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National Economic Recession Shatters Local Ability to Invest in Utility Infrastructure

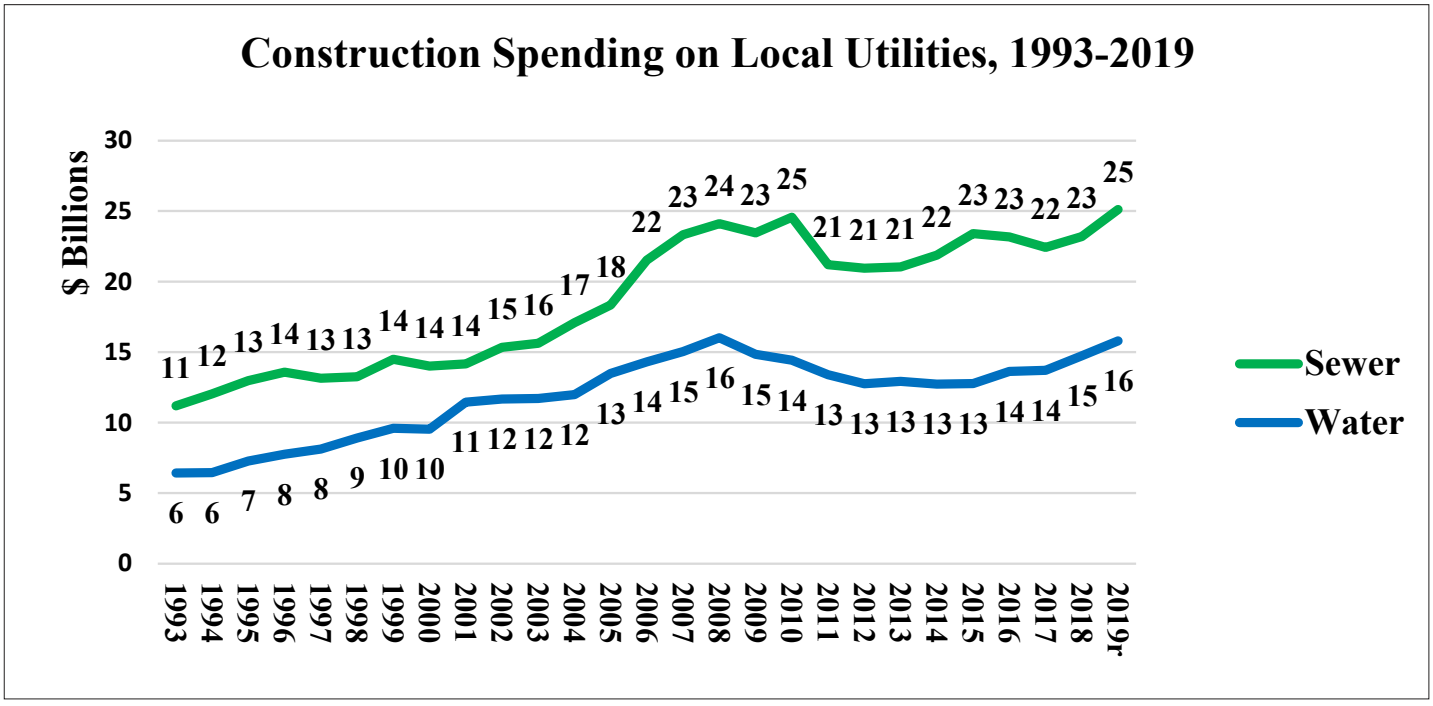
By Richard Anderson, Ph.D.
Senior Advisor, Mayors Water Council

The covid-19 recession began in February 2020 and we are now six months (August, 2020) into it with great uncertainty over the severity and duration of the pandemic. Local governments are already documenting pandemic response costs and lost sales and income taxes and worrying about lost revenues from public services. Local water and sewer utilities adjust their budgets in response to national economic recessions to ensure continuity of service for public health and safety. What we learned from the Great Recession (December 2007-June 2009) is that utilities shift resources to ensure continuity of operations and make difficult decisions about spending limits or reductions on workforce and capital construction. Limiting growth in capital construction spending has important implications for water and sewer utility infrastructure renewal needs which may now exceed $700 billion in America. This paper examines the levels and trends of utility construction spending before and after the Great Recession to help anticipate what the covid-19 recessionary impacts might be in store for municipal utilities.

