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LNG Imports and the Development of the North American Pipeline Grid

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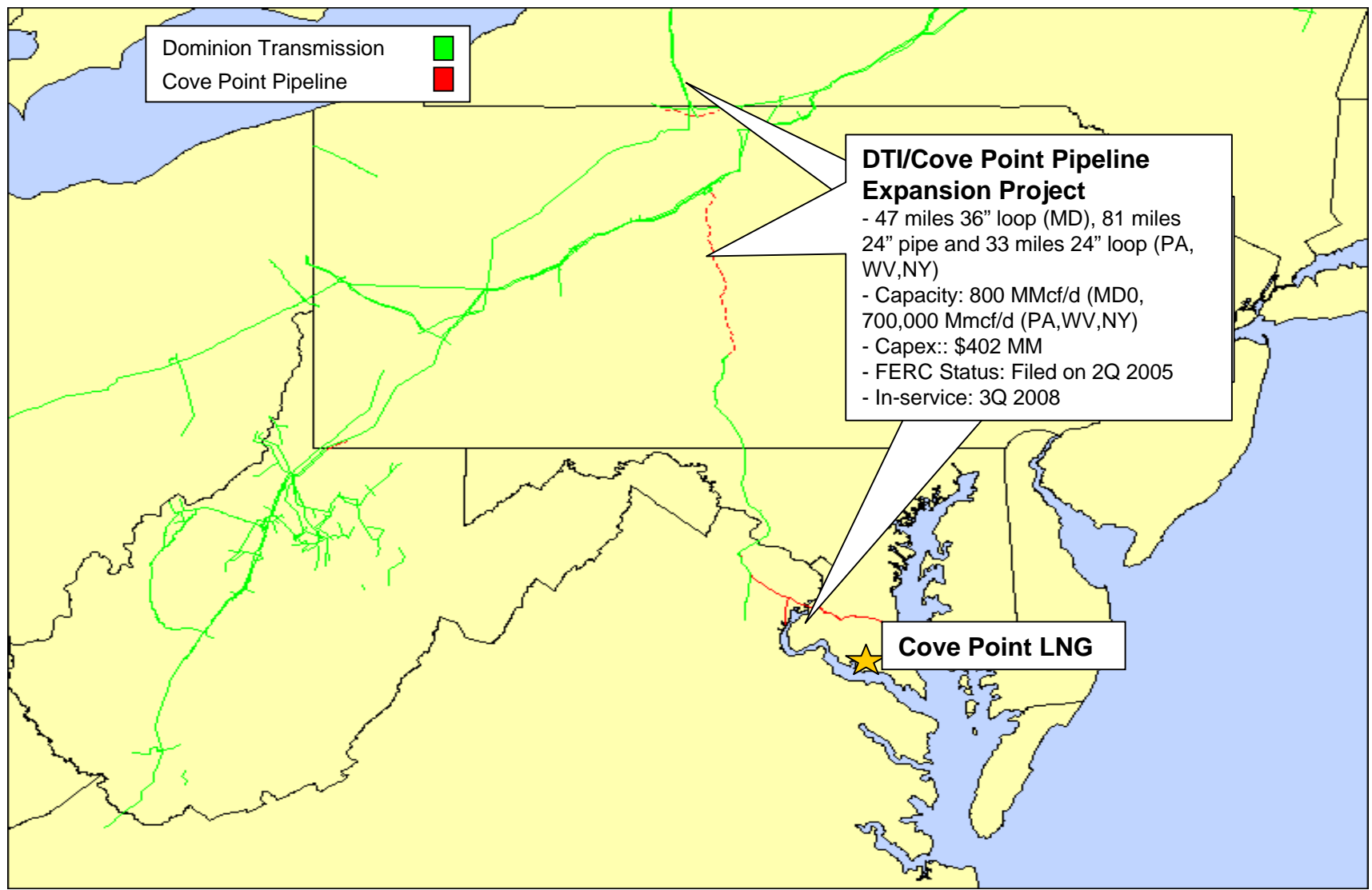


Pipeline development trends driven by LNG imports

- Producer integration to trading hubs
- Netback enhancement investments
- Less likely infrastructure projects
- Renewed impetus for storage

