

CITY OF BISHOP General Plan



FORWARD

The City of Bishop's General Plan is based on and incorporates to the maximum extent possible the portion of the County of Inyo's General Plan known as the Bishop Community Plan. Prepared by the staff of the Inyo County Planning Department, the Bishop Community Plan is a comprehensive general plan which contains or incorporates all of the general plan elements mandated under California law, Government Code Section 65300 et seq. The Community Plan examined Inyo County's largest urban community including the City of Bishop and the surrounding unincorporated area. A product of nearly two years of work, the planning process emphasized public participation with an appointed Citizens Advisory Committee and an element by element subcommittee system open to any interested person. Residents from both the City and unincorporated areas participated in all aspects of the planning process. In addition the City's staff and Planning Commission were represented throughout the Plan's development.

City officials concerned about existing and future development, began a General Plan Revision Program paralleling that of the County's. This effort based on the data and analysis of the Community Plan resulted in a draft Land Use Element. Widely supported by the residents of the City the City's draft Land Use Element differed from the Bishop Community Plan in several small but significant ways. Generally the draft Land Use Element's designations more closely coincide with the existing and contemplated changes in the City's Zoning Ordinance. During the development of the Community Plan, the City of Bishop received a grant from the Office of Traffic Safety which led to the preparation of a circulation plan. This Plan, prepared by Barton-Aschman Associates and Summit Engineering, also differed slightly but significantly from the Circulation Element of the Community Plan. Similarly, the City of Bishop contemplates an active role in the provision of housing, particularly for senior citizens.

Given the need for an internally consistent, adequate general plan and a concern for development issues, City Officials sought to maximize the data and information available in the Bishop Community Plan. Use of the Community Plan provides a rare opportunity to efficiently and effectively integrate County and City planning processes. The City's General Plan retains the two document approach used in the development of the Community Plan. The Planning Analysis and Draft Environmental Impact Report contains the data, analysis, plan elements, technical appendices and EIR in a single document. The Plan itself contains the goals, objectives, policies and program statements in summary form. Unlike the County's Community Plan which articulated two plan alternatives selected from among five conceptual alternatives, the City's General Plan will focus on a single alternative having benefited from the alternatives developed in the Community Plan process. The Planning Analysis utilized for the City's General Plan will be modified to eliminate references to the Community Plan's two alternatives except where necessary to relate to the County's plans for the unincorporated area or overall community. Descriptions of the Community Plan alternatives will be provided for clarity. In addition the initial sections of the Planning Analysis which discusses past planning efforts, community attitudes, population forecasts and the conceptual alternatives, will

275.1 acres or 9.5 percent are devoted to mining activities. Table 2 identifies the land devoted to various land uses within each jurisdiction and the planning area in total. Conventional single family residential dwellings account for 56.7 percent of all residential units with mobilehomes (both in and out-side mobilehome parks) accounting for 28.6 percent.

The City of Bishop contains nearly one quarter of the Bishop area's private land resources and approximately one third of Bishop area's population. These private lands, 304.2 acres, account for approximately 45.2 percent of the City's slightly more than one square mile. The City of Los Angeles DWP owns 254.1 acres within the City limits. Approximately one third of the City's land area is devoted to residential land use, one third to various commercial, service and other non-residential land uses with the balance divided between streets, roads, agriculture and vacant land. Vacant private land resource, owned largely by the City of Los Angeles DWP, are limited to 96.6 acres or 16.7 percent of the City's land area.

To many who call the area home or who visit the Eastern Sierra, Bishop is more than buildings, streets, roads, acres and other statistical abstractions. Bishop is a forested oasis in the otherwise tree-less plain of the Owens Valley. Bishop is an area of renown scenic beauty with spectacular views of the Sierra Nevada and White Mountains available from nearly every vantage point in the area. The Owens River, Buckley Ponds and the many canals and channels provide a remarkable watery contrast in an otherwise semi-arid region. These resources combine to give Bishop its uniqueness; a source of pleasure and fulfillment to the residents and basic natural resource for the local recreation based economy.

Planning in the Bishop Area

Each of the three principal local entities responsible for land use regulation in the Bishop area have or are in the process of developing plans for future land use and development within their respective jurisdictions. This discussion is intended to provide a summary of each entities' plans and programs.

Inyo County

The 1968 Inyo County General Plan, prepared by Herman Ruth and Associates, contained one page schematic community development plans for each of the principal urban communities of Inyo County including Bishop. Each schematic described the locations of the basic land uses (i.e. single family residential, commercial, etc.). Unfortunately the schematic plan failed to identify the intensity of land uses (i.e. density) and to clearly establish policies designed to define and implement the land use designations contained in the plan. In fairness to both the consultant and those who worked on the plan, the schematic plans were ultimately to be replaced by more detailed community plans. Figure 6 depicts the existing Bishop Community Plan schematic.

In general, the plan designates lands adjacent to U.S. 395 for the broad category of business-commercial-industrial-governmental. Multiple family residential areas are designated on the east side of the commercial areas adjacent to Main Street, either side of West Line Street, an area between Yaney and Keough Streets and an area West of the fairgrounds; all within the City of Bishop. By in large the balance of private lands within the area are designated single family residential and parks-schools (open space-easements) with generous expansion areas provided for all uses on City of Los Angeles lands particularly in the area between the City of Bishop and West Bishop. Nearly all streams and other water courses were to be preserved through open space easements providing a large interconnected open space network.

The plan shows a freeway (U.S. 395) skirting the City of Bishop to the east and passing to the north of Dixon Lane area. Under this plan Underwood Lane, as an arterial-collector, would connect U.S. 395 south of the City of Bishop to U.S. 395 west of the planning area. The balance of the circulation system consists of an interconnected grid system of major streets.

Consistency between zoning and plan designations became mandatory in 1974. However, by then a zoning/land use pattern at odds with the schematic Bishop Community Development Plan had become entrenched. The Bishop Community Plan is intended to replace the obsolete schematic plan contained in the Inyo County General Plan.

In early 1978 the Board of Supervisors and Planning Department took action to correct this situation. Recognizing the diversity of the County and the need for an adequate general plan, the County undertook to revise its General Plan. One portion was to focus on the rapidly growing urban community of Bishop the Bishop Community Plan, with an emphasis on community development issues while the balance of the County would be addressed through a separate document emphasizing conservation and resource issues including the smaller communities of the County. From five conceptual alternatives or scenarios two alternatives emerged. One referred to as Plan A, provides for a population of 11,000 to 13,000 utilizing principally the private land resources of the planning area. The second alternative, known as Plan B, provides for a population of 15,000 to 16,000 and plans for an expansion of the community on surrounding lands owned by the DWP. Both alternatives address all of the issues required by the law. Residential land use in five density categories are identified based on existing use, zoning, service capacity and vacant land resources were made for each of the five planning units. Commercial activities, focused in centers, are designated in the central business district, a future regional center north of the City, in smaller centers in West Bishop and the Dixon Lane/Meadow Farms area and highway oriented commercial along major highways and a major light industrial-heavy commercial area in the Wye Road area. Proposed new and upgraded streets and roads are identified in the Circulation Element. Major proposals include a bypass corridor east of the City of Bishop and extension of Sierra Street, Jay, South Street, See Vee Lane and

MUNICIPAL AIRPORT

(Proposed Freeway Route)

U.S. 395

CITY OF BISHOP

Home St.

Sunland Dr.

PAIUTE SHOSHONE

See Vee Ln.

Barlow Ln.

INDIAN RESERVATION

Brockman Ln.

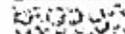
FIGURE 7

BISHOP COMMUNITY DEVELOPMENT PLAN

Underwood Ln.

U.S. 395

State 168

-  Single Family
-  Multi-Family
-  Bus- Com-Ind-Gov
-  Parks, School's
-  Proposed Expansion

Herman D. Ruth + Associates
2000'  May, 1968

City of Bishop

The City of Bishop adopted a General Plan in 1964. The plan prepared as a joint venture by the consulting firms of Koebig and Koebig, Inc. and Hahn, Wise and Associates, Inc., remains the City's official Land Use Element despite the acknowledged need for its revision. The City of Bishop's Land Use Element encompassed an area bounded on the west by McLaren, on the east by the airport, on the north by U.S. 395 and Schober Lane to the south. A population of 5,000 persons was projected for 1980 with "ample space for future growth and development".

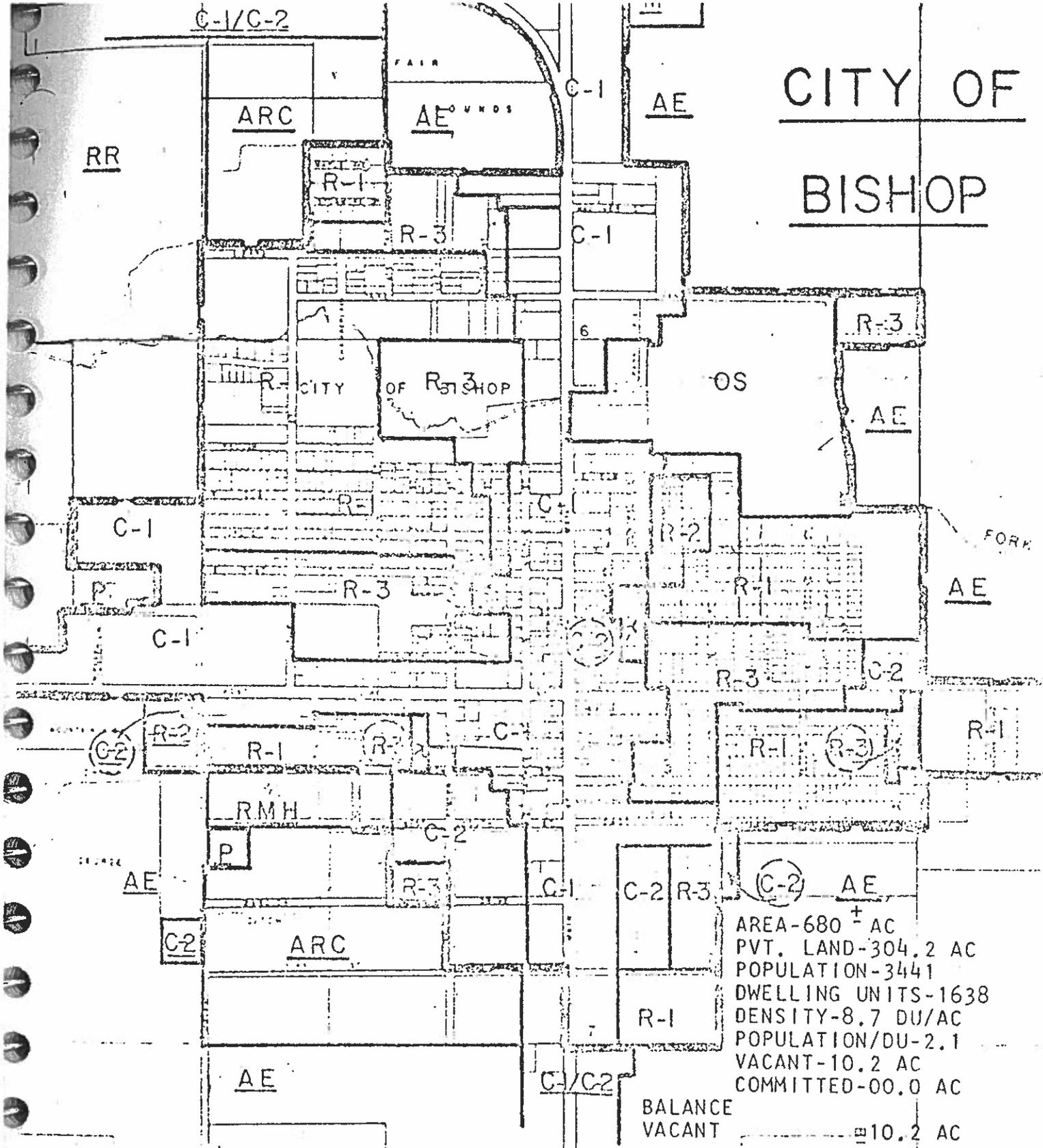
Conceptually the plan provided for retail commercial uses in the central business district of the City and an outlying area north of Wye Road. Both highway commercial uses and high to medium high density residential uses were designated on either side of Main Street and West Line Street adjacent to the central business district. The plan identified the need to diversify the local economy and consequently designated four areas for industrial uses including: an area north of the City southeast of Wye Road, an area south of East Line Street adjacent to the sewage treatment plant, an area two blocks south of West Line Street in the southern portion of the City and an area at the Bishop Airport. The balance of the area both within the City Limits and in the outlying West Bishop area was designated for low to medium single family residential uses. With the exception of generalized areas immediately adjacent to the City of Bishop no expansion areas were proposed with development confined to existing private lands.

