

National Lock Traffic Forecasts

Inland Waterways User Board Meeting #73

18 November 2014

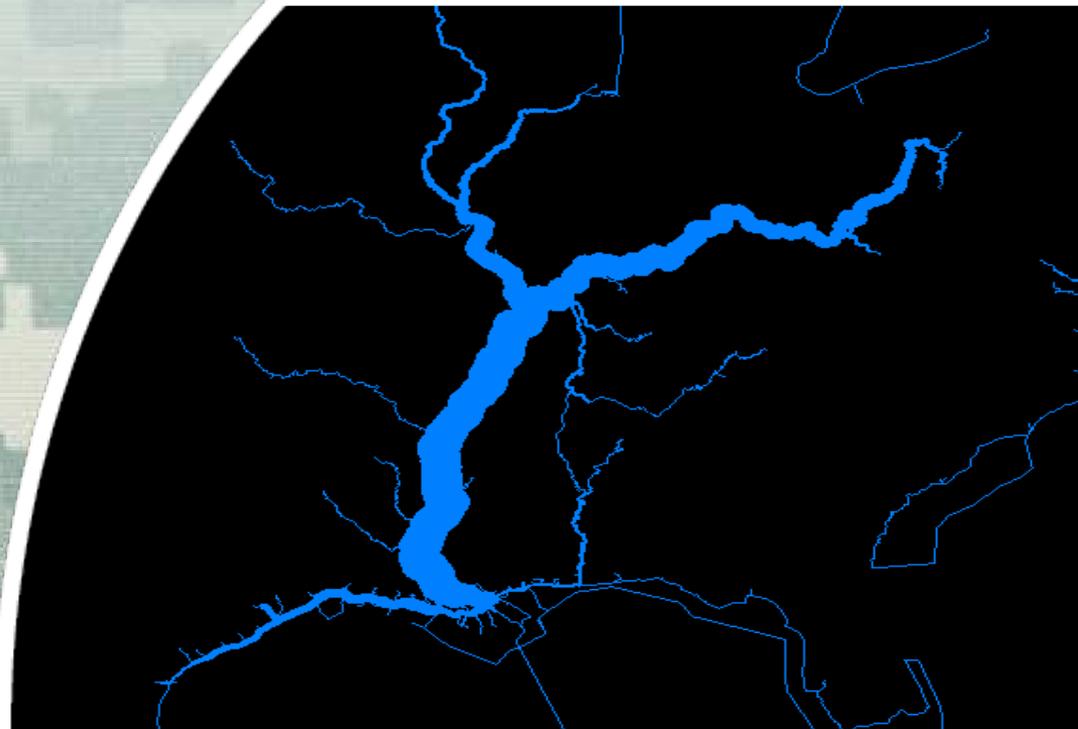
**Planning Center of Expertise for
Inland Navigation and Risk-Informed
Economics Division (PCXIN-RED)**

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Chief, PCXIN-RED

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RTS Navigation, CELRH-PX-NC



US Army Corps of Engineers
BUILDING STRONG®



Objective and Scope of National Forecasts

- National lock forecasts to use in sensitivity test of IMTS-IPAT risk exposure rankings. Important to capture relative trends between projects in the system.
- Forecasts need to be reasonable and timely (SMART Planning). Detailed demand forecasts (typically basin level) as part of feasibility study.
 - Growth indices needs to be reputable and readily available.
 - Focus on major commodities.
 - Not feasibility level; good enough for lock prioritization sensitivity.



FORECAST SOURCES

- Department Of Energy, Energy Information Administration (*Annual Energy Outlook 2014*).
 - Criton Corporation.
- Leonardo Technologies, Inc.
- U. S. Department of Agriculture (*USDA Long-term Projections, February 2014 Edition*).
- IHS Global Insight (*The US Economy, 30-Year Focus 2013*).

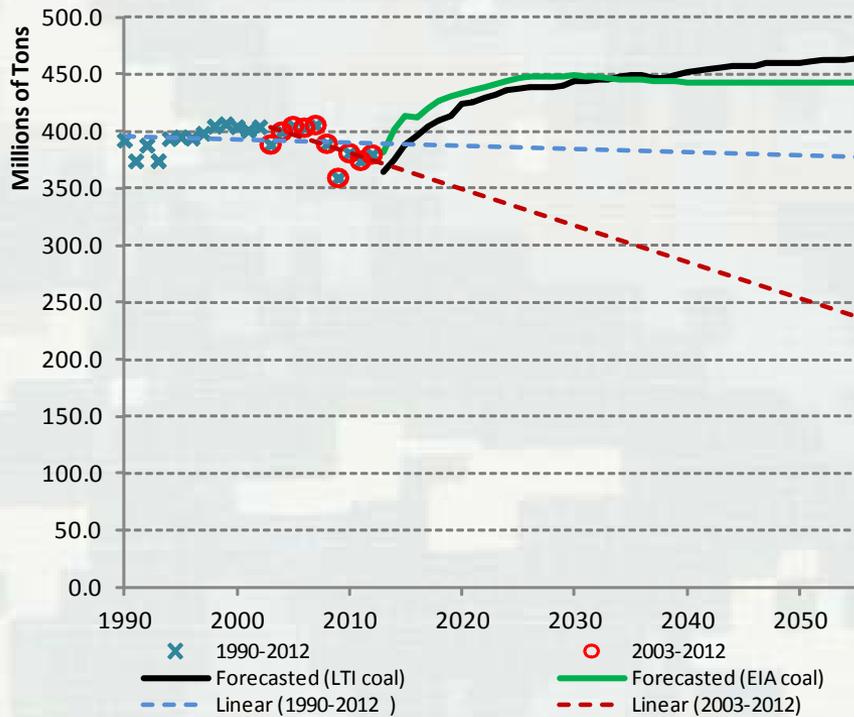


WATERWAY SYSTEM RESULTS

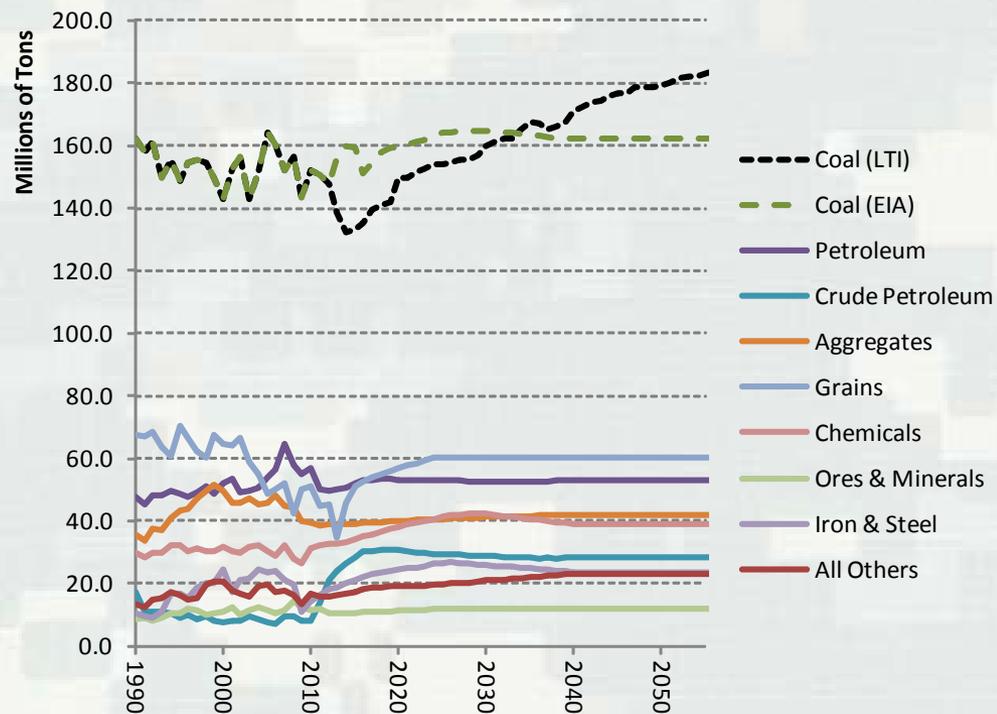
TOTAL - ALL COMMODITIES

(System Lock Traffic)

Total Tons - Forecasts versus most recent 10 & 23-year Trends



Tonnage by Commodity Group - 1990-2055



SOURCE: 1990-2012 Waterborne Commerce Statistics Center data, lock traffic. Forecasts developed by CELRH-PX-NC.



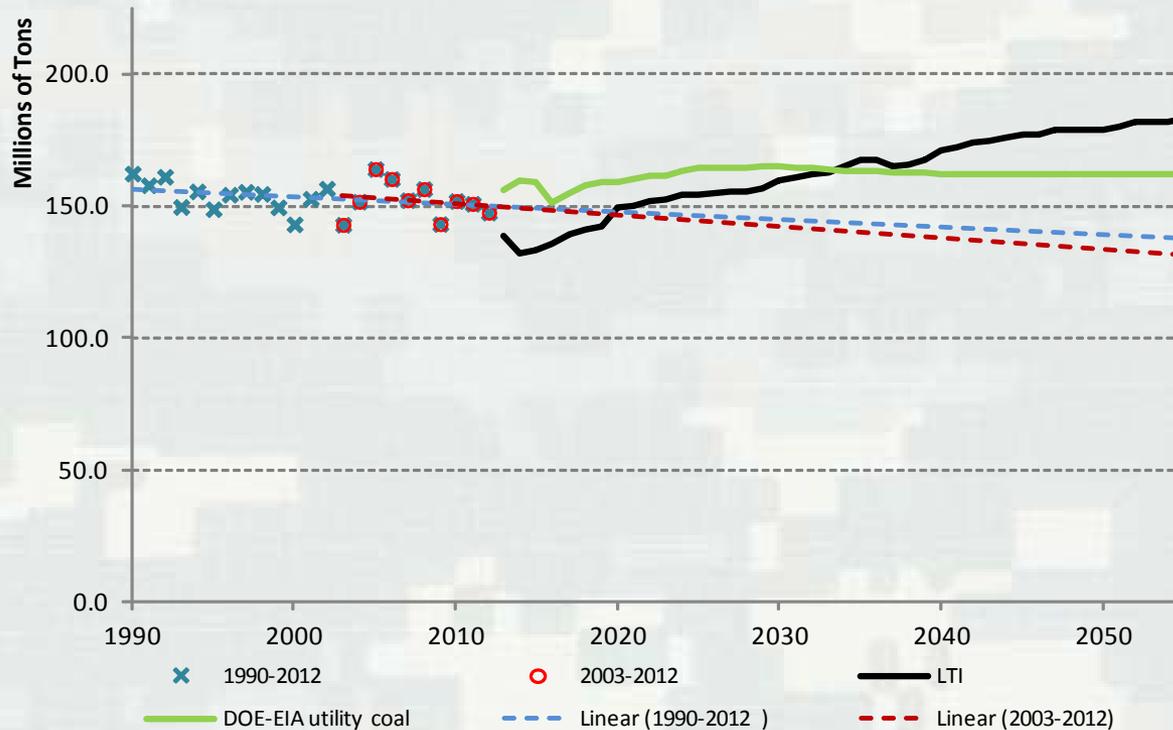
WATERWAY SYSTEM RESULTS

COAL

(39% of 2012 National Lock Traffic)

System Tons - Forecasts versus most recent 10 & 23-year Trends

Note x-axis
scale change.



