State Water Plan Report No. 2

OBJECTIVES AND POLICIES

of the

STATE WATER PLAN

A Report from the

STATE WATER PLAN

State Engineer’s Office

Cheyenne, Wyoming
This report is one in a series of reports that are outputs from the Wyoming Water Planning Program. The program is under way as a result of the direction by the 1967 Legislature to undertake a comprehensive study of Wyoming's water and related land resources. The Water Planning Program is being conducted by a division of the State Engineer's Office.
OBJECTIVES AND POLICIES

of the

STATE WATER PLAN

The State Water Planning Program was established by the 1967 Legislature to study the availability of the State's water resources, the present uses of the State's water, projected needs for water in the State, and to plan for the wise use of water resources to meet the needs of the people of Wyoming. The need for the Program stems from increased demands for water within Wyoming and in neighboring states. Additional motivation is caused by increased planning efforts by other states and the Federal government. The availability of Federal matching funds through the national Water Resources Council provides a means of defraying part of the cost of the Planning Program to the State of Wyoming, and thus provides somewhat of an impetus for the Program.

I. Objectives of the Planning Effort

A. To analyze and evaluate the availability of water in Wyoming and the present uses being made of this water.

B. To point out how the water supply for existing users in Wyoming can be stabilized to better support the existing uses.

C. To point out how water resources can be used to stimulate and support the future development of Wyoming.

D. To point out how Wyoming's decreed or compacted share of interstate waters can be fully utilized to produce maximum benefits to the people of Wyoming.

E. To point out how those portions of decreed or compacted interstate waters which are in excess of our share can be beneficially utilized while they are within Wyoming.

F. To develop data, criteria, and rationale pertaining to Wyoming's interstate waters still undivided and for desirable changes in existing compacts or decrees that might be arrived at by mutual agreement with other parties to these compacts or decrees.

G. To develop information for use in the planning efforts of other Wyoming agencies, and in review of planning done by other states and the Federal government.
H. To expand the capabilities of the State of Wyoming in planning, implementation, and surveillance of water resource activities.

I. To increase the knowledge and understanding of Wyoming citizens about their water and related land resources.

J. To assist in the decision making process of the state, local, and private bodies.

K. To provide a framework plan for water and related resources development.

II. Water Plan Procedures

A. Perform a general water resource inventory to determine the water supplies presently available for development, to determine ways of controlling this water, and to show where it may be used and what general benefits would accrue.

B. Perform inventory and projection type studies to determine water needs and the associated economic and social benefits derived from development in the foreseeable future:

1. Present and projected--
   a. Irrigated lands
   b. Agricultural economics
   c. Mineral and industrial development
   d. Municipal (population) growth
   e. Recreation
   f. Water uses of 1 - 5
   g. Economics of water use
   h. Electric power--hydro and thermal

2. Water Resource Studies-- determine present supplies, shortages, alternative means for supplemental supplies, alternative ways to provide water for projected needs.

3. Develop a framework plan to provide alternative solutions to anticipated water resource needs and problems.

C. Desired results of the Plan

1. Illustrate how water resource development can stimulate and assist in the growth of Wyoming.
2. Show the potential for State projects as well as ways of utilizing Federal assistance and providing for private development. Investigate means of financing the State projects.

3. Suggest legislative, organizational, and other desirable changes.

D. Implementation of plan--implementation will depend upon the outcome of the studies and the direction indicated at that point in time.

III. Policies and Guidelines For The Planning Program

A. General Policies of the State

1. Planning must conform with State water laws, interstate compacts, and court decrees.

2. The existing State institutional organization must be recognized and utilized.

3. Follow water development policy as set by the Legislature, administered by the Governor, and advised by the State Engineer and the Natural Resource Board.

4. Planning will always be directed toward the general utilization of Wyoming water in the State in such a way as to produce maximum benefits to the people of Wyoming.

