SURVEY AND ANALYSES OF WATER AND WASTEWATER INFRASTRUCTURE FINANCING MECHANISMS

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Table of Contents

Sect.		Page
	Executive Summary	**vii**
1.0	**INTRODUCTION**	**1**
1.1	BACKGROUND	1
1.2	PURPOSE AND OBJECTIVES OF THIS RESEARCH EFFORT	2
2.0	**DATA AND INFORMATION SOURCES**	**3**
2.1	UTILITY SURVEY	3
2.2	STAKEHOLDER INTERVIEWS	4
2.3	LITERATURE REVIEW	4
3.0	**FUNDING NEEDS AND METHODS**	**5**
3.1	TYPES OF FUNDING METHODS AND CONSIDERATIONS	6
3.1.1	Alternative Funding Tools and Methods of Levy	6
3.1.2	Evaluation Considerations	7
3.1.3	Influences of Utility Type, Location, and Socioeconomic Setting	9
3.2	FUNDING METHODS ASSESSMENT	12
3.2.1	Utility Rates	12
3.2.1.1	Investor-owned Utility Regulated Rates	15
3.2.2	Utility Rate Surcharges	17
3.2.3	Impact Fees	18
3.2.4	Availability of Service Fees	29
3.2.5	Ad Valorem Taxes	31
3.2.6	Developer Exactions/Dedications	33
3.2.7	Grants/Subsidized Low-Interest Loans	35
3.2.7.1	Other States' Assistance Programs	40
4.0	**COMPARISON OF ALTERNATIVE FUNDING METHODS**	**51**
4.1	EFFECTIVENESS	51
4.2	IMPACT	54
4.3	PROCESS	57
4.4	COMPARATIVE SUMMARY	58

5.0 RECOMMENDATIONS **63**
5.1 UTILITY TAXES AND UTILITY RATES 63
5.2 UTILITY RATE SURCHARGES 64
5.3 IMPACT FEES 65
5.4 AVAILABILITY FEES 67
5.5 DEVELOPER EXACTIONS/DEDICATIONS 68
5.6 GRANTS/LOW INTEREST LOANS 69

6.0 BIBLIOGRAPHY **71**

Appendix A – Survey Instrument and Compilation of Survey Results 73
Appendix B – Narrative from Responses to Open-ended Survey Questions 91
Appendix C – Personal Communication Contacts from Other States 95

SURVEY AND ANALYSES OF WATER AND WASTEWATER INFRASTRUCTURE FINANCING MECHANISMS

List of Tables

Table		Page
3-1	Description of Typical Water and Wastewater Infrastructure Funding Methods and Means of Levy	8
4-1	Comparison of Effectiveness, Impact, and Process Issues Among Alternative Funding Methods	59
5-1	Recommendations Related to Utility Taxes and Utility Rates	63
5-2	Recommendations Related to Utility Surcharges	64
5-3	Recommendations Related to Impact Fees	65
5-4	Recommendations Related to Availability Fees	67
5-5	Recommendations Related to Developer Exactions/Dedications	68
5-6	Recommendations Related to Grants/Low-Interest Loans	70

SURVEY AND ANALYSES OF
WATER AND WASTEWATER
INFRASTRUCTURE FINANCING MECHANISMS

List of Figures

Figure		Page
3-1	Average 5-Year Total Infrastructure Cost	5
3-2	Composition of Avg. 5-Year Infrastructure Costs	5
3-3	Average New Infrastructure Cost Per Connection	6
3-4	Types of Water-related Utilities and Other Key Factors Affecting Funding Capabilities	9
3-5	How Effective Are Utility Rate Revenues In Meeting Your Capital Needs?	13
3-6	What Are the Difficulties In Obtaining Funds From Utility Rates?	15
3-7	How Effective Are Impact Fee Revenues in Meeting Your Capital Needs?	20
3-8	Are Impact Fees Recovering the Full Capital Cost of Service?	20
3-9	Who Ultimately Bears the Impact of Impact Fees?	23
3-10	What Are the Difficulties In Obtaining Funds From Impact Fees?	28
3-11	How Effective Are Developer Exactions In Meeting Your Capital Needs?	34
3-12	What Are the Difficulties In Obtaining Funds From Developer Exactions?	35
3-13	Can Your Utility Meet Its Capital Needs Without Outside Financial Assistance?	36
3-14	How Effective Are Grants/Loans In Meeting Your Capital Needs?	36
3-15	How Effective Are Financial Assistance Programs In Mitigating the Costs of Unfunded Mandates?	37
3-16	Do You Agree That Centralized Financial Programs Can Provide Overall Savings?	38
3-17	What Are the Difficulties In Obtaining Funds From Grants/Loans?	38
4-1	Municipalities: Types of Capital Funding	51
4-2	Water Districts; Types of Capital Funding	51
4-3	Water Corporations: Types of Capital Funding	51
4-4	Are Funds Available When Needed?	52
4-5	Are Funds a Stable Source of Revenue?	52
4-6	Are Funds Used For a Variety of Purposes?	53
4-7	Do Customers Receive Commensurate Benefit?	54
4-8	Is This Levy Tax Deductible?	55
4-9	Does This Levy Effect Growth Patterns?	56
4-10	Are These Funds Difficult to Obtain?	57
4-11	Are These Funds Administratively Cost-Effective?	57

Survey and Analyses of Water and Wastewater Infrastructure Financing Mechanisms

Executive Summary

Providing high quality water and wastewater infrastructure for existing customers requires a huge outlay of funds. However, utilities in Texas and in other growing states face the *additional challenges* of financing: (1) water and wastewater capital improvements for growth-related demands, and (2) the additional capital costs for existing and new customers to provide for compliance with Safe Drinking Water Act and other federal and state regulations.

However, the more traditional financial approaches were not fully sufficient to meet the burgeoning infrastructure needs over time nor did they address the growth-related utility rate increases that were being borne by existing customers. With the rapid growth of the 1970-1980s, many utilities searched for new and more innovative capital financing techniques, and various approaches were implemented by utilities and cities under home rule powers in somewhat of an ad hoc nature. In Texas, complaints about these new approaches, perceived abuses, and lack of governmental direction on basic authority, acceptable methods, and public process led the state legislature to enact a series of utility-related bills in 1987 and 1989. This new legislation addressed capital recovery (impact) fees, utility exactions from developers, creation of municipal drainage utilities, and other funding-related issues.

While there are now a broader array of methods available for raising funds for water and wastewater capital investment in Texas, there are continuing concerns. The tremendous amounts of past and pending infrastructure investment have strained consumer affordability and utilities' funding capabilities. Also, certain financing tools are not uniformly available to all public and private utilities, and there are outstanding issues with respect to how well these fees and charges perform.

Given these concerns, the Texas Water Development Board commissioned this research effort to:

- identify water and wastewater infrastructure funding methods available and in use in Texas and other states;
- assess the effectiveness, impacts and process issues of these funding tools;
- identify the advantages and disadvantages of each financing method depending on the characteristics of the utility and the area needing the infrastructure;
- identify what financing methods are working well and what aren't; and
- make recommendations for statutory or administrative policy action that would improve utilities' ability to meet infrastructure needs as well as address stakeholder concerns.

Four primary sources of information were used in this assessment: (1) a survey of water and wastewater managers in Texas and other western states, (2) interviews with key stakeholders groups in Texas, (3) a review of the professional literature, and (4) the professional experience and knowledge of the authors.

A summary of key findings and recommendations in the report include:

- Utility rates (for most utilities) and taxing capabilities (for special purpose districts) are the backbone of utility capital financing. These sources of funds provide a generally stable, dependable source of revenue that is commonly accepted as a pledge for repayment of debt. Improved public education and public relations programs on the cause and need for rate changes could benefit most public utilities.

- Texas public utilities currently have the ability to levy utility rate surcharges for certain classes or groups of customers, but the relevant governing or regulating body should review existing or potential surcharges for their appropriateness and fairness.

- The process for enacting and administering impact fees for public water and wastewater utilities in Texas is rather cumbersome and expensive. Also, current law does not provide for a more full consideration of the benefits of growth in the fee-setting process. Statutory changes are recommended to address clarification, streamlining, and a broader consideration of the benefits and costs of growth.

- Statutory authority for the levy of availability of service (or standby) fees in Texas is currently limited to water districts and designated economically distressed utility service areas. This levy on undeveloped property can be an appropriate funding mechanism for all water and wastewater utilities in situations where significant oversizing is being borne by existing customers. It is recommended that statutory authority for this fee be broadened for use by other public and private water and wastewater utilities.

- Current state subdivision and zoning law for municipalities and water utility law for districts and private utilities are generally adequate with respect to the authority for and treatment of developer exactions/dedications. However, Texas utilities should review their policies, other rate and fee levies, and specific exactions to be sure that such requirements are lawful and do not result in a duplicative or overlapping charges or requirements.

- State loan and grant assistance programs also provide important support for utility capital financing programs. In some Texas state programs, additional funding may be needed to expand loan capability, make loans more affordable, and provide for grant funding for poor communities that cannot afford full loan funding. While utility managers expressed a need for low-cost loan and grant funds, few were willing to support any new statewide revenue gathering mechanism at this time to fund such expanded state assistance programs.

- Several cross-cutting issues and recommendations arise with respect to investor-owned water and sewer utilities (IOUs). IOUs, while privately owned, provide a basic public service. Of the various types of utilities, IOUs also comprise a large percentage of distressed utilities in Texas with the least degree of financial flexibility or eligibility for low-cost public assistance. The Texas Natural Resource Conservation Commission should monitor agency rules being adopted to ascertain if additional financial flexibility being granted IOUs is indeed resulting in improved financial performance and utility service. New authority for IOUs to implement a broader range of funding tools, including impact and stand-by fees, should be considered with appropriate treatment of such funds in the regulated rate-making process. The risk, cost, and overall viability of further extending State financial assistance to IOUs should also be evaluated.

- Vis-à-vis Texas water-related financial assistance programs, other western states' programs incorporate some differing funding approaches, other interesting program features, or broader provisions that could be considered in Texas. These include program revenue from fully- or partially-dedicated sources; leveraging some portion of SRF interest repayments to provide wastewater grants for poor communities; use of other non-bond funds to help poor credit risk communities; fast track loans for small or emergency purchases; broader consideration of need, affordability, and health risk in funding award decisions; and limitations on construction change orders.

SURVEY AND ANALYSES OF WATER AND WASTEWATER INFRASTRUCTURE FINANCING MECHANISMS

1.0 INTRODUCTION

1.1 BACKGROUND

Providing high quality water and wastewater infrastructure for existing customers requires a huge outlay of funds. However, utilities in Texas and in other growing states face the *additional challenges* of financing: (1) water and wastewater capital improvements for growth-related demands, and (2) the additional capital costs for existing and new customers to provide for compliance with Safe Drinking Water Act and other federal and state regulations.

The significant level of capital investment facing these utilities can present a staggering proposition of not only possessing the needed financial capability, but also rallying the political support to move forward. Gaining political support may depend, in great part, upon the available array of financing tools that can provide for a fair, equitable, and politically acceptable assignment of these infrastructure costs to the appropriate consumers of the service. Political support for such fees or other financing methods may also depend upon the public process (or lack thereof) used in developing the financing proposal.

Decades ago, many municipally owned utilities used tax revenues to fund the issuance of general obligation debt to finance capital infrastructure for both general and utility services. In the post-war years with the advent of separate municipal enterprise funds, utility rate revenue became the basic pledge for issuance of municipal revenue bonds for utility construction. To this day, utility rate revenue is the primary means of gathering significant capital funds for most utilities.

Primarily beginning in the 1950s and 1960s, the federal government and many state governments began various successions of grant and low-interest loan programs for the development of water and wastewater infrastructure. The availability of federal grant funding has grown and shrunk over the years, and for the most part, has been replaced by low-interest revolving loan programs capitalized with a combination of federal and state funds. In Texas, state-originated assistance for water and wastewater infrastructure is provided with grants for colonias and regional planning and state capitalization of a wastewater and drinking water State Revolving Funds. Assistance beyond those programs is limited to what amounts to an extension of the state's credit rating to eligible regional and local entities that typically cannot borrow at more attractive terms on the open market.

However, the more traditional financial approaches have not been fully sufficient to meet the burgeoning infrastructure needs over time nor did they address the growth-related utility rate increases that were being borne by existing customers. With the rapid growth of the 1970-1980s, many utilities searched for new and more innovative capital financing techniques, and various approaches were implemented by utilities and cities under home rule powers in somewhat of an ad hoc nature. In Texas, complaints about these new approaches, perceived abuses, and lack of governmental direction on basic authority, acceptable methods, and public process led the state legislature to enact a series of utility-related bills in 1987 and 1989. This new legislation addressed capital recovery (impact) fees, utility exactions from developers, creation of municipal drainage utilities, and other funding-related issues.

As later described in Section 3.1, some of the more commonly used sources of capital funds or assets in use today include:

- Utility Rate Revenue
- Utility Rate Surcharges
- Ad Valorem Tax Revenue
- Impact (capital recovery) Fee
- Availability of Service (stand-by) Fee
- Tap (meter) fee
- Fire Protection Charge
- Demand Contract Charge
- Developer Exaction or Dedication
- Subsidized Low-interest Loan or Grant

While there are now a broader array of methods available for raising funds for water and wastewater capital investment in Texas, there are continuing concerns. The tremendous amounts of past and pending infrastructure investment have strained consumer affordability and utilities' funding capabilities. Also, certain financing tools are not uniformly available to all public and private utilities, and there are outstanding issues with respect to how well these fees and charges perform.

1.2 PURPOSE AND OBJECTIVES OF THIS RESEARCH EFFORT

Given these issues and concerns, the Texas Water Development Board commissioned this research effort to:

- ✓ identify water and wastewater infrastructure funding methods available and in use in Texas and other states;
- ✓ assess the effectiveness, impacts and process issues of these funding tools;
- ✓ identify the advantages and disadvantages of each financing method depending on the characteristics of the utility and the area needing the infrastructure;
- ✓ identify what financing methods are working well and what aren't; and
- ✓ make recommendations for statutory or administrative policy action that would improve utilities' ability to meet infrastructure needs as well as address stakeholder concerns.

2.0 DATA AND INFORMATION SOURCES

Given the large number of different funding approaches; the even larger number of effectiveness, impact, and process issues that could be associated with each funding tool; and the reality that most utilities have not conducted such analyses of their funding programs, it would be unwise to narrowly depend upon a detailed survey as the primary basis of the research. The response rate to a detailed survey is usually limited and, given the typical lack of formal analyses of these issues at the utility level, the response from utility managers is likely to be somewhat opinionated. To broaden the bases of the assessment, this research effort also gathered information from personal interviews with key stakeholder groups and from prior analyses published in the professional and trade literature.

2.1 UTILITY SURVEY

Through regulatory mailing lists, phone contacts, and our personal experience, the HDR/IUG team identified 120 candidates in Texas and the other twelve western states for receipt of a utility funding survey questionnaire. A mix of municipal, special district, and utility corporations were targeted for the survey in each state. Within Texas, a variety of large, medium, and small utilities of different types were identified in various parts of the state, also reflecting urban and rural settings and differing rates of growths and income levels.

A sample questionnaire was developed and reviewed for clarity and any potential wording or statistical bias. There is an inherent trade-off in how lengthy and detailed the survey can get without affecting the response rate. Given the diversity of financing approaches, care was taken in the questionnaire design to keep many of the questions generic, yet at the same time pertinent enough to gather useful information that can be compared for similarity and differences. Various narrative-response, open-ended questions were also included to help provide for a broader, qualitative interpretation. A copy of the survey instrument and compilation of survey results is included as Appendix A. Various narrative responses to open-ended questions are presented in Appendix B.

The utility survey was mailed at the beginning of October 1998 with a due date at the end of that month. Follow-up phone calls were made to prompt survey completion and to clarify responses. Overall, the survey response was typical of most surveys at about one-third of those sent. A summary and compilation of the survey results are shown in Appendix B. Survey results, as appropriate, are also related in the assessment discussions in Sections 3.0 and 4.0.

2.2 STAKEHOLDER INTERVIEWS

Telephone and personal interviews were also conducted with key stakeholder interests representing utilities who have experienced funding problems, funding agencies, and trade associations representing builders and municipal, special district, and rural utilities. A partial list of those interviewed included representatives of: Texas Water Development Board (TWDB), Texas Municipal League (TML), City Planners Association of Texas (CPAT), Association of Water Board Directors (AWBD), Texas Rural Water Association (TRWA), Independent Water and Sewer Companies of Texas (IWSCOT), Texas Association of Builders (TAB), and selected Texas cities. All of those interviewed were helpful and generally familiar with these issues. Their cooperation is appreciated. Some stakeholders had specific issue agendas for policy changes, while others had concerns but no specific list of policy initiatives. These policy positions and concerns are considered later in this assessment.

2.3 LITERATURE REVIEW

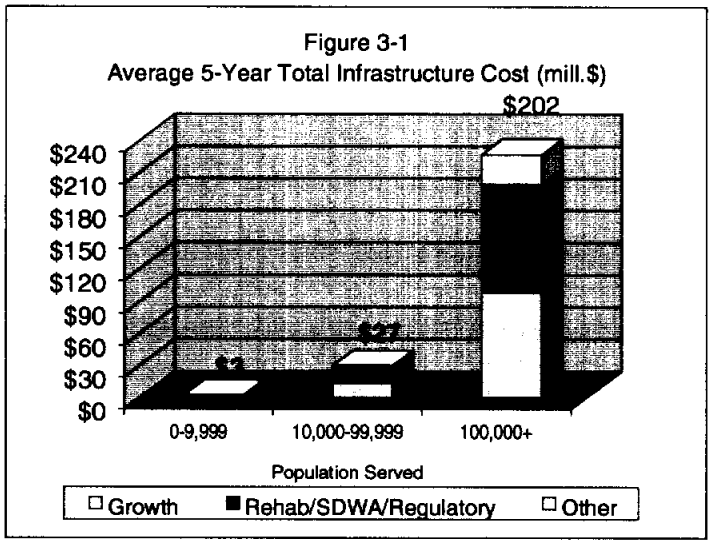
Further research on utility capital financing practices and issues was accomplished through a broad literature review. There are various sources and publications that contained information pertinent to this effort, including:

- American Water Works Association (AWWA) Manual M1, Water Rates
- AWWA Manual M26, Water Rates and Related Charges
- AWWA Manual M29, Utility Capital Financing
- AWWA Manual M34, Alternative Rates
- AWWA Manual M35, Revenue Requirements,
- National Association of Regulatory Utility Commissioners
- Journal of the American Planning Association
- Land Economics
- Public Management
- Government Finance Review
- Urban Land Institute
- International Journal of Public Administration
- Civil Engineering
- Growth and Change
- Real Estate Law Journal
- Raftelis Environmental Consulting Group – 1998 Water and Wastewater Rate Survey
- International City/County Management Association – Local Government Infrastructure Financing Special Data Issue
- Others

In some of these cases, the time and budgets for this previous research allowed a more scientific assessment of effectiveness and impacts of funding mechanisms than is typically feasible for a single utility. This report's authors attempted to use academic sources, whenever possible, to minimize any possible bias that might be present any special interest-funded research. The literature provides an interesting comparison to some of the facts and opinions voiced in the current utility survey involved in this effort.

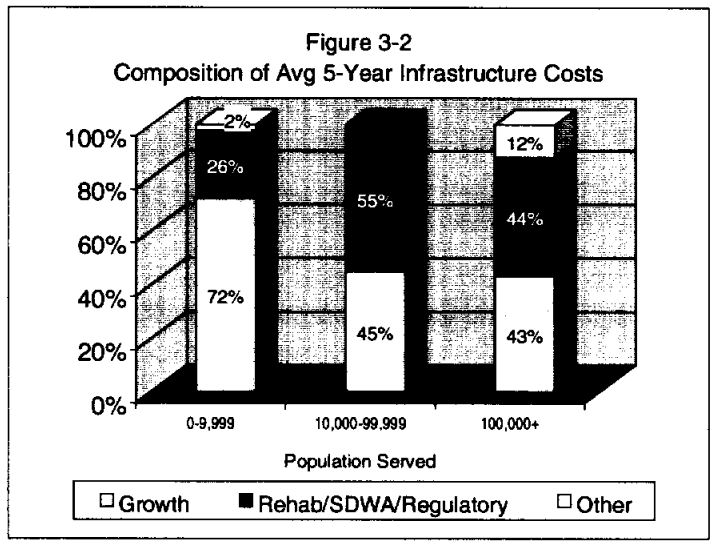
3.0 FUNDING NEEDS AND METHODS

As previously discussed, the anticipated water-related infrastructure costs facing Texas' and other western states' utilities is significant. The TWDB, in its 1997 Texas Water Plan, has conservatively projected Texas water-related infrastructure needs at over $65 billion over the next 50 years with over $22 billion of that forecast as needed by the year 2020.

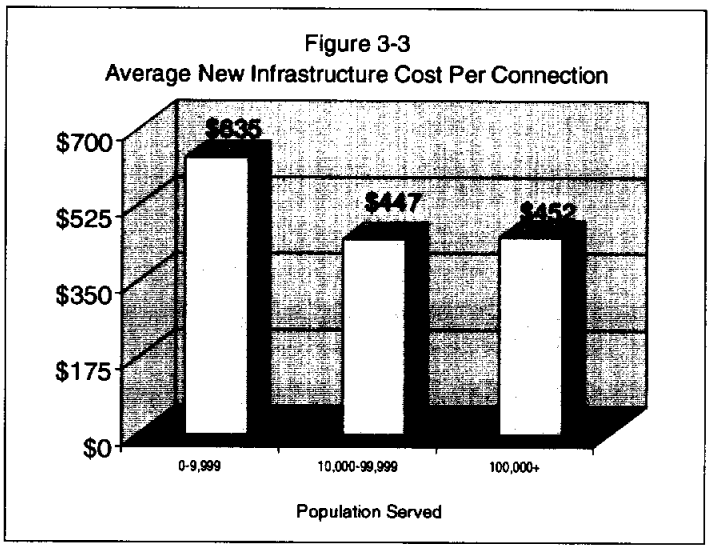


The utility survey from this research also provided some information in this regard. Figure 3-1 shows the anticipated 5-year average water-related infrastructure need, classified by the utility size. Small utilities serving less than 10,000 population reported a 5-year need averaging about $3 million per utility. Medium size utilities from 10,000 to 99,999 persons reported a 5-year need averaging $27 million. For large utilities, the average 5-year funding need was $202 million per utility.

Figure 3-2 shows the reported composition of what is inducing the additional infrastructure spending. For the smaller water-related utilities reporting, growth is anticipated to account for over 72% of near-term infrastructure spending with rehabilitation and related-regulatory compliance factors accounting for most of the rest. Medium size water and wastewater utilities were about evenly split between growth and rehab/regulatory influences on near-term spending.



The large utilities reported a very similar result once the responses labeled "Other" were examined. San Antonio listed a number of new project capital needs under this category for reuse, water acquisition, aquifer storage and other alternative water supply projects that would provide not only for new growth, but also replacement supplies, given the regulatory limits on Edwards Aquifer supply availability.



As utility size increases and economies of scale are gained, the average cost per unit of service will commonly decline. This is illustrated in Figure 3-3 where the cost per connection of new infrastructure requirements is expected to range from $635 for the small utilities to about $450 per connection for the medium and larger cities surveyed. This represents a unit cost of new infrastructure over 40% higher for small utilities than for large systems.

3.1 TYPES OF FUNDING METHODS AND CONSIDERATIONS

As can be seen from the tremendous infrastructure needs facing water and wastewater utilities, it is important to provide an appropriate array of utility funding tools that are effective and seek to minimize undesirable impacts. In order to assess the viability of different utility capital funding techniques, it is first important to understand what funding tools are in widespread use and how they are typically levied, as well as how factors, such as the type of utility, its location, and socioeconomic setting, can affect their performance.

3.1.1 Alternative Funding Tools and Methods of Levy

There are numerous methods available for financing water and wastewater infrastructure. In most cases, several of these tools are employed at the same time by a utility, and as such, must be evaluated in a more comprehensive, integrated fashion. To some degree, the effectiveness and impact of individual funding approaches will depend upon the reliance placed upon a certain tool versus that of other alternative financing mechanisms.

There are many issues associated with each one of these tools, so many so that the needed effort on significant issues of interest to the TWDB and Texas utilities would be diluted with a broader assessment of all financing tools. For instance, there are issues associated with minor fees that collect money for utility capital (fire flow fees, tap fees, etc.), but in the broader scheme of things, these fees are not designed nor intended to raise a significant amount of capital funding. Other approaches, such as the demand contract charge, may only narrowly apply in situations where one or two large customers constitute a noticeable portion of system water sales. Therefore, efforts will subsequently be made in this study to narrow the assessment to those funding mechanisms that would play a major role in providing for capital infrastructure.

