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# The Future of LLS

## Louisiana benchmark should move to Gulf Coast at LOOP.

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### Morningstar Commodities Research

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### Data Sources for This Publication

U.S. Energy Information Administration  
CME Group  
U.S. Census  
To discover more about the data sources used, [click here](#).

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### Texport Boom

U.S. crude exports continue to boom. Weekly average shipments so far in 2018 are 1.5 million barrels/day, up from an annual average 1.1 mmb/d in 2017, according to the Energy Information Administration. Most of the new exports are shipped from Gulf Coast ports in Texas and Louisiana, with the Lone Star state dominating the picture, accounting for a monthly average 85% of exports by volume in 2017, according to U.S. Customs. But Louisiana has strong advantages, including existing benchmark-grade Light Louisiana Sweet and the only currently operating deep-water port that can load a very large crude carrier for export. In this third note of our series on Louisiana crude flows, we discuss Louisiana's changing focus toward the crude export market and the future of regional benchmark LLS.

### Previously on Louisiana Crude

The previous notes in this series ("[Capline Empties as Louisiana Crude Market Evolves](#)" and "[Empty Capline Signals Changing Louisiana Crude Flows](#)") provide an overview of Louisiana's crude supply/demand balance over the past 13 years. The focus of crude flows has always been to serve Louisiana refineries and ship excess supplies north on the Capline pipeline to the Midwest. The 1.2 mmb/d Capline pipeline is running close to empty now that domestic shale and Canadian pipeline imports serve Midwest refining needs. Regional crude trading has previously been centered at the origin of Capline in St. James, Louisiana, which has 38 million barrels of storage and pipeline connections to offshore and onshore production as well as imports. But with Capline no longer needed to feed the Midwest, incremental flows of offshore Gulf of Mexico and Texas shale production coming into Louisiana are bound instead for export markets. During 2017, most of these exports were shipped from St. James on the Mississippi River using smaller tankers. But the Louisiana Offshore Oil Port has recently been converted to facilitate exports in 2 million-barrel VLCCs, providing impetus to move the center of gravity of Louisiana crude trading and exports to the Gulf Coast.

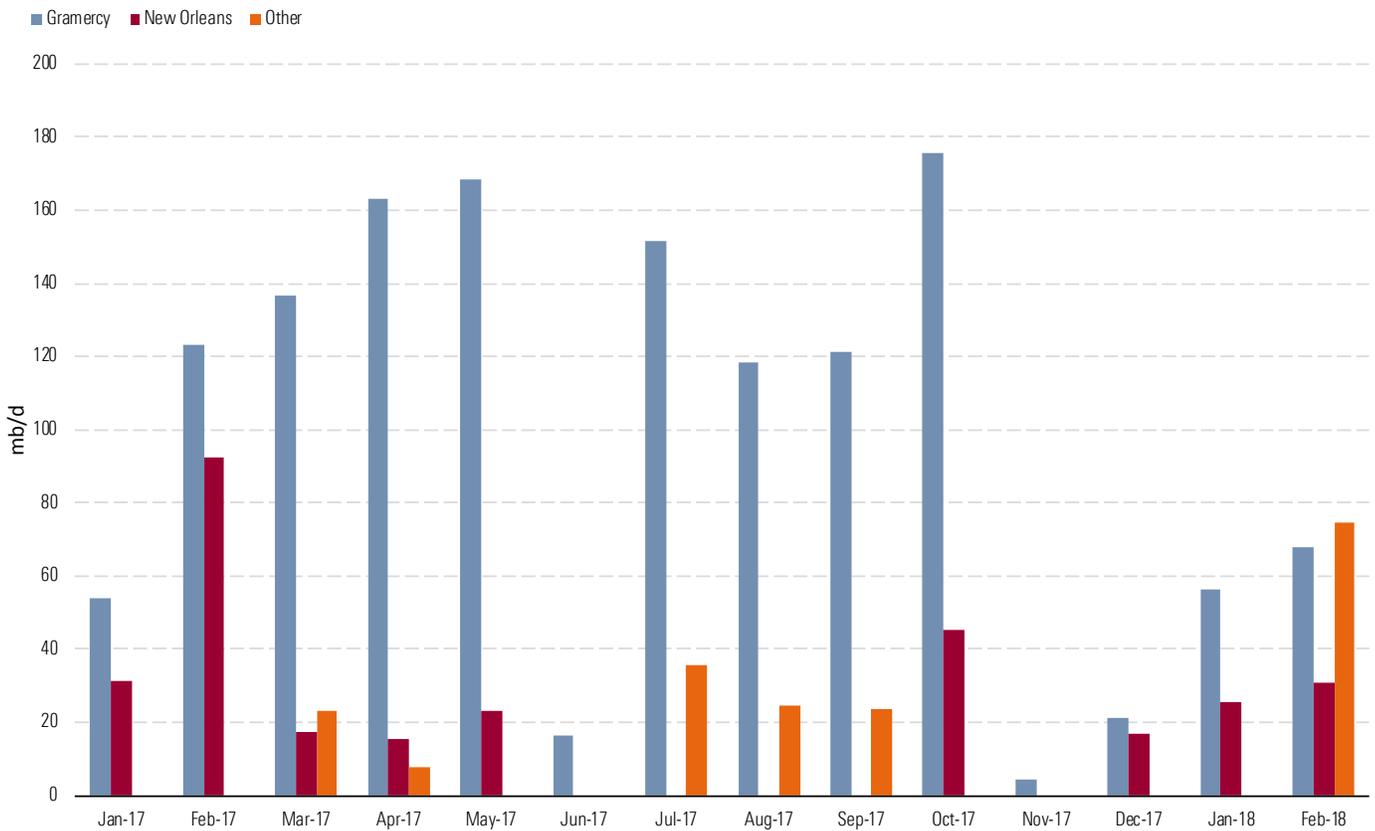
### LOOP Infrastructure

To this end, we expect future flows of crude in Louisiana to be centered at the LOOP terminal rather than the somewhat redundant St. James hub. LOOP is linked directly to 72 million barrels of cavern and above-ground storage onshore at Clovelly, Louisiana. Clovelly storage already accommodates incoming Gulf of Mexico production and imports as well as tankers delivering shale crude from Corpus Christi, Texas. However, apart from a southbound lateral to the Shell Midstream Partners Zydeco pipeline between Houma, Louisiana, and Clovelly, all the existing pipelines at Clovelly flow inland away from the port, many of them north to St. James. That means infrastructure development is needed to reverse

these flows before LOOP can really take off as an export center. Nevertheless, the startup of LOOP exports this year has already had an impact on shipments.

Exhibit 1 shows monthly crude exports from Gramercy, Louisiana (close to St. James, blue columns), as well as New Orleans area ports (red columns) and other Louisiana ports (orange columns) between January 2017 and February 2018, according to U.S. Customs. The data shows Gramercy shipped a monthly average 80% of Louisiana crude exports during 2017, dropping to 39% during February 2018 when LOOP shipped its first VLCC export cargo of Gulf of Mexico Mars crude (included in the "other" column). Exports from Gramercy are constrained by the small 700 thousand-barrel Aframax vessel size that Mississippi River ports can accommodate compared with VLCCs at LOOP, but until pipelines can ship more domestic crude into LOOP, significant exports will continue to originate at Gramercy.

**Exhibit 1** Crude Exports From Louisiana Ports



Source: U.S. Customs, Morningstar

### **LOCAP Reversal Key**

As discussed in the [second](#) note in our series, Capline's owners are soliciting interest in reversing the pipeline to flow south from Patoka, Illinois, to St. James. The expectation is that this reversal will happen after 2020 when additional Canadian crude supplies become available at Patoka via Enbridge's Line 3 pipeline expansion (see our October 2017 note "[Cautious Capline Proposal Reflects Low Demand](#)"). Reversing Capline would leave Canadian barrels stranded at St. James unless the Capline partners also reverse the 1.7 mmb/d LOCAP pipeline that currently ships crude north to St. James from LOOP. A LOCAP reversal would provide a southbound route to the LOOP terminal for barrels currently exported from St. James. The LOCAP reversal is therefore key to LOOP's export fortunes because it provides a large conduit to ship any excess crude at St. James south to the Louisiana coast. That includes up to 470 mb/d of crude expected to arrive in St. James by early 2019 on completion of section two of the Phillips 66, Energy Transfer, and Sunoco joint-owned Bayou Bridge pipeline between Lake Charles, Louisiana, and St. James. The Bayou Bridge will bring shale barrels from North Dakota via the Dakota Access pipeline as well as crude from the Texas Permian and Eagle Ford basins. A reversed LOCAP could also ship to LOOP any excess offshore Gulf of Mexico and local Louisiana crude production that was previously sent direct to St. James on the Shell Ship Shoal and ExxonMobil North Line pipeline systems.

### **LLS Capline**

Meantime, until LOCAP is reversed, the role of St. James as a Louisiana trading hub is shrinking along with deliveries of its benchmark crude-grade Louisiana Light Sweet. LLS is a blended crude stream with qualities defined by specifications for the Capline pipeline that include a wide API gravity range from 34 to 41 (in practice deemed by price reporting agencies like Argus at 38.5 API), sulfur 0.4% max, and various other specifics for metals content and total acid number. LLS was originally defined by Capline shippers as a blend of local Louisiana and imported crude grades that refiners could rely on to be of uniform quality. LLS contracts specified delivery at St. James. With Capline running empty, LLS trading for delivery at St. James is now redundant apart from sales to refineries fed directly by the hub. We understand that LLS barrels are now more often traded for delivery at alternative, more liquid locations such as Clovelly and Shell's Houma terminals.

### **Benchmark**

Traders have long relied on LLS as the pricing benchmark for Louisiana Gulf Coast light sweet crude. LLS prices used to be set by equivalent imported crudes such as North Sea Brent but are now set in large part by competition with West Texas shale grades in the export market. Exhibit 2 shows the premium of LLS over West Texas Intermediate crude delivered from the Permian basin to Magellan's East Houston, Texas, terminal—the Houston export benchmark. LLS typically attracts a quality premium of \$0.30-\$0.50/barrel over WTI Houston because it has a higher diesel yield, but fluctuations in prices for the two crudes otherwise reflect local supply and demand on the Louisiana and Texas sides of the Gulf Coast. For example, in the aftermath of Hurricane Harvey, LLS premiums over WTI Houston spiked up to \$1.60/barrel in October 2017 as local refiners scrambled for Louisiana supplies after Texas refineries and ports were knocked out by the storm, but they have settled back into a narrower range since January 2018 (Exhibit 2).

**Exhibit 2** LLS Premium Over WTI Houston

Source: CME Group, Morningstar

**Desirable Export Grade**

Even as LLS trades decline with Capline flows, the grade could still have a strong future setting prices for Louisiana crude exports. Should LOCAP be reversed, there's a good argument for repurposing LLS as a Clovelly delivered light sweet export grade. One of the Clovelly storage caverns, known as Segregation 20, is already devoted to light sweet crude, but its specification is less well known in the market than LLS. We see three strong advantages to creating an export LLS grade at Clovelly/LOOP in place of Segregation 20. The first is that shippers could use the Clovelly storage tanks to blend LLS from a mixture of the shale, offshore Gulf of Mexico, and imported crudes already delivered there as well as new flows from a LOCAP reversal. The second advantage of using LLS is its well-known quality specification, which is trusted and desired by refiners. The third advantage is access to the LOOP VLCC export terminal, facilitating competitive rates for long-distance shipments to European or Asian customers.

We believe creating an LLS export grade at Clovelly/LOOP would help U.S. producers find export buyers for shale crudes that are typically of a very light quality, which makes them less desirable to refiners. These shale crudes could easily be mixed with heavier crudes from offshore Gulf of Mexico production or imports already delivered to LOOP to make the more desirable LLS blend. This would reverse declining LLS trade volume and create a viable Louisiana trading hub that levels the state's playing field against Texas competition in the booming crude export market. ■■

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