

Wastewater Infrastructure Funding Mechanisms

For the
13-County
H-GAC
Region



Houston-Galveston
Area Council

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Cover Picture: Final Effluent, City of Geneva, 2007

Table of Contents

- Introduction1

- Wastewater Infrastructure in the Region2

- The Potential for Consolidation3

- Factors in Consolidation Decisions4
 - Benefits5
 - Feasibility Factors.....6

- Available Funding Mechanisms9
 - Direct Funding.....10
 - Loans11
 - Grants.....12
 - Ad Hoc Sources13
 - Districts14

- Other Resources14
 - Program Links14
 - Additional Resources.....15

Introduction

Wastewater infrastructure is an essential component of development, and often is overlooked in the public eye. It rivals transportation and drinking water infrastructure in its scope, extent and fiscal demands. Whether an area is served by a public or private wastewater utility, there are a host of concerns that factor into local decisions regarding the development of infrastructure. While these considerations may also include political and logistical issues, funding mechanisms are a key limiting factor for wastewater development. The nature of the existing funding mechanisms in our Region, and the way in which dischargers have utilized them, has brought about a distinctive style of development, as well as corresponding issues.

A rapidly growing population and large amount of available land have allowed the Houston-Galveston area to grow expansively over the last several decades. Accompanying that growth is the ever-present challenge to put into place the wastewater infrastructure to serve it. The Houston area has been characterized by a diffuse network of numerous, often non-adjacent dischargers. Concern has arisen over the loss of efficiency represented by a large number of predominantly small treatment facilities, as well as the potential impact on local waterways. Consolidation of treatment facilities (consolidation), especially among small, adjoining dischargers, is a potentially beneficial option for the Region as a whole, and may bear financial and logistical benefits for the individual dischargers as well.

As regulatory restrictions (TMDLs, permit limitations, etc) on discharges to local waterways tighten, and infill development reduces distances between service areas, many communities are considering the potential to pursue consolidation. While there are appreciable benefits to be gained through consolidation of wastewater treatment facilities, for both local entities and the Region as a whole, there are also significant hurdles for dischargers who intend to pursue this course. Availability of funding and related resources can be a pivotal aspect in a discharger's consolidation decision. Before a discharger can make an informed decision on consolidation they should consider the potential costs, benefits, and political or logistical challenges involved.

This document is intended to provide an analysis of the potential for wastewater infrastructure coordination and consolidation in the Houston-Galveston area, a consideration of the factors that affect dischargers' consolidation decisions, and as a resource for available funding mechanisms, strategies and other resources available to dischargers looking to consolidate.

Wastewater Infrastructure in the Region

A burgeoning economy, explosive population growth, and a general lack of geographical constraints on outward expansion have alternately benefited and challenged the 13-County Houston-Galveston Region (Region). This dual nature is especially apparent in the greater Houston Metropolitan area, where the benefits of relatively low land costs and high economic prosperity have created the counterpart disadvantage of development characterized by rapid, uncoordinated growth. With growth comes an inevitable need for utility services, and the effects of this growth phenomenon have had a pronounced impact on the development of our wastewater infrastructure. Beginning in the 1970's and 80's, the rapid expansion of the Region's population lead to a vast proliferation of wastewater treatment plants and related infrastructure, primarily centered on the Houston Metropolitan Area and surrounding counties. An abundance of undeveloped land, coupled with the ability of developers to use funding mechanisms like Municipal Utility Districts (MUDs), helped enable "leapfrog" growth in which non-adjacent areas, expanding outwards, were developed at the same time with little coordination. For example, unincorporated Harris County saw the creation of over 400 separate political subdivisions (e.g., municipal utility districts, water conservation and improvement districts, and fresh water supply districts; most with their own individual water well(s) and wastewater treatment plants) during this time. (Figure 1)