Each alternative funding approach may have a different means of being levied upon affected parties. As discussed later in Section 2.0, the means of levy can have a bearing upon how effective the tool is in producing revenue, who initially and ultimately bears the cost, and its affordability to consumers.

A brief description of the various funding tools and how they are typically levied or charged is shown in Table 3-1.

3.1.2 Evaluation Considerations

The evaluation of individual infrastructure funding methods follows in Section 3.2. Overall, each funding tool is assessed according to three major criteria: (1) effectiveness, (2) impact, and (3) process.

While each of these major considerations has a number of sub-issues within them, a broad description of these criteria is:

- **Effectiveness.** Effectiveness is the *ability and dependability* of the tool to raise the *targeted amount* of funds for *infrastructure needs* by the *time* the funding is needed.

- **Impact.** Impact is the direct and indirect socioeconomic effects of the funding tool, in part determined by *who pays*, its *affordability* and *fairness, commensurate service for levies made*, and influence on *growth and development patterns.*

- **Process.** Process is the procedures for creating and operating the funding program and includes considerations of relative *ease of implementation and management*, the *cost-effectiveness of administration*, and degree of influence of *regulatory, policy and public participation* on program elements.

Table 3-1
Description of Typical
Water and Wastewater Infrastructure Funding Methods
And Means of Levy

- **Utility Rate Revenue** - revenue gathered from periodic (usually monthly) billing of customers for utility service and used to address utility operating and capital funding, either in the form of debt service payments or cash funding of capital projects.

- **Utility Rate Surcharge** – a special additional charge on the monthly utility bill intended to target capital recovery for certain items or target certain customers for an additional level of capital recovery reflective of unusual service costs associated with that customer group.

- **Ad Valorem Tax Revenue** – annual revenue gathered from a broad-based assessment of real property value that is used to address utility operating and/or capital funding needs, typically used today only by special water districts.

- **Impact (capital recovery) Fee** – a front-end payment or customer contribution typically assessed to new connections for the purposes of providing capital funding to help offset the cost of growth and protect existing customers from growth-related rate increases.

- **Availability of Service (stand-by) Fee** – a monthly charge to utility customers to recover capital-related and on-going costs incurred by a utility when it is constructing facilities for the benefit of future customers. Normally, this is applicable during the period when service is first made available to a possible customer and the time service actually begins.

- **Tap Fee** – a one-time charge to new utility connections made for purchase/installation of the water meter and/or making the water or wastewater customer service connection to the utility.

- **Fire Protection Charge** – a periodic charge to selected special need customers for providing public or private fire protection services, typically derived from an allocation of the general or customer-specific additional costs to the utility of providing high (fire) flow capabilities and other fire-related facilities (hydrants, standpipes, etc.) in the system.

- **Demand Contract Charge** – similar to availability of service fees, demand contract charges are periodic payments where a significant (high volume) customer(s) may contract to pay the fixed costs related to a particular share of utility capacity attributable to their use.

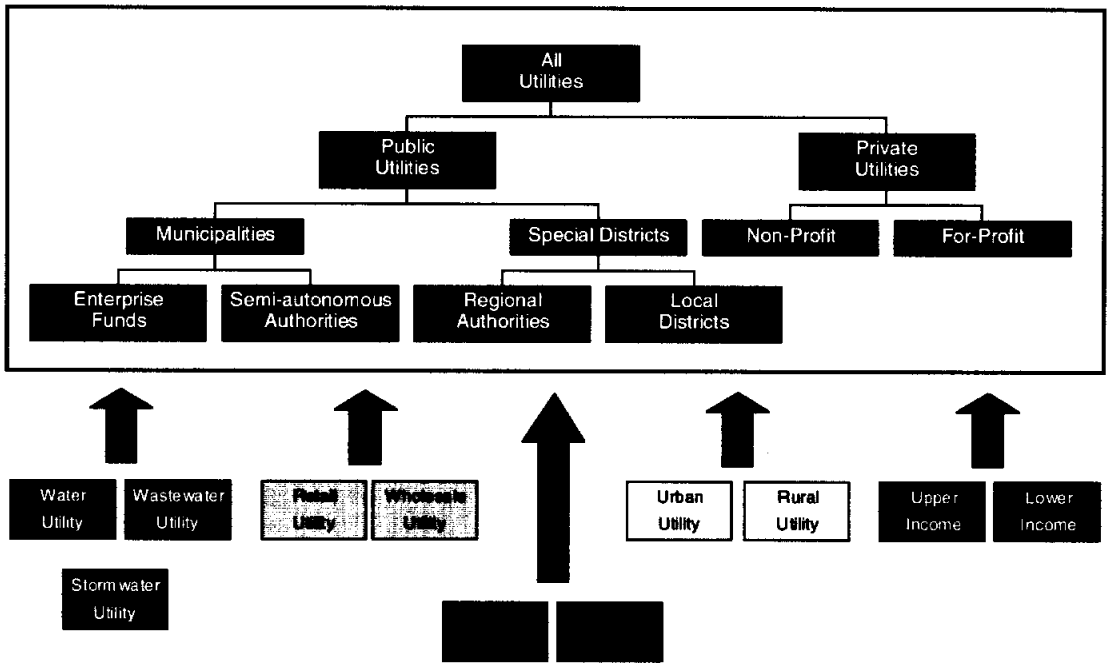
- **Developer Exaction/Dedication** – typically capital received through a utility or local governmental policy that requires a land developer, at his own expense, to provide some degree of utility facilities that provide a particular service benefit to that development. This may also include oversizing of facilities for future development in the area for which the initial developer is reimbursed through the levy of "subsequent user" fees from later connections or some other methods of repayment.

- **Grants/Low-interest Subsidized Loan** – no-cost or low-cost financial assistance usually received from a higher level of government. While nearly all utilities may be eligible for some type of assistance, utility eligibility is defined for each assistance program. Investor-owned utilities have the most limited opportunities for public assistance. Typically, the funding agency either expends public monies or extends its good credit rating to provide funds to the receiving utility at an interest rate or funding cost lower than can be obtained by the utility itself.

3.1.3 Influences of Utility Type, Location, and Socioeconomic Setting

There are also background factors that can influence the performance of various infrastructure funding methods. The type of utility, its location, and socioeconomic setting can have significant effects upon a funding tool's availability, effectiveness, and impact. Figure 3-4 illustrates the various major types of utility organizations and institutional or socioeconomic factors influencing funding capabilities.

Figure 3-4
Types of Water- related Utilities
and Other Key Factors Affecting Funding Capabilities



Utility Type. Water-related utilities can be classified into two major categories, public or private, with assorted variations underneath these high-level groupings.

Public Utilities. These are utilities commonly organized as a level of local government. Within the public class, there are two major types of utilities, municipalities and special districts:

Municipalities. Utilities that are formed under state law defining broad municipal authorities. There are usually two common types, both of which normally fund most of their operations and capital provision with utility rate revenue:

Enterprise Funds – a separate accounting fund that is typically oriented as a self-supporting business, usually governed by an elected council. Debt is usually issued in the name of the city.

Semi-autonomous Authorities – a separate utility organization that is related to city government, but is mostly governed by separate decisions of an appointed Board. The Authority may come under some degree of city council oversight, has separate accounting, and many times will issue debt in its own name.

Special Districts. Utilities that are formed under general or specific state law that exists as its own discrete governmental body, although there may be some degree of state oversight. There are a wide variety of special districts with varying powers, although in general, special districts fall into one of two sub-classes:

Regional Authorities. Large regional purveyors of wholesale and/or retail utility service, usually encompassing one or more counties, and organized under specific state law with particular powers and authorities. In most cases, utility rate revenues are their primary source of income for capital and operating expenses.

Local Special Districts. Smaller local providers of wholesale and/or retail service, usually serving one or more land development projects. In most cases, utility rate revenues are a primary source of income for capital and operating expenses. Some districts also supplement capital and operating expenses with tax revenues.

Private Utilities. Utilities typically organized as a non-governmental, but regulated, business enterprises. In many cases, private utilities serve small developments or unincorporated rural areas. There are two major types of private utilities:

Non-profit or Coop Private Utilities – a nonprofit water or sewer service corporation that is member-owned and member-controlled. These entities are usually given a public license to serve a defined area. Major funding for operations and infrastructure usually comes from rate revenues. Some non-profit utility corporations may be eligible for access to public financial assistance programs.

For-profit or Investor-owned Private Utilities – These are any utility corporation, joint-stock company, or association owned by investors with the intent of making a business profit, and as such, are considered as taxable enterprises under federal tax law. These entities are usually given a public license to serve a defined area and are closely regulated (usually by the state) with respect to utility rates and allowable profit. Major funding for operations and capital usually derive from rate revenues with financing usually coming from private sources.

Within any of these varied forms of institutional organization of utilities, there can still be further diversity in types of service provision. Most municipalities and some special districts offer a combination of water, wastewater, and stormwater drainage services, although not always under the same departmental management. Many investor-owned utilities will offer water service, but not wastewater or drainage. Some special districts provide drainage functions, but not water or wastewater services. Some utilities only provide retail service to their customers, while many other utilities supply retail customers and provide wholesale services to outlying utility districts or corporations. Most large regional entities specialize only in wholesale raw water or bulk treatment service to member or contract parties.

So how do these institutional or service-type issues affect a water-related utility's ability to raise funds for infrastructure?

First, the specific legal authority enabling the utility institution and defining its authority may limit the funding tools available. While municipalities typically have the latitude to employ a wide array of funding mechanisms, ad valorem tax revenues are usually dedicated to general services. Some other funding tools (e.g., availability of service fees) may not be viable for cities without specific statutory authority. Since special water districts do not usually provide general services for police, fire, etc., and have specific statutory authority, ad valorem taxing is a viable utility funding tool for these entities. For-profit utility corporations may not be eligible for certain types of public financial assistance, may find impact fees less desirable if they are given unfavorable treatment under federal tax law as contributions-in-aid-of-construction, and also come under greater regulatory scrutiny on allowable costs in utility rate and fee structures.

Second, the type of utility service offered may preclude some options. For instance, a wastewater-only utility may find it difficult to collect bills and terminate service, not having direct control over the water connection. Also, a regional drainage district with taxing authority or municipal drainage utility may find it politically difficult to levy a tax or implement a monthly charge to those both in and out of the floodplain. Those outside of the floodplain only receive an indirect benefit (e.g., improved access, maintained overall economic activity and tax base, etc.) from improvements to reduce flooding and may not support related funding initiatives.

Third, various funding measures targeted at retail customers (e.g. impact fees, availability of service fees, etc.) are not very practical tools for wholesale service providers.

Utility Location. The location of a utility may also affect the array of funding tools available for use. There may be differences in the authorities granted various types of utilities under differing states' laws. Fees that may be lawful in Oregon may or may not be specifically authorized in Texas. Certain public financial assistance programs for utilities, such as the federal Farmers Home Administration low interest loans or grants under the Economically Distressed Areas Program of Texas, may also be restricted to certain types of utilities or service situations located in more rural or unincorporated areas.

Utility Development Setting. The socioeconomic characteristics of a utility service area can also noticeably affect the viability of certain types of funding measures. The degree of new development, or lack thereof, can directly affect the effectiveness of growth-related impact fees. The degree of affluence in a community affects the overall affordability of various utility charges and how equitably the charges are levied. A high degree of specialty service demand by a few customers or unusual seasonal water demand may entail the need for special rate or charges.

3.2 FUNDING METHODS ASSESSMENT

There is a noticeable lack of previous research on the broader issues of alternative funding tools. The large majority of existing research is either in the form of surveys on use of tools or focused more narrowly on impact fees.

3.2.1 Utility Rates

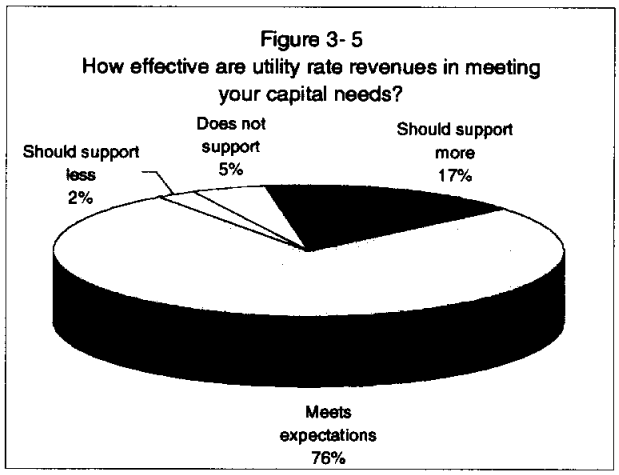
The AWWA characterizes utility rates as a periodic charge for service that generates "sufficient total revenue to ensure proper operation and maintenance of the system, development and perpetuation of the system, and maintenance of the utility's financial integrity" (AWWA-M1, 1991). Other fees and charges may also be levied, but utility rate revenue is, in most cases, the most significant revenue stream of the utility.

There are two major methods of projecting revenue requirements in water ratemaking, the utility basis and the cash basis. These methods primarily differ in how capital-related costs are recovered. Then, there is an array of alternative rate designs (flat, declining block, seasonal, etc.) that may seek to achieve various cost-recovery and policy goals (AWWA-M34, 1992).

However, the AWWA does not endorse any substantial departure from cost-of-service-based rates to achieve social objectives (AWWA-M1, 1991).

Effectiveness. Utility rate charges have been the primary source of water and wastewater utility funding for many years. Many of the basic legal issues or process problems have been worked out over the years, although rate increases, changes in rate design, or inappropriate deviations from cost of service methods can still elicit public controversy.

Because it generates a sizeable, stable revenue stream and is a generally proportionate, understandable charge for utility service received, the utility rate levy is typically the backbone of water and wastewater utility finance. Rate revenue for municipal utilities also has a high degree of flexibility of use in being targeted towards O&M expenses, debt service, current year capital needs, or being accumulated in carryover or special fund balances toward future capital needs. As discussed later in the comparative evaluations in Section 4.0, utility rate revenues were the majority capital funding source among the survey respondents in this research, averaging 67%, 78%, and 54% of total water-related capital provision for municipalities, special districts, and utility corporations, respectively.



In the survey, utility managers were asked how effective were utility rate revenues in meeting capital needs. As shown in Figure 3-5, over three-quarters of managers responded that they were generally satisfied with the relative contribution of utility rates to the provision of water and wastewater capital infrastructure. Only about one-fifth of the respondents stated that rates should support even more utility capital. A few districts responded that rates do not support their capital needs.

Three-fourths of managers responding said that utility rates were recovering the full capital cost of service. Those that indicated less capital recovery usually mentioned other capital contributions from taxes or impact fees. Concerning flexibility on use of funds, over 80% of the managers said that utility rates were useful for a variety of capital project purposes. Almost all managers (95%) answered that utility rate funds were available when needed, and all respondents (100%) said that utility rate revenues were a stable source of revenue.

In summary, there appears to be substantial agreement on the effectiveness of the utility rate funding tool on all of the key evaluation measures: significance of funds, a high degree of capital recovery, stable revenue source, and flexible use of funds. However, there is one area related to utility rates that deserves greater attention: investor-owned utilities. Following this discussion on rates for utilities in general is a separate sub-section on regulated utility rates for investor-owned water and sewer companies, which have special financial issues that should be considered.

Impacts. The large majority of utilities now have either flat or inclining-block rate structures. This is where the price per unit of service is the same for all volumes of water or wastewater use (i.e. flat rates) or the unit price increases in a step-wise fashion as water use moves into higher usage blocks of consumption (i.e., inclining-block rates). As the total amount paid increases with increasing water use, they are somewhat proportionate in the incidence of impact on different income groups. Lower income groups commonly use less water (resulting from smaller lots, less landscaping, less water-using appliances, etc.) and pay a smaller bill. Conversely, if you use more water for these more luxury-type purposes as income increases, you pay proportionately more.

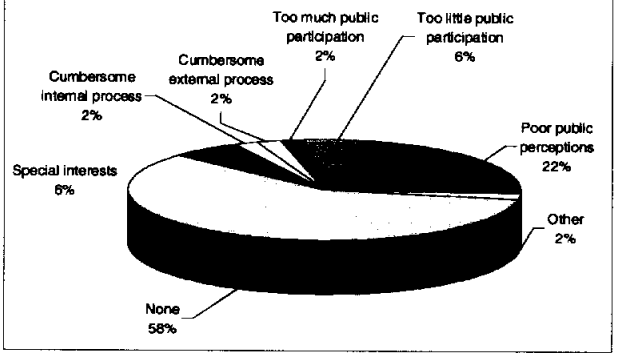
However, a typical utility bill for a customer in the low-income group is still a greater percentage of disposable income that that realized by the more affluent, and in that sense is somewhat regressive. Many utilities, especially municipalities, try to consider affordability to low income groups in their rate-setting decisions. Here the public policy goal is to keep utility bills as reasonable as possible for minimal levels of service use, while at the same time, not varying too far from cost-of-service and other legal considerations. Reflecting these considerations and other policy matters (such as promoting water conservation, out-of-city service, etc.), the average utility survey respondents said cost-of-service issues weighed into the rate-setting decision by the governing body at about 83%, while policy matters tended to affect about 17% of the final decision.

For the most part, utility managers in the survey felt that ultimate financial impact of utility rate charges were borne mostly by middle income (36%) and lower income (20%) residential users. High-income residential users and commercial/industrial customers were estimated to each bear about 15% of the financial burden of total rate revenues. These allocations are generally representative of the mix of customers in an average municipal utility, weighted by differing levels of use for each group.

Process and Procedural Issues. In this survey, managers were also asked what were their greatest difficulties in raising funds from utility rates. As expected, most (61%) reported no unusual difficulties with this funding tool. However, about one-fifth indicated that poor public

perception was a problem, likely encountered in opposition to or complaints about utility rate increases. As shown in Figure 3-6, some managers (2%) responded that there was too much public participation, while other managers reported too little (6%) public participation in the rate-setting process. Special interest influence affecting the rate-making process was also a problem for some (6%).

Figure 3- 6
What are the difficulties in obtaining funds from utility rates?



Summary of Issues and Concerns. On the whole, there are few reported problems with the utility rate tool for municipal, district and non-profit private utilities. Poor public perceptions of need for rate increases and consumer affordability of continuing rate increases were mentioned as concerns by several utility managers. These problems likely apply to many utilities. While overall increasing costs are not likely avoidable in the future, expanded state financial assistance programs could help lower the cost of financing capital improvements for many utilities and help mitigate some degree of potential rate increases. Further, enhanced public education on factors underlying utility rate increases might assist in increased public support.

Some stakeholders expressed concern about the management of surplus revenue carryover balances or "sinking funds" for cash funding of capital improvements. While not observed as a major problem with municipalities, this funding mechanism should be reviewed by the governing political body to assure themselves that this does not create an unfairness in current ratepayers funding future capital improvements that may unduly benefit new customers. Also, care should be taken that such carryover fund balances are used for the utility purpose intended and not transferred to address some other municipal financial need.

As discussed below, there are state regulatory actions about to be taken, and possible further actions still needed, with respect to rate policy for regulated private utility corporations.

3.2.1.1 Investor-owned Utility Regulated Rates

In Texas, the Texas Natural Resource Conservation Commission (TNRCC) has primary rate-setting jurisdiction over water and wastewater IOUs. In general, these utilities have been restricted from public sources of financial assistance, and previously state law and TNRCC rules were rather restrictive in procedures and allowances made for rate setting for investor-owned

utilities. Additional regulatory requirements facing all IOUs, growth pressures on some, and common low density/high unit cost situations have also compounded the challenges facing these typically small utilities. Over time, the financial viability and corresponding system service levels have tended to deteriorate for IOUs in general. Many of the utilities on the TNRCC's list of "problem" public water suppliers are the small IOUs.

This growing problem has begun to be more meaningfully addressed with regulatory and financial assistance initiatives in Senate Bill 1 (SB1), 75th Texas Legislature, and related Safe Drinking Water Act (SDWA) initiatives promulgated recently from the federal level. The major thrust of SB1/SDWA provisions towards IOUs is essentially two-fold: financial assistance from the state Drinking Water SRF (with an emphasis on utility consolidation) and additional flexibility in rate and financial regulation. The TNRCC published proposed rules on rate flexibility and other IOU issues in October 1998, and final rules are pending adoption.

In general, the new rules relating to rates allow for TNRCC consideration of: (1) a positive acquisition adjustment for utility plant, property, and equipment acquired from another utility in a sale or transfer of utility service areas which will help facilitate small utility consolidation; (2) water conservation surcharges that could generate revenue above the utility's usual cost of service; (3) additional surcharges to provide funds for debt repayments and reserve funds; and (4) a variety of alternative rate methods including single issue and phased/multi-step rate changes, and a cash needs rate design method.

These proposed changes are intended to: (a) facilitate consolidation of distressed utilities without the additional capital gain from the acquisition being treated adversely in the rate-making process, (b) allow for additional rate-setting flexibility in meeting system costs changes with more minor or agreed-on phased rate adjustments, and (c) provide for full debt-service recovery in the rates. However, there are still significant outstanding public comments on the proposed rules. The IWSCOT trade association stated a number of regulatory process and administrative concerns related to utility rates in its comments on the draft rules, including insufficiency of allowable late charge penalties, allowable periods for backbilling, periods of time for resolving bill disputes, and other issues.

However, the main thrust of IWSCOT's comments was that little is being done by either federal or state actions to address the problems caused by lack of financial capital available to these utilities. IWSCOT states in its comments:

> "Private industry has repeatedly shown that it will respond to public service needs when there is a reasonable opportunity to recover operating costs and capital investment while earning a fair return on their capital.... It is the lack of predictability

and realistic opportunity [for a reasonable return] that has led to the current deteriorated state of [private] PWS's [public water systems] and sewer systems."

IWSCOT further comments that the legislative intent to provide these missing elements in SB1 revisions to Chapter 13 of the Texas Water Code has not been accomplished in the proposed TNRCC rules (30 TAC §291). Concern was voiced about overly flexible-proposed rules on the positive acquisition adjustments leading to uncertainty on how that will be treated in the regulatory review of rates. Also, the "streamlined" single-issue rate case proposal was characterized as being impractical since a new "single issue" capital improvement would also alter a variety of other utility expenses that would broaden the needed rate adjustments beyond a single issue. Further, a proposed cash returns (or cash basis) method of ratemaking would allow debt service to be fully recovered, but potentially exclude a full reasonable return on investment.

Lack of sufficient accumulation of reserve funds for operating and capital contingencies and debt service reserves were also noted as a deficiency in the proposed rules. Overly restrictive time limitations on building a capital reserve fund can be self-defeating in not allowing for a sufficient accumulation of funds towards major capital needs. The TNRCC should consider allowing for a more extended time of two to three years of building capital reserves by IOUs. This potential additional flexibility should be also be accompanied by additional reporting by the IOU and close monitoring by TNRCC to assure that these accumulated funds are used for their intended purposes or are ultimately refunded to the ratepayers.

These and other comments are being considered by the TNRCC. However, not until final rules are adopted, implemented, and a few years experience gained will there be sufficient information to ascertain how well the SB1 initiatives have addressed the funding problems of the IOUs. Other considerations related to IOU capital needs are discussed in the following sections.

3.2.2 Utility Rate Surcharges

In order to gain an acceptable response rate by keeping the utility survey as manageable as possible, no detailed information was sought on utility rate surcharges through that means. Further, utility surcharges are not in widespread use, although they do merit discussion in this research.

Utility rate surcharges can take a variety of names and forms although the generally common feature of these additional monthly billing charges is that certain types of customers are being

narrowly targeted for special cost recovery due to unusual utility service provision. Additional charges for enhanced fire protection and special recovery of bonded water distribution and wastewater collection line capital costs from residents of districts that have been annexed by municipalities (normally borne by developers in typical city subdivisions) are two examples of unusual service costs that can be addressed through surcharges. Another form may entail a line item surcharge for all utility customers to specifically identify the collection of funds for a particular purpose, such as water supply acquisition.

Effectiveness. Where used, utility rate surcharges generally demonstrate the same effectiveness as utility rates in terms of producing the desired level of funds on time and with revenue stability.

Impacts. The impacts on income groups are generally the same as utility rates. However, while there may be perfectly valid cost justification for a surcharge, it may cause concerns about equity when levied at some groups and not others. For instance in the proximity of an annexed district, two similarly situated homes may pay different sets of rates because of the presence or lack of a utility surcharge.

Process and Procedural Issues. Process issues are typically related to equity or affordability complaints from customers targeted with the surcharge. Also, the levy of a surcharge may result in additional computer and billing expenses.

Summary of Issues and Concerns. Again, concerns about surcharges relate to having adequate justification for the surcharge and being prepared to respond to customer comments about its fairness and affordability. IWSCOT also commented on proposed TNRCC rules that the computer billing systems of many small utilities could not accommodate specific listing of surcharges and wanted to exclude those situations where customers have been previously notified that there rates had been increased by a surcharge amount.

