Water Funding Alternatives Task Force Report

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Water Funding Alternatives Task Force Report

I. INTRODUCTION

A. Purpose of Report. The Governor's Office of Planning and Budget projects that Utah's population will increase from 2,321,707 in 2002 to 3,772,042 in 2030, an increase of more than 60%. During this same time, all infrastructure systems will have to be enlarged accordingly. Water systems, arguably the most basic of all community infrastructure, will require improvements estimated at more than $5.3 billion over the next 20 years. Essentially all of the water supply and wastewater treatment facilities now in place will have to be duplicated, at the same time that existing systems are being maintained, upgraded to new federal standards, and in many instances replaced due to age and deterioration. To make the task even greater, the simple sources of water supply have already been developed. Development of additional supplies and treatment capacity will be much more expensive, even before taking into account the greater concern for mitigating the environmental effects of water development. Budgets for these needs have to be balanced against numerous other priorities and demands on state and local funds. Yet, population growth without water infrastructure expansion spells disaster.

Meanwhile, the State of Utah budgeted revenues for the 2001-02 and 2002-03 fiscal years fell short of projections after 9/11 and other events caused a significant downturn in the national and state economies. The Legislature, in the 2002 General Session, passed a negative appropriation (reduction instead of increase) act for the first time in many years. Most state funded programs took budget reductions, including water development. The Legislature took $10 million, purportedly in a one time reduction, from the 1/16% of the sales tax allocated by statute for water development and used this money to reduce the impact of the general fund short fall. Further revenue reductions after the 2002 legislative general session prompted a special session call for July 9, 2002 to make further budget cuts.

As the July 9 special session approached, our state was also suffering the fourth year of drought. Due to lack of winter storms and low soil moisture content, the spring run off was greatly reduced; water storage reservoirs that started out very low were not replenished and suffered greater than usual demand as the state saw record high temperatures in May, June, and July. Farmers suffered substantial crop loses and ranchers sold off their herds because ranges produced no grazing and scarce feeds crops made feed expensive. Due to the sell-offs and an oversupply of meat in world markets, prices for cattle were depressed. Cities passed ordinances rationing water and regulating outdoor use practices. Television weather reports constantly reported on water conservation efforts.[1]

Added to the drought and economic woes, a clash developed between Utah's executive and legislative branches over whether education should share in the next round of negative

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[1] This report was written primarily during the summer and fall of 2002. Severe drought conditions have continued through the summer of 2003. At the time this report was adopted, most major reservoir systems in the State of Utah contain either no storage or only a fraction of capacity.

appropriation acts. Governor Leavitt, who in 1997 allowed the legislation to go into law without his signature that allocated 1/8% of the sales tax to transportation and water, wanted the 1/8% back in the general fund to help protect education funding. The Legislature, on the other hand, opposed reductions to water development funding during the hottest months in the fourth year of drought. The Legislature refused to further cut water and transportation funding and spread the reductions to all state programs, including education.[2]

The Legislature and Governor Leavitt agreed, however, that a study should be undertaken to evaluate methods of funding water infrastructure. Senate Bill 5012 enacted in the 2002 Fifth Special Session created the Gubernatorial and Legislative Task Force on Alternative Revenue Sources for Water Funding. Section 1 (1) of SB 5012 states that the Task Force is created to "determine and identify alternative revenue sources for water funding." Section 1(11) provides "The Task Force shall review and make recommendations relating to alternative revenue sources for water funding to the State Water Development Commission." The Task Force legislation provides for appointment of 12 members, including four legislators, three executive branch officials, and five persons with water experience appointed by the Governor with concurrence from the co-chairs of the Utah Water Development Commission. (See Attachment 1: Senate Bill 5012.) The latter five members have no vote. The members of the Task Force are listed in Attachment 2: Task Force Members.

At the first meeting of the Task Force, the voting members of the Task Force created a subcommittee composed of the nonvoting Task Force members. The motion creating the subcommittee directed that it "determine and identify alternative revenue sources for the water funding options for the Task Force to consider." This report summarizes the subcommittee's study as presented to the Task Force, but has also been modified based on the public comments received at the July 16, 2003 meeting of the Utah Water Development Commission and at the September 16, 2003 final meeting of the Task Force. This report was formally adopted by the Task Force at its final meeting on September 16, 2003.

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[2] The subcommittee acknowledges that the executive and the legislative branches hold somewhat different views regarding revenue sources for water funding, even though both seem to recognize the need to address tomorrow's needs within today's budgetary constraints. The subcommittee views these differences as a healthy example of the checks and balances created under our state constitution. The subcommittee remains confident that these constitutional-based processes will produce the sound decisions for funding water development, if the decision makers act with courage, foresight, and wisdom. This subcommittee report therefore intends no position regarding budgetary objectives, but only to provide information to those responsible for such decisions.

This report:

- Presents the context of Utah's water funding programs
- Assesses Utah's water development needs
- Reviews the subcommittee's evaluation of alternative funding sources to meet those needs

The subcommittee members suggest that the Task Force proceedings and this report represent a valuable opportunity to address water infrastructure development needs and to evaluate the effectiveness, fairness, feasibility, and adequacy of Utah's water funding.

B. Task Force Guiding Principles. At its initial meeting on August 12, 2002, Governor Mike Leavitt addressed the Task Force and proposed a set of principles which the Task Force might adopt to guide its efforts. The voting members of the Task Force unanimously adopted the "Guiding Principles" presented by Governor Leavitt as follows:

Water Funding Task Force
Guiding Principles

Water is essential to life and economic opportunity. The state has an obligation to ensure a clean and adequate supply of water for Utahns. The Gubernatorial and Legislative Task Force on Alternative Revenue Sources for Water Funding will craft recommendations that are consistent with these guiding principles:

1. **Commitment to water development** - We must continue to maintain and develop Utah's water storage and delivery infrastructure.

2. **Statewide interest** - We desire to foster the participation and address the interests of all 29 counties. Water development is a statewide concern and benefit.

3. **Efficiency** - We must develop and distribute water efficiently so resources are not wasted.

4. **Conservation ethic** - We must make conservation a way of life. Utah is the second driest state in the nation; our per capita consumption per gallon cost for culinary water ought to be comparable to states with similar climates.

5. **Adherence to sound financial principles** - We must finance the development of water infrastructure in a manner consistent with widely accepted and well-

proven principles of public finance. Among others, these include:

- Incentives - People respond to incentives. We need to properly use incentives to serve public interest.
- Benefits principle - When feasible and appropriate, people should pay for government services based on the benefits they receive.
- Ability-to-Pay - When feasible and appropriate, taxes should be levied on a person according to how well that person can shoulder the burden.

6. **Wholeness of the general fund** - We must gradually restore legislative flexibility with the use of the general fund. During the next decade the state's general fund will continue to face extreme pressures as service demands increase, the service economy increases its share of total economic activity, and remote sales grow.

7. **Innovative** - We will carefully and creatively identify and review funding options. Current funding mechanisms are not acceptable over the long term.

C. Report Review Process

This report was written from September through December of 2002. After review by the Task Force members, the report was presented both in written form to members of the Utah Water Development Commission prior to its July 15, 2003 meeting and by verbal presentation at that meeting. The Commission received public comment on the report during the July 15 meeting and directed that the report be revised in response to the public comment received. This report was then adopted in the September 17, 2003 final meeting of the Task Force. Other than inclusion of the public comment, the information contained in the report is based on information available as of September, 2002. The Task Force found, however, that the principles, issues, trends, and needs described in the report accurately describe conditions as of the date the report was adopted.

II. EXECUTIVE SUMMARY

The Task Force has been charged with identifying and evaluating alternative sources of water funding. In meeting this charge, the Task Force has looked for all funding sources it can identify from both the private and public sectors, as well as examining efficiencies and complementary programs. The Task Force also tried to identify crucial relationships, even as diverse as the interplay between irrigation infrastructure, local government land development regulations, and matching funds for federal programs.

Utah's history and geophysical setting dramatically affect water availability. Utah's culture determines how those water resources are used. Beginning with the settlement pattern

established by the 1847 pioneers, a culture of irrigation and water utilization has developed. The Task Force has assumed there is no desire to fundamentally change such cultural aspects as natural growth patterns, business expansion, irrigated landscapes, the private property nature of water rights, and marketing water essentially as a commodity both by public and private sector entities. From these assumptions, the Task Force directed its efforts to evaluation of the means by which Utah will replace and improve its existing infrastructure while expanding capacity to meet the demands of growth and addressing environmental concerns related to water development.

The Task Force felt a determination of the need for water development funding was necessary in order to evaluate methods of meeting the need. To gather this information, the Task Force drew mostly on the state agencies. These agencies have the best access to information involved in development of drinking water, irrigation water, water-related recreation, water pollution prevention, and sewer treatment. The extent of needs surprised even the Task Force members experienced in water management. The Task Force also compared funding methods used in other states and at other times in Utah, then analyzed the advantages of various funding methods. In so doing, the Task Force recognized that water supply development and water distribution have been recognized as vital governmental functions, at both the state and federal level, in Utah as in other states of the arid West.