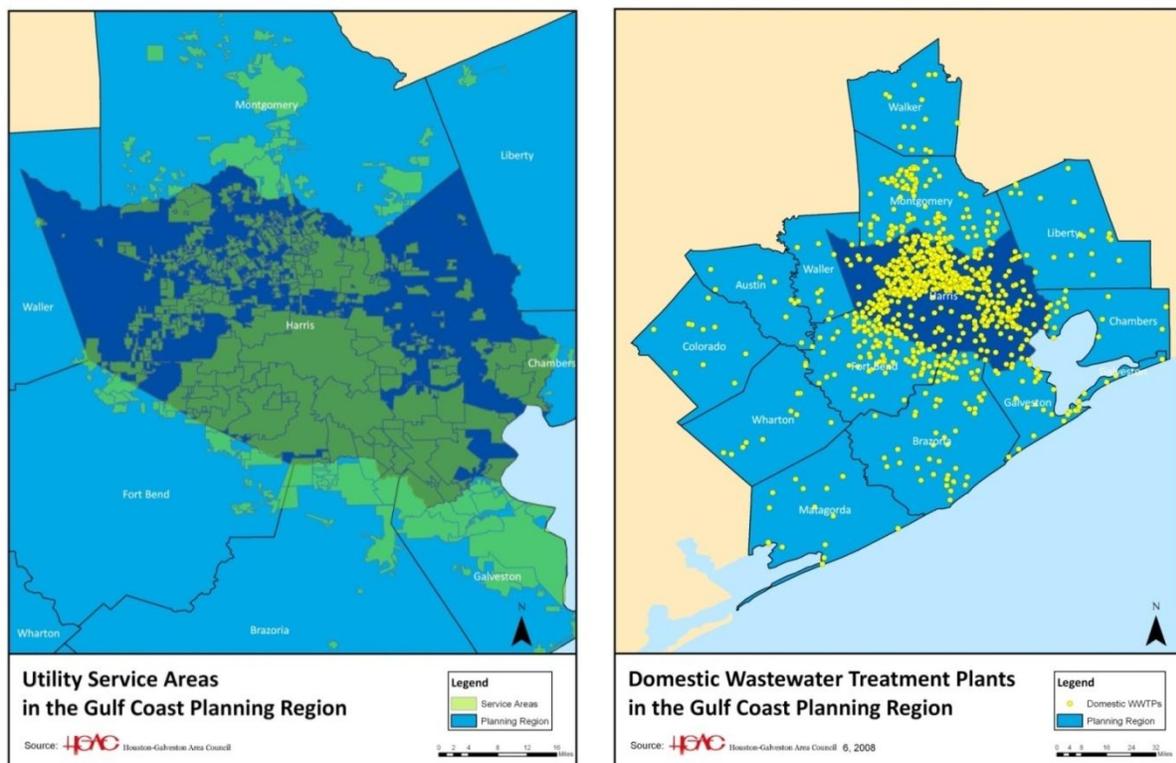


Figure 1: Utility Service Areas and Domestic Wastewater Treatment Plant Outfalls, 2008.

Absent a strict system of regional coordination, this growth has spurred the rapid development of a distributed, patchwork mosaic of primarily small, single-entity plants rather than larger, regional facilities. The reliance on the MUD model to finance utility infrastructure has been a primary driver of this developmental pattern, particularly in northern areas of Harris, Fort Bend and Montgomery Counties.

The end result of this expansive growth pattern is a set of unintended consequences that serve as the primary challenges that currently face the Region's wastewater infrastructure: a disproportionately large number of plants, a reliance on smaller, single-entity plants, and a widespread and diffuse infrastructure network. These consequences impact the efficiency of the Region's wastewater treatment capacity and represent a potentially greater impact to local waterways that are already facing water quality problems (e.g., impairment for bacteria based on the state's contact recreation standard).

While the area's current wastewater challenges are daunting on their own, projections indicate the Region's population will grow by another 3.5-4 million people before 2035. This additional population will exacerbate the scale and costs of the existing situation. While recent efforts by Harris County and the Harris County Flood Control District to promote the consolidation of wastewater infrastructure in their jurisdiction are a potential example for an equivalent approach for the Region as a whole, the development of infrastructure continues to be dominated by small, independent dischargers.

The Potential for Consolidation

In the face of increasing regulatory controls on wastewater permits via TMDLs, new bacteria testing requirements and limits, and other programs, there is increased incentive for smaller dischargers to consider consolidation of operations with larger facilities. New facilities face greater challenges in obtaining permits to discharge to local waterways, the vast majority of which are already facing water quality issues and thus have less (or no) ability to receive new inputs. As infill in the core counties of the region increases, the potential costs of consolidation falls as the distance between facilities decreases. However, as density increases, available land and easement space also decreases, leaving a window of time in which a discharger can feasibly work toward cost-efficient consolidation.

The clusters of multiple small dischargers/MUDs in areas like northern and northwestern Harris County and northeastern Fort Bend County provide a wide range of consolidation opportunities. There are several established larger providers in the same area, and small distances between many of the small providers. Many consolidated facility operations already exist, but there is the potential to greatly expand that number given the large community of small MUDs and other single community treatment solutions in place in areas such as these. Especially among many of

the smaller MUDs, the treatment facilities put in place during the boom of the last few decades have begun to age. As capital improvement, maintenance and operations costs increase as the facilities age, there is greater financial incentive to abandon these single-community treatment solutions in favor of shared consolidated facilities.

