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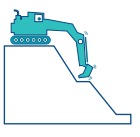
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FISCAL YEAR 24/25 1ST QUARTERLY REPORT

STRATEGIC RESOURCE EVALUATION STUDY
HIGHWAY CONSTRUCTION MATERIALS
CONTRACT BEC18

OVERVIEW: FLORIDA'S HIGHWAY CONSTRUCTION MATERIALS

Construction Material	Status
 ASPHALT	Asphalt bids were effectively flat this quarter; bids varied widely. Binder prices have been flat for several quarters, at record high prices, but have had little effect on FDOT bids this quarter. Factors including a difficult workforce and high infrastructure funding continue to support high prices. Interviewees report large backlogs and little incentive to sharpen their pencils for bids, but competition and low energy prices appear to be constraining bids.
 CONCRETE	Projections reflect an apparent reprieve for FDOT's structural concrete prices – albeit temporary. After nearly doubling prices over the last two fiscal years, producers appear to have covered their margins; bids year to date reflect about 1.5% higher costs than FY 2024. Suppliers report an expected uptick in demand after the new year in competing sectors including housing and commercial real estate. Consequently, currently high prices are likely to stick, barring a global or national economic downturn.
 STEEL	Reinforcing steel appears to be returning to more commodity-like pricing, while Structural steel bids reflect varied behavior. Contractors are less optimistic about structural steel prices. Mill capacity appears to be stable currently, with healthy utilization rates.
 AGGREGATE	Recent bids have moderated, although producers report planned price increases on a traditional January schedule. Worker shortages continue, some rail issues were reported and continued high demand is expected to support current price levels. Recent grants to the industry should constrain price increases and streamline delivery and production.
 EARTHWORK	Similar to concrete, earthwork bids appear to be holding steady but not increasing at recent rates. Record high infrastructure spending continues to support high prices, along with a recovering commercial market, residential redevelopment in storm-vulnerable areas and ongoing housing demand. Low energy prices have not accompanied declines in price; projections are for overall slight increases this year and so far, bids are following this trajectory.

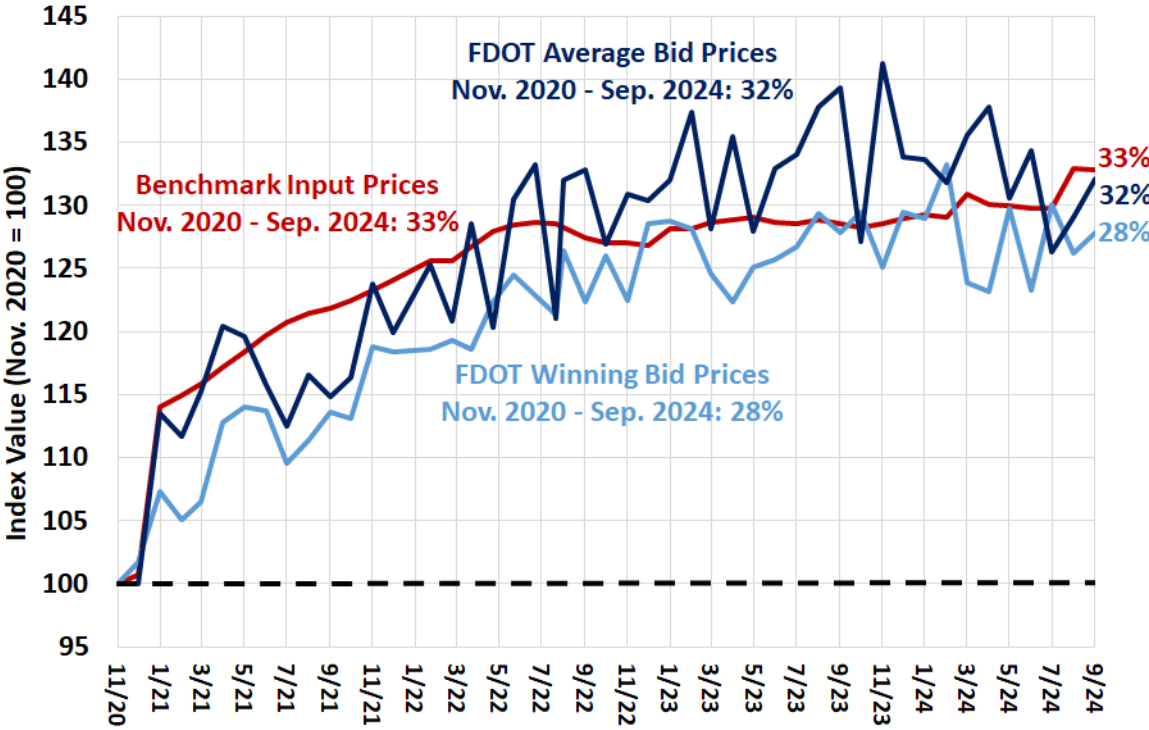
FDOT Cost Index

The **Florida Department of Transportation (FDOT) Cost Index** is calculated by assessing awarded and average bids. The share of aggregate, asphalt, concrete, and steel dollars spent on FDOT projects is compared to a baseline index that is calculated from regional industry prices; see **Figure 1** for data from November 2020 forward.

FDOT winning and average contractor bids and industry benchmark input prices converged in May 2024¹. The industry benchmark remained 32% higher than November 2020 levels through September 2024. According to preliminary data, FDOT winning bids were 28% higher than November 2020 in September 2024 in comparison. Preliminary average bid prices remained elevated in September 2024 at 33% higher than pre-pandemic levels. The gap between *average* bid prices (calculated from all bids received) and *winning* (awarded) bid prices narrowed significantly in May 2024, indicating less competitive bidding activity. The average gap between all bids and awarded bids over the last year was between 1-9% each quarter.

Monthly cost composition by material is provided in **Appendix A**, along with an update on the Bureau of Labor Statistics (BLS) Producer Price Index (PPI).

Figure 1. Florida Benchmark Input Prices vs FDOT Bid Prices



Source: TBG calculated from data provided by FDOT Office of the Work Program and Budget, TBG Work Product.

¹ with revised month-end data

Table 1 shows the estimated cost impacts as a result of changes to different market factors. For example, if the price of crude oil increases 10%, FDOT may see an increase of 3.19% in the price of reinforcing steel and 2.37% in the price of structural steel.

Table 1. Market Factor Cost Impacts		
	For every 10% increase in:	FDOT saw a cost increase of:
HMA	Construction Employment in FL	2.28%
	Price of Binder	3.27%
	Price of Diesel	3.51%
	GSP	5.19%
Concrete	FDOT Work Program	2.56%
	Price of Diesel	2.66%
	Price of Crushed Stone	3.63%
	Construction Employment in FL	6.30%
Reinforcing Steel	Price of Crude Oil	3.19%
	GSP	5.44%
	Construction Employment in FL	6.62%
Structural Steel	Price of Crude Oil	2.37%
	Construction Employment in FL	2.84%
	GSP	8.56%
Aggregate	Price of Diesel	2.57%
	FDOT Work Program	4.19%
	Construction Employment in FL	5.97%
	GSP	7.92%
Earthwork	Price of Diesel	2.33%
	Price of Crushed Stone	3.07%
	Construction Employment in FL	7.98%
	Value of Florida Construction Put in Place	8.74%

Source: TBG Work Product.

Disclaimer

The opinions, findings, and conclusions expressed in this publication are those of the authors and not necessarily those of the State of Florida Department of Transportation

Prepared in cooperation with the State of Florida Department of Transportation.

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INTRODUCTION

The Florida Department of Transportation commissioned The Balmoral Group (TBG) to evaluate the availability and costs of critical highway construction materials in Florida. The evaluation includes an analysis of existing and planned supply of these materials, and an estimate of future costs and quantity requirements FDOT will face in fulfilling its five-year work program. Materials in the analysis include the bituminous, cement, steel, aggregate and earthwork markets. An annual assessment of the materials markets and significant trends affecting FDOT's supply availability and costs is included in this report.

The report is organized as follows:

- **General Economic Landscape** for highway construction materials,
- **Work Program Work Mix** allocation and materials quantities estimates,
- **Material-specific findings** for supply chain variables, including
 - raw material sources,
 - existing and likely future transport and distribution methods,
 - potential impact of external forces including global markets, technological change, foreign materials, and environmental regulatory or permitting issues, as relevant,
 - forecasts of likely Florida supply and FDOT costs for the five-year work plan, and
 - GIS maps of existing supplier locations.

GENERAL OUTLOOK: HIGHWAY CONSTRUCTION MATERIALS

Bid Data

Average bids provide insight to market trends; in economic terms, the expected value of a contract or project is the average of all bids. In this analysis, the average of all bids, or the mean, is compared to the official preliminary estimate. Using a 3-month rolling average, in the fourth quarter of Fiscal Year 2023-24 (FY 2024), the average deviation of all bids from the mean of all official preliminary estimates was 6%; slightly higher than the previous quarter (**Figure 2**). Excluding contracts exceeding an official estimate of \$100 million from the analysis finds different results, with bids being 5% higher than the official estimate.

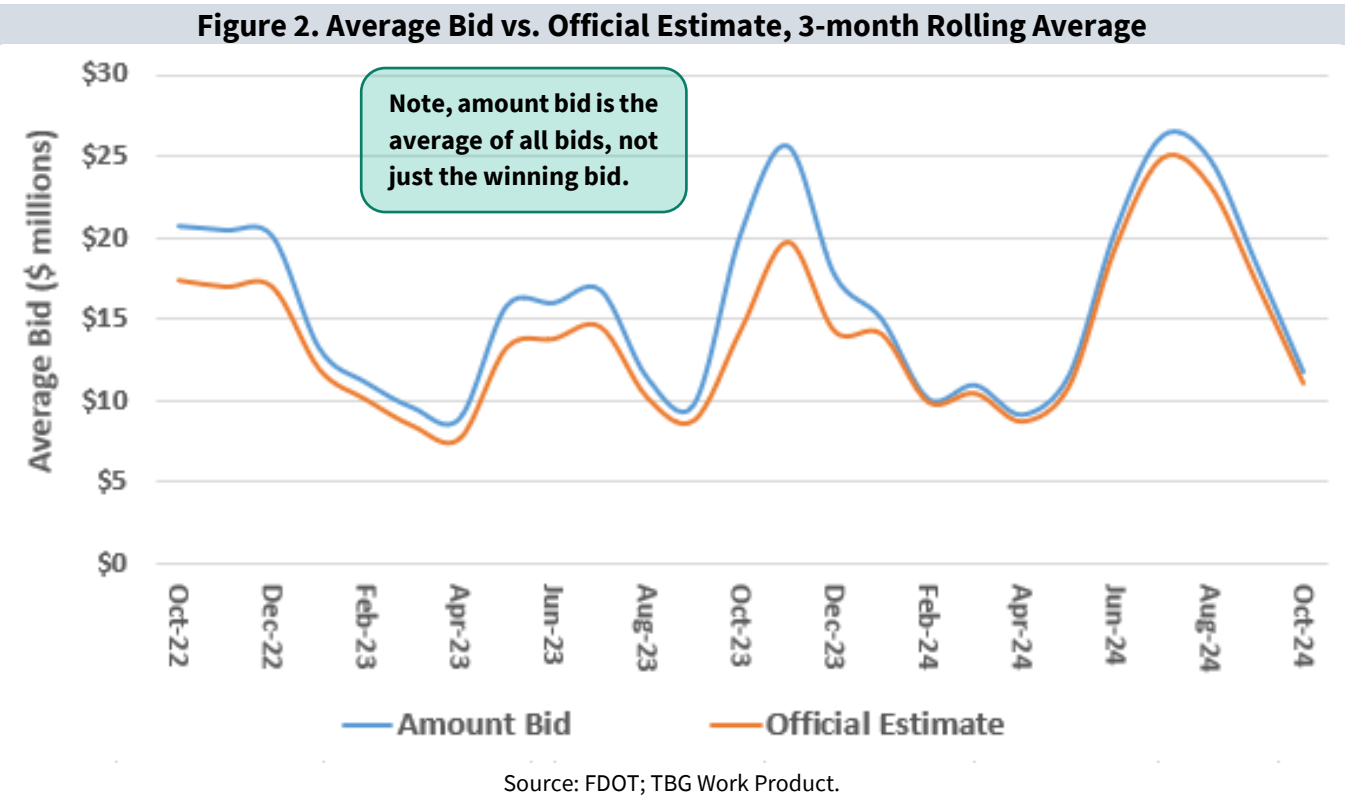
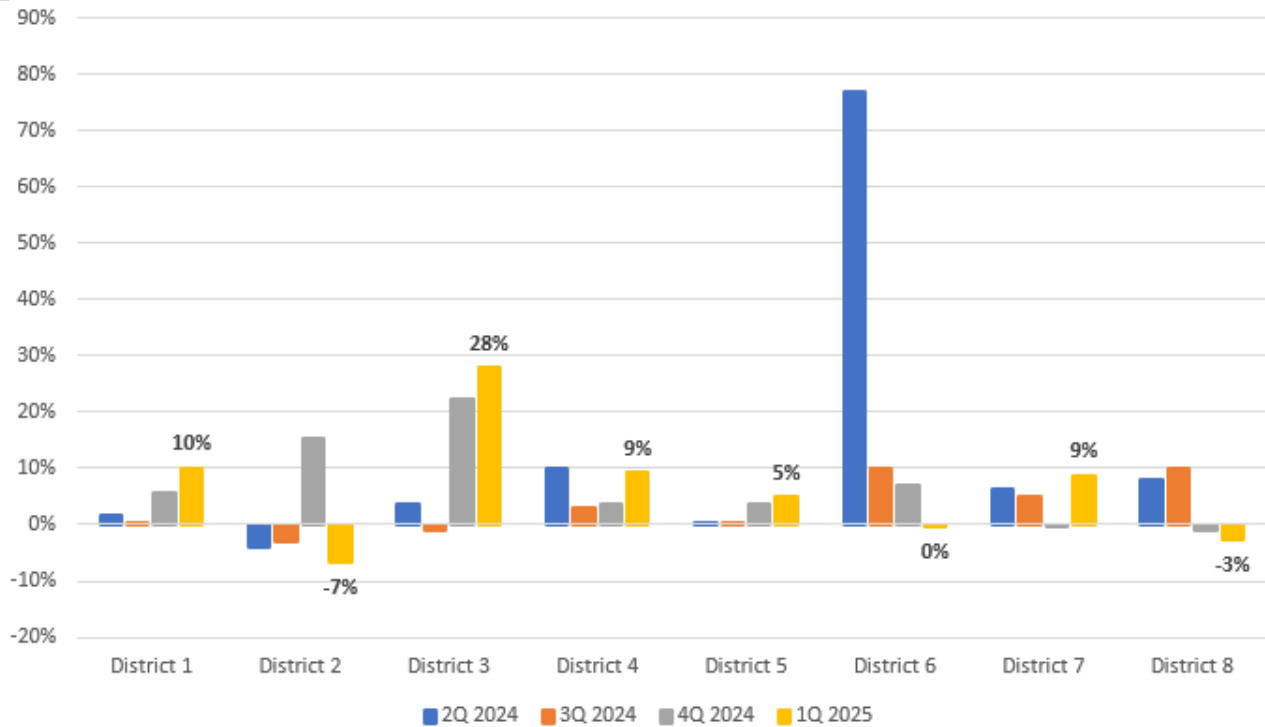


Figure 3 illustrates the average bid versus their official estimate by District on a three-month rolling average. Differences in district-level percentages compared to overall statewide averages are driven by the total amount of dollars for both the official estimate and bids, as well as the total number of bids. Over the past 4 quarters most districts have average bids greater than the official estimates. The deviation of over 75% in District 6 in the second quarter of 2024 is from one very large project and should be considered an outlier.

