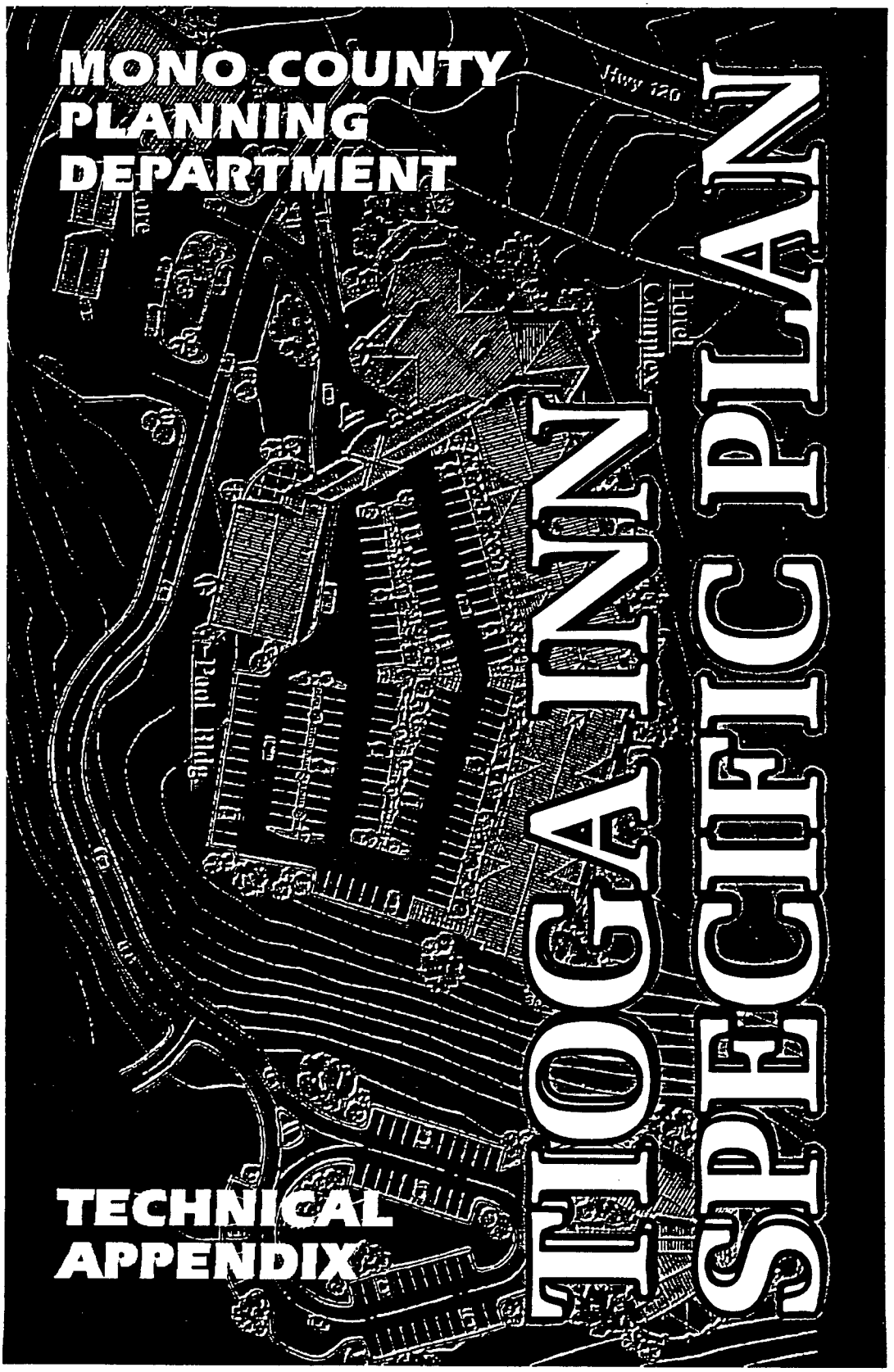

MONO COUNTY
PLANNING
DEPARTMENT
TECHNICAL
APPENDIX
INYO/MONO
SPECIFIC PLAN

GEOTECHNICAL/ HYDROLOGICAL REPORT

Report 1

KLEINFELDER

August 21, 1992
File: 30-2091-01.001

Mono County Planning Department
HCR 79 Box 221
Mammoth Lakes, CA 93546

Attention: Mr. Scott Burns

SUBJECT: Modified Phase I Groundwater Resources Assessment and Review of a Fault Investigation Report for the Tioga Inn Specific Plan, Lee Vining, California

Dear Mr. Burns:

This letter report presents a summary of our hydrogeologic assessment and a review of Geo Soils, Inc.'s fault investigation report for the subject Tioga Inn Specific Plan, in Lee Vining, California.

BACKGROUND

The proposed Tioga Inn project is located along Highway 395, just south of Highway 120 in Lee Vining (see Plate 1, Appendix A). At completion, the project will consist of a 120 room full service hotel, a restaurant, a gas station/mini mart, and 10 units of residential housing. There is an existing well, extending to a total depth of 580 feet, located near the east portion of the site. A short pump test conducted on the well by the drillers immediately after installation (1984) indicates it will produce approximately 150 gallons per minute (gpm). However, the well has been idle since it was constructed.

In May 1992, the Mono County Planning Department (MCPD), as part of its review of the project, requested Kleinfelder conduct an assessment of the potential impact of pumping groundwater from an existing well at the site for use in the proposed development. Specifically, they requested we focus on the preliminary groundwater characteristics of the aquifer, potential impacts from pumping, and potential impacts to water resources from project activities based on available information.

The MCPD also requested we review a preliminary geologic investigation to evaluate the potential hazard of surface fault rupture at the site, prepared by Geo Soils, Inc. of Marietta, California.

WORK PERFORMED

Review Pertinent Geologic Literature. We reviewed pertinent references on the geology attendant to the Lee Vining area and specific to the project area prior to initiating the aquifer pump test and reviewing the fault investigation report by Geo Soils, Inc. These references include professional papers and maps that address geologic and hydrogeologic conditions in the Mono Lake region. We list the references reviewed for this project at the end of the report.

Aquifer Pump Test. Proper testing of a well typically involves conducting two aquifer tests; a continuous pumping test and a step-drawdown test. The extended aquifer pumping test provides information necessary to estimate the hydraulic conductivity and storativity. This information assists in estimating the long-term yield of the well and potential interference between the subject well and nearby wells, springs, etc. The step-drawdown test provides information on the dynamic (pumping) water levels (DWL's) at various pumping rates for developing pump design criteria.

We recommended combining the two tests into one extended step-drawdown test to obtain as much information as possible, given the time and budget constraints of this project.

On June 24 and 25, 1992, Kleinfelder and Mr. Dennis Domaille (property owner) conducted an extended step-drawdown test on the well. The test consisted of three steps, with each step having a successively higher pumping rate than the preceding step. We ran the first two steps for approximately two hours each and the third step for approximately 21.7 hours. The pumping rates employed for the steps were about 38, 91, and 132.5 gpm, respectively. We also recorded well recovery data for approximately 27.2 hours. The DWL's and recovery water levels were measured with a pressure transducer placed in a 1.25-inch inside diameter slave well installed inside the well, and recorded on a Hermit 2000^{R} data logger manufactured by In-Situ, Inc.

GEOLOGIC SETTING

The project site is located at the base of the eastern slope of the Sierra Nevada Mountain Range at Lee Vining Creek and west of Mono Lake. This is a transition area between two major geologic provinces, the Sierra Nevada geologic province to the west, and the Basin and Range geologic province to the east. The Sierra Nevada is predominantly composed of granitic plutonic rocks of Mesozoic age. These rocks constitute the Sierra Nevada batholith, which is a nearly monolithic block tilted westward by uplift along a fault system at its eastern limit. Paleozoic to Triassic age metamorphic rocks that were intruded by the plutonic rock are common as roof pendants along the crest and eastern slope of the Sierra Nevada Mountains. Cenozoic volcanic rocks are also prominent along the central portion of the eastern Sierra Nevada. The crest of the Sierra Nevada Mountain Range is located only a few miles west of the site.

The Basin and Range geologic province consists of northwest trending fault-block mountain ranges, separated from intervening basins by high angle normal faults of great displacement. This province includes eastern Nevada, western Utah, a part of Oregon, Idaho, California, and Arizona. The mountain ranges in western Nevada are primarily made up of Mesozoic or Early Tertiary intrusive and Tertiary volcanic rocks. The intervening basins consist of deep accumulations of Early Cenozoic to Quaternary age deposits.

The Mono Basin is characterized by Quaternary age volcanic activity that has resulted in lava flow, ash and cinder deposits over much of the area. Numerous volcanic cinder cones and plugs occur within a few miles of the project site.

The mountains west of the site were subjected to repeated Pleistocene age glaciations. This glacial activity produced in glacial till and outwash deposits along the eastern Sierra. Previously higher water levels in Mono Lake resulted in alluvial deposits and wave cut terraces around Mono Lake. The project site is predominantly underlain by Tahoe age glacial till. Quaternary age alluvium underlies part of the eastern portion of the site.

FINDINGS AND DISCUSSION

Hydrogeologic Conditions

The static water level (SWL) measured approximately 339 feet below ground surface before the start of the test. Total drawdown at the end of the test (25.7 hours) was about 17.6 feet. The well recovered to about 0.3 feet of the original SWL within 13.8 hours after terminating the pumping phase of the test.

The specific capacity for the well ranged from approximately 11.1 gallons per minute per foot (gpm/ft) at 38 gpm to 7.5 gpm/ft at 132.5 gpm. Using the test data, we calculated drawdowns, specific capacities, and well efficiencies for several pumping rates. In general, the calculated well efficiencies vary between 55.8% at 125 gpm to 28.3% at 400 gpm. These low efficiencies are not unusual considering the type of perforated casing (Mill Slot) installed in the well. Appendix B contains the step-drawdown calculations for this test.

We used the recovery data to assess the hydrogeologic characteristics of the aquifer penetrated by the well. Usually, the recovery data is more reliable and accurate because there is no potential electrical interference or turbulent flow from pumping. In addition, conducting the pumping phase in steps essentially renders the drawdown data useless in terms of estimating the hydrogeologic characteristics of the well.

To calculate the average transmissivity (T) using the recovery data, we used a variation of the Jacob straight-line method (Driscoll, 1989). The T is the rate at which the aquifer can transmit water through a unit width of an aquifer under a unit hydraulic gradient. We were not able to calculate storativity because of the lack of monitoring wells for this test.

The method of using recovery data involves plotting on semilog paper the residual drawdowns versus a ratio of time since the pump test began divided by the time since pumping stopped. We began collecting recovery data within 5 seconds after turning the pump off. In this time, the well recovered approximately 8.7 feet. In addition, the pump was turned on for about 15 minutes towards the end of the recovery phase. We do not believe the rapid initial recovery or the brief pumping period adversely affects the data.

The recovery plot usually gives a relatively straight line, from which we can calculate T. The plot from this well indicates there is a recharge boundary encountered near the end of the recovery period, therefore, we calculated T values before and after the recharge boundary using the formula and assumptions as shown below:

$$T = \frac{264Q}{ds'}$$

Where: T = transmissivity (gpd/ft)
Q = pumping rate (gpm)
ds' = recovery per log cycle of time (ft)

Assumptions:

Before Boundary	After Boundary
Q = 132.5 gpm	Q = 132.5 gpm
ds' = 2.25 ft	ds' = 1.10 ft

For additional assumptions refer to Driscoll (1989).

Then, the T of the aquifer(s) before boundary is approximately 15,600 gpd/ft. The T after the boundary condition increases to about 31,800 gpd/ft. These T values are probably typical of high yielding unconfined aquifers in this area (see Appendix B for the recovery data).

We calculated the potential sustained yield of the well by taking 67% of the saturated thickness times the specific capacity. In other words, at 67% of the total potential drawdown, the well will produce 90% of its maximum yield (Driscoll, 1989). Although the subject well does not completely penetrate the unconfined aquifer, we believe this method gives a reasonable estimate of the sustained yield.

This well has 200 feet of perforations. Although the SWL is about 41 feet higher than the perforated interval, we must use that portion of the well open to the aquifer. Using this saturated thickness, we calculated the sustained yield as follows:

Sustained Yield = (saturated thickness x 0.67) x specific capacity

Where: Saturated thickness = 200 feet
Specific capacity @ 400 gpm = 3.95

Thus, the sustained yield for this well is approximately 530 gpm. We used the calculated specific capacity for a pumping rate of 400 gpm because the specific capacity will decrease as the pumping rate increases. This will give a more accurate calculated sustained yield.

Based on the calculations above, we believe the yield of this well is capable of exceeding 400 gpm. However, additional testing of this well in the form of an extended aquifer test with one or more monitoring wells, and quality analysis will be necessary before pumping at this rate. We understand the maximum production will be only about 150 gpm. The recovery data indicates that recharge into the well is quick, as is evidenced by the relatively high T for the aquifer. Actually, the aquifer probably has a much higher T than those calculated because we did not account for the inefficiency of the well. As discussed above, the well is not very efficient. Water level measurements taken from a more efficient well would likely have resulted in a much higher T value which would probably be nearer the actual T of the aquifer.

Because of the highly transmissive nature of the aquifer, and the presence of an apparent recharge boundary in the vicinity of the well, we believe there will be minimal impacts to the groundwater in terms of quantity or quality. The withdrawal of the quantity of water required for this project will likewise be minimal.

The nearest surface water source is the generally north trending Lee Vining Creek, located about 2,800 feet northwest of the site. Based on the topography in the area, the apparent groundwater flow direction is to the east-northeast. Considering this, and the depth of the aquifer below ground surface, it is highly unlikely that the well will draw water from surface water sources. Rather, surface waters percolating into the subsurface, in addition to eastward groundwater flow from the Sierra Nevada, will serve to recharge the aquifer.

Fault Investigation Report

The following presents the results of our review of a geologic investigation report entitled "Preliminary Geologic Investigation, 83± -acre Parcel, Tentative Parcel Map No. 34, Lee Vining Area, Mono County, California." The purpose of this report was to evaluate the hazard of primary surface rupture at the subject site. We did not assess other potential geologic hazards at the site. The subject report was prepared by Geo Soils, Inc. of Marietta, California, for Mr. Dennis Domaille of Mammoth Lake, California.

The purpose of our review was to evaluate the adequacy of the subject geologic report in terms of potential hazard of surface fault rupture at the site. Our review was based on Kleinfelder's previous experience in the site area and the "Guidelines for Evaluating the Hazard of Surface Fault Rupture" presented in Appendix C of California Division of Mines and Geology (CDMG) Special Publication 42: "Fault-Rupture Hazard Zones in California," by E. W. Hart, (1990).

As discussed above, the subject site is located near the town of Lee Vining in Mono County, California. The Mono Lake fault was previously inferred by others to trend across the site. Consequently, the State of California required a geologic study of the fault under the Alquist-Priolo Special Studies Zones Act of 1972. An Alquist-Priolo Special Studies Zone was designated along the Mono Lake fault in 1985 and is shown on the NE1/4 Mono Craters, California 7.5 Minute Quadrangle Map. The Mono Lake fault was included in a regional evaluation of faults by Associate Geologist William A. Bryant with the CDMG. The results of this regional evaluation are contained in the CDMG Fault Evaluation Report FER-155, "Faults in Bridgeport Valley and Western Mono Basin, Mono County," by Bryant (1984).

Discussion The scope of services performed by Geo Soils included:

- Review of geologic literature and photolineament analysis of available aerial photographs;
- Site reconnaissance by a geologist;
- Subsurface exploration consisting of about 1,500 feet of trenches excavated 10 to 15 feet below existing grade;
- Geologic analysis of the data collected; and
- Preparation of the subject report.

The report contains a description of the proposed development, methods of study, regional geologic setting, and several plates. In addition, the report was signed by a registered geologist in the State of California.

The scope of services performed by Geo Soils is in general accordance with the CDMG guidelines and similar to the scope of other geologic studies for similar projects at the time the study was performed. In addition, the subsurface exploration performed for the project was relatively extensive. However, Geo Soils did not review CDMG FER-155 and other recent literature referenced in FER-155 pertaining specifically to faulting in the site area. CDMG FER-155 presents evidence of active fault displacement near the project site with locations of fault-related features shown on a regional fault map.

The Geo Soils report does not state specific conclusions concerning the location and existence (or absence) of hazardous faults on or adjacent to the site, or the relative potential for future surface displacement. The likelihood of future ground rupture may be stated in semiquantitative terms such as low, moderate, or high, or in terms of slip rates estimated for specific fault segments.

In summary, based on our knowledge of the planned development and guidelines given by the State of California, the scope of services performed by Geo Soils, Inc. for the subject geologic study was reasonably adequate to evaluate potential fault rupture at the subject site. However, a key reference (CDMG FER-155) for the Mono Lake fault was not stated in the references reviewed by Geo Soils for their study. In addition, the subject report does not state conclusions concerning the existence or absence of hazardous faults on the subject site, or the relative potential for future surface displacement.

CONCLUSIONS

We have based the following conclusions on the data collected during this investigation. These conclusions are subject to the limitations stated in this report, and may change if additional information becomes available. The following is a summary of our conclusions:

Aquifer Test:

- The results of the extended pump test indicate the well can produce a sustained yield of approximately 530 gpm. The results also indicate there is a recharge boundary encountered near the end of the test. The calculated T before and after the boundary is approximately 15,600 gpd/ft and 31,800 gpd/ft, respectively.
- Pumping groundwater at the proposed rate of no greater than 150 gpm should have minimal impact on the quantity and quality of the groundwater or on surface waters in the area.

Fault Investigation Report Review:

- The subject geologic study by Geo Soils, Inc. was reasonably adequate to evaluate potential fault rupture at the site. However, a key reference (CDMG FER-155) was apparently not reviewed for the study.
- The subject report does not state conclusions concerning the existence or absence of faults on the site, or relative potential for future surface displacement.

RECOMMENDATIONS

Based on our findings and conclusions above, we recommend the following:

- Request Geo Soils, Inc. review the CDMG Fault Evaluation Report FER-155; and
- Request Geo Soils, Inc. modify their report to include their review of FER-155 and state their conclusions regarding the existence or absence of faulting on the site.

REFERENCES

Bryant, W.A., (1984). Faults in Bridgeport Valley and Western Mono Basin, Mono County: California Division of Mines and Geology Fault Evaluation Report FER-155.

California Division of Mines and Geology, 1985, Alquist-Priolo Special Studies Zones - NE 1/4 Mono Craters, 7.5 Minute Quadrangle Series: California Division of Mines and Geology, 1:24,000.

Driscoll, Fletcher G., 1989, Groundwater and Wells: Johnson Filtration Systems, Inc., St. Paul, Minn., 1089 p.

Geo Soils, Inc., (April 4, 1991). Preliminary Geologic Investigation 83± Acre Parcel, Tentative Parcel Map No. 34, Lee Vining Area, Mono County, California. Unpublished Report, Geo Soils File No. W.O. 431-A-RC.

Hart, E.W., (1990). Fault-Rupture Hazard Zones in California. California Division of Mines and Geology, SP-42.

Kistler, R.W. (1966). Geologic Maps of the Mono Craters Quadrangle, Mono and Tuolumne Counties, California. United States Geological Survey, Map GQ-462.

LIMITATIONS

The services provided under this contract, as described in this report, include professional opinions and judgments based on the data collected and analyzed. We performed these services according to currently accepted engineering geology practices for water resources and geotechnical engineering in Northern California. We base this report on information derived from the following:

- Data from selected available literature;
- Extended step-drawdown aquifer test;
- Copy of the Fault Investigation Report by Geo Soils, Inc.; and
- Our knowledge of and experience in the local area.

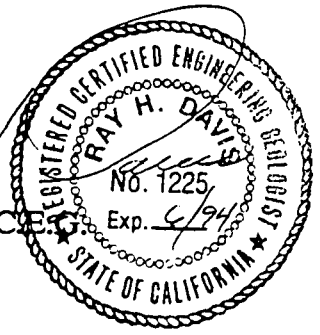
We consider the information contained in this report to be valid for a period of one year from the date of the report. This report does not provide a warranty as to variable subsurface conditions which may actually exist. Do not assume this report applies outside the specific project area. In addition, one should recognize that definition and evaluation of geologic and hydrogeologic conditions is a difficult and inexact art. Geologists and hydrogeologists must occasionally make general judgments leading to conclusions with incomplete knowledge of the geologic history, subsurface conditions, and hydraulic characteristics present. To reduce the inherent risk associated with evaluating water resources, the client should request that the geologists and hydrogeologists use more extensive studies including subsurface exploration.

If the client wishes to reduce the uncertainty beyond the level associated with this study, Kleinfelder should be notified for additional consultation.

Very truly yours,

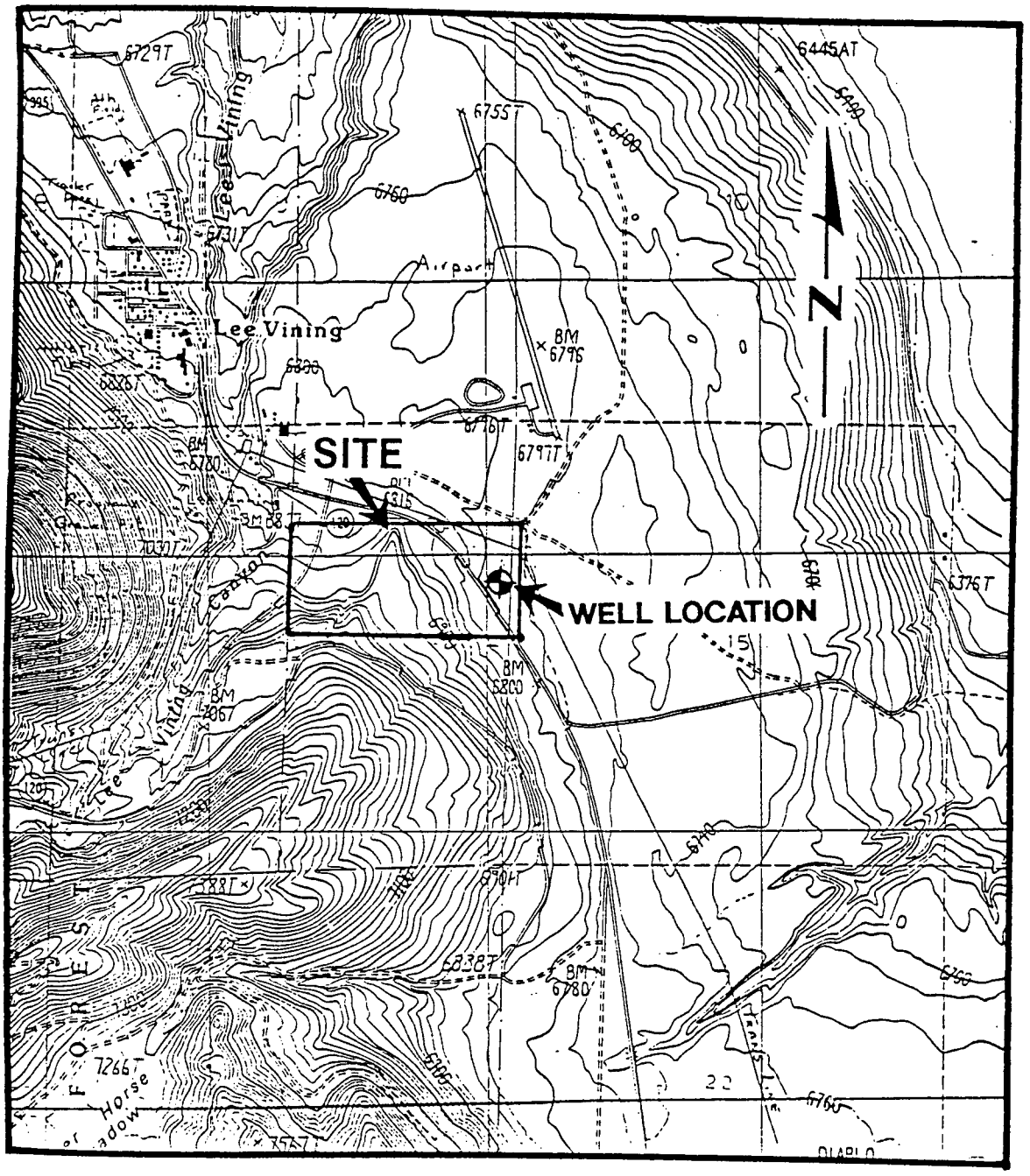
KLEINFELDER, INC.

Michael W. Fies
Project Geologist



Ray H. Davis, P.E., C.E.G.
Principal

MWF:RHD:jhs



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QUADRANGLE LOCATION

BASE MAP: U.S.G.S., 1986, TOPOGRAPHIC MAP OF LEE VINING
7.5 - MINUTE QUADRANGLE, CALIFORNIA

KLEINFELDER

PROJECT NO. 30-2091-01.001

SITE WELL LOCATION MAP

TIOGA INN

LEE VINING CALIFORNIA

PLATE 1

STEP-DRAWDOWN TEST CALCULATIONS

PROJECT NO: 30-2091-01.001 DATE OF TEST: June 24-25, 1992

JOB NAME: Tioga Inn

TEST LOCATION: Approx. 200 Ft. E. of Hwy 395, 2000 ft. S. of Junction with Hwy.120

WELL NO: 1 STATIC WATER LEVEL: ± 340 TOC @ ____HRS

CALCULATED BY: M.W. Fies ± 339 GL

EXPLANATION OF SYMBOLS

Q = well discharge (gpm)
s = total drawdown (ft)
Δs = drawdown at end of step (ft)
B = Formation loss (s/Q) (from graph)
C = Well loss (s/Q^2) (from graph)
E = Aquifer Efficiency

EQUATIONS:

Specific drawdown: s/Q (ft/gpm)
Specific capacity: Q/s (gpm/ft)
Calculated drawdown: $s_c = BQ + CQ^2$ (ft)
Aquifer Efficiency: $E = 1/[1 + (C/B)Q]$ (%)

Step	Pump Rate Q (gpm)	Step-Drawdown Δs (ft)	Total Drawdown s (ft)	Specific Drawdown s/Q (ft/gpm)	Specific Capacity Q/s (gpm/ft)
1	38	3.411	3.411	0.0898	11.14
2	91	6.697	10.108	0.1111	9.00
3	132.5	7.502	17.610	0.1329	7.52

Calculated Drawdown, Specific Capacity, Well Efficiency

Pump Rate Q (gpm)	Formation Loss BQ (ft)	Well Loss CQ^2 (ft)	Calculated Drawdown s_c(ft)	Calculated Specific Capacity Q/s_c(gpm/ft)	Well Efficiency E (%)
125	8.96	7.09	16.05	7.79	55.8
150	10.76	10.22	20.98	7.15	51.3
200	14.34	18.16	32.50	6.15	44.1
300	21.51	40.86	62.37	4.81	34.5
400	28.68	72.64	101.32	3.95	28.3

