

TRENDS IN FACILITIES ENGINEERING

Presented by
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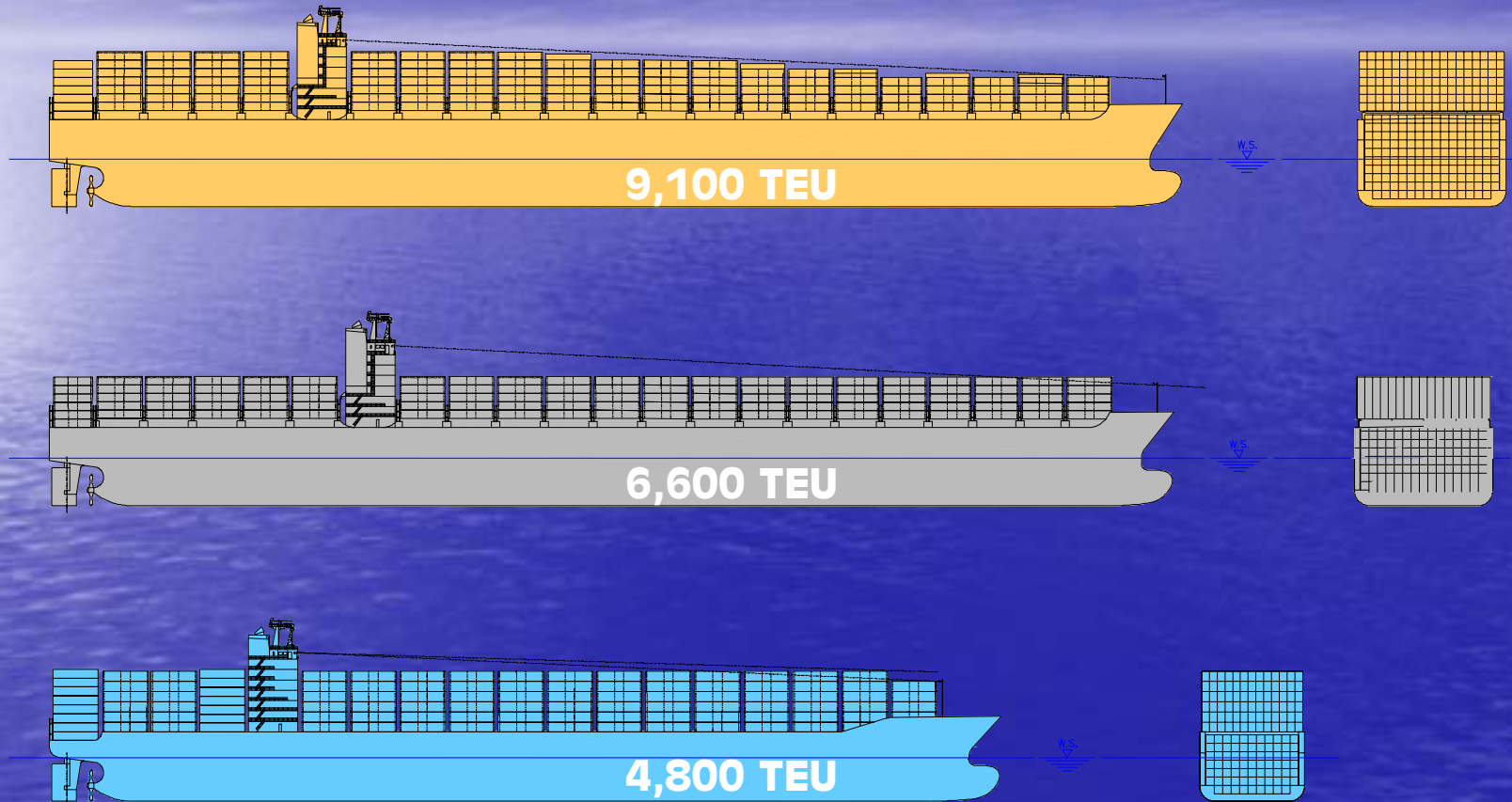