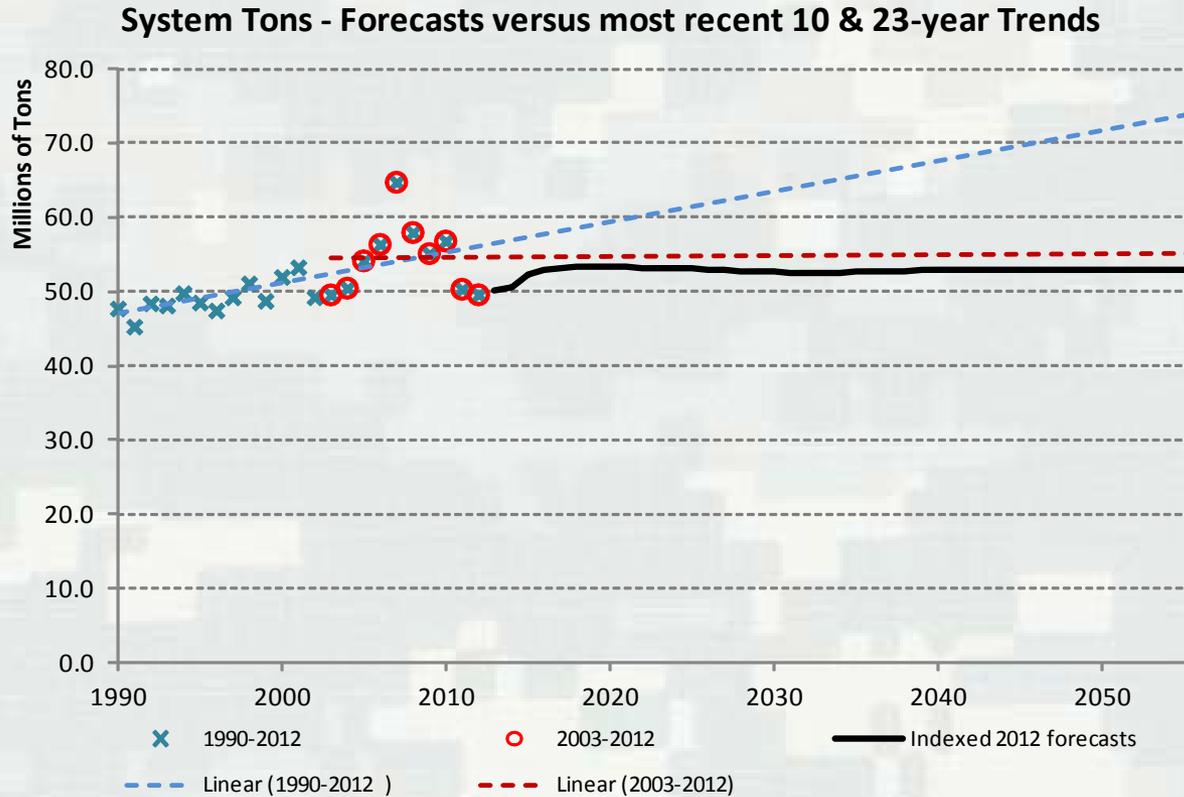
SOURCE: 1990-2012 Waterborne Commerce Statistics Center data. Forecasts developed by CELRH-PX-NC.
Indices: Method 1 - EIA or Method 2 - LTI with EIA (coke & export)



WATERWAY SYSTEM RESULTS

PETROLEUM

(13% of 2012 National Lock Traffic)



SOURCE: 1990-2012 Waterborne Commerce Statistics Center data. Forecasts developed by CELRH-PX-NC. Indices: EIA.

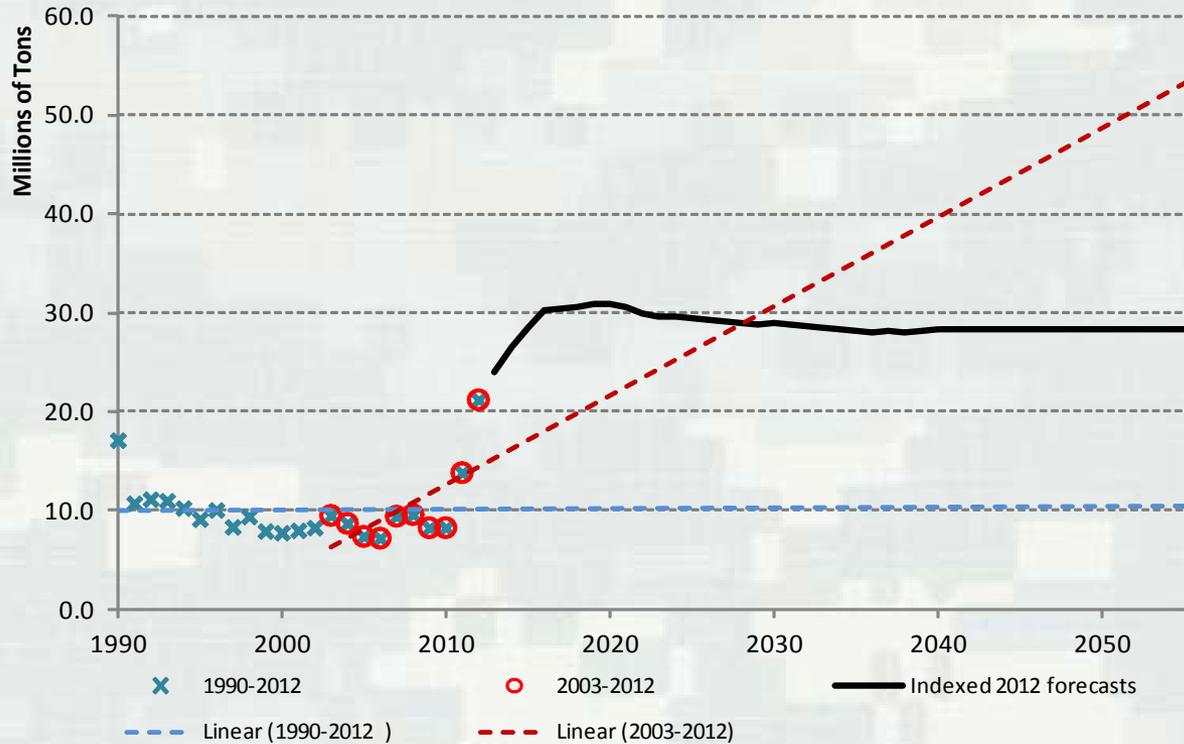


WATERWAY SYSTEM RESULTS

CRUDE PETROLEUM

(6% of 2012 National Lock Traffic)

System Tons - Forecasts versus most recent 10 & 23-year Trends



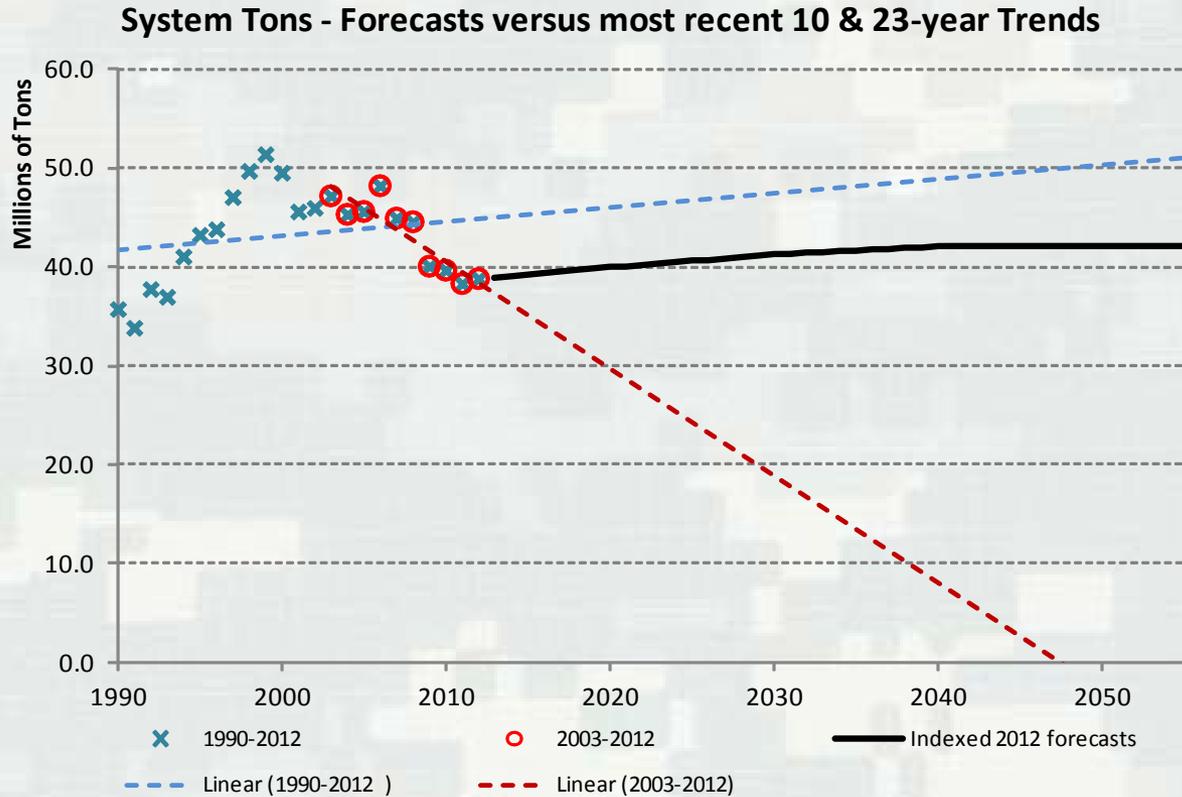
SOURCE: 1990-2012 Waterborne Commerce Statistics Center data. Forecasts developed by CELRH-PX-NC. Indices: EIA (adjusted with Criton Corp. information).



