Diagnosing the Marine Transportation System:

Measuring Performance and Targeting Improvement

Biennial Research and Development Conference



CAPACITY Session

Moderator: Diane Davidson, ORNL Recorder: Dinah McComas, USACE

Session 1A : Measuring Performance

KEY POINTS

- 1. MTS is diverse, consisting of inland, ocean and coastal waterways and ports with a variety of users (commercial, recreational and military) so *multiple* capacity metrics are needed.
- 2. The capacity of the MTS itself must be reliable, economical and accessible.
- 3. Capacity is optimized operationally by increasing cargo throughput at ports and terminals.
- 4. Container terminal capacity varies due to efficiency factors such as draft, annual slot turns, berth lengths, stacking height, yard size, operating hours, etc. The caveat is that every port and terminal is different.
- 5. Lack of maintenance dredging results in light loading, partial discharge at deeper intermediate terminals and daylight restrictions impacts which can be monetized.
- 6. Understand your metrics! The commonly used TEU per acre is misleading (low TEU per acre = more capacity).
- 7. Automated information is an enabler of capacity (collision avoidance, draft utilization).
- 8. Need a DASHBOARD that displays a variety of measures for use by MTS stakeholders and the public (which implies intermodal partners).

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Session 2A: Targeting Improvement

KEY POINTS

- 1. Spatial data targets improvement needs, monitors performance, i.e., diagnose shoaling, verify events, identify channel obstructions, etc.
- 2. Channel Portfolio Tool provides scalable information at the tactical level but can also indentify where prioritization of improvements can yield the greatest national benefits.
- 3. Operational decision support tools (like CPT) can show the risks/consequences of not pursuing improvements.
- 4. Availability of real-time and archived vessel data, computational resources and advanced predictive algorithms that mine the data will continue to drive the development of advanced operational management systems.
- 5. Data framework for capacity measures; knowledge sharing with stakeholders, advanced technologies for infrastructure monitoring and vessel tracking; technologies for infrastrucutre monitoring and vessel tracking; and system level models will contribute to reliable and adequate capacity.