3.2.3 Impact Fees

This particular funding tool goes by many names: impact fee, capital recovery fee, facility charge, plant investment fee, system development charge, and so on. While AWWA characterizes this type of charge as a program of contributions of capital by a developer or new customers connecting to a water system (AWWA-M26, 1986), care should be taken to distinguish the water-related impact fee's typical one-time, up-front payment at time of connection or occupancy from that of developer exactions or other more minor connection or tap fees which may more ad hoc in nature or only a small charge for meter placement.

Given that officials are interested in continued community growth and an efficient management thereof, impact fees can represent a viable and rate-mitigating alternative in raising revenues needed for infrastructure expansion (Townsend, 1996). With continuing growth pressures and evolving attitudes, this type of capital charge gained widespread use by municipalities during the early 1980s.

In Texas, authority was typically assumed under municipal home rule powers and fees were derived and levied in somewhat of an ad hoc manner. In 1987, real or perceived concerns over abuses of this tool resulted in the passage of Senate Bill 336 (SB 336) to specifically authorize and define a process and method for levy of impact fees by municipalities in Texas. The municipal applicability of this law was codified as Chapter 395 of the Texas Local Government Code. The TNRCC was charged in SB336 to develop subsequent rules for water districts. Requirements for levy of impact fees by water districts are found in Section 293.171 of TNRCC rules. Water supply corporations in Texas still have no specific authority to charge impact fees.

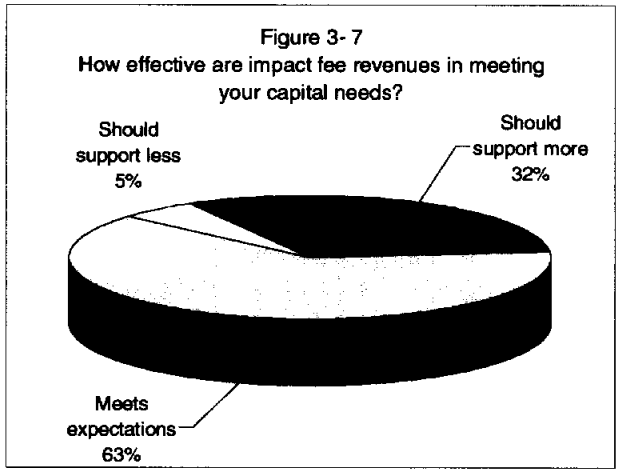
The "impact" of impact fees was a significant topic in the professional literature for a period of time in the late 1980s, while little has been published in terms of effectiveness and impact of other infrastructure financing tools.

Effectiveness. One measure of the effectiveness of impact fees is the breadth of their use among utilities as a reflection of general acceptance of the tool. A 1991 infrastructure financing survey of all cities with populations over 100,000 revealed that 29.5% of all respondents (175/863) used impact fees to recover some percentage of capital costs tied to infrastructure expansions. Among those using impact fees, cities with population over 500,000, as well as all West coast (81.7%) and Mountain Division states (65.5%) showed the highest usage of impact fees (ICMA, 1993). About 24% of all respondents relied on impact fees to finance between 1 to 20% of their capital needs, while only 2.7% relied on impact fees to generate 21-40% of their capital requirements (Ibid). In the case of water utilities, 100% of the responding jurisdictions with populations of 250,000 and more levied impact fees on developers. In the case of sewage treatment, 97% of respondents, who had fees, levied those impact fees on residential, industrial, commercial and institutional customers, as well as developers (Ibid).

The first city in Texas to adopt impact fees in compliance with the 1987 state legislation was the small, rapidly growing city of Keller. Having been faced with booming growth rates, outdated and insufficient local water and sewer systems, as well as with a population unwilling to invest in growth-related infrastructure improvements, the city adopted impact fees aimed at recovering the capital costs of new water and sewer system facilities proportionally from existing customers and growth. Based on the size of the water meter, the city was able to generate $40,000 in

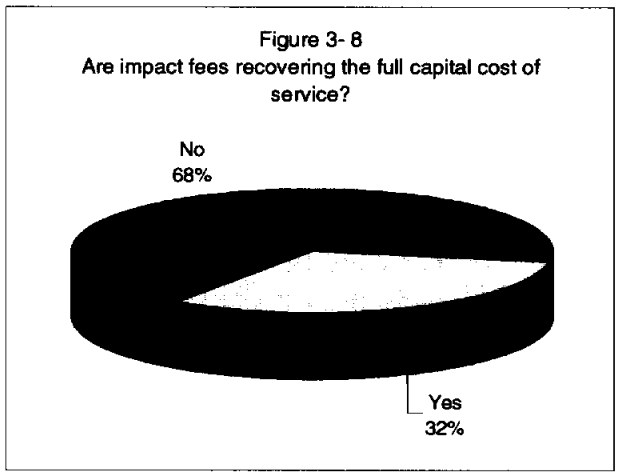
revenue monthly which paired with the revenues generated from massive water rate increases allowed the city of Keller to issue enough debt to finance the desired new water and sewer lines (Bogard, 1990).

The survey of Texas utilities conducted in this research indicated that municipalities received about 8% of their capital funding from impacts fees, while utility corporations reported about 14% of capital derived from this source. This latter response is somewhat of a misnomer in that utility corporations do not, per se, have specific statutory authority to levy impact fees, but can receive one-time, up-front payments from developers for the expansion or use of capacity.



Utilities were also asked in this survey whether impact fees were effective in meeting their capital needs. As shown in Figure 3-7, over 60% of managers responding said that the level of impact fee levy meets their revenue expectations with about one-third indicating that these fees should support more capital expenses. This generally favorable response does not imply, however, that impact fees are being calculated to recover the full capital cost of a standard unit of new capacity.

As indicated in Figure 3-8, about two-thirds of utility managers responded that their impact fee levies were not recovering the full capital cost of water and wastewater utility service. Further supporting these findings, survey respondents also indicated that cost-related issues were weighted about 2/3 and policy issues were weighted about 1/3 in determining the extent of capital recovery desired by the municipal governments in the sizing of the ultimate impact fee.



This is not unexpected. In many instances, municipal decision-makers have been reluctant to set the utility impact fees to their potential maximum, typically expressing concerns over impacts to housing affordability, competitiveness with neighboring communities, and the potential for refunds and penalties for overcharges defined in the state statute.

Obviously, the effectiveness of impact fees is tied to the occurrence of growth. Impact fees are most effective in a continuing-growth scenario where funds can be meaningfully accrued and then applied towards imminent needs. Growth and stagnation cycles can create problems in a community having recently experienced no or slow growth with little collection of impact fees. Once growth pressures reappear, the need may be suddenly present to provide for new capacity, but with little fee proceeds to assist in that funding. Impact fees are usually collected one new service connection at a time. As in the case of developer exactions, impact fees are not solely dependent on the occurrence of new subdivision processes and have been found to be relatively more flexible than exactions in their usage and application (Bauman and Ethier, 1987).

Raftelis (1989) states that impact fees or capital development fees usually only recover the costs associated with major capital improvements. In Texas, many communities also recover major water transmission and wastewater collection lines in their fee levies as well. Unlike some other funding tools such as tax or rate revenues, impact fees in Texas are limited by law in their application towards capital-related expenses.

Impacts. Impact fees, by their very nature and intent, can add equity to the cost burden imposed by new infrastructure by shifting the financial responsibility for such funding toward new growth. As impact fees represent an effort to add equity to the financing and accounting processes of utility expansions, they have enjoyed strong popularity among planners and government officials in charge of creating a fair funding base for needed infrastructure expansion projects (Raftelis, 1989).

Economic theory suggests that the final burden of a tax or fee is influenced by the structure of the tax or fee as well as by the supply and demand forces within the housing market (Nicholas, 1987). More specifically, the incident of impact fees will shift back and forth between homebuyers, developers, and landowners depending on the elasticities of supply and demand in a particular housing market (Huffman and Nelson, 1988). As a general rule of thumb, "the party who is least sensitive to price changes shoulders a relatively greater burden of an impact tax [fee]" (Delaney and Smith, 1989).

The following three scenarios describe how the incidence of an impact fee can shift as the characteristics and elasticities of supply and demand of a housing market change.

1. Given that a certain housing market has no barriers to entry for developers (i.e., institutional or other factors that prevent new developers from easily entering or exiting a market), a plethora of close substitutes (i.e., alternative homes of the same general desirability), and home buyers who are insensitive to changes in price, the developer will be able to pass all increases in price on to the new home buyer.

2. If, however, the same market suddenly had barriers to entry for developers, a complete forward shift of the cost increase to the new home buyer would most likely be impossible. Instead the developer would either have to pass the all unrecovered development costs back to the landowner or accept a lower profit margin (Huffman and Nelson, 1988). In a case where the supply of land is limited and demand for housing is elastic the developer will be forced to absorb even smaller profits or go out of business (Delaney and Smith, 1989).

3. The third and most common market situation is where buyers are sensitive to changes in price and where no barriers to entry for developers exist. In this case, the short run outcome will result in the buyer and seller sharing the increase in costs. However, unless landowners are willing to sell their land for less, the long run cost of impact fees will mostly be borne by new home buyers (Huffman and Nelson, 1988).

While the issue of who pays for the added financial burden of impact fees has been the subject of several studies and theory papers, empirical work focusing specifically on water and wastewater utilities is rare and often inconclusive. Before summarizing the literature on the incidence and implications of impact fees, it is important to note that several of the studies were on impact fees for parks, libraries and other community facilities that provide value differently than water and wastewater facilities. Parks, etc, provide greater value to houses in close proximity. When a developer includes those amenities within a subdivision, the value of the houses to potential residents is directly affected. Sufficient and safe water and wastewater facilities are different however. Either a community has them or not. Therefore, they do not influence the value of property in the same manner as the other amenities. It is somewhat questionable if these studies can be reliably used in determining the true incidence of impact fees levied for water and wastewater utility expansion projects.

The question of who really pays for impact fees was most commonly approached by looking at housing prices in different markets. The results and conclusions of these studies suggest that the burden of impact fees will, depending on the elasticities of demand and supply for housing, be either born by buyers, builders, or landowners or a combination of the three (Delaney and Smith 1989). A very commonly shared conclusion however was that new home owners will ultimately absorb the majority of the impact fee imposed price increase while existing homeowners will gain some windfall due to appreciating property values.

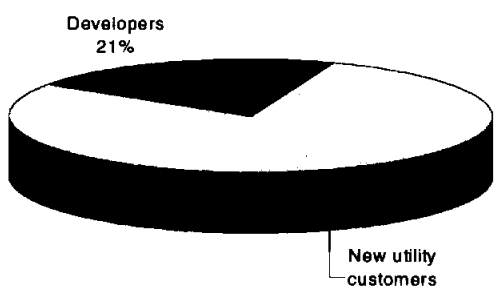
A 1986 study by Stegman focusing on different market types found that, in markets where impact fees are applied, buyers viewing a specific area as more attractive than other substitutes end up paying a premium in order to live in the community (Delaney and Smith 1989). An alternative to paying a monetary premium for living in such an area would be to buy a smaller house or a house with less amenities. Delaney and Smith (1989) argue that such a downward shift in demand will cause an increase in the price in lower cost housing

while leaving the prices of existing housing and rents unaffected. The authors go on to argue that such an increase in price for lower-priced housing could be an indication that impact fees have the potential of forcing borderline buyers out of the market and thereby greatly influencing the affordable housing market in a particular area.

Dingell and Lillydahl's (1990) study of effects of impact fees on the existing housing market in Loveland, Colorado suggest that the new home buyers absorbed the full cost of the fee while existing homeowner's experience a windfall gain in property value. The authors concluded that the price of new housing as well as that of existing housing rose while the quality and lot size of the newly constructed homes tended to decrease over time. The same study suggests that, in a situation of soft demand for new housing, developers will not be able to shift the increase in price to the new homebuyers. In fact, new homebuyers will only absorb increases in costs if the demand for new housing is inelastic or if all new developments have to pay the same fee (Huffman and Nelson, 1988). If, however, builders are perfectly mobile in the long run and do not face barriers to entries in neighboring communities, the supply of housing will decrease causing home buyers in such an area to be forced to absorb the cost of the fee and all associated costs (Dingell and Lillydahl, 1990).

The available literature on impact fees is limited and somewhat dated. Microeconomic theory suggests that the issue of who are the parties that actually bear the burdens of an impact fee is more complex than the analyses found in the available literature. The articles generally fail to differentiate between impact fees that provide amenities to the property like parks, and those that do not confer additional value like water and wastewater. Once a development has utility services, it has additional value regardless of whether impact fees are paid or not. Parks, on the other hand, provide additional value based on the proximity of the property to the park. In other states, impact fees are sometimes used to fund neighborhood parks that provide amenities beyond what is provide in older neighborhoods. This difference between park-like amenities and water and wastewater infrastructure can affect who ultimately bears the burden of the impact fee.

Figure 3- 9
Who ultimately bears the impact of impact fees?



As shown in Figure 3-9, the large majority of survey respondents felt that new utility customers ultimately bear the cost of impact fees. However in a slack market, developers and builders will seek foremost to recover their out-of-pocket costs and incur a smaller profit from the lower price needed to affect a sale. A lesser profit may also occur where nearby

developments are not levied an impact fee and the full cost of such fee cannot be passed on to the buyer given a highly competitive market situation.

Another important theme in the reviewed literature was the timing and payment schedules of impact fees and the resulting impacts thereof. The timing of the fee in particular was found to have a direct effect on the overall development costs of a new development and therefore the magnitude of the added burden due to the impact fee (Raftelis 1989, Nicholas 1987). Although most studies found that impact fees are most commonly levied at the time of issuing a building permit, depending on the objective of who should bear the costs, utility administrators might want to consider scheduling the payment during other parts of the development cycle such as the development approval stage or when issuing a certificate of occupancy (Nicholas 1987, Bauman and Ethier 1987). If the objective is to have new development pay its fair share and decrease the burden on developers, land owners, and existing home owners, Nicholas (1987) suggests assessing the impact fee at the time of occupation as it is the only way to truly ensure that new development actually pays the full cost of the impact. If, however, the payment time is during the early stages of development, financing costs and therefore total costs of the development will increase significantly while decreasing the financial liquidity of the developer in the most crucial stages (Nicholas 1987).

Delaney and Smith (1989) also argue that impact fees have at least two indirect effects on housing markets. First, if market forces are such that the developer runs the risk of absorbing the majority of the price increase while facing stiff competition from other developers, studies have shown that the decreasing number of developers in a particular market will ultimately increase the degree of market power of the remaining developers. This increased market control enables the remaining developers to raise their prices above competitive levels (Delaney and Smith, 1989). Secondly, in the hope of conserving their profit margins, some developers will shift to more expensive housing projects while reducing the amount of lower end housing construction. This shift, the authors claim, will not only decrease the amount of affordable housing available but also put upward pressure on prices as the supply is reduced (Ibid 1989).

As already mentioned, several studies identified small to significant windfall gains for existing homeowners (Dingell and Lillydahl, 1990; Huffman and Nelson, 1988). First, given that potential homebuyers consider existing housing as a close substitute to new housing, an increase in the price of new housing will cause a demand shift toward existing housing, resulting in an appreciation of the existing housing stock value. Secondly, the impact fee funded infrastructure expansion might provide additional amenities to existing properties that then could be materialized in higher asking prices for existing houses (Huffman and Nelson, 1988). Huffman and Nelson (1988) also point out that local governments might also

experience some degree of windfall gains from impact fees as the prices for new and existing housing are caused to rise, thus generating increased property taxes.

Concerning affordability, water and wastewater impact fees can have several disadvantages, including:

(1) not being deductible from federal income tax (although if included in the home mortgage, related mortgage interest is deductible);
(2) typical impact fees in Texas range from about $500 to $2,000. Prior research has indicated that impact fees tend to increase new home prices by an amount of 2 to 3 times the fee on the average (Dingell and Lillydahl, 1990 and Delaney and Smith, 1989). This can decrease the eligibility of new homebuyers for a product of a certain price, increase price pressure and reduce loan eligibility on existing homes, and possibly "price out" some low income groups who can only marginally afford to purchase a home; and
(3) usually being a fixed charge per standard utility connection, the incidence of impact fee is thought by many to be regressive in nature towards lower income groups (Nicholas, 1992).

To help address the affordability of impact fees to low income groups, some municipalities have allowed special provisions to allow the fee to be paid in increments over a longer period of time while some have sought to waive the full fee for affordable housing projects.

However, not that many low income groups buy new housing and realize the incidence of the fee. If the effect of impact fees is to mitigate growth-related utility rate increases, then keeping utility rates as low as possible likely provides the most significant benefit to the greatest number of low- and fixed-income persons.

Process and Procedural Issues. The legal guidelines for impact fees, established by Florida state courts following the *Contractors and Builders Association of Pinellas County v. City of Dunedin* (329 So. 2d 314 [Fla. SC 1976]) and *Hollywood, Inc. v. Broward County* (431 So.2d 606 [Fla. 4th DCA 1983]) court cases, have been consulted and generally adopted by many other states, including Texas (Farabee, et. al., 1989). The *Dunedin* finding upheld the validity of water and sewer impact fees, in principle, while it invalidated the city's fee ordinance because the funds collected were not dedicated to the facilities for which they were intended. This case established the rational nexus test that the level of impact fee be related to the new infrastructure serving the contributing development, and that the fees must be dedicated specifically for those facilities (Lillydahl, Nelson, et. al., 1988). The Broward County case set overall conditions under which impact fees were allowable in Florida (Delaney and Smith, 1989).

In order to ensure that impact fees are only used to pay for infrastructure improvements actually necessitated by new development versus paying for improvements made necessary by the total activity of the community, state courts around the country have striven to establish some common legal guidelines for assessing impact fees (Townsend, 1996). However, since legislation in some states is still vague and often difficult to use, there have been calls for a standard impact fee enabling act aimed at setting standards and clear statutory guidelines for communities. In 1998, a group of economists, planners, lawyers, and developers suggested principles to be included in such an act that they envision to be spearheaded by the American Planning Association.

The following is a short description of key features of the suggested model act as proposed by Lillydahl, Nelson, et. al. (1988).

- Provide guidance on which facilities and under what conditions impact fees can be assessed as supplements to user charges, general taxes, and special assessment districts.

- Applicant communities must show need for impact fee within the scope of the capital improvement plan (CIP) which must be directly tied to a comprehensive community wide development plan.

- Applicant communities must show how the proposed impact fee relates to other forms of exactions.

- Applicant communities must establish a rational connection between new development and need for additional facilities needed to serve growth.

- Facility costs must be required by new growth and not by existing facilities' deficiencies.

- All costs of additional facilities have to be apportioned to existing and new development.

- New development's proportionate share of new infrastructure expansion costs has to be determined.

- Applicant communities must establish a clear connection between expenditure of fees paid by new development and all benefits new development will receive.

- Residents must have a reasonable expectation to use the proposed facilities.

- All proposed facilities must be close and must be taken into service in a reasonable amount of time after move-in.

- Impact fees should be collected so that possible adverse effects on affordable housing are minimized.

- Government should consider delaying payment until project is occupied or allow payments to be paid over a 5-10 year period at subsidized interest rates.
- All impact fees must be assessed separately for each development.
- Communities should consider how impact fees effect the achievement of other, higher priority communal policies as for instance job development and low-income housing.

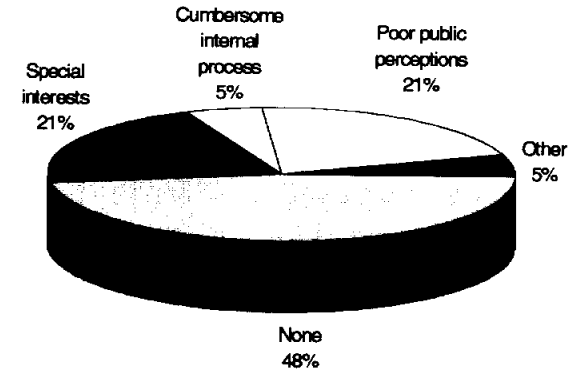
According to Farabee, et. al. (1989), the state of Texas was the first state in the United States to design and implement, with the passage in 1987 of SB 336, 69th Texas Legislature, comprehensive legislation to address the use of impact fees as a source of municipal revenue. In general, SB 336 follows many of the principles and procedures referenced in the model act previously developed by Lillydahl, Nelson, et. al. (1988).

SB 336 defined all permissible uses of impact fees, the procedure of adopting impact fees, and two different formulas for calculating the fee. In order to adopt impact fees, SB 336 required Texas cities interested in levying impact fees to make four studies or findings. The first test, the adoption of land-use assumptions, calls for "growth projections in either population or service units over at least a 10-year period." The second test is aimed at establishing a clear relation between the fee paid and the property to be serviced. Third, the applicant must develop a maximum 10-year capital improvement plan for each system that clearly identifies the specific capital improvements required by new development. The fourth study deals with the calculation of a rate table that, while referring to the capital improvement plan (CIP), "identifies fees to be charged for different types of development, relating service units to the CIP" (Bogard, 1990). Beyond the actual studies, SB 336 required extensive notice and public meeting requirements. In addition, an Impact Fee Advisory Committee, which includes representatives of the development community, must also be established to advise the city council regarding adoption and administration of the fees. Finally, the law specified accounting and refunding procedures of "extreme complexity" (Bogard, 1990).

During consideration and since the passage of SB 336, there have been continuing concerns voiced by Texas municipalities related to what is seen as a cumbersome and expensive procedure to adopt and update an impact fee, as well as the perceived cost of administering the program. Many utility rate consultants also feel that a more streamlined, yet still fair, process could be designed.

Interestingly, utilities responding to the survey did not highlight procedural concerns to the extent vocalized by certain cities and some stakeholder groups. As shown in Figure 3-10, about half of the managers indicated no unusual difficulties in obtaining funds from impact fees. The remaining 52% voiced some problems, but only 5% related a cumbersome process. A larger problem was poor public perception. Chapter 395 allows for significant public input, but many people may still not understand the fee's purpose or simply do not like to pay them. Special interest influence was also mentioned as a noticeable concern.

Figure 3- 10
What are the difficulites in obtaining funds from impact fees?



Summary of Issues and Concerns. Some stakeholder groups indicated more specific issues on impact fees and possible remedies when interviewed. Builders' groups interviewed expressed concerns that utility service be available when needed, funds be used for intended new growth capital purposes, and that all methods of capital payments (through rates, exactions, etc.) and the benefits, not just the impacts, of growth be considered in the desirability or sizing of the fee. The authors' feel these issues are reasonable.

The City Planners Association of Texas (CPAT), with support from the Texas Municipal League (TML), have developed a list of suggested revisions to Chapter 395. Some of these changes involve impact fees related to roads and were not considered in this effort. CPAT proposes, what the authors' also believe to be, reasonable statutory changes to eliminate confusion between impact fees and other pro rata fees and offsite exactions, bring impact public notice requirements into line with what is required for subdivision and zoning notices, and various streamlining proposals to reduce the required two step public hearings process to one step, extend the mandatory updating requirement from 3 years to 5 years, and to eliminate a post hoc recalculation of the fee Beside making the impact fee notice and hearings process similar to other development processes, these changes would also acknowledge that a future capital improvements program (CIP) is dynamic, and the CIP content and estimated costs change over time. Another proposed change was to include a "rough proportionality" test that the amount of the levied fee would be roughly proportional to the new capital service rendered. These changes, combined with safeguards of not exceeding the appropriate capital cost of service, would add some flexibility, acknowledge that there is some error in accurate new capital needs forecasts, and reduce the administrative burden for the municipalities. Also,

some cities noted in the survey and interviews that they would like water supply specifically included in the law as an allowable new item for impact fee capital recovery.

The Independent Water and Sewer Companies of Texas (IWSCOT) association noted that investor-owned utilities are allowed to only charge up-front levies for the extension of service or to developers for significant capacity demands and that specific authority to levy impact fees for new individual service connections and to meaningfully accrue those funds for capital investment purposed would be desirable.

In general, the authors' thought that most of these impact fee recommendations are reasonable and will help streamline the fee adoption and administrative requirements of Texas law. At the same time, these revisions will still ensure that fee proceeds be used for the new growth purposes intended, that public notice and input would be facilitated, and that impact fees will not exceed a reasonable average cost of new service. A combination of these stakeholder proposals is referenced in suggested policy changes in Section 5.3.

3.2.4 Availability of Service Fees

AWWA describes an availability charge (stand-by fee) as a levy designed to recover capital-related cost and other on-going costs incurred by a utility when it is constructing facilities for the benefit of potential future users (AWWA-M26, 1986). When levied, it is usually part of the utility's general water rate structure and is applicable from the time service is first made available to a potential customer (or when the levy is first enacted) until the time service goes into effect. It is essentially a charge for the benefit of having utility service available, but not using it.

