



## Promises and Perils: Port of Houston Poised for Growth

CAPT Bill Diehl USCG (Ret.), P.E., GHPB president

Federal Reserve Economic Outlook  
July 17, 2019





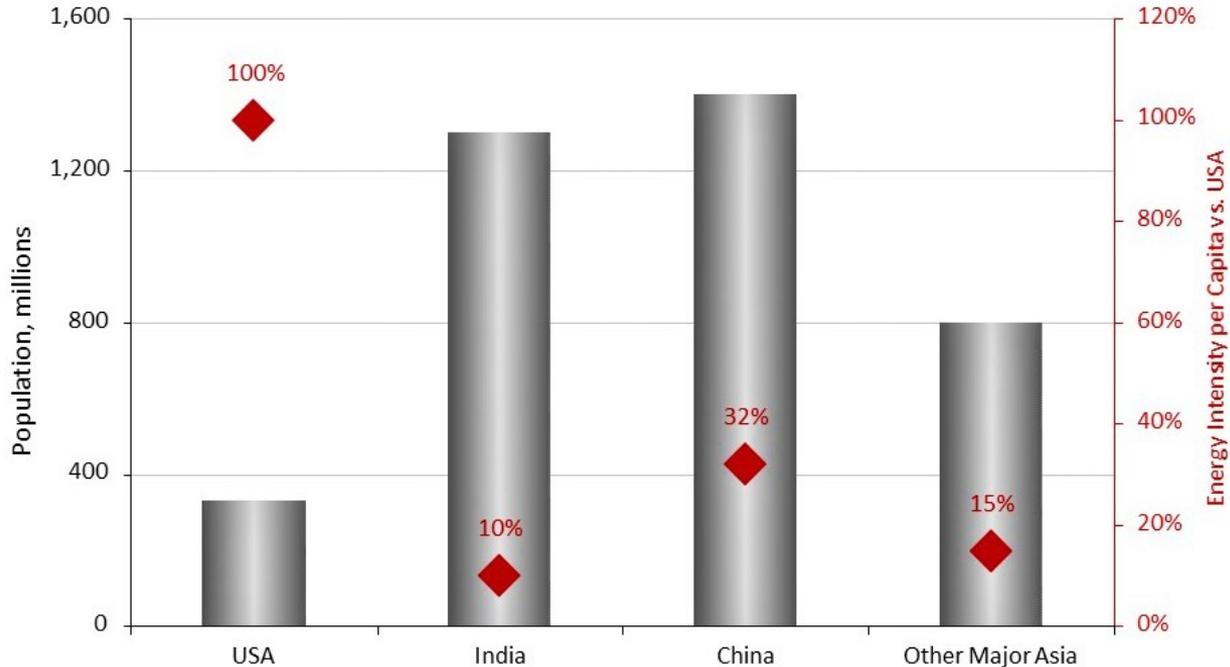


# Port of Houston



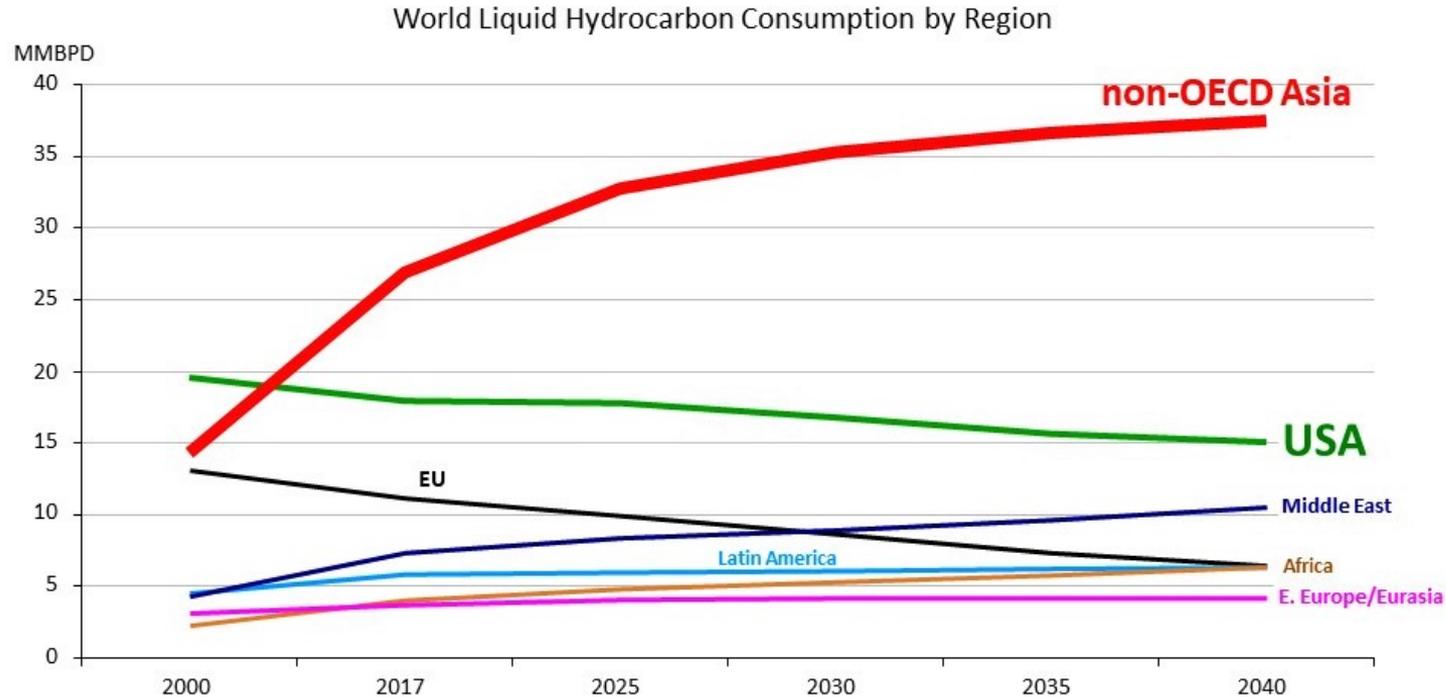
# Population and Energy Intensity

*Asia Has Room For Dramatic Growth vs. Low-Growth USA*



Source: EPD Fundamentals, World Bank

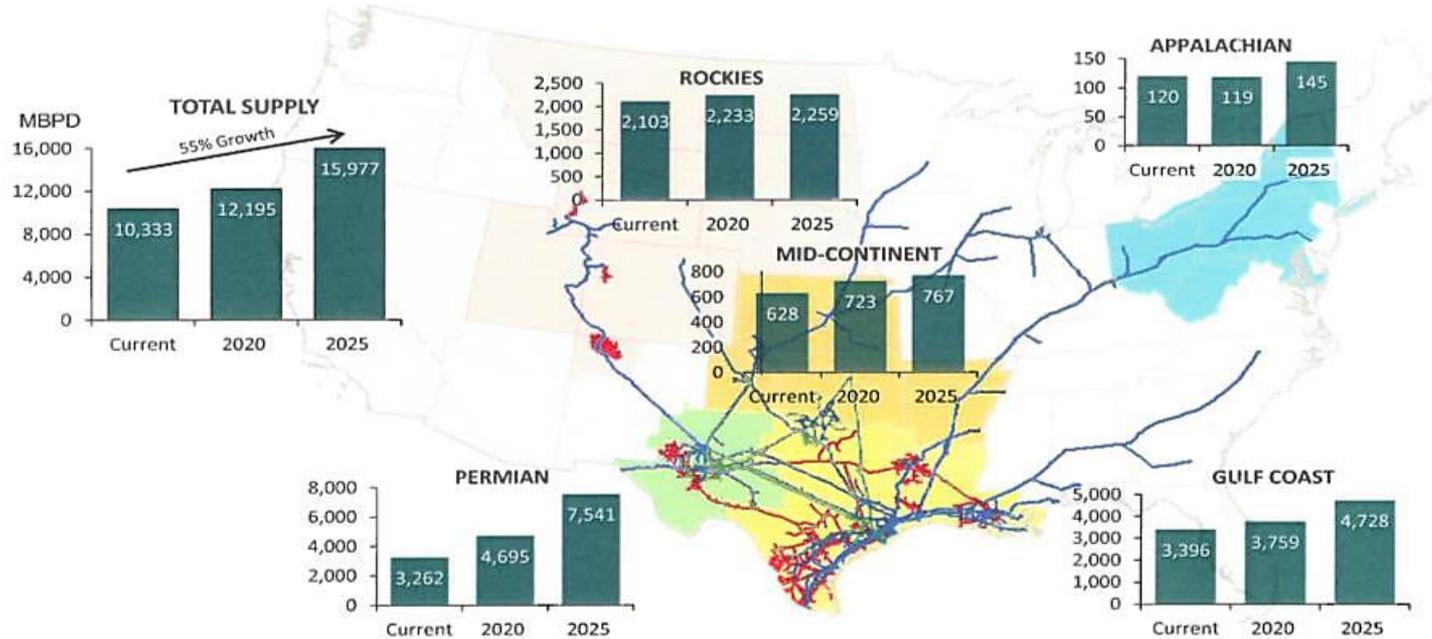
# Liquid Hydrocarbon Demand Growth: Dominated by Emerging Markets



Source: EPD Fundamentals

Source: IEA World Energy Outlook

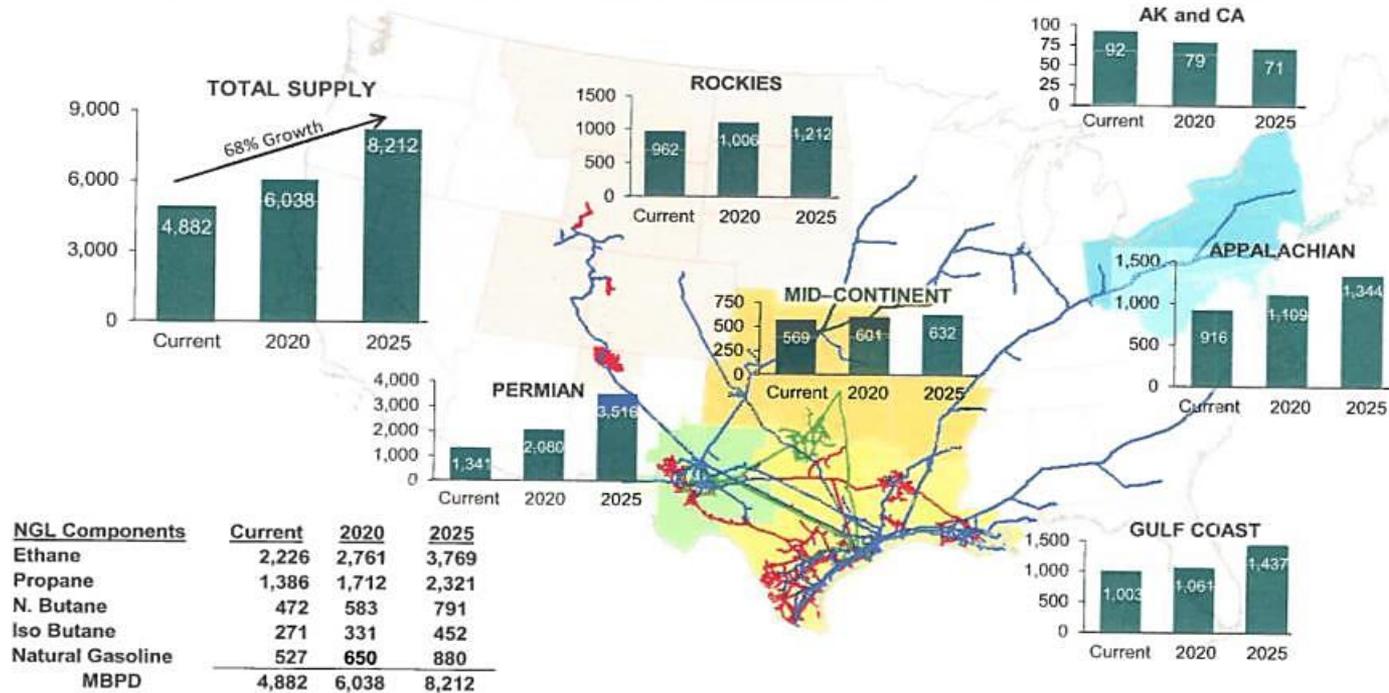
# Oil/Condensate Production Forecast by Major Basin



**More than 80% of growth is from Permian and Eagle Ford**

Source: EPD Fundamentals

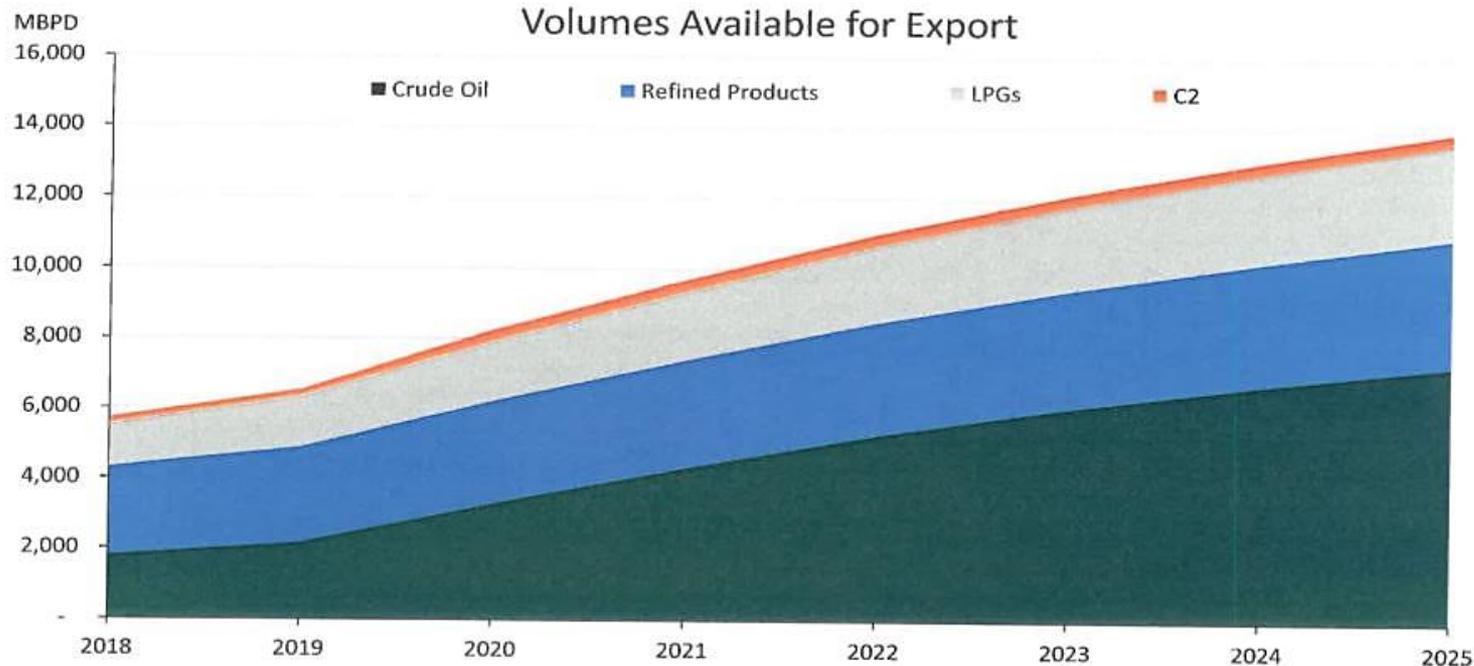
# U.S. NGL Production By Major Basin



***NGLs: About 75% of NGL growth is from Permian and Eagle Ford... destined for the Houston area***

Source: EPD Fundamentals

# Export Estimates: Total Volumes Available for Export to Triple By 2025



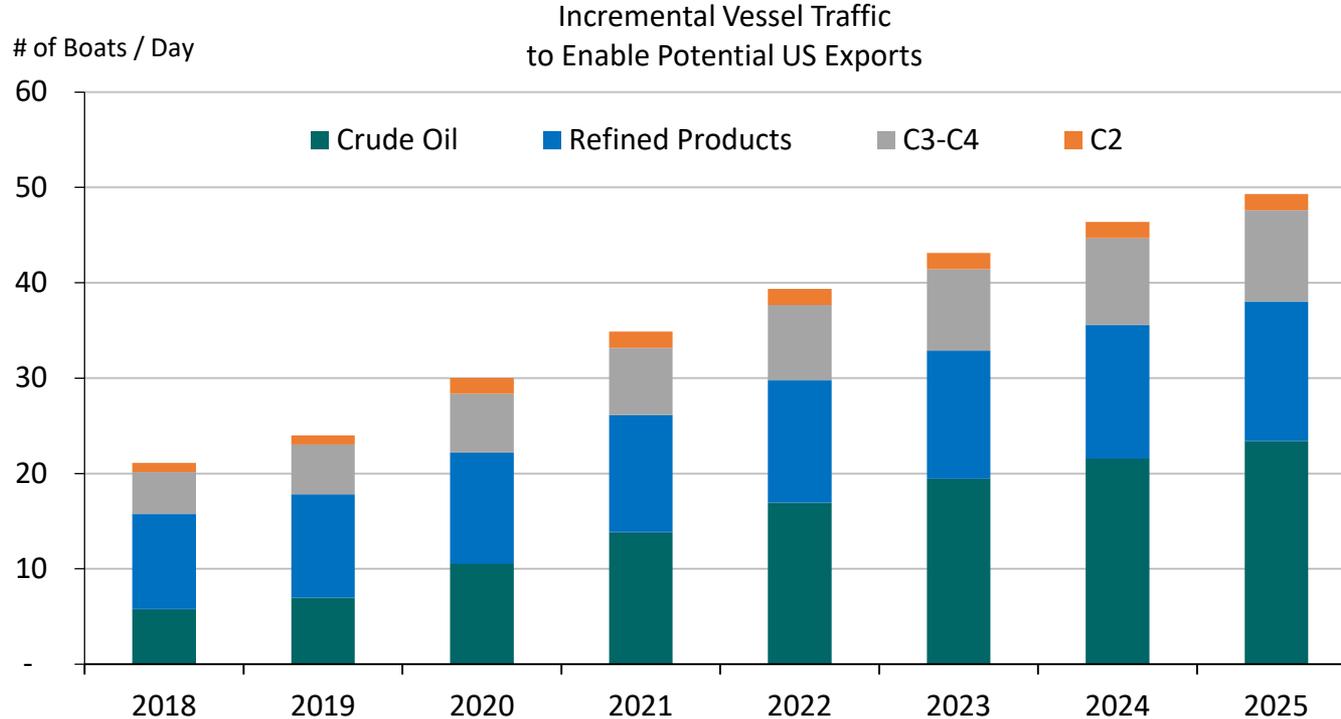
**Volumes available for export have a monetary value rising from \$0.4B/day to almost \$16 every day.  
Without adequate export capacity, the entire Hydrocarbons value chain is put at Risk!**

Source: EPD Fundamentals

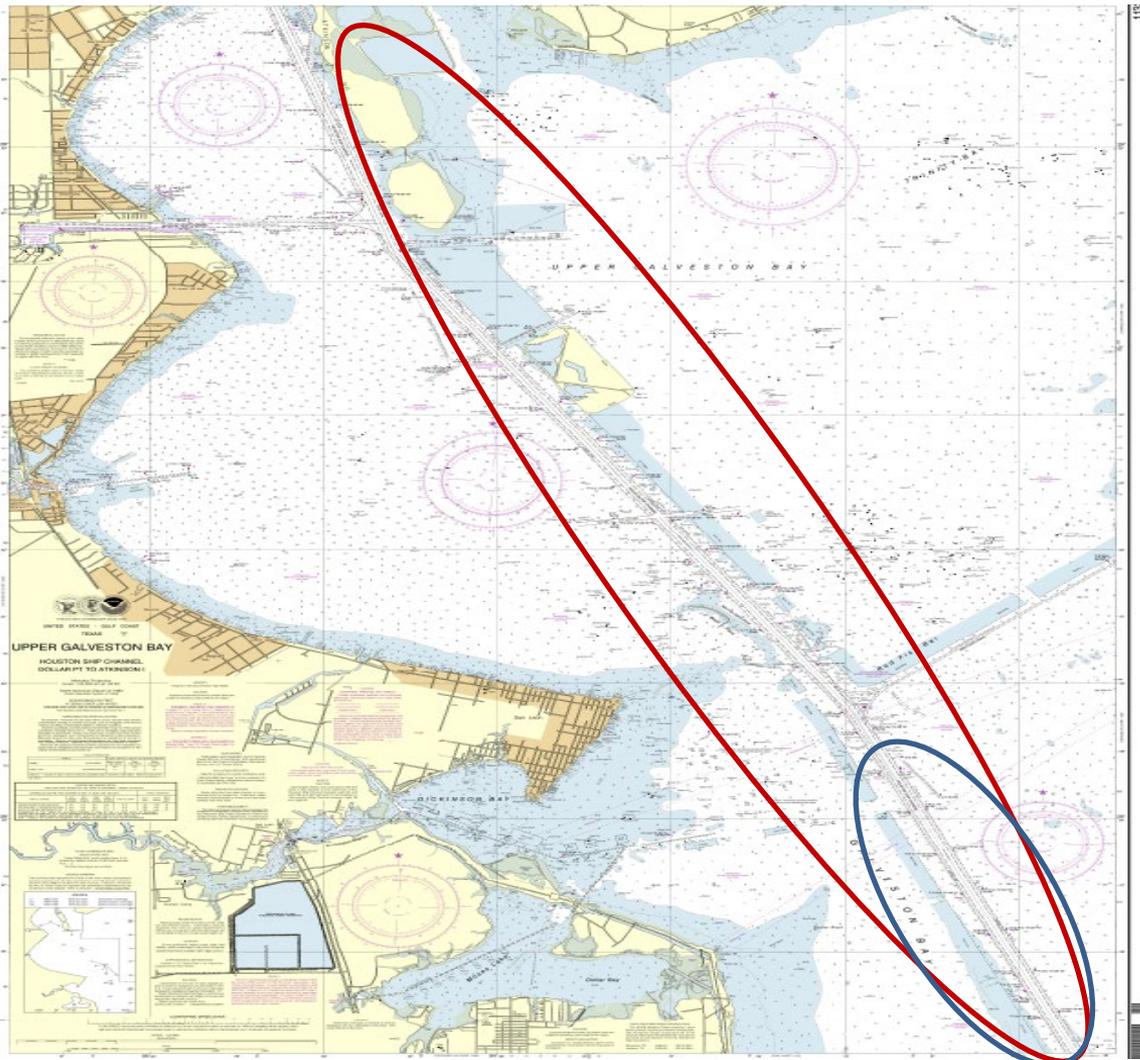
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# This Volume Growth Would Result in 2.5X Additional Ships For To Support Exports



Source: EPD Fundamentals



# Houston Ship Channel Through Galveston Bay

# Gulf Coast Private Investments Dwarfs Investments by All Other Ports

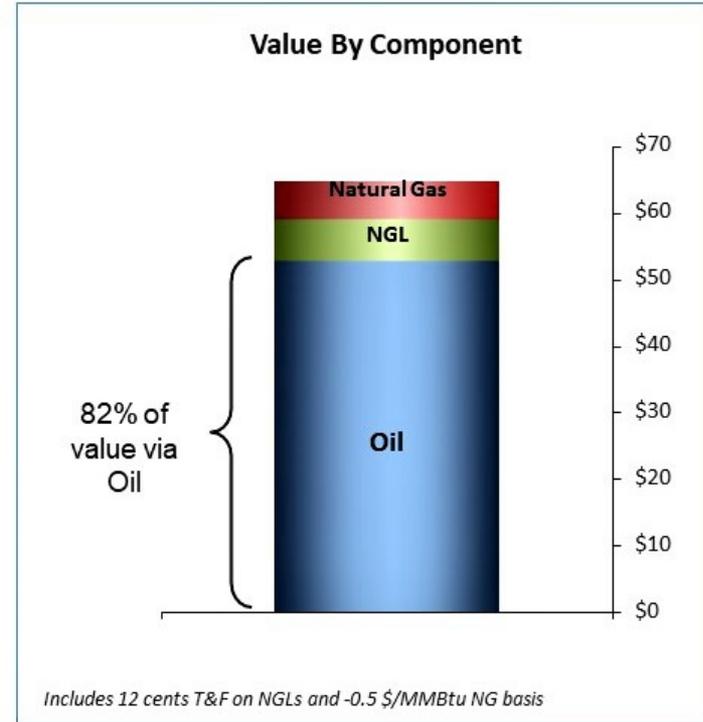
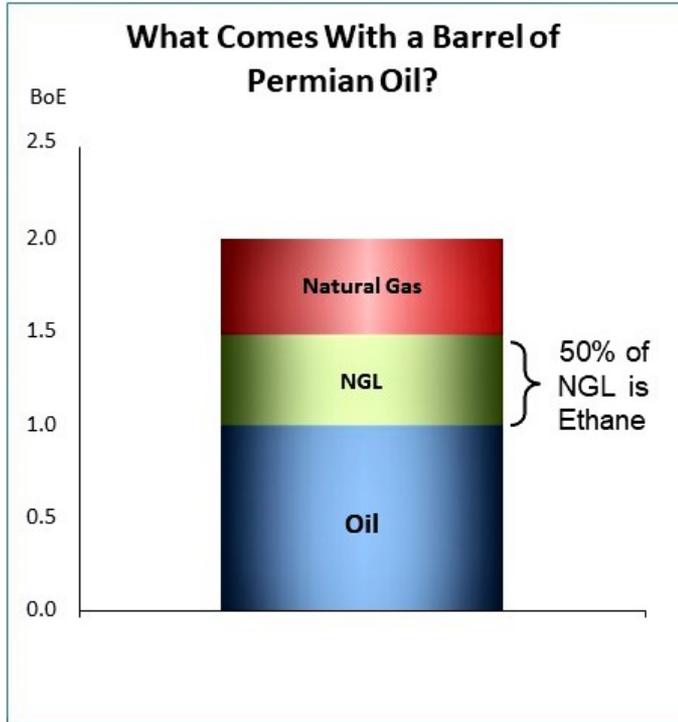
(Dollars in Billions)

| Region         | Capital Spend By Ports<br>2016-2020 | Private Sector Port Capital<br>2016-2020 |
|----------------|-------------------------------------|--|
| Great Lakes    | \$0.5                               | \$0.5                                    |
| North Pacific  | \$1.3                               | \$2.7                                    |
| North Atlantic | \$3.6                               | \$1.2                                    |
| South Pacific  | \$4.6                               | \$3.1                                    |
| South Atlantic | \$7.6                               | \$1.8                                    |
| Gulf Coast     | \$5.0                               | <b>\$122.8</b>                           |
|                | <b>\$22.6</b>                       | <b>\$132.1</b>                           |

Source: EPD Fundamentals, American Association of Port Authorities; 2016-2020 Port Planned Infrastructure Survey

***While most port's capital is driven by imports of foreign-made products, the Gulf Coast is driven by private investments supporting the U.S. Energy Revolution.***

# Permian Producer Economics are Driven by the Oil Component



Source: EPD Fundamentals

# 2019 Executive Partners