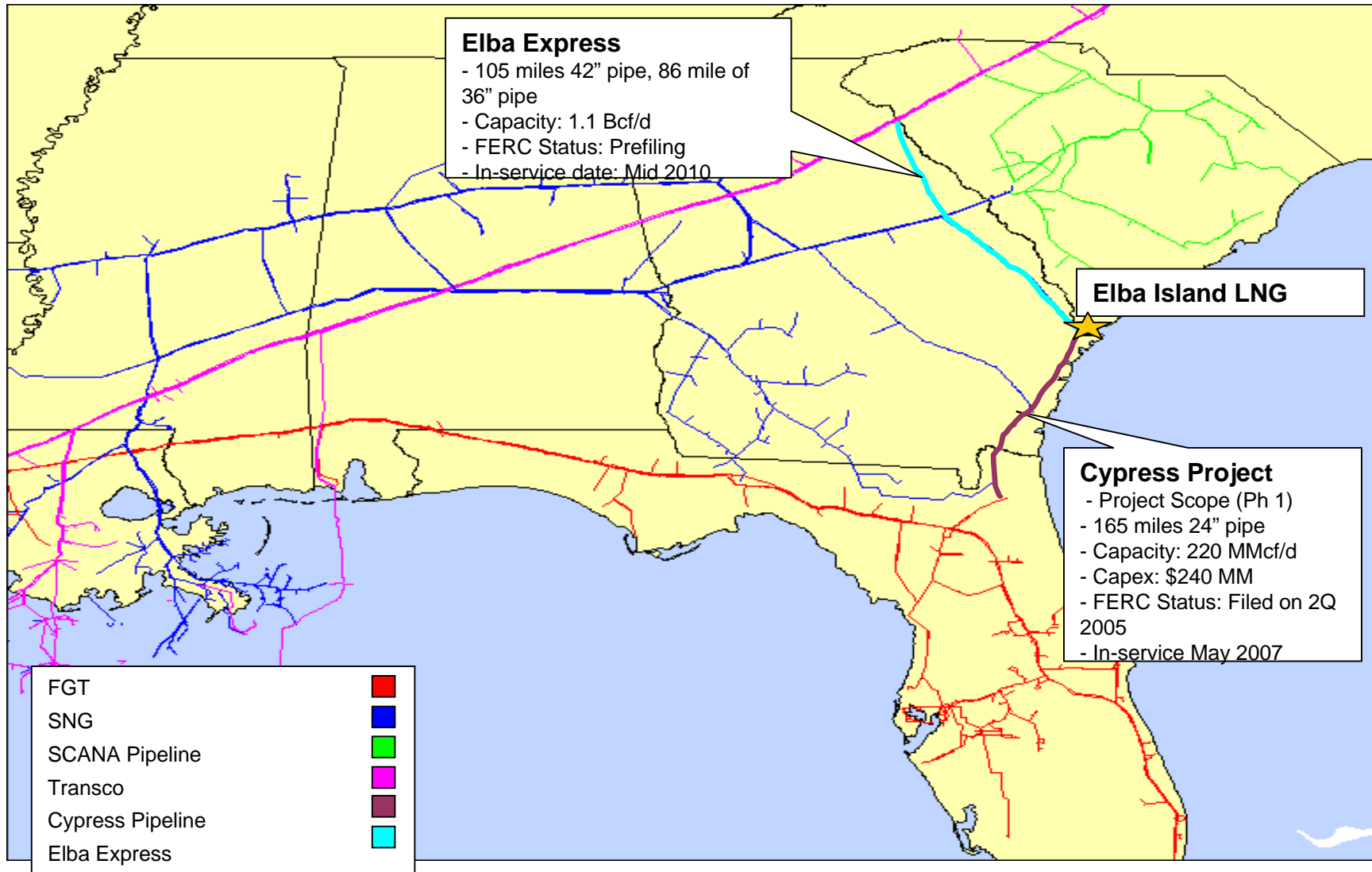


Producer Integration to Trading Hubs – Cove Point



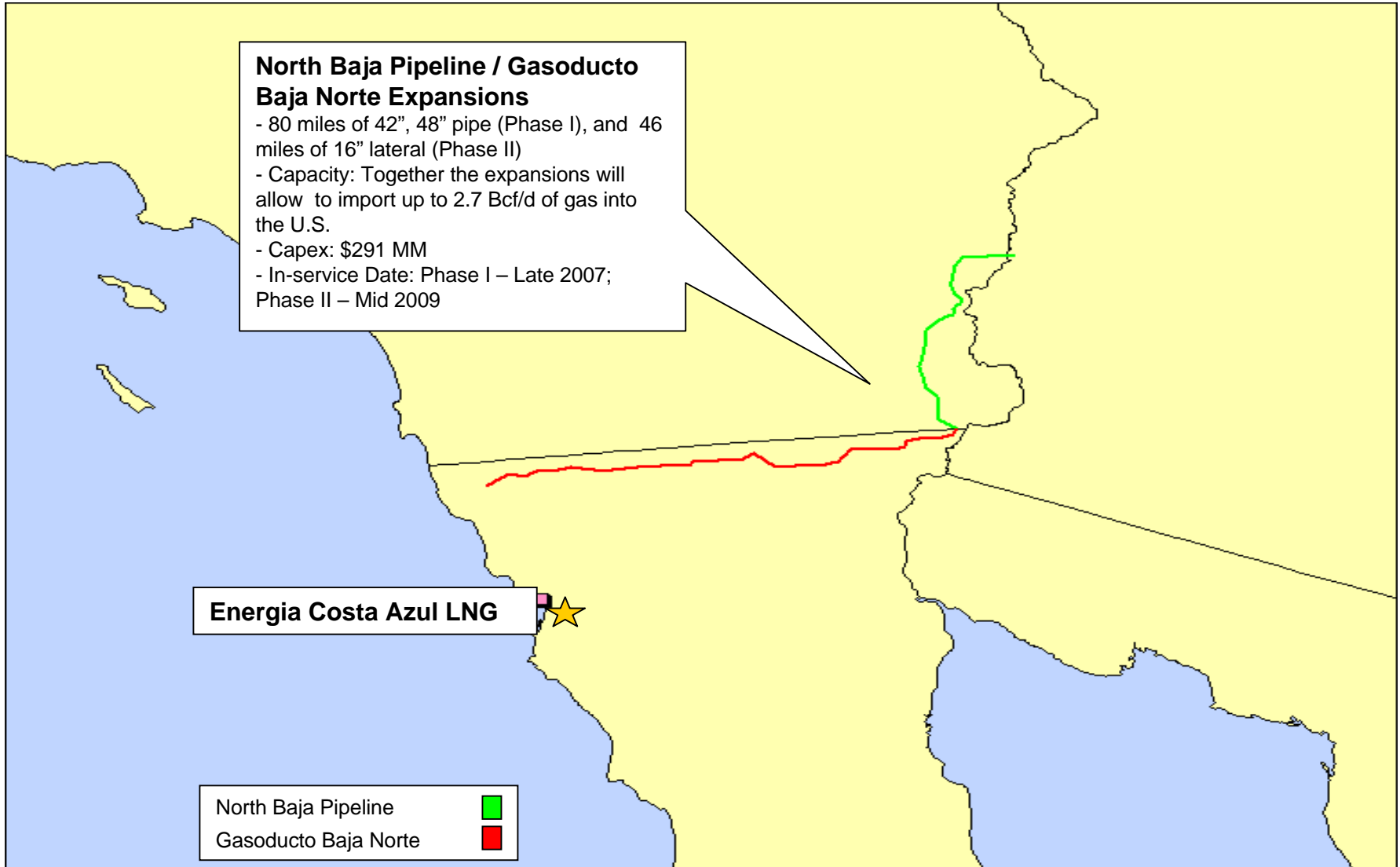


Producer Integration to Trading Hubs – Elba Island



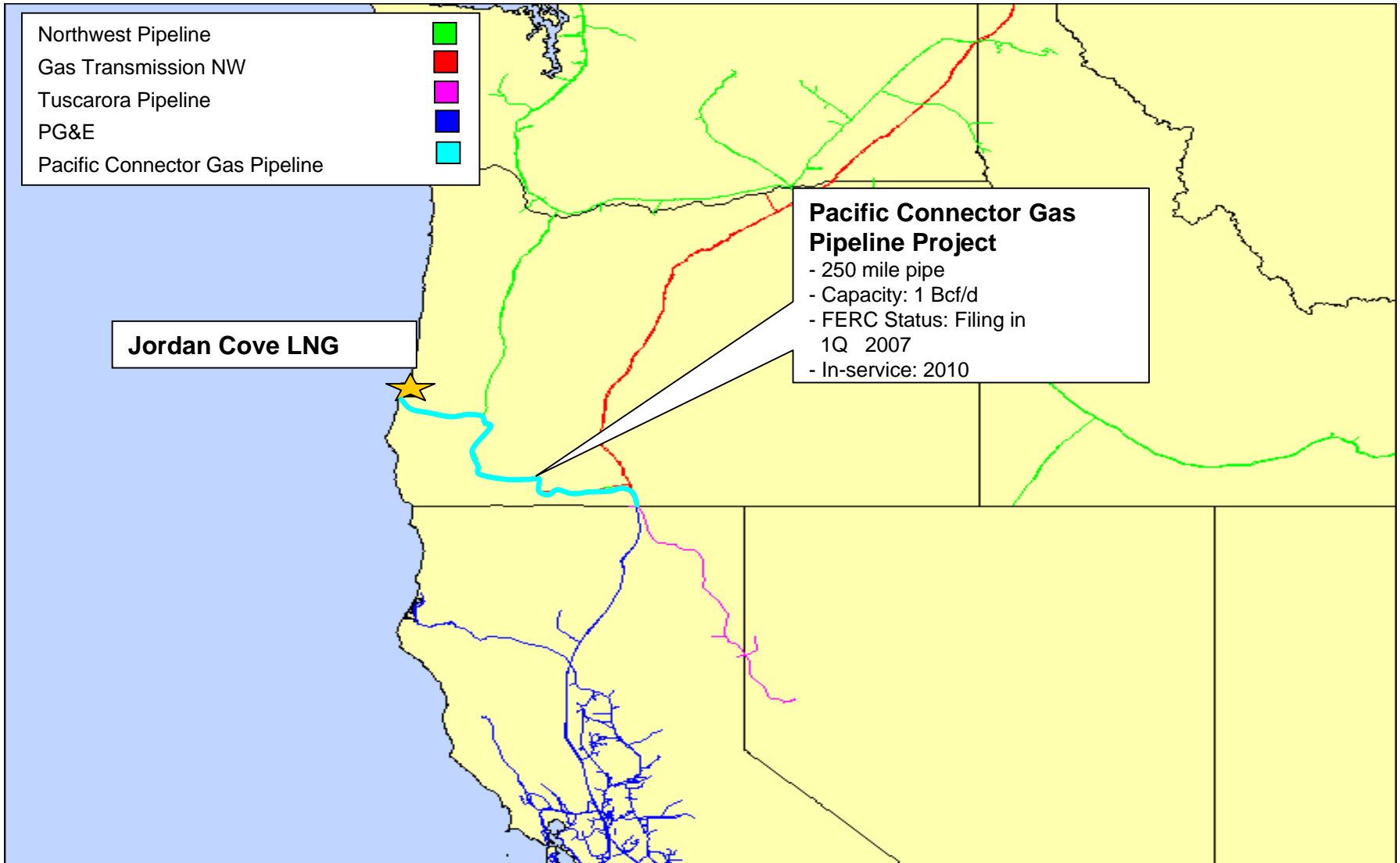


Producer Integration to Trading Hubs – Energia Costa Azul





Producer Integration to Trading Hubs – Jordan Cove LNG





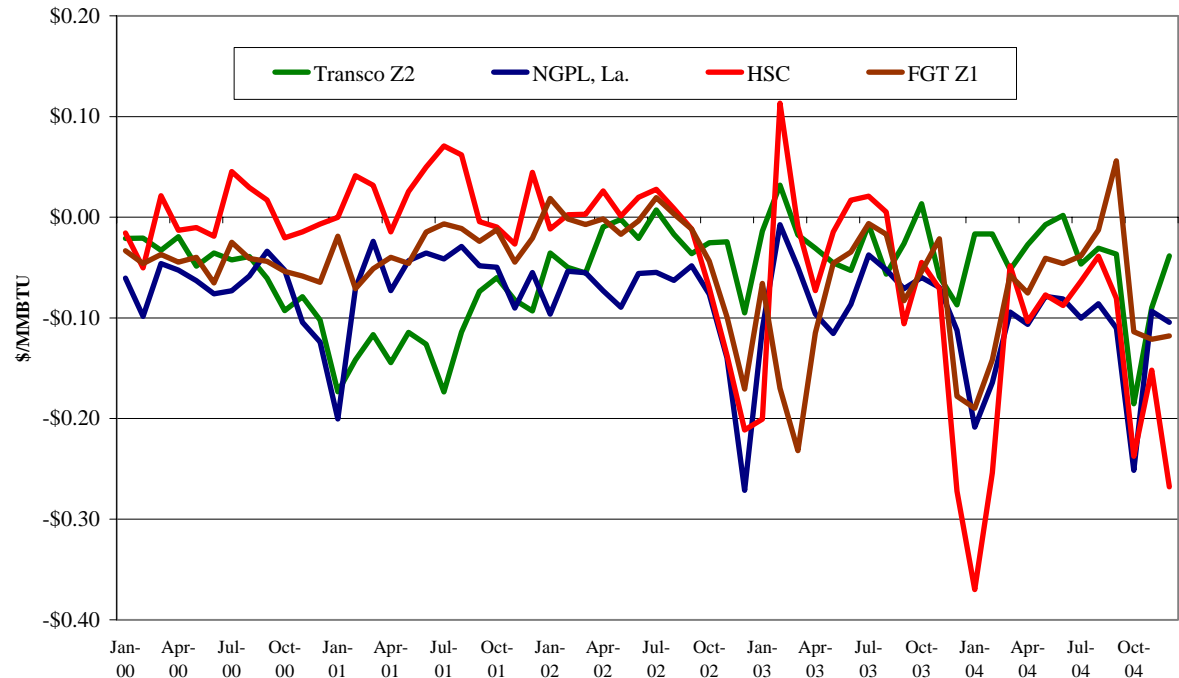
Header strategies to enhance netbacks

