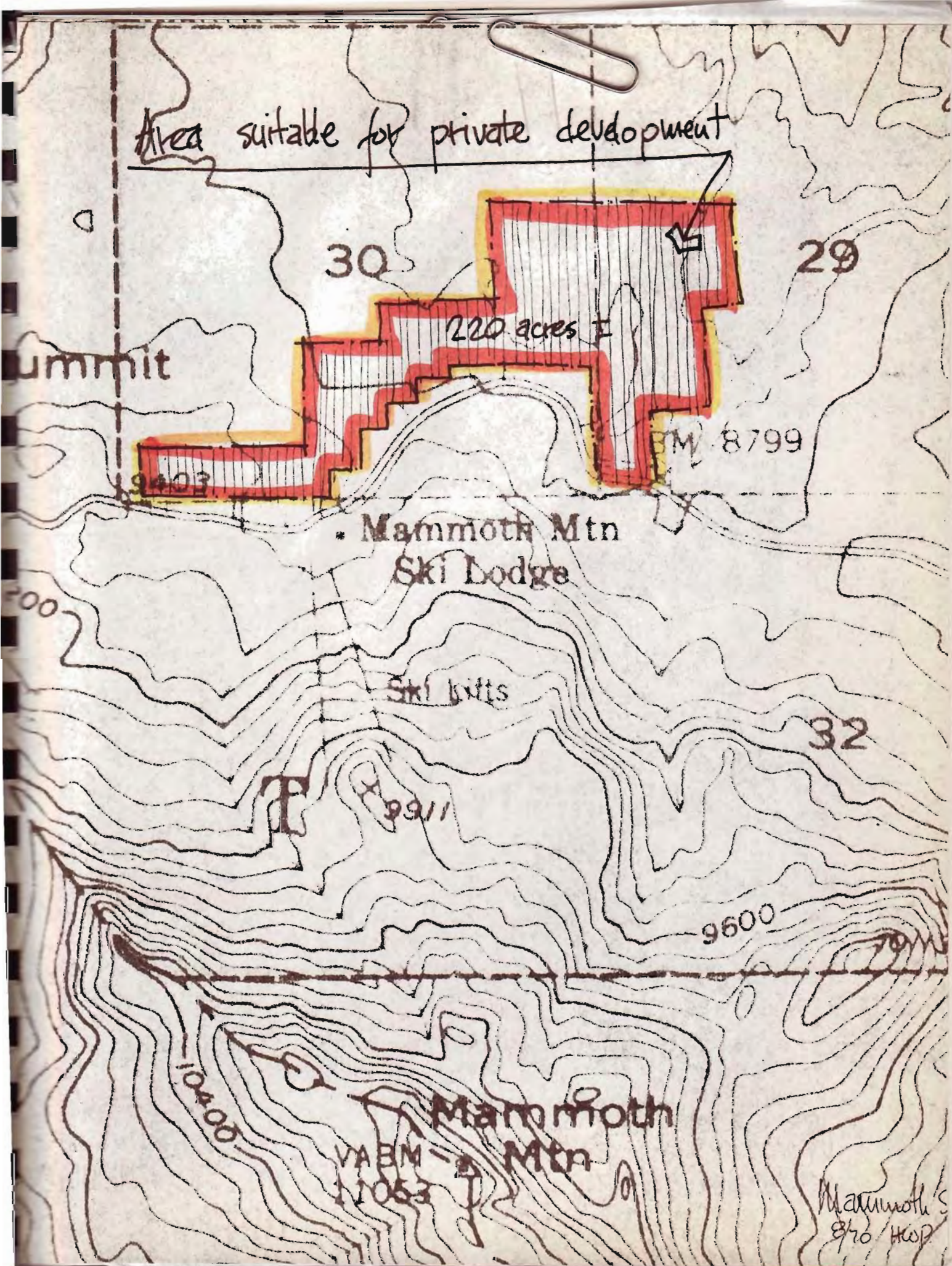
The winter sports opportunities in the Mammoth area are of major significance in the planning of private lands developments and the general allocation of circulation systems and utilities. The recreation use proposal recognizes the potential for development of the Sherwin Bowl Ski Area and the increasing of the sier capacity of the Mammoth Mountain ski area. The proposal does not yet, however, wish to concede that development of lifts and ski trails or skiways on the westerly slopes of Mammoth Mountain will not have an undesirable visual impact on the wilderness environment.