While some areas of the Region rely on on-site sewage facilities (OSSFs, which include single private wastewater systems like septic tanks or aerobic systems) almost exclusively, others have a mix of these systems and sanitary sewer service (traditional sewer collection systems). Many of the areas, especially in Montgomery County and other northern areas in the Region, have OSSFs that are fairly new, and are located in areas where the soils are better suited to these systems. However, there are large swaths of communities in the center and coastal areas of the Region that have large percentages of malfunctioning, aged and/or ill-maintained OSSFs. These systems are potentially large contributors to bacterial contamination in waterways, and have resulted in instances like that which occurred in the community of Demi-John in Brazoria County. Demi-John is served solely by aging OSSFs with a malfunction rate of 79%. The degraded condition of the community's systems has led to significant local bacterial pollution to the point of generating a rare indigenous case of cholera. The resulting situation for Demi-John is a lawsuit from the County to address their failing systems. Given the community's small size and ability to generate revenue, the community adopted to consolidate treatment of its flows with a treatment facility in an adjacent community (requiring the installation of a collection system and wastewater transmission line.) While the Demi-John community is a worst case example, it is at the vanguard of a large number of communities in the area with high failure rates. Many communities in northern Harris County, outside the City of Houston's limits, have similar issues with OSSFs. As local dischargers and utility districts consider consolidation issues, there is pressure to include such communities in future treatment planning. However, like Demi-John, many of these communities are not sizeable enough, or do not have sufficient revenue streams, to implement individual treatment solutions.

Ideally, these mounting challenges and opportunities would prompt a condensing of groups of small, existing plants and a new Regional mindset for incentivizing coordinated treatment solutions for new growth (coordination). However, efforts to consolidate the existing infrastructure are hampered by the lack of a guiding regional authority or incentives and the increasing costs and logistical challenges of retrofitting a large, aging, and widespread infrastructure network. On the level of the individual discharger, funding, among other concerns, is a primary limiting factor in their wastewater treatment facility options. An examination of the benefits, and potential hurdles, of consolidation is a necessary first exercise for dischargers considering this option.

Factors in Consolidation Decisions

For many of the small dischargers in the Region, consolidation is an increasingly attractive option for financial, logistical and regulatory reasons. However, the benefits of consolidation often are only realized after appreciable hurdles have been overcome.

Benefits

In general, the consolidation of smaller plants into shared regional facilities reaps benefits in:

- **Economy of scale** –Some infrastructure and operations and maintenance costs are necessary for all plants, regardless of size. In smaller plants these costs are a greater portion of their overall cost per gallon treated. However, as plant/infrastructure size increases, the cost to treat additional volumes of wastewater does not increase proportionally. Treating additional volumes represent only an incremental cost increase, because the original infrastructure does not need to be duplicated, only upsized. Thus, the larger a facility, the greater the economy of scale (the economic benefit of doing things in bulk). The ability to buy equipment, chemicals, and other necessary components in greater bulk quantities increases these savings.
- **Efficiency** – as part of economies of scale, larger plants have greater opportunities for efficiency. The general financial efficiency benefit gained by consolidating treatment systems is enhanced by logistical efficiency benefits. Manning a large treatment system does not require twice the staffing of a facility half its size (assuming the smaller facility in comparison is manned). In emergency/disaster planning, a single large facility requires less backup power equipment, etc., than a series of small facilities. A single location is also more easily managed in the event of an emergency situation, compared to a widespread array of smaller facilities.
- **Capital improvements financing** – Larger facilities have a greater capacity to finance large infrastructure and equipment costs (capital improvement) and rehabilitation projects. As larger entities, they tend to have better bond ratings or access to better financing terms. Additionally, since less of their cost to treat each gallon of wastewater is based on set costs (infrastructure, etc), they have a greater portion of their available funds or operating reserve, and a larger operating reserve to begin with, to address necessary upgrades, etc. from a wider revenue base. At the same time, they have lower per capita costs than a smaller plant. Overall, consolidated facilities have a greater revenue to costs ratio, increasing their ability to fund projects.
- **Regulatory flexibility** – based on more advantageous revenue and funding sources, economies of scale, and decreased costs of installing new equipment (as opposed to installing multiple instances of new equipment at multiple small facilities), consolidated facilities are better able to adapt to shifting regulatory requirements. Their benefits leave them a greater amount of financial and logistical flexibility to adapt operations and equipment as necessary. Larger facilities also have the ability to have more specialized staff expertise.
- **Lesser Impact on Waterways** – while there is some evidence that larger facilities do not necessarily contribute less pollution than smaller facilities, there are also arguments to the contrary. All other things being equal, the benefits of a consolidated facility would seem to provide at least the potential to reduce water pollution from spills, overflows, or malfunctions. Larger facilities are usually manned facilities, decreasing response times to overflows. They often have more restrictive limitations and come under greater regulatory

scrutiny in general. Their financial resources are more amenable to affording more advanced treatment solutions and detection systems. Additionally, with a smaller number of plants to deal with, regulatory authorities can more carefully watch the remaining facilities.

