A Clear Commitment to America's Waters

Impacts of the Current Economy on Public Clean Water Agencies

January 29, 2009

Written for NACWA

By

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I. INTRODUCTION

This paper explores the issues facing public wastewater treatment facilities caused by recent trends in the economy. The paper has three main sections: 1) a discussion of the trends that are impacting or may significantly impact public clean water agencies; 2) a discussion of the potential impacts from a theoretical perspective; and 3) a brief overview of public member agency responses to a recent NACWA survey on the economic downturn, identifying some of the challenges and impacts they are experiencing as a result of the ongoing economic downturn. In the discussions, comparisons will be made when possible to responses of the nation's clean water agencies to the last economic downturn in 2001.

This paper constitutes part of an ongoing effort by NACWA to facilitate a more in-depth discussion among its members and key committees regarding how public clean water agencies from coast-to-coast are impacted by a severe economic downturn. NACWA's longer-term goal is to build on this white paper and continue the discussion on these issues in order to develop some helpful strategies regarding how to mitigate and minimize harmful impacts during uncertain economic conditions, while also seizing on potential opportunities. For example, this paper touches on the opportunity of significant stimulus package funding for the Nation's clean water agencies — an outcome made possible by difficult economic conditions coupled with significant preparation and data gathered by NACWA and other key organizations.

