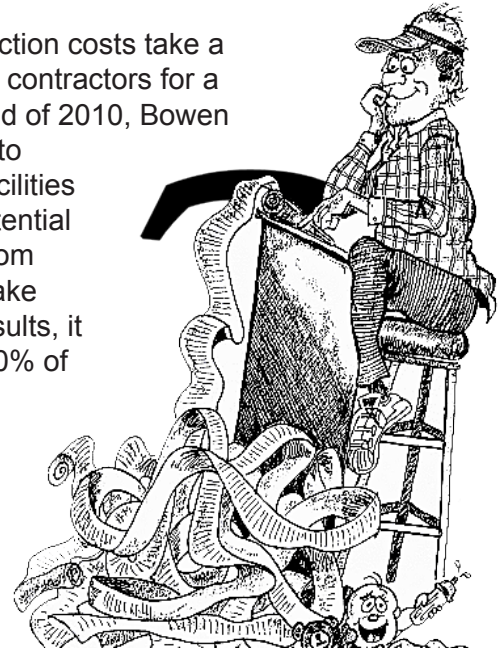


CONSTRUCTION COSTS ANALYSIS

During the last few years, most municipalities in Utah have seen construction costs take a steep decline. This appears to be the result of fierce competition among contractors for a limited number of projects combined with lower material costs. At the end of 2010, Bowen Collins & Associates (BC&A) was asked by a number of different clients to consider how these declines in prices should affect their future capital facilities planning. BC&A prepared an analysis of historic costs and projected potential construction costs in 2011 and beyond. The primary recommendation from this study was to accelerate the bidding and construction of projects to take advantage of favorable bidding conditions. Based on actual 2011 bid results, it is estimated that those entities that followed this advice will save up to 10% of total construction costs over those that failed to act.

As 2011 was approaching its end, several entities returned to ask how changing conditions over the last year have affected the construction outlook. The purpose of this article is to report on what we have learned over the last year and to make recommendations for 2012.



Observed Construction Costs

While most in the construction industry would agree that prices are down from what they historically have been, an important aspect of this analysis is quantifying how much prices have actually fallen in recent years. To do this, BC&A has plotted observed construction costs for the past 20 years as shown in Figure 1. This figure represents the expected cost of a \$1,000,000 project (2011 dollars) under “normal” economic conditions. In this case, “normal” is defined as expected construction costs based on steady inflation of 2.76 percent (the average inflation rate for the past 20 years).

BC&A used two sources of data for the observed construction costs shown in the figures. Prior to 2007, the Engineering News Report (ENR) Construction Cost Index has been used. This is a national measure of construction costs based on several different construction components including labor and materials. While this index does not reflect Utah construction conditions as closely as we might like, it provides a long-term indication of overall trends in construction costs. Starting in 2007, the observed construction costs are based on a sample of observed bid results for BC&A projects in Utah. They have been calculated based on the ratio of actual bid prices to the cost estimate for the projects based on long-term construction cost averages.

“Based on actual 2011 bid results, it is estimated that those entities that followed this advice will save up to 10% of total construction costs over those that failed to act.”

A few conclusions can be taken from the figure. Until the last several years, construction prices have increased fairly steadily at around 3 percent per year. Starting in 2004, there was a distinct upswing in construction costs peaking at



about 10 percent above historic averages in 2007 and 2008. This was followed by a precipitous drop in prices in 2009 and 2010. In 2010, prices from BC&A's sampling reached their minimum at approximately 29 percent below historic averages.

In 2011, construction costs appear to have made a partial rebound. While they are still significantly lower than historic averages, they are up sharply from the lows observed in 2010. One likely reason for this rebound is the gradual improvement in the overall economy and the resulting increase in fuel and material costs. Another possible explanation may be reduced competition as some contractors have been unable to survive in the current difficult market.

Future Financial Conditions

The biggest difficulty of performing this type of analysis is trying to predict what financial conditions will exist in the future. While trying to develop an exact prediction is unreasonable, there are a few general conclusions that can be made to help identify the likely range of future conditions:

- **Construction prices are unlikely to continue at currently depressed levels far into the future.** Based on historic costs, it can be seen that the current level of prices are well below anything observed in the past 20 years. While some additional small decreases could occur, most contractors have reported that they are currently doing work at or below costs. Further lowering prices (or even continuing to do work at current prices for an extended period of time) would likely put additional contractors out of business, reducing competition in the market. Since competition appears to be one of the primary driving factors in the currently depressed prices, this would result in a rebound of prices.
- **Construction prices are likely to return to near historic averages.** Long-term data suggests that construction costs will eventually return to something near their historic average. While there have been (and will continue to be) occasional large swings in local construction costs, the overall effects of inflation in the larger economy will eventually drive prices back toward historic averages.