Driving Forces

- ❖ Trends in shipping (Larger Container Vessels)
- ❖ Container Cargo Growth
- ❖ Roadway/Rail Traffic Congestion
- ❖ Security
- ❖ Environmental Concerns

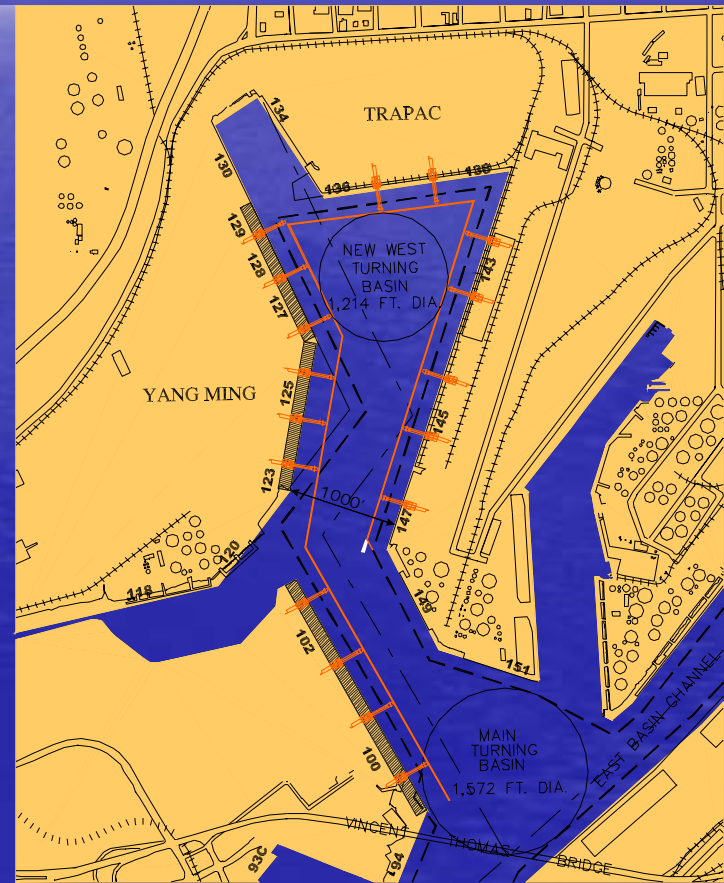
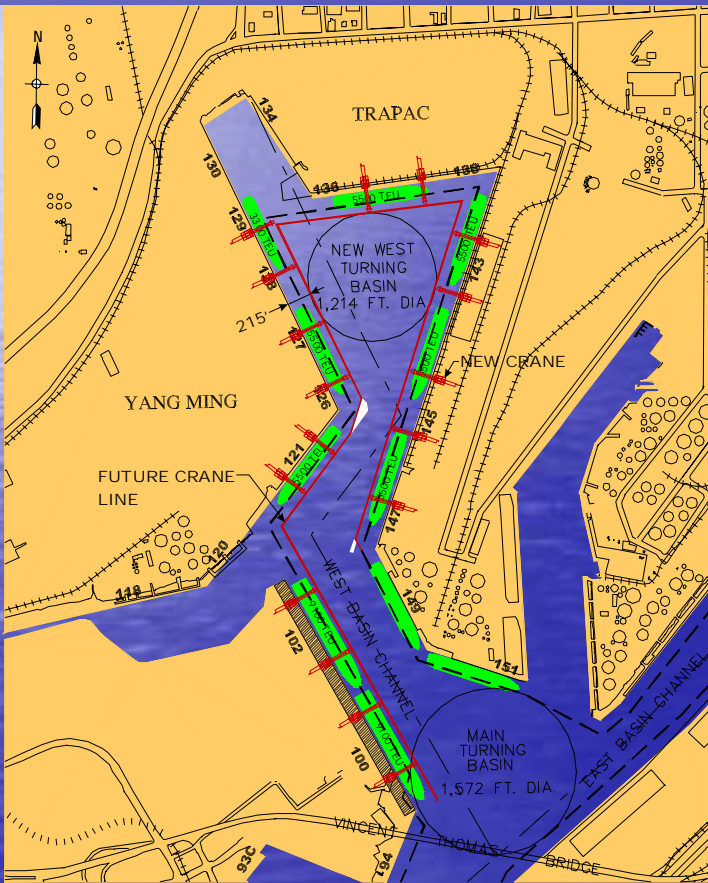


Trends in shipping (Larger Container Vessels)



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Deeper and Wider Navigation Channels, etc.