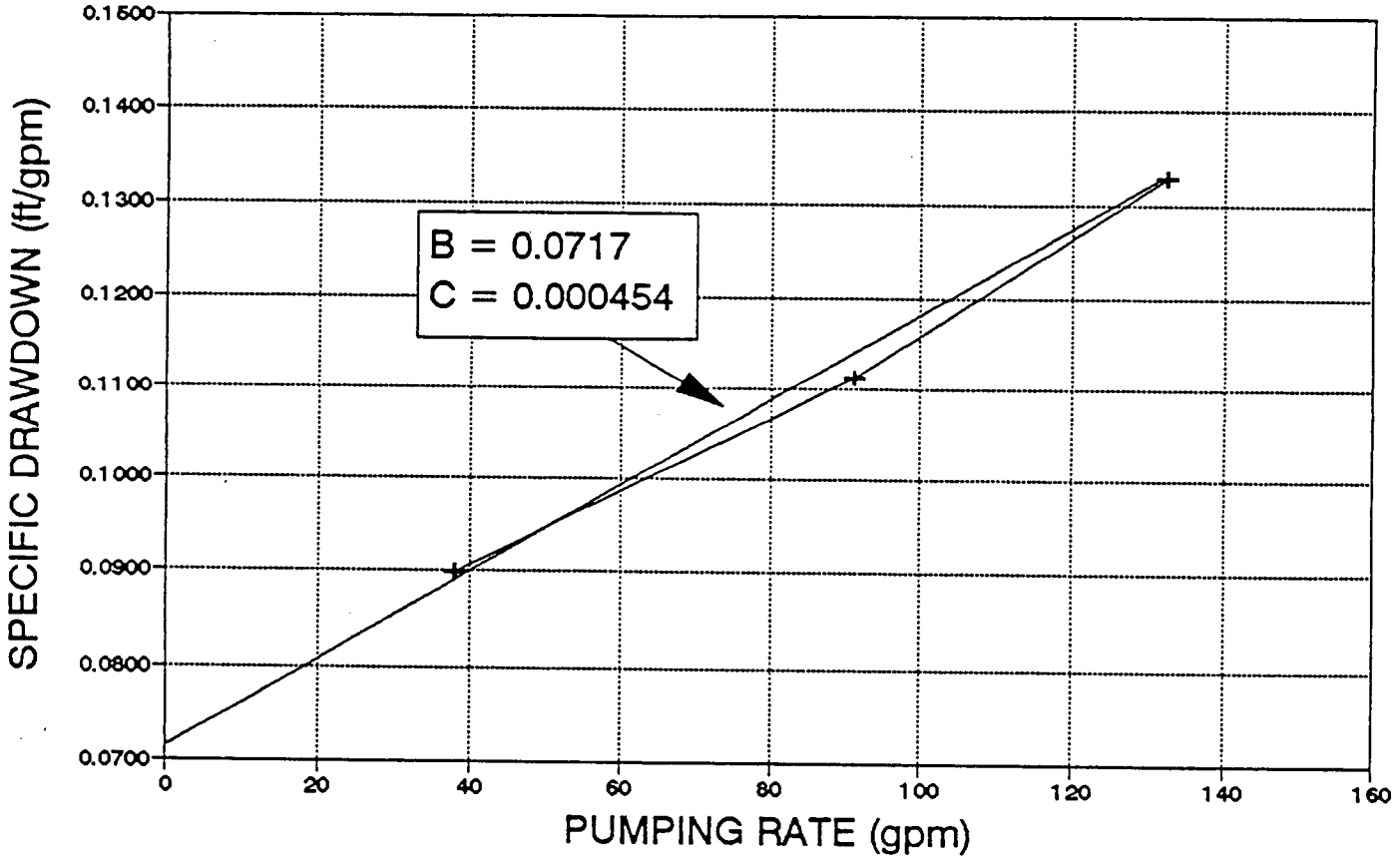
From graph: B = 0.0717 s/Q

C = 0.000454 s/Q^2

SDTCALC

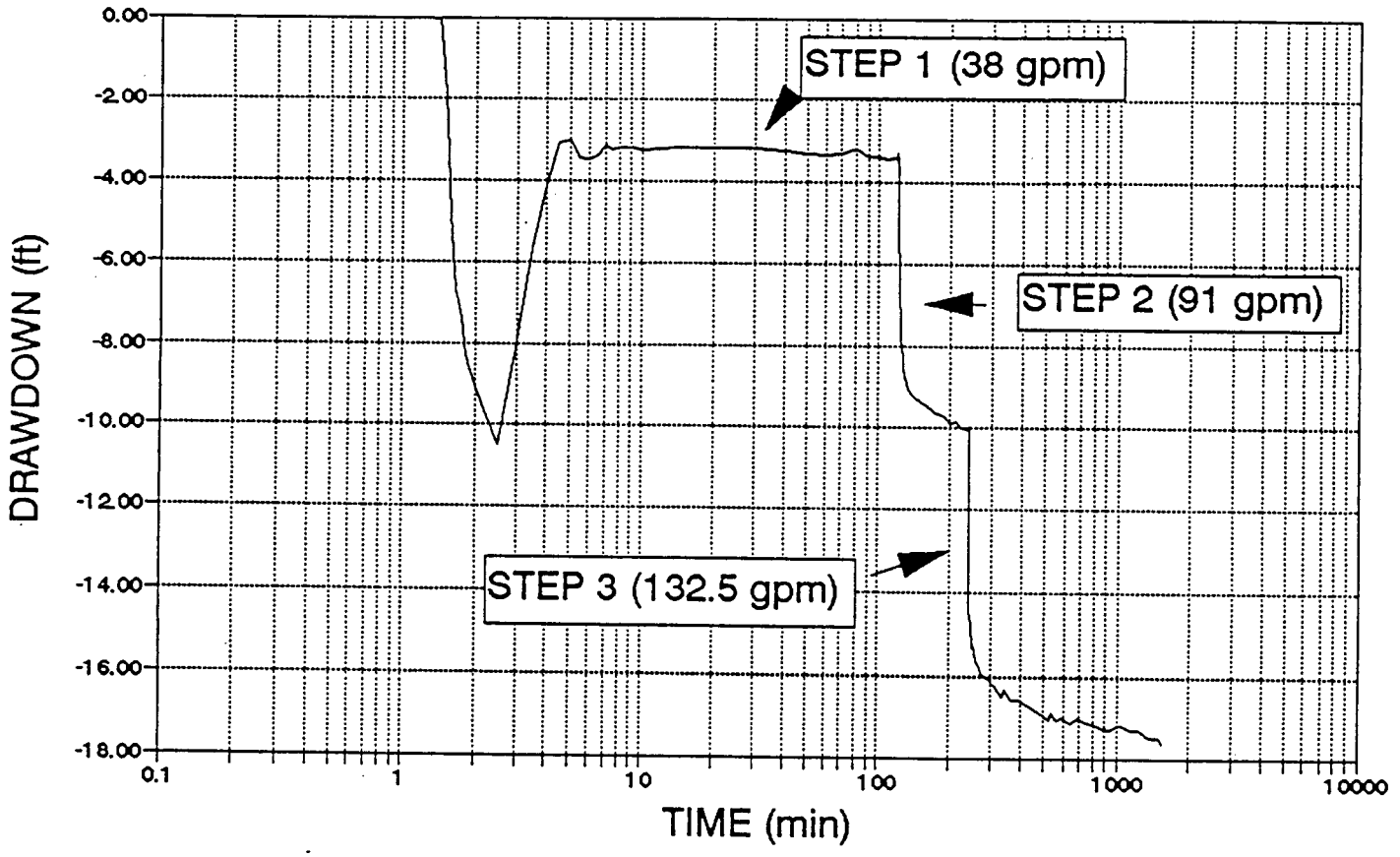
TIOGA INN WELL #1

Specific Drawdown/Discharge



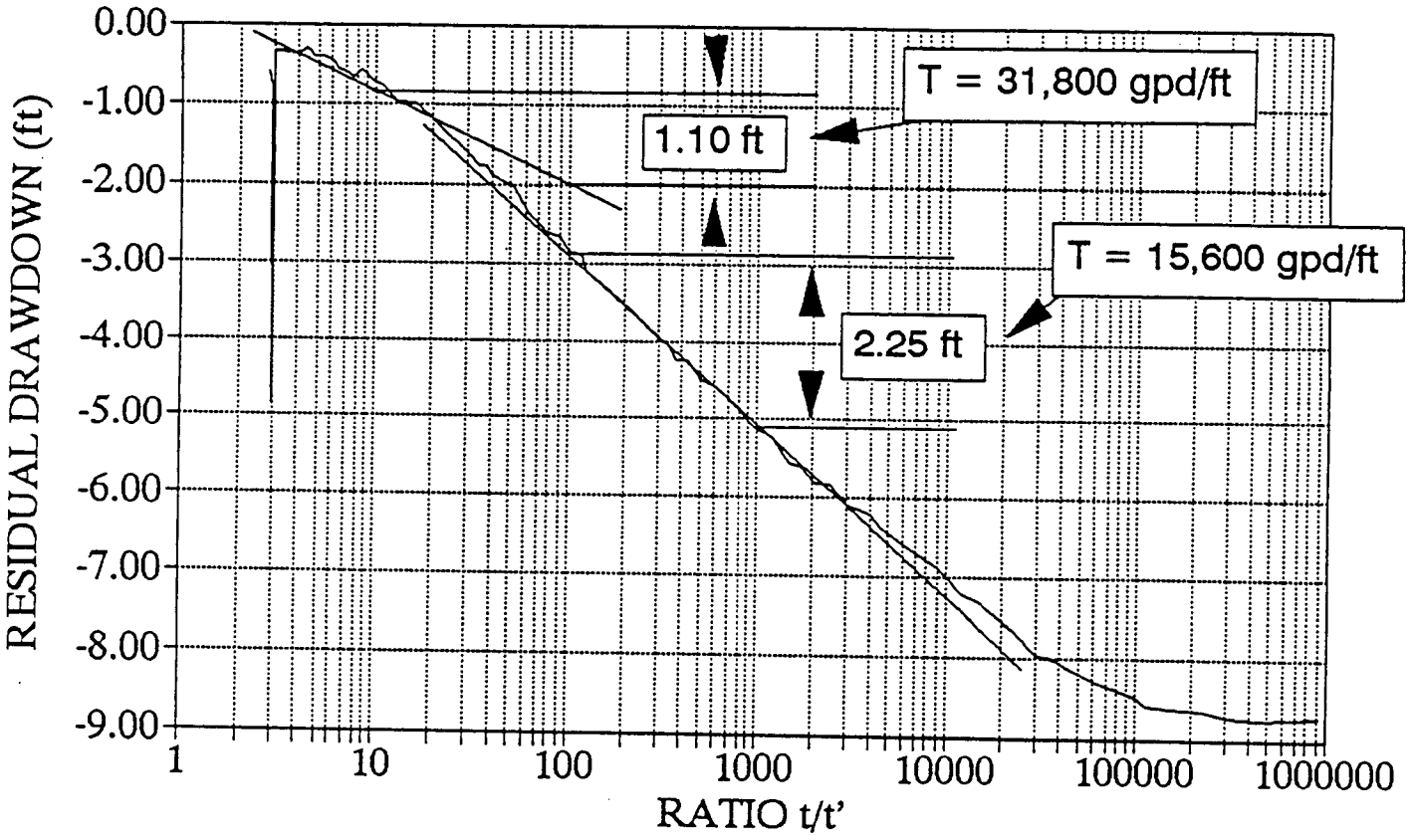
TIOGA INN WELL #1

Extended Step-Drawdown Aquifer Test



TIOGA INN Well #1

Step 4 (Recovery)



VISUAL IMPACT ANALYSIS

Report 2

DRAFT

VISUAL IMPACT ASSESSMENT

FOR

THE TIOGA INN SPECIFIC PLAN EIR

LEE VINING, CALIFORNIA

Prepared for:

MONO COUNTY

November 1992

Prepared by:

CERTIFIED/EARTH METRICS
7000 Marina Boulevard, 4th Floor
Brisbane, CA 94005
(415) 742-9900

S12046B

EXISTING SETTING

Visual Setting. Mono County offers some of the most diverse terrain features and scenic resources to be found in any area of the country. The proposed project site is situated in the Mono Basin at the intersection of U.S. Highway 395 (US 395) and State Route 120 (SR 120). The site borders the federally designated Mono Basin National Forest Scenic Area, a nationally recognized visual resource. The basin's visual resources include Mono Lake and a diverse spectrum of dramatic landforms such as tufa towers, glacial moraines, and young volcanic features. Within a 20 mile radius of the site a number of visually significant resources attract the area's many visitors, including Yosemite National Park, Inyo National Forest, June Lake, Mammoth Lakes, Topaz Lake, and Devil's Postpile National Monument.

The proposed project site lies on the outskirts of Lee Vining, a small, rustic community. Many different architectural styles can be found in Lee Vining from trailer parks to "alpine lodge" and old west styles. Lee Vining marks the southern gateway to the famous Bodie Ghost Town, an authentic old western gold mining town.

The project site consists of a gently sloping grade trending north to south with a ridgeline running through the center, forming two upper "plateaus" (see Plates A and B). The site's varied terrain is vegetated with a dense cover of sagebrush, whitethorn and other low lying shrubs, as well as a sparse covering of Jeffrey and Pinion pines. The site's barren, chaparral landscape is characteristic of the Mono Basin environment.

View Opportunities. View opportunities are those views available from the project site. The project site affords scenic vistas to Mono Lake, Paoha Island, and Mono Basin to the north (see Plate C); Williams Butte and the Ansel Adams Wilderness to the south (see Plate D); and Crater Mountain to the east. View opportunities are more dramatic from the site's upper elevations due to increased elevation of the viewer's vantage point.

View Corridors. A view corridor is a vantage point which offers aesthetically pleasing views or panoramas to a substantial number of people. The major view corridors of consideration in the impact analysis of the proposed project are the views from SR 120 looking north to Mono Lake and Mono Basin (SR 120 - Mono Basin corridor), and the views from the intersection of SR 120 and US 395 looking south up Tioga Pass (SR 395 - Tioga Pass corridor). The SR 120 - Mono Lake corridor is significant in that it marks an important first view to Mono Lake for motorists travelling down Tioga Pass. There is currently a scenic turnout with an interpretive information kiosk on SR 120 adjacent to the project site (see Plate E). The US 395 - Tioga Pass corridor is significant in that it marks the intersection of two highways which experience a high volume of vehicle traffic, and offers aesthetically pleasing views to the dramatic peaks of the eastern Sierra (see Plate F).

Other view corridors which would be potentially impacted by the proposed project are views from the community of Lee Vining, and views from across Mono Basin (Black Point, Mono County Park, lower Lee Vining Canyon). Views to the project site from these vantage points are illustrated in Plates G, H,, I and J. Due to the relative distance of the project site to any development, the project site would not be readily perceptible from this vantage point.

Scenic Highways Management. There are no official State of California designated scenic highways in the vicinity of the project site. The section of SR 120 that runs adjacent to the project site is one of several highway segments for which the State has completed Scenic Highway Reports, indicating possible future consideration for official state scenic highway designation.

In a mandate to manage the County's scenic resources, Mono County adopted a Scenic Highways Element in 1981. Mono County has designated the road segments of US 395 and SR 120 running adjacent to the project as part of the Mono County Scenic Highway system. These road segments are managed through the goals, policies and implementation measures of the Scenic Highways Element. Most of the goals, policies and implementation measures of this element have been reworked and incorporated into the Conservation/Open Space Element of the Mono County General Plan Update which is currently in draft form. The county has applied to the state for an extension to the time period required to certify the Draft General Plan. Therefore, the state has required that all projects currently under consideration be subject to the policies of the Draft General Plan Update.

The Scenic Highways Element (1981) and Draft General Plan define a "Scenic Highway" as:

> Any freeway, highway, road, street, boulevard, or other public right-of-way which traverses an area of unusual scenic quality and has been designated as a scenic Highway by the County Board of Supervisors and/or the State of California.

Similarly, these planning documents define a "Scenic Highway Corridor" as:

> The area of land generally adjacent to (within 1000 feet) and visible from the highway, which requires protective measures to insure perpetuation of its scenic qualities. Scenic Highway Routes consist of both the public right-of-way and the scenic corridor.

The following goals, objectives, policies and actions of the Conservation/Open Space Element of the Draft Mono County General Plan are particularly relevant to the proposed project (see Appendix A for a complete list of visual resource policies and the existing Scenic Highways Element):

GOAL. Protect and enhance the visual resources and landscapes of Mono County.

OBJECTIVE A. Maintain and enhance visual resources in the county.

Policy 3: Preserve the visual identity of areas outside communities.

Action 3.1, Action 3.2, Action 3.4

Policy 4: Protect significant scenic areas by maintaining land in those areas in public ownership.

Action 4.2, Action 4.3, Action 4.4, Action 4.5

OBJECTIVE B. Maintain a countywide system of state and county designated scenic highways.

OBJECTIVE C. Ensure that development is visually compatible with the surrounding community and/or natural environment.

Policy 1: Future development projects shall avoid potential significant visual impacts or mitigate impacts to a level of non-significance, unless a statement of overriding considerations is made through the EIR process.

Action 1.1

Policy 2: Future development shall be sited and designed to be in scale and compatible with the surrounding community and/or natural environment.

Action 2.1, Action 2.2, Action 2.3, Action 2.4, Action 2.5, Action 2.9, Action 3.1, Action 3.2, Action 3.3

Policy 4: Promote revegetation and reforestation programs along county roads, including designated scenic highways.

Action 4.1

Policy 5. Minimize the visual impact of signs within designated scenic highway corridors.

Action 5.1, Action 5.3

OBJECTIVE D. Heighten awareness of Mono County's unique visual environment.

Policy 1: Tourist facilities should be located to take advantage of scenic views.

Action 1.1, Action 1.2

Policy 2: Provide roadside improvements for designated county and state scenic highways.

SR 120 up Lee Vining Canyon has been designated as a National Scenic Byway. This program designates highways that traverse scenic areas in public lands. These roads highlight an area's special scenic and recreational values and further serve to increase public awareness of those lands and resources. The byways further highlight a variety of resources, management opportunities, and activities. The U.S. Forest Service is currently in the process of developing an interpretive program for the SR 120 scenic byway.

Mono Basin National Forest Scenic Area. The proposed project site is adjacent to the Mono Basin National Forest Scenic Area (scenic area). The Inyo National Forest and U.S. Department of Agriculture have developed a Comprehensive Management Plan for the scenic area which manages the area's natural resources. Although the project site is not within the scenic area's boundaries, development of the site may affect views to and from the scenic area. It would therefore be beneficial for the proposed project to conform with the scenic area's standards and management prescriptions. Areas adjacent to the project site that are within the scenic area boundary and along SR 120 and US 395 are mostly within the designated "Developed Recreation Zone." This designation is designed to "maintain existing developments and provide for new services and/or facilities in support of visitor use needs." The following

standards, guidelines, and management prescriptions of the scenic area Comprehensive Management Plan are particularly relevant to the proposed project:

Scenic Area Standards and Guidelines:

- Do not allow new overhead lines outside of existing utility corridors, which are visible from sensitivity level 1 roads and trails. Sensitivity level 1 observation points include U.S. 395, and Highways 120, 167; Lundy Canyon Road; Cemetery Road (from 395 to County Park); the visitor center; and South Tufa, Panum Crater, Navy Beach, Old Marina, County Park, and Black Point visitor sites.

Management Prescriptions:

- Developed Recreation Zone - Manage vegetative setting in and adjacent to the zone to meet the Visual Quality Objectives (VQO) of retention within the foreground zone.

- Strive to meet the VQO of retention but do not exceed partial retention standards for all facilities and developments as seen from sensitivity level 1 travel routes or occupancy sites. For distances greater than 1.2 mile from the viewing location, meet retention standard.

- Plant and maintain vegetation at developed sites to provide screening and a natural appearing setting. Favor native species, but historically introduced species and cultivated equivalents of native species may be used.

- Facilities should borrow shape, color, and texture from the natural setting.

National Forest Visual Management System. The project site is adjacent to lands managed by the U.S. Forest Service. The Visual Management System (VMS) is applied to all management activities on National Forest Lands. The system establishes VQOs which are based on a combination of variety class and sensitivity level. The variety class is determined by classifying the landscape into one of three different degrees of variety: Distinctive, Common, or Minimal. The sensitivity level is determined by measuring viewers' concerns for visual quality and assigning a level of sensitivity: Level 1, highest sensitivity; Level 2, average sensitivity; and Level 3, lowest sensitivity. Based on these classifications, the land is assigned VQOs, describing the level of acceptable alteration of the natural environment. The objectives are as follows:

- Preservation. Allows only ecological changes on the land. The only management impact allowed is very low visual impact recreation facilities.

- Retention. Allows management activities which repeat form, line and color already found in the natural landscape.

- Partial Retention. Allows management activities to repeat the form, line, and color of the natural landscape; other changes can be made provided the visual impact is dominated by the natural landscape.

- Modification. Management activities may visually dominate the natural characteristics of the environment. The management activities must borrow from the natural characteristics of the environment.

- Maximum Modification. Management activities of vegetative and landform alterations may dominate the natural characteristics of the environment.

Although the project site itself would not be subject the VMS, it should be noted that Forest Service lands may be subjected to changes in classification or visual quality upon completion of the proposed project.

IMPACTS

Standard of Significance. Based on CEQA Guidelines, the adverse visual impacts of a project will only be significant if they would have a "substantial, demonstrative negative visual or aesthetic impact." This determination is based on several criteria including observer position, views, view corridors, existing and proposed screening, backdrop, the characteristics and building materials of the proposed development, and the existing visual character of the surrounding area. As the determination of significance is often a subjective judgement, heavy emphasis is placed on the goals and policies of the Mono County General Plan and the Scenic Highways Element in the interpretation of impacts. The County has further defined its standard of significance in the Conservation/Open Space Element (see Visual Resources objective C, policy 1, action 1.1):

Examples of a substantial demonstrable negative aesthetic effect include:

1) Reflective materials
2) Excessive height and/or bulk
3) Standardized designs which are utilized to promote specific commercial activities and which are not in harmony with the community atmosphere
4) Architectural designs and features which are incongruous to the community or area and/or which significantly detract from the natural attractiveness of the community or its surroundings.

Visual Character. The proposed project would transform the existing natural landscape into a multi-use development (see Plate K). In considering whether the proposed project could be considered to have a "demonstrable negative effect," the project can be evaluated by the standards of the Conservation/Open space element (objective C, policy 1, action 1.1. See "Standard of Significance" above).

REFLECTIVE MATERIALS. A complete list of proposed building materials was not provided as part of the application for the proposed project. Contact with the project applicant indicated that glare resistant glass and roofing materials would be used in project construction. Use of building materials which would cause excessive amounts of light and glare is identified as a potentially significant impact.

EXCESSIVE HEIGHT AND/OR BULK. The proposed hotel would not exceed the roof elevations of 30 feet from finished floor elevations. Preliminary hotel designs, with gabled roofs, wood beams, and stone columns would break up the northern facade of the hotel, thereby minimizing the perception of a "bulky" design. Similarly the restaurant, service station/mini-mart, and

housing portions of the proposed project would not exceed 30 feet in height or be considered to have excessive bulk. No significant aesthetic impact would be expected relating to excessive height and bulk if the proposed project design were implemented.

STANDARDIZED DESIGNS. Although the hotel and restaurant portions of the proposed project call for similar basic design and building materials, it would not be considered a "standardized" design which promotes certain commercial activity. The proposed alpine style architecture would blend with the environment and be congruous with other structures in Lee Vining. As no standardized, commercialized designs are proposed, no significant aesthetic impacts would be expected.

ARCHITECTURAL DESIGNS. As stated above, the proposed architectural design and use of natural and naturally colored building materials (ie. stone walls, wood beams, green roof, etc.) would increase blending with the existing surrounding natural terrain. The proposed project design would not cause significant aesthetic impacts relating to its architectural design.

As no detailed landscape plans have been drawn for the proposed project, visual screening for the proposed project remains to be defined. Landscape vegetation and other visual buffers are of vital importance to provide an adequate transition from the manmade environment to the natural environment. Landscape designs have the potential to temper manmade features on site and minimize their visual prominence. As cited in the Conservation/Open Space Element of the Draft Mono County General Plan, buildings must blend with the natural environment. Inadequate designs would reduce natural blending and cause potentially significant visual and aesthetic impacts.

The type and design of the proposed signage at the project site have not been included as part of the project application. Signs which do not blend with the natural environment or cause excessive light and glare would not be compatible with the stated goals, policies, and actions of the Conservation/ Open Space Element, or the Mono County Sign Ordinance. Improper sign design is identified as a potentially significant impact.

The type and design of nighttime lighting on the project site has not been defined as part of the project application. lighting fixtures and configurations which project excessive light and glare to its surroundings would be inconsistent with Objective C, policy 1, Action 2.1 h of the Conservation/Open Space element which calls for lighting to be shielded and direct. This is identified as a potentially significant impact.

View Opportunities. The proposed project would allow privately owned land to become available for public use. Due to the richness of the view opportunities present on the project site, aesthetically pleasing views would become available to a larger number of people. Views would be particularly pleasing from the proposed restaurant due to its elevated position on the site. Enhanced public access to view opportunities can be considered a beneficial impact.

View Corridors. The proposed project would cause existing unobstructed view corridors to become partially obstructed. As the photo simulations in Plate H demonstrate, the foreground views of the US 395 - Tioga Pass corridor would be

disrupted from its existing natural setting. Distant views to the peaks surrounding Tioga Pass (occluded in photo by cloud cover) would not be disrupted by the proposed project. Similarly, foreground views from the SR 120 - Mono Basin corridor could potentially be partially obstructed by the proposed project. The proposed building siting would minimize obstruction of views of Mono Lake because adequate setback of the hotel portion of the project is planned. The mini-mart is also set back sufficiently to avoid obstruction of Mono Basin views from this corridor (see Plate L). With the proposed project siting and height and bulk, no significant impacts relating to obstruction of view corridors are anticipated.

Visually prominent areas of the proposed project site in relation to significant view corridors are identified in Figure 1. The proposed service station/mini-mart and western side of the hotel would be visually prominent because of their proximity to SR 120. The proposed restaurant and parking area would also be visually prominent because of their elevated position on the project site. The restaurant would "daylight" above the existing ridgeline and be prominent from both US 395 and SR 120. The northern-most portion of the proposed housing would be visible from US 395, though not as prominent as the restaurant due to proposed setbacks from the ridgetop. Without adequate landscape buffering and use of naturally colored building materials, the proposed structures in these areas would potentially be visually intrusive. This is identified as a significant environmental impact.

Scenic Highways Management. The proposed project site is within the Mono County designated 1000 foot scenic corridor of both SR 120 and US 395. As discussed in "Visual Character" and "View Corridors" above, the proposed project is generally compatible with the Conservation/Open Space Element of the Draft Mono County General Plan. Where potentially significant and significant impacts have been identified, the identified mitigation measures would be required in order to mitigate impacts to less-than-significant levels.

The main entrance of the project is proposed to be at the location of an existing scenic turnout along SR 120 (see Plate E). The elimination of a scenic turnout would be in conflict with Objective D, Policy 1, Action 1.1 which calls for the construction of such turnouts. This is identified as a significant environmental impact which can be mitigated as recommended below.

Mono Basin National Forest Scenic Area. The proposed project would be generally compatible with the management prescriptions and guidelines of the Mono Basin National Forest Scenic Area. As the project site is adjacent to areas along SR 120 and US 395 that are within the "Developed Recreation Zone," the proposed land use would be compatible with stated Management Prescriptions of the area. Any potential impacts resulting from inadequate landscaping designs or blending with the natural environment are discussed above in "Visual Character" and "View Corridors." No other significant impacts are identified relating to project inconsistency with the Mono Basin National Forest Scenic Area.

National Forest Visual Management System. The proposed project would be visually compatible with the surrounding National Forest lands, provided that adequate building material blending and landscape designs are employed at the site (see "Visual Character" and "View Corridors" above). No significant

impacts relating to project inconsistency with the Forest Service's VMS are identified.

MITIGATION MEASURES

Unless otherwise noted, the following mitigation measures would mitigate significant and potentially significant impacts to less-than-significant levels:

Visual Character

- The project applicant should fully comply with all pertinent objectives, policies, actions of the Draft Conservation/Open Space Element of the Mono County General Plan (draft May 1992).

- Only glare resistant glass and building materials should be used in the construction of the proposed project. Prior to project approval, the applicant should submit a detailed list of proposed building materials and colors to the Mono County Planning Department. The planning director should approve building material list prior to project approval.

- Nighttime lighting should be designed with low mounting heights, shielded and direct. Nighttime lighting should be minimized to that necessary for safety and security.

- The project applicant should submit to the Mono County Planning Department a detailed landscape plan which specifies design, location, and species of vegetation. Existing trees on the project site should be maintained on site and incorporated into landscape plans. As required by County policy, landscape plans should be submitted and approved prior to issue of use permits.

View Corridors

- In developing the landscape plan, the applicant should take the visually prominent areas identified in Figure 1 into special consideration. In these identified areas, mature, native, drought resistant species should be planted in a manner which maximizes visual screening quality. Landscape berms should be employed in the restaurant parking area and on the ridgeline where homes are proposed.

Scenic Highways Management.

- If necessary, the existing Scenic Turnout and Kiosk near the proposed entrance of the project site should be moved at the developer's expense to a location agreed upon by the Mono County Planning Department and U.S. Forest Service.

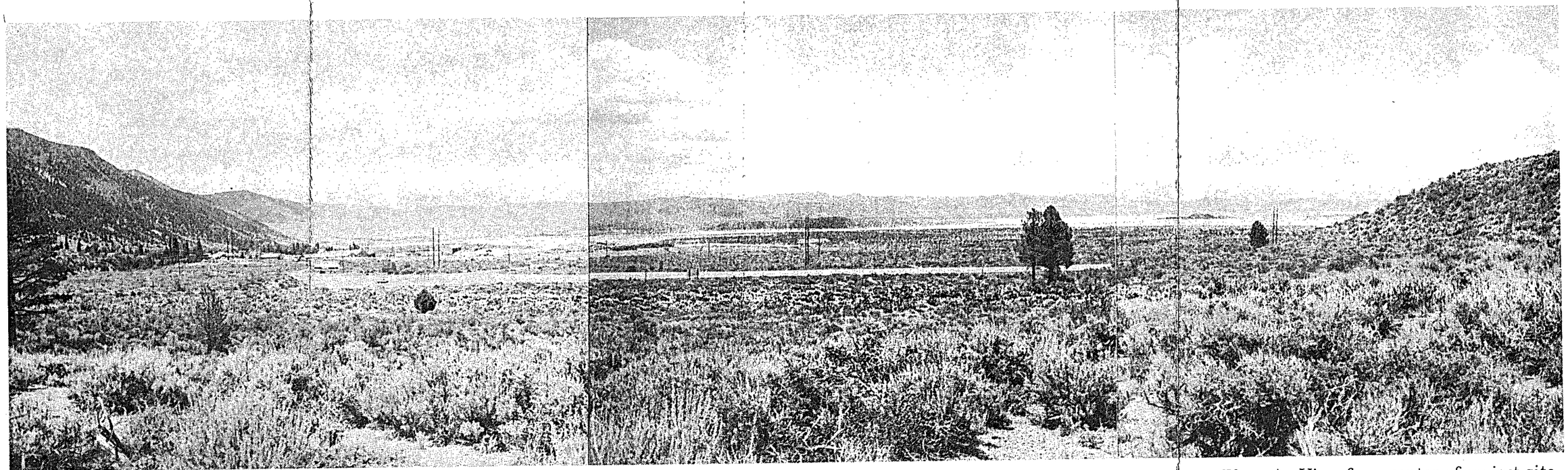


Plate A: View from center of project site looking north showing site characteristics.

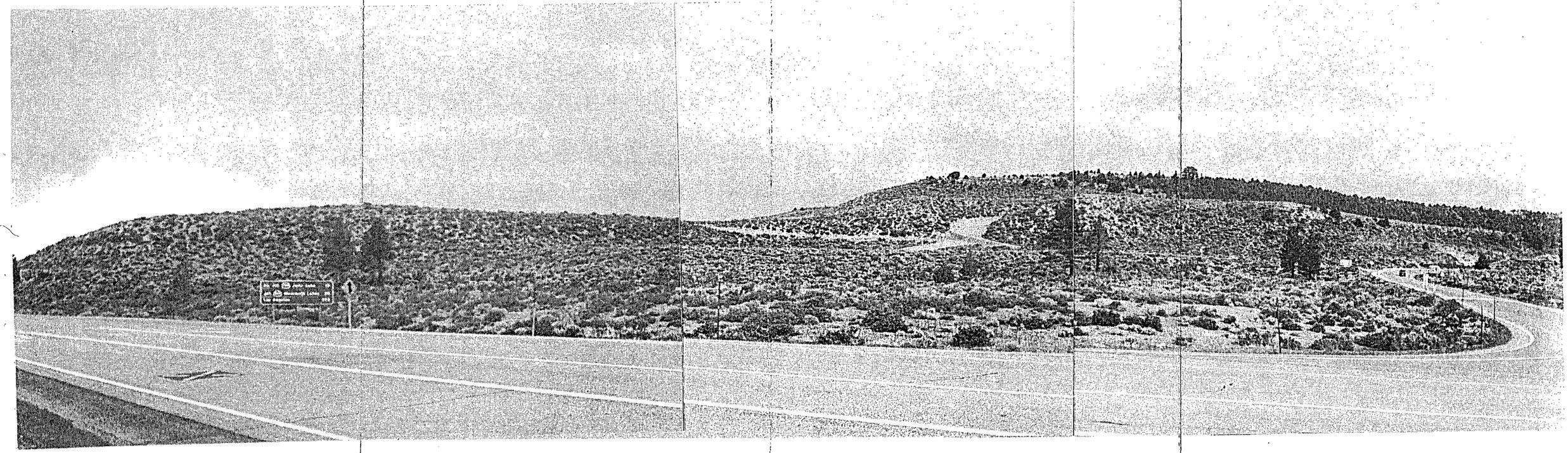


Plate B: View from north side of U.S. 395 at junction with S.R. 120 looking south across project site.

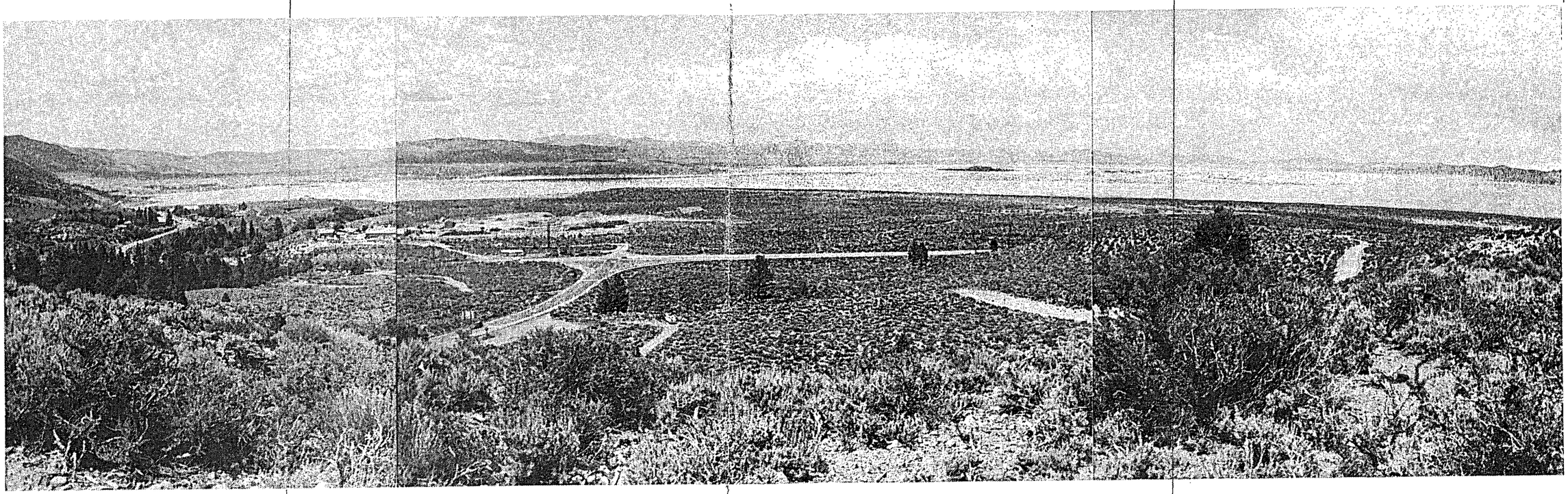


Plate C: View from upper plateau of project site looking north, showing panorama of Mono Basin and project site in foreground.