- The total arbitrage value depends on operational characteristics – such as capacity and cost, as well as the price correlation between pricing points.
- The intrinsic value is captured by choosing the highest-valued delivery point at the beginning of each month.
- The realization of the extrinsic value depends on the market liquidity and portfolio management practice.

Potential Header Value

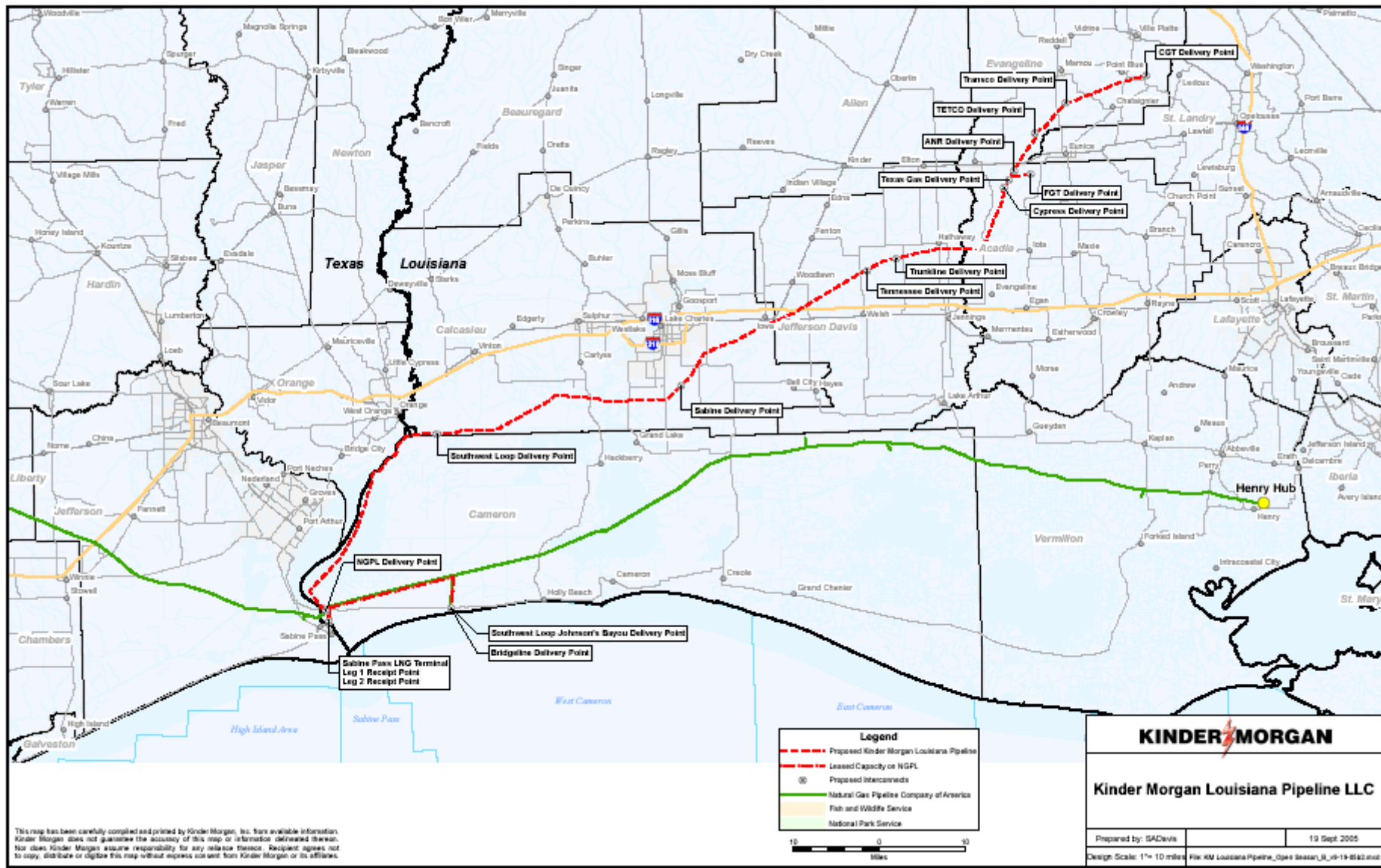
Year	Intrinsic \$/Dth/d	Extrinsic \$/Dth/d
2002	0.00	0.05
2003	0.11	0.02
2004	0.28	0.01
Average	0.13	0.03

