I. Introduction

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Background

Comprehensive area-wide water quality management planning in the State of Utah is a relatively new concept which has recently been introduced by Federal Law. Amendments to the Federal Water Pollution Control Act passed in October, 1972 (PL 92-500) require that studies recommending specific solutions to water pollution problems be conducted before Federal monies are released for funding construction and management programs toward the improvement of water quality. These studies, known as the 303 (e), the 208, and the 201 plans, maintain an interdependent set of both congressional and local objectives in the development of an overall water quality management plan. The overall objective is to provide a planning, construction and management process which will "restore and maintain" the quality of the nation's waters.

The Section 303 (e) plan developed a river basin plan that serves as the framework for later, more specific plans (i.e., the 208 plan).

The 208 plan, as defined in Section 208 of PL 92-500, is required to propose implementable solutions to area-wide water quality and pollution problems, both from point and non-point sources.

Part of the plan to be developed, according to standards set forth in Section 201 of the Act, will describe specifics of facilities that are needed to attain the goal of substantially reduced pollution in the nations waterways.

This document is the second of three studies designed to define the problems and describe solutions to abate pollution and restore and maintain water quality on a local level. The goals and objectives of Salt Lake County are consistent with those of Congress.

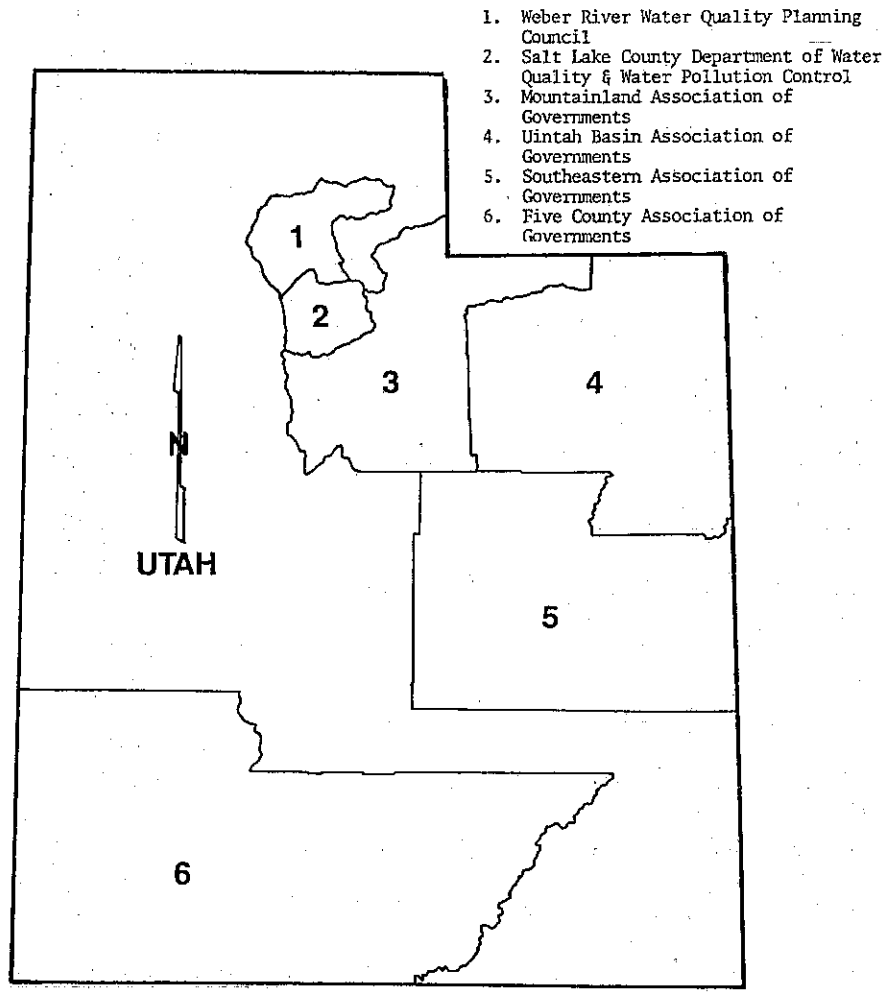

Figure I-1. Designated Area-wide Water Quality Planning Organizations in Utah

Congressional Objectives

The intent of Congress in enacting the Federal Water Pollution Control Act Amendments was to provide a process to identify the nature and extent of pollutants entering the surface waters, with emphasis on impairment of beneficial uses resulting from such pollution. Interpretation of beneficial use as applied to the Jordan River would mean conditions that impair the economic, social, and environmental productivity of the river's resources. Presently, the River is extremely low in productivity. Such low productivity in turn affects the productivity of economic and social uses, such as fishing, boating, swimming, picnicking, bicycling, and other open-space oriented activity that produces local multiplier effects in the generation of related goods and services.