With the exception of designated economically distressed service areas by the TWDB, only water districts in Texas currently have specific statutory authority to levy an availability of service (stand-by) fee, and water districts must comply with TNRCC rules in its design and implementation (30 TAC §293.141). Regulated investor-owned utilities have not been allowed such a charge by the TNRCC. There is no specific statutory either authorizing or not authorizing such a fee for IOUs but, in practice, is not currently allowed given TNRCC staffs' interpretation of rules. While some municipalities have utility policies that require the payment of the utility rate monthly minimum charge when service is available, but not taken, this is not considered by most municipalities to constitute an availability of service fee because of the small amount of the monthly minimum charge. Historically, some municipalities in Texas had levied more substantial availability of service fees until some residents in North Central Texas challenged its legality for municipalities, lost in the lower court, but won on appeal in 1990

(Graham v. Lakewood Village, Texas; 2-89-276-CV, Court of Appeals of Texas, Ft. Worth). The appeals court cited a number of issues in its decision, but centered its finding on the stand-by fee constituting an illegal tax on property with no specific statutory authorization.

Effectiveness. Since its use is mostly restricted, the availability of service fee is not an effective tool for most utilities. Most utility managers in our utility survey responded "not applicable." Of those few utility managers who did respond otherwise, there was not a great degree of support for this tool citing concerns about availability and stability of revenue and perceiving landowner complaints and/or collection problems that may be associated with this funding tool. Since utility service is not yet being provided, the threat of cessation of utility service is not an effective collection tool. Given such circumstances, measures such as liens or foreclosures on the property may ultimately be a final recourse.

Impacts. Availability of service fees are usually designed as a fixed periodic levy for having a standard unit of utility service available for use, such as a residential connection. Since the *same level of fee* would be commonly charged all residential lots that have service available, but are not yet taking service, the incidence of the fee would tend to be regressive towards lower-income groups. However in many instances, these undeveloped lots are still retained by the developer or builder whose lot values have benefited from the property appreciation associated with utility availability. As discussed in following Section 3.2.4.1, there may be a tendency for the developer or builder to defer payment of these fees until the property is ultimately sold, thus partially or fully passing on the accrued cost to the lot or home buyer.

Process and Procedural Issues. Since most utilities are not able to levy an availability of service fee, there is not an extensive history in Texas with associated process or procedural issues. However, one can infer that care must be taken in such a fee's design and sizing to assure that it recovers only capital and/or certain fixed operating costs associated with having service available. If these fees are charged, the utility must also be very careful to assure itself that service will be available when requested by those that have paid the fee. Finally, there will be additional administrative costs associated with billing and collecting this fee as well as some degree of acceptance and public relations problems from affected landowners.

Summary of Issues and Concerns. AWWA suggests that the major need for this type of fee is where: (1) there has been a substantial outlay for infrastructure capacity, but the customer base is still small, or (2) in other appropriate situations (AWWA-M26, 1986). "Other relevant situations" might entail where there are a sufficient number of candidate properties to recover the fee's administrative costs plus a reasonable contribution to covering appropriate utility expenses.

Given the current and future significant infrastructure costs facing many Texas utilities of all types and the need for a full complement of funding tools to meet these significant financing requirements, it would be advisable to extend specific authority for the levy of availability of service fees to all water and wastewater service providers. The relevant local governing body or state regulatory authority can then decide their appropriateness for a given utility situation. In extending such authority, considerations should be given to an open public process for their levy, appropriate cost-of-service basis, and a viable collection mechanism. IWSCOT noted that filing and collecting on a property lien could be cost-prohibitive for a small utility unless such liens could be accrued and packaged in periodic cost-effective collection efforts. TNRCC staff was not very supportive of such authority being given to IOUs citing that they did not see where it would serve much purpose. TNRCC staff did concur that there were common situations where IOUs had oversizing or excess capacity that were currently being paid for by existing customers rather than those future customers that would ultimately use that oversizing and currently benefit from property appreciation because of the presence of the utility service.

3.2.5 Ad Valorem Taxes

For the most part, the practical use of ad valorem (i.e., "at value" property assessment) taxes for funding water and wastewater utility purposes in Texas is limited to special water districts, a form of local government. While municipalities have taxing authority, nearly all modern day municipal water and wastewater utilities employ utility rates and fees as the primary basis for funding the operations, maintenance, and capital needs of the system. There are water districts of various types and powers, some created through an administrative process through the TNRCC and some directly created by legislative act.

Effectiveness. Most municipal utility districts in Texas have authority to levy separate taxes for operations and for debt service. Districts must seek voter authorization from resident voters to be able to issue debt, and the level of the tax rate and use of funds from tax proceeds by districts is overseen by the TNRCC.

Ad valorem (at value) property taxing authority can be an effective source of utility revenue, although it differs in several respects to revenues gained from utility rates. Besides coming from different sources, most tax revenue is collected annually in the spring rather than monthly receipts usually associated with utility rates. Cessation of utility service is the typical tool of last resort for collections with utility rates, while the taxing tool can employ both that and liens and foreclosure of property to force collections. Where utility rates only commonly apply to active customers, the taxing tool can collect from all eligible property within the taxing jurisdiction including those undeveloped properties benefiting from having service available. On the other

hand, taxing all eligible properties creates an even greater impetus to be able to provide service in a timely manner to those requesting it.

In this research's utility survey, the limited number of persons responding to questions about the taxing tool indicated that the taxing tool met their funding expectations, was a stable source of revenue, and recovered considerable portions of the full capital cost of service.

Impacts. Obviously, the initial impact of tax-funded utility services falls upon the taxpayers/property owners, although in the case of businesses and apartments in the taxing district, these charges will likely be passed through to consumers in the form of higher prices and rents. It may be possible to reduce the financial impact of this funding tool through an itemized federal tax deduction as a local tax, effectively reducing the realized cost to itemizing taxpayers by 15-20%. However, some would argue that any tax payment for utility capital can potentially constitute a "double charge" if lots were sold when market conditions are good. For instance, the district developer can sell his lots at the full market price of neighboring similar-quality developments where those developers had to more fully bear the expense of their subdivision's utilities. In this manner, the district developer can potentially recoup utility capital expenses in the lot sale price and then also legally seek tax-funded reimbursement from the district for the privately provided capital infrastructure.

The presence of the tax can also affect growth patterns, deterring some and attracting others. In some cases in the past, tax rates in some districts became sufficiently high so as to slow the growth and buildout of the district considerably thus hindering the district's ability to eventually lower the tax rate and spur additional growth. Subsequent to the real estate depression of the mid to late-1980s, TNRCC rules changes have been generally effective in avoiding a repeat of these high tax rate situations.

Because taxing water districts commonly encompass large blocks of land, they may also include existing residents who are already have their own wells and/or septic tanks and may not desire to connect to a centralized utility system. If they are then levied a utility tax, these existing residents will pay for a service not being actively used. While this does result in a conceptual "overcharge," it should also be mentioned that these existing residents' property values have also likely appreciated from the availability of the nearby higher quality utilities.

Process and Procedural Issues. There are some additional process and procedural issues associated with taxing authority that differ from the utility rate tool. First, the district must seek voter authorization to be able to issue bonded tax-funded debt and provide adequate public notice of pending tax rate changes. No similar requirements exist for utility rate changes for

municipal and district utilities, although it is prudent to fully educate and inform the ratepaying public.

Property valuation estimates have to be periodically maintained with the taxing tool, although water meters have to be similarly read monthly with utility rates. Property valuations tend to be challenged more frequently than do utility bills, although most of the administrative activities associated with property valuation are now borne by central appraisal districts, rather than the utility district itself.

Summary of Issues and Concerns. No significant issues or concerns were identified with the taxing tool other than public understanding/acceptance of the basis for tax rate changes and possible concerns of existing residents of these districts who already have wells and/or septic tanks. These residents are also being charged a tax for utility service available, but not taken.

3.2.6 Developer Exactions/Dedications

Exactions are government requirements that developers dedicate land or other facilities for public use or improvements, or pay a fee in lieu of dedication (Bauman and Ethier 1987). Within the water and wastewater utility business, these types of capital provisions are also normally known as utility extension policies (AWWA-M26, 1986). In Texas, these exactions or dedications are governed for municipalities by the subdivision and zoning powers authorized in the Local Government Code and through statutory and rules provisions for districts and regulated utility corporations in the Texas Water Code and TNRCC rules.

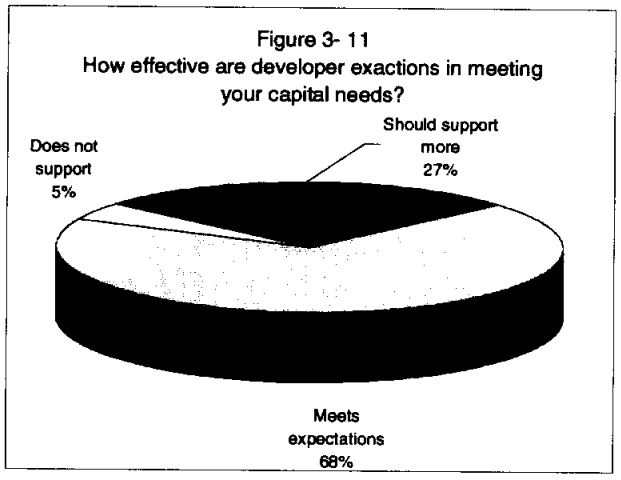
Within municipal limits, there is a state law requirement after annexation to provide a level of municipal services to the annexed area similar to other municipal areas with similar situations within a defined period of time. In these cases, any major infrastructure needed to serve a new development will be provided at city expense, although the cost of water distribution and wastewater collection lines "internal" to a new development are usually borne at the developer's or owner's expense. For requests to provide service outside of the municipal boundaries, the developer may be required to fund the cost of water and/or wastewater approach mains to the development or other facilities (such as lift stations) that may provide unique service to the development. In some cases, there may be extension refund policies or agreements that allow for near- or longer-term reimbursement of these capital costs to the developer.

In the instances where the city will require oversizing of the extended facilities to ultimately serve other development, the city may cost participate in the construction (usually on a pro rata

capacity basis) or require the developer to initially fund the entire extension project(s) with an agreement of subsequent reimbursement.

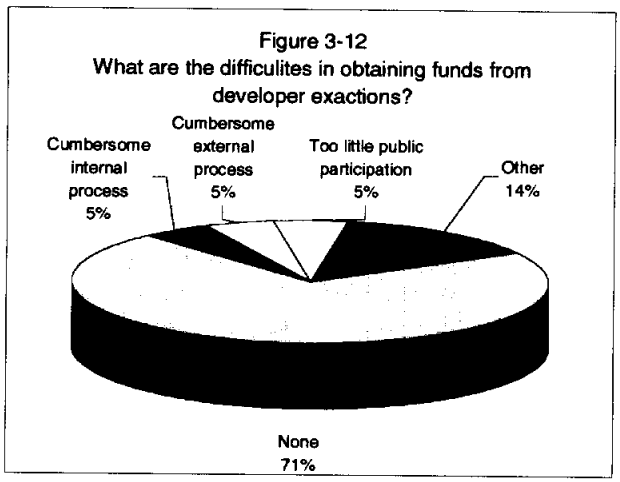
Water districts, by TNRCC rules, are directed to financially insulate district tax and ratepayers from any associated cost increases due to out-of-district service provision. Practically speaking, this means that such service-extension capital costs must be borne by the out-of-district party requesting the service and that utility rates for this new customer(s) should recover an appropriate share of operations and maintenance costs.

Water corporations generally have extension policies that require the payment of a determined amount by the party requesting service. In many cases, this will constitute a "footage" charge for extending current service line lengths. If the service extension request is large or unusual, other capital charges may be applicable. When capital is acquired in this manner, this as defined as "contributed capital" and would not be eligible for earning a rate of return. Some utility corporations may employ a reimbursement policy to eventually have the contributed capital classified as a owner-funded asset.



Effectiveness. Exactions or dedications can be effective tools in helping insulate current ratepayers from the cost of new growth and targeting those costs directly to the development requesting service. The capital or funds are generally available at the time needed and in the right amount. As seen in Figure 3-11, about 2/3 of utility managers surveyed stated that exactions or dedications met their funding expectations, although several corporation managers stated that the tool could be more effective for them.

Impacts. Impacts from exactions and dedications typically fall on the lot or homebuyer or owner in the development receiving service. In more competitive situations, the developer may ultimately realize some of these costs in the form of lowered profits. If these costs are passed through as a standard mark-up per lot, these levies may tend to be regressive towards lower income groups. In more rural settings where service extension is being requested by only one or a few landowners, the affordability of the service extension may be a concern.



Process and Procedural Issues. Figure 3-12 indicates that most utility managers (71%) reported no unusual difficulties in raising capital with the exaction/dedications funding method. Some stated that the process of negotiating these service extensions and their cost were somewhat cumbersome. One manager mentioned that his utility directors had some reservations about passing along the full (high) costs of the new service extension to new customers.

Summary of Issues and Concerns. Municipalities and districts expressed no broad concerns or problems with capital derived from this source. In some instances, the request for service extension may accelerate or alter other improvements planned by the utility. Utility corporation managers felt that this tool could be more effective for their purposes, likely due in part to the lack of affordability of extensions to individuals requesting service. The building industry commented that some municipalities may be requiring excessive exactions and that there might also be a duplication of levies in providing an exaction and also having to subsequently pay other fees and rates. TML commented that current law adequately addresses these two issues, and that any abuses are occurring, it is an enforcement problem that does not necessarily require any statutory change.

3.2.7 Grants/Subsidized Low-Interest Loans

Federal and state financial assistance programs in Texas have varied over the years, evolving from substantial grant programs to a greater emphasis on loan and revolving loan assistance programs. Today, state financial involvement is primarily focused in federal/state capitalized revolving loan (SRF) programs, the extension of the state's credit rating in making low interest loans, and grants for special purposes such as economically distressed areas and promoting regional water planning and water research in programs. These programs are administered by the TWDB.

Broader eligibility for such federal/state assistance is generally limited to political subdivisions of the state and non-profit water and sewer corporations with IOUs being able to access some assistance only from the state Drinking Water SRF. Also, there are various public policy

initiatives that are associated with accessing funds from these sources, such as environmental review and promotion of water conservation.

With the exception of the EDAP grant program for colonias and some limited loan and grant funding provided primarily for distressed small utilities associated with the state Drinking Water SRF program, Texas has not committed a substantial investment of actual state funds in providing for low cost financial assistance for the provision of water-related infrastructure. While many utilities in Texas are facing challenges in funding even near-term capital improvements, the TWDB conservatively projects a staggering $65 billion cost for needed water-related infrastructure over the next 50-years. This will place even greater pressure on individual utilities' ability to finance these future costs, straining the resources of many and exceeding the financial capability of others.

One-third of utility managers surveyed in this research thought that they could not meet their future capital needs without grant assistance. Figure 3-13 also indicates that about 2/3 of those surveyed related a critical need for low-cost loan assistance. So in addition to having all viable funding tools available to these utilities for consideration and potential use, it is very important that meaningful public financial assistance be available in a dependable and cost-effective form.

Figure 3-13
Can your utility meet its capital needs without outside financial assistance?

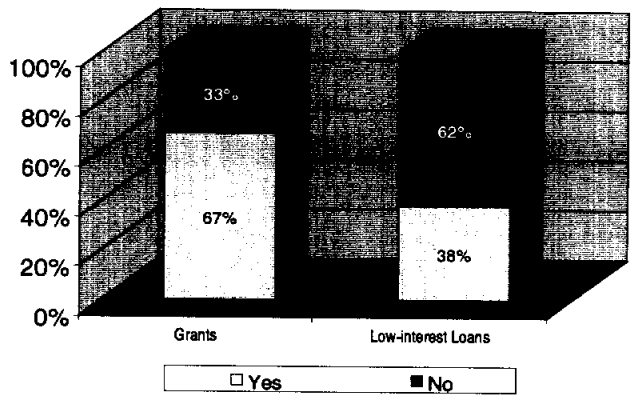
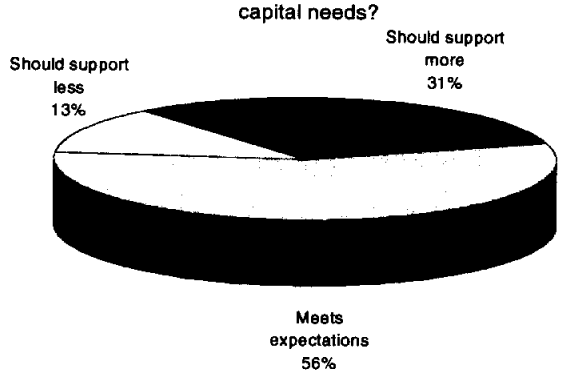


Figure 3-14
How effective are grants/loans in meeting your capital needs?

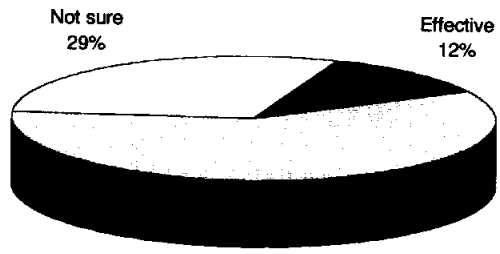


So while not strictly a rate or fee funding tool, these public financial assistance programs can be an important source of lower cost, and sometimes no cost, funding for the provision of capital infrastructure. Also, having more effective rate and fee funding tools can help ensure the qualification for and repayment of this public assistance.

Effectiveness. As indicated in Figure 3-14, utility managers were asked if grants and low-interest loan programs were effective in meeting their capital needs. Over 1/2 of the managers said those programs met their expectations, while about 1/3 felt the programs should support more funding. While thought to be insufficient by some, today's level of public financial assistance is not inconsequential. The survey indicated that grant/loan programs accounted for 11% of capital funding for the average municipal and non-profit utility corporation.

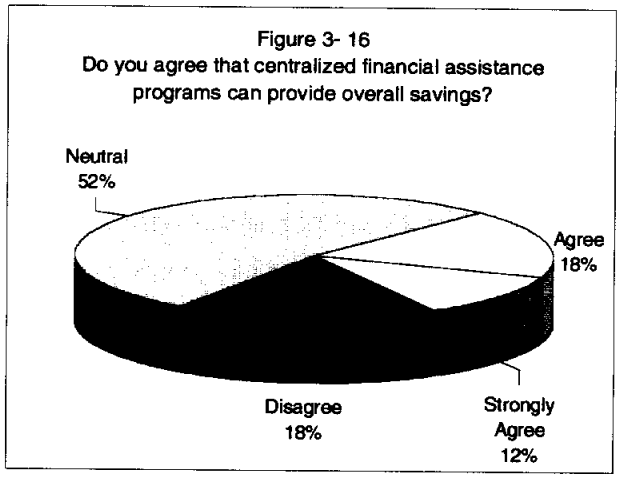
While 56% indicated previously that these assistance programs met their expectations, Figure 3-15 relates that 59% of the managers reported in another survey question that available financial assistance programs were insufficient in mitigating the costs of unfunded regulatory mandates, seeming to indicate that further financial assistance is still needed to improve effectiveness. Only 12% felt the programs were adequate in offsetting these imposed costs. Many respondents simply were not sure.

Figure 3- 15
How effective are financial assistance programs in mitigating the costs of unfunded mandates?



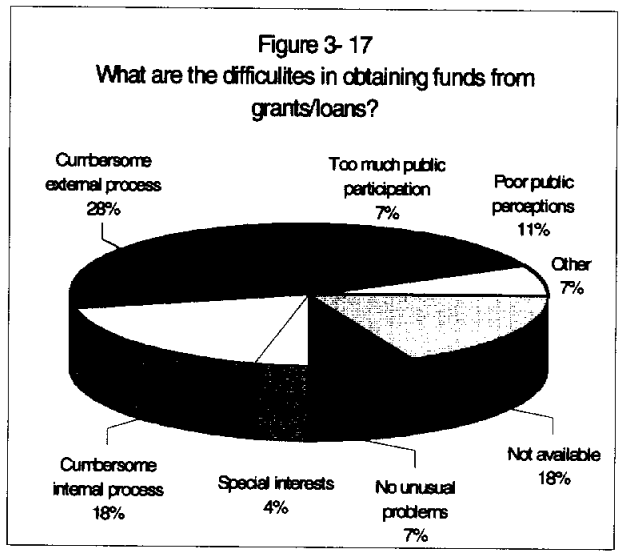
Impacts. When asked who ultimately bears financial impact of these public assistance programs, utility managers answered that utility customers bore about 62%, taxpayers carried about 22%, and government about 15% of the impact. The response concerning utility customers and (district) taxpayers likely indicated the responsibility of loan repayment, while general governmental revenue funded the subsidy portion. Since much of the funding to support these subsidies originates from federal income taxes or state sales tax revenues, the general incidence of financial impact on income groups varies. Federal income taxes are thought to be progressive to some degree, while sales taxes are relatively more regressive towards lower income groups in that taxable purchases constitute a larger percentage of disposable income.

Alternatively, the question arises of who benefits from these programs. While large and small entities alike access the very favorable interest rates of the wastewater SRF, a greater proportion of less credit-worthy entities (who cannot get as favorable financing on the open-market) tend to access the low-cost loan funds generated from extending the state's good credit rating. Less well to do groups are frequent customers of these programs. The preponderance of currently available state and federal grant funds are also targeted at economically distressed areas and small distressed water utilities.



Process and Procedural Issues. When asked if centralized financial assistance programs can provide overall savings to the applicants (considering the time and money costs of the application and approval process), about 1/2 of the utility managers decided to remain neutral. As reflected in Figure 3-16, about 1/3 indicated agreement with these programs' cost-effectiveness, while about 1/5 did not think they were cost-effective.

When the survey asked what were the difficulties encountered in obtaining funds from grants and low-interest loan programs, a mixed response was received (see Figure 3-17). About one-half of the utility managers cited cumbersome external or internal processes, such as the lengthy and sometimes unknown time line for approval, meeting the appropriate rules and regulations, and the many reporting requirements. Some indicated the lack of availability of funds, and others reported issues with public perception or public participation. Only about two out of 28 responses indicated no unusual problems.



Summary of Issues and Concerns. These findings should be put in perspective. Clearly, there is a need for additional financial assistance, and attractive assistance programs will likely be accessed by utilities of all sizes. However, there still appears to be lingering attitudes about the significant application and qualification requirements of the earlier federal construction grants program for wastewater, and probably to some degree, the lesser requirements that still exist today. The TWDB in recent years has implemented significant streamlining efforts and new customer assistance programs to facilitate access to available funds. However, there still remain valid public policy requirements, such as environmental review and implementation of water conservation programs that are not realized to the same degree by utilities financing on the open market. In most cases, these requirements are also applicable to open-market transactions, but compliance and/or enforcement is not strict.

While providing noticeable benefit to some, the state-funded programs are constrained in breadth of assistance and funding capacity. Utility eligibility is limited in some programs because of lack of legal authority. Funding limitations in some state programs has led to deterred or unfunded applications for assistance, prioritization of use of available funds thus limiting participation by others, and lending rates not sufficiently attractive to some and considered still unaffordable by some others. While provisions of SB1 recently addressed some of these issues, the funding provisions were rather small given the prospective $65 billion in future water and wastewater infrastructure need. There may be potential new statewide funding sources that could be considered by the legislature in the future to further enhance the effectiveness of these programs in helping meet these tremendous future capital needs.

Stakeholders were also asked about possible support for the enhanced state funding of water infrastructure programs. While most wanted improved financial assistance, few at this time were willing to support tax, rate, or fee increases to support such a program. Some stakeholders stated concerns that they were already levied state assessments, and there were possibly looming increases in those fees to support TNRCC operations. It was made clear to them that the conceptual funding being evaluated in this effort was to more narrowly address issues related to infrastructure funding. With an expanded statewide funding program, concerns were voiced that agencies supervising such assistance programs demonstrate that leveraging such expanded state funding would result in a net benefit (after costs of program administration) to Texas utilities, both large and small. Also, comments were made that program eligibility and financial assistance decisions should be carefully considered to ensure that there is not undue or unintended redistribution of funds from cities to rural areas or from those paying the additional charge to entities or other purposes who do not pay.

Some stakeholders were not supportive of any new fees or taxes to support an enhanced statewide funding program. However, nearly all stakeholders did not want to see any increase in state fees or taxes related to water be used for any purpose but water programs and then only on programs that "benefit" local utilities rather than regulate them.

If a new state funding method for water infrastructure programs were to be employed, the method that seemed to be most favored by the interviewed stakeholder groups is the extension of the state sales tax to retail water and wastewater bills. This approach has several features more attractive to most stakeholders. These include being generally fair in its levy and impact versus other methods, providing a sales tax rebate to municipalities, allowing utilities to line item the expense on customer billing as a state tax, providing for a volumetric charge that increases with service use, and providing customers with a more clear understanding that an additional water-related charge is being invested in water infrastructure.