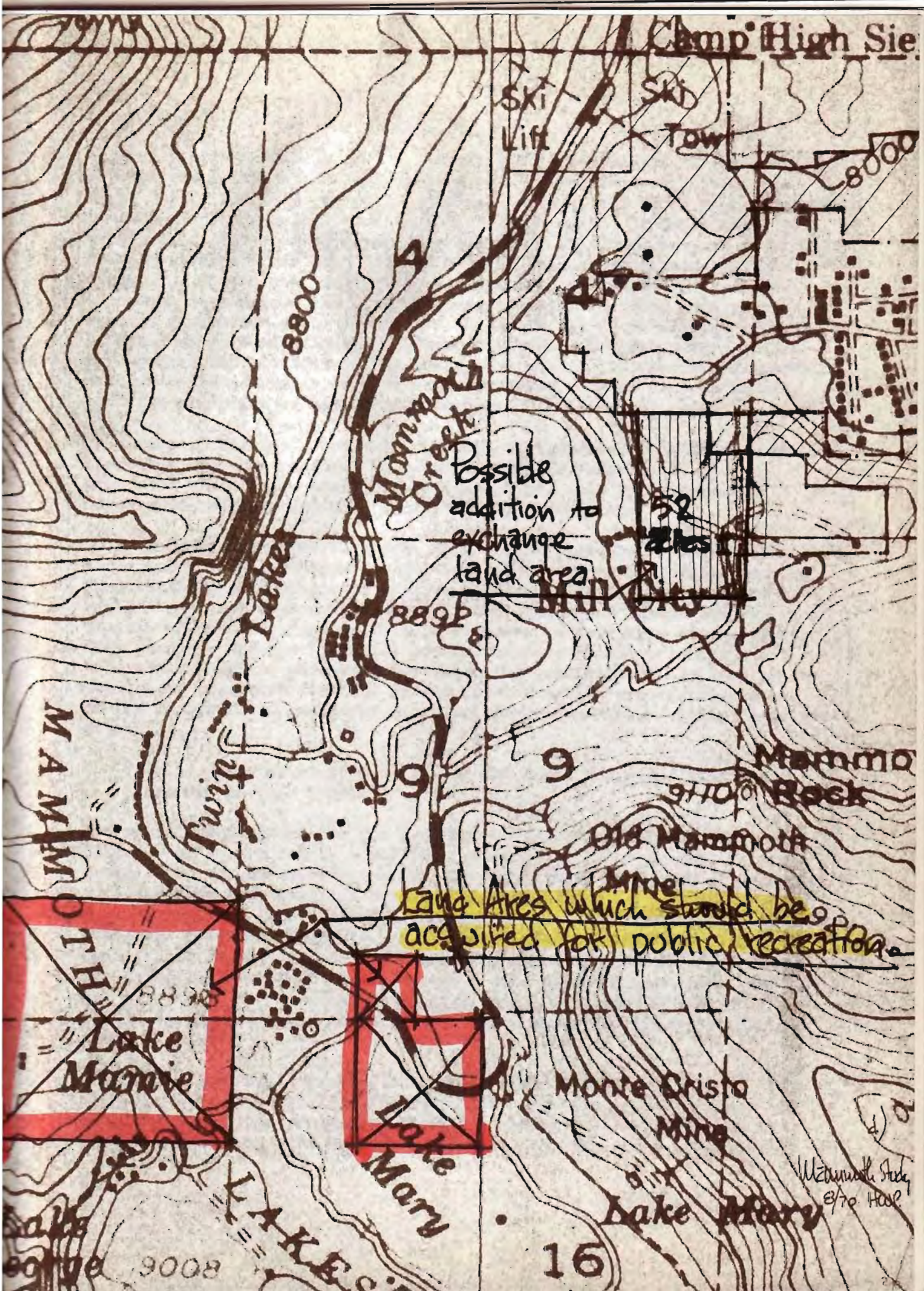
Land Exchanges

One of the most critical elements of the proposal is the recommendation that private, undeveloped land holdings in the meadow area north and east of Old Mammoth be retained as permanent, public open space. Alternative land areas are better suited for private development at the base of Sherwin Bowl, at the base of Mammoth Mountain ski area and east of the existing land exchange boundary as shown on the drawing. Exploratory negotiations to redistribute the private land holdings in the area indicated on the following drawings should be initiated at the earliest possible time since private construction is already slated for 1971 in portions of the meadow area and efforts to drain the meadow area south of Old Mammoth have already been attempted.


BM
8359
8400
Existing Land Exchange Boundary
Ch
BM
33
34
Mammoth Lakes
Land area proposed for public recreation and open space.
Camp High Sierra
Ski Lift
Ski Run
3
Old Mammoth
52 ± acres
Mill City
proposed area suitable for private development
Mammoth Ski
8/70 HWP


BM 7860
Mammoth Ranger Sta
Lakes
35
36
7613
270
360 acres ±
(260?)
BM
?
Septic Lagoons?
90 acres.
Proposed land areas suitable
for private development.
Mammoth
N
A
T
130 acres ±
120
acres ±
Gravel pit
8400
Mammoth
8170 Hwy


Area suitable for private development
220 acres ±
30
29
32
Summit
M 8799
9403
Mammoth Mtn
Ski Lodge
Ski lifts
9911
9600
10400
Mammoth
Mtn
VABM
11053


Camp High Sie
Ski Lift
Ski Tow
8000
8800
Mammoth Creek
Possible addition to exchange land area
52 acres
Mammoth
Lake
Twin
9
9110
Mammoth Rock
Old Mammoth Mine
Land Area which should be acquired for public recreation.
MAMMOTH
8898
Lake Mamie
Lake Mary
Monte Cristo Mine
Mammoth Study 8/70 Hoof
Lake Mary
16
9008

Circulation

Another important aspect of the general land use proposal is the handling of vehicular circulation and public access to various sections of the area. As illustrated, Mammoth is divisible into land units with different characteristics and qualities special to each unit. Of these units, the zone west of the Mammoth Crest lies within an area described as "wilderness environment," meaning that it has the attributes of areas which lie within the established wilderness boundary and it is removed from development associated with Mammoth townsite. Reds Meadow, an area of special recreation value located in this zone, has been treated in this proposal as a "semi-wilderness" recreation area in which public access is expected and provided for by means of a public transportation system. Private vehicles are excluded from the roadway west of Minaret Summit with the exception of service and emergency vehicles.

In a similar fashion, access to the Lakes Basin area south of Mammoth Creek has been provided for by means of a public conveyance system, such as a mini train, which serves Twin Lakes, Lake Mary, Coldwater Campground, Lake Mamie, Lake George and Horseshoe Lake.

In both cases where public access is being provided by a public transportation system the objective has been to create opportunities for the greatest number of people to utilize the area with the least amount of visible wear and tear on the natural environment and scenic beauty. Because of the heavy use of private vehicles in this area at the present time, and the forecast is still greater numbers to come, it has been determined that the best way to present the qualities of the area to the public and to insure the most meaningful recreation experience now and in the future is to implement a public conveyance system within these two areas.

(See proposed development plan for the Lakes Basin and Reds Meadow included in this report.)

The circulation system for the area includes consideration of the possibilities of incorporating a public transit system such as that recently proposed by the Dasheveyor Company for the private land area of Mammoth. Such a system has excellent potentials for handling large numbers of people with much less disturbance to the natural environment than conventional roads and highways. Coordinated with this transportation possibility is the design of routes for the public conveyor system in the Lakes Basin in Reds Meadow, i.e., a mini train of some sort, including provisions for terminal parking areas at the intersections of the public access roads and the limited access routes for these recreation areas.

