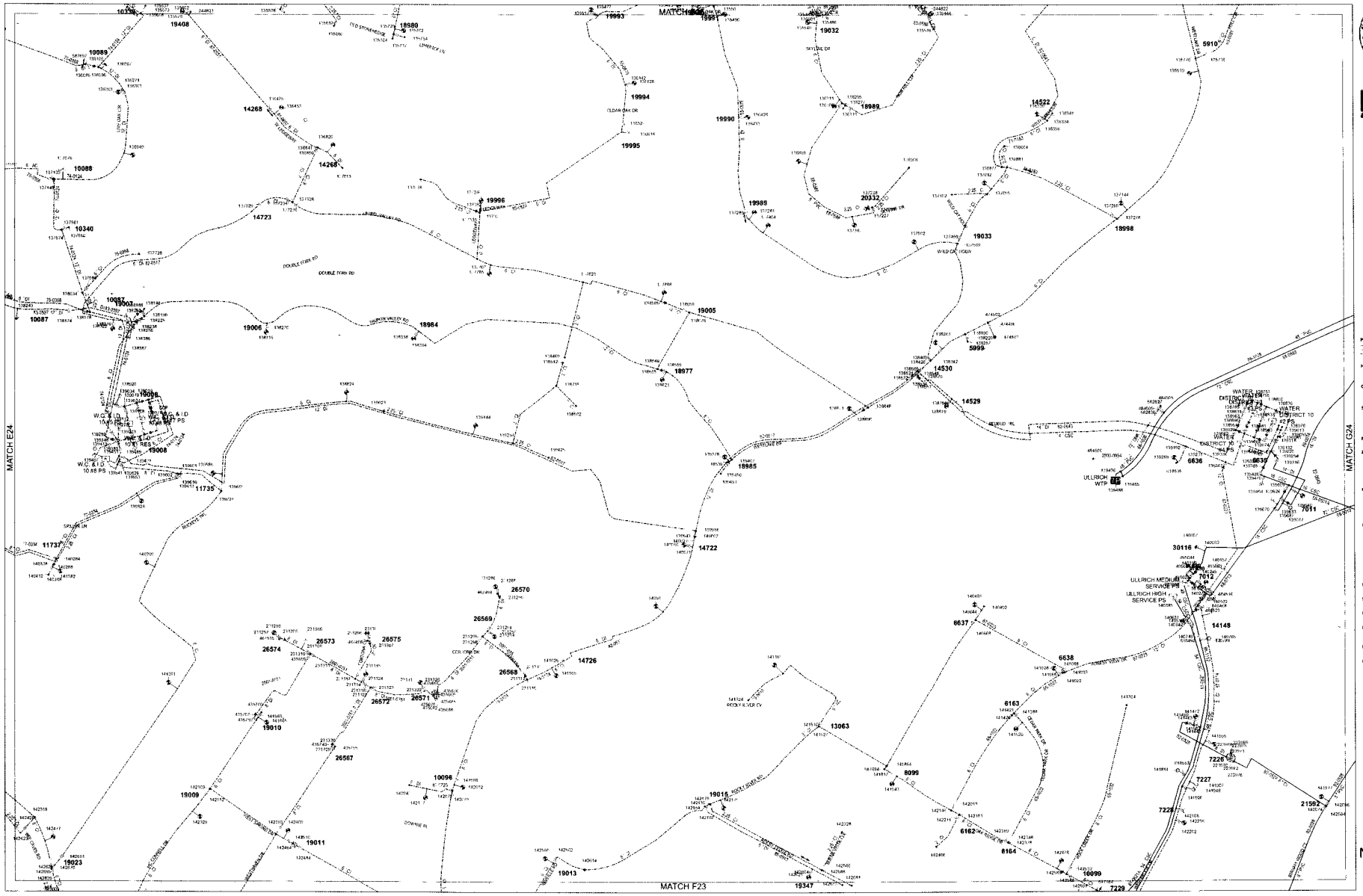
CITY OF AUSTIN - WATER DISTRIBUTION SYSTEM



Produced by the Water & Wastewater Utility City of Austin Texas

Last Update: 12-14-2009

Map Sheet F24

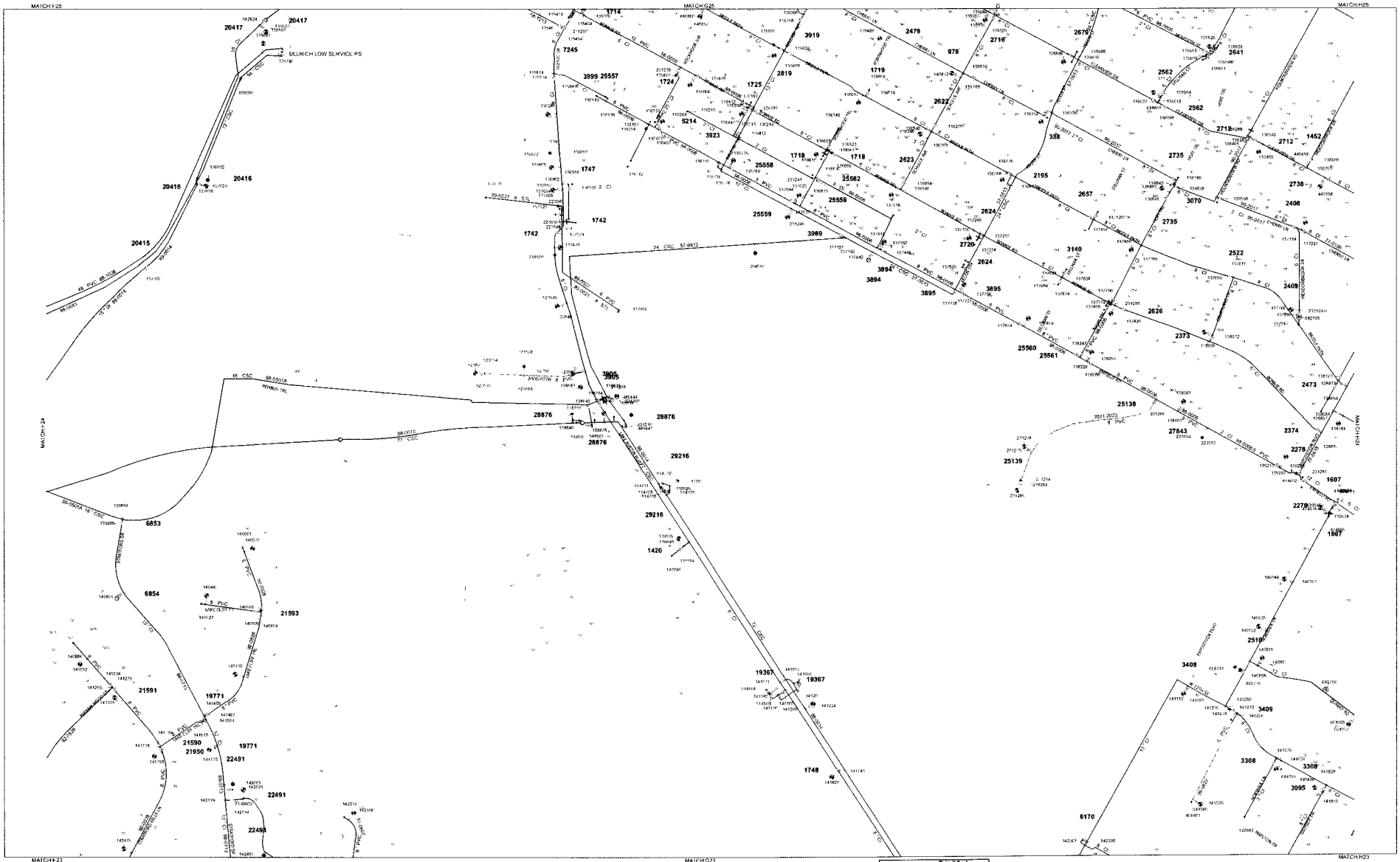
NOTE THIS MAP IS PRODUCED FOR THE NEEDS OF THE CITY AND NO WARRANTY IS MADE AS TO ITS ACCURACY OR QUALITY

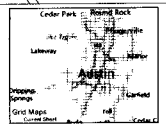
1 1200 scale maps are available for this grid, additional labels may be visible

