



Forecasting the Future: How Much and How Far?



Port of
LONG BEACH
The Green Port

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GREEN PORT POLICY

Leading the way in reducing environmental impacts

Updated Cargo Forecast

What is it?

- Joint forecast of both ports' throughput
- Long-term, unconstrained, projection of demand for the gateway

How will it be Used?

- Port Development Planning
- Environmental Impact Analysis
- The Ports' Clean Air Action Plan and Emissions Forecasting
- Update of the Long Beach Port Master Plan
- Port and Stakeholder Financing
- Regional Planning Partners
- Strategic Planning

Scenarios

Economic Scenarios

Expected Growth

- Gradual U.S. Economic Recovery Continues
- U.S. GDP Growth - 2.4% Long-term
- U.S. Trade Growth – 3.9%
- Declining Tariff Rates

High Growth

- More Positive Near-term Outlook
- U.S. GDP Growth - 2.7% Long-term
- U.S. Trade Growth – 5.1%
- Aggressive Trade Liberalization

Low Growth

- Downside Shocks Near-term
- U.S. GDP Growth - 2.0%
- U.S. Trade Growth – 2.7%

Competitive Adjustments

Base Case

- Moderation in Largest Vessel Size Growth
- IPI losses to British Columbia
- IPI losses to U.S. Gulf and East Coast Ports

Upside

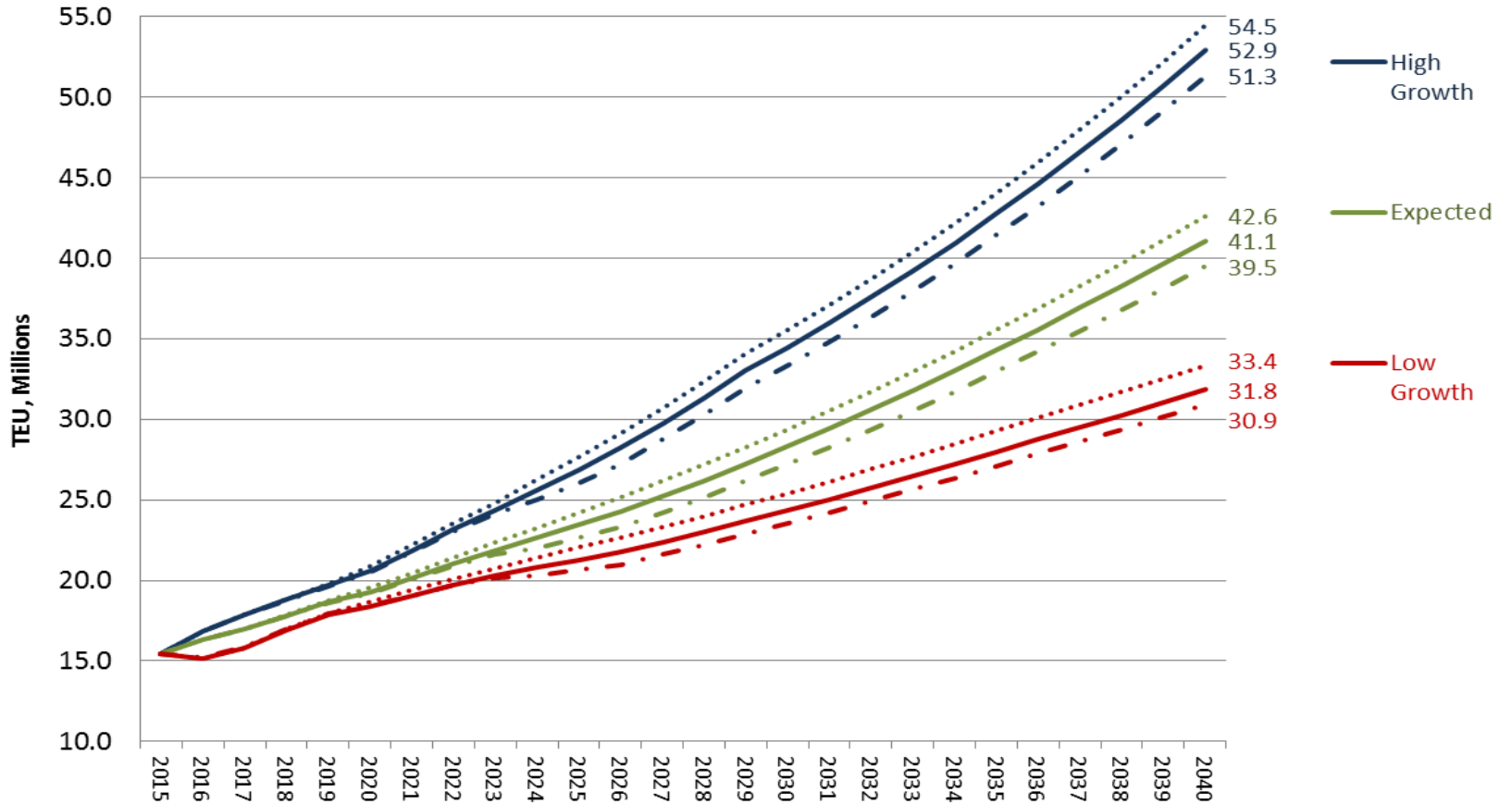
- Continued Growth in Largest Vessel Size
- IPI losses to U.S. Gulf and East Coast Ports Minimized
- IPI losses to British Columbia Minimized