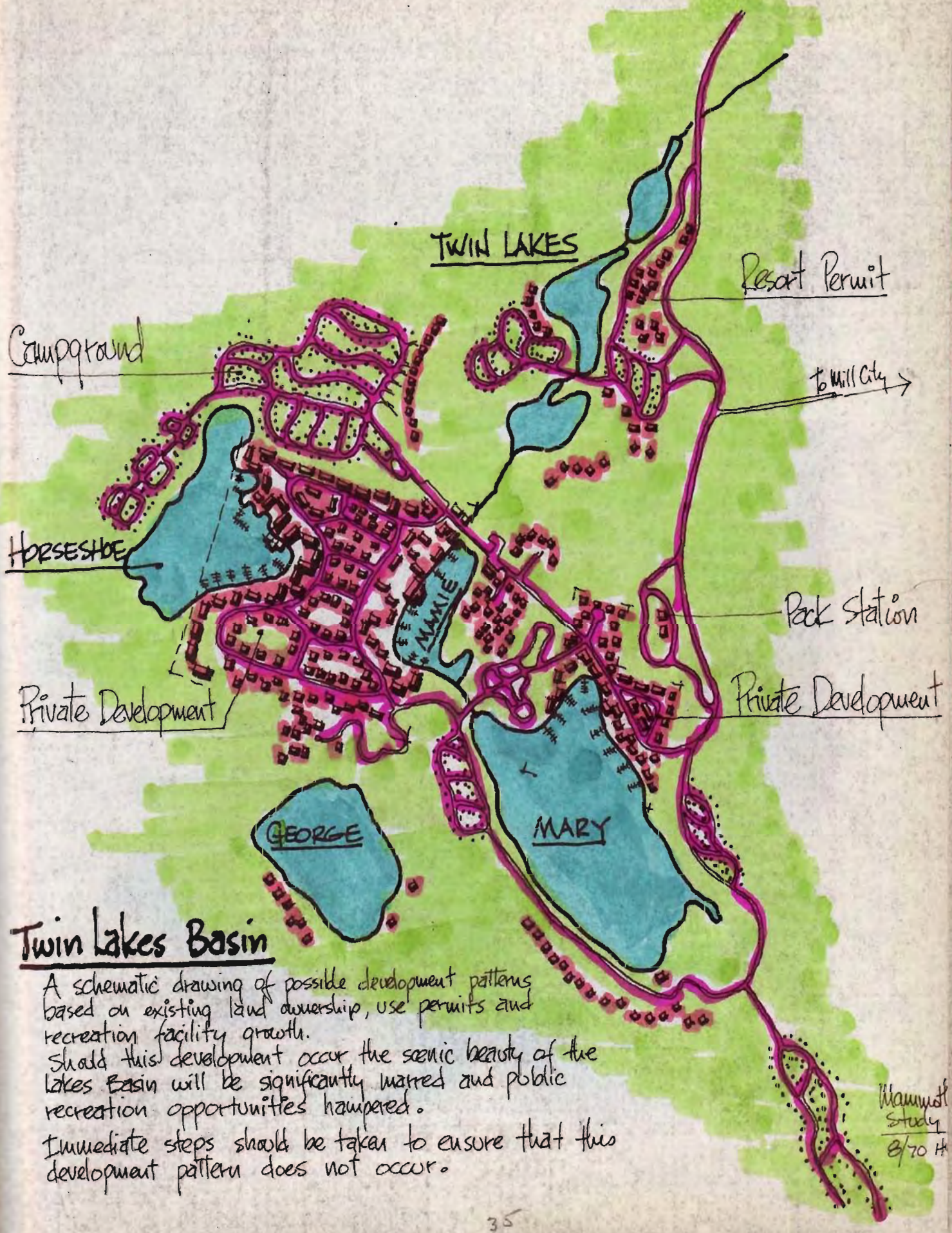
Specialized recreation vehicles, such as motor bikes, trail bikes, dune biggies, snowmobiles, all terrain vehicles and jeep type vehicles, are provided for in the proposal with the intention of providing each vehicle type with an area allocated primarily for their use with minimum

conflicts with other recreation activities. The trails and traveled routes indicated are preliminary but the principle of separated one way trails is important to providing the safest and most enjoyable experience. Further study of these trails and vehicle routes is necessary to finalize the system and include opportunities for connecting the Mammoth area trails with longer "touring routes" connecting with the June Lakes area, Mono Lake, etc.

Case Studies: Lakes Basin and Reds Meadow

Application of the principals of land use proposed in the general land plan to the Lakes Basin and Reds Meadow areas illustrates the implications of the proposal for specific development and policy formulation. Illustrations of "what could happen" to Reds Meadow, the Lakes Basin and the meadow area if no changes in present policy are initiated are included in this section. Although not intended to be accurate representations of the development which could occur in these areas, the magnitude of development in these areas could approximate that indicated on the drawings.

The proposals recommended for approval and implementation for the Lakes Basin and Reds Meadow are primarily land use proposals with indications and principles for site design within the areas. Detail master design and site planning studies should now be prepared for each of the areas to expedite the plan implementation. These plans should be based not only on the usual topographic and aerial photo base materials, but in addition, the detailed inventory of wildlife habitat, vegetation patterns and unique ground form features. The problems of sanitary facilities, noise, air and visual pollution should also be given special attention.