Scale 1:2400

0 100 200 400 600 800 Feet

P-TC00142





City of Austin Water Distribution System

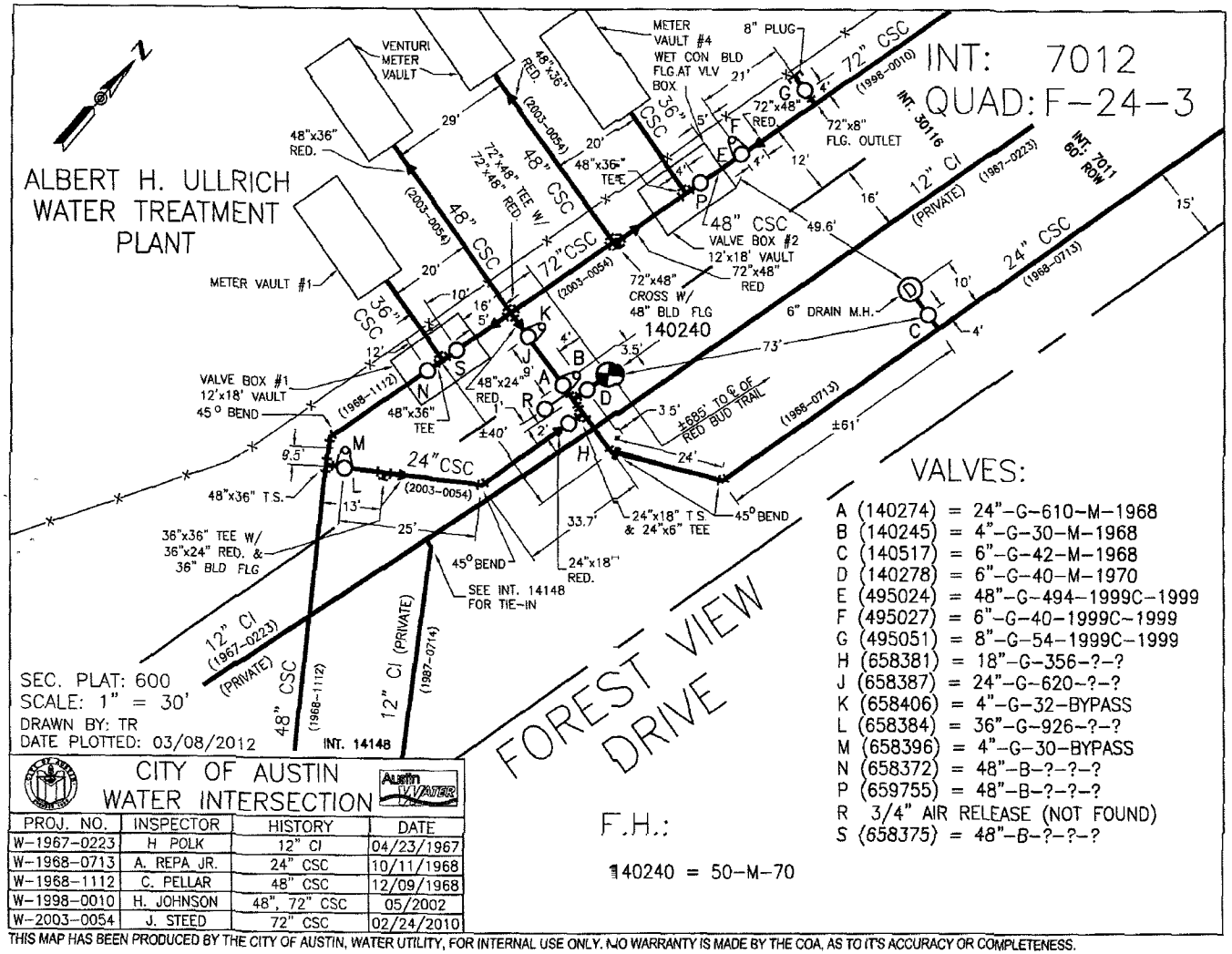
Last Update: 10/18/2013

Austin Water

Map Sheet G24

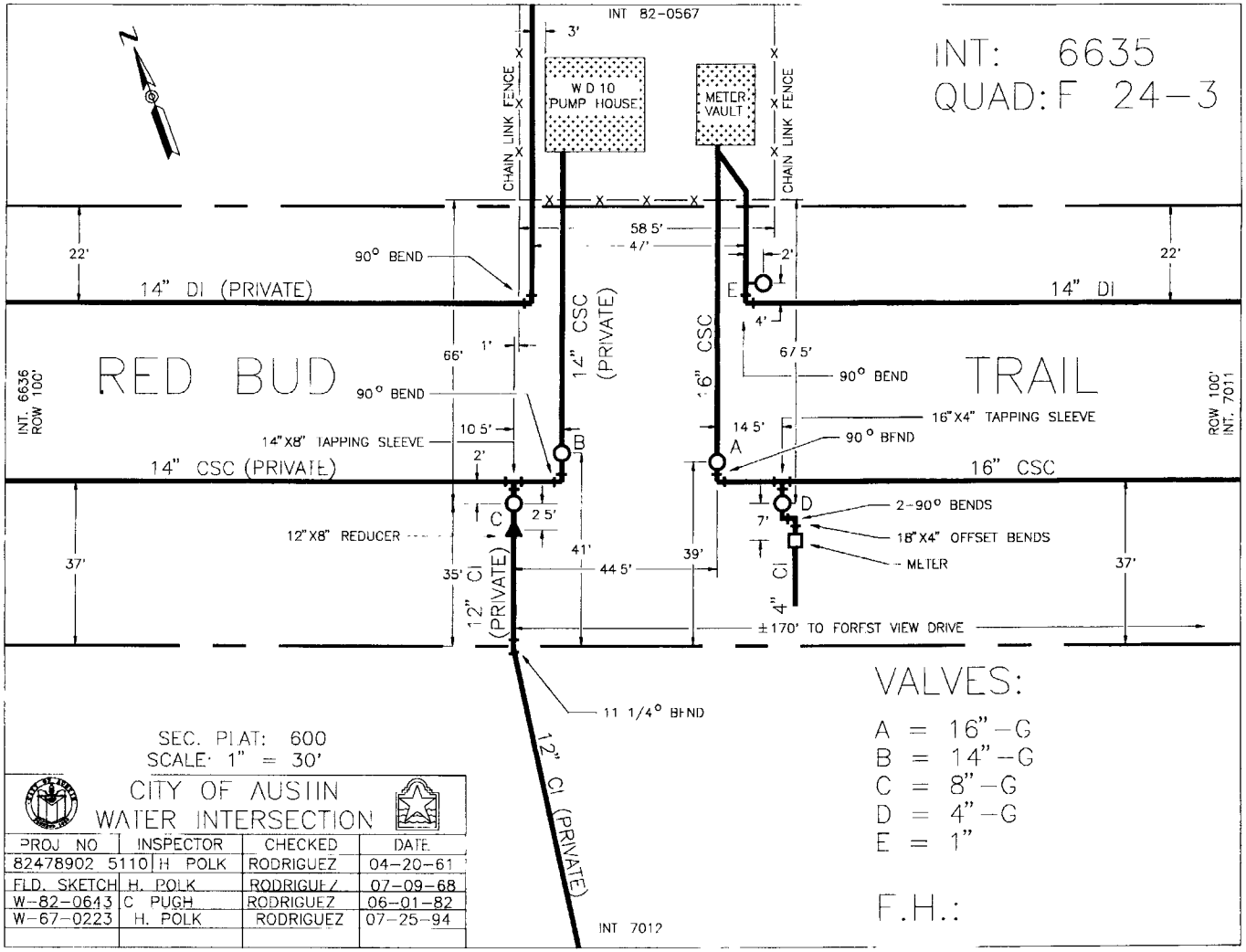
Produced by GIS Services

P-TC00143



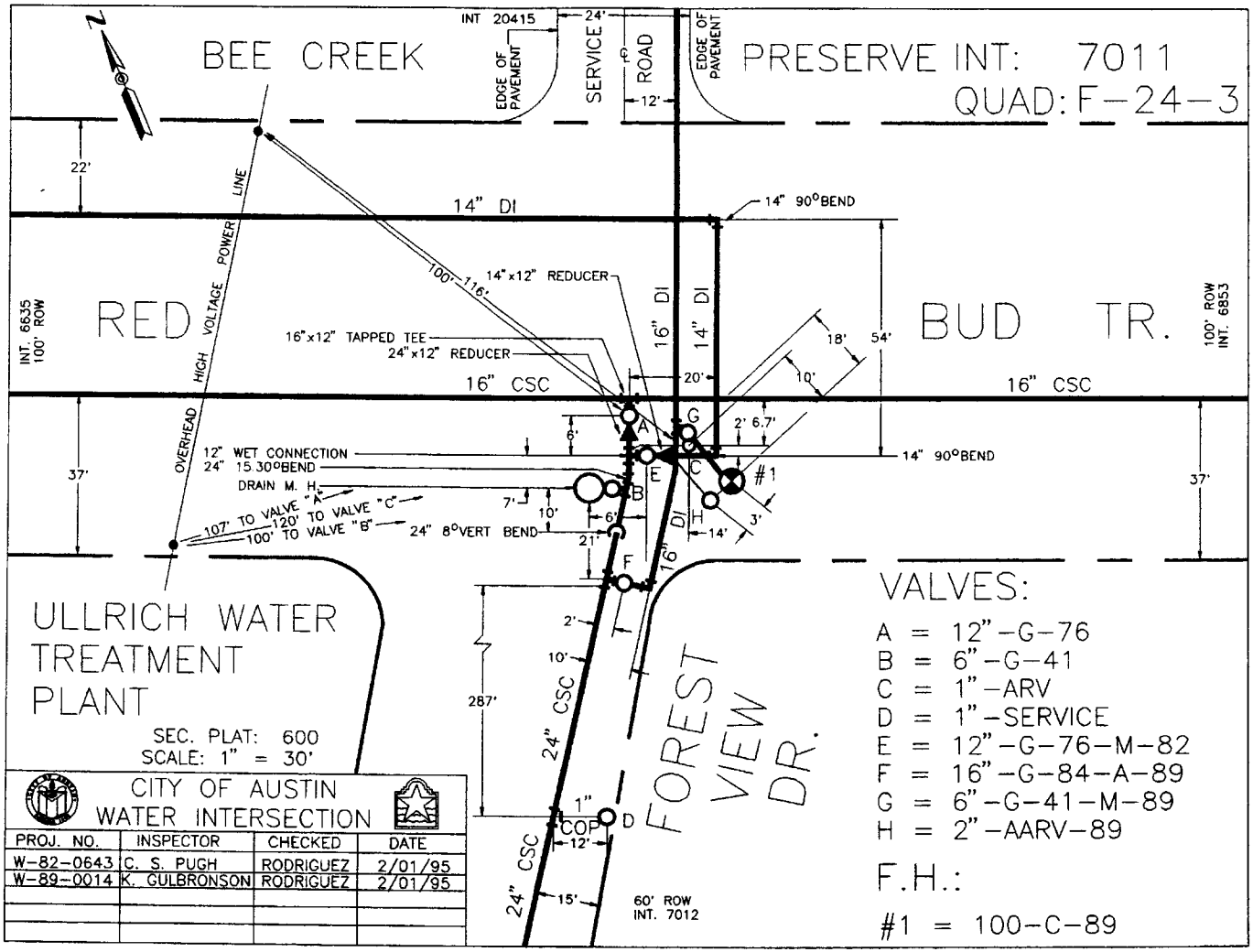
CITY OF AUSTIN
WATER INTERSECTION

PROJ. NO.	INSPECTOR	HISTORY	DATE
W-1967-0223	H POLK	12" CI	04/23/1967
W-1968-0713	A. REPA JR.	24" CSC	10/11/1968
W-1968-1112	C. PELLAR	48" CSC	12/09/1968
W-1998-0010	H. JOHNSON	48", 72" CSC	05/2002
W-2003-0054	J. STEED	72" CSC	02/24/2010



PROJ NO	INSPECTOR	CHECKED	DATE
82478902 5110	H POLK	RODRIGUEZ	04-20-61
FLD. SKETCH	H. POLK	RODRIGUEZ	07-09-68
W-82-0643	C PUGH	RODRIGUEZ	06-01-82
W-67-0223	H. POLK	RODRIGUEZ	07-25-94

P-TC00145


BEE CREEK
PRESERVE INT: 7011
QUAD: F-24-3
INT 20415
EDGE OF PAVEMENT
SERVICE RD
EDGE OF PAVEMENT
14" DI
14" 90°BEND
14"x12" REDUCER
16"x12" TAPPED TEE
24"x12" REDUCER
16" CSC
RED BUD TR.
INT. 6635 100' ROW
100' ROW INT. 6853
HIGH VOLTAGE POWER LINE
OVERHEAD
12" WET CONNECTION
24" 15.30°BEND
DRAIN M. H.
107' TO VALVE "A"
120' TO VALVE "C"
100' TO VALVE "B"
24" 8°VERT BEND
ULLRICH WATER TREATMENT PLANT
SEC. PLAT: 600
SCALE: 1" = 30'
FOREST VIEW DR.
24" CSC
60' ROW INT. 7012
CITY OF AUSTIN
WATER INTERSECTION
PROJ. NO. | INSPECTOR | CHECKED | DATE
W-82-0643 | C. S. PUGH | RODRIGUEZ | 2/01/95
W-89-0014 | K. GULBRONSON | RODRIGUEZ | 2/01/95
VALVES:
A = 12"-G-76
B = 6"-G-41
C = 1"-ARV
D = 1"-SERVICE
E = 12"-G-76-M-82
F = 16"-G-84-A-89
G = 6"-G-41-M-89
H = 2"-AARV-89
F.H.:
#1 = 100-C-89

P-TC00146

RESPONSE TO REQUEST NO. 17

Tom Arndt

From: Jennings, Bart <Bart.Jennings@austintexas.gov>
Sent: Thursday, June 14, 2012 1:42 PM
To: Water District 10 (waterdistrict10@austin.rr.com); Tom Arndt
Cc: Dollins, Mark
Subject: Information Requested re: pressure issue
Attachments: Scan001.PDF

Per your request from this morning's meeting, attached is additional documentation.

Thanks for taking the time to meet with us. I appreciate your patience and understanding. Let me know if you need anything else.

Bart

Jennings, Bart

From: Jennings, Bart
Sent: Thursday, June 14, 2012 1:11 PM
To: Smith, Sharon
Subject: RE: Request for Legal Opinion

From: Smith, Sharon [mailto:Sharon.Smith@austintexas.gov]
Sent: Tuesday, May 22, 2012 4:23 PM
To: Jennings, Bart
Subject: RE: Request for Legal Opinion

I have reviewed TCEQ water program web pages and staff regulatory guidance; TWC Chapter 13; and other sources as available. I have focused on requirements for water supply service, and any specifics pertaining to wholesale service. Everything I find about pressure requirements and service pertains to public water systems; a PWS serves retail customers, so Austin's wholesale relationship with a WCID would not fit within that definition. A PWS is responsible for ensuring adequate water service to its customers. If a wholesale customer is not satisfied with its own service provider, I believe it needs to look to its wholesale contract for service standards.

Water Code Chapter 13 limits TCEQ jurisdiction to wholesale rates; I find nothing there re: TCEQ authority over wholesale service.

Water Code 13.1395 requires certain emergency operations at 35 psi, and applies, among other providers, to a provider or conveyor of portable or raw water service that furnishes water service to more than one customer. This might be the type of language that could be used to bootstrap an argument that there is a general 35 psi requirement to all providers. But the section is bracketed and only includes Houston and adjacent counties, as far as I can tell. Further, the TCEQ guidance Charlie provided re: 30 TAC 290.44 also makes it clear that there is no general 35 psi requirement, but is at least limited as indicated in the guidance.

Therefore, based on what I have been able to find, I believe the City of Austin - Travis County WCID No. 10 contract(s) control on this matter. I have reviewed the contract. There are service requirements pertaining to sales volume, points of delivery, compliance with laws - as amended from time to time (which means "current" so I have not looked back at 1990 law), metering, and City O&M of facilities it constructs for transporting the water to the district. I see no provisions that I would construe as requiring a particular psi.

Sharon

Tom Arndt

From: William Abshire <WAbshire@crossroadsus.com>
Sent: Friday, November 07, 2014 11:09 AM
To: Tom Arndt
Cc: Mike Morin; Neal Grubert
Subject: WD10 Dates for low pressure pump lock-outs

Tom,

Dates are listed below for days pumps locked out due to low pressure:

3/18/2014 @ 12:14 pm
4/2/2014 @ 2:17 am
4/30/2014 @ 2:56 am
5/10/2014 @ 5:20 am
6/6/2014 @ 3:59 am
6/12/2014 @ 7:30 pm

Thanks.

William

RESPONSE TO REQUEST NO. 18

(1) In the same manner that it distributes the costs for their actual use, or
(2) Under a system which uses one or any combination of the following factors on a reasonable basis:
   (i) Flow volume of the users;
   (ii) Land area of the users;
   (iii) Number of hookups or discharges of the users;
   (iv) Property valuation of the users, if the grantee has an approved user charge system based on ad valorem taxes "

The foregoing regulatory requirements provide considerable flexibility in how I/I costs may be allocated to users or user classes. The distinction made is that I/I represents a cost category which must be identified and addressed in a user charge study following the criteria specified

4.0 CONSULTANT'S RECOMMENDATION

The Rate Consultant recommends that the cost associated with infiltration/inflow (I/I) to the wastewater system be allocated to customer classes on a two-thirds (66.7%) customer basis and one-third (33.3%) volume basis. Further, it is recommended that the number of customer accounts approach be used for the customer allocation portion. We conclude that this basis is most appropriate because:

- Since a significant portion of I/I is not directly related to the wastewater volume contributed by customers, but rather to the number of customer connections and the total length of the sanitary sewage collection system, the allocation of cost responsibility for I/I should recognize that the number of customers served is a predominant factor in the amount of I/I that occurs in the collection system.
- The larger 2/3 customer weighting basis is justified on a cost-causative philosophy recognizing that most I/I enters the sanitary sewer system through defective customer service connections, pipe joints, broken pipe, cracks or openings in manholes, roof leaders, and area drains. The 1/3 volume portion fairly recognizes the greater length and size of services and frontage mains serving larger commercial and industrial customers relative to residential customers
- The method based on utilizing number of customer accounts, as opposed to equivalent connections, is administratively more simple and easy to understand by rate-payers, and does not require the establishment of wastewater service charge schedules by meter size.
- The 2/3 customer and 1/3 volume method is consistent with Austin's existing allocation procedure on this issue.

