July 2013 Construction Cost Outlook and Forecast

July-2012 POST-FORECAST REVIEW:

The ODOT Construction Cost Index measured inflation for FY 2013 at 1.1%. Commodity prices have declined due to slower than predicted growth in Ohio and in the nation. FY 2013 costs escalated at a lower rate than the 4.4% predicted in July 2012.

July-2013 FORECAST OVERVIEW:

Uncertainties regarding federal fiscal policy and health care costs have been mitigated. The Federal Reserve’s bond purchase schedule is expected to be transparent, thereby minimizing market shocks.\(^1\) In addition, delays of key components in the Patient Protection and Affordable Care Act and the Health Care and Education Reconciliation Act have decreased near-term risk and uncertainty.

The driving force of emerging markets has also eased in recent months, leading to commodity surpluses.\(^2\) Global growth, however, will continue at a slow pace. Hence, expected inflation for FY2014 is lower than the calendar year inflation forecast (5.7%) predicted in January 2013.\(^3\)

Given current economic indicators, we anticipate an ODOT construction cost inflation rate of 5.3% in FY 2014. We expect inflation growth to increase slightly in FY 2015 to 5.5%. Due to greater uncertainty in FY 2015, we predict a high-range forecast of 9.5%. We expect inflation to remain relatively level in FY 2016 (5.6%) and to peak in FY 2017 at 5.7%, with a decline in FY 2018 (4.0%). Beyond FY 2018, we predict a long-run construction cost inflation rate of 4.0%.

| Table 1: July 2013—5-YEAR CONSTRUCTION COST INFLATION FORECAST |
|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
|                 | FY 2014 | FY 2015 | FY 2016 | FY 2017 | FY 2018 |
| High            | 7.8%    | 9.5%    | 9.6%    | 9.7%    | 8.0%    |
| Most Likely     | 5.3%    | 5.5%    | 5.6%    | 5.7%    | 4.0%    |
| Low             | 2.0%    | 3.1%    | 3.5%    | 3.0%    | 2.0%    |

The following is an overview of the major contributors to changes in construction costs over the next five years: (1) the direction of state, national, and global economies and (2) the cost of regional construction inputs including labor, oil and diesel, liquid asphalt, and steel, among others.

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STATE & NATIONAL ECONOMIES:

The Ohio economy has recently fared better than the nation as a whole. According to JP Morgan Chase, Ohio’s economy grew faster (1.9%) than the U.S. economy (1.7%) in CY 2012. Chase forecasts Ohio’s GDP growth will pick up modestly in CY 2013 (2.2%) and CY 2014 (3.6%) but not keep pace with their U.S. growth forecasts of 3.1% in CY 2013 and 4.0% in CY 2014. In June, the Federal Reserve predicted the U.S. economy would grow between 2.3% and 2.6% in CY 2013 and between 3.0% and 3.5% in CY 2014. Bright spots in the U.S. economy include the housing market, the auto industry, and domestic oil production, each also having a positive effect on Ohio.

Home sales are improving. The Cleveland Federal Reserve Bank’s business contacts reported higher year-over-year sales of new and existing single-family homes within their region. The improvements are attributable to low interest rates, attractive prices, and an improving labor sector. Nationally, both new and existing home sales rose in May, with new home sales up 2.1% (the highest level since July 2008) and existing home sales up 4.2% (the highest level since 2009). The strong sales indicate high demand. Subsequently, the annual median sale price jumped 15% with April marking the biggest year-over-year gain in home prices since March 2006. Meanwhile, permits for new home construction reached its highest level in five years. Though the housing sector is showing strong signs of improvement, the recent increase in mortgage rates could adversely influence the rate of recovery.

The U.S. construction industry continues to improve at a gradual pace. Excluding electric utilities, total construction starts were up 10% in the first six months of 2013. Residential and non-residential construction continue to show signs of recovery. We anticipate these sectors to remain strong even as mortgage rates increase in the near term. Public spending on non-building construction was up 5% through May 2013. Despite the non-building growth, overall government construction spending is at the lowest level since 2006. This drop in spending is being attributed to the recent federal budget cuts, known as “sequestration”. We anticipate this decline to be a temporary development that will not have a long-term negative effect on the overall recovery. Even though the construction sector is experiencing positive signs of recovery, it has a long way to go before it is considered a sustained recovery.

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4 JP Morgan Chase, “Regional Perspectives, Ohio Economic Outlook”, June 6, 2013
5 The Cleveland Federal Reserve region includes the state of Ohio and portions of western Pennsylvania, eastern Kentucky, and northern West Virginia.
11 Mortgage rates have jumped in recent months” Wall Street Journal, July 16, 2013, p. A1, Rates increased from 3.35% in May 2013 to 4.51% in July 2013.