Downside

- Vessel Size Weighted Toward Canal Limits
- Additional 1st Call Service in British Columbia
- Significant Route Cost Disadvantage

Summary of Results

25 Year Forecast of SPB Ports Total Container Volume

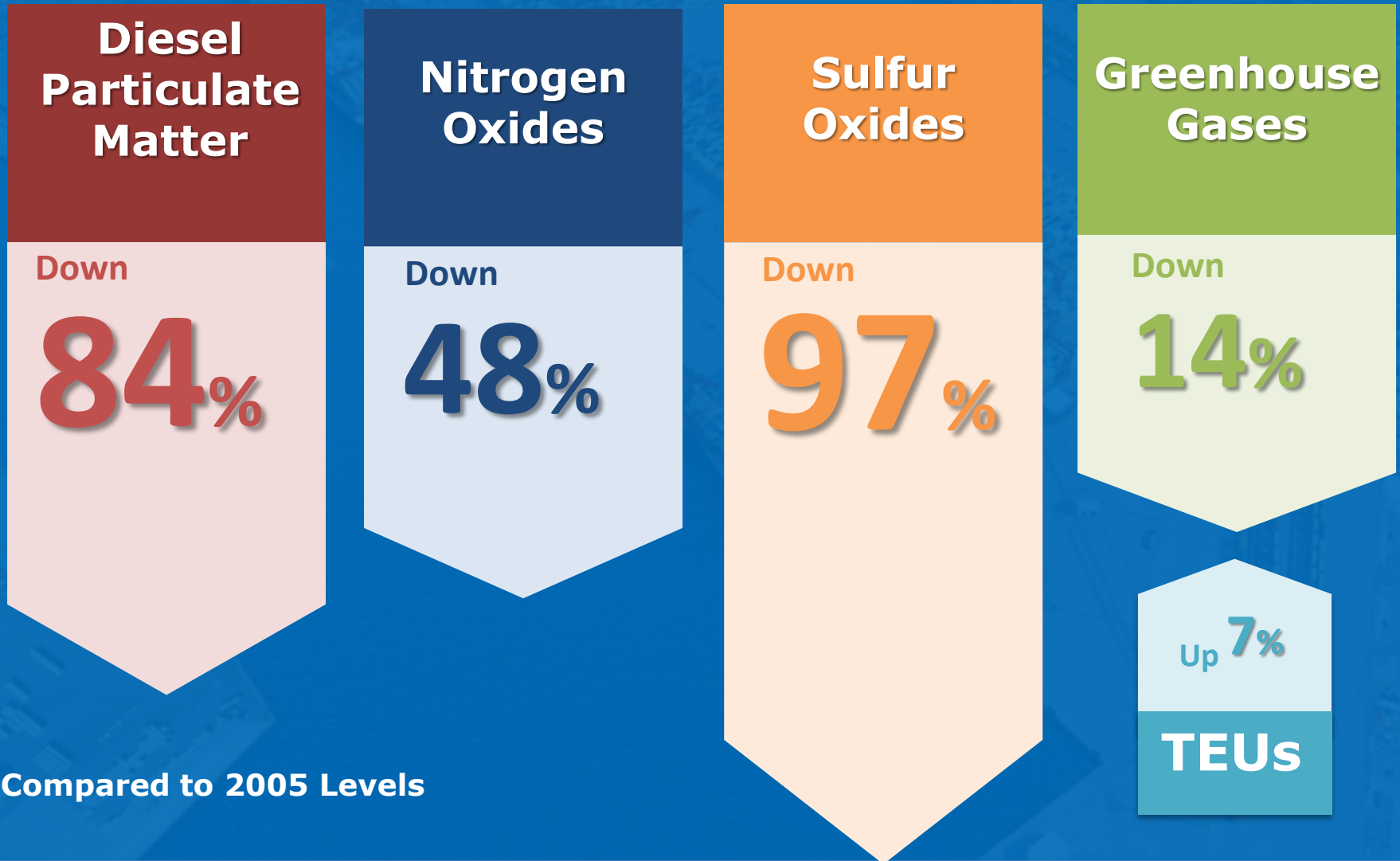


	High Growth			Expected			Low Growth		
	Base	Upside	Downside	Base	Upside	Downside	Base	Upside	Downside
CAGR 15' to 40'	5.1%	5.2%	4.9%	4.0%	4.1%	3.8%	2.9%	3.1%	2.8%