5.0 ATTACHMENTS

See Public Involvement Committee (PIC) member comments and Executive Committee decision on this issue paper immediately following.

Executive Team Decision on
Issue Paper #5 Inflows & Infiltration

Consultant Recommendation:

- Allocate 2/3 (66.7%) of identified Infiltration/Inflow costs based on number of customer connection
- Allocate 1/3 (33.3%) of identified Infiltration/Inflow costs based on a customer class volume basis.

Executive Team Decision: The Executive Team agreed with the consultant's recommendation for Infiltration/Inflow cost allocation. Black & Veatch will proceed with these general methodologies and detail all specific allocation results within the cost of service model to be presented to the PIC in May.

Executive Team Decision on
Issue Paper #7 Customer Class Wastewater Strengths

The Executive Committee met and reached the decision documented below on March 30, 1999.

Consultant Recommendation: Customer class wastewater strengths should be determined using the "system mass balance" method based on monitored contributions and estimates of normal domestic strength contributions. The associated costs should be recovered through the use of normal-strength volume charges and extra-strength surcharges.

(E)

Executive Team Decision: The Executive Team agreed with the consultant's recommendation for sewage strength cost allocation. Black & Veatch will proceed with these general methodologies and detail all specific allocation results within the cost of service model to be presented to the PIC in May.

Executive Team Decision on
Issue Paper #8 Peaking Factors

The Executive Committee met and reached the decision documented below on March 30, 1999.

Consultant Recommendation: The recommendation has three elements

- Customer class peaking factors should be determined using the non-coincident demand or "non-coincident peak" (NCP) method.
- The customer class non-coincident peaking factors should be calculated using the billing data estimation approach (Option #2 in the issue paper) in the short term for the current cost of service study.
- The Utility's demand monitoring program should be re-examined and validated.

Executive Team Decision: The Executive Team agreed with the consultant's recommendation for using the non-coincident peak demand basis and the billing data estimation approach. Black & Veatch will proceed with these general methodologies and detail specific allocation results within the cost of service model to be presented to the PIC in May.

The Executive Team also discussed the current hourly demand monitoring program. They recommended further analysis be completed before any final decision is made on whether to terminate the program.

Exh 2 - 1992 COS
(16) (29)
(E) (23)

This study is in fulfillment of that requirement. An additional provision of the agreement is that the City **must allow the wholesale customers 6 months to review and comment on the cost-of-service rate study before the study is presented to the Austin City Council for** adoption.

The substantial increases in water and wastewater service costs during the 1980's also focused attention on retail rates. In addition to the principal concern with the overall retail rate levels, questions arose about the equity of the current rate structure. It was recognized that information on the costs to provide service to different types of retail customers is critical for establishment of equitable service rates.

Water conservation also became a significant issue during the course of the 1980's, particularly following mandatory water use restrictions and a moratorium on new service connections in 1984. Although imposed in response to treatment capacity shortages which have since been cured, environmental concerns and the cost of treatment capacity expansions, have prompted interest in the use of rate designs to promote water conservation.

Purpose and Objectives

This cost-of-service water rate study has multiple objectives. These objectives are summarized as follows:

1. The City of Austin, like all municipal utilities, needs to generate revenues adequate to meet revenue requirements (i.e., costs). Determination of rates that meet the Utility's revenue requirements is important to maintain long-term viability and efficiency of service over time.

2. The purpose of a cost-of-service rate study is to promote rate equity by determining the costs of serving user classes and designing rates to recover those costs by class.

3. The City of Austin agreed to perform a cost-of-service rate study as part of the settlement of wholesale rate litigation.

4. **Implementing cost-based rates will make the City of Austin's utility rates defensible. Cost-of-service rates have traditionally been successfully defended when challenged.**

5. An important product of this rate study is a comprehensive computer rate model that will be used by the City in future years to update and maintain cost-of-service rates.

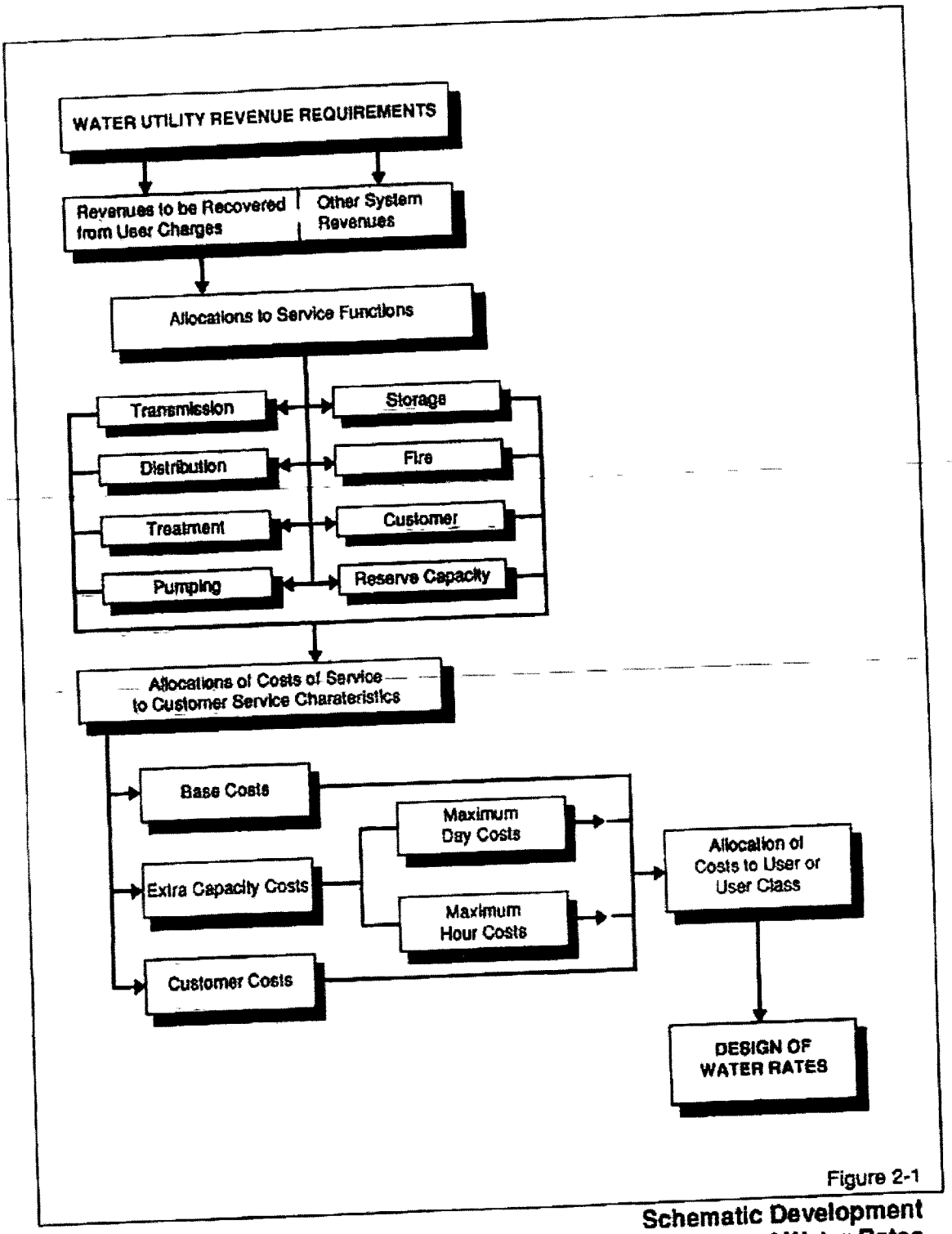


Figure 2-1

Schematic Development of Water Rates

Debt Service Coverage

Debt service coverage is revenue collected in addition to O&M and debt service requirements to provide security on bonded indebtedness, finance certain capital expenditures, and meet equity transfer requirements. **The City's utility revenue bond covenants require minimum debt service coverage ratios of 1.25 times for prior lien bonds and separate lien bonds (contract revenue bonds are separate lien bonds) and 1.10 times for subordinate lien bonds.** The City's financial policies require the Utility to maintain debt service coverage ratios of 1.50 times. The level of debt service coverage is a significant ratemaking issue, because debt service coverage requirements may dictate overall requirements for which rate revenues must be raised.

There are virtually always differences between the amount of debt service coverage required by bond covenants and those actually achieved by utilities. Bond covenants specify minimum coverage ratios. In practice, utilities strive to maintain coverage ratios in excess of these minimums, both to ensure continued compliance with the covenants and to assure continued access to new capital on reasonable terms. For example, if a utility operated at or near the minimum required coverages, it would run the risk of failing to achieve the minimum coverage whenever unanticipated events operated to reduce forecasted revenues or increase costs. In addition, operating near the margin would create a risk that the utility's bonds would be downgraded by rating agencies.

In recent years, the City's debt service coverage policies were challenged by outside-City customers. These challenges were based on the view that the City's 1.50 times coverage policy requires collection of revenues for discretionary costs that could be cut without affecting the delivery of utility services. **In the 1989 water rate case, the Texas Water Commission, based on the evidence presented in that case, held that a coverage ratio of 1.39 times was adequate at that time.**

CH2M HILL examined the City's 1.50 times coverage target compared to other communities across Texas and the nation. These surveys indicate that Austin's target is substantially below what other communities achieve. **Additionally, the Utility's revenue-based general fund transfer and capital outlay requirements are currently such that coverage ratios of approximately 1.50 times will be realized** (even if there were no policy directive to do so).

If debt service coverage is treated as a residual calculation in determining revenue requirements (i.e., it only operates to increase revenue requirements if current claims against coverage dollars are insufficient to generate adequate coverage), the City's revenue requirements would not be increased because of the current 1.50 times coverage target. If, on the other hand, debt service coverage is treated as a primary factor in determining revenue requirements, the City's 1.50 times coverage policy will effectively minimize revenue requirements as compared to those that would be established in most other communities. In the rate study, debt service coverage was treated as a residual

that new development pay impact fees designed to recover a portion of the capital cost of the offsite facilities needed to serve new customers.

Though some customers may have made substantially different capital contributions than others, differences in capital contributions among customer classes are generally not a consideration in development of cost-of-service based rates. Contributions are viewed as part of the historical agreements by which service provision was contracted. Standard ratemaking practice is to design service rates to recover rate year revenue requirements, not revise or remedy previous contractual obligations.

However, through the cost-of-service project's public involvement program, several wholesale customers asserted that the City had required extraordinary capital contributions from certain customers. These customers claimed that they were effectively forced to make these contributions due to the unfair bargaining position the City holds as regional service provider. They asserted that their contributions entitle them to discounted service rates, since, in the absence of their contributions, the facilities they contributed would have been financed by the Utility. (23)

The question of rate credits for capital contributions raised several issues for the development of rates for Austin. Should any rate credits be provided, since to do so would involve retroactive ratemaking and diverge from standard cost-of-service ratemaking principles? And, if rate credits are granted, how should these credits be calculated?

As to the second question, considerable discussion focused on how certain customers' capital contributions could be distinguished as eligible for credit. Retail customers have, as a matter of standard practice, been required to contribute capital as a condition of receiving service. If wholesale contributions were to be recognized in rates, equity would require that credits be provided only to the extent that contributions exceeded the average contributions made by retail customers.

An analysis was performed to determine the relationship between the capital contributions claimed by wholesale customers and what might be termed "normal" or average contributions required of retail customers. **This analysis indicated that in nearly all cases, the facilities for which contribution credits were claimed had not been transferred to City ownership. Because it would be incorrect to grant rate credits for facilities that have not been made part of the City's system, the question of how to calculate a credit was deemed moot.**

Therefore, both because of the inherent problems in developing rate credits for capital contributions at all, and the fact that most of the facilities in question remain owned by wholesale customers, capital contribution credits were not incorporated in rate calculations. This conclusion was supported by the Ad Hoc Cost-of-Service Committee's vote to exclude rate credits from rates.

General Fund Transfer

The City of Austin has a long standing policy of relying on its utility enterprise departments to provide a portion of the funds needed to finance general government operations. For cost-of-service ratemaking, general fund transfers present two important questions largely because of the existence of outside-City Utility customers. These questions are whether general fund transfers are properly included at all in utility revenue requirements based on cost of service, and if so, what is an appropriate transfer level?

The Water and Wastewater Utility's principal general fund transfer is currently set at 8 percent of average annual revenues for the prior 2 years and the current year estimate—approximately $13.6 million at FY92-93 revenue levels. It has variously been described as a payment in lieu of taxes, a payment in lieu of franchise fees, and a return on investment. These descriptions reflect the view that general fund transfers are properly included in revenue requirements in the same way that rate of return or tax and franchise fee payments are included in investor-owned utility revenue requirements.