The Task Force concluded that the cumulative experience and wisdom of 155 years of water management, along with knowledge shared from programs in other states and at the federal level, have enabled Utah to effectively develop the needed water systems with a very small portion of the state budget. Utah's political leaders and water managers can be justified in feeling a sense of accomplishment. The present funding mechanisms seem to be equitable, efficient, and well suited to the needs.

In all, drinking water and sewer treatment, along with nonpoint source programs and other needs identified by the Utah Drinking Water Division and Utah Water Quality Division represent $5.3 billion over the next 20 years. Additional major projects to transport water from less populated areas of the state to Utah's urban settings have been identified. The four such projects identified in the following table were considered.

Table 1 - Major Water Projects

Bear River Development Act Projects	$260,000,000
Lake Powell Pipeline	$310,000,000
Upper Green River Pipeline	$300,000,000
Central Utah Project Utah Lake System	$200,000,00

In addition, there will be needs for irrigation system improvements, in both agricultural and secondary municipal systems, to take advantage of more water efficient technologies, and to help reduce water pollution; infrastructure improvements such as replacement of municipal water system components such as in Salt Lake City and system improvements such as the Provo Reservoir Canal project that rival the cost of the projects listed above; and security improvements brought to the forefront by homeland security concerns.

This report does not evaluate the effects of events that might significantly alter the management of water supply systems, such as the terrorist attacks of September 11, 2001. The September 11 attacks have significantly altered management of water infrastructure and systems operations through design evaluations, security, personnel screening and training, modification of operating procedures, and sometimes rather costly modifications to existing and planned facilities. Costs associated with homeland security will can only increase the costs and therefore the funding needs of vital water infrastructure.

Current funding levels will not be sufficient to meet these needs, but conservation, prudent use of funding sources, and quality planning and coordination can help water managers meet the anticipated needs. We might all hope that the same criticisms can be directed at the water community that is now often heard: that water service is too cheap and that water users fail to appreciate the work required to provide an abundant supply of water in this mostly desert state.

III. HISTORICAL AND CULTURAL SETTING

Utah's present system of managing and financing water resources grew from 155 years of history and experience. While prudent management requires constant reevaluation and improvement, understanding the historical context of any system allows use of the accumulated wisdom and hopefully prevents repetition of errors. Also, dramatic changes in policy and direction by governmental agencies and external events often produce economic disruption and dislocation. With these principles in mind, the subcommittee felt that at least a fundamental understanding of the historical and institutional context was essential to consideration of funding alternatives.

A. Irrigation and the Utah Culture. Utah's water use culture and water management institutions grew from the state's unique geophysical setting and the history of its people. Since Utah is mostly made up of desert terrain and has the second lowest average annual rainfall of any state, necessity drives Utah water infrastructure development. Any people who inhabit such a land must become skilled in using the limited water resources. The Anasazi Indians were known to develop water for irrigation. The first company of Utah's Mormon pioneers begin building irrigation infrastructure on their first day in the Salt Lake Valley, diverting the waters of City Creek to soften the hard ground so they could plow it and plant grain.

Utah's population centers exist only where water could be readily developed by the early settlers. Water development tended to be the first and most essential community activity and required, for the sake of survival, a communal effort to concentrate the capital and labor essential to success. Since most communities were settled near available water sources and water development relied on rather basic technologies, the water systems tended to be small and very local in scope. Many of these communal efforts were later organized into mutual water companies which distribute water based on shares held. As a result, many small water companies exist today throughout Utah. These mutual irrigation companies have been and continue to be major players in Utah's water management, at least in the private sector.

Irrigation became an essential element of life in Utah and remains so today. The settlements formed by the settlers transplanted from the eastern states and Europe simply would not have survived without irrigated agriculture. Even with the quantities of water shifted to municipal and industrial use, irrigated agriculture presently uses and preserves more than 80% of Utah's developed water supply. Irrigation has also become an important part of the community culture. The oft repeated imperative to "make the desert blossom as a rose" saw fulfillment in the planting of gardens, trees, and other irrigated landscaping common in Utah. Today such water use creates the heaviest demand on public water systems and has led many communities to develop secondary irrigation systems as an essential component of municipal water delivery. Water providers have accepted irrigated landscaping as an established element of the Utah culture. At the present, irrigated agricultural water distributers are mostly private sector companies, while the secondary landscape irrigation systems are mostly owned by the public sector.

B. Culinary systems. Culinary water development, on the other hand, has mostly been a public sector activity. In the early pioneer era, communities at first used irrigation ditches for culinary water needs. As such communities grew, however, water quality problems quickly developed. Ditches used for "dipping" became fouled with dirt and animal waste, leading to development of springs, wells, and distribution systems. A few culinary water systems were developed by mutual irrigation companies. More often, however, cities and other public agencies have met this need, often financing culinary water systems with property taxes until water systems could be established and revenues generated through water service fees. Approximately 98% of Utah's households receive their culinary water supply from culinary systems, with the vast majority of these being operated by local government agencies.[3]

C. Water Storage. Experience with Utah's rivers and streams also taught the value of reservoirs for both irrigation and culinary water supplies. Wide fluctuations in stream flow, both with the time of year fluctuations and year-to-year variations in the hydrologic cycle imposed extreme variations in water availability. Also, efforts by water users to maintain on-stream

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[3]Testimony to the Subcommittee by Drinking Water Division staff in September 11, 2002 meeting.

diversion dams during high spring run-off were often met with failure as dams washed out and left crops without irrigation water. Even when these simple diversion dams held, communities saw high spring run-offs dwindle to smaller late summer stream flows as snowpacks melted and soil storage became depleted. Thus the water supplies from mountain streams decreased at the very times that water demand for irrigation became more acute. The problem remained, however, that reservoirs required labor and capital in amounts difficult for small communities to muster. Only a few reservoirs were developed before statehood. There was, however, a long history of water development projects financed solely through private capital that either failed or succeeded only after huge losses had been incurred by private developers.[4] Yet, these experiences led to successful partnerships between state government and local water users. The State of Utah has cooperated with local water users organized both as private sector mutual irrigation companies and as local government agencies. Various public and private cooperative ventures have allowed construction of an indispensable series of reservoirs from the storage component of Bear Lake at the Idaho border, to Sand Hollow and Quail Creek in Washington County, and Lloyd's Lake in San Juan County.

D. Federal and State Involvement in Water Development. The Utah Enabling Act passed by Congress in 1894 gave impetus to reservoir construction by providing a grant of 500,000 acres to Utah upon statehood. The sale of this land was to provide the funds to develop reservoirs for irrigation purposes.[5] In 1896 the Legislature established the Utah State Board of Land Commissioners. Its duties, among others, included use of monies derived from sale of the grant lands to select potential reservoir sites and to finance reservoir construction. The Land Commission experienced spectacular and large failures on projects funded and developed by the state, but significant success in private development projects for which the state provided loan financing. For instance, Sevier Bridge Reservoir (Yuba), the largest privately-owned reservoir in Utah, Otter Creek Reservoir, and others were constructed in part with Land Commission loans.[6]

The largest water development projects have come through cooperation between the Utah Water Storage Commission and the United States Bureau of Reclamation and its predecessor, the United States Reclamation Service. Such projects include the Weber River Storage project, the Strawberry project, Deer Creek Reservoir, and more recently development of Central Utah projects as the Strawberry Reservoir enlargement and the Jordanelle Reservoir.

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[4]Id. See also, Sadler, Richard W. and Roberts, Richard C., *The Weber Basin: Grass Roots Democracy on Water Development*. Utah State University Press, Logan, Utah 1994.

[5]John Swensen Harvey, *A Historical Overview of the Evolutions of Institutions Dealing with Water Resources Use, and Resource Development in Utah-1847 through 1947,* Utah State University, 1989, pages 38-39.

[6] *Id.*

E. United States Bureau of Reclamation. Congress also declared development of reservoirs in the west as an important element of national policy and established the Bureau of Reclamation to develop reservoirs and other facilities on western waters. The U.S. Bureau of Reclamation has played an important role in water development for Utah. Early Reclamation projects established long term water supplies for irrigation and urban use by constructing dams, canals, aqueducts, power generation stations, and diversions.

Under federal direction, private and public entities were established to receive water from federal projects. The typical model for a Reclamation project includes establishing a local sponsor which will participate in land acquisition for a project, then operate and maintain the facilities, and most importantly, distribute the water supply and provide repayment of the project costs to the United States over time. The State of Utah has fostered creation of a number of both special districts and private entities to contract for water developed by the federal projects.