Level and Growth in Local Utility Construction Spending

An analysis of Census data for local government from 1993 to 2019 indicates that combined water and sewer utility construction spending went from $17 Billion in 1993 to about $41 Billion in 2019. Year over year nominal dollar spending on construction enters a clear trough beginning and after 2008, and does not recover to peak pre-recession levels until 2019, (Figure 1). The reduced growth in construction spending lasted for about 12 years (2008-2019). Construction spending in 2019, however, may be equal to 2005-2007 spending levels due to inflation – thus, construction spending has been stalled for about a decade or more.

Figure 1



Construction spending averaged more than 11 percent growth annually in the pre-Recession period and less than 1 percent in the post-Recession period, (Table 1). Water construction average spending growth in the pre-Recession period was 6.4 percent, and 0.003 percent in the post-Recession period. The pre-Recession average annual growth in sewer construction spending was 5.4 percent and the post-Recession period was 0.55 percent.

Table 1

Average Growth in Annual Construction		
Utility Sector	1993-2008	2009-2019
	Pre-Recession	Post-Recession
Water	6.4%	0.003%
Sewer	5.4%	0.55%
GDP	3.04%	1.68%

By comparison, a change in dates for estimating the pre- and post-Recession growth rate periods by removing 2008 and 2009 yields a substantially higher post-Recession annual growth in water construction and a slight increase in sewer utility construction growth, (Table 2).

Table 2

Average Growth in Annual Construction		
Utility Sector	1993-2007	2010-2019
	Pre-Recession	Post-Recession
Water	6.4%	0.74%
Sewer	5.5%	0.87%
GDP	3.25%	2.28%

Utility Construction Spending

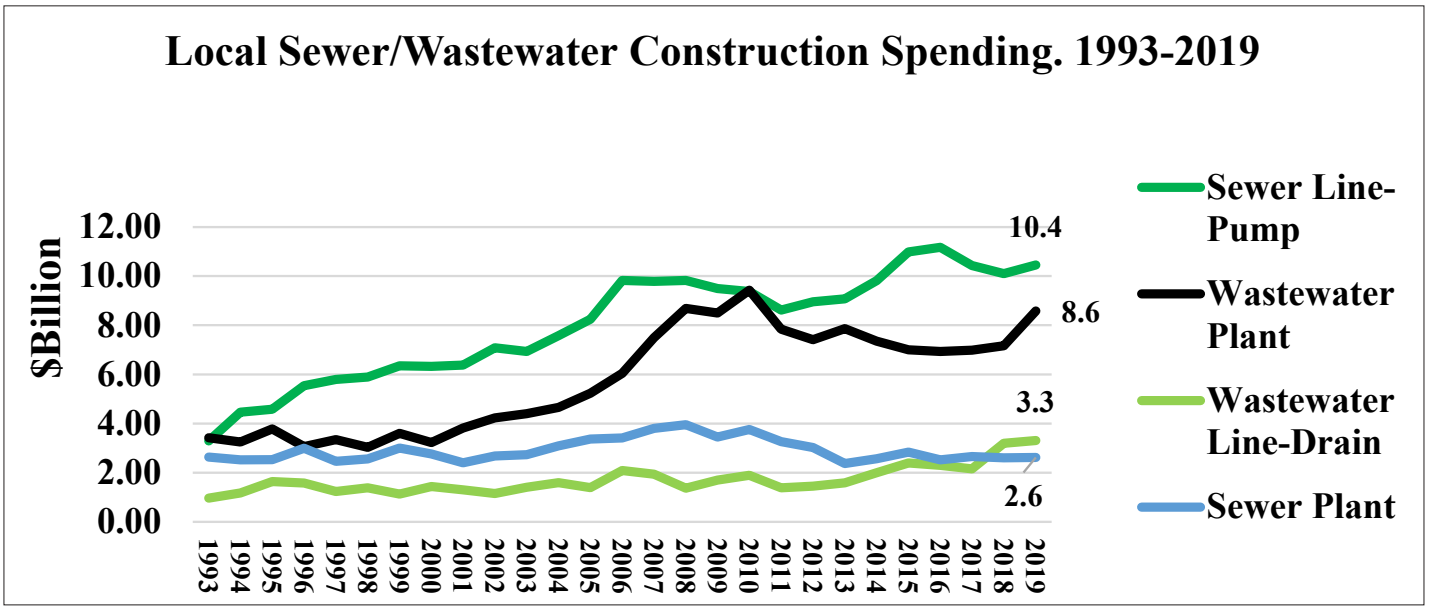
Looking more closely at spending patterns during the recession recovery years indicates that some categories of utility construction spending were impacted more than others. Actual spending levels are compared to spending estimates based on pre-recession annual growth rates to estimate what local government was on track to invest in utility construction.