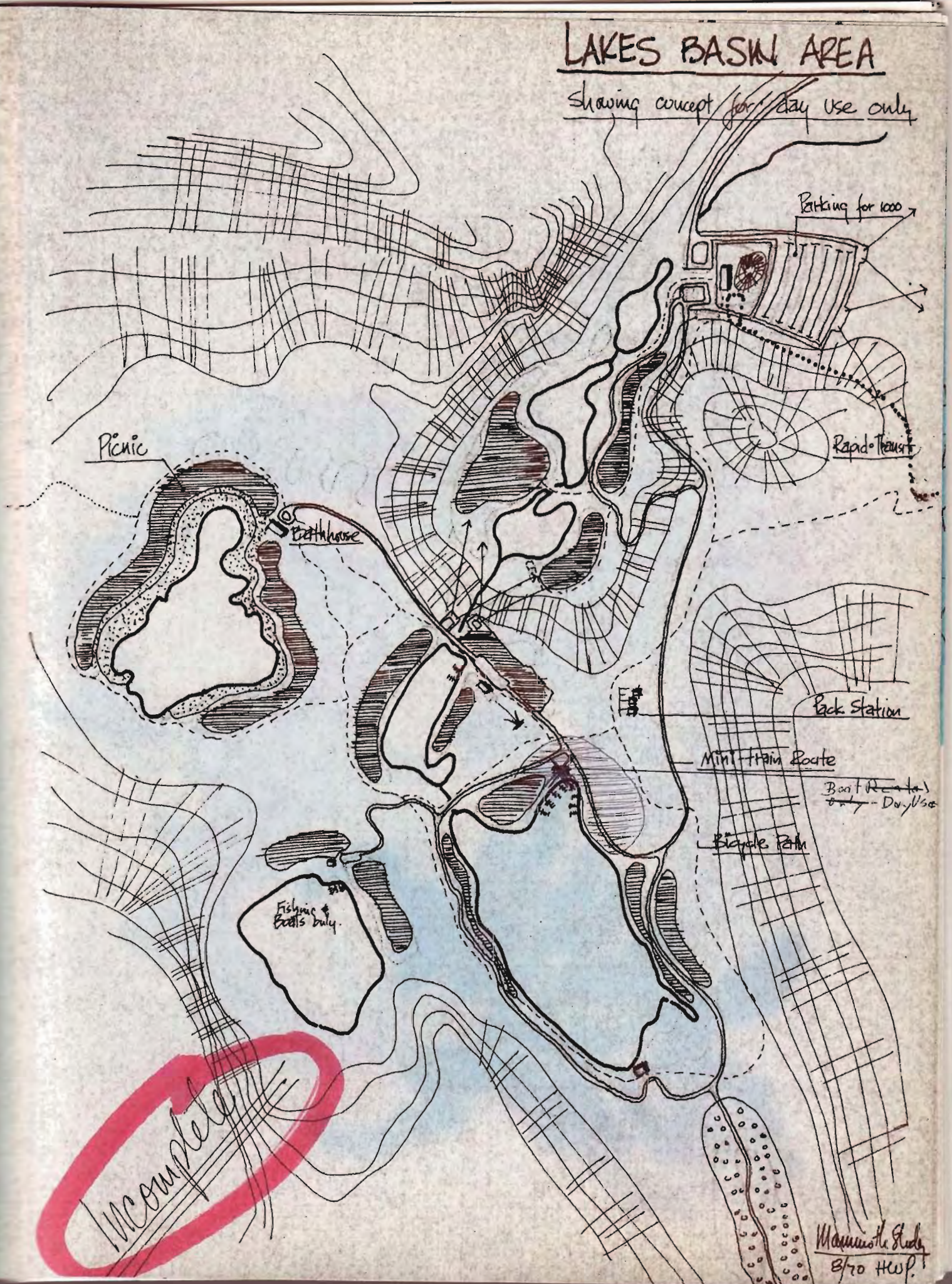


Twin Lakes Basin

A schematic drawing of possible development patterns based on existing land ownership, use permits and recreation facility growth.
Should this development occur the scenic beauty of the Lakes Basin will be significantly marred and public recreation opportunities hampered.
Immediate steps should be taken to ensure that this development pattern does not occur.

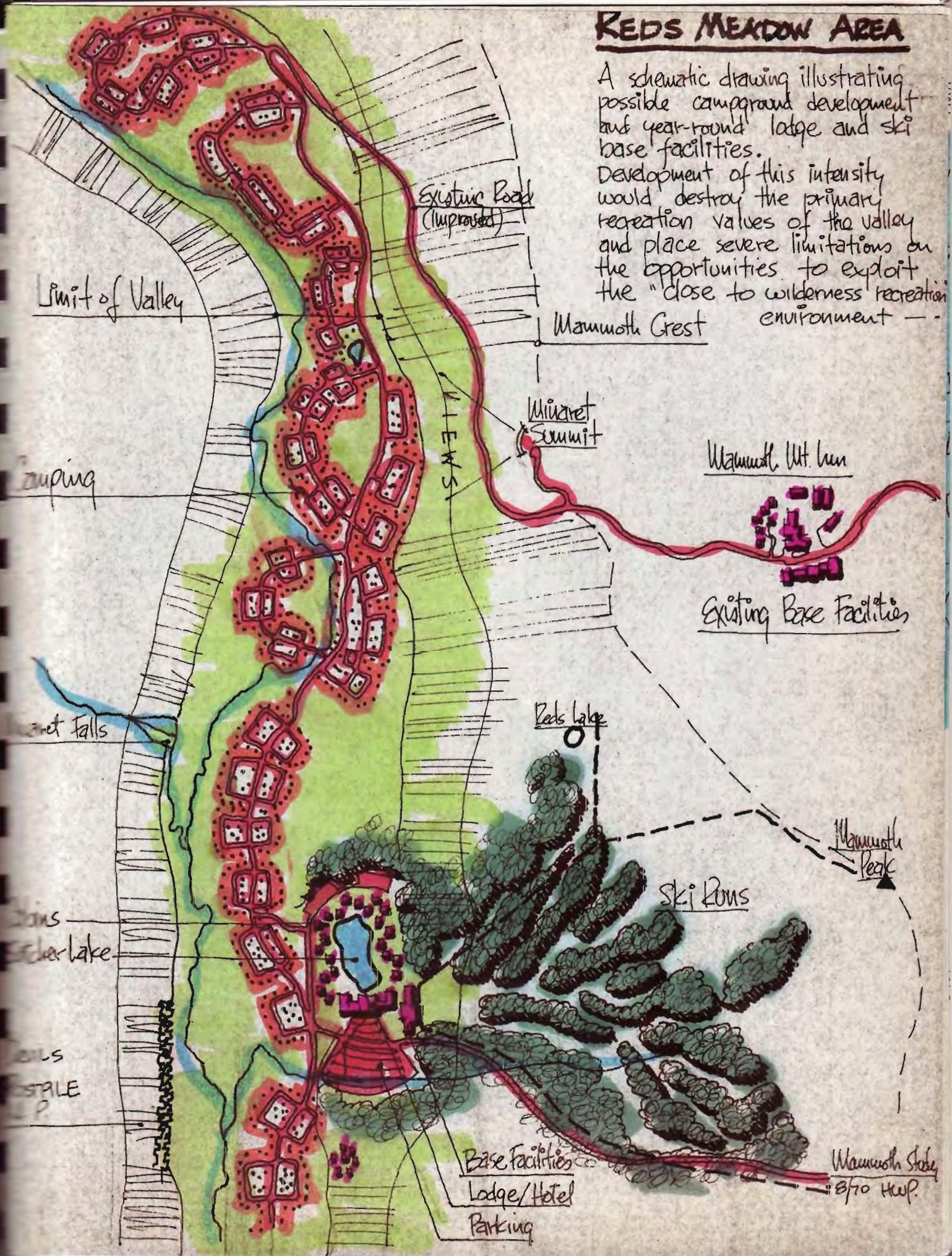
Mammoth Study 8/70 H


Horseshoe Lake Development includes:
Lodge (300 capacity overnight ±)
Cabins (50-75 ±)
Platform tenting (150 units)
Dining facilities/Restaurant
Store
Beach/Swimming
Bathhouse.
Public Transportation terminal
Group Camping.
} is this a good thing there in the basin with Mammoth so close?
Information
parking
TWIN LAKES
mini-train
bicycle path
bridle path
Group Camping
picnic area
public transit
scenic overlook
boating
store concession
pack station
Cabins
HORSESHOE
MARY
GEORGE
Existing private land
~~boat store concession entry~~
boating
Resort Hotel
Boating
Scenic Overlook
Mini-train
Bicycles
Bridle path
store concession
tenting
Twin Lakes Basin
A preliminary proposal to preserve the scenic beauty of the area and still provide a maximum of recreation opportunities both active & passive. Intense development of the Horseshoe Lake area can relieve the pressures for use of the other lakes.
Mammoth Study
8/70 HWP


LAKES BASIN AREA
showing concept for day use only
Parking for 1000
Rapid Transit
Picnic
Bathhouse
Pack Station
Mini-train Route
Boat Rental
Day Use
Bicycle Path
Fishing Boats only
Incomplete
Mammoth Study
8/70 Hewp