Utility transfers are a particularly important method for general government financing in Austin because of the City's unique public financing position. Austin, which is the seat of state government and the site of a large public university, and where there is a substantial federal government presence, has a large fraction of real property exempt from property taxation. Support of general government through utility charges is, therefore, an effective mechanism to recover payments for general government services from institutions that would otherwise be exempt. A survey of similarly situated cities around the country indicates that Austin's practice is not uncommon and, among cities which employ such a transfer, Austin's transfer rate is within the range of these cities' transfer practices. The legality of such a transfer as upheld in various courts around the country, as well as the fact that such transfers are a common public financing mechanism, further support its inclusion in Austin's revenue requirements and suggest that Austin's transfer rate is reasonable.

However, in the 1989 rate case at the Texas Water Commission, the City's wholesale customers took the position that the transfer was an improper exercise of the City's taxing power and that the transfer was unrelated to the cost of providing service. They argued that because they do not live in the City and do not benefit from its municipal services, they should not be asked to share in the cost of providing those services through utility rates.

The subject of the revenue-based transfer was debated at length at a meeting of the Ad Hoc Cost-of-Service Committee. It was the Committee's view, with which CH2M HILL concurs, that the transfer is properly includible in the Utility's revenue requirements, and that all customer classes, wholesale and retail, should share proportionately in the cost.

in the regression equation to estimate water use during 1991 under normal weather conditions. The resulting estimate was 4.7 percent higher than the actual 1991 sales volumes.

Based on the weather normalization analysis, actual water sales during the summer months were increased for each customer class (except in-City single-family, which was already based on a 12-year average use per account). The commercial and multifamily classes' summer volumes were increased 4.7 percent. The wholesale volumes were increased 5.0 percent. Industrial usage was assumed unaffected by weather, so no adjustment was made. Outside-City single-family summer usage was increased 6.0 percent. In-City single-family usage was based on historical billing data which showed the average use per account over the 1979-1991 period. This multi-year average was judged to be a reasonable normalization, so no further weather normalizations were made to this class.

The rate calculations assume a 1.1 percent annual growth in sales volumes from the year for which usage data were available (May 1991 through April 1992) to the year for which the rates would be in effect (FY92-93). This growth estimate was provided by the City based on estimates of short-term customer growth in the service area. The growth estimate is conservative so that revenues will not be overestimated. The 1.1 percent growth assumption was applied to all nonindustrial customer classes, including wholesale customers that may be fully developed. The potential inaccuracies resulting from not specifically analyzing growth rates in each portion of the service area are judged to be insignificant in the overall rate calculations.

Billing Cycle Adjustment for Wholesale Customer Class

For purposes of the cost of service study, the billed water consumption for each of the wholesale customers for the 12-month period May 1, 1991 to April 30, 1992 was adjusted to reflect consumption on a calendar month billing cycle.

The process followed by Utility staff to make the adjustments included reviewing each wholesale customer's billing read dates and shifting a pro rata share of billed consumption for calendar days that pertained to a different month.

For example, if ABC MUD #1's billed consumption for billing cycles 4/15/91 to 5/14/91 and 5/15/91 to 6/14/91 were 150,000 and 170,000 gallons respectively, the adjusted consumption for the month of May 1991 would be calculated as follows:

1. 4/15/91 to 5/14/91 billing cycle = 30 days

2. 14 days pertained to May = 14/30 or 46.67%

3. Pro rata consumption from 4/15 to 5/14 cycle assigned to the month of May = 150,000 X 0.4667 = 70,005 gallons

PLUS

4. 5/15/91 to 6/14/91 billing cycle = 31 days

5. 17 days pertained to May = 17/31 or 54.83%

6. Pro rata consumption from 5/15 to 6/14 cycle assigned to the month of May = 170,000 X 0.5483 = 93,211 gallons

EQUALS

7. TOTAL ADJUSTED GALLONS FOR THE MONTH OF MAY = 70,005 (14 days) + 93,211 (17 days) = 163,211 GALLONS

Peaking Demands

The cost of providing water to customers depends, not only on how much water they use, but also on how their use occurs over time. The maximum-day and maximum-hour peaking requirements of a water utility's customers are an important influence on the utility's costs. Because water utilities attempt to meet all the water demands of their users, they size their water systems to meet their users' peak requirements. Therefore, during off-peak periods, there are usually costs associated with unused capacity of the system. To develop equitable rates, the analyst must allocate these costs to the users in proportion to each user's contribution to the system peak. Thus, the analyst must determine the peak rate of use relative to the average rate of use for each class. This ratio is called a peaking factor. Peaking factors are developed for maximum-day and maximum-hour rates of use.

If water meters could record both daily and hourly flow rates for each customer, the utility could obtain perfect information on peaking factors. Clearly, this is not feasible, because the enormous costs imposed on the utility could not be justified on the basis of better results. The City's utility has, however, instituted an hourly monitoring program to allow it to collect peaking information from a sample of customers. Currently, complete data from this program is expected to be available for the period June through September 1992.

Hourly Water Demand Monitoring Data

Because of the unavailability of monitored water demand data, **the vast majority of water utilities rely on monthly billing data and system pumpage information to estimate peaking factors (i.e., maximum-day and maximum-hour cost allocators). These estimates, though** usually developed using well established techniques, are subject to important limitations. **For example, an individual wholesale customer may effectively employ storage facilities that mitigate peak day and peak hour demands.** This may not be reflected in the monthly

billing data used to estimate peaking factors. Similarly, if daily water demand patterns vary significantly over days (and hours) of the billing month, estimated peaking factors may mute customer class responsibility for peak day and peak hour demands.

The City of Austin Water and Wastewater Utility has begun a water demand monitoring effort which, upon full implementation, promises peak demand data collected from continuous monitoring of a statistically representative sampling of customers. Peaking factors based on monitored usage will be available from this monitoring effort. This information will represent a significant advancement in the availability of information on water demand patterns and, correspondingly, will enhance the accuracy of cost allocations made through cost-of-service analysis.

Hourly monitoring of selected wholesale and industrial customers was initiated in FY89-90 and expanded in FY90-91 to include residential and commercial customers. The limited deployment of metering equipment in FY89-90 yielded valuable, though not comprehensive, information. For example, the data collected offered evidence of distinct differences in intra-class water demand patterns among the Utility's wholesale customers. Several implementation problems including mid-summer lightning strikes, meter vault floodings, and installation delays, resulted in the collection of limited data during FY90-91 Notably, meter vault floodings and lightning strikes resulted in the loss of most of the Utility's residential sites. Those remaining constituted a rarified sample from which customer class peaking factors cannot be inferred.

The availability of limited hourly monitoring data presents several options for cost allocation. First, use of monitoring data could be suspended until sufficient data is collected to ensure statistically valid representations of customer class peaking responsibility. The advantage of this option is that a standard methodology—billing data estimation of peaking factors—would be consistently applied to all customer classes. The disadvantage of this option is that it largely ignores data that is available for a limited number of customers. Insofar as the analysis of billing data is an estimation procedure for monitored information, it could be argued that the available monitoring data is the best possible "estimate" of peaking factors.

A second option would be to use available monitoring data and billing data estimates for those customer classes for which monitored data are unavailable. The advantage of this option is that it would use the best available peaking factor data for each customer class. The disadvantage is that it sacrifices the consistent application of a single methodology to all customer classes. Individual customer classes could be disadvantaged or benefitted simply by virtue of whether they happened to be successfully monitored.

A third option for the development of wholesale customer peaking factors is suggested by the possibility that monitoring data on one wholesale customer may be used to represent the water demands of similarly situated wholesale customers. If so, monitored peaking factors of comparable wholesale customers, adjusted for differences in monthly consumption, could be assigned to those customers for which monitoring data is not available. The principle advantages of this option are that it uses all available peaking

factor information, preserves the relationships between wholesale customers indicated by billing data, and consistently applies a single methodology. Significant disadvantages of this option are its tenuous assumption of comparability among individual wholesale customers, and its awkward synthesis of billing data and monitoring data.

The peaking factors developed under each option are presented in Table 3-2. The Project Team evaluated each of these options considering the fact that relative, rather than absolute, peaking factor values are most important for cost allocation purposes. This consideration led to the conclusion that preservation of the relationships between customer classes indicated by billing data was of primary importance—a conclusion which secured consensus agreement of the Ad Hoc Cost-of-Service Committee. Peaking factors developed by Option 1 methodology is used for the development of rate options largely due to the inherent problems in assuming comparability among wholesale customers. Sensitivity analysis of the base case rate option was performed using Option 3 peaking factors (see Section 6).

As of the end of July 1992, most of the implementation problems of the Utility's hourly water demand monitoring program had been resolved. This presents an opportunity for update of the cost-of-service analysis using water demand data collected during the summer of 1992.

Peaking Factor Estimates

For reasons mentioned above, Option 1 peaking factors were used for this study. The following equations show the calculations of these peaking factors for each class.

$$\frac{(\text{Class } i \text{ Consump. During System Max Month})}{(\text{Av. Month for Class } i)} \times \frac{(\text{System Peak Day Rate Flow})}{(\text{System Max. Month Rate of Flow})} = \text{Maximum-Day Peaking Factor}$$

$$\frac{(\text{Class } i \text{ Consump. During System Max Month})}{(\text{Av. Month for Class } i)} \times \frac{(\text{System Peak Hour Rate Flow})}{(\text{System Max. Month Rate of Flow})} = \text{Maximum-Hour Peaking Factor}$$

The estimates of maximum-day and maximum-hour peaking factors for each class calculated under Option 1 are shown in Table 3-2. The maximum-hour peaking factors for the customer class ranged from a high of 3.43 (Hill Country Utilities) to a low of 1.49 (In-City large Volume/Industrial, Outside-City Multifamily, and Village at Western Oaks MUD).

The peaking factors estimated are for coincidental peaks. This means that the estimates of maximum-day peaking factor measure the probable ratio of each class's use during the system's peak day, to each class's use during that class's average day. Similarly, the maximum-hour peaking factor is based on the customer class's use during the system's maximum-hour. Thus, the peaking factors estimated in this analysis are the expected peaking factors for each customer class during the system's maximum-day and maximum-hour.

Capital Improvement Program expenditures in any given year are financed through existing CIP fund balances, bond proceeds from new money issues, and current revenues. Importantly, a significant portion of projects required in a particular year may not have available bond authority. For example, transmission line relocations in conjunction with state highway projects are typically not debt financed. These projects must be funded through current revenue transfers to the CIP. Funding of remaining projects is guided by coverage requirements, equity financing constraints, and economic considerations of new bond issues. If required current revenue funding of CIP projects does not result in excess coverage, projects for which bond authority is available may be equity financed. However, as has been the case in recent years, the Utility's FY92-93 requirements generate debt service coverage ratios slightly above the 1.50 coverage target, largely as a result of required transfers to CIP funds.

Table 4-2 shows the Utility's actual capital requirements for FY90-91, known and measurable changes in costs, and the FY92-93 requirements.

Revenue Bonds

The largest capital cost item is debt service on utility revenue bonds. The FY92-93 debt service requirement on utility revenue bonds is about $27.3 million. This requirement is net of debt refunding and defeasance savings and application of funds from the Utility's Debt Management Fund. The known and measurable changes for utility revenue bond debt service reflect the effects of defeasances and refundings, as well as the normal annual changes in the scheduled debt service. **About 2.6 million (almost 10 percent) of the total revenue bond debt service requirement is debt service on the system's excess reserve capacity.**

Contract Revenue Bonds

The City's FY92-93 debt service requirement on contract revenue bonds is about $3.9 million. Contract revenue bonds (CRBs) were issued by the City to pay for capital improvements that would serve Municipal Utility Districts (MUDs), but would also have sufficient capacity to accommodate future growth outside of the MUDs. The City entered into agreements with each of the MUDs, which specified how the debt service costs would be shared between the City and the MUD based on the projected use of the facilities. **The CRB debt service included in the Utility's revenue requirement reflects only the City's portion of the debt service on these bonds.** This requirement is also net of savings resulting from debt refundings and defeasance and interest income earned on excess construction and reserve funds.