Historical Basis to Henry Hub



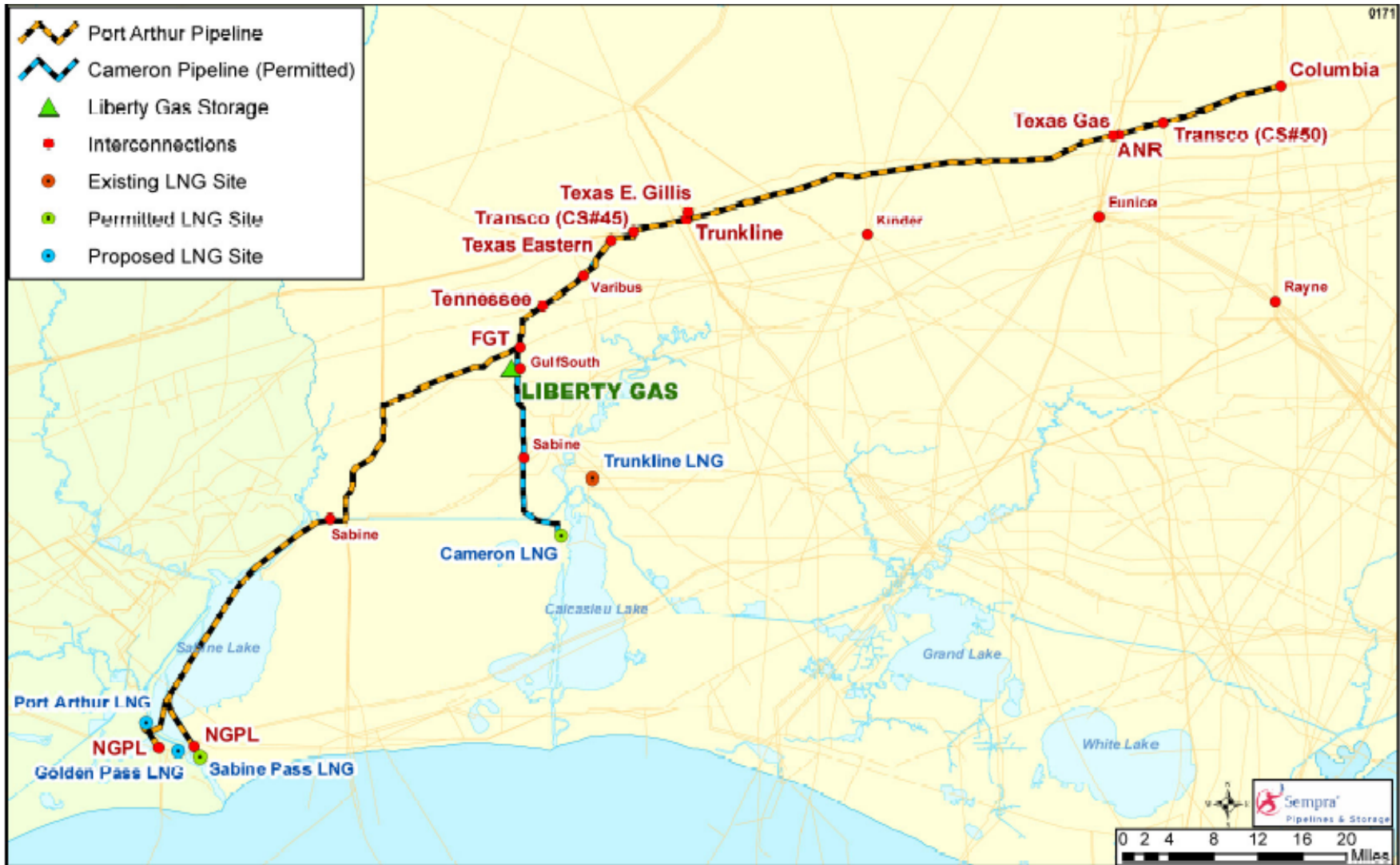


Header System - Kinder Morgan Louisiana Pipeline



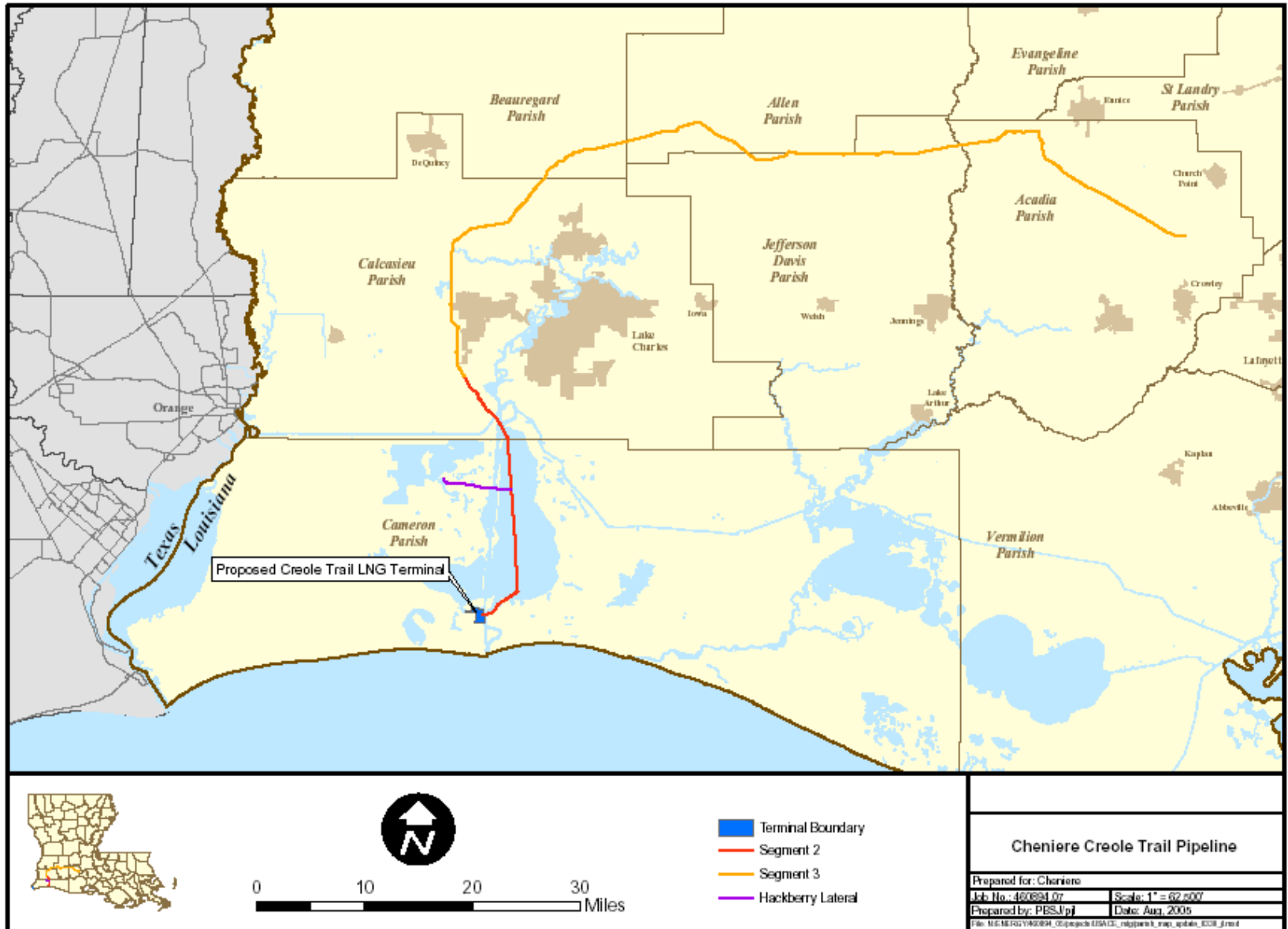


Header System – Sempra Port Arthur Pipeline