In order to increase the beneficial use of the nation's waterways, the pollutants that reduce their natural - likewise economic - productivity must be eliminated or drastically reduced. This is not a simple task. Pollution sources are diverse. Federal law requires the identification of the nature and extent of pollution originating not only from municipal sewage plants or industries, but agricultural and silvicultural activities (tree harvesting), mining, construction, groundwater seepage, and hydrologic modifications.

This Congressional goal has far-reaching implications for regulation of development and dredge/fill operations adjacent to waterways. The convenience of grading and excavation practices must change into a careful process of staged development followed by reclamation of disturbed land. The law will establish real limits to the development of public watershed and produce new incentives for developers to monitor and economize land-disturbing activity. Such a far-reaching goal promises to produce new challenges between public and private sectors as well as within divisions of the public sector itself.

It is for this reason that local citizen goals and policies play a critical role in water quality planning and implementation. Because the 1977 Clean Water Act administers this planning and implementation at the local level (one of the first federal programs to do so), it was necessary that the residents of Salt Lake County provide a framework of goals and policies that could mold a water quality plan consistent with Congressional goals but representing the needs of the local population.

Local Citizen Objectives

Citizen participation in the county-wide water quality plan consisted of a five step process:

1. To survey public opinion about water use and quality in Salt Lake County.
2. To formulate an initial workshop for a Citizen's Planning Advisory Committee which would articulate the goals and policies which would be reflected in the plan.
3. To provide a secondary citizen input phase based on the final progress and outcome of the planning process.
4. To hold public hearings - county-wide - on the water quality plan.
5. To provide the machinery for on-going citizen participation in the plan update and implementation.

1. Surveying Local Public Opinion

The Salt Lake County Council of Governments (COG) initiated a public opinion poll conducted in cooperation with the University of Utah. It is recognized that polls may not be the most accurate method of discerning public attitudes, but some method of locating common concerns is necessary in order to avoid extensive mistakes and oversights in the formulation of research work programs. The poll involved 260 individual interviews which for a population of 500,000 (as in Salt Lake Valley) produces a 95% confidence level with a tolerated error of 5.5 to 6.0%. The format of the poll

was to identify problems-particularly those relating to water. It consisted of five sections:

1. Perceived Problems
2. Water Supply System
3. Improving and Maintaining the Water Supply System
4. Waste Disposal System
5. Natural Waterways
6. Growth and Development

The major attitude profile for each of these sections is summarized below:

1. Perceived Problems. Three major problems surfaced from the majority of the respondents -

   - o The problems of unplanned and unlimited growth
   - o Inflation and rising costs
   - o Environmental problems and pollution

   When asked to rank eleven possible problems that could be facing the county, respondents clearly rated providing additional employment, controlling development in the canyons, and reducing air pollution as the top three. Providing an adequate water supply followed close behind.

2. Attitudes toward the Water Supply System. Prominent in this section was the feeling that restricted use in the canyons is necessary to protect the quality of county drinking water.

3. Attitudes on Improving or Maintaining the Water Supply System. Local government has the responsibility and need to improve canyon water supplies through adequate restrictions and that government should establish standards to ensure good water quality.

   "It is evident that a positive program of zoning, land use planning, and a restrictive system of development are far more acceptable means for maintaining or improving water quality in Salt Lake County than would increasing taxes or decreasing services . . .", but "increasing taxes if necessary" is the next choice after other controls have been tried.

4. Attitudes towards the Waste Disposal System. There is a definite void in public awareness concerning the advantages and disadvantages of the various types of sewage treatment systems available. There appears to be an even division of opinion regarding centralized treatment works:

30.8% favor centralization
37.8% favor a local system
31.4% have no opinion

5. Attitudes toward the Natural Waterways. Respondents desire to see natural waterways enhanced and kept uncovered. An overwhelming majority of the respondents feel that the Jordan River should provide swimming, bicycling, fishing, horseback riding, picnicking, and boating.