WATERWAY SYSTEM RESULTS

AGGREGATES

(10% of 2012 National Lock Traffic)



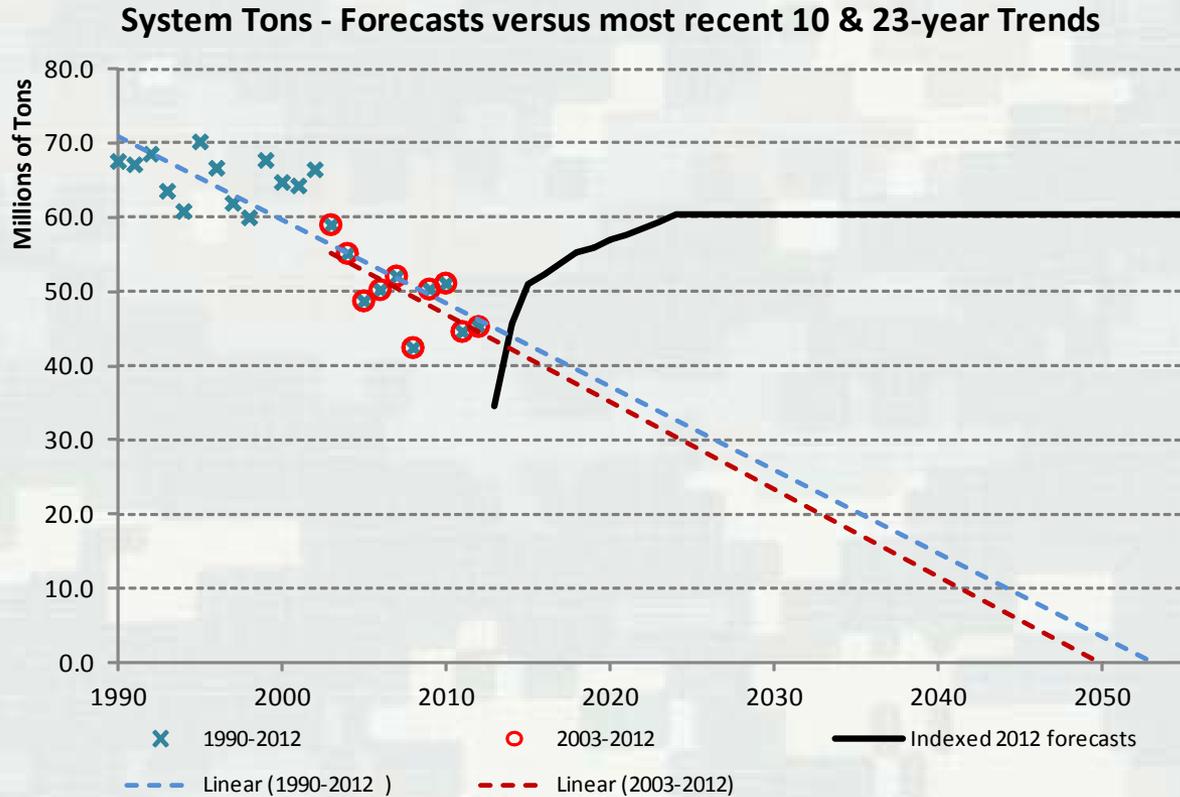
SOURCE: 1990-2012 Waterborne Commerce Statistics Center data. Forecasts developed by CELRH-PX-NC. Indices: destination state population.



WATERWAY SYSTEM RESULTS

GRAINS

(12% of 2012 National Lock Traffic)



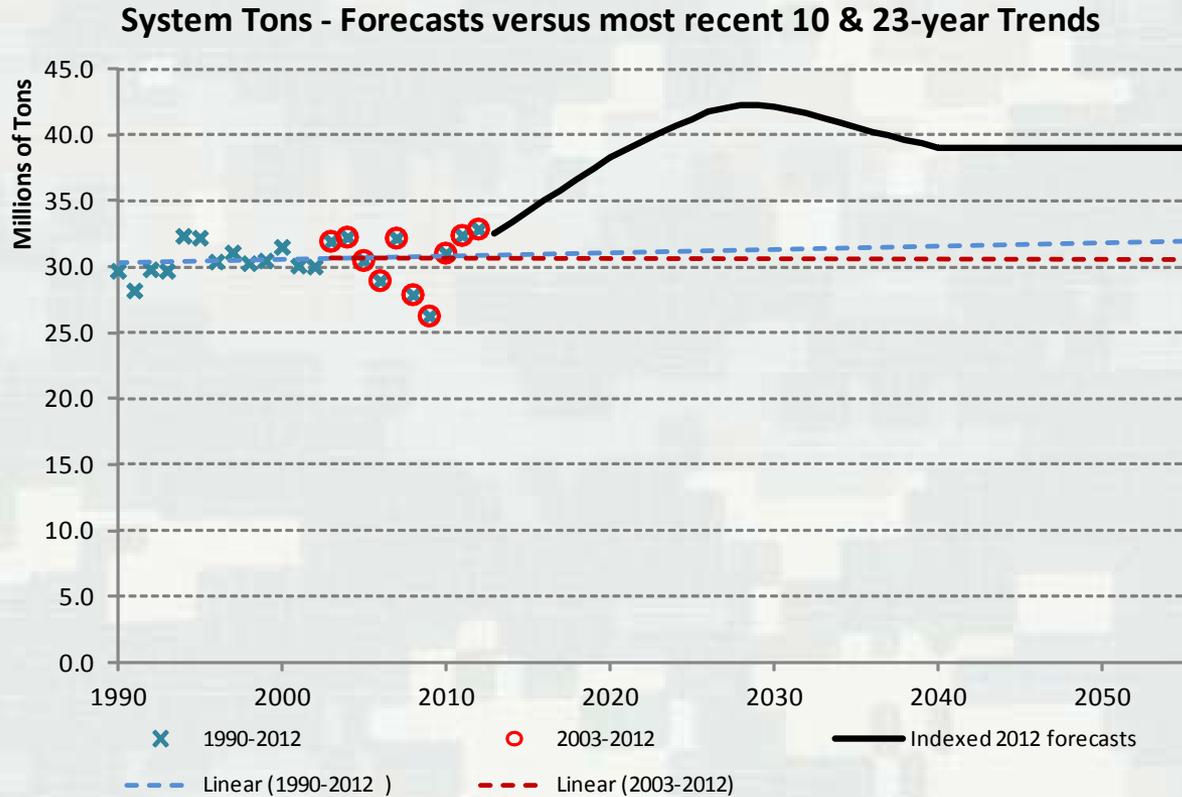
SOURCE: 1990-2012 Waterborne Commerce Statistics Center data. Forecasts developed by CELRH-PX-NC. Indices: USDA.



WATERWAY SYSTEM RESULTS

CHEMICALS

(9% of 2012 National Lock Traffic)



SOURCE: 1990-2012 Waterborne Commerce Statistics Center data. Forecasts developed by CELRH-PX-NC. Indices: IHS Global Insight.

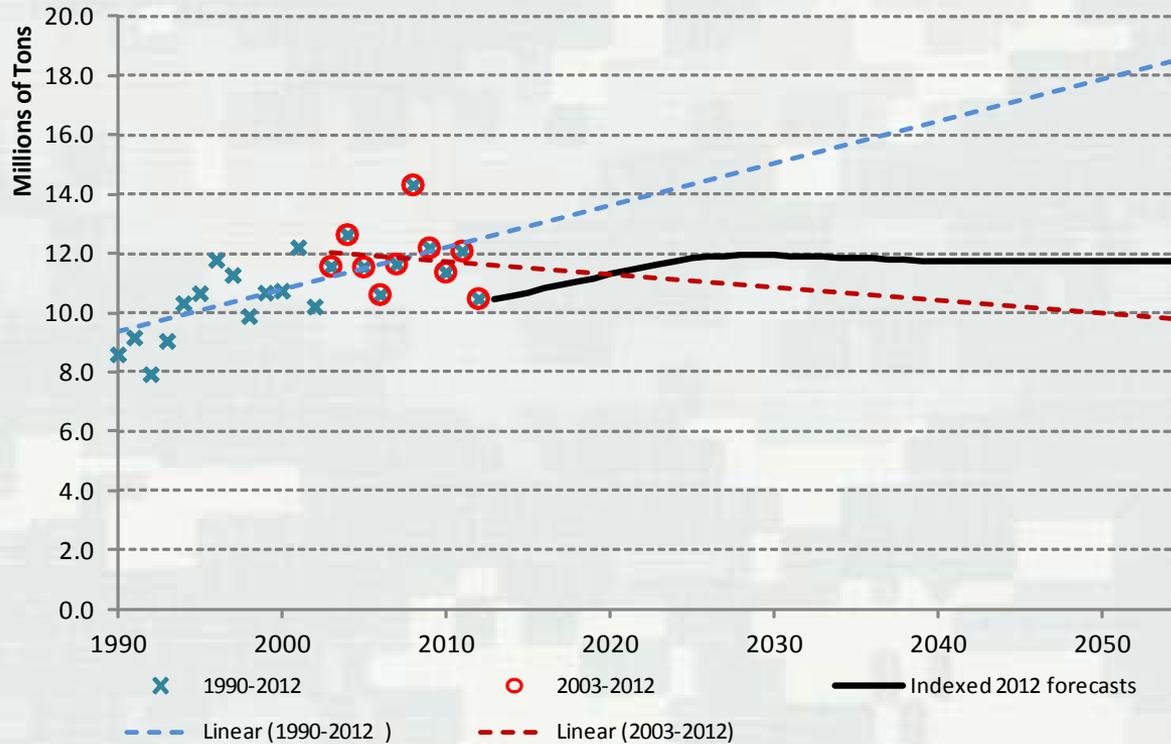


WATERWAY SYSTEM RESULTS

ORES AND MINERALS

(3% of 2012 National Lock Traffic)