Trends in shipping (Larger Container Vessels)

Larger Cranes/ Higher Wharf Loads



Trends in shipping (Larger Container Vessels)

Larger Cranes/ Higher Wharf Loads

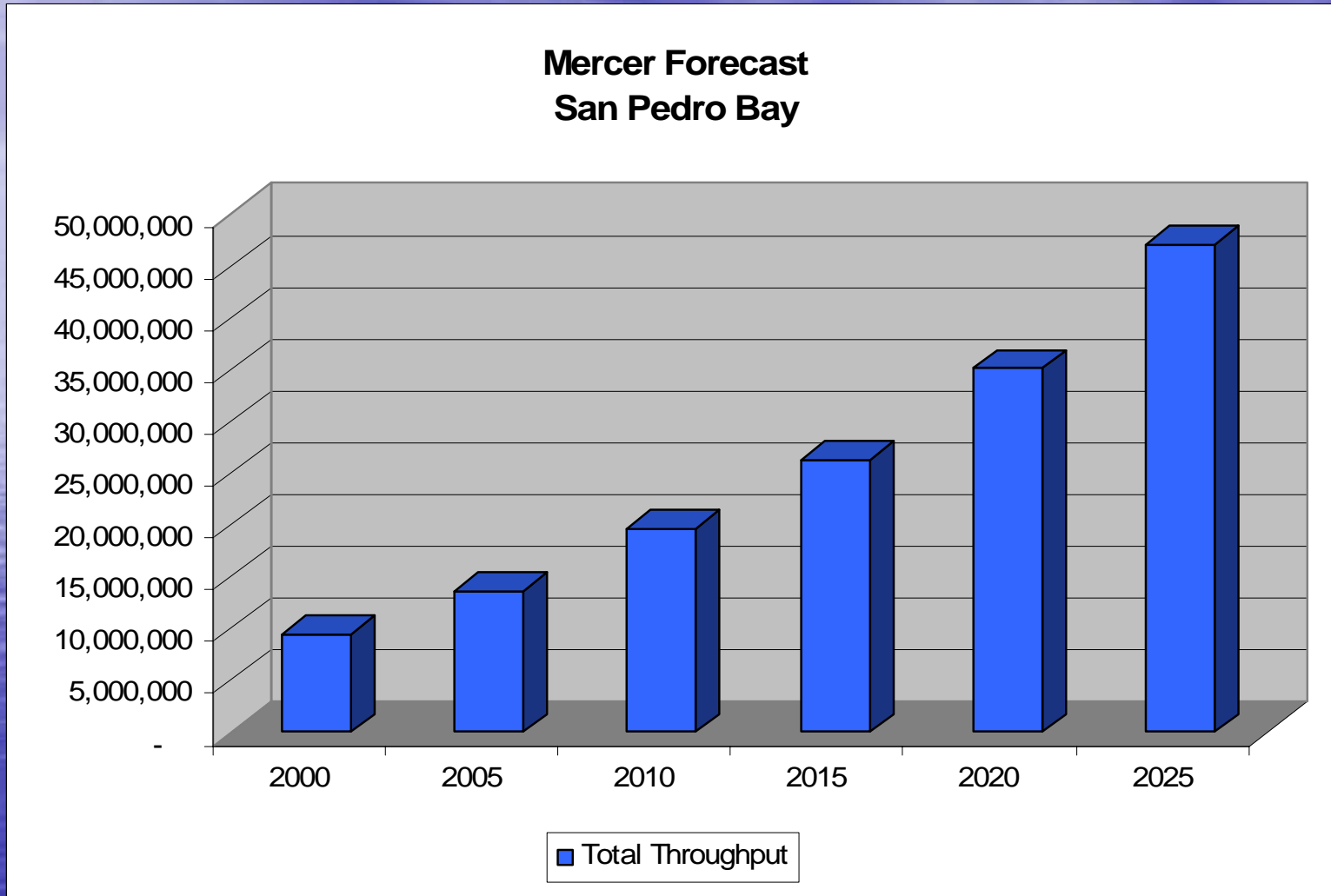


Trends in shipping (Larger **Cruise** Vessels)