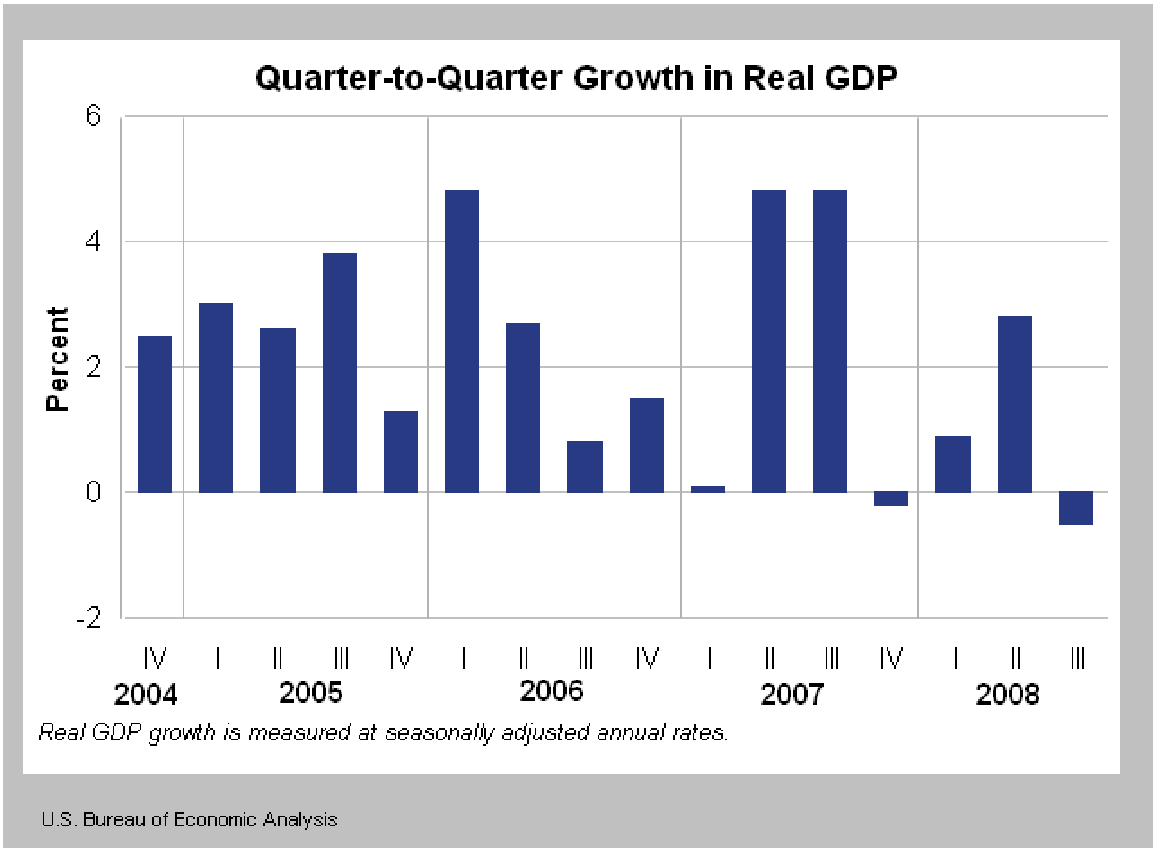
II. TRENDS

There are four economic trends that are challenging the industry: recession, financial crisis, deflation, and likely government responses. The following is some background information on all four.

A. Recession

The National Bureau of Economic Research (NBER) has recently pegged the start of the recession to December 2007. Although the Gross Domestic Product (GDP) declined in the fourth quarter of 2007, it grew in the first two quarters of 2008 before declining again in the third quarter. The fourth quarter is expected to be in sharp decline, and many forecast the first two quarters of 2009 to also be down. What led the NBER to call the recession in 2007, even though GDP was growing, was the start of the rise in unemployment. With the December 2008 figures just released, 3.6 million jobs have been cut from payrolls since the recession started. This number is expected to continue to grow because of major layoffs already announced or expected.

Although job loss can impact the industry, the major impacts of the recession will just be starting to be felt because GDP has only recently started to decline. GDP is the better measure of economic activity, and as such is a better gauge of industrial water demand and effluent. For example, while residential construction is down 23.6% in the 12 months from October 2007 to October 2008, manufacturing construction and office construction are up 53.7% and 8.9% respectively. The shrinking of the industrial sector should just be starting to be felt now rather than for the last 12 months. As evidence, factory orders were just reported to have dropped by 5.1% in October, a trend that is now widespread and not just related to the auto industry.



B. *Financial Crisis*

The financial crisis has been much more apparent for the last year and, as opposed to the recession which most likely will not reach bottom for a while, the overall financial market is slightly better now than a couple of months ago. Still, it is in bad shape. The bursting of the housing bubble caused a cascade of failures. As the mortgage market deteriorated, this caused some banks to fail. Derivatives based on mortgages then began to go under, bringing with them the investment banks that created markets in them and the insurance companies that backed them. This led to a credit freeze as no one was willing to extend credit, and no one trusted the banks when they extended letters of credit. The London Interbank Offer Rate (LIBOR) rate sky-rocketed, new bond issues had no buyers, and there was no insurance to back the issues. On December 3, for example, the New York Port Authority received no bids on its $300 million municipal bond issue.

As investors have sought safety in treasuries, the municipal bond market (muni or munis) has become less attractive because it is less liquid than the treasury market. Also, the credit quality and safety of munis are becoming more suspect. State tax revenues were estimated to have shrunk 2.6% last quarter.[1] This has caused the yield on munis to rise while those on treasuries fell. Now the relationship between treasury yields and munis has changed. Traditionally, muni yields were 70 to 100% that of treasuries, but they are now yielding more.[2] Yield spreads have been hovering around 135% of treasuries.

The credit market for munis, in summary, is in bad shape. With yields higher, fewer banks are willing to underwrite debt issuances or support the secondary market. Also there have been significant ratings downgrades of insurers and municipal and state tax revenues are

falling significantly. The result has been a 41% drop in the issuance on munis this quarter compared to a year ago.