System Tons - Forecasts versus most recent 10 & 23-year Trends



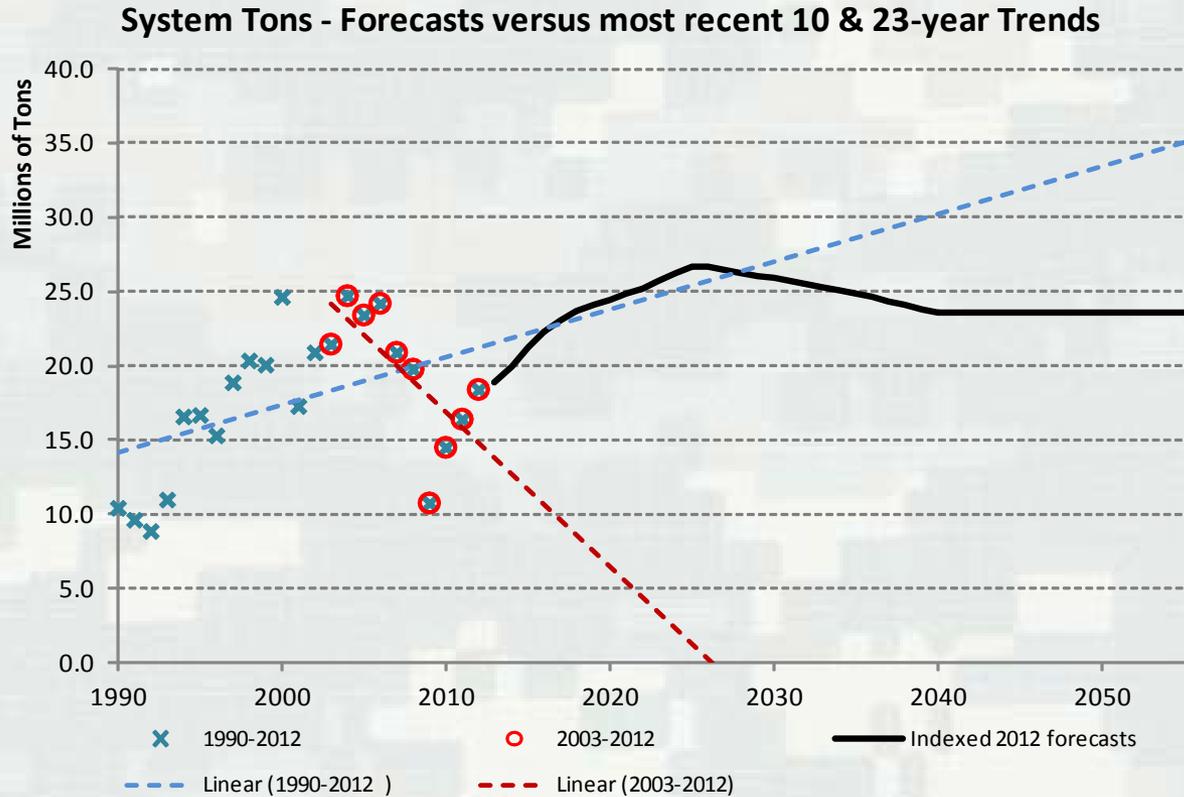
SOURCE: 1990-2012 Waterborne Commerce Statistics Center data. Forecasts developed by CELRH-PX-NC. Indices: IHS Global Insight.



WATERWAY SYSTEM RESULTS

IRON AND STEEL

(5% of 2012 National Lock Traffic)



SOURCE: 1990-2012 Waterborne Commerce Statistics Center data. Forecasts developed by CELRH-PX-NC. Indices: IHS Global Insight.

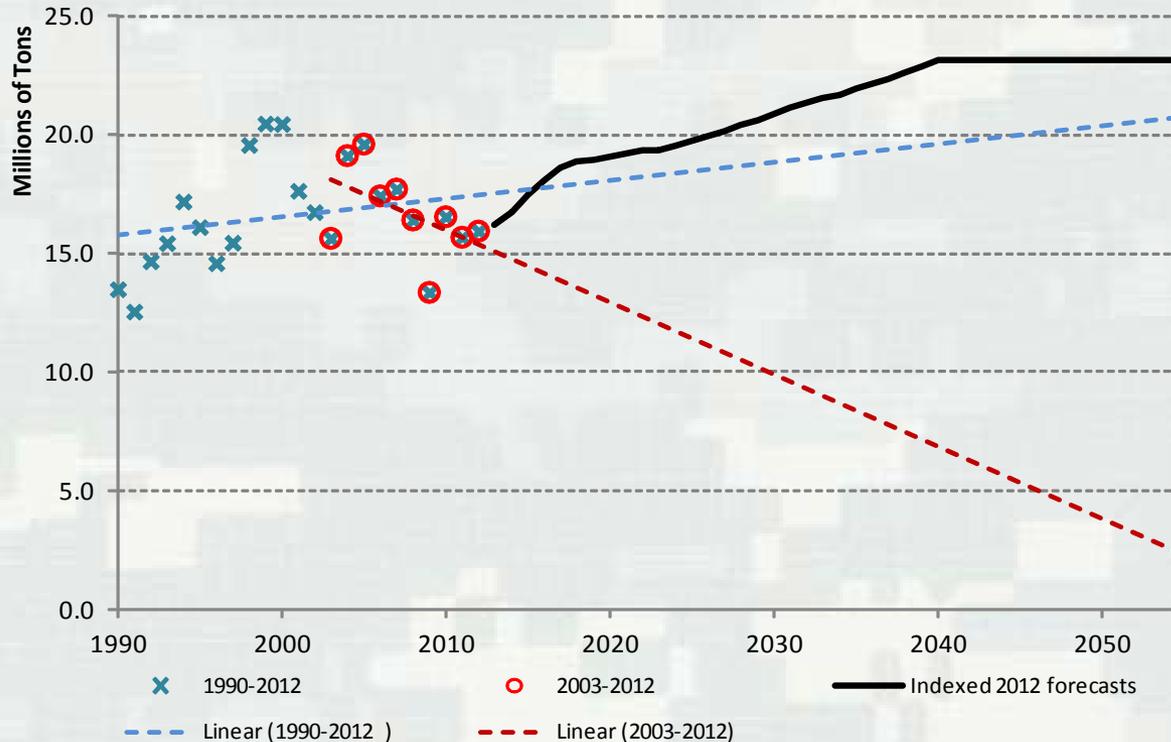


WATERWAY SYSTEM RESULTS

ALL OTHER COMMODITIES

(4% of 2012 National Lock Traffic)

System Tons - Forecasts versus most recent 10 & 23-year Trends



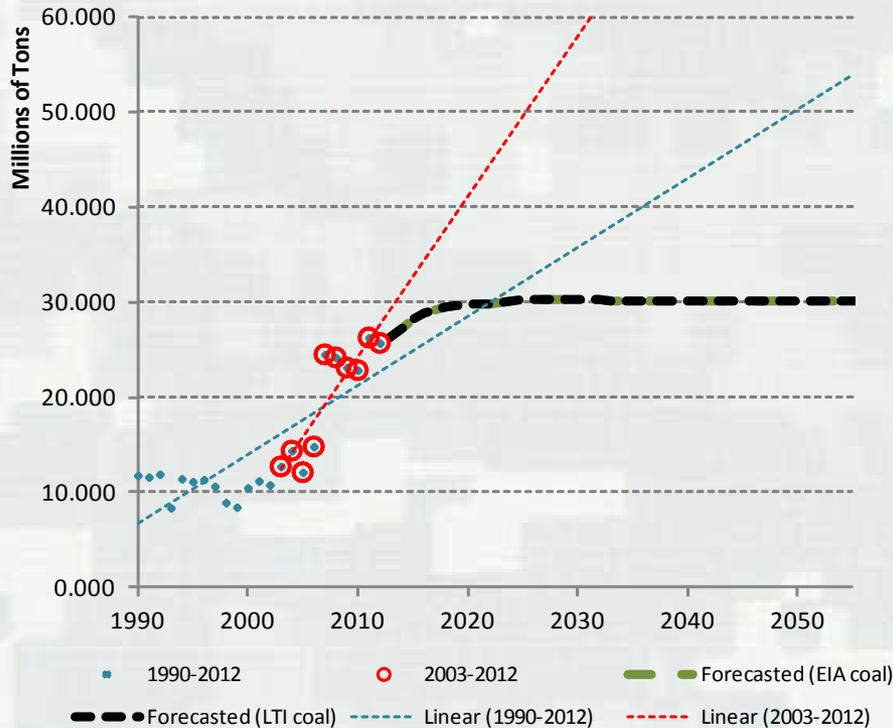
SOURCE: 1990-2012 Waterborne Commerce Statistics Center data. Forecasts developed by CELRH-PX-NC. Indices: IHS Global Insight & destination state population.