The Weber Basin Project and Central Utah Project are examples of this model. In both cases, water conservancy districts were formed to provide the local sponsoring agency. These districts were created by court decree under guidelines of the Utah Water Conservancy Act, accompanied by an election within district boundaries which authorized property tax collection and generally obligated those collections to the repayment and operation of the projects. Repayment contracts with the United States are typically long term. Contract terms generally vary from 40 to 60 years. Commitment of property tax revenue is written into each contract as a required source of revenue from which to make the annual repayment obligation. Weber Basin Water Conservancy District, for example, has such contracts and property tax obligations through 2034 for the original Weber Basin Project costs.

F. State Funding Programs. Against this backdrop of water development need, the Legislature has established various boards that administer loan programs. Each board has its own distinct functions and emphasis, and each has functions separate and distinct from the loan programs. The Legislature established the Utah Water and Power Board in 1947 to lend money for water development to private and public entities from a revolving loan fund in which loan repayments, together with new appropriations, could be loaned to project sponsors. The program was expanded in 1975 by creation of the Water Resources Cities Water Loan Fund to be funded "from liquor control profits."[7] The Water Resources statute was again amended in 1978 to create the Conservation and Development Fund. Similar revolving loan programs were established in the Department of Environmental Quality under the direction of the Water Quality Board and the Drinking Water Board, as more fully explained in this report.

G. Recent State Tax Modifications. The current evaluation of tax support for water funding comes in the context of significant restructuring of Utah's tax system since 1995, as

[7]UCA Section 73-10-22.

summarized in the following table:

Table 2 - Pertinent General Tax Reductions		
Session/Bill	**Tax Modification**	**Revenue Reduction**
FY 1995		
HB 162/'94 Session	1/16th Cent - Tax Reduction	(23,600,000)
FY 1996[1]		
Various Bills/'95 Session	Sales Tax Exemptions Authorized	(3,613,000)
SB 56 & SB 254/'95 Session	Property Taxes	(141,440,883)
FY 1997[2]		
Various Bills/'96 Session	Reinstated Tax Exemptions	(1,188,300)
HB 349/'96 Session	Gross Receipts Tax Modification	(4,750,000)
HB 3001/'96 November	Sales Tax-Manufacturing Exemptions	(8,700,000)
SB 237/'96 Session	Income Tax Rate Reduction	(41,000,000)
SB 275/'96 Session	Sales Tax - Ski Exemption	(338,000)
FY 1998		
HB 3001/'96 November	Sales Tax-Manufacturing Exemptions	(8,700,000)
SB 253/'97 Session	Sales Tax Rate Reduction	(34,300,000)
FY 1999		
HB 3001/'96 November	Sales Tax - Manufacturing Exemptions	(11,200,000)
SB 34/'98 Session	Sales Tax Exemption - Higher Ed Athletic	(402,000)
FY 2000		
SB 69/'99 Session	Sales Tax - Manufacturing Exemptions	(5,600,000)
FY 2002		
HB 78/'01 Session	Sales Tax - Sales Relating to Schools	(281,000)
SB 36/'01 Session	Income Tax - Individual Adjustments	(18,000,000)
Estimated Annual Total (based on estimates in year of enactment)		(303,113,183)

[1] The property tax reduction was increasing the residential exemption from 32% to 45%. Also, the legislature reduced the basic school rate from .00422 to .00264.
[2] The income tax reduction in FY '97 was a reduction in income tax rates.

H. Comparisons of Utah Water Use and Rates. Water usage and rate information must be properly correlated to make meaningful comparisons. Water rates analyses used by Utah's water system operators and the funding boards look both at the cost per gallon of water and ability to pay. The average cost of water to Utah community water system consumers in 2001 was $1.17 per thousand gallons for water billings only, and $1.39 per 1000 gallons when taxes are included. The 2001 monthly average cost to community drinking water systems consumers in Utah was $33.89, with $28.49 coming from billings and $5.40 from taxes.[8] The monthly costs for drinking water represent 1.25% of the median adjusted gross income for Utah families.[9] The Utah average monthly community sewer system fee was $17.35 in 2001.[10] Thus, the total average cost per household for drinking water and sewer in 2001 was $51.20, compared to a national average of $47.50.[11] Comparisons of monthly water rates with other Western states, however, show relatively low monthly water bills. (See Attachment 3: 2001 Survey of Community Drinking Water Systems, Appendix 10.)

Data sets used for comparisons should be chosen carefully. Previously published reports made using Salt Lake City ($0.87/1000 gals.) and Provo ($0.75/1000 gals.) for comparison seem to be either poor sampling technique or sampling used to further a particular viewpoint. Salt Lake City and Provo have mature systems that have received significant federal capital contributions, resulting in low rates. The economic size of the water service provider, location, and other factors also affect rates. For example, while the average monthly community sewer system fee in Utah is $17.35, entities participating in the state loan programs have average monthly fees of $26.99. (See Attachment 4: Utah Wastewater Financial Assistance Program Summary Report.) The Rural Water Association of Utah has compared 24 of the larger systems in the state and 44 of the smaller entities that have received funding from the 1/16th % sales tax money from the Division of Drinking Water with base rates and costs per 1000 gallons. The RWAU compilation shows this comparison:

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[8] *2001 Survey of Community Drinking Water Systems*, Utah Division of Drinking Water, report draft dated November 14, 2002

[9] *Id.*

[10] Utah Division of Water Quality report to Water Development Funding Task Force, October 4, 2002.

[11] *U.S. News and World Report,* August 12, 2002, p. 28. These totals do not include billings for secondary irrigation systems used in some communities.

Table 3 - Urban/Rural Water Rate Comparisons

	Larger Systems	Smaller Systems Funded By DDW
Highest Base Rate	$20.20	$50.00
Lowest Base Rate	$1.50	$2.60
Average Base Rate	$9.09	$17.70
Highest Gallons/Base	10,000	20,000
Lowest Gallons/Base	0	0
Average Gallons/Base	4,403	10,071
Highest 1st Step/1000 Gal.	$1.10/1000	$4.00/1000
Lowest 1st Step/1000 Gal.	$.39/1000	$.25/1000
Average 1st Step	$.74/1000	$1.13/1000

Rural systems on the average have higher rates, yet provide more water. Most of the systems have rate structures that help promote conservation. Careful comparison between states still shows that Utah has high per capita water consumption when compared to other states, but water usage without the summer irrigation is consistent with water usage in other states. The dry climate and cultural setting require irrigation, suggesting need for wise irrigation and landscaping practices.

IV. CURRENT STATE WATER FUNDING PROGRAMS

Five state boards currently oversee loan programs among the other functions served by each. These boards are:

A. Board of Water Resources. The Board of Water Resources is the policy making body for the Division of Water Resources with primary responsibility for water planning and water management policies for the state. The Board has no regulatory function, but provides loans and limited grants for water infrastructure development. (See Attachment 5: Board of Water Resources Existing Loans By County.) The Board receives no federal money, but operates entirely from appropriations from the state legislature and loan repayments.[12] Though the Board of Water Resources nominally receives 50% of the revenue from the 1/16% sales tax, most of the money allocated by the statute to the Water Resources budget actually replaces funding previously appropriated as general fund expenses. The actual use of the 1/16% sales tax is summarized in the following Table 4.

[12] See Utah Code Annotated, Title 73, Chapter 10.

Table 4 - Water Resources Sales Tax Revenues

BOARD OF WATER RESOURCES				
SALES TAX INFORMATION				
Fiscal Year	Total Received	Dam Safety Program	CUP Mitigation	C&D Fund
98	$9,810,700	$3,800,000	$3,000,000	$3,010,700
99	$8,576,500	$3,800,000	$3,000,000	$1,776,500
00	$8,978,900	$3,800,000	$3,000,000	$2,178,900
01	$9,421,800	$3,800,000	$3,000,000	$2,621,800
02	$8,277,800	$3,800,000		$4,477,800
03*	$2,810,000	$2,810,000		
Total	$47,875,700	$21,810,000	$12,000,000	$14,065,700
*Values based on 2003 appropriation act **The Division of Water Rights estimates it will take another $80 million to bring the remaining dams to standard				

The Board of Water Resources, by statutory mandate, must use leveraged financing on at least 10% of its loans. The Board has worked extensively with the Utah Water Finance Agency and other private lenders on interest buy downs, bond insurance, and other techniques to achieve this goal.

B. Water QualityBoard. The Utah Water Quality Board is established under the Utah Water Quality Act as the successor to the Water Pollution Control Committee created by the legislature in 1981. The Board and the Division of Water Quality staff have both regulatory and funding responsibilities.[13] The Water Quality Board administers loan programs patterned after the Board of Water Resources loan programs. These programs have, in turn, served as a model for matching fund programs operated by the United States Environmental Protection Agency. The Board and Division administer the Utah State Water Quality Revolving Fund (SRF) established under the Federal Clean Water Act of 1987. The SRF program requires that the state provide a 20% match to federal funds. The SRF provides a source of low interest loans to finance construction of publicly-owned water quality facilities. The Board also operates a loan program using only state funds (including repayments from the SRF) that allows more flexible assistance to needful communities. (See Attachment 6: Utah State Revolving Loan Fund 2001 Annual Report.) The Board receives one-fourth of the 1/16% sales tax, which it uses for the

[13] UCA Section 19-5-104.

federal SRF matching funds and to fund the state loan program.

