

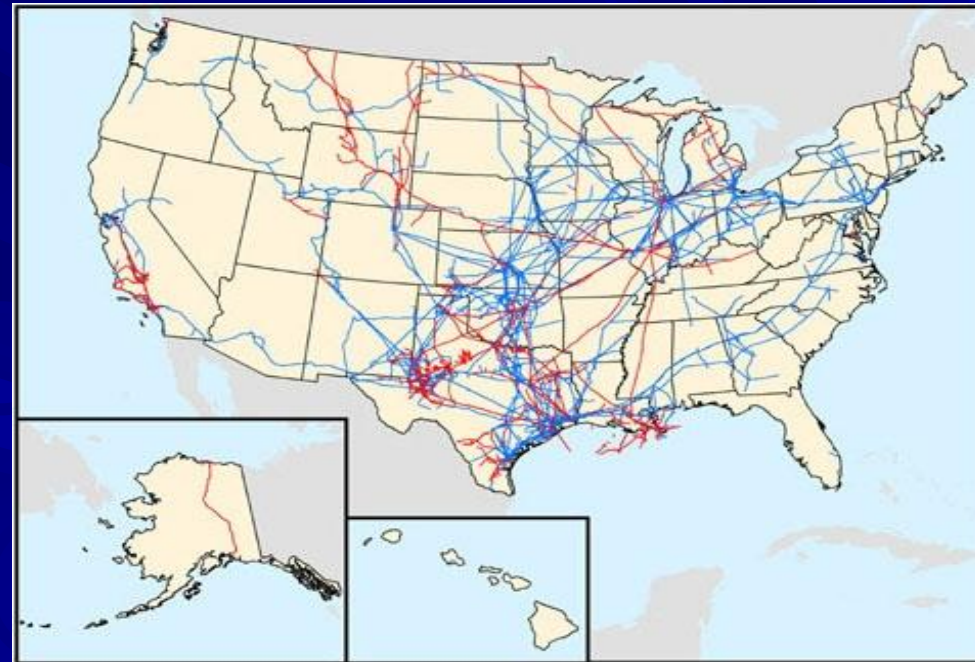
# Association of Oil Pipe Lines

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Federal Energy Regulatory Commission  
Washington, D.C.  
April, 2004

# Pipeline Infrastructure Critical to Balance Energy Supply and Demand

- Crude oil and petroleum products are supplied to major demand centers in the United States by over 200,000 miles of pipelines representing a \$31 billion investment
- Pipelines transport over 38 million barrels of crude oil, feedstocks and petroleum products each day
- 17% of the nation's freight is transported via pipelines for only 2% of the nation's freight bill



# Oil Pipeline Infrastructure

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## ■ Crude oil

- Transport crude oils from major producing basins and ports to various refining centers and/or supply hubs

## ■ Refined products

- Transport refined petroleum products, including gasoline, diesel, jet fuel and LPGs, from refineries and ports to end user markets

## ■ Other liquids

- Energy related petrochemical feedstocks transported between supply chain points

# Key Industry Challenges

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- Changes in supply and distribution patterns challenge existing industry infrastructure
- Substantial investment required to meet logistics and safety requirements
- Increased competition from alternate logistics providers
- Need regulatory environment that continues to attract investment capital

# Industry Organization

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- Major integrated oil companies
  - Primarily focused on assets that support their proprietary operations
  - Have recently divested significant number of “non-strategic” assets
- Independent refiners and producers
  - Primarily invest in infrastructure directly upstream and downstream of their operations
- Joint ventures
  - Most are formed to share investment costs of major construction initiatives
- Independent pipelines
  - Proliferation of master limited partnerships reflects the need for new sources of capital
- Regardless of organizational structure, most pipelines are governed under the Interstate Commerce Act