The state sales tax has already been extended to garbage bills, and it may be only a matter of time before this additional revenue source is claimed for various other state general revenue programs, rather than being applied for water-related purposes. Most interviewed favored the sales tax (on water and sewer bills) funding approach for expanded utility infrastructure funding as an alternative to having such new funds potentially being directed to overall General Revenue in the future.

Another issue that was put forward was the need for improved financing mechanisms for investor-owned water and wastewater utilities. Currently, these private for-profit entities are only eligible for limited state-funded financial assistance through the state Drinking Water SRF. While limited federal and state funds have been made available to help address problem IOUs through the SDWA programs, there are still state constitutional and statutory issues that would need to be addressed to provide for possible future loan or grant use of state bond funds. Because of the size of these utilities and the limited funds they have available for applying for such assistance, any future consideration of new programs such as this should consider a direct appropriation as funding to allow for signature or simple collateralized loans. The TWDB and Legislature should evaluate possible additional public assistance funding for IOUs for potential cost, risk and overall viability. TNRCC regulatory rate review can provide that such state assistance be fully passed on the ratepaying public and not result in any financial gain to the private owner.

3.2.7.1 Other States' Assistance Programs

This research also inquired into whether other states had state water-related financial assistance programs beyond state revolving funds. Personal communication contacts from the various states are listed in Appendix C.

Alaska. Mainly due to the serious lack of sufficient water and wastewater infrastructure, the state has been the target of several financial aid packages aimed at improving the infrastructure conditions throughout the state. Besides the State Revolving Fund, there are two other major sources of funding for water and wastewater capital improvements.

The first is a state-funded agency that is split into the Municipal Grants and Loans Program with a focus on incorporated communities and the Village Safe Water Program with focus on unincorporated communities. Both programs fund water, wastewater, solid waste, and hazardous waste projects. The major funding source for both programs is state oil revenue. The amount of grant versus loan from the Municipal Grants and Loan Program

mainly depends on the population of community while the Village Safe Water Program funds selected programs at 100% grant. With the need for water and sewer improvements being so large and community credit history being mostly non-existent, the evaluation of loan and grant proposal are based primarily on necessity.

Over the past five years, the Municipal Grants and Loans Program had an annual average budget of $13 million while the Village Safe Water Program has disbursed as much as $20-$25 million in grants. Due to the relatively large number of small unincorporated communities, the usage of loans as viable funding source for water and wastewater projects is still very limited. The average repayment period for loans administered by the Municipal Grants and Loans Program is 8.1 years with no existing minimum term and a maximum of 20 years. The interest rates for such loans are based on a multi-tiered scale: 1.5% for loans under 2 years in length; 2.5% for loans between 2 and 5 years; and a floating interest rate, calculated as being 75% of the municipal bond index as published in the *Wall Street Journal*, for loans over 5 years.

The second alternative funding source is the Public Health Service (PHS), a federally sponsored program that focuses on native Alaskan communities. The great majority of assistance coming from this source is in the form of grants. Occasionally, the PHS will require matching funds if full grants are not available. The five-year average funding budget for the PHS ran between $5 to $10 million.

Arizona. The Arizona Department of Water Resources manages a Conservation Assistance and Augmentation Program financed by revenues generated by groundwater withdrawal fees assessed in the state's five Active Management Areas. Active Management Areas are characterized by high ground water depletion rates and were created to manage the water usage and secure the replenishment of the areas' water resources. All groundwater withdrawn within such an area is subject to a $2.57 per acre-foot charge of which the Conservation Assistance and Augmentation Program is eligible to receive between $0.25 to $0.50 depending on need. The current assessment is $0.25 per acre-foot, and the fee is collected on an annual basis. The program offers grants for the establishment of water conservation programs within these Active Management Areas. All grants are tied to contracts that ensure the completion of certain deliverables. Examples of funded projects include wastewater re-use facilities, feasibility studies, and underground water storage facilities. Capital improvements are only eligible for funding if they contribute to the conservation or augmentation of water.

California. Currently, the two major funding sources for water and wastewater capital improvement projects in the state of California are the State Revolving Fund and a exclusively state-funded revolving wastewater reclamation loan program. Interest rates for loans through the wastewater reclamation loan program are flexible and set at one-half the rate of the most recent sale of state general obligation bonds with current interest rates running as low as 2.2%. The repayment period on all loans is 20 years.

In addition to the two revolving loan programs mentioned above, California has successfully used a small community wastewater grant program. Although the complete distribution of $30 million in general obligation bond proceeds generated by a 1996 bond offering leaves the program currently inactive, the success of appropriating these grants to poor communities with populations less than 5,000 has been significant. All general obligation bonds issued to raise funds for this program are being repaid with general state tax revenues. The program would fund up to 97.5% of total project cost for the construction of treatment facilities, collection systems, and for the purchase of land needed for new facilities. According to state staff, passing increases in funding has proven to be very difficult.

At this time, the state of California does not offer any financial assistance to water utilities besides the SRF. In the past, however, the state has had good success with issuing Safe Drinking Water Bonds to finance grants and low interest loans for small water utilities. The state is considering another bond issue to offer financial assistance for smaller water capital improvement projects.

For a new bond issue and subsequent program to be effective, however, California's safe drinking water laws would have to be changed to allow the state to target smaller water systems. If this legislative action were accomplished and the bond issue approved, the Department of Health Services would base the new funding program, in part, on its past experience. The program would likely retain features such as health risk and the prohibition of participation by privately owned utilities. Additionally, the program would include measures to prohibit frequent change order requests, which had been a previous problem. The major constraint associated with the program has been the refusal of voters to approve safe drinking water bond issues. In fact for the past two elections, the proposed safe water drinking bonds have failed. As in the case of general obligation bonds issued to fund the above mentioned small community wastewater grant program, safe drinking water bonds are repaid with state general fund revenues.

Florida. Currently, the state Department of Environmental Protection only manages the SRF for water and wastewater. However, in order to generate funds to help poor communities otherwise not eligible for funding with wastewater capital improvement projects, the department has adopted rules and regulations to start a wastewater grants program funded by a surcharge levied on all SRF loans. Florida administrative code states that 60% of all interest paid on SRF loans be allocated to the Department of Environmental Protection. Of this 60%, half is used to pay off interest expenses while the other half of the program income generated from SRF loans is put aside for the wastewater grant program. According to the EPA, all program income generated from SRF can be used for water and wastewater project funding.

Given an annual $40 million in federal grant money, $8 million in state matching funds, and all repayment funds, the department anticipates to be able to assess the grant allocation surcharge to about $100 million of activity per year. Given these figures, the program is expected to generate close to $3 million a year by the year 2000 and approximately $10 million annually by 2010.

New Mexico. All state funding for financial assistance programs administered by the New Mexico Financial Authority is provided by the Public Project Revolving Fund (PPRF) which receives its funding from the state Governmental Gross Receipts Tax (GGRT). In 1998, the GGRT generated $17 million of which the Public Project Revolving Fund received 75% or approximately $13 million. All programs administered by the New Mexico Financial Authority (NMFA) are financed with this money. The NMFA offers two exclusively state funded financial assistance programs applicable for water and wastewater utilities.

The first, the Infrastructure/Equipment Finance Loan Program, was set up to finance qualified local government infrastructure programs, combining federal, state, and local funds whenever possible. The program is also intended to expand future availability of financing of infrastructure projects by making loans at below market rates through the leveraging of the Governmental Gross Receipts Tax (GGRT) revenue dedicated to the NMFA. More specifically, this loan program provides accessibility to bond markets for communities by utilizing GGRT as a credit enhancement, reducing coverage requirements of borrowers and reducing costs of issuance with pooled bond issues. Although the NMFA dedicated all GGRT funds to the repayment of bonds, the program has never had to use any GGRT funds to cover defaulted loans. At the end of the year when the pledged GGRT funds are no longer needed as repayment guarantee, the NMFA uses the left over funds to supply cash loans under the same conditions applied to bond financed loans. All loans

awarded through this program have to be approved by the legislature, which can result in waiting periods of up to 6 or 7 months.

Any state, county, or other local governmental entity, Indian tribe, or non-profit organization is eligible for this funding. The loans may be used to finance any costs related to the completion of the project. The interest rates on the loan vary significantly with the median household income of the community. While the normal terms of a NMFA funded loan offers 10% of the loan amount at 3% interest and 90% at market rate, disadvantaged communities with a median household income below either 90% or 75% of the state average receive the first $200,000 of the loan at either 3% or 0% interest, respectively. The average repayment period of these loans is 20 years. Although the number and amount of loans awarded yearly changes, over the last five years that NMFA has awarded more than $140 million in loans through the Infrastructure/Equipment Finance Loan Program.

The second exclusively state funded loan program offered by the NMFA is a Just-In-Time Equipment Finance Loan Program aimed at providing funds for equipment needed by the police, fire department, utilities, emergency medical services, and others. The advantage of this loan program is that loans do not have to be approved by the legislature before disbursement thus offering a shorter turnaround time of funding. Loans awarded through this program tend to be significantly smaller than those provided through the Infrastructure/Equipment Finance Loan program. Over the past five years, this program has awarded approximately $11 million in loans. A just-in-time equipment loan cannot exceed $500,000 per qualified entity within any one fiscal year. Equipment financed must have at least a three-year useful life. Eligibility for funding is the same as for Infrastructure/Equipment loans.

The Interstate Stream Commission administers a regional water resource planning project that funds planning and technical studies for water plans on a regional level. During the program's 10-year existence, the New Mexico State Legislature has awarded approximately $2 million. As the fund receives all its funding from the state's general fund without having a funding mandate, the funding flow has traditionally been very uneven. Yearly appropriations from the legislature have run anywhere from zero to $900,000. Until last year, the program awarded grants to qualified regions. However, as the legislature requires better performance results, the program has switched to a contract bases requiring funding recipients to demonstrate adequate progress on a quarterly basis in order to receive funding. In 1998, the agency awarded funding to 7 out of 14 competing regions via a competitive bidding process. Due to the severe funding constraint, the average award

runs between $20,000 to $30,000 which often is not sufficient to cover all necessary consulting fees.

The New Mexico Environment Department (NMED) sponsors a rural infrastructure program aimed at providing loans and grants to local authorities. The funding for this program comes from general fund appropriations and can only be awarded to a public entity with a population of less than 10,000. Funding from the legislature changes annually. The fund currently has between $9 and $10 million available for funding. However, due to frequent legislative grants for water and wastewater projects and a currently flat interest rate of 5%, the administrators of the fund have actually found it hard to award the majority of loan funding available.

Although the maximum loan allowance per entity per year is $500,000, the majority of loans requested are between the $30,000 and $100,000. The large number of small communities can explain this phenomenon. Mostly, loans awarded through this program are intended for water lines, tanks, and water meters. Grants are awarded only sparingly due to the legislative requirement that no more than 10% of funds be awarded as grants. Grants are awarded when the repayment of a loan would require rate increases above the state average. The program has an average turnaround time between the applications and the awarding of funds of about 4-6 weeks, an open enrollment period, and no priority list.

The biggest problem faced by the program is the lack of demand for funding because many communities hope for legislative grants instead of loans. In the last few years, the amount of grants given directly by the legislature has increased dramatically. In order to fund projects in what it believes is a more equitable manner, the NMED is planning on stepping up the promotion of its programs, considering tying its interest rate to the federal discount rate to increase competitiveness, and generating more funds for grant awards.

Oregon. The only funding available for Oregon's water utilities are the State Revolving Fund and funds dispersed by the Oregon Economic Development Department. The Oregon Economic Development Department offers grants and loans for both water and wastewater capital improvement projects. The legislature appropriates lottery funds to the department to be used for improving the water and wastewater infrastructure of rural and distressed communities. In 1998, the department distributed $35 million in loans and grants.

The department disburses funds via three avenues. First, the department uses its credit to sells low interest, tax exempt revenue bonds. The proceeds are then lent to relatively

strong borrowers with good credit histories. As the communities repay their loans from the department, the department retires the bonds. In this case, the department acts as a low-interest lender or loan intermediary. Second, the department lends relatively poor and unstable communities money out of its own funds. Third, in case of very poor communities, the department awards grants for water and wastewater capital improvement projects.

Utah. The state of Utah has four major funding programs for water and wastewater utilities. These are the:

- Drinking Water Board
- Water Quality Board
- Water Resource Board, and
- Community Impact Board.

The Utah Drinking Water Board, established in 1983, manages both a SRF and state-funded water fund, both of which provide financial assistance in the form of low-interest loans and hardship grants for various drinking water projects. The state fund receives its funding primarily from legislative appropriations of the state's general fund, loan repayments, interest on loans, bond proceeds, and, starting in 1997, a percentage of the state sales tax. Currently, the Drinking Water Board receives 1/16th of a percent ($4 million for 1998) of the state sales tax revenues. After paying for the state's matching portion of the federal/state revolving fund, the Board received roughly $1.5 million to be used in the state-funded revolving fund. Eligibility for funding from the state is limited to municipalities, incorporated municipalities, various districts, and other political subdivisions of the state. Requests for grants or loans, interest rates, and repayment periods are all evaluated based on an individual basis. Interest rates are based on a point system measuring a community's financial capability to repay its debt. The state also offers a reduction in interest rates up to one-quarter of a percentage point to encourage the implementation of board-recommended programs. The average interest rate runs between 2% and 3%. The repayment period on loans can range from 10 to 30 years; however, the great majority of loans have a maturity of 20 years.

The Utah Water Quality Board is very similar in set-up and funding sources except that all funding attributed through this board is exclusively aimed at wastewater projects.

The Utah Water Resource Board provides three funding programs for cities, towns, districts, and other water supply entities to develop water projects. The Revolving Construction Fund, initiated in the 1940s, is a loan program that helps construct irrigation and rural water projects. Up to $500,000 can be borrowed, interest free, for up to 25 years.

Only incorporated entities that own a water right are eligible for a loan from this program. The state takes title to water rights, easements, right of ways, and the project itself as security during the duration of the loan. The Cities Water Loan Fund, the second loan program offered by the Utah Water Resource Board, is available to any political subdivision of the state with the ability to bond. The loan period is for up to 25 years, with an interest rate between 1% and 5%. There is no maximum on the amount that can be borrowed, but it is dependent on availability of funding. If funding from these two programs is unavailable, incorporated entities and political subdivisions may access the Conservation & Development Fund. This fund, created in 1978, generally helps to finance larger projects, such as dams and water systems. Interest rates are between 1% and 7%, and the loan period is a maximum of 35 years. These three loan programs are funded from general revenue appropriations, 1/16th of 1% of state-wide sales tax revenue, and repayments of existing loans. For all three, there are no federal requirements. Ninety-five percent of all applications are accepted, and over 1,100 projects have been funded.

Another loan and grant program for water projects is the Utah Permanent Impact Fund, managed by the Utah Community Impact Board. The sole-funding source for the board is mineral lease funds paid by developers mining minerals on federally owned land in Utah. The Board receives roughly 30% of all mineral mining taxes paid in the state. However, in order to guarantee that the communities impacted by the negative affects of mineral mining receive the benefit of the mining tax collected, the fund's distribution is limited to the county in which they were generated.

Washington. The state Public Works Trust Fund (PWTF) is the only one of its kind in the United States. It funds four different programs: a construction program, a pre-construction program, an emergency loan program, and a facilities planning loan program. The fund receives revenues from four sources: a real estate excise tax, a solid waste collection tax, a water sales tax, and a sewer collection tax. The state Department of Revenue collects all taxes allocated to the PWTF. For the 1997 fiscal year, $7,251,000 was collected from the public utility tax (water and sewer), $22,973,000 from the real estate excise tax, and $21,621,000 from a refuse collection tax. Revenue collected from loan repayments for the fiscal year 1997 were $4,027,082 from interest repayment and $15,838,210 from principal repayment.

In terms of water and wastewater capital improvements, the capital facilities planning loan program is most relevant. It provides low interest loans for the preparation of long-term capital facilities plans and comprehensive system plans. The loan funds can be used for repair, replacement, rehabilitation, or improvement of public works systems to meet current

standards for existing users. Apart from bridges and roads, domestic water, sanitary sewer, storm sewer, and solid waste are considered eligible systems. All counties, cities, and special purpose districts are eligible for funding. Due to the uniqueness of this fund in the nation, the Washington Public Works Board has received requests from other states to help establish similar funds in these states.

Wyoming. The Wyoming Water Development Commission (WDC) administers two programs that provide financial and technical assistance for water supply projects, the New Development Program and the Rehabilitation Program. Eligible projects include source water projects, transmission, and storage. The WDC has developed priorities for which types of water projects the programs should pursue, with multi-purpose (serving two or more functions) the highest priority and recreation the lowest. Only public entities with taxing authority are eligible to receive financing. Projects are broken down into three levels.

All costs associated with a level 1 preliminary study are paid 100% by the WDC. Level 2 costs for a more detailed, feasibility study are paid at 100% by the WDC with the exception of any costs incurred during the level 2 analysis that are part of the actual project construction costs. Those costs are included in the level 3 costs, which are financed through a combination of grants and loans. All level 1 and 2 costs are financed by the WDC through state omnibus spending bills financed through general state revenues. Level 3 costs require a specific project-funding bill be passed by the state legislature. New construction projects usually receive 60% of the total cost through grants and 40% through loans. The loans can be obtained through the WDC, although the eligible public entity is free to explore alternative funding sources, including grants from other agencies such as Wyoming State Land and Investments. The going interest rate on loans through the WDC is 7.25%, but can go as low as 4%. That is uncommon and would only be considered where an income study showed the cost would be an excessive burden on the community being served by the improvement. Grants can amount to more than 60% based on an income evaluation study.

Evaluation of Other States' Assistance Programs. Many of the states surveyed had commonalties in the presence and use of federal/state capitalized State Revolving Funds. However, there was some diversity among the states in the primarily state-funded assistance programs in terms of source of funding, eligibility, and use of funds.

Problems or constraints hampering some of these state-funded programs' include:

- ✗ Lack of sufficient funding versus infrastructure needs;
- ✗ Bond funding tied to difficult general election approval.
- ✗ Erratic or periodic legislative funding in several states making it difficult for utilities to plan to access these funds and meet infrastructure needs schedules;
- ✗ Ad hoc award of grants directly by the Legislature in one state undermining the desire of utilities to seek loan funding;
- ✗ Costly grant assistance programs necessitated in some states because those needing the assistance can not afford loans. While these target a special need, expensive grant programs can limit the number of entities assisted and require continuing appropriations because of the lack of revolving funds; and
- ✗ Narrow program eligibility (e.g. small communities, distressed utilities, Indian tribes, no IOUs, etc.) or limits on the use of funds (water conservation, planning only, no treatment or storage facilities, etc.) in some states.

Positive aspects of other states programs' include:

- ✓ Widely accessed and generally appreciated State Revolving Funds;
- ✓ Broad programs in some states that provide funding for a wide variety of water-related purposes;
- ✓ Targeted one-time programs (such as grants to small communities) that have had good "focused" success;
- ✓ Targeted continuing programs (such as water conservation and augmentation projects) that have had success and also furthered state policy objectives; and
- ✓ Being able to leverage as many federal programs and dollars as possible.

Vis-à-vis Texas water-related assistance programs, differing funding approaches, interesting program features, or broader provisions offered by other western states included:

- ➢ State revenue sources from fully- or partially-dedicated sources, such as mineral severance taxes; gross receipts taxes, excise taxes, sales taxes, lottery proceeds, and groundwater withdrawal assessments;
- ➢ With concurrence of EPA, use of some portion of SRF interest repayments to provide cash to fund wastewater grants program for poor communities (although this may over time limit the SRF program's expansion or revolving nature);
- ➢ Targeted assistance to communities impacted by certain types of development. As the EDAP program has targeted the U.S/Mexico border area, Texas could have benefited in the recent decade from a similar program oriented towards small communities impacted by prison construction;
- ➢ Use of other non-bond funds to help poor credit risk communities;
- ➢ Fast track loans for small or emergency purchases;
- ➢ Broader consideration of need, affordability, and health risk in funding awards; and
- ➢ Limitations on construction change orders.

4.0 COMPARISON OF ALTERNATIVES FUNDING METHODS

While the previous sections discussed each funding tool individually, this section compares effectiveness, impact, and process issues across the various funding methods.

4.1 EFFECTIVENESS

As expected, utility rate revenue is the most commonly used means for funding utility infrastructure needs. As shown in Figures 4-1, 4-2, and 4-3, utility rates revenues are the majority capital funding source among the survey respondents, averaging 67%, 78%, and 60% of total water-related capital provision for municipalities, special districts, and utility corporations, respectively.

Figure 4-1
Municipalities:Types of Capital Funding

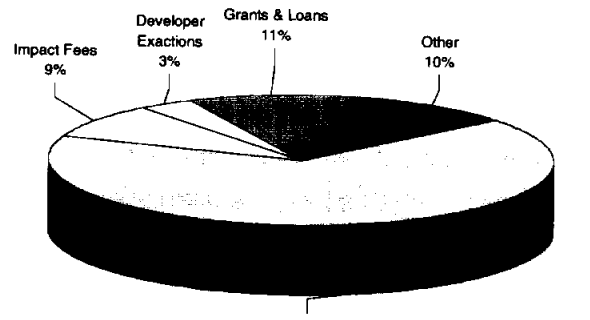
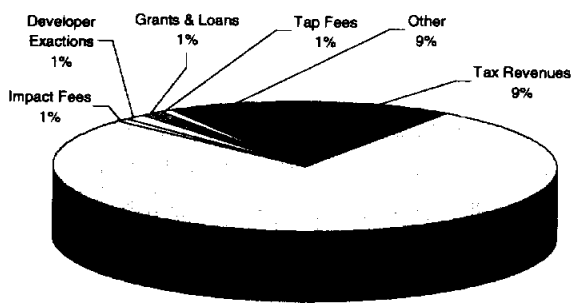


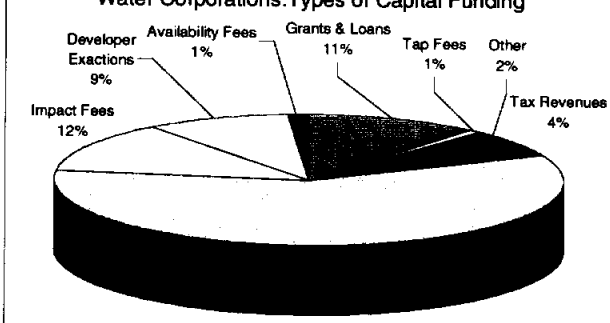
Figure 4-2
Water Districts:Types of Capital Funding

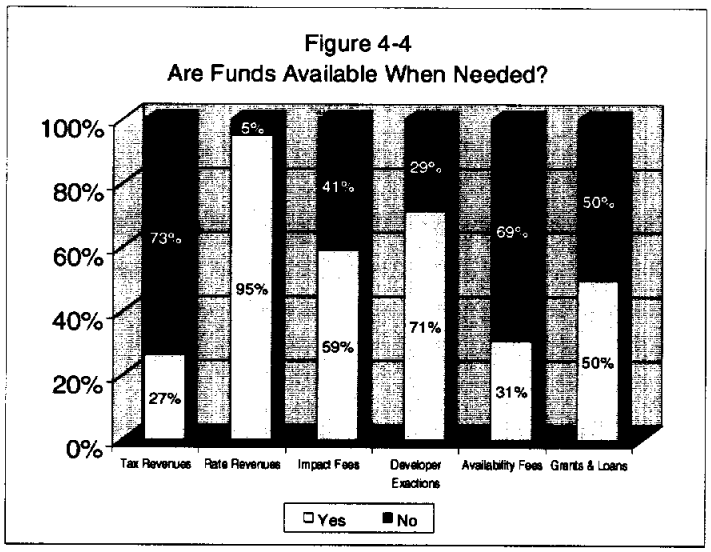


Grants and low-interest loans ranked second among those municipalities and corporations reporting, averaging about 11% of capital needs and likely reflecting access to State Revolving Fund and Farmers Home Administration assistance. Among district respondents, tax revenues ranked second with about 9% of capital funding, and grants and low-interest loans being reported at only 1% of district capital funding.

Impact fees accounted for noticeable shares of capital funding for municipalities and corporations at 9% and 12%, respectively. Developer exactions also contributed 3% and 9% of capital needs, respectively. Districts reported only a small role for impact fees and exactions, likely due to new growth already paying through taxes on undeveloped lots and district reimbursement for eligible developer infrastructure.

