

Programmatic approaches – GHG & noise reductions



IMO Expert Workshop on
relationship between Energy
Efficiency & Underwater
Radiated Noise

Theme 4: Bridging gaps &
going to scale

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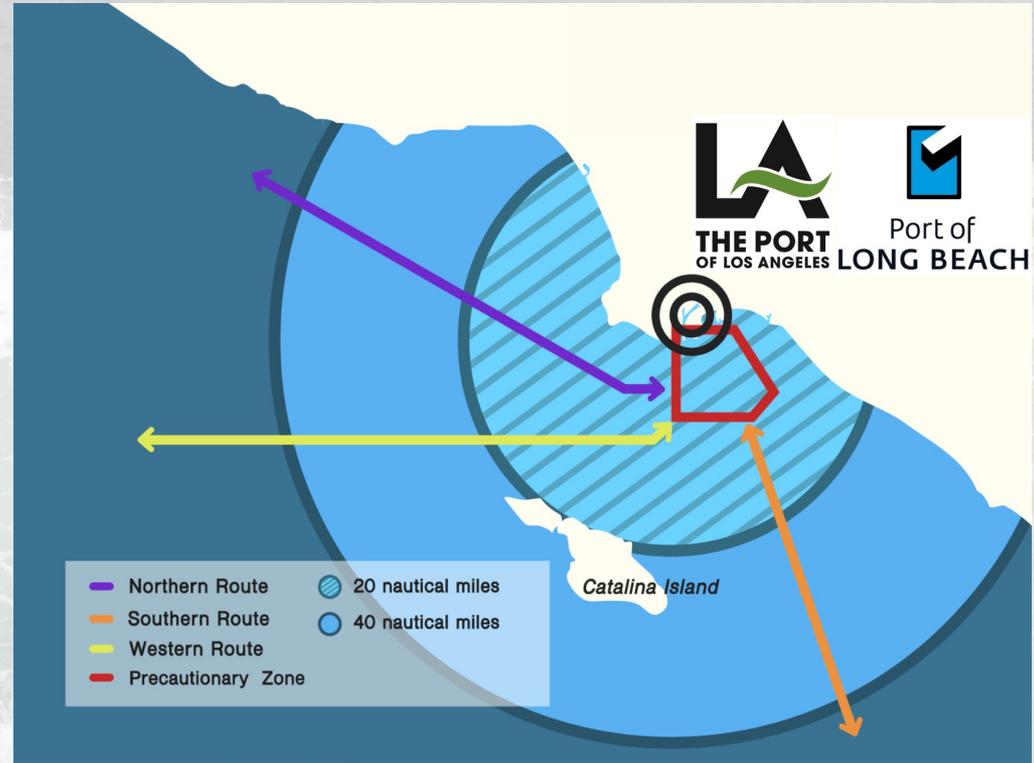
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- Ports
 - Regional initiative
 - Maritime industry initiative

Ports

- Focused on air quality pollutants & more recently focusing on GHGs
- Several ports use a combination of data sources to conduct & track ship emissions
 - AIS data
 - vessel boarding data
 - port data sources
 - IAPH ESI data
 - commercial vessels parameter data sets
- Vessel speed reduction for some ports is a key emission reduction strategy
- Ports are working with the maritime industry to support & promote just-in-time arrival
 - Co-benefits – vessel speed, anchorage times, emissions, URN, & whale strike

Port examples

- Port of Los Angeles & Port of Long Beach
- Air quality strategy
- First port-led voluntary/incentive-based vessel speed reduction program
- Established 2005
- 12 knots
- Over 90+% annual compliance
- Co-benefits recognized
- Quantified benefits