- Deeper Draft
- Higher Air Draft
- Wharf Loads
- Parking Requirements
- Traffic Control

Container Cargo Growth



Container Cargo Growth Higher Throughput Velocities



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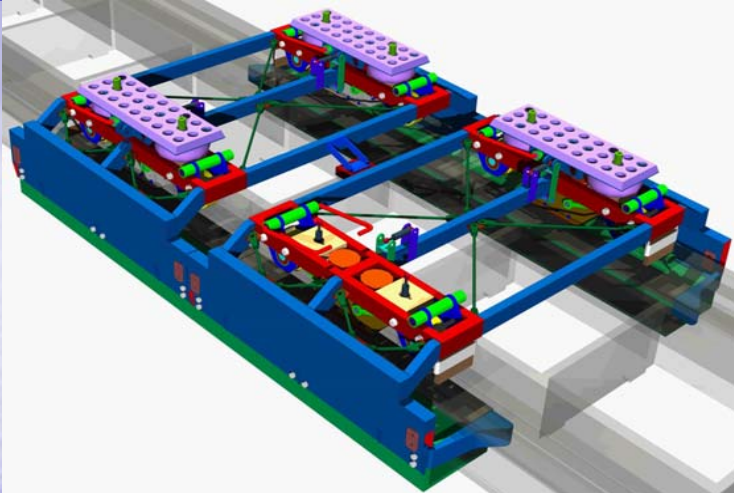
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Roadway/Rail Traffic Congestion