Sources and Challenges

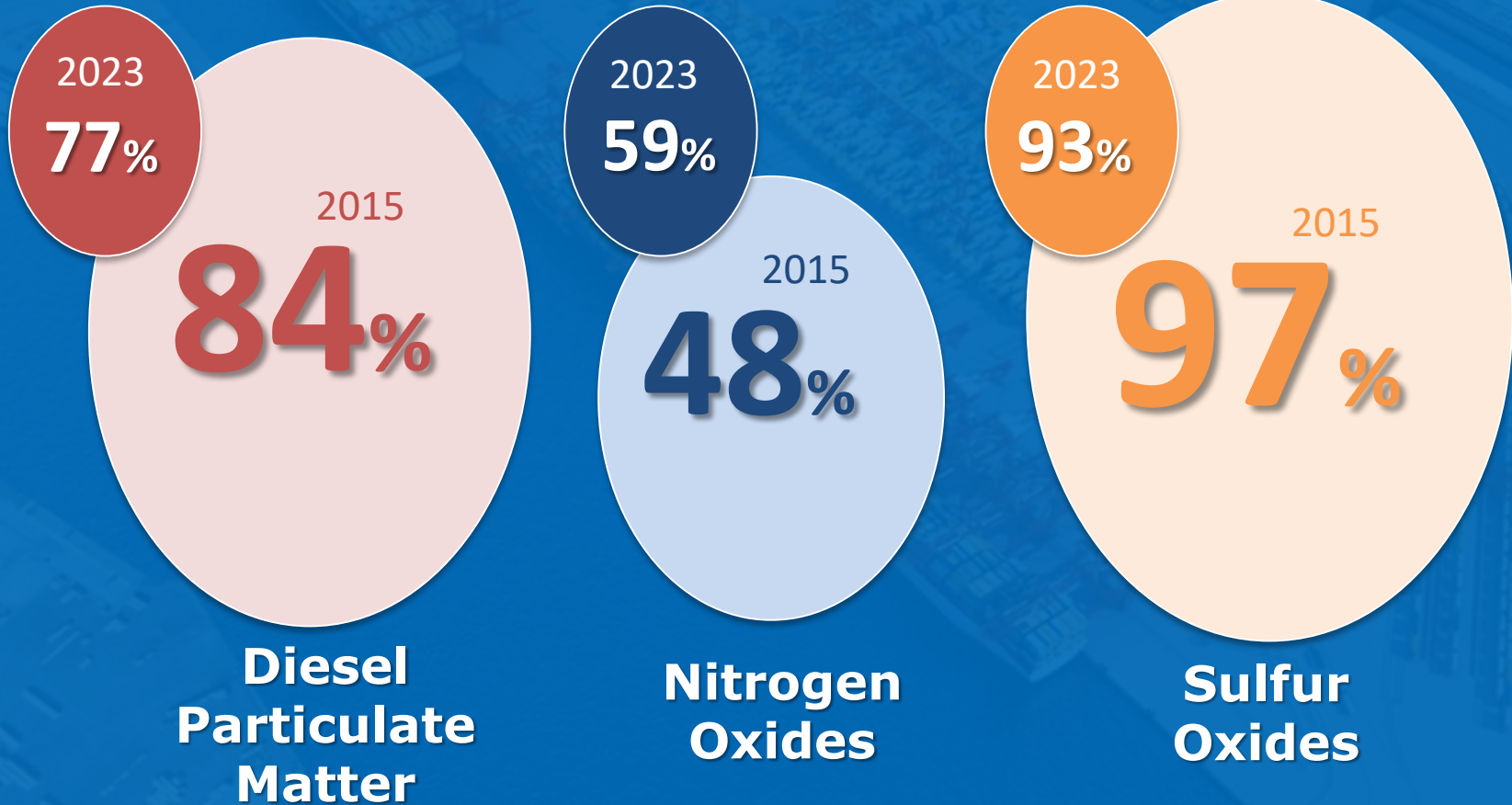


2015 Air Emissions Inventory



*Compared to 2005 Levels

Clean Air Goals

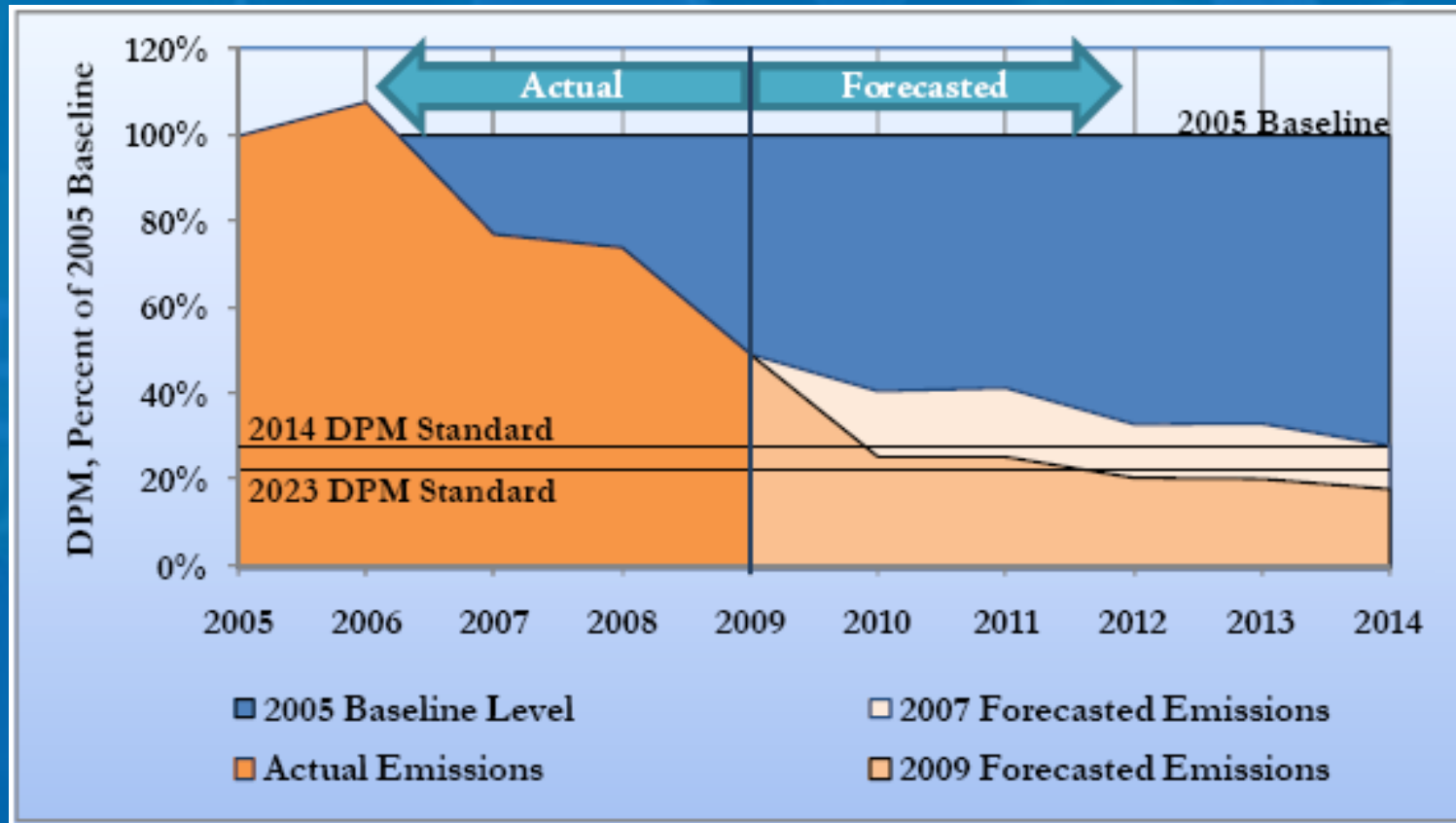


