

City of Corinth Gas & Water Department (CGWD)

Community: Corinth, MS

Population: 17,500

Number of Accounts: 7,200

Annual Revenues: \$2,200,000

Sustainable Finance Problem: *Evaluating options for financing a major capital project by a combination of sources and to predict rate increases; using capital reserves to mitigate “rate shock”*

Background

The City of Corinth is a rapidly growing (18.9% from 1990 to 2000¹), medium sized community in Northeastern Mississippi with critical water supply concerns. Previously, Corinth relied on a Paleozoic aquifer for its entire water supply. In recent years, concern has risen about the sustainability of this water source as Corinth and neighboring communities alike have noticed the water table falling. The problem caught public attention when Kimberley-Clark Corporation proposed an industrial park development which would double the City’s water demand (by 3 MGD). The State denied Corinth’s application for an additional well permit and Kimberley-Clark and was forced to scale back plans to demand no more than 300,000 gallons/day².

To greatly expand water supplies, the community has considered switching from exclusive reliance on groundwater to a surface water withdrawal from the Tennessee-Tombigbee Waterway, roughly 10 miles away. Projected costs of new surface water treatment facilities and the transmission main from the Waterway together were approximately \$26 Million in 2006. Despite their rapid rate of growth, such a large capital cost would impose a significant burden on the community where the median household income was only \$23,436 in 2000¹. Estimates based on bond market financing in 2005 showed that average user rates would have to increase roughly 47% (from \$15 to \$22 per month) to 1.1% of annual MHI for water alone².

Given the scale of the capital needs in Corinth, city leaders were forced to explore multiple financing and funding options. Grant options were explored, but none would cover more than a tiny fraction of the sum. Even the Drinking Water SRF in Mississippi was capped at \$1.5 Million as late as 2007, and it was clear that leaders needed a way to project the impacts of complicated financing and funding models on the average rate payer. Getting buy-in from the Corinth Public Utilities Commission, which oversees the CGWD, and from neighboring communities that might also participate in the project required detailed knowledge of the rate impacts of any financing scheme that might be used.

Solution

To assist Corinth, the UNC Environmental Finance Center designed a tool for estimating the financial impacts of multi-component financing models for large capital projects. The tool user can input

¹ 1990 & 2000 Decennial Census, U.S. Census Bureau

² Drinking Water and Wastewater in Appalachia, Case Study: Corinth, MS. ARC, 2005.

information on multiple combinations of grant, loan and bond funding and instantly determine direct financing costs over the life of the debt (assuming there is debt). The USEPA recently released a similar tool, the Financing Alternatives Comparison Tool (FACT³) which compares the amortized costs of financing alternatives. FACT allows the user to enter planning, design and financing costs in much great detail; however the model does not connect those costs to user rates. While it is important to have a detailed understanding of financing costs before taking on large amounts of debt, a detailed

TOTAL FINANCING IN PROJECT START YEAR		
Type of Funding Source	Name of Funding Source	Amount
Grant #1	STAG	\$0
Grant #2	EDA	\$0
Loan #1	DWSRF	\$0
Loan #2	CAP	\$0
Loan #3	Commercial	\$0
Bond	Revenue	\$24,853,740
Capital Reserve Used at Project Start	CR	\$5,146,260
Capital Reserve Available at Project Start	CR	\$5,146,260
Total Financing Allocated ----->		\$30,000,000
Project Cost Adjusted for Inflation ----->		\$30,000,000
To meet Project Cost, increase or (decrease) financing by		\$0

Table 1. Financing Model Input Table

understanding of costs is insufficient to address the political challenges of selling infrastructure projects to the public. Far too often, vital capital project are deferred or left undone because of uncertainty over the impacts on rate payers. It is therefore necessary to show not only cost details but how those costs will trickle down to user rates.

Thus the most important feature of the tool is that it allows the user to enter incremental rate increases, over the life of the debt, to determine the size of the revenue stream that will be available for debt service. This

tool offers enormous flexibility regarding when to raise rates and to what extent. On the output side the objective is simple: the user adjusts rates such that the project balance does not go into the red.