The City's plan features a U.S. 395 bypass of the City beginning at Schober Lane south of the City heading diagonally to the northwest crossing the Reservation and reconnecting to the present U.S. 395 alignment north of the McLaren area. (Note-this proposal does not appear in the City's most recent Circulation Element and does not reflect current policy). Figure 8 depicts the land use designations made in the 1964 plan.

The City of Bishop has adopted the other eight required general plan elements in varying degrees of detail. In general with the exception of the 1964 plan none of the elements address issues beyond the present City Limits.

As noted in the Forward and other sections of the Planning Analysis, the City undertook a General Plan revision program completing a draft Land Use Element. This Land Use Element combined with a recent Circulation study prepared by Barton-Aschman and Associates in conjunction with Summit Engineers will be integrated with the Bishop Community Plan to provide an adequate, internally consistent General Plan for the City of Bishop. Figure 9 depicts the existing City Zoning.

CITY OF BISHOP



AREA-680 ± AC
 PVT. LAND-304.2 AC
 POPULATION-3441
 DWELLING UNITS-1638
 DENSITY-8.7 DU/AC
 POPULATION/DU-2.1
 VACANT-10.2 AC
 COMMITTED-00.0 AC

BALANCE
VACANT

10.2 AC

(COUNTY ZONES UNDERLINED)

D. W. P. LOT SALE

R-1 (2) - 1.9 AC. R-3 (9) - 1.4 AC. C-1 (5) - 2.7 AC.

FIGURE 22

center is located on a 0.15 acre parcel situated adjacent to the parking lot located between South Warren and South Fowler Streets. Clyde Coons, Public Works Director, indicates that the present site is inadequate for present use. The City of Bishop owns two acres of land located on the east side of Sunland Drive approximately one quarter mile south of West Line Street. It is anticipated that the City of Bishop will re-locate its maintenance center to this area within the near future. Although residential development is designated for the general area, a well designed and buffered maintenance center can coexist successfully with residential development. Inyo County has two maintenance centers operated by the Road Department located in the Bishop area. The largest is located on the west side of U.S. 395 south of the City of Bishop on approximately one acre leased from the City of Los Angeles DWP. The second County Facility is located in West Bishop on the south side of West Line Street on an acre of land leased from the City of Los Angeles DWP adjacent to the West Bishop Fire District sub-station. These facilities appear adequate to meet future needs and adjoining lands could provide for expansion if necessary. The existing County maintenance center and the proposed City of Bishop facility are designated in the Plan.

Sewage Treatment

The Bishop area is served by two sewage collection and treatment systems; one operated by and serving the City of Bishop and one operated by the Eastern Sierra Community Services District which serves most of the developed lands of the unincorporated portion of the planning area. The two plants, situated adjacent to one another, are located approximately one half mile southeast of the City of Bishop. The plants provide similar activated sludge-pond stablization treatment on approximately 100 acres for this. Although the City of Bishop is planning to up grade their facility, the land area appears adequate to future needs. This area is designated for sewage treatment in the proposed Plan.

Solid Waste Disposal

Operated by a private party through a franchise agreement with Inyo County, the Sunland Solid Waste Disposal facility provides for the land fill disposal of the north Owens Valley's solid waste. Located on a 71 acre parcel leased from the City of Los Angeles DWP, the present 20 to 24 acre disposal site provides for the disposal of Class II waste. The 1976 Inyo County Solid Waste Master Plan indicated that the site will be adequate through 1985, after which an additional 70 to 80 acres will be needed. Resource recovery activities conducted by the operator may extended the useful life of the landfill an additional 5 to 10 years. However, in the event that additional land is needed the adjacent aggregate site would be a likely location for solid waste disposal as indicated in the Natural Resources Land Use Section. The existing disposal site lies outside the City's planning area, but is designated in the Bishop Community Plan.

Cemeteries

There are three principal cemeteries located in the planning area; Pioneer Cemetery, located adjacent to the Hospital; the East Line Street Cemetery, located on East Line Street (Poleta Road) south of the Bishop Airport and the Sunland Indian Cemetery located approximately one mile southwest of the Sunland Reservation Road. The first two, approximately five and 20 acres respectively, are maintained by the Pioneer Cemetery District. Except for Pioneer Cemetery, these land areas are either adequate or can readily be expanded to provide for the planning area's needs. The Pioneer Cemetery is designated in the City's General Plan and the other is the Bishop Community Plan.

Water Reservoir

The City of Bishop maintains an off stream water reservoir south of West Line Street adjacent to the Mc Laren area. The reservoir occupies an area of approximately 3.2 acres and there are no plans to expand or enlarge this facility. This facility is designated in the Bishop Community Plan.

Bishop Airport

The Bishop Airport, situated on approximately 835 acres leased from the City of Los Angeles DWP, is located one mile east of the City of Bishop. Operated by Inyo County, the Airport is the region's principal airport. The Airport Master Plan, prepared for Inyo County by Taylor and Associates, focuses on the improvement of the airport facilities to meet future needs and does not propose any major expansion apart from that necessary to accommodate minor runway extensions. The Airport is designated in the Bishop Community Plan as a public facility land use, although the Airport will be discussed in the Transportation and Circulation Element.

Power Plants

Southern California Edison has two of its Bishop Creek power plants located in the planning area along Bishop Creek. These quasi-public facilities each occupy approximately ten acres of land although SCE owns considerably more of the surrounding land. These facilities are designated in the Bishop Community Plan.

Public Facility Land Use Policies

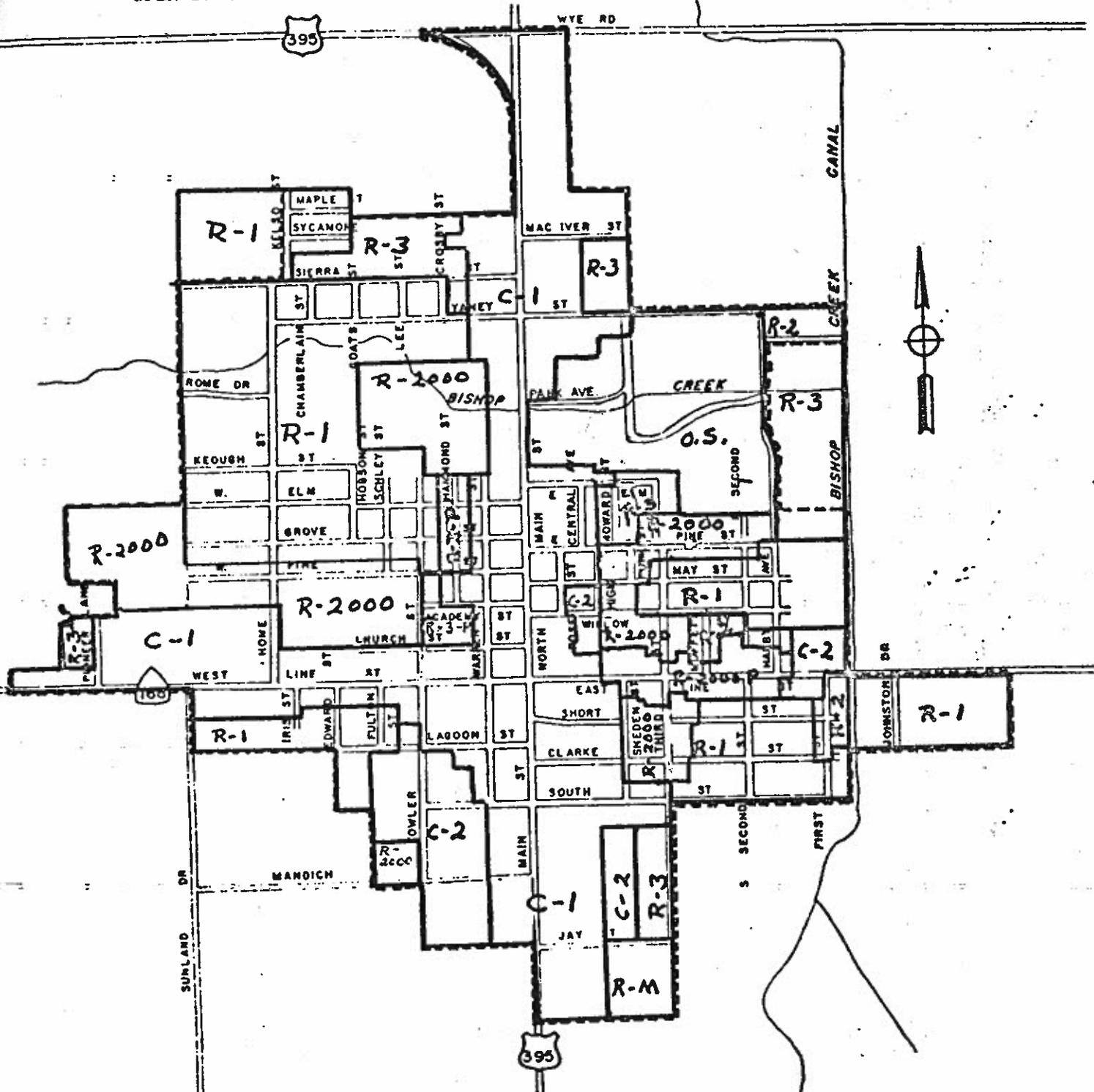
The City of Bishop General Plan consists of a map or maps and text which describe the goals, objectives, policies and programs necessary to guide future development in the Bishop Community. The Land Use Map brings together all of the Map-related policies of the Plan. These and other policies and programs which cannot be reflected on the Map, but influence both the Map-related policies and other aspects of land use are described below:

PUBLIC FACILITIES (MAPPED)

The Bishop Community Plan designates the following public facilities:

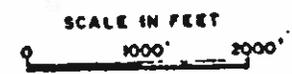
R-M	Min. Lot Size	4400 sq ft	- 10 DU/AC	
R-3	"	"	5000 "	1250 sq ft Land/Unit - 34 DU/AC
R-3-P	"	"	5000 "	1250 " " " " - 34 " " Professional
R-2000	"	"	5000 "	2000 " " " " - 21 " " "
R-2000-P	"	"	5000 "	2000 " " " " - 21 " " Professional
R-2	"	"	5000 "	Max. 2 DU/Parcel
R-1	"	"	5000 "	Max. 1 DU/Parcel
A-R	"	"	10,000 sq ft	Max. 4.5 DU/AC

OPEN SPACE



PRIMARY SPHERE OF INFLUENCE MAP
SHOWING LAND USE DISTRICTS ARE
ON FILE IN PUBLIC WORKS DEPT.