C. Utah Drinking Water Board. The Utah Drinking Water Board also has both regulatory and funding functions.[14] The Board adopts rules implementing the Utah Safe Drinking Water Act and the federal Safe Drinking Water Act. The Drinking Water Board and the Division of Drinking Water staff provide loans and grants to public drinking water systems. Drinking Water also operates both a federal SRF funded by matching grants from the U.S. Environmental Protection Agency and the State Revolving Fund Program. (See Attachment 7: Drinking Water Board Project List.) The State Revolving Fund Program also receives one-fourth of the 1/16% sales tax. Drinking Water uses the 1/16% sales tax revenue as matching funds for the federal grants.

D. Permanent Community Impact Board. The Permanent Community Impact Fund Board provides loans and/or grants to state agencies and subdivisions of the state which are or may be socially or economically impacted, directly or indirectly, by mineral resource development on federal lands. Under the Federal Mineral Lease Act of 1920, lease holders on public land make royalty payments to the federal government for the development and production of non-metalliferous minerals. In Utah, the primary source of these royalties is the commercial production of fossil fuels on federal land held by the U.S. Forest Service and the Bureau of Land Management. Since the enactment of the Mineral Lease Act of 1920, a portion of these royalty payments, called mineral lease payments, have been returned to the state in an effort to help mitigate the local impact of energy and mineral developments on federal lands. The State of Utah allocates 32.5% of these to the Permanent Community Impact Fund. Currently about 20 - 25% of the funds allocated by the PCIB are allocated for water and sewer projects. Approximately $8.2 million was authorized for water system funding in FY 2002, however, the amount varies from year to year.[15]

E. Soil Conservation Commission. The Soil Conservation Commission approves loans under the Utah Department of Agriculture Agricultural Resource Development Loan program revolving loan fund. These loans apply only to farm and ranch land improvements, such as on-farm irrigation systems. The ARDL program currently receives $500,000 in new appropriations each fiscal year (except 2002-03) from the 1/16% sales tax, in addition to loan repayments. ARDL loans provide necessary matching funds for Clean Water Act on-farm programs such as Section 319 non-point source programs and the Environmental Quality Incentive Program.

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[14] See UCA 19-4-104.

[15] See Attachment 3, Table 9.

V. PROJECTED NEEDS

The state funding agencies in recent years have funded about 20% of the state's water and wastewater needs. The individual water entities including cities, water districts, and private companies, have funded 80% of their own needs through bonding, water rates, user fees, impact fees, property taxes, and shareholder assessments. The projected need over the next 20 years exceeds $5.3 billion for just the Drinking Water and Water Quality programs.

A. Drinking Water Funding Projections. The State Division of Drinking Water reports that $184 million was spent for water projects in calendar year 2001, of which $41 million was provided through state and federal loans and grants. The Division of Drinking Water projects that an average of $210 million per year will be needed over the next 20 years, for a total of $4.2 billion.

B. Water Quality Cost Estimates. The State Division of Water Quality reports the current wastewater projects in planning total $59 million and that wastewater needs over the next 20 years are projected at $1.1 billion. Division of Water Quality personnel report, however, that this number does not adequately address emerging needs mandated by federal laws for storm water control and non-point source pollution control that will have to be funded in coming years.[16]

C. Board of Water Resources. The committee anticipates that Board of Water Resources funding will be needed over the next 20 years for the following projects, in addition to the $5.3 billion projected by Drinking Water and Water Quality:

1. The Division of Water Resources lists three large water development projects which they are investigating, with estimated costs totaling $870 million. These projects are as follows:

    a. Bear River Water Development to meet the needs of Box Elder, Cache, Davis, Salt Lake and Weber counties in about 20 years. Estimated cost is $260 million.

    b. Lake Powell Pipeline to meet the needs of Washington County in about 20 years. Estimated cost is $310 million.

    c. Upper Green River Pipeline from Flaming Gorge to meet the needs of the Wasatch Front beyond the 20-year time frame. Estimated cost is $300 million.

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[16] See Attachment 4.

d. Another major project requiring substantial funding will be the Utah Lake System, the final water component to be developed for the Wasatch Front by the Central Utah Project. The project, currently in the scoping phase, is expected to deliver water within the next 10 years at a projected cost of approximately $200 million, of which 35% will need to be provided by local water entities.

D. Dam Safety. Over and above these needs, dam safety funding will require an estimated $80 million to complete the currently mandated round of rehabilitation projects. The Dam Safety Act, enacted in 1990, requires that the Utah State Engineer classify all dams, except Bureau of Reclamation dams, according to "hazard and use." The Act then provides for funding allocated through the Board of Water Resources to rehabilitate certain dams. The $80 million estimate represents the state's share of such dam rehabilitations.

E. Irrigation Funding Needs. These infrastructure cost projections do not include irrigation system improvements. There is no planning and reporting system in place for private irrigation systems operated by mutual irrigation and ditch companies such as exists for drinking water systems. Therefore, there is no reliable way to predict the need for funding in this sector of Utah's water economy. More extensive planning is usually found in secondary systems because they tend to be used in tandem with culinary systems, as discussed below.

Irrigation systems, including secondary systems, represent a substantial portion of the Board of Water Resources loan portfolio. Loans range from highly publicized projects such as rehabilitation of the Davis-Weber Canal to water conservation projects for small ditch companies serving only a few hundred acres. Irrigation company projects often provide canal improvements such as lining or piping older canals as urban encroachment creates risks external to operation of the canal. In this sense, "subsidized" loans for canal rehabilitation projects constitute a risk allocation that allows society at large to help pay at least a fraction of the costs imposed on irrigators. In the end, however, the canal rehabilitation loans are repaid by irrigators. A majority of canal projects involve linings, automation, and conversion to sprinklers to achieve water conservation. Many loans represent matching funds for grants from federal sources such as Section 206 and 207 funds under the Central Utah Project Completion Act, and Bureau of Reclamation Colorado River Salinity grants. Most irrigation companies do not have access to private lenders and could not complete these projects without Board loans.

F. Secondary Irrigation Systems. Secondary irrigation systems deserve specific mention because they reduce both capital and operational costs when compared to supplying all needs through culinary water system development. Secondary irrigation is generally defined as pressurized outdoor irrigation-grade water for individual residential and special use locations and is piped separately from drinking water systems. Such systems are employed in locations throughout the state, but has been firmly adopted by many communities on the Wasatch Front in

Davis and Weber Counties. This source of urban irrigation is widely used in these areas to avoid the incremental cost increase of treatment required for drinking water. At least in these counties, secondary irrigation has become culturally accepted and widely expected, as a lower priced, unfiltered supply for outdoor use.

Most secondary systems are predicated on relatively low cost water supplies developed by early Bureau of Reclamation projects or irrigation company sources. Conversion of agricultural supplies to urban supplies has been facilitated by introducing the same untreated sources into piped systems for seasonal use. This conversion has also allowed some mutual irrigation companies to stay viable in an urban setting.

Future challenges for secondary systems include, 1) increased accountability of amounts used in a mostly unmetered delivery, especially as conservation needs increase, and 2) building new secondary systems for an expecting public with more recently developed and more expensive sources of water. The funding needs for these systems have not been quantified.

VI. CURRENT FUNDING SOURCES

A. Private Funding Sources. A number of private entities provide water funding.

1. Private Lenders. Commercial banks generally provide funding for water systems which are being started as part of a development. Such developments may or may not meet the requirements to be considered a public water system. Once systems are of a size to be included as a municipal or special service district system, bonds are required to be issued which may include general obligation bonds or revenue bonds. Private lenders can be the purchaser of these bonds, however, they are usually sold through commercial loaning institutions.

2. Developers. Currently most municipalities require private developers to build infrastructure to meet the storm water, wastewater, water supply and in some cases secondary water systems needs of their developments. Some communities require developers to pay impact fees for these improvements. At present, developers are paying approximately $20.00 per linear foot each for installation of water and wastewater lines. If line sizes need to be increased in size from the minimum size required by health standards, municipalities often charge impact fees to fund the increased size.

