

TWO SIDES OF THE SAME GOLD COIN

School Construction and Water Quality Projects in Iowa

A Higher Road for a Better Tomorrow



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TWO SIDES OF THE SAME GOLD COIN: SCHOOL CONSTRUCTION AND WATER QUALITY PROJECTS IN IOWA

MEPI Economic Commentary #33

Executive Summary

Both school construction and water quality improvements are important to Iowa's economy. Investments in school construction allow students to learn in a positive environment, which can improve educational outcomes over the long run. Investments in water quality projects improve health outcomes for Iowa citizens, which can lower healthcare costs over the long run.

Instead of diverting revenue from one construction sector to another, funding *both* investments would grow the economy and boost employment. Iowa has present-day water quality needs that must be addressed. The fairest and most effective way to increase revenue for current water needs is to utilize the taxing authority of the drainage districts to charge those who impact the water quality for their usage and pollution. Appropriate action today could be sustained beyond 2029, avoiding the need for the Iowa Governor Branstad's plan to divert school construction funding to water quality projects.

If Iowans must choose between school construction and water quality projects, it becomes a matter of preference and of need, based on which sector has quality deteriorating at a faster pace:

- The average blue-collar construction worker on school construction projects in Iowa adds \$113,295 in value to the state's economy over one year and earns a middle-class compensation package totaling \$27.04 per hour in wages and benefits. Every \$10 million invested in school infrastructure projects generates 47.4 direct construction jobs and \$17.7 million in economic output.
- The average blue-collar construction worker on water quality projects in Iowa adds \$114,799 in value to the state's economy over one year and earns a middle-class compensation package totaling \$30.63 per hour in wages and benefits. Every \$10 million invested in clean water projects generates 46.8 direct construction jobs and \$19.5 million in economic output.

The payoff from each of these investments is greater than benefits associated with many other government expenditures. Every \$10 million invested in all other non-education state government programs only generates a \$13.0 million increase in economic output.

Iowa Governor Branstad's proposal to divert school construction funding to water quality projects by extending the 1 percentage-point sales tax increase for another 20 years would be expected to improve the economy by 18 cents per reapportioned dollar. However, it would be better to reallocate funds from other state government programs, especially since water quality is a present issue and the Governor's proposal would not take effect until 2029. Diverting revenue from other non-education state government programs to water and sewage projects generates a 65-cent economic gain per reapportioned dollar.

Ultimately, Iowa should not have to choose between funding either school construction or water quality projects, especially since needs for both are expected to increase in the future. Reallocating funds from other state programs or implementing fees on polluters are better courses of action from an economic impact perspective. Both school construction and water projects are investments in future success.

Introduction

Iowa Governor Terry Branstad has proposed an extension of Iowa's 6 percent sales tax, which is scheduled to decrease to 5 percent on December 21, 2029. The proposal would extend the 6 percent sales tax under the State Sales and Use Tax for School Infrastructure Act for an additional 20 years until December 2049. Enacted in 2008, the increase in the state's sales tax from 5 percent to 6 percent now generates more than \$400 million in annual revenue for school infrastructure needs across Iowa. The revenue is used for school construction repairs and as property tax relief for school districts (Petroski & Pfannenstiel, 2016). The governor's proposal would extend the 1 percentage-point increase in the sales tax, but would reallocate funds. Schools would continue to receive a baseline amount of revenue, but a portion of the tax collections would go to support water quality and related initiatives (Noble & Pfannenstiel, 2016).

If the sales tax were to return to 5 percent, funding gaps for school infrastructure would have to come from a raise in local taxes or new fees for Iowa residents. For instance, counties could implement a 1 percent local sales tax with voter approval to be used for schools in their communities. Governor Branstad's proposal— which he predicts would commit \$4.7 billion to water quality over 32 years, or \$149 million per year— does not raise other taxes to make up for the loss in school funding (Petroski & Pfannenstiel, 2016).

There are mixed views on the proposal. In response, some legislators have claimed that splitting the revenues from the 1 percentage-point sales tax increase would “divert billions over the next three decades” that would be essential for schools in the long run (Noble & Pfannenstiel, 2016). Others think water quality efforts should be funded in other ways, such as through water bills or a tax on economic activity that pollutes the water. On the other hand, the Governor's supporters argue that education will still receive more revenue during the 20 year extension without raising additional taxes. Assuming an average annual inflation rate of 2 percent per year over two decades, however, the real purchasing power of a constant level of school funding would decline by 48 percent due to compounding.