CITY OF BISHOP
DRAFT
2-13-80



The planning area is served by three State maintained routes; U.S. 395, 168, and U.S. 6 which also serve as the area's principal arterials. North-south movement is accommodated by U.S. 395 (Main Street and North Sierra Highway) which also provides frontage for much of the planning area's commercial uses. This route also serves as the principal inter-regional transportation corridor, used extensively by recreational traffic linking the region with Southern California. In addition to providing arterial access to the Dixon Lane residential area, U.S. 6 handles considerable truck traffic between the Los Angeles area and points north and east. East-west movement is accommodated on State Route 168 linking West Bishop, McLaren, Rocking K and Bishop Creek with the commercial center in the City of Bishop. This route also provides access to the recreational opportunities in the Bishop Creek area west of the planning area. Barlow Lane, Home Street, East Line Street, Sierra Street, Hanby Street, Mandich Drive, Sunland Drive, Elm Street, Fowler Street, South Street, Dixon Lane, Pa Me Lane, See Vee Lane, Red Hill Road, Ed Powers Road and Brockman Lane serve in varying degrees as collectors for the planning area's traffic.

Current traffic counts are unavailable except for State routes. As a result the total traffic volume is unknown. Table 33 provides information on the most recent and complete traffic counts for the State routes and the growth of traffic since 1973.

TABLE 33

1977 TRAFFIC COUNTS

<u>STATE ROUTE</u>	<u>AVE. ADT</u>	<u>PEAK MO. ADT</u>	<u>% INCREASE FROM 1973</u>
6-TEXACO CORNER	3,050	4,500	53%
168-OTTEY'S	1,500	2,550	67%
168-BROCKMAN	4,400	7,600	-12%
168-JCT.-395	10,900	13,650	25%
395-SO. CITY LIMITS	6,200	10,700	35%
395-JCT.-168	12,300-18,200	19,800-27,500	26-48%

SOURCE-DISTRICT 9 TRAFFIC COUNTS 1973-1977

NOTE: ADT-AVERAGE DAILY TRAFFIC
 PEAK MO. ADT-AVERAGE DAILY TRAFFIC DURING MONTH OF HIGHEST ADT

Information from these records indicate that traffic on these routes has grown at an average annual rate ranging from 5 to 13 percent. Caltrans sampling indicates that recreational traffic has increased at a rate of 3.5 to 4.0 percent annually. Traffic census records also indicate that recreation vehicles account for approximately 25 percent of total traffic. Trucks account for approximately 4-6 percent with a combined effect on traffic flow of nearly 30 percent due to the similar operating characteristics of both vehicles.

Peak traffic volumes on the State routes within the planning area occur during the summer months of June through August and can account for as much as 30 to 40 percent of the total annual traffic volume on U.S. 395. In recent years this tendency for peaking has been offset slightly by increased traffic volumes associated with winter recreational use of the Mammoth area. With the likely prospect of expansion of the Mammoth Mountain ski resort, a more balanced flow of recreational traffic should result. Figure 26 graphically depicts the seasonal pattern of recreational traffic on U.S. 395. Caltrans estimates that local residents account for 18-20 percent of U.S. 395 traffic outside the community. This percentage increases to 40-50 percent within the developed portion of the planning area.

Even without the benefit of a thorough analysis, there exists several widely recognized circulation problems within the planning area. Among these are:

- Congestion on Main and Line Streets stemming from the large volume of recreational through traffic combined with local-regional traffic associated with the community's commercial center; and
- A converging radial arterial system without the benefit of a circumferential system of collector streets permitting circulation around the community's commercial center, compounded by offset intersections within the City of Bishop; and
- The absence of an integrating collector serving the Dixon Lane area; and
- The absence of a dominant connector through the Bishop Reservation linking West Bishop with the Dixon Lane-Meadow Farms areas; and
- The absence of an additional east-west connector linking the City of Bishop with the Bishop Reservation and western portions of the planning area; and

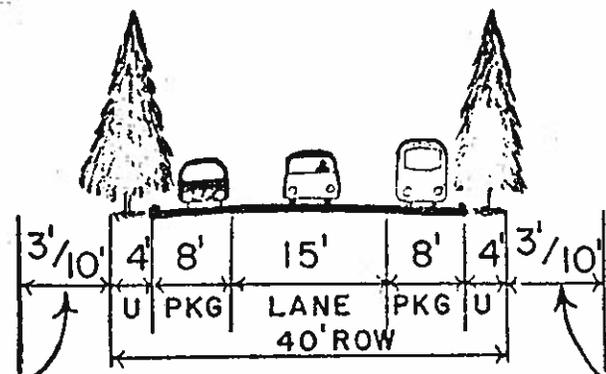
The Plan projects a total passenger demand for Bishop of between 25,000 and 36,000 by 1990. General aviation is forecasted to more than double from the present 25,690 annual operations to 56,440 by 1990. The number of general aviation aircraft based at the Airport is expected to increase to 80 from the present 34. In order to adequately meet these needs, a plan and program for improvement of the Airport is recommended in the Master Plan. The Master Plan focuses attention on the need for runway, improvements, navigational aides, control tower, terminal building, hangers, fire-crash facilities and parking to meet this anticipated demand.

There are several power line transmission corridors within the planning area. One links Southern California Edison's Plant 5 with the City of Los Angeles Department of Water and Power's Gorge Power Plant. The second is a portion of the north-south grid and power system intertie linking Southern California with the hydro power generating plants in the northwest. Neither SCE or DWP have any present plans to add or enlarge any of their transmission lines. Development within the Chalfant-Hammil Valley area of Mono County, may eventually require an additional power line in order to meet customer demand. Chuck Miller, of SCE, indicates that there are no plans or specifications as yet developed for this transmission line.

Transportation-Circulation Objectives

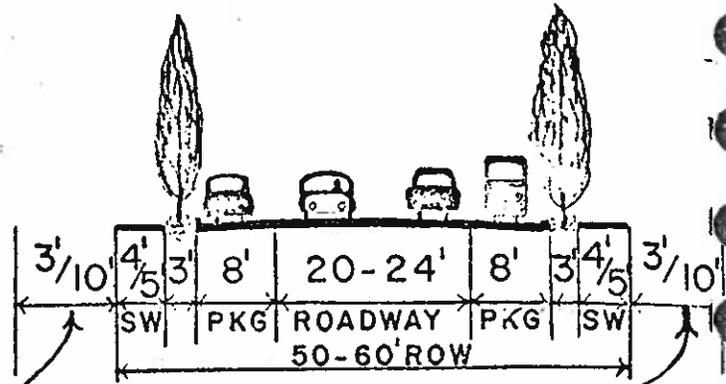
The following transportation-circulation objectives are recommended:

1. To give priority to transportation projects designed to improve the efficiency, safety, and quality of existing facilities
2. To plan a circulation system to facilitate truck transportation and to minimize the impacts of truck traffic on residential areas.
3. To provide accessible transportation services and facilities responsive to the needs of the young, aged, handicapped, and disadvantaged
4. To design and develop transportation routes to accommodate bikeways, equestrian trails, and pedestrian facilities with coordination of all concerned agencies
5. To assure that land use decisions give strong consideration to minimizing the requirements for travel
6. To require that transportation and land use planning be coordinated to avoid overloading streets and highways
7. To encourage voluntary reduction of vehicle miles traveled to promote energy conservation and reduce air pollution. One way this can be accomplished is by encouraging more bicycle commute trips for work, shopping and school.



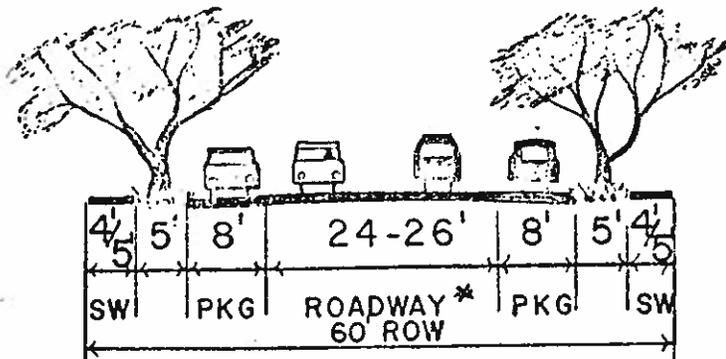
ADDITIONAL UTILITIES EASEMENTS IF NECESSARY

RESIDENTIAL CUL-DE-SAC OR SHORT LOOP STREET (ONE WAY ONLY)



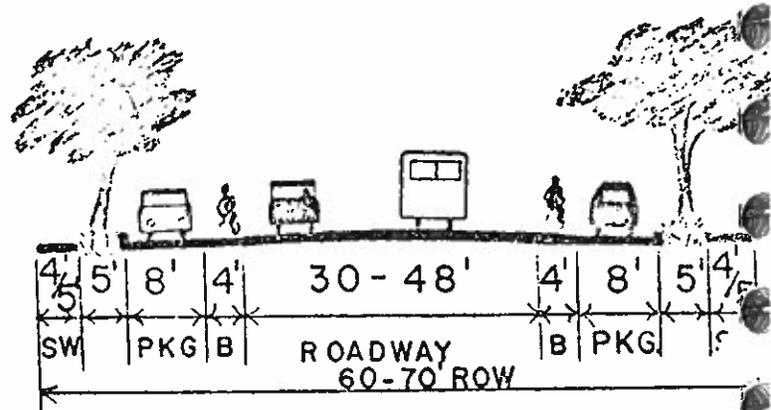
ADDITIONAL UTILITIES EASEMENTS IF NECESSARY