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The U.S. automotive industry is booming. Exports are on the rise due to favorable exchange rates and lower labor costs. In 2012, the U.S. auto industry saw record levels of car and light truck exports totaling more than one million units. That figure is more than triple the national level set in 2003.\textsuperscript{15} The increase in production is significant, because Ohio accounts for nearly 20\% of national auto manufacturing employment.\textsuperscript{16}

The growth of U.S. crude oil production may be the most influential upswing to the country, as well as to the world. Last year, U.S. crude output grew at a rate of more than one million barrels per day,\textsuperscript{17} the highest crude production growth in U.S. history. American crude oil is cushioning the markets, providing stability. The Wall Street Journal reported that with increased energy independence, the US is pursuing foreign policy and international security objectives more aggressively. For example, the increased sanctions against Iran have significantly reduced Iranian crude exports. However, this reduction had little effect on global prices, demonstrating newfound market resilience due to U.S. production expansion.\textsuperscript{18} Ohio is currently participating in the oil and gas boom through the development of the Utica and Marcellus shale plays in Northeast Ohio. In 2014 and 2015, Ohio’s non-residential construction sector is expected to have significant growth due to oil and gas development.\textsuperscript{19}

Modest economic growth will continue to fuel a reviving construction sector in Ohio. Despite the boost in funding ODOT will receive from the sale of Ohio Turnpike bonds, we expect public construction spending to remain flat or to decline in the near term. However, we anticipate private construction spending in Ohio to follow national trends, with spending in the residential and non-residential sectors increasing substantially in the near term. The growth provided by these sectors is bolstering both the U.S. and Ohio economies through job creation and increased manufacturing/construction demand, thereby boosting consumer confidence.\textsuperscript{20}

INTERNATIONAL ECONOMY:

The global economy is not recovering as quickly as expected. The Euro currency stayed solvent in 2012 despite facing financial turmoil, mainly in Greece and Spain.\textsuperscript{21} Uncertainty and slow growth in Europe are expected to continue. As a result, Europe is predicted to have weak demand for raw materials and little crude oil consumption growth. Though domestic crude oil prices may dip, prices of refined products are predicted to remain at current levels. Some fluctuation due to global demand is expected.

As Brazil is the host nation for the 2014 FIFA World Cup and the 2016 Summer Olympics, global demand for construction materials will be somewhat affected by the required building projects. However, projections continue to decrease from the initial estimates due to civil unrest, construction delays, and currency deterioration, slowing Brazil’s overall growth.\textsuperscript{22}

\begin{thebibliography}{9}
\bibitem{16} JP Morgan Chase, “Regional Perspectives, Ohio Economic Outlook”, June 6, 2013, p. 7
\bibitem{19} Simonson, Ken, Chief Economist, AGC of America, “Construction & Materials outlook”, May 22, 2013, p. 22
\bibitem{22} Frangos, Alex, “Forces Converge in Emerging Markets”, Wall Street Journal, July 2, 2013, p. C1
\end{thebibliography}

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China is expected to remain the global leader in growth, but demand for scrap steel and petroleum products will be more moderate than expected. China’s GDP growth is expected to average under 8.0% in 2013.\textsuperscript{23} Though this prediction is below initial estimates, China’s GDP is still the fastest growing in the world.

Slow growth has also affected raw commodities; surpluses continue to build while prices decline. Overproduction of steel, copper, and nickel persists due to the regional structure of producers.\textsuperscript{24} The global glut in inventory has not necessarily translated into lower end-user costs.

Japan is intentionally weakening its currency to boost the attractiveness of its exports. In an attempt to spur economic growth, Prime Minister Shinzo Abe has signaled his support of a weaker yen.\textsuperscript{25} The United States imports more than $100 billion in goods from Japan, fourth behind China, Canada, and Mexico. Though most steel used in construction is produced domestically, Japanese steel, equipment, and other commodities will help temper global prices.

**KEY CONSTRUCTION INPUT TRENDS:**

**LABOR:** Labor accounts for a significant portion of the cost associated with the construction of ODOT projects. The majority of construction workers on ODOT projects are covered by union labor contracts. We expect labor costs to increase modestly, between 2.0% and 3.0%, during the forecast period.

**CONTRACTOR & SUPPLIER MARGINS:** Figures 1 and 2 depict competition for asphalt and bridge replacement work-type projects, respectively. Between June 2011 and July 2013, the average number of bidders dropped by 12.0% for asphalt contracts and by 6.0% for bridge replacement contracts.\textsuperscript{26} Recent months have shown a slight increase in competition. Although competition is near a four-year low, the market is expected to remain even. We do not expect contractor and supplier margins to significantly affect construction cost inflation in the next 12 months.

