Construction Costs

Finance & Operations Committee
February 6, 2006
OUTLINE

- Building Services Process
- Estimating
- Construction Economics
- Future
Building Services Process

- No funds for “Improvements”
  - Examples – copy machine, split a classroom, build time out room, playground equipment
  - Other funding sources must be identified

- Preliminary Cost Estimate Form available: [http://www.madison.k12.wi.us/bldgsrvc/](http://www.madison.k12.wi.us/bldgsrvc/)

- Can not start design, permitting or construction until account number is established and purchase order approved.
Estimating

- Referendum Projects –
  - Removed from website for adjustments
  - Scope Changes are largest cause for price difference.
  - We do not have resources to perform detailed engineering analysis on each project, prior to implementation.

- Contracted Labor –
  - All estimated are based on contracted costs.
Estimating

- Resources –
  - Means Cost Estimating Guide
  - Previous projects
  - Experience
Estimating factors

- Time and resources
- Asbestos
- Changes in scope
- Design, 8% to 10%
- Fees, permits
- ADA, 20%
- Contingency, who pays change orders?
- Construction and construction labor are more expensive than commonly thought.
Estimating

- Material prices have far exceeding standard inflationary numbers.
- 3% annual increase is no longer valid.
RISI predicts that OSB prices by next year will decline 34% from today’s level to $213 per thousand sq ft or about $32 less than what they were before the storm. It also predicts that lumber prices by next August will decline 15% from today’s level to $306 per thousand bd ft.

RISI's forecast is based on an anticipated slowdown in the national housing market for economic reasons unrelated to Katrina. “The industry has the capacity to build 2.1 million [housing] units a year and, even with Katrina, we will be well below that,” says Jannke.

“We have revised our housing forecast because of Katrina but starts will still start falling off in 2006,” says Michele Halickman, building products analyst for Global Insight, Washington, D.C. The forecasting firm had expected housing starts to decline 3.2% in the first quarter of 2006 and another 4.9% in the second quarter. Now it is looking for declines of 2.7% and 4.1%, respectively.

Estimators also are closely watching wallboard prices. There are 77 plants in the U.S. and at least two are located in the New Orleans area, says Michael A. Gardner, executive director of the Gypsum Association, Washington, D.C. Through the end of June 2005, shipments were running 5% above last year’s strong numbers, he says.

“Our facility in New Orleans is not running and we have not been able to assess damage yet,” says Robert E. Williams, USG spokesman. “We have a new facility in Mexico coming on line to make up the wallboard shortfall,” but drywall demand will not peak for at least a year

### Construction Materials Price Movement in 2005

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<th>JAN.</th>
<th>FEB.</th>
<th>MAR.</th>
<th>APR.</th>
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**Source**: Bureau of Labor Statistics. NA—Not available.
escalation in 2006 to be about the same as this year,” he adds.

Diesel fuel prices also are expected to remain high. This year, diesel fuel prices posted a 59% year-to-year increase, according to the Bureau of Labor Statistics producer price index for October. “Higher fuel prices have led to stiff surcharges for the delivery of materials,” says Mary Wallers, president of Sierra West Group, which compiles the Lee Saylor cost index (see p. 28). She says delivery surcharges have been reported between 10 to 25%.

**Main Index Drivers**

The most critical element in forecasting ENR’s indexes is labor costs, which account for 80% of the CCI and 64% of the BCI. A year ago, ENR’s forecast called for a 4.4% increase in the CCI’s labor component and a 4.1% increase for the BCI’s labor component: The actual increase for both was 4.2%.

Once again, ENR is forecasting that the labor component of its indexes will hold close to the increases already negotiated for next year. Multiyear collective-bargaining agreements reported by the Construction Labor Research Council, Washington, D.C., call for another 4.3% increase in 2006.

For the last two years, material price escalation has been the main driver of inflation. Steel prices, which account for 20% of the BCI, followed 2004’s 31% increase with another 13% increase this year. This was about 2% more than ENR...
Construction Economics

Major World Economic Factors

- Katrina – Hurricane Katrina disrupted labor and material markets, boosting inflation and sending oil prices above $70 barrel. Some analysts believe the markets will cope, but estimators are padding escalation factors in bids.
Construction Economics

- Midwest Drought - (ENR 10/26/05)

- Drought over the upper Midwest this year may start drying up construction profits there next year.

- Even after receiving a brief reprieve of rain delivered by Hurricane Katrina, barge haulers on the upper Mississippi and Ohio Rivers continue to cope with low river levels that are limiting capacities of bulk loads of cement, aggregate, asphalt, steel and other building materials.
Construction Economics

- Crude Oil Prices - Transportation, Petroleum products (roofing, PVC pipe), Shipping costs
- In the past year, crude oil prices have risen significantly. From August 31, 2004 to August 31, 2005.
  - The price of a barrel of West Texas Intermediate crude oil—a benchmark for international oil prices—rose almost 64 percent.
  - During the same time period, average retail prices for regular gasoline increased approximately 40 percent, up to $2.61 per gallon.
  - Despite the increase, Americans still pay significantly less for gasoline than those in many other countries.
COMPARISON OF THE NATIONAL AVERAGE RETAIL PRICE OF GASOLINE AND THE PRICE OF CRUDE OIL

Source: EIA  Date: January 2003 - October 2005

- National Average Retail Price (RUL) Regular Unleaded Gasoline
- WTI (West Texas Intermediate Crude)
1/23/06 - $70/barrel
World energy demand is at an all-time high.