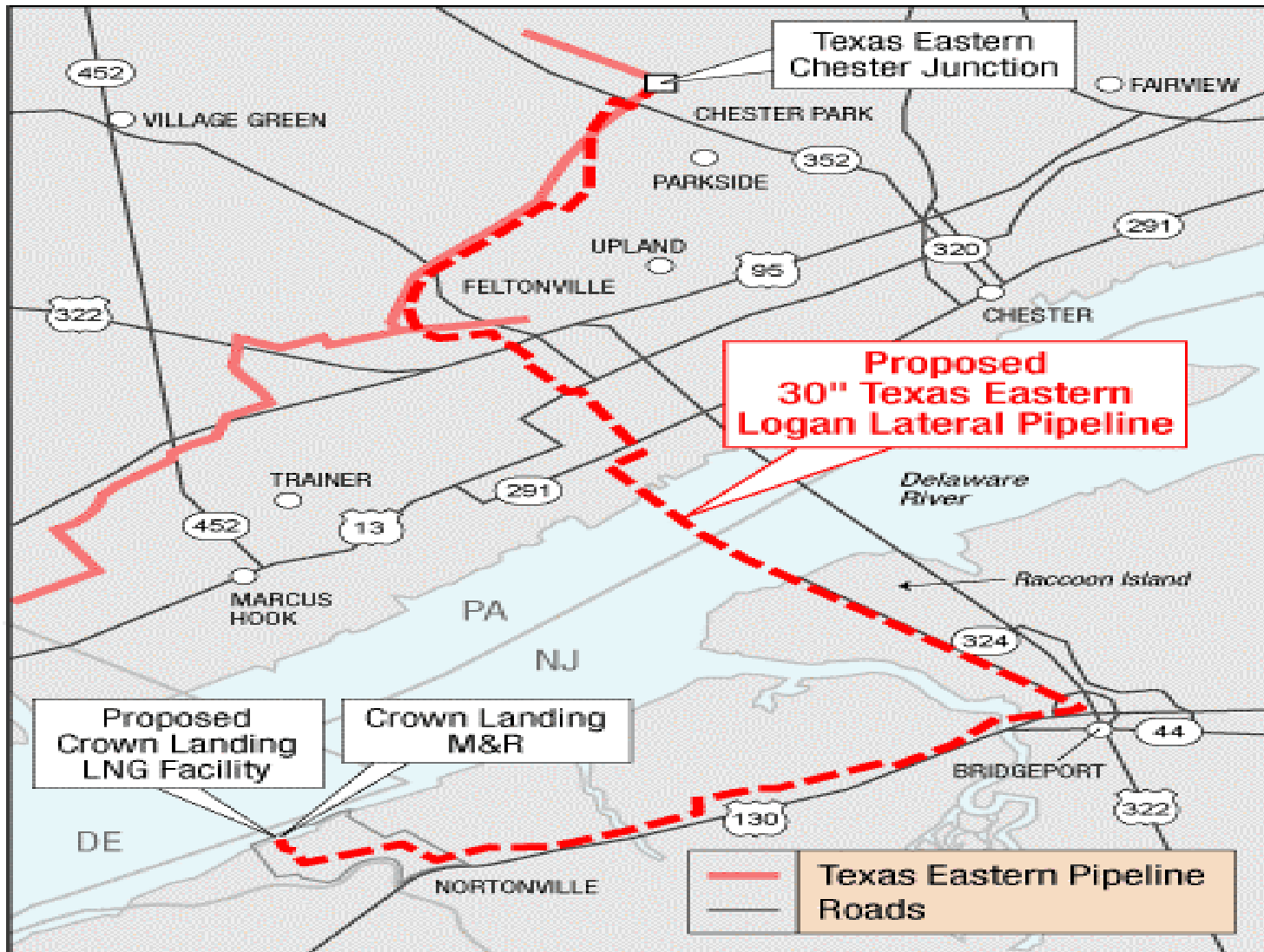


Header System – Cheniere Creole Trail Pipeline



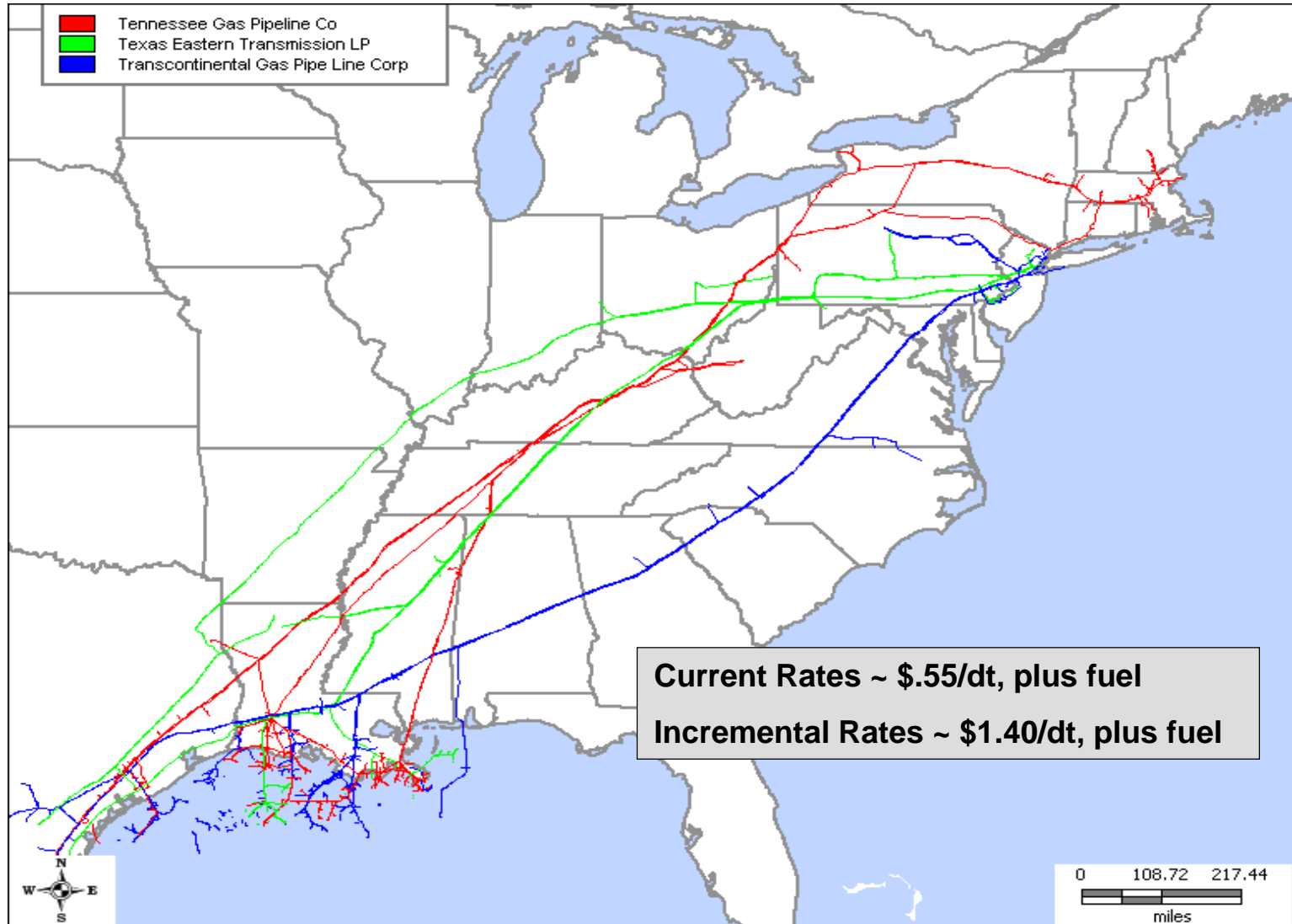


Header System – Texas Eastern Logan Lateral, BP Crown Landing



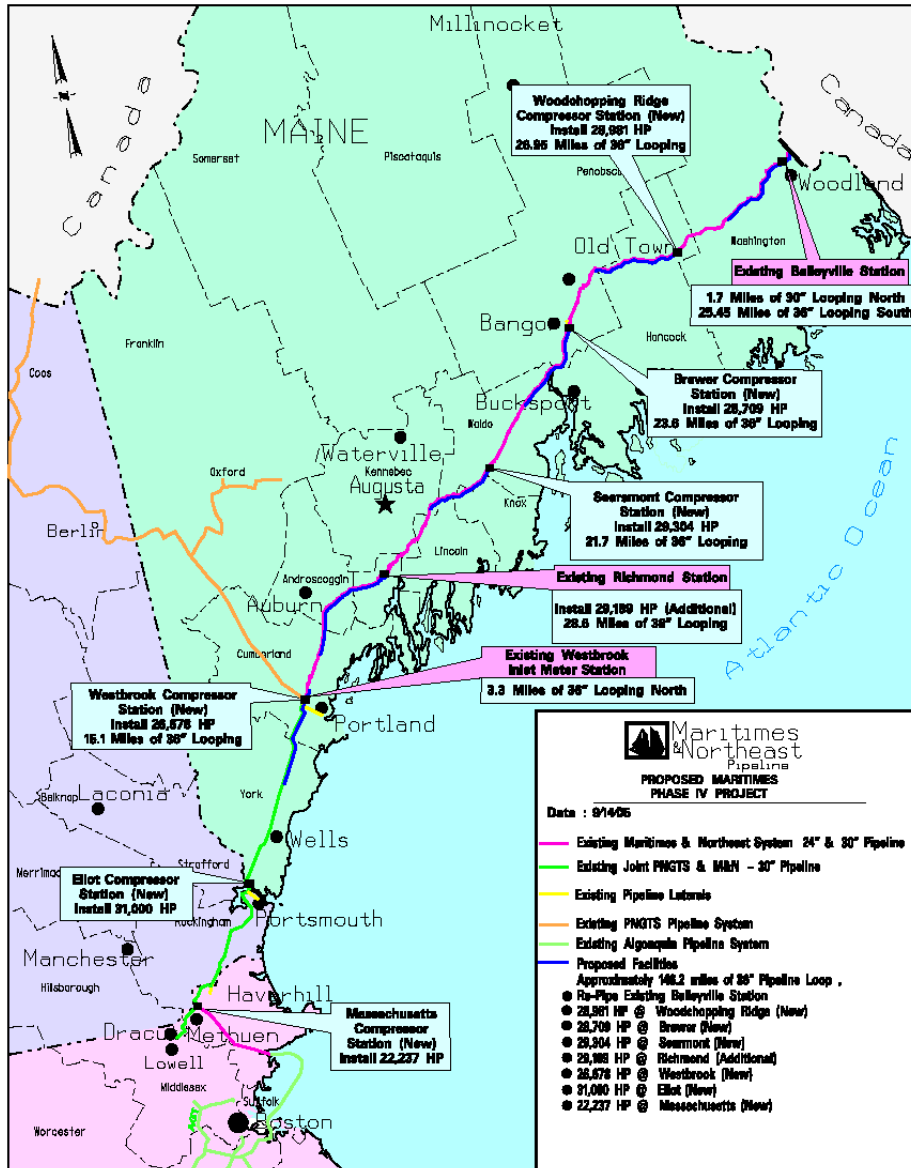