With this said, BC&A has made an assumption of future recovery as shown in Figure 1 for discussion purposes. This scenario assumes that recovery occurs fairly linearly over the next 4 years. It should be emphasized that this is not a "projection" of what will occur. It is simply a possible scenario to be used for calculations and discussion.

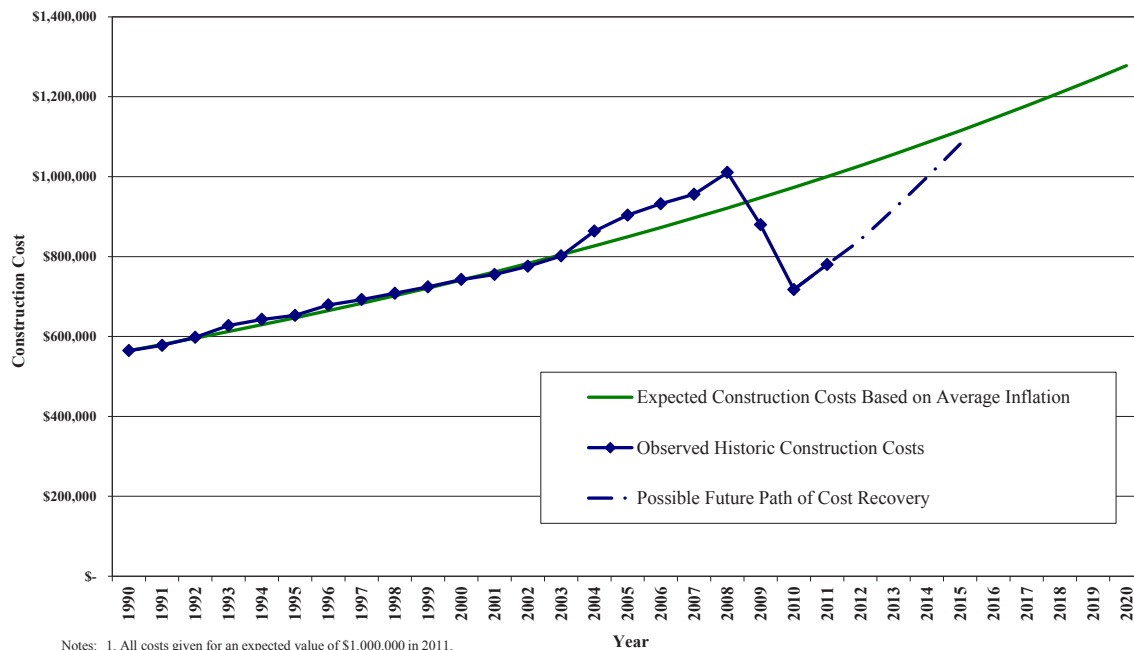
Comparison of 2011 Construction Costs to future Construction Costs

With the information contained in Figure 1, it is apparent that there are significant potential cost advantages of building projects during this period of reduced prices. The final component of this analysis is to develop an analysis of the cost to complete projects in 2012 versus the cost of completing those same projects in future years. This is shown graphically in Figure 2.

Figure 2 shows the potential cost savings of constructing a project in 2012 versus waiting to construct the project in later years considering the time value of money. Included in the figure are two curves, one