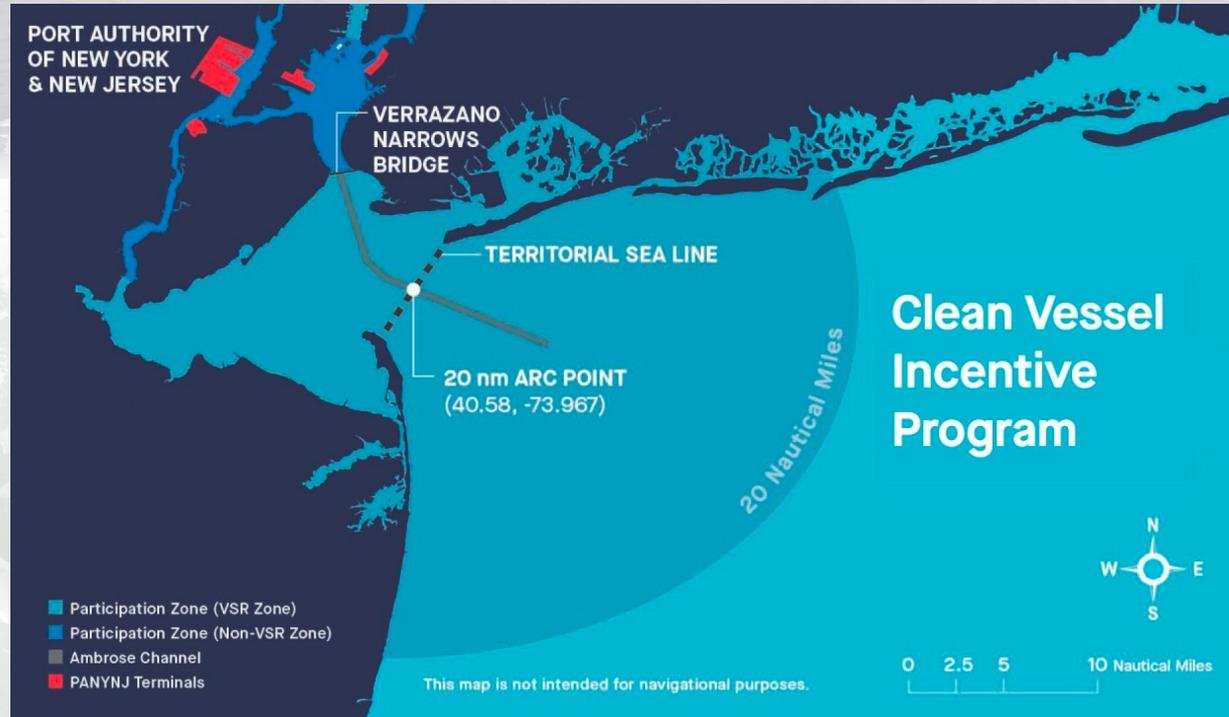


<https://www.portoflosangeles.org/environment/air-quality/vessel-speed-reduction-program>