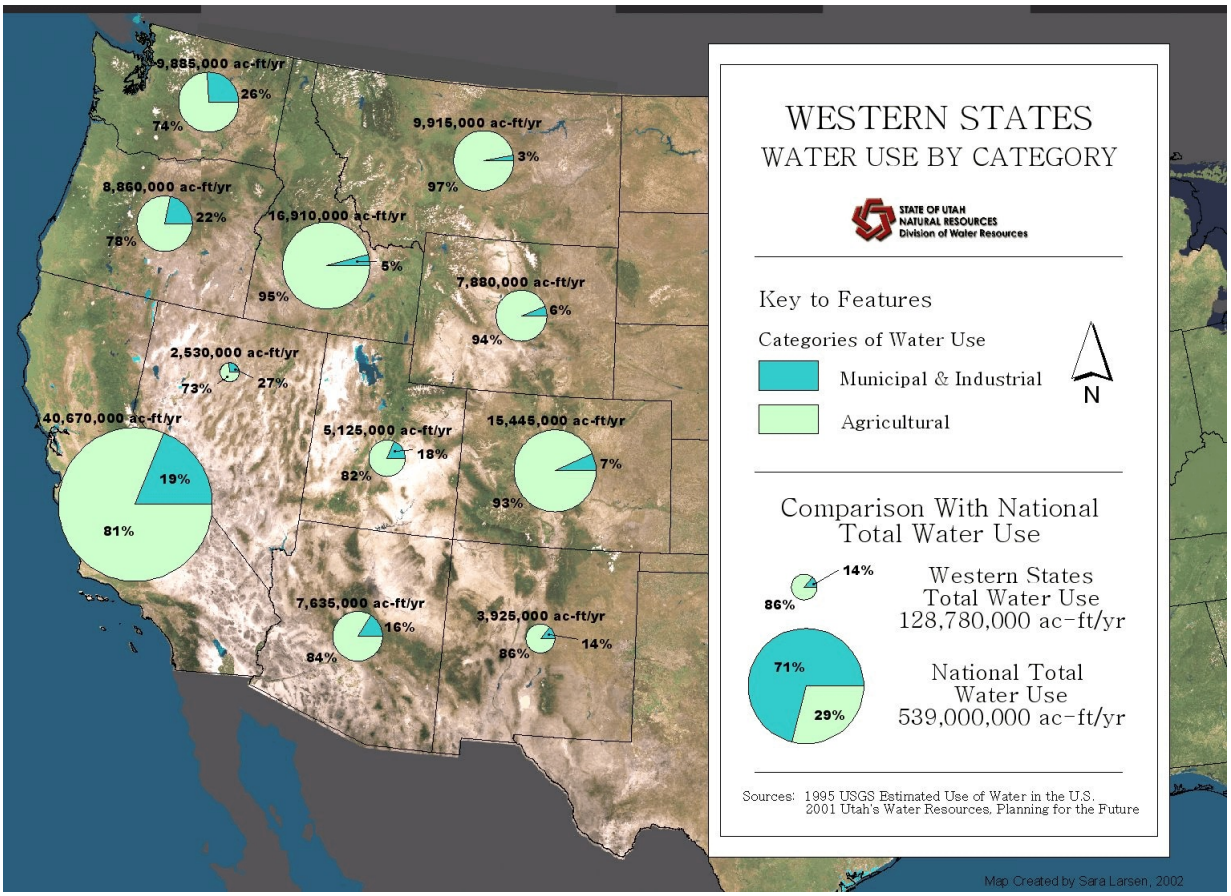
3. Irrigation Companies. The shareholders in mutual irrigation companies ultimately pay for the operation, maintenance, repair, and replacement of their systems through assessments on their shares of company stock. Such

assessments are very similar to a property tax and enforced in the same way; *i.e.,* the companies have the right to take the shares of stockholders who do not pay assessments and sell a sufficient number of shares to pay the assessment. These companies are very similar in function and financing to governmental units such as irrigation districts or other limited purpose agencies.

B. Agriculture Water: "82% of Water Use, 1.4% of Economy." Reference has often made to Utah agriculture consuming 87% of the annual water supply, yet representing only 1% of the state economy, as though this indicates an imbalance in priorities. These figures are not correct. More significantly, such an analysis understates the contribution of irrigation to Utah's economy and quality of life. The most current figures show agriculture as using 82% of developed water supplies. The following graphic compares this level of irrigation use to other arid states. Also, Utah Department of Agriculture and Food reports show direct farm sales, without related industries or any multipliers, representing 1.4% of the total state economy. Food production and services, by some measures, represent 16% of the state economy.[17]

[17] Testimony of Utah Commissioner of Agriculture and Food, Cary Peterson, to meeting of Gubernatorial and Legislative Task Force on Alternative Revenue Sources for Water Funding at meeting held September 17, 2003.

Based on information presented to the Task Force, this statement deserves serious analysis. It also greatly understates the role of agriculture in the regional economies of rural Utah. In many such areas, irrigated agriculture produces the highest economic return and will continue to do so unless agriculture altogether ceases to be viable in Utah. First, agricultural use of water serves an important function in future water development. Water in agriculture is developed water. This water thus has economic value and ownership and can be allocated by the marketplace. In areas where water is fully appropriated, which constitutes virtually the entire state, the market very effectively transfers water from agriculture to uses that produce greater economic return through willing seller/willing buyer transactions. As such, agricultural water has served as a bank for water being converted to M&I uses and will do so for the foreseeable future. Second, water used in agriculture is developed water that can be converted to M&I with less environmental impact and with very little regulatory overhead. Without agriculture continuing to use the water and thereby protecting the water rights, it will be much more difficult for the resource to be made available for M&I uses as the need arises. Third, the reference to



agriculture representing only 1% of the state economy fails to take into account the multiplier effect of basic agriculture production in the state economy.

The environmental benefits of agriculture must also be recognized. It can be argued that the state population long ago exceeded the natural carrying capacity of the natural environment that existing in 1847. Utah agriculture has provided food and fiber needed to allow the state population to exceed the natural carrying capacity, but has provided many other factors essential to our quality of life. Irrigated farm lands provide a large and essential portion of wildlife habitat throughout the state. Reservoirs, many of them used and paid for by farm irrigation, provide recreation opportunities for state residents and tourists as well as habitat for migratory birds and other wildlife. Farm fields, trees, and other vegetation supported by agricultural irrigation systems provide the "lungs" essential to air quality in urban areas through carbon and nitrate sequestration and other natural processes. Domestic food production also represents an important component of our national security.[18] Since agriculture in Utah relies heavily on irrigation, these additional benefits of water funding for agriculture must be recognized.

The Task Force therefore recommends that Utah continue its present policy of encouraging wise irrigation practices and providing selective funding of irrigation facilities.

C. Local Government Retail Water Service Entities. Local government retail water service providers include general purpose entities such as municipalities and special purpose districts.

1. Fees are charged on a per service basis by municipalities and service districts for water, wastewater, storm drain and secondary water. These fees are usually assessed based on type and amount of water used or delivery pipe size. These fees are used at times to include not only the cost of delivering the service to the end customer, but also for purchase of water rights and development of facilities for the systems.

2. Impact fees for water, wastewater, and storm drainage are charged by most municipalities to include the costs associated with developing the resources to provide these services. Impact fees can only be assessed to provide for surplus capacity beyond individual development requirements. The Utah impact fee legislation requires a capital facility plan to be approved prior to the imposition of impact fees.

3. Connection fees are assessed for actual cost of time and materials to connect individual services to the system.

4. Developers contribute capital such as the piping, hydrants and valves in new subdivisions. These costs are typically advanced by developers, who

[18] Testimony of Utah Commissioner of Agriculture and Food Cary A. Peterson at Water Development Commission meeting held July 15, 2003.

finance and install improvements. These improvements, after inspection to assure proper installation, are in turn dedicated to either a local government entity or to a homeowners' association. These costs are ultimately paid as part of the lot or home price.

5. Some of the smaller municipalities will subsidize these utility costs by property tax or in some cases will assess fees which are used for purposes other than the delivery of the utility service.

6. Municipal entities are very sensitive to the cost of providing services to their citizens. Local officials have contact with rate payers on a daily basis and are often reluctant to increase the cost of services until absolutely necessary. When rate increases finally come due to pressures from system need, population growth, or regulatory factors, increases can be as high as 100%.

D. Local Governmental Wholesale Entities. The major sources of funding for wholesale water agencies are water fees and property taxes. The five largest water wholesalers in the state are:

Central Utah Water Conservancy District
Jordan Valley Water Conservancy District
Metropolitan Water District of Salt Lake & Sandy
Washington County Water Conservancy District
Weber Basin Water Conservancy District

Water fees account for as much as 80% and as little as 20% of the revenues for these districts, with property taxes making up most of the remainder.

E. State Legislative Appropriations. The state funding agencies participation is summarized above. Detailed information on the loan programs, funding appropriations, and loan portfolios is contained in the attachments to this report.

F. Federal. Some federal funding comes through the Drinking Water and Water Quality SRF programs as described. Beyond these programs, Utah should not anticipate a significant level of water-related federal funding in the near future.

1. Bureau of Reclamation. The role of the U.S. Bureau of Reclamation (USBR) has shifted in the western states over the last two decades. Direction from Congress, environmental laws, and lack of locations with development potential have refocused the Bureau towards maintenance of existing facilities and distribution of developed water to many uses. More

specifically in Utah, and excepting the CUP (discussed above), USBR does not have additional major water supply projects in their planning. For many areas of the state, this creates a demand for local and/or state developed projects to meet some future need.