Reds Meadow Area

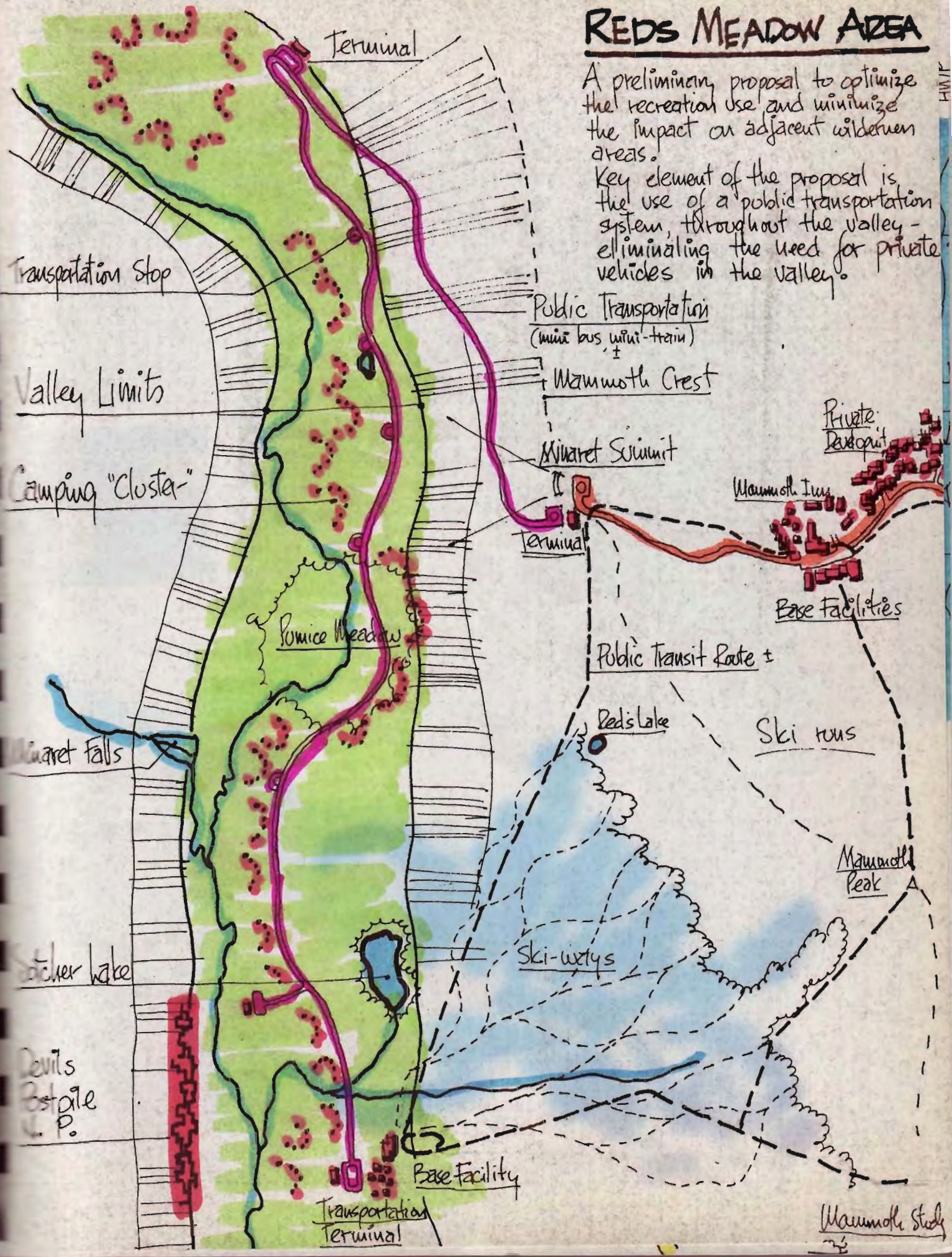
A schematic drawing illustrating possible campground development and year-round lodge and ski base facilities.
Development of this intensity would destroy the primary recreation values of the valley and place severe limitations on the opportunities to exploit the "close to wilderness recreation environment --

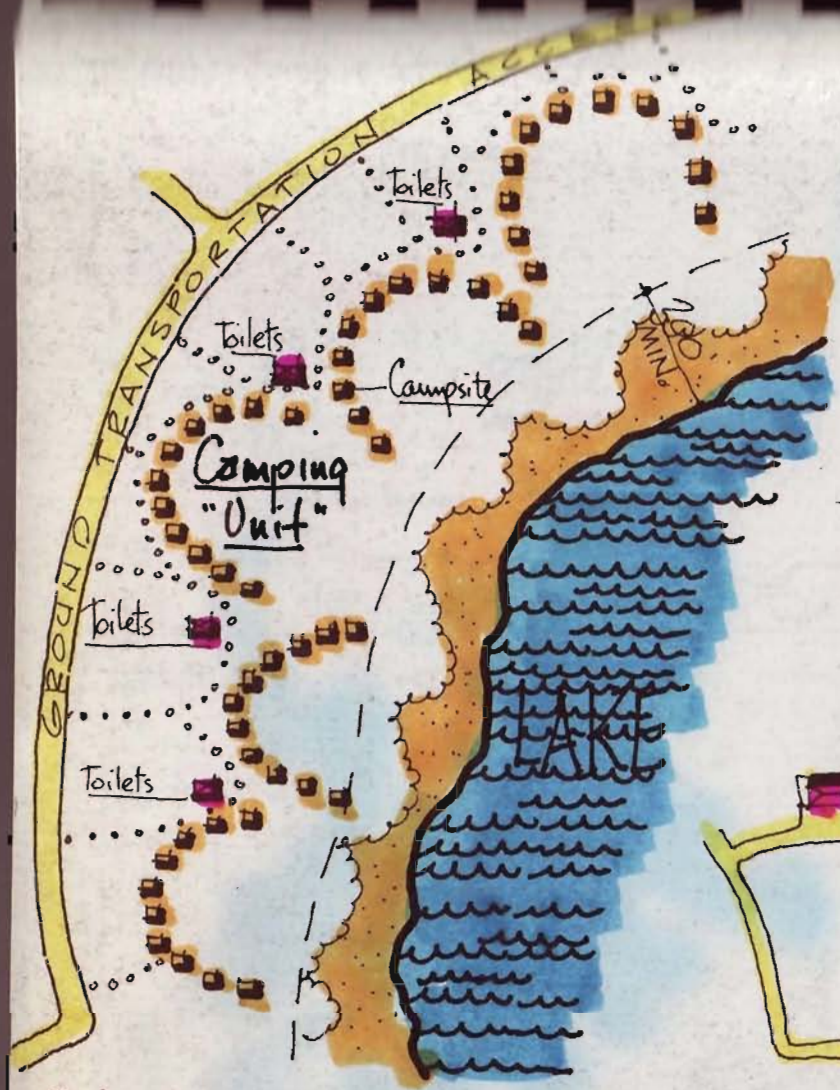


REDS MEADOW AREA

A preliminary proposal to optimize the recreation use and minimize the impact on adjacent wilderness areas.