Gulf Coast-to-Northeast long haul expansions are less likely





Maritimes & Northeast – Phase IV expansion uncertainty

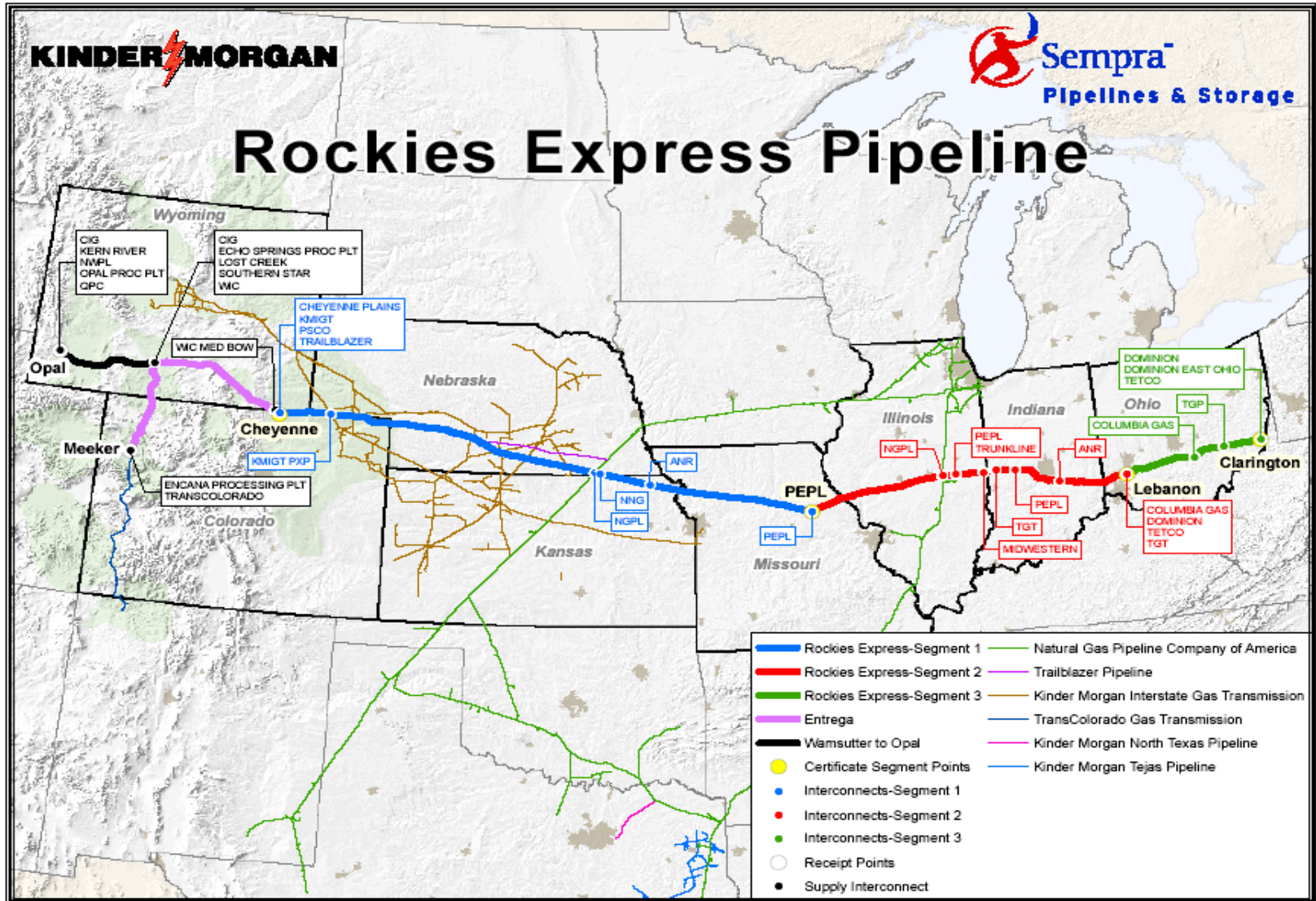


Maritimes & Northeast Pipeline Phase IV – Open Season Results