Health Risk Assessment Results



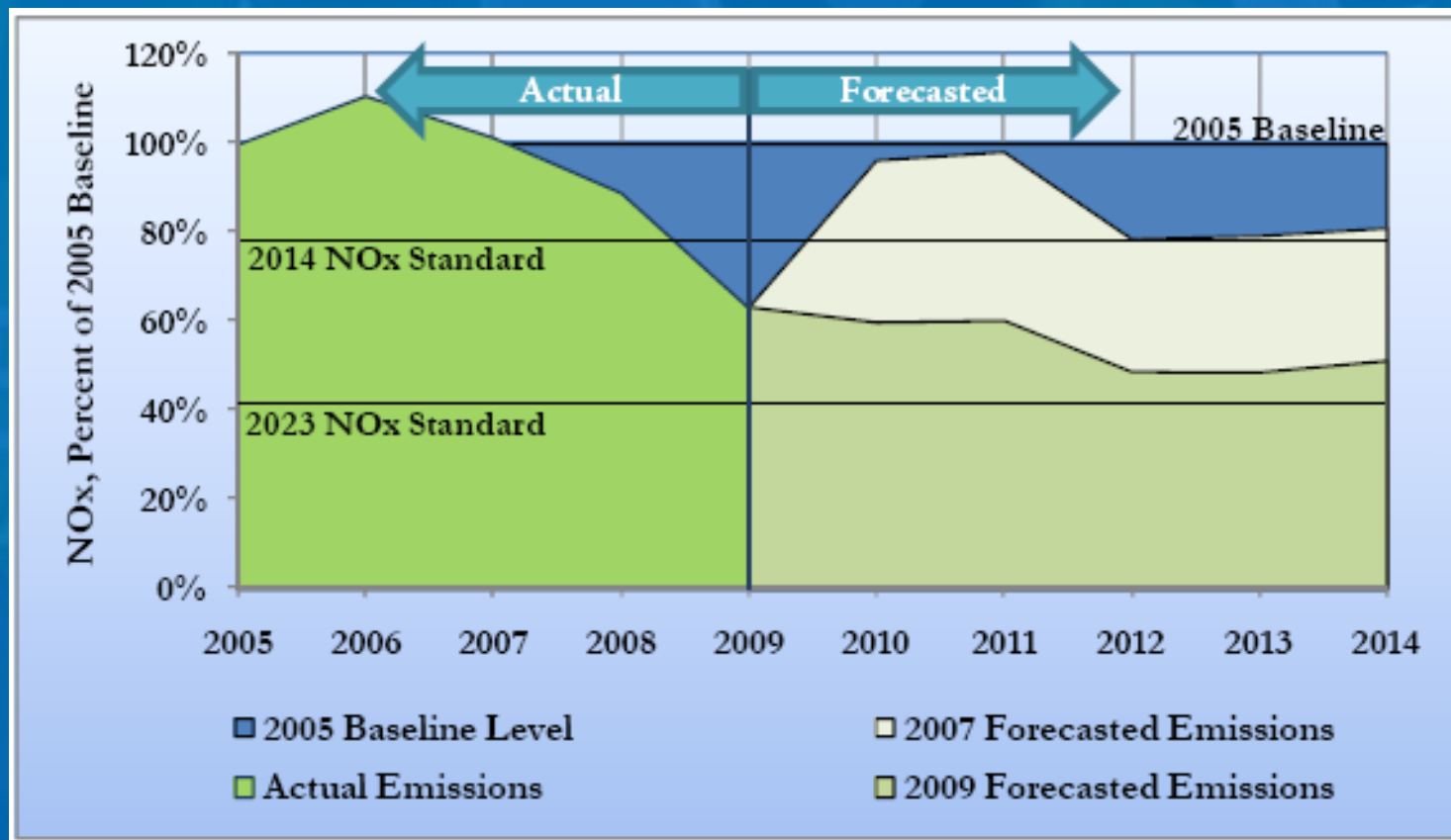
Emissions Benefits

- DPM Actual and Forecasted Reductions



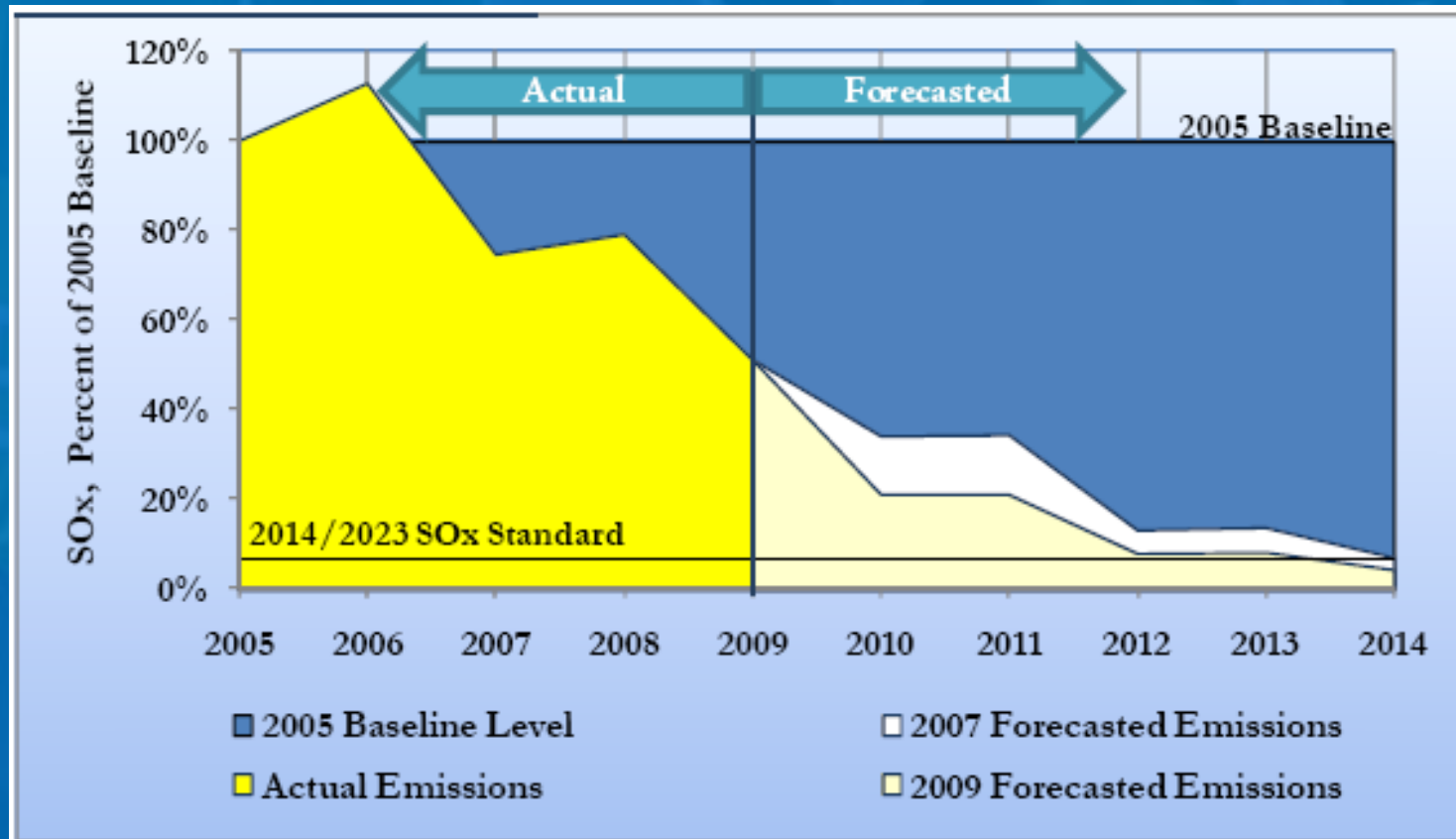
Emissions Benefits

- NOx Actual and Forecasted Reductions



Emissions Benefits

- SOx Actual and Forecasted Reductions



Planning Approach

- Goals

- Meet Throughput Targets
- Big Ship Priority
- Respect Existing Constraints

- Scenarios

- Conventional “Mega-Terminals”
- Electrification
- Densify Intermodal Yards
- Automation
- Short-haul Shuttles
- Max Containers South of Ocean Blvd.

