

Chicago Federal Reserve Bank - Midwest Agricultural Conference

Big Harvest, Big Questions: Where do Midwest Crops Go...?

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Outline for Discussion

- I. Grain Storage Capacity and Spatial Utilization Dynamics**
- II. Farm-Level Marketing Strategies and Selling Patterns**
- III. Post-Farm Gate – Commercial Warehousing and Marketing Strategies**
- IV. Multi-Sector Procurement Dynamics for the 2026–27 Marketing Year**
 - I. Corn and Coarse Grains Usage**
 - II. Soybeans and Oilseeds Usage**
- V. Logistics, Supply Chain Architecture, and Spatial Consumption Pathways**
- VI. Geopolitical Dynamics, Trade Policies, and Structural Competition**
- VII. Enterprise Profitability Projections and Sector Credit Conditions**
- VIII. Federal Reserve Bank's Impact on Commodity Markets 38**
- IX. Conclusions**





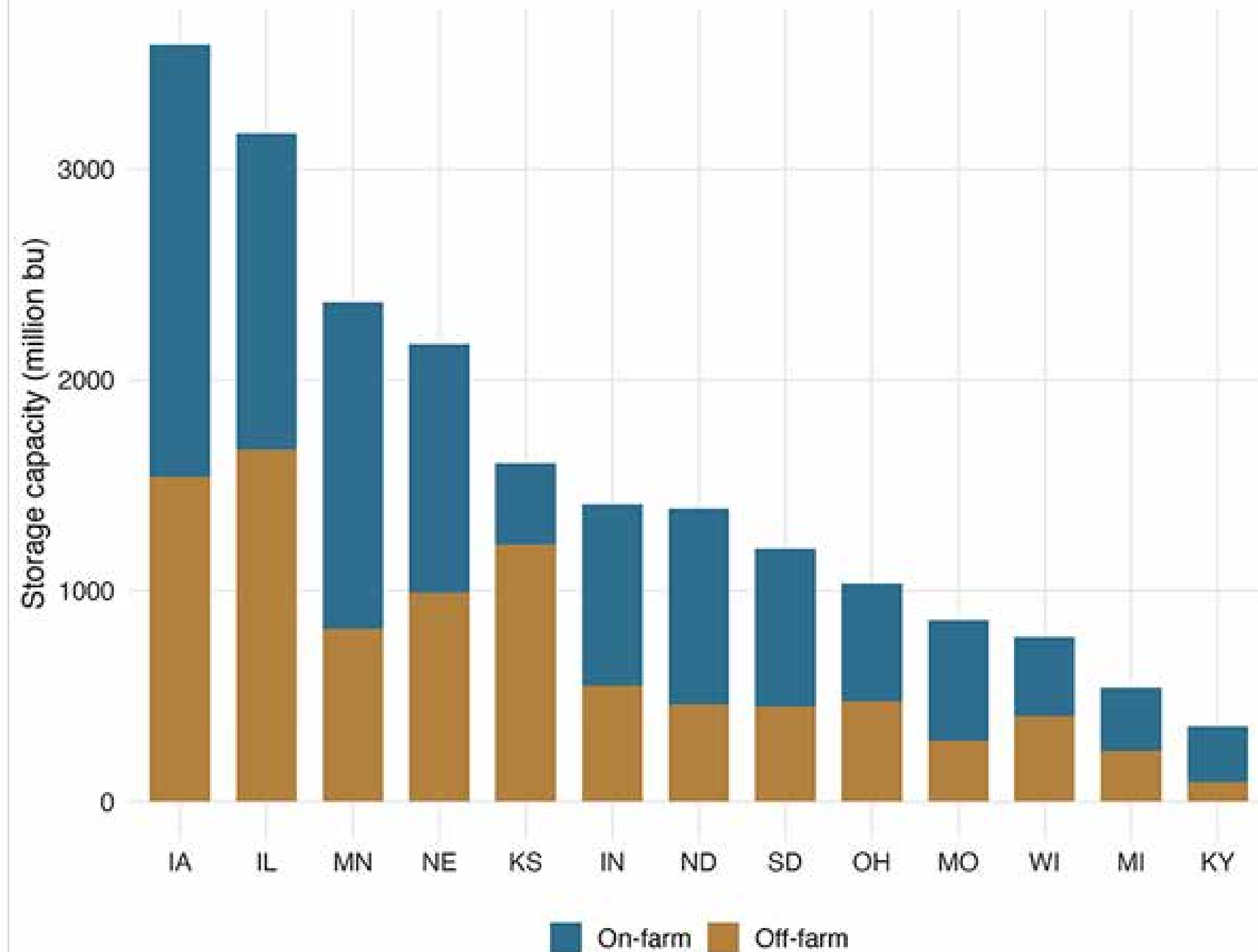
GRAIN STORAGE & WAREHOUSING



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Grain Storage & Warehousing

Figure 1. Grain Storage Capacity by State and Location, December 2025



Source: USDA National Agricultural Statistics Service

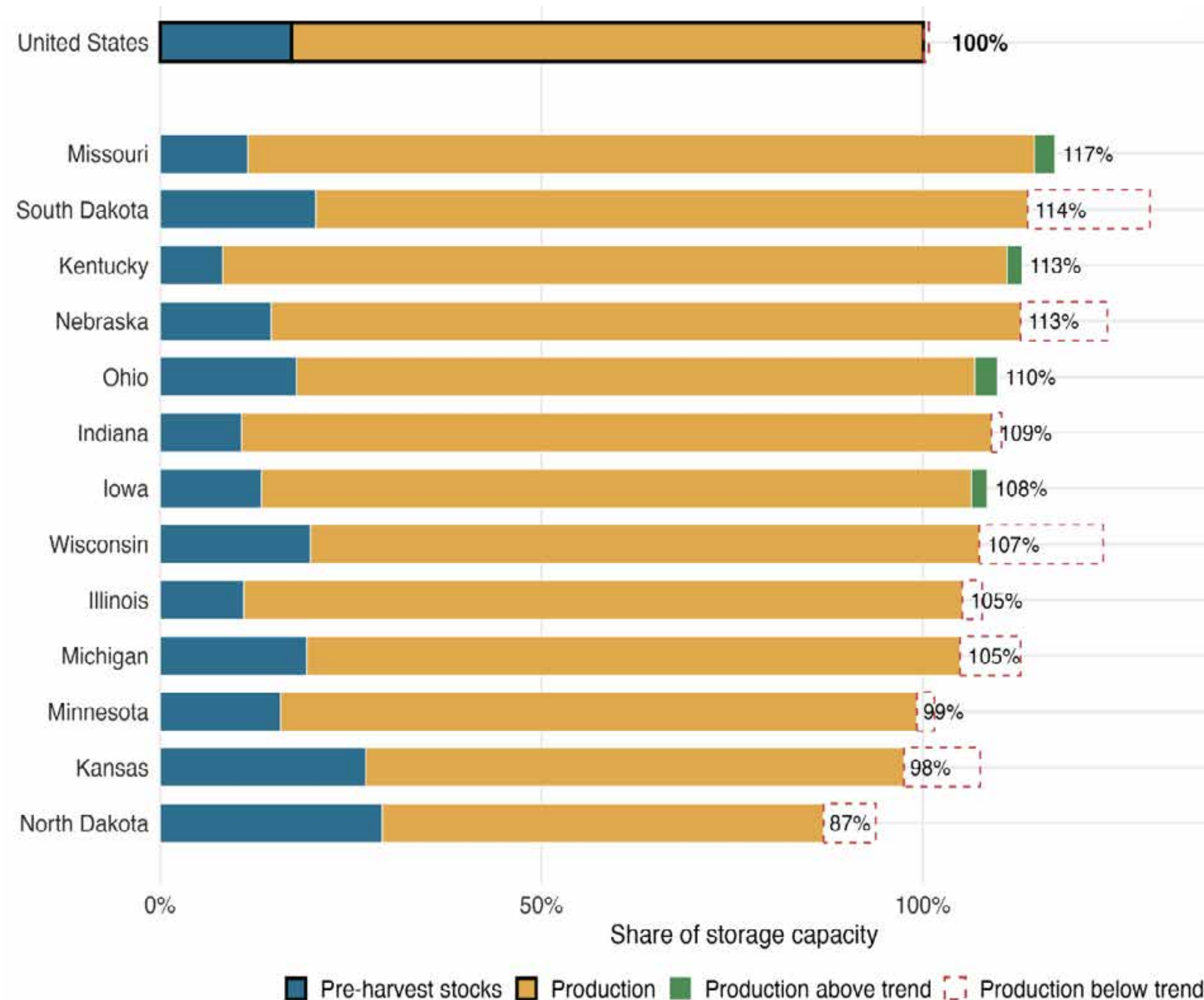
farmdocDAILY

- **On-Farm Capacity: 13.62 billion bushels**
(roughly 53% of total space)
This includes bins, cribs, and structures located directly on farm sites.
- **Off-Farm Capacity: 11.87 billion bushels**
(roughly 47% of total space)
This comprises licensed, rated commercial operations like elevators, terminals, refineries, and merchant mills.

With the historically large volume of the 2026 U.S. harvest, vulnerabilities in the geography of domestic agricultural infrastructure have been exposed. Aggregate national metrics suggest a balanced balance sheet, but a localized spatial analysis reveals unprecedented physical capacity deficits across the primary production regions of the Corn Belt.

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Grain Storage & Warehousing

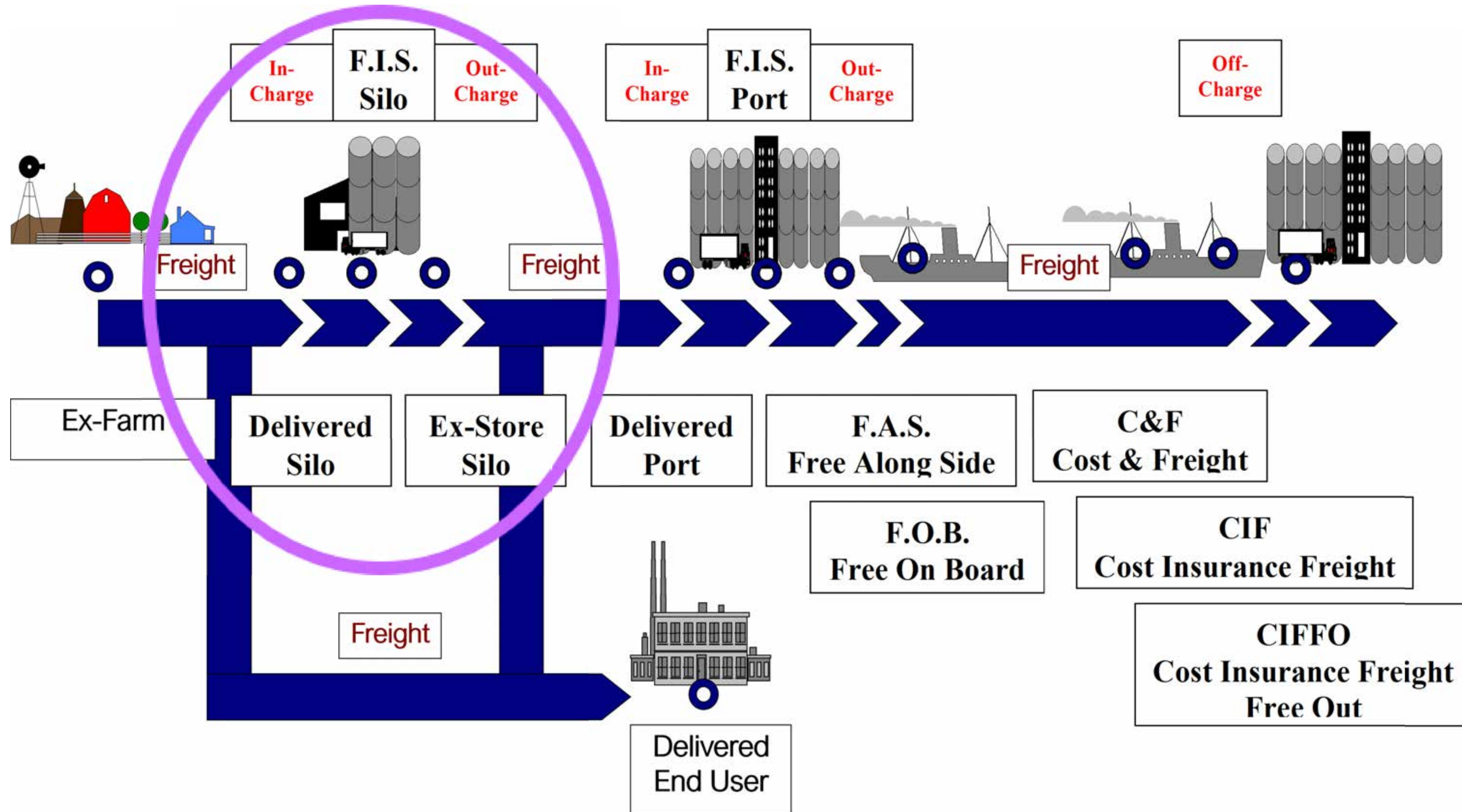


According to the University of Illinois *FarmDoc Daily* spatial analysis, **revised the 12th of October 2026**, specific states face tight storage utilization metrics:

- **Missouri**: Confronts the most severe storage deficit in the nation, with projected demand reaching **117% of permanent capacity**.
- **Kentucky**: Projected storage requirements stand at **113% of capacity**.
- **Ohio**: Projected storage requirements stand at **110% of capacity**.
- **Indiana** and Iowa: Both exceed the 100% threshold, 109% and 108%, respectively, meaning that the absolute physical volume of old-crop inventories and new-crop field runout cannot be contained within standard-rated steel or concrete structures simultaneously.
- **Illinois and Nebraska**: While possessing a large total storage capacity, these core states are operating at **96% to 98% utilization**, leaving virtually zero margin for transit delays.
- Conversely, many areas in the Western Cornbelt, such as **Minnesota, Kansas, and North Dakota**, maintain aggregate utilization levels below 100%, functioning as critical safety valves for the broader multi-state logistics network.

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Post-Farm Gate Commercial Grain Storage & Warehousing



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Post-Farm Gate Logistics

Midwest Grain Transport Corridors & Flows

Origin Region	Primary Mode	Key Linkages	Final Destination
Local Processing	Truck Short-Haul	Direct-to-Plant	Domestic Ethanol / Crush Plants
Central/East Belt	River Barge	Miss. / Illinois Riv.	Gulf of Mexico Export Ports
Western Corn Belt	Class I Rail	BNSF / Union	Pacific Northwest (PNW) / Mexico

The initial post-harvest supply chain begins with short-haul truck movements from fields to on-farm bins or localized country elevators.

From these interior accumulation points, grain is moved directly or by road truck, and consolidated into high-efficiency, barge or railcar loading facilities into 110+ shuttle trains operated by Class I railroads.

These unit trains are optimized for high-speed transit to long-distance destinations, notably the for first-stage processors or domestic livestock feeding operations, or to export terminals at the U.S. Center Gulf, the PNW, Great Lakes, Eastern Coast, or directly to Mexico or Canada.

The physical transit of billions of bushels of grain requires a coordinated, multimodal logistics network spanning truck, rail, and barge systems.

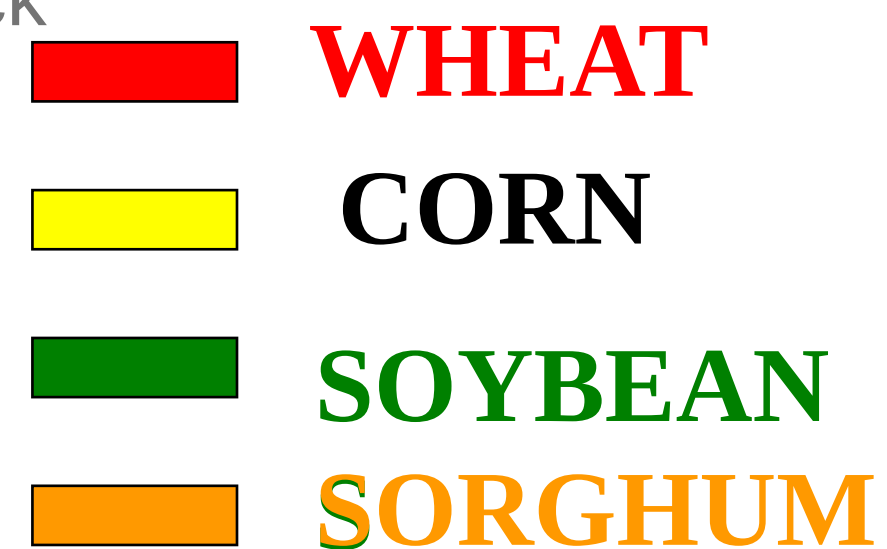
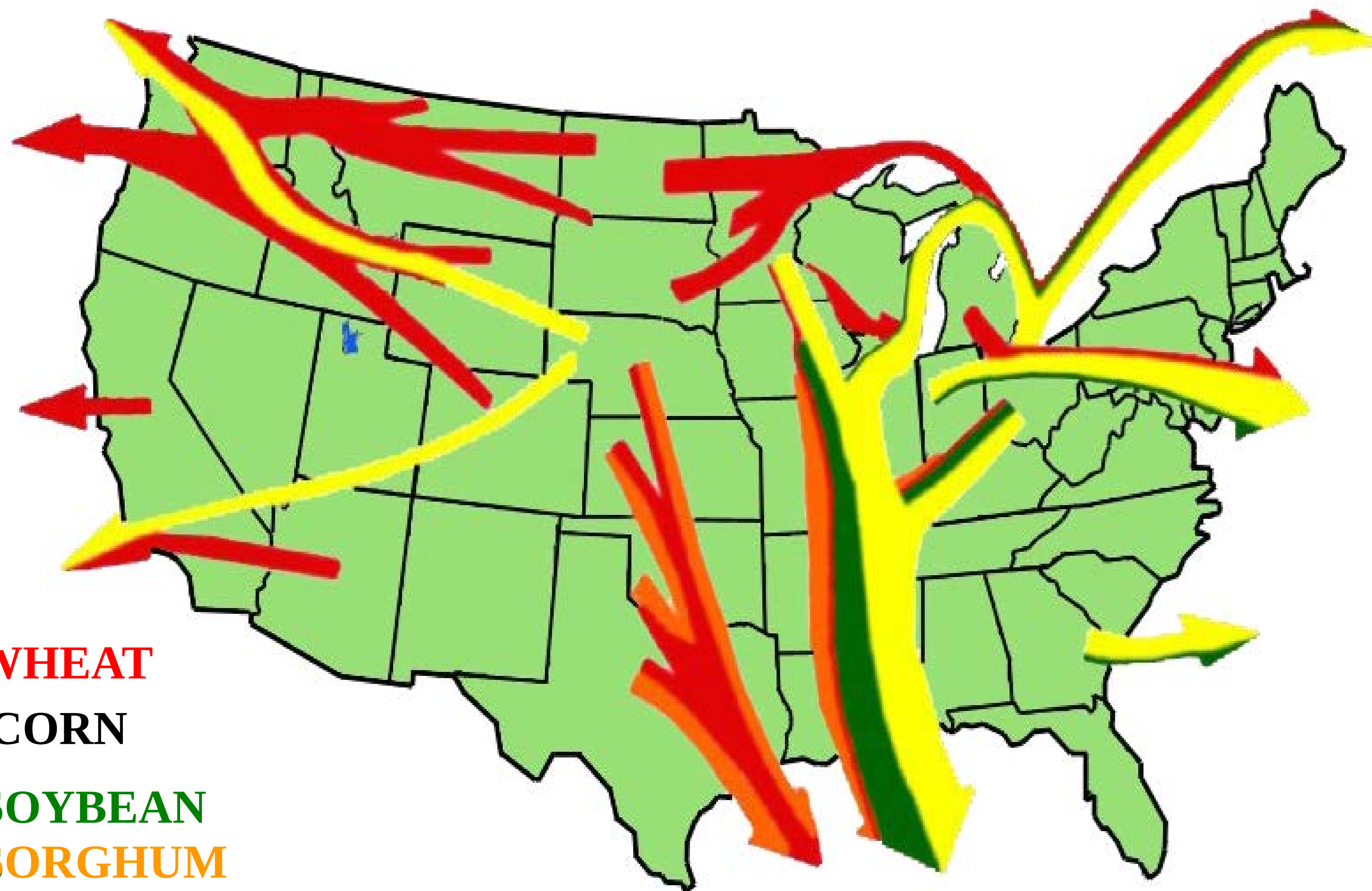
U.S. Grain Production and Marketing System

Export Flow for Grains and Oilseeds

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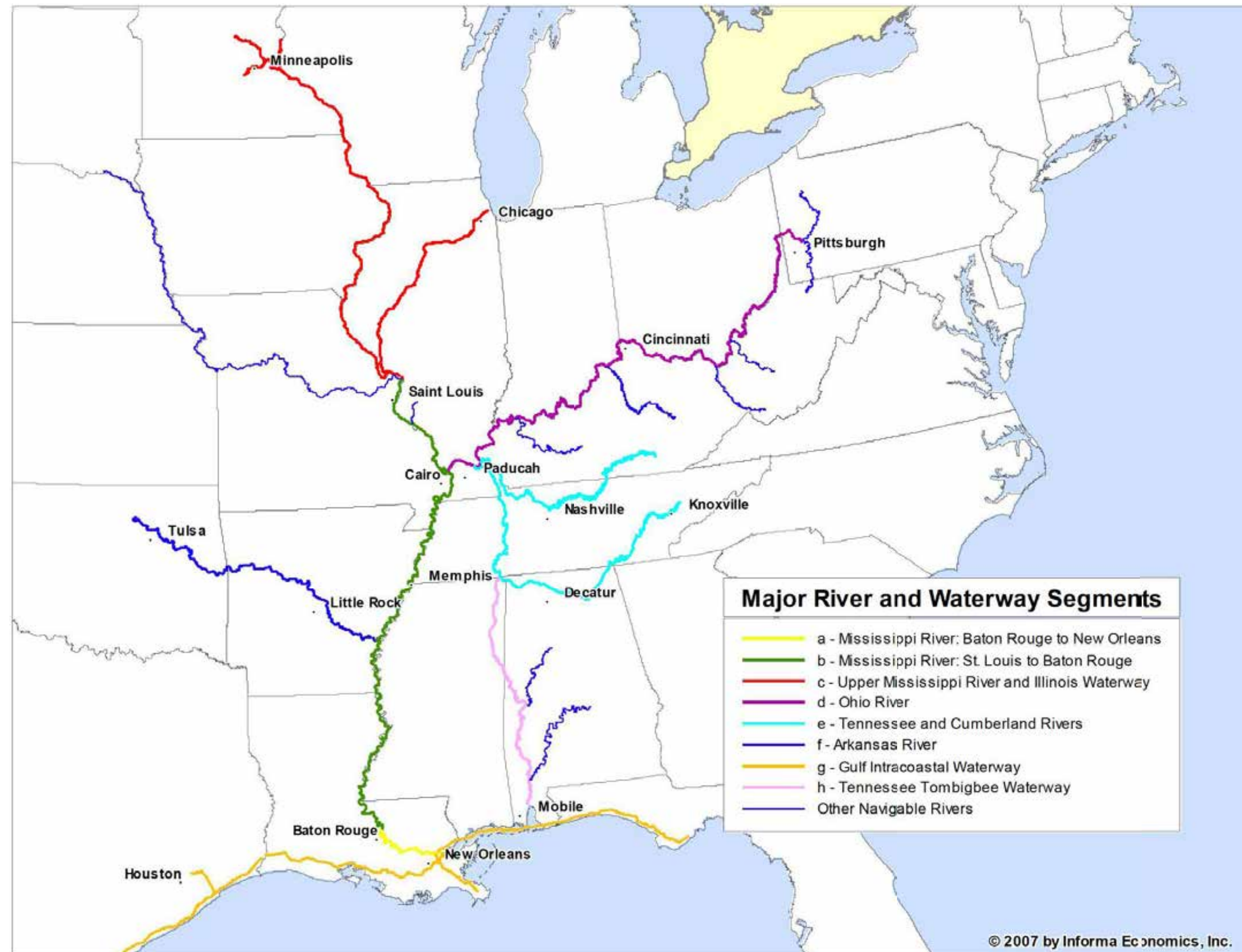
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Navigable Inland Waterways of the United States



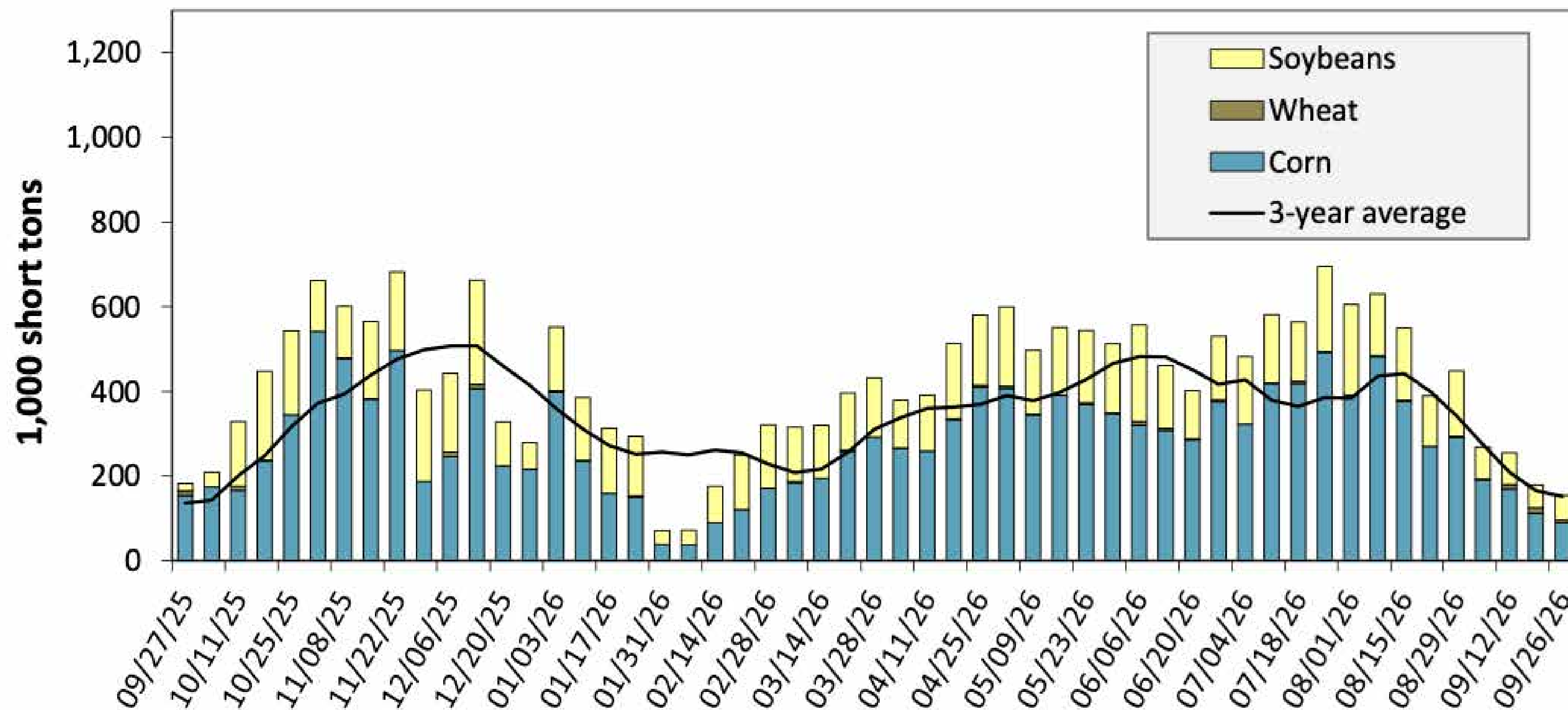
The Mississippi River system remains the backbone of the U.S. agricultural export infrastructure, carrying a significant volume of interior crop supplies via barge fleets to the Center Gulf region. However, seasonal supply chain vulnerabilities present ongoing operational risks. Low river stages, combined with autumn locks-and-dams maintenance schedules, frequently restrict allowable barge drafts and reduce tow sizes.

U.S. Grain Production and Marketing System

Mississippi River System – Barge Loadings

Barge Movements on the Mississippi River (*Locks 27 - Granite City, IL*)

Figure 12. Barge movements on the Mississippi River (Locks 27-Granite City, IL)



Note: The 3-year average is a 4-week moving average.

Source: U.S. Army Corps of Engineers.

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Navigable Inland Waterways of the United States

Barge Freight Market as of the 12th of October 2026

IL RIVER FREIGHT

	10/9/2026	10/12/2026	
wk 10/4	825/875	825/875	UNC
wk 10/11	825/875	825/875	UNC
LH OCT	775/825	775/825	UNC
NOV	675/725	675/725	UNC
DEC	625/675	625/675	UNC
JFM	600/650	600/650	UNC
AMJJ	550/600	550/600	UNC

UPPER MISSISSIPPI

ST PAUL/SAVAGE	10/9/2026	10/12/2026	
wk 10/4	825/875	825/875	UNC
wk 10/11	825/875	825/875	UNC
LH OCT	800/850	800/850	UNC
NOV	750/800	750/800	UNC
AMJJ	625/675	625/675	UNC

MID MISSISSIPPI

McGregor	10/9/2026	10/12/2026	
wk 10/4	825/875	825/875	UNC
wk 10/11	825/875	825/875	UNC
LH OCT	775/825	775/825	UNC
NOV	725/775	725/775	UNC
DEC	675/725	675/725	UNC
AMJJ	575/625	575/625	UNC

ST LOUIS BARGE

FREIGHT 14'	10/9/2026	10/12/2026	
wk 10/4	700/750	700/750	UNC
wk 10/4	700/750	700/750	UNC
wk 10/11	675/725	675/725	UNC
LH OCT	675/725	675/725	UNC
NOV	600/650	600/650	UNC
DEC	550/600	550/600	UNC
JFM	525/575	525/575	UNC
AMJJ	450/500	450/500	UNC

LOWER

OHIO RIVER	10/9/2026	10/12/2026	
wk 10/4	800/850	800/850	UNC
wk 10/11	800/850	800/850	UNC
LH OCT	700/750	700/750	UNC
NOV	650/700	650/700	UNC
DEC	600/650	600/650	UNC
JFM	550/600	550/600	UNC
AMJJ	500/550	500/550	UNC

The Mississippi River barge freight market trades largely through decentralized spot and contract agreements anchored to historical benchmark tariffs established in 1976.

Rates swing wildly based on seasonal harvest pressures (typically peaking in Q3 and Q4), export demand, fuel/diesel costs, and critical physical disruptions like low-water depth restrictions or lock closures. Low water forces barges to "light-load" (carry fewer tons), which spikes per-ton freight rates and widens local crop basis.

When river freight rates spike due to capacity constraints, the inland basis spreads widen dramatically, forcing grain into alternative rail routes or back into local storage, which worsens interior storage pressures.

U.S. Grain Production and Marketing System

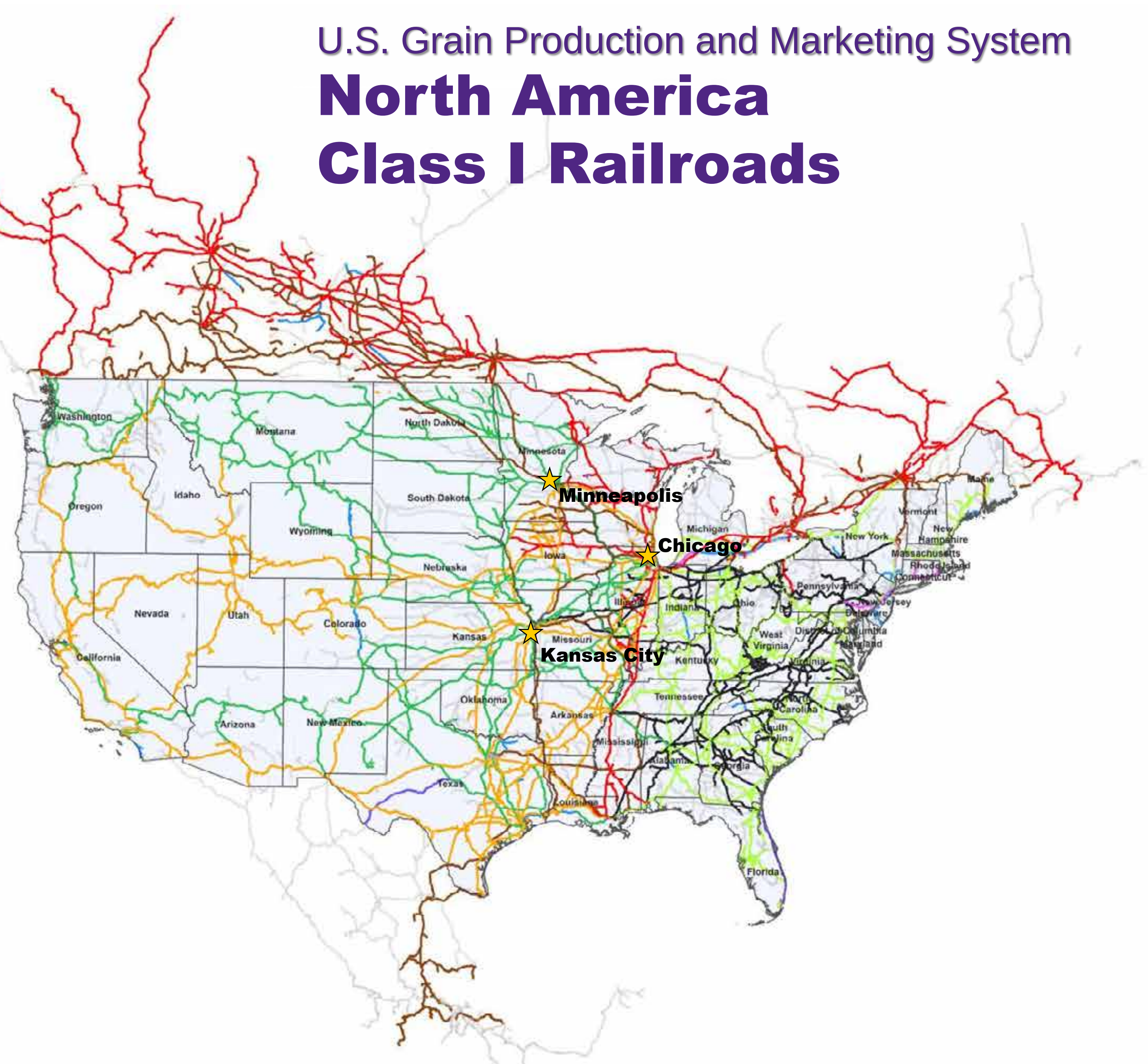
North America

Class I Railroads



NORTH AMERICAN FREIGHT RAIL NETWORK MAP

- Short Line/ Regional
- UP
- CN
- BNSF
- CPKC
- CSX
- NS
- Multiple Owners
- Amtrak
- GMXT



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Post-Farm Gate Logistics - Rail

BN SHUTTLE	Bid/Ask/Last	Bid/Ask/Last	
Return Trip	200 / -	400 / -	
F/H October	200 / -	400 / -	
MP October	300 / 1000	400 / -	
LH October	300 / 800	400 / 800	
November	- / -	100 / 400	
November, December	200 / 400	75 / 300	
Jan, Feb, Mar 2027	600 / 800	600 / 800	UNC
April May 2027	300 / 400	300 / 400	UNC
April - September 2027	200 / 250	200 / 250	UNC
UP SHUTTLE	Bid/Ask/Last	Bid/Ask/Last	
Return Trip	- / 300	100 / -	
F/H October	- / 400	100 / -	
L/H October	- / -	0 / 300	
L/H October (Mex. Opt.)	- / -	100 / 600	
November	- / 300	- / 300	UNC
December	- / 250	- / 250	UNC
Jan, Feb, Mar	- / 300	- / 300	UNC

Western Rail Transportation

The BNSF Railway and Union Pacific (UP) price and trade grain “shuttle train” capacity through a combination of long-term commitments, weekly digital auctions, and market-based tariffs designed to allocate high-volume, dedicated-train logistics.

How Pricing Works

- **Base Tariffs and Bids:** Standard freight rates are established through published railroad tariffs and rate tables (such as BNSF-90068), combined with base pricing or mileage/revenue fuel surcharges.
- **Auction Premiums:** For dedicated shuttle trains — which move 100+ car blocks from a single origin to a single destination — the railroads allocate a large portion of capacity via competitive bidding.
- **Market-Driven Values:** Auction prices fluctuate sharply based on export demand, crop sizes, global grain futures, and seasonal bottlenecks. For instance, winning bids for BNSF yearlong shuttle contracts have averaged around **\$1.3 million per contract** (translating to hundreds of dollars per car per trip), though prices vary widely depending on whether the trains service domestic processors or Pacific Northwest (PNW) export terminals.

Why is the U.S. the Residual Store for World Grains...

Four Pillars of Highly Efficient Grain Storage and Supply Chain

Capital Markets Short Term Finance



Access to the U.S. highly competitive, sophisticated, and deeply liquid capital markets to finance massive physical grain inventories in the short term.

Capital Markets Long Term Finance



Access to the U.S. to highly competitive, sophisticated, and deeply liquid capital markets to continuously fund the construction and modernization of supply chain assets that support grain handling, storage, and warehousing infrastructure in the long term.

Inter-Seasonal Price Risk Management



The capacity to seamlessly manage inter-seasonal price risk between marketing years through deeply liquid, well-established grain futures and derivative markets.

Human Capital and Institutional Knowledge



Ongoing access and development of specialized human capital and skills capable of executing complex physical and financial arbitrage, along with merchandising and risk management strategies, in addition to generational institutional knowledge.

Together, these four pillars of the United States grain marketing system help to ensure that when global markets experience structural oversupply, excess volume may then flow predictably into United States grain storage assets.



ENTERPRISE PROFITABILITY PROJECTIONS AND SECTOR CREDIT CONDITIONS...



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Enterprise Profitability Projections

2026/27 Midwest Cash Grain Estimated Cost/Revenue Per Acre

=====					
Crop	Avg. Yield	Projected Price	Gross Revenue	Est. Cost*	Net Return

Corn	181.2 bpa	\$4.70 / bu	\$851.64	\$885.00	-\$33.36
Soybeans	53.1 bpa	\$12.00 / bu	\$637.20	\$620.00	+\$17.20
=====					

*Includes variable inputs, machinery depreciation, and cash rent equivalent.

The combination of high yields and falling commodity prices has put financial pressure on Midwestern cash grain operations. The USDA season-average farm price projections—\$4.70/bu for corn and \$12.00/bu for soybeans—must be evaluated against current crop production budgets.

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Profitability Projections

2026/27 Midwest Cash Grain Estimated Cost/Revenue Per Acre

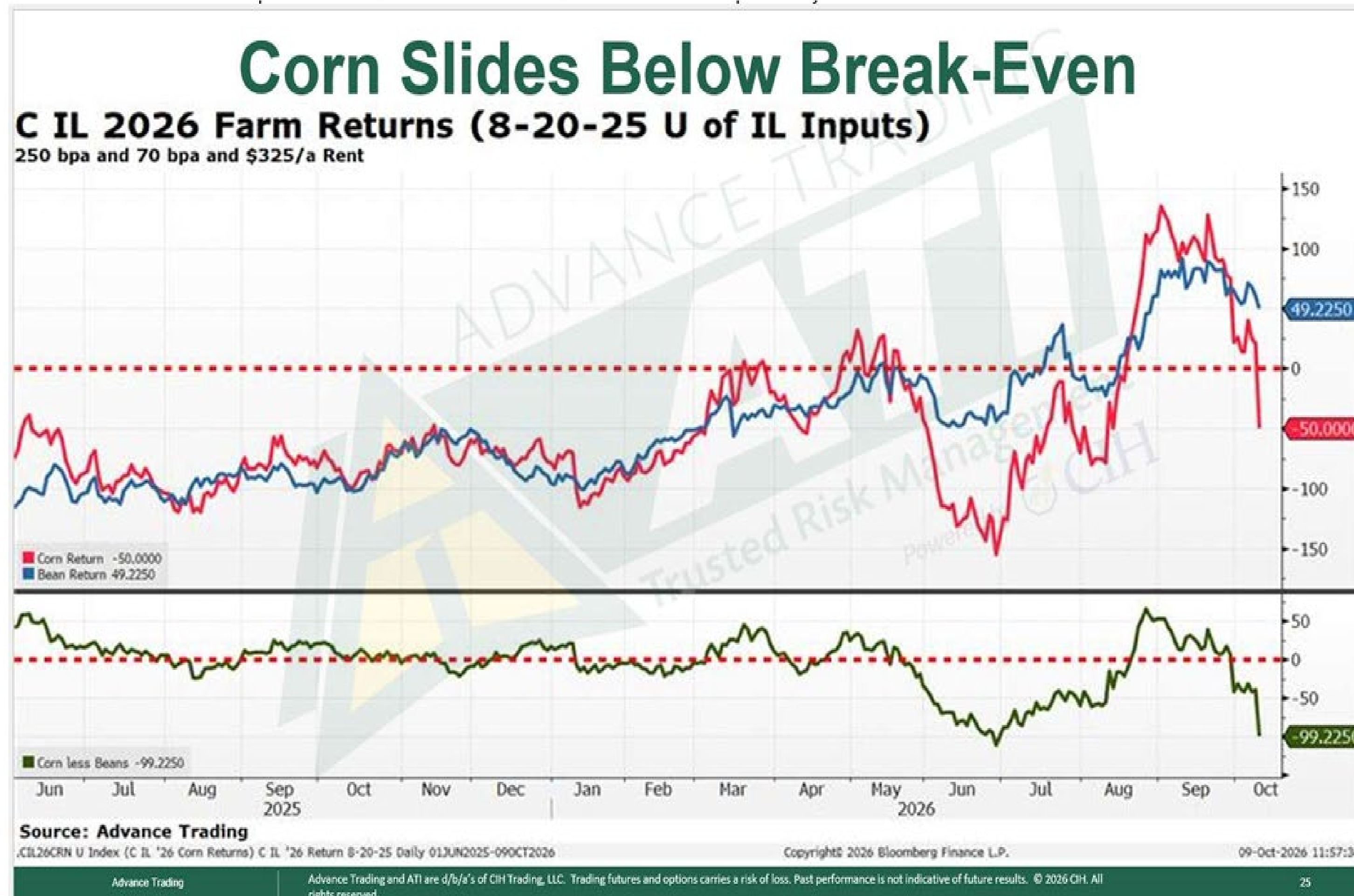
For **corn**, an average yield of 181.2 bushels at \$4.70 generates a gross economic return of approximately **\$851.64 per acre**. Across much of the Midwest, total economic costs of production—including synthetic nitrogen fertilizers, seed technology fees, machinery depreciation, and high cash rents—average **\$860.00 to \$910.00 per acre**. This leaves typical corn operations facing net economic losses of **\$10.00 to \$50.00 per acre**, operating below full economic cost recovery.

For **soybeans**, the financial outlook is closer to break-even. A record yield of 53.1 bushels at \$12.00 generates a gross return of **\$637.20 per acre**. With total production costs averaging **\$600.00 to \$635.00 per acre**, producers are capturing thin positive margins ranging from **\$2.00 to \$35.00 per acre**.

This narrow profitability underscores the importance of the domestic biofuels sector in supporting demand. It also highlights the financial risks facing producers as they navigate rising interest rates on operating notes and elevated input costs for the upcoming 2027 planting cycle.

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Profitability Projections



The recent sharp drop in cash and CME corn prices of over 20 cents/bu following the 9th of October 2026 USDA WASDE Report may likely see the farmer become a tighter holder of corn than previously expected.

With the season-average farm price for corn dropping to \$4.70 per bushel, a significant share of Midwestern operators are facing negative net margins.

While input components such as fertilizer and wholesale fuel have moderated slightly from historical peaks, fixed expenses remain high. Cash rents, seed technology fees, equipment depreciation, and interest expenses on short-term operating notes remain high, keeping economic breakeven targets near \$5.10 per bushel for corn. Consequently, operators are sustaining an estimated net loss of \$0.40 per bushel on corn production, which is only partially offset by razor-thin margins on soybean operations.

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Profitability Projections

Agricultural Banking and Credit Stress

This widespread margin compression is causing noticeable shifts in the agricultural credit sector.

Data monitored by the Federal Reserve Bank of Chicago shows a steady rise in operating loan demand as farmers look to cover cash shortfalls.

Concurrently, repayment rates on agricultural loans have slowed, prompting ag lenders to tighten credit standards and require higher collateral commitments for 2027 production cycles.

While land values have shown resilience due to strong balance sheets built during the lucrative 2021–2023 period, continued negative cash returns in late 2026 are expected to put downward pressure on cash rents and farmland values heading into the next year.

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Profitability Projections – Country Elevator

The profit outlook for country elevators is **solid to positive**, primarily driven by market structure rather than outright grain prices.

- **Storage and Carry Profits:** High national yields have created massive grain inventories. According to CoBank's Grain Elevator Outlook, this oversupply is widening futures spreads (market carry) and weakening the buy basis in cash markets. This market setup directly improves elevator profitability by rewarding operators for storing grain long-term.
- **Crop Specifics:** Wheat and corn storage margins are robust. However, elevators face minor risks with soybeans; slow global exports have forced longer holding periods, meaning elevators may have to narrow their harvest basis to entice farmers to sell rather than store on-farm.
- **Infrastructure Limits:** Elevated steel and aluminum tariffs have raised grain bin construction costs by up to 33%, discouraging elevators from expanding physical footprints and forcing high utilization of existing space.

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Profitability Projections – Supply Chain Operator

Logistics providers, freight haulers, and Class I railroads are seeing **highly resilient, volume-driven profitability**.

- **High Shipment Volumetry:** Shifting global demand and large domestic harvests mean high traffic. Companies like CN Rail are executing robust grain plans, projecting up to 33 million metric tonnes of grain and processed products shipped for the 2026–27 crop year.
- **The Margin Squeeze:** While revenue is protected by sheer volume, net profit margins face pressure from operational challenges. Elevated diesel costs and ongoing structural vulnerabilities in domestic waterways (e.g., river flow delays from high/low water cycles) dictate that efficiency determines the final bottom line.

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Profitability Projections – First-Stage Processors

First-stage processors are experiencing expanding profit margins, capitalizing on cheap feedstocks and strong legislative tailwinds.

- **Biofuels Boost:** Ethanol and renewable diesel refiners benefit from a clearer long-term outlook. The EPA finalized the Renewable Volume Obligations (RVOs) for 2026 and 2027 at the highest levels in the program's history. This mandate forces substantial blending, securing consistent domestic demand for first-stage corn and soybean processing facilities despite macro headwinds like a strengthening U.S. dollar.
- **Soybean Crushers:** Soybean and oilseed processors are a bright spot in the agribusiness landscape. Surging soybean oil prices and expanding domestic demand have significantly enhanced soy crush margins.



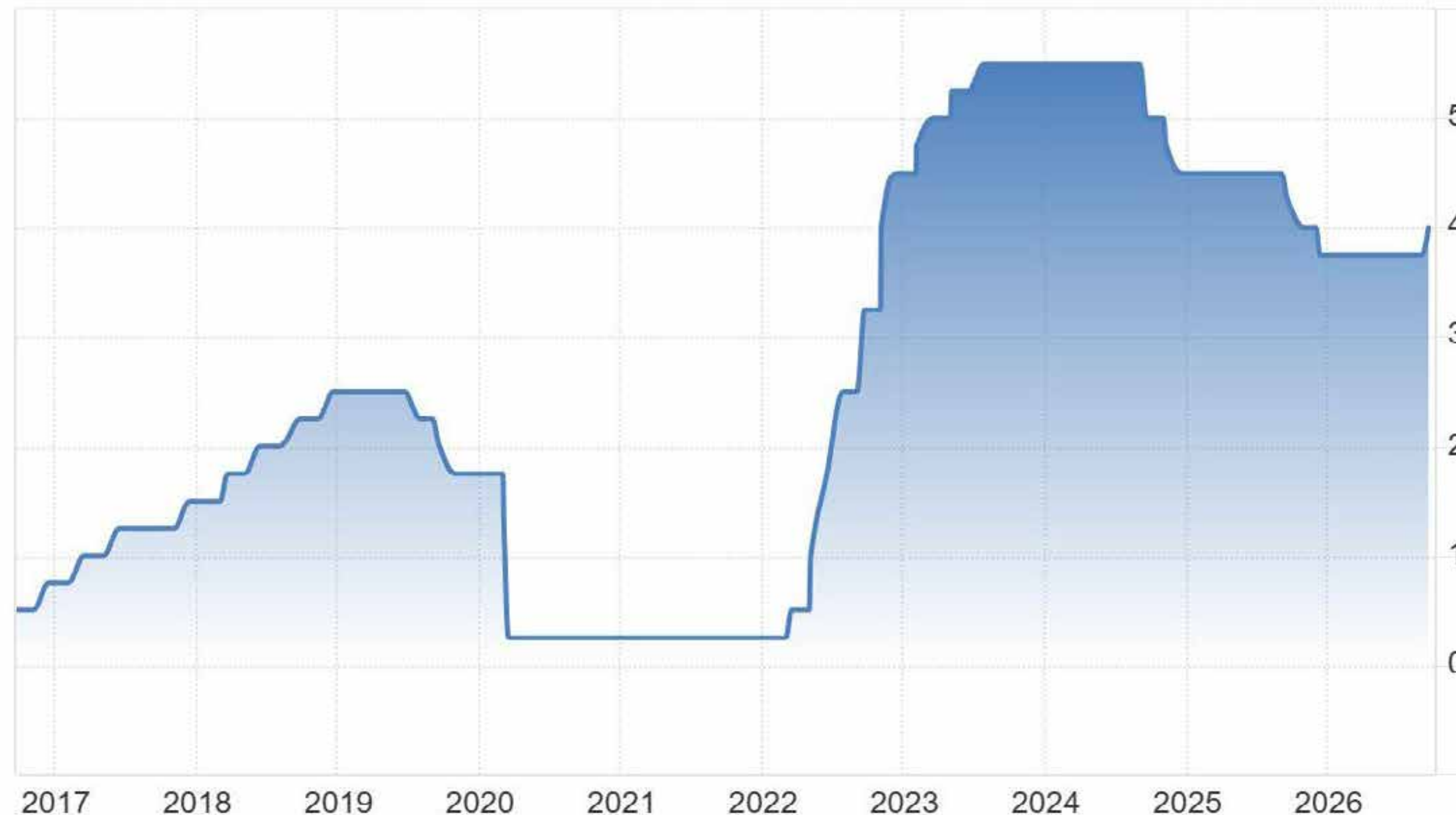
FEDERAL RESERVE BANK'S IMPACT ON COMMODITY MARKETS...



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U.S. Dollar – Federal Funds Interest Rate

United States Fed Funds Interest Rate (%)



Source: tradingeconomics.com | Federal Reserve

10 Year Chart Monthly

(12th October 2026)

Source: U.S. Federal Reserve

Federal Funds Rate: 3.75% – 4.00%

Most Fed policymakers judged that another increase in the target range for the federal funds rate would likely be appropriate by year-end. However, they emphasized that they approached each meeting with an open mind and that future decisions would depend on incoming economic data, its implications for the outlook, and the balance of risks, according to the minutes of the September 15–16, 2026 FOMC meeting. Minutes also showed that all policymakers supported raising the target range for the federal funds rate by 25bps to **3.75%-4.00%**.

Participants generally emphasized that inflation remained elevated while the labor market appeared to be near full employment, with some signs of strengthening, and that economic activity was expanding at a solid pace. Furthermore, almost all participants assessed that, while inflation risks were tilted to the upside, risks to the labor market had diminished and were now broadly balanced.

The benchmark interest rate in the United States was last recorded at 4.00%. Interest Rate in the United States is expected to be **4.25%** by the end of this quarter, according to global macro models and analysts expectations.

In the long-term, the United States Fed Funds Interest Rate is projected to trend around **4.25%** in 2027 and **4.00%** in 2028, according to our econometric models.

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Federal Reserve Bank's Impact on Commodity Markets



U.S. Dollar Index (DXY)

45 Year History – Monthly, Nearby

The U.S. Dollar Index tracks the strength of the dollar against a basket of major currencies. **DXY** was originally developed by the U.S. Federal Reserve in 1973 to provide an external bilateral trade-weighted average value of the U.S. dollar against global currencies. U.S. Dollar Index goes up when the U.S. dollar gains "strength" (value), compared to other currencies. The following six currencies are used to calculate the index:

[Euro \(EUR\)](#) 57.6% weight

[Japanese yen \(JPY\)](#) 13.6% weight

[Pound sterling \(GBP\)](#) 11.9% weight

[Canadian dollar \(CAD\)](#) 9.1% weight

[Swedish krona \(SEK\)](#) 4.2% weight

[Swiss franc \(CHF\)](#) 3.6% weight

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Federal Reserve Bank's Impact on Commodity Markets

The primary objectives of the **U.S. Federal Reserve Board (FRB)** are legally defined by a congressional mandate often referred to as the **Dual Mandate**.

The Dual Mandate & Core Responsibilities

Maximum Employment

- Targeting the highest level of employment the economy can sustain without triggering inflation.
- Monitoring structural, cyclical, and frictional unemployment rates.

Price Stability

- Maintaining a long-run **inflation target of 2%** (measured by the Personal Consumption Expenditures price index).
- Preserving the purchasing power of the U.S. Dollar.
- **Moderate Long-Term Interest Rates:**
 - Fulfilling this third, implicit objective by successfully balancing employment and price stability.

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Federal Reserve Bank's Impact on Commodity Markets

Macro-Economic Dynamics of Fed Rate Adjustments

Economic Metric	Impact of Fed Rate Hikes (Tightening)	Impact of Fed Rate Cuts (Easing)
Value of the US Dollar	Strengthens (Appreciates) <ul style="list-style-type: none">• Higher yields attract foreign yield-seeking capital.• Increases global demand for USD-denominated assets.	Weakens (Depreciates) <ul style="list-style-type: none">• Lower yield spreads prompt capital outflows.• Reduces global demand for the greenback.
Foreign Exchange (FX) Rates	USD Appreciates vs. Foreign Currencies <ul style="list-style-type: none">• The exchange rate shifts; foreign currencies buy fewer dollars.	USD Depreciates vs. Foreign Currencies <ul style="list-style-type: none">• Foreign currencies strengthen relative to the dollar.
U.S. Export Competitiveness	Decreases <ul style="list-style-type: none">• American commodities become more expensive for international buyers.	Increases <ul style="list-style-type: none">• American products become cheaper and more attractive abroad.
U.S. Import Competitiveness	Increases <ul style="list-style-type: none">• Foreign goods become cheaper for U.S. buyers, widening the trade deficit.	Decreases <ul style="list-style-type: none">• Imported goods and raw materials become more expensive domestically.



STRATEGIC OUTLOOK AND INSTITUTIONAL CONCLUSIONS...



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Strategic Outlook and Institutional Conclusions

The 2026–27 marketing year highlights a structural paradox in modern American agriculture: exceptional productivity that results in financial strain for producers. The combination of high yields and stagnant grain storage capacity has shifted the economic burden from agronomic risk to logistical execution and financial management.

For the Midwest economy, this transition means that regional profitability will depend heavily on the performance of the logistics network. Minimizing regional basis damage requires keeping rail corridors clear, maintaining steady river freight movement, and avoiding severe weather disruptions.

Over the long term, the agricultural sector must address structural bottlenecks by reinvesting in commercial and on-farm storage assets or adjust to an environment where localized crop gluts become a recurring challenge for farm income and credit stability.



DISCUSSION & QUESTION...





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