- China, once an exporter of oil, has doubled its oil imports in the last four years.
- Demand in the Asia region as a whole, is forecast to grow at a strong pace.
- Overall, the United States consumes approximately 25 percent of the world’s energy—which translates into one million dollars worth of energy every minute.
Construction Economics

- Underinvestment - After a decade, or more, of underinvestment in everything from refineries to oil field maintenance to engineering expertise, the global oil industry isn't in any shape to increase production overnight.

For example, in the Persian Gulf nation of Qatar, Marathon Oil, ConocoPhillips and Chevron have signed agreements to build three natural gas-to-liquid fuel (GTL) plants to exploit that nation's huge reserves of natural gas. But the projects were recently delayed for at least three years because of a shortage of engineers to design the plants and because a shortage of construction materials had driven up costs. So much for the third-largest natural gas reserves in the world providing a quick shot to global supply.
More Underinvestment

The inescapable conclusion is that this whole damn system is stretched tight from top to bottom -- all the past years of underinvestment are coming home to roost at once, and the situation is being exacerbated by the petrodollar boom.

- We need more steel to build more equipment to dig more coal so we can feed new power stations, and
- use the extra energy to mine and refine more copper, which
- we need to wire new shipyards so we can launch more dredgers, so
- we can improve port facilities, so
- we can move more iron ore to the expanded railways, so
- we can make more steel. …*MSN Money News, November “05*
Construction Economics

- SAFETEA-LU - $286 Billion Highway bill, increases road and bridge construction by 38%. This will impact the prices on cement, steel, and labor.
Three Gorges

- When completed, the $27 billion Three Gorges Dam on the Yangtze will be the largest hydroelectric dam in the world, and the largest engineering and construction project on the planet. It spans nearly a mile across and towers 575 feet above the world’s third longest river. Its reservoir stretches over 350 miles upstream and forced the displacement of close to 2 million people. Construction began in 1994 and is scheduled for completion by 2009. The reservoir, its engineers say, will enable 10,000-ton ocean-going freighters to sail directly into the nation’s interior for six months of each year, opening a region burgeoning with agricultural and manufactured products. And the dam’s hydropower turbines are expected to create as much electricity as 18 nuclear power plants.

- When China buys metal, Lowell PTO gets upset. Why?
Future

- Associated General Contractors (AGC) Reports
  - *How High is the Sky? The Outlook for Materials Prices*, Ken Simonson, Chief Economist AGC – ‘The popular one-word explanation for these increases is ‘China.’ India has matched China’s 8-10% growth rate, buying up far more resources than it did a few years ago as it simultaneously industrializes, builds infrastructure, and develops an appetite for resource gobbling consumer products.’
  - ‘*The Cost Outlook for Construction,*’ AGC, November 15, 2005
  - ‘*Documenting Changes in Construction Costs,*’ AGC

- ENR – High material prices will remain, but inflation will level off.
Future

ENR’s Materials Price Indexes

GYPSUM WALLBOARD

PRICES HAVE INCREASED 12%
DURING THE LAST EIGHT MONTHS.

2002=100

M A M J J A S O N D

PARTICLE BOARD

DESPITE A RECENT REBOUND,
PRICES ARE STILL BELOW LAST YEAR’S LEVEL.

2002=100

M A M J J A S O N D

PLYWOOD

DECEMBER’S 1.4% DECLINE
CHECKED THREE MONTH’S OF STRONG GAINS.

2002=100

M A M J J A S O N D

LUMBER

PRICES FELL FOR THE
FIFTH CONSECUTIVE MONTH.

2002=100

M A M J J A S O N D

SOURCE: ENR CONSTRUCTION ECONOMICS DEPT.
Costs Remain High As Escalation Peaks

Contractors should get some relief in 2006 from two years of intense material price escalation. The explosion in steel prices in 2004 was followed by stiff price hikes for cement and lumber. This year, gypsum wallboard and energy, plastic and copper-based products all posted large double-digit price hikes. An anticipated slowdown in the housing market combined with increased imports and producer capacity will put a cap on escalation. However, price declines will be modest compared to the increases of 2004 and 2005. International inflation rates also are easing, with the average rate for 40 countries falling back to 4.9% this year after jumping to 6.3% in 2004.
Future

Construction costs will continue to outpace inflation rates. How much is unknown.

District Impact:
- Current economic factors indicate that we will be unable to complete all of the items scheduled on the Maintenance List as originally published.