\textsuperscript{23} Economist Intelligence Unit, “The World in Figures Countries”, The World in 2013, p. 113
\textsuperscript{26} The 12-month rolling average number of bidders for asphalt and bridge replacement work-types is compared for June 2011 and June 2013. Source of calculations: The Bid Analysis and Review Team.

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Figure 1

**Competition for Asphalt Work-type Projects**
*(12 Month Rolling Average)*

Ohio Department of Transportation, Bid Analysis & Review Team

Figure 2

**Competition for Bridge Replacement Work-type Projects**
*(12 Month Rolling Average)*

Ohio Department of Transportation, Bid Analysis & Review Team
OIL & DIESEL: Fuel prices are a major cost driver of construction and asphalt production. Oil and fuel prices are expected to remain stable in the near term. The U.S. Energy Information Administration (EIA) upper boundary prediction for West Texas Intermediate crude oil (WTI) is slightly raised. The annual prediction is between $88.00 and $93.25 per barrel,27 a range that coincides with most forecasts. The high boundary was previously $91.00 per barrel. In 2013, we expect to see more domestically produced oil exported overseas.28

Transportation and machinery rely on diesel to fuel operations. The EIA predicts retail diesel fuel will cost between $3.50 and $4.00 per gallon in 2013, a slight decline from 2012 levels. EIA forecasts are consistent with the gradually declining crude oil prices predicted for the coming quarters.

Figure 3 shows the Energy Information Administration’s average retail diesel fuel forecast. The EIA’s first quarter prediction, published at the end of 2012, is included as a dotted red line. The forecast is expressed as a dashed blue line. After an unexpected spike in price due to both scheduled and unplanned refinery maintenance, diesel fuel prices are currently trending inline with expectations.29 We expect prices to trend with predicted levels barring unforeseen production disruptions.

LIQUID ASPHALT: Liquid asphalt and crude oil prices are closely linked. Domestic refineries continue to pursue lighter crude inputs that yield less asphalt grade product. Barring unforeseen events, such as global political unrest or additional transportation disasters,30 liquid asphalt prices are predicted to follow the current trend. Prices are flat and declining slightly. Annualized price change is expected to settle between -5% and +15% of 2012 levels. In real dollar terms, prices are expected to remain at the current elevated level. Asphalt binder price trends are displayed in Figures 4 and 5.

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Asphalt Binder PG64-22


Percent Change in Asphalt Binder PG64-22 Unit Price

STEEL: Steel costs continue to be influenced by both domestic and international markets. Domestic steel demand is buoyed by increases in durable goods manufacturing, particularly in the auto industry. Steel imports from both China and Europe are dampening domestic prices. For 2013, steel analyst John Anton, IHS Global Insight, expects a 2.3% drop in structural steel prices along with a 6% drop in concrete reinforcing bar prices. As the economic recovery gains ground, Europe and China will cut steel production capacity. We expect steel prices to remain flat for the next 12 months.

READY MIX CONCRETE (RMC): Though cement, a component of RMC, is impacted by global construction demand, RMC prices are influenced more by regional demand factors. Concrete prices are tied to building and are expected to move slowly upward when the construction pace increases. We expect RMC prices to remain relatively flat (1-2%) until the residential and commercial building markets recover more fully. Ready mix concrete prices are currently as expected, but will have more upward movement outside the current FY forecast period (4-6%).

AGGREGATE: The current oil and gas development within the Utica and Marcellus shale have increased demand for aggregate in Eastern Ohio. Transportation costs for this heavy commodity will typically drive its price, effectively limiting the number of suppliers.

Throughout Ohio, only certain suppliers provide aggregate that meets ODOT’s quality standards. Given the limited competition in many areas, we predict aggregate prices to trend upward throughout the forecast period. In Eastern Ohio, there may be price spikes in the near term as supply is ramped up to meet demand. ODOT aggregate prices have risen 10% in the past twelve months and are up 31% over the past four years.

FUNDING:

ODOT’s Capital Program anticipates additional funding from the sale of bonds from the Ohio Turnpike. With those additional funds, ODOT’s budget is projected to average just over $2 billion per year through FY 2017. Given anticipated market conditions, the incremental increase in spending will not materially raise construction demand throughout Ohio. Therefore, the funds from the Ohio Turnpike bond sale are not expected to have an appreciable impact on ODOT construction inflation.

SUMMARY:

National and global economies are not recovering as quickly as expected. The Ohio economy is expected to remain on a slow and steady growth path. The delay in economic growth has translated into low levels of inflation. We anticipate input cost growth to remain stable, resulting in moderate construction cost escalation in FY 2014.

Prepared by the Bid Analysis and Review Team, Office of Estimating, Ohio Department of Transportation, July 23, 2013

33 Grogan, Tim, “Inflation is becoming regional: Price hikes depend on market”, Engineering News Record, June 24/ July 1, 2013, p. 25