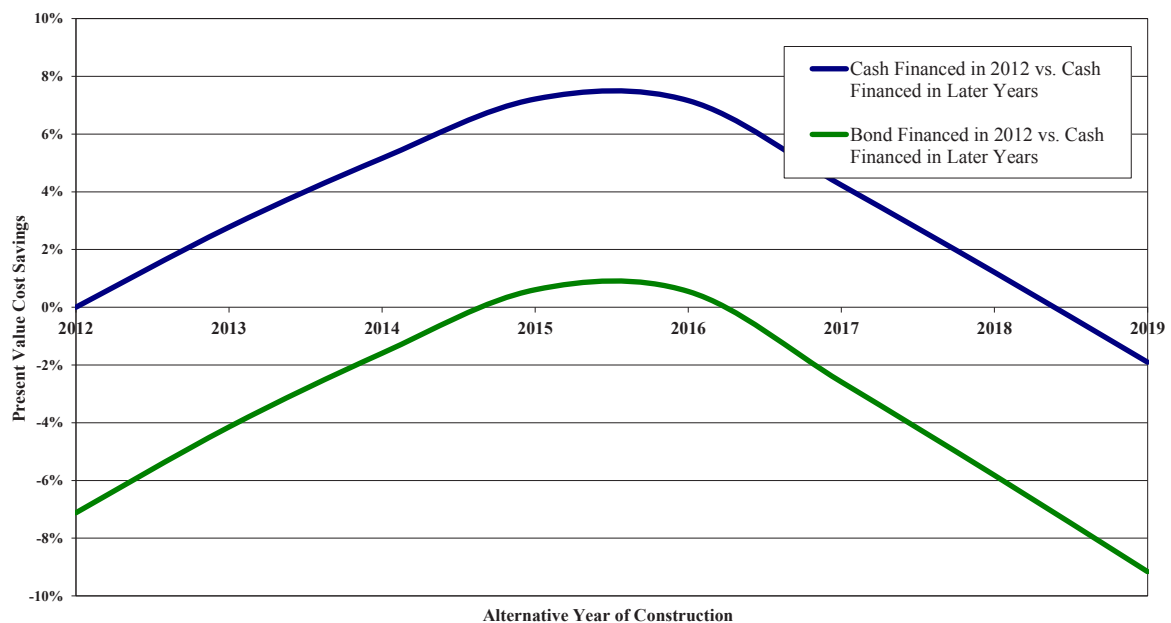
for completing the project using cash and one for completing the project using bond financing. A primary assumption in the figure is that construction prices follow the "Possible Future Path of Price Recovery". As noted previously, this is just one possible scenario for future construction prices. However, while the shape of the curve and its magnitude may change slightly depending on future economic conditions, the overall conclusions that can be taken from the curve will still apply.

Figure 1
Historic and Expected Future Construction Costs



Notes: 1. All costs given for an expected value of \$1,000,000 in 2011.
 2. Average inflation = 2.76 percent
 3. 1990 to 2006 observed costs based on ENR Construction Index. 2007 to 2011 observed costs based on ratio of average of bids for BC&A projects to expected costs based on long-term averages.

Figure 2
Cost Savings of Constructing Project in 2012 Versus Future Years¹



Notes: 1. Cost savings based on constructing a project in 2011 vs. constructing the same project in a future year using cash financing (e.g. there is an estimated 1% savings of constructing a bond financed project in 2012 vs. the same cash financed project in 2015). Future year costs based on "Possible Future Path of Cost Recovery" shown in previous figures.
 2. Bonding based on 20-year bond at 6 percent interest rate with an initial bond expense of 4 percent.
 3. Present value calculations based on a 6 percent return on investment.

Conclusions

From Figure 2, BC&A would offer the following conclusions:

1. There are significant cost advantages of constructing projects now versus waiting until later. If an entity has cash on hand, it can potentially save up to 8 percent in construction costs over waiting to construct the project a few years down the line.
2. If a project must be bonded for, bonding costs and interest will eat up most of the potential savings vs. cash financing later. However, bonding now vs. bonding later would have the same cost advantages as noted for cash financing above.
3. For the set of assumptions contained here, the break even point between constructing now versus later is approximately 6 years for cash financed projects and 4 years for bond financed projects. If an entity has any project that will be constructed within the break even time frame, the project will likely be less expensive to construct now rather than later.
4. The maximum cost savings resulting from project acceleration will occur for projects that would otherwise occur within the next 2 to 5 years. For any projects currently scheduled in this period, overall costs can potentially be reduced by accelerating bidding and construction to occur within the next year.

In short, the opportunity for saving money by accelerating construction still appears to be available but potential savings are less than observed in 2011. For entities with needed projects scheduled within the next 4 to 5 years, it is still worth considering acceleration of the projects to take advantage of the favorable bidding climate. While this is especially true for entities with cash on hand, even those entities that would need to bond for the projects may wish to consider project acceleration. While overall costs savings would likely be minimal, even bond financed projects could be completed now for about the same present worth cost as completing them 3 or 4 years later.



1. Who is "the father of Soil Mechanics?"
2. Name one of the two engineers elected President?
3. When water flows through a full pipe, the water is fastest in what part of the pipe?
The top, middle, bottom, or all the same?

The first person to email us with the correct answers at
info@bowencollins.com

by March 17, 2012 will receive a \$20.00 gift certificate to Cafe Rio!