Plate D: View from upper plateau of project site looking south up Tioga Pass.

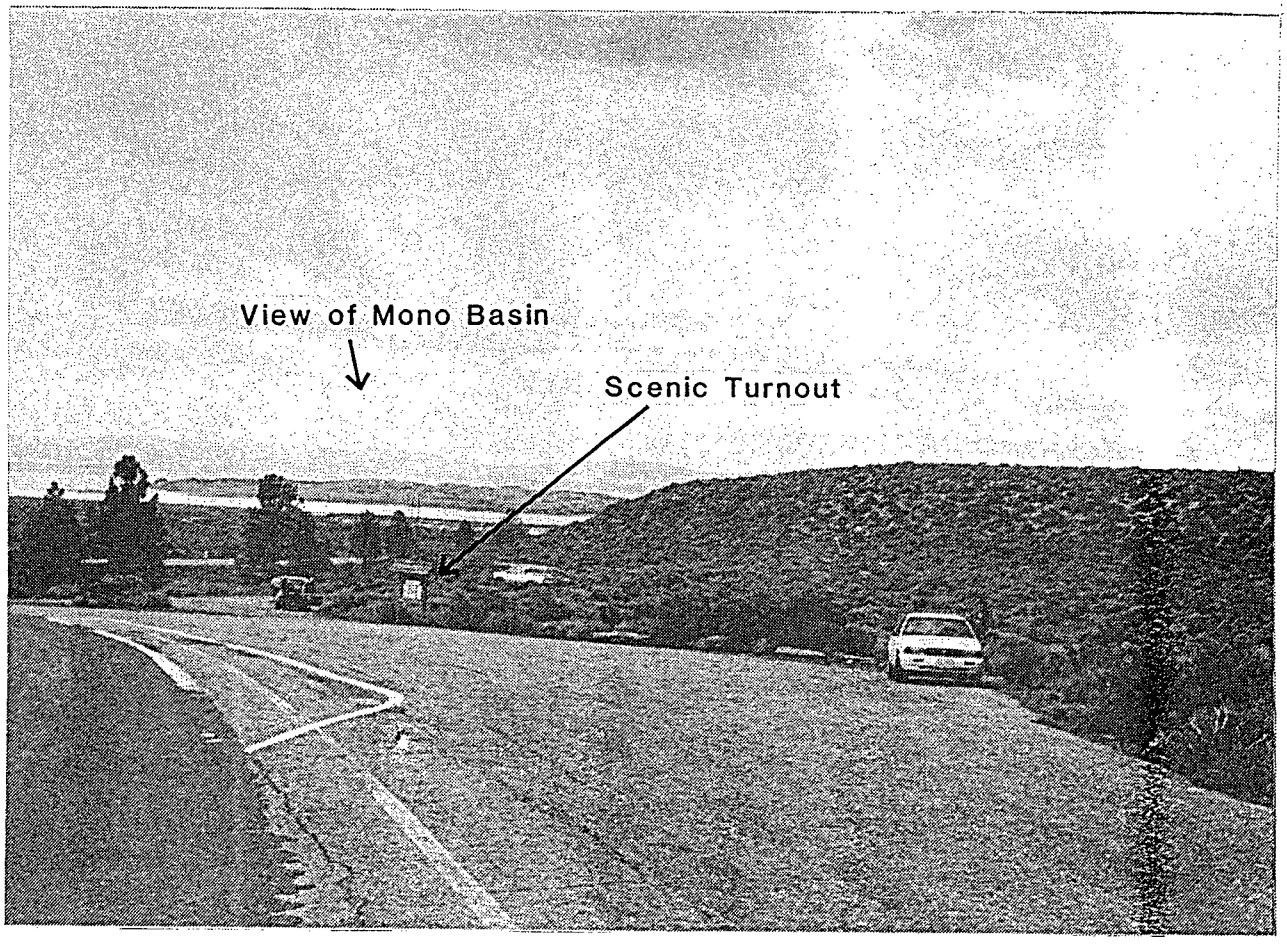


Plate E: View from S.R. 120 on western side of project site looking north showing scenic turnout and the S.R. 120-Mono Basin view corridor.

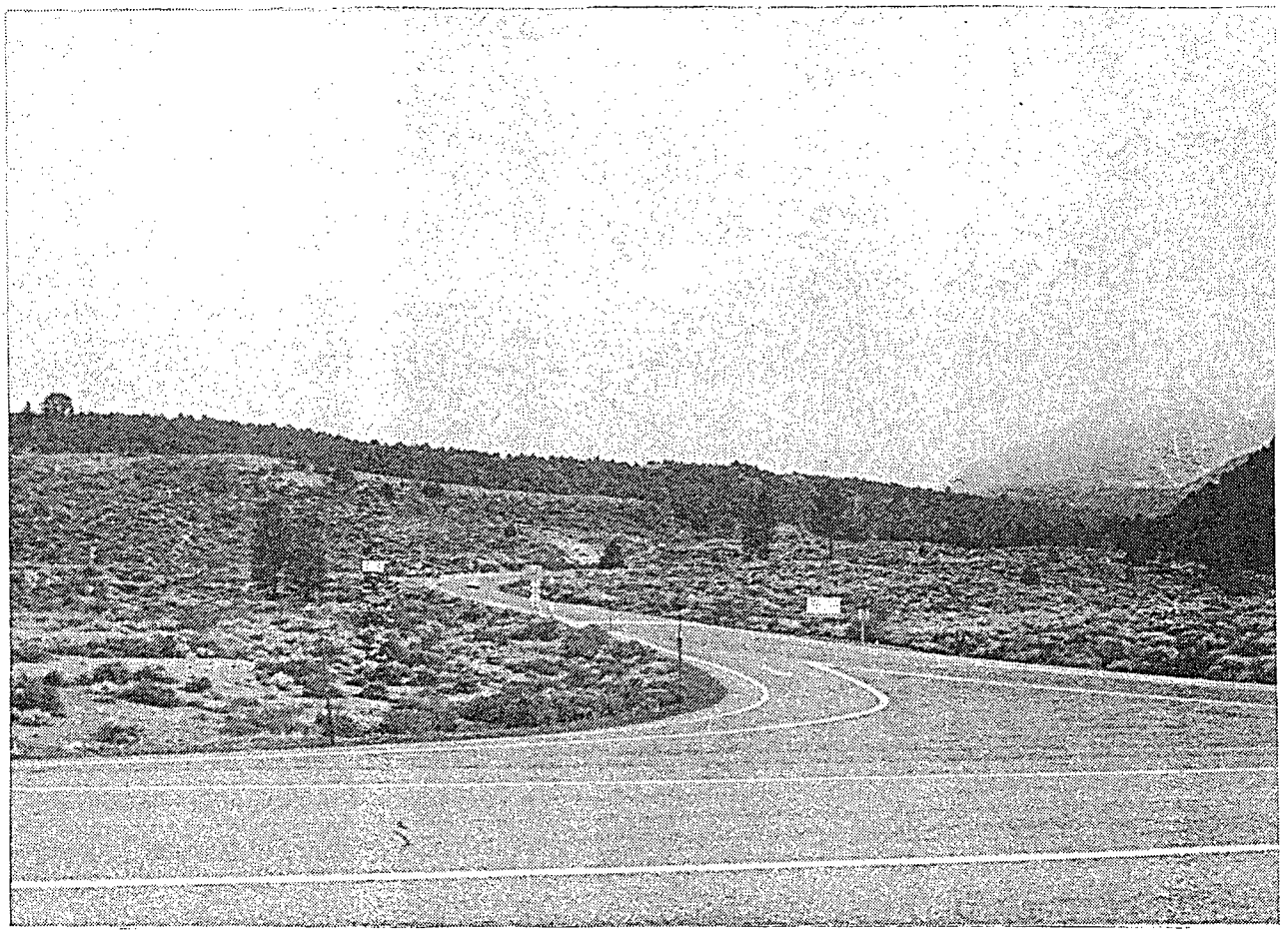


Plate F: View from north side of U.S. 395 looking south showing the U.S. 395-Tioga Pass view corridor.

Note: Distant view occluded by clouds.

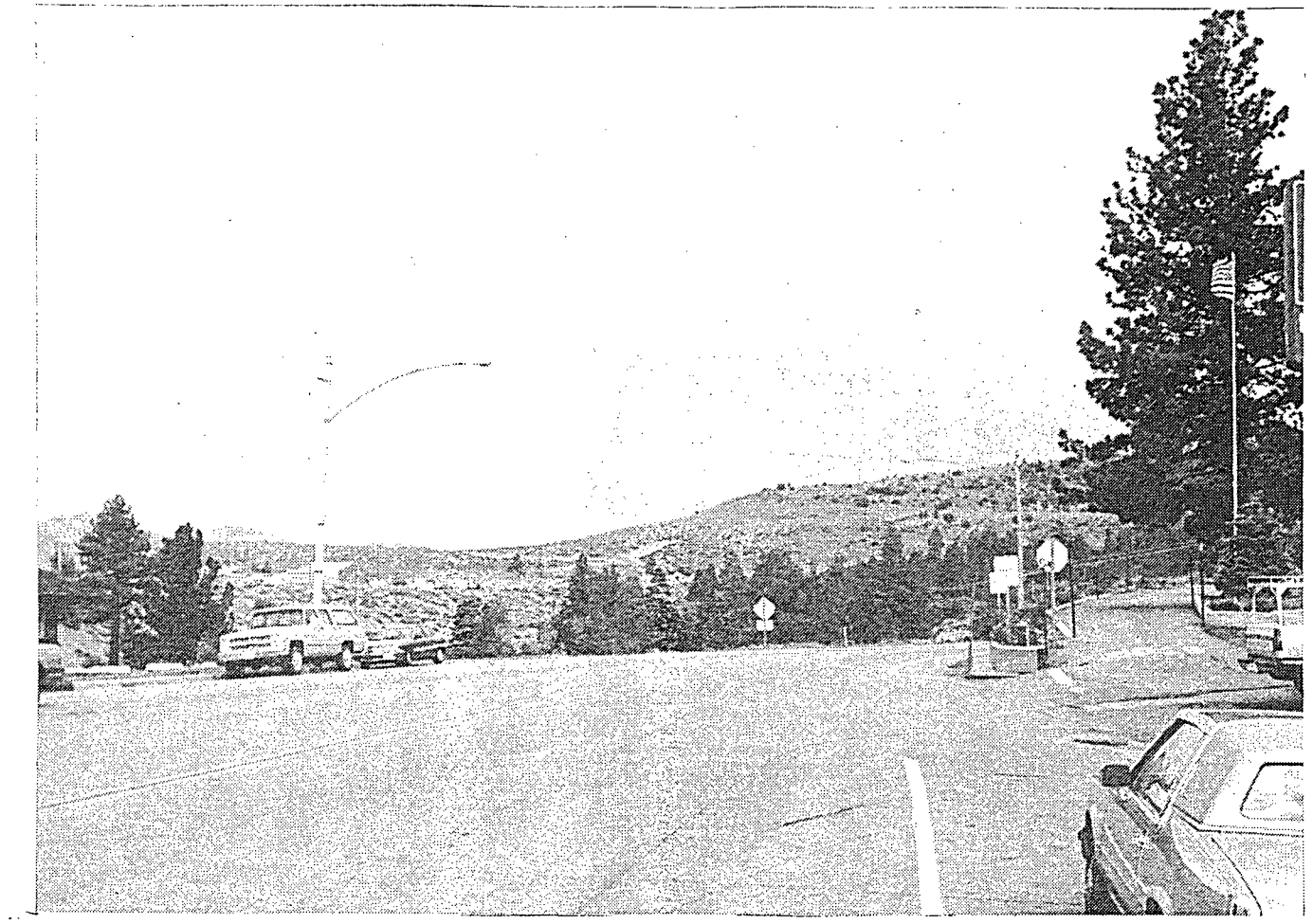


Plate G: View from State Route 395 in Lee Vining, looking southeast towards the project site.

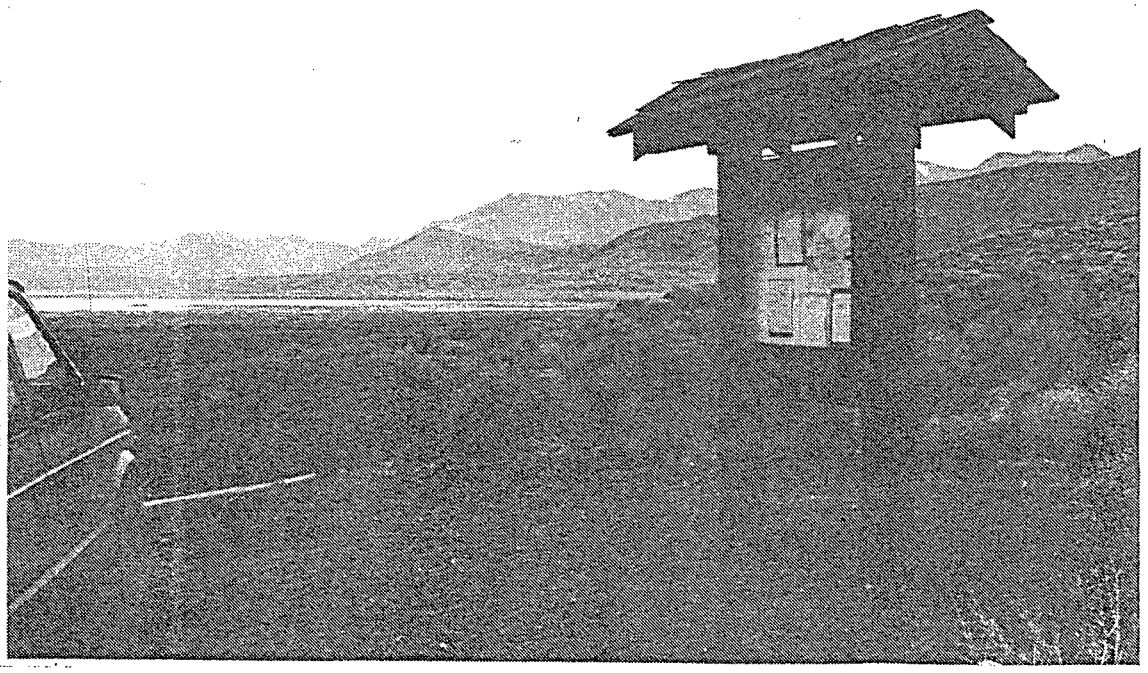


Plate H: View from Black Point looking south towards the project site.

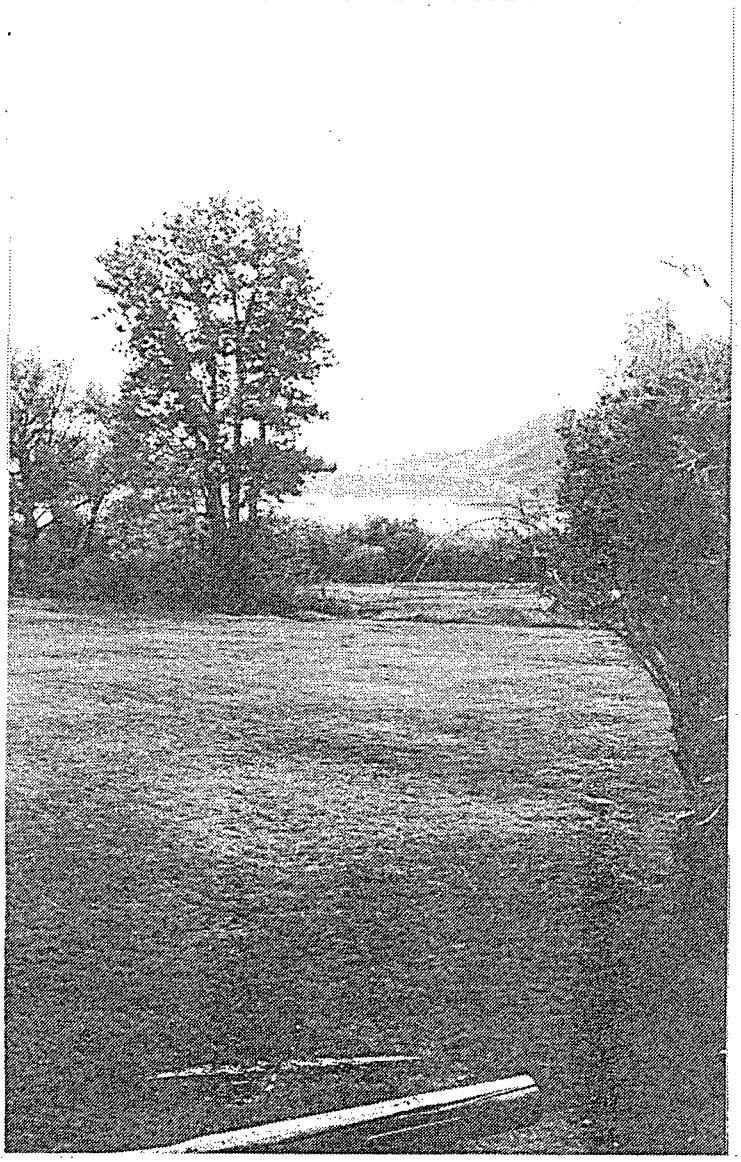


Plate I: View from county park looking south towards the project site.

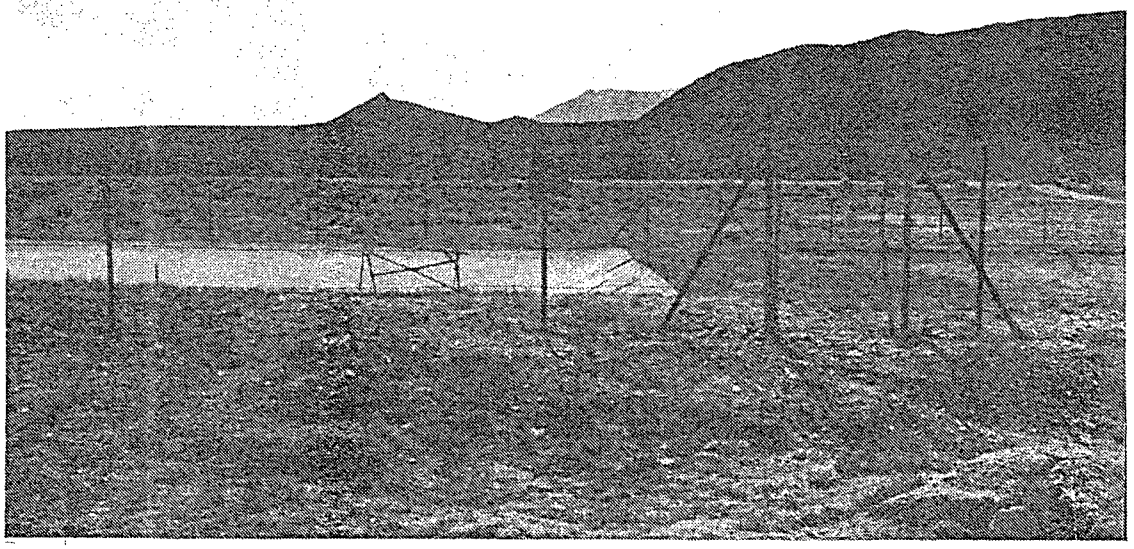


Plate J: View from bottom of Lee Vining Canyon at Mono Lake looking south towards the project site.

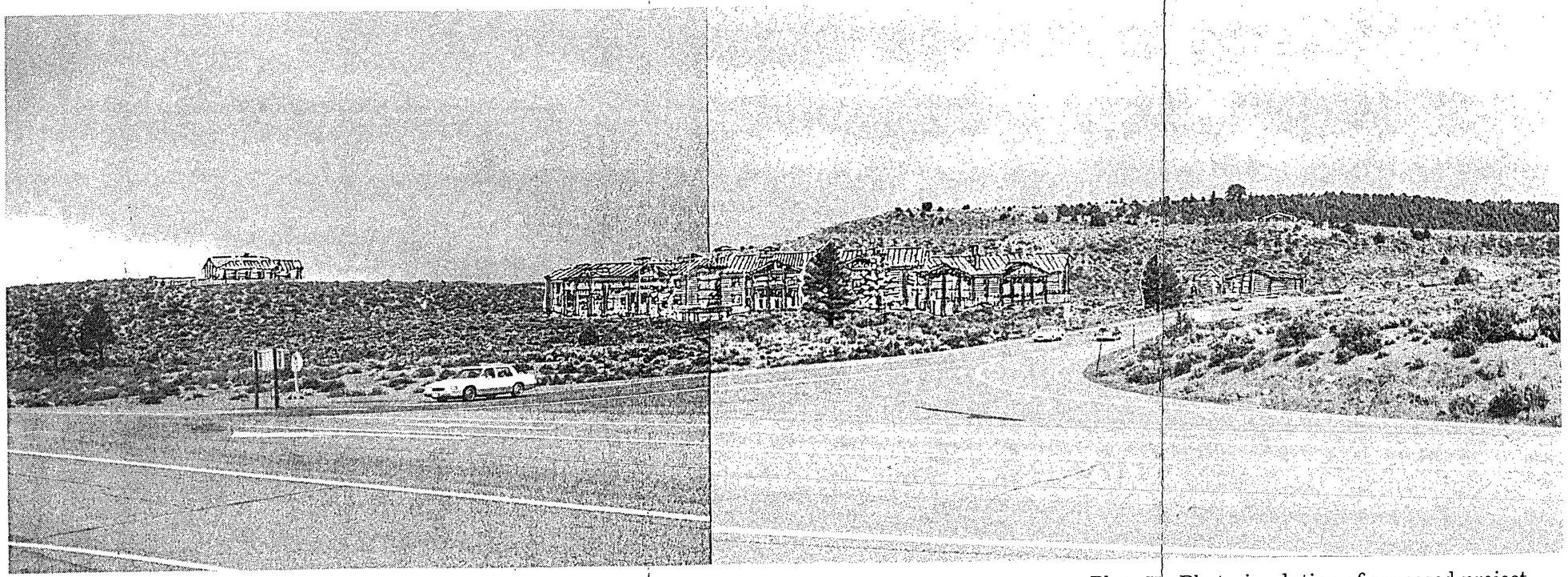


Plate K: Photosimulation of proposed project from north side of U.S. 395 at junction with S.R. 120 looking southeast.

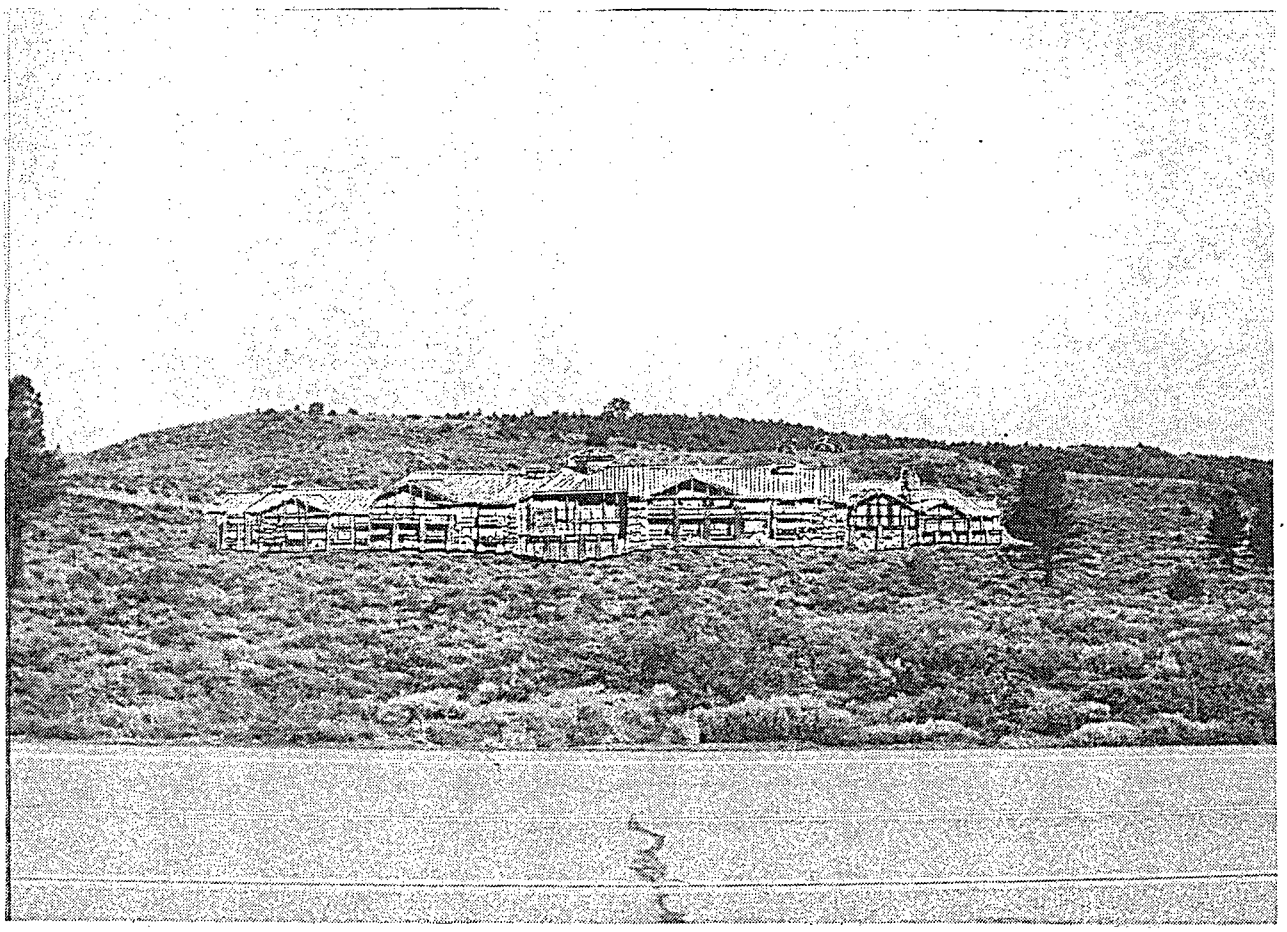


Plate L: Photosimulation of proposed project from north side of U.S. 395 looking south at the U.S. 395-Tioga Pass view corridor.

Note: Distant view occluded by clouds.

WILDLIFE and BOTANICAL REPORT

Report 3

TIOGA INN

VEGETATION AND WILDLIFE ASSESSMENT STUDY

FINAL REPORT

June 1992

Prepared for:

Mono County Planning Department
HCR 79 Box 221
Mammoth Lakes, CA 93546

Prepared by:

Timothy J. Taylor
Consulting Biologist
P.O. Box 191
June Lake, CA 93529

TABLE OF CONTENTS

I. INTRODUCTION

The proposal to develop the Tioga Inn near Lee Vining, California, has raised concerns with respect to potential deleterious impacts on local wildlife, especially migratory Rocky Mountain mule deer (Odocoileus hemionus) which use the project area and vicinity. A brief evaluation of biological resources on the proposed project area was conducted by a private consultant on October 28, 1984 (White 1984). This assessment was considered by the California Department of Fish and Game (CDFG) and other agencies to be lacking information on site-specific mule deer use of the area. In addition, it did not address potential significant impacts of the proposed development on mule deer and other biological resources. In response to recognized concerns and in order to initiate the environmental review process pursuant to the California Environmental Quality Act (CEQA), the Mono County Planning Department (MCPD) contracted the present investigator to allow an assessment of the importance of the area to deer and other wildlife.

Deer which use the project area and vicinity are from the Casa Diablo herd, a migratory mule deer herd consisting of approximately 1,500 animals that winters at lower elevations near Benton, California, some 35 airline miles east of the Project Area (Figure 1). The herd summers primarily on the east slope of the Sierra Nevada, from Mammoth Lakes, north to Lundy Canyon. From January 1986-December 1988, an intensive ecological

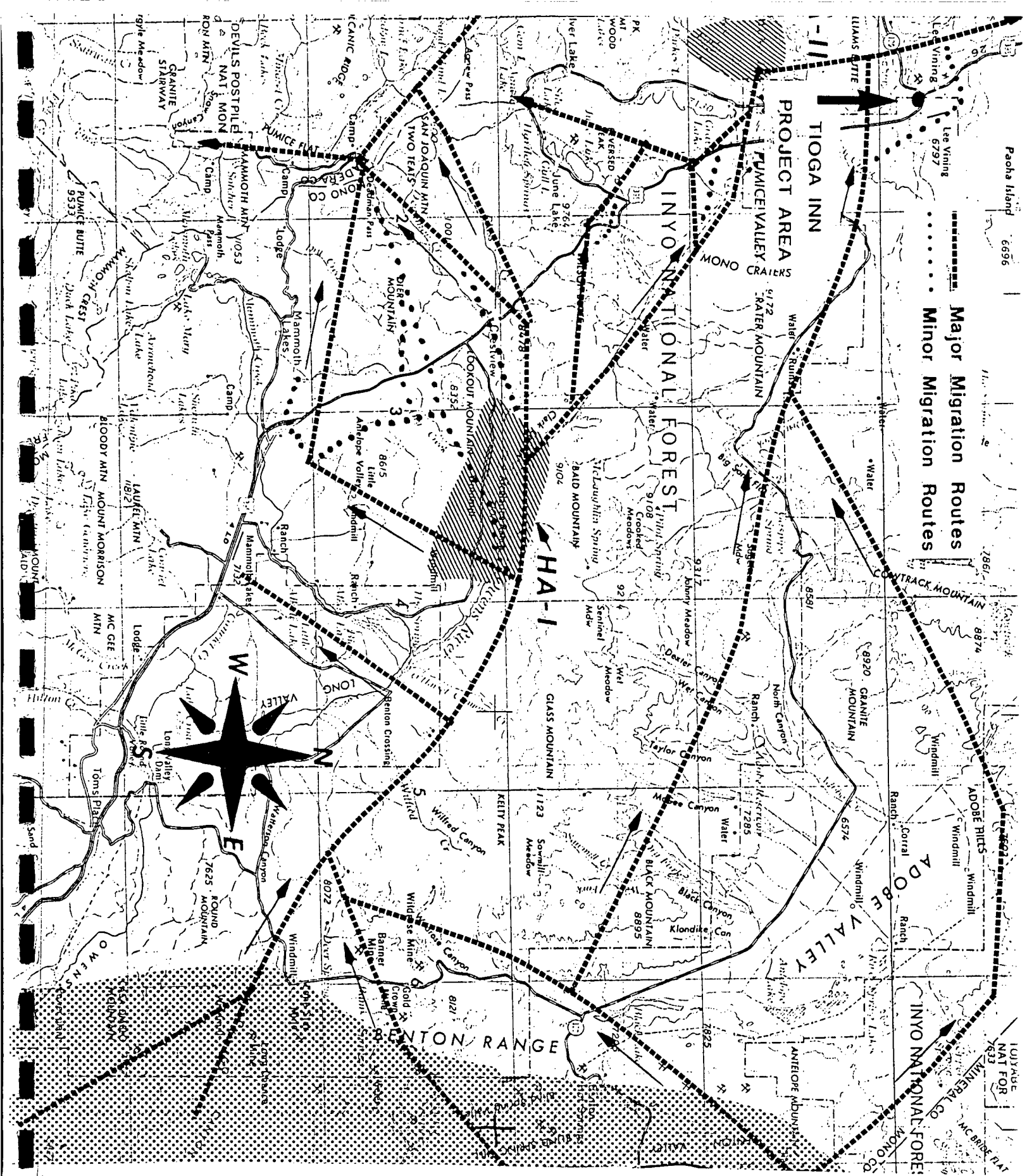


Figure 1. Regional map showing the location of the Tioga Inn Project Area in relation to Casa Diablo deer herd wintering areas, holding areas, and migration routes in Mono County, California (Taylor 1988).

investigation of the Casa Diablo deer herd was conducted by the present investigator under contract with CDFG (Taylor 1988a). This investigation revealed that approximately 26% of all deer which winter near Benton, migrate west to summer range located within and adjacent to the Lee Vining Canyon area.