While these benefits depend greatly on the specifics of the area, and the character of the existing and proposed consolidated plants, these potential benefits have been realized in other parts of Texas. In a discussion of the Dallas Fort Worth area, Dr. Richard Browning of the Trinity River Authority indicated that pursuit of regionalized treatment has “efficiently achieved advanced levels of treatment at the fewest number of plants. It has achieved economies of scale in facilities, expertise, and logistics. It has facilitated planning of service areas and treatment improvements. It has also made the work of the regulatory agencies more efficient by enabling them to deal with fewer entities and facilities.”

Without a regulatory mandate, consolidation in this Region relies on a series of choices made by individual dischargers. Whether consolidation is feasible/advantageous depends on a series of factors, the individual importance of which depends heavily on the unique circumstances of that discharger and their neighboring communities. The following are factors that should be considered, as applicable, by the individual dischargers.

Feasibility Factors

The following factors are all considerations for a consolidation decision, many relating to a fundamental comparison of the costs and benefits involved.

- **Distance** - One of the primary cost factors for consolidating facilities is the distance between their respective sewage collection systems. In general, the costs associated with the large pipes that transfer the sewage (transmission lines) are large drivers in the overall costs of a wastewater treatment plant cost. Therefore, greater distances means more transmission line, and higher costs. Consolidation works best between adjacent or nearby dischargers, as new transmission lines needed to transport the wastes are minimized. As distance increases, the relative economic advantages of consolidation decrease rapidly, especially when dischargers consider the short-term impact of funding the project. For smaller facilities with limited capital improvement budgets, long transmission lines are often relatively unfeasible options.
- **Available land/easements** - In dense urban areas, available land or easements may be limited or be too costly to acquire. Even in the suburban/exurban settings in which a majority of the Region’s small dischargers are located, inadequate planning can often leave small adjacent developments without easily obtainable parcels of land for expanding existing facilities or installing new ones. The cost and availability of land/easements are important considerations as they influence where plants are located, resulting transmission costs, and may exacerbate potential political concerns (i.e. whether a consolidated facility is located in one jurisdiction versus another). Depending on prevailing land values, the need to acquire

additional land can be a significant cost driver. Consolidation works best when there is available land/easements contained within, or directly adjacent to land already owned by one or more of the dischargers involved.

- **Development Timing** - Coordination of wastewater treatment among new developments often becomes problematic without a regulatory or other official mandate. Developments, especially single, isolated MUDs, do not necessarily coordinate their development with surrounding areas of land. Moreover, the growth of such dischargers in the Region has been characterized by “leap-frog” development style in which outward expansion and development tends to “leap” both spatially and chronologically beyond existing development. This has led to a wide array of development ages in adjoining parcels. It is generally less costly to build consolidated infrastructure prior to finishing development (or upsize accordingly) than it is to retrofit (especially with transmission lines). However, if neighboring developments are not being completed in synch, there is a disincentive to coordinate, as the “earlier” community may not be able to fund the costs of infrastructure to serve subsequent development in the area.
- **Growth Expectations** – Just as it may be difficult to coordinate shared facilities between adjacent communities developing at different times, consolidation of existing facilities in growing areas can also be a challenge. Dischargers tend to make wastewater treatment capacity decisions on the basis of expected growth, which drives when they will need new capacity. If growth in an area considering consolidation is not concurrent among all its dischargers, there may be differing need for capacity, and differing ability to consolidate.
- **Available capacity** – Some of the more successful examples of consolidation in the area have been between a set of users who had existing capacity. In the Demi-John example given before, the outcome of their issue was a decision to replace the OSSFs with a sanitary collection system and transmit their waste to a nearby treatment plant. The nearby plant already has existing capacity, so this consolidation decision did not need to consider the costs of increasing capacity, obtaining new land to do so, etc.
- **Regulatory considerations** – Before consolidation (or coordination of new facilities) can be considered, there are numerous regulatory considerations that must be made. In the Region, State and local (municipal, County, etc) requirements regarding effluent discharges or plant design and location can impact the ability to increase discharge to a given waterway, or potentially increase the cost of doing so through necessary treatment upgrades. If two communities have different water bodies to which they discharge, or are intending to discharge to a new water body, the ability of that water body to receive additional inputs (and potential pollutants) can greatly impact siting decisions, or potentially even render a new facility unfeasible (especially if the water body already has water quality issues). Entities must also consider whether local, regional or state developmental regulations or planning requirements may stand as hurdles to propose consolidation activities.
- **Flow character** – Consolidation works best between two dischargers who treat sewage that is fairly similar (i.e. their flows have a similar consistency or character). While the majority

of the dischargers in the region deal solely with domestic sewage, many medium size plants accept flows from industrial facilities. Depending on the content of those flows, the plants may be required to have an industrial pretreatment program, which would be a requirement of a shared plant, should that facility merge with one or more others. In general, differences in flow characteristics can impact how incoming sewage is treated, and potentially the design of treatment processes. Even comparing residential flows, a community with a stringent program to deal with fats, oils and greases (FOG) will likely have a different flow characteristic than a similar community without such a program.