6. Attitudes toward Problems of Growth and Development.

   - Over 80% of the respondents feel that future canyon development should be regulated and/or limited.
   - "The single dwelling approach to housing is still by far the most preferred."
   - "65% of the respondents indicate their opposition to any further development on the upper areas of the East Bench."
   - The final question analyzed deals with the perceptions of the residents in Salt Lake County of the extent to which they feel local government has the legitimate responsibility to impose restrictions on the extent, the type, and the areas where development can or cannot take place. It is crucial to the whole emphasis of this questionnaire that nearly 60 percent (58.1%) of the respondents "strongly agree" that this type government intervention is appropriate and some 92.5 percent would not openly disagree with this claim. The significant point of this question is closely related to several earlier questions. Public acceptance of government regulation and control, at least in the Salt Lake County area, is much more likely to be viewed as appropriate and legitimate to the extent that local governmental units, as opposed to state and federal units of government, have the responsibility and control of these activities.

2. Citizen's Advisory Committee Goals

Figure I-2 represents the 208 Project organization structure and shows how the Citizen's Advisory Committee interfaced with the on-going planning process. The need to obtain citizen input for definition of legitimate goals and objectives to be addressed in the Water Quality Plan was critical to the planning process.

The Bureau of Community Development at the University of Utah was contracted to provide a meaningful process for involving the Citizen's Advisory Committee in the initial plan approach. A workshop/conference was initiated on March 12th and 13th, 1976. The format of the combination workshop/conference was to provide the members of the Citizen's Committee with a study guide which would acquaint the participants with the nature of local water pollution and the many alternative methods of dealing with it.

The Study Guide addressed the three major technical areas into which water-quality management falls:

1. Land Use
2. Water Quality
3. Facilities

Questions were asked of the committee members in the Study Guide in order to prepare them for the kinds of dialogue and group interaction that would ultimately produce a list of articulated goals. These goals would then provide a framework for the study of water pollution problems and solutions in the county.

The following narrative summarizes the goals and policies recommended by the 208 Citizen's Advisory Committee in each category. The three committees were not asked to suggest technical solution to problems plaguing the county's water quality. Rather, they represented the county's population in suggesting