Figure 3. Average Bid vs. Official Estimate, 3-month Rolling Average by District



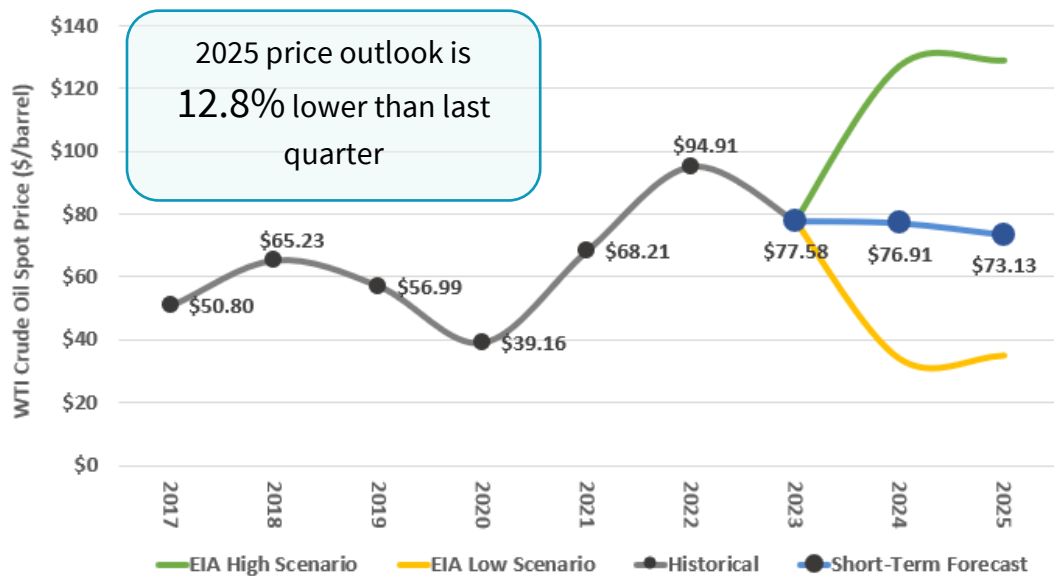
Source: FDOT; TBG Work Product

Energy Prices

The U.S. Energy Information Administration (EIA) October 2024 Short-term Outlook forecast of calendar year-end 2024 crude oil prices fell to \$79.91 per barrel, which is 2.6% lower than the \$82.03 reported in the July report. Currently, crude oil prices are down 21% in September 2024, year-over-year. For

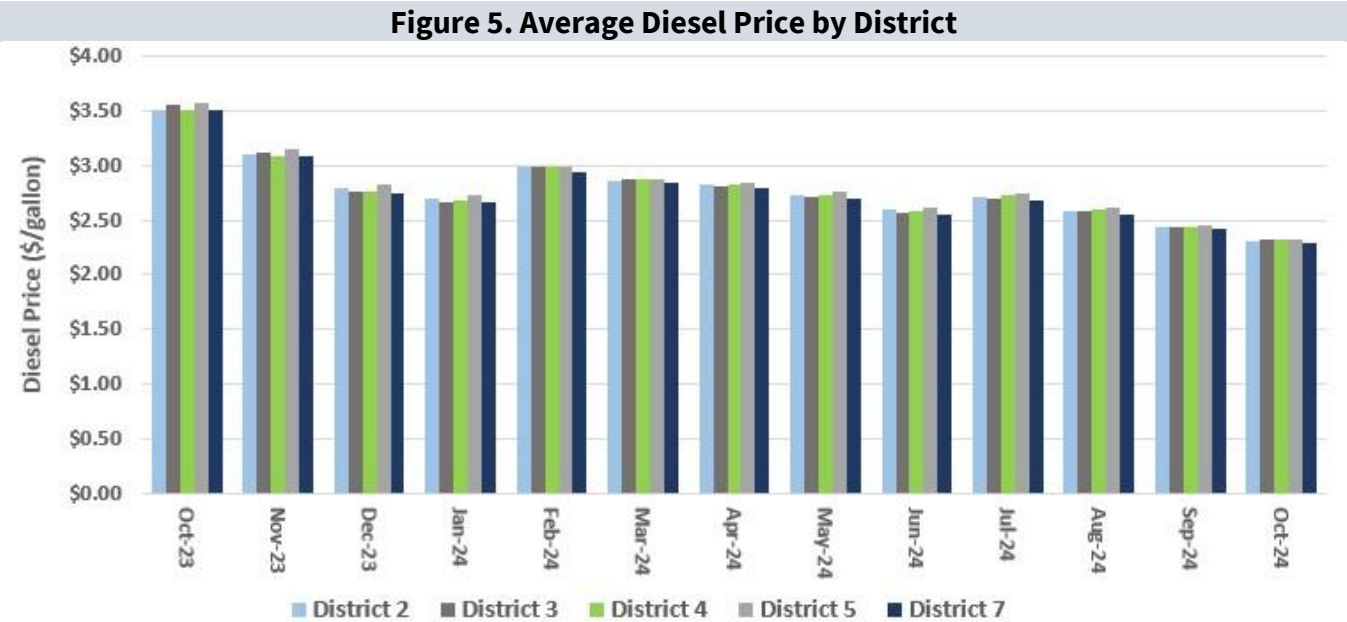
2025, EIA now forecasts crude oil prices at \$73.13 per barrel (down 12.8%). However, ongoing geopolitical conflicts could disrupt global oil prices at any time, which may lead to a worst case/high range scenario (upper bound in **Figure 4**).

Figure 4. Monthly Crude Oil Price, 2017 to 2025



Source: EIA Annual Energy Outlook and Short-term Forecast.

Diesel price quotes from suppliers at terminals around the state decreased from October 2023 to October 2024. On average, prices in October 2024 were \$2.31 per gallon, which is a 34% decrease year-over-year and a 5% decrease month-over-month (**Figure 5**). Prices in all districts ranged between \$2.29 and \$2.33 per gallon.



Source: FDOT, TBG Work Product (D1 and D6 terminals did not report data).

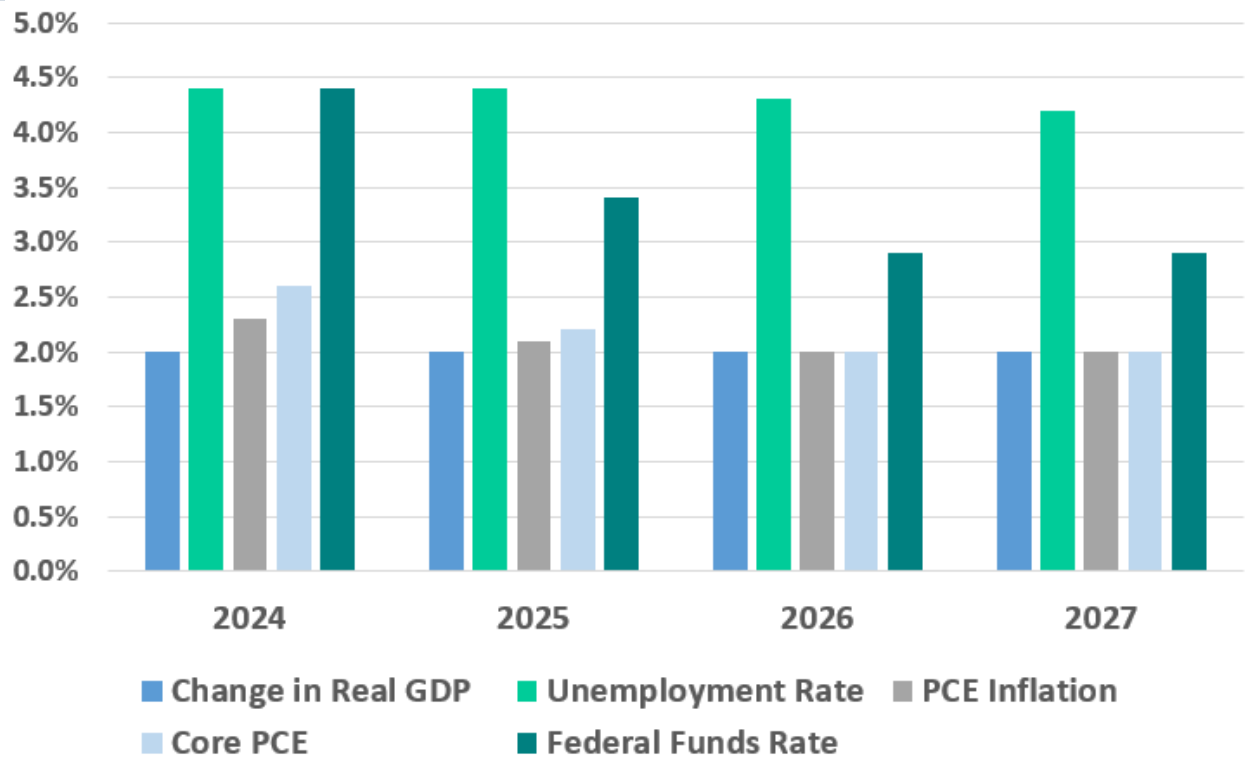
Late in 2023, Belvedere Terminals announced that they began planning the construction of three fuel terminals in Jacksonville, Ormond Beach, and Ft. Pierce, plus seven more around the state in the next five years. Belvedere Terminals is facing pushback from the public and government on their location in Ormond Beach. Ten million of the state budget has been designated for Volusia County to give to Belvedere for the relocation of the terminal. The additional supply could potentially increase competition and lower prices in the long run.

Inflation

The Federal Open Market Committee (FOMC) released revised economic projections in September 2024, leaving Gross Domestic Product (GDP) estimates relatively unchanged from March and June. Unemployment estimates slightly increased for 2024 through 2026 from the June publication. However, inflation estimates are now estimated to be slightly lower at 2.3% for 2024, down from 2.6% in June and 2.4% in March (**Figure 6**). The National Association of Business Economists (NABE), in their October Business Outlook Survey, finds the consensus among corporate economists is that recession is unlikely; investment and hiring decisions are not being impacted by the upcoming election but are being impacted by concerns over inflation; and that a U.S. economic recession and increased global geopolitical instability are the greatest downside risks to economic growth.



Figure 6. FOMC Economic Projections, September 2024



Source: Economic Projections were provided by Federal Reserve Board members and Federal Reserve Bank Presidents.

Legislation and Regulations



State and federal funding and regulatory changes are expected to increase demand for, or otherwise impact, highway construction materials resources

IRS, Several States Grant Fuel Tax Relief After Hurricane Helene

Due to Helene's destruction the IRS and several states, including 41 counties of Florida, have extended governmental fuel tax relief measures based on areas designated by the Federal Emergency Management Agency. Further support may come after Hurricane Milton. Taxpayers will have until May 1st, 2025 to file tax returns. Additionally, the IRS will provide relief by not imposing penalties for not making semimonthly deposits for dyed diesel fuel taxes in Florida, North Carolina, Georgia, South Carolina, Virginia, Tennessee and Alabama.

Florida Investing in Supply Chain, Aggregate Enhancements

In September, Governor DeSantis announced that \$18 million in state funding will be invested in supply chain enhancements and

aggregate storage facilities to help with construction material availability. Areas that will be identified for investment will be based off of cost, proximity, and time to project completion. Projects include \$3.7 million to Florida Gulf & Atlantic Railroad to design and construct a new aggregate terminal, \$1.5 million to Capital Asphalt for a new aggregate terminal in Tallahassee, \$3.9 million to CSX for a new aggregate terminal in Plant City, \$6.2 million to Port of Tampa for a new aggregate terminal, and \$2.6 million to JAXPORT to increase rail capacity.

State DOTs Aiding Hurricane Helene Recovery Efforts

Southeastern State Departments of Transportation are aiding cleanup of Hurricane Helene. FDOT has diverted 2,100 personnel to work directly on storm response. Traffic signals, bridge inspection,

roadway clearing, and assistance with the rail industry has all been offered by FDOT to assist with cleanup.

Hurricane Helene Fuel Concerns Realized Amidst Hurricane Milton

With both Hurricane Milton and Helene battering Florida and the southeast in recent months, there was concern about major supply chain disruptions, which luckily do not appear to have occurred. At one point during Hurricane Milton storm prep, nearly 1,500 Florida fueling locations had run out of fuel, although the disruption was resolved fairly quickly after the storm passed. In DAT's southeast region, inbound and outbound rates increased by an average of 10 cents per miles compared to the previous week. Spot loads decreased by 15% and truck posts were down 16%.

Law Removes Barriers for Veterans at new CDL School Branches

President Biden signed into law a bill aimed at ensuring veterans' benefits are approved without delay at new commercial driving schools. The Veteran Improvement Commercial Driver License Act will guarantee accredited CDL schools can accommodate veterans at new branches. The hope is that this will assist with driver shortages in the industry.

U.S. DOT Aims to Modernize Drug and Alcohol Testing Regulations

The U.S. DOT is proposing changes that would allow electronic signatures, forms, and recordkeeping in place of paper documents for related testing programs. This will help lower costs for the industry but will not be required for those that do not want personal information online.

Tax Fairness Bill Would Restore Per Diem for Company Drivers

In 2017 the Tax Cuts and Jobs Act eliminated the ability of employee truck drivers to deduct per diem expenses from their taxes. This includes union dues, meal expenses, and others. A bill has been proposed as the Tax Fairness for Workers Act that would restore many deductions from daily eligible expenses while on the road. The Senate version has 40 co-sponsors currently and has support from owner-operated independent drivers and 202 co-sponsors in the House with some bipartisan support.

Fracking Bill Moves Forward in Florida

A Florida House Committee has approved a bill that will create regulations for fracking for oil and gas. The bill calls for a \$1 million study to be conducted on the potential environmental and health problems that come with fracking and how chemicals and contaminants will be disposed of.

Regulations will be made based on the study.

What OSHA Regulations are in the Pipeline

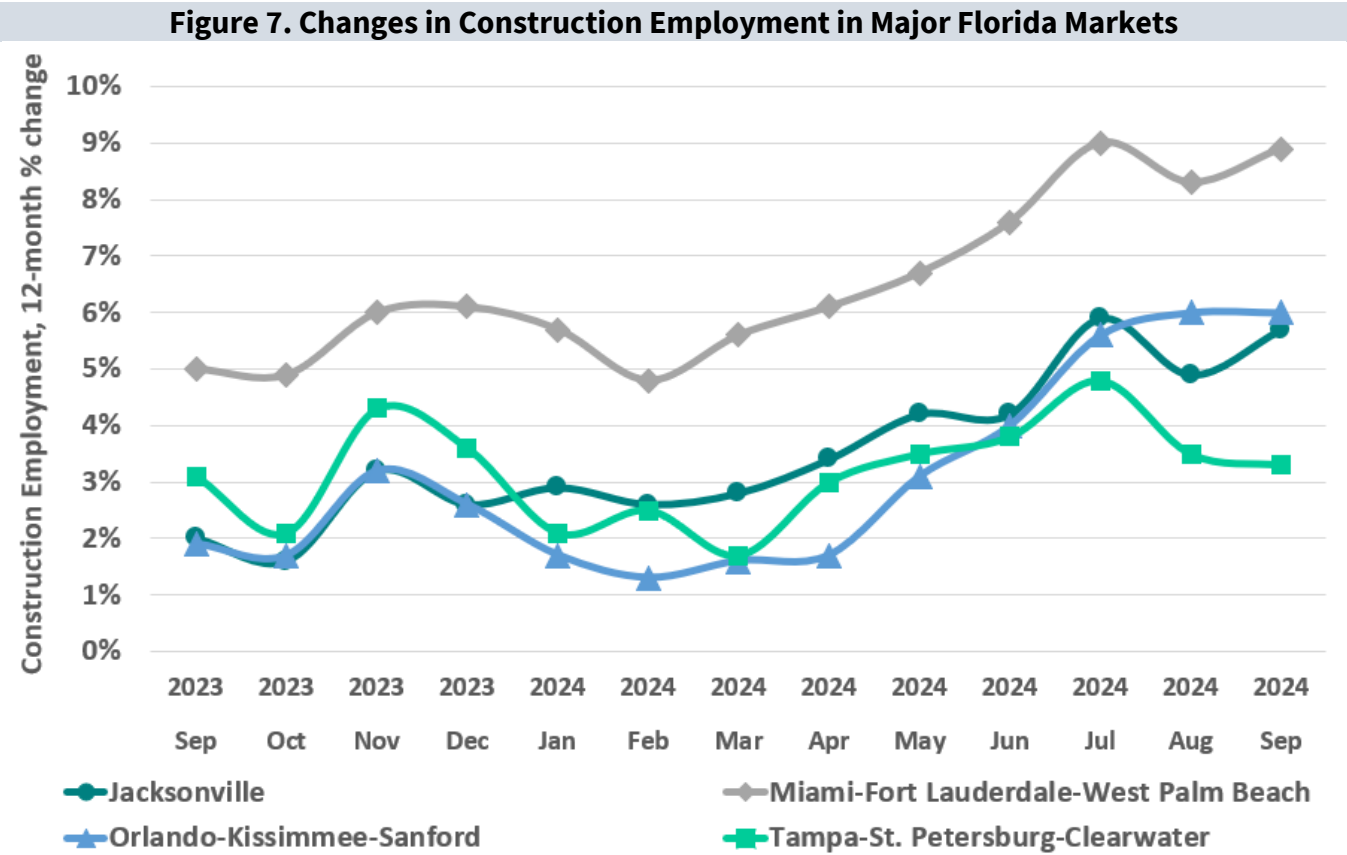
The Department of Labor has released its semiannual update of their regulatory agenda which covers proposed regulations. Some of these regulations include Reinforced Concrete in Construction, controlling silica exposures in construction, amendments to the cranes and derricks in construction standard, and more.