A review of Laudenslayer Jr. et al. (1991) revealed that no federal or state-listed or candidate rare, threatened or endangered amphibians, reptiles, birds, or mammals are expected to occur within the Project Area. However, the Project Area is potential habitat for several "Special Animals" which refers to all vertebrate and invertebrate taxa of concern to the California Department of Fish and Game Natural Diversity Data Base (NDDB), regardless of their legal or protection status (CDFG 1988). "Special Animals" which are known within the vicinity of the Project Area include:

1) American Badger (Taxidea taxus)
   Status: CDFG species of special concern

2) Western White-tailed Hare (Lepus townsendii townsendii)
   Status: CDFG species of special concern

3) Golden eagle (Aquila chrysaetos)
   Status: CDFG species of special concern, California "fully protected" species, no federal status

4) Prairie falcon (Falco mexicanus)
   Status: CDFG species of special concern, no federal status

5) American Peregrine Falcon (Falco peregrinus anatum)
   Status: California-listed Endangered Species, Federal listed Endangered species, California Fully Protected species.

A review of the NDDB revealed that the following sensitive plants species are known to occur in the vicinity of the Project Area:

Mono Buckwheat (Eriogonum ampullaceum)
Status: no state status, federal Category 2 candidate, California Native Plant Society List 1B (rare, threatened or endangered in California and elsewhere)

The objectives of the present investigation are to: 1) describe and quantify the amount, timing, and specific locations of deer use of the Tioga Inn Project Area during the spring migration of 1992; 2) determine the relative abundance and habitats of Federal candidate, proposed or listed threatened or endangered species, state-listed species, and locally sensitive plant and animal species that are found at or near the Tioga Inn Project Area; 3) provide a complete description of all vegetative communities occurring within the Tioga Inn Project Area; 4) assess and quantify direct, indirect, and cumulative potential project-related impacts on wildlife and associated sensitive habitats; and 5) provide a specific mitigation plan to offset potential project-related impacts.

The information in this report will be incorporated into a Draft Environmental Impact Report (EIR) prepared for the Tioga Inn by the Mono County Planning Department.

II. ACKNOWLEDGMENTS

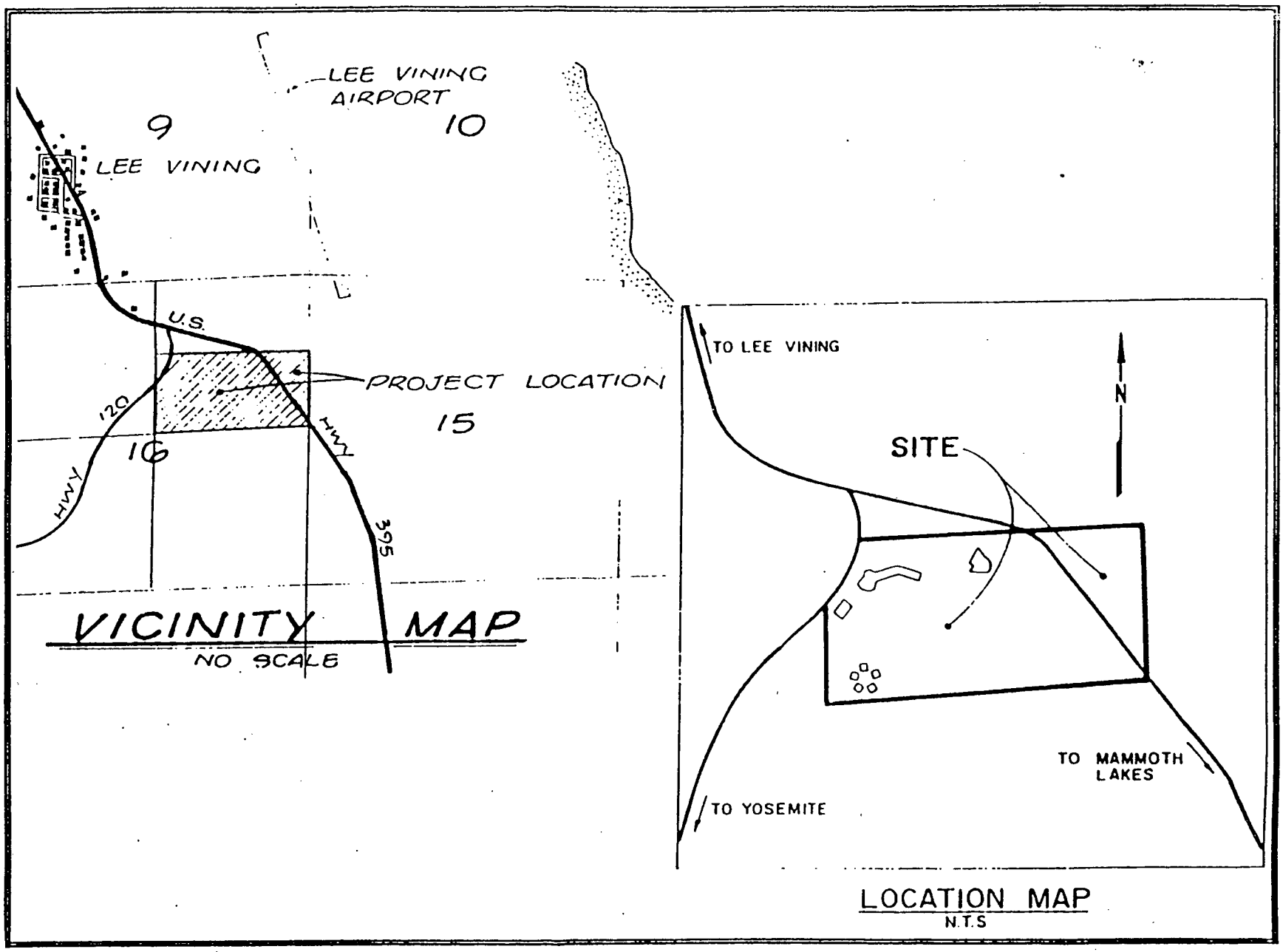
This investigation was conducted under a contract with the Mono County Planning Department, the lead agency for this

project. Some of the data presented here is from a DFG funded radio-telemetry study of the Casa Diablo herd which was conducted from January 1986-December 1988. The information presented in this report is to be used entirely for the purpose of assessing the environmental effects of the proposed Tioga Inn, and are not for publication, citation or other use without permission of the author.

III. STUDY AREA

The site of the proposed Tioga Inn, hereafter designated the Project Area, is located approximately one-half mile south of Lee Vining, California, southeast of the intersection of Highways 395 and 120 in the S 1/2 of the NE 1/4 of Section 16, T. 1 N., R. 26 E (Figure 2). It encompasses approximately 70 acres and is bordered by Highway 120 on the north, Highway 395 on the east, and USFS land on the south and west. Elevations on the project area range from approximately 6,800 to 7,000 feet.

The proposed Tioga Inn will include a 120 room full service motel, a 100 seat restaurant, a gas station/mini-mart, and 10 units of residential housing (Figure 3). The hotel will be situated on Parcel 1 (30.3) about 800 feet south of the intersection of Highways 120 and 395. The proposed restaurant will be situated on Parcel 2 (36 acres), the gas station mini-mart on Parcel 3 (2.4 acres), and the 10 units of residential housing on Parcel 4 (5.0 acres).



PROPOSED TIOGA INN & RESTAURANT

Figure 2. Location of the Tioga Inn Project Area near Lee Vining, California.

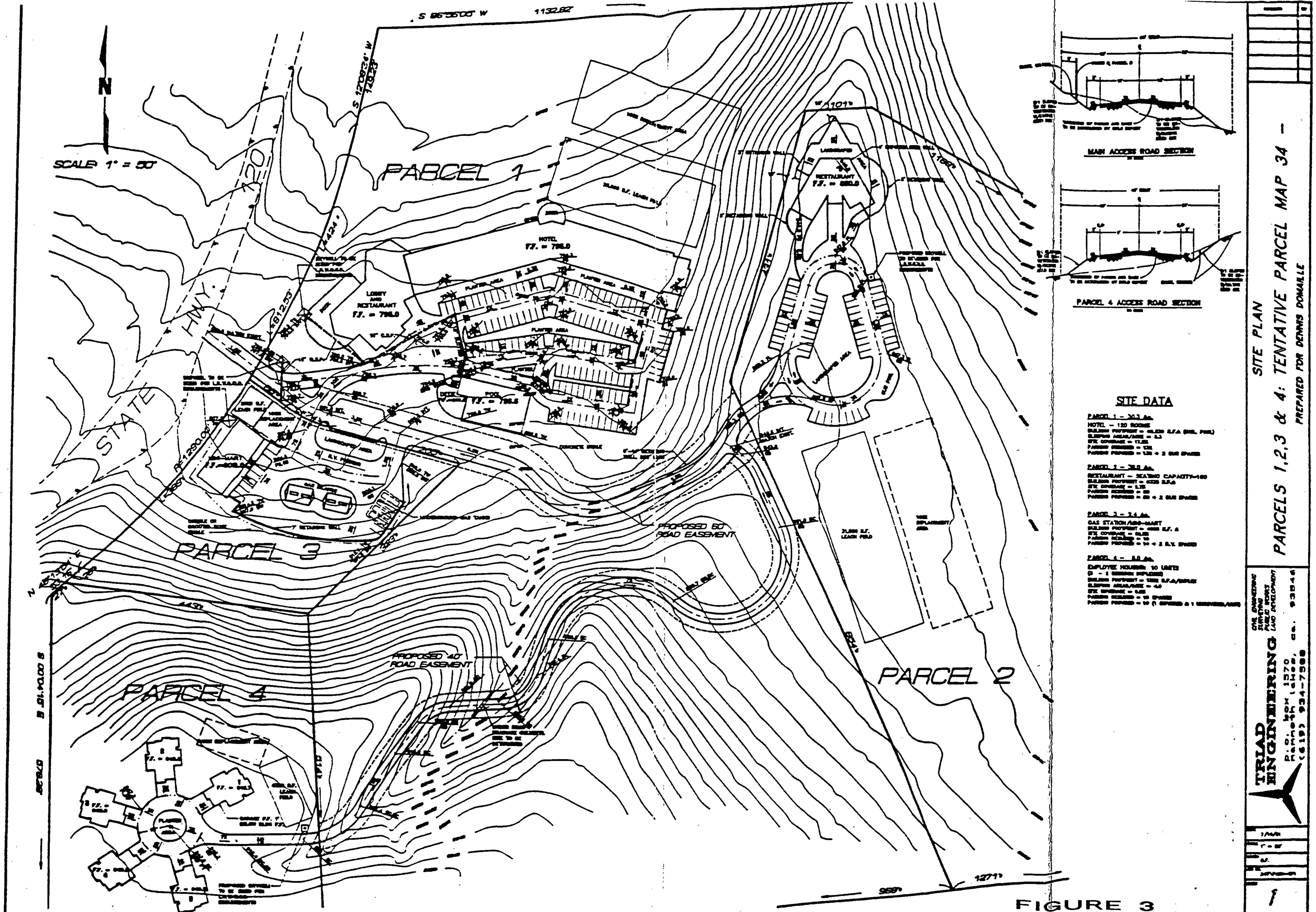

N
SCALE: 1" = 50'
S 86°36'00" W
1132.82'
PARCEL 1
PARCEL 2
PARCEL 3
PARCEL 4
STATE HWY. 120
HOTEL
LOBBY AND RESTAURANT
RESTAURANT
POOL
PROPOSED 60' ROAD EASEMENT
PROPOSED 40' ROAD EASEMENT
MAIN ACCESS ROAD SECTION
PARCEL 4 ACCESS ROAD SECTION
SITE DATA
HOTEL – 120 ROOMS
RESTAURANT – SEATING CAPACITY=160
GAS STATION/MINI-MART
EMPLOYEE HOUSING: 10 UNITS
SITE PLAN
PARCELS 1,2,3 & 4: TENTATIVE PARCEL MAP 34 –
PREPARED FOR DENNIS DOMAILLE
TRIAD ENGINEERING
CIVIL ENGINEERING
SURVEYING
PUBLIC WORKS
LAND DEVELOPMENT
P.O. BOX 1570
Mammoth Lakes, ca. 93546
(619) 934-7588
1

FIGURE 3

IV. METHODS

Mule deer use of the project vicinity during the spring of 1992 was determined from a DFG funded radio-telemetry study of the Casa Diablo deer herd conducted from January 1986-December 1987, and track counts funded by the project proponent.

A) Mule Deer

1) Radio-telemetry

Deer were captured on Casa Diablo deer herd winter ranges from January 1986-March 1986 and February 1987-March 1987 using Clover traps (Clover 1956), drive nets and a Bell Jet Ranger III helicopter (Beasom et al. 1980), and a hand-held net gun. All captured deer were physically restrained and marked with large, plastic, consecutively numbered cattle ear tags (7.5 x 11.5 cm; Allflex Tag Systems, Harbor City, Calif.), color coded to wintering area. Twenty-four adult does were fitted with radio-collars. In addition, 1 adult male was instrumented with a radio transmitter mounted on expandable collars to allow for neck swell during the rut.

The locations of all radio-collared animals were obtained by triangulation from the ground or from a fixed-wing aircraft. Deer were located 3-4 times weekly during the spring and fall migrations. During the summer and winter months deer were located 1-2 times weekly. Initial ground locations were made from a vehicle equipped with a Telonics TR-2 receiver with an

attached program/scanner (TS-1) and a base loaded whip antenna. Triangulation bearings were obtained using a hand-held, 2 element antenna (RA-2A; Telonics, Inc., Mesa, Ariz.). Visual sightings of radio-collared deer were made whenever possible. Radio locations and visual sightings of radio-collared deer were marked on U.S. Geological Survey 7.5 and 15 minute series topographic maps.

Fixed-wing flights were conducted once weekly, weather permitting, during the winter and summer months, usually between 0800 and 1000 hours. Flights were conducted from a Cessna 185 at air speeds of 120-180 km/hr.

2) Track Counts

From radio-telemetry studies (Taylor 1988), it was determined that deer migration through the project vicinity occurs generally in a westerly and northwesterly direction. Accordingly, the investigator selected a track count survey route that incorporated dirt roads running in a generally north-south direction through and adjacent to the Project Area, bisecting the direction of spring migration (Figure 4). The route selected was 0.7 miles in length and began approximately 0.4 miles south of the Project Area at the junction of Highway 120 and the Los Angeles Department of Water and Power (LADWP) aqueduct road. In order to increase specificity of data, the 0.7 mile survey route was divided into even length segments recognizable by

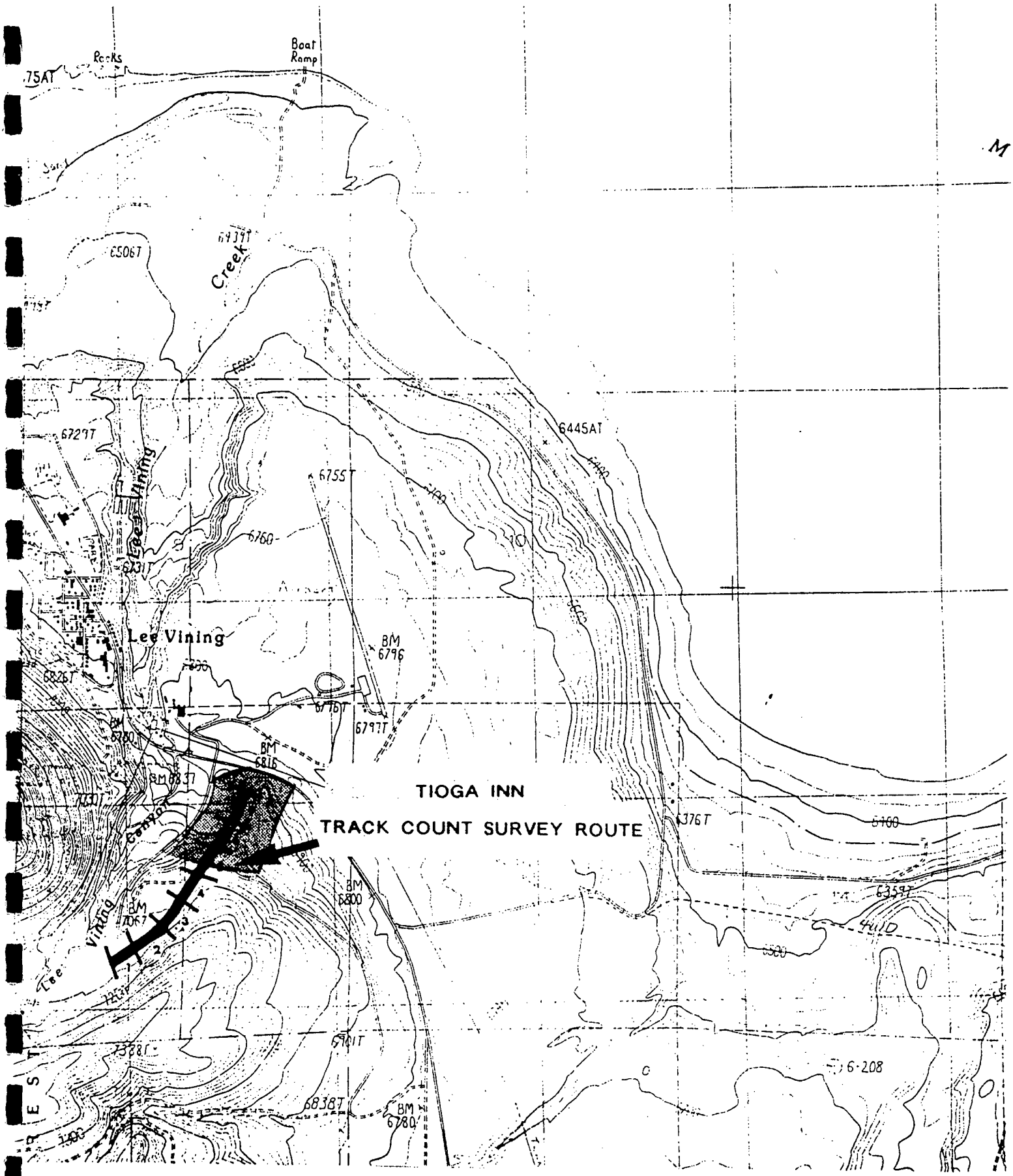


Figure 4. Location of the track count survey route within and adjacent to the Tioga Inn Project Area.

flagged local landmarks. Segments 1-4 were located along the aqueduct road; segments 5-7 were located within the Project Area (Figure 4).

On the evening prior to each track count survey, usually around 1700 hours, the road surface of each transect was prepared for counting by grading with a drag made of a 5 foot section of chainlink fence. Dragging erased old tracks enough so that new tracks were visible. During each track count survey, which was conducted the following morning between 0700 and 0800 hours, both transects were surveyed on foot and the number of all tracks observed were recorded along with their direction of travel. Thus, the elapsed time from road preparation to track counting ranged from 14-15 hours. The direction of travel assigned to a track was the actual compass direction in which it was headed, e.g., northeast, southwest, etc. A track headed down the road was followed until it turned off the road; the direction in which it turned was subsequently recorded as its direction of travel.

Recording tracks by road segment was designed for the purpose of providing a quantitative representation of deer movement through each parcel. Recording tracks by direction of travel was designed to allow for separation of localized back-and-forth movements, performed by holdover and resident deer, from migratory movements.

3) Ground Surveys

Ground surveys of the entire Project Area were conducted on a weekly basis to identify any particular important travel routes or feeding, fawning or resting areas. All deer observed during field work were counted, classified by sex and age (adult or fawn) and their locations recorded.

B) OTHER WILDLIFE

In order to determine the presence, relative abundance, and locations of species other than mule deer, ground surveys were conducted on a weekly basis throughout the entire Project Area. Surveys were conducted in a non-systematic way by walking over each parcel and recording the presence of all wildlife species observed. Once an animal was detected, its numbers were determined, and location and activity, e.g., feeding, perching, roosting, etc., identified.

C) RARE PLANT AND VEGETATION SURVEYS

Because Eriogonum ampullaceum typically flowers toward the latter part of July, field surveys for this small annual cannot be conducted until that time. Surveys for Eriogonum ampullaceum will be conducted by Mark Bagley, a local botanist familiar with this species. Prior to surveys for Eriogonum ampullaceum, the phenology of known populations of this species will be examined to facilitate proper identification. Surveys for Eriogonum

ampullaceum will include systematic walking transects located at ≤ 50 foot intervals, providing an estimated 25-50% sample coverage of the Project Area. In addition all plant species seen on sight will be identified to at least genus and to the level necessary to ensure that they too are not sensitive species. Those species not readily identifiable in the field will be collected for later determination. A list of all plants encountered on the site will be compiled by vegetation type.

A vegetation map of the entire area was prepared by the investigator. All vegetative communities were identified, their major components quantified, and locations mapped on U.S. Geological Service 7.5 minute series topographic maps.

V. RESULTS

A. Mule Deer

1) Radio-telemetry

a) Seasonal Movements--The annual life-cycle of deer from the Casa Diablo herd consists of four periods: spring migration, summer, fall migration, and winter. The spring migration begins in early April when deer leave the winter range and move in a westerly direction, along the base of the southern escarpment of the Glass Mountains, to a large spring holding area located on the upper Owens River (Taylor 1988). Holding areas are bulbous expansions of the migration corridor located at intermediate elevations where deer congregate for 2-6 weeks during the spring and fall migrations (Bertram and Remple 1977). These areas are

typical of migratory mule deer (Leopold et al. 1951, Russel 1932) and are recognized for their importance in providing nutritional spring forage for does in their third trimester of pregnancy (Bertram and Remple 1977, Bertram 1984, Loft et al. 1984, Kucera 1988). When deer increase their intake of easily and quickly digested types of forage, metabolites are readily absorbed and the net energy available to deer is greatly increased (Short 1981). As a result, deer are able to reverse the negative energy balance acquired over the winter and improve their overall physiological condition (Garrott et al. (1987).

Another reason for deer delaying spring migration on the upper Owens River holding area may be the effects of weather on plant phenology, which is paramount among factors that influence forage availability (Nelson and Leege 1982). Throughout the eastern Sierra, the availability of succulent forage is related closely to snow conditions in the spring, and these two factors appear to strongly influence the timing and rate of migration from lower to higher elevations. Delaying spring migration several weeks until snow conditions have retreated allows Casa Diablo deer to move quickly through the migration corridor to summer ranges where quality forage is readily available. By arriving on summer ranges at a time when the snowpack has receded and plant phenology is at a later stage, pregnant does with increased energy demands can maintain the high gross energy intake levels they experienced on lower elevation

holding areas.

The timing of spring migration from the winter range was similar in 1986 and 1987, despite extreme differences in snowfall amounts recorded during the winters of 1985-86 and 1986-87. In both years, deer began arriving on the upper Owens River holding area in late March.

During the spring migrations of 1986 and 1987, 19 of 27 radio-collared deer from the Casa Diablo winter range migrated west along the south slope of the Glass Mountains to the holding area located near the upper Owens River (Figure 1) (Taylor 1988a). Of these 19 deer, 13 continued north from the upper Owens River to summer range located in the June Lake, Lee Vining and Lundy Canyon areas. After leaving the upper Owens River, these deer migrated around the south end of the Mono Craters and crossed Highway 395 near the Aeolian Buttes. They then continued in a westerly direction around the north end of Grant Lake to another spring holding area located in the Parker Bench/Sawmill Meadow areas. Deer remained on this holding area for an average of eight days, after which time they dispersed to their summer ranges. Six deer continued north, four of which summered in Lee Vining Canyon, one in Lundy Canyon and one at Lower Twin Lake near Bridgeport. Of the four deer which summered in Lee Vining Canyon, two summered on the Burger Preserve located on the north side of the canyon adjacent to the USFS Lee Vining Ranger Station; one summered on upper Lee Vining Creek near the

Southern California Edison Pool Plant; and one summered on lower Lee Vining Creek immediately adjacent to the Project Area. In addition, 12 non-radioed ear-tagged deer were also observed in Lee Vining Canyon during the summers of 1986 and 1987 (Taylor 1988a).

Assuming that the radioed sample was representative of the entire population of deer wintering in the Casa Diablo deer herd, a reasonable assumption given the trapping methods, about 22% of the Casa Diablo herd moved through or summered within the Lee Vining area during the spring and summer of 1986 and 1987. At that time, the Casa Diablo herd was estimated to have a winter population of about 1500 animals. Thus, it can be estimated that some 300 deer from the Casa Diablo deer herd summered within or migrated through the vicinity of Lee Vining.

Deer arrive on the summer range in May and June, produce fawns in July, and begin fall migration back to the winter range in October. Fall migration is more rapid than that of spring and is usually triggered by the first fall snow storm. The usual pattern is for the first fall storm to deposit snow at the higher elevations of the summer range during the first two weeks of October. This causes many high elevation deer to move to the upper Owens River holding area where they find adequate forage and cover. Then there is often a dry period until late October or early November when more severe storms move deer from the holding area to the winter range.

During the fall migration of 1986, 83% of radio-collared deer migrated from the summer range between 3 October and 8 November. In 1987, 82% of radio-collared deer migrated from the summer range between 11 October and 3 November. In both years, radioed deer spent an average of 10 days (range 1-41 days) during fall migrations on the Upper Owens River holding area (Timothy Taylor, pers. files). Deer were frequently observed on this holding area until mid-November, after which time they moved further east to the winter range. Radio-collared deer monitored for >2 consecutive years (n = 16) displayed strong fidelity to migration routes and holding areas. Deer arrive on the winter range in November and December, breed in December and January, and begin the annual life-cycle again.

2) Herd Characteristics and Management

The Casa Diablo deer herd has experienced extremely poor recruitment rates over recent years. Since 1986, spring fawn:doe ratios have averaged 22 fawns per 100 does. Reproductive studies of the Casa Diablo deer herd conducted in 1987 and 1988 suggest that poor fawn recruitment may be related to high neonatal losses on the summer range. Several factors are believed to contribute to neonatal losses including: 1) conflicts with land uses (i.e., OHV's, livestock grazing, recreation activities, etc.) that are either physically detrimental to deer habitat or decreasing the use of potentially productive deer habitat; 2) increased

predation from mountain lions (Felis concolor) and other predators; and 3) the possible lack of adequate forage on spring and summer ranges as a result of seasonal drought and overgrazing by livestock, which may result in reduced maternal nutrition in pregnant does prior to fawning (Thomas 1985, Taylor 1988b).

Buck to doe ratios have fluctuated over the years within the Casa Diablo herd, and are currently low to due to low recruitment. From 1985-1991, post season buck ratios averaged 9.3 bucks per 100 does (DFG files). The most recent population estimate for the Casa Diablo herd based on the best available information is about 1500 animals (Ron Thomas, DFG, pers. comm.)

The primary management goal of DFG for the Casa Diablo herd is to restore deer numbers to levels compatible with existing range conditions and uses (Thomas 1985). According to the Casa Diablo deer herd management plan, this goal can be obtained by maintaining a spring population that is within carrying capacity of the range (2245 deer) (Thomas 1985). Therefore, current objectives are to maintain spring fawn ratios at 50 fawns per 100 does during cycles when the herd population is lower than usual, and to attain and maintain post season buck ratios of 20 bucks per 100 does (Thomas 1985).

3) Track Count Surveys

a) Timing and intensity of migration--Track count surveys were conducted between 17 April and 10 June 1992. A total of 16

surveys were performed during this 54 day survey period. The total number of individual track sets recorded during the survey period was 44. Appendix A, Table 1 presents the total number of tracks counted on each of the 16 surveys. The greatest number of tracks observed on any one survey was 12, on 5 May, after which there was a gradual, uneven diminution in deer activity through mid-June. There were no tracks recorded on surveys performed on 17, 20 and 23 April and 16 and 26 June.

Appendix A, Table 1 presents the breakdown of tracks counted by direction of travel. Of the 44 track sets recorded, 23 sets were headed north and west; 21 were headed south and east. For the purpose of this investigation, tracks crossing the survey route to the north and west are in the direction of spring migration; those to the south and east are opposite. Therefore, the net number of tracks crossing the route to the north and west are migrants while holdover deer or summer resident deer are represented by tracks crossing the route to the south and east.

The objective of this analysis is to treat the 16 surveys as a 16 day sample extending over a survey period of 54 days (17 April-10 June). Therefore, because the 16 surveys covered 29.6% of the 54 day survey period (54/16 = 29.6%), the estimated number of migrants calculated to have moved directly through or adjacent to the Project Area is 77.6 (23/.296 or 23 x 3.375). This number will likely be low since errors in track counting (i.e., missed

tracks) may have occurred and daytime migrants are not included.

Now that a crude estimate of the number of migrants has been obtained, the next step is to calculate the amount of holdover or summer resident deer use of project vicinity during the 54 day survey period. Since each migrant is considered to be an individual deer, the number of holdover or resident deer can be stated as an individual deer for that day. This number is expressed in deer-days use. A deer-use day is the amount of use of any area made by one deer over a 24-hour period (Dasmann 1981).

To calculate deer-days of holding over, the number of migratory tracks (i.e., deer that moved toward the summer range) must be subtracted from the total tracks, and the difference divided by 2 to account for holdover deer crossing the survey route and subsequently returning. These calculations are shown in Appendix A, Table 2, where the total number of migrants in column B (23.0) is subtracted from the total number of tracks in column A (44) to derive the total number of nonmigratory tracks in column C (21). Dividing 21 in half to account for back-and-forth movements, yields a total 10.5 holdover deer (column D).

By comparing the migrants (Appendix A, Table 2, column B) with holdover deer (Appendix A, Table 2, column D), it can be seen that for every migrant, an average of 2.2 deer are holding over (sum of column D divided by sum of column B). Since the 16 surveys covered 29.6% of the survey period, a total of 35

(10.5/.279 or 10.5 x 3.375) deer days are represented by holdover deer (Appendix A, Table 2, column D total). A quick check of column D shows that 2.5 deer is the highest daily number of nonmigratory deer, and this is the absolute minimum number of deer holding over. Thus, each deer would have to remain in the project vicinity for about 14 days to account for the 35 deer days of holdover. At the other extreme, if each deer remained in the project vicinity for 1 day, then 35 deer would be involved. The actual number deer holding over between these two extremes cannot be determined.