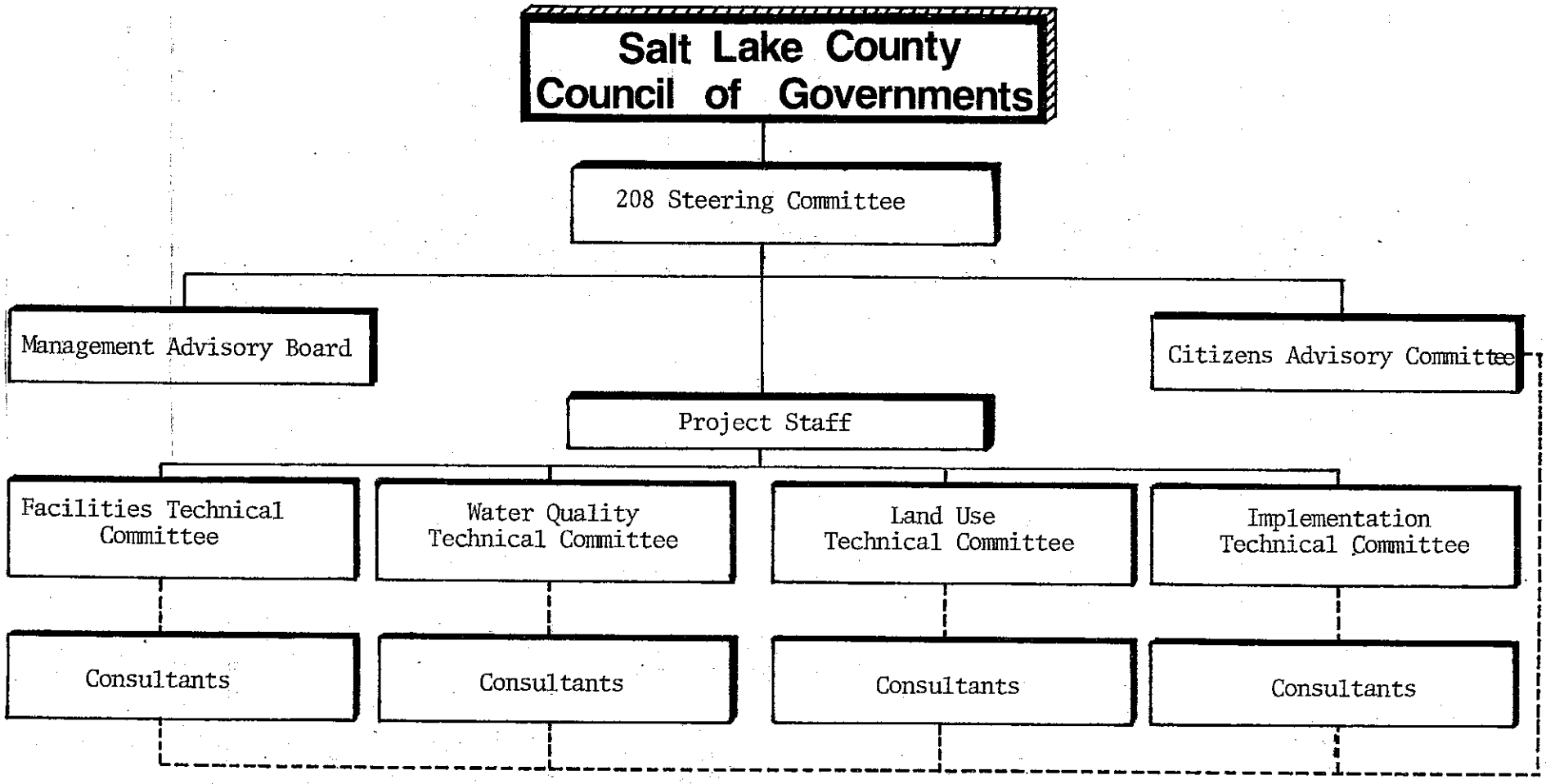

Figure I-2. 208 Project Organization

priorities, goals, and policies. The committees met separately in several sessions during the two-day conference. Twice, all the participants met together to review and correlate the recommendations of all committees

Land Use

Jeff Anderson
Frank Fitzgerald
Raymond Hixson
M.J. Matsumori
Dorothy Miles
David Myers
Gina Rieke
Keith Romney
Beverly Saathoff
Dan Simons
Vay Simper
James W. Smith, Jr.
Velma Steele
Ernest Snyder
Randolph Taylor
Bill Viavant
Kevin Watts

- o Preserving Agricultural Land

  1. Agricultural land should be preserved - in large block - wherever possible.

  2. Urban limit lines should be used discriminately to accomplish agricultural land preservation, along with transferable development rights and purchase by municipalities and the county.

- o Irrigation Water

  1. Farmers should receive subsidies to help finance costs of pollutant removal, construction of holding ponds, etc.

  2. Recharge areas for groundwater should also be protected from development that might adversely affect groundwater quality.

  3. All Salt Lake Valley subdivisions should be provided with sewers and water lines to prevent groundwater contamination.

- o Compact Cities & Facility Location

  1. Some types of industries should be discouraged because of the pollution they may contribute.

  2. Industrial locations should be bunched in areas where employment centers are needed.

- o Transportation

  1. Access to the canyons, utilizing passing lanes and mass transit, should be improved.

2. Large parking lots in the canyons should be discouraged; parking lots at the canyon mouths should be constructed.

3. Devote funding for the improvement of the Jordan River as a central valley scenic and recreation area.

4. The recreational aspects of the Great Salt Lake should also be improved.

5. Mass transit systems should be expanded and the use of cars discouraged.

o Pollution

1. Canyon water standards should be maintained at their present levels. Presently, water from the canyons exceeds federal standards and authorities should retain the responsibility for maintaining this high level of quality.

o Natural Constraints

1. Development in areas threatened by hazards such as landslides, mudflows, etc. should be designed to mitigate the hazard.

2. It should be the responsibility of the developer to prove that no hazards exist before approval for a development which does not mitigate the hazard.

o Determining Priorities for Use

1. Recreational use and private ownership in the canyons should continue, but where uses conflict, "scientific facts" should be considered in determining which needs should be encouraged or discouraged.

2. Existing resorts should be expanded before other developments for skiing are considered.

3. Several canyons should be left in their natural state. Development should be limited in -

   a. Millcreek Canyon
   b. City Creek Canyon
   c. Red Butte Canyon
   d. Bell Canyon

4. Wherever development occurs in the canyons, water quality monitoring of the development site should be the responsibility of the developer.