<https://polb.com/business/incentives/#green-flag-program>

Port examples

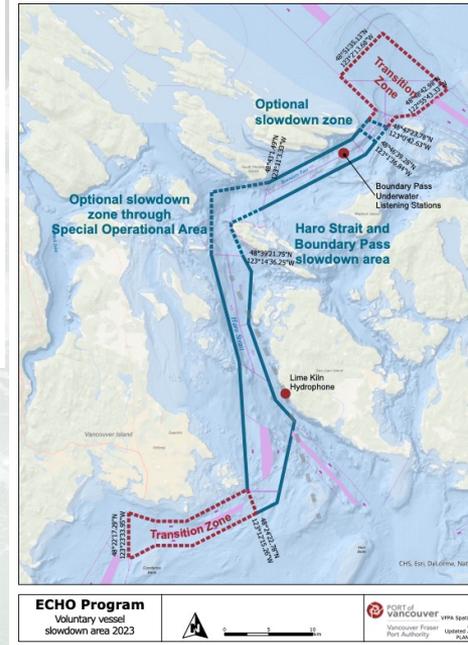
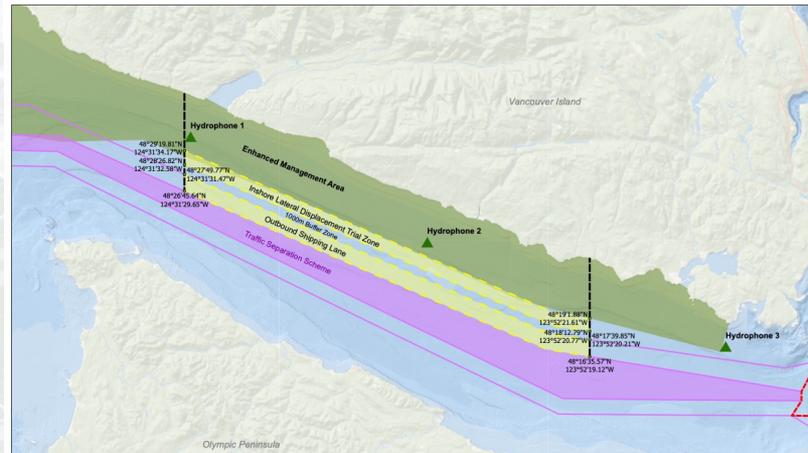
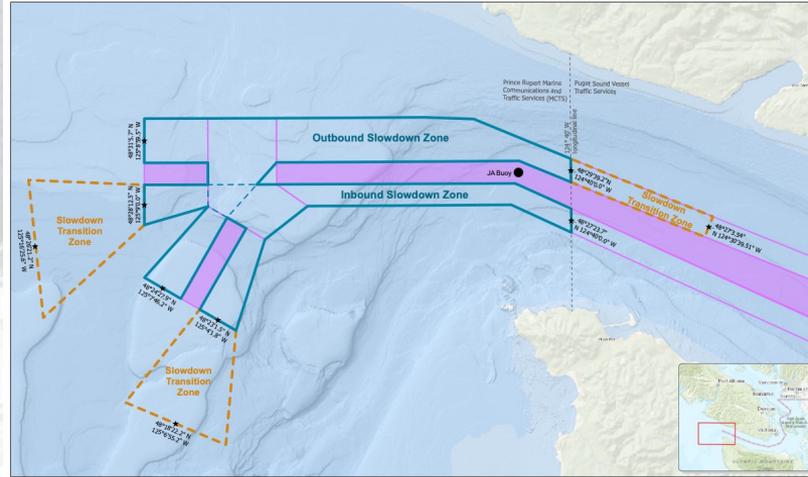
- Port Authority of New York & New Jersey
- Air quality strategy
- Established 2012
- Voluntary/incentive based
- 10 knots
- Extends & expands NOAA's Right Whale Ship Strike Reduction Rule
- Quantified benefits



<https://www.portvancouver.com/environmental-protection-at-the-port-of-vancouver/maintaining-healthy-ecosystems-throughout-our-jurisdiction/echo-program/>

Port examples

- Port of Vancouver
- Unique as the program was started to reduce URN & now assessing co-benefits in emission reductions
- 11 & 14.5 knots
- Two areas & lateral displacement zone
- Quantified benefits



Regional example

- Protecting Blue Whales & Blue Skies
- Broad coalition
- Building from the POLA/POLB VSR program
- Voluntary VSR program
- Southern & central California coast
- Combined URN, whale strike, & emission reductions
- Fleet based program
- 10 knots
- Quantified benefits



Regional example

2023 Protecting Blue Whales and Blue Skies Program San Francisco and Monterey Bay Region Vessel Speed Reduction Zones



2023 Protecting Blue Whales and Blue Skies Program Southern California Region Vessel Speed Reduction Zone



Regional example



Season Highlights

- 23 global shipping companies participated
- Total VSR distance: 266,148 nautical miles
- Air pollution (NOx) reduced by: 921 tons
- Regional greenhouse gas emissions reduced by: 32,604 metric tons
- Ocean noise reduced by: 4.6 db/transit on average
- Risk of ship strikes to whales reduced by: 44%

2022 Fleet Cooperation Awards

Participating companies received awards and recognition based on the percentage of total nautical miles traveled at 10 knots or less by each company's fleet of vessels.