Since one migrant is equivalent to one deer-use day, there was an estimated total of 113 (sum of columns B + D) deer-use days of the project during the spring survey period (sum of column E).

b) Locations of deer activity--Appendix Table 3 presents the total number of tracks sets counted in each of the seven survey segments. Deer activity was most concentrated in segments 1-4, located to the south of the Project Area. A total of 34 track sets or 77% of all tracks observed, were recorded in these 4 segments. Nineteen (43%) of all track sets observed were recorded in segment 4, located on the LADWP aqueduct road immediately south of the southern border of Parcel 4.

Approximately 23% of deer activity was recorded within the limits of the Project Area (segments 5-7). Most of this activity

was restricted to segment 5, located in the upper southwest portion of Parcel 1 (Figure 3). Only 4 (9%) track sets were recorded in segments 6 and 7, located at the extreme northern end of the route in the central portion of Parcel 1.

Appendix Tables 4a and 4b present a breakdown of track count data for segments 1-4, located south of the Project Area, and segments 5-7, located within the Project Area. From Appendix Table 4a (column B), it can be seen that the total number of migrants estimated to have crossed segments 1-4 during the survey period was 61 (18 x 3.375) or 78% of the total number of migrants estimated to have crossed the entire survey route. It can also be seen that the number of nonmigrants estimated to have crossed segments 1-4 was 30 (9.0 x 3.375) or 86% of the total number of nonmigrants estimated to have crossed the entire survey route (Table 4a, column D). In addition, segments 1-4 received an estimated 88 deer days of use during the 54 day survey period or 78% of all total deer use recorded (column E).

Within the Project Area (segments 5-7), a total of 17 migrants and 8.5 nonmigrants, or 22% and 24% of the total number of migrants and nonmigrants recorded, respectively, were estimated to have crossed the survey route (Appendix Table 4b, columns B and D). In addition, the Project Area received a total of 25 deer days of use during the 54 day survey period or 22% of all total deer use recorded (column E).

There were no deer trails observed within the Project Area

boundaries. However, some light trailing does occur above the LADWP aqueduct road, along the north slope of the mountain located to the immediate south of the Project Area.

The fact that deer tracks were observed during the last three surveys conducted on 2, 5 and 10 June, indicates that the project vicinity may be used by a few summer resident deer. The direction of movement of these tracks suggests that the Project Area, along with Lee Vining Creek and the mountain located to the immediate south, compose a portion the summer home range of these deer.

B. Other Wildlife

No federal or state-listed or candidate rare, threatened or endangered species were observed during surveys of the Project Area. Nor were any species listed on the California Department of Fish and Game Natural Diversity Data Base list of "Special Animals". However, the Project Area does provide potential habitat for a few "Special Animals" including the American Badger (Taxidea taxus) and the Western White-tailed Hare (Lepus townsendii townsendii). Both species are known within the vicinity of the Project Area. The American Badger prefers open areas with sandy soils for digging burrows and pursuing rodents, its main prey source, while the Western White-tailed Hare prefers open brushlands and meadows.

The only large carnivore positively detected within the

project vicinity was the coyote (Canis latrans). Black-tailed Jackrabbits (Lepus californicus), Chipmunks (Tamiaus sp.), Golden-mantled ground squirrels (Spermophilus lateralis) and California ground squirrels (Spermophilus beecheyi) were all commonly observed in the Project Area. A list of all mammal species observed or expected to occur in the Project Area is provided in Appendix Table 5.

The Prairie Falcon (Falco mexicanus), a California species of special concern, and the Golden Eagle (Aquila chrysaetos), a California Species of Special Concern and a Fully Protected Species, may occasionally forage over the area. A list of all birds observed or expected to occur within the Project Area is presented in Appendix Table 6.

C. Vegetation Types

The entire Project Area is covered by a fairly uniform stand of Great Basin Sagebrush Scrub (Figure 5). This was a fairly tall stand (2-3 feet) and dense scrub (estimated at 50-70% shrub cover) dominated by antelope bitterbrush (Purshia tridentata) and scattered big sagebrush (Artemisia tridentata), desert peach (Prunus andersonii), rubber rabbitbrush (Chrysothamnus nauseosus), and horsebrush (Tetradymia comosa). A few scattered Jeffrey pine (Pinus jeffreyi) (8 trees) and 2 lodgepole pine (Pinus contorta) occur on the northwest corner of Parcel 1 (Figure 5). Additionally, a few Jeffrey pine and pinyon pine

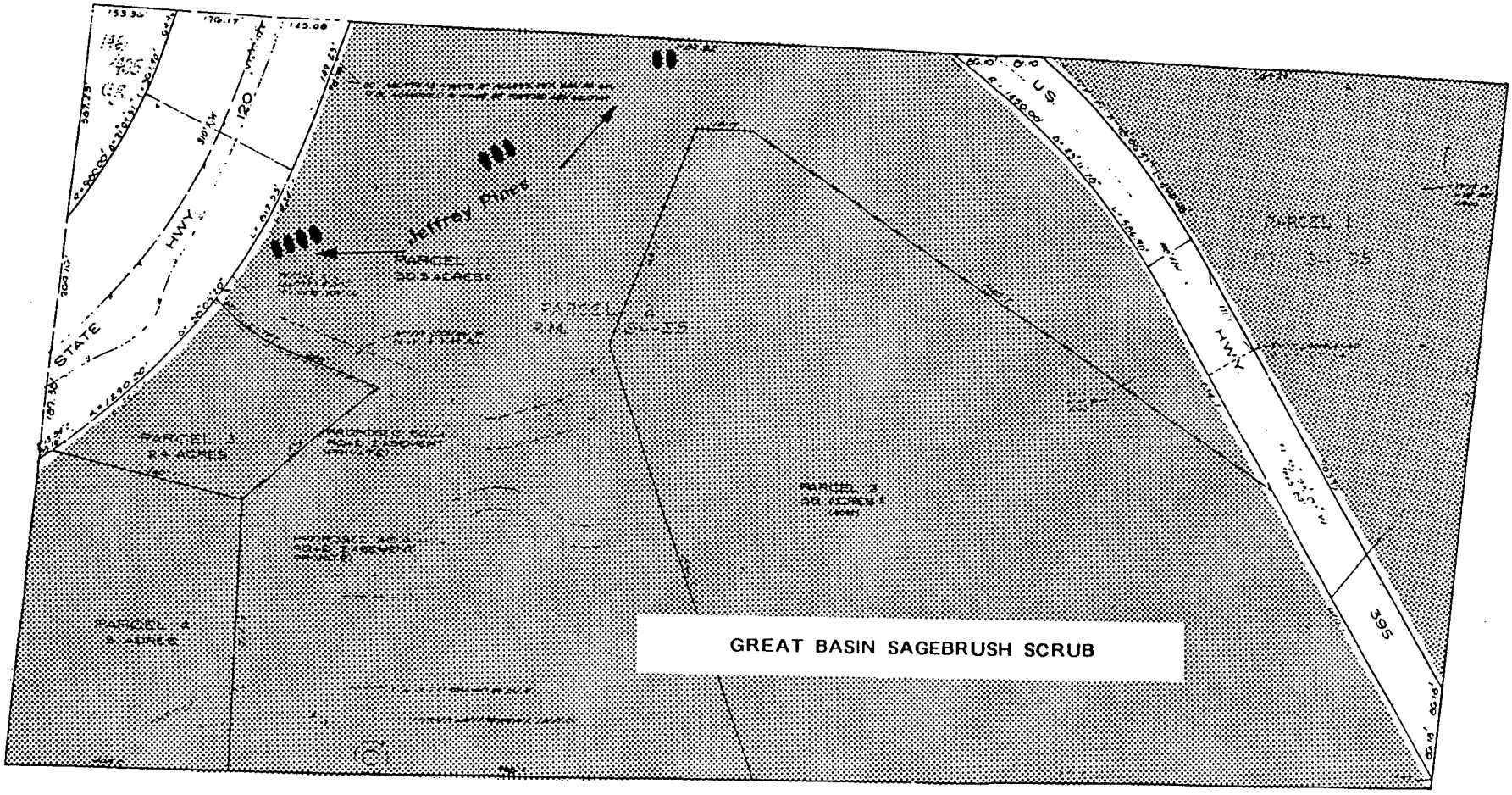


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Figure 5. Vegetation map showing locations of the Great Basin Sagebrush Scrub type in the proposed Tioga Inn project Area.

(Pinus monophylla) occur on the steep northwest slope of Parcel 4. The most common of the scattered herbs include needlegrass (Stipa sp.), squirreltail (Sitanion sp.), and Indian ricegrass (Oryzopsis hymenoides). Appendix Table 7 provides at least a partial list of plant species occurring in the Project Area. Other species may be added to this list during surveys conducted for Eriogonum ampullaceum.

VI. DISCUSSION

Impending development of the Tioga Inn and associated loss of habitat has created some concern for the future of mule deer which migrate through the area. From track count data, it was estimated that the Tioga Inn Project Area and adjacent vicinity received 113 deer days of use during the spring migration period. About 75% of this deer use, which equates to anywhere from 63 to 88 deer (61 migrants and 2-27 nonmigrants), is concentrated to the immediate south of the Project Area. There was only an estimated 25 deer days of use within the Project Area proper, the equivalent of about 17 migrants and anywhere from 1-8 nonmigrants.

Habitual behavior, topographic features, security cover, and human intrusion are factors which likely govern deer distribution within the Project Area and surrounding vicinity. The role that habitual behavior plays in deer migration has been widely

documented in the eastern Sierra Nevada (Kucera 1988, Taylor 1988a, Taylor 1991) and other areas of California (Bertram and Remple 1977, Loft et al. 1989). Radio-collared deer from the Casa Diablo herd monitored for 2 or more successive years displayed strong fidelity to individual summer ranges and migration routes by returning to the same ranges year after year (Taylor 1988a). This is largely due to topography and landscape and the existence of natural travel lanes that become established trails.

Track counts and ground surveys indicate that as deer migrate west toward Lee Vining Canyon, they contour the northern side of the ridge located immediately south of the Project Area (Figure 3). This east-west orientation along the base of the slope is the likely reason deer intercept the track survey route in the general vicinity of segment 4, which begins just south of the Project Area's Parcel 4.

Hiding cover is a feature of habitat that provides an animal security or a means to escape predators or harassment (Skovlin 1982). For mule deer, hiding cover is generally recognized as some form of vegetation, such as a brushy thicket, but may also be a drainage corridor. The pinyon pine (Pinus monophylla) forest which occupies the lower north and west slopes of the ridge located just south of the Project Area (above the LADWP aqueduct road), likely provides migrant deer with adequate security cover as they move along the lower portion of the

escarpment. With the exception of a few fragmented clumps of 3-5 foot high Sagebrush Scrub vegetation, the Project Area appears to be lacking adequate security cover for deer.

In addition to security cover, the Pinyon Pine type also provides habitat edge effect where it contacts the Sagebrush Scrub type just south of segment 4. An abrupt ecotone such as this likely furnishes deer with a greater variety of food and cover along the contact zone.

Because of the location of the Project Area near the intersections of Highways 120 and 395 (the gateway to Yosemite), human intrusion is rampant. Tourists seeking an unobstructed view of Mono Lake were often observed walking or driving roads located within and adjacent to the Project Area, especially within Parcel 1 which is adjacent to the Highway 120 pullout. This high level of human intrusion, when coupled with poor security cover and lack of habitat edge effect, likely makes the lower, more accessible portions of the Project Area unattractive to deer.

It is appropriate to emphasize that track counts provide a very crude estimate to deer numbers and usage throughout the Project area and surrounding vicinity. This is primarily due to problems associated with weather and poor tracking substrate which prevent track registration. According to Salwasser (1976) and Connolly (1981), track counts may underestimate total numbers of deer moving through an area for several reasons: rain, sleet,

snow, or wind may prevent track registration; during periods of heavier movement some tracks may obliterate others.

Conversely, track counts can also overestimate animal numbers because a potential exists for multiple counts of the same animals tracks. This source of error is impossible to quantify especially for holdover and summer resident deer because it may be the same individuals holding over for an unknown number of days. For these reasons, estimates of deer abundance provided in this report are meant only as approximations of relative deer use within the Project Area and surrounding vicinity. Furthermore, the precise number of deer using the project area at one time is not important; what matters is the estimate of magnitude. Track count data indicates that the Project Area and vicinity was used by approximately 100 deer during the 1992 spring migration.

VII. ENVIRONMENTAL IMPACT ANALYSIS

A. INTRODUCTION

Impending development of the Tioga Inn has initiated concerns with respect to potential adverse impacts on migratory mule deer and other wildlife. Concerns regarding mule deer were based on knowledge obtained from a radio-telemetry studies of the Casa Diablo deer herd (Taylor 1988a) which indicate that approximately 300 deer migrate through the project vicinity. A site review of the Project Area conducted by White (1984) was considered by CDFG and other agencies to be deficient in data on the timing, amount and specific locations of migratory deer use. In addition, the White (1984) study did not address potential environmental impacts of the proposed development or provide mitigation measures to avoid or minimize impacts. The present investigator was subsequently contracted to update previous work and provide an assessment of migratory deer use of the area.

This section describes the potential environmental effects of the Tioga Inn on plant and animal communities occurring within the Project Area. Impact assessment will include an analysis of potential impacts of the project by describing activities associated with each phase of the proposed project description that may have a direct, and indirect significant effect on biological resources.

Accompanying the impact assessment will be mitigation measures which would avoid or minimize potentially adverse impacts to insignificant or acceptable levels. This section also identifies those significant environmental effects which cannot be avoided if the project is implemented, including those effects which can be mitigated but not to a level of insignificance. The discussion of impacts to biological resources also include discussions pertaining to cumulative impacts or the incremental impact of the project when added to other past, present and reasonably foreseeable future actions.

B. IMPACTS TO BIOLOGICAL RESOURCES

1. Loss of Native Vegetation and Wildlife Species

Construction of the proposed Tioga Inn will directly impact existing Great Basin Sagebrush Scrub vegetation, a significant environmental effect that cannot be avoided. However, the proportion of acreage taken out of production compared to the remaining acreage of Great Basin Sagebrush Scrub vegetation in the Mono Basin is very low. Removal of existing vegetation will result in decreased biomass production from replacement of vegetation by parking lots, roads and buildings. Vegetation removal would reduce the amount of suitable habitat for Sagebrush Scrub dependent species, since food and shelter resources provided by vegetation are no longer present. As a result, there would be a corresponding reduction in diversity and abundance of Sagebrush Scrub dependent species, both on the development site and in adjacent natural areas (Howald 1982). Most adversely effected would be animals having relatively small home ranges, such as small mammals and birds. Local abundance of common and typical wildlife species, e.g., chipmunk (Tamias sp.), ground squirrel (Spermophilus sp.) and Brewer's sparrow (Spizella breweri), will decrease, since development results in loss of high quality habitat. In most cases, it is not possible for displaced animals to successfully establish themselves in nearby natural areas, since these

areas already contain as many animals as they can support (Howald 1982). If the area impacted by development is relatively small, larger wide-ranging species such as mule deer, coyote and mountain lion, can often find resources on adjacent ranges. However, when animals attempt to move, greater competition for scarce resources occurs, and weaker individuals gradually die out, resulting in decreased population size (Ingles 1965). Species diversity can also be reduced by local extirpation of common and typical species. This can occur when development eliminates or prevents the use of an essential resources in scarce supply, e.g., isolated thickets of vegetation required as hiding cover for mule deer fawns.

Natural plant revegetation within disturbed areas can be expected to develop extremely slow due to severe climate and poor soils. Secondary succession in disturbed areas would probably initially become dominated with a mixture of herbaceous species (grasses and forbs) and weeds. It is likely that shrub species would eventually reestablish on these sites provided that the soil resources were left intact.

Increased erosion potential on steep slopes within the Project Area would likely occur as a result of vegetation removal. The intensity of erosion would depend on a number of factors including volume and intensity of precipitation, relative slope of terrain, and soil condition (Owen 1975).

The potential impacts to wildlife from vegetation removal associated with the proposed project include:

* Over utilization of adjacent habitats
* Decreased availability of forage and cover (e.g., loss of Purshia as browse for mule deer)
* Adverse physiological effects and reduce reproductive potential
* Interference or alteration of migration routes and movement patterns
* Reduced wildlife numbers

2. Impacts From The Spread of Weeds

Natural areas characterized by low levels of disturbance and relatively harsh climates, such as the Mono Basin, typically support few weed species (Howald 1982). However, soil disturbance over large areas, in conjunction with overgrazing from domestic livestock and increased traffic, results in the decline of native plant species (decreasers) and encourages the spread of more tolerant weed species (invaders) into the

area. There are numerous plants from throughout the world that have been introduced into California. These plants have the ability to survive without cultivation (Raven and Axelrod 1977). The presence of weeds can inhibit regrowth of native vegetation and also alter the availability of food supplies for herbivores (Howald 1982). In addition, some species of weeds also produce toxins that can be debilitating to some animals (Cronin et al. 1978).

3. Impacts From Free Roaming Pets

A typical problem associated with most development located in rural areas is harassment of wildlife by domestic pets. Free roaming domestic dogs can create an intolerable stress to deer (Reed 1981) and other wildlife, including rodents and small mammals (Most 1981). Free roaming house cats can interfere with the courtship and feeding of birds and small mammals (Most 1980). Free roaming pets are a significant environmental effect which can be mitigated, but not reduced to a level of insignificance.

The potential impacts to wildlife from free roaming domestic pets associated with an increased population base include:

* Permanent decreased use or temporary desertion of traditional habitat
* Shift of home range and change in distribution
* Interference and alteration of migration routes
* Reduced wildlife numbers
* Reduced feeding efficiency
* Use of more marginal habitats
* Increased stress and energy expenditure
* Decreased productivity

4. Impacts From Noise and Lights

Noise generated during construction activities and operational phases of the project is a form of human intrusion that can adversely effect wildlife behavior (Howald 1982). Many animals respond to frequent noise disturbance by moving further from its source, resulting in lower wildlife diversity and abundance and crowding of adjacent natural areas (Howald 1982). Some species, however, which are less mobile or occupy smaller home ranges (e.g., small mammals) cannot readily vacate an area subjected to frequent noise disturbance. This can influence an individuals ability to forage efficiently and successfully rear young.

Night lighting, like noise, typically accompanies

both construction and operation phases of development. The collective glow of lights associated with hotel, restaurant, mini-mart, and employee housing facilities will likely illuminate areas well outside the Project Area boundaries. This will inhibit nocturnal use of these adjacent areas by some species, (e.g., mule deer and owls). With respect to impacts to wildlife resources, noise and lighting are significant environmental effects which can be mitigated to a level of insignificance.

Collectively, potential impacts to wildlife from noise and lights associated with the proposed development include:

* Permanent decreased use or temporary desertion of traditional habitat
* Shift of home range and change in distribution
* Interference and alteration of migration routes
* Reduced wildlife numbers
* Reduced feeding efficiency
* Use of more marginal habitats
* Increased stress and energy expenditure
* Decreased productivity

5. Impacts to Mule Deer

There was an estimated 88 deer-days of use (75% of all deer use) of segments 1-4 during the 54 day survey period. As many as 60 migrants may have crossed this portion of the track survey route, illustrating its relative importance as a migration corridor.

The Project Area received an estimated 25 deer-days of use during the 54 day survey period. This relatively light amount of use indicates that the Project Area itself is of little importance to the Casa Diablo herd as a migration corridor, at least during the spring migration period. It may, however, be an important foraging area for a small number of summer resident and holdover deer.

a. Direct and Indirect Impacts

The construction and operation of the Tioga Inn within the proposed Project Area could impact deer use of the project vicinity in a variety of ways. The following discussion categorizes potential direct (primary), indirect (secondary) and cumulative effects to mule deer resulting from human intrusion, habitat removal, habitat alteration, and direct mortality. For clarity, direct, or primary impacts, are environmental effects resulting from development due to

construction and operation activities (e.g., loss of foraging and fawning habitat for deer) (Comer 1982). Indirect (secondary) environmental effects typically occur outside the Project Area as the result of increased permanent or seasonal population growth within the community, and do not readily show a cause-effect relationship (Dodge 1992). Examples of indirect effect impacts include increased deer-vehicle collisions, increased physiological stress and lowered productivity in migratory and resident deer, and permanent decreased use or temporary desertion of traditional habitat due to human intrusion. Cumulative effects are the composite of all environmental effects (direct and indirect) for the region resulting from past, present and reasonably foreseeable projects that are not related to the proposed project.

Direct and indirect impacts that would occur within and adjacent to the Project Area as a result of habitat removal, habitat alteration, human intrusion, and direct mortality, could adversely effect the herd segment which migrates through the area, particularly those animals (2-25 deer) which currently use the Project Area. Secondary impacts that would mostly be independent of the Tioga Inn and that would occur outside the proposed Project Area as a result of project generated human growth, e.g., dog harassment, increased deer-vehicle collisions, could adversely effect that portion of the Casa Diablo herd which migrates to the immediate south of the Project Area. Potential significant adverse impacts to this herd segment could have deleterious effects to overall herd productivity by contributing to the already poor recruitment rates currently experienced by the Casa Diablo deer herd.

1) Human Intrusion: Reflects disturbances to deer behavior which would render undisturbed habitat immediately adjacent to the Project Area unsuitable for deer without physically impacting habitat (indirect impact). Human intrusion could result from construction and maintenance activities; and visual stimulus, noise, domestic dogs, increased human activity, and increased traffic associated with an increased permanent and seasonal (summertime) population.

Potential Impacts:

* Permanent decreased use or temporary desertion of traditional habitat: Construction activities (e.g., noise generated by heavy equipment), could displace migrant, holdover and summer resident deer which currently use the Project Area and immediate vicinity by forcing animals further upslope. This response

would constitute a significant environmental effect since as much as 3% of the Casa Diablo herd may be involved.

* Increased use of marginal habitat types: Migrant, holdover and summer resident deer which use habitats within and adjacent to the Project Area, could be forced to use less suitable habitat for migration, foraging and fawning (e.g., does which fawn near Lee Vining Creek could be forced to more marginal fawning habitats located further from Lee Vining Creek, an area which provides adequate food, cover and water).

* Alteration/interference of migration routes and shift of home ranges: Deer which currently migrate through the Project Area vicinity could abandon traditional habitats due to construction related activities (e.g., noise from heavy machinery) and operational phases (night lighting, human activity, dogs, etc.)

* Increased energy expenditure and stress: Increased physiological stress could result from increased energy expenditures associated with use of more nontraditional habitats for migration and summer range.

2) Habitat Removal: Reflects permanent physical reduction in the amount of available habitat within the Project Area due to the placement of facilities (primary effect), and outside the Project Area due to increased community growth (secondary effect). Considered to be a significant environmental effect.

Potential Impacts:

* Over utilization of adjacent habitat: Deer displaced from the Project Area (direct impact) and adjacent migration routes (indirect effect) could concentrate activity outside the project's zone of influence. This could create excessive crowding and increased competition for resources, which could, over time, result in over utilization of adjacent habitats. This response would constitute a significant environmental effect.

* Declines/elimination of forage and cover availability: Reductions in available deer habitat due to placement of facilities and increased community growth.

* Alteration/interference of migration routes and shift of home ranges: Deer which currently migrate through or summer within the project vicinity could abandon traditional habitats.

* Adverse physiological effects and reduced reproductive potential: Forage loss, alteration of migration routes, and over utilization of habitats could result in reduced productivity in migrant, holdover, and summer resident deer potentially displaced by the proposed development.

3) Habitat Alteration: Represents change in plant species composition and structural characteristics due to the growth inducing effects of development.

Potential Impacts:

* Change in availability of forage and cover within the Project Area and adjacent migration route.

* Change in utilization of adjacent habitats.

* Change in animal reproductive success: Increased physiological stress from habitat alteration from placement of facilities (direct impact) and increased community growth (indirect impact) resulting in decreased productivity.

4) Direct Mortality: Losses of deer due to construction activities as a result of increased deer-vehicle collisions created by utilization of alternate migration routes, e.g., across Route 395 or Route 120. Considered to be a significant environmental effect.

Potential Impacts:

* Decreased deer numbers.

* Decreased prey base for predators, mainly coyotes and mountain lions.

b. Cumulative Impacts

Comer (1982) defined cumulative effects as "the totality of interactive impacts over time; or the sum incremental synergistic effects on fish and wildlife habitats caused by all reasonable future actions over time and space". Cumulative impacts for an individual project may be minor, but collectively significant.

There are several reasonably foreseeable projects proposed on Casa Diablo deer herd migration routes and seasonal ranges which could have cumulative impacts to the Casa Diablo deer

herd. These projects include:

* The Arcularius Ranch located on the upper Owens River holding area is planning a substantial expansion of their 1,080 guest ranch facility. The upper Owens River holding area is used by approximately 70% of the Casa Diablo deer herd during annual spring and fall migrations. For this reason, the holding area appears to be an extremely important component of the Casa Diablo deer herd's year-round range and likely plays an integral role in the productivity of this herd. Habitat degradation and human intrusion within the holding area could contribute to declining recruitment rates by lowering the ability of deer to overcome nutritional stress acquired over the winter.

* The California Department of Transportation (Caltrans) is proposing a highway expansion from 2-4 lanes within the vicinity of Sandhouse Hill, located between the south June Lake Junction and approximately two miles south of Lee Vining. Telemetry data (Taylor 1988a) and track count data (Taylor 1990) indicates that between 50% and 66% of the Casa Diablo herd crosses this section of highway during annual spring and fall migrations. Therefore, the proposed highway expansion could result in additional direct mortality of deer due to the increased risk of deer-vehicle collisions.

* Mammoth Mountain Ski Area has proposed development of the Hartley Springs, White Wing Mountain and San Joaquin Ridge areas for alpine skiing. These areas provide important migration and summer range habitat for the Casa Diablo herd.

Other considerations regarding migratory mule deer which should be addressed in the impact analysis include:

* The Casa Diablo deer herd is currently experiencing low recruitment rates primarily as a result of a prolonged drought.

1) Human Intrusion: Reflects disturbances to deer behavior which would render undisturbed habitat immediately adjacent to the Project Area unsuitable for deer (indirect impact). Human intrusion could result from construction and maintenance activities; and visual stimulus, ambient noise, domestic dogs, increased human activity, and increased traffic associated with an increased permanent and seasonal (summertime) population.

Potential Impacts:

* Permanent decreased use or temporary desertion of traditional habitat: Construction activities could displace migrant deer which currently use the area immediately south Project Area by forcing animals further upslope. This response would constitute a significant environmental effect since as much as 3% of the Casa Diablo herd may be involved.

* Increased use of marginal habitat types: Migrant, holdover and summer resident deer which use habitats south of the Project Area could be forced to use less suitable habitat for migration and foraging.

* Alteration of migration routes and shift of home ranges: Deer which currently migrate and summer adjacent to the Project Area could abandon traditional habitats.

* Increased stress and energy expenditure

2) Habitat Removal: Reflects permanent physical reduction in the amount of available habitat due to unrelated, reasonably foreseeable projects. Considered to be a significant environmental effect.

Potential Impacts:

* Declines/elimination of forage and cover availability and over utilization of adjacent habitats: Deer displaced from the increased growth could concentrate activity outside the project's zone of influence. This could create crowding and increased competition for resources, which could, over time, result in over utilization of adjacent habitats. This response would constitute a significant environmental effect.

* Interference to daily movement patterns of holdover and summer resident deer: As proposed, the locations of facilities could alter movement patterns of summer resident and holdover deer.

* Adverse physiological effects and reduced reproductive potential: Forage loss could result in reduced productivity of summer resident deer potentially displaced by the proposed development.

3) Habitat Alteration: Represents change in plant species composition and structural characteristics due to the

growth inducing effects of unrelated, reasonably foreseeable development projects.

Potential Impacts:

* Change in availability of forage and cover within the migration route.

* Change in utilization of adjacent habitats.

* Change in animal reproductive success: Increased physiological stress from increased community growth resulting in decreased productivity.

4) Direct Mortality: Losses of deer due increased deer-vehicle collisions on Mono County roadways.

Potential Impacts:

* Decreased deer numbers.

* Decreased prey base for predators, mainly coyotes and mountain lions.

C. MITIGATION MEASURES

Direct, indirect, and cumulative significant environmental effects to mule deer and other wildlife that would occur as a result of the proposed Tioga Inn development are attributed to human intrusion, permanent losses and alteration of existing habitat, and direct mortality. Mitigation measures designed to minimize the magnitude of a significant environmental effect or reduce impacts to a level of insignificance are presented below.

1. Construction Activities

During spring migration, mule deer does in their third trimester of pregnancy are experiencing increased nutritional demands due to accelerated fetal development and migration to the summer range. Mule deer does from the

Casa Diablo herd typically breed in late October and early November and give birth to fawns in late June and early July (Taylor 1988b). Noise, lights and other forms of human intrusion associated with construction activities could disturb pregnant does migrating through the project vicinity in the spring, resulting in increased stress and reduced reproductive success.

Impacts from construction activities will be minimized through the following measures:

* Construction will be scheduled to minimize disturbance to migratory deer during the spring and fall migration/holding periods. Track count data indicates that in the spring deer arrive in the project vicinity as early as late April. The fall migration period can extend from mid-September through mid-December depending on the severity of weather. Therefore, construction activities within Parcel 4 should be scheduled during the interim period between spring and fall migration periods (1 June-15 September).

  The objective of this measure is to minimize disturbance to migrant deer which use the project vicinity, especially the area south of Parcel 4, during the spring and fall holding/migration periods. Restricting the timing of construction to the interim period between spring and fall migrations will reduce, but not to a level of insignificance, direct human intrusion impacts associated with construction activities. However, this measure will not minimize construction associated impacts to summer resident deer. Nor will it reduce impacts to migratory deer in the event of an early migration (prior to 15 September).

* Construction will be conducted during daytime hours in order to reduce disturbance to nocturnal wildlife species, particularly migratory mule deer.

2. Control of Domestic Dogs

Many researchers have documented cases of deer mortality from dog attacks (Lindsale and Tomich 1953, Boyles 1976, Moser 1975, Dasmann and Taber 1956). For this reason domestic dogs would be controlled within the Project Area during both construction and operation phases. Mono County leash laws would be enforced to the greatest extent possible through adequate signing and regular patrol. Hotel guests and all patrons will be provided an enclosed area located away from the migration corridor to walk pets. Tioga Inn employees will be required to keep dogs in an enclosed area. A full-time project employee will likely be needed to successfully enforce this measure.

Implementation of this measure will minimize direct and indirect significant adverse impacts associated with human intrusion, and direct and indirect mortality, injury and harassment of deer and other wildlife from free roaming domestic dogs.

3. Noise and Lights

* Vegetative Screening--Screening cover will be established on the south, west and east sides of Parcel 4 where employee housing is proposed. Screening cover should be planted in a 20 foot wide band consisting of an inner strip of native shrubs and an outer strip of trees. This design will effectively reduce illumination and noise into the migration corridor, screen employee houses from migrating deer, and provide additional wildlife habitat. Smith and Conner (1989) suggested that deer avoidance of structures declines with the amount of vegetation adjacent to them. Vegetative screening also has the function of sound pollution abatement, because it is particularly effective in absorbing high frequency sounds (Owen 1975). Visual screening will not be effective until a number of years after its implementation, when plants are large enough to provide a visual barrier. Therefore, the use of larger planting stock is recommended in order to accelerate this process. Fast growing tree species that may work well as screening cover and provide migrating and holdover deer with additional forage once they become established include; poplars (Populas sp.), alder (Alnus sp.), and willow (Salix sp.). Willow and alder are hydrophilic species that require copious amounts of water in order to survive. For this reason, it will be necessary to establish an irrigation system to ensure both rapid growth and longevity of these species. Poplars require less water than willows and alders, but still need mesic soils in order to survive. Slower growing endemic species requiring less water include: Jeffrey pine (Pinus jeffreyi), single-leaf pinyon pine (Pinus monophylla), western juniper (Juniperus occidentails) (Appendix Figure 8).