In its most productive years(in terms of new facility construction), USBR provided water to areas of Utah that was sold in blocks as demand grew, was offered at subsidized or low interest pricing, and sold on contracts that allowed long-term repayment. Typically, local and state water development will not be able to match these USBR benefits. The results will be higher unit costs which will be applied immediately to water purveyors and ultimately to the end user.

2. **Natural Resources Conservation Service**. The new federal farm bill has funds available to help with the development of water resources as well as to assist in the reduction of point and non-point source pollution improvements under the Section 319 and EQIP programs. Section 319 projects require 60%/40% on-farm match. EQIP projects require a 25% on-farm match. The most common source of on-farm matching funds (other than in-kind) are ARDL loans. The NRCS has earmarked up to $16 million for the federal 75% share for Utah in federal FY2003.[19]

G. EPA State Revolving Funds. Because of federal mandates related to the federal Safe Drinking Water Act and the Clean Water Act, some federal funding has been made available to states for their revolving loan funds.

1. The Division of Drinking Water reports about $8 million per year funding from federal grants of which approximately $6.5 million has been available for loans. A 20% state match is required.

2. The Division of Water Quality reports about $7 million per year funding from federal grants, all of which is available for loans except for the 4% allocated for administrative costs. A 20% state match is required.

3. Without the 20% state matches, which have been funded from the 1/16 cent sales tax for water, all of the $15 million in federal grants would be in jeopardy. The federal grants are subject to annual appropriations from Congress.

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[19] Presentation by Phillip Nelson, NRCS State Conservationist for Utah, at Ninth Annual Water Summit, Salt Lake City, Utah, November 14, 2002.

VII. WATER DEVELOPMENT FUNDING EVALUATION

A. Evaluation of Current Practices. The Task Force began its evaluation of funding by examining the current funding programs. The current loan programs of the Divisions of Water Resources, Drinking Water, and Water Quality, funded by the 1/16 cent sales tax, loan repayments and federal grants, are barely addressing the current water and wastewater needs of the state. The state loan programs are currently funding about 20% of the state's water and wastewater needs. With a need for over $5.3 billion projected for the next 20 years, if the state were to continue providing 20% of the required funding, the state would need to contribute $50 million per year. The following observations are pertinent:

1. Many waters providers will have to carry a greater part of the burden than they have in the past through private sector bonding, higher water rates and fees, property taxes, and assessments.

2. The state loan funds should develop clear and consistent criteria for making loans only to those entities which are not creditworthy in the private sector. This will allow the state loan funds to do more for smaller entities, often located in the rural areas of the state, that really need help.

3. The 1/16 cent sales tax should stay in place. There appears to be no viable alternative that can provide a reliable and equitable source of funds for water and wastewater development. Without a reliable source of state funding, federal matching dollars will be placed in jeopardy. Most water entities will be hard-pressed to raise their own rates, fees, and assessments to deal with funding for water development, new water and wastewater facilities, replacement of aging infrastructure, additional infrastructure, and operating costs required to meet existing and future federal Safe Drinking Water and Clean Water Act requirements, watershed source protection, storm water run-off regulations, environmental mitigation, and water conservation. The 1/16 cent sales tax is an equitable way to fund state-wide water needs. It reaches all corners of the state and also allows tourists and other visitors to the state to make a contribution towards state water and wastewater funding. No other alternatives have been identified or examined that provide funds on as equitable a basis as the sales tax.

B. Regulatory Issues Creating Additional Costs. In addition to projecting future funding needs as discussed above, the Task Force also looked at factors that may affect the water infrastructure costs. There are a number of water related regulatory issues that will create additional costs. The following issues all affect water development, but the degree to which they affect funding is not known until particular local issues arise during water development or as specific problems arise:

1. Water quality standards - Total Maximum Daily Loads and impaired waters inventory and remediation

2. Cost of meeting publicly-owned treatment works regulations

3. Storm water Phase II implementation

4. Non-point sources remediation

5. Recreation development

6. Federal regulatory changes

7. Endangered and sensitive species impact mitigation

8. Capacity increases to meet fire codes

9. Local zoning and planning restrictions

C. Evaluation of Current Funding Practices and Alternatives. The Task Force next developed as many alternative funding sources as possible. This was done through examination of historical efforts in Utah, obtaining information on funding methods from other states and from organizations such as Western States Water Council and others, and even by trying to invent new possibilities. (See Attachment 8a - Western States Water Council Water and Wastewater Project Financing Matrix, and Attachment 8b - Benchmarking Summary: How States Fund Programs to Meet Wastewater Needs.) The subcommittee and the Task Force then evaluated the effectiveness and economic feasibility of each funding method compared to other alternatives. The following matrix summarizes the recommendations of the Task Force.

Table 5- Funding Alternatives

No.	Alternative	Advantages	Disadvantages	Recommendations
1.	Present 1/16 sales tax	- Stable funding source - Uses existing collection system - Equitable - Broad based - Allows public participation in general governmental purposes	- Dedicated source impairs legislative discretion - No water conservation incentive - Not a user fee	Should continue, but there was a diversity of opinion

Table 5- Funding Alternatives

No.	Alternative	Advantages	Disadvantages	Recommendations
2.	Present property tax authorization, with local decision whether to implement	- Local management for specific needs - Voter authorized - Stable funding source - Provides revenue stream prior to service delivery - Fosters bond issuance - Allows capture of benefits for fire protection, environmental mitigation -State has comparatively low tax rate - Allows undeveloped land to contribute to water system enhancement of value - Provides contribution to maintaining value	- No water conservation incentive - Tends to be regressive - Not a user fee or use based	Recommend continuation of present property tax system
6.	Statewide property tax levy for water development	- Stable and predictable - Uses established tax collection system - Visibility	- Imposes collection costs and responsibilities on counties	Recommended for further evaluation only if the 1/16% is repealed or not renewed
7.	Registration fee surcharge on all watercraft	- User fee	- Limited revenue stream	Recommended for further evaluation only if the 1/16% is repealed or not renewed
8.	Water fowl hunting license and fishing license surcharge	- User fee	- Limited revenue stream - May violate federal law	Recommended for further evaluation only if the 1/16% is repealed or not renewed
9.	Surcharge admission fees at state parks	- User fee	- Limited revenue stream - State parks fees are not self-sustaining	Recommended for further evaluation only if the 1/16% is repealed or not renewed

Table 5- Funding Alternatives

No.	Alternative	Advantages	Disadvantages	Recommendations
10.	Excess usage/water conservation surcharge	- Encourages conservation - User fee	- Difficult to define - Difficult to collect - If effective, decreasing revenue source - Collection system not in place - Imposes burden on local governments	Recommend that concept be incorporated into increasing block rate fee structures by local water providers, with surcharge imposed by state on retail sellers that fail to implement surcharge
11.	Restructuring of loan funds and Boards		- Disruptive to existing programs - No perceived benefit - Loss of specialized functions	Not recommended
12.	Evaluation of Board funding criteria and possible recapitalization	- Does not require additional revenues - Specific to programs - Opportunity for improvements	- Long term decrease in funding depending on type of recapitalization - Creates no new revenue	Recommended for further study
13.	Allow greater flexibility in use of tourism taxes	- Captures revenue from incidental users (similar to sales tax)	- Tourism tax is already committed to other programs - Narrow revenue base - Fluctuations caused by events such as 9/11 - May cause impairment of existing bonds.	Recommended for further evaluation only if the 1/16% is repealed or not renewed
14.	Green fees surcharge at golf courses	- User fee for water intensive use - Equitable - Stable revenue source	- Political nightmare - Relatively small revenue stream - Collection system not in place	Recommend heavy surcharge on all political fund-raising events. Recommended for further evaluation only if the 1/16% is repealed or not renewed.

Other alternatives studied by the Task Force but considered not acceptable:

1. Surcharge on metered water retail sales per 1000 gallons[20]
2. Sales tax on water and sewer utility bills[21]
3. Surcharge per water and sewer connection[22]
4. State issued general obligation bonds
5. State issued revenue bonds
6. Beverage tax on all beverages sold at retail in containers
7. Annual surcharge or fee on water rights ownership
8. Statewide impact fee on all new development
9. Legislative direction for CIB to give higher priority to water development
10. Head ($x per person) tax
11. Head ($x per plumbing fixture) tax
12. State sponsored lottery
13. Lease of Colorado River water
14. Sales tax on water and sewer utility bills
15. Surcharge per water and sewer connection
16. Surcharge on metered water retail sales per 1000 gallons

Revenue estimates for each of the alternatives evaluated by the Task Force were prepared the Office of Legislative Research and General Counsel. See Attachment 8c, Estimate of Annual Revenues.