Roadway/Rail Traffic Congestion



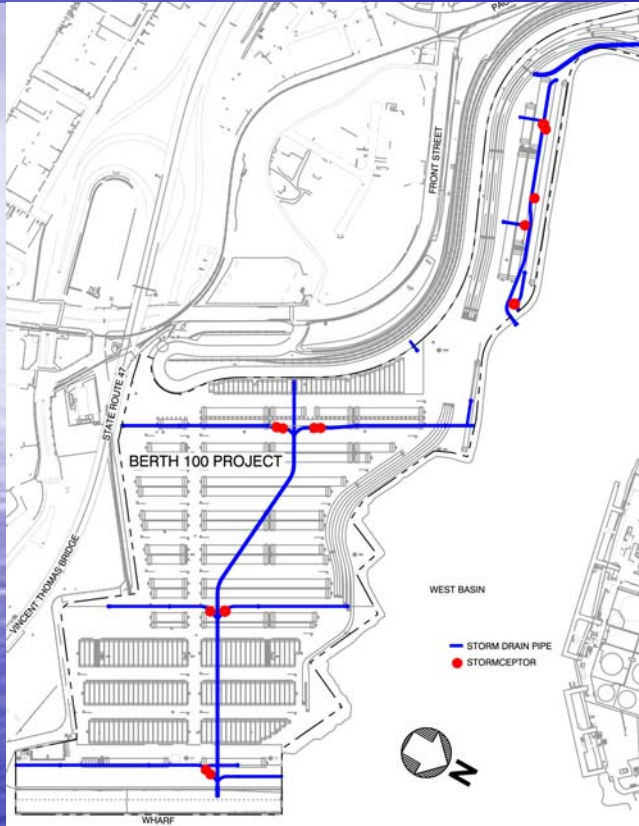
Security



Security



Environmental Concerns



Environmental Concerns

Leadership in Energy & Environmental Design®

Low Impact Development



Environmental Concerns

Vessels Generate a Large Fraction of Total Port Pollution



Diesel Yard Cranes Are Also Significant Emitters



Environmental Concerns



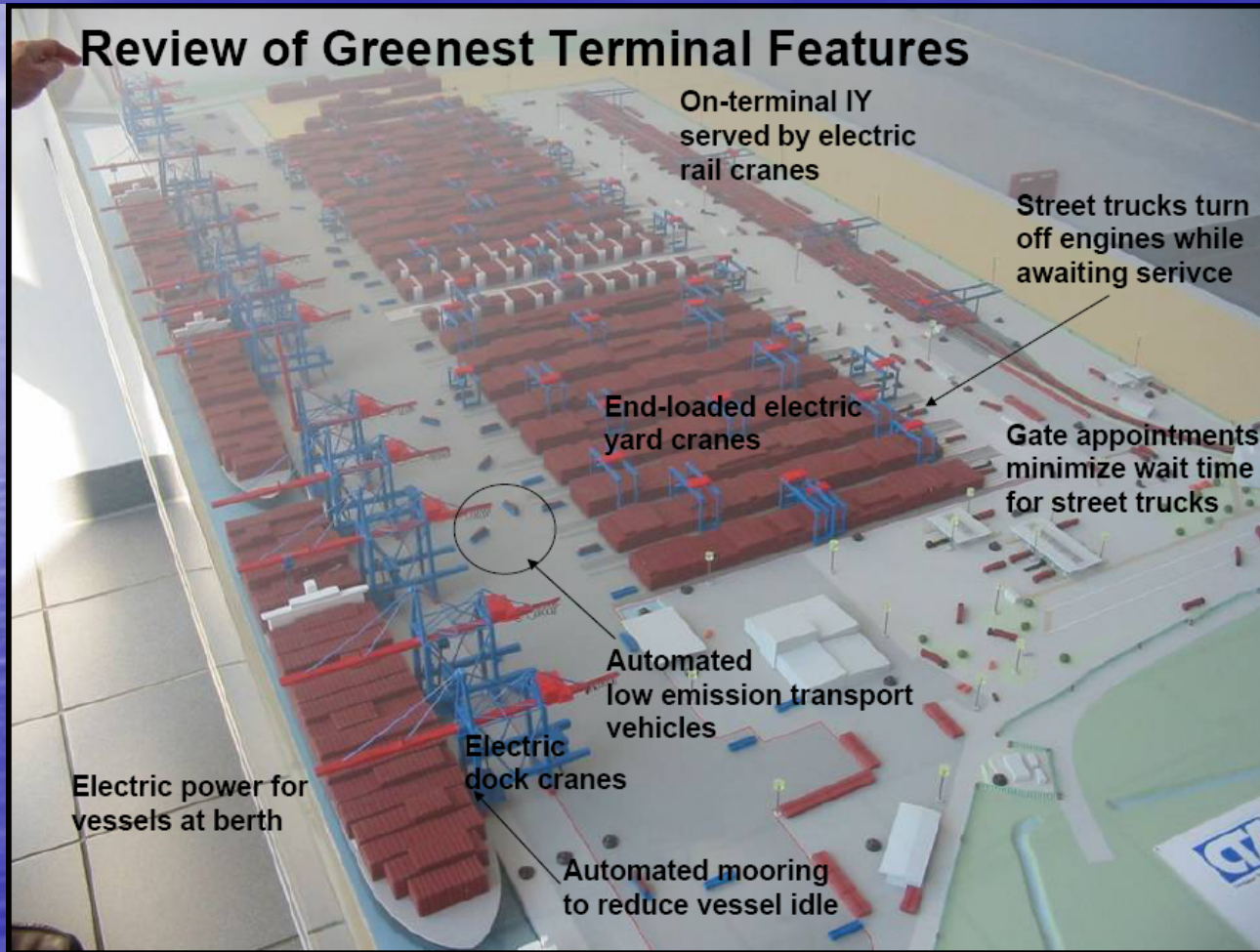
Alternative Marine Power (AMP) Wharf-to-Vessel Cable Connections



Alternative Maritime Power (AMP)



Environmental Concerns



Questions?