Water Quality

James Ash
Genevieve Atwood
Keith Bergstrom
Lloyd Bliss
Orlando Cuellar
Jan Johnson
Elwood Jones
Harold Lamb
Gary Lloyd
Clark Ostergaard
Clark Partridge
Susan Pratt
Burdett Ringlesbach
Tom Sessions
E. G. Valdez

- Water Quality in the Jordan River

  1. The Jordan River should be cleaned up so that it conforms to Class C standards as a minimum and upgraded even more if possible.

  2. The county should consider the possible use of the Jordan River for water contact sports.

- Recreational Use

  1. The highest priorities for recreational use of the Jordan River are enhancement for aesthetic quality, boating, rafting, and water contact sports.

  2. Fish should be planted or bred in the area if necessary to encourage this recreational use of the Jordan River.

- Irrigation Canals

  1. Canals near development (residential) should be covered. Requirements for approval of development near open canals should include that the canals in the immediate area be covered.

- Stormwater

  1. No more storm drains should be allowed to empty into canals or streams in the future.

  2. Catchment basins or holding ponds should be constructed to allow pollutants in stormwater to settle out as an alternative to treating the stormwater.

  3. Property owners or developers should be required to revegetate areas stripped bare by development to improve the quality of the water.

  4. Development should also be controlled in areas where high runoff occurs.

Facilities & Facilities Management

Ed Blaney
Sands Brook
Vee Call
Barbara Denton
Joy Dunyon
John R. Evans
Bob Glascock
William Guillory
J. K. Holdsworth
Moroni Jensen
Glen A. Lloyd
Jan Miller
Stanley Mulaik
Casper A. Nelson
Richard Taggart
John Winder

- o Regional Sewage Treatment

  1. To maintain high water quality, the county should construct a regional sewage treatment system.

- o Water Re-use and Recharge

  1. No use is presently made of water discharged from the sewage treatment plants. However, water reuse for some purposes will be imperative in the future.

- o Water Conservation

  1. Since 50% of Salt Lake County's water is used on lawns, gardens, public parks, etc., a campaign to educate the public about water conservancy is needed.

  2. Regulation of water use by law or by economic or mechanical means should be investigated.

- o Disposal Practices

  1. The county should continue to dispose of effluent to surface waters, but this should not exclude future examination or implementation of other methods of wastewater reclamation.

  2. If the disposal of sludge becomes a problem as the population grows, some commercial enterprise for converting it to a marketable product should be considered. Another alternative . . . is to dispose of it in a landfill.

- o Stormwater

  1. Pollution problems caused by stormwater should be investigated. It should be determined how serious the problem from this source is and how expensive it would be to remedy.

- Location of Treatment Plants

  1. Sewage treatment plants should not be located where they would adversely affect areas of historical or archeological importance. Areas which have ecological value - fisheries, cemeteries, etc. - should also be considered in selecting a site for a sewage treatment plant.

- Who Pays and How

  1. Costs of new facilities should be distributed on the basis of general usage.

3. Citizen's Advisory Committee Progress Report

Just before the end of the initial planning and research phase of the 208 Project, a progress report was prepared by the 208 staff and Bureau of Community Development for the Citizen's Advisory Committee. In May, 1977 a second conference was held that mainly provided feedback to the committee on the progress made during the last year.

The main conclusions of the water quality, facilities, and land use consultants were referred to the committee for their reaction. Most of the conclusions are consistent with the goals and policies initially formulated by the committee.

Water Quality

The canyon tributaries, the valley tributaries, and the Jordan River received the majority of consultant attention. Final conclusions were that:

Canyon Tributaries-

- Construction, picnicking, camping, and leaking septic tanks (or holding vaults) are the main causes of pollution to pristine canyon waters.

- A potential source that needs further study is the influence of salts used to clear roads of ice.

Valley Tributaries-

- Stormwater runoff is a major source of non-point pollution. This runoff is a potentially severe problem which will affect Jordan River Parkway facilities.

- o If the maximum use of the tributaries for recreation or other uses is to be achieved, stormwater control is necessary.

Jordan River—

- o The major sources of pollution to the Jordan River are stormwater runoff, dry-weather pollutants pumped into the storm drains, and irrigation returns.