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[20] This alternative was designated by the Task Force as the primary alternative to, although much less preferred than, the existing 1/16% sales tax revenue source. It has been eliminated from this report based on instructions from the Task Force chairs contained in a letter dated January 3, 2003 which states, in part:

> Upon further consideration and study, we, as the Task Force chairs, feel that this alternative should not be considered further. It would be unfair to municipalities and small water companies and would place a heavy burden on them to collect and report the surcharge. Difficulties in fairly assessing this type of surcharge make it unworkable. Clearly, using one of the already existing tax mechanisms to generate a relatively small amount, if necessary, to address the budget needs, is preferable to a new tax which would create a new bureaucracy and be expensive to set up and administer. We recommend that in your next revision of the draft report, this proposal be added to the list of alternatives [deemed] not acceptable.

[21] This potential revenue source was included as a recommended alternative in previous drafts of this report, but was omitted on a divided vote in the November 15, 2002 Task Force meeting.

[22] See previous footnote.

D. Should Existing Funding Boards' Structure or Criteria Be Modified. The Task Force also directed the subcommittee to evaluate the existing boards and their lending criteria. Based on the subcommittee review, the Task Force recommends that the water lending boards should continue as presently structured. Some recommended changes to their criteria have already been discussed in this report. The following additional items should be noted

1. The Boards have already set policies regarding water pricing based on community median adjusted gross income and, in the case of water supply systems, water pricing and water conservation rate structures. Water suppliers that have borrowed from the state lending programs tend to have higher rates and rate structures that encourage conservation.

2. The Boards all require water conservation plans as a condition of financing. The conservation plans use guidelines adopted by the Board of Water Resources. The plans submitted by applicants to all boards are evaluated by the Division of Water Resources staff under a Memorandum of Understanding among the agencies.

3. The Boards each have policy or regulatory functions that are distinct from the others and require separate expertise.

4. The Boards also require significant time commitment from the board members, who serve as a public service. If Board functions are consolidated, expectations imposed on citizen board members may be too high.

5. The Boards and their staffs presently coordinate loans to assure there is no duplication of efforts. Applicants are instructed to apply to one board only. The Boards share feasibility reports in the few instances when policy reasons may allow joint applications to be received.

6. The federal matching fund programs are specific to the state boards that also have regulatory functions under the same programs.

7. The Boards have attempted to implement the policies and guidelines of the executive and legislative branches of state government and provide an effective means of balancing the interest of the government agencies and their clientele.

VIII. OTHER CONSIDERATIONS

A. Benefits of Predictable Stream of Water Funding. Water projects require as much as 30-years lead time from identification of need to delivery of water. Factors such as environmental mitigation, changes in federal and state standards, design and administrative requirements, legal constraints, and financing all affect water development. Balancing these multiple uncertainties complicates planning on any project. Stable funding sources reduce the uncertainty, and allow efficiencies in contracting for services, construction, and operation of water facilities. As shown in the following table summarizing the history of appropriations for the Drinking Water Division, dedicated sources such as the 1/16th cent sales tax have improved funding stability.

Table 6 - Drinking Water Appropriations History

DRINKING WATER BOARD		
Financial Assistance Program		
Legislative Appropriations		
1983	State Bond	$9,879,378
1983	Appropriation	$2,500,000
1990	Appropriation	$1,500,000
1991	State Bond	$4,337,490
1992	State Bond	$1,654,418
1992	Appropriation	$450,000
1993	Appropriation	$728,700
1995	Appropriation	$300,000
1996	Appropriation	$1,000,000
	Total	$22,349,986
	Sales Tax Revenues	
1998		$4,905,343
1999		$4,277,228
2000		$4,500,466
2001		$4,710,895
2002		$3,835,922
Total Capitalization		$44,579,840

B. Economic Benefits of Water Developments. The value of water takes on greater perspective through water projects. Water projects such as Echo, Strawberry, Quail Creek and Sand Hollow are reservoirs that provide water supply to their communities, as well as other benefits. The recreation use of these reservoirs greatly affect surrounding communities. Two reservoirs, Quail Creek and Sand Hollow, have had and will have a huge economic impact on Washington County. Dr. John Groesbeck has completed studies identifying the benefits of both water developments. With the completion of Quail Creek Reservoir, it is estimated that 568 jobs have been supported and/or created. Yearly dollars generated from this project have been $28.3 million. The economic evaluation on the recently completed Sand Hollow Reservoir shows a $21.2 million generated yearly and 478.7 jobs supported and/or created. Both project evaluations are based on the economist's conservative assumptions. Given these kinds of yearly benefits, the cost of these dams represents investment in the most basic sense.

The Board of Water Resources also completed an economic analysis of only one of its projects, the DMAD Dam near Delta. That study, summarized in Attachment 9: Economic Analysis of DMAD Dam, is outdated and understates the actual benefit because study was completed before construction of the Intermountain Power Plant (IPP) coal-fired electrical generation station north of Delta. IPP accounts for employment of hundreds of workers directly, and indirectly through the coal mines that supply the needed fuel. IPP was feasible, in part, because it is able to draw water from DMAD Dam.

C. Conservation. The subcommittee recommends a continued emphasis on efficient water use as an element of any water financing analysis. For the past ten years, water conservation has been an important element in managing water within the State of Utah. The Utah State Water Plan published May, 2001 by the Utah Board of Water Resources established a goal to reduce water consumption by 25% by the year 2050. This goal, if realized, will provide the same benefit as development of 400,000 acre feet of water per year. With Utah in its fourth year of drought, water use reduction is a top priority to minimize the burden on the state's water resources. This demand-side management has proven to be an effective means to extend the state water supply.

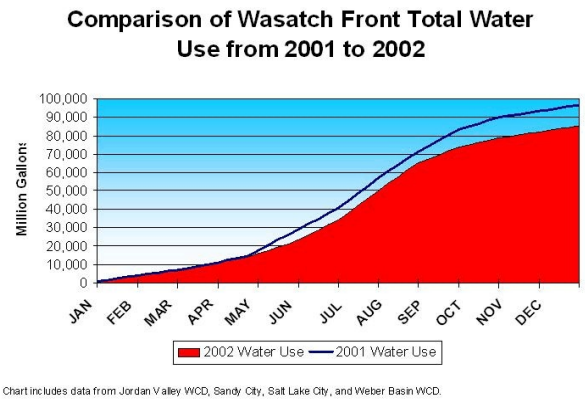
In 1998, the Legislature enacted legislation requiring all water retailers serving more than 500 connections and all water conservancy district's to prepare and adopt a water conservation plan. By 2001, 93 out of 150 water entities have complied with the new law. Washington County Water Conservancy District promotes this law further by instituting a policy which requires their wholesale water purchasers to have a water conservation plan in place.

Utah has also had in existence for the past several years a Governor's Water Conservation Team. This team funds a statewide media campaign educating residents on water conservation practices. Each member water utility, as well, has reinforced the conservation ethic of the statewide campaign within their local communities. As a result of everyone's efforts, water usage in the state for 2002 has declined by 10 percent.

D. Results of Water Conservation Efforts. State agencies and local water utilities have aggressively promoted water conservation. They have taken a consistent, comprehensive planning approach to assure all communities can meet their water needs.

Over 60% of Utah's municipal and industrial water is applied to the landscape, so many water agencies focus on education in outdoor water use. A landscape irrigation audit is one education avenue offered free to residents. These audits help residents manage their landscapes to be water efficient. Large water users can participate in workshops on reducing outdoor water consumption. Many demonstration gardens are available throughout the state as an educational resource to minimize water use.

Many local governments have implemented water conservation codes. Outdoor water use has also been curtailed through ordinances such as time-of-day watering restriction. Other water purveyors implemented an every-other-day watering restrictions. Some communities have amended their building codes to include landscape features and limited turf areas and restricted turf on slopes. Indoor water conservation is also being encouraged through building codes. Codes are being modified to require low-volume toilets, aerated faucets, and low-flow showerheads. All of these measures have significantly helped in reducing per capita water use.



The efforts of Utah citizens to voluntarily reduce water consumption should be acknowledged. It does not seem prudent to enact strict guidelines with possible criminal or economic sanctions when a meaningful appeal to responsible citizens accomplishes the desired results. The accompanying chart shows the reduced water use during 2002, based essentially on voluntary water conservation efforts by individual water users and educational efforts by affected state and local agencies.

E. Water Rates As a Conservation Method. Water rates have also been a focus of water utilities to help curtail water usage. Historically, water rates often used a decreasing block rate structure. This practice encouraged water guzzling, because the price of water decreased as usage increased. Another popular water rate that is conservation neutral is a uniform block rate in which the price remained the same regardless of how little or how much was consumed. Using water rates in demand-side management has been relatively new within the past ten years. Rates are being constructed to decrease annual water use and to help establish an efficient pattern of water consumption.

Goals in establishing a water rate have been two fold: revenue stability and equity.

Equity in pricing refers to fair distribution of water costs between customer classes. A third goal, conservation pricing, has emerged in recent years. Water purveyors are looking at rates to promote conservation and manage peak demands. However, an uneasiness is found in managing this third goal. This is because equity is harder to achieve and revenue becomes volatile when conservation enters into the equation.