OTHER NEWS

In November 2023, the U.S. Environmental Protection Agency (EPA) proposed a new rule that would require all lead service lines to be replaced within 10 years. This is relevant as it is expected the demand for PVC pipes will increase as a result. The rule was implemented as of October 8th, 2024.

Construction Employment

Statewide construction employment increased in September 2024 to 5.9% higher than the same month last year (**Figure 7**). However, some metro areas had slightly different growth patterns. Tampa and Orlando metro areas increased at similar rates in September 2024 as in August 2024 (3.3% and 6%, respectively). Construction employment in the Miami and Jacksonville metro areas saw even higher increases than the previous month at 8.9% and 5.7%, respectively. September data are preliminary and may be revised. Interviews indicate hiring reliable skilled labor remains a struggle. Wage increases and retention issues continue to drive up costs for FDOT contractors.



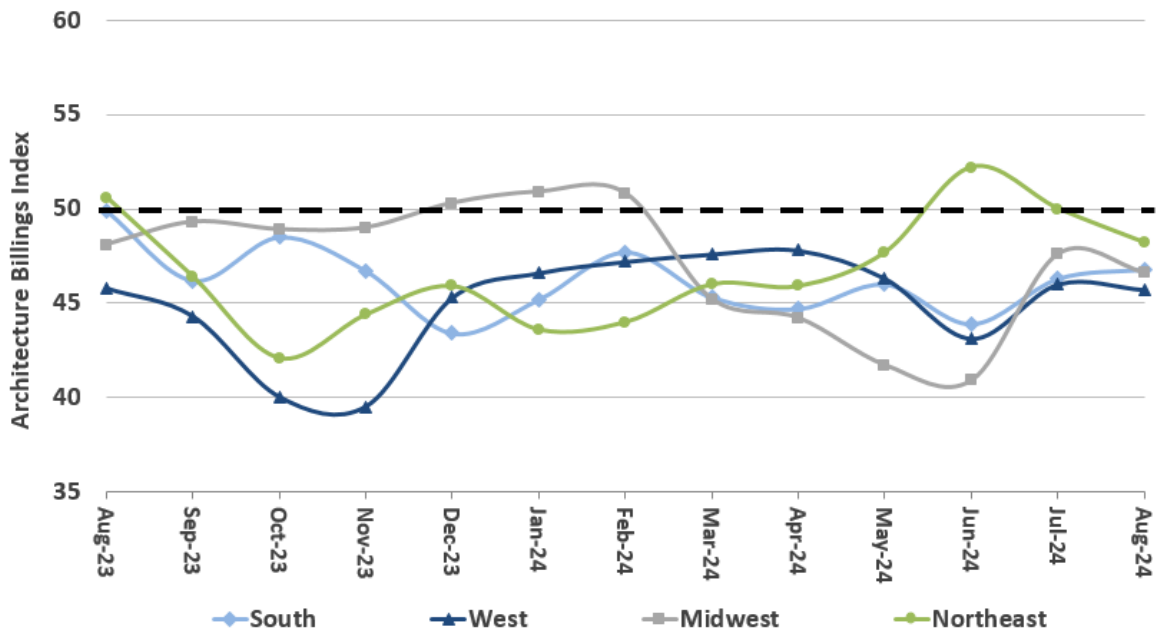
Source: Bureau of Labor Statistics.

Billings

The Architecture Billings Index (ABI) is a leading indicator for nonresidential construction activity.² Nationally, the index was 45.7 in July, indicating that a majority of architecture firms saw decreasing billings at their firms (**Figure 8**). Since August 2023, the ABI has stayed below 50 in most months for all regions. Additional information on economic conditions is provided in **Appendix A**.

² ABI Billings are considered a leading indicator, meaning that construction activity 9-12 months from now generally follows the current ABI billings activity. A score below 50 indicates declining firm billings.

Figure 8. Architecture Billings Index



Source: American Institute of Architects, Architecture Billings Index

Rail

In September 2024, CSX's train and engine employee counts increased 1.78% year-over-year with counts fluctuating around 7,900 since January 2024. In regards to operating performance, average terminal dwell time (between July and October 2024) in Jacksonville increased 3% year-over-year to 20.9 hours and increased in Waycross, GA to 27.2 hours³. The overall system dwell time during the same timeframe increased 8% to 21.7 hours year-to-year. Dwell times have worsened this in comparison to this time last year with significantly worse increases in Waycross, Georgia. Higher dwell times means that it takes more time to get material out of the station, which could lead to project delays. This is consistent with feedback from interviews as there has been some mention of rail delays affecting suppliers but little impact on producers.

On September 7th, 2023, the National Surface Transportation Board (NSTB) issued a notice of proposed rulemaking in reciprocal switching for inadequate service issues. The final rule was published in May 2024 and has gone into effect on September 4, 2024. The rule allows customers to request a reciprocal switching agreement if a rail carrier service fails to meet the performance standards in three areas: service reliability, service consistency and inadequate local service.

Other news that affected rail in this fiscal year include: In September, the Florida government announced an award of \$18 million in grants to help fund projects designed that will increase supply chain capacity. These projects include grants to CSX and the Florida Gulf & Atlantic Railroad. Aggregate terminals will be constructed in Plant City, Lake City, Port of Tampa, and increased rail capacity for the Jacksonville port authority.

³ Average amount of time in hours between car arrival to and departure from the yard.

ASPHALT

Summary

- Asphalt producers report stable or slightly increasing prices. FDOT asphalt prices appear to be slowing in growth alongside slowing producer price growth, but prices remain high.
- Binder prices were relatively unchanged over the last quarter. Ongoing geopolitical conflicts are a constant threat to crude oil pricing in FY 2025.
- Producers continue to report that obtaining skilled labor is a challenge and employees are switching between companies, which is driving up wages.
- Producers indicated no issues securing polymer this quarter and potential hurricane-related shortages do not appear to have come to fruition as feared in Florida.

FDOT Impacts

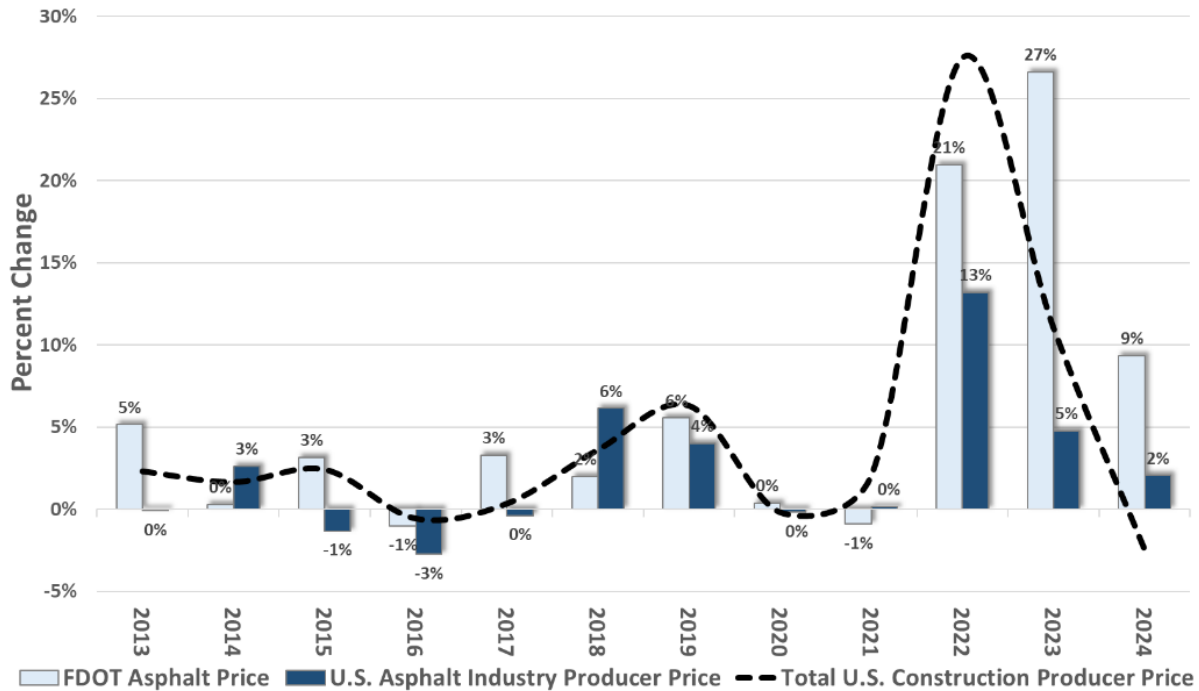
- FDOT contractors do not anticipate massive price increases to occur in FY 2025, but current price levels are unlikely to abate to pre-pandemic levels due to current high levels of demand.
- Updated asphalt price projections estimate a 2.0% increase in bids through the end of FY 2025.
- Asphalt consumption is expected to range between 18-20 million tons through FY 2029 due to significant levels of infrastructure spending and residential construction activity in major metro areas.

General Trends

National construction producer prices in asphalt declined significantly over the last two years. The decline follows annual fluctuation from -3% and 6% between 2013 and 2021, before increasing substantially in 2022. FDOT's asphalt prices rose 9% in 2024, after sharp increases in 2022 and 2023. A comparison of changes in producer prices since 2013 as well as FDOT's asphalt price is provided in **Figure 9**, which shows that prior to COVID-19, FDOT prices tended to track but exaggerate national trends, a pattern that appears to still be holding.

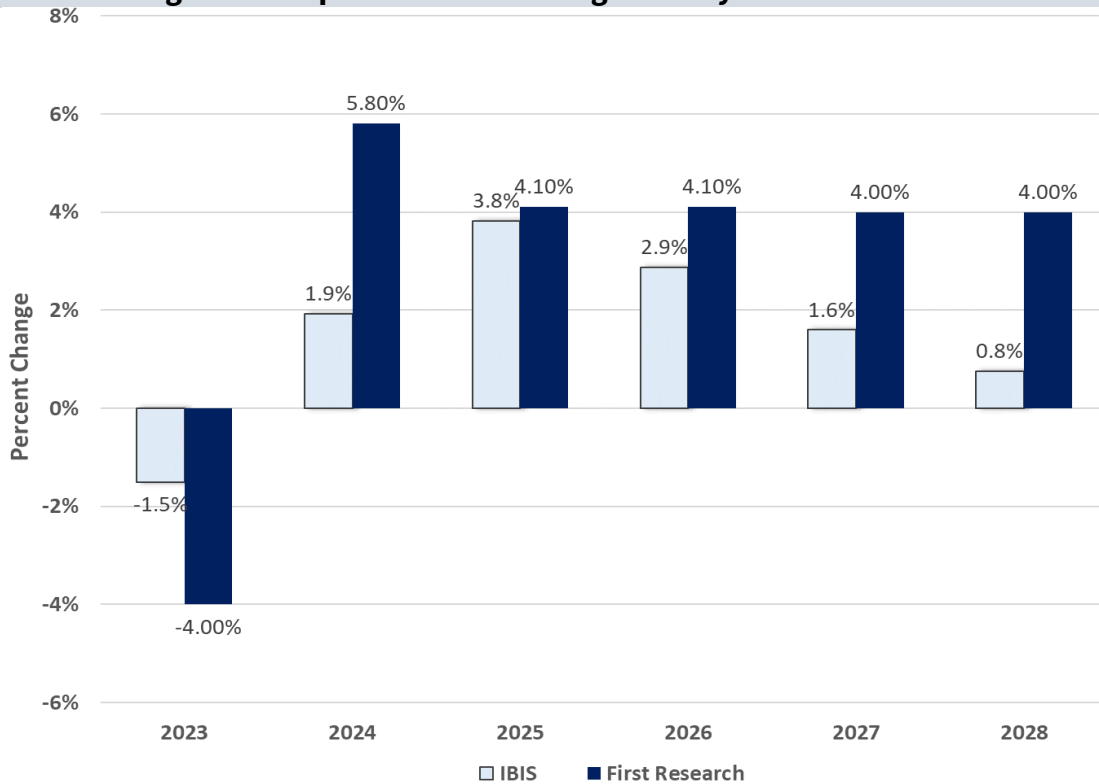
Both IBIS and First Research project revenue growth to turnaround in 2024 and beyond after declines in 2023. However, the two publications differ in how strong that turnaround in growth will be. IBIS expects growth to be between 4% and 5.8% over the next 4 years and to be steady after 2025. First Research expects slightly lower growth rates between 0.8% and 3.8% over the next 4 years and slowing growth after 2025 (**Figure 10**).

Figure 9. Change in Producer Prices, Asphalt Industry



Source: FDOT, U.S. Federal Reserve.

Figure 10. Asphalt Manufacturing Industry Revenue Outlook



Source: IBISWorld (IBIS) May 2024 Asphalt Manufacturing Report; First Research Industry Report August 2024.

SUPPLY CHAIN VARIABLES: ASPHALT PAVEMENT MATERIALS

Table 2 provides the current status of selected variables of interest.

Table 2. Supply Chain Summary: Asphalt Materials		
 Aggregate	The U.S. Geological Survey (USGS) reported that Florida's crushed stone production decreased 3.9% during the second quarter of calendar year 2024, and was essentially flat year-to-date. Aggregate prices have continued increasing. Interviews indicated issues with aggregate pricing and availability.	↑
 Refinery Capacity	Oil Refinery Utilization in the Gulf Coast was between 89% and 94% in the third quarter of calendar year 2024. Costs and prices will continue to be affected by geopolitical factors, such as Organization of the Petroleum Exporting Countries (OPEC+) production quota announcements. The OPEC+ countries extended their additional voluntary production cuts of 2.2 million barrels per day until the end of November 2024. The EIA estimated that asphalt supplied to the East Coast declined 9% year-over-year, indicating lower demand for resources, and asphalt production in the Gulf Coast also decreased 9% year-over-year.	=
 Asphalt Binder	Unmodified (PG 67 & lower) asphalt binder price changes remain moderate. In calendar year 2024, they have increased by 1% and since October 2023 they rose 1% year over year. Rack binder prices in Jacksonville and Miami increased 2% and 1%, year-over-year, respectively, and declined 3% in Tampa, year-over-year.	=
 Polymers	With very few suppliers, polymers are a source of vulnerability. U.S. production of resins increased 5.5% in August 2024 vs. August 2023. Year-to-date production increased 5.7% year-over-year. The U.S. Chemical Regional Production Index was flat in August 2024 month-over-month and declined 0.3% year-over-year, showing a negative trend in chemicals production. Reference prices and volumes from Q2 of calendar year 2024 earnings of a publicly traded polymer producer declined 8% year-over-year. The average cost per ton of ethylene production also declined 7% quarter-over-quarter and declined 33% since Q3 of calendar year 2023.	=
 Imports	Data from the U.S. International Trade Commission shows that imports of bitumen products to ports that service the Florida market increased 111% in calendar year 2024 through July. The increase was related to the collapse of the Francis Scott Bridge in March and the closure of the Port of Baltimore. As a result, ships were diverted across eastern ports and Florida ports received an influx of activity during this period. The Port of Baltimore is now at full operational capacity and imports are expected to return to "normal" levels.	↓

 Rail	In Q2 of calendar year 2024, tons of asphalt products shipped by CSX, regardless of the destination, decreased by 1% and revenues of asphalt products increased by 0.5% year-over-year. Compared to the previous quarter, price increases have slowed down significantly. In September this year, Governor Ron DeSantis announced almost \$18 million in grants to be channeled towards port, rail and other infrastructure-related projects, which included \$3.9 million for a new CSX terminal in Plant City.	
 Trucking	Asphalt suppliers continue facing issues with trucking. Diesel prices gradually declined through the fiscal year and are down 15% since July 2024. As of October 2024, diesel prices have decreased 34% compared to October 2023. Effective November 18, 2024 the Federal Motor Carrier Safety Administration (FMCSA) will enforce a new rule with serious consequences for commercial drivers and the trucking industry. The rule will ensure that drivers who fail to comply with the drug and alcohol program are not only disqualified from safety-sensitive functions, but also lose their state-issued commercial driving privileges. Available drivers are a key factor. According to Freight Transportation Research, specialized trucking volumes and rates have been normal or below normal over the past 3 months.	
 Pavement Markings	As mentioned in the polymers section, the Chemical Regional Production Index remained flat month-over-month in August 2024, but production of coatings, adhesives and other specialty chemicals went up. Overall, pavement markings and other plastics-based/petroleum-based ancillary products continue to be vulnerable to movements in the crude oil markets and supply chain issues. Interviewees did not raise any issues with pavement markings in the current period.	
 Labor	The search for skilled labor is an ongoing concern for asphalt plant operators. Statewide construction employment increased 6% year-over-year, but decreased 0.2% in August from the previous month. Interviews indicated that the labor market had worsened. Producers have difficulty finding skilled candidates to fill vacant positions. Interviews have stated that the labor market continues to worsen and competition is high with many workers switching between companies at a rapid pace, driving up wages.	
 Competition	The number of asphalt producers in FDOT's approved list increased by 1 plant in FY 2024 to 122. There are no new asphalt plants under construction that have been added to FDEP's Air Permitted list.	