This Midwest Economic Policy Institute (MEPI) Economic Commentary analyzes the economic and employment effects of diverting sales tax revenue from school construction to water quality needs.

Recent Water Quality Concerns in Iowa

Water quality has become an important political, economic, and social topic in Iowa. The federal government has required Mississippi River states to reduce toxic nutrients that flow down the river and pollute aquatic life in the Gulf of Mexico. In addition, the Des Moines Water Works filed a lawsuit against three farming counties in 2016, alleging that upstream agricultural runoff into the Raccoon River was contaminating the water in Des Moines. The department reported that they spent more than \$1.5 million to remove nitrates from the water (Casey, 2016). Meanwhile, the recent water crisis in Flint, Michigan has reminded all residents about the human costs of willfully taking no action to invest in clean water infrastructure.

In their *Iowa Infrastructure: 2015 Report Card*, the Iowa Section of the American Society of Civil Engineers (ASCE) gave the state's drinking water systems a “C+” grade, wastewater systems a “C-” grade, dams a “D” grade, levies a “C-” grade, and inland waterways a “D” grade. The ASCE notes that additional revenue is needed “to enable water line replacement and treatment plant modernization,” to replace aging dam and wastewater infrastructure, and to implement a maintenance program at the state level for constructed levies (ASCE, 2015). Furthermore, Iowa's inland waterway transportation system has reached capacity and will be unable to meet the future increase in demand for Iowa products. Iowa's

drinking water and wastewater combined have an estimated capital need of \$9.6 billion over the next 20 years (ASCE, 2015).

The Governor's proposal is intended to help solve these and similar water quality problems within the state in the future. The Iowa Department of Revenue states that the plan would continue to generate almost \$21 billion for schools over the 32 year period, and school districts would be guaranteed current funding levels through the Secure an Advanced Vision for Education (SAVE) program (Schwartz, 2015). Schools would also receive an additional \$10 million annually during the 20 year extension due to projected economic growth and population growth. New revenues beyond that \$10 million would be reallocated to water quality projects (Petroski & Pfannenstiel, 2016).

There are both benefits and costs to the Governor's plan. Water quality efforts are a growing concern in Iowa due to new federal guidelines and the growing possibility of residents drinking harmful water. Splitting 1 percent of the sales tax with school infrastructure is a way for water quality projects to be funded without raising additional taxes or fees on Iowans. However, public school infrastructure construction is an important economic and social investment that needs to be funded. It is critically important that students are provided the best environment for learning. Diverting revenue that schools would otherwise get to clean water projects may be detrimental to Iowa's education system.

In addition, water quality is a present-day issue in Iowa. The Governor's plan to fund water projects would not start until 2029, when the condition of water lines, sewage infrastructure, and river quality have deteriorated further due to underfunding. The state needs a plan to generate revenue for water quality projects *before* 2029. The best alternative to raising revenue for water needs is to utilize the taxing authority of drainage districts to charge those who impact the water quality for their usage and pollution. Other potential sources of increasing funding include a marginal increase in the state's sales tax rate or the issuance of revenue bonds. Appropriate action today could be sustained beyond 2029, avoiding the need for the Governor's plan.

Because spending is higher in cities and suburban areas, residents of populated areas would pay for a disproportionate amount of the water quality efforts through the Governor's sales tax diversion. Des Moines is negatively impacted by the drainage systems of farming counties because nitrates flow down the Des Moines River and Raccoon River into the area. The people of Des Moines should not have to pay for pollution they did not produce. In addition, most of Iowa's other larger cities are not directly impacted by water quality issues associated with agricultural runoff. Whereas the sales tax increase to pay for schools benefits urban and rural populations relatively equally, the shift to funding water quality projects would disproportionately benefit rural communities at the expense of urban consumers. Ultimately, the fairest way to fund water quality improvements over the short-term would be to increase user fees for the polluters through the taxing authority of the drainage districts.

Comparing Sectors: School Construction and Water Construction

Both school construction and water construction are investments in Iowa's future. Blue-collar construction workers on school projects and on water quality, sewer quality, river, and related projects are important to Iowa's economy. To assess their economic impact, data was collected from the 2012 *Economic Census of Construction*, which is released every five years by the U.S. Department of Commerce and U.S. Census Bureau. Figure 1 displays this economic data, which includes information on the average worker in the institutional building construction sector and the average worker in the water and sewer line, rivers, dams, and related construction sector in Iowa. From the standpoint of stimulating the economy over the short term, the findings indicate that construction work in both sectors is equally valuable.