  Regardless of the tree species used as screening cover, it will be necessary to protect the terminal shoots of young individual trees from deer, rodents and domestic livestock. Several types of individual tree barriers have been designed to protect tree leaders, allowing them to grow quickly beyond the reach of deer. Wire cages have been widely used (Longhurst et al. 1962, Mealy 1969), but are expensive and must be removed as enclosed trees grow. Yawney and Johnson (1974) found that a 1.52 m (5 ft) wire fence surrounding seedlings worked well to protect them from deer. Vexar tubing (E.I. DuPont de Nemours and Company, Inc.) has been successful in protecting Douglas fir seedlings (Campbell and Evans 1969) and oak seedlings (Lasher and Hill 1977).

* Impacts from night lighting can also be minimized by avoiding unnecessary lights and unnecessarily bright

lights. Lights which could potentially illuminate the migration corridor should be avoided or adequately screened.

Implementation of these measures would minimize direct and indirect significant adverse impacts associated with human intrusion resulting from employee housing and commercial lighting.

4. Fencing

Fencing, depending on the type and location, can have indirect significant adverse effects on deer by interfering with migration and the use of seasonal habitats. Fencing can also result in direct mortality of deer (Urness 1976, Papez 1976). Therefore, any wire fences, except those required for retaining pets, will be prohibited. Any other impediments to deer movements such as spoil piles, open ditches, and excessive cut-fill slopes will be minimized to the greatest extent possible. For example, care must be taken to avoid leaving ditches or trenches open for a prolonged period of time since they can be hazardous to migrating deer and other wildlife.

5. Utilize Existing Dirt Roads

Access and maintenance roads will be designed to follow existing dirt road alignments whenever possible to avoid unnecessary removal of additional vegetation. This would minimize significant environmental effects associated with habitat loss and alteration.

6. Establish Driver Warning Signs

Establishing driver warning signs along Highway 395 and Highway 120 (west), would minimize significant environmental effects associated with direct mortality from deer-vehicle collisions.

7. Controlling Vehicle Access

Limiting vehicular access within the migration corridor immediately south of the Project Area would minimize significant environmental effects to deer resulting from increased human intrusion.

8. Maintain Existing Native Vegetation

Vegetative disturbance due to construction activities would be confined only to those areas designated for development to protect surrounding vegetation. In this way, landscaping needs are minimized by retaining the

maximum amount of native vegetation possible. The pad cleared for a particular building usually alters more habitat then just the building itself. Development designers are encouraged to use techniques to reduce the area altered by pads and drives. This could minimize significant environmental effects to deer associated with habitat loss and alteration.

9. Revegetation with Native Plants

Revegetation of disturbed areas shall be conducted using native plants as soon as possible following construction. This could reduce significant environmental effects to deer associated with habitat loss and alteration. A list of native plants appropriate for revegetation are provided in Appendix Figure 8.

10. Control of Weeds

At the Tioga Inn project site, the spread of weeds can be deterred by revegetating disturbed sites as soon as possible, using mulches free of weed seeds, and covering stockpiled topsoil (Dodge 1992).

11. Control of Erosion

Unfortunately, many development projects are associated with extensive soil erosion largely because of either lack of planning or carelessness. For example, studies by the Soil Conservation Service (USDA 1970) have shown that erosion of soils on land used for development projects (highways, buildings, homesites, etc.,) is 10 times greater than on land in pasture and 2,000 times greater than on land in timber. Erosion control measures that might be effectively implemented at the construction site include:

* No more vegetation should be removed from the site than is absolutely necessary for immediate construction purposes.

* Steep road cuts should be revegetated as soon as possible after construction.

* Disturbed areas should be reseeded as soon as possible after construction with native vegetation.

* Temporary catch basins may be constructed to intercept run-off water and trap its sediment load. After construction has been completed and revegetated, the basins may be removed and the area graded and blended into the surrounding landscape.

* Boards can be arranged in rows across steep areas to serve as temporary terraces, thus establishing soils and allowing seeding (USDA 1970).

12. Mitigation Monitoring

Several mitigation measures will require monitoring. California law (PRC 210801.6) requires that mitigation monitoring be conducted. A plan will be developed to comply with measures outlined in the mitigation plan.

VIII. REVIEW OF LITERATURE RELEVANT TO THE PROPOSED PROJECT

According to Wallmo et al. (1976) and Bormann (1976), rural housing developments in deer habitat with their accompanying increases in automobiles, snowmobiles, off-road vehicles, dogs and human activity, affect large areas beyond the actual boundaries of the development. As a result, the overall effect of these encroachments on mule deer habitat is greater than indicated by analysis of the actual area involved. Disturbances associated with housing developments on and adjacent to deer winter range significantly alter, reduce or eliminate deer use of an area (Mackie and Pac 1980). Smith and Conner (1989) reported that a one-acre loss in habitat can equate to a 2.5 acre loss in deer habitat due to significant reductions in deer use around the area developed. Smith and Conner (1989) also suggested that when a house is built on deer range, deer affected by the house redistribute their use to just outside the zone of influence of the house. This could result in over utilization of more marginal habitats outside the zone of influence through increased interspecific competition for food and cover resources. Armstrong et al. (1983), indicated that cottage development in Ontario reduced the quality of winter white-tailed deer habitat. Mann (1985), suggested that deer use of an area decreased with increased development of recreational lot and second home subdivisions, but the intensity of use is dependent upon location, year, season and human activity. Cornett et al. (1979), provided evidence that deer use of a meadow near cabins received only 40 percent of the use of a similar control meadow located in an undisturbed area. Cornett et al. (1979) also reported that deer use was reduced by 30 percent within a 30-50 yard distance to hiking trails. Freedy et al. (1986) concluded that mule deer were more disturbed by people afoot then by snowmobiles.

Reproduction and condition studies of several local deer herds have shown that deer in the eastern Sierra exist on a negative energy budget during the winter months (Kucera 1988, Taylor 1988b). The energy required by activity is derived from products of digestion and stored fat reserves. In the winter, deer rely heavily on fat stores accumulated over the summer and fall months to supplement digestible energy available from the winter range (Mackie and Pac 1980, Short 1981). Deer also attempt to conserve energy by lowering their metabolic rate and by conducting energy-efficient activity and range use patterns (Mackie and Pac 1980). When normal activity patterns are disrupted due to development, drought, overgrazing, excessive snowfall, interaction with humans, or other factors, digestible energy intake can be reduced severely and the rate at which fat reserves are used will increase. This will ultimately decrease an animals ability to

survive the winter and reproduce the following year (Mackie and Pac 1980). This is especially true of deer with limited fat reserves, such as fawns or animals from poor-quality summer or intermediate ranges. In severe winters, these animals can tolerate little additional energy costs if they are to survive. Under repeated harassment, they will rapidly deplete stored fat and succumb to malnutrition when sufficient energy is no longer present to maintain normal bodily functions (Short 1981). According to Mattfeld (1973), the energy costs of running, especially in deep snow, is many times that of walking on bare ground.

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APPENDIX A

Appendix Table 1. Total number of tracks by direction of travel recorded on 16 track count surveys conducted in the Tioga Inn Project Area from 17 April-10 June 1992. Tioga Inn wildlife and vegetation study.

Survey No.	Date	NW	SE	Total
1	041792	0.0	0.0	0.0
2	042092	0.0	0.0	0.0
3	042392	0.0	0.0	0.0
4	042892	2.0	0.0	2.0
5	050192	2.0	0.0	2.0
6	050592	7.0	5.0	12.0
7	051092	5.0	4.0	9.0
8	051392	3.0	2.0	5.0
9	051692	0.0	0.0	0.0
10	052092	0.0	1.0	1.0
11	052392	2.0	3.0	5.0
12	052692	0.0	0.0	0.0
13	053092	2.0	2.0	4.0
14	060292	0.0	2.0	2.0
15	060592	0.0	1.0	1.0
16	061092	0.0	1.0	1.0
		23.0	21.0	44.0

Appendix Table 2. Calculated data from 16 track counts conducted in the Tioga Inn Project Area from 17 April-10 June 1992. Tioga Inn wildlife and vegetation assessment study.

A = Total number of tracks observed on 16 surveys.
B = Total number of tracks attributable to migrants (determined by tracks N and W)
C = Total number of tracks attributable to nonmigrants (A-B).
D = Total number of deer on a given survey represented by tracks of nonmigratory deer (C/2).
E = Total deer on a given survey (B + D).

Survey No.	Date	A	B	C	D	E
1	041792	0.0	0.0	0.0	0.0	0.0
2	042092	0.0	0.0	0.0	0.0	0.0
3	042392	0.0	0.0	0.0	0.0	0.0
4	042892	2.0	2.0	0.0	0.0	2.0
5	050192	2.0	2.0	0.0	0.0	2.0
6	050592	12.0	7.0	5.0	2.5	9.5
7	051092	9.0	5.0	4.0	2.0	7.0
8	051392	5.0	3.0	2.0	1.0	4.0
9	051692	0.0	0.0	0.0	0.0	0.0
10	052092	1.0	0.0	1.0	0.5	0.5
11	052392	5.0	2.0	3.0	1.5	3.5
12	052692	0.0	0.0	0.0	0.0	0.0
13	053092	4.0	2.0	2.0	1.0	3.0
14	060292	2.0	0.0	2.0	1.0	1.0
15	060592	1.0	0.0	1.0	0.5	0.5
16	061092	1.0	0.0	1.0	0.5	0.5
Sum X 3.375		44.0	23.0	21.0	10.5	33.5
			77.6	70.8	35.4	113.0

Appendix Table 3. Total number of track sets recorded in each survey segment of the Tioga Inn track count survey route on 16 track count surveys conducted from 17 April-10 June 1992. Tioga Inn wildlife and vegetation assessment study.

Survey No.	Date	Segment Number 1	2	3	4	5	6	7	Total
1	041792	0	0	0	0	0	0	0	0
2	042092	0	0	0	0	0	0	0	0
3	042392	0	0	0	0	0	0	0	0
4	042892	0	0	0	0	2	0	0	2
5	050192	0	0	0	1	1	0	0	2
6	050592	2	0	2	6	0	0	2	12
7	051092	1	1	1	5	0	1	0	9
8	051392	0	0	1	3	0	1	0	5
9	051692	0	0	0	0	0	0	0	0
10	052092	0	1	0	0	0	0	0	1
11	052392	2	1	0	2	0	0	0	5
12	052692	0	0	0	0	0	0	0	0
13	053092	0	0	0	2	2	0	0	4
14	060292	1	1	0	0	0	0	0	2
15	060592	0	0	1	0	0	0	0	1
16	061092	0	0	0	0	1	0	0	1
Total		6	4	5	19	6	2	2	44

Appendix Table 4a. Calculated data from 16 track counts conducted adjacent to the Tioga Inn Project Area (segments 1-4) from 17 April-10 June 1992. Tioga Inn wildlife and vegetation assessment study.

A = Total number of tracks observed on 16 surveys.
B = Total number of tracks attributable to migrants (determined by tracks N and W)
C = Total number of tracks attributable to nonmigrants (A-B).
D = Total number of deer on a given survey represented by tracks of nonmigratory deer (C/2).
E = Total deer on a given survey (B + D).

Survey No.	Date	A	B	C	D	E
1	041792	0.0	0.0	0.0	0.0	0.0
2	042092	0.0	0.0	0.0	0.0	0.0
3	042392	0.0	0.0	0.0	0.0	0.0
4	042892	0.0	0.0	0.0	0.0	0.0
5	050192	1.0	1.0	0.0	0.0	1.0
6	050592	10.0	7.0	3.0	1.5	8.5
7	051092	8.0	4.0	4.0	2.0	6.0
8	051392	4.0	3.0	1.0	0.5	3.5
9	051692	0.0	0.0	0.0	0.0	0.0
10	052092	1.0	0.0	1.0	0.5	0.5
11	052392	5.0	2.0	3.0	1.5	3.5
12	052692	0.0	0.0	0.0	0.0	0.0
13	053092	2.0	1.0	1.0	0.5	1.5
14	060292	2.0	0.0	2.0	1.0	1.0
15	060592	1.0	0.0	1.0	0.5	0.5
16	061092	0.0	0.0	0.0	0.0	0.0
Sum X 3.375		34.0	18.0 60.8	16.0 54.0	8.0 27.0	26.0 87.7

Appendix Table 4b. Calculated data from 16 track counts conducted in the Tioga Inn Project Area (segments 5-7) from 17 April-10 June 1992. Tioga Inn wildlife and vegetation assessment study.

A = Total number of tracks observed on 16 surveys.
B = Total number of tracks attributable to migrants (determined by tracks N and W)
C = Total number of tracks attributable to nonmigrants (A-B).
D = Total number of deer on a given survey represented by tracks of nonmigratory deer (C/2).
E = Total deer on a given survey (B + D).

Survey No.	Date	A	B	C	D	E
1	041792	0.0	0.0	0.0	0.0	0.0
2	042092	0.0	0.0	0.0	0.0	0.0
3	042392	0.0	0.0	0.0	0.0	0.0
4	042892	2.0	2.0	0.0	0.0	2.0
5	050192	1.0	1.0	0.0	0.0	1.0
6	050592	2.0	0.0	2.0	1.0	1.0
7	051092	1.0	1.0	0.0	0.0	1.0
8	051392	1.0	0.0	1.0	0.5	0.5
9	051692	0.0	0.0	0.0	0.0	0.0
10	052092	0.0	0.0	0.0	0.0	0.0
11	052392	0.0	0.0	0.0	0.0	0.0
12	052692	0.0	0.0	0.0	0.0	0.0
13	053092	2.0	1.0	1.0	0.5	1.5
14	060292	0.0	0.0	0.0	0.0	0.0
15	060592	0.0	0.0	0.0	0.0	0.0
16	061092	1.0	0.0	1.0	0.5	0.5
Sum X 3.375		10.0	5.0	5.0	2.5	7.5
			16.8	16.8	8.4	25.3

Appendix A Table 5

The following list includes those mammal species most likely to be found at or adjacent to the Tioga Inn Project Area. Information used in this report comes from direct observations and from the following sources (Engles 1965).

Symbols

Abundance	Status in Habitat	Sightings
C Common	G General Habitat, present year-round	O Observed
U Uncommon	B Breeding Habitat	E Expected
R Rare	S Summer Resident	
	M Migrant	
	V Occassional Visitor	
	U Unknown	

Common Name	Scientific Name	Si	A	St
MAMMALS	CLASS MAMMALIA			
Sierra Nevada golden-mantled ground squirrel	Spermophilus lateralis	O	C	G
Porcupine	Erethizion dorsatum	E	C	U
Coyote	Canis latrans	O	C	G
Black bear	Euarctos americanus	E	C	V
Bobcat	Lynx rufus	E	C	G
Striped skunk	Mephitis mephitis	E	C	G
Mule deer	Odocoileus hemionus	O	C	G
Gray fox	Urocyon cinereoargenteus	E	U	G
White-tailed hare	Lepus townsendii	E	C	G
Black-tailed jackrabbit	Lepus californicus	O	C	G
Long-tailed weasel	Mustela frenata	E	C	G
Audubon's cottontail	Sylviligus audubonii	O	C	G
Northern pocket gopher	Thamomys talpoides	E	U	G
Sagebrush vole	Lagurus curtatus	E	C	G

Appendix A Table 6

The following list includes those bird species most likely to be found at or adjacent to the Tioga Inn Project Area. Information used in this report comes from direct observations and from the following sources (Peterson 1961, Storer and Usinger 1963, Gaines 1965).

Symbols

Abundance	Status in Habitat	Sightings
C Common	G General Habitat, present year-round	O Observed
U Uncommon	B Breeding Habitat	E Expected
R Rare	S Summer Resident	
	M Migrant	
	V Occassional Visitor	
	U Unknown	

Common Name	Scientific Name	Si	A	St
Birds	Class Aves			
Red-tailed hawk	Buteo jamaicensis	O	C	G
American kestrel	Falco sparverius	E	C	G
Rough-legged hawk	Buteo lagopus	E	U	M
Golden eagle	Aquila chrysaetos	E	U	G
Great-horned owl	Bubo virginanus	E	C	G
Common nighthawk	Chordeiles minor	E	C	M
Poorwill	Phalaenoptilis nuttallii	O	C	S
Common raven	Corvus corax	O	C	G
Common flicker	Sphyrapicus varius	E	U	S
Gray flycatcher	Empidonax wrightii	O	C	S
Say's phoebe	Sayornis saya	E	C	S
Olive-sided flycatcher	Nuttallornis borealis	E	C	G
Pinyon jay	Gymnorhinus cyanocephala	O	C	G
Stellar's jay	Cyanocitta stelleri	O	C	G
Clark's nutcracker	Nucifraga columbiana	O	C	G
American robin	Turdus migratorius	O	C	G
Mountain bluebird	Sialia currocoides	E	C	G
Brewer's blackbird	Euphagus cyanocephalus	O	C	S
Brewer's sparrow	Spizella breweri	O	C	S
Brown headed cowbird	Molothrus ater	O	C	S
Green-tailed tohee	Pipilo chlorurus	O	C	S
Fox sparrow	Passerella iliaca	O	C	S
Song sparrow	Melospiza melodia	O	C	S
Black-billed magpie	Pica pica	O	C	G
Dark-eyed junco	Junco hyemalis	O	C	G

Appendix A Table 7

The following list includes those plant species observed in or adjacent to the Tioga Inn Project Area.

Common Name	Scientific Name
Shrubs	
Big sagebrush	*Artemisia tridentata*
Antelope bitterbrush	*Purshia tridentata*
Rubber rabbitbrush	*Chrysothamnus nauseosus*
Twisted rabbitbrush	*Chrysothamnus viscidiflorus*
Desert peach	*Prunus andersonii*
Horsebush	*Tetraddymia comosa*
Trees	
Pinyon pine	*Pinus monophylla*
Jeffrey pine	*Pinus jeffreyi*
Lodgepole pine	*Pinus contorta*
Perennial Grasses	
Indian ricegrass	*Oryzopsis hymenoides*
Giant wildrye	*Elymus cinereus*
Needlegrass	*Stipa* sp.
Squirrel tail	*Sitanion* sp.
Perennial Flowering Plants	
Prickley phlox	*Leptodactylon pungens*
Sulphur-flowered eriogonum	*Eriogonum umbellatum*
Prickley poppy	*Aregemone munita*
Cryptantha	*Cryptantha circumscissa*
Hoary aster	*Machaeranthera canescens*
Mule ears	*Wyethia mollis*
Indian paintbrush	*Castilleja* sp.
Lupine	*Lupinus* sp.

Appendix A Table 8

Native Plants Recommended For Revegetation in the Tioga Inn Project Area.

Common Name	Scientific Name	
Shrubs		
Antelope bitterbrush	Purshia tridentata	*
Big Sagebrush	Artemisia tridentata	*
Curl-leaf mountain mohogany	Cercocarpus ledifolius	*
Rubber rabbitbrush	Chrysothamnua nauseosus	
Mormon Tea	Ephedra nevadensis	*
Wood's rose	Rosa woodsii	*
Slender-leafed willow	Salix exigua	
Trees		
Pinyon pine	Pinus sp.	*
Lanceleaf cottonwood	Populus acuminata	*
Desert willow	Chilopsis linearis	*
Western juniper	Juniperus occidentalis	
Jeffrey pine	Pinus jeffreyi	
Perrenial Grasses		
Indian ricegrass	Oryzopsis hymenoideds	*
Squirrel tail	Sitanion hysterix	
Needlegrass	Stipa comata	
Wild rye	Elymus sp.	

* These plants are available from:

Plants of the Southwest
930 Baca St.
Santa Fe, NM 87501
(505) 983-1548

FISCAL IMPACT ANALYSIS

Report 4

FINAL
ECONOMIC IMPACT
AND
FISCAL ANALYSIS
FOR
THE TIOGA INN
SPECIFIC PLAN AND EIR

PREPARED FOR:

MONO COUNTY PLANNING DEPARTMENT

DECEMBER 1992

FINAL

ECONOMIC IMPACT AND FISCAL ANALYSIS

FOR

THE TIOGA INN SPECIFIC PLAN AND EIR

Prepared for:

MONO COUNTY PLANNING DEPARTMENT

December 1992

Prepared by:

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1. INTRODUCTION

PURPOSE OF ECONOMIC AND FISCAL ANALYSIS

CERTIFIED/Earth Metrics was retained by the Mono County Planning Department to conduct a study of the potential market demand and fiscal effects upon the county of a proposed hotel development to be located at the intersection of U.S. Highway 395 (US 395) and State Route 120 (SR 120), south of Lee Vining. The proposed development, called Tioga Inn, consists of a 120 unit hotel, a 100 seat restaurant, a service station/mini-mart, and 10 units of on-site housing.

This report is the product of CERTIFIED/Earth Metrics and consists of independent market research and objective evaluation relative to the market demand and fiscal effects of the proposed development. CERTIFIED/Earth Metrics has no financial interest in the subject hotel development.

STUDY APPROACH

Market analysis presented in this report evaluates the potential market demand for the hotel, restaurant, and service station/mini-mart portions of the proposed project. Current supply and potential market demand for lodging, restaurant, and service station/mini-mart are evaluated using a variety of techniques for market analysis. The proposed project is considered in terms of access, visibility, and proximity to visitor attractions, and is compared to competitive supply in the defined "market area." Data consisting of California tax and economic development data, traffic counts, visitor counts, archival and original survey data are assembled and reviewed in this market analysis.

A primary market area is defined, to distinguish between the proposed hotel's probable competition east of Yosemite National Park in Mono County and less probable competition with existing hotels on the "west-side" outside of Mono County. Price ranges and quality of competitive lodging and restaurants in the primary market area are documented. Historical trends in visitation and tourism are considered to form an opinion of potential market demand for the proposed hotel, restaurant, and service station/mini-mart.

Shift share analysis is provided to evaluate the baseline performance of the proposed hotel and amenities. Shift share refers to the proportionate share of an existing market that a proposed new commercial enterprise can be expected to capture, all locational and competitive factors being equal among the competitors. When there is competition for like-kind services, the market share captured by the new enterprise is shifted within the existing marketplace. The concept of shift share is important in fiscal analysis because fiscal benefit (i.e., tax revenue) does not necessarily accrue from shifting patrons among competitors within the boundaries of a taxing entity. Maximum fiscal benefit generally accrues instead from new business development in unserved or underserved markets.

SUMMARY

There appears to be unmet demand for lodging in the Lee Vining vicinity in summer. A small portion (one-in-six) of visitors attracted from Yosemite National Park to Mono Basin in summer are currently attracted to stay overnight in the basin. The constraint appears to be limited lodging supply. In winter, with Tioga Pass closed, shift share analysis demonstrates that the proposed 120-room hotel could potentially achieve 50 percent occupancy. Net revenue generation, exclusive of one-time fees intended to cover the costs of specified county services, is conservatively estimated to be $195,000 (first full year after opening) to $304,000 (fifth year). Fully 90 percent of the revenue would be derived from property tax and transient occupancy tax; therefore, the estimate is not sensitive to evaluations of the other project elements (i.e., restaurant, service station/mini-mart).

2. MARKET ANALYSIS

LOCAL SETTING

Mono County has a permanent population of approximately 10,403 persons (Department of Finance, 1992). The county experienced an average annual growth rate of 5.3 percent per year from 1970 to 1980, which slowed to an average of 1.4 percent per year between 1980 and 1990 (see Figure 1). Employment in Mono County is heavily weighted in the tourist industry with approximately 25 percent of all jobs held in the county resting in the hotel/motel industry, and 16 percent in eating/drinking establishments (see Table 1). Employment in the tourism industry is seasonal (Employment Development Department, 1990).

The location of the project site at the intersection of US 395 and SR 120, just south of Lee Vining, marks a key crossroads in the scenic eastern Sierra Nevada, one of the fastest growing tourist visitor areas in the state. The area surrounding the project site provides a wealth of scenic resources and summer recreational opportunities. Lee Vining's main attraction is Mono Lake, the focal point of the Mono Basin National Forest Scenic Area, and the Mono Lake Tufa State Reserve. Mono Lake is famous for its dramatic scenery (tufa towers) and is host to a wide variety of wildlife including large numbers of seagulls and migratory waterfowl. The newly constructed Mono Basin National Forest Scenic Area Visitor Center offers educational exhibits, art galleries, a 98 seat theater, bookstore, and other services for Mono Lake's estimated 200,000 yearly visitors.

According to interpretation of visitation records of the Mono Lake Committee Visitor Center in downtown Lee Vining, 64.5 percent of visitation is in the summer months (June through September) and 83 percent during the extended dry season (May through October). Visitation at the Mono Lake Committee Visitor Center in downtown Lee Vining is itself approximately 40,000 persons per year in recent years according to the Mono Lake Committee (Mono Lake Committee, 1992).

Lee Vining's motto of "Gateway to Yosemite" partly describes this community's favorable geographical position only 14 miles from Yosemite National Park's eastern entrance at Tioga Pass. World renown Yosemite National Park hosts over 3 million tourists per year, approximately 500,000 or 15 percent of whom travel through the Tioga Pass entrance in the summer months (see Figures 2 and 3). Other outdoor recreation opportunities can be found in the Inyo National Forest which hosts 27 campgrounds in the Lee Vining Ranger District, and in the nearby Toiyabe National Forest.

Northeast of Lee Vining is the historic town of Bodie, the most well preserved and largest authentic ghost town in the country. This old gold mining town has come to personify the "rowdy" spirit of the old west. The town is now a State Historic Park that offers a museum and self guided tours.

Another popular visitor area in the project site vicinity is the June Lake Loop and its surrounding recreational opportunities. The June Lake Loop offers spectacular vistas, four alpine lakes, 14 miles of fishing creeks, and several trailheads to backcountry terrain. In the winter months, nearby June Mountain offers skiing on over 500 acres and access from eight chairlifts. June Mountain is visited by approximately 75,000 skiers and winter sports enthusiasts each year. Mammoth Mountain, a much larger ski area, is located approximately 45 miles to the south of the project site.

Interpretation of Mono Basin visitation estimates and California Department of Transportation (CALTRANS) average daily traffic volume counts of U.S. 395 and S.R. 120 reveals that 1000 vehicles per day (vpd) are, during the summer months, attracted to the local Mono Basin attractions. This latter volume represents 25 percent of the daily traffic volume on U.S. 395 and 50 percent of the daily volume on SR 120.