Municipal Utility Districts with outstanding contract revenue bonds for which the City pays a share of scheduled debt service are as follows:

- North Austin Growth Corridor
- South Austin Growth Corridor

Table 4 - 2
City of Austin, Texas
Water Utility
Capital Requirements

DESCRIPTION	Actual 1990 - 91	KNOWN & MEASURABLE CHANGES: O&M Realign. Adjustments	1991 - 92 Adjustments	Reorganization Adjustment	1992 - 93 Adjustments	1992 - 93 Revenue Requirements
DEBT SERVICE REQUIREMENTS						
Revenue Bond Debt Service	$23,564,696	$0	$4,998,533	$0	($4,031,233)	$24,530,996
Debt Service on Joint Facilities					2,828,464	2,828,464
Debt Service on Reserve Capacity						
Subtotal Revenue Bond Debt Service	$23,564,696	$0	$4,998,533	$0	($1,402,769)	$27,257,460
Contract Revenue Bond Debt Service						
W. Central Austin Growth Corr. #1	$2,736,661	$0	($2,736,661)	$0	$0	$0
North Austin Growth Corridor #1	90,383	0	(1,066)	0	(578)	88,413
South Austin Growth Corridor #1	82,781	0	(18,768)	0	51,631	116,848
North Austin #1	0	0	0	0	0	0
Circle C #3	982,646	0	(122,210)	0	(139,943)	721,387
Southland Oaks	79,523	0	278,088	0	76,831	434,442
Maple Run	0	0	482,368	0	912,822	1,395,291
Village @ Western Oaks	200,802	0	930,433	0	(230,427)	900,808
Springwoods	0	0	0	0	0	0
Northwest Travis County	0	0	0	0	0	0
Circle C #4	0	0	0	0	0	0
Debt Service on Reserve Capacity	0	0	0	0	282,474	282,474
Subtotal Contract Bond Debt Service	$4,182,010	$0	($1,184,782)	$0	$914,410	$3,911,661
Water District Bond Debt Service	247,863	0	225,902	0	14,472	488,357
Certificates of Participation	537,484	0	90,894	0	(300)	568,078
Subtotal Debt Service Requirements	$28,532,173	$0	$4,077,567	$0	($474,186)	$32,255,554
CIP TRANSFERS						
System Improvements	$0	$0	$0	$0	$0	$0
1978 Authority	0	0	0	0	0	0
1982 Authority						
Prop. 4	0	0	0	0	0	0
Prop. 5	0	0	0	0	0	0
Prop. 6	0	0	0	0	0	0
Prop. 7	0	0	0	0	0	0
Prop. 8	0	0	0	0	3,000,000	3,000,000
Prop. 9	0	0	0	0	0	0
Prop. 10	0	0	0	0	0	0
Prop. 11	0	0	0	0	0	0
Prop. 12	0	0	0	0	0	0
1984 Authority						
Prop. 1	0	0	0	0	0	0
Prop. 2	0	0	0	0	0	0
Prop. 3	0	0	0	0	0	0
Prop. 4	0	0	0	0	0	0
Prop. 5	0	0	0	0	2,509,000	2,509,000
Prop. 6	0	0	0	0	0	0
Prop. 7	0	0	0	0	0	0
Prop. 8	0	0	0	0	0	0
Prop. 9	6,000,000	0	(6,000,000)	0	0	0
Prop. 10	0	0	0	0	0	0
Prop. 11	0	0	0	0	0	0
Prop. 12	0	0	0	0	0	0
Prop. 13	0	0	0	0	0	0
1985 Authority						
Prop. 5	0	0	0	0	0	0
Prop. 6	0	0	0	0	0	0
Prop. 7	0	0	0	0	0	0
Prop. 8	0	0	0	0	0	0
Prop. 9	0	0	0	0	0	0
Prop. 10	0	0	0	0	0	0
Prop. 11	0	0	0	0	0	0
Prop. 12	0	0	0	0	0	0
Prop. 13	0	0	0	0	0	0
1985 Apfd Authority	2,400,000	0	(100,000)	0	(2,300,000)	0
Future Authority						
New Projects						
City Mainframe	0	0	0	0	190,000	190,000
Davis Lab/Admin Renovation	0	0	0	0	1,760,000	1,760,000
Avenue Plaza Rehab/Relocation	0	0	0	0	188,000	188,000
Water - Computer Purchases	0	0	0	0	485,000	485,000
Relocation of Webberville	0	0	0	0	75,000	75,000
Water Master Plan	0	0	0	0	25,000	25,000
Instrumentation/Electric	0	0	0	0	200,000	200,000
Subtotal CIP Transfers	$8,400,000	$0	($6,100,000)	$0	$8,259,000	$8,559,000

Table 4 - 2
City of Austin, Texas
Water Utility
Capital Requirements

DESCRIPTION	Actual 1990 - 91	KNOWN & MEASURABLE CHANGES: O&M Realign Adjustments	1991 - 92 Adjustments	Reorganization Adjustment	1992 - 93 Adjustments	(1992 - 93 Revenue Requirements
APPROACH MAINS/REFUND CONTRACTS						
Highway 183 / FM 620	$0	$0	$443,810	$0	$84,550	$528,360
Nuckols Crossing	84,808	0	(84,808)	0	0	0
Springfield	0	0	0	0	0	0
Texas Oaks	0	0	0	0	0	0
Travis Country	0	0	0	0	0	0
Zaze - Kruger	1,014,929	0	(1,014,929)	0	0	0
North Travis	0	0	0	0	104,867	104,867
Oak Hill	0	0	0	0	0	0
Lake Creek	0	0	0	0	0	0
Old Settler	0	0	40,000	0	(7,308)	32,692
Park 290 E	0	0	0	0	22,000	22,000
Woodlake	0	0	0	0	0	0
West Park	0	0	0	0	20,400	20,400
Silas - Shannon	0	0	0	0	0	0
Branch Creek Estates	0	0	0	0	0	0
COA F/P Joint Usage Facility	0	0	0	0	15,200	15,200
Refund Contracts	218,108	0	(23,707)	0	(23,267)	169,042
Principal and Interest	37,500	0	(12,500)	0	(25,000)	0
Non - reimbursable Inspection Charges						
Subtotal Approach Mains/Refund Contracts	$1,355,140	$0	($692,021)	$0	$191,442	$852,561
OTHER CAPITAL REQUIREMENTS						
Vehicle Acquisition Fund	$0	$0	$360,000	$0	$315,583	$695,583
General Fund Transfers	3,942,837	0	3,152,053	0	215,439	6,879,582
Non - CIP Capital Outlay	223,788	(24,504)	826,181	0	(548,257)	480,218
Line Rehabilitation	906,726	0	7,274	0	0	913,000
Debt Management Appropriation	0	0	1,385,000	0	(1,385,000)	0
Subtotal Other Capital Requirements	$5,072,451	($24,504)	$5,730,528	$0	($1,802,792)	$9,055,583
TOTAL CAPITAL REQUIREMENTS	$43,477,784	($24,504)	$3,056,074	$0	$4,166,464	$56,675,738

Table 5-1 shows joint and specific O&M costs for FY92-93. The joint O&M costs of the water system are about $25.1 million, including about $632,000 of revenue-based allocations. Costs allocated to retail customers only are about $11.7 million.

Capital Costs

CH2M HILL analyzed the Utility's plant-in-service and received input from Utility staff to determine joint and specific capital costs. **As with O&M costs, all capital costs associated with water distribution and fire protection are specific to retail customers.** Most of these costs are determined through the functionalization process (see discussion below). Table C-2 in Appendix C shows that Leak Detection activities occur within the distribution system. **It is important to note for this analysis, water lines that are 24 inches and larger in diameter are designated as transmission lines, while all lines less than 24 inches in diameter are considered distribution lines.** Table C-3 shows that the FY92-93 requirement for Leak Detection projects is almost $1.0 million.

Table 5-2 shows the Water Utility's FY92-93 capital costs net of nonrate revenue. In FY92-93, the net capital costs allocated to retail customers only is about $3.6 million, and joint costs are about $40.1 million, including $6.9 million of revenue-based allocations. The allocation of contract revenue bond (CRB) costs to customer classes is discussed later in this section

Allocation to Service Functions

For this analysis, the revenue requirements were allocated to the following service functions: transmission, distribution, pumping, treatment, storage, customer services, fire protection, and indirect. In addition, some costs were allocated to reserve capacity, and revenue allocation categories. These are special categories that resulted from specific cost allocation issues pertaining to the City. The methods for allocating costs in these categories are described separately below.

Costs are allocated to service functions for two primary reasons. First, as mentioned above, certain functions serve specific customer classes. The costs of these functions must be segregated from other system costs in order to determine specific cost responsibilities. Second, by functionalizing the revenue requirements, the costs can be more accurately allocated to customer service characteristics (see discussion below) and, ultimately, to customer classes.

Table 5-1
City of Austin, Texas
Water Utility
Summary of Net O&M Costs by Customer Service Characteristic

ITEM	CUSTOMER SERVICE CHARACTERISTICS								
	Base	Max Day	Max Hour	Customer	Equivalent Meter	Fire Protection	Revenue Allocations	Direct Assignments	TOTAL
Joint	$14,608,262	$1,919,043	$237,753	$6,116,014	$1,576,043	$0	$0		$24,457,116
Retail Only	8,307,331	2,234,706	764,938	214,483	0	221,110	0		11,742,567
Revenue--Based Allocations							631,676		631,676
Direct Assignments								0	0
NET O&M COSTS	$22,915,593	$4,153,749	$1,002,691	$6,330,496	$1,576,043	$221,110	$631,676	$0	$36,831,359

5-4

D. After all research on these CIP projects was completed, the next task for the Utility was to functionalize all CIP projects to the identified functional parameters. This process was done in two phases:

1. The first phase was directed by the Utility Finance staff and obtained information from the Utility and Public Works Department project managers. The Utility received functionalization criteria from CH2M HILL to assist the project managers in determining the functionalization of each of the projects. The project managers were given workpaper forms for each CIP project they managed to be used to document their response. The Utility used these forms to enter data into the COS CIP Project Database.

2. The second phase was completed by CH2M HILL engineering staff. The Utility provided CH2M HILL with printouts of the COS CIP Project Database showing the project number, project name, and the functional parameters. The functional percentages on projects that had been functionalized in phase one were included for review. The remaining projects that had not been functionalized were also listed. CH2M HILL reviewed the projects to determine the functional percentages. This process took approximately one month. The COS CIP Project Database lists were returned to the Utility staff for data entry.

After the Utility had initiated the CIP project research, it became apparent that the Utility would not be able to identify which specific CIP projects were funded entirely or in part by issued revenue bonds. Records of funding sources on individual CIP projects could not be readily tracked from the City's financial system. Therefore, the Utility and CH2M HILL were faced with a decision on how to best functionalize revenue bond debt service using the available CIP project information The process by which revenue bond debt service was functionalized is detailed below:

A. Although the Utility staff was unable to determine which specific CIP projects were funded using issued revenue bonds, they could identify the total amount of revenue bonds that were issued for a specific bond authority proposition. **Therefore, it was decided that revenue bond debt service functionalization would be based upon the overall bond authority proposition functionalization.**

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B. The COS CIP Project Database was then sorted by bond authority proposition. The total expenditures for each CIP project listed within the proposition were distributed to each of the functional parameters based upon that project's functional percentages identified by the project managers or CH2M HILL. For example, if a specific Water CIP project was functionalized as 95 percent transmission and 5 percent fire protection, then the total expenditures for that project were distributed to the

respective functional parameters based on the identified percentages. The resulting functional expenditures for each bond authority proposition were totaled for each functional parameter. The overall bond authority proposition functional percentages were then calculated by dividing each functional parameter total expenditures by the total proposition expenditures. Printouts of each bond authority proposition showing a list of CIP projects, total expenditures, functional percentages, and the overall bond authority proposition functional percentages were completed as documentation.

C. CH2M HILL and the Utility decided that excess reserve capacity revenue bond debt service requirements would be functionalized differently than other revenue bond debt service requirements. In the analysis that determined the excess reserve capacity debt service requirements, an allocation of issued revenue bonds pertaining to excess reserve capacity was determined. The Total Issued Revenue Bonds were reduced by the allocation of excess reserve capacity issued bonds to produce the Net Issued Bonds for each of the bond authority propositions.

D. The Net Issued Bonds for each bond authority proposition was distributed to the functional parameters by using the overall bond authority proposition functional percentages calculated in section B. Each functional parameter's Net Issued Bonds were totaled. Revenue bond debt service functionalization percentages were calculated by dividing the Net Issued Bonds for each functional parameter by the total Net Issued Bonds.

E. Revenue bond debt service requirements net of identified excess reserve capacity revenue bond debt service requirements were functionalized according to the percentages calculated in section D.

Table C-4 in Appendix C shows the percentages of each capital requirement item that are distributed to the functional categories. As shown in the table, a portion of revenue bond debt service is allocated to each functional category (except revenue allocations). The functional category that receives the largest allocation of revenue bond debt service cost is treatment; about 40 percent of the revenue bond debt service requirement is associated with treatment facilities.

Table C-5 shows the amount of joint costs allocated to each service function. Treatment is the largest function in terms of cost, representing almost 50 percent ($19.0 million) of total capital requirements. The smallest portion of system capital costs are allocated to fire protection, these costs are about $135,000 in FY92-93. Table C-6 shows the allocation of retail only costs to functions. All of the costs allocated to retail customers in this table are distribution costs. **It is important to note that fire protection costs are also retail only; however,** they are allocated to retail customers following the allocation of costs to customer service characteristics discussed later in this section.

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Capital Costs by Customer Service Characteristic

Table 5-2 summarizes the results of the allocations of capital costs to customer service characteristics, including joint costs, retail-only costs, revenue-based allocations, and contract revenue bond allocations. The revenue-based capital cost is the general fund transfer, which is calculated from system revenues, and is therefore a revenue-based allocation item. Contract revenue bonds are allocated as a separate category because these costs are allocated to customer classes in a slightly different manner than other costs. The method used to allocate contract revenue bond debt service to customer classes is described later in this section.

Table 5-2 shows that more than $21.8 million of the $47.3 million net capital costs are allocable to base demand and more than $10.9 million are related to maximum-day demand. Maximum-hour costs and contract revenue bonds are each more than $3 million.

Allocations to Customer Classes

The costs by customer service characteristic (Tables 5-1 and 5-2) are allocated to customer classes based on the proportionate usage levels of each characteristic by each class. Joint costs are shared proportionately by all classes. Retail costs are allocated only to the retail classes based on their respective proportions of each characteristic.