- **Political control/citizen preference** – Regardless of financial and logistical issues, some communities may decide not to pursue consolidation for political concerns. In agreeing to consolidate with another jurisdiction, an entity gives up solitary control of their wastewater decisions. It requires a shared decision-making, at best, or being subject to another entity’s decisions at worst. This intertwines with citizen preference as an important consideration for local decision-makers as a consideration of potential consequences. The other side of political control is citizen preference. As with similar decisions like annexation, etc, citizen preference can be a powerful controlling factor in consolidation and feeds into the political aspect of the decisions. Consolidation is best served in situations in which existing, well-established relationships between the two dischargers exist and where the public is well-informed and supportive.
- **Financial ability** – Of all the potential cost-based considerations, funding for consolidation decisions can be the most pressing. The greatest financial consideration is also the most general. Regardless of source, is funding available at all? Are there loans/grants/capital reserves that the discharger can call upon? What mechanisms are open to them? Many of the dischargers considering consolidation in the Region will likely be small to medium size systems, without the financial resources and advantages of larger dischargers. Their ability to consider consolidation can depend on:
 - **Cost of Inaction** – The first consideration of a financial cost-benefit comparison is the cost of taking no action. As described above, mounting regulatory pressures and the need to maintain aging treatment infrastructure may make the cost of inaction greater than the cost of consolidation. This is the benchmark against which the costs and benefits of consolidation must be considered.
 - **Cash Flow** – Even if consolidation may make sense in the short term, it may prove unfeasible if there is insufficient short term capital or financing (cash flow) available to pay for initial infrastructure costs. This may also occur in developing MUDs whose communities have not finished building out. Lack of a steady revenue stream in the short term can make consolidation unfeasible.
 - **Cost of money** – Smaller entities, especially those with lower revenue streams, are less likely to obtain financing terms on loans that are as desirable as those available to larger entities with better credit/bond ratings. The “cost of money” (i.e. the portion of costs related to interest and administration costs on financed debt), can be a

significant portion of total project cost. Consolidation works best when the dischargers involved can minimize these costs through direct payment from available funds, low interest loans or other funding mechanisms that do not incur large interest rates.

- **Opportunity Costs** – Especially in times where funding is scarce and revenues may be down, the opportunity costs of consolidation should be considered. There may be more pressing concerns to the discharger that require priority and may depend on the same pool of funds.

Available Funding Mechanisms

The availability of affordable funding is a crucial component in a discharger’s consolidation decisions. Even assuming consolidation makes financial and logistical sense for a variety of reasons, the ability to finance the up-front and long term costs of consolidation is a key limiting factor in making an opportunity into a decision. There are a wide variety of funding mechanisms available to dischargers, each with their own unique benefits and disadvantages, and some more readily accessible than others. In reality, it is likely that dischargers will utilize more than one funding mechanism at the same time, so these options are not intended to be mutually exclusive. More to the point, utilizing multiple funding sources can allow flexibility and a reduction of risk in terms of sustaining long term funding. Regardless of what funding source(s) a discharger may utilize, consolidation between two or more entities should include an inter-local agreement or other contractual instrument that clearly spells out how each user’s portion of the consolidation costs are allocated, and the rights and duties thereof. Such an agreement is necessary as a foundation for the consolidation relationship and as security in funding decisions.

For the purpose of this document, it is broadly assumed that for a group of dischargers to consider consolidation, they are already existing entities (municipalities, counties, MUDs, other special districts, private utilities, etc.). However, because it is conceivable that a district could be created for the sole purpose of serving multiple other districts (e.g. MUDs or other special district) or providing service to existing areas in another jurisdiction (e.g., management district, freshwater supply district, etc) creation of a special district is included as a funding mechanism. It is important to note, however, that this mechanism should not be considered exclusive from the other mechanisms, which are tools such a district can employ, as the law allows.

The following is a list of funding mechanisms open to most dischargers in the Region. Each specific mechanism may have requirements that limit which types of entities have access to it, but these are generally broad programs that are in wide use throughout the Region. Dischargers interested in pursuing these funding mechanisms are encouraged to first identify any specific restrictions they may have by contacting their state and local regulatory authorities. For specific programs, the web address, as is available/applicable, is included in the Other Resources section. This list is not intended to be exhaustive, but rather, to reflect commonly utilized programs. Additional opportunities can be found in the resource compilation links in Other Resources.