Sapphire Tier (85-100%):



Gold Tier (60-84%):



Blue Sky Tier (35-59%):



Regional example



"Protecting Blue Whales and Blue Skies" Vessel Speed Reduction Program								
Program Year	2014	2016	2017	2018	2019	2020	2021	2022
VSR Zone	Santa Barbara Channel Region		Santa Barbara Channel Region & San Francisco Bay Region			Southern California Region & San Francisco Bay Region		
# Companies	7	10	11	12	15	16	18	23
# Vessels	14	25	44	295	349	483	545	684
Slow-speed Distance (nautical miles)	2,700	5,000	12,630	46,026	99,019	181,306	179,530	266,148
Overall Fleet Cooperation	--	--	--	36%	55%	60%	64%	78%
NOx Reductions (tons)	12.4	25.6	84	266	536	748	650	921
Regional GHG Reductions (metric tons)	535	1,005	2,630	8,668	17,026	24,258	22,201	32,604
Ocean Noise Reduction * (Decibels (dB) / transit)	--	--	--	1.0	--	2.3	4.1	4.6
Ship Strike Risk Reduction **	--	--	--	--	--	35%	50%	44%
* Represents the decrease in noise from participating vessels in the Southern California Region.								
** Represents the proportional decrease in risk from participating vessels and not absolute estimates of mortality avoided.								