LOCAL RESIDENTIAL STREET



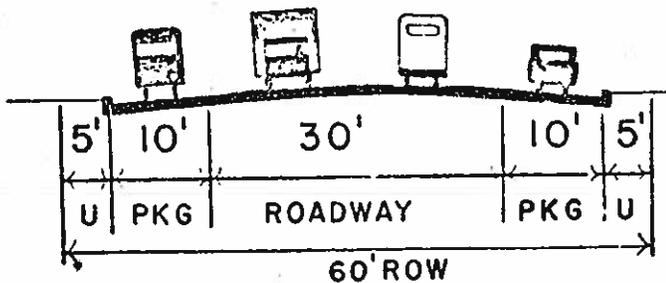
LOCAL RESIDENTIAL MINOR COLLECTOR

* ADD TWO 5' BIKELANES FOR CLASS II BIKEWAY, BIKEWAY LANES CAN BE REDUCED TO 4' WHEN PARKING PROHIBITED

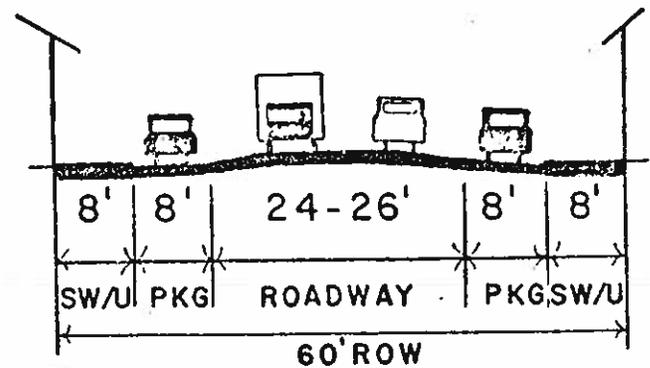


COLLECTOR STREET

NOTE: PARKWAY-SIDEWALK AREAS CAN BE REDUCED AND/OR ELIMINATED IN ORDER TO ACCOMMODATE THE OVERALL ROADWAY DESIGN STANDARD WHEN IN A CONFINED ROW OR FOR SPECIAL CIRCUMSTANCES



INDUSTRIAL - HEAVY COMMERCIAL-STREET

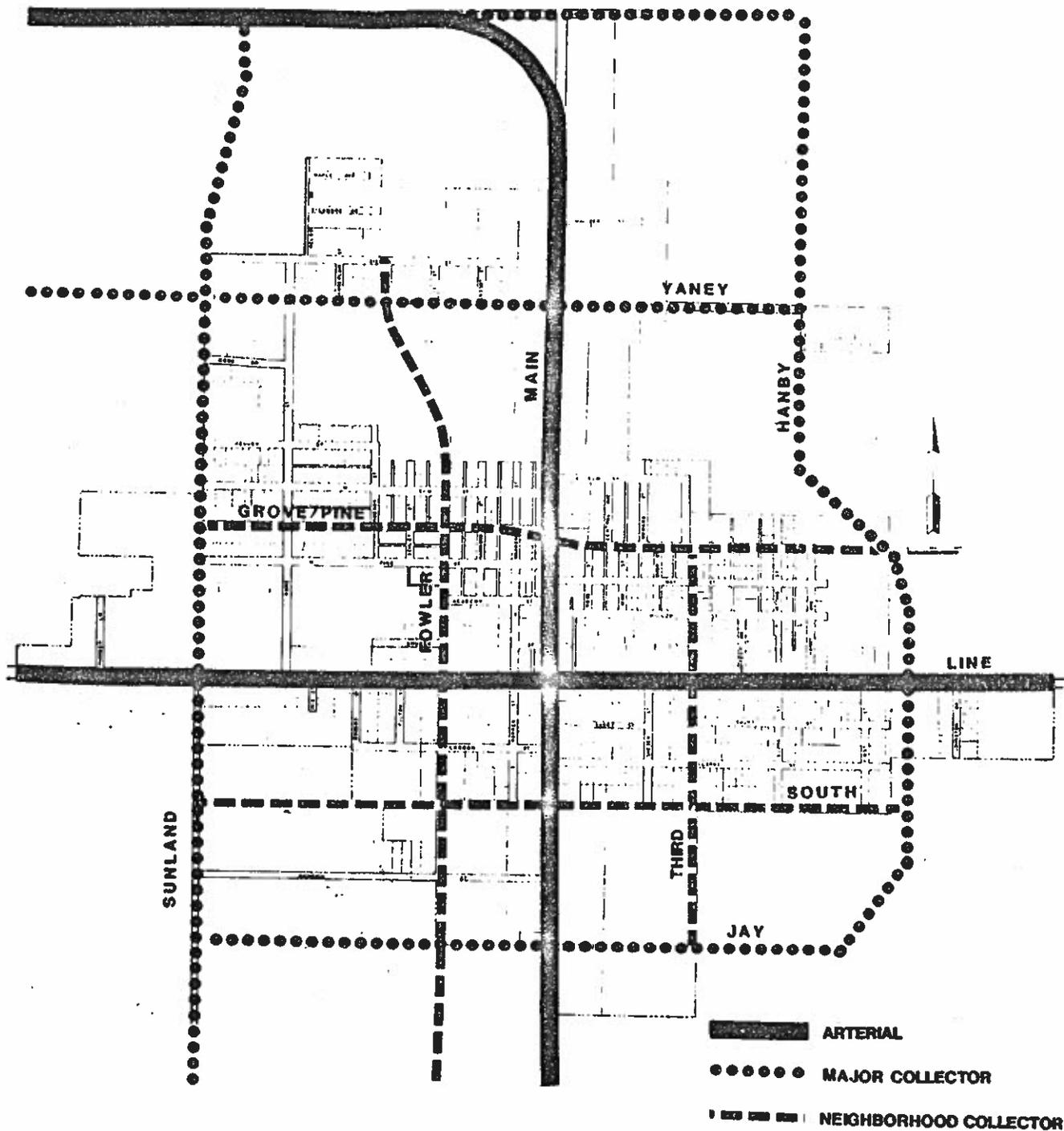


CBD - COMMERCIAL STREET

U - UTILITIES
 PKG - PARKING
 SW - SIDEWALK
 B - BIKEWAY
 G GRADED SHOULDER

MAJOR CIRCULATION PROPOSALS

FIGURE 30



- The present policy of providing a bypass route only after U.S. 395 has been developed with four lanes through the Owens Valley should be re-evaluated jointly by the Local Transportation Commission and State Department of Transportation in conjunction with the preparation and subsequent revisions to the Local Transportation Plans. General Policy LTC
- No bypass alignment should pass through the developed portion of the planning area so as to divide or disrupt the community. General Policy
- Any future bypass shall be aligned and developed to accommodate the growing volume of truck traffic on U.S. 6. General Policy
- Access to the bypass shall respect and emphasize the present north and south entrances to the community including the provision of access to the heavy commercial-light industrial areas in the Wye Road area. General Policy
- Access control shall be maintained along the bypass route and commercial activities shall not be permitted to locate along the bypass route. Zoning
- An alignment east of the City of Bishop is preferred over other possible alignments. General Policy

Residential Streets

- Residential streets should emphasize short cul-de-sacs and interconnected loops attached to a system of major and minor collectors. Subdivision Ordinance
- Residential lots should be provided with an appropriate frontage on a street. Flag lots are acceptable where there exists no other practical means to utilize the property. Consideration should be given to emergency access, parking and number of trips generated by the residential development. Zoning Subdivision Ordinance

Transit

- Inter-regional transit system should be maintained and not discontinued. General Policy
- Existing programs providing transportation to low mobility groups such as the elderly should be continued and expanded in response to community needs. City-County LTC
- Opportunities to provide inter-and intra-regional transit and specialized transit serving recreational needs should be examined periodically in response to community need, energy availability and financial City-County LTC

resources. The City of Bishop shall cooperate with the State Department of Transportation and Inyo County in the planning and implementation of the Van Pool, Park and Ride and Staging Area programs designed to improve the efficiency of the existing automobile mode of transportation.

Pedestrian Circulation

- An acceptable method of controlling drainage shall be required on all streets and roads within the planning area except for rural roads. Design Standards
- Sidewalks shall be required in the following cases: General Policy
Subdivision Ordinance
 - (1) In all areas within the City of Bishop, except as provided in (2) below;
 - (2) Alternatives to sidewalks such as separated pedestrian paths may be substituted depending upon the circumstances and the degree to which the alternatives meet pedestrian needs in the project area.
- Provisions for the handicapped shall be incorporated into all sidewalks and pedestrian facilities pursuant to State Law. Building Code

Air Transportation

- Air transportation is vital to the economic well being of the community. Air transportation service, both general aviation and regularly scheduled air carrier service should be maintained and improved. General Policy
- The Bishop Airport should be developed and improved as detailed in the Bishop Airport Master Plan, excluding the immediate future industrial development, but including smaller scale associated commercial development. County

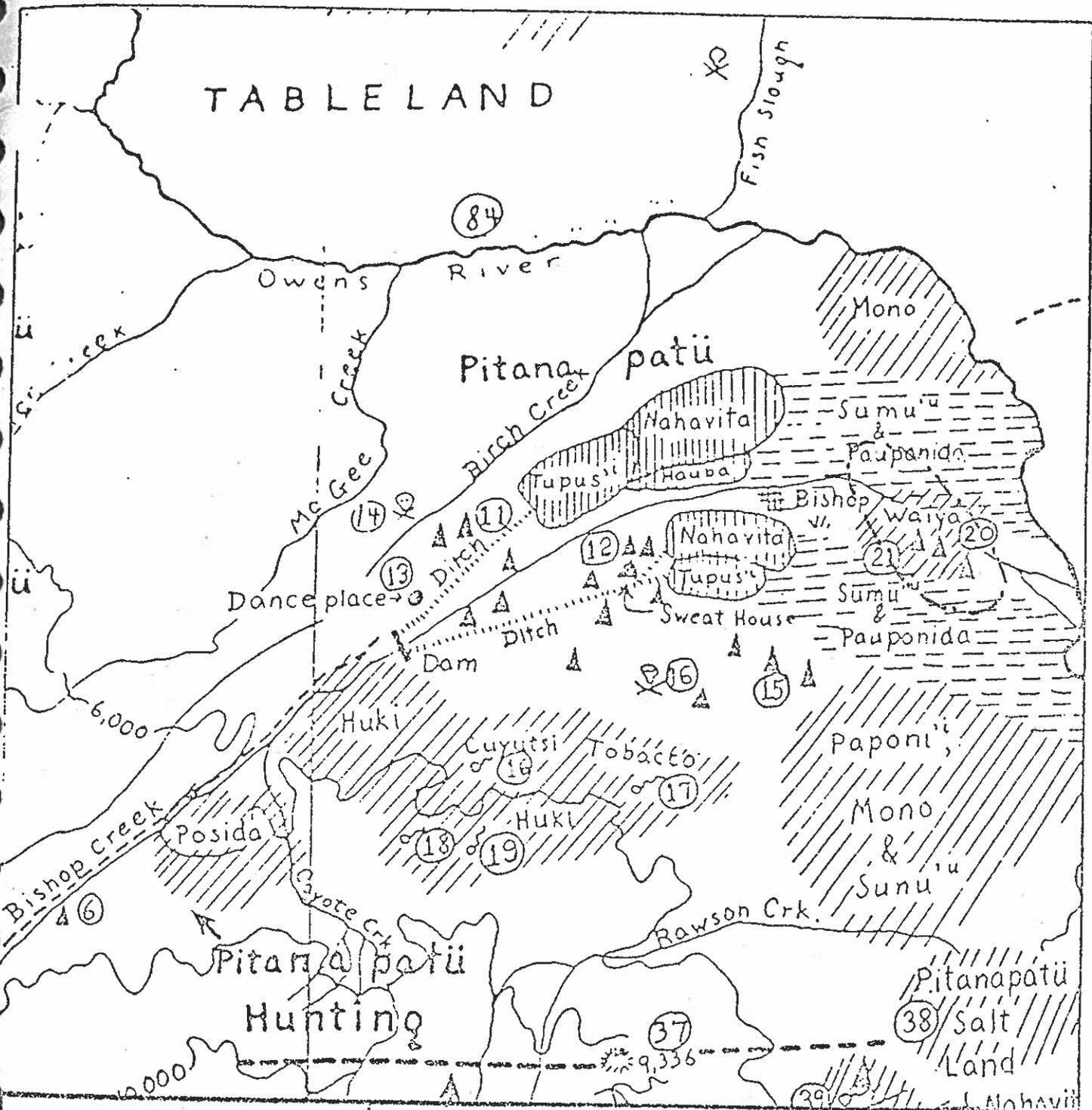
Truck Routes

- Trucks serving heavy commercial-industrial areas should not be permitted to pass through residential areas or utilize streets not specifically designed for regular truck use. General Policy

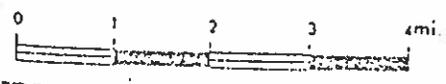
Parking and Access

- Access, on site, off-street parking and loading area requirements should be re-evaluated against actual need and revised appropriately. The change in land use through time should also be considered. Zoning Standards

TABLELAND



OWENS VALLEY
 ADAPTED FROM JULIAN STEWARDS
 1933 ETHNOGRAPHIC MAP.
PIAUTE LAND USE
 FIGURE 48



LEGEND

- | | | | |
|--|------------------|--|------------------|
| | VILLAGE OR CAMP | | WILD SEED LANDS |
| | IRRIGATION DITCH | | HUNTING BOUNDARY |
| | MARSH | | CEMETERY |
| | IRRIGATED LAND | | SPRING |
| | WATERSHED | | |
| | TRAIL | | |
| | | | 2000' CONTOURS |

Flood Hazards

The Owens Valley's alluvial fans and alluvium are products of stream deposition, particularly of floods. Continental climatic conditions combined with high mountains which intercept moisture bearing air masses create an environment conducive to repeated floods. There are two seasons during which the probabilities of flooding increase. Late spring and early summer is one period when the danger arises from rapid snow melt. Late summer and early fall the threat comes from snow melt combined with a tropical storm at a time when the reservoirs on Bishop Creek are full. Record snowfall and the subsequent melting produced the flooding of 1969. Tropical storm Norman produced flooding in 1978.

The Owens River regulated by Crowley Lake, provides little in the way of flood hazard particularly to the developed portions of the community. Flooding along the Owens River will be confined to agricultural-open space lands adjacent to the banks of the River. Considerable elevation and distance separates the River from the developed portion of the community. Bishop Creek provides the planning area with its greatest flood potential. Power reservoirs and a partial bypass constructed after the 1969 flood reduce the possibilities of full scale flooding. Linda Hulsey, Director of Disaster Services, indicates that each of the forks of Bishop Creek have channel capacities of approximately 350 cfs with the bypass providing an additional 250 cfs for a total capacity of approximately 1,000 cfs before flooding presents a problem. However, without continued maintenance past flood debris can significantly reduce channel capacities permitting lesser volumes of water to produce flood damage. Such is the present condition a year after the flooding which accompanied tropical storm Norman. The bypass, a straight line diversion connected to the C-drain north and west of the community, is not uniform in its channel capacity. Linda Hulsey, indicates that once north of U.S. 395 the water tends to pond and sheet flow to the east as a result of inadequate capacity. One source of ponding has been alleviated with the installation of a new culvert at the Dixon Lane crossing. The capability exists to divert water south of the community through the Owens River channel. However, there is some concern over flooding along this channel as a result of channel problems. In addition this channel passes through residential areas in Westridge and McLaren.

Figure 51 depicts the alleged "flood hazard" area as designated by the Department of Housing and Urban Development's National Flood Insurance Program. In the opinion of many the area identified as flood prone considerably overstates the actual flood potential and fails to reflect the development of the bypass. The planning area's flood problems tend to be localized, most often occurring in the low lying locations adjacent to the forks of Bishop Creek and major canals of the area. Figure 52 illustrates the areas with the greatest potential for flooding. The potential loss of access to various residential areas is also a significant flood related problem. Many of the planning

Services-Safety Goal

The Citizens Advisory Committee established the following preliminary Goal for the provision of Services and Safety:

The quality and availability of such services as fire protection, police, schools, water and sewage treatment is one of the principal distinctions between rural and urban communities. The quality and availability of these services is one of the major factors in Bishop's past, present and future growth. A goal of the Bishop Community Plan is to maintain and improve the quality of these essential services on which the community depend.

SERVICES-SAFETY

WATER SUPPLY

Water service in the planning area is provided by the City of Bishop, the Westridge Community Services District, the Indian Creek Mutual Water Company, the Ranch Road Estates Mutual Water Company, the Brookside Estates Mutual Water Company, the Owens Valley Mutual Water Company, the Sierra Highlands Water System, Desiderata Estates Mutual Water Company, Highlands Mobilehome Park System, Bishop Paiute-Shoshone Indian Reservation, other smaller mutual systems created in conjunction with the subdivision of land and individual wells. Information on most of these systems is outdated or incomplete. Figure 54 depicts the approximate areas served by each system. Ground water is derived from the "Bishop Cone." Groundwater in the Bishop Cone is protected from export by the injunction issued in the Hillside Case in 1940. With the exception of high fluoride and boron encountered in some locations, the groundwater is of excellent quality and should remain this way with the near total elimination of septic effluent made possible by the completion of the Bishop sewer system.

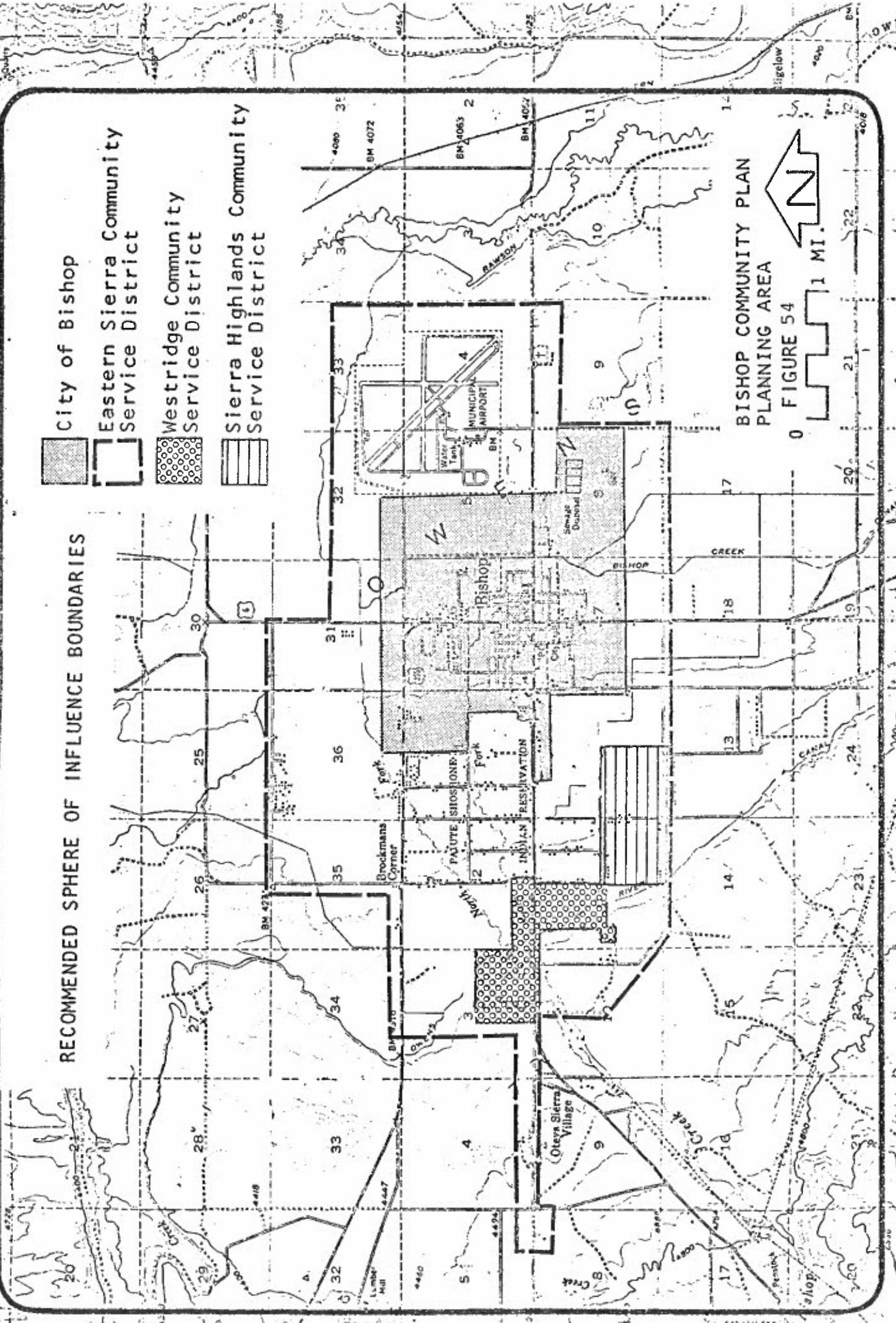
City of Bishop

Water Sources-System

The City of Bishop owns and operates the water system which serves the corporate limits of the City. Wells provide the main source although the City retains the ability and the right to divert water from Bishop Creek. The "Chandler Decree" awarded the City of Bishop rights to 1.7 cubic feet per second (cfs) or 1.1 million gallons per day (gpd) or 401 million gallons per year (gpy), approximately

RECOMMENDED SPHERE OF INFLUENCE BOUNDARIES

-  City of Bishop
-  Eastern Sierra Community Service District
-  Westridge Community Service District
-  Sierra Highlands Community Service District



BISHOP COMMUNITY PLAN
PLANNING AREA
FIGURE 54

1,230 acre feet per year (afy). Figure 55 depicts the main elements of the City's water system. Recent years have seen a shift to groundwater sources as water quality standards have been strengthened. The main well is located approximately two miles west of the City limits on West Line Street adjacent to the City's diversion works and reservoir. This well is capable of producing 1,100 gallons per minute (gpm) or 1.58 million gpd under normal conditions and 2,000 gpm or 2.88 million gpd under peak fire or demand conditions. Two additional wells tied directly to the distribution system are maintained by the City for backup sources and peak demand periods. These wells located adjacent to City Hall and north of Sierra Street have capacities of 3,000 to 2,500 gpm respectively. Treatment is limited to chlorination.

Water is transmitted from a million gallon reservoir via a 12 to 14 inch water main by gravity. Water pressure in the system ranges from 40 to 60 pounds per square inch (psi). The distribution system consists of a grid system of 8.6 and 4 inch water lines. Fire hydrants, standard pacific states (frostless), are provided throughout the system with adequate capacity for fire flows and peak demands.

Existing Requirements

The City of Bishop's service area consists of approximately 673 acres with a permanent population of approximately 3,441. Unmetered, water consumption can only be estimated from aggregate system use. Seasonally high transient population complicates this analysis. Based on Department of Finance population estimates, Bishop has an average per capita consumption of approximately 405 gallons. An average of 146 gallons per capita per day (gpcd) is obtained when the population is adjusted to 9,821 to account for transient tourist and employment consumption. Water consumption studies conducted by the Planning Department indicate an average consumption of approximately 200 gpcd. Given the high transient population and unmetered service an estimate of 250 gpcd is reasonable. Water consumption is greatest during the months of April through September which corresponds to peak tourist and irrigation periods.

With the City's disproportionate high non-residential land use and high transient population a method needs to be developed to account for the water consumption of these land uses. Water consumption records indicate a system wide annual average of 546.4 million gallons. Using the 1977 Special Census population of 3,441 and the estimated average per capita consumption of 250 gpcd, the resident population accounts for 860,250 gpd or approximately 60 percent of total consumption. The balance, approximately 639,750 gpd, is attributable to the non-residential land uses found in the City of Bishop. Using the 1976 Land Use inventory data of approximately 181 acres of non-residential land an average of 3,535 gpd per acre is obtained. This seems rather high except that restaurants and motels account for a substantial portion of non-residential land use in the City of Bishop. Since the Plan anticipates a greater diversification of non-residential land uses such as a major retail center and heavy commercial-light industrial uses, the analysis will employ a non-residential consumption figure of 1800

EXISTING WATER SYSTEMS SERVICE AREAS
AND MAIN ELEMENTS

-  City of Bishop
-  Westridge Community Services District
-  Sierra Highlands Community Services District
-  Ranch Road Estates Mutual Water Company
-  Indian Creek Mutual Water Company
-  Owens Valley Water Company
-  Brookside Estates Mutual Water Company
-  Bishop Reservation

Balance of planning area supplied by individual wells and smaller community water systems

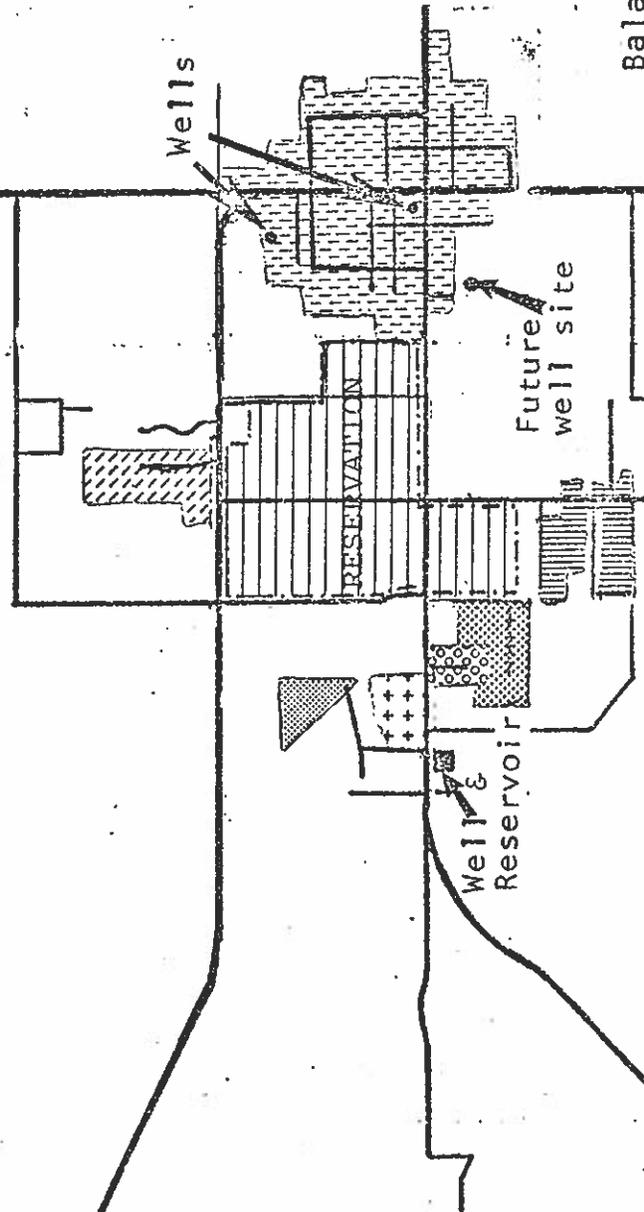


FIGURE 55

gallons per acre, approximately one half of the existing estimate.

Future Requirements-Impacts

The City of Bishop Public Works Department estimates the capacity of the City's water system at 15,000 persons. Assuming that the City will annex and provide service to all the proposed land which lies within the recommended sphere of influence, future water requirements can be estimated from the additional population growth plus additional non-residential development. The principal distinction between Plan alternatives lies in the population planned for in conjunction with the Plan B alternative.

TABLE 70
WATER REQUIREMENTS

	<u>PLAN A</u>	<u>PLAN B</u>
TOTAL POPULATION (ESTIMATED)	4387	7125
EXISTING POPULATION	<u>-3441</u>	<u>-3441</u>
	946	3684
PER CAPITA WATER CONSUMPTION (DAILY)	<u>x 250 gpcd</u>	<u>x 250 gpcd</u>
INCREMENTAL RESIDENTIAL WATER DEMAND (DAILY)	236,500 gpd	921,000 gpd
EXISTING RESIDENTIAL DEMAND (DAILY)	<u>+860,250 gpd</u>	<u>+860,250 gpd</u>
TOTAL 1990 RESIDENTIAL DEMAND (DAILY) (SUBTOTAL)	1,096,750 gpd	1,781,250 gpd
INCREMENTAL NON-RESIDENTIAL PLANNED LAND USES (ACRES)	165 ac	165 ac
AVERAGE NON-RESIDENTIAL WATER CONSUMPTION PER ACRE (DAILY)	<u>x1800 glac</u>	<u>x1800 glac</u>
INCREMENTAL NON-RESIDENTIAL WATER DEMAND (DAILY)	297,000 gpd	297,000 gpd
EXISTING NON-RESIDENTIAL DEMAND (DAILY)	<u>+639,750 gpd</u>	<u>+639,750 gpd</u>
TOTAL 1990 NON-RESIDENTIAL DEMAND (DAILY) (SUBTOTAL)	936,150 gpd	936,150 gpd
TOTAL 1990 WATER DEMAND (DAILY) (BOTH SUBTOTALS)	2,032,900 gpd	2,711,400 gpd
15 HR. PUMPING RATE (ASSUMES 2/3 OF TOTAL WATER DEMAND CONSUMED DURING 15 HR PERIOD 6AM-9PM)	1,491 gpm	1,988 gpm

9 HR PUMPING RATE

(ASSUMES 3/4 OF ABOVE

WATER DEMAND CONSUMED DURING

9 HR PER PERIOD 12 NOON-9PM)

1,863 gpm

2,485 gpm

The City's present water system has a total capacity, all wells, of 7500 gpm. The main well has a capacity of 2000 gpm. The estimated water demand of Plan A appears to be within the capacity of the existing system with use of the City's number two well (2,500 gpm) on an intermittent basis. Even assuming that peak demand periods (summer days) result in a short term doubling of water demand to 3,726 gpm, the system has a combined capacity of 4,500 gpm, providing a margin of safety and a backup capacity of 3,000 gpm. The estimated water demand of Plan B also appears to be within the capacity of the existing system. However, the City's number two well will likely be utilized on a more regular basis. Assuming peak demands (summer days) double to 4,970 gpm, all wells will be required leaving the City without a backup source. In addition booster pumps, and additional storage may be required to maintain pressure and meet instantaneous demands. Should the water requirements of Plan B result in all three wells, two on a regular basis and one intermittent, being utilized an additional backup well might become necessary. Such a well could be developed at the City's future maintenance center on Sunland Drive. Expansion of the distribution system will be required under both Plan alternatives since the expansion areas of either Plan alternative are not presently served. Well number two located north of Sierra Street, could be utilized to serve the heavy commercial-light industrial area in the Wye Road area, the highway oriented commercial, retail center as well as the residential expansion proposed in the Plan B alternative. The other expansion areas of either Plan alternative can be served by connection to the existing system in the adjacent incorporated area. The environmental review process can be used to systematically monitor water requirements against the system's capacity.

Fire flows are generally thought to be adequate. Aggregate system fire flows, estimated at 3,000 gpm for 10 hours and 3,500 gpm for 10 hours for Plan alternatives A and B respectively, appear to be well within the City's water system's capacity with one well as a backup. Fire flows appear to be within the system's aggregate capacity although the backup well would likely be required. Minimum fire flows of 2,500 gpm for 10 hours should be available in the central business district heavy commercial-light industrial area and retail center. Minimum fire flows of 2,000 to 500 gpm for from four to two hours should be available in residential areas with the highest to lowest standard corresponding to density height and construction materials. These fire flow standards should provide the basis for system design in these areas.

Unincorporated Portion of Planning Area

The balance of the planning area, generally lower density residential development, is served by smaller community systems or individual wells. Information on these systems is limited making an analysis of each system's capacity virtually impossible. Most of the growth anticipated in conjunction with both Plan alternatives lies within the City of Bishop "sphere of influence" reducing the need for a critical analysis of each of these smaller systems. Additional development in the unincorporated area outside the City of Bishop "sphere of influence" will either connect to an existing system or develop the requisite system. A description of the major systems located in the unincorporated portion of the planning area and a discussion of problems and standards is provided below.

Westridge Community Services District

The Westridge Community Services District (WCSD) serves approximately 80 single family dwellings and Manor Market commercial area. The system consists of two wells, each with a 200 gpm capacity and a 5,000 gallon pressure tank. This system serves approximately 240 individuals and includes fire hydrants. The area served by the WCSD is built out and no additional development is planned within the District's service area. This system appears adequate to meet this area's needs. The Bishop Community Plan anticipates expansion of the commercial center adjoining Manor Market, and approximately three acres of Medium-High Residential development on land contiguous to the WCSD. Annexation to the WCSD and service provided to these areas would be preferable to on site water service.

Indian Creek Mutual Water Company

Adjoining the WCSD is the Indian Creek Mutual Water Company (ICMWC) which serves the residential area south and east of the WCSD. The Indian Creek Mutual Water Company's service area consists of approximately 202 single family dwellings on approximately 80 acres. The system consists of a well and 10,000 gallon pressure storage. Records do not indicate any problems which would result in inadequate service under normal or fire conditions. Largely built out, the Community Plan does not entertain any major development proposals within the ICMWC service area. Service provided by an existing system, if not the WCSD, then ICMWC, would be preferable to on site water systems.

Sierra Highlands Community Services District

Water service is also provided to the West Bishop area by the Sierra Highlands Community Services District (SHCSD). The District provides water to an area of approximately 69 acres encompassing 119 lots located in the Glenbrook-Irene Way area. The District's system consists of two wells capable of producing 500 gpm each and a 5,000 gallon pressure tank. This system also provides a limited number of fire hydrants. The Community Plan designates the District's service area for Low and Very Low Residential development. Some additional dwellings will be connected to the system as recent subdivisions have

been annexed into the District. The system appears to have a capacity more than adequate to meet present and future needs.

Owens Valley Mutual Water Company

The Owens Valley Mutual Water Company (OVMWC) serves the Lazy A Estates and some commercial development in the Meadow Farms area north of U.S. 395. The OVMWC system serves an area of approximately 40 acres which contains 140 dwellings and is largely built out. The OVMWC system consists of three wells and has a 1,000 gpm capacity including a 5,000 gallon pressure tank. Fire hydrants are included in the distribution system. The system appears to meet the normal and fire demands of the service area. The Community Plan anticipates Retail Commercial and Office and Professional development on vacant land in and adjacent to the OVMWC service area. Connection to the OVMWC system in these areas is preferable to individual on site systems for fire protection and reliability. The capacity of the system should be evaluated before major commitments are made. Medium density residential development to the west and north of the OVMWC service area would likely exceed the system's capacity requiring an enlargement of the system or creation of a separate system.

Brookside Estates Mutual Water Company

The southeast corner of the McLaren neighborhood is served by the Brookside Estates Mutual Water Company (BEMWC). The service area of this system encompasses approximately five acres and 23 dwellings and is totally built out. Water is supplied by two wells, each with 250 gpm capacity, and a 5,000 gallon pressure tank system. This system is adequate for normal and fire demands. The Bishop Community Plan designates the area for Very Low Density Residential Development consistent with the existing land use.

Ranch Road Estates Mutual Water Company

The Ranch Road Estates Mutual Water Company (RREMWC) provides water to the northeastern corner of the McLaren area. The RREMWC serves approximately 35 parcels of Exclusively Residential Development on 10 acres. This system consists of two wells equipped to deliver 500 gpm each to a 5,000 gallon pressure tank. This system is adequate for normal and fire demands. The Bishop Community Plan designates the area for Very Low Density Residential Development consistent with existing land use.

Balance of Planning Area

Throughout the balance of the planning area water is supplied by smaller community water systems or individual wells. Among the larger of the community water systems are the Highlands Mobilehome Park, Glenwood Mobilehome Park, Desiderata Estates and R & V Water Company.

Future Requirements-Impacts

Abundant groundwater of good quality and an absence of clear standards are largely responsible for the piecemeal approach to water supply development. Each of the major water systems appear to be adequate to meet the existing and future demands within their service area. Limited information on each system prevents a systematic analysis of the capacities of each system to determine whether planned land uses on adjoining lands can be successfully accommodated. Consequently, this section will focus on the types of policies and standards necessary to provide greater coordination of water supply requirements and land use. Water supply problems consists of a need for interconnections between major water systems, auxiliary power or pumping capability, and a clear set of policies and standards keyed to the type and intensity of land uses.

Interconnection between at least the larger systems could help insure that water would be available during emergencies or in the event of a shut down in one system. Connections between systems could be designed to be utilized only during emergencies thus retaining each system's independence during normal operations. Likewise, it would be desirable to provide more than one well per system and/or the provision of gasoline, diesel or similar non-electric pump capability in the event of a power outage.

The provision of water and sewer services is an important determinant of density. Land use and density standards relative to the provision of water and sewage disposal have evolved from long term experience with water quality degradation and are themselves founded on public health requirements. However, even these standards do not insure that water quality and the public health will be absolutely guaranteed. Often the site or local specific circumstances such as soil characteristics groundwater conditions and total volume of effluent or groundwater extracted in an area play important roles in determining land use and density. Discounting anything unique about these factors, these standards have proved satisfactory at providing a reasonable level of public health protection. As a general standard residential development which is dependent upon an individual well and septic system should not be less than one acre. When either water or sewage disposal is accomplished off site, leaving a well or septic system to be supported by the land, a parcel of not less than one half acre should be provided. Most often community water is provided retaining septic system sewage disposal. This situation is reversed in the planning area with nearly all of the planning area provided with a sewage collection and disposal system. Only when both off site sewage and water supply systems are provided should densities of greater than two dwellings per acre be considered. With the provision of community water and sewer systems density need only be limited by system capacity or other factors such as land use compatibility or traffic congestion. These standards, reflected in Inyo County

Health Department standards and the policies contained in the Lahontan Regional Water Quality Control Board's Basin Plan. These standards were also employed in the development of the Land Use Element and are reflected in the land use designations contained in the Element.

For development including commercial land uses, at densities of greater than two dwelling units per acre (less than one-half acre or an equivalent for non-residential development), water service should be provided by an existing system or the development of a community system. Fire protection capability and overall system reliability are generally better in the larger water systems than smaller ones. As a result, the extension of water service from an existing system is preferable to the proliferation of individual wells or small mutual water systems. This may in some areas where numerous small parcel subdivisions could take place (lot splits or subdivisions containing four or less parcels of less than one-half acre in size), produce an apparent hardship on land owners. However, a strong policy on lot size and water system requirements might produce a larger scale single or multiple community water system(s), a more desirable long-term alternative to the present uncoordinated water supply development. Water service from an adjoining water system should be explored before reliance on individual wells or the creation of small scale mutual systems are approved. A long-term program of encouraging the larger water systems to expand their service areas would be desirable. Greater water supply coordination might result if development proposals adjacent to the service areas of the major water systems were consulted during the development review process. This is particularly true for developments proposed within the "sphere of influence" boundaries of the public water systems. Where a mutual company or other privately operated system is capable or willing to enlarge its service area, the County should cooperate including making such provisions for over-sizing of extensions.

In general, the area's groundwater quality is good to excellent with occasionally high fluoride and boron constituents. Connection of the recently completed community sewage collection and treatment system has eliminated a major source of pollution and thus a potential public health problem. Nevertheless, a policy should be incorporated in the Plan to insure that water supply by individual or community systems meets Public Health Service Drinking Water Standards. Capacity and storage should be designed to provide quantities adequate to meet maximum or peak day demands, without significant loss of pressure. These systems should also be capable of meeting fire flow demands consistent with the type and intensity of use. Community water systems for residential development created by subdivision or for more intense types of land uses located on a single parcel should provide fire hydrants which adequately protect the development. Fire flow standards recommended by the State of California and the National Board of Fire Underwriters range from 500 gpm for two hours for lower density single family areas to 2,500 gpm for from four to ten hours for high value commercial-industrial areas. Fire flows of 1,000 gpm for four hours are recommended for higher density residential or mixed use areas. While the City of Bishop's municipal system is designed to produce these fire flows, the lack of systematic water resources development in the unincorporated portion of the planning area confine effective fire flows to those areas developed in conjunction with a district or mutual water system. The provision of hydrants as a means of delivering the recommended fire flows is also an important issue. The State of California recommends a hydrant spacing of a minimum of 660 feet for densities of two dwellings per acre or less and a minimum of 330 feet for greater densities.

SEWAGE TREATMENT

Sewage collection and treatment, in contrast to the decentralized provision of water supply, is more systematic and centralized. The City of Bishop provides sewage service within the City limits. The Eastern Sierra Community Services District, heir to the County Services Area Number One, provides sewage service to all unincorporated portions of the planning area except for the Rocking K and Laws areas. Figure 56 depicts the areas served by each entity and the major features of each system.

City of Bishop

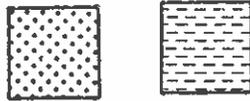
Sewage Treatment

The City of Bishop operates a collection and treatment system for the incorporated portion of the planning area. Primary effluent is treated by clarifiers and digesters. This effluent is then discharged to stabilization, oxidation/percolation ponds for secondary level treatment. The City of Bishop hopes to receive permission from the Lahontan Regional Water Quality Control Board to operate a 40 acre flood irrigation waste water reclamation adjacent to the City's treatment facility. The City is presently upgrading its six ponds (three sealed and three percolation) by improving the sealed ponds with a bentonite blanket and additional aeration designed to improve the facility's efficiency. The treatment plan, ponds and waste water reclamation area are located approximately one half mile southeast of the City of Bishop. The facility is located on land obtained by the "Garner Agreement" which permits the City of Bishop to dispose of sewage in perpetuity.

Existing Requirements-Capacity

An analysis of the existing facility's capacity, flows and needs was conducted by Gram/Phillips Associates, Inc., engineers in 1976 and 1977. At that time, the Meadow Farms area was connected to the City's treatment plant. Subsequently, the Meadow Farms area has been connected to the Eastern Sierra Community Services District's collection and treatment system. Consequently, the figures developed in the analysis for total and per capita flows are slightly higher than they actually are today. The City generates an annual average of 1.489 million gallons per day (mgd) of effluent and 1.651 mgd in peak month conditions. Approximately one third of these effluent flows are thought to as a result of infiltration and the balance of 1.011 mgd is due to residential and commercial use. The City is undertaking remedial actions to reduce the high infiltration volumes and thereby increase both capacity and plant efficiency. Based on maximum month flows (less infiltration and service stations, restaurants and hotels/motels) per capita flow is estimated to be 156 gpcd. Service stations, restaurants and hotels/motels are thought to account for .270 mgd or 16 percent of the peak month daily effluent flow of 1.651 mgd. Gram/Phillips estimates the present design capacity of the Bishop treatment

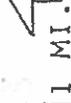
EXISTING SEWAGE COLLECTION AND TREATMENT SYSTEMS SERVICE AREAS AND MAIN ELEMENTS.



CITY OF BISHOP

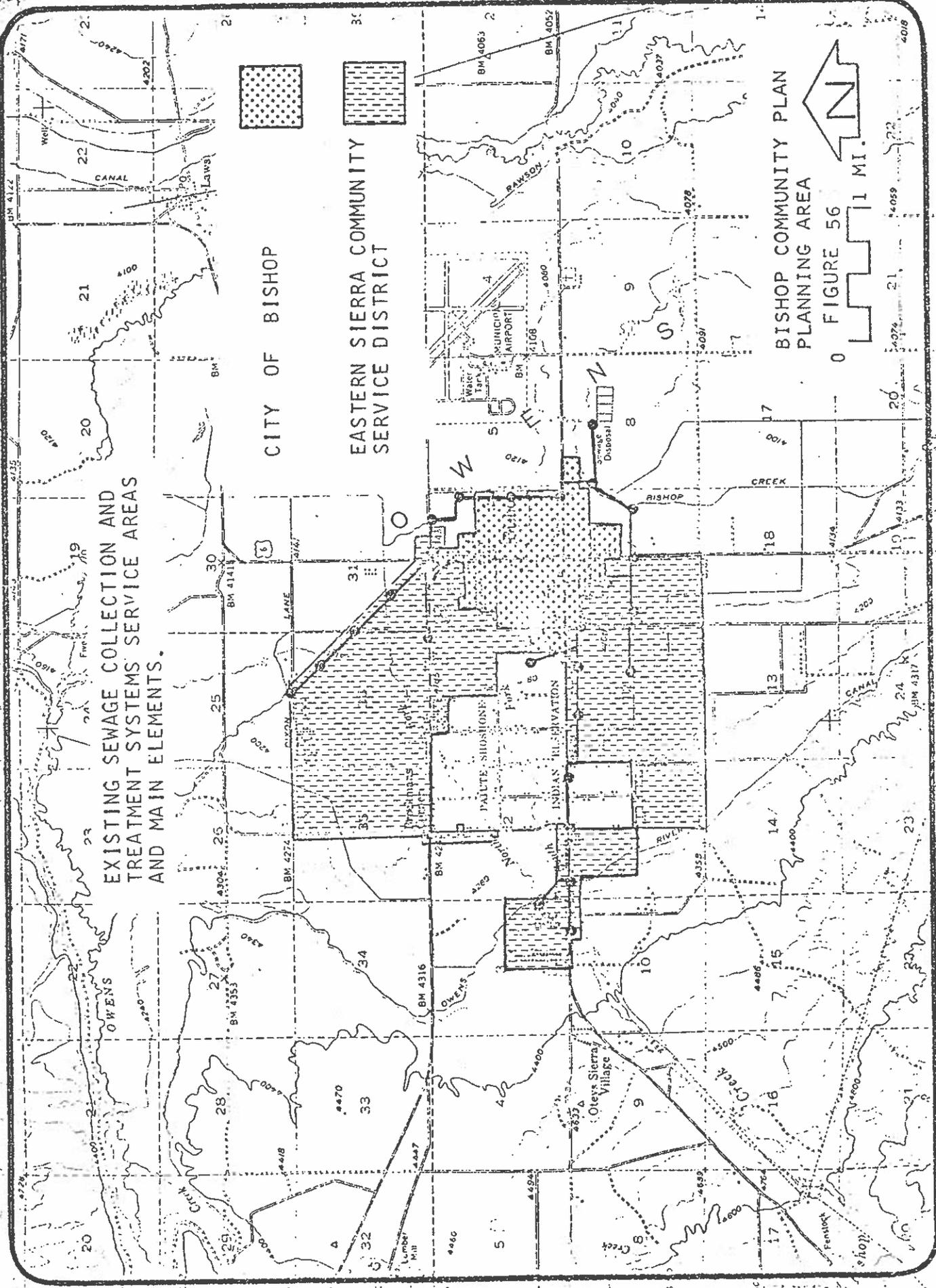
EASTERN SIERRA COMMUNITY SERVICE DISTRICT

BISHOP COMMUNITY PLAN PLANNING AREA



0 1 MI.

FIGURE 56



facility at 2.5 mgd and with reductions in line infiltration combined with the improvements to the lagoon system the difference between existing flows and capacity could be much greater than the present .849 mgd volume.

Future Requirements-Impacts

Based on the estimated design capacity of 2.5 mgd and estimated per capita flows of 156 gpcd, the present system could accommodate a total population of 16,026. This of course neglects the contributions made by the high transient and employee populations as reflected in the high proportion of non-residential land use found in the City of Bishop. This need combined with the reduction in effluent by the connection of Meadow Farms to the ESCSD facility create the need to adjust the effluent figures before determining future capacity-requirements. Effluent flows with infiltration reduction and loss of Meadow Farms are presently averaging an estimated .880 mgd (based on short term records). Long term records indicate that these flows are approximately 91 percent of peak monthly average daily flows. Adjusting the present average daily flows by historically observed increases, an average peak month daily sewage flow of .975 mgd is estimated.

Using per capita contributions estimated at 156 gpcd by Gram/Phillips for the present service population of 3,440 approximately .536 mgd or 55 percent can be attributed to the resident service population. The balance of daily effluent flow of .438 mgd can be attributed to non-residential land uses. Based on approximately 181 acres of non-residential land uses as established in the 1976 Land Use Inventory, non-residential land uses generate an average of 2420 gallons of effluent per acre on a daily basis.

As was the case in estimating future water requirements it is assumed that the City will annex and provide service to all the land which lies within the recommended sphere of influence. Thus, future requirements can be estimated from the additional population growth plus additional non-residential development. The principal distinction lies in the population planned in conjunction with the Plan B alternative.

TABLE 71
SEWAGE REQUIREMENTS

	<u>PLAN A</u>	<u>PLAN B</u>
TOTAL POPULATION (ESTIMATED)	4387	7125
EXISTING POPULATION	-3441	-3441
INCREMENTAL POPULATION GROWTH	946	3684
PER CAPITA SEWAGE CONTRIBUTION (DAILY)	<u>x156 gpcd</u>	<u>x156 gpcd</u>
INCREMENTAL RESIDENTIAL SEWAGE REQUIREMENTS (DAILY)	.148 mgd	.574 mgd

EXISTING RESIDENTIAL CONTRIBUTION (DAILY)	<u>.536 mgd</u>	<u>.536 mgd</u>
TOTAL 1990 RESIDENTIAL CONTRIBUTION (DAILY) (SUBTOTAL)	.684 mgd	1.11 mgd
INCREMENTAL NON-RESIDENTIAL PLANNED LAND USES (ACRES)	165 ac	165 ac
AVERAGE NON-RESIDENTIAL SEWAGE CONTRIBUTION PER ACRE (DAILY)	<u>x2420 gal/ac</u>	<u>x2420 gal/ac</u>
INCREMENTAL NON-RESIDENTIAL SEWAGE CONTRIBUTION (DAILY)	.399 mgd	.399 mgd
EXISTING NON-RESIDENTIAL SEWAGE CONTRIBUTION (DAILY)	<u>+.438 mgd</u>	<u>+.438 mgd</u>
TOTAL 1990 NON-RESIDENTIAL SEWAGE CONTRIBUTION (DAILY) SUBTOTAL	.837 mgd	.837 mgd
TOTAL 1990 SEWAGE TREATMENT REQUIREMENTS (DAILY) (BOTH SUBTOTALS)	1.521 mgd	1.941 mgd

The estimated sewage flows generated by either Plan alternative are well within the 2.5 mgd design capacity of the Bishop Sewage treatment plant.

A collection system would be required in all expansion areas proposed by both Plan alternatives. The Plan B alternative would, due to the relatively large amount of proposed residential development, require the greatest investment and largest amount of collection system expansion. Non-residential expansion areas located within the City of Bishop's sphere of influence including North Sierra Highway, Wye Road and residential expansion south of the City of Bishop might easily be served by high capacity sewage lines of the ESCSD already in place in these areas. This would require an agreement between the two service entities. In any event, some of the projected 1990 sewage effluent flows may be collected and treated by the ESCSD, unless agreement between these entities cannot be reached in which case the City's collection system expansion will be greater than necessary. Periodic monitoring of sewage effluent volumes is also desirable.

Eastern Sierra Community Services District

Sewage Treatment

Developed to prevent the degradation of groundwater quality used for domestic water supply from individual waste water disposal systems. The sewage collection and treatment facility was initiated under the auspices of Inyo County as a County Services Area. Subsequently, an election was held which created the Eastern Sierra Community Services District (ESCSD). ESCSD is responsible for the collection and treatment of sewage for nearly all of the developed

portion of the planning area including the Bishop Reservation. Nearly identical to the City of Bishop's sewage treatment facility, the ESCSD system consists of a primary clarifier, digester, oxidation/percolation ponds and sludge drying bed. Effluent is provided with secondary level treatment through three oxidation/percolation ponds. The plant and ponds are located on approximately 65 acres adjacent to the City of Bishop's treatment facility.

Existing Requirements-Capacity

In operation for just over a full year, complete records representing operation under a full range of conditions are not yet available. However, the plant has a design capacity for .850 mgd and substantially greater line capacity. Land use within the ESCSD service area is overwhelmingly residential and nearly all connected to the system. Records indicate that the plant treats an average daily volume of .200 mgd generated by an estimated 2,873 individuals served by the system. Per capita daily sewage effluent is estimated at 69 gpcd.

Future Requirements-Impacts

At present per capita rates, the ESCSD plant has a capacity to serve a population in excess of 12,000. Both the A and B Plan alternatives provide for an estimated holding capacity of 8011 nearly all of which would be served by the ESCSD collection and treatment plant. In addition both Plans call for relatively minor non-residential expansion largely in the Meadow Farms and Manor Market areas. Assuming present per capita discharge rates for residential development and a factor for the additional non-residential development proposed for the portion of the planning area within the ESCSD's sphere of influence, an estimated average daily effluent volume of approximately .589 mgd will be generated leaving a margin of .261 mgd. This balance in capacity may be utilized for the non-residential development proposed in both Plans where the ESCSD has existing high capacity lines. If all the areas proposed for expansion in both Plan alternatives, but the B Plan alternative in particular, were connected to the ESCSD plant, the plant's capacity would be exceeded. This could be mitigated by the construction of a line linking both plants and the diversion of effluent over the ESCSD's plant's capacity to the City of Bishop's treatment capacity remaining. The technical/physical problems may prove to be more easily surmountable than the complex legal and political issues involved with the two service entities.

Balance of Planning Area

Both Plan alternatives provide for land uses outside of the future service areas of the City of Bishop or Eastern Sierra Community Services District. The principal areas include the Rocking K area, the residential development south of the Airport around Van Loon Lane, the Airport including future airport related commercial activity and the general industrial development in the Laws area. The Basin Plan indicates that a separate secondary level, community sewage treatment facility will be required at some time in the future for the Rocking K area. The Plan designates the area for Very Low Density (0-2 cu/ac) Residential with a holding capacity estimated at 94 dwellings and a population of 254. Strict adherence

to the density, lot size standards based on the provision of essential services (i.e., individual septic and well-1 acre, individual septic and community water system) may prevent the need for a community sewer system. The Rocking K area is included within the ESCSD sphere of influence in the event it becomes either necessary or feasible to construct an interceptor to the Rocking K area. Inclusion of the Rocking K area within the ESCSD sphere of influence does not commit either the District to provide service or to the Rocking K area to accept this type of solution to sewage treatment.

The residential area south of the Airport around Van Loon Lane consists of approximately five acres, largely developed under the RMH-7200 zoning. This area is also dependent upon well and septic systems. However, since it is both isolated and more importantly already developed at a density greater than permitted in order to be self-supporting with respect to essential services, the Plan recognizes the existing development by designating the area for Medium Density (4.5 to 7.0 du/ac) Residential. No change or major problems are anticipated.

Airport related commercial development as suggested in the Airport Master Plan is included in the Plan. This development like the existing development will have to rely on septic system waste disposal as sewer service is not provided to the Airport. Isolated, situated on a large parcel and unlikely to generate substantial effluent volumes, septic disposal should be adequate for the type of development envisioned in the Plan.

The Laws area is also without sewage treatment service. The Plan proposes to continue the present land use activities, including general industrial, truck terminals and the Laws Museum. Septic or other similar forms of on-site waste disposal will be the only mode of waste water disposal. General industrial activities vary in the type and content of their discharges. If waste water discharges are confined to employee effluent, septic or on-site waste water disposal should be acceptable. However, industrial wastes should be carefully evaluated before on-site disposal is permitted. Setting discharge requirement for the protection of groundwater quality is the responsibility of the Inyo County Health Department and Lahontan Regional Water Quality Control Board on a case-by-case basis.

Overall sewage treatment service while requiring additions to the collection system and perhaps complex legal arrangements should not overtax either existing systems or groundwater resources under the policies of either Plan alternative.

FIRE PROTECTION

Two distinct but interrelated entities provide structural fire protection services within the planning area. The City of Bishop Fire Department provides fire protection service within the City limits and the Bishop Rural Fire Protection District serves the unincorporated portion of the planning area. Although separately funded and thus having some equipment limitations, the two entities are organized and effectively operate as one fire department. Staffed by volunteers under one elected Fire Chief, the Bishop

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