	Exerting negative influence on FDOT's costs; monitor.
	Currently stable; not influencing FDOT's costs.
	Exerting positive influence on FDOT's costs.

Asphalt Forecast

Asphalt prices are projected in **Table 3** for the five-year construction work program. Regression modeling was performed using pay item data, supply chain variables, and other macroeconomic indicators to identify models that best predicted FDOT’s materials costs and quantities.

Table 3. FDOT HMA Price Forecast Results						
Year	2024	2025	2026	2027	2028	2029
Price HMA, \$/Tons	\$182	\$185	\$188	\$191	\$194	\$198
Percent Change, %	8.9%	2.0%	1.4%	1.4%	1.7%	1.9%

Source: TBG calculated from data provided by FDOT Office of Forecasting and Project Cost, various industry sources.

The impact of global conflicts on crude oil futures remain moderate at this time, with U.S. crude oil prices expected to fall by as much as 5% in calendar year 2025. Likewise, Florida asphalt binder prices were stable through October 2024. In interviews with FDOT contractors, little mention was made about industry capacity concerns, but interviews have stated ongoing labor and supply issues are a problem when meeting capacity.

The current FY 2025 forecast is little changed from the FY 2024 annual report, estimating weighted average prices increasing by about 2.0% by fiscal year end (within 0.4% of previous estimates). With the most current forecast for projected employment and fuel price scenarios, the current best estimate expects asphalt prices to remain elevated through the end of the five-year work program. Continued high infrastructure funding is expected to support current high prices. However, interviews indicate that pricing has only gone up slightly over the last quarter and year as price increases are slowing down.

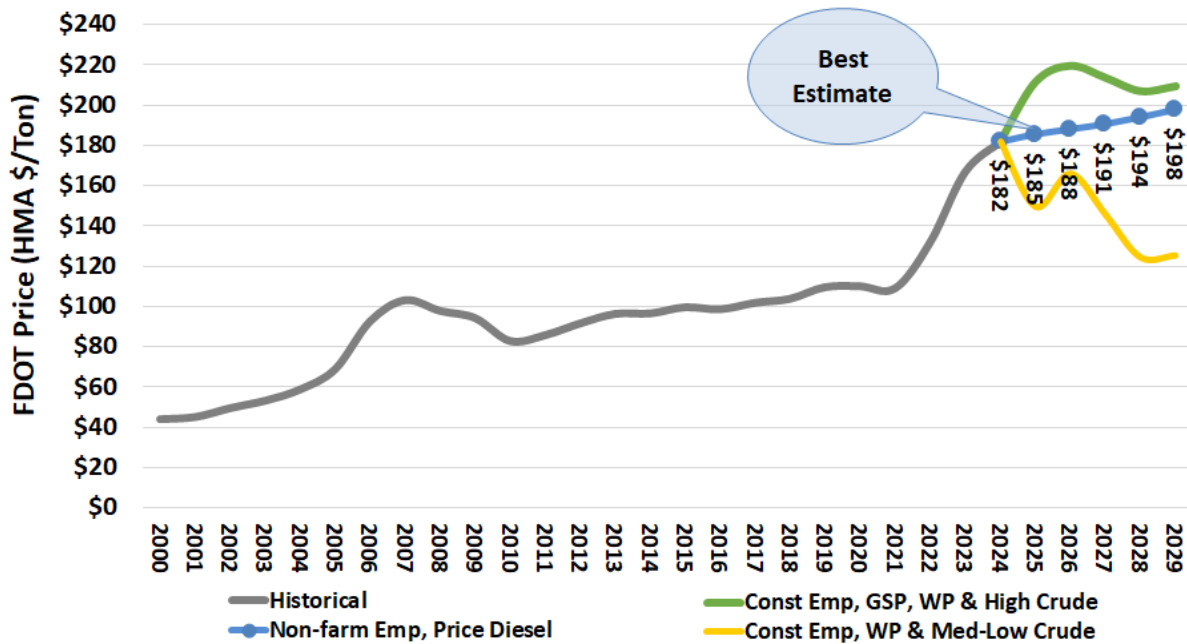
The upper bound scenario is supported by construction employment, statewide economic growth, high infrastructure demand, and higher crude oil prices. The lower bound reflects a recessionary scenario, with lower crude prices, construction employment, and infrastructure demand. This scenario would follow a pattern similar to the previous recession and would constitute a reset of asphalt prices.

According to a recent industry survey, 56% of economists estimate the probability of the U.S. entering a recession within the next 12 months is less than 25%, while another 31% believe the likelihood is between 26% and 50%.⁴ With inflation stabilizing and the Federal Reserve easing interest rates by 0.5%, only 12% of economists believe the likelihood of U.S. recession to be over 50%.

Figure 11 shows the potential range of estimates over the five-year work program.

⁴ NABE October 2024 Business Conditions Survey.

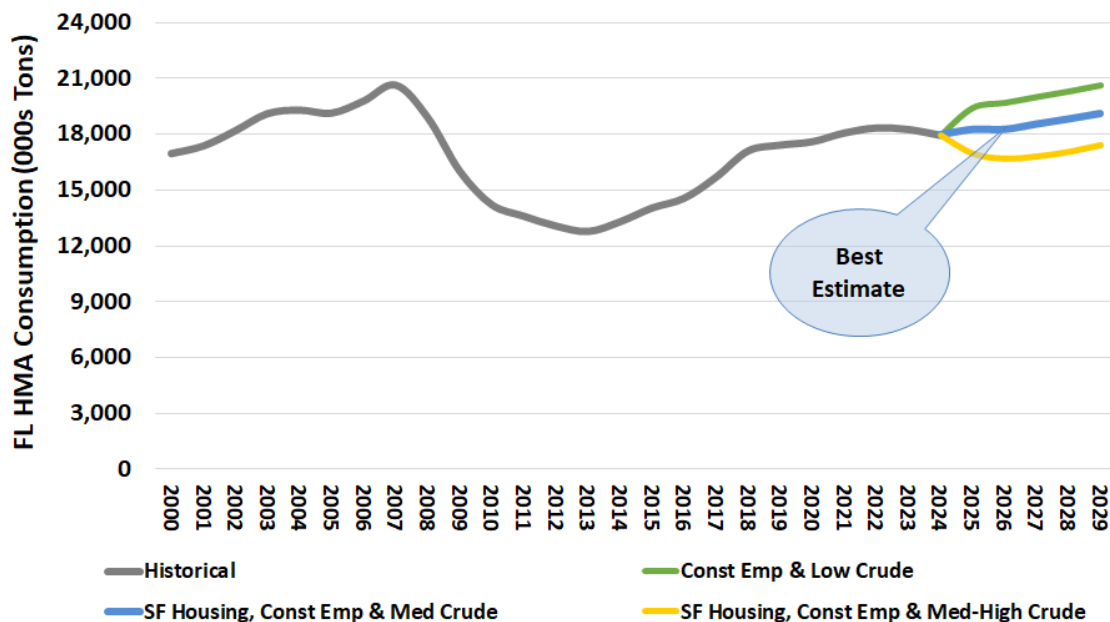
Figure 11. FDOT HMA Price Forecast



Source: TBG calculated from data provided by FDOT Office of Forecasting and Project Cost, various industry sources.

For Florida HMA consumption, **Figure 12** shows a best estimate of gradual production growth through FY 2029 based on construction employment growth, housing starts, and medium crude oil price projections. The upper bound is based on a more positive labor outlook and significantly lower fuel costs that would allow for additional production. The lower bound requires recessionary conditions, which appear unlikely at this writing, and higher crude oil prices.

Figure 12. Florida HMA Consumption Forecast



Source: TBG calculated from data provided by FDOT Office of Forecasting and Project Cost, various industry sources.

CONCRETE

Summary

- The industry outlook has dampened since last quarter as publicly traded companies report flat sales and gross profits, lower production volumes due to weather impacts (record precipitation and flooding), and sustained price increases.
- A turnaround supported by infrastructure demand, residential housing demand, and a stabilizing commercial sector is expected for 2025.
- While publicly traded companies reported increasing cement prices, Florida producers report that cement prices have remained flat, consistent with a dampened industry outlook. However, prices remain high.
- Concrete producers continue facing fly ash supply constraints. Producers report they are importing fly ash from out of state and increasingly more from out of the country.

FDOT Impacts

- Recent regional increases in cement prices could impact Florida markets in the next quarter. In addition, interviews indicate that cement suppliers are increasing prices more frequently, with some quoting increases every four to six months, as opposed to more traditional annual upticks.
- Updated concrete price projections estimate a flat 0.5% increase for FY 2025, relatively unchanged from the previous report.
- Concrete consumption was higher than expected in FY 2024 and is forecasted to exceed 30 million cubic yards through FY 2029 due to high infrastructure and industrial demand and resiliency efforts.

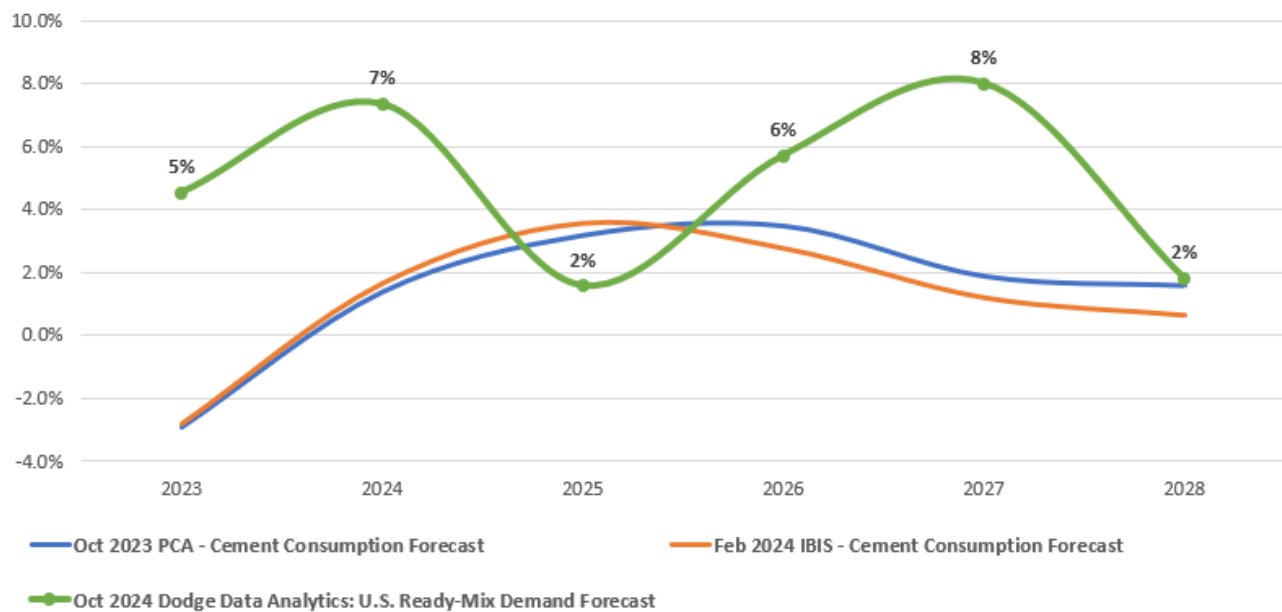
General Trends

Figure 13 shows the forecasted U.S. demand for ready mix concrete through 2028 alongside previous cement consumption forecasts from multiple industry sources.⁵ The Dodge Data Analytics forecast predicts U.S. demand for Ready-Mix to increase 7% in 2024 year-over-year. Growth is expected to taper off in 2025 (growth rate of 2%), but then increase at higher rates of 6% and 8% in 2026 and 2027, respectively, and then slow again to 2% in 2028. New overall U.S. cement forecasts have not been released. Compared to those previous cement forecasts, growth rate expectations for ready-mix are much higher in 2024, 2026, and 2027 than cement, but similar in 2025 and 2028. PCA released some information about their fall 2024 cement consumption forecast at their World

⁵ Source: The IBIS February 2024 forecast is based off domestic demand and is estimated by adding industry revenues with imports and subtracting exports. The U.S. Ready-Mix demand forecast is from Dodge Data Analytics as reported in their October 2024 edition of The Pulse.

of Cement conference in early October. Notable elements of their forecast include an interim market weakness until more cuts in interest rates occur and impacts from these rate cuts materialize positively for construction activity. They expect construction loan rates and an energized construction market by mid-2025. In addition, their forecast assumes mortgage rates will decline by mid-2025 and will increase supply and outpace demand, causing a reduction in home prices. They are predicting that the Bipartisan Infrastructure Law will positively impact public construction activity from increased spending while nonresidential construction won't rebound until 2026.

Figure 13. U.S. Consumption Forecasts



Source: PCA Fall 2023 Forecast; IBIS U.S. Cement Manufacturing Forecast Feb. 2024, Dodge Data Analytics June 2024.

SUPPLY CHAIN VARIABLES: CONCRETE MATERIALS

Table 4 provides an overview of supply chain variables and a summary of their current status.

Table 4. Structural Concrete Supply Chain Variables & Current Status		
	During Q3 of calendar year 2024, publicly traded companies continued to report lower volumes due to weather and price increases through September. However, some producers in interviews report that cement prices have stayed flat over the last year. Price increases are reportedly planned for January which has traditionally been the schedule, but not by all producers.	
	High demand is supporting current price levels. Some issues with rail and worker shortages are expected to continue. General issues are covered in the Aggregate section.	
	Year-to-date through August fly ash imports were up 61% compared to the same period in 2023. Imports were primarily sourced from Japan and Turkey into Tampa and Miami. As of August, imports of fly ash into Tampa from Japan had already reached 90% of the total that was imported into Tampa from Japan in all of 2023. Producers continue to report the same difficulty obtaining fly ash. One producer is importing all of their fly ash from South Carolina.	
	In Q2 of calendar year 2024, overall tons and revenues of concrete products shipped by CSX increased by 2% and 11% year-over-year, respectively. The increase in tons is comparable to the increase last quarter, but revenues saw a much higher increase year-over-year than last quarter when increases were 4% and 3%, respectively. Producers in interviews report that there are some issues with rail for some of their suppliers. Additionally, CSX reports that impacts from Hurricane Helene will be seen over the next quarter as they work to recover and re-route due to damages. Costs related to hurricane damage could be roughly \$50 million. However, most of the damage incurred to CSX is in eastern Tennessee. A north-south line from Kingsport, Tennessee into Georgia has been affected. Re-routing appears to be sufficient to serve customers.	
	Diesel prices are down 15% since July 2024. As of October 2024, diesel prices are down 34% compared to October 2023. According to Freight Transportation Research, specialized trucking volumes and rates have been normal or below normal over the past 3 months. Over the past quarter spot rates have been at or below 2023 levels and this past week were 7% lower than the five-year average.	
	Interviews have indicated that labor is still an issue. For some costs have gone up. Others say sourcing and retaining labor has remained difficult, but not gotten worse.	
	No significant consolidations were reported this quarter. Smaller outfits are struggling to secure consistent supply of raw materials.	

	Exerting negative influence on FDOT's costs; monitor.
	Currently stable; not influencing FDOT's costs.
	Exerting positive influence on FDOT's costs.