<https://www.bluewhalesblueskies.org/>

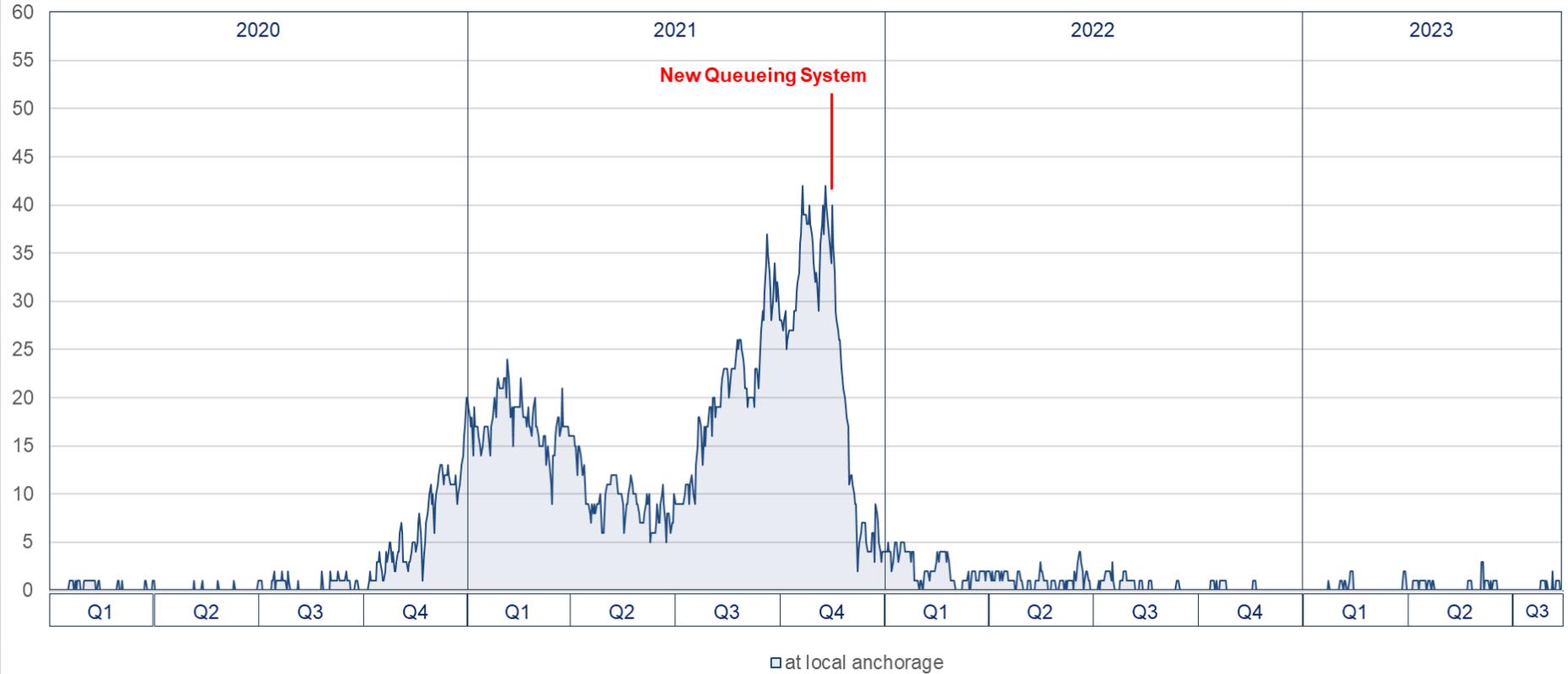
Maritime industry initiative

- 2020-2022 container ship queueing at POLA & POLB
- Pandemic + logistics chain disruptions
- 100+ container ships at local anchorages
- Significant increase in air quality pollutants & GHG emissions
- Racing to the 20 nm line to enter port arrival queue
- Voluntarily changed point to last port departure prior to calling ports
- Established Safety & Air Quality Area
- Co-benefits: reduction in speed, URN, whale strike severity, & emissions



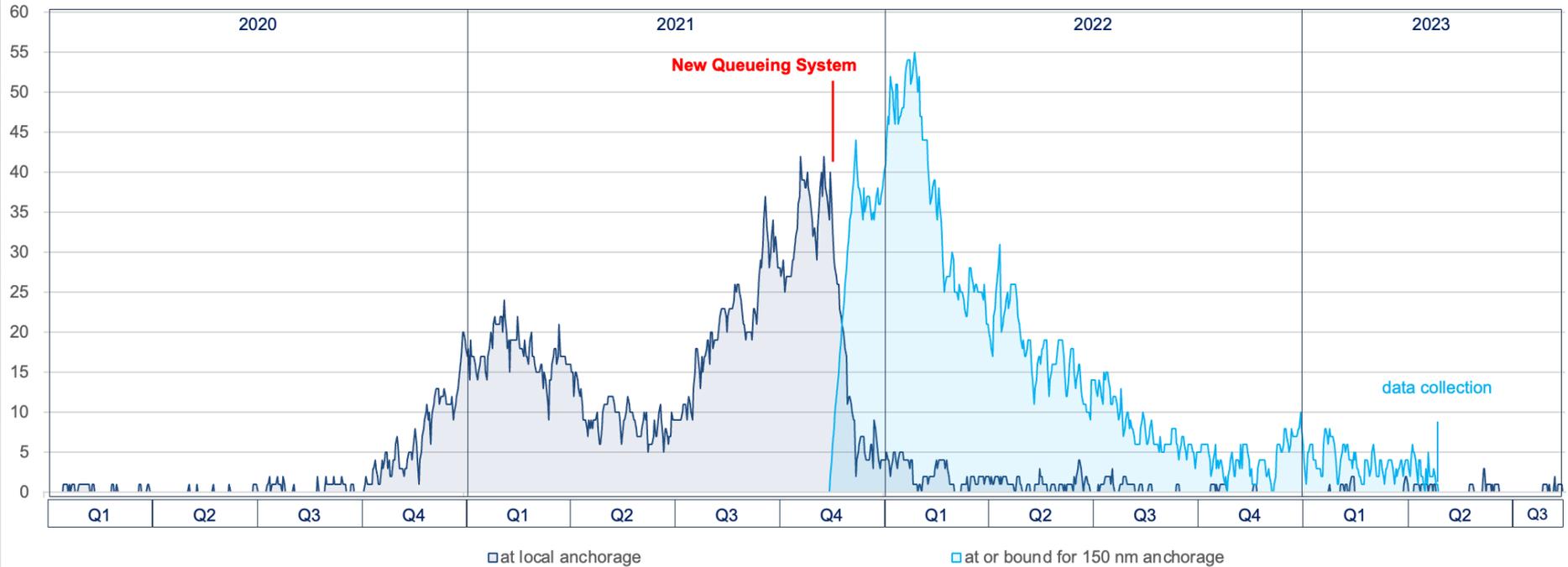
New queuing system effectiveness on local anchorages

2020 - 17 Aug 2023 daily POLA container ship anchorage counts



What was avoided by the new queuing system

2020 - 17 Aug 2023 daily POLA container ship anchorage counts



□ at local anchorage

□ at or bound for 150 nm anchorage

Thank You!



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ENVIRONMENTAL MANAGEMENT
AIR QUALITY • CLIMATE • SUSTAINABILITY

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