Figure 4-3
Water Corporations:Types of Capital Funding

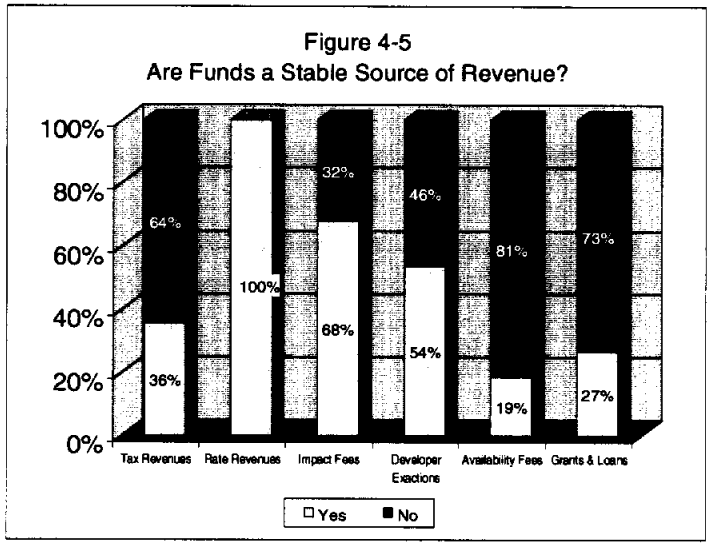




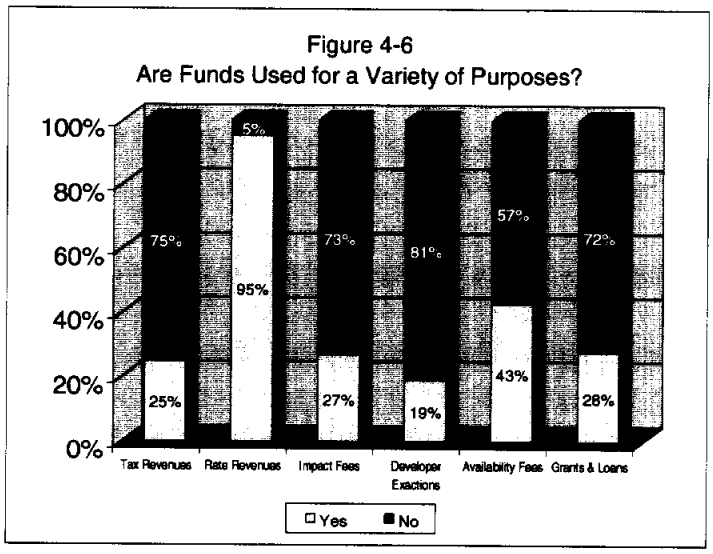
Another measure of funding effectiveness is the timeliness with which the funds are available for use. As indicated in Figure 4-4, about 27% of the utilities surveyed reported favorably on the timeliness of tax revenues, which is also the same approximate percentage of taxing utility districts responding to the survey. The positive responses on timeliness of fund availability were all special purpose taxing districts that regularly use this funding tool.

Even with the influences of wet and dry weather upon amount of utility revenue accrued in any given year, nearly all utilities reported satisfaction with the timeliness of rate revenues being available when needed. About two-thirds responded that funds or capital from impact fees and developer exactions were available when needed, reflecting the maturation (and fund accumulation) of the impact fee programs in Texas and the developer-specific timing of provision of utilities with exactions. Utilities reported the lowest degree of timeliness satisfaction for availability of service fees with only one-third responding favorably potentially indicating the problem associated with collecting non-tax funds from undeveloped property or lack of legal authority to charge such fees. Respondents were about evenly split on the timeliness of grants and subsidized loans, likely indicating mixed experiences with programs' availability and process issues sometimes slowing the funding award.

The stability or lack of variability of the revenue stream can also measure funding effectiveness. Again among the water districts responding, tax revenues were found to be a stable source of capital funds. As shown in Figure 4-5, all reporting utilities stated that rate revenues were a stable revenue source. Not surprisingly, these two funding mechanisms are the most commonly accepted revenue pledge by lenders for repayment of utility capital debt.



Utilities indicated generally favorable results for the stability of impact fee revenue, reflecting the continuing growth in Texas and the adoption of impact fee programs primarily only by those utilities facing growth pressures. Respondents did not rate availability fees or grants/loans very high with respect to the stability of funds. This could be reflective of the periodic availability or limited availability of funds in some financial assistance programs.



The broader applicability or use of funds also plays a role in the effectiveness of the funding tool. Planning for future growth and development is not an exact science, and having the flexibility to use funds for multiple purposes can be an attractive funding feature. Tax revenues typically have the broadest legal flexibility for use of funds, as indicated by the one-quarter favorable responses from the taxing districts shown in Figure 4-6.

Utilities also indicated a high degree of flexibility in the use of rate revenues, commonly only limited in their use by bond ordinances or state or local law limiting transfers to other funds. However, impact fees, developer exactions, and grants/loans usually have defined restrictions on their use, either by law or by the lending agency.

In summary, utility rate and tax revenues are the most effective funding tools in not only providing substantial funds, but in also having stable revenue streams, being available when needed, and having flexibility in the use of funds for a variety of purposes. Grants and low interest loan programs can be substantial sources of funds, but utilities express concern over the timeliness and stability of funding availability.

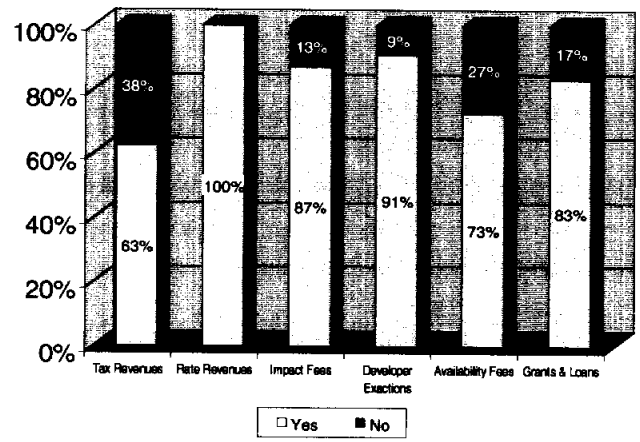
Impact fees and developer exactions can be effective in certain situations, but produce less funds or capital and are less stable, timely, and flexible than the utility rate and tax revenues. Overall, availability (stand-by) fees seemed to be least favored by utilities in terms of effectiveness.

4.2 IMPACT

One of the primary issues of impact and fairness is "are the customers getting their money's worth?" Figure 4-7 indicates utility managers' opinion on this issue. On this question, tax revenues were considered more favorable than previously, likely indicating an attitude among municipal and corporate utility managers that undeveloped property with utilities available should also pay something for the property appreciation benefit.

As indicated in Figure 4-7, all utility managers felt strongly that utility rates provided a commensurate benefit to customers for the amount paid, reflecting in part the typical rate structure's volumetric charge for increasing usage and that most service is funded from utility rate revenue. Impact fees and developer exactions also scored relatively favorable, likely reflecting that these funds are being used to target the costs of new water-related infrastructure.

Figure 4-7
Do Customers Receive Commensurate Benefit?



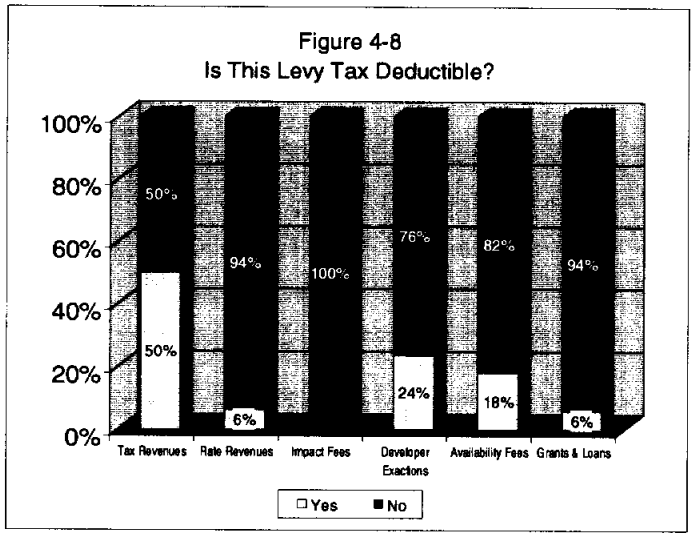
Availability fees scored about the same as tax revenues possibly indicating again utility manager's attitudes that undeveloped property should pay something for property appreciation benefits of having utilities available. Grants and low interest loans also scored high in this regard potentially reflecting an attitude that public funds that provide for these subsidized programs are being returned for the public's benefit.

A significant aspect of impact is the affordability and fairness of the charge. Many utilities employ utility rate structures (e.g., lifeline rates) designed to provide low monthly minimum charges and a low-priced, low-usage block to produce more affordable bills to those using minimal service. In some utilities, the rate charge is then proportional for increasing use (e.g., flat rates), while in other cases the cost per unit of service may increase with increasing use (ex. inclining-block rates). Those rate structures with lifeline or inclining block-type features are less regressive to low and moderate income groups than proportional or flat rate structures. The important issue with respect to rates on income impact issues is that utility rate structures can be designed to be less regressive and consider the affordability of service to lower income groups.

While all property in a taxing jurisdiction generally faces the same tax rate, the value of the property taxed tends to increase with increasing income levels. In this respect, the burden of the taxes is proportional. However when one considers that many low income people rent their dwelling and/or do not itemize their federal taxes, the tax levy can then have a more regressive effect. This potential impact is generally not realized as many taxing water districts encompass developments in the middle to upper income levels.

In that impact fees and availability fees tend to be a single-sized charge for a standard utility connection, these fees would tend to be regressive towards low-income customers. Developer exactions, if passed along proportionately in the ultimate lot price, would be proportionate in nature, and slightly impacting middle income groups more so than high-end groups. In that exactions are levied at new development, this type of capital recovery would usually not affect low-income neighborhoods.

The affordability impact of low-interest loans programs can have several aspects. First since the financing costs are lower, the overall utility capital cost to all customers would be less. Then depending on the revenue pledge with which the loan is repaid (taxes, rates, or tax/rate revenues), the financial impact on various income groups would be as previously discussed.



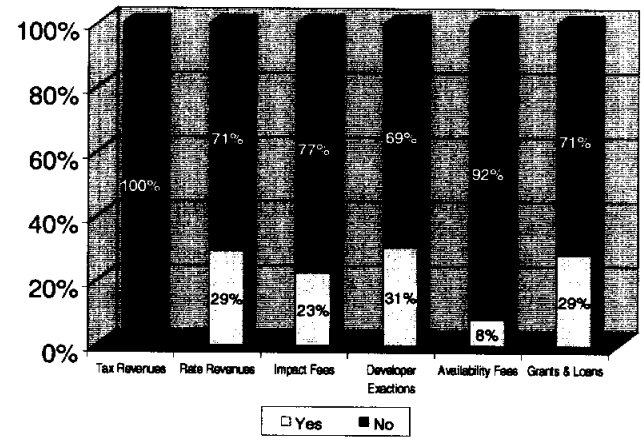
Depending on how infrastructure is financed, it may be possible to reduce the financial impact to consumers through a federal tax deduction. Infrastructure financed with a local tax (as in the case of many water districts) is deductible on federal income taxes, effectively reducing the realized cost of the infrastructure to itemizing taxpayers by 15-20%. Either there is misunderstanding on this issue, or the 50% negative response shown in Figure 4-8 indicates that many utility customers may not itemize their taxes.

Some managers responded that utility rates, availability fees, and grants/loans were tax deductible. While not the case for most utility customers, this is likely only true for business expenses or low interest loans for districts financed with tax bonds. Another interesting point on this issue is that all utility managers responded negatively on the availability of a tax

deduction for impact fees. In many cases, the cost of an impact fee is included in the price of the house (and home mortgage) or included in business rent. While not affecting the principle portion of the impact fee included in the home mortgage, the interest expense portion of the fee is tax deductible for many homeowners. For businesses, the principle and interest portion of the fee included in rent can be deducted as allowable expense.

Another dimension of impact resulting from infrastructure financing methods is their possible effect on an area's growth and development patterns. As indicated in Figure 4-9, most utility managers felt that the major financing tools had little or no effect on area growth patterns. In more extreme cases, however, there is an obvious upper limit to how high water-related utility charges can rise before deterring or slowing new development.

Figure 4-9
Does this Levy Effect Growth Patterns?



This has been most starkly demonstrated in some special districts that incurred debt as development was slowing. The resulting high property tax rates then markedly deterred new development once general business conditions improved. These conditions have tended to persist unless the developer marks down lots sufficiently or some district refinancing scheme is affected.

In most cases, however, businesses and people tend to locate in an area or community for many reasons other than the level of infrastructure levies. In high growth areas, the presence of impact fees in one community has not typically caused noticeable growth to "flee" to a neighboring community with no impact fees. This may be more of an issue in slower growth locales or in similarly situated communities aggressively competing for incoming industry.

In summary, utility rates were found to rank highest in terms of commensurate benefit to the customer for the amount paid and were thought to have only minor effects on changing growth patterns. Utility rates can be designed to lessen impact on lower income groups, but are not tax deductible for residential ratepayers. Other funding tools were thought to have lesser commensurate benefit to the consumers, minor to moderate effects upon growth patterns, and several fees, by their fixed charge nature, tended to be more regressive to low income groups.

4.3 PROCESS

Procedural and process issues can play a significant role in a community's willingness to voluntarily levy an infrastructure charge, cost-effectively administer the funding mechanism, or access public financial assistance programs.

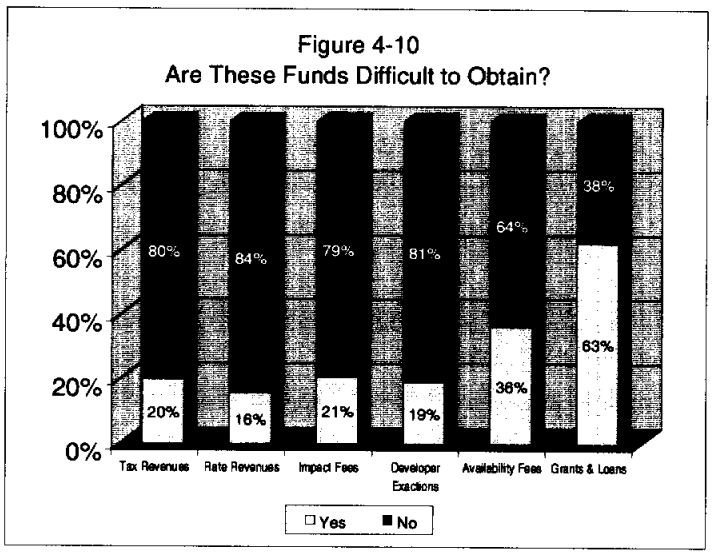


Figure 4-10
Are These Funds Difficult to Obtain?

Figure 4-10 indicates utility managers' responses on the difficulty of raising funds. About 80% responded that taxes, utility rates, impact fees, and exactions posed no major difficulties in raising capital. Only one of the five reporting taxing utilities expressed concern over the difficulty of obtaining tax revenues. Managers reported some problems with availability fees likely reflecting complaints from undeveloped lot owners and difficulty in collections.

Over 60% reported some difficulty in obtaining funds from financial assistance programs. Historically, federal policy initiatives (environmental, prevailing wages, etc.) have come with "strings attached" to the availability of subsidized funds. Utilities do face some of these same requirements with open-market transactions, while other laws, such as environmental regulations, are generally applicable to all new development, regardless of source of funding. Also, this perception of difficulty lingers from earlier federal/state programs, while in reality many newer financial assistance programs have been streamlined with technical assistance usually available to the utility.

Another measure of procedural hurdles is whether the costs of creating and maintaining the funding tool is acceptably less than the revenue gained. As shown in Figure 4-11, most managers surveyed found utility rates cost-effective to administer, followed by impact fee, exactions, and availability fees. Tax and grant/loan funding received less

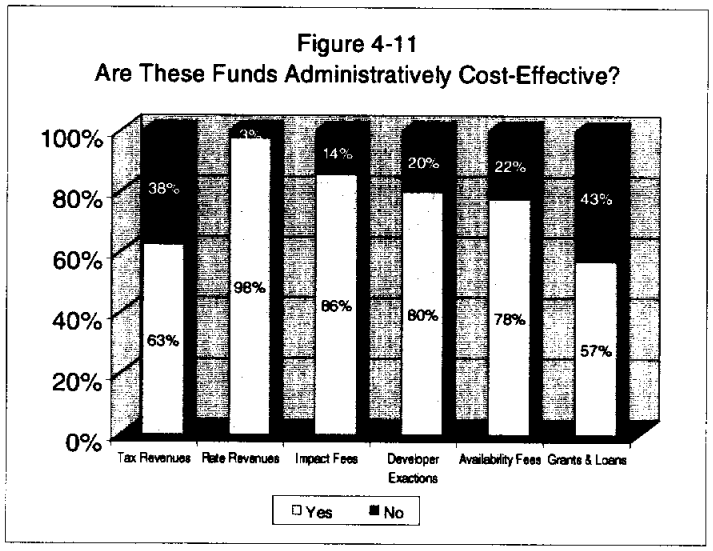


Figure 4-11
Are These Funds Administratively Cost-Effective?

favorable ratings, likely reflecting the costs of administering property valuations and special requirements associated with assistance programs, respectively.

In summary, utility rates again ranked very favorably on acceptable process and procedures. Somewhat surprisingly, complaints from municipalities about the perceived burdensome procedures associated with impact fees were not noticeably reflected in these two questions about process issues. Utilities indicated a higher degree of real or perceived procedural problems and costs associated with funds from public grant and low interest loan programs.

4.4 COMPARATIVE SUMMARY

The availability, effectiveness, impacts, and process features of the alternative funding tools are summarized and compared in Table 4-1. The comparative comments are meant to describe typical characteristics of these funding tools as used and experienced in Texas.

In addition to the discussion in Table 4-1, a further issue is how these funding tools may perform under different utility service area or socioeconomic settings. At the basis of performance of all of the authorized funding tools is the affordability of the utility charges versus the *income levels* of the service. In a poorer areas, the effectiveness of all of the funding tools may be restricted by the customers' ability to pay and reflected in less good billing collection rates or undesirably low levels of service use. In more affluent areas, collection rates are typically higher, and service use reflects or exceeds commonly accepted health standards. For tax and utility rates and utility surcharge tools, serious affordability issues may be service area specific, but public perception and acceptance of rate or surcharge levies can affect all utilities.

The *size of the utility* can also factor into the effectiveness of the funding tools. Larger utilities commonly enjoy economies of scale and lower unit costs of service while small utilities typically incur higher unit costs. The unit cost of service and service area disposable income levels have a direct effect on the affordability of the utility service and how much revenue might be collected from the various utility charges. Another aspect of utility size is the amount of capital currently invested for ultimate service capacity versus the degree of buildout of the utility service area. In cases where a noticeable amount of utility oversizing exists and the number of customers are relatively few, the ability to tax or charge availability of service fees to undeveloped property benefiting (i.e., appreciating) from the presence of the water and wastewater utilities may be integral to affordable utility rates and overall financial viability of the utility.

The *location of the utility* may affect the viability of the funding tools. Municipal and special district utilities are usually located in more highly urbanized areas where the density and size of the development have induced the formation of government-run utilities that generally have greater access to funding sources and more latitude in the number of authorized funding tools. Conversely, some governmental assistance is specially targeted to non-urban utilities, such as the Farmers' Home or Rural Development Administrations' loan programs for non-profit utility corporations in qualifying rural areas.

Another key socioeconomic factor affecting the viability of certain funding tools is the *rate of growth*. Funding tools, including impact fees and exactions, are specifically targeted at new development and attempt to insulate the existing ratepayers from growth-related rate increases. Obviously, these growth-related funding tools are most effective in a more rapid growth situation, and work correspondingly less well in a slow- or no-growth environment. These types of growth-related fees arose from the difficulty of using increasingly unpopular utility and tax rate increases as a sole means of funding significant new capital requirements.

5.0 RECOMMENDATIONS

The following section contains recommendations for legislative or administrative action to further the effectiveness, reduce undue effects, and facilitate the administration of water and wastewater funding tools. The recommendations represent the authors' professional opinions, and while drawing on information from various parties, should not be construed as the specific policy platforms of the TWDB or any other stakeholder groups.

The recommendations also reflect an orientation by the authors that, given the significant future funding needs faced by utilities, all reasonable funding tools should be available for widespread use. There is either publicly elected governing bodies or a regulatory review process to decide the appropriateness of applying these tools in specific instances.

5.1 UTILITY TAXES AND UTILITY RATES

In general, there is a high degree of satisfaction associated with both the utility tax and rate-funding tools. The most common concern being voiced is the affordability of rate increases. TNRCC is in the final process of rulemaking to implement rate flexibility and financial enhancement features for private utilities addressed in SB1, 75th Texas Legislature, although concerns exist that the proposed rules have not meaningfully addressed the intent of SB1.

Table 5-1
Recommendations Related to Utility Taxes and Rates

Administrative

The TNRCC should consider:

(1) Adopting pending amendments to TNRCC rules Section 291 that would add flexibility and financial enhancement features to allowable tariff design for regulated private water utilities.

(2) Closely monitoring the financial performance of IOUs overall to ascertain if further statutory or rules changes are needed to meet the legislative intent of enhanced financial viability for these utilities.

Texas utilities should consider:

Implementing improved public awareness programs to better inform utility tax and ratepayers with respect to: (1) needed or required changes in the utility's infrastructure and operations, and (2) how the utility's revenue programs are designed to recover costs from various service demands.

5.2 UTILITY RATE SURCHARGES

The typical purpose of utility surcharges are to recover funding for unusual cost of service items. In many cases, these charges are targeted at certain classes of customers. Because some utility customers pay and some do not, care should be exercised in their levy.

Table 5-2 Recommendations Related to Utility Surcharges
Administrative
Utilities should carefully review the bases for any utility surcharge to ascertain that they are treating all similarly situated customers in a like manner and that such charges are fair and non-discriminatory.

5.3 IMPACT FEES

One of the more controversial infrastructure funding tools in Texas has been impact fees, as defined in Chapter 395 of the Local Government Code. Municipalities have voiced concerns that the required process is cumbersome and expensive, administration is costly, and use of funds is overly restrictive. Builders want to be assured that fees are correctly determined, funds are properly used, there is adequate public input, and growth benefits are weighed in the fee-setting process. The following recommendations reflect, in the authors' opinion, a balanced set of proposals for statutory change and draw, in part, upon platforms of the CPAT, TML, and builders associations. While these proposed changes would clarify and/or streamline current law, these changes should not unduly affect the building industry.

Table 5-3
Recommendations Related to Impact Fees

Statutory

The Texas Legislature should consider amending Chapter 395 of the Local Government Code to:

(1) Specifically exclude "other pro rata fees" from the definition of "impact fees." This will directly reference and exclude pro rata, providing for the reimbursement of city extended water/sewer mains and already addressed elsewhere in the Local Government Code.
(2) Exclude from the definition of impact fees, "off-site" dedication/construction improvements. The law currently only excludes "on-site' dedication/construction. Subdivision regulation tools addressing off-site extension of utilities should not be subject to impact fee methodology.
(3) Delete a subsection in the "refunds" section that requires the recalculation of the impact fee, based on actual costs, once the capital improvement/facility is completed. Since CIPs are dynamic and never "complete", these requirements are unrealistic. In addition, there are already adoption/updating procedures in place that provide for review and comment on the amount and use of the fees. Since most cities that have levied such fees have done so at less than the capital cost of service, this strict cost accounting is overly burdensome.
(4) Specifically exclude from fee funding such activities as plant rehabilitation or water supply replacement for existing customer use. Any portion of such projects that also provide for growth-related water supply or utility capacity should be considered eligible for use of impact fee proceeds.
(5) Require that relevant forms of utility capital payments be specifically considered in sizing the impact fee.
(6) Require that the benefits of growth also be considered as policy input by utility decision-makers.
(7) Replace the provision for a mandatory 3-year update of the CIP plan, with a 5-year update. This would also eliminate the provision that allows for one person to cause the update of a CIP when a city has already deemed it unnecessary. The 3-year update is too short a period, when considering it takes 3 to 9 months to update a CIP and that construction costs do not fluctuate widely.
(8) Reduce the notice and advertising requirements for adoption/update of impact fees to match those required under zoning and subdivision enabling acts. The requirements are too costly in both time and money. Currently, there are also separate notice requirements, public hearings, and adoptions for the land use assumptions and the CIP. This process can be fairly consolidated into one step.
(9) Simplify the assessment and collection provision. Currently there are 5 different scenarios, depending upon adoption date of impact fees and platting status of property. This can easily be compressed into one section with no substantive changes.

(10) Allow all contractual costs, not just engineering and financial, to be encompassed in the cost basis of the fee, including the reasonable costs for planning, legal, and any other consultants a city may find necessary to accurately adopt or update an impact fee program.
(11) Delete the section that imposes a penalty on those cities whose impact fees do not conform with the legislation by June 20, 1990. This date has passed.

The Texas Legislature should consider amending Chapter 13 of the Texas Water Code to:

Provide specific authority to levy impact fees for private water supply corporations, ensure that related rate and fee design and use of proceeds are properly treated in regulatory review, and that such regulated utilities be allowed to meaningfully accrue such funds toward payment of significant capital infrastructure.