Figure 1 Mono County Population
1970 – 1992

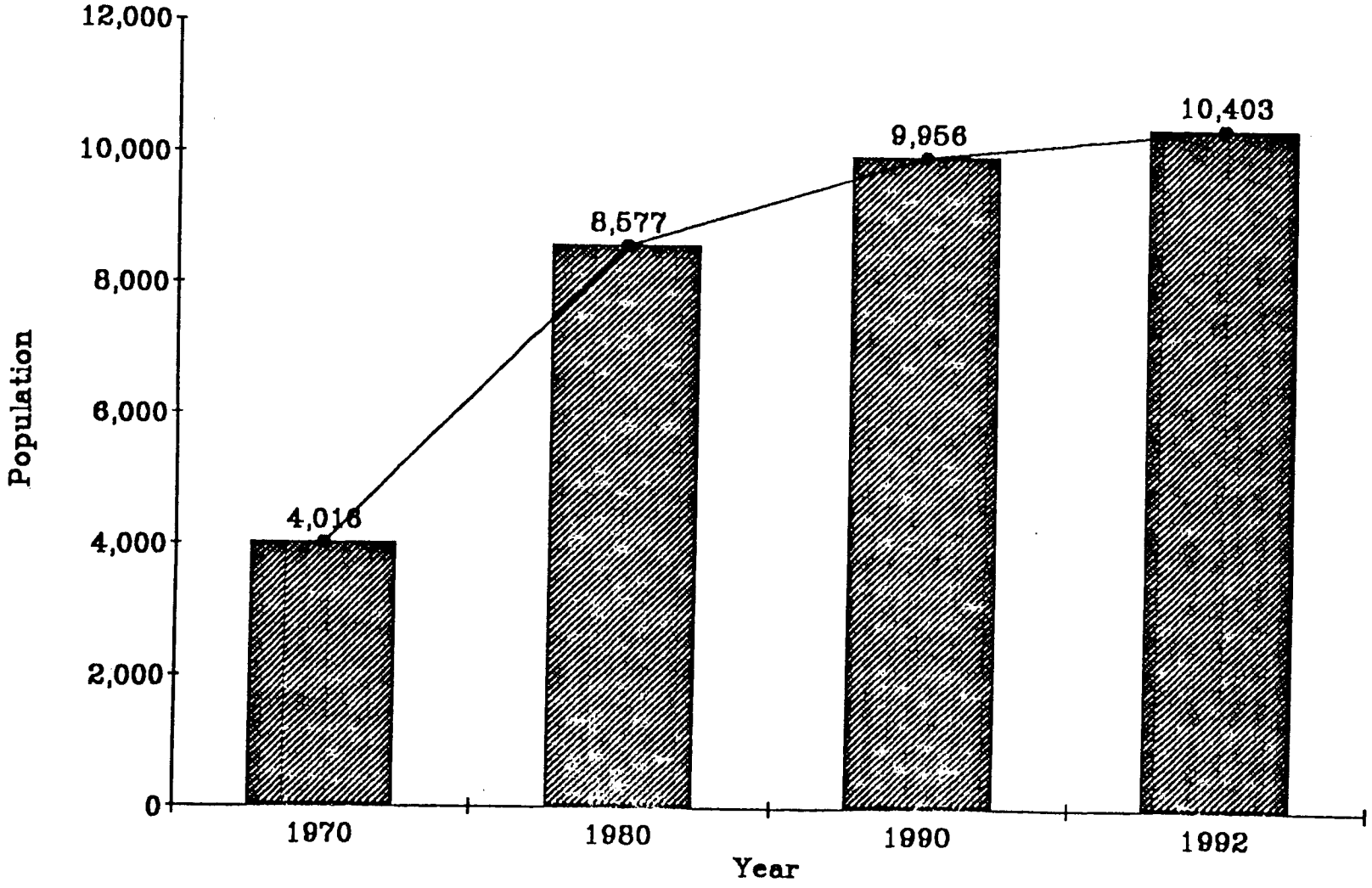


Figure 2 Yosemite National Park

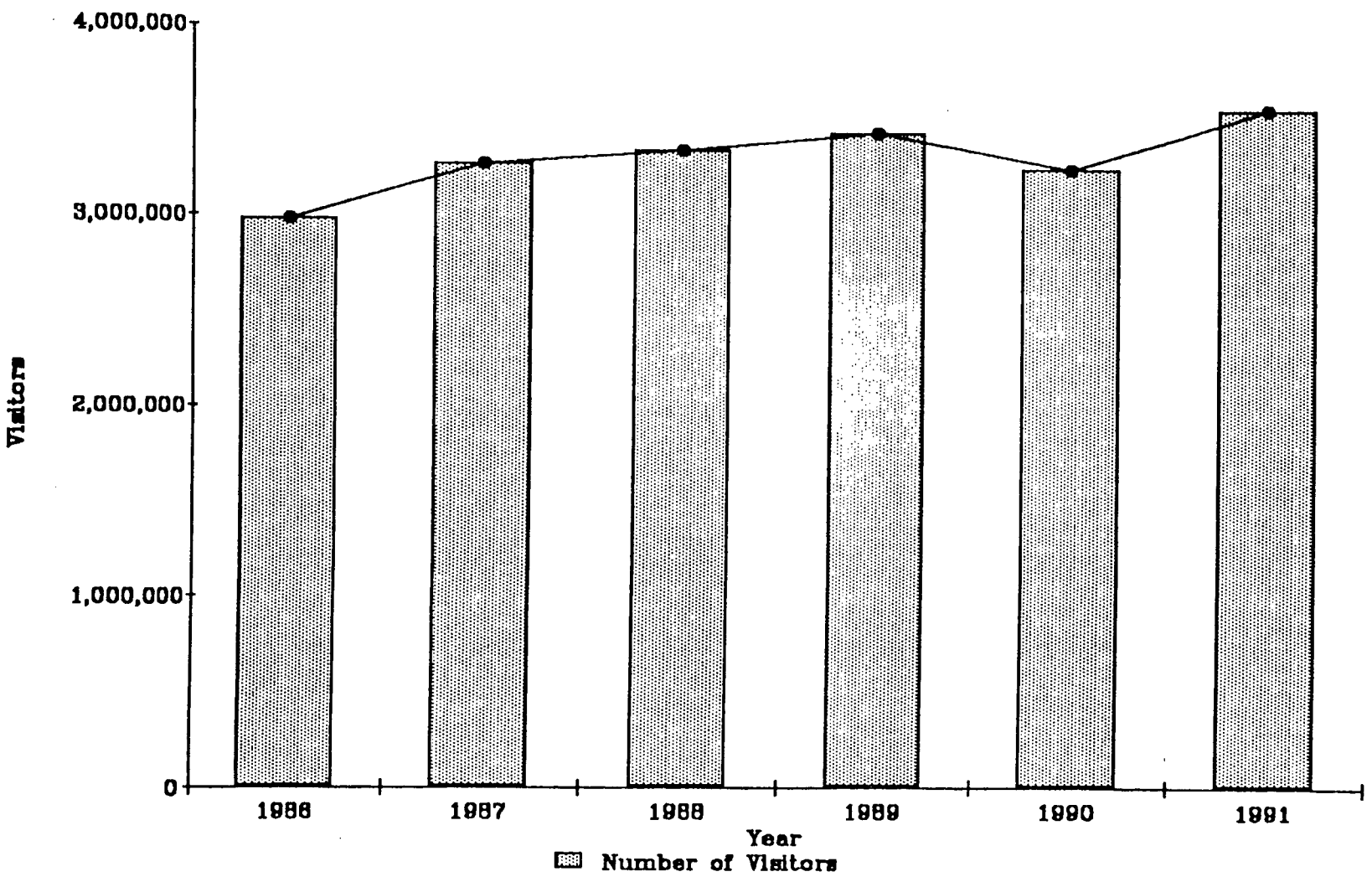


Figure 3 Yosemite National Park

Tioga Pass Entrance

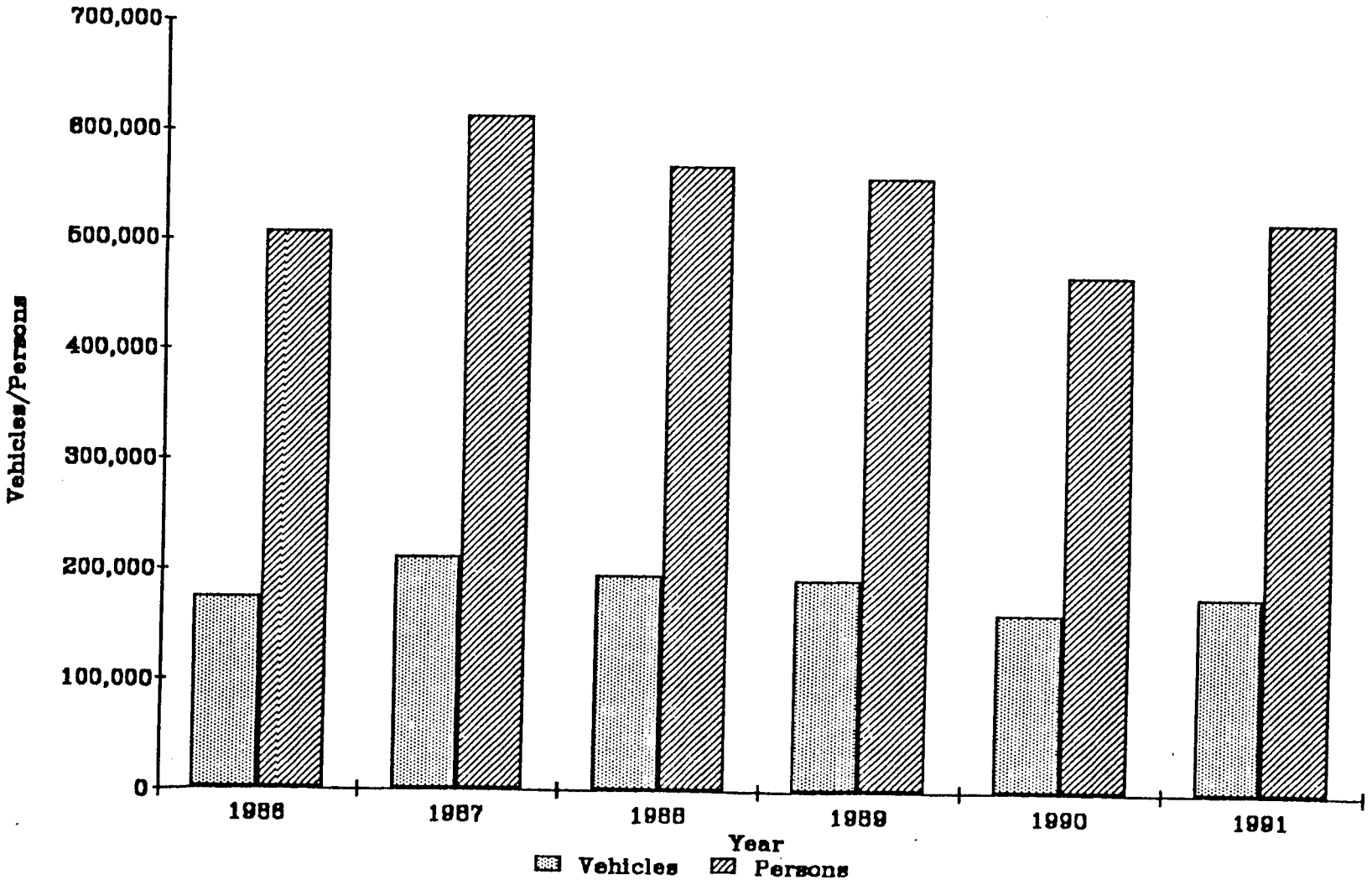


TABLE 1. 1990 MONO COUNTY EMPLOYEE COUNT BY INDUSTRY

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	AVERAGE
Federal Government	99	96	92	107	138	183	208	195	195	132	115	176	145
State Government	148	149	141	119	112	111	108	106	102	106	124	140	122
Local Government	865	725	732	651	659	735	524	528	664	712	701	570	727
Agriculture	48	53	51	60	65	73	77	79	77	72	60	42	63
Mining/Construction	381	351	365	429	479	584	648	720	693	571	559	541	535
Manufacturing/Transportation	41	41	39	44	46	50	46	47	49	41	40	46	44
Communications/Utilities	66	64	68	70	71	68	73	76	77	70	72	70	70
Wholesale/Building Materials/ Hardware	57	58	55	59	59	56	66	60	58	57	58	57	58
General Merchandise/Food Stores	97	92	98	81	92	108	206	217	218	177	170	174	141
Auto Dealers/Service Stations	56	51	50	56	63	65	83	82	73	53	52	54	62
Eating/Drinking Places	956	990	1,038	879	745	745	926	911	867	694	634	654	837
Miscellaneous Retail	356	350	357	293	274	275	290	291	286	267	305	309	300
Financial/Insurance/Real Estate	418	451	443	365	354	326	317	350	331	294	316	373	362
Hotels/Motels	2,225	2,183	2,128	1,813	997	993	1,055	1,040	1,010	891	1,010	898	1354
Personal/Business Services	63	68	64	70	53	60	50	60	63	65	56	62	61
Automotice/Miscellaneous Repair	46	41	44	49	46	50	51	46	44	49	50	50	47
Amusement/Recreation	59	57	54	78	61	79	70	63	59	48	40	46	60
Health/Legal Services	193	199	197	201	198	187	191	192	187	190	195	198	194
Education/Social Services/ Membership Organizations	140	141	138	113	104	121	99	91	95	84	85	90	108
Engineering/Accounting/ Management Services	85	94	92	84	91	100	103	101	98	133	123	125	102
Miscellaneous	10	9	8	12	8	6	15	11	8	10	9	7	9
Total Government	1,112	970	965	877	909	1,029	840	961	829	950	940	886	994
Total Private	5,297	5,293	5,289	4,756	3,806	3,946	4,366	4,437	4,293	3,766	3,834	3,796	4407
Total All Industries	6,409	6,263	6,254	5,633	4,715	4,975	5,206	5,266	5,254	4,716	4,774	4,682	5401

Hotel/Motels % of Total: 25%
Eating/Drinking Places % of Total: 16%

Source: California Employment Development Department, 1992.

MARKET AREA

A market area is defined as a geographic area from which future consumers of a proposed commercial project may originate. The proposed Tioga Inn development would consist of visitor-serving commercial uses. Residents of Lee Vining could also patronize the proposed restaurant and service station/mini-mart.

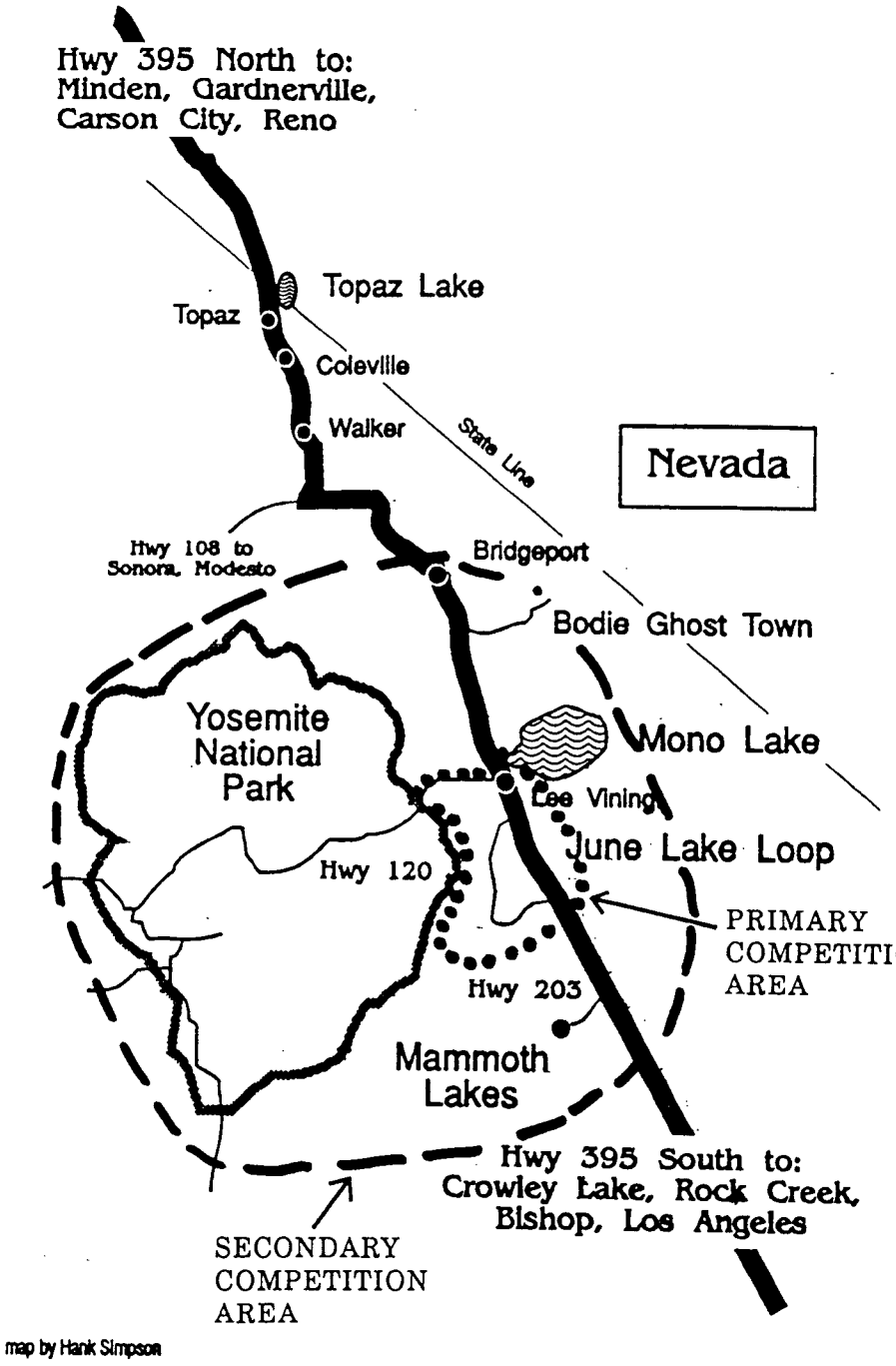
The primary market area is defined relative to the project site, where given a choice between similar alternatives, 75 to 85 percent of consumers will normally choose services located within this area. The secondary market area is the area where given a choice between similar alternatives, approximately 85 to 100 percent of consumers will normally choose services located within this area.

Estimation of the primary market area is based on a number of factors including kind of services, geographic position, quality of competitive services, proximity to visitor attractions, road access, driving times, and visibility. Different kinds of commercial uses (ie. hotel, restaurant, service station/mini-mart) can have different consumption patterns, hence different market areas.

The primary market area for lodging consists of Mono Basin and the area south to June Lake, east of Yosemite National Park (see Figure 4). Mammoth Lakes is excluded from the primary market area because it is approximately 35 miles south of the project site. Moreover, Mammoth Lakes is a destination vacation area with its own attractions, and the proposed hotel will not be in primary competition with the visitor attractions in Mammoth Lakes. Bridgeport was similarly excluded owing to its distance and lack of significant visitor attractions. The secondary market area for the proposed hotel extends south to Mammoth Lakes, north to Bridgeport, and, during summer, would also extend west to Yosemite National Park.

In summer, it is estimated that approximately 75 to 85 percent of visitors seeking lodging in the project site vicinity would stay within the primary market area. Nearly 100 percent of visitors seeking lodging would stay somewhere within the larger secondary market area which includes Yosemite National Park. The proposed site of the Tioga Inn is situated centrally, at the junction of two key highways (US 395 and SR 120), and close to the Lee Vining airstrip.

The primary market areas for restaurants and service stations/mini-marts are typically smaller than those for hotels. Convenience and attraction of passby traffic are the primary determinants for service stations/mini-marts. Consumers are less likely to travel more than a five mile radius to purchase similar services of food, automotive service, and mini-market goods. Because of this geographic limiting factor, a secondary market area is not considered meaningful for restaurants and service station/mini-marts. Therefore, the primary market area for the proposed restaurant and service station/mini-mart includes the community of Lee Vining only (see Figure 4).



earth metrics

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SCALE

NO SCALE

FIGURE 4. PRIMARY AND SECONDARY COMPETITION AREAS

LODGING DEMAND

Lodging demand in the primary market area varies seasonally and differs by community. Lee Vining receives the majority of its visitors between the months of May and October. This visitor pattern is consistent with the availability of nearby summer attractions (e.g., Mono Lake, Yosemite National Park, and the Inyo National Forest). Based on figures of monthly attendance at the Mono Lake Committee Information Visitor Center, it is estimated that on an annual basis approximately 65 percent of visitors visit Lee Vining in the dry season (June through September) and over 80 percent visit in the extended dry season (May through October). Lodging demand in Lee Vining follows this above seasonal pattern.

Approximately 75 percent of all Yosemite visitors are from California (Gramman, 1992). No formal visitor surveys have been completed for the Lee Vining area including Mono Lake, but the Lee Vining area could be expected to have hybrid tourist demographics combining those of Yosemite National Park and June Lake.

Lodging demand in June Lake is relatively less seasonal than lodging demand in Lee Vining owing to the winter attraction of June Mountain ski area. The June Lake Chamber of Commerce is currently performing a study to determine seasonal variations in tourism. Based on variations of lodging prices by season, it would appear that summer (May through September) and winter "ski weekend" demand are roughly equal.

Based on a report prepared by Quad Consultants, "Winter Population Survey: Mammoth Lakes/June Lake" (1983) average winter vacancy rates ranged from 24 percent in Mammoth Lakes to 30 percent in June Lake. Because of a drop in tourism experienced in the past two years during the nationwide recession, vacancy rates have been abnormally high.

In the summer motel/lodging survey conducted for the Yosemite Area Regional Transit Study approximately 44 percent of respondents indicated they would visit Mono County attractions (18 percent-Bodie Ghost Town, 17 percent-June Lake/Mammoth Lakes, and 9 percent-Mono Lake). Approximately 60 percent travelled by automobile or van. The motel/lodging survey was conducted by the Mariposa County Department of Public Works, in August and September 1991, at a total of 25 lodging places.

Of the 25 lodging places surveyed, three on Yosemite's east side were included (i.e., The King's Inn, Best Western Lakeview, and Gateway). Of the 443 survey questionnaires analyzed, approximately 11 percent (51 survey questionnaires) were survey questionnaires completed by guests at the three Mono County lodging facilities. If these 51 survey responses are excluded, then the proportion of "west-side" lodging patrons who also visited attractions on Yosemite's east side, but did not necessarily stay overnight on the east side, is 36 percent.

In a separate summer 1990 survey, called the Yosemite National Park (YNP) survey, approximately 24 percent of respondents stated they were spending at least one night in lodging in a nearby community. Approximately 6.5 percent of respondents noted specifically they were staying overnight in lodging on Yosemite's east side, from Mammoth to Bridgeport.

In number, these above Mariposa and YNP survey responses are equivalent to a potential 195,000 overnight visitors per summer season (1100 overnight visitors per day), who desire to stay at least one night in lodging on Yosemite's east side. At three persons per room average occupancy, this number equates to 65,000 booked room nights per season (350 booked room nights per day). A small proportion (one-in-six) of visitors attracted from Yosemite National Park to Mono Basin are currently attracted to stay overnight in Mono Basin. These numbers demonstrate that, in the summer season, bookings are

apparently constrained not only by visitor preferences in lodging but also by the limited supply of lodging in Mono Basin.

Lodging Supply And Competition

The proposed hotel would be unique among existing lodging facilities in the primary market area, that is, east of Yosemite National Park in the Lee Vining and June Lake vicinity. The proposed hotel would have 120 rooms, lobby, in-hotel restaurant, indoor pool, and health club. The estimated cost of an average room at the proposed hotel at opening is approximately $100 per night. On the eastern side of Yosemite National Park, there are currently no full service hotels of this type north to Lake Tahoe, and south to Mammoth Lakes. Within the primary market area, which is Mono Basin east of Yosemite National Park, 120 rooms would represent approximately 25 percent of the total supply of lodging rooms if the proposed Tioga Inn were built.

The recent growth in destination-type hotels on the western side of Yosemite shows the strong expected growth of tourism to the Yosemite area from the western side. The new Marriott Tenaya Lodge in Fish Camp and the proposed "Yosemite Springs Resort" are manifestations of the unmet or latent demand for major destination hotels in the Yosemite National Park area. Because there is currently no high-end, amenity-rich lodging near Yosemite's eastern entry, the proposed Tioga Inn could be expected to attract patrons to stay overnight, who intend to visit Yosemite's east side, but who would not normally seek overnight accommodations or would seek them elsewhere outside of Mono Basin.

The competitive supply of lodging in the primary market area is presented in Table 2. As review of Table 2 shows, the proximate competitors consist of motels (primarily in Lee Vining) or motel/cabins (primarily in June Lake). June Lake also has a number of condominium units for rent which were not included in this analysis because they are not considered to be like-kind lodging. The lodging in the primary market area most comparable to the proposed project is the Boulder Lodge in June Lake. The proposed Tioga Inn is more accessible from Yosemite than Boulder Lodge, being located on SR 120 east of Tioga Pass.

Within the secondary market area there are a number of hotels that would provide a similar level of service, amenities, and price as the proposed Tioga Inn. In Yosemite National Park, the Yosemite Lodge ($57-$90 per night), Ahwahnee Hotel ($177-$201 per night), and Wawona Hotel ($60-$80 per night) would be in a comparable range of service and price. On the western side of the park, the Marriott at Fish Camp would provide similar amenities at slightly higher prices. In Mammoth Lakes, Mammoth Mountain Inn ($69-$145 per night), Jagerhof Lodge ($69-$135 per night), Quality Inn ($69-$140 per night), Shilo Inn ($69-$110 per night), Sierra Lodge ($65-$85 per night), and Travelodge ($57-$105 per night) would be in a comparable price/amenity range as the proposed hotel.

Shift Share Analysis

As is common in new hotel developments in developed resort areas or other developed tourist destination areas, early business success typically depends upon competitive displacement or "shift" of patrons from existing lodging within the market area. Because the proposed Tioga Inn would be unique in Lee Vining in its provision of accommodations and amenities (rooms are expected to cost almost twice as much as the average in the area), competitive displacement can expected to be minimal and not sufficient to assure the proposed hotel's success. The viability of the proposed hotel would depend instead upon management's ability to attract summer visitors of Mono Lake/Mono Basin National Forest Scenic Area and Yosemite National Park to stay overnight.

Existing lodging in the primary market area would not be in direct competition with the proposed Tioga Inn for provision of like-kind services. Existing lodging in the primary market area would continue to serve the market for rooms in the $40 to $70 range; in contrast, the proposed hotel is planned to serve the higher-end, $100 to $150 range. One target market consists of the one-in-six Yosemite visitors who although interested in visiting attractions in Mono Basin seek overnight accommodations elsewhere outside the primary market area.

In summer, the proposed hotel could be expected to attain a maximum of 10 to 15 percent of its booked room nights from displacement of patrons of existing lodging within the primary market area. Most bookings would have to be obtained from the numerous visitors attracted to Mono Basin and Yosemite National Park who do not currently seek overnight accommodations or who currently seek accommodations elsewhere outside the primary market area. A modest percentage (3 to 5 percent) of patrons of existing lodging facilities in Mono Basin could potentially be attracted to upgrade to the $100 to $150 per night range from the $40 to $70 per night range. This estimate is approximate, based on the above-described dissimilarity of the proposed hotel accommodations and accommodations of existing lodging in the Mono Basin, and is intended to emphasize that displacement of patrons from existing lodging facilities in Mono Basin would not be sufficient for financial feasibility of the proposed hotel.

In winter, with Tioga Pass closed, the proposed 120-room hotel would be dependent upon displacement of patrons of existing lodging within the primary market area. Much of the winter attraction to the Mono Basin is derived from skiing. Based on shift share analysis, if the proposed Tioga Inn captured a proportionate share (25 percent) of the existing winter room bookings (45,000 booked room nights per season or 250 booked room nights per day), the proposed inn could potentially achieve 50 percent occupancy (60 booked room nights per day).

A proportionate share is expected when competing facilities are comparable and similarly located. The proposed Tioga Inn would generally have superior amenities and room accommodations, would be closer to the Lee Vining airport, but would be farther from the local ski areas. Mammoth Mountain ski resort, for example, is approximately 45 miles south of Lee Vining.

A smaller 60-room hotel in winter could potentially achieve 60 percent occupancy (35 booked room nights per day). This potential booking in winter is calculated from the same assumption of proportionate share of existing room bookings. The proportionate share for a new 60-room hotel is 14 percent, based upon the estimated existing supply of rooms in hotel-type lodging (360 rooms).

TABLE 2. HOTEL-TYPE LODGING WITHIN THE PRIMARY MARKET AREA

NAME	ROOM TYPE/RATE	UNITS	AGE
Best Western- Lakeview Lodge Lee Vining	Summer Sing. $65 Dbl. 75 Winter Sing. $47 Dbl. 57	47	No Information
Blue Skies Motel Lee Vining	Summer Sing. $37 Dbl. 60 Winter Closed	11	50+ Yrs.
El Mono Motel Lee Vining	Summer Sing. $49 Dbl. 65 Winter Closed	10	65 Yrs.
Gateway Motel Lee Vining	Summer Sing. $69 Dbl. 74 Winter Sing. $35 Dbl. 45	12	40 Yrs.
King's Inn Lee Vining	Summer Sing. $45-48 Dbl. 51 Winter Closed	14	56 Yrs.
Murphey's Motel Lee Vining	Summer Sing. $63 Dbl. 73 Winter Sing. $44 Dbl. 51	44	2-30 Yrs.

(CONTINUED)

TABLE 2 (CONTINUED). HOTEL-TYPE LODGING WITHIN THE PRIMARY MARKET AREA

NAME	ROOM TYPE/RATE	UNITS	AGE
Whispering Pines June Lake	Summer (Aug. & Holidays) Dbl. Motel - w/kitchen $55 Winter Dbl. Motel - w/kitchen $60	65	0-30 Yrs.
June Lake Motel and Cabins June Lake	Summer (July to August) Dbl. Motel $50 Winter (weekend) Dbl. Motel $52	26	20+ Yrs.
June Lake Village June Lake	Summer (weekend/holiday) Dbl. Motel $59 Winter Dbl. Motel $54	22	Approx. 20+ Yrs.
Boulder Lodge June Lake	Summer (July - August) Dbl. Motel $75 Winter (holiday) Dbl. Motel $68	60	36 Yrs.

Source: CERTIFIED/Earth Metrics, 1992.

Lodging Demand Conclusions

CERTIFIED/Earth Metrics estimates that the proposed 120-room hotel would in the long-term (after five years of operation) be able to achieve an average occupancy rate of 85 percent or better during the summer months (May through October), and 50 percent occupancy in the winter months (November through April). The former summer rate is based on the preceding analysis which demonstrates demand for lodging by visitors of Mono Basin and limited supply. The latter winter rate is based on the reasoning presented previously that the proposed Tioga Inn could potentially capture a proportionate share (25 percent) of winter bookings in "east-side" lodging. The lower winter occupancy level results from winter closure of Tioga Pass, lack of winter attractions in the immediate area of Lee Vining, and availability of competitive lodging in June Lake and Mammoth Lakes.

The nation and region are in an economic recession. Travel by Americans including Californians is in a slump. Considering these current market factors and competitive factors, it is the opinion of CERTIFIED/Earth Metrics that in the first year of operation, the proposed 120-room hotel could attain average occupancy rates of 65 percent at $100 per room night in the "summer" months (May to October), and 40 percent at $74 per room night in the "winter" months (November to April). As summer occupancy rates improve to 85 percent or better in subsequent years, summer room rate increases of approximately 4 to 5 percent per year would be attainable.

In summer the proposed Tioga Inn hotel could achieve a strong level of market support while not displacing a significant number of patrons from existing lodging in Mono County. In winter with the closure of Tioga Pass the proposed hotel would be dependent upon displacement of patrons of existing lodging in Mono County. These conclusions follow from the market analysis and market conditions presented herein and summarized below:

- The facilities, services, and quality of accommodations of the proposed hotel could be unique in the primary market area.

- The project site location is ideal for attracting visitors from Yosemite National Park and Mono Lake. Specific attractions to the site are the panoramic views of the surrounding Mono Basin and its proximity to Yosemite's Tioga Pass entry.

- The proposed hotel in summer could attract tourists to stay overnight in the Lee Vining area, satisfying the latent demand of 6.5 percent of existing Yosemite National Park tourists for lodging in Mono Basin, rather than shifting patrons from existing Lee Vining lodging.

- Growth in popularity of Yosemite National Park as a national and international tourist destination, combined with the limited amount of lodging inside the park boundaries, enhances the long-term outlook for peripheral hotels including the proposed Tioga Inn.

- In winter the proposed Tioga Inn could attract some of the existing patrons of June Mountain and Mammoth Mountain ski areas to stay overnight at the proposed inn. For a new 120-room hotel a proportionate share of the market is estimated to be 25 percent or, equivalently, 60 booked room nights per day. Some of this potential represents spillover from Boulder Lodge in June Lake.

RESTAURANT DEMAND

The proposed development would include two restaurants: a coffee shop style restaurant located within the hotel building and a separate 100 seat restaurant located on top of the site's eastern ridgeline. This analysis focuses on the separate 100 seat restaurant (the "proposed restaurant"). The proposed restaurant is expected to have lunch entrees in the $6.00 to $10.00 range and dinner entrees in the $12.00 to $22.00 range. The restaurant would also offer panoramic views of the Mono Basin area.

The primary market area would consist of the Lee Vining area only. Given a choice among similar alternatives, 95 percent of consumers, including guests of the proposed Tioga Inn, would be expected to eat within a 10 mile radius of the project site.

Restaurant Supply and Competition

A list of restaurants and entree price ranges in the Lee Vining area is presented in Table 3. As Table 3 shows, the proposed restaurant would compete with a number of restaurants in both the lunch and dinner trades. The main competitors for the lunch trade would be Nicely's, Blue Skies (open in summer only), and the Yosemite Trails Inn. The main competitors for the dinner trade would include the Yosemite Trails Inn and the Mono Inn (open in summer only).

TABLE 3. RESTAURANTS WITHIN THE PRIMARY MARKET AREA

RESTAURANT	LUNCH $	DINNER $	OPEN
Blue Skies	$4.25 - $8.00	$4.25 - $8.00	Summer only
Bodie Mike's	N/A	N/A	Summer only
Kellogg's	N/A	N/A	N/A
Mono Cone	N/A	N/A	Summer only
Mono Inn	N/O	$9.50 - $16.00	Summer only
Nicely's	$3.25 - $5.00	$6.95 - $10.95	Year round
Yosemite Trails Inn	$4.00 - $6.30	$8.95 - $15.95	Year round

N/A - Not available at time of survey
N/O - Not open

Source: CERTIFIED/Earth Metrics, 1992.

The location of the proposed restaurant has good visibility and access from both US 395 and SR 120. This preferred location could enable market penetration into the tourist restaurant market.

The proposed restaurant would derive its core of patronage from guests of the proposed hotel. Their patronage can be expressed in summer and winter seatings. For the proposed 120-room hotel, the baseline number of seatings in summer could potentially be 200 seatings per evening (two turns per evening). In winter, the baseline number of seatings could potentially average 120 seatings per evening (1.2 turns per evening). A "turn" or "turnover" refers to the number of times the tables at the restaurant would be used in one evening. The above baseline estimates are based soley on the core or "baseline" patronage of hotel guests.

Shift Share Analysis

Owing to direct competition between the proposed restaurant and select existing restaurants in Lee Vining (i.e., Mono Inn and Yosemite Trails Inn), the proposed restaurant could potentially shift a percentage of existing business. Maximum patronage shift, during the first two years of the proposed restaurant's opening, is estimated based upon the concept of proportionate market share. Expressed as a percentage of the lunch and dinner trade in Lee Vining area restaurants, the maximum percent shift is 20 to 25 percent (average three percent per restaurant for each of the seven existing restaurants open in summer). Patronage shift could vary among individual restaurants.