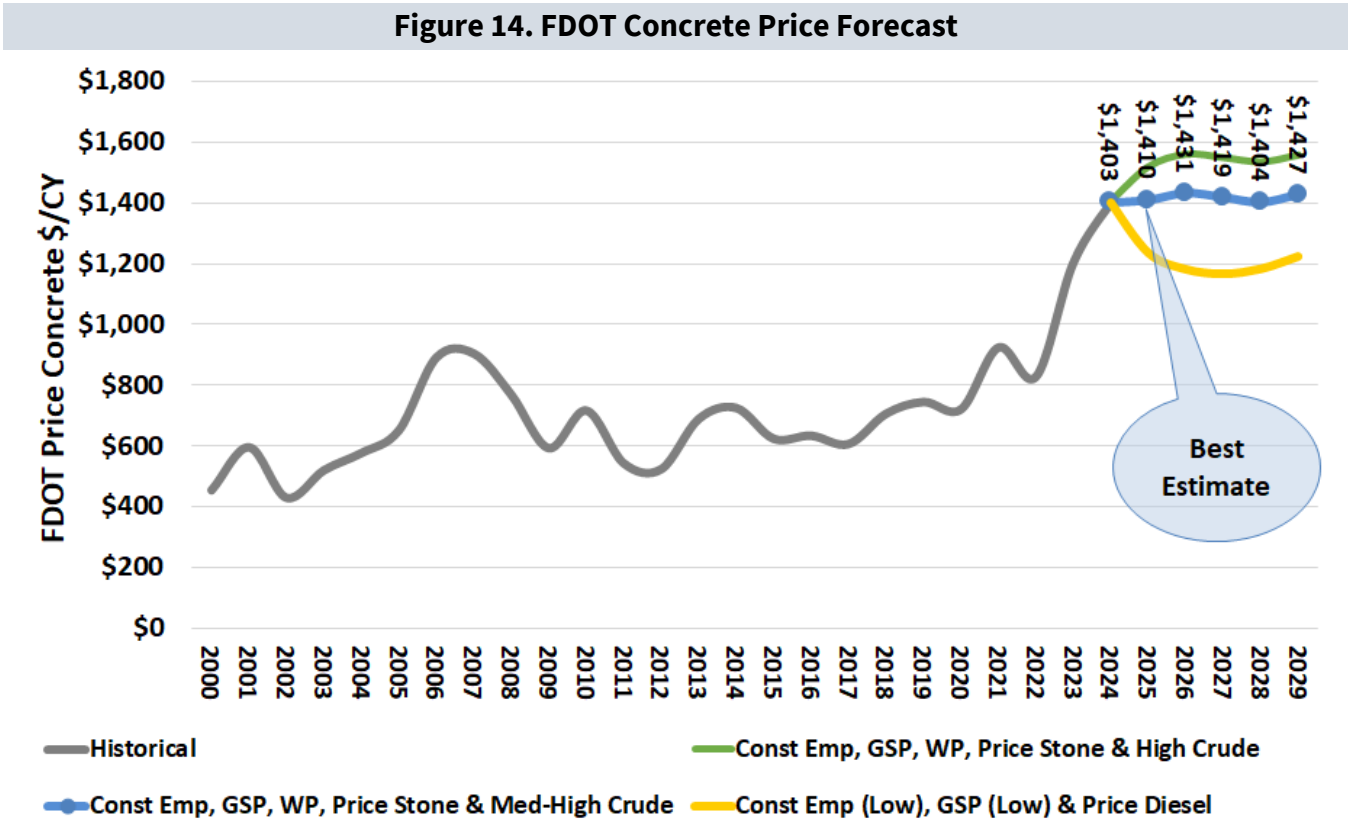
Concrete Forecast

Regression modeling was performed using pay item data, supply chain variables, and other macroeconomic indicators to identify models that best predicted FDOT’s materials costs and quantities. **Table 5** provides the updated forecast average price for concrete.

Table 5. FDOT Concrete Price Forecast Results						
Year	2024	2025	2026	2027	2028	2029
Price Concrete, \$/CY	\$1,403	\$1,410	\$1,431	\$1,419	\$1,404	\$1,427
Percent Change, %	16.3%	0.5%	1.5%	-0.9%	-1.1%	1.6%

Source: TBG calculated from data provided by FDOT Office of Forecasting and Project Cost, various industry sources.

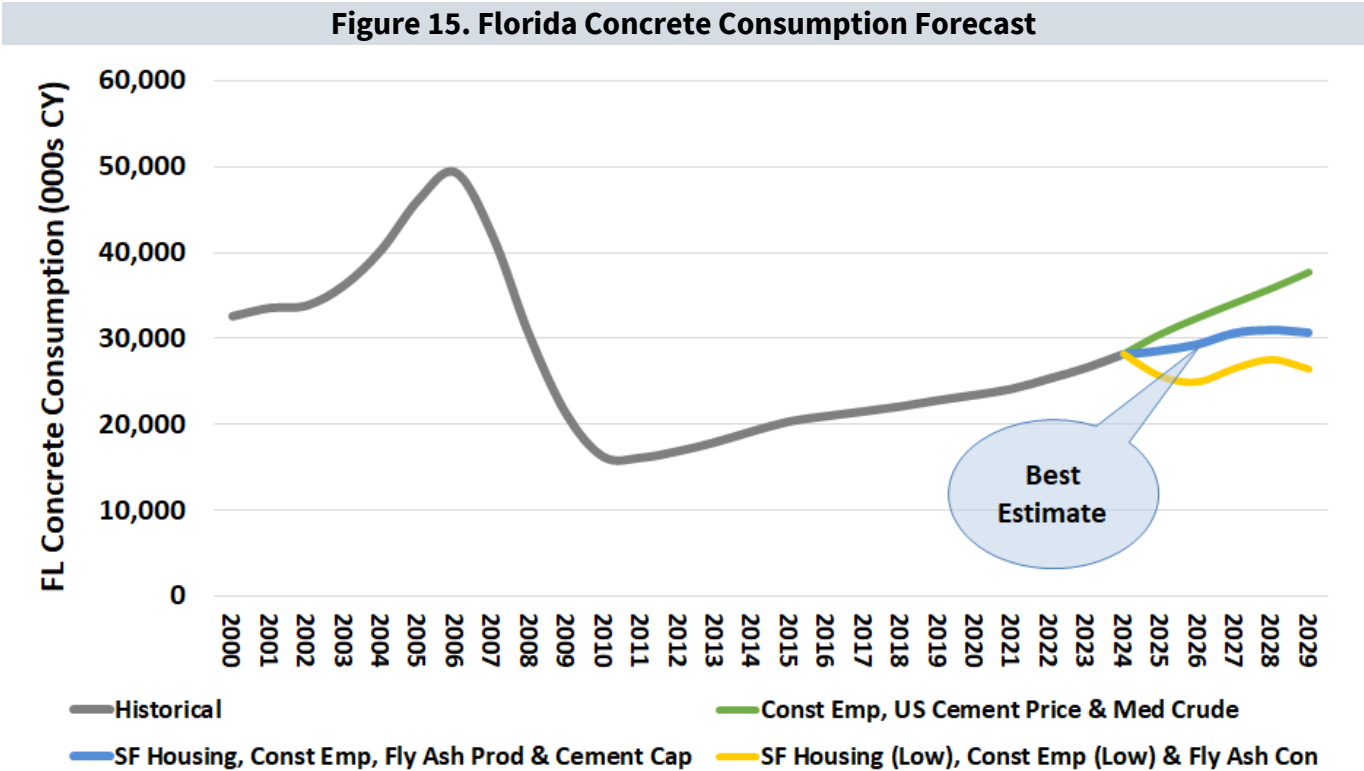
The current FY 2025 forecast is relatively unchanged and within 0.3% of previous estimates; concrete costs are expected to remain high due to the increased cost of cement and aggregates and the always looming concern of fly ash availability. Cement prices rose in the southeast region of the U.S. in September as major suppliers reported flat to declining sales in the third quarter of calendar year 2024. Interviews report mixed experiences in receiving price increases. The best estimate of concrete prices reflects changes in construction employment, Florida economic growth projections, FDOT work program demand, aggregate costs, and crude oil prices (**Figure 14**).



Source: TBG calculated from data provided by FDOT Office of Forecasting and Project Cost, various industry source.

The upper bound reflects construction employment, economic growth, infrastructure demand, aggregate costs, and higher crude oil prices. The lower bound scenario incorporates declines in construction labor, lower Florida macroeconomic activity, and diesel price projections. However, due to current high demand, pre-pandemic conditions are unlikely to return.

Figure 15 shows the output of several quantity models forecasting statewide consumption of concrete and the scenario identified as the best estimate. The best estimate tracks Florida housing and construction employment, fly ash production, and cement production capacity. The upper bound requires higher cement prices, stable construction employment, and medium crude oil costs. Declining production is shown in the lower bound where recessionary conditions of lower housing starts and construction employment, along with fly ash consumption, would drive down production. Interviews indicated that labor remains a bottleneck on industry capacity.



Source: TBG calculated from data provided by FDOT Office of Forecasting and Project Cost, various industry source.

STEEL

Summary

- Steel pricing has declined generally for all of 2024 with slight increases for some products over the last quarter.
- Nationally, steel production is slightly lower year over year and utilization rates are slightly above last year on average.
- Reports on labor are mixed. Some producers have seen an uptick in the number of people looking for work, while others believe the labor market has worsened. Producers are concerned about competition for labor as federal funding continues.
- Global demand is weakening, pushing down input prices. Steel demand forecasts have been dropped lower in most major economies. However, a moderate turnaround in demand could occur in 2025.

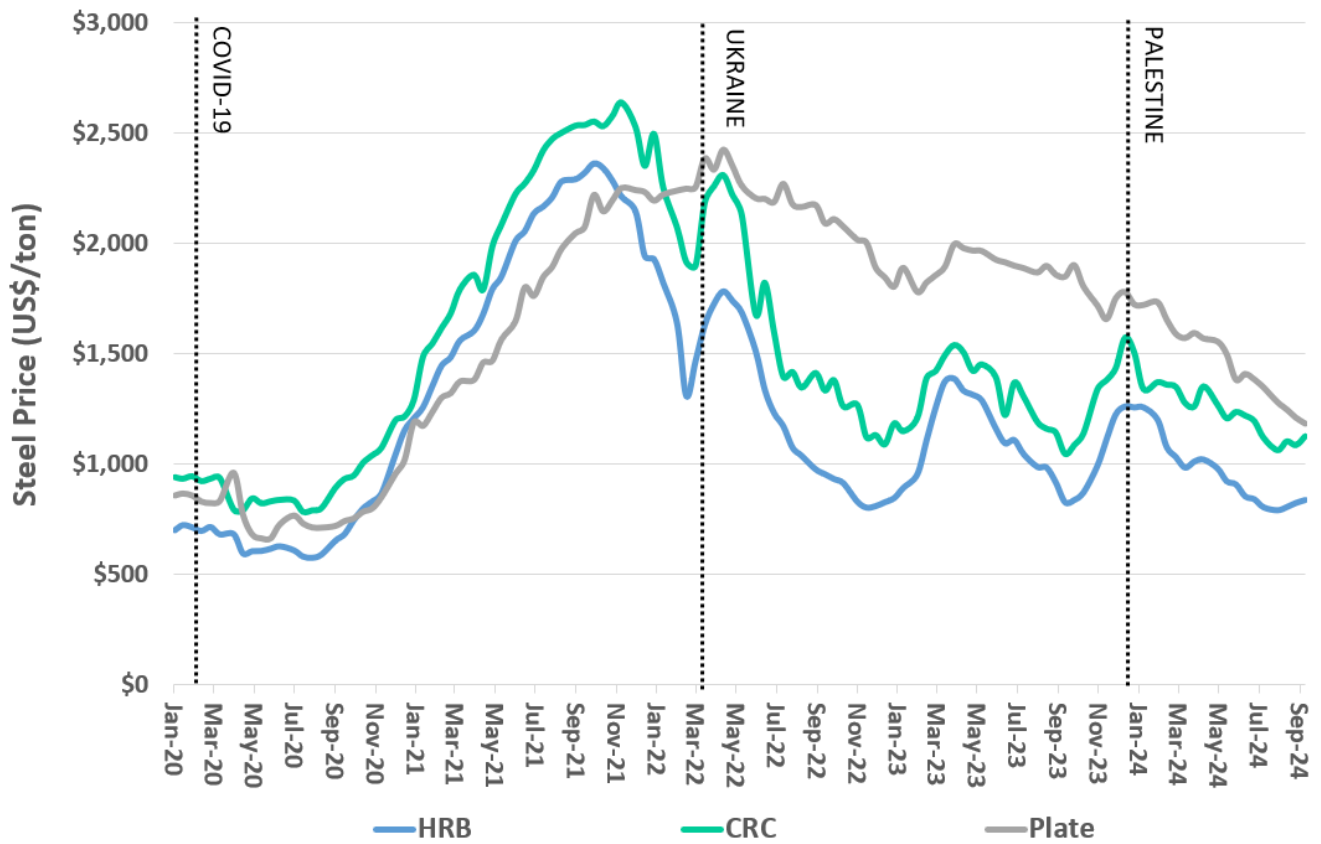
FDOT Impacts

- Structural steel prices began moderating at the end of FY 2024 and interviews indicate declines could continue in FY 2025 for some products due to weakening global demand and lower commodity prices.
- Structural steel prices are forecast to fall 3.1% in FY 2025.
- Reinforcing steel bids declined by over 12% in FY 2024, but are not expected to return to pre-pandemic levels. FY 2025 prices are currently forecast to remain flat.

General Trends

Producers report that steel prices were stable over the last quarter but are down considerably over 2024. Steelbenchmarker data show a slight increase over the past few months for some products after declining for most of 2024 since their peak in December 2023 (**Figure 16**). U.S. hot-rolled band prices are up 4% month-over-month, down 5% year-over-year, and down 34% since January 2024. U.S. cold-rolled coil prices are up 2% month-over-month, up 1% year-over-year, and down 22% since January 2024. U.S. Plate prices are down 5% month-over-month, down 35% year-over-year, and down 30% since January 2024. In its October 2024 outlook, the World Steel Association (WSA) expects worldwide steel demand to decline 0.9% in 2024 and increase 1.2% in 2025. For the U.S. the new forecast is a 1.5% decline in 2024 and 2% increase in 2025. The World Steel Association has revised the forecast downward in 2024 for most major developed economies due to global economic headwinds and weakness in the manufacturing sector. However, WSA is cautiously optimistic about 2025 and expects moderate growth in 2025. This will be determined on the stabilization of China's real estate sector, interest rate adjustments and their effects, and infrastructure spending.

Figure 16. U.S. Steel Pricing, Jan. 2020 – Sep. 2024



Source: AISI Weekly Raw Steel Production.

SUPPLY CHAIN VARIABLES: STEEL

Table 6 summarizes select variables that impact the steel supply chain and their current status.

Table 6. Supply Chain Variables for Structural Steel		
 Raw Materials	Prices for hot-rolled steel decreased 18% in September 2024 year-over-year. Prices have declined for most of 2024, with a few products increasing slightly over the past few months. Rebar prices have decreased 17% year-over-year as of April 2024. Iron ore prices increased 12% in 2023 and have declined 23% year-over-year as of September 2024. Prices are still higher than 2020. Producers didn't report any issues with lead times or obtaining material this quarter for typical products.	
 Scrap Steel	Scrap steel prices have remained stable since the last report and are down 20% in calendar year 2024 and 7% year-over-year, but are still 12% higher than pre-pandemic prices.	
 Galvanizing Steel	Global zinc prices have increased over the past year. In calendar year 2024 through September they increased 13% and year-over-year they increased 14%. Zinc prices are down to \$1.29 per pound in September 2024 from their peak of \$1.98 in April 2022, but are still 40% higher than June 2020. Global trends are expected to support price increases in zinc over coming years.	
 China	As of September 2024, prices for Chinese steel have declined 17% to an average of \$436 per ton, a 4% decline month-over-month. Concerns around excess global capacity and China's role remain. Other countries including Turkey and Indonesia have instituted anti-dumping duties on Chinese steel. Chinese exports of steel are expected to increase in 2025, even with declining domestic Chinese production, because of weakening demand in China (3.3% decline in 2023, 3% decline in 2024, and 1% decline in 2025 according to the World Steel Association forecast).	
 Transportation	Trucking is an issue due to driver availability. Diesel prices are down 15% since July 2024. As of October 2024, diesel prices are down 34% compared to October 2023. According to Freight Transportation Research, specialized trucking volumes and rates have been normal or below normal over the past 3 months. Over the past quarter spot rates have been at or below 2023 levels and this past week were 7% lower than the five-year average. Producers are still worried about their ability to transport materials.	
 Rail	Trucking is the preferred method for transportation of finished product, but raw materials are delivered by rail to some fabricators. Other sectors continue having reliability issues with rail, however, this does not appear to be a problem for steel.	
 Milling Capacity	Nationally, capacity utilization rates in calendar year 2024 averaged 77%, a healthy level and slight increase from the 75% in 2023. Year-to-date production is down 1.8% to 72.3 million net ton and capacity utilization averaged 76.4%.	



Labor

Producers perceptions on the labor market are mixed. Some believe the market has improved and have seen increased numbers of people looking for work, both skilled and unskilled, while others believe the labor market has worsened. Some producers are worried that continued federal funding through 2026 will increase competition for labor.



Competition

U.S. steel shareholders have approved the deal for U.S. Steel to be bought by Nippon Steel. The agreement still faces some opposition from the United Steelworkers Union and politicians and is still being reviewed by the Committee on Foreign Investment, which has been postponed until after the election. Regardless, most analysts do not anticipate significant impacts on market prices, and in turn little impact is expected for FDOT costs.



Exerting negative influence on FDOT's costs; monitor.



Currently stable; not influencing FDOT's costs.



Exerting positive influence on FDOT's costs.

Steel Forecast

Steel prices were forecasted over the five-year work program. Regression modeling was performed using pay item data, supply chain variables, and other macroeconomic indicators to identify models that best predicted FDOT’s materials costs. **Table 7** provides the forecast average price for structural and reinforcing steel.

Table 7. FDOT Steel Price Forecast Results						
Year	2024	2025	2026	2027	2028	2029
Price Structural Steel, \$/lb.	\$4.52	\$4.38	\$4.42	\$4.43	\$4.46	\$4.49
Percent Change, %	28.6%	-3.1%	0.8%	0.4%	0.6%	0.6%
Price Reinforcing Steel, \$/lb.	\$1.34	\$1.34	\$1.42	\$1.46	\$1.49	\$1.53
Percent Change, %	-12.2%	0.1%	6.3%	2.4%	2.4%	2.5%

Source: TBG calculated from data provided by FDOT Office of Forecasting and Project Cost, various industry sources.

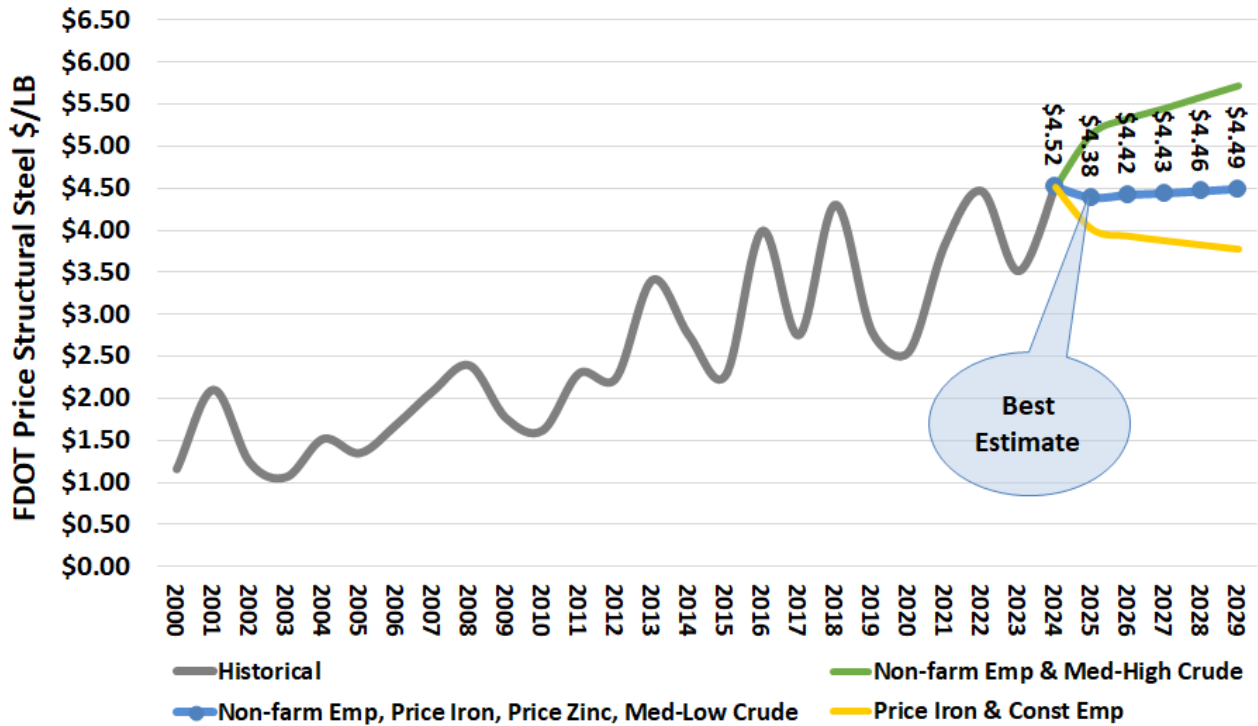
While reinforcing steel costs declined significantly in FY 2024 (12% year-over-year), structural steel costs were still nearly 29% higher than FY 2023. Interviews indicate some structural product costs are coming down in the first quarter of FY 2025, which could lead to a slight decline in the overall weighted average price by fiscal year end if the trend continues.

With limited bid data and updated industry forecasts, the best estimate of FY 2025 structural steel costs rose 0.9% compared to the previous report to \$4.38 per pound, a 3.1% decline from FY 2024. Forecasted input prices like iron ore and zinc support price increases from FY 2026 forward support the current level of pricing, with small increases each year after FY 2025. On the upper bound, statewide employment declines and higher crude oil costs could lift structural steel prices over recent peaks. A declining commodity price and employment scenario is shown in the lower bound.

Weighted average reinforcing steel prices moderated in FY 2024, and recent interviews indicate prices are expected to remain stable in the next fiscal year. After FY 2026, the best estimate currently predicts reinforcing steel cost increases will pick up again for the remaining years of the work program based on updated economic and construction employment projects and crude oil price forecasts. The upper bound takes Florida economic growth, construction employment, and higher crude oil prices into consideration. The lower bound, measuring economic growth, construction employment, and commodity prices, shows a much steeper decline in FY 2025. With current expectations on recessionary conditions, this is considered less likely.

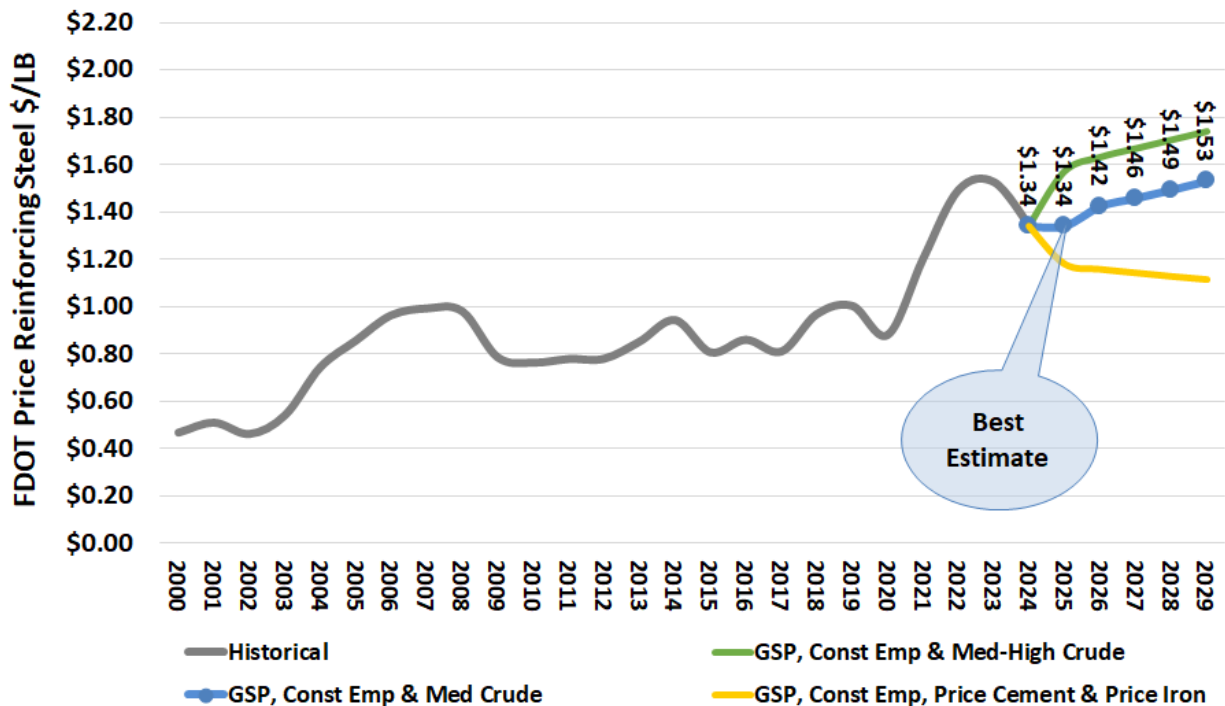
Figure 17 and **Figure 18** show the output of several price models and the scenario identified as best estimate for structural steel and reinforcing steel, respectively.

Figure 17. FDOT Structural Steel Price Forecast



Source: TBG calculated from data provided by FDOT Office of Forecasting and Project Cost, various industry sources.
(Variable descriptions available in the **Appendix**.)

Figure 18. FDOT Reinforcing Steel Price Forecast



Source: TBG calculated from data provided by FDOT Office of Forecasting and Project Cost, various industry sources.
(Variable descriptions available in the **Appendix**.)

AGGREGATE

Summary

- Demand for aggregate material continues to be high. Crushed stone sold or used in Florida declined year-over year in the first two quarters of 2024. However, pricing remains strong and companies continue to try to expand their production and resources in the Southeast.
- Publicly traded companies continued increasing prices over the past quarter.
- Public infrastructure continues to drive demand statewide.

FDOT Impacts

- FDOT producers report that supply chain issues improved over the last year, but labor availability, wage increases, and trucking costs remain burdensome.
- FDOT aggregate base prices are expected to remain flat in FY 2025 before increasing with general inflation through FY 2029 according to current models.
- However, with demand at historic highs over the five-year work program, planning for upper bound price scenarios would be prudent.

General Trends

According to quarterly data released by the USGS, crushed stone production in Florida for the second quarter of calendar year 2024 was down 3.9% compared to production in the second quarter of 2023. Nationally, crushed stone production in the second quarter fell 4.9%, which was slightly worse than in Florida. Quarterly reports from most publicly traded companies showed a decline in shipments during the second quarter of calendar year 2024. However, pricing remains strong with Cemex citing 30% margins on aggregate products and slight increases in price. They also recently partnered with Couch Aggregates to expand their aggregates reserves in the Southeast. Significant weather disruptions throughout 2024 were cited as the main reason for these slight declines in volumes.

Prices from publicly traded companies also increased year-over-year. For 2025, Vulcan expects high single digit increases in aggregate prices, and public infrastructure will continue to drive demand.

	Exerting negative influence on FDOT's costs; monitor.
	Currently stable; not influencing FDOT's costs.
	Exerting positive influence on FDOT's costs.

SUPPLY CHAIN VARIABLES: AGGREGATE

Table 8 provides current status of selected supply chain variables.

Table 8. Aggregate Supply Chain Variables		
	The USGS reported that Florida's crushed stone production declined 3.9% in the second quarter of calendar year 2024 compared to the same period in 2023. Nationally, production declined 4.6% in the second quarter of 2024. Prices from publicly traded companies showed significant increases in the second quarter of 2024 between 2% and 12% year-over-year, while volumes declined between -10% and -2%. New sources of aggregate are covered in the respective section in the report.	
	Access to land with suitable deposits is key to cost-effective material extraction for FDOT Aggregate. As mentioned elsewhere in the report, the Mexican government seized Vulcan's quarry in September and declared it a natural protected area. The majority of environmental resource permits issued in 2024 were for modifications of existing permits/mines excluding expansions. Nonetheless, a recent ruling on Florida's 404 permitting program would cause more delays triggering continued uncertainty.	
	Rail is the primary transportation for aggregates from Georgia, and from Lake Belt to Central and Northeast Florida. In the second quarter of calendar year 2024, tons of aggregate products shipped by CSX declined by -1% year-over-over, while revenues of aggregate products shipped increased by 3% year-over-year. However, these statistics are for CSX's whole system as location specific data is not available.	
	Diesel prices fell 15% since July 2024 and 34% year-over-year through October. Despite fuel price declines, interviews indicated little to no change in trucking over previous quarters in terms of pricing, driver availability, and other concerns.	
	In the second half of 2024, producers continue reporting issues with finding and retaining skilled labor. Interviews indicated that the labor rate is about the same. Statewide construction employment continued increasing year-over-over, but decreased in August. Wages have also slowed down. Nationally, stone mining and quarrying employment slightly increased since June. Interviews indicated the same need for higher quality workers.	
	In FY 2024, aggregate producers in FDOT's producer approved list rose by 6.8%. Since July 2024, a total of 9 new mines across different districts were approved in FDOT's approved producer list. Interviews indicated little change with competition over the last quarter.	
	As the Federal Reserve cut interest rates by 50 basis points from 5% to 4.75% in September, the industry expects lower acquisition costs of equipment and vehicles and a lower cost of long-term building construction. The rate is projected to decline through the next quarter. However, recent storm damage in Florida and neighboring states may impact insurance rates and redirect resources to redevelopment.	

Aggregate Base-Course Forecast

Regression modeling was performed to estimate aggregate base costs using pay item data, Work Program funding, and supply chain variables and other macroeconomic indicators. **Table 9** provides the forecast average price for aggregate base.

Table 9. FDOT Aggregate Base Price Forecast Results

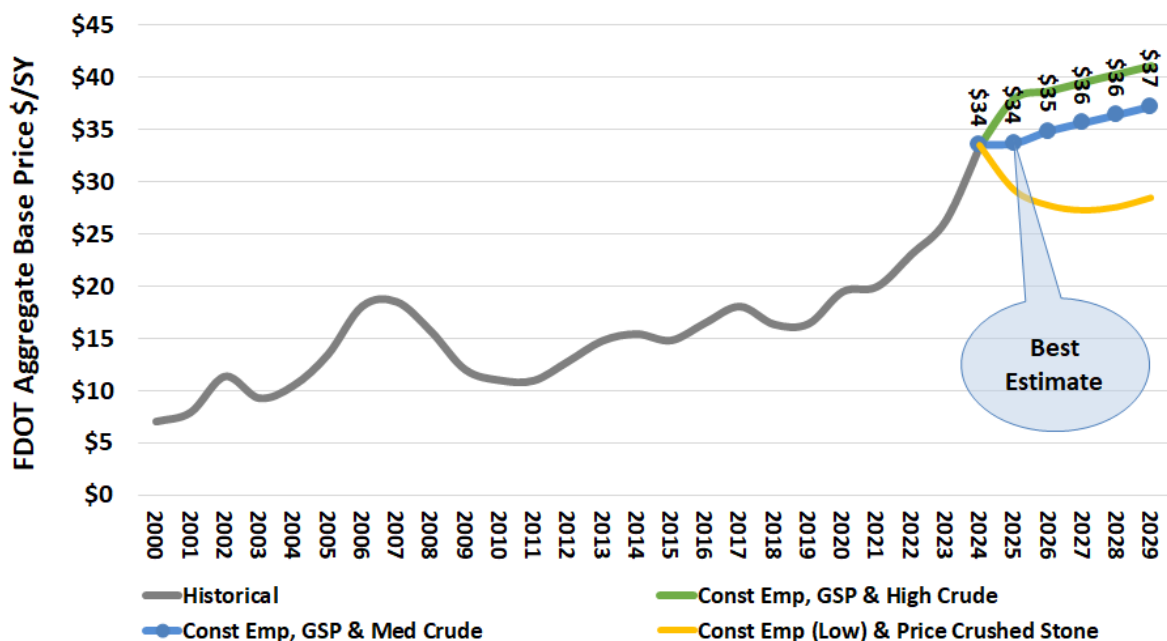
Year	2024	2025	2026	2027	2028	2029
Price Aggregate Base, \$/SY	\$34*	\$34	\$35	\$36	\$36	\$37
Percent Change, %	27.3%	0.5%	3.5%	2.2%	2.2%	2.2%

Source: TBG calculated from data provided by FDOT Office of Forecasting and Project Cost, various industry sources.

Note: *One extremely high-cost, high-quantity bid from September 2023 was excluded, adjusting the FY 2024 weighted average earthwork price from \$38 per cubic yard to \$34 per cubic yard.

Current bid data shows that aggregate base costs declined 7.6% in the first quarter of FY 2025 compared to year-end FY 2024 prices, indicating some stability entering the market after huge price increases in FY 2024. According to interviews, it's unlikely prices will revert to pre-pandemic levels, but cost increases are expected to be milder over the five-year work program even as they come at more frequent intervals than in the past. Subsidies offered in the \$18 million grants previously described should in theory result in additional production and streamlined delivery of material, which should constrain price increases. The best estimate model considers construction employment, statewide economic growth, and crude oil prices, supporting flatter price increases than previous estimates through FY 2029 (**Figure 19**).

Figure 19. FDOT Aggregate Base Price Forecast



Source: TBG calculated from data provided by FDOT Office of Forecasting and Project Cost, various industry sources.
(Variable descriptions available in the **Appendix**.)

The adjusted upper bound includes the construction employment, economic growth, and higher energy costs, topping out at over \$40 per square yard in the latter half of the five-year work program. The lower bound takes poor construction employment growth and statewide stone pricing (including the cost of stone used in other markets) into account and would yield lower aggregate base prices; return to pre-pandemic pricing levels is considered likely in the event of recessionary conditions.

EARTHWORK

Summary

- It is estimated that trucking employment in Florida increased 3% year-over-year. A new federal law signed on October 1st is expected to make CDL schools more accessible to veterans and help address the truck driver shortage.
- Over the past 3 months, specialized trucking volumes and rates have been normal or below normal. Over the past quarter spot rates have been below 2023 levels.
- In general, equipment costs continued their declining trend.

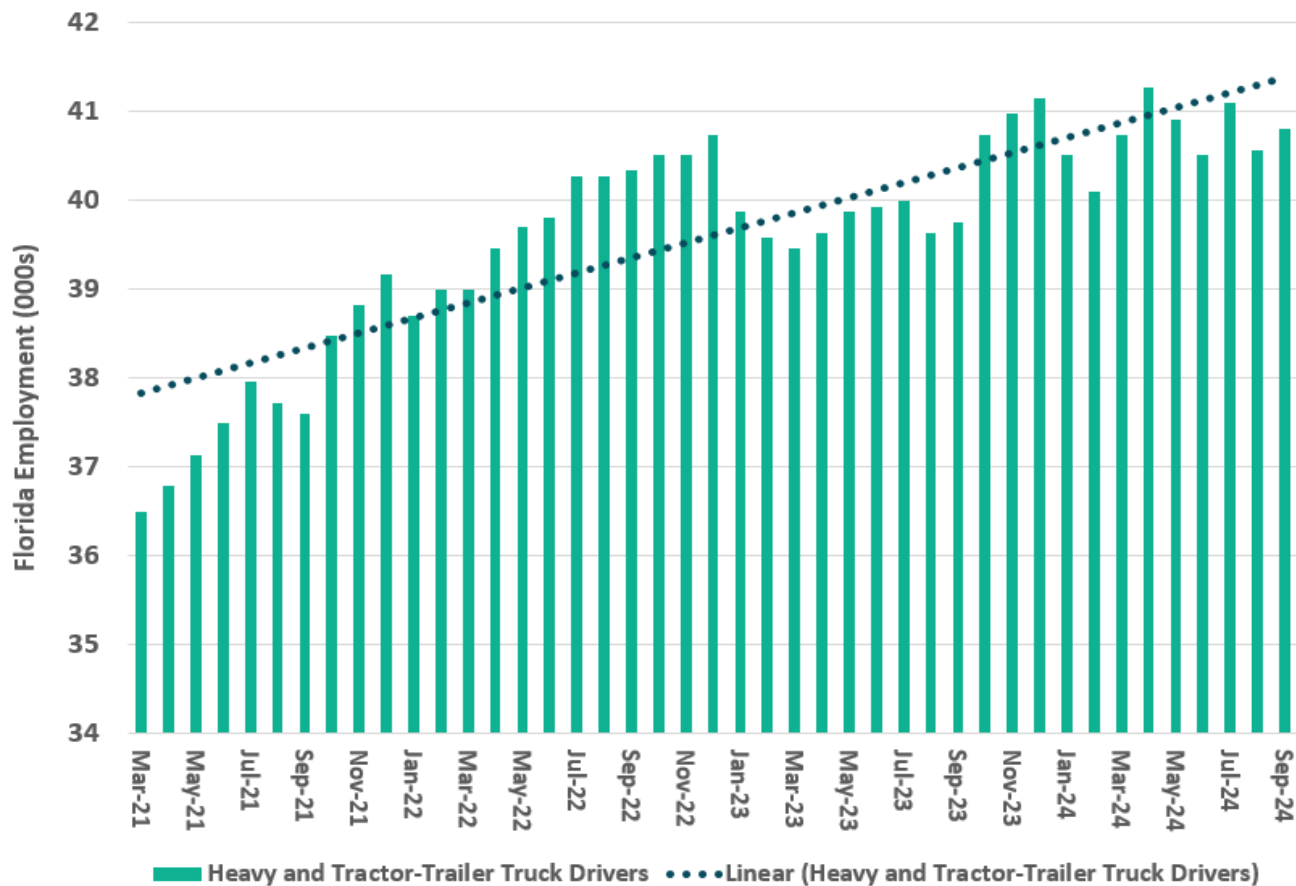
FDOT Impacts

- FY 2024 earthwork bids have more than doubled since FY 2020 and are expected to remain elevated in FY 2025 and beyond as contractor costs remain high.
- Current models forecast earthwork bids to remain above \$20 per cubic yard for the foreseeable future.
- Skilled and unskilled labor, driver availability, and trucking costs were reported as impediments to lowering costs this quarter.

General Trends

Trucking and labor costs are the primary factors in this sector. On average truck transportation employment increased 3% year-over-year (**Figure 20**). As mentioned in other areas of the report, diesel prices are down 13% year-over-year. According to Freight Transportation Research, specialized trucking volumes and rates have been normal or below normal over the past 3 months for Florida. Over the past quarter spot rates have been at or below 2023 levels and this past week were 7% lower than the five-year average. On October 1st President Biden signed a bill to make it easier for veterans to get CDL licenses. The law expands the scope of GI education benefits to CDL programs and removes the 2-year waiting period for new locations of CDL schools that have already been approved at another location. This will make CDL schools more accessible to veterans and help address the truck driver shortage.

Figure 20. Florida Truck Transportation and Driver Employment, 2021-2024



Source: TBG Work Product, BLS.

Earthmoving Equipment and Trucking

Prices continue their declining trend after the previous year of inflationary cost pressures. The September 2024 Equipment Report released by Rouse analyzes price trends of different construction equipment in the U.S. The report includes a Fair Market Value (FMV) Index and Forced Liquidation Value (FLV) Index (equipment sold at auctions) for heavy and light & medium Earthmoving equipment. Prices for both mostly continued their declines (**Table 10**). Volumes were reported to be slightly down or flat year-over-year for auction proceeds, but higher compared to historical averages. Volumes were down year-over-year for retail proceeds.

Table 10. Equipment Prices, August 2024 vs July 2024

Equipment Type	Auction (FLV) Prices			Retail (FMV) Prices		
	Increasing	Flat	Decreasing	Increasing	Flat	Decreasing
General Construction Equipment						
Heavy Earthmoving Equipment						
Light and Medium Earthmoving Equipment						
Excavators						
Dozers						
Wheel Loaders						
Articulated Trucks						
Forklift Trucks						
Truck Tractors						

Source: Rouse September 2024 Equipment Report

Earthwork Forecast

Regression modeling was performed to estimate earthwork costs using pay item data, supply chain variables and other macroeconomic indicators. **Table 11** provides the forecast average price for earthwork.

Table 11. Earthwork Price Forecast Results

Year	2024	2025	2026	2027	2028	2029
Price Earthwork, \$/CY	\$21*	\$21	\$21	\$22	\$22	\$23
Percent Change, %	83.1%	0.7%	2.4%	2.1%	2.0%	2.1%

Source: TBG calculated from data provided by FDOT Office of Forecasting and Project Cost, various industry sources.

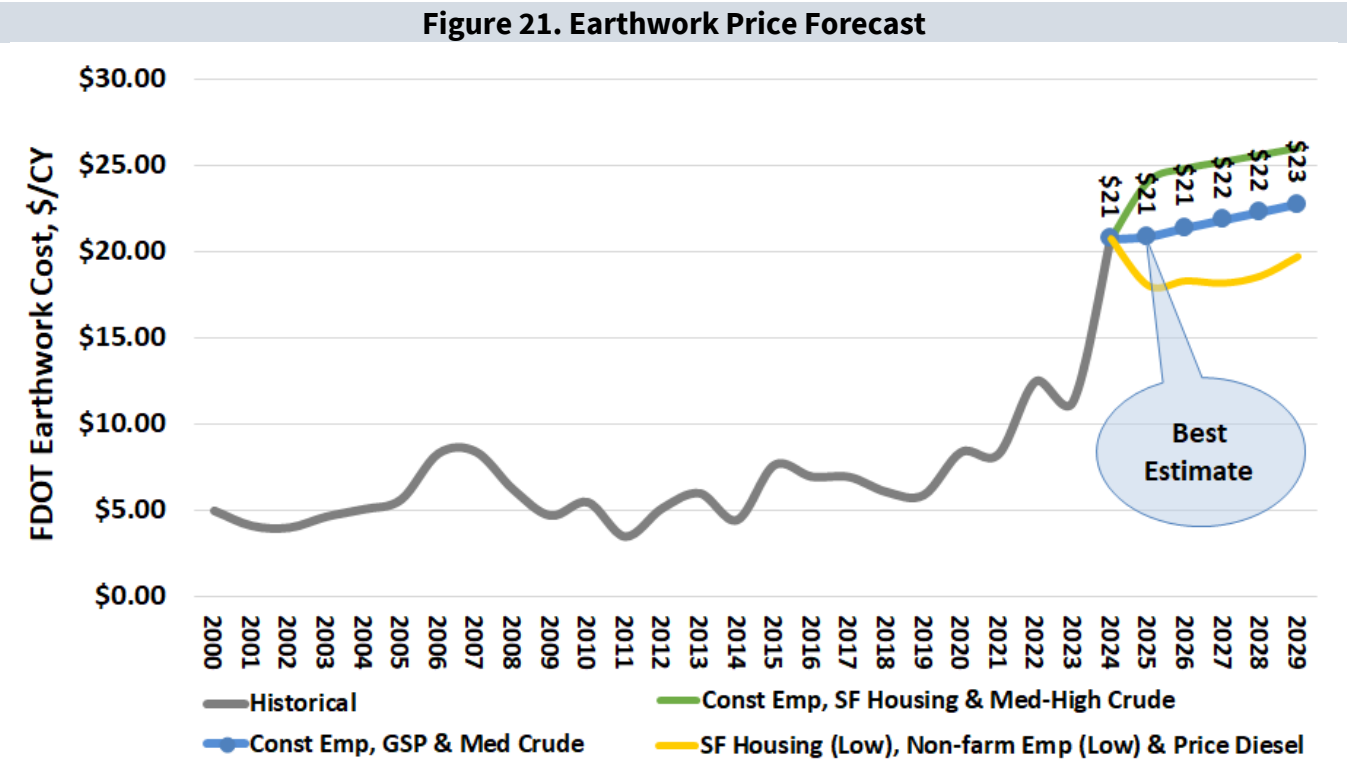
Note: *One extremely high-cost, high-quantity bid from September 2023 was excluded, adjusting the FY 2024 weighted average earthwork price from \$24 per cubic yard to \$19 per cubic yard.

With updated FDOT bid and industry data, fiscal year-end earthwork were nearly double historical levels in FY 2024. Interviews with FDOT contractors indicate that this level in pricing is expected to continue due to rising labor costs, including wages and retention issues, as well as shortages of drivers needed for material transportation.

The best estimate, revised with the latest industry employment, economic, and fuel forecasts, shows earthwork bids continuing to grow at a steady rate close to general inflation through the end of the five-year work program. The updated upper bound, which takes forecasted construction employment, housing starts, and higher energy costs into account, may not be out of the question as contractors remain concerned about workforce retention and meeting infrastructure demand. In the lower bound scenario, recessionary conditions (lower housing starts and employment, plus diesel price forecasts)

would be necessary to drive down costs, but even then, it's not expected that pre-pandemic bid levels are reachable at this time.

Figure 21 shows the output of potential price models and the scenario identified as best estimate for earthwork.



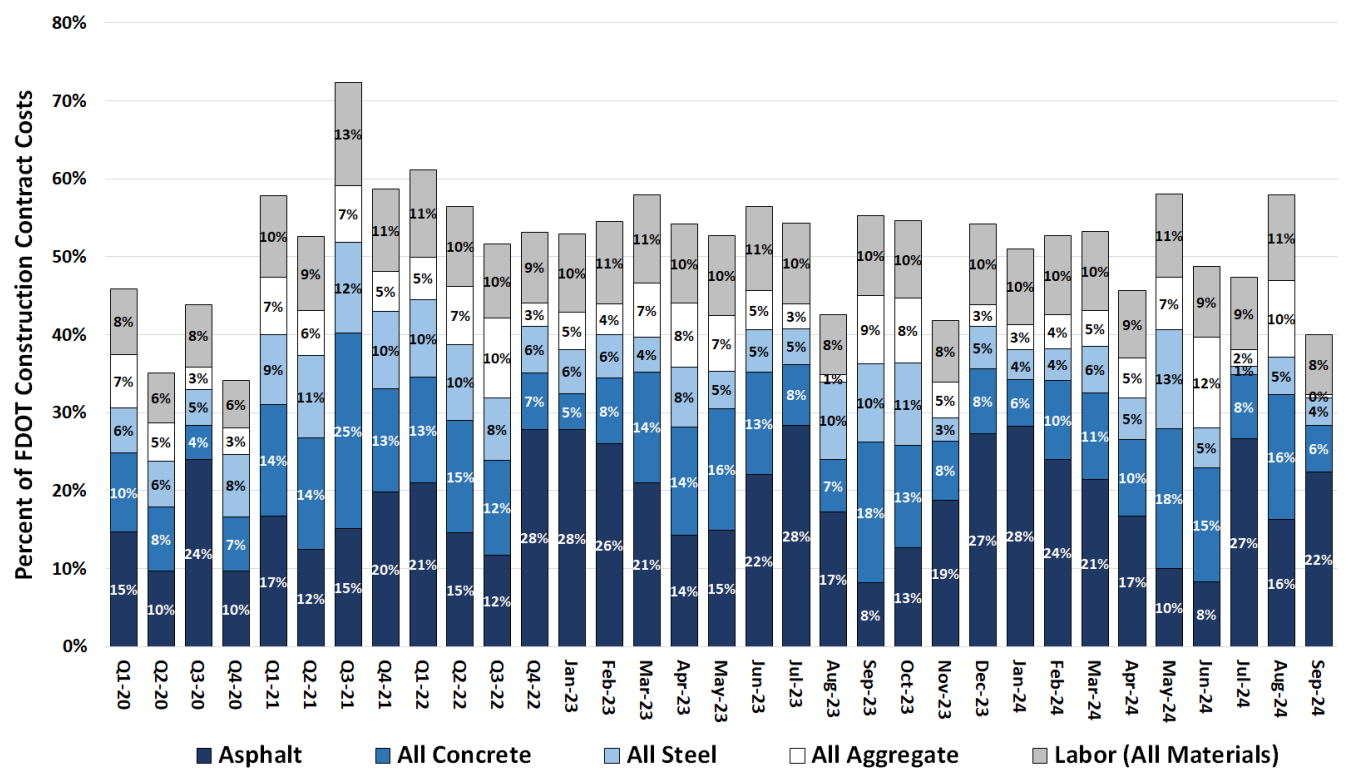
Source: TBG calculated from data provided by FDOT Office of Forecasting and Project Cost, various industry sources.
(Variable descriptions available in the Appendix.)

APPENDIX A: UNDERLYING ECONOMIC CONDITIONS

FDOT Cost Composition

Tracking FDOT’s costs by month shows how the cost composition may shift depending on project type, scheduling, and material costs (**Figure A- 1**). Asphalt costs were the largest share of total costs over the last three months according to revised August and preliminary September data. Steel costs remain about 5% or less of total costs according to updated data. Aggregate costs were 10% of total costs in August with revised data, but is lagging behind other materials in preliminary September data. Labor costs continued fluctuating over the past few months between 8% to 11% of total costs.