Contract revenue bonds are allocated to each class in a slightly different manner. **The contracted debt service for an issuing MUD is considered the entire debt service responsibility for that MUD.** The MUD pays none of the City's share of the debt service on its own issue. However, the MUD does pay its proportionate share of the City's debt service on all other contract revenue bond issues. Retail classes pay their respective shares of all the City's contract revenue bond debt service requirements. This method is used because the City's shares of these debt issues were for facilities providing general system benefits. However, the MUD's contracted shares of their issues were initially set based on the total use (benefit) that the MUD would receive from those facilities. Therefore, allocation of any of the City's share of that issue to the MUD would result in the City overcharging the MUD.

Revenue-based costs are allocated to customer classes in proportion to their share of other costs. The allocation of these costs is the final step in the cost allocation process.

Net Costs by Class

The allocated costs by customer class are summarized in Table 5-3. The in-City single-family class is responsible for more than $39.9 million of net requirements from ratepayers. This amount is about 47.4 percent of the total requirements from rates. Commercial users inside the City are allocated about $17.1 million, and large volume/

Common Data Limitations

Customer class peaking factors serve as the basis to allocate functionalized costs to each customer class. Customer class peaking factors are based on peak-day and peak-hour demands. These demands are not typically available on a customer class level. In fact, usage data for individual customer classes are typically available only on a monthly basis (or in some cases, less frequently.) Nonetheless, estimates of peaking factors by customer class can serve as a proxy to assign functional cost components in an equitable manner.

Method of Prorating System-Wide Peaking Factors

Considering the limitations on meter reading frequencies, the water industry has developed approaches to estimate peaking factors by customer class. Some utilities maintain meters that record daily and hourly reads for a sample of customers. In fact, during the early 1990s AWU did just that. The costs of these programs are often considerable and the challenges of attaining usable data are significant. For those reasons, AWU abandoned its daily and hourly meter-reading program.

Published data from comprehensive sampling programs may be used to develop estimates of peaking factors by class. However, these data are often specific to the climatic and demographic conditions where the studies are conducted and generally do not provide adequate information for other utilities.

As an alternative, peaking factors are often derived by prorating the system-wide peaking factors to customer classes based on each class's contribution to the system peak-month demands. The derivation of customer class peaking factors uses the following information:

- System average-day demands
- System peak-day demands
- System peak-hour demands
- System peak-month demands
- Customer class average-month and peak-month demands

The following formulas are often used:

$$Class\ Peak\ Day\ Factor = \left(\frac{Class\ Peak\ Month\ Demand}{Class\ Average\ Month\ Demand} X \frac{System\ Peak\ Day\ Demand}{System\ Peak\ Month\ Demand} \right)$$

And:

$$Class\ Peak\ Hour\ Factor = \left(\frac{Class\ Peak\ Month\ Demand}{Class\ Average\ Month\ Demand} X \frac{System\ Peak\ Hour\ Demand}{System\ Peak\ Month\ Demand} \right)$$

(E)

- Number of connections. Under this approach, I/I is attributed to customer classes based on the number of connections each class has within the wastewater system.

- Land Area. Since I/I is often introduced into the collection system, and the ultimate length of pipe in the collection system is based on the total area served, land area is available as a method to allocate and recover I/I costs.

- Property values. For systems that have USEPA approved system of rates based on *ad valorem* property taxes, property values may be used to allocate and recover I/I costs.

Other Observations

The approaches used to allocate and recover I/I costs vary from utility to utility. Some utilities base the allocations of I/I to customer classes based on a combination of the factors listed above. Other utilities use only one of the available methods.

The primary differences in the methods of allocating and recovering I/I costs are based on different philosophies. Some analysts consider I/I cost as another element of the wastewater system that must be managed. And since I/I generally affects the flow-related unit processes the most, the cost associated with I/I are then allocated based on a customer classes' flow. The cost of mitigating I/I are often incurred to augment the hydraulic capacity of the treatment plant and portions of the conveyance system.

Some analyst attempt to allocate the source of I/I back to the customer classes. In some cases, I/I is assumed to occur primarily in the collection system and at the point of connection of customers' services to the sewer laterals. Under this assumption, analyst may allocate I/I on a per customer basis.

AWU is unique since much of its major conveyance systems have historically be placed within natural creeks and streams. Although this placement may maximize the use of gravity to convey wastewater, it likely increases the I/I of the major conveyance systems. This unusual circumstance suggests that I/I does not correlate well to the number of connections.

Methodological Options under Review

When considering the issue of wastewater cost allocations, the following methodological options are important to consider:

1. Which is the most appropriate overall method for allocating costs (i.e., design, functional, or hybrid basis)?

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Table 28
Austin Water Utility
Wastewater Cost of Service Model - Hybrid Method
Wastewater Concentrations by Customer Class

	Contributed Flow (mg/L)			Inflow & Infiltration (mg/L)		
Customer Class	BOD	TSS	Unused	BOD	TSS	Unused
Residential	200.0	200.0	0.0	40.0	95.0	0.0
Multi-Family	200.0	200.0	0.0	40.0	95.0	0.0
Commercial	200.0	200.0	0.0	40.0	95.0	0.0
Comanche Canyon (WCID#17)	4.0	6.0	0.0	40.0	95.0	0.0
Manor, City of	200.0	200.0	0.0	40.0	95.0	0.0
North Austin MUD #1	200.0	200.0	0.0	40.0	95.0	0.0
Northtown MUD	200.0	200.0	0.0	40.0	95.0	0.0
Rollingwood, City of	200.0	200.0	0.0	40.0	95.0	0.0
Shady Hollow MUD	200.0	200.0	0.0	40.0	95.0	0.0
Sunset Valley, City of	200.0	200.0	0.0	40.0	95.0	0.0
Steiner Ranch (WCID #17)	4.0	6.0	0.0	40.0	95.0	0.0
Wells Branch MUD	200.0	200.0	0.0	40.0	95.0	0.0
Westlake Hills, City of	200.0	200.0	0.0	40.0	95.0	0.0
Hospira	200.0	94.0	0.0	40.0	95.0	0.0
Spansion	11.0	6.0	0.0	40.0	95.0	0.0
Freescale	109.0	97.0	0.0	40.0	95.0	0.0
Samsung	51.0	32.0	0.0	40.0	95.0	0.0
Sematech	88.0	107.0	0.0	40.0	95.0	0.0
University of Texas	182.0	188.0	0.0	40.0	95.0	0.0
Surcharge						

144 200 47 40 95

See Castillo 476 (Exh 4)

1999

contributed volume of each class is generally based upon wastewater winter average billing records that exclude estimated water use not reaching the wastewater system, such as that used for lawn sprinkling and car washing.

Based on a historical analysis, it is estimated that the amount of flow entering the sewers through infiltration/inflow will average about 15 percent of the total wastewater flow reaching the treatment plants. Each customer class should bear its proportionate share of the costs associated with infiltration/inflow as the wastewater system must be adequate to convey and process the total flow. Recognizing that the major cost responsibility for infiltration/inflow is allocable on an individual connection basis, two-thirds (66.7%) of the infiltration/inflow volume is allocated to customer classes based on the estimated number of customer connections with the remaining one-third (33.3%) allocated on the basis of contributed volume. The allocation of I/I on this basis to customer classes is shown on Table S-12.

The responsibility for collection system capacity cost varies with the estimated peak flow rates of both contributed wastewater and infiltration attributable to each customer class. Infiltration/inflow is estimated to comprise about 30 percent of the total peak flows.

The BOD and suspended solids responsibility of each customer class is based on estimated average domestic strength concentrations and contributed wastewater volume for each class. Estimated average BOD and suspended solids concentrations of contributed domestic sewage are estimated to be about 144 milligrams per liter (mg/l) and 200 mg/l, respectively, for all customers excluding industrial users. Because of the pretreatment efforts of these customers, their strengths are estimated to be 77 mg/l for BOD and 82 mg/l for suspended solids. An average infiltration/inflow strength allowance of 40 mg/l for BOD and 95 mg/l for suspended solids was also used to balance total wastewater loadings contributed by normal and excess strength users with the total wastewater loadings received at the wastewater treatment plants.

The BOD and suspended solids strengths that are in excess of normal domestic limits of 200 mg/l are assigned to the surcharge customer classification as shown on Line 22 of Table S-11. The estimates of excess strength quantities for surcharge customers are based on a detailed analysis of extra strength data provided by historical surcharge billings of the Utility.

Customer costs are distributed among customer classes on the basis of the number of bills rendered.

8.4.3 Customer Class Cost of Service

Costs of service are distributed among customer classes by application of unit costs of service to respective service requirements. Unit costs of service are based upon the total costs previously allocated to functional components and the total number of applicable units of service.

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WE SAY AUSTIN WATER

Resize text A A A

Questions await coming debate on water rates

Posted 7:00 p.m. Tuesday, March 4, 2014

By Editorial Board

Our response to last week's American-Statesman story that Austin's successful water conservation efforts might force the city's water utility to significantly raise rates was similar to yours: Shouldn't we be saving money if we're using less water?

As the Statesman's Asher Price and Marty Toohey reported, Austin Water is losing revenue because its customers are using less water. The revenue decline – $27 million below budget projections in 2013 and $10 million below projections in the first quarter of this fiscal year, which began Oct. 1 – comes despite the doubling of rates over the past 12 years.

The utility is working out a rate-increase proposal to present to the City Council this spring. The water utility's director, Greg Meszaros, told Price and Toohey that rates might have to rise by double digits. This was stunning news.

Austin residents are to be commended for taking conservation seriously. Austin's single-day water use peaked in August 2001 at 240.3 million gallons, and has been declining ever since. Meanwhile, Austin's population has grown by 20.5 percent, from about 670,000 residents in 2001 to 843,000 today. To put it another way, as Price and Toohey reported, per-person water use in 2006 averaged 190 gallons a day; last year, daily per-person use was 136 gallons.

This is virtuous behavior to be encouraged and fostered. Yet our readers have told us in letters and online comments they feel as though

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Texas GOP convention features Cruz vs. Perry presidential talk

UT could get wide latitude on spending tax money for medical school

Study shows 2% percent decline in expulsions in Texas

Judge David Peeples to decide Dietz school-case recusal

Testimony continues in Hays County gun range case

Band team defeats Seattle Police Department in beer baseball game

Gregory McQueen prostitution hearing wraps up at Ft. Hood

Kourtney Kardashian reportedly pregnant with third child

Panel set judge to hear school-finance recusal case

they are being punished for saving water

The utility says it understands our readers' response, but answers that everybody keeps using water even as they use less of it, and there are costs associated with getting water to every customer. The utility saves money on pumping and treatment costs when customers use less water, but other costs in the utility's budget — water and sewer line repairs, equipment maintenance, and debt payments — are fixed.

Which brings us to Water Treatment Plant No. 4, the controversial, $508 million facility being built near RM 620 and RM 2222 in Northwest Austin. Some opponents of the plant saw a told-you-so moment in Price and Toohey's report. Critics of the plant had argued that conservation could make Water Treatment Plant No. 4 unnecessary. A new treatment plant eventually would be needed, they said, but it could be smaller and built years from now after the utility first focused on replacing leaky pipes and encouraged even more conservation.

Critics said Water Treatment Plant No. 4 would result in a rate increase substantially larger than city officials were saying would be necessary. The Save Our Springs Alliance, for example, put out a report in June 2010 forecasting that residential water rates could nearly double by 2015 to pay for the new water treatment plant.

Supporters of the plant — we were among them — said the plant was needed to ensure a rapidly growing Austin had an adequate future water supply. There perhaps was existing treatment capacity for another couple of decades, but it was better to build a new plant now while construction costs were relatively low rather than wait.

Plus, it was argued, building a new plant now could stave off crisis should one of the city's two existing plants, built in 1954 and 1969, needed to be shut down for lengthy repairs. Once operational, the new treatment plant would allow Austin Water to make life-extending upgrades to its older plants.

We have been consistent supporters of the city's conservation efforts, and on a couple of occasions have criticized city officials for not going far enough — we favor making the city's lawn-watering restrictions permanent, for example. But we and others didn't think conservation ultimately would be enough to meet the city's future water needs.

It is pointless to reargue Water Treatment Plant No. 4. The plant is being built and remains on track to begin operating this year.

There is merit, however, in exploring questions surrounding how the plant was sold to the public. We also find merit in asking how utility officials failed to properly and adequately account for conservation's effect on demand. And a key question to get around as we begin to

debate a rate increase is, what happens when the utility raises it rates?

For one, people will use less water. As we now are fully aware, when people use less water, the utility's bottom line suffers and the utility has to raise rates. A way has to be found to manage this spiral toward more burdensome rates.

We will be asking these and other questions as Austin Water moves toward a rate-increase proposal and the City Council begins debating it. The answers will be needed as we plan for the region's economic and water future.

Be sure to read Thursday's Viewpoints for our view on Tuesday's local and statewide primary election results, or read us online at www.statesman.com.

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All Comments (3)

Post a Comment

Comment(s) 1-3 of 3

Report

Claire-Standish

Perhaps the City should start giving hefty rebates to those proud Austin homeowners who install a property-wide automatic sprinkler system to keep their lawn full of thirsty, non-indiginous St. Augustine grass beautiful and green all summer long.