B. State Engineer Policies

1. State Water Planning Program--to undertake the necessary work to accomplish the Goals and Objectives.

2. State Water Plan Staff
   a. Organization -- Organization Chart
   b. Director
      1.) Responsibilities
         (a) Direct the State Water Plan staff and perform the required administrative and personnel functions.
         (b) Provide constant liaison with the State Engineer.
(c) Provide coordination with other agencies and planning efforts as required.

2.) Authority

(a) To set working policies and to determine scope and timing for work projects within the program.

(b) To seek and hire personnel and set salaries within an agreed salary structure.

(c) To delineate staff responsibilities, supervise and evaluate personnel performance, and effect necessary changes.

(d) To administer State Water Plan funds with the advice and approval of the State Engineer.

C. Basic Assumptions

1. General Assumptions

   a. There will be no major wars or depressions that will have an extreme affect on the long-term economic development.

   b. Federal government will follow policies designed to stimulate economic growth in the State.

   c. Wherever possible, development in Wyoming will be for multiple purposes.

   d. The utilization of water and treatment of return flows will conform to the water quality standards set by the Wyoming Health Department.

   e. Population projections relevant to the State Water Plan will be developed as a function of the economy.

   f. Wyoming agricultural products will supply at least the same share of national requirements in the future that it has in the past.

   g. Irrigation efficiency is a function of economics.

2. Assumptions pertaining to Wyoming conditions

   a. Planning can best be accomplished by concentrating
on projections and development plans for the near future, such as between now and 1980, with less emphasis being placed upon long-range developmental planning to the year 2020.

b. Surplus water which generally occurs as uncontrolled spring runoff can be developed to stabilize present water supplies and provide water supplies for new uses. Early attention in the planning process should be directed towards ways of controlling Wyoming's rivers by means of storage projects.

c. In some cases, the potential growth is located away from water supplies, thus indicating the need for an early study of potential transbasin diversions.

d. Present uses of ground water are largely from sources in alluvial formations associated with nearby streams. Detailed investigation is necessary to better determine additional potential sources for ground water supplies.

e. Existing water rights and water law will be recognized as constraints in development of the Plan.

IV. Water Resource and Related Problems

A. Statewide Problems

1. Determination of water supplies—Wyoming's compact share, magnitude of water supplies by specific areas, present water uses and water supplies, and the amount of water available for supplemental and new supplies need to be determined on a statewide basis.

2. Accurate information on the lands actually irrigated is not available.

3. Water rights

   a. Water rights exceed the actual development in some areas, and in others the development has taken place without water rights.

   b. Water right records retrieval is presently complicated and time consuming.

4. Economics
a. Agriculture

1.) Farm cost-price squeeze

2.) Farm labor shortage

b. Other economics

1.) Wyoming's growth pattern-- historically has been
a steady growth spotted with booms in various areas of
the State, sometimes offset by declines in the same or
other areas.

2.) Needs for water-- because of this growth pattern,
needs for water resources development and other services
are often difficult to predict.

5. Problems associated with the Federal government

a. The changing concepts of land use and management of
the Federally owned land is causing increasing constraints on
development in Wyoming, sometimes to the point of exclusion
of development.

b. Implications of increasing controls by Federal agencies
in such areas as water pollution, power plant licensing, and
the reservations of water on Federal lands indicate increasing
constraints on the development of water and related land re-
sources.

c. Compliance with the 160-acre limitation on Federal
Reclamation projects presents problems in some areas of the
State.

d. The slowdown of programs that foster development and
conservation of water resources, such as Bureau of Reclamation
projects and programs, Soil Conservation watershed projects,
the Agricultural Conservation program cost sharing, and others,
assist in the slowdown of development in Wyoming.

e. Long delays between initial investigation and construc-
tion of Federal projects cause loss of momentum that is detri-
mental to progress.

f. Wyoming progress is hindered by the problems of get-
ting Congressional approval of Federally financed projects.

-7-
B. Problems Peculiar to River Basins or Smaller Areas

The specific problems relating to water resources are different from one river basin to the next within the State. As planning progresses, the problems will be outlined within those areas. It should be noted that the problems stated above are more of a general nature, and others may become more apparent as the study progresses.