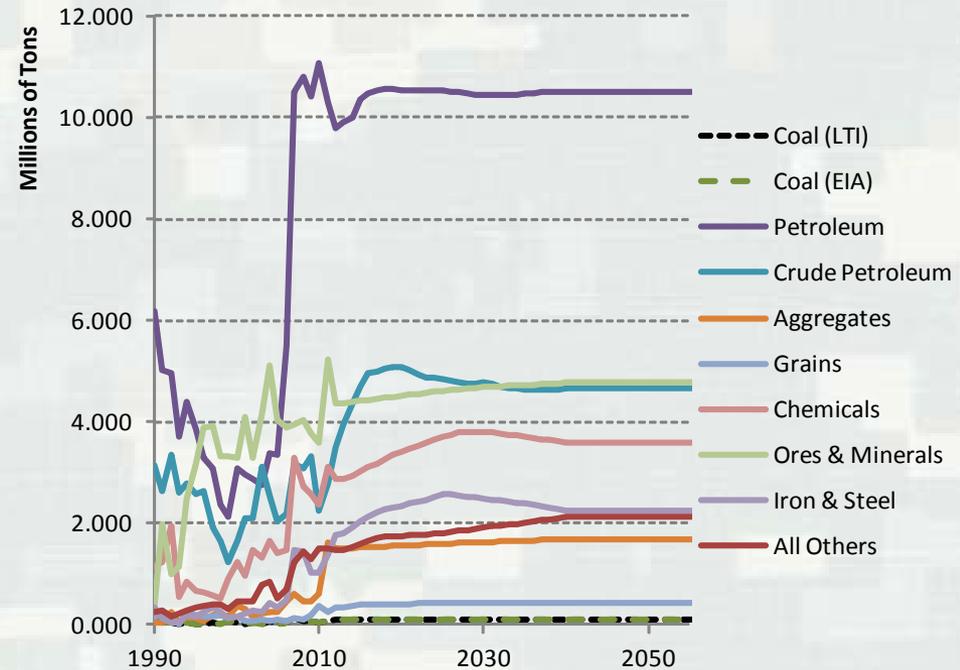
LOCK PROJECT RESULTS – Selected Projects

Algiers

TOTAL - 1990-2055



By Commodity Group - 1990-2055



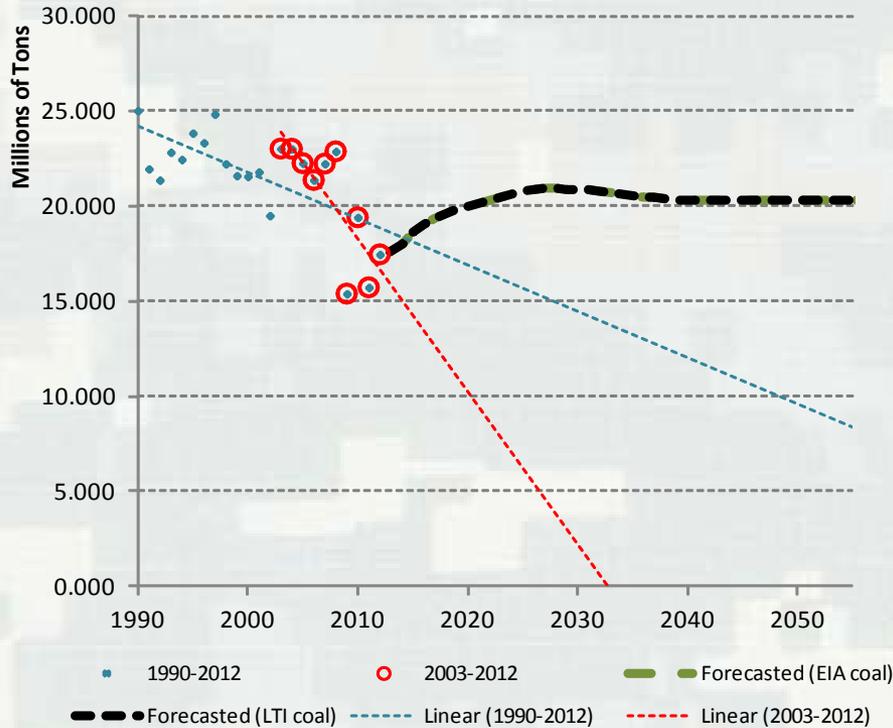
SOURCE: 1990-2012 Waterborne Commerce Statistics Center data. Forecasts developed by CELRH-PX-NC.



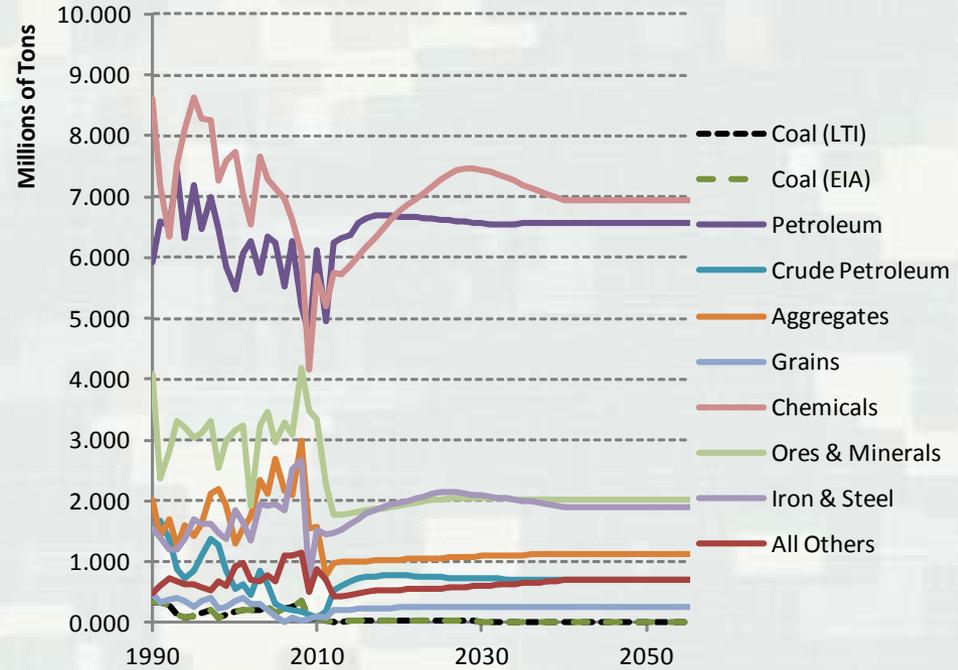
LOCK PROJECT RESULTS – Selected Projects

Bayou Sorrel

TOTAL - 1990-2055



By Commodity Group - 1990-2055



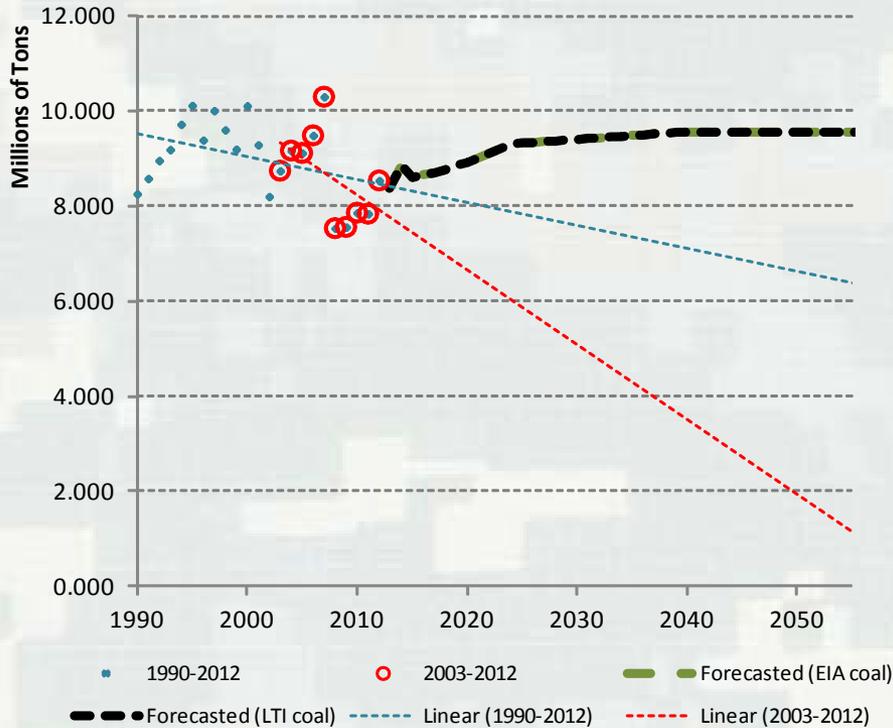
SOURCE: 1990-2012 Waterborne Commerce Statistics Center data. Forecasts developed by CELRH-PX-NC.



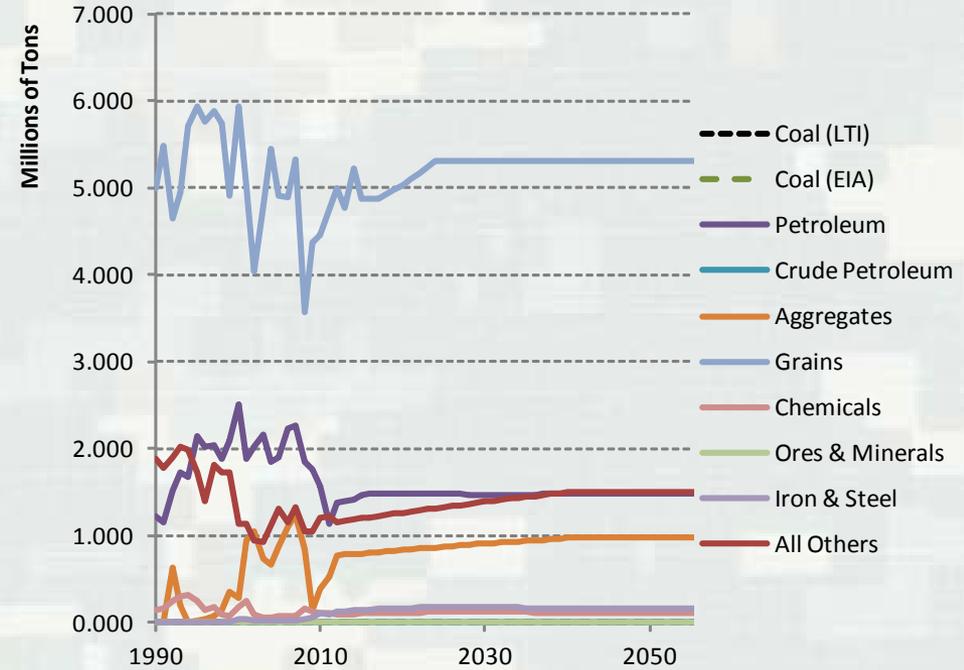
LOCK PROJECT RESULTS – Selected Projects