7:07 p.m. Mar. 4, 2014

(2) (24) (E)

Why drop in water use could cost Austin customers more

Resize text A A A

Posted: 5:17 p.m. Monday, Feb. 24, 2014

By Asher Price and Marty Toohey - American-Statesman Staff

Austin officials say residents have done such a good job conserving water that the city faces a conundrum: People aren't buying enough water to keep the delivery system in the black.

The Austin Water Utility took a $10 million hit in water sales for the first few months of this fiscal year, on top of the $27 million loss it logged last year. Correcting that shortfall could require new, higher "drought rates" that raise more money even as people use less water, according to the city.

Utility executives told the American-Statesman they are discussing new rate structures that could be proposed this summer. One idea is rates that rise as the lakes that supply Austin's water shrivel, a concept similar to one Dallas has adopted. Asked whether the rate increase would be double-digits, water utility director Greg Meszaros didn't rule the possibility out. To balance its books, the water utility also may deepen internal cuts.

In a sense, Austin has been a victim of its own success: Austinites have been reducing their water consumption ... which means the city has collected less money from them ... which is leading city officials to conclude rates must rise to bring in the money necessary to fund the 80 percent of costs that utility executives say are "fixed," such as debt payments and some equipment maintenance.

"For a customer it can be counterintuitive" that water conservation causes higher rates, Meszaros said. "But as we reduce water demand we

In this Section

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reduce revenue and a lot of the costs of our operation cannot be cut. We're just not built to absorb $27 million in losses year after year."

This situation may sound vaguely familiar after all, Austin has been steadily raising rates for more than a decade to pay off major investments, such as a $400 million, federally mandated upgrade of the sewer system. It is not unique to Austin, either; cities across Texas have also raised rates substantially as the drought took hold.

Anyone who has looked at Lake Travis lately saw a powerful argument for conservation. Lakes Travis and Buchanan, which are the main water supplies for Central Texas, are only about 38 percent full. That is approaching the all-time low of 30 percent, with summer yet to come. Nearly every water official says the region is in a crisis.

Largely because of conservation efforts, Austin homes and businesses have used less water each year since 2006, despite population growth and hard droughts. Utility officials say the main reason is the once-a-week watering restriction, which Meszaros said will probably not be lifted for years. Utility officials also credit public education, giveaways of low-flow toilets, rebate programs and the current rate structure, which includes progressive "tiered" rates intended to discourage profligate water use.

In the 2006 fiscal year, per-person water use in Austin averaged 190 gallons a day; in the 2013 fiscal year, daily use had dropped to 136 gallons per capita. A more sophisticated analysis, which uses a five-year average to smooth out unusually wet and dry years, shows a similar trend. Likewise, the total amount of water pumped by the water utility peaked in 2007.

Even the summer scorchers of recent years haven't changed the basic picture.

"It used to be that in dry years, water utility revenues would go up, and in wet years it would go down. It's still down in wet years, but now it also is down in dry years," said Daryl Slusher, an assistant director of the water utility who oversees its conservation efforts.

The revenue shortfall is happening despite rates that have more than doubled over the past 12 years. And it is happening despite one of Austin's worst-kept secrets: Some houses are watering during days on which watering is not allowed – and producing revenue the city would not be collecting were it enforcing its conservation rules more vigorously.

Fiscal conservatives question whether the utility should cut rebates and other programs that kneecap revenues. Environmental activists say the city should not have added nearly a billion dollars worth of debt, to be

? True?

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paid back over 30 years for a water-treatment plant now under construction, particularly at a time when citywide use is declining.

For years the city had also given developers steep discounts on water-and-wastewater hookup fees, a practice the City Council recently concluded should be curtailed because it pushed water-utility costs onto everyone else.

Even Mayor Lee Leffingwell recently alluded to nonvital expenses while trying to persuade his City Council colleagues to be more cognizant of the city's bottom line. Leffingwell noted that a few years ago, the council decided to use Austin Water Utility revenue to maintain the Balcones Canyonlands Preserve, a high-profile nature conservation effort, "because that's where the money was."

To deal with the expected budget crunch, the water utility has begun cutting. Its plans include: reducing conservation advertising; hiring fewer consultants to help fashion conservation strategies; signing fewer contracts, such as those for leak detection and assessment of the utility's water distribution system; creating less-generous rebate programs; and deferring maintenance of pumps and other equipment. But utility executives expect those cuts to yield only about $4.5 million in savings.

Last year, the utility dealt with the $27 million shortfall partly by refinancing some of its outstanding debt, which saved about $5 million, said David Anders, an assistant director who oversees the utility's finances. The rest of the shortfall was covered by borrowing money to finance some construction projects, instead of paying for them with cash. Meszaros, the utility director, said it may do an even more pronounced shift from cash to borrowing in the coming years, which would save money in the short term but adds interest payments.

Meszaros added that the utility is looking to save more money by delaying more construction and maintenance projects.

"When we're in a cash crunch, that's one of the big knobs we can turn," Meszaros said.

Expert reporting

Marty Toohey has written about local government since 2005, and has reported on Austin City Hall since 2009. He has taken in-depth looks at how Austin Energy revenue supports the city budget, the rise in government pension and health care costs and the combined burden of various local tax entities on area property owners.

By the numbers

190: Average daily water use, in gallons, per person in Austin in 2006

136: Average daily water use, in gallons, per person in Austin in 2013

$27 million: Shortfall in Austin Water sales last year

$10 million: Shortfall in Austin Water sales for the first quarter of this year

Source: Austin Water Utility

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All Comments (9)

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Comment(s) 1-9 of 9

Report

807swr

I suspect this is the new norm. I sense a Hurricane bonus for those 1 in 10 year events where the lakes are recharged and AWU can revert back to conventional operations and maintenance costs.

Of course the developers will keep on building until we shut them off from water for sanitation and fire protection.

1:46 p.m. Feb. 24, 2014

Report

OldBlowhard

Lay off the deadwood in the administrative suites and cut the pay of the ones who keep jobs. Make Slusher

the manager He has succeeded Don't even THINK about screwing the people for conserving precious water and hard-earned money If the present City Council can't deal with it the new one will

4:57 a.m. Feb. 25, 2014

Report

educated

Poor management and lack of foresight has sunk our boat

5:25 a.m. Feb. 25, 2014

Report

BillBunch

Austin a "victim of its own success"? This is what is called revisionist history

Austin water ratepayers are victims of pork barrel politics at its worst and a failure of integrity and leadership from AWU director Greg Meszaros from his boss, City Manager Marc Ott, and from his boss, a narrow 4-3 city council majority that includes sitting Mayor Leffingwell and councilmembers Mike Martinez and Sheryl Cole

The "Save Water Save Money" coalition of SOS Alliance, Austin Sierra Club, Clean Water Action, and Environment Texas documented for two years running that water use was not increasing as Water Utility directors insisted, such that building the "Billion Dollar Mistake on the Lake" water plant was a total waste of ratepayer funds. We documented that it would lead directly to the rate trap that we are in right now It was all crystal clear from 2009 through 2011 before construction on the plant began It was clear that Austin Water had a finance and water waste problem not a treatment problem

But the Austin Chamber the Real Estate Council, the contractors, and the Statesman editorial board all ignored the facts that were clear in the Water Utility's own data and fell for the scare tactics and misrepresentations of Meszaros and Company

Austinites are saving water because rates have skyrocketed and they care about our city and our planet. They are saving despite the incompetence of city management With Water Treatment Plant No 4, Meszaros, Ott and Leffingwell led Austin over a cliff Someone should be held accountable. Price and Toohey should tell the truth

8:02 a.m. Feb. 25, 2014

Report

Gritsforbreakfast

Gee, if only this could have been predicted when the Statesman Chronicle and city council were pushing a half billion dollars in debt for a water treatment plant we didn't need Oh wait, it was, in detail

http://www.sosalliance.org/file-library/doc_view/250-the-perfect-storm-setting-priorities-at-the-austin-water-utility-in-a-time-of-fiscal-crisis

To blame massive rate hikes on the pittance spent on rebates or the Balcones Canyonlands Preserve is shockingly disingenuous Some enterprising reporter should compare Leffingwell and Meszaros' comments today on the topic of water rates with the mendacious foolishness they were spewing when they wanted to

build WTP4 This was all both predictable and predicted

The environmentalists opposing all that new debt were the real "fiscal conservatives " Leffingwell, the Statesman, Chronicle and other WTP4 boosters all owe ratepayers a big mea culpa

8:17 a.m. Feb. 25, 2014

TominAustin Report

Hey boss what's up? These people are cutting back water use so much we can't rake in a profit like we used to What'll we do now? Son, GMAB, easy - just bump the rates like we always do We know that conserving does not save a $ Look at Austin Energy, they bumped rates Recycling trash? A cash cow for us means nothing to the environment Get with the program, keep Austin Weird 6-figure city boss

8:33 a.m. Feb. 25, 2014

Timmy1234 Report

So that clown Leffingwell wants to limit "nonvital" expenses?

Novel concept

9:29 a.m. Feb. 25, 2014

JOEY68 Report

lets cut the city water service off and let the truck roll on into the neiborhoods We have to watch the water we use because of the drought Ok so now lets forget about the restriction and waste water so we dont have that stupid and dumd water rate raise Our politicians are dumd!!!!!!

4:06 p.m. Feb. 25, 2014

WonderBread Report

I am agree with Old Blowhard Bill Bunch, and GritsforBreakfast comments at the same time My head may explode The new 10-1 city council members need to put a stop to the city staff undermining water conservation efforts in the future.

9:44 p.m. Feb. 25, 2014

Comment(s) 1-9 of 9

All Comments (9) Post a Comment

(E)

2010-2011 PROPOSED BUDGET
RESPONSE TO REQUEST FOR INFORMATION

DEPARTMENT: Austin Water Utility

REQUEST NO.: 14

REQUESTED BY: Riley

DATE REQUESTED: 8/3/10

REQUEST: Have the bonds approved in 1984 been used for any WTP4-related costs? If so, please describe how these bonds are incorporated in the $508M figure for the FY 2008-2014 total projected CIP spending. If these bonds were not used for WTP4, please describe what these bonds have been used for.

RESPONSE:
The 1984 Proposition 4 voter authorized bonds have been appropriated for use for the site acquisitions, engineering design, and construction of the specific bond proposition related projects including:

	Appropriated Funds
• Four Points / Spicewood Transmission Main	$1.8
• Four Points Reservoir	$5.2
• WTP4 - Bull Creek Site Related Projects	$55.2
• WTP4 – Bullick Hollow Site Related Projects	$77.6
Total 1984 Prop. 4 Bonds Appropriated	$139.8

All of the $141 million in voter authorized bonds will be issued and expended on the previous bond proposition projects constructed in the 1980s, Bull Creek site acquisition and engineering completed in the 1980s, and the current WTP4 and transmission main construction at the Bullick Hollow Site.

The $508 million in WTP4 construction at the Bullick Hollow site is currently estimated to be funded through $78.8 million of the 1984 Proposition 4 bond authority, $327.6 million in commercial paper which will be converted to long-term revenue bonds, and $101.6 million in cash funding from Austin Water Utility current revenue.

The Council approved Financial Policies for the Austin Water Utility allow the voter authorized bond authority to be increased by inflation plus an additional 50% for construction of the original scope of bond projects that have been significantly delayed. By applying this financial policy, the total funding for WTP4 is authorized at $597.9 million when including inflation and the additional 50% limit. This funding limit will provide sufficient funding to complete the construction of WTP4.

(E)

2011-2012 FINANCIAL FORECAST
RESPONSE TO REQUEST FOR INFORMATION

DEPARTMENT: Austin Water

REQUEST NO.: 33

REQUESTED BY: Spelman

DATE REQUESTED: 6/30/2011

REQUEST: For expenditures made on the WTP4 project at the Bull Creek site, or are otherwise excluded from the $508 million budget, please state the current outstanding debt for those expenditures and give the annual payment schedule for that debt. For this same time period, please also give the projected annual Operations & Maintenance costs.

RESPONSE:

Of the $55.7 million expended on the Bull Creek Site, about $7.6 million was funded with cash and capital recovery fees, and the remaining $48.1 million was debt financed. The current outstanding debt on the original Bull Creek Site is approximately $28.9 million with annual debt service of about $2.2 million through November 2030. **Appendix A** is an estimated debt service schedule for the Bull Creek Site bond-funded expense

The Bull Creek site has been repurposed and has been dedicated to the Balcones Canyonland Preserve. There are minimal Operations & Maintenance costs to maintain the site as part of the BCP; however, those costs are not associated with WTP4 now, or in the future.