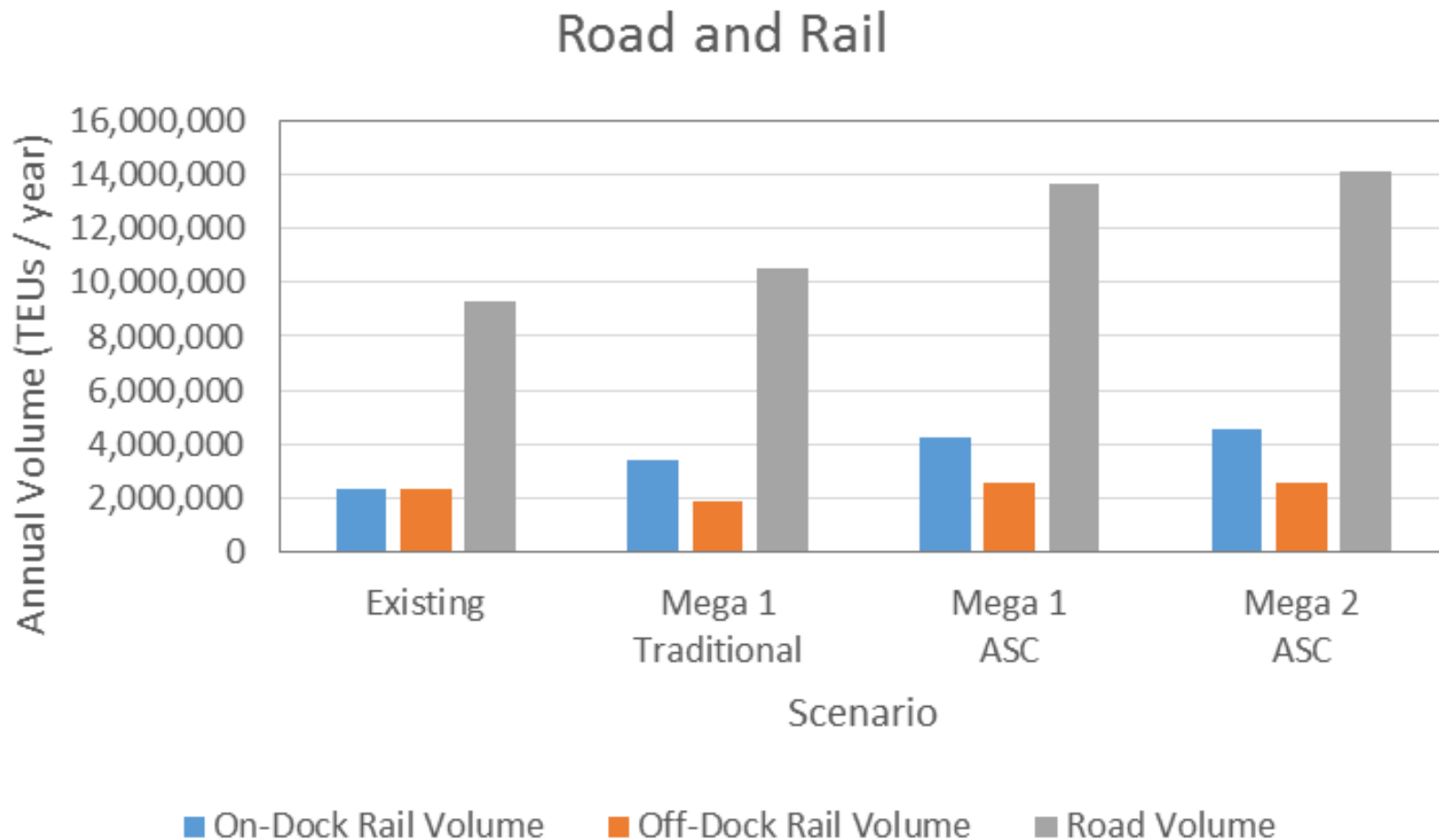
- Evaluation Criteria

<ul style="list-style-type: none">▪ Capacity▪ Revenue▪ Vessel Access▪ Use of Rail	<ul style="list-style-type: none">▪ Emissions▪ Traffic▪ Efficiency▪ Utilization	<ul style="list-style-type: none">▪ Cost▪ Employment▪ Accessibility▪ Resiliency
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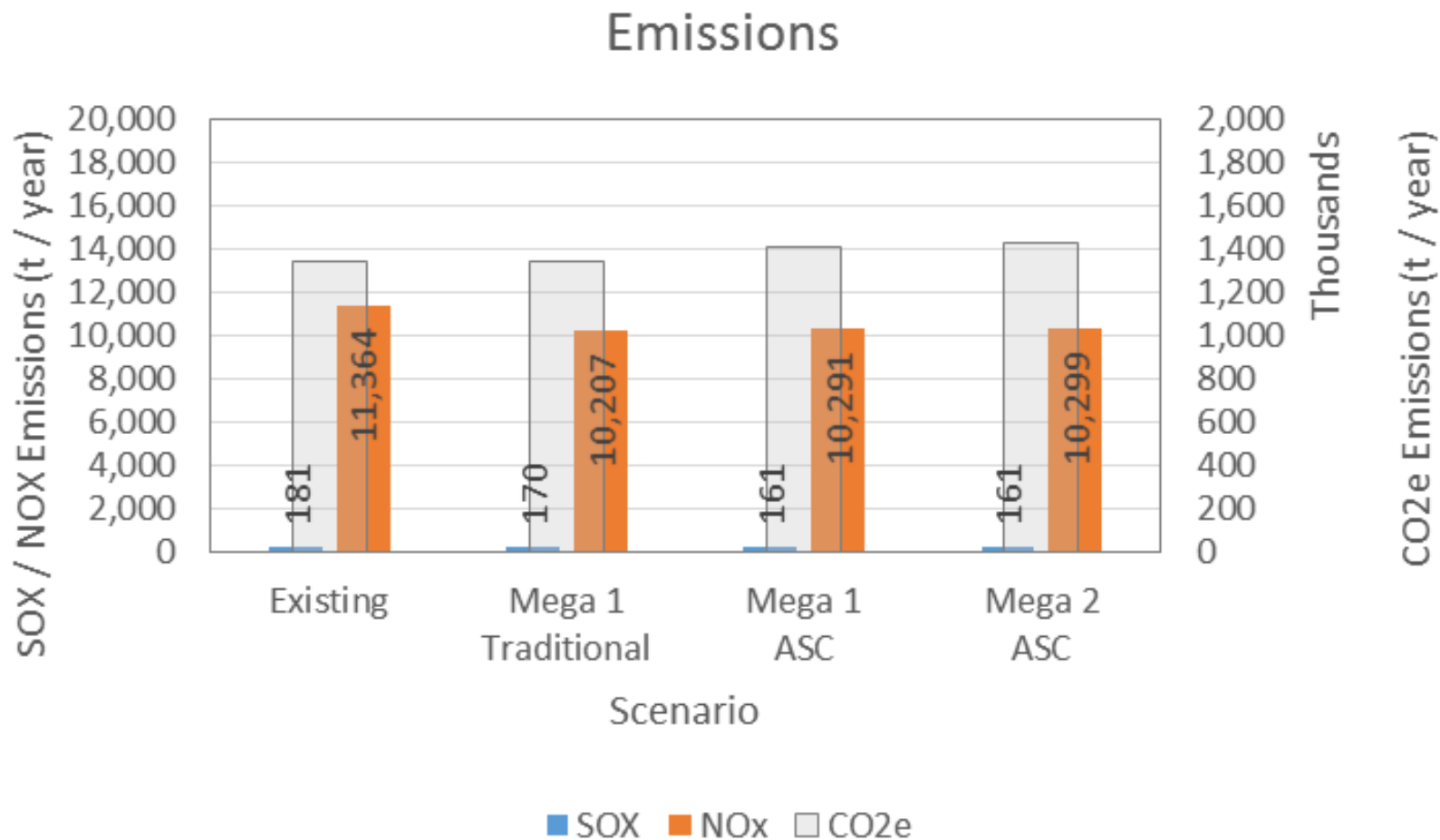
Tools

- Graphically driven, integrated, suite of models
- Inputs
 - High Level Terminal Layout
 - Equipment and Operating Assumptions
 - Known Constraints and Conditions
 - Historical Port and Terminal Operating Data
- Outputs
 - Terminal Capacity (Berth, Storage, Intermodal)
 - Vessel / Rail / Gate / Road Activity
 - Emissions Factors
 - Equipment Power Requirements
 - Labor Needs
 - Additional Evaluation Criteria

Road and Rail Volumes



Emissions – Based on 2014 Inventory



Priorities

Project Objectives

- Robust & Flexible Tools
- Incorporate New Forecast
- Integrate with related Port Initiatives
- Stakeholder Input
- Account for Operational Changes/Improvements
- Plan for Support Uses
- Department-wide Collaboration

Evaluation Criteria

- Facility Performance
- Supply Chain Velocity
- Environmental Stewardship
- Energy Demand
- Financial Impacts
- Regional Economic Impact
- Traffic & Transportation Impacts

Thank You