Key element of the proposal is the use of a public transportation system, throughout the valley - eliminating the need for private vehicles in the valley.





Camping "Unit"

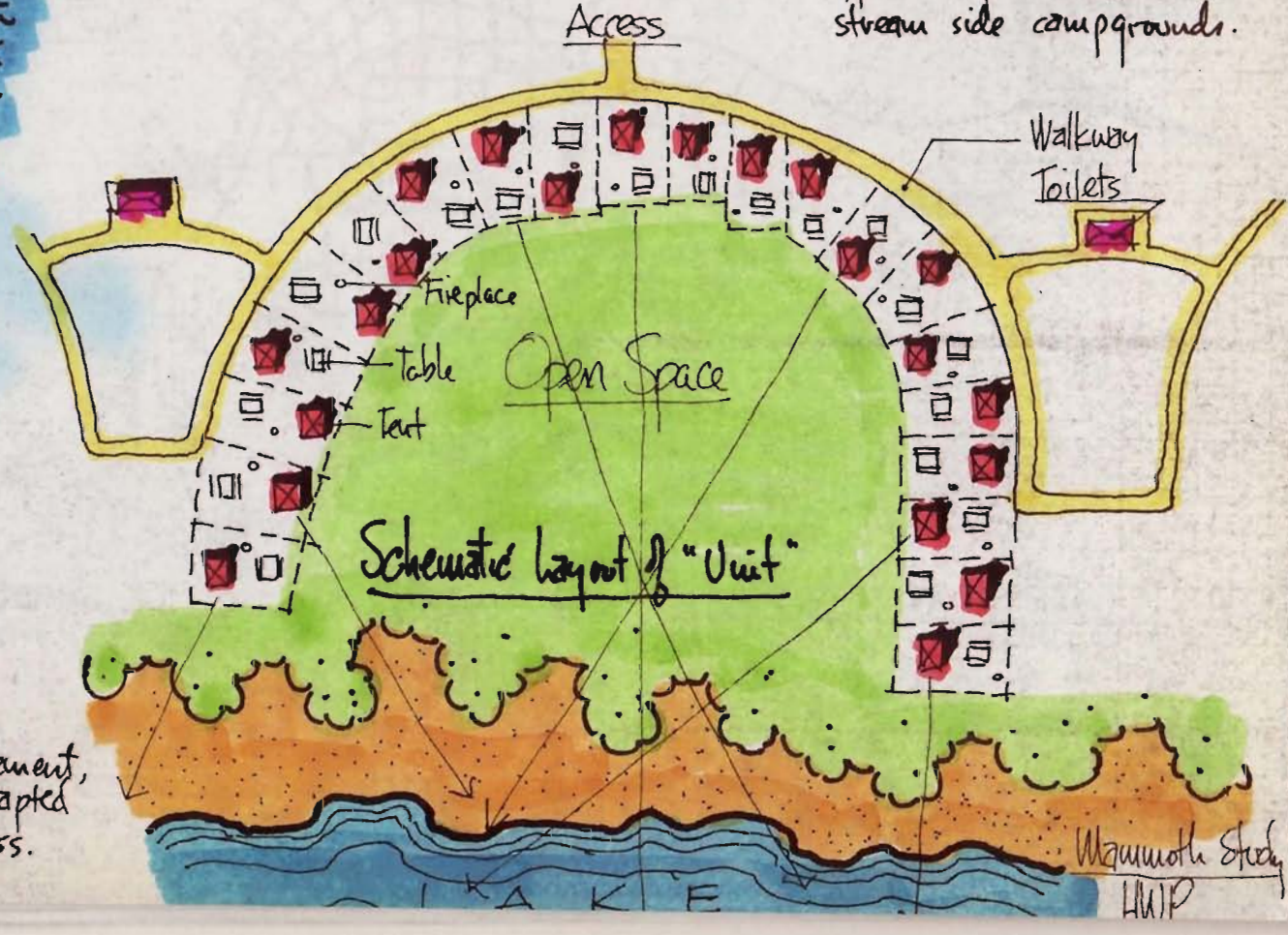
Schematic Layout of "Cluster" Campground.

Note: This scheme assumes no private vehicles. However the same arrangement, with minor modifications can be adapted for direct auto & camper vehicle access.

Schematic Layout for "Campsite"

Principles for "Clustering" of Campsites to Create More "Lakeside" Sites and still protect shoreline

Note that each individual campsite has direct access & unobstructed views to the lake. The same principle is applicable for meadow & stream side campgrounds.



Schematic Layout of "Unit"

Circulation System *

It is important to establish a clear hierarchy of circulation for the area. This illustration shows the general road types and their relationship to recreation areas and development of private lands.

* Note: this scheme recognizes the potential for a rapid-transit system (such as "Dashaveyor") as an integral part of the circulation system. (Assumes privately financed)

X. ADDITIONAL STUDY NEEDS

This study has revealed several needs for further investigation in planning if there is to be a continuity of efforts in resolving the Mammoth Lakes area growth and development.

First, and most importantly, the relationship between land management policies and multiple-use practices in the area needs to be compared and analyzed in the context of the entire region, if not in the context of nation-wide and international resource allocations. To make the appropriate comparisons and analyses it is not unrealistic to expect that the use of rather sophisticated data processing, retrieval and mapping techniques will be required. An early effort should be made to collect, store and communicate all available information for use in multiple-use planning activities. Such methods of inventory and investigation as remote sensing, computer mapping, and simulation should be an integral part of forest lands management procedures.

Since decisions to allocate recreation uses to appropriate land areas requires an understanding of the needs, expectations and habits of the recreation lands user, an intensive campaign should be launched to learn more about the people being served. The science of social research has developed reliable interview and sampling methods which are applicable to forest land use planning. It should be recognized, however, that asking people what it is they "like" or "prefer" or "need" does not always reveal the true need. Thus, the importance and critical role in planning of the professional--his special insights, perspectives and skills in judging the consequences of innovation and policy adjustments.