Shipper	Volume (MMBtu/d)
Anadarko LNG Marketing (Bear Head LNG)	813,000
Repsol Energy NA (Canaport LNG)	750,000
Total	1,563,000



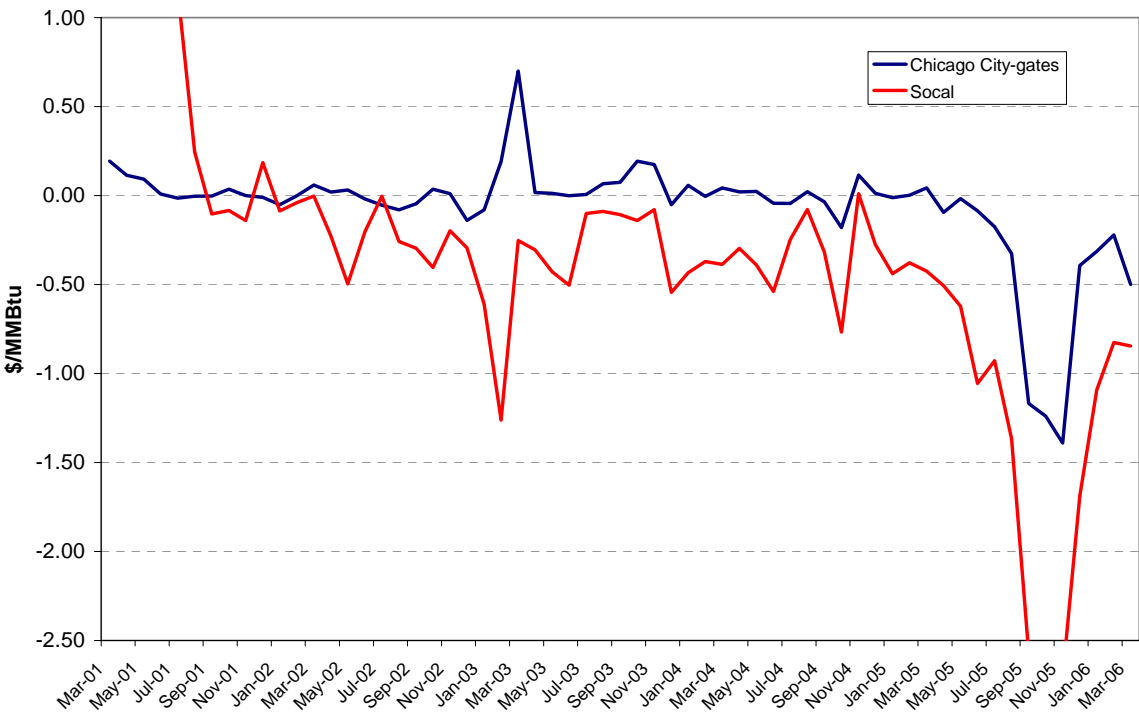
Interregional projects influence and are influenced by LNG