This above percent shift of the existing lunch and dinner trade to the proposed restaurant is the maximum, near-term shift conservatively estimated based upon simple shift share analysis. The actual shift could potentially be less owing to mitigating factors:

i) co-location. The proposed hotel, service station, and restaurant would tend attract new lunch and dinner patrons among highway travellers and hotel guests rather than shift patrons away from existing Lee Vining area restaurants; and,

ii) principle of comparability. The proposed restaurant entree prices as conceived by the project applicant are relatively higher compared to those of the existing competitive restaurants.

In the long-term, within five years of opening, the proposed hotel/restaurant is expected to capture enough trade consisting of highway travellers, hotel patrons attracted to stay overnight, and Yosemite National Park/Mono Basin visitors, that there would be a net increase in the local lunch and dinner business. Additional business attracted by the proposed project after two years could also have a positive "spill-over" effect upon the existing local restaurants (e.g. Nicely's) and other businesses in Lee Vining.

Restaurant Demand Conclusions

CERTIFIED/Earth Metrics estimates that the proposed restaurant could achieve a baseline summer season seating of 50 to 60 percent of capacity within two years. Capacity is three turns per evening or, equivalently, 300 seatings. With establishment of market identity in ensuing years, capacity levels of 70 to 80 percent (210 to 240 seatings per evening) could be achievable.

In the winter season, restaurant patronage is likely to be reduced from the summer levels as described in the discussion entitled "Lodging Demand Conclusions." In winter, baseline seating of 30 to 40 percent of capacity could be achievable within two years. In ensuing years capacity levels of 50 to 60 percent (150 to 180 seatings per evening) could be achievable.

The above estimates are based on core or baseline patronage by hotel guests. Shift share analysis demonstrates that maximum restaurant patronage shift from the existing Lee Vining area restaurants to the proposed restaurant could be 20 to 25 percent. The maximum shift is not expected owing to mitigating factors described above.

The proposed 100 seat restaurant could potentially achieve a high level of market support owing to the following factors:

- Excellent location, visibility, and access from US 395 and SR 120.
- Unique restaurant location that would provide panoramic views.
- Creation of restaurant market demand from the hotel portion of the proposed project.

SERVICE STATION/MINI-MART DEMAND

The proposed project would also include a service station and mini-mart. The service station/mini-mart would be located at the main entrance to the development near the existing scenic turn-out on SR 120, south of US 395.

Service Station/Mini-Mart Supply and Competition

The market area for a service station/mini-mart is geographically limited by consumer preferences purchase fuel and convenience food and other convenience within a short distance of the consumer's travel path. Location is the most important determinant in the capture of trade at service stations. When a motorist needs to purchase gasoline, he/she generally does so at the closest possible, or most convenient service station. Only gross price differences or credit card/brand name loyalty between competitive suppliers could potentially sway this general consumer preference for convenience. For this reason, the primary competition area for the proposed service station/mini-mart at its largest consists Lee Vining.

Average daily traffic (ADT) volumes on U.S. 395 and SR 120 are illustrated in Figure 5. These figures reflect ADTs, in both directions combined, counted on US 395 south of SR 120, and on SR 120 at US 395. As is evident in Figure 5, US 395 carried at least 4000 vehicles per day (vpd) and SR 120 carried at least 2300 vpd, in each year during 1987 to 1991. This traffic volume has supported three service stations in Lee Vining.

Lee Vining currently has three service station/mini-mart combinations: B-P, Chevron, and Union 76. The Blue Skies Motel also has a mini-mart, but is not considered competitive owing to its lack of a service station element. These above three service stations are located within a quarter of a mile of each other in downtown Lee Vining.

The proposed service station/mini-mart would achieve a high degree of market capture owing to its superior highway visibility and location on SR 120 and near US 395. With name-brand recognition and competitive pricing, it could attain a high percentage share of the business of motorists. The proposed project would create some demand for the service station from patrons of the proposed hotel and restaurant, and the service station itself could potentially attract business to the proposed coffee shop and gift shop.

Shift Share Analysis

Patronage of the existing service stations in Lee Vining would be shared with the new service station at the proposed project. Based on existing traffic volumes and preferred location on US 395 and SR 120, the proposed service station could be expected to capture at least a proportionate share (25 percent) of fuel and mini-market sales from existing service providers in Lee Vining.

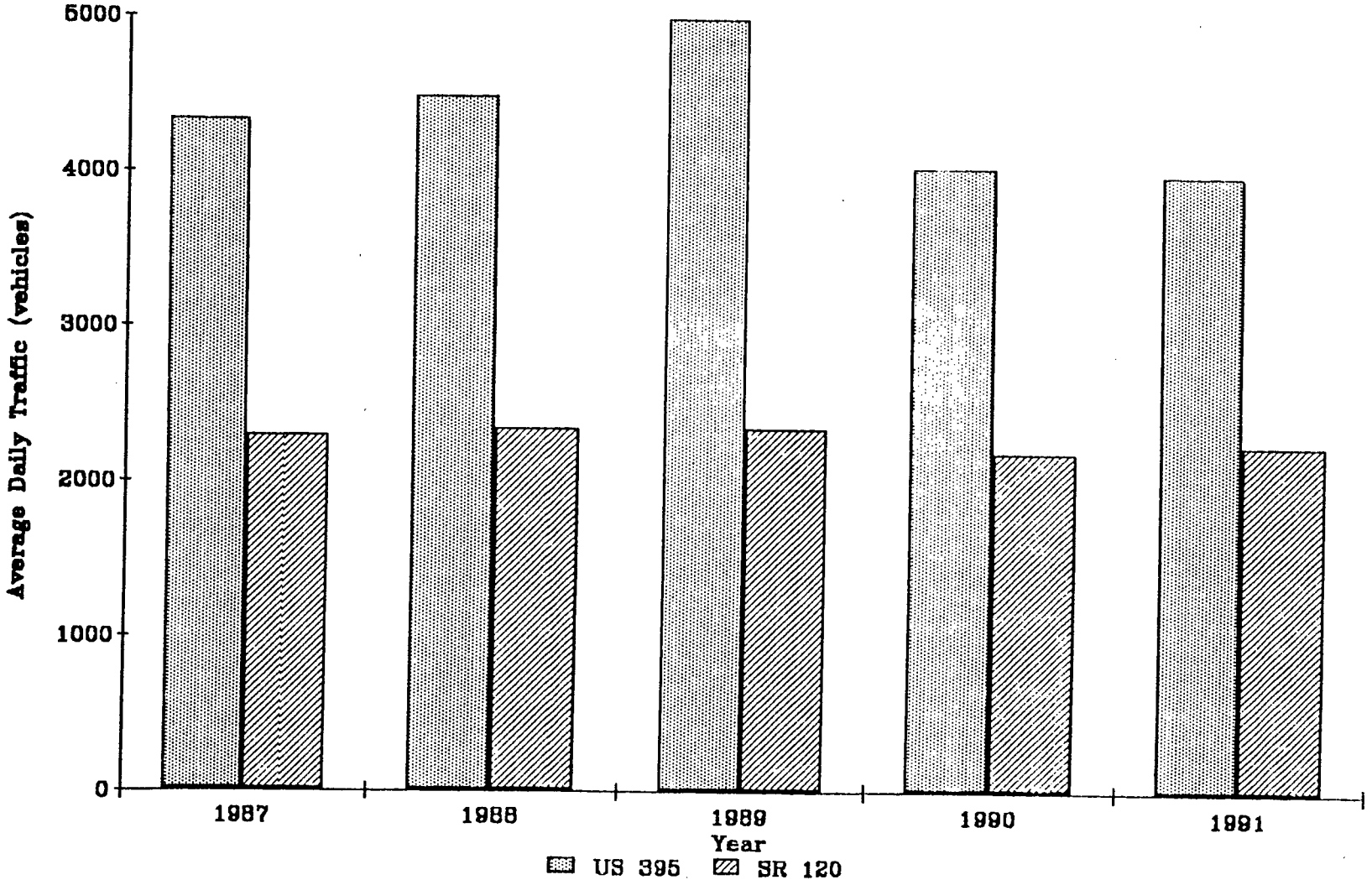
The existing service stations (B-P, Chevron, and Union 76) could potentially continue to operate at reduced shares of patronage consisting of motorists travelling north/south on US 395 and other motorists who have strong brand-name loyalty. It is also possible that one of the existing service station operators could seek to relocate at the proposed site rather than operate at 75 percent of his existing business volume.

Service Station/Mini-Mart Demand Conclusions

The proposed service station/mini-mart could attain at least a proportionate share of the trade in the Lee Vining area for the following reasons:

- Preferred location, visibility, and access from US 395 and SR 120.
- Creation of service station/mini-mart market demand by the hotel and restaurant portions of the proposed project.

Figure 5 Average Daily Traffic Volume
U.S. 395 and S.R. 120



3. FISCAL IMPACT ANALYSIS

The following fiscal analysis focuses on evaluating potential fiscal effects of the proposed project on Mono County. The analysis addresses the direct changes in revenues and public service costs resulting from the proposed project. As most of the on-site infrastructure improvement cost would be provided by future developers, on-site capital improvement costs are not included as part of this analysis. Other jurisdictions (State of California, U.S. Forest Service, etc.) could also be fiscally affected by the implementation of the proposed project. The proposed project would be expected to favorably impact the tax and revenue collection of the county.

EMPLOYMENT

The proposed project, at full build-out, would be expected to generate an estimated 108 permanent and/or seasonal jobs (see Table 4) and an undetermined number of temporary construction related jobs. Based on an average household size in the unincorporated areas of Mono County of 2.56 persons, at 100 percent occupancy the housing portion of the proposed project (ten units) could be expected to house up to 26 persons including employees of the proposed project. This additional employment would also result in generation of local sales tax and property tax revenues by the employed residents, would be a positive fiscal benefit to the county.

TABLE 4. PERMANENT AND SEASONAL EMPLOYMENT PROJECTIONS FOR THE PROPOSED TIOGA INN PROJECT

BUSINESS	EMPLOYMENT DENSITY (1)	EXPECTED EMPLOYMENT
Hotel	0.67 employees/room @ 120 rooms	80
Restaurant	0.22 employees/seat @100 seats	22
Service Station with Mini-Mart	6 employees/station	6
Total		108

(1) Average employment densities from Trip Generation (1991). Hotel employment density of 0.67 per room is average of hotel and motel densities.

Source: Trip Generation Institute of Transportation Engineers (1991), and CERTIFIED/Earth Metrics (1992).

REVENUE GENERATION

Three main sources of locally generated tax revenue in the county are property taxes (secured and unsecured), sales/use taxes, and transient occupancy tax which collectively accounted for approximately 95 percent of the total collected taxes in Mono County in fiscal year 1990-1991 (Mono County Final Budget, County Assessor's Office, 1992). The main license fees and permit fees the proposed project can be expected to generate are pool and food permits, business license fees, construction permits, and well and septic permit fees. The estimated taxes, license fees, and fees that would be generated by the proposed project are detailed below.

Property Tax Revenue

The project site (Assessors Parcel Numbers 21-08-11 and 12) has an assessed value of $154,069 (Mono County Tax Assessor, 1992). At a property tax rate of one percent, the county currently collects $1,541 in property tax revenue per year from the project site. The proposed project would substantially increase the assessed value of the subject property because of the addition of the proposed improvements.

Table 5 presents the estimated increase in the assessed value of the property and improvements. The estimated construction cost of the proposed project was adjusted by 25 percent to reflect an estimated assessed value of the project improvements (Mono County Assessor's Office, 1992).

The hotel portion of the project would have an estimated assessed value of approximately $4.2 million. The restaurant and service station/mini mart together would have an estimated assessed value of $757,000. The proposed five duplex housing units would have an estimated assessed value of $1.2 million. The proposed project, property and improvements, at full buildout, would have an estimated assessed value of $6.32 million and generate an estimated $63,217 in property tax revenue in 1992 dollars.

TABLE 5. ESTIMATED PROPERTY TAX REVENUE FOR THE PROPOSED TIOGA INN PROJECT

PARCEL NUMBER	CURRENT ASSESSED VALUE	CURRENT PROPERTY TAX @ 1%
21-08-11	$117,678	$1,177
21-08-12	36,391	364
Subtotal	$154,069	$1,541

PROPOSED IMPROVEMENTS	ESTIMATED COST OF CONSTRUCTION	ADJUSTMENT (25%)	ESTIMATED PROPERTY TAX
Hotel	$3,383,325	$4,229,156	$42,292
Restaurant and Service Station/mini-mart	$605,745	$757,181	$7,572
Houses (Ten Units)	$945,000	$1,181,250	$11,813
Subtotal	$4,934,070	$6,167,588	$61,676
TOTAL (Existing with Improvements)		$6,321,657	$63,217
NET INCREASE IN PROPERTY TAX			$61,676

Source: Mono County Tax Assessor, 1992.
CERTIFIED/Earth Metrics, 1992.

Transient Occupancy Tax

The proposed project would include a 120-room, full service hotel (see Section 2, Market Analysis). Based on market projections, the proposed hotel could ultimately be expected to achieve an average occupancy rate of 85 percent during the "summer months" of May through October. The winter occupancy rate is estimated to average 50 percent. Given an average summer room rate of $100 per night and an average winter room rate of $74 per night, the proposed hotel could be expected to generate approximately $213,000 per year (1992 dollars) in occupancy tax revenue by the fifth year after opening. This figure is net additional transient tax revenue, which accounts for 10 percent shifted patronage from other existing lodging in the county (see Table 6). In the initial years if the proposed hotel were open only in the summer or extended summer season, the transient tax increment received by Mono County from the proposed Tioga Inn would be at least $114,000.

TABLE 6. ESTIMATED TRANSIENT OCCUPANCY TAX REVENUE FROM THE PROPOSED TIOGA INN (EXPRESSED IN 1992 DOLLARS)

PERIOD	AVERAGE OCCUPANCY RATE (%)	BOOKED ROOM NIGHTS	ROOM REVENUE	TAX REVENUE AT 9 PERCENT
Summer (May-October $100/night	85	18,360	$1,836,000	$165,240
Winter (November-April) $74/night	50	10,860	803,640	72,328
Year One(a)	65(a)	14,040	1,404,000	
Year Two(a)	74(a)	15,984	1,598,400	
Year Three(b)	55	24,090	2,213,860	
Year Four	65	28,470	2,556,060	
Year Five and Later	67.5	29,220	$2,639,640	$237,568
Shifted Patronage Adjustment (-10%)				$213,811

Notes: All revenue is expressed in uninflated 1992 dollars.

(a) Hotel open in summer season only. Occupancy is for six months.

(b) Hotel opens in winter season. Occupancy is the annual occupancy rate.

Source: CERTIFIED/Earth Metrics, 1992.

Sales Tax

The proposed project would generate additional sales tax revenue for Mono County. The county currently collects sales tax on all taxable sales at a rate of 7.25 percent. One percent of all sales generated at the project site (except hotel rooms and nontaxable food items) would return to Mono County. An additional 0.25 percent of sales generated at the project site would also return to the county in the form of transportation funds. Therefore, Mono County can expect to receive 1.25 percent of taxable sales from the project site.

The estimated sales and sales tax revenue of the proposed project are presented in Table 7. Sales tax calculations assume full project build-out of all ancillary commercial elements (i.e., gift store, service station, minimart, 100 seat restaurant and coffee shop) and are expressed in uninflated 1992 dollars, that is, as if the taxable sales were at today's prices.

TABLE 7. ESTIMATED SALES TAX REVENUE FROM THE PROPOSED TIOGA INN PROJECT

BUSINESS	ESTIMATED ANNUAL SALES (a)		COUNTY SHARE OF SALES TAX REVENUE (1.25%)
Restaurant	Hotel guests	$1,470,000	
	Other patrons	800,000	
	Subtotal	$2,270,000	$28,375
Service Station/ Mini-Mart	3 year average of all service stations in Mono County = $227,400 per station + 10% adjustment		
	Subtotal	229,600	2870
TOTAL		$2,299,000	$31,245
INCREMENT - Accounting for 25 percent shifted patronage (b)			$28,000
- Accounting for maximum shifted patronage and relocation of one service station to Tioga Inn (c)			$18,375

(a) Assumes full operation in year five after initial startup. Sales are expressed in uninflated 1992 dollars.

(b) Shifted patronage adjustment is applied only to "restaurant--other patrons" and "service station/mini-mart." It is not applicable to "restaurant--hotel guests" which guests are assumed to be attracted to the area because of the hotel and, therefore, do not represent patrons shifted from existing restaurants.

(c) Maximum patronage shift is defined as follows: $800,000 per year of the proposed restaurant's trade is shifted from existing restaurants and one of the existing three service stations relocates to the Tioga Inn site.

Source: CERTIFIED/Earth Metrics, 1992.

The estimated taxable sales of the proposed 100 seat restaurant and coffee shop were calculated in two different ways: i) by restaurant patronage of hotel guests only and ii) by restaurant seating capacity and average per person meal tabs. CERTIFIED/Earth Metrics conservatively estimated that at full project buildout, the restaurant could be expected to attain nearly 100 percent of the business of hotel patrons. The average per person restaurant receipt, with appetizer, entree, and beverages, was estimated at $8.00 for lunch and $17.00 for dinner. The proposed restaurant could potentially generate an estimated $1.47 million per year in gross food and beverage sales to hotel guests. Based upon seating,--two seatings or "turns" at dinner and three at lunch, 65 percent seating, and restaurant service 300 days per year,--the project restaurant could generate total receipts of $2.27 million per year (see Table 7).

The estimated taxable sales of the proposed service station/mini-mart were calculated by averaging the per station taxable sales in Mono County from 1989 - 1991 based on State Board Equalization taxable sales data. As all service stations in Mono County do not contain mini-marts, this figure was adjusted upward by 10 percent. The proposed service station/mini-mart was estimated to generate approximately $229,600 in sales, and $2870 in annual sales tax revenue to the county (1992 dollars).

All of the taxable sales generated by the proposed project would not reflect "new" business or incremental sales tax in Mono County. A portion of the sales volume at the project site would represent shifted patronage from the competitors in the Lee Vining and June Lake area. CERTIFIED/Earth Metrics conservatively estimates that 25 percent of specified taxable food and retail sales of the proposed project could potentially reflect shifted patronage or spending that could have occurred elsewhere at existing outlets in the county. The sales tax figures in Table 7 were adjusted accordingly.

Several fees would be collected by Mono County. The purpose of the fees listed below is to pay for the costs of specified service provision by Mono County. Fees are summarized in Tables 8 and 9.

TABLE 8. OTHER ANNUAL REVENUE FROM THE PROPOSED TIOGA INN

FEE	UNITS	FEE PER YEAR
Business Licenses		
$25 per business	3	$75
Pool Permits		
$60 per pool or spa +	1	$60
$50 per additional unit	1	$50
Food Permits		
Variable amount based on restaurant size 100 seat restaurant = $140 per year	1	$140
TOTAL		$325

Source: CERTIFIED/Earth Metrics, 1992.

TABLE 9. ONE-TIME FEE REVENUE FROM THE PROPOSED TIOGA INN

Building Permit Fees

IMPROVEMENTS	COST OF CONSTRUCTION	PERMIT REVENUE
Hotel	$3,383,325	$37,924
Restaurant Gas Station/Mini-Mart	$605,745	8,140
Homes	$945,000	$12,889
TOTAL	$4,934,070	$58,953

School Impact Fees

CONSTRUCTION TYPE	SQUARE FOOTAGE	REVENUE
Commercial @ $0.26/square foot	60,700	$15,782
Residential @ $1.56/square foot	13,500	$21,060
TOTAL	74,200	$36,842

Well and Septic Permits

SYSTEM	NUMBER ON SITE	PERMIT REVENUE
Commercial Septic @ $25 per system	1	$25
Residential Septic @ $50 per system	1	$50
Commercial Well @ $100 per Well	1	$100
Residential Well @ $50 per Well		$50
TOTAL		$225

Source: CERTIFIED/Earth Metrics, 1992.

Business License Fees

Mono County would receive approximately $75 for new business licenses see Table 8).

Pool And Food Permit Fees

The Mono County Health Department collects annual fees for pools, spas, and restaurants in the county. The current annual fee for a commercial pool is $60 per pool or spa, plus an additional $50 per year for each additional pool or spa. The proposed project is expected to have a pool and a spa which would generate $110 per year in annual permit revenue.

The annual Health Department fee for restaurants varies depending on the size of the restaurant. The current fee for a 100 seat restaurant is $140 per year (see Table 8).

Construction Permit Fees

The county collects one time construction permit fees based on the estimated construction cost of a proposed project. Table 9 presents the estimated construction costs of the proposed project at build-out and the estimated permit fee revenue. The county can expect to collect an estimated $58,953 in construction permit fee revenue from the proposed project (see Table 9).

Well And Septic Permit Fees

The Mono County Health Department collects one time fees for private well and septic system permits, both of which are proposed as part of the project. The current health department fee for well permits is $50 per residential well, and $100 per commercial well. The current fee for septic systems is $25 per residential system and $50 per commercial system. The proposed project would have one commercial and one residential well which would generate $150 in fee revenue. The project would have one residential and one commercial septic system, generating $75 in fee revenue. The Mono County Health Department can expect to collect at least $225 in one time well and septic permit fees (see Table 9).

School Impact Fees

Owing to overcrowding of many of California's schools, the state has authorized school districts to collect school impact fees from development projects. These fees are designated for the construction of school facilities and are intended to mitigate the student generation impacts of development projects. The project site is located within the boundary of the Eastern Sierra Unified School District. The district currently collects fees of $0.26 per square foot of commercial development and $1.56 per square foot of residential development. Table 9 shows the estimated school impact fee revenue generated from the proposed project at full buildout. At the proposed building density, the proposed project can be expected to generate approximately $36,842 in one time school impact fee revenues (see Table 9).

Fire Impact Fees

The Lee Vining Fire Department would receive fire mitigation fees of $0.50 per square foot of covered structure (Strazdins,1992). The total fire mitigation fee is estimated to be $37,100 based on a total of 74,200 proposed square feet.

TAX AND FEE REVENUE SUMMARY

Within five years at full buildout of all commercial elements, the proposed project could be expected to generate an estimated $304,000 incrementally to Mono County in additional annual local taxes and annual fee revenues. The county could also expect an estimated $133,000 in one time fee revenues (see Table 10). One-time fee revenues are intended to cover the cost of specified services provided by Mono County and do not, therefore, represent any budget surplus.

TABLE 10. REVENUE SUMMARY FOR MONO COUNTY FROM THE PROPOSED TIOGA INN

REVENUE SOURCE	ONE-TIME FEES	ANNUAL REVENUE First Year	ANNUAL REVENUE Fifth Year
Property Tax		$63,217	$63,217
Sales Tax		18,000	28,000
Transient Occ. Tax		114,000	213,000
Business Licenses		75	75
Pool Permits		110	110
Food Permits		140	140
Building Permits	$58,953		
School Impact Fee	$36,842		
Fire Mitigation Fee	$37,100		
Well and Septic Permits	$225		
TOTAL	$133,120	$195,000 (rounded)	$304,000 (rounded)

Source: CERTIFIED/Earth Metrics, 1992.

4. PUBLIC SERVICE COSTS

FIRE DEPARTMENT

Mr. Tom Strazdins of the Lee Vining fire station was contacted to assess the potential fiscal impact of the proposed project on the fire station. The Lee Vining area is served by an all volunteer fire department. The Lee Vining area is served by one station located in town. This station is equipped with a total of three trucks including one rescue truck and two structure rigs with 35 foot ladders. The volunteer man power includes a total of 20 volunteers.

Mr. Strazdins stated that new equipment could potentially be required as a result of the proposed project. Mr. Strazdins also noted that he is familiar with the proposed project plan for Tioga Inn. Sprinklering, hydrant placement, and water storage requirements would be reviewed by the Fire Department as part of the Building Permit process. Mr. Strazdins was particularly concerned with the water system which he understood to be a private well system, not Lee Vining's municipal water system.

COUNTY SHERIFF

Lieutenant Padilla of the Mono County Sheriff's office was contacted to assess the potential fiscal impact of the proposed project on law enforcement. Police protection in the Lee Vining area is served by the Mono County Sheriff's office. Sheriff deputies based in Bridgeport routinely patrol the Lee Vining area from 8:00 A.M. to 12:00 P.M. The area employs a residential deputy system where local residents are on-call for any potential law enforcement needs 24 hours per day. These deputies are reimbursed on a per call basis. The Sheriff's office currently utilizes two residential deputies in June Lake and one in Lee Vining. Calls in the area are generally for family disturbances and bar fights. Calls for disturbances at local hotels is generally very light (Padilla, 1992).

Lt. Padilla did not foresee any need for additional personnel, equipment, or patrolling resulting from the proposed project.

SCHOOLS

Mr. Rick Miller, Superintendent of the Eastern Sierra Unified School District, was contacted to determine the potential fiscal impact of the proposed project on schools. The Lee Vining area is served by the Eastern Sierra Unified School District which administers Lee Vining Elementary and Lee Vining High School. The high school currently enrolls approximately 51 students and has no capacity problem. The elementary school currently enrolls approximately 120 students and is close to capacity (Miller, 1992).

At an average student generation rate of 0.4 students per household (grades K-6), the proposed 10 housing units would be expected to generate approximately four new elementary students. Also, a portion of the estimated permanent employment generated by the proposed project could potentially represent new residents to the community and, hence, children of these employees of the proposed project could add to the current school enrollment. If this student generation falls mainly in the elementary grades, Lee Vining Elementary may experience overcrowding.

Mr. Miller noted that at a worst case scenario, the proposed project may cause the school district to employ a portable classroom at the elementary school. It is expected that the district collected developer fees ($36,842) would pay for the proposed project's fair share of any portable classroom additions. Mr. Miller also noted that the project applicant may enter into negotiations with the district to pay for any additional classroom needs resulting from the proposed project.

OTHER COUNTY SERVICES

Because the vast majority of the proposed project would consist of visitor serving commercial uses, the impact to other county services would be expected to be minimal. While any addition to the permanent population to the area would generate incremental costs to county services, these costs are considered to be too small to quantify.

COST SUMMARY

The proposed project could potentially generate net revenue in excess of public services costs to Mono County and the Mono County School District. Fire and police protection services do not anticipate any quantifiable increase in the cost of providing services to the Lee Vining area. Although the project could potentially create, as a "worst case," the need for a portable classroom at Lee Vining Elementary, developer fees and/or developer negotiation with Eastern Sierra Unified School District could mitigate the cost of such a portable classroom. Any incremental costs of additional county services resulting from permanent population increases would be considered minimal.

5. SHORT-TERM BENEFITS VERSUS LONG-TERM PRODUCTIVITY

SHORT-TERM BENEFITS

The proposed project could potentially have a number of short-term benefits to the county. The construction of the proposed project would bolster the local building industry and generate a substantial number of construction jobs. The increased construction activity would in turn fuel local retail sales in Lee Vining as construction workers patronize local shops, restaurants, and service stations. The proposed project would also generate an estimated $133,000 in one-time permit and fee revenue to Mono County (1992 dollars).

LONG-TERM BENEFITS

The proposed project could also have a substantial number of long-term benefits to the county. At full buildout, the proposed project would generate approximately 100 permanent or seasonal jobs, and provide housing for approximately 26 residents. This estimated permanent and seasonal employment could further stimulate the local economy.

The county could also expect a net increase in tax and fee revenues if the project were implemented (see above). In each year after opening tax and fee revenues to the county would exceed the estimated cost of providing county services to the project.

6. SOCIOECONOMIC IMPACTS

According to CEQA guidelines, economic or social effects of a project shall not be treated as significant effects on the environment. Only by linking a socioeconomic impact to a physical change in the environment, can this type of impact be considered significant under CEQA guidelines.

The proposed project is demonstrated herein to have a net positive effect on the economic and social condition of the county. As discussed above, the proposed project could generate tax and fee revenues in excess of services costs to the county. The proposed project would include 10 housing units which would house approximately 26 persons. With an estimated employment of 108 persons at build-out, the proposed project could be expected to stimulate the local economy through local spending by the project employees. This statement applies even allowing for hiring of current residents of Mono County who are unemployed or underemployed.

One negative socioeconomic aspect of the proposed project could be the perception of local businesses that the proposed project would detract from their business. In fact, the proposed hotel and restaurant would not be economically viable if they did not attract new patrons to the area. This analysis estimates that the proposed hotel would derive no more than 10 percent of its booked room nights from patronage shifted from local lodging. The proposed restaurant would derive no more than 25 percent of its trade from patronage shifted from competing restaurants in the primary market area.

From the perspective of owners of existing lodging, restaurants, and other retail outlets in the primary market area, potential reductions in business volume can be expected to be small and short-term. For the existing service stations, relocation of one of the three existing outlets to the proposed project site is considered; relocation would have no adverse socioeconomic consequence. For the existing eating places, three percent for each business is estimated; and for each lodging facility, three percent or no reduction is estimated. Business failures are not forecast.

In the long-term (after five years of opening) the project could have a net positive benefit on the local economy. A portion of Tioga Inn guests could patronize the shops, restaurants, and service stations in nearby Lee Vining and June Lake, who otherwise might not have stopped in the area. Under CEQA guidelines competition and potential for shifted patronage are not to be considered as adverse environmental impacts.

7. ALTERNATIVE PROJECT PHASING

The applicant has tentatively proposed a phasing plan as follows:

- Phase 1: hotel
- Phase 2: portion of housing
- Phase 3: service station/mini-mart
- Phase 4: portion of housing
- Phase 5: restaurant

By implementing the proposed project in the Applicant's Phasing Plan, competing restaurant, service station and mini-mart businesses in the primary market area could potentially be less affected than if all were project elements were implemented concurrently. In Phases 1 and 2 (above), the primary beneficiaries of the applicant's phasing concept would be local restaurants and service stations. In Phases 3 and 4, the primary beneficiaries would be local restaurants.

The Applicant's Phasing Plan may not be practical from the perspective of hotel viability. Restaurant service would most certainly be a requisite to the financial success of the proposed hotel. Also, related to the success of the hotel, provision of less than full-service lodging could potentially result in reduced occupancy rates and room rates, reductions which could also translate into reduced tax and fee revenues.

Alternatives to the Applicant's Phasing Plan were considered. In Alternative Phasing #1, hotel, restaurant, and housing elements of the proposed project would be constructed concurrently exclusive of the proposed service station/mini-mart and coffee shop, which would be constructed later. The alternative phasing concept could provide essential services demanded by patrons of high-end lodging accommodations, and create additional demand for highway commercial services in Lee Vining. Tax and fee revenues would be reduced to approximately $170,000 per year in the first years after opening from the $195,000 per year estimated for the complete "build-out" project.

In Alternative Phasing #2, the service station/mini-mart and coffee shop would be constructed later after the hotel, restaurant, and housing. The hotel would be constructed in two phases, hypothetically of 60 rooms each. Room rates in phase one could potentially be increased slightly, and occupancy rates would increase, compared to the room rates and occupancy rates documented herein in this report for the 120 room hotel. Alternative Phasing #2 could have minor benefits for the existing local lodging facilities and for Mono County. Phase one (60 rooms) would place the proposed Tioga Inn on a scale more similar to that of existing lodging facilities. The proposed hotel could nevertheless target patrons of higher-end accommodations. Tax and fee revenues would be reduced in phase one to approximately $100,000 per year from the $195,000 per year estimated for the complete project. Property value and tax increment on the subsequent second phase could potentially be assessed at somewhat higher levels, to the potential fiscal benefit of Mono County.