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Litigate or Innovate? US Shipping in [the] 21st Century

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The United States consists of over 29,000 nautical miles of maintenance free, traffic free "navigable highways" that have the potential to transport unmatched amounts of freight.[12] For example, the average containership can carry approximately 10,000 tractor trailer loads which, if loaded onto a train, would be 44 miles long.[3] Yet domestic shipping is going through a bit of an identity crisis at present. Is domestic shipping just another idea of a bygone era, or a slumbering powerhouse, essential to America's goals in the 21st century? The answer, it turns out, is both. The need for domestic shipping is growing more evident as the current U.S. supply framework begins to, literally, crack under the weight of the demand. Yet the future potential of domestic shipping cannot be realized while sailing on the fleet of the past. Legislative and economic realities of the new global shipping industry dictate that unless U.S. shipping constructs a modern fleet, domestic shipping will remain anchored in obscurity.

Legislatively, these realties include the the canon of Federal laws which govern marine shipping including the Clean Air Act (CAA), Clean Water Act (CWA), Endangered Species Act (ESA), and the National Environmental Policy Act. In addition, despite common perceptions, heightened environmental regulations are not a uniquely American condition. In fact, major foreign shipping nations have been operating under heightened environmental standards for years and in some key areas the US is just now catching up to the international community.[4] On

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[1] Steve Overturf is a visiting student at Roger Williams School of Law 2012-2013 and a graduate of Phoenix School of Law 2013.

[2] Americas Marine Highway Program: US Department of Transportation, Maritime Administration. 2012 *available at* www.marad.dot.gov/ships_shipping_landing_page/mhi_home/mhi_home.htm

[3] Container Ship Design: World Shipping Council. *available at* www.worldshipping.org/about-the-industry/liner-ships/container-ship-design

[4] The United States just recently became a party to MARPOL Annex VI (air emissions) by depositing its instrument of ratification with IMO on October 8, 2008. Control of Emissions From New Marine Compression-Ignition Engines at or Above 30 Liters per Cylinder: 75 FR 22896-01

the economic front, international trade via seaports accounts for more than 32 percent of the U.S. GDP, which is expected to increase to the equivalent of 37 percent by 2015.[5] Yet it is quasi-national foreign shipyards that are reaping the benefits while also enjoying the resultant employment and tax revenues produced by these mammoth industries.[6] In fact, in 1955, the US Flag fleet represented almost 25% of the world's overall tonnage that share today is approaching only a mere 2%.[7] Therefore, unless the industry comes to grips with these new global realities, U.S. shipping will continue to drift into obscurity, another conveyance discarded by time and technology.

The Road to Nowhere

The primary workhorse of US transportation is trucks, which deliver nearly 70% of the estimated 18 billion tons of freight moved each year across the US transportation network.[8] Rail transport comprises a distant second carrying about 15% of tonnage, with pipelines carrying roughly 9%, and waterborne shipping landing fourth at 6%.[9][10]

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[5] Seaports and the US Economy: American Association of Port Authorities. 2012. *available at* http://aapa.files.cms-plus.com/PDFs/Awareness/US%20Economy%20Fact%20Sheet%2012-4-12.pdf

[6] Top 10 Shipbuilding Companies in the World in 2012: August 14, 2012. Marine Insight. *available at* www.marineinsight.com/marine/marine-news/headline/top-10-shipbuilding-companies-in-the-world-in-2012

[7] American Maritime Congress: Modern Merchant Marine. *available at* http://www.americanmaritime.org/merchant/

[8] Freight Facts and Figures 2011: U.S. Department of Transportation, Federal Highway Administration, Office of Freight Management and Operations, Freight Analysis Framework, version 3.2. *available at* http://ops.fhwa.dot.gov/freight/freight_analysis/nat_freight_stats/docs/11factsfigures/table2_1.htm

[9] Air transport comprises less than 1% of total tonnage.

[10] Freight Policy Across the Modes: Waterways Council, Inc. Phil Byrd, Vice Chairman American Trucking Association. 2012 Fall Symposium. *available at* http://www.waterwayscouncil.org/Presentations/2012FallSymposium/Byrd.pdf

Yet the Eisenhower Interstate System, which at its opening in 1955 carried 65 million vehicles, now strains to support nearly 246 million.[11] In addition, is estimated that over 750,000 of these vehicles are long-haul trucks and this number is expected to double by 2050[12]. This traffic growth has far outpaced needed maintenance and repairs. In fact nearly, "33 percