

Water for Nevada

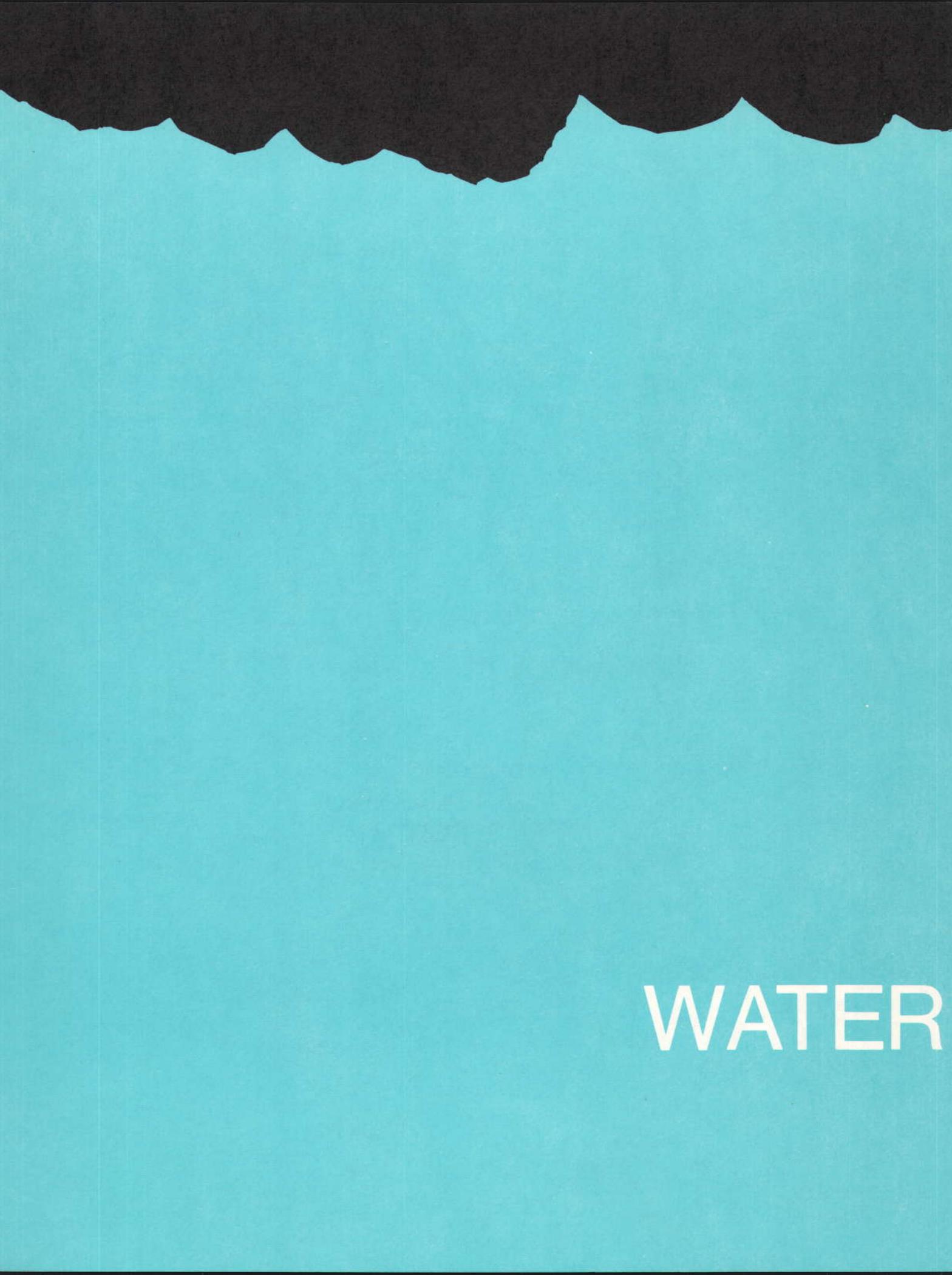


GUIDE LINES FOR NEVADA WATER PLANNING

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BRANCH OFFICE
LAS VEGAS, NEVADA



State of Nevada
WATER PLANNING
REPORT



WATER

FOR NEVADA

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GUIDE LINES FOR
NEVADA WATER
PLANNING

REPORT NO.

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TO THE CITIZENS OF THE STATE OF NEVADA

This is the first in a series of planning reports designed to keep the people of Nevada informed of the development of the State Water Plan and to outline its details. It has been prepared by B. J. Vasey, Planning Engineer, Division of Water Resources.

The State Water Planning Program had its start in the 1969 legislature, which authorized the completion of water inventories, and the conduct of those studies necessary to develop a comprehensive water resource plan for Nevada.

At the same time, the lawmakers directed the State Engineer to "review and evaluate proposals by federal, state, and local agencies for flood control and water development projects, to insure that such proposals are compatible with the state water resource plan and are in compliance with Nevada Water Laws." As a result of this legislation, the Office of the State Engineer established a Planning Section on July 1, 1969, to develop the State Water Plan.

Planning efforts are supported by funds provided by the Nevada legislature and by federal matching funds from the Water Resources Council under Title III of the Water Resources Planning Act of 1965 (Public Law 89-80).

One of the first efforts has been the preparation of proposed objectives, principles, assumptions, and procedures to be used in the planning process. These were presented to the people of the state in a series of public meetings held in each of the seventeen counties. Comments and suggestions received at these meetings, and subsequently, led to revised standards, which are now being used as guidelines in the development of the State Water Plan.

Respectfully,


Roland D. Westergard
State Engineer

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1 GUIDE LINES FOR NEVADA WATER PLANNING

PURPOSE AND SCOPE

The need for a State Water Planning Program is especially pressing in Nevada because of its limited water resources. How it uses those resources will be a key factor, not only in the extent, but also in the kind of development and growth that will take place in the state.

For the plain fact is that improvements in Nevada's economy, the well-being of her people and the enhancement of the quality of her environment cannot be separated from the use that is made of her water resources. That includes not only existing water resources, but those which may become available as a result of technological advances, or water which is imported from outside the state.

Another big reason for the development of a State Water Plan lies in activity that is building elsewhere. Lately there have been increased water and related land resource planning efforts by other western states and the federal government. In order for Nevada to express and protect its interests and desires in these other planning efforts, the state must prepare a water plan based on a statewide perspective. The information developed can also be used in the planning done by other Nevada state agencies and local entities.

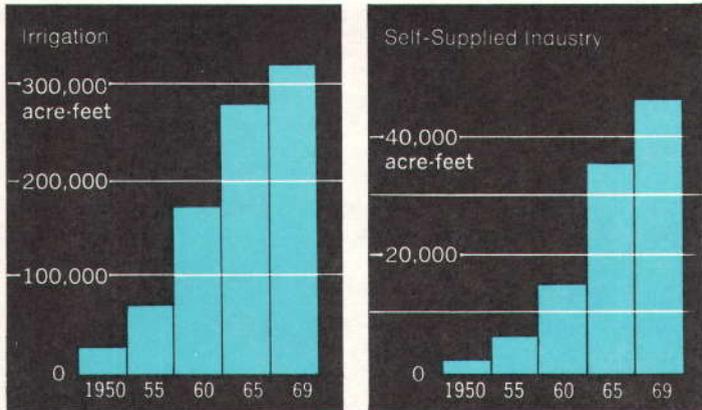
The State Water Planning Program was authorized by the 1969 Nevada Legislature by virtue of an amendment to Chapter 532 of the Nevada Revised Statutes, and an appropriation to the Division of Water Resources for a planning section within the Division. State funds were also provided to employ consultants to assist in the preparation of portions of the plan.

Because the State Water Plan will outline the ways and means by which future water needs of the state can be met, emphasis will be given to those elements which affect water and related land resource requirements.

(Note that the term "related land" as used here refers to land that is associated with water resource developments either through significant effects of the land on the water resources, or the effects of the water resources and their development on the land.)

Gus Bundy





WELL WATER USED FOR IRRIGATION AND SELF-SUPPLIED INDUSTRY 1950 TO 1969

Plans for the uses of Nevada's water and related land resources will have three broad objectives: (1) "environmental quality"; (2) "economic efficiency" and (3) "area development".

The process of working toward these objectives will help to identify alternative courses of action, as well as supplying information which will be helpful in making sound final decisions.

It might appear that this kind of preparation for developing a State Water Plan is rather elaborate. It should be stressed here that water is such a complex subject in our society that only an organization incorporating the knowledge and skills of many specialists can control its preservation, usage, and general development.

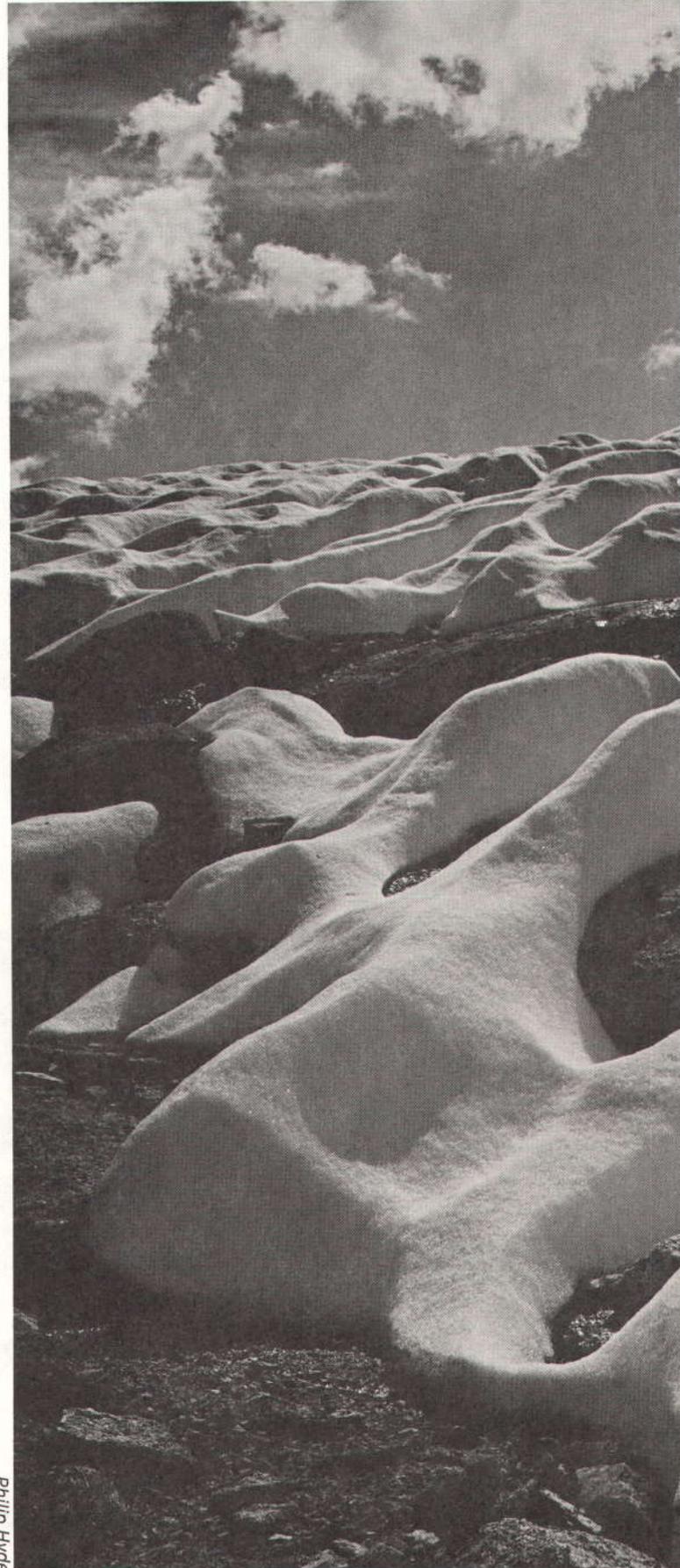
An organization chart of the Nevada Division of Water Resources is included at the back of this planning report to give an idea of the broad range of responsibilities relating to water vested in the State Engineer's office.

OBJECTIVES

The development of the State Water Plan rests on more than one basic objective. But although a wide range of goals exists, practical limitations require our using as guidelines only the three objectives mentioned above because they are, in Nevada, those significantly affected by water resources development. These definitions will explain them and how they fit into the over-all pattern.

1. Environmental Quality

The aim here will be to maintain or improve the quality of the state's environment. Emphasis will be on ways to enhance the state's water and related land resources. Since the other two objectives will include evaluation of needs for environmental factors such as water quality, recreation, and fish and wildlife, the "environmental quality objective" may be met by satisfying certain needs included in



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the two other objectives. In some instances, however, the state's resources may not be adequate to meet both the "environmental quality objective" and the "development objectives."

2. **Economic Efficiency**

The aim of the "economic efficiency objective" is to find ways to bring as much economic return as possible to the state per unit of investment of water and related land resources. Estimates of Nevada's future growth in certain major economic and/or water use sectors will be made and associated water needs derived. These projections will provide the basis for an evaluation of the future water demands and the amount of resources available to meet them. Then an analysis of alternative water and related land resource allocations for each of the sectors will be made to determine which investments of resources will yield the maximum economic returns.

3. **Area Development**

The "area development objective" aims to create specified patterns of development through investments of water and related land resources. In some cases, meeting the "economic efficiency objective" will satisfy the "area development objective." Deviations from the economic efficiency plan intended to stimulate area development shall be clearly identified. Improvement of an area's economic integrity, increased employment and increased income in an area are examples of area development objectives.

Plans for the use of our water and related land resources will be based on an evaluation of the ability of these resources to furnish different levels of contribution to the planning objectives. Alternate plans to meet the different objectives will be prepared where conflicts occur. This will provide the tools needed to make sound comparisons between alternative plans.

The order in which the objectives are presented in this report does not imply their relative priorities. No one objective has any greater entitlement to the state's water and related land resources than any other.

PRINCIPLES AND ASSUMPTIONS

In order that like evaluations may be made among alternative plans developed to meet the objectives of the State Water Plan, it is necessary to establish general principles and assumptions. These assumptions will also



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facilitate the comparison of the state water planning effort with the planning efforts of other Nevada and federal agencies, and other states.

A. Principles

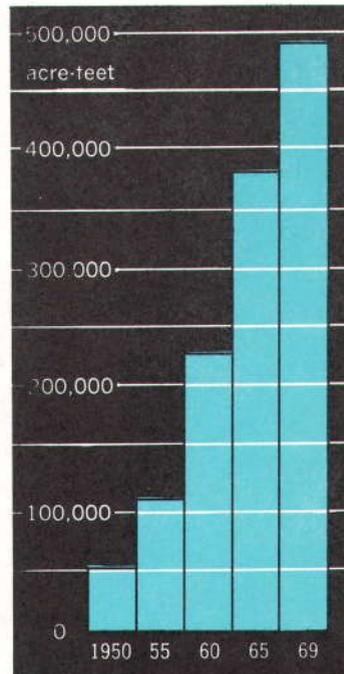
1. Existing water rights will be recognized in the development of the State Water Plan, and planning shall conform with interstate compacts and court decrees.
2. The utilization of water and treatment of return flows will conform to the water quality standards established by the state.
3. Authorized and/or proposed federal, state and local flood control and water development projects shall be evaluated as a part of the development of the State Water Plan.
4. The regions and basins, shown on the map of hydrographic areas of the state prepared by the State Engineer's office and dated January 1968, shall be the hydrologic boundaries used in the development of the plan.
5. The period covered by the plan shall be the next 50 years, to the year 2020.
6. The base year of study will be 1970, with projections at 1980, 2000, and 2020.
7. The plan shall recognize and incorporate scientific advances and new technology as a means of meeting future needs. Desalinization, weather modification and evaporation reduction are examples of possible ways to increase or improve water supplies.
8. Early attention will be directed towards meeting the needs of those areas of the state which are presently experiencing water deficiencies and those areas which will be deficient in the near future.

B. Assumptions Relative to the U.S. Economy

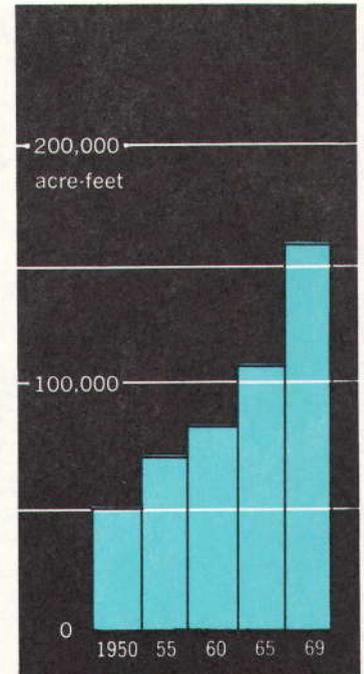
1. The national economy will continue to grow and economic recessions of major significance will not occur.
2. The trend toward shorter work weeks and increased leisure time will continue.
3. The redistribution of population to the western states will continue.
4. No major war will occur.

C. Assumptions Relative to the Nevada Economy

1. Gaming will continue to be legal in Nevada and



WELL WATER USE
1950 TO 1969



PUBLIC WATER USE
1950 TO 1969

there will be no federal controls imposed on gaming.

2. Inter-relationships between sectors of the Nevada economy will remain constant, or will change in a predictable fashion.
3. Wherever possible, future water development in Nevada will be for multiple purposes.
4. The plan shall be predicated upon the theory that the state will have to exist at least until the year 2000 with the surface and ground water supply now available to it — that is, without being able to get major imports.

PROCEDURES

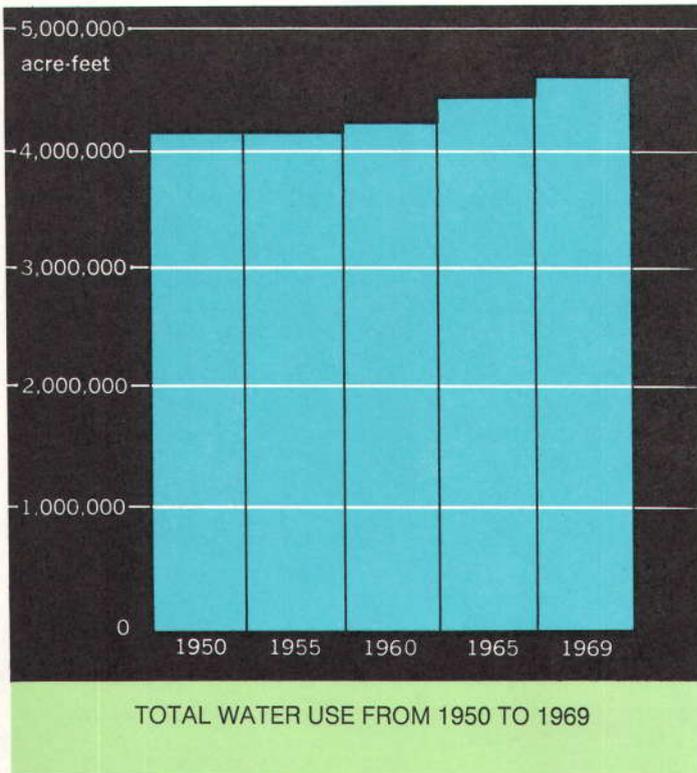
Plan formulation consists of a series of steps by which data are collected, evaluated and applied in the planning process. The process involves an orderly and systematic approach to making determinations and decisions. Basically, the procedure calls for the following steps:

A. Resource Availability

1. An inventory of the water resources presently available to the state, including facts on their



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present use and a summation of existing water rights.

2. An appraisal of present land use and suitability, including soil analysis and classification in certain areas of the state which have potential for development in the near future.

B. Projected Needs

Projections of future water and related land resource needs for the following categories of use – not necessarily in this order of priority:

- | | |
|----------------------|-----------------------------|
| 1. Agriculture | 4. Municipal Mining |
| 2. Electric Power | 5. Municipal and Industrial |
| 3. Fish and Wildlife | 6. Recreation |

Nevada may have a good chance of participating in regional and/or inter-regional water transfers. Since, geographically, Nevada lies across the path of many such proposed transfers, an appraisal will also be made of the potential level of development the state could attain limited by available land and other physical resources, except water.

C. Residual Needs

Residual or net needs for the specified target dates (1980, 2000, 2020) will be determined by comparing resource availability (A) with projected needs (B).

D. Alternate Plans

The formulation of alternate plans will be limited to consideration of significant alternative uses of water and related land resources required to meet the three objective functions. It is known, for example, that there will be instances where resources are inadequate to meet all components of all three objectives, and that more expensive alternatives may be required to satisfy one objective than another. In these cases, alternate plans will be prepared to meet the different objectives, and to identify the difference among separate courses of action. In this way a reasoned choice or blending of alternatives can be made.

E. Selection of Plan

The goal of the state water planning effort is to prepare and recommend a general plan which will provide the best basis for meeting the existing and projected water and related land resource needs of the state.

The State Water Plan is a plan for the people of Nevada, therefore, the selection of a plan will reflect Nevada's preferences for attainment of different levels of contribution to the three planning Objectives.





State of Nevada
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