Bonneville L&D

TOTAL - 1990-2055



By Commodity Group - 1990-2055



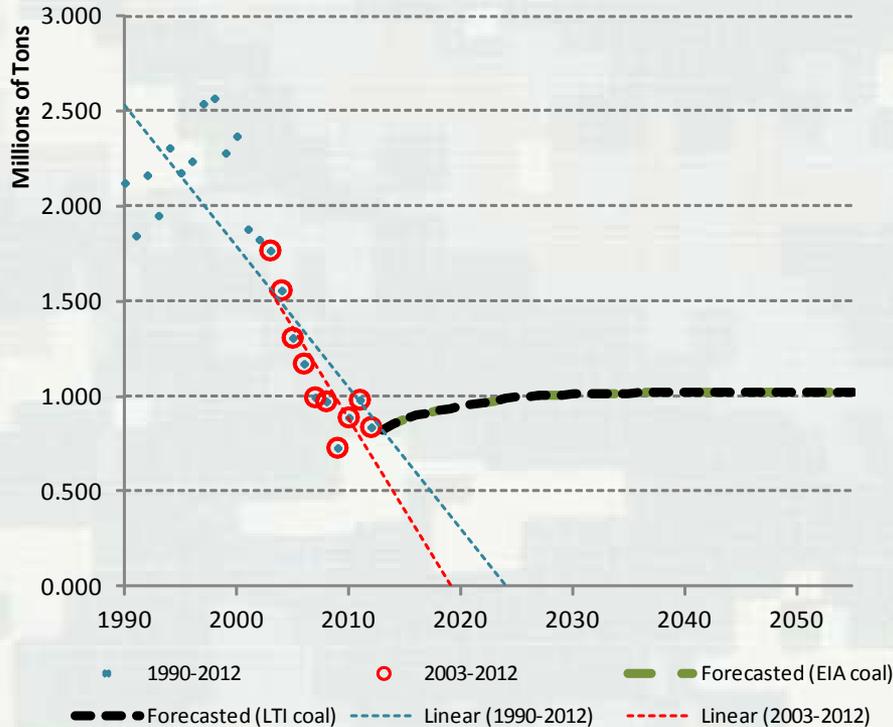
SOURCE: 1990-2012 Waterborne Commerce Statistics Center data. Forecasts developed by CELRH-PX-NC.



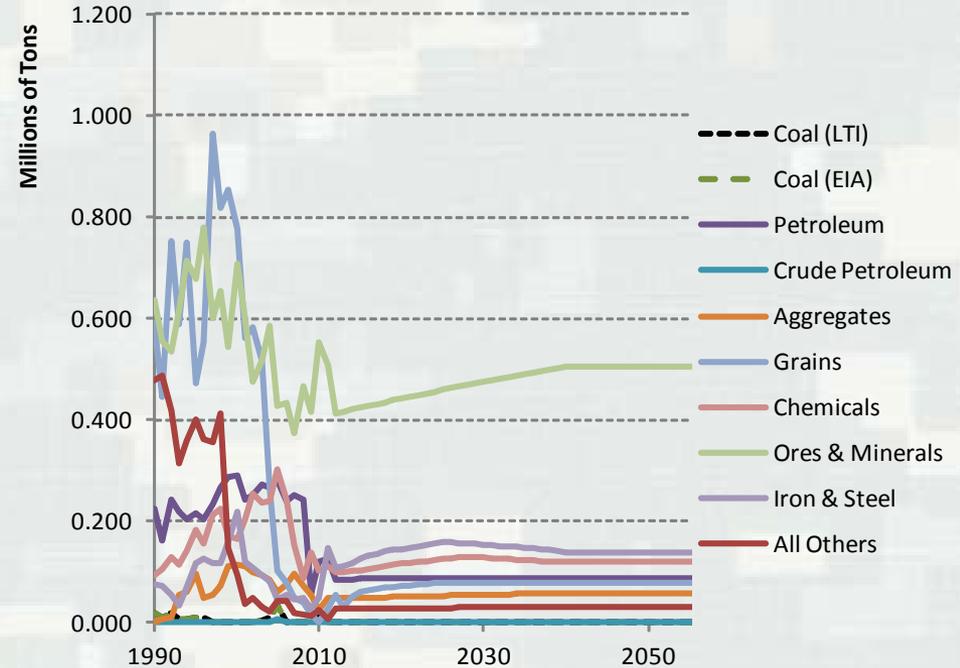
LOCK PROJECT RESULTS – Selected Projects

Chickamauga

TOTAL - 1990-2055



By Commodity Group - 1990-2055



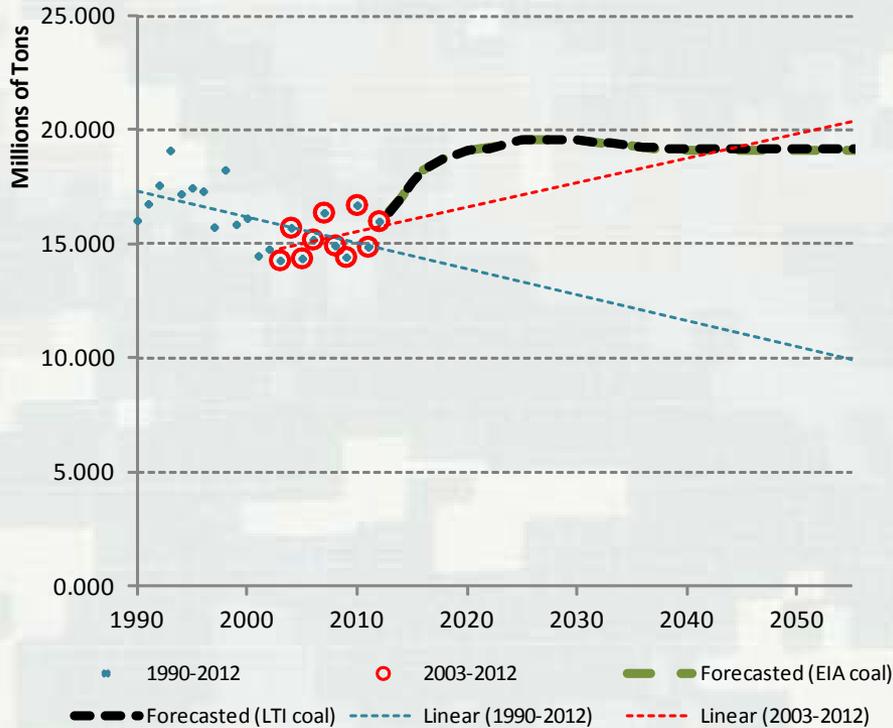
SOURCE: 1990-2012 Waterborne Commerce Statistics Center data. Forecasts developed by CELRH-PX-NC.



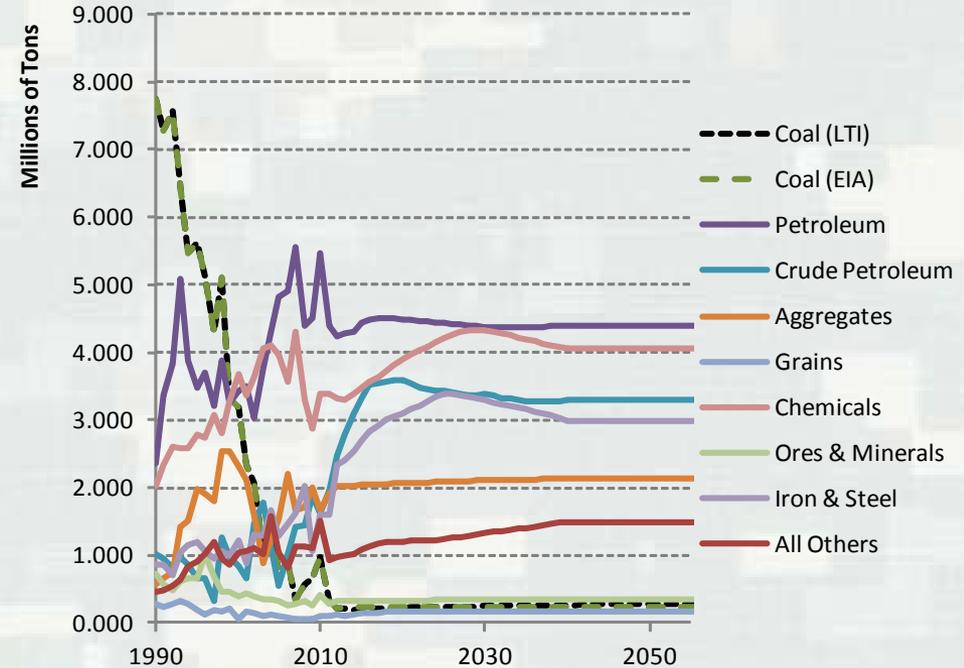
LOCK PROJECT RESULTS – Selected Projects

Inner Harbor Navigation Canal Lock

TOTAL - 1990-2055



By Commodity Group - 1990-2055



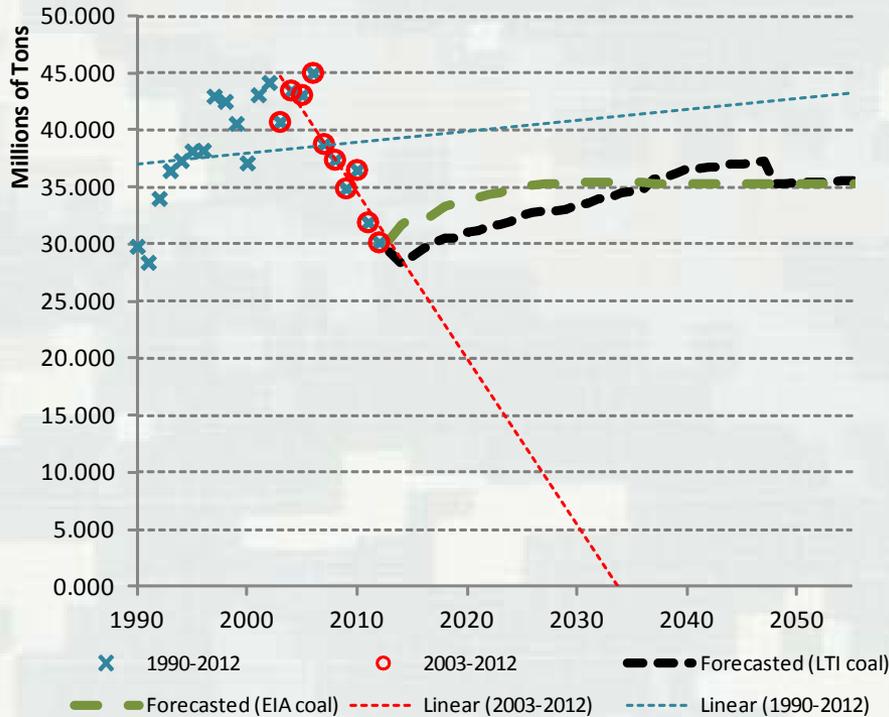
SOURCE: 1990-2012 Waterborne Commerce Statistics Center data. Forecasts developed by CELRH-PX-NC.