Sewer/Wastewater Utility Construction Categories

Census data reports construction spending in four categories: (1) sewer plant, (2) sewer line-pump, (3) wastewater plant, (4) wastewater line-drain. Spending levels on these four categories increased 124 percent from $11.2 billion in 1993 to $25.1 billion in 2019.

The two major spending categories include sewer line-pump at $10.4 billion and wastewater plant at $8.6 billion in 2019, (Figure 2). The two lesser spending categories – wastewater line-drain and sewer plant – has a narrow band of variation, yet consistently reaches combined annual levels of $1 to $6 billion of investment.

Figure 2

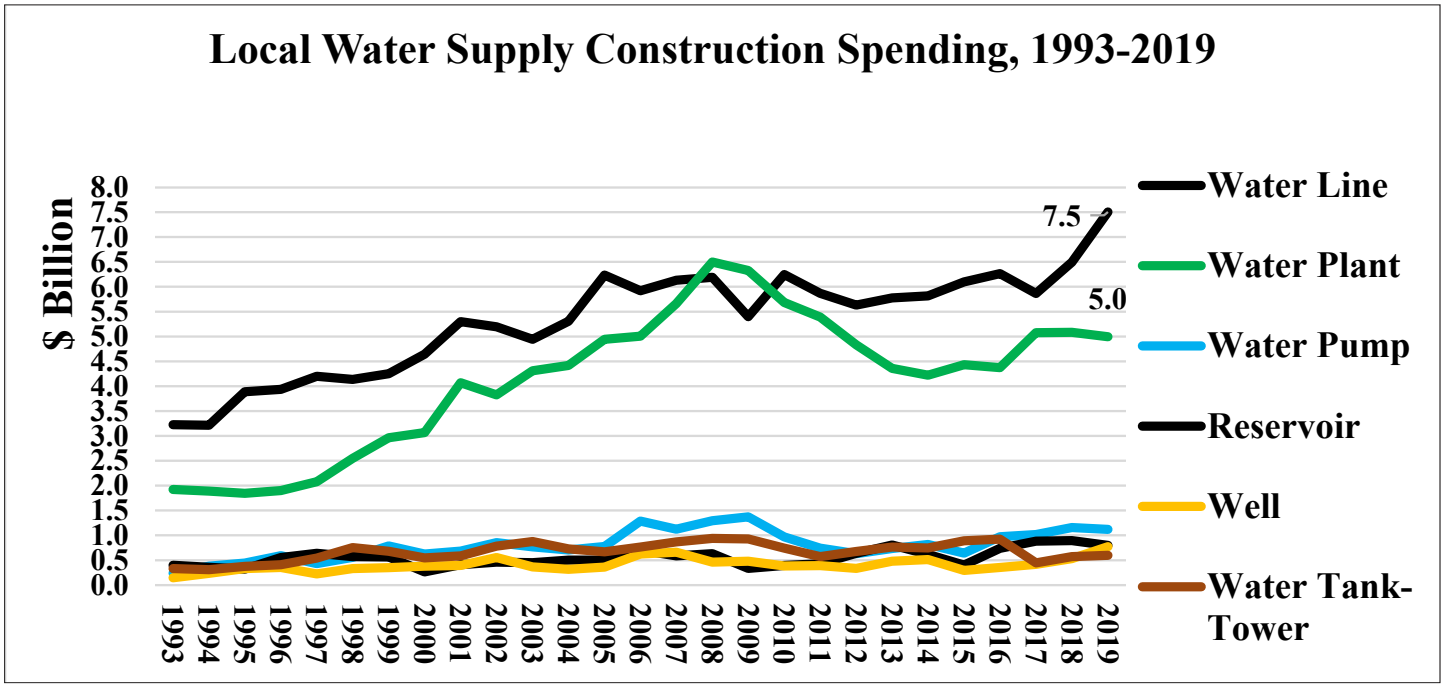


Water Utility Construction Categories

Census data reports six categories of water supply construction spending: (1) treatment plant, (2) water line, (3) wells, (4) pump stations, (5) reservoir, (6) water tanks/towers. Water supply construction spending increased 145% from $6.4 billion in 1993 to $15.8 billion in 2019.

Water lines and water plants are the major spending items accounting for $12.5 billion in spending out of $15.8 billion in 2019, (Figure 3). The remaining four categories account for a combined $3.3 billion: water pump, well, reservoir and water tanks/towers.

Figure 3



The Local Utility Infrastructure Investment that Never Happened!

The Great Recession has had a strong impact on utility decisions to defer capital investments and prioritize construction spending. Still, in 2019 the estimates suggest $41 billion was spent on utility construction – not a small sum. The problem is the pace of growth in capital spending – the Great Recession set it back some 12-15 years to near 1 percent on average; and this rate of investment will face major challenges trying to sustain the physical assets that serve over 280 million Americans in the future.