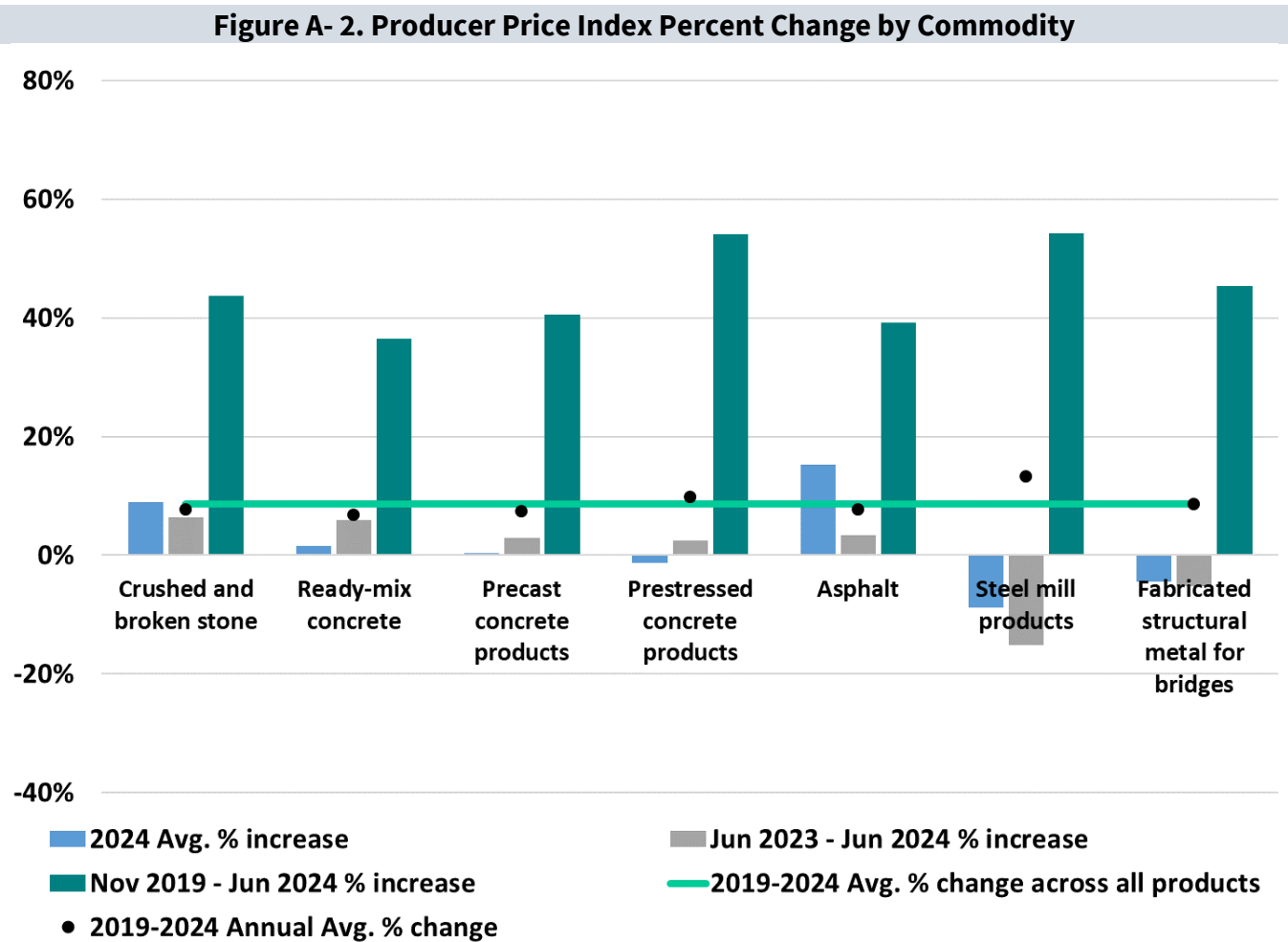
Figure A- 1. Monthly Cost Composition



Source: TBG calculated from data provided by FDOT Office of Forecasting and Project Cost.

U.S. Inflation

Another measure of inflation for the construction industry is the BLS PPI by commodity type. Nationally, a 2% average increase has been seen across all commodities in calendar year 2024, with crushed and broken stone having the largest (7%). Structural metal for bridges has declined 3% (blue bars in the graph). Year-over-year, crushed stone, ready-mix, precast, prestressed, and asphalt (refinery production) have increased by 7%, 6%, 3%, 2%, and 3% respectively in the U.S. while steel mill products and structural metal for bridges have declined by 7% and 3%, respectively. ⁶ **Figure A- 2** illustrates select PPI in the U.S. for relevant commodity types.

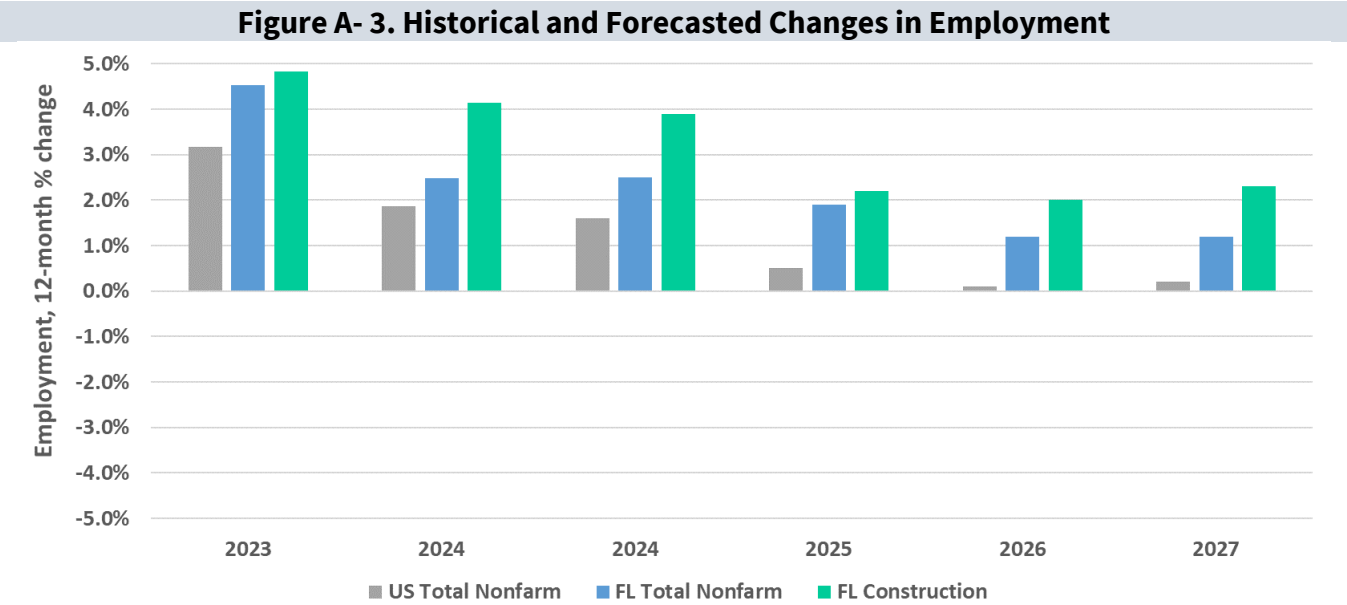


Source: BLS (Producer Price Index, not seasonally adjusted); TBG Work Product.

⁶ As a processed good for intermediate demand; i.e. asphalt used at refineries as an input by producers and not the final prices seen by FDOT.

Construction Employment Forecast

According to the Economic Estimating Conference results from Florida’s Office of Economic & Demographic Research (EDR), statewide construction employment grew by 3.9% in 2024, slightly below the most recent statewide construction employment growth estimate from the Bureau of Labor Statistics (BLS) at 4.1%. EDR expects construction employment growth to grow further over the next three years, with 2025 estimated to rise by 2.2%, 2026 by 2.0% and 2027 by 2.3%. The Institute for Economic Forecasting’s (IEF) most recent nationwide report elucidates their predictions for non-farm employment growth across the us, estimating a 1.6% increase in 2024, coming in under what the BLS has estimated at 1.9%. For further years, IEF estimates growth slowing down across the U.S., with 2025 expected to bring 0.5% employment growth, 0.1% expected in 2026, and 0.2% expected in 2027. In Figure A-5, BLS estimates for U.S. nonfarm, Florida nonfarm, and Florida construction employment growth in years 2023 and 2024 are shown alongside the IEF and EDR projected growth for years 2024, 2025, 2026, and 2027 (**Figure A- 3**).

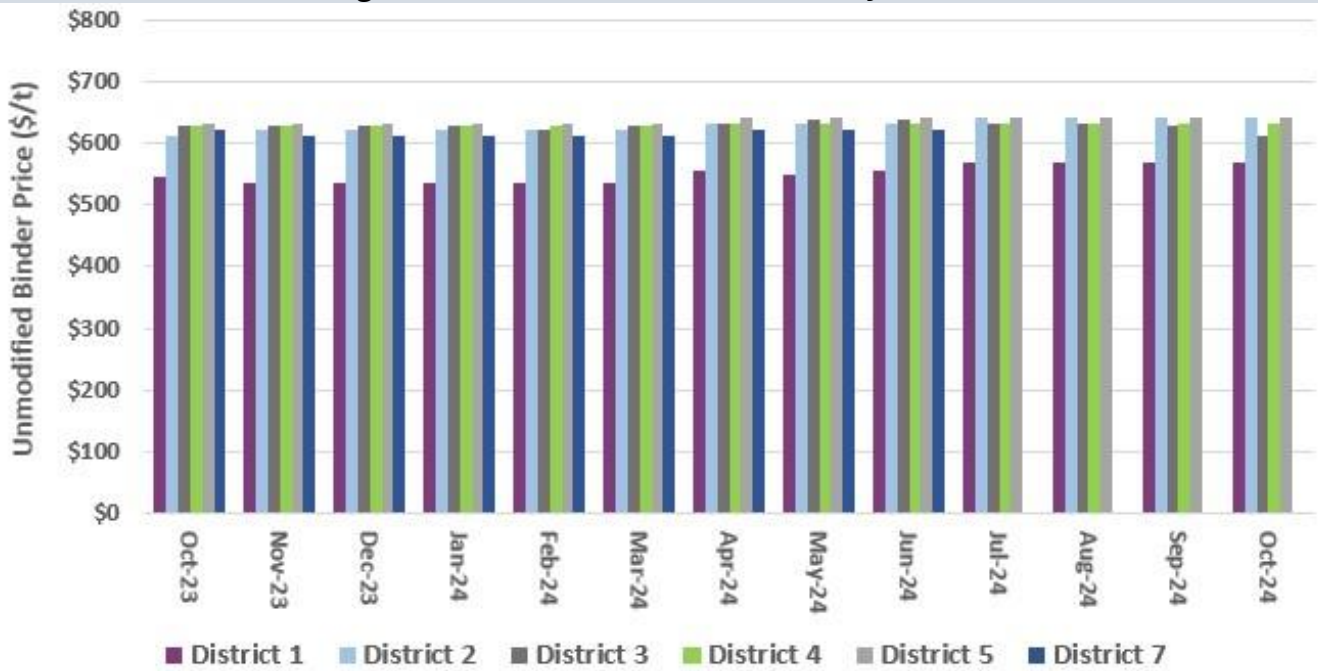


Source: UCF Institute for Economic Forecasting Spring 2024 Florida & Metro Forecast; Florida’s Office of Economic & Demographic Research; TBG work product.

Binder Prices by District

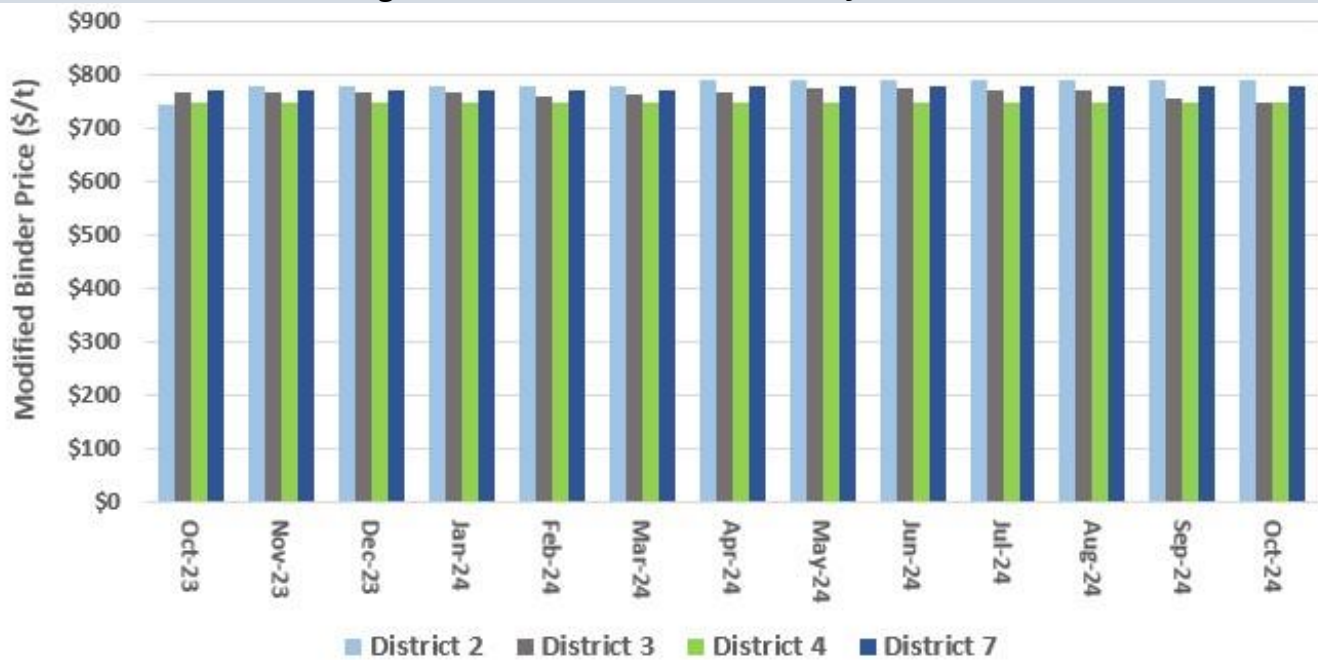
Where available, the average prices for unmodified (**Figure A- 4**) and modified (**Figure A- 5**) binder were calculated from monthly terminal price quotes at the district level. Unmodified binder is the average of PG 52-28 and PG 58-22 prices, while modified binder is a quote for the price of PG 76-22 (PMA) in the dataset. Unmodified binder prices increased in Districts 1, 2, 4, and 5, year-over-year, between 1% and 4% while District 3 decreased by 3%. Modified binder prices showed similar patterns, with prices increasing in Districts 2 and 7 while District 3 decreased by -2.5% year-over-year. Prices in all Districts were relatively stable through the year.

Figure A- 4. Unmodified Binder Price by District



Source: FDOT, TBG Work Product (D6 terminals did not report data).

Figure A- 5. Modified Binder Price by District



Source: FDOT, TBG Work Product (D1, D5, and D6 terminals did not report data).

APPENDIX B: FORECAST DETAILS

A description of the variables used in forecasting are provided in **Table B-1**.

Table B-1. Forecast Variable Descriptions	
Variable Reference	Description
Const Emp	Baseline FL construction employment forecast.
Const Emp (Low)	Lower (less optimistic) FL construction employment forecast.
Chinese Imports	The value of imports to global partners originating from China.
FL Cement Price	Average price of cement in Florida.
Fly Ash Consumption	U.S. consumption of fly ash as a share of total production.
GSP	FL Gross State Product.
GSP (Low)	Lower (less optimistic) FL gross state product forecast.
Historical	Historical pricing or quantity.
Housing Starts	FL housing starts forecast.
Housing Starts (Low)	Lower (less optimistic) FL housing starts forecast.
Low/Med/High Crude	Average crude price (low, medium, or high forecast).
Major Event	Major geo-political, health, or weather-related events that strongly affect market forces; i.e. 9/11, the Great Recession, hurricanes, pandemics.
Non-farm Emp⁷	FL Non-Farm employment forecast.
Non-farm Emp (Low)	Lower (less optimistic) FL total non-farm employment forecast.
Price Binder	Average price of HMA binder (PG-76 & higher).
Price Coal	Average price of coal.
Price Diesel	Average diesel price.
Price Iron	Average price of iron ore.
Price Stone	Average price of crushed stone.
Price Zinc	Average price of crushed stone.
SF Housing	FL Single-Family housing starts forecast.
SF Housing (Low)	Lower (less optimistic) FL Single-Family housing starts forecast.
US Cement Price	Average price of cement in the U.S.
WP	FDOT Five-Year Work Program.

Pay items that are partially or wholly used in the analysis are listed in **Appendix B** of the FDOT SRES [FY 2023-24 Final Report](#)⁸, starting on page 89. It should be noted that the lists may include some pay items that are no longer in use by FDOT, or are not represented in the lettings data every year, but are retained for historical record.

⁷ Workers in the agriculture sector are excluded from government and industry estimates; [Nonfarm Payrolls: Why Farmers Aren't Included in Jobs Data | St. Louis Fed \(stlouisfed.org\)](#)

⁸ Main page: [Strategic Resource Evaluation Study Reports \(fdot.gov\)](#)

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