West Coast LNG may be influencing Rocky Mountain producer pipeline decisions

Monthly Average Basis - Socal vs. Chicago



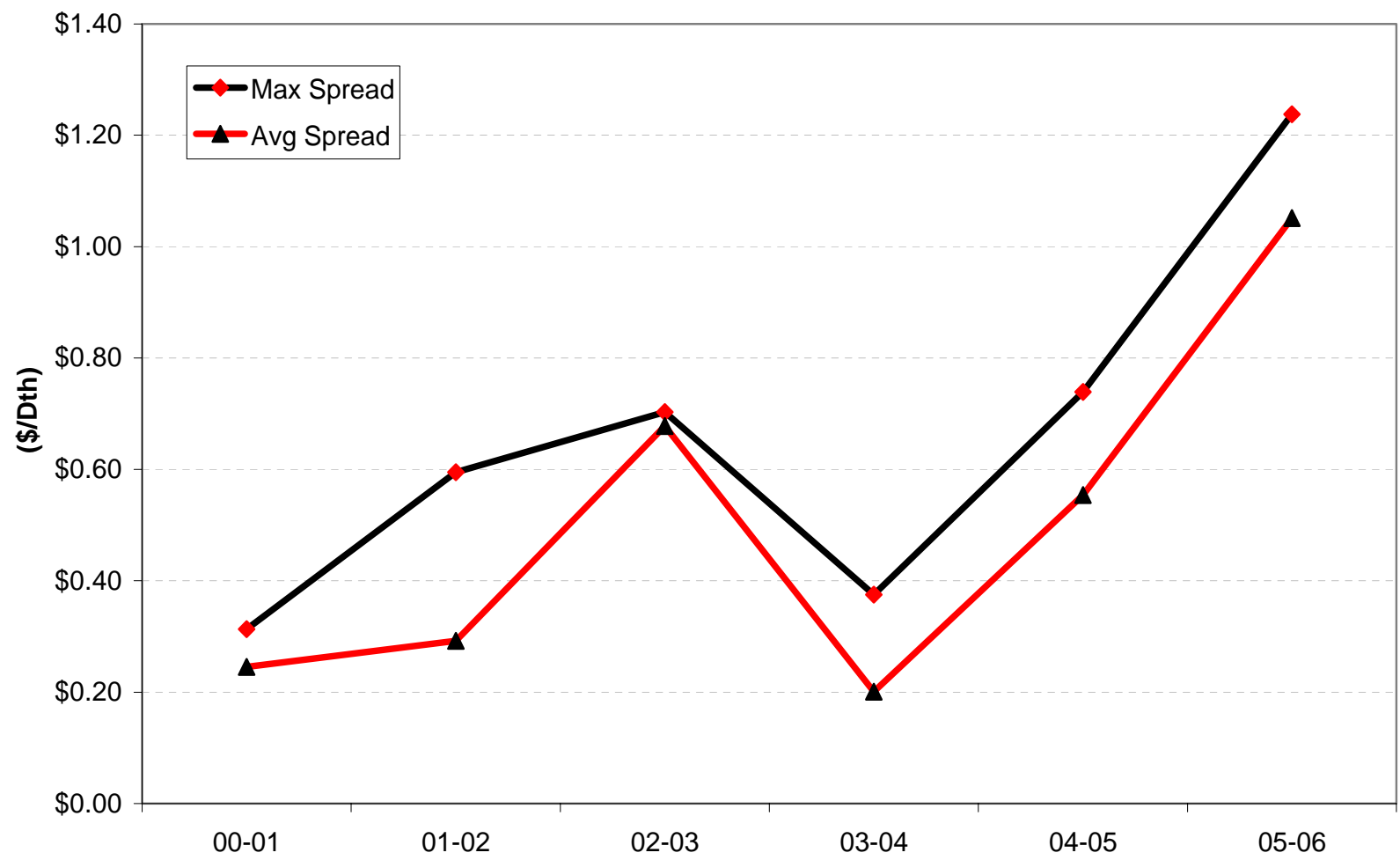
Comparison of Rates

Kern River vs. Rockies Express

Pipeline	Demand \$/Dth/d	Commodity \$/Dth/d	Fuel %
Kern River	0.3973	0.0618	1.83
Rockies Express	1.4269	0.0120	2.22

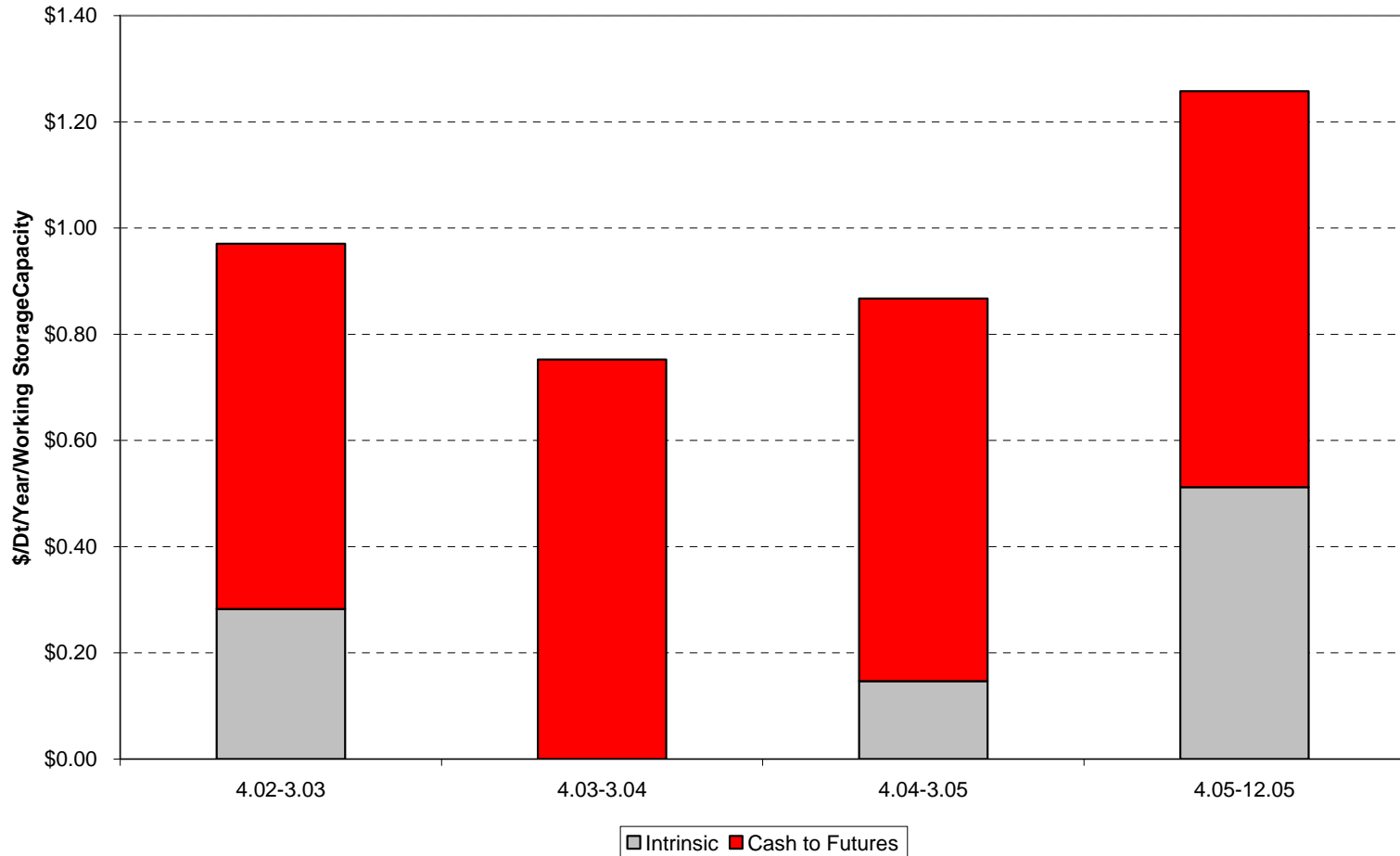


Baseloaded LNG may drive summer/winter prices wider and promote more storage development





Historical values of a Gulf Coast storage facility



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Thank You.

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