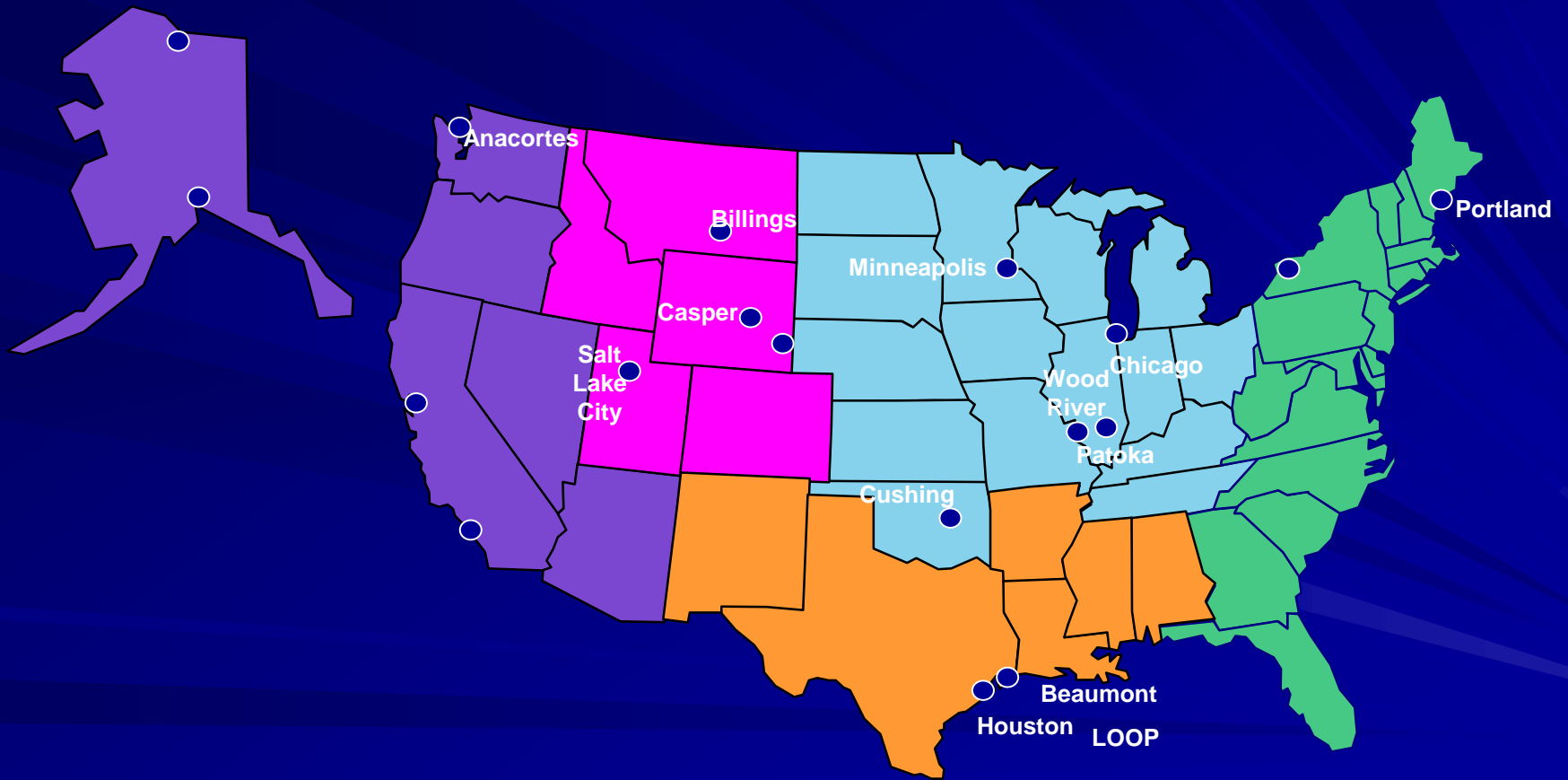
# Independent Pipeline Ownership

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- Pipelines traditionally owned by large integrated companies
- Congress provided tax incentives in mid-1980's to stimulate energy infrastructure investment
- Formation of MLPs has provided new sources of capital for energy infrastructure development
  - MLPs primarily owned by individual investors
- MLPs solely focused on increasing throughput and capacity
  - Benefits consumers by increasing transportation options and supply to regional markets

# Supply and Demand Regions

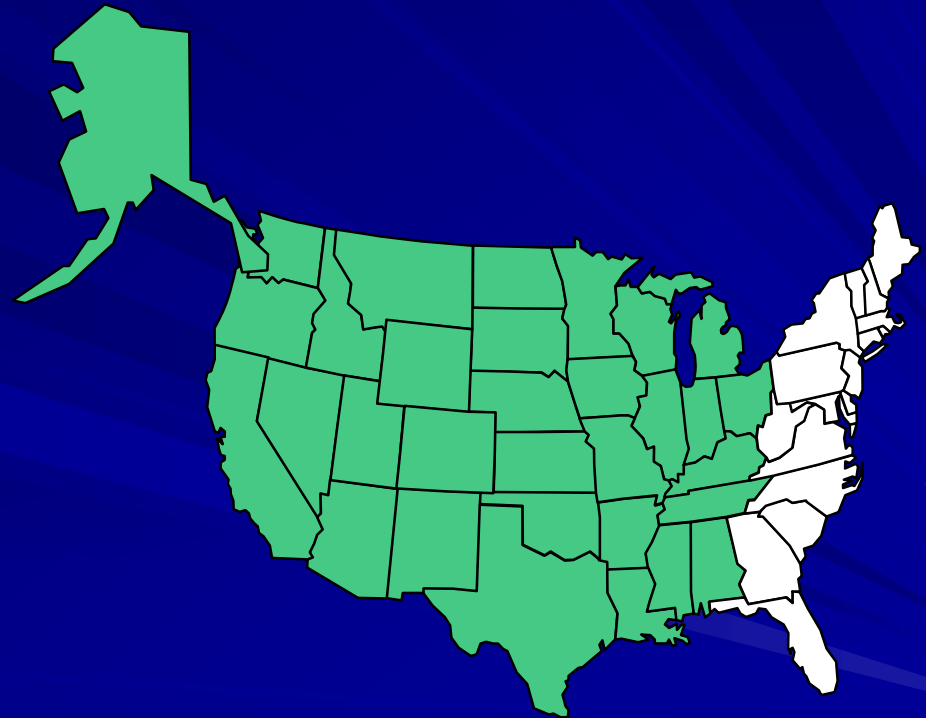
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# East Coast (PADD 1)

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- Highest petroleum consumption rates in the United States
- Highly dependent on imports for both crude oil and refined products supply
  - ~100% crude oil
  - 24% of refined products
  - Largest recipient of supplies from other regions
- South Atlantic region experiencing higher population growth rates than the slower growth New England region
- Largest concentration of oil-heated homes

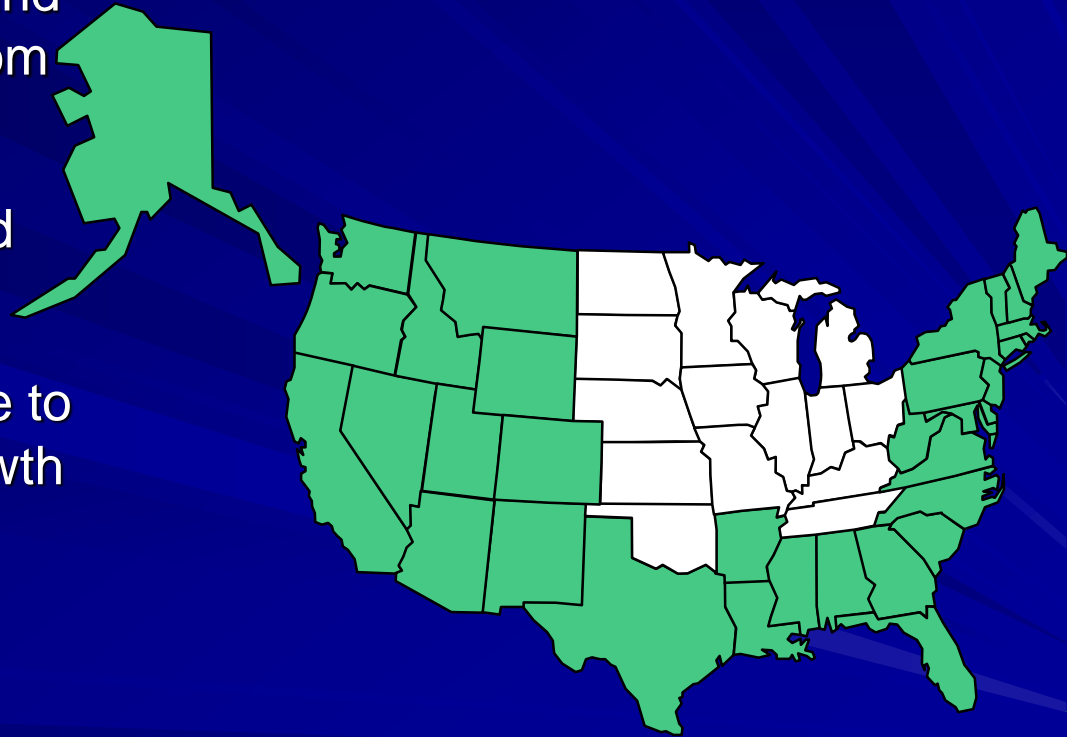




# Midwest (PADD 2)

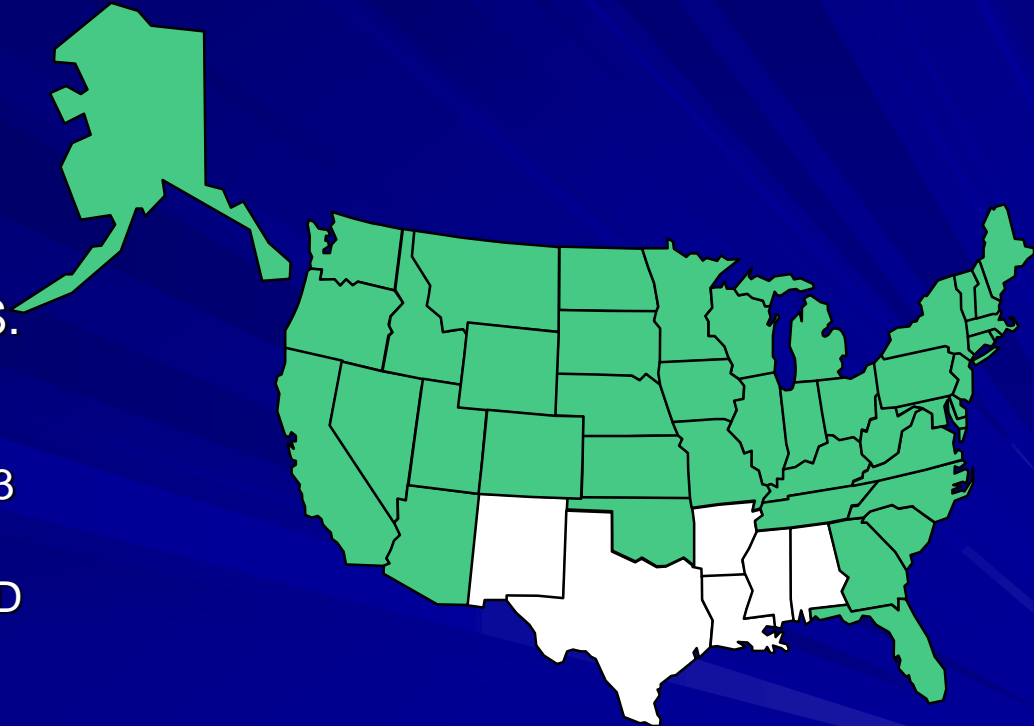
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- Dependent on crude oil imports (mostly Canadian) and refined products supplies from other regions
- 2<sup>nd</sup> highest crude oil demand region in the U.S.
- Chronically short market due to combination of demand growth and refinery closures



# Gulf Coast (PADD 3)

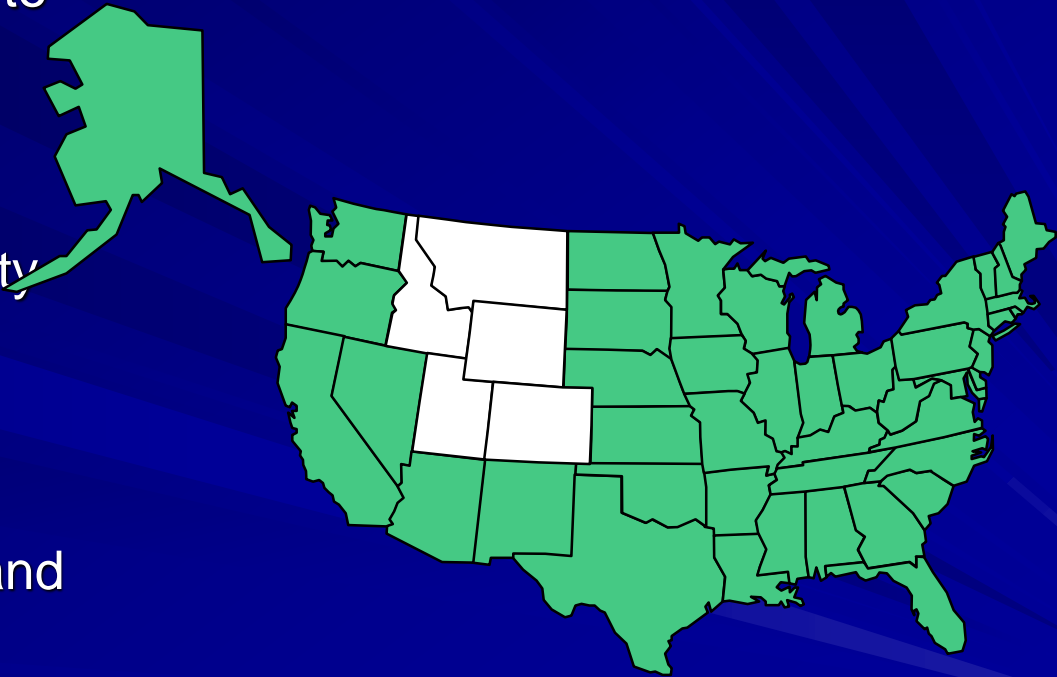
- PADD 3 is the origin of 90% of crude oil and 80% of the refined products shipped between U.S. regions
- Largest crude oil and refined products supply region in the U.S.
  - Only two OPEC nations (Saudi Arabia and Iran) have higher crude oil production than PADD 3
  - No foreign nation has higher refined product output than PADD 3
- Pipeline and terminal capacity in the Houston refining center constrained



# Rocky Mountains (PADD 4)

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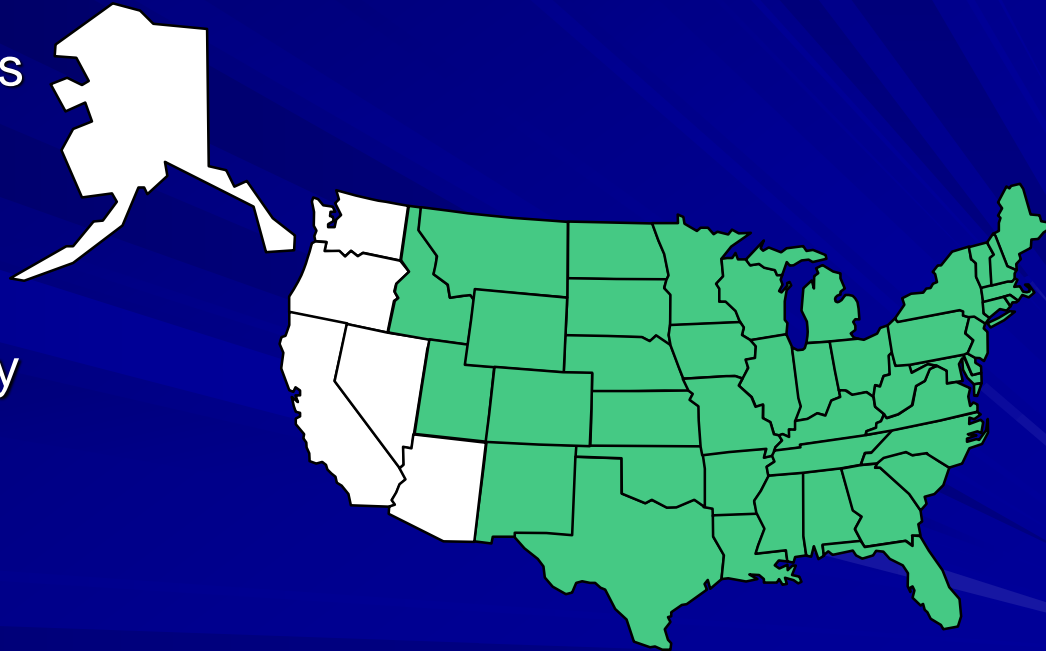
- PADD II and III have historically supplied market to augment local production
- Small, but growing market
- Minimal demand for specialty products
- Infrastructure not well developed due to long distances, limited markets and high costs



# West Coast (PADD 5)

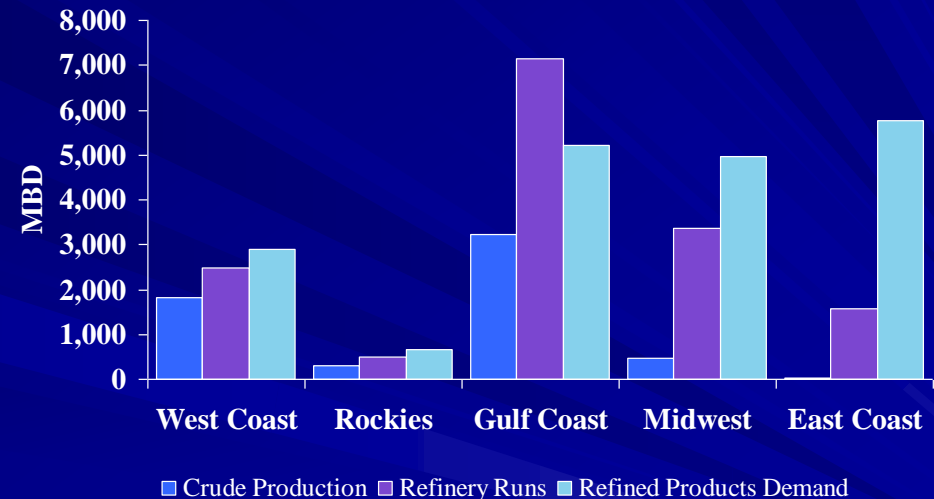
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- West Coast traditionally isolated from other U.S. supply regions
- Growing population continues to increase demand for products
- Alaska North Slope crude oil an important source of supply for West Coast refineries
- CARB rules isolate market, limiting supply options

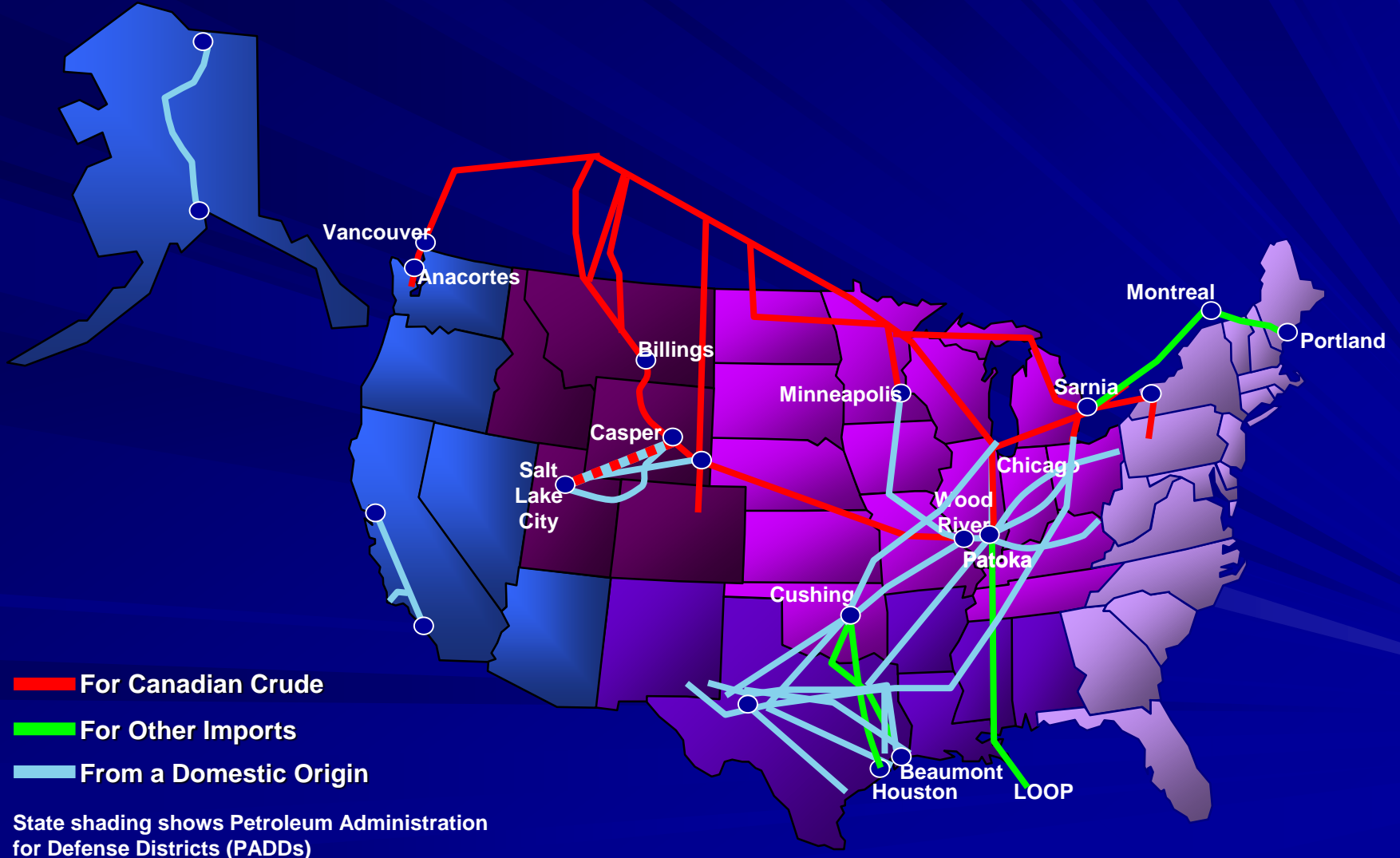


# Supply and Demand Overview

- Over 50% of all U.S. crude oil demand exists in the Gulf Coast region
- Production from the Gulf Coast region supplies the majority of Midwest and East Coast refined products deficit
  - New England region becoming increasingly dependent on foreign imports as South Atlantic region continues to grow
  - Midwest deficit expected to grow as regional refineries struggle to keep up with demand
- West Coast and Rockies regions fairly well balanced between regional refined products supply and demand