V. Scope and Timing of the State Water Plan

A. Scope

1. Overall scope-- the network analysis that is attached shows the study elements to be undertaken and the interrelationship of each to the other.

2. The scope of individual work elements will be defined as they are undertaken.

B. Timing

1. The goal for a document outlining the possibilities and potentials for water development throughout the State has been generally scheduled for the end of 1972.

2. Inventory by river basins are planned on an interim basis. The publication of these basin reports will depend somewhat on the availability of data in each basin.

3. A tentative schedule for the State Water Plan on a statewide basis is attached.

VI. Public Information

A. Public Involvement

1. The State Water Plan is a plan for the people of Wyoming. The people must be involved if the plan is to be successfully implemented.

   a. Public hearings.

   b. Participation in activities concerning development sponsored by Wyoming citizens.

   c. Advisory committees.

   d. Attendance at meetings, associations, and other group gatherings.
# TENTATIVE SCHEDULE FOR THE WYOMING STATE WATER PLAN

(ordered by date)

|------------|---------|---------|---------|---------|---------|

## I. Water Supply

### A. Surface and ground water

1. Compile records
2. Analyze present supply and identify shortages and surpluses
3. Studies of future water supply development

### B. Weather Modification

1. Reconnaissance of potential weather modification operations in the State

### C. Water Quality

1. Existing quality
2. Effects of proposed uses

### D. Water Rights

1. Set up computer retrieval system

## II. Agriculture

### A. Land Use

1. Identify present irrigated lands
2. Locate potentially irrigable lands

### B. Economics

1. Determine present agricultural economy
2. Projected agricultural needs
3. Cost-benefit analyses
III. Minerals
   A. Existing development and location of reserves
   B. Projected development
   C. Water requirements

IV. Industry
   A. Existing development
   B. Projected development
   C. Water requirements

V. Recreation
   A. Supply, demand, and needs studies
   B. Coordination with water resource development

VI. Municipal Water Use (Population)
   A. Municipal water use studies
   B. Projected population growth and water use

VII. Economics
   A. Benefits of mineral and industrial growth
   B. Economics of size of unit of development
   C. Effects of water cost on development

VIII. Completion of the Plan and Report Preparation

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
B. Public Information

1. A leaflet-explaining program.

2. State Water Plan reports.

3. Information dissemination through the Wyoming Water Development Association, County Agents, Soil Conservation districts, Wyoming Association of Municipalities, Farm Bureaus, and by other means.
Network Analysis of State Water Plan

State Water Plan
Framework plan of water resource development for Wyoming
1. Suggestions for alternative development and improvements
2. Possible state undertakings
3. Suggestions for legislative and organizational adjustments
4. Advice for determining best use of water for Wyoming public interest

Alternates of future water needs

Alternates of Water Development

Water Supply Studies:
1. Determine location and amount of new and supplemental water supplies
2. Consider all types of uses
3. Requirements for water supply control

Facility Cost Estimates

INVENTORY
1. Present Development
   2. Economic Base
   3. Production
   4. Water Use

ESTIMATE POTENTIAL
1. Irrigable Lands
   2. Benefits
   3. Costs

FORECAST FUTURE
1. Alternative Projects
   2. Alternative water needs

Irrigation and Agricultural Economics

Municipal and Industrial

Electric Power

Recreation

Water Resources

Determines all water resources

Estimate:
1. present uses
2. Shortages
3. Surpluses

Resource Analysis and Use of Water Based Recreation

1. Present Capacities and uses of hydro and thermal power
2. Water Use

Transportation

1. Mineral and other Industrial Development
   2. Present population
   3. Economic base
   4. Water Use

1. Mineral Reserves
2. Regional and State needs
3. Economics of development

1. Project stages of industrial growth and development
2. Project future population
3. Determine economic impact
4. Estimated water needs

1. Estimated power needs and development
2. Estimate water needs

1. Estimate needs
2. Estimate water uses

Network Analysis of State Water Plan