The soil and geology survey conducted during this study involved an on-site reconnaissance with Mr. George Badura, Soils Scientist, Klamath National Forest, as well as work with published geology maps and soils information. It is recommended that a detailed soil survey, based on test borings and soundings, be made of those areas considered suitable for development in order to clarify the specific development opportunities within each site.

XI. SUMMARY COMMENT

The results of this study indicate that changes in the traditional public use patterns for the Mammoth area are necessary if the long-term public benefits are to be achieved and maintained. Obviously, changing people's established habits and attitudes is, without doubt, one of the most perplexing problems facing any decision-maker and unfortunately an element of risk is always involved, whether the decision is to do nothing or to innovate and prescribe change.

Consequently, the decisions which must be made in determining the programs, policies and actions for the Mammoth area will no doubt involve considerable soul-searching, deliberation, debate and persuasion. But it is important that a definite statement of policies and goals be formulated very soon.

Total reliance on expressions of need received from the public cannot be the only basis for decisions. Social research and "advocacy planning" programs have determined that the most reliable decisions are those which take into account public opinion but also incorporate a high degree of professional judgment.

The stewardship of public forest lands carries with it an obligation to apply the best available professional expertise and judgment to land resource use. The Forest Service is expected, by the public, to assume a leadership role in determining the best means of maximizing these resources for the public good - now and from here on. A combination of creative responses to stated public needs plus conscientious professional judgment is expected of any contemporary public agency.

XII.

APPENDIX

CREDITS

The following people were consulted during Professor Harry Porter's involvement in this study:

Mr. Morrison "Andy" Anderson
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June Lake, California

Mr. Phil Pister
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Mr. George Badura
Soils Scientist
Klamath National Forest
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Mr. Donald Thompson
Landscape Architecture Student - *(Involved in preparation of*
California Polytechnic Institute *"Mammoth Lakes Study," June,*
Pomona, California *1970)*

In addition, close collaboration with Staff of the Forest Headquarters Office in Bishop and the District Headquarters in Mammoth was an important aspect of this study.

Special appreciation for their continued support of this study is due Mr. Ron McCormick, Recreation Staff Officer for the Inyo National Forest, who was instrumental in initiating this study effort, and Mr. Ted Rickford, Inyo National Forest Landscape Architect, for his advice and constant help throughout the study period.

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(For an excellent example of the landscape analysis process applied to a California area refer to the Nicasio Study, Hidden Valley in Transition, prepared for the Marin County Planning Dept. Civic Center, San Rafael, California, by Robert Twiss, David Streatfield, Eugene Kojan and Arthur W. Magill in collaboration with the Pacific SWF&RE Station, Forest Service, Berkeley, Ca. and the Department of Landscape Architecture, College of Environmental Design, University of California, Berkeley, California.)

HISTORY OF MAMMOTH

Prior to the coming of white man the Mammoth area was used by the Piute Indians for generations.

An archaeological excavation of Mammoth Creek Cave was conducted by the Eastern California Museum in 1962 and 1963. The data obtained suggests an Indian occupantional time-span in excess of 700 years, encompassing two or possibly three cultural periods.

Red Mountain in the southwest portion of the area was the scene of a mining boom from 1878 to 1880. This activity resulted in several mining camps springing up in the vicinity, they were Mammoth City, Pine City, Mill City, and Mineral Park.

The Mammoth Mining Company drove four tunnels into Red Mountain's north slope. A 20 stamp mill was erected nearby to process the ore and dams were constructed on Lake Mary and Twin Lakes to provide water power. The company spent $300,000 to produce $200,000 worth of gold. The mine shut down in 1880.

In the 1890's a Judge Doyle of Chicago built a 10 stamp mill and reopened the mines on Red Mountain. They did not pay and only sporadic activity has continued to the present.

Other mines have been operated on the southwest slope of Red Mountain from the 1890's to the present. They include the Monte Cristo and the Mammoth Consolidated. Near the northeast shore of Lake Mary is the remains of a water powered arrasta mill dating back to 1890.

The first road in the area was constructed during the fall of 1878 and the spring of 1879 to connect the mine community of Pine City with Owens Valley. This road was operated for a number of years as a toll road by one of the builders, James L. C. Sherwin. Mr. Sherwin later came into entire possession of the road, but abandoned the project when the county wouldn't accept the responsibility for its maintenance.

Several hundred acres of timber land in the vicinity of Lake Mary and the community of Old Mammoth were cut over for use in the construction of the mines and mining camps. A large amount of cutting was also carried out for fueld wood.

Two sawmills are reported to have been built on Laurel Creek in 1879 and operated for five years. A shake mill was operated during this period by James Sherwin, in the vicinity of the Voorhis Viking Camp (Site 229).

In 1891, Mr. C. F. Wildasin built a double circular water powered sawmill on Mammoth Creek with a capacity of 6,000 board feet per day. It employed six men from July 1 to October 1, cutting from 180,000 to 300,000 feet per season. Seasonal operation was continuous into the early 1900's supplying lumber for Owens Valley. Logging was carried out in the immediate vicinity with horses and trucks. Over 200 acres were cut.

Mr. White Smith, an attorney of Bishop, acting for an association of Bishop businessmen, purchased the Wildasin Mill on Mammoth Creek about 1907. A New York lumberman named Bradley was also involved in the operation. Lumber continued to be produced for the Owens Valley market.

About 1925, a steam powered sawmill was built near the present Mammoth Ranger Station. This mill operated into the late 1930's supplying lumber to the Owens Valley market. Arthur Hess of Bishop owned the mill and was succeeded by the Inyo Lumber Company, who transferred the production to a mill in Round Valley, near Bishop.

Mr. C. F. Wildasin grazed cattle in the area and operated a small hotel, as well as the sawmill, during the early 1900's.

The Charles Summers family were cattlemen who settled in the area around 1900 and maintained a herd of about 1400 head in the basin. In 1918, the Summers built a hotel on Mammoth Creek near the present community of Old Mammoth.

Roving bands of 1,000 to 2,500 head of sheep moved through the area in the early 1900's.

A power development was proposed for the basin in 1920 by a Mr. Henry J. Pierce who had 1,500 acres bordering Lake Mary, Mamie, George, Twin and Mammoth Creek, this withdrawn under Federal Power Commission application number 76, filed on October 25, 1920. The plan included diversion of water from Lake Arrowhead to Power Plant #1 on the southeast side of Lake Mary. Plant #2 was to be located at the south end of Twin Lakes. Plant #3 was to be constructed on Mammoth Creek below Twin Lakes and Plant #4 was to be situated near the present Mammoth Creek Campground. Conduit flow lines were to transport the water from one plant to the next.

An alternate proposal was to construct a tunnel from Lake Mary to the base of Mammoth Rock where a generating plant would be built. The power was to be transmitted to Los Angeles.