F. Water Pricing as an Water Conservation Incentive. Several Utah water utilities have pioneered implementation of conservation rates, each tailored to fit their specific needs. The constants that are present in establishing a conservation rate successfully are:

- Identifying conservation goals.
- Identifying mandatory revenue requirements, including potential elasticity results
- Selecting a rate structure that best meets goals and objectives.
- Considering public perception and input. (Public support is imperative to the success of any rate structure change.)

G. Elasticity in Conservation Pricing. The economic theory of price elasticity and demand for a commodity holds true even for water. When water rates increase, the theory holds, demand decreases. Water use of certain types, referred to as elastic demands, will be reduced because of the sensitivity to rate hikes. Some water uses that fall under this description are irrigation, water-using appliances, car washing, and cleaning outdoor surfaces. The subcommittee received opinions regarding elasticity (which is represented by a negative decimal fraction) that ranged from -0.1 to -0.7. For example, if the elasticity is -0.2, a 10 percent increase in rates will result in about a 2 percent decrease in water use. The experience among the water retailers represented on the subcommittee suggests that elasticity is close to -0.1. Studies find elasticity to be relatively constant for small change in water rates. However, inconsistencies in the elasticity were found for very large rate increases. The higher the rate change, the more unpredictable become the elastic demands.

Changes in elasticity can also occur as variables are introduced.. Public education, conservation programs, or other conditions affect the way consumers view the use of water and its price. Each of these, as well as other factors, can affect elasticity. Therefore, circumstances other than price will change the elasticity response over time.

H. Methods to Insure Success in Implementing Conservation Pricing. In order to keep a conservation price effective, regular updating is essential. Rates increases will have some effectiveness in the short term, but research has shown that there is a tendency for users to slowly resume their previous consumption patterns if a conservation price structure is not updated. This trend occurs because consumers become used to the new structure and also because the real price falls over time unless the rates are increased. As incomes rise, there is a natural tendency to increase the demand for water. This tendency is called the income elasticity of demand.

Rate structures used in combination with other methods prove to be more effective than price increases alone. The frequency of a customer billing affects the effectiveness and duration of conservation rates. Frequent billings increase the conservation response because of the awareness of usage and the awareness of cost. This allows the customer the ability to respond and achieve cost savings. A comprehensive public information and education program tends to enhance the duration of conservation resulting from the implementation of conservation rates. A detailed, easy to understand bill also has proven to be beneficial. Bills with information on usage and conservation effectively help customers reduce water use.

I. Water Pricing in Utah. According to the U.S. Environmental Protection Agency, water rates at 2% or less of the median monthly household income are considered affordable. One of the most difficult tasks is setting a fair and equitable water rate. If rates become too high, utilities lose money through increased costs for collections, staff time for disconnects, etc. Economic strains can reach throughout the community, forcing utility customers to request assistance from local, state, and federal agencies to meet basic life needs. Computations of the average Utah water bill in 2002 in rural areas range from $27.77 to $34.25. The average rate in Utah based on ability to pay is higher than many other states. The table below compares Utah's water cost to surrounding cities and the national average. As presented, southern Utah's rates are above EPA's affordability guidelines of 2%.

Table 7 - Water Utility Bills As a Percentage of Income

Water Utility	% of water bill to income (MAGI)*
Phoenix, AZ	.87%
Las Vegas, NV	1.02%
Denver, CO	1.05%
N. Utah Average	1.11%
Twin Falls, ID	1.14%
S. Utah Average	2.5%
National Average	1.59%

*Income figures came from US Bureau of Economic of Economic Analysis, Utah Tax Commission, and Utah Dept. Of Workforce Services.

J. Continuing Conservation Efforts. Many conservation efforts of state and local entities have been successful, but continued progress will be needed to meet water goals and needs. The following is a partial list of tools for demand-side management:

1. A finance mechanism for future water development that encourages conservation instead of additional consumption;

2. A program to retrofit older, less efficient water fixtures in homes;

3. Continued and increased public education on water-wise landscaping principles;

4. Water conservation training as a condition for business licensing of landscape architects and planners and landscape maintenance contractors;

5. City and county zoning and landscape ordinances updated to encourage conservation landscaping and watering methods;

6. Water pricing which rewards conservation and discourages excess water consumption;

7. More research and training in conservation practices and impacts on dependent eco-systems; and

8. Development of better landscape water controllers to make daily and seasonal water adjustments to meet plant needs according to the evapotranspiration rate (ET) value and current weather conditions. Does anyone want to lead a cultural shift away from irrigated landscaping?

K. The Role of City and County Land Use Codes. Better land development codes adopted at the local levels could greatly reduce both the cost and need to retrofit water infrastructures. Many projects to line, fence, and pipe canals are nothing more than a subsidy by water users to land development. Irrigation canal owners are forced to respond to development around canals at their cost because local land use codes do not require developers and land owners to bear the true cost of development. These land use codes can be used to protect water sources and water infrastructure and to enhance the capital contributions of land developers by requiring construction and dedication of infrastructure. These developers can in turn pass much of the new infrastructure cost on to those creating the need for expansion of water distribution, collection, and treatment systems and water sources. More standardization of codes, coordination with water agencies, and assistance to local jurisdiction would reduce the capital needs for water supply and wastewater treatment.

L. Water Reuse. As pressure to develop additional water supply, local government agencies and other water providers have shown an increasing interest in reuse of water from water treatment plants. A few water reuse systems have been developed and are in use. Water reuse applications under Utah Code Annotated Title 73, Chapter 3a have been filed by

municipalities and are currently pending for authorization to use treated effluent water in irrigation systems. Public water treatment plants already discharge large quantities of high quality water. These amounts will increase with population growth and increases in culinary water use. Water reuse should and will receive greater emphasis.

IX. CONCLUSION AND RECOMMENDATIONS

A. Current funding for water, wastewater, and storm drainage is inadequate to meet projected needs. If state funds are not increased beyond the current level, projects will fall further and further behind needs. If current levels of state funding are not continued, as a minimum commitment, there are federal funds which may be lost to the State of Utah.

B. Utah has for many years exported the education paid for by the state, thereby transferring from Utah to other states the economic advantages provided by our education system. To benefit from the education of Utah' s children paid for and provided by Utah and its residents, Utah should either create sufficient jobs to allow a choice for students to stay in Utah or attempt to recapture those education costs. Perhaps students who accept jobs outside Utah should be surcharged for the education that they receive at the expense of Utah's taxpayers. In our current system, we invest in such things as education and water development so we can subsidize the economies of California and other states by sending at no cost our best and most expensive product - bright, educated children.

C. Water development appropriation represents a small, but very effective part of the state budget. With the current state budget of $7.5 billion, the estimated $16.45 million in funds appropriated from the 1/16% cent sales tax in Fiscal Year 2001-02 represents only 0.0022 (.22%) of Utah's state budget for the same year. Of the $16.45 million appropriated, $3.8 million went directly to dam safety rehabilitation, leaving a net of $12.65 million, or .0017 (.17%) of the state budget for the Water Resources, Drinking Water, Water Quality, and ARDL water development programs. This small annual investment is highly leveraged. (See Attachment 10 - Board of Water Resources Projects Fund Leveraging.) The Task Force recommends maintaining the present funding sources and looking for new funding sources.

D. Even the Task Force was surprised at the anticipated need for water infrastructure funding. With an estimated $5.3 billion in the next 20 years needed for Water Quality and Drinking Water projects, over and above the amounts needed for dam safety, major Bear River, Green River, and Lake Powell pipeline projects (if built), and private irrigation and private developer investment, current funding levels will not be adequate.

E. Given the significant growth projected by the GOPB and the increasing complexity and lead time in water development, Utah cannot afford to neglect water development and such development must be conducted in a consistent, planned, efficient manner to get the most benefit from water development funds.

F. Rural economic growth depends heavily on water funding, yet costs for water supply and treatment to rural households usually exceed both national averages and average cost for urban households. Water development in new communities, or in communities that have not had municipal water supply or water treatment systems is especially dependent on state managed water development funding.

G. Sales tax best fits the Guidelines for these reasons: Water development and management have always been high priority in Utah. Much of the water developed in this state has occurred as a result of the common efforts of individuals, developers, ditch companies, churches, and government agencies. Utah needs to continue in educating water users with conservation principles, managing our water resources efficiently and making water affordable to all Utahns. This will be necessary to maintain our quality of life.

H. Significant synergies can be achieved by better land development codes adopted at the local levels. These codes can be used to protect water sources and water infrastructure and to enhance the capital contributions of land developers who can in turn pass much of the new infrastructure cost on to those creating the need for expansion of water distribution, collection, and treatment systems and water sources.

I. Water reuse raises a number of water rights and operational issues, but the value of this resource cannot be ignored. The Task Force strongly recommends that state and local agencies and affected water users work through the operational, environmental, and legal ramifications of water reuse so that this high quality water source can be properly utilized.

Additional Resources

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