Direct Funding

While it is not as common as generating revenue through sale of bonds or other debt instruments, some entities may decide to reduce financing costs by paying for infrastructure with fund from capital reserves or other accumulated revenue, or raising special revenue through a new source. In direct funding, a discharger should strongly consider the opportunity costs of their capital expenditure, and ensure they have maintained an adequate operating reserve for other contingencies. They should also do due diligence in investigating whether it would be more advantageous to sell debt (usually considered in a “net present cost” analysis perspective), assuming available funds would be invested in the mean time. The following are some examples of these funding mechanisms:

- **Direct payment from existing funds assets** – Depending on the discharger, there may be some capacity to fund consolidation (especially if the costs are minimal, as in an ideal consolidation arrangement) through available funds not linked to sold debt. These sources may include property (ad valorem) tax surpluses, utility fund surpluses, etc. A majority of water and wastewater infrastructure is paid for through utility rates. Often, debt is sold, and the utility rates allow for the long term repayment of the debt. However, if the debt is paid back (retired) before the infrastructure needs replacement (and rates are not reduced accordingly) then there may be a surplus of rate-generated revenue. Based on state and local requirements regarding rate-setting by districts, operational reserves, etc, and public pressure to reduce rates, it is not common for dischargers to have large pools of surplus funds available. However, if a discharger does have a surplus this form of direct payment is an option. One consideration to make in this case is what the opportunity costs are for using these funds for direct payment rather than for paying down other existing debts.
- **New revenue source** – As is allowable under state and local law in regard to the specific discharger (e.g. tariff stipulations for investor owned utilities), some entities may wish to add a surcharge to their utility rates, ad valorem taxes, or other revenue sources to pay directly for the cost of consolidation. This approach is potentially more effective as a repayment mechanism for sold debt than as a direct funding mechanism. However, it is a potentially feasible strategy if consolidation is a long term option, or if the costs are minimal enough as to make the revenue accumulation period relatively short. As a regional example, many communities started generating revenues through utility rate surcharges in advance of the implementation of Subsidence District regulations concerning the conversion to surface water. Many of the entities providing surface water were consolidated groups of smaller users (akin to a consolidation model), who shared costs among their participants through assessment of a standard pumpage fee or similar surcharge. The participants then passed along that cost to their customers as a surcharge to utility rates. Putting the charges in place prior to the required surface water infrastructure costs allowed the communities to fund elements of the mandate directly, and “buy down” the amount of debt they would need to acquire subsequently.

Loans

There are many potential loan sources available to dischargers (though they may be restricted in their choice thereof by applicable state regulation.). Loans/selling debt is a primary source of wastewater infrastructure financing, usually backed up by utility rate revenue, ad valorem tax revenue, or other similar steady revenue sources. Loans may come from the private market, through broad-based state programs, or through specific purpose loan programs. When utilizing loans, dischargers should consider their ability to obtain favorable interest rates under each loan source. A discharger with excellent credit/bond rating may be able to get equivalent or better loans than some state low rate loan programs on the open market, without reporting requirement. Conversely a small discharger without access to lower rates should pursue loan programs like the State Revolving Fund. The following are examples of these sources available in the Region on a continuing basis (for other temporary loan sources, refer to “Ad hoc sources” below):

- **Municipal bonds and equivalent sources** – A large portion of wastewater infrastructure is financed through bonds issued by a utility. There are multiple regulations and rules concerning this process, and similar non-municipal bond processes. Typically, debt generated through proceeds of a bonds auction provides initial revenue that is paid back by the steady accumulation of utility rates or similar periodic charge. The feasibility of this loan source varies greatly by the discharger’s bond rating, as determined by bond rating agencies. This option is typically best pursued for larger established dischargers like municipalities.
- **Private loans** – There are a multitude of private lenders available to provide financing outside of the traditional municipal bond market. There are typically numerous rules and restrictions to how some types of dischargers/utilities can use these loan sources. While relatively higher interest rates make these loan sources less attractive, they can often serve as bridge funding sources or for emergency supplemental funding for some types of dischargers.
- **Low Cost/Subsidized Loans** – There are several ongoing state programs in Texas that provide low interest/subsidized loans for water and wastewater development. Primary examples are:
 - **Clean Water State Revolving Fund** – Loans under this Texas Water Development Board-administered program are available to fund planning, designing and construction costs of wastewater programs. The repayment period can be as much as 20 years, and can be obtained as fixed or variable rate loans. Long-term fixed rates are at 0.95% below market with additional financing for the 1.85% loan origination charge. If the loan origination charge is funded out of other sources, the rate is set at 0.70% below market. Combined with applicable federal subsidies through the program, an additional 1.0% subsidy is available, which means interest rates may be up to 1.95% below market rate. Short-term variable fixed rates can be used during construction, but must be converted to long-term fixed rate loans 90 days after completion of construction. Generally, the variable rates are ~2% below fixed rates, or up to 2.95% below market rates. There are multiple tiers and reporting and administration requirements that

accompany this loan program. More information can be found at the link in the Resources section below.