One benefit of the tool is that CGWD staff were able to test whether it was more cost effective to make a large down payment on the project, or to take on more debt and to spend capital reserves gradually to mitigate the impact of debt service and spread out rate increases. In this way, CGWD could avoid sending their customers into “rate shock.”

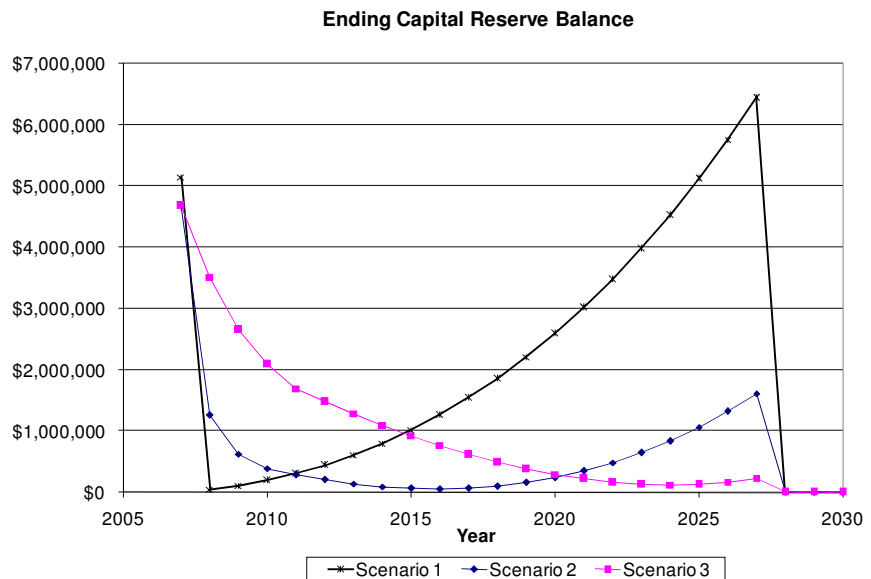


Figure 1. Financing Model Output with Project Fund Projections

³ FACT is available for free download from the USEPA at <http://www.epa.gov/owm/cwfinance/cwsrf/fact.htm>

Outcome

The CGWD has since initiated Phase I of their water supply project including construction of the surface water treatment plant, estimated at \$19.3 Million. Phase I is to be completed by spring of 2009 and subsequent phases, including the 10 mile raw water transmission main, will be completed within the next four years. Although other communities have expressed interest in participating in the project, none have “stepped up to the plate” at this time. Nevertheless, Corinth officials were confident that the community could afford to proceed with the project without overburdening their rate payers.

There were several reasons why CGWD staff were able to succeed in convincing their community to proceed. One major catalyst was a \$7.5 Million grant from the Federal Government to help cover costs. Also, the State agreed to remove the cap on the Drinking Water SRF fund allowing CGWD access to a significantly cheaper pool of capital. CGWD staff also attribute their success to the modeling tool provided by this project and the ability to demonstrate both the long term affordability of the debt they proposed to assume and the impact on rate payers.

Another key benefit of the tool was that it allowed CGWD to plan to use their capital reserves in a way which would mitigate the impact on their rate payers. CGWD staff were able to demonstrate that using less of their reserves as a down payment and spending the remainder on debt service made it possible to spread out rate increases instead of loading them all up front in the first year of debt service. The trade off, which CGWD staff could now evaluate, is higher interest payments over the life of the debt.

CASH FLOW (Incremental Rate and Monthly Bill per Household)

Year	Scenario 1		Scenario 2		Scenario 3	
	Incremental Rate	Monthly Bill per Household	Incremental Rate	Monthly Bill per Household	Incremental Rate	Monthly Bill per Household
2007	\$0.85	\$19.04	\$0.45	\$16.37	\$0.45	\$16.37
2008	\$0.85	\$24.73	\$0.40	\$19.04	\$0.40	\$19.04
2009			\$0.40	\$21.72	\$0.30	\$21.05
2010			\$0.35	\$24.06	\$0.25	\$22.72
2011			\$0.10	\$24.73	\$0.15	\$23.72
2012					\$0.15	\$24.73

Table 2. Financing Model Output of Annual Rate Increases Required for Project Revenue Sufficiency