5.4 AVAILABILITY FEES

While not considered highly favorable among the utility survey respondents, availability of service fees can produce needed revenue, help mitigate against growth-related rate increases, and serve as another viable tool of an array of alternative funding methods to help utilities meet pressing infrastructure needs.

Table 5-4 **Recommendations Related to Availability Fees**
Statutory The Texas Legislature should consider amending the Local Government Code and Texas Water Code to give specific statutory authority to municipalities and water utility corporations to levy availability (stand-by) fees on undeveloped property that has utility service available. Such new authority should address appropriate fee-setting methodology and collection procedures, such as allowed in similar authority under Texas Water Code §16.347 only for economically distressed areas.

5.5 DEVELOPER EXACTIONS/DEDICATIONS

Current law and policy in the Texas Local Government and Water Codes and TNRCC rules provide direction for the privately funded extension of utility service to outlying developments. While no statutory change was identified, it is important for cities and utilities to be knowledgeable of these provisions and only require exactions in conformance with applicable statute and/or agency rules.

Table 5-5 **Recommendations Related to Developer Exactions/Dedications**
Administrative Utilities should review Local Government Code (for municipalities) and Texas Water Code provisions and TNRCC rules (for districts and private utilities) relating to subdivision and zoning requirements, exactions, and utility extension laws and policies to ascertain that such exactions not exceed the capital cost of service of extending utility service to the benefited development . Utility-required oversizing, associated with such exactions, should be borne at the utility's expense or reimbursed to the developer in a timely and agreed-upon manner.

5.6 GRANTS/LOW INTEREST LOANS

Adequate water-related infrastructure is at the very heart of the state's future health, welfare, and economic prosperity. Texas cannot afford to under-invest in this basic infrastructure. While the alternative funding tools discussed above can help address future capital needs, these alone are not likely sufficient to meet the staggering $65 billion in 50-year water-related infrastructure needs projected for Texas. Utilities of all sizes will face serious issues of affordability in funding these improvements, and the lowest-cost funds possible should be made available to provide for these purposes. The state of Texas should consider better aiding its water utilities through enhanced loan and grant programs supported either by dedicated funding or additional continuing appropriations. The authors found that many utilities wanted additional financial assistance, but most were not willing, at this time, to support a new statewide revenue gathering mechanism to fund such expanded assistance programs. Therefore, no recommendation is made with respect to this issue. However, water managers were concerned that if there will be future state initiatives to expand state revenues through some sort of new water fee or tax, it be dedicated to water purposes.

Some utilities expressed concerns about the additional "strings attached" requirements associated with accessing the state/federal funds versus that of open market funding. In reality, those seeking open-market funding also face many of the same lawful requirements. However, they may be able to avoid compliance or realize a lesser degree of scrutiny than associated with public financing. For the most part, these additional requirements have encompassed environmental review, water conservation initiatives, and financial auditing requirements. The environmental review is primarily required because of federal funding participation, and this can not likely be addressed through state-oriented initiatives. In recent SB1 changes to the Texas Water Code (30 TAC §11.1271), water conservation plans are now separately required for all surface water rights holders. Thus, many future applicants for state financial assistance that hold surface water rights will not fact this as an additional funding requirement. The TWDB, as a guardian of proper use of state funds and concerned over avoiding loan defaults, will likely want to retain the financial auditing function. Because of the purpose of these public policy initiatives, it is unlikely that all of the "additional requirements" associated with state and/or federal assistance will be removed. The TWDB has, in recent years, reviewed these additional requirements and implemented streamlining initiatives. The Board should continue its efforts to monitor the effects of these program improvements for efficiency and customer "friendliness" and undertake any further streamlining efforts that may be appropriate. Those seeking open-market funding, as public entities, should also comply with applicable federal and state law.

There is a need for improved financing mechanisms for investor-owned water and wastewater utilities. These entities, while privately owned, provide a basic public service. Currently, these private for-profit entities are only eligible for state-funded financial assistance through the newly established Drinking Water SRF, and funds are limited from that program. While limited federal funds and appropriated state funds have been made available to help address problem IOUs through the SDWA programs, there are concerns over state constitutional provisions and lack of statutory authority that may restrict using state bond proceeds for loans or grants to IOUs. Because these small utilities do not have much funds to cover applying for this assistance, any new programs such as this should consider a direct appropriation of funding that would better allow for signature or collateralized loans. TNRCC regulatory rate review can require that the benefit of state assistance be fully passed on to the ratepaying public and not result in any financial gain to the private owner. A further evaluation should be made to determine the potential costs, risks, and overall viability of extended state financial assistance to IOUs prior to any further legislative consideration.

Table 5-6
Recommendations Related to Grants/Low-Interest Loans

Statutory

The Texas Legislature should consider:

(1) Requesting a further TWDB evaluation of the costs, risks, and overall viability of further extending state financial assistance to IOUs; if such assistance is desirable, then calling for an election to decide a possible state constitutional amendment; and if successful, enacting variously needed statutory changes to allow for the use of state bond proceeds for loans or grants to IOUs.

Administrative

The TWDB should continue to monitor the performance of recently-implemented streamlining initiatives and program enhancements for water-related state financial assistance programs and undertake, as appropriate, any further assistance action to facilitate applicants' compliance with governmental policy requirements in a time- and cost-efficient manner.

6.0 BIBLIOGRAPHY

AWWA. 1991. *Manual of Water Supply Practices M1: Water Rates*, American Water Works Association.

AWWA. 1996. *Manual of Water Supply Practices M26: Water Rates and Related Charges*, American Water Works Association.

AWWA. 1988. *Manual of Water Supply Practices M29: Water Utility Capital Financing*, American Water Works Association.

AWWA. 1992. *Manual of Water Supply Practices M34: Alternative Rates*, American Water Works Association.

AWWA. 1990. *Manual of Water Supply Practices M35: Revenue Requirements*, American Water Works Association.

Bauman, Gus and William H. Either. 1987. "Development Exactions and Impact Fees: A Survey of American Practices," *Law and Contemporary Problems*, 50(1): 51-68.

Bland, Robert. 1989. *A Revenue Guide for Local Government*, Washington, D.C.: International City/County Management Association.

Bogard, Allen. 1990. "Impact Fees in a Small Texas City," *Government Finance Review*, June: 15-18.

Clark, Don M. 1994. "Development Fees: A Legislative History," *Journal AWWA*, November: 40-49.

Delaney, Charles J. and Marc T. Smith. 1989. "Development Exactions: Winner and Losers," *Real Estate Law Journal*, 17: 195-220.

_____. 1989. "Impact Fees and the Price of New Housing: An Empirical Study," *AREUEA*, 17(1): 41-54.

_____. 1989. "Pricing Implications of Development Exactions on Existing Housing Stock," *Growth and Change*, Fall: 1-12.

Dingell, Larry D. and Jane H. Lillydahl. 1990. "An Empirical Examination of the Effect of Impact Fees on the Housing Market," *Land Economics*, 66(1):82-93.

Dorris, Virginia Kent. 1989. "Buying Tomorrow's Water," *Civil Engineering*, May: 52-54.

Fishbeck, Mickey and Tony Bagwell. 1989. "Municipal Utility Impact Fee Programs in Texas Face Upcoming Compliance Deadline," *Southwest & Texas Water Works Journal*, August: 4-6.

Farabee, Ray and Lisa K. Anderson, et al. 1989. "Impact Fees: The Intent Behind the New Law," *Texas Environmental Law Journal*, 19: 68-73.

Gildan, Phillip C. 1995. "Florida Village Generates Revenue From Utility," *American City & County*, 110:53.

Kelly, Janet M. 1997. "Development Impact Fees: Modeling Future Growth and Economic Development in a South Carolina Community," *International Journal of Public Administration*, 20(8&9):1599-1617.

Levine, Jonathan C. 1994. "Equity in Infrastructure Finance: When are Impact Fees Justified," *Land Economics*, 70(2): 210-222.

Lillydahl, Jane and Arthur Nelson, et. al., 1988, "The Need for a Standard State Impact Fee Enabling Act," *Journal of the American Planning Association*, 54 (1988): 7-17

Lucero, Angelique. 1997. "The Price of Progress: Infrastructure Payment Plans You Can Live With," *American City & County*, May: 42-49.

Moulder, Evelina R. 1993. *Local Government Infrastructure Financing, Special Data Issue,* Washington, D.C.: International City/County Management Association.

Nelson, Arthur, editor. 1988. "Symposium on Impact Fees," *Journal of the American Planning Association*, Winter: 1-78.

Nicholas, James C. 1992. "On the Progression of Impact Fees," *Journal of the American Planning Association*, Autumn: 517—525.

Rafelis, George A. 1989. *The Arthur Young Guide to Water and Wastewater Finance and Pricing*, Michigan: Lewis Publishers: 61-70.

Ross, Dennis H. and Scott Ian Thorpe. 1988. "Impact Fees: Practical Guide for Calculation and Implementation," *Journal of Urban Planning and Development*, 118(3): 106-118.

Siemon, Charles. 1987. "Who Bears the Costs," *Law and Contemporary Problems*, 50(1): 115-126.

Texas Water Development Board, 1997. *Water for Texas,* August 1997.

Townes and, Bradford. 1996. "Development Impact Fee: A Fair Share Formula for Success," *Public Management*, April: 10-15.

Wassmer, Robert W. 1993. "Property Taxation, Property Base, and Property Value: An Empirical Test of the 'New View'," *National Tax Journal*, 46(2): 135-159.

Yinger, John. 1998. "The Incidence of Development Fees and Special Assessments," *National Tax Journal*, 51(1):23-41.

APPENDIX A

SURVEY INSTRUMENT AND COMPILATION OF OVERALL AND OTHER STATES' SURVEY RESULTS

(note: where applicable, the following compilation reflects aggregate amounts totaled from individual responses. Otherwise, averages across the responses are shown.)

SURVEY OF WATER AND WASTEWATER INFRASTRUCTURE FINANCING METHODS

Compiled Responses for Texas and Other States

GENERAL INFORMATION

Your Name: _____
Title: _____
Organization: _____
Mailing Address: _____
City: _____
State: _____
Telephone: _____
FAX: _____
e-mail address: _____

UTILITY DESCRIPTION

1. Type of Services *(check one or more)*:

	Water	Wastewater	Stormwater
Wholesale	21	11	1
Retail	37	29	2

2. Type of Utility: *(check one)*

Large Regional Authority: 1
Municipality: 25
Special District: 8
Non-profit Co-op: 6
For-profit (investor-owned) Corp: 2

3. Please provide the following service area information: Various

County(ies) location: _____
Approx. size (sq.mi.): _____
Number of connections: _____
Service area population: _____
Connections 3-yr ann. growth rate: _____ %
Percent developed: _____ %
Avg. age of the system: _____ years
Percent served: _____ %

4. What are your estimated water and wastewater capital funding needs over the next five years? (Totals)

Growth related: $1,540 million
Rehabilitation related: $1,114
Safe Drinking Water Act related: $94
Other regulatory compliance: $334
Other: $365
Total: $3,447

describe other: _____

5. What do you consider the greatest impediment to adequate capital funding of your utility?

_____
_____
_____
_____

COMPARISON OF MAJOR CAPITAL FUNDING TOOLS

6. What *percentage* of your utility capital funding or capital provision comes from these sources?

	M	D	C
Tax revenues:	0 %	9 %	4 %
Rate revenues:	67 %	78 %	59 %
Impact (capital recovery) fees:	9 %	1 %	12 %
Developer Contributions/Dedications:	3 %	1 %	10 %
Availability of Service (Stand-by) fees:	0 %	0 %	1 %

	M	D	C
Grants/Subsidized Low-interest Loans :	11 %	1 %	1 %
Utility surcharges:	0 %	0 %	11 %
Tap (meter placement) fees:	0 %	1 %	0 %
Other:	10 %	9 %	2 %
Total:	100 %	100 %	100 %

M - Municipality; D - District; C - Corporation

7. If you have other innovative methods of raising significant capital funds, please describe:

_____

_____

_____

(check one box for each funding tool)

	Yes	No	Not Applicable
8. Funds/capital from this source are available when I need them.			
Tax revenues	4	11	27
Rate revenues	40	2	0
Impact (capital recovery) fees	16	11	15
Developer contributions/dedications	20	8	14
Stand-by (availability of service) fees	5	11	26
Grants or subsidized low-interest loans	14	14	14
Other, please specify _____	5	3	34
9. This is a relatively stable source of revenue.			
Tax revenues	5	9	28
Rate revenues	42	0	0
Impact (capital recovery) fees	17	8	17
Developer contributions/dedications	14	12	16
Stand-by (availability of service) fees	3	13	26
Grants or subsidized low-interest loans	7	19	16
Other, please specify _____	2	5	35
10. Funds from this source can be used for a variety of purposes.			
Tax revenues	3	9	30
Rate revenues	40	2	0
Impact (capital recovery) fees	7	19	16
Developer contributions/dedications	5	21	16
Stand-by (availability of service) fees	6	8	28
Grants or subsidized low-interest loans	7	18	17
Other, please specify _____	1	6	35
11. Customers get a service benefit comparable to what they pay.			
Tax revenues	5	3	34
Rate revenues	42	0	0
Impact (capital recovery) fees	20	3	19
Developer contributions/dedications	20	2	20
Stand-by (availability of service) fees	8	3	31
Grants or subsidized low-interest loans	15	3	24
Other, please specify _____	1	5	36

	Yes	No	Not Applicable
12. This levy is deductible on Federal/state personal income taxes.			
Tax revenues	7	7	28
Rate revenues	2	30	10
Impact (capital recovery) fees	0	18	24
Developer contributions/dedications	5	16	21
Stand-by (availability of service) fees	2	9	31
Grants or subsidized low-interest loans	1	16	25
Other, please specify _____	0	7	35
13. This levy has had a noticeable effect on growth patterns.			
Tax revenues	0	12	30
Rate revenues	10	24	8
Impact (capital recovery) fees	5	17	20
Developer contributions/dedications	8	18	16
Stand-by (availability of service) fees	1	11	30
Grants or subsidized low-interest loans	6	15	21
Other, please specify _____	0	7	35
14. The process of obtaining funds from this source is difficult.			
Tax revenues	2	8	32
Rate revenues	6	32	4
Impact (capital recovery) fees	5	19	18
Developer contributions/dedications	5	21	16
Stand-by (availability of service) fees	4	7	31
Grants or subsidized low-interest loans	15	9	18
Other, please specify _____	2	2	38
15. Funds from this source are administratively cost-effective.			
Tax revenues	5	3	34
Rate revenues	39	1	2
Impact (capital recovery) fees	18	3	21
Developer contributions/dedications	20	5	17
Stand-by (availability of service) fees	7	2	33
Grants or subsidized low-interest loans	12	9	21
Other, please specify _____	2	3	37

TAX REVENUE

(skip over this page if this financing tool is not relevant to your utility)

16. How effective are tax revenues in meeting your capital needs? (check one)

Should support more utility capital:	
Meets expectations:	4
Should support less utility capital:	
Does not support utility capital:	

17. Are tax revenues recovering the full capital cost of service? (check one)

No: 1 — If no, what % of the maximum amount was levied? 40%

Yes: 3 — If no, what was the motivation for charging less? _____

18. Are there discrete types of capital funded from tax revenues? (check one)

No: 2

Yes: 1 — If yes, what types of capital? _____

1 no response

19. What entity(ies) bear the financial impact of utility-related taxes? (please estimate percents)

Initially		***Ultimately***	
Taxpayers/Property owners:	100%	Taxpayers/Property owners:	100%
Existing utility customers:		Existing utility customers:	
New utility customers:		New utility customers:	
Developers:		Developers:	
Government:		Government:	
Other:		Other:	
Total:	100%	Total:	100%
Not sure:		Not sure:	

20. What utility customers ultimately bear the financial impact of utility taxes?

Low income residential:	
Middle income residential:	
High income residential:	
Small business:	
Large business/industrial:	
Institutions:	
Other:	
Total:	100%

No Response

21. Regarding the extent of capital recovery in the utility-related tax rate, how much weight was given to:

Cost-related issues:	75%
Policy-related issues:	25%
	100%

22. What are the difficulties in obtaining funds from tax revenues? (check one or more)

No unusual difficulties:	4	Too much public participation:	
Undue influence of special interests:		Too little public participation:	
Internal requirements too cumbersome:		Poor public perceptions/understanding:	1
External requirements to cumbersome:		Other:	

23. What changes or improvements are needed to make tax revenues a more effective funding source?

_____

_____

_____

UTILITY RATE REVENUE

(skip over this page if this financing tool is not relevant to your utility)

24. How effective are utility rate revenues in meeting your capital needs? (check one)

Should support more utility capital:	7
Meets expectations:	32
Should support less utility capital:	1
Does not support utility capital:	2

25. Are utility rates recovering the full capital cost of service? (check one)

No: 11 — If no, what % of the maximum amount was levied? 47%

Yes: 30 — If no, what was the motivation for charging less? _____

1 no response

26. Are there discrete types of capital funded from utility rates? (check one)

No: 31

Yes: 6 — If yes, what types of capital? _____

4 no response

27. What entity(ies) bear the financial impact of utility rates? (please estimate percents)

Initially		*Ultimately*	
Taxpayers/Property owners:	2%	Taxpayers/Property owners:	5%
Existing utility customers:	73%	Existing utility customers:	73%
New utility customers:	15%	New utility customers:	15%
Developers:	5%	Developers:	2%
Government:	5%	Government:	5%
Other:		Other:	
Total:	100%	Total:	100%
Not sure:		Not sure:	

28. What utility customers ultimately bear the financial impact of utility rates?

Low income residential:	19%
Middle income residential:	34%
High income residential:	15%
Small business:	9%
Large business/industrial:	8%
Institutions:	5%
Other:	10%
Total:	100%

29. Regarding the extent of capital recovery in the utility rates, how much weight was given to:

Cost-related issues:	82%
Policy-related issues:	18%
	100%

30. What are the difficulties in obtaining funds from utility rates? (check one or more)

No unusual difficulties:	30	Too much public participation:	1
Undue influence of special interests:	3	Too little public participation:	3
Internal requirements too cumbersome:	1	Poor public perceptions/understanding:	11
External requirements to cumbersome:	1	Other:	1

31. What changes or improvements are needed to make this a more effective funding source?

_____

_____

_____

IMPACT (CAPITAL RECOVERY) FEES

(skip over this page if this financing tool is not relevant to your utility)

32. How effective are impact fee revenues in meeting your capital needs? (check one)

Should support more utility capital:	6
Meets expectations:	12
Should support less utility capital:	
Does not support utility capital:	1

33. Are impact fees recovering the full capital cost of service? (check one)

No: 13 — If no, what % of the maximum amount was levied? 38%

Yes: 6 — If no, what was the motivation for charging less? _____

34. Are there discrete types of capital funded from impact fees? (check one)

No: 9

Yes: 6 — If yes, what types of capital? _____

3 no response

35. What entity(ies) bear the financial impact of impact fees? (please estimate percents)

Initially		*Ultimately*	
Taxpayers/Property owners:		Taxpayers/Property owners:	
Existing utility customers:		Existing utility customers:	
New utility customers:	62%	New utility customers:	79%
Developers:	38%	Developers:	21%
Government:		Government:	
Other:		Other:	
Total:	100%	Total:	100%
Not sure:		Not sure:	

36. What utility customers ultimately bear the financial impact of impact fees?

Low income residential:	11%
Middle income residential:	37%
High income residential:	12%
Small business:	11%
Large business/industrial:	8%
Institutions:	6%
Other:	15%
Total:	100%

37. Regarding the extent of capital recovery in impact fees, how much weight was given to:

Cost-related issues:	65%
Policy-related issues:	37%
	100%

38. What are the difficulties in obtaining funds from impact fees? (check one or more)

No unusual difficulties:	9	Too much public participation:	
Undue influence of special interests:	4	Too little public participation:	
Internal requirements too cumbersome:	1	Poor public perceptions/understanding:	4
External requirements to cumbersome:		Other:	1

39. What changes or improvements are needed to make impact fees a more effective funding source?

_____

_____

_____

AVAILABILITY OF SERVICE (STAND-BY) FEES

(skip over this page if this financing tool is not relevant to your utility)

40. How effective are stand-by fee revenues in meeting your capital needs? (check one)

Should support more utility capital: _____
Meets expectations: 2
Should support less utility capital: _____
Does not support utility capital: _____

41. Are stand-by fees recovering the full capital cost of service? (check one)

No: 1 — If no, what % of the maximum amount was levied? _____
Yes: 1 — If no, what was the motivation for charging less? _____

42. Are there discrete types of capital funded from stand-by fees? (check one)

No: 2
Yes: _____ — If yes, what types of capital? _____

43. What entity(ies) bear the financial impact of stand-by fees? (please estimate percents)

Initially		*Ultimately*	
Taxpayers/Property owners:		Taxpayers/Property owners:	
Existing utility customers:	100%	Existing utility customers:	100%
New utility customers:		New utility customers:	
Developers:		Developers:	
Government:		Government:	
Other:		Other:	
Total:	100%	Total:	100%
Not sure:		Not sure:	

44. What utility customers ultimately bear the financial impact of stand-by fees?

Low income residential: _____
Middle income residential: 100%
High income residential: _____
Small business: _____
Large business/industrial: _____
Institutions: _____
Other: _____
Total: 100%

45. Regarding the extent of capi

Cost-related issues: 100%
Policy-related issues: _____
100%

46. What are the difficulties in obtaining funds from stand-by fees? (check one or more)

No unusual difficulties:	2	Too much public participation:	
Undue influence of special interests:		Too little public participation:	
Internal requirements too cumbersome:		Poor public perceptions/understanding:	
External requirements to cumbersome:		Other:	

47. What changes or improvements are needed to make stand-by fees a more effective funding source?

_____

_____

_____

DEVELOPER DEDICATIONS/EXACTIONS

(skip over this page if this financing tool is not relevant to your utility)

48. How effective are developer dedications/exactions in meeting your capital needs? (check one)

Should support more utility capital:	6
Meets expectations:	15
Should support less utility capital:	
Does not support utility capital:	1

49. Are dedications/exactions recovering the full capital cost of service? (check one)

No: 6 — If no, what % of the maximum amount was levied? no response

Yes: 16 — If no, what was the motivation for charging less? _____

50. Are there discrete types of capital funded from dedications/exactions? (check one)

No: 8

Yes: 12 — If yes, what types of capital? _____

2 no response

51. What entity(ies) bear the financial impact of dedications/exactions? (please estimate percents)

Initially		*Ultimately*	
Taxpayers/Property owners:		Taxpayers/Property owners:	5%
Existing utility customers:	10%	Existing utility customers:	10%
New utility customers:	13%	New utility customers:	58%
Developers:	77%	Developers:	27%
Government:		Government:	
Other:		Other:	
Total:	100%	Total:	100%
Not sure:		Not sure:	

52. What utility customers ultimately bear the financial impact of dedications/exactions?

Low income residential:	14%
Middle income residential:	39%
High income residential:	18%
Small business:	5%
Large business/industrial:	5%
Institutions:	5%
Other:	14%
Total:	100%

53. Regarding the extent of capital recovery in dedications/exactions, how much weight was given to:

Cost-related issues:	74%
Policy-related issues:	26%
	100%

54. What are the difficulties in obtaining funds from dedications/exactions? (check one or more)

No unusual difficulties:	15	Too much public participation:	
Undue influence of special interests:		Too little public participation:	1
Internal requirements too cumbersome:	1	Poor public perceptions/understanding:	
External requirements to cumbersome:	1	Other:	3

55. What changes are needed to make dedications/exactions a more effective funding source?

_____

_____

_____

GRANTS OR SUBSIDIZED LOW-INTEREST LOANS

(skip over this page if this financing tool is not relevant to your utility)

56. How effective are grants or low-interest loans in meeting your capital needs? (check one)

Should support more capital:	5
Meets expectations:	9
Should support less capital:	
Does not support utility capital:	2

57. Are grants or low-interest loans supporting less than the full capital cost of service?

No: 7

Yes: 9 — If yes, about what % of the capital cost of service is addressed? 45%

1 no response

58. Are there discrete types of capital funded from grants or low-interest loans? (check one)

No: 13

Yes: 2 — If yes, what types of capital? _____

59. What entity(ies) bear the financial impact of grants/low-interest loans? (please estimate percents)

Initially		*Ultimately*	
Taxpayers/Property owners:	9%	Taxpayers/Property owners:	22%
Existing utility customer:	49%	Existing utility customer:	50%
New utility customers:	10%	New utility customers:	12%
Developers:	4%	Developers:	1%
Government:	28%	Government:	15%
Other:		Other:	
Total:	100%	Total:	100%

60. Are available financial assistance programs effective in mitigating the cost of unfunded mandates?

Effective:	2
Not effective:	10
Not sure:	5

61. Can your utility meet its prospective capital needs without outside financial assistance?

	grants		low-interest loans
Yes:	10	Yes:	6
No:	5	No:	10

62. Centralized financial assistance programs can provided savings in lowered administrative costs and leveraging of financial markets? (check one)