Local government spends 98 cents or more of every dollar spent on municipal water and sewer utilities in America made possible through service revenues from customers that are financially sensitive to recessions and unemployment, pandemic disease and government emergency orders that impede their access to income. Deferring large capital investments is a prudent short-term practice. The recovery period from the Great Recession suggests that construction spending can pick up when the economy is expanding.

The opportunity cost loss, however, is significant. The rate of annual average growth in construction spending from 1993 to 2007 could have, arguably, maintained that level of annual growth had it not been for the Great Recession. We estimate the loss of investment by extrapolating the pre-Recession average annual growth rate to the recession and recovery years.

The estimated lost investment in local construction spending for the four major construction spending categories:

• Sewer line-pump	$34 billion
• Wastewater plant	$25 billion
• Water line	$25 billion
• Water plant	$21 billion
Total	$105 billion

Will the Covid-19 Recession Have as Big an Impact on Utility Construction Spending as the Great Recession?

One lesson from the Great Recession is that capital spending on municipal utilities continues at levels that generally preserve the ability of the utility to continue providing customers with safe and adequate service, and this is the primary purpose for establishing the utilities. Budget decisions responding to national recession conditions shifts priority to continue operations and pare back capital investments. This decision, even though unavoidable, has consequences - the Great Recession suggests lower levels of annual growth in local utility construction investment for a decade or more.

The practical implication of recessionary impacts on municipal water and sewer utilities was the loss of some $105 billion in needed investment that local government would have made if not for the recession. So, the impacts are not only real but fiscally significant for communities across the nation, (there are roughly 145,000 public drinking water utilities and 16,000 publicly owned treatment works). $105 billion in local utility spending yields positive local and regional economic multipliers and spurs job creation.