- **TWDB State Loan Program Texas Water Development Fund II** – This loan Fund is funded purely through state dollars, and does not receive federal subsidies. It is a streamlined loan program, and has a separate economically distressed areas component. All political subdivisions of the state and water supply corporations are eligible for this grant project. More information can be found at the link in the Resources section below.
- **Economically Distressed Areas Program (EDAP)** – Administered through the TWDB, the EDAP program “provides grants, loans, or a combination grant/loan...for water and wastewater services in economically distressed areas...” where “present facilities are inadequate to meet residents' minimal needs.” The project must include “measures to prevent future substandard development.” The funds can be used for planning, acquisition of property/easements, design, and construction costs. There are several special requirements concerning county rules, state designations for certain projects, and other issues. More information can be found at the link in the Resources section below.
- **United States Department of Agriculture (USDA) Water and Environmental Program Loans** – The USDA Water and Environmental Programs (WEP) “provides loans (and grants and loan guarantees) for drinking water, sanitary sewer, solid waste and storm drainage facilities in rural areas and cities and towns of 10,000 or less. Public bodies, non-profit organizations and recognized Indian tribes may qualify for assistance.” These loans are restricted to rural communities, and have other stipulations attached. More information can be found at the link in the Resources section below.

Grants

Grants are a preferable funding source as they have no long term commitment, other than applicable local matching funds requirements. Therefore, considerations of opportunity costs are limited, and a greater degree of flexibility is achieved. However, grant programs often have a greater degree of prerequisites or stipulations for qualification. The following grant programs are ongoing, established programs. Additional grants may be found at some of the grant links in the Resources section below, or as ad hoc programs.

- **United States Department of Agriculture (USDA) Water and Environmental Program Loans** – As described previously, The USDA Water and Environmental Programs (WEP) “provides loans, grants and loan guarantees for drinking water, sanitary sewer, solid waste and storm drainage facilities in rural areas and cities and towns of 10,000 or less. Public bodies, non-profit organizations and recognized Indian tribes may qualify for assistance. WEP also makes grants to nonprofit organizations to provide technical assistance and training to assist rural communities with their water, wastewater, and solid waste problems.” These grants are restricted to rural communities, and have other stipulations attached. More information can be found at the link in the Resources section below.
- **United States Department of Commerce Economic Development Grants for Public Works and Development Facilities** – This grant program targets economically distressed communities for water and wastewater facilities, among other items. Matching

funds and local commitment is required. Eligibility is for political subdivisions of the US government, Indian tribes and private or public nonprofit organizations or associations representing a redevelopment area or a designated economic development center. Corporations and associations organized for profit are not eligible. More information can be found at the link in the Resources section below.

- **Community Development Block Grants** – CDBGs are made available through the United States Department of Housing and Urban Development (HUD) and via the state of Texas for a variety of purposes in promoting community development needs, primarily in underserved communities. Wastewater infrastructure as a public service is eligible for funding through some of its programs. Eligibility differs depending on program requirements, etc. More information can be found at the link in the Resources section below.
- **Economically Distressed Areas Program (EDAP)** – Administered through the TWDB, the EDAP program Provides grants, loans, or a combination grant/loan...for water and wastewater services in economically distressed areas...” where “present facilities are inadequate to meet residents’ minimal needs.” The project must include “measures to prevent future substandard development.” The funds can be used for planning, acquisition of property/easements, design, and construction costs. There is generally up to a 75% project cost limit to the grant, but certain hardship cases allow for 100% funding. There are several special requirements concerning county rules, state designations for certain projects, and other issues. More information can be found at the link in the Resources section below.

Ad hoc Sources

This category of funding sources is, by its very nature, not intended to be an exhaustive or predictive list, given that it refers specifically to temporary or specific/limited purpose funding sources. Ad hoc (meaning, “to this purpose”) sources are one-time, temporary or pilot projects that are not ongoing programs. They can include grants and loans, and may not be able to be counted on for long range planning and resource needs. However, if a discharger is opportunistic and able to match the timing of consolidation with that of an ad hoc opportunity, they can be a good supplement to other resources. Dischargers are strongly encouraged to use these sources solely in that supplemental role, as they are likely to be short-lived, while infrastructure funding is a long-term commitment. Some common ad hoc sources are:

- Private Foundations – there are many existing foundations who promote community development through grant projects. A general list of Houston area grant foundations, a foundation compilation website can be found in the Resources section below.
- Non-Profit organizations – While few non-profit organizations in the Region have the capital to directly fund wastewater infrastructure, there are several that have traditionally allied themselves as partners on a variety of water quality issues. These organizations can help with public outreach in promoting a consolidation decision/pursuit, and may be eligible for grants that a political subdivision is not. Even if the partner non-profit cannot fund any aspect of a project directly, they can often help defer costs through in-kind donations. This often counts as match for other loan and grant programs. A general list of Houston area environmental non-profits is appended to the Other Resources section below.