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
	3	9	3	2

63. What are the difficulties in obtaining capital from grants or low interest loans? (check one or more)

Not available:	5	Too much public participation:	2
No unusual difficulties:	2	Too little public participation:	
Undue influence of special interests:	1	Poor public perceptions/understanding:	3
Internal requirements too cumbersome:	5	Other:	2
External requirements to cumbersome:	8		

64. What changes or improvements are needed to make this a more effective funding source?

_____

_____

_____

SURVEY OF WATER AND WASTEWATER INFRASTRUCTURE FINANCING METHODS

Compiled Responses For Other States

GENERAL INFORMATION

Your Name: _____
Title: _____
Organization: _____
Mailing Address: _____
City: _____
State: _____
Telephone: _____
FAX: _____
e-mail address: _____

UTILITY DESCRIPTION

1. Type of Services *(check one or more)*:

	Water	Wastewater	Stormwater
Wholesale	2		
Retail	4	4	

2. Type of Utility: *(check one)*

Large Regional Authority: 1
Municipality: 4
Special District: _____
Non-profit Co-op: _____
For-profit (investor-owned) Corp: 1

3. Please provide the following service area information: Various

County(ies) location: _____
Approx. size (sq.mi.): _____
Service area population: _____
Percent developed: _____ %
Percent served: _____ %
Number of connections: _____
Connections 3-yr ann. growth rate: _____ %
Avg. age of the system: _____ years

4. What are your estimated water and wastewater capital funding needs over the next five years? (Totals)

Growth related: $56 million
Rehabilitation related: $235
Safe Drinking Water Act related: $58
Other regulatory compliance: $267
Other: $18
Total: $634

describe other: _____

5. What do you consider the greatest impediment to adequate capital funding of your utility?

_____
_____
_____
_____

COMPARISON OF MAJOR CAPITAL FUNDING TOOLS

6. What *percentage* of your utility capital funding or capital provision comes from these sources?

	M	D	C
Tax revenues:	0 %	53 %	0 %
Rate revenues:	50 %	40 %	94 %
Impact (capital recovery) fees:	14 %	0 %	0 %
Developer Contributions/Dedications:	4 %	0 %	3 %
Availability of Service (Stand-by) fees:	0 %	0 %	2 %

	M	D	C
Grants/Subsidized Low-interest Loans :	3 %	0 %	0 %
Utility surcharges:	0 %	0 %	0 %
Tap (meter placement) fees:	0 %	0 %	1 %
Other:	29 %	7 %	0 %
Total:	100 %	100 %	100 %

M - Municipality; D - District; C - Corporation

7. If you have other innovative methods of raising significant capital funds, please describe:

_____

_____

_____

(check one box for each funding tool)

8. Funds/capital from this source are available when I need them.

	Yes	No	Not Applicable
Tax revenues	1	2	3
Rate revenues	6	0	0
Impact (capital recovery) fees	3	2	1
Developer contributions/dedications	3	1	2
Stand-by (availability of service) fees	0	1	5
Grants or subsidized low-interest loans	2	1	3
Other, please specify _____	1	0	5

9. This is a relatively stable source of revenue.

	Yes	No	Not Applicable
Tax revenues	1	1	4
Rate revenues	6	0	0
Impact (capital recovery) fees	4	1	1
Developer contributions/dedications	3	0	3
Stand-by (availability of service) fees	0	1	5
Grants or subsidized low-interest loans	0	2	4
Other, please specify _____	1	0	5

10. Funds from this source can be used for a variety of purposes.

	Yes	No	Not Applicable
Tax revenues	1	1	4
Rate revenues	6	0	0
Impact (capital recovery) fees	2	3	1
Developer contributions/dedications	0	3	3
Stand-by (availability of service) fees	0	1	5
Grants or subsidized low-interest loans	0	2	4
Other, please specify _____	0	1	5

11. Customers get a service benefit comparable to what they pay.

	Yes	No	Not Applicable
Tax revenues	1	0	5
Rate revenues	6	0	0
Impact (capital recovery) fees	4	0	2
Developer contributions/dedications	2	0	4
Stand-by (availability of service) fees	0	0	6
Grants or subsidized low-interest loans	0	0	6
Other, please specify _____	1	0	5

12. This levy is deductible on Federal/state personal income taxes.

	Yes	No	Not Applicable
Tax revenues	1	1	4
Rate revenues	1	4	1
Impact (capital recovery) fees	0	3	3
Developer contributions/dedications	0	2	4
Stand-by (availability of service) fees	0	2	4
Grants or subsidized low-interest loans	0	1	5
Other, please specify _____	0	2	4

13. This levy has had a noticeable effect on growth patterns.

	Yes	No	Not Applicable
Tax revenues	0	3	3
Rate revenues	0	5	1
Impact (capital recovery) fees	0	4	2
Developer contributions/dedications	0	3	3
Stand-by (availability of service) fees	0	2	4
Grants or subsidized low-interest loans	0	3	3
Other, please specify _____	0	2	4

14. The process of obtaining funds from this source is difficult.

	Yes	No	Not Applicable
Tax revenues	0	1	5
Rate revenues	0	5	1
Impact (capital recovery) fees	1	2	3
Developer contributions/dedications	0	3	3
Stand-by (availability of service) fees	0	0	6
Grants or subsidized low-interest loans	1	0	5
Other, please specify _____	1	0	5

15. Funds from this source are administratively cost-effective.

	Yes	No	Not Applicable
Tax revenues	1	0	5
Rate revenues	5	0	1
Impact (capital recovery) fees	3	0	3
Developer contributions/dedications	3	0	3
Stand-by (availability of service) fees	0	0	6
Grants or subsidized low-interest loans	0	1	5
Other, please specify _____	1	0	5

TAX REVENUE

(skip over this page if this financing tool is not relevant to your utility)

16. How effective are tax revenues in meeting your capital needs? (check one)

Should support more utility capital: _____
Meets expectations: 1
Should support less utility capital: _____
Does not support utility capital: _____

17. Are tax revenues recovering the full capital cost of service? (check one)

No: 0 — If no, what % of the maximum amount was levied? _____
Yes: 1 — If no, what was the motivation for charging less? _____

18. Are there discrete types of capital funded from tax revenues? (check one)

No: _____
Yes: _____ — If yes, what types of capital? _____
no response

19. What entity(ies) bear the financial impact of utility-related taxes? (please estimate percents)

Initially		*Ultimately*	
Taxpayers/Property owners:	100%	Taxpayers/Property owners:	100%
Existing utility customers:		Existing utility customers:	
New utility customers:		New utility customers:	
Developers:		Developers:	
Government:		Government:	
Other:		Other:	
Total:	100%	Total:	100%
Not sure:		Not sure:	

20. What utility customers ultimately bear the financial impact of utility taxes?

Low income residential: _____
Middle income residential: _____
High income residential: _____
Small business: _____
Large business/industrial: _____
Institutions: _____
Other: _____
Total:

no response

21. Regarding the extent of capital recovery in the utility-related tax rate, how much weight was given to:

Cost-related issues: 50%
Policy-related issues: 50%
100%

22. What are the difficulties in obtaining funds from tax revenues? (check one or more)

No unusual difficulties: 1
Undue influence of special interests: _____
Internal requirements too cumbersome: _____
External requirements to cumbersome: _____
Too much public participation: _____
Too little public participation: _____
Poor public perceptions/understanding: _____
Other: _____

23. What changes or improvements are needed to make tax revenues a more effective funding source?

_____
_____
_____

UTILITY RATE REVENUE

(skip over this page if this financing tool is not relevant to your utility)

24. How effective are utility rate revenues in meeting your capital needs? (check one)

Should support more utility capital:	2
Meets expectations:	4
Should support less utility capital:	
Does not support utility capital:	

25. Are utility rates recovering the full capital cost of service? (check one)

No: 0 — If no, what % of the maximum amount was levied? _____

Yes: 5 — If no, what was the motivation for charging less? _____

1 no response

26. Are there discrete types of capital funded from utility rates? (check one)

No: 5

Yes: 0 — If yes, what types of capital? _____

1 no response

27. What entity(ies) bear the financial impact of utility rates? (please estimate percents)

Initially		*Ultimately*	
Taxpayers/Property owners:	15%	Taxpayers/Property owners:	18%
Existing utility customers:	74%	Existing utility customers:	70%
New utility customers:	10%	New utility customers:	12%
Developers:		Developers:	
Government:	1%	Government:	
Other:		Other:	
Total:	100%	Total:	100%
Not sure:		Not sure:	

28. What utility customers ultimately bear the financial impact of utility rates?

Low income residential:	17%
Middle income residential:	17%
High income residential:	17%
Small business:	19%
Large business/industrial:	17%
Institutions:	12%
Other:	1%
Total:	100%

29. Regarding the extent of capital recovery in the utility rates, how much weight was given to:

Cost-related issues:	81%
Policy-related issues:	19%

30. What are the difficulties in obtaining funds from utility rates? (check one or more)

No unusual difficulties:	2	Too much public participation:	1
Undue influence of special interests:		Too little public participation:	1
Internal requirements too cumbersome:		Poor public perceptions/understanding:	3
External requirements to cumbersome:		Other:	

31. What changes or improvements are needed to make this a more effective funding source?

_____

_____

_____

IMPACT (CAPITAL RECOVERY) FEES

(skip over this page if this financing tool is not relevant to your utility)

32. How effective are impact fee revenues in meeting your capital needs? (check one)

Should support more utility capital:	1
Meets expectations:	3
Should support less utility capital:	
Does not support utility capital:	

33. Are impact fees recovering the full capital cost of service? (check one)

No: 2 — If no, what % of the maximum amount was levied? _____

Yes: 2 — If no, what was the motivation for charging less? _____

34. Are there discrete types of capital funded from impact fees? (check one)

No: 2

Yes: 1 — If yes, what types of capital? _____

1 no response

35. What entity(ies) bear the financial impact of impact fees? (please estimate percents)

Initially		*Ultimately*	
Taxpayers/Property owners:		Taxpayers/Property owners:	
Existing utility customers:		Existing utility customers:	
New utility customers:	56%	New utility customers:	62%
Developers:	44%	Developers:	38%
Government:		Government:	
Other:		Other:	
Total:	100%	Total:	100%
Not sure:		Not sure:	

36. What utility customers ultimately bear the financial impact of impact fees?

Low income residential:	21%
Middle income residential:	23%
High income residential:	23%
Small business:	12%
Large business/industrial:	11%
Institutions:	8%
Other:	2%
Total:	100%

37. Regarding the extent of capital recovery in impact fees, how much weight was given to:

Cost-related issues:	75%
Policy-related issues:	25%
	100%

38. What are the difficulties in obtaining funds from impact fees? (check one or more)

No unusual difficulties:		Too much public participation:	
Undue influence of special interests:	1	Too little public participation:	
Internal requirements too cumbersome:		Poor public perceptions/understanding:	1
External requirements to cumbersome:		Other:	

39. What changes or improvements are needed to make impact fees a more effective funding source?

_____

_____

_____

AVAILABILITY OF SERVICE (STAND-BY) FEES

(skip over this page if this financing tool is not relevant to your utility)

(N/A FOR THOSE OTHER STATES THAT RESPONDED)

40. How effective are stand-by fee revenues in meeting your capital needs? (check one)

Should support more utility capital: _____
Meets expectations: _____
Should support less utility capital: _____
Does not support utility capital: _____

41. Are stand-by fees recovering the full capital cost of service? (check one)

No: _____ If no, what % of the maximum amount was levied? _____
Yes: _____ If no, what was the motivation for charging less? _____

42. Are there discrete types of capital funded from stand-by fees? (check one)

No: _____
Yes: _____ If yes, what types of capital? _____

43. What entity(ies) bear the financial impact of stand-by fees? (please estimate percents)

Initially		*Ultimately*	
Taxpayers/Property owners:	_____	Taxpayers/Property owners:	_____
Existing utility customers:	_____	Existing utility customers:	_____
New utility customers:	_____	New utility customers:	_____
Developers:	_____	Developers:	_____
Government:	_____	Government:	_____
Other:	_____	Other:	_____
Total:	100%	Total:	100%
Not sure:	_____	Not sure:	_____

44. What utility customers ultimately bear the financial impact of stand-by fees?

Low income residential: _____
Middle income residential: _____
High income residential: _____
Small business: _____
Large business/industrial: _____
Institutions: _____
Other: _____
Total: 100%

45. Regarding the extent of capi

Cost-related issues: _____
Policy-related issues: _____
100%

46. What are the difficulties in obtaining funds from stand-by fees? (check one or more)

No unusual difficulties: _____
Undue influence of special interests: _____
Internal requirements too cumbersome: _____
External requirements to cumbersome: _____
Too much public participation: _____
Too little public participation: _____
Poor public perceptions/understanding: _____
Other: _____

47. What changes or improvements are needed to make stand-by fees a more effective funding source?

_____

_____

_____

DEVELOPER DEDICATIONS/EXACTIONS

(skip over this page if this financing tool is not relevant to your utility)

48. How effective are developer dedications/exactions in meeting your capital needs? (check one)

Should support more utility capital: _____
Meets expectations: 2
Should support less utility capital: _____
Does not support utility capital: _____

49. Are dedications/exactions recovering the full capital cost of service? (check one)

No: _____ If no, what % of the maximum amount was levied? no response
Yes: 2 If no, what was the motivation for charging less? _____

50. Are there discrete types of capital funded from dedications/exactions? (check one)

No: _____
Yes: 2 If yes, what types of capital? _____

51. What entity(ies) bear the financial impact of dedications/exactions? (please estimate percents)

Initially		*Ultimately*	
Taxpayers/Property owners:		Taxpayers/Property owners:	
Existing utility customers:	50%	Existing utility customers:	50%
New utility customers:		New utility customers:	50%
Developers:	50%	Developers:	
Government:		Government:	
Other:		Other:	
Total:	100%	Total:	100%
Not sure:		Not sure:	

52. What utility customers ultimately bear the financial impact of dedications/exactions?

Low income residential:	17%
Middle income residential:	17%
High income residential:	17%
Small business:	16%
Large business/industrial:	16%
Institutions:	17%
Other:	
Total:	100%

53. Regarding the extent of capital recovery in dedications/exactions, how much weight was given to:

Cost-related issues:	100%
Policy-related issues:	
	100%

54. What are the difficulties in obtaining funds from dedications/exactions? (check one or more)

No unusual difficulties: 1
Undue influence of special interests: _____
Internal requirements too cumbersome: _____
External requirements to cumbersome: _____
Too much public participation: _____
Too little public participation: _____
Poor public perceptions/understanding: _____
Other: _____

55. What changes are needed to make dedications/exactions a more effective funding source?

_____
_____
_____

GRANTS OR SUBSIDIZED LOW-INTEREST LOANS

(skip over this page if this financing tool is not relevant to your utility)

56. How effective are grants or low-interest loans in meeting your capital needs? (check one)

Should support more capital: _____
Meets expectations: 1
Should support less capital: _____
Does not support utility capital: _____

57. Are grants or low-interest loans supporting less than the full capital cost of service?

No: _____
Yes: 1 If yes, about what % of the capital cost of service is addressed? 50%

58. Are there discrete types of capital funded from grants or low-interest loans? (check one)

No: 1
Yes: _____ If yes, what types of capital? _____

59. What entity(ies) bear the financial impact of grants/low-interest loans? (please estimate percents)

Initially		***Ultimately***	
Taxpayers/Property owners:		Taxpayers/Property owners:	
Existing utility customer:	100%	Existing utility customer:	100%
New utility customers:		New utility customers:	
Developers:		Developers:	
Government:		Government:	
Other:		Other:	
Total:	100%	Total:	100%

60. Are available financial assistance programs effective in mitigating the cost of unfunded mandates?

Effective: _____
Not effective: 1
Not sure: _____

61. Can your utility meet its prospective capital needs without outside financial assistance?

grants		low-interest loans	
Yes:	1	Yes:	1
No:		No:	

62. Centralized financial assistance programs can provided savings in lowered administrative costs and leveraging of financial markets? (check one)

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
			1	

63. What are the difficulties in obtaining capital from grants or low interest loans? (check one or more)

Not available: _____
No unusual difficulties: _____
Undue influence of special interests: _____
Internal requirements too cumbersome: _____
External requirements to cumbersome: 1
Too much public participation: _____
Too little public participation: _____
Poor public perceptions/understanding: _____
Other: _____

64. What changes or improvements are needed to make this a more effective funding source?

_____

_____

_____

APPENDIX B

NARRATIVE RESPONSES TO OPEN-ENDED SURVEY QUESTIONS

Narrative Responses to Open Ended Survey Questions

Difficulties in acquiring adequate capital financing:

- the public's ability to afford rising sewer/stormwater rates is the biggest constraint to funding more capital; mandated CSO abatement constrains ability to fund rehab projects
- the high cost passed on to the customer
- availability, timing and the cost of federal funding programs, interest rate for state funding, availability for state funding
- lack of grant funds in order to keep rates affordable
- limited tax base, limited use of surface water by largest wholesale customer, rising cost of water from supplier
- inability to borrow at affordable rates, or even to borrow at all
- one problem is being able to borrow funds at a low interest rate, long payback schedule, so that it will not have a huge impact on rates, which need to remain competitive with other systems
- attempting to keep down costs while still complying with all legislative mandates and regulations
- low economic level of district customers
- board's reluctance to incur debt
- no maintenance tax
- ability to raise rates
- not enough money is generated with the current rates for water & wastewater
- current utility rates generate adequate funding to support water & sewer capital funding; greatest impediment is the General Fund, which siphons off of utility funds
- the utility's current high-level of revenue , bond debt, and high rates
- adequate rate increases
- committing of current funds and future revenue to the extent that unforeseen projects and emergencies may not be able to be funded
- competing demands to expand infrastructure, while maintaining low utility rates
- we are required to receive voter approval to raise water/wastewater rates
- unplanned major projects; funding environmental mandates

Innovative methods of raising capital funds:

- manage 2 Water Supply Corporations
- bank line of credit at a low interest rate/collateralized loans/TWDB-SRF
- interdepartmental loans & grants
- currently, our Electric Utility partially subsidizes our water & wastewater systems, but we are involved in establishing rates that will reduce this transfer
- we have not bonded for over 40 years, but will need to soon in order to finance various projects
- short term debt through commercial paper program; long term debt through revenue bonds; both ultimately repaid through rate revenues

Improvements to make utility rates a more effective funding source:

- none; very effective, but somewhat painful
- ease in applying for state loans
- communication with customers
- 99% collection rate
- greater understanding of rate structure by customers
- increase rates per tariff
- education of city council and public
- minimization of interest expense
- improved long range planning

Improvements to make impact fees a more effective funding source:

- review yearly - determine cost based on equity or existing service alone. equity allows new service demands to pay their own way into the system
- the directors of the corporation are reluctant to increase the impact fee to fully recover costs because of their difficulty imposed on first-time home buyers
- public education
- more than just covering fuel cost; need to recover opportunity cost
- redeveloping our CIP plan and enabling us to use the funds for a wide variety of projects
- infrastructure costs for additional water resources should be added to impact fees

Improvements to make developer dedications/exactions a more effective funding source:

- directors are reluctant to charge full impact of development to developers because the impact is ultimately on those who buy property
- require developers to pay reinforcement mains

Improvements to make grants/loans a more effective funding source:

- need more grant funds made available to build and protect rural infrastructure
- TWDB - good job with SRF; need more flexibility for water projects
- None; hopefully we will be debt free and self-sustaining by 2008
- stream line process; put together a set time line of approval
- require training of what is available
- too many rules and reports

APPENDIX C

PERSONAL COMMUNICATIONS CONTACTS FROM OTHER STATES

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TABLE 4-1
COMPARISON OF EFFECTIVENESS, IMPACT, AND PROCESS ISSUES AMONG ALTERNATIVE FUNDING METHODS IN TEXAS

			Effectiveness			Impact			Process	
Type of Funding Mechanism	Typical Means of Levy	Legal Authority to Levy Charge	Applicability	Significance of Funding	Timing Availability and Stability of Revenue	Who Pays	Income Effect	Economic Effect	Implementation and Administration	Cost-Benefit
Tax Rates	Annual levy and collection on the assessed valuation or real property and contents value.	Most special water districts; Municipalities, but not commonly used.	Broad use of funds for operating and/or capital expenses; typically only used by water districts.	Can provide significant capital and operating funds for water-related districts with taxing authority.	Good availability; stable revenue stream.	Property owners.	Generally proportionate effect upon income groups as property values increase with income.	No significant deterrent to growth and development unless levy is significantly high.	No significant problems, except maintaining appraised values and public acceptance of tax increases	Benefits exceed costs of administration.
Utility Rates	Monthly charge for utility service based on a minimum charge plus a volumetric charge associated with quantity of use.	All utilities.	Broad use of funds for operating and/or capital expenses; used by nearly all water and wastewater utilities.	Primary means of capital and operations funding for most utilities.	Good availability; stable revenue stream.	Ratepayers.	Generally proportionate effect on income groups when lifeline rates are included in rate design.	No significant deterrent to growth and development unless levy is significantly high.	No significant problems, except for public understanding and acceptance of utility rate increases.	Benefits exceed costs of administration.
Utility Surcharges	Monthly charge for special service based on some incremental utility cost that can be discretely charged to a certain class of users.	All utilities.	Possibly more narrow use of funds for special operating or capital expenses; used by a limited number of utilities, mostly municipal.	Usually small contribution to overall utility funding, but can help insulate general ratepayers from unusual service provision to others.	Generally good availability/revenue stability given ability to collect through service provision.	Ratepayers in designated special classes.	Generally regressive effect upon low income groups given its typical fixed charge per connection.	No significant deterrent to growth and development unless levy is significantly high.	No significant problems, except for public understanding and acceptance of targeted levy to certain user groups.	Benefits exceed costs of administration.
Impact Fees	A one-time charge targeted at new development and usually levied at time of utility connection or building occupancy.	Special water districts; Municipalities	Narrow use for capital funding of projects in designated Capital Improvements Program; used by some municipalities and water districts.	With growth and accumulation of funds, can provide noticeable capital funding to help offset growth-related rate increases.	Dependent upon presence of growth and accumulation of funds.	New development.	Generally regressive effect on low income groups given its typical fixed charge per connection. Its effects on minimizing rate increases may be of some benefit to low income groups.	No significant deterrent to growth and development unless levy is significantly high.	Concerns expressed by cities about cumbersome process and administrative requirements. The levy of impact fees are not generally supported by the building industry.	With sufficent conditions of growth, benefits exceed costs of administration. In slow or no growth situations, fee development and administration may not be cost-effective.
Stand-by Fees	Monthly charge for undeveloped properties that have utility service available.	Special water districts; other utilities serving designated economically distressed areas.	More narrow use of funds for capital (sometimes operating) expenses; use currently limited, primarily to specially authorized areas.	Usually small contribution to overall utility funding, but can help insulate general ratepayers from unusual service provision to others.	Not as good availability and revenue stability, commonly due to no service provision affecting ability to collect.	Undeveloped property with utility service available.	Generally regressive effect on low income groups given its typical fixed cost passed through in lot price. Its effects on minimizing rate increases may be of some benefit to low income groups.	No significant deterrent to growth and development.	Concerns expressed by utility managers about additional efforts associated with collections.	Benefits exceed costs of administration, but concerns exist over costs of administration and collections.
Dedications & Exactions	Developer-funded provision of certain utility infrastructure that provides narrow benefit to the developer's property.	All utilities.	Narrow use of private funds for capital infrastructure specific to items for certain development(s); used by nearly all utilities.	Usually moderate contribution to overall funding, but can help insulate current ratepayers from oversizing for future users.	Generally good availability when targeted service is needed, but may pose problems for utility in unexpected funding of oversizing.	Lot buyers in development receiving service.	Same as above	No significant deterrent to growth and development.	No significant problems as long as exactions being required are proportionate to utility service received by the development.	Benefits exceed costs of administration, but concerns exist over costs of administration and collections.
Loans/Grants	Periodic use of no-cost or low-cost subsidized governmental financial assistance programs	All utilities may be able to qualify for some type of governmental assistance, but eligibility may vary by program.	Narrow use of public funds for capital items specific to the financial application; can be used by nearly all utilities.	Can provide significant low cost capital funds to eligible entities.	Generally good availability for certain programs, but must meet program reqs. Some programs may have narrow funding or eligibility limits.	Taxpayers typically supply funds used to provide grant or loan subsidies.	Generally proportionate effect upon lower income groups when sales taxes paid increase with income.	Can foster growth in low income or small utilities areas that may be deterred by inadequate utility service.	Concerns expressed by utility managers about additional requirements not associated with open-market financing.	Benefits exceed costs of administration, but concerns exist over cost of additional requirements.