Facilities

- o Local officials had determined that three regional wastewater treatment plants be constructed. (However, following this progress report, this figure had changed to five plants. The Environmental Protection Agency recently decided to provide funding for only two plants).

Land Use

Valley Element—

- o Medium Density clustered development offers the greatest advantages for improving water quality because it increases the amount of permeable, open land thus allowing for less surface runoff and greater absorption.

- o As development becomes more scattered, it becomes less efficient and potentially more polluting.

Canyon Element—

- o The data for water quality in the canyons is not yet sufficiently precise to determine how certain levels of use will affect the canyons.

- o However, it was determined that construction, picnicking, camping, and septic tank seepage do affect canyon water quality. These impacts can be kept to a minimum through the following practices for best water quality management:

1. Phased Development and Monitoring

   A contractor should develop in phases (as as to keep disturbed land at a minimum) and provide for continuous water quality monitoring to determine how his development affects the stream.

2. Planned Suitability

   Development should be planned on land with the best suitability.

3. Avoid Adverse Impacts

The developer should demonstrate that the proposed construction will either eliminate adverse impacts and hazards or reduce them to some acceptable level.

4. Maintain Stream Buffer

Construction and other human activities should be kept back from stream beds or other surface water features.

- o Erosion control is needed to minimize the degradation of water caused by construction, road cuts, and areas of high use.

4. Public Hearings

County-wide hearings were held in December, 1977 on the Draft Water Quality Management Plan:

1. November 28, 1977 Salt Lake City	7:00 to 9:00 p.m. City-County Building Room 300 City Commission Chambers
2. November 30, 1977 Holladay	7:00 to 9:00 p.m. Auditorium - Holladay Library 2150 East 4800 South
3. December 1, 1977 Midvale	7:00 to 9:00 p.m. Auditorium Midvale City Hall 80 East Center
4. December 5, 1977 Granger-Hunter	7:00 to 9:00 p.m. Auditorium Granger Library 2880 West 3650 South
5. December 7, 1977 Cottonwood	7:00 to 9:00 p.m. Classroom, Whitmore Library 2197 East 7000 South
6. December 8, 1977 West Jordan	7:00 to 9:00 p.m. City Office Council Room 1850 West 7800 South
7. December 12, 1977 Sandy/Draper	7:00 to 9:00 p.m. Sandy Police Department 800 East 100 North
8. December 14, 1977 South Jordan/Riverton	7:00 to 9:00 p.m. Bingham High School Copper Pit - 2160 West 10400 South

A total of 83 persons attended these hearings exlcuding the 208 staff. Among the heaviest turnouts were the Whitmore and Granger Library hearings where local residents appeared to vigorously protest the expansion of the Cottonwood and Granger-Hunter Treatment Plants as presented in the facilities plan.

Due to the controversy surrounding the approval of the Central Regional Plant at the Cottonwood site and maintenance of the Granger Plant in the North Regional Facilities, the Environmental Protection Agency (EPA) mandated that the 208 staff conduct additional public hearings on the proposed North and Central Facilities. These hearings were held June 7th and 8th, 1978. The outcome of these hearings produced a decision by EPA to reject the Draft plans and provide funding for only two of the original three regional plants.

Conclusion

The Water Quality Management Plan for Salt Lake County was produced on a foundation of local citizen goals that are consistent with the goals of Congress in establishing national water pollution control laws.

The local population was scientifically surveyed for their opinions about water quality related issues and a Citizen's Advisory Committee participated in laying a framework in which water quality planning and management be carried out.

Many opportunities for the public to respond to the plan were provided in the form of extensive public hearings. As detailed in Chapter VII, Implementation, an on-going process has been set up to insure adequate citizen involvement as programs for pollution control get under way.

The Water Quality Management Plan presents the details of how water pollution control will be implemented. Chapter III describes the Salt Lake

County study area — as it is now — and how it is projected to be in the future; Chapter IV discusses the water quality conditions in the Salt Lake Basin; Chapter V presents the plan for new industrial and municipal wastewater facilities; Chapter VI discusses the need for implementing new and far-reaching programs for non-point or diffuse water pollution; Chapter VII describes how these plans will be implemented; and Chapter VIII is an assessment of the environmental impact of plan recommendations.

In order to understand the general elements of the plan without extensive detail, refer to Chapter II - Plan Summary.