Comparing the covid-19 recession and the Great Recession impacts on municipal utilities may be premature since there are many uncertainties: duration and recurrence of the pandemic and emergency orders; the level and duration of the national unemployment rate; and, governmental intervention. National unemployment peaked at just under 10 percent in the Great Recession and took a decade to then reach the lowest national unemployment rate in modern history. The covid-19 recession period unemployment rate is significantly higher than the Great Recession peak rate, and the rate spiked faster than during the Great Recession.

If the new recession impact is similar to the Great Recession, we can expect another decade of subdued construction spending. Adding that outcome to the Great Recession impacts suggest we may experience a generation of lost utility construction investment – maybe $210 billion - at a time when experts urge investing an additional $700 billion to renew the nation's municipal utilities.

The need for Congress to intervene to provide fiscal assistance to cities and towns to rebuild the nation's utility infrastructure is growing. National economic disruptions clearly hinder infrastructure spending, and now governmental emergency orders impede the ability of customers to earn income and pay utility bills. Congress has provided fiscal relief to counties who have discretion over sharing the stimulus with their cities. Even where some large cities take a share of the stimulus aid, Treasury rules prohibit their use by municipal utilities. Current national policy does not target utility issues and will thereby exacerbate the impacts on utility infrastructure and renewal from the covid-19 recession. Crumbling infrastructure can easily lead to a crisis in confidence in local government, and as we have experienced in Flint – citizens lose confidence in and distrust all levels of government.

Acknowledgement: This article is based on research conducted by the United States Conference of Mayors Water Council, (Recessionary Impacts and Recovery Periods of City Water and Sewer Utilities, May 2020, Washington, D.C.), www.usmayors.org.