C. *Deflation*

A byproduct of a severe or extended recession is the possibility of deflation. Deflation is a sustained drop in general price levels. Recently released data by the Bureau of Labor Statistics had the Consumer Price Index (CPI) dropping in each of the last three months. Automobiles, oil, and apparel were the three main culprits, but agriculture prices are also down. Other sectors, such as steel, are facing decreased demand so prices are expected to drop. In deflationary times it is very difficult for any company to raise its prices. This is good for customers, but terrible for sellers. Customers know the longer they hold off on a purchase, the cheaper it will become, which drives down demand even more.
This also makes borrowing unattractive, as it makes no sense to take on debt when prices and profits are falling. In deflationary times, borrowers end up paying back dollars that are worth more than when they borrowed the money. This becomes, in effect, an additional 'tax' on borrowing. So it makes no sense to add capacity, as break-even times lengthen due to the shrinking margins.

D. *Government Response*

The main actor in trying to redress many of these economic challenges is the federal government, as state governments are mostly in deficit already. The two main levers the feds have are monetary and fiscal. On the monetary side, the Federal Reserve has been cutting interest rates and injecting cash into the financial system to try to thaw the credit freeze. The Treasury has created several programs to bail out financial and insurance companies, and Congress is being asked to help many other industries. On the fiscal side, the leaders of the new Congress have stated that they want to create spending programs to help the economy. The program that seems most likely to be enacted is a spending program for infrastructure development as part of a broader economic recovery or stimulus package. These programs have generally meant that there will be money for rehabilitating existing infrastructure or adding new capacity rather than for operations and maintenance (O&M) expenses. These programs also often require the hiring of additional employees, serving to create solid new jobs.

III. IMPACTS

The framework used in this paper to analyze the potential impacts of these trends to the industry is to explore the potential effects on income statements and balance sheets. More specifically, during a period of economic downturn, we must ask and explore what happens to revenues, costs, capital projects, and financings?

A. *Revenues*

There will be several forces affecting revenues. The most immediate is from the drop in residential and commercial construction spending, which has been going on for a year. But added to this may be a drop in manufacturing and office space construction, which has not shown up in the numbers yet. As GDP continues to shrink, companies will delay or cancel expansion plans, as they see their demand and financials shrinking. This means less revenue from fewer hook-ups.

Along with a cutback in building, one can look for factories to cut back on production and offices to cut back on employees. As the industrial sector cuts back, there will be less water usage and effluent from factories and office parks. In the residential market, home-owners

who are facing tight budgets will cut back on water usage for lawns and pools. So there is the possibility of decreased revenue from both the water and effluent treatment sides. In any recession, there will be regional variation and adjustments. Population tends to shift to regions that are doing better economically and away from areas that are doing poorly. There are regions of the country where this has been going on for a while, but it will be exacerbated by the recession. With extended recessions, immigration also drops and may even reverse. In the 1980s recession, many immigrants who had come to the U.S. for economic reasons went back to their countries because there was no work.

Many water utilities, then, may be facing drops in demand, and some of them may be severe. Utilities in parts of Michigan have seen their demand drop by 10-15% over the last year, with monthly drops of 40% over the summer.[3] Of course other factors may be playing into these numbers, but the lesson is that revenues will be stressed.

With demand decreasing, the natural inclination is to raise rates so that revenues stay stable or continue to grow. Given the current economic climate when the prices of most everything else will be going down, it will be hard to enact a major rate increase. In utilities that have automatic price escalators in place, this can be done. But in places where governments are strapped and are cutting services and talking about raising taxes, a major increase in water and sewer rates may face stiff opposition.

Along with decreasing demand will come an increase in bad debt and a lengthening of time to receive payments. Consumers and businesses that are facing difficulty will delay paying or walk away from their bills altogether. An initial review performed for this paper of retailers in Boston finds that their time to collect payments from customers has now doubled. Obviously, increasing bad debt will not only cut net revenue, but increasing time to collect will hurt cash flow.

Three other areas from which utilities traditionally generate revenue will face decreases due to the downturn: interest on investments, local government subsidies and ad valorem rates. With the Federal Reserve trying to re-inflate the economy, interest rates on low risk instruments are very low. With states and municipalities facing budget problems, the likelihood of help from them will be low. Home prices have dropped 25% since their peak in July, 2006, so any revenue based on real estate values is under pressure.

B. Costs

The impact of the economy on costs will be mixed, with some potential benefits and some challenges. The pluses are that the costs of wages, materials, and vendor services should not rise and may even fall. Many people are not expecting raises this year – they will be happy to keep their jobs. So if salary increases have not already been negotiated into multi-year contracts, wage increases can be kept to a minimum. Vendors will be scrambling to retain business and will, therefore, be more flexible in their pricing. The prices on many materials and supplies have already dropped and should continue to do so. For example, construction supplies and fuel are way down.

Although these reduced costs will be beneficial on the margin, getting overall costs down will be more difficult because so much of a utility's costs are fixed. According to Census Bureau figures, payroll is only 20% of revenues while depreciation might be closer to 40%. Given that a utility's costs are more related to its capacity than its actual usage, cutting back on costs will be hard.

The first place people generally look when cutting costs is staffing – open requisitions may go unfilled or retirees not replaced. Although temporary, part-time or contract workers might be let go, actual cutbacks in full-time employees are hard, especially given the political pressure to maintain workers. Out of the 2001 recession, water utility employment actually went up in 2002, and did not start to decrease until 2003. It took until 2004 for employment to drop below 2001 levels, or three years to cut back.

Another cost area that might be a focus for utilities is their pensions. If utilities have defined benefit pension plans rather than defined contribution 401(k) s or 403(b) s, then these pensions are most likely underfunded. With a 40% drop in the stock market, the pension assets are most likely well below the actuarial value they should have. This means that utilities will need to add more money into their pensions to make up for the shortfall, which will be a cash drain for the next several years.

Water, Sewage, and Other Systems Employment

Year	Employees	Payroll (1000s)
2000	39,555	$1,362,126
2001	43,148	$1,603,457
2002	45,595	$1,674,162
2003	44,704	$1,700,636
2004	42,670	$1,688,606
2005	41,986	$1,723,170

Because of the stress from reduced revenues, there will be pressure on the bottom line and cash flow. Given and the inability to make major cuts in operating costs, the temptation for many utilities is to save money from deferring maintenance. Although this may be helpful to cover a short- term shortfall, it leads to trouble in the longer term, especially with a possibly long recession. Deferred maintenance generally ends up costing more in the long run.

C. *Capital Projects*

A difficult challenge for utilities is assessing what to do with capital projects now that the Nation is solidly in a recession. Capital projects, not mandated by law or regulation, require long-term projections of demand growth. If people think that the recession will be short and shallow, then no real change is likely needed. But if the recession is deep and/or long, then the original projections are probably no longer valid. Forecasters are notorious for projecting the future based on the immediate past and therefore miss inflection points. If your region is undergoing a major structural change because of the recession, as many people are forecasting, then capacity requirements may be way off. The risk of misforecasting demand is that times to break-even and payback will lengthen. Increased capacity also means increased O&M costs, which can put the ongoing financials of a utility into more trouble.

Although one would think that it is hard to cut back on major construction projects because of multiple year planning and multiple year construction, the data suggest otherwise. The data, in fact, suggest that it was easier for utilities to cut back on capital expenditures because of a recession than to cut back on employees. While employment continued to grow out of the recession of 2001, capital expenditures were immediately cut back 21% in 2002 and continued down for an additional two years before rising again.

This raises an interesting dilemma regarding the new Congress's plan to provide infrastructure money and what it will mean for clean water agencies. Generally these programs provide incentives to add capacity and will help pay for that construction. These programs, however, do not provide money for O&M and depreciation, which will go up. If the industry's reaction in the last recession was to cut capital expenditures for three years, but the federal government's reaction is to get the industry to increase capacity now, the cheap construction money may lead to long-term financial difficulty if demand for water does not increase to the levels of the new capacity. At the same time, given the enormous needs identified by the U.S. Environmental Protection Agency, the Congressional Budget Office, and the Government Accountability Office identifiying nearly $500 billion in water and wastewater infrastructure rehabilitation and repair needs, the projects could center on rehab rather than the construction of new capacity.

Capital Expenditures - Utilities

Year	**Expenditures (millions)**
2001	$82,823
2002	$65,502
2003	$54,569
2004	$50,409
2005	$58,032
2006	$69,967

D. Balance Sheet

For public utilities the major balance sheet challenges are managing short-term and long-term debt. The main difficulties come down to the lack of supply by lenders, especially institutional lenders, so that interest rates are much higher, if they are available at all. This increases the time, effort, and cost involved so many utilities are waiting for better conditions to issue new debt. This puts a freeze on new capital projects. Where utilities have not been able to wait is for refinancing of bonds coming due. The long-term bond market has been at a standstill: 30 year terms are less attractive than 20 year or shorter terms, and insurance is not readily available so authorities have issued without insurance. This has not only caused interest rates to rise but debt service to increase from shorter maturities, adding to profit and cash flow pressures.

At the shorter end, such as commercial paper, the market seems to have eased somewhat. Several respondents to the NACWA survey stated that they had had difficulty getting short-term debt because the rates were so high but that they have now fallen back to 'normal' levels.

IV. NACWA SURVEY RESULTS

NACWA had sent a quick survey to its members in late 2008 to find out what they were experiencing in the downturn, and the results are consistent with the foregoing discussion. The financial market crisis has been the most apparent over the year and has caused the most immediate problems. Sixty percent of utilities had difficulties in getting financing. Because long-term debt is seen as so hard to come by, 70% of utilities have delayed capital projects. For shorter term debt, however, 20% of utilities said their conditions are back to pre-crisis terms. The stock market decline has caused 20% of utilities to have underfunded pensions.

What may be the next shoe to drop, however, is the impact of the recession. Again, the NBER has said that we have been in recession for a year, but we had two quarters of GDP growth. As GDP is declining now, decreases in revenue may just be beginning to appear. Thirty percent of utilities have already seen connection fees drop dramatically, but no one has seen actual usage drops. Instead, another 30% of utilities are pretty sure usage drops are coming. Of the 60% of utilities that have seen hook-up fees drop or are anticipating usage drops, half have already frozen hiring and are looking to reduce costs. The main challenge is predicting the depth and length of the recession. If we knew the recession was going to be the next 'depression,' we could plan for it. But as we saw from the 2001 recession, which was considered mild, the industry did not cut enough and ended up trimming employment for the next several years.

Survey Results

Survey Responses	
Revenues	
Decreased Hook-ups	30%
Decreased Usage Demand	30%
Inability to Raise Prices	50%
Increased Bad Debt	30%
Decreased Interest Income	20%
Decreased Government Support	10%
Costs	
Easing Salaries/Hiring	10%
Decreasing costs from suppliers and vendors	10%
Cutting or freezing payroll	30%
Underfunded Pension Liability	20%
Deferring Maintenance	10%
Capital Projects	
Delaying projects	70%
Balance Sheet	
Difficult to refinance	70%

V. NACWA NEXT STEPS

As the economic downturn continues and its impacts, and the utility responses to it, become clearer, NACWA will continue providing member agencies with updated information. The Association will likely update and re-circulate its survey regarding the economic downturn (see results above) to gather additional member input and will continue to provide opportunities through its committees, conferences, and web seminars to advance this critical dialogue. If you have any questions regarding this effort, please contact Adam Krantz at 202/833-4651 or akrantz@nacwa.org.

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[1] Rockefeller Institute of Government

[2] Dan Seymour, Crisis Upends Muni - Treasury Relationship, *The Bond Buyer*, December 2, 2008

[3] John Wisely, Revenues dry up as water demand drops, *Detroit Free Press*, November 30, 2008