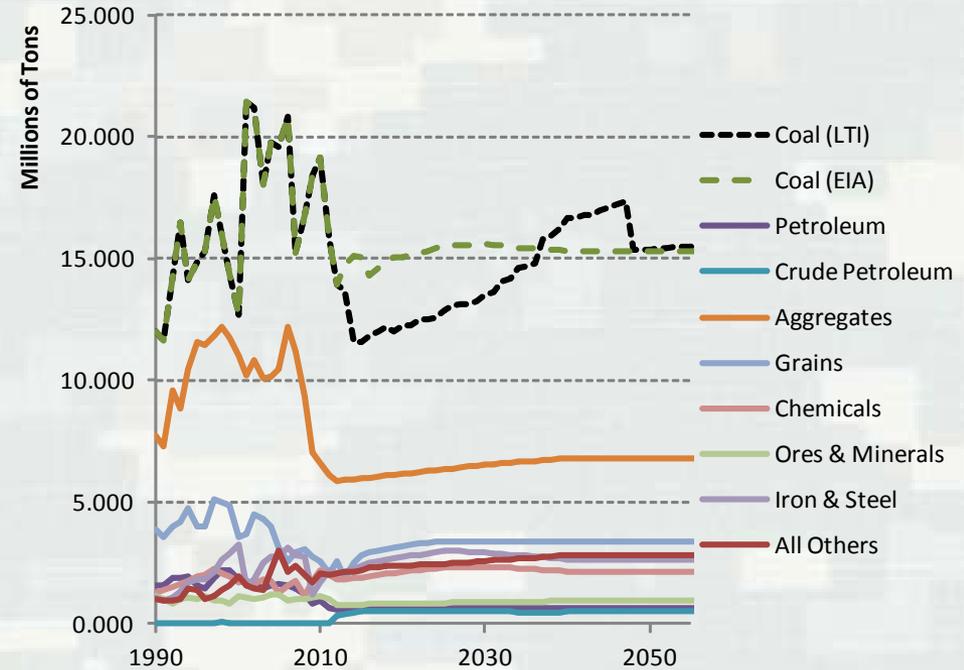
LOCK PROJECT RESULTS – Selected Projects

Kentucky / Barkley

TOTAL - 1990-2055



By Commodity Group - 1990-2055



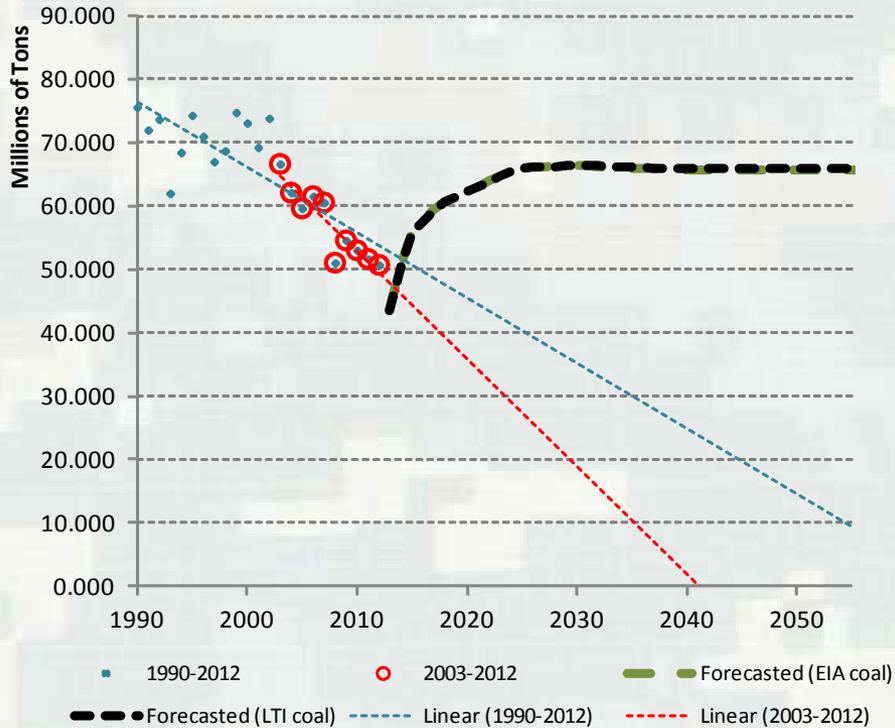
SOURCE: 1990-2012 Waterborne Commerce Statistics Center data. Kentucky and Barkley Locks summed. Forecasts developed by CELRH-PX-NC.



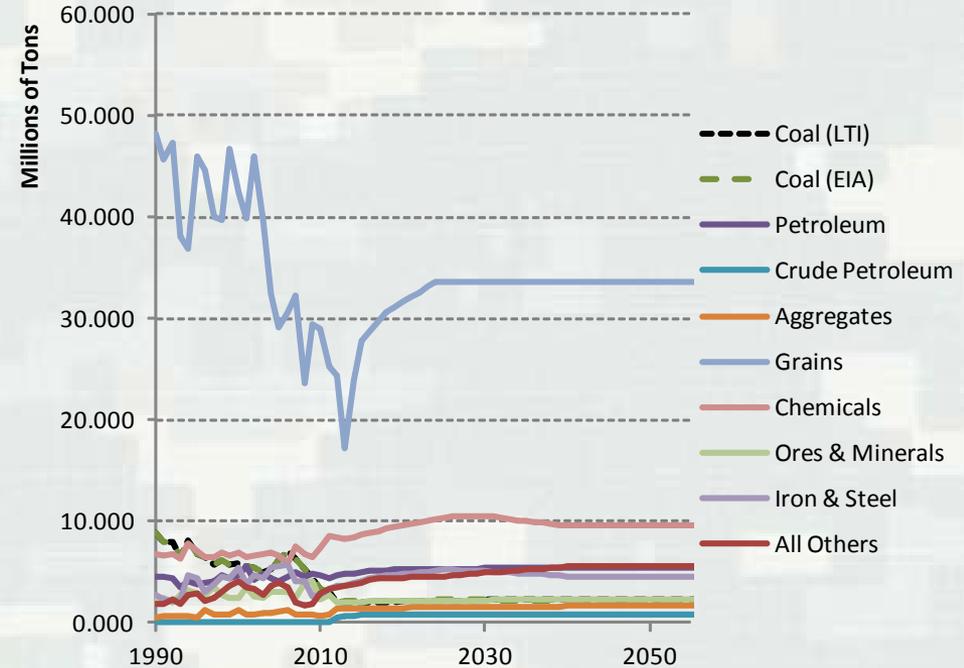
LOCK PROJECT RESULTS – Selected Projects

Mel Price L&D

TOTAL - 1990-2055



By Commodity Group - 1990-2055



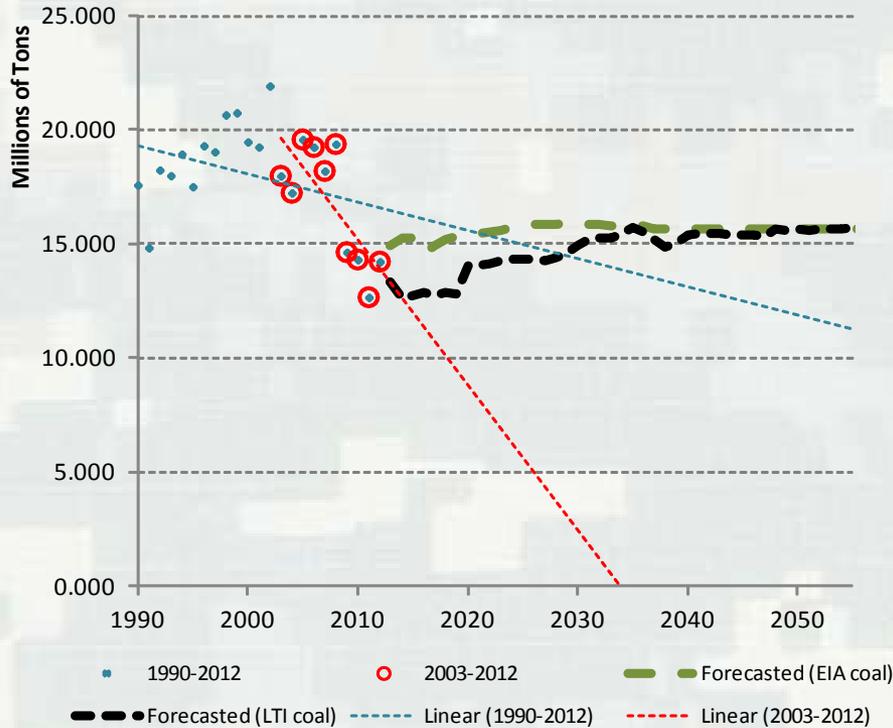
SOURCE: 1990-2012 Waterborne Commerce Statistics Center data. Forecasts developed by CELRH-PX-NC.