APPENDIX

Figure 4

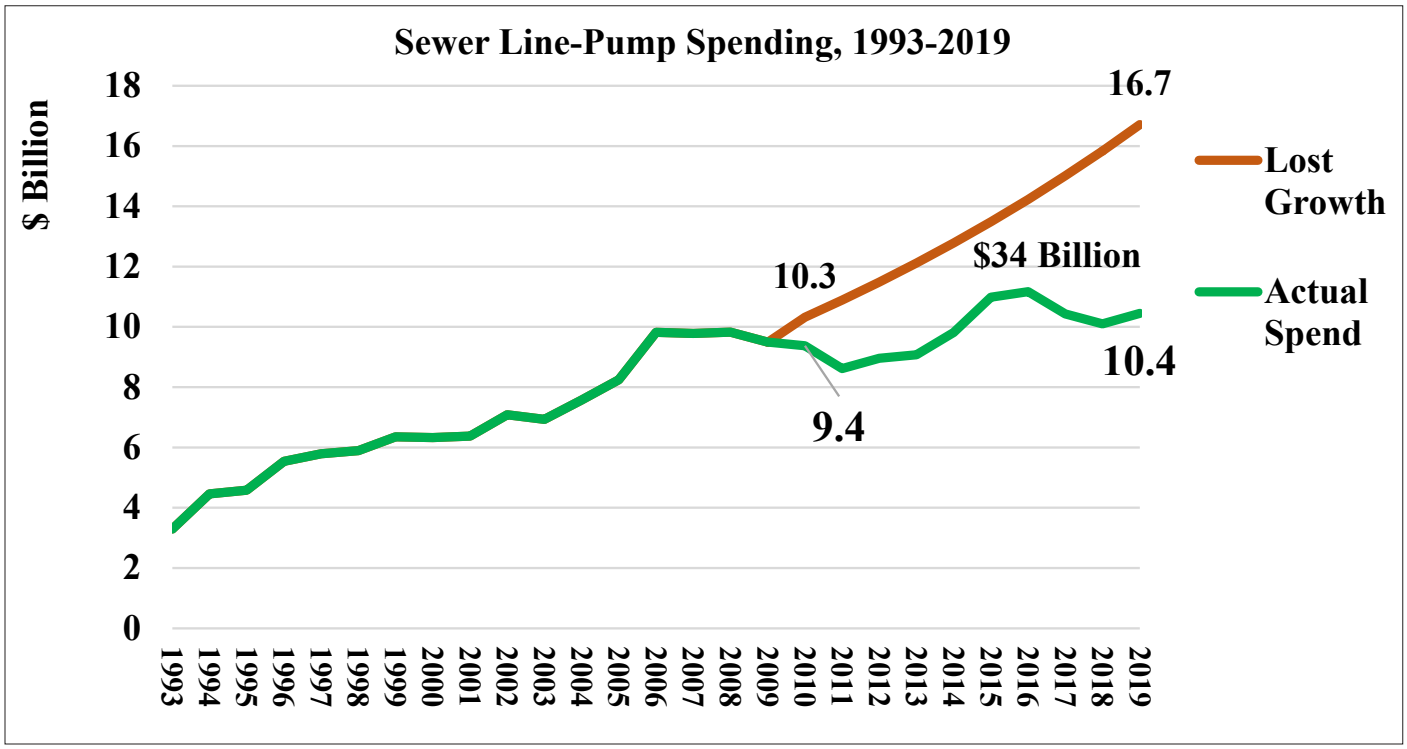


Figure 5

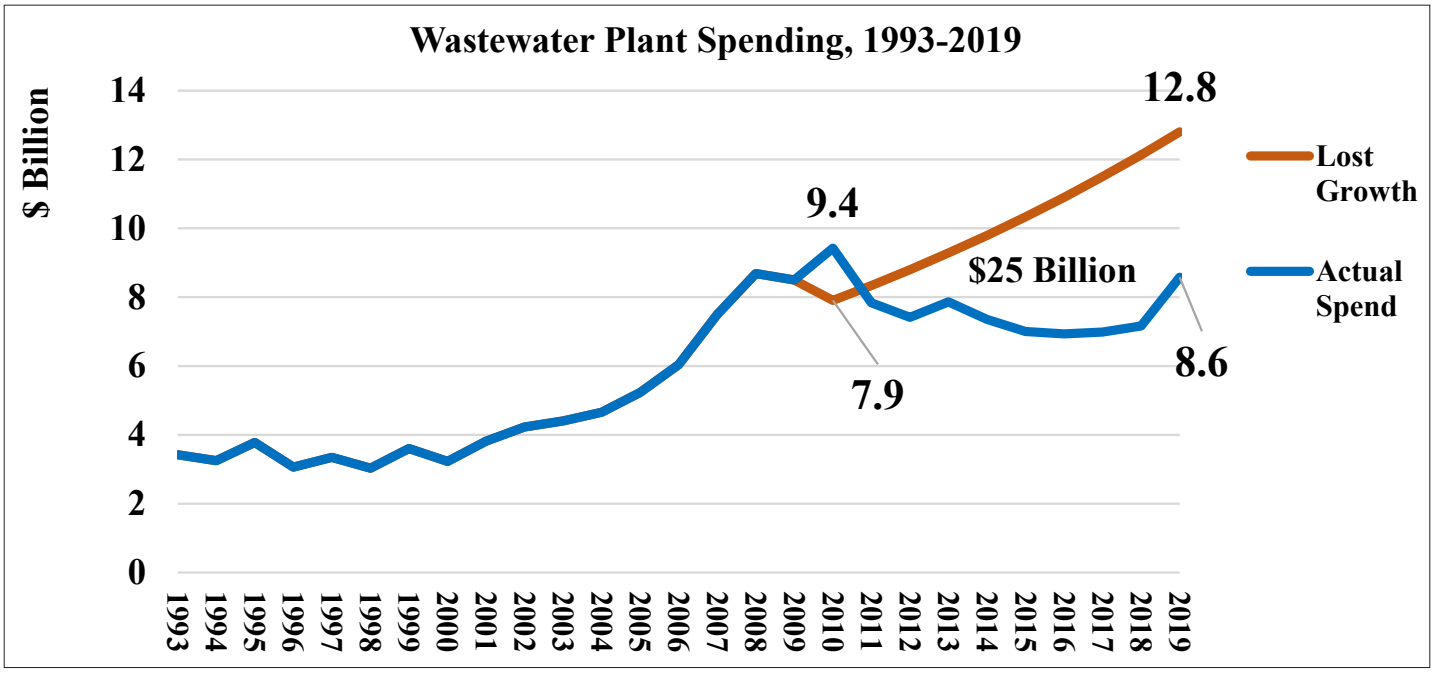


Figure 6

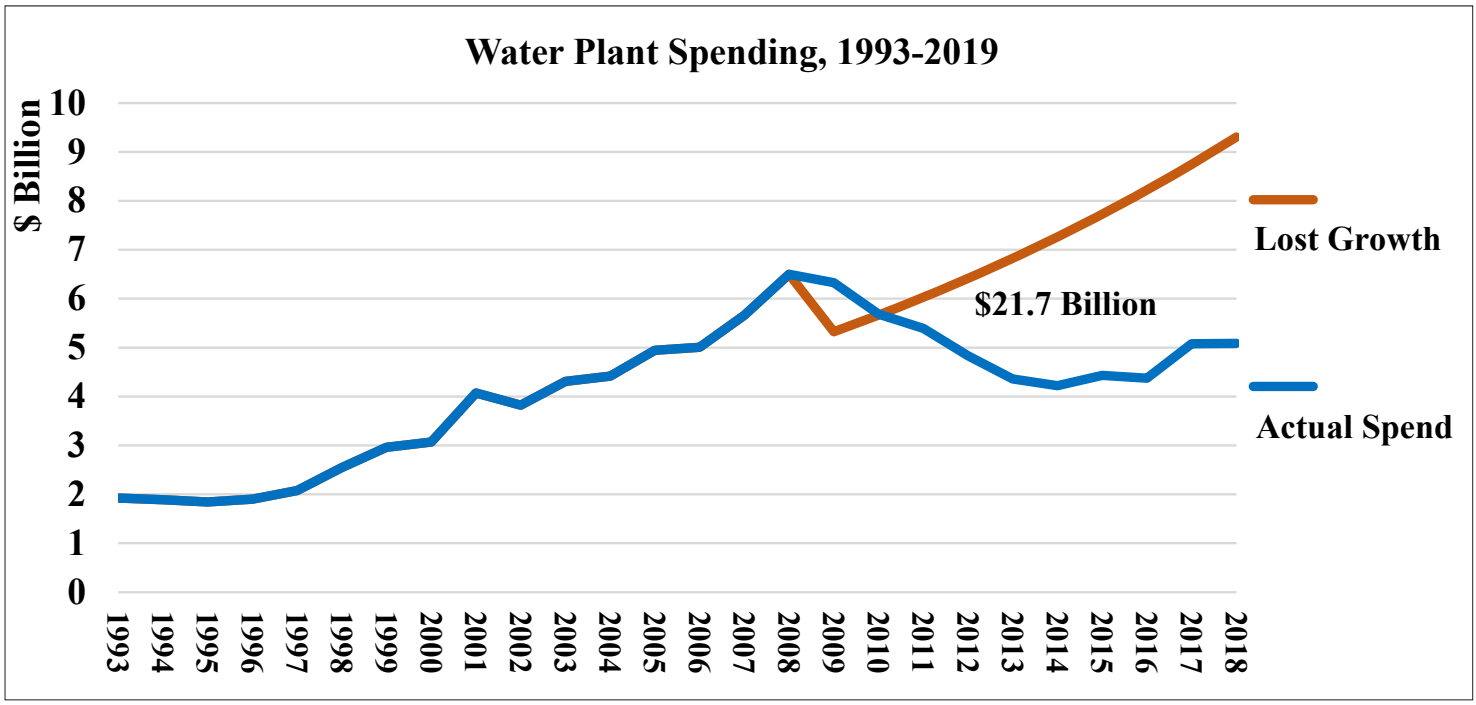


Figure 7