- Temporary Grant/Loan Programs - There are a myriad of temporary or special purpose state and federal loan/grant programs that occur as a result of specific situations. The current American Recovery and Re-investment Act (ARRA/Stimulus) program is a prime example, providing some funding opportunities for wastewater projects. While timing is everything on this type of opportunity, “shovel-ready” projects can benefit if they actively watch for similar programs. More information on the ARRA program is located in the Other Resources section below.

Districts

While not a direct funding source in the same manner as a loan or grant, special purpose districts are a popular method of providing a funding mechanism for areas not served by a city, county or other traditional wastewater service provider. The more frequently-used districts in the Region are the Municipal Utility Districts (MUDs), although other special use districts like Public Utility Districts (PUDs), Fresh Water Supply Districts (FWSDs), Water Control and Improvement Districts (WCIDs), Management Districts, Improvement Districts, etc, are also utilized to provide wastewater service. Districts are created by acts of legislature, often to serve primarily as public entity funding mechanisms to fund water and wastewater infrastructure in new development. For the purpose of consolidation, it is assumed the discharger is already in existence. However, because it is possible that consolidating entities might create a new entity to serve as service provider (such as developments in unincorporated county areas that had previously relied on private OSSF service). Therefore, districts are being included as a potential funding mechanism in this document. The MUD, or other district subject to its specific powers and requirements, serves in lieu of a municipal authority for a limited series of functions, including water and wastewater service, for which it recoups initial costs of infrastructure through taxes and/or utility rates.

In addition to these funding mechanisms, there are a variety of resources (technical assistance programs, funding resource compilations, etc) that are useful for an entity considering consolidation.

Other Resources

The following items are links to resources related to programs referenced in this document (Program Links) or additional funding source compilations, research and resources worth noting (Additional Resources).

Program Links

American Reinvestment and Recovery Act program information:

<http://www.recovery.gov/Pages/home.aspx>

USDA Water and Environmental Programs information:

<http://www.usda.gov/rus/water/index.htm>

<http://www.usda.gov/rus/water/program.htm>

CDBG – grants

<http://www.hud.gov/offices/cpd/communitydevelopment/programs/>

<http://www.hud.gov/offices/cpd/communitydevelopment/programs/stateadmin/index.cfm#eligibleactivities>

Economically Distressed Areas Program information:

http://www.twdb.state.tx.us/assistance/financial/fin_infrastructure/edapfund.asp

Clean Water State Revolving Fund program information:

http://www.twdb.state.tx.us/assistance/financial/fin_infrastructure/cwsrffund.asp

TWDB State Loan Program Texas Water Development Fund II information:

http://www.twdb.state.tx.us/assistance/financial/fin_infrastructure/DfundII.asp

Additional Resources

State (TCEQ) list of water/wastewater funding sources:

http://www.tceq.state.tx.us/assets/public/assistance/sblga/pws_funding.pdf

TCEQ Financial-Managerial –Technical assistance program application/information:

<http://www.trwa.org/FMTAssistanceBrochure.pdf>

List of Houston environmental non-profit groups

<http://www.volunteermatch.org/search/orgs.jsp?r=msa&l=77665&categories=13>

List of Houston area foundations:

http://foundationcenter.org/findfunders/statistics/pdf/03_fund_geo/2004/50_found_msa/f_houston_04.pdf

The Foundation Center (conglomeration of information on all foundations, including query capability):

<http://foundationcenter.org/>

Rural assistance Center (funding and technical assistance resource compilation site for rural communities):

<http://www.raconline.org/funding/>

Federal (EPA) list of funding sources for small community wastewater systems:

<http://www.epa.gov/owm/mab/smcomm/eparev.htm>

Grants.gov (federal site compiling all federal grant information with query capability)

<http://www.grants.gov/>

Texas Dept of Agriculture Texas Capital Fund (an additional grant program opportunity)

http://www.agr.state.tx.us/agr/program_render/0,1987,1848_6050_0_0,00.html?channelId=6050

Texas Department of Health Services Funding Information Center (a public health-focused funding compilation site that includes references for wastewater systems)

<http://www.dshs.state.tx.us/fic/default.shtm>

TWDB Survey and Analyses of Water and Wastewater Infrastructure Funding Mechanisms (1999 research document)

<http://www.ecy.wa.gov/programs/wr/wstf/images/pdf/texas.pdf>

Our Family Album: A History of the Trinity River Wastewater Treatment Plants (Dr. Richard Browning, Trinity River Authority – a discussion of regionalization/consolidation in the Dallas/Fort Worth area)

<http://www.environmental-expert.com/Files\5306\articles\9310\247.pdf>

Texas Commission on Environment Quality (TCEQ) - state environmental agency with information of wastewater regulation, funding, permit requirements, other related topics.

<http://www.tceq.state.tx.us/>

Houston Galveston Area Council – Regional Council of Governments for the 13-county Region, with publications concerning regionalization, water quality impairments, and other related topics. An interactive water quality map and wastewater permit database are also located here.

www.h-gac.com