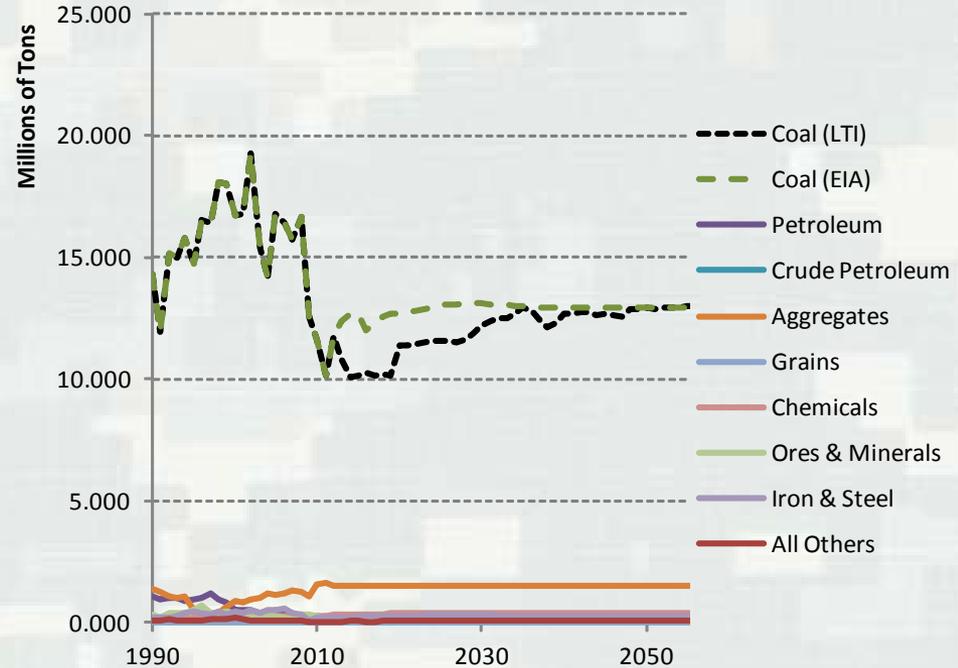
LOCK PROJECT RESULTS – Selected Projects

Monongahela 2 / Braddock L&D

TOTAL - 1990-2055



By Commodity Group - 1990-2055



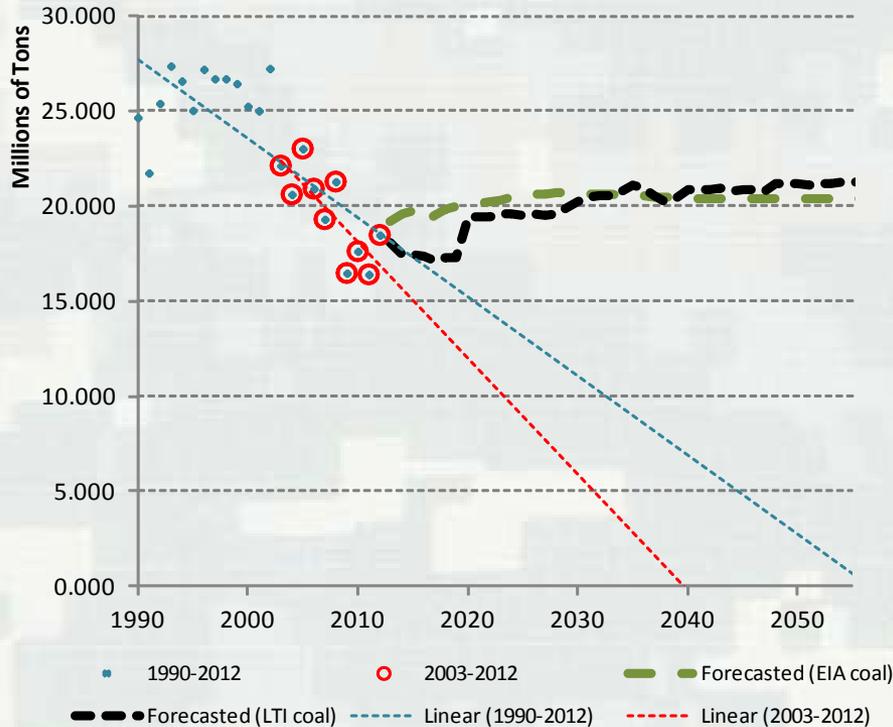
SOURCE: 1990-2012 Waterborne Commerce Statistics Center data. Forecasts developed by CELRH-PX-NC.



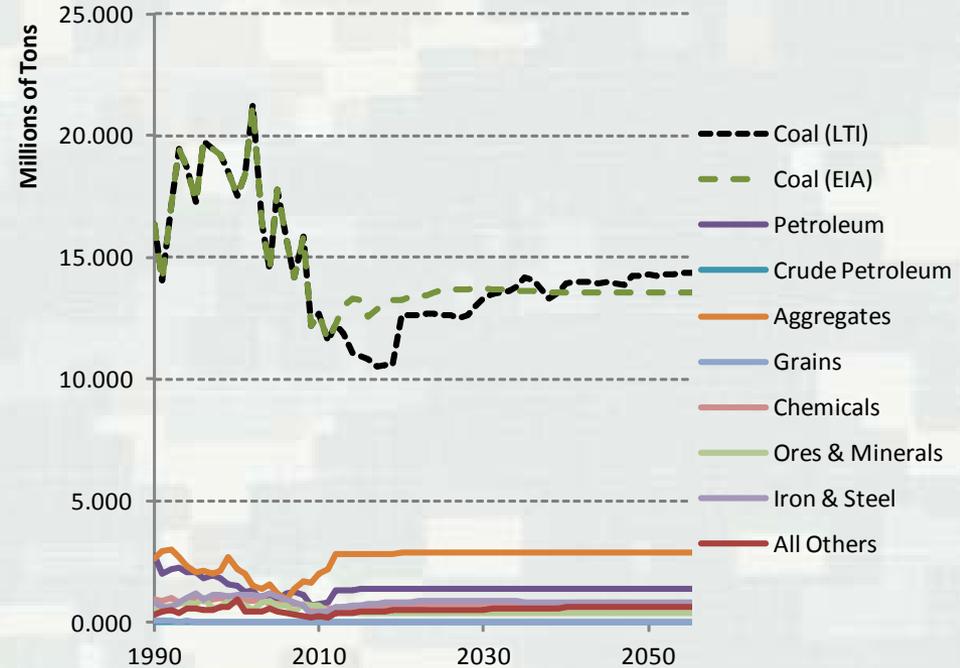
LOCK PROJECT RESULTS – Selected Projects

Montgomery L&D

TOTAL - 1990-2055



By Commodity Group - 1990-2055



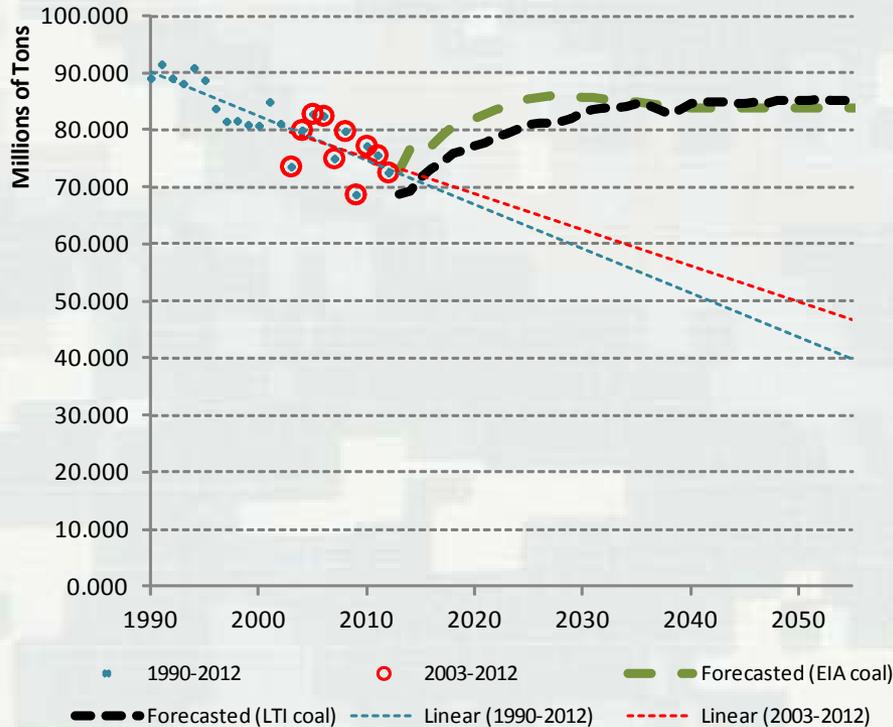
SOURCE: 1990-2012 Waterborne Commerce Statistics Center data. Forecasts developed by CELRH-PX-NC.



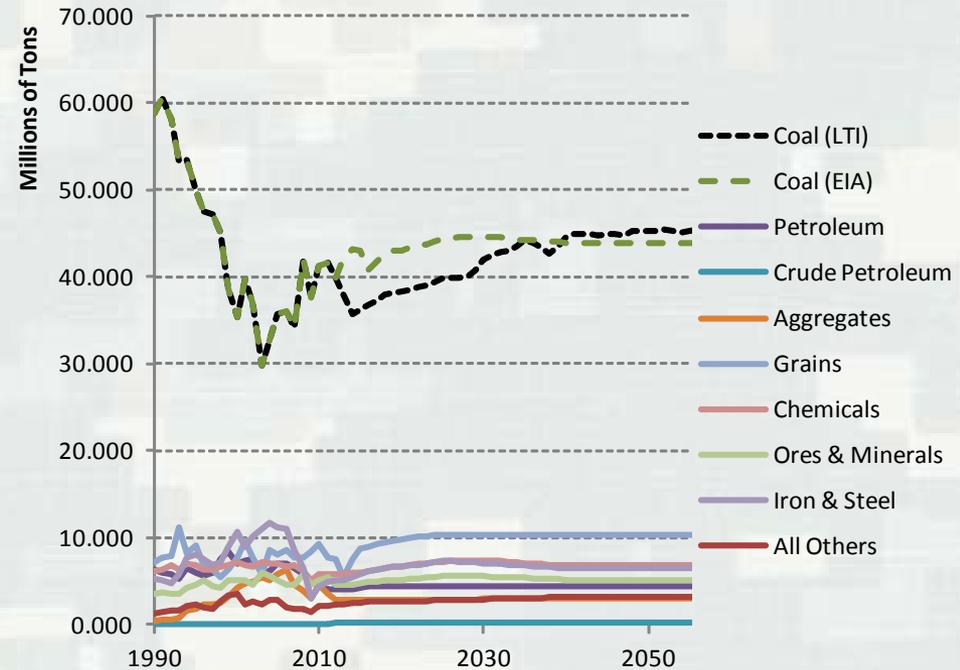
LOCK PROJECT RESULTS – Selected Projects

Smithland L&D

TOTAL - 1990-2055



By Commodity Group - 1990-2055



SOURCE: 1990-2012 Waterborne Commerce Statistics Center data. Forecasts developed by CELRH-PX-NC.



Path Forward

- Systematic update LTI utility plant consumption forecasts. Apply with sourcing data.
- Apply and systematically update Global Grain Model forecasts.
- For non-utility coal and non-grain commodities, annually apply University of Oregon time series Box-Jenkins Auto Regression Integrated Moving Average (ARIMA) models.
- Secure funding