Appendix A

CITY OF AUSTIN, TEXAS
Estimate of WTP#4 Debt Service for Bull Creek Site Only
1985-2009

Date	Principal Outstanding	Principal Additions	Principal	Coupon	Interest	Total	Fiscal Year Total
					-	-	
		8 000 000 00					
11/15/85	8 000 000 00		-	12 000%	480 000 00	480 000 00	
05/15/86	8 000 000 00	13 513 000 00	-		480 000 00	480 000 00	960 000 00
11/15/86	21 513 000 00	-	305 390 97	12 000%	1 290 780 00	1 596 170 97	
05/15/87	21 207 609 03	10 000 000 00	-		1 272 456 54	1 272 456 54	2 868 627 51
11/15/87	31 207 609 03	-	466 666 40	12 000%	1 872 456 54	2 339 122 94	
05/15/88	30 740 942 64		-		1 844 456 56	1 844 456 56	4 183 579 50
11/15/88	30 740 942 64		484 232 62	6 400%	983 710 16	1 467 942 78	
05/15/89	30 256 710 02	5 000 000 00	-		968 214 72	968 214 72	2 436 157 50
11/15/89	35 256 710 02	-	585 018 32	6 400%	1 128 214 72	1 713 233 04	
05/15/90	34 671 691 70		-		1 109 494 13	1 109 494 13	2 822 727 17
11/15/90	34 671 691 70		606 029 18	6 400%	1 109 494 13	1 715 523 32	
05/15/91	34 065 662 52		-		1 090 101 20	1 090 101 20	2 805 624 52
11/15/91	34 065 662 52		627 229 06	6 400%	1 090 101 20	1 717 330 26	
05/15/92	33 438 433 47		-		1 070 029 87	1 070 029 87	2 787 360 13
11/15/92	33 438 433 47		648 553 90	6 400%	1 070 029 87	1 718 583 77	
05/15/93	32 789 879 56		-		1 049 276 15	1 049 276 15	2 767 859 92
11/15/93	32 789 879 56		669 932 12	6 600%	1 082 066 03	1 751 998 14	
05/15/94	32 119 947 45	1 149 152 00	-		1 059 958 27	1 059 958 27	2 811 956 41
11/15/94	33 269 099 45		716 016 20	6 700%	1 114 514 83	1 830 531 03	
05/15/95	32 553 083 25		-		1 090 528 29	1 090 528 29	2 921 059 32
11/15/95	32 553 083 25		738 014 26	6 000%	976 592 50	1 714 606 76	
05/15/96	31 815 068 99		-		954 452 07	954 452 07	2 669 058 83
11/15/96	31 815 068 99		759 794 80	6 000%	954 452 07	1 714 246 87	
05/15/97	31 055 274 19		-		931 658 23	931 658 23	2 645 905 10
11/15/97	31 055 274 19		781 249 30	6 000%	931 658 23	1 712 907 52	
05/15/98	30 274 024 89		-		908 220 75	908 220 75	2 621 128 27
11/15/98	30 274 024 89		802 260 22	6 000%	908 220 75	1 710 480 97	
05/15/99	29 471 764 67		-		884 152 94	884 152 94	2 594 633 91
11/15/99	29 471 764 67	8 198 00	822 701 07	5 675%	836 261 32	1 658 962 39	
05/15/00	28 657 261 61		-		813 149 80	813 149 80	2 472 112 19
11/15/00	28 657 261 61	1 577 00	842 677 57	5 675%	813 149 80	1 655 827 36	
05/15/01	27 816 161 04		-		789 283 57	789 283 57	2 445 110 93
11/15/01	27 816 161 04	1 114 00	861 617 99	5 500%	764 944 43	1 626 562 42	
05/15/02	26 955 657 05		-		741 280 57	741 280 57	2 367 842 99
11/15/02	26 955 657 05		879 545 51	5 500%	741 280 57	1 620 826 07	
05/15/03	26 076 111 54		-		717 093 07	717 093 07	2 337 919 14
11/15/03	26 076 111 54	506 000 00	896 276 57	5 500%	717 093 07	1 613 369 64	
05/15/04	25 685 834 97		-		706 360 46	706 360 46	2 319 730 10
11/15/04	25 685 834 97		930 001 67	5 500%	706 360 46	1 636 362 13	
05/15/05	24 755 833 30		-		680 785 42	680 785 42	2 317 147 54
11/15/05	24 755 833 30		944 187 86	5 250%	649 840 62	1 594 028 48	
05/15/06	23 811 645 44		-		625 055 69	625 055 69	2 219 084 18
11/15/06	23 811 645 44		956 667 66	5 250%	625 055 69	1 581 723 35	
05/15/07	22 854 977 78		-		599 943 17	599 943 17	2 181 666 52
11/15/07	22 854 977 78	3 000 000 00	967 260 19	5 250%	599 943 17	1 567 203 36	
05/15/08	24 887 717 59		-		653 302 59	653 302 59	2 220 505 94
11/15/08	24 887 717 59		1 109 528 35	5 250%	653 302 59	1 762 830 94	
05/15/09	23 778 189 24	6 918 976 00			624 177 47	624 177 47	2 387 008 41
11/15/09	30 697 165 24		902 661 70	4 500%	690 686 22	1 593 347 92	
05/15/10	29 794 503 54		-		670 376 33	670 376 33	2 263 724 25
11/15/10	29 794 503 54		922 898 03	4 600%	685 273 58	1 608 171 61	
05/15/11	28 871 605 51		-		664 046 93	664 046 93	2 272 218 54
11/15/11	28 871 605 51		942 061 65	4 600%	664 046 93	1 606 108 58	

CITY OF AUSTIN, TEXAS
Estimate of WTP#4 Debt Service for Bull Creek Site Only
1985-2009

Date	Principal Outstanding	Principal Additions	Principal	Coupon	Interest	Total	Fiscal Year Total
05/15/12	27 929 543 85				642 379 51	642 379 51	2,248 488 09
11/15/12	27 929 543 85		959,981 93	4 600%	642,379 51	1 602 361 44	
05/15/13	26,969 561 92				620,299 92	620 299 92	2,222 661 36
11/15/13	26,969,561 92		1 028,619 50	4 600%	620,299 92	1 648,919.43	
05/15/14	25,940,942.42				596,641 68	596,641 68	2,245,561 10
11/15/14	25,940,942.42		1 042 215.28	4 600%	596 641 68	1,638,856 96	
05/15/15	24 898 727 14				572,670 72	572,670 72	2,211 527 68
11/15/15	24,898 727 14		1,110,019 17	4 600%	572 670 72	1 682,689.90	
05/15/16	23,788 707 97				547 140 28	547 140.28	2,229,830 18
11/15/16	23,788 707 97		1 176,808 61	4 600%	547,140 28	1 723,948 89	
05/15/17	22,611 899 36				520,073 69	520 073.69	2 244 022 58
11/15/17	22,611,899 36		1,241,234 03	4.600%	520 073.69	1 761 307 71	
05/15/18	21,370,665 33				491 525 30	491 525 30	2,252,833 02
11/15/18	21,370,665 33		1 301 716 23	4 600%	491 525.30	1,793 241 53	
05/15/19	20,068,949 10				461,585 83	461 585 83	2 254 827 36
11/15/19	20 068,949 10		1 367 972 94	4 600%	461 585.83	1,829,558 77	
05/15/20	18 700,976 15				430 122 45	430,122.45	2 259 681 22
11/15/20	18 700,976 15		1,386,932 76	4.600%	430 122.45	1 817 055 21	
05/15/21	17 314 043 39				398,223.00	398,223 00	2,215,278 21
11/15/21	17 314,043 39		1,474 527 23	4 600%	398,223 00	1 872,750 23	
05/15/22	15 839 516 16				364 308 87	364 308.87	2,237,059 10
11/15/22	15 839,516 16		1 539 025 30	4 600%	364 308 87	1 903.334 17	
05/15/23	14,300,490 86				328 911 29	328 911 29	2,232,245 46
11/15/23	14,300 490 86		1 603 995 34	4 600%	328 911 29	1 932,906 63	
05/15/24	12 696 495 53				292 019 40	292,019 40	2 224 926 02
11/15/24	12,696 495 53		1 678 015.27	4 600%	292 019 40	1 970,034 66	
05/15/25	11 018 480 26				253,425 05	253,425 05	2,223,459 71
11/15/25	11 018 480 26		1 764 760 08	4 600%	253,425 05	2 018 185 13	
05/15/26	9,253,720 18				212 835.56	212,835 56	2,231 020 69
11/15/26	9,253,720 18		1 838 127 14	4 600%	212,835 56	2 050 962 70	
05/15/27	7 415 593 04				170,558 64	170,558 64	2,221,521 34
11/15/27	7,415,593 04		1 936,683 39	4 600%	170,558 64	2 107,242 03	
05/15/28	5,478,909 65				126,014 92	126,014 92	2,233,256 95
11/15/28	5,478,909.65		2 022,614 32	4 600%	126,014 92	2,148,629 24	
05/15/29	3,456,295.33				79,494 79	79,494 79	2 228 124 03
11/15/29	3 456 295 33		2,126 187 27	4 600%	79 494 79	2,205 682 07	
05/15/30	1 330 108 06				30,592.49	30,592 49	2,236 274 55
11/15/30	1 330 108.06		1 330 108 06	4 600%	30,592 49	1 360 700.55	
05/15/31	0 00				0 00	0.00	1,360,700 55
Totals		48,098,017.00	48,098,017 00		61 415,031 02	109,513 048.02	109,513,048 02

(E)

2011-2012 FINANCIAL FORECAST
RESPONSE TO REQUEST FOR INFORMATION

DEPARTMENT: Austin Water

REQUEST NO.: 34

REQUESTED BY: Spelman

DATE REQUESTED: 6/30/2011

REQUEST: For the $508 million budget for WTP4, please give an annual expenditure projection, starting the year the $508 million budget covers, showing both cash/out of pocket payment and debt service for each year, and show that projection through the end of the projected debt payment schedule.

RESPONSE:

The $508 million capital infrastructure expense annual expenditure projections, showing both cash/out of pocket (equity financing) and debt service (commercial paper and revenue bond) is shown in **Appendix A**.

CITY OF AUSTIN, TEXAS
AUSTIN WATER UTILITY

WTP4
Capital Infrastructure Cost Summary ($508.0 Million)

"DRAFT"	Actual 2007-08	CYE Projected 2008-09	1 Proj 2009-10	2 Proj 2010-11	3 Proj 2011-12	4 Proj 2012-13	5 Proj 2013-14	6 Proj 2014-15	7 Proj 2015-16	8 Proj 2016-17	9 Proj 2017-18	10 Proj 2018-19	11 Proj 2019-20
Debt Service Requirements													
Commercial Paper Debt Service	$112,750	$782,550	$1,741,110	$1,791,748	$2,478,483	$2,513,825	$1,753,407	$581,429	$0	$0	$0	$0	$0
Revenue Bond Debt Service	0	374,894	4,027,761	7,305,697	11,917,401	17,634,826	23,241,046	26,871,464	27,907,087	28,024,450	27,989,153	27,974,501	27,982,399
Total Debt Service	$112,750	$1,157,444	$5,768,871	$9,097,443	$14,395,884	$20,148,651	$24,994,453	$27,452,893	$27,907,087	$28,024,450	$27,989,153	$27,974,501	$27,982,399
Other Requirements													
Transfer to CIP (Equity Financing)	$0	$0	$12,526,027	$23,924,232	$28,243,552	$24,668,115	$12,238,073	$0	$0	$0	$0	$0	$0
Total Debt Service & Equity Requirement	$112,750	$1,157,444	$18,294,898	$33,021,676	$42,639,436	$44,816,766	$37,232,526	$27,452,893	$27,907,087	$28,024,450	$27,989,153	$27,974,501	$27,982,399

	12 Proj 2020-21	13 Proj 2021-22	14 Proj 2022-23	15 Proj 2023-24	16 Proj 2024-25	17 Proj 2025-26	18 Proj 2026-27	19 Proj 2027-28	20 Proj 2028-29	21 Proj 2029-30	22 Proj 2030-31	23 Proj 2031-32	24 Proj 2032-33
Debt Service Requirements													
Commercial Paper Debt Service	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Revenue Bond Debt Service	27,998,635	28,010,815	28,012,055	27,999,368	27,988,663	27,928,281	27,887,168	27,854,022	27,829,202	27,813,544	27,808,842	27,814,311	27,825,966
Total Debt Service	$27,998,635	$28,010,815	$28,012,055	$27,999,368	$27,988,663	$27,928,281	$27,887,168	$27,854,022	$27,829,202	$27,813,544	$27,808,842	$27,814,311	$27,825,966
Other Requirements													
Transfer to CIP (Equity Financing)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Debt Service & Equity Requirement	$27,998,635	$28,010,815	$28,012,055	$27,999,368	$27,988,663	$27,928,281	$27,887,168	$27,854,022	$27,829,202	$27,813,544	$27,808,842	$27,814,311	$27,825,966

	25 Proj 2033-34	26 Proj 2034-35	27 Proj 2035-36	28 Proj 2036-37	29 Proj 2037-38	30 Proj 2038-39	31 Proj 2039-40	32 Proj 2040-41	33 Proj 2041-42	34 Proj 2042-43	35 Proj 2043-44	Total
Debt Service Requirements												
Commercial Paper Debt Service	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$11,695,300
Revenue Bond Debt Service	27,842,828	27,861,241	27,880,891	27,627,889	24,817,832	20,796,423	16,881,670	11,222,755	5,447,915	1,380,195	0	785,820,589
Total Debt Service	$27,842,828	$27,861,241	$27,880,891	$27,627,889	$24,817,832	$20,796,423	$16,881,670	$11,222,755	$5,447,915	$1,380,195	$0	$797,515,889
Other Requirements												
Transfer to CIP (Equity Financing)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$101,599,999
Total Debt Service & Equity Requirement	$27,842,828	$27,861,241	$27,880,891	$27,627,889	$24,817,832	$20,796,423	$16,881,670	$11,222,755	$5,447,915	$1,380,195	$0	$899,115,888