# Major Crude Oil Trunklines



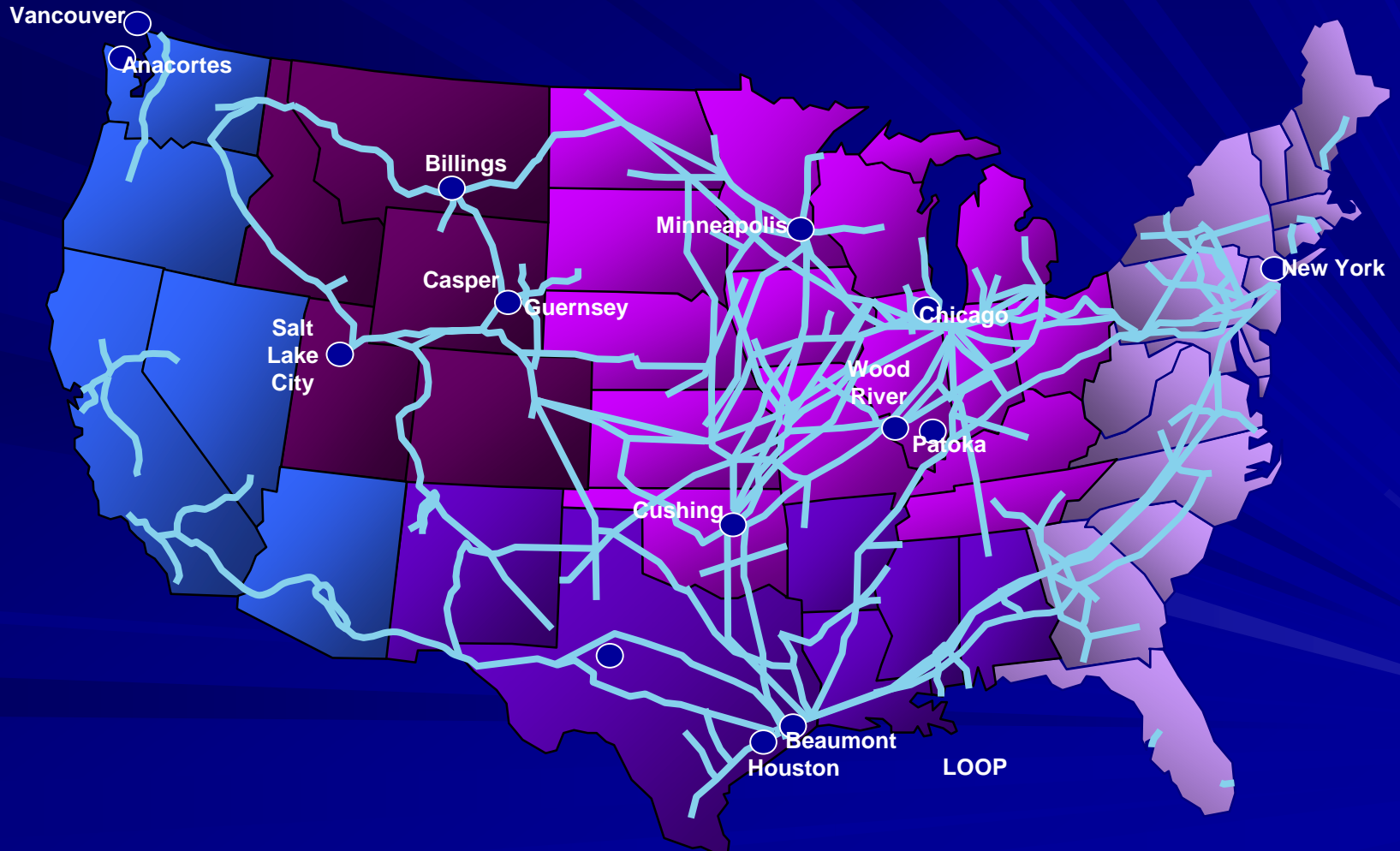


# Crude Oil Supply Challenges

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- Declining production of domestic on-shore crude oil
- Increased production from U.S. OCS, Canada, and other foreign countries
- Changing refinery crude slates and some refinery closures
- Adaptation of infrastructure to accommodate supply changes

# Major Refined Product Pipelines



# Product Supply Challenges

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- Demand growth resulting in “tight” pipeline capacity in the Midwest and Gulf Coast markets
- Proliferation of fuel grades straining pipeline and terminal infrastructure
- Lack of capacity tempers market liquidity resulting in fuel shortages and retail price spikes

# Pipeline Industry Economic Challenges

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- Aging and limited logistics infrastructure
- Challenging environment for permitting
- Soaring expenditures for pipeline integrity programs
- Competition from non-regulated entities
  - Refiners
  - Barges, trucks, and rail cars

# Summary

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- The oil pipeline industry has responded well to supply and distribution challenges and integrity management issues
- Future challenges will require significant investment in pipeline infrastructure
- Continued rate flexibility will be paramount to attracting the capital necessary to successfully meet these challenges