The F.P.C. withdrawal was cancelled on June 20, 1922 for failure to proceed with work on the project.

In 1928, winter freight and passenger service by dog sled was inaugurated into the area. This lasted until World War II and enabled a few residents to live the year around in Mammoth.

During the early 1930's the Forest Service improved and constructed roads leading to the Mammoth Lakes group and constructed trails to the more important remote lakes adjacent to the area.

In 1933 and 1934 the Forest Service constructed control dams on Lake Mary, Mamie, and Twin Lakes for purposes of improving recreation. These dams were earth fill with provisions for a 24 foot roadway across the top. The Lake Mamie and Twin Lakes dams were expected the carry the proposed highway to the Devils Postpile. Each dam was provided with a masonary spillway and log control gates for a fluctuation of three feet. These dams were reconstructed in 1968 by the Forest Service.

The present all year highway was constructed in 1937 and the center of activity in the area shifted from Mammoth Creek north to its existing location on the new highway.

HISTORY OF REDS MEADOW

Activity in the Reds Meadow area dates back to the time of the mining boom at Mammoth Lakes in the 1870's. The boom led to the construction of a trail through the area to bring supplies from the west side of the Sierras to the mines. The trail was known as the Mammoth Trail or French Trail, after J. S. French who built it. The present Summit Meadow Trail is a part of this route.

During and after the Mammoth Lakes mining boom several prospectors lived in the Reds Meadow area. These included Red Sotcher, from whom the area and Sotcher Lake received their names. Sotcher is reputed to have raised vegetables at Reds Meadow and sold them for fabulous prices to the miners at Mammoth.

Agnew Meadows is named for prospector Tom Agnew who settled there in 1877. He remained through the 1890's, when he acted as a guide for the U.S. Army troops protecting the area when it was part of Yosemite National Park.

Starkweather Lake is named for a prospector who lived nearby in the 1920's.

Joseph Ivanhoe "Postpile Joe" lived in a cabin at the Devils Postpile during the late 20's and into the 30's trapping animals throughout the area.

The existing road into the area was built in the late 1920's by the Minaret Mines Comapny. The mine located within the Minarets Wilderness on Volcanic Ridge operated through two winters, completely dependent on dog teams for supplies from Mammoth.

The major portion of the area was included within Yosemite National Park by Congressional Act of October 1, 1890. Reds Meadow, Agnew Meadows, and the Devils Postpile were used as Army outpost stations prior to 1905. Requests by mining and grazing interests resulted in the area being eliminated from the Park and placed in Forest Reserve status by a Congressional Act of February 7, 1905.

Upon Forest Service recommendation the Devils Postpile National Monument (consisting of 800 acres) was established by the proclamation of President Taft on July 6, 1911. This was done to protect the unique formation from destruction by a proposed power dam.

The Devils Postpile was administered by the Forest Service from the time of its establishment until 1933, when the Park Service took it over. The Forest Service again administered the monument by cooperative agreement during the period 1948 to 1952. Since 1952 the monument has been under Park Service supervision.

When the Mt. Dana-Minarets and High Sierra Primitive Areas were established by the Secretary of Agriculture in 1930 a corridor was left between the two areas for a Trans-Sierra route if and when needed. The original proposal involved taking the highway from the Mammoth Lakes over Mammoth Pass thence

VISITOR INFORMATION SERVICE OPPORTUNITIES

Agnew Hill - site 30, Ecological nature trail to hillside with a relatively large stand of picturesque junipers.

Upper Gorge Vista - site 298, Interpret geology of spectacular view to San Joaquin River. (This site can be reached by the construction of trail from Agnew Meadows site 99.)

Starkweather Geological Area - site 352, This area has considerable opportunity for a system of nature trails to outstanding glacier polished granite, a shallow mud pond with many lilies, and an earthquake fault.

Pumic Flat Station - site 102.8, An amphitheater for evening programs is located here.

Minaret Falls - site 103.5, Loop Interpretive Trail that will take advantage of best photo points.

Sotcher View Geological Area - site 355, a nature trail could be located here leading to columnar basalt with glacial polish and a splendid view of Sotcher Lake.

Interpret ecology along existing trail to Rainbow Falls.

Red Cones Lava Flow - site 359.5, The youngest volcanic activity in the Reds Meadow area--less than 20,000 years ago.

Red Cones - Site 359, Construct an ecological and geological nature trail from the camp sites on Boundary Creek to the summit of the North Cone and extend a lateral trail to Fish Creek trail thus creating a loop trail to Red Cones, Red Cones Lava Flow and Rainbow Falls by use of a portion of the existing trail system.

Snow Canyon (King Creek) Features of geological interest west of the Devils Postpile, include columnar basalt similar to but not as outstanding as the Devils Postpile, and glacier sculptured granite.

Points of V.I.S. interest west and south of the Devil's Postpile area.

Site 362.6 - Indian Camp - Many grinding holes in granite.

Site 364 - Post Top - A basalt remnant with glacial polish on the ends of columnar basalt that equals the top of the Devils Postpile in interest.

Site 365 - Dome - A dome of granite with a large remnant of Reds Meadow tuff lava flow. This interesting remnant was left after the retreat of the glacier in the area.

west along the north bank of the San Joaquin. Later studies and reconnaissance recommended the highway go over Minaret Summit and a route has been surveyed from this point to the San Joaquin River.

Conservation groups, notably the Sierra Club, strongly oppose construction of the road through the corridor and want to see the corridor classified as wilderness.

Other groups, principally in the San Joaquin Valley, want the road built now.

The road is built to Squaw Dome on the west but 30 miles of difficult terrain lie between the terminii. The section from Minaret Summit to Agnew Meadow will be started in Fiscal Year 1969. The road will probably end at the river for the near future.

For many years there have been proposals to build a Trans-Sierra highway from the vicinity of Clover Meadow on the Sierra National Forest through Reds Meadow and eastward.

Cattle and sheep grazed all the accessible forage in the area from 1870 to 1890 when the area was included in Yosemite National Park. Control of stock on allotments came with Forest Service jurisdiction in 1905. As early as 1912 recreational stock use was heavy in the Reds Meadow area and it was closed to commercial grazing at that time.

A sheep allotment extended over the north half of the area until 1928.

Recreational use of Reds Meadow Hot Springs dates back prior to 1890 when people packed into the area. The trend in recreation use has been similar to that of the remainder of the Forest. This area is very popular with groups who often spend a week in the wilderness using the Reds Meadow area as a base.

MAMMOTH V.I.S. OPPORTUNITIES

See the Mammoth Visitor Information Service Plan, 1610.