Figure 1 presents the value added per employee and the average wage and benefits paid to each blue-collar construction employee in both sectors. “Value added”— which measures worker productivity over one year— is business revenues minus the costs for materials, components, supplies, fuels, and subcontracted work. Thus, value added per employee equates to the productivity of each worker. Approximately \$113,295 in value is added to Iowa’s economy per blue-collar construction worker on institutional building construction. By contrast, an estimated \$114,799 in value is added per blue-collar construction employee on water quality projects (Figure 1). Construction workers in both industries add essentially the same annual value to the economy.

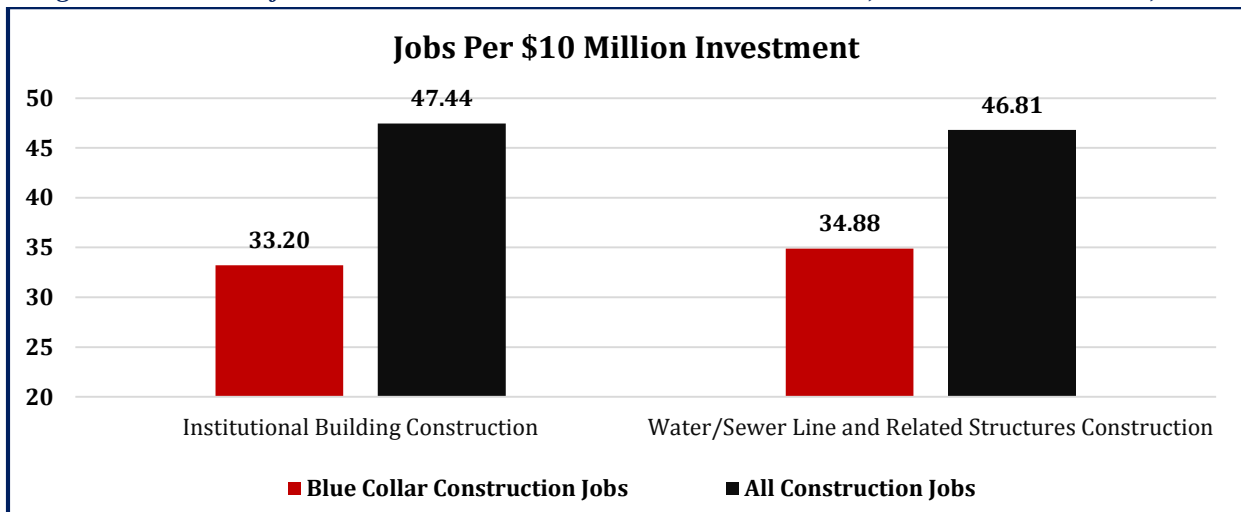
Figure 1: Value Added and Labor Cost Per Blue-Collar Construction Worker in Iowa, 2012

Employment and Wage Outcomes	Institutional Building Projects	Water, Sewer, River, and Related Projects
Value Added Per Employee	\$113,295	\$114,799
Construction Worker: Value Added Per Hour	\$84.06	\$78.41
Construction Worker: Wage Per Hour	\$21.77	\$24.33
Construction Worker: Wage Plus Benefits Per Hour	\$27.04	\$30.63
Ratio (Per Hour): Value Added vs. Wage Plus Benefits	3.1	2.6

Source: Economic Census of Construction (2012).

Iowa taxpayers, however, get slightly more “bang for the buck” from blue-collar school construction workers. Limited by the school day and the school year, blue-collar school construction workers tend to work fewer annual hours than their counterparts in water quality construction. On an hourly basis, the average productivity per blue-collar construction worker is \$84.06 per hour in institutional building construction and \$78.41 in water and sewer line construction, a \$5.65 difference. A water, sewer, and related construction worker, however, makes \$2.56 more in wages per hour. Including benefits, water quality construction workers earn \$3.59 more per hour than their counterparts in school construction. The ratio of value added to labor cost, a benefit-cost ratio, is therefore higher in school construction (3.1) than in water construction (2.6). The takeaway, however, is that both types of workers provide similar value and earn relatively good, middle-class wages.

Figure 2: Number of Direct Jobs Created Per \$10 Million Investment, Blue-Collar and Total, 2012



Source: Economic Census of Construction (2012).

Figure 2 illustrates the jobs impact per \$10 million infrastructure investment. For every \$10 million investment, institutional building construction saves or creates 47.4 total direct jobs, including 33.2 blue-collar construction jobs. By contrast, a \$10 million water construction program produces 46.8 total construction jobs, including 34.9 blue-collar construction jobs. Blue-collar labor costs account for just

17.3 percent of total (net) construction costs in the institutional building construction sector and 21.0 percent in the water construction sector. Institutional building construction produces slightly more total construction jobs per \$10 million invested, but the difference is minimal. Each worker is valuable in either investment program, no matter which sector he or she works in. The state would benefit from expanding employment in both sectors to build and repair infrastructure needs.

Finally, Figure 3 reports the fiscal “multiplier” of each sector compared to typical state government employment. A multiplier summarizes the interrelationship between an economic activity and other sectors of the economy, following a dollar as it cycles through the market. According to regional data, every dollar spent on water, sewage, river, and related systems returns \$1.95 back into Iowa’s economy. Construction of new educational and vocational structures, on the other hand, generates \$1.77 in economic output per dollar invested by the state. A \$10 million water infrastructure program would therefore be expected to boost the Iowa economy by \$19.5 million while a \$10 million school construction program would be anticipated to improve economic output by \$17.7 million. Accordingly, one could conclude that the Governor’s proposal would shift funding from an activity with a lower multiplier to one with a higher multiplier, thereby increasing GDP.

However, the appropriate conclusion is that Iowa should invest additional resources in *both* water construction and school construction. All other non-education state government programs generate only \$1.30 in economic output per dollar spent. If Iowa’s lawmakers want to keep taxes constant and cut spending in one area to augment water project expenditures, they should not divert funds from school construction. Dollar for dollar, the school construction diversion generates an 18-cent economic gain. Reallocating funds from other state government programs to water, sewage, river, and related projects, however, generates 65 cents per reapportioned dollar. If raising new taxes or fees is unfeasible, the best way to support Iowa’s economy is by diverting revenue from other wasteful or inefficient programs, not from school construction.

Figure 3: Construction Sector Multipliers vs. Other State Government Spending Multiplier in Iowa

State Government Expenditure Item	Fiscal Multiplier
Water, Sewage, River, and Related Systems	1.95
Construction of New Educational and Vocational Structures	1.77
Employment and Payroll of State Government, Non-Education	1.30

Source: IMPLAN (2014).

Conclusions and Implications

The data show that both sectors are important and bring similar value to the economy. Investments in school construction allow students to learn in a positive environment, which can improve educational outcomes over the long run. Investments in water quality projects improve health outcomes for Iowa citizens, which can lower healthcare costs over the long run. The payoff from both investments is greater than benefits associated with many other government expenditures.

Both school construction and water quality projects are important to Iowa’s economy. Instead of taking funding and jobs in the trades from one sector and transferring them to another, funding *both* investments would grow the economy and increase employment. Revenues for present-day water quality concerns are needed prior to 2029, when Governor Branstad’s proposed changes would take place. If Iowans must choose between the two construction sectors, it becomes a matter of preference and of need, based on which sector has quality deteriorating at a faster pace.

Iowa's possible courses of action, ranked from best to worst, are presented below:

1. Fund school construction through its current mechanism and fund water quality projects through a new user fee or polluter's tax to address current needs now.
2. Fund school construction through its current mechanism and fund water quality projects through a bonding program to address current needs now – the longer the delay, the greater the costs over the long run.
3. Fund school construction through its current mechanism and, if taxing or bonding is off the table, divert funds from *other* state government programs to fund water quality projects.
4. Enact the Governor's plan, extending the sales tax increase and diverting some portion to water quality projects.
5. Extend the sales tax increase and keep all of the funding for school construction.
6. Do nothing, let the sales tax increase expire, allow Iowa's water and school quality to deteriorate, and cost the state thousands of long-term jobs.

Ultimately, Iowa should not have to choose between funding either school construction or water quality projects, especially since needs for both are expected to increase in the future. Blue-collar construction jobs in both sectors are good, middle-class jobs that provide very similar value added to the economy. Instead of splitting revenues from the 1 percentage-point sales tax increase, reallocating funds from other state government programs or implementing new taxes and fees are better courses of action from an economic impact perspective. Government works best when it uses taxpayer dollars to invest in physical capital and human capital to improve the economy over the long run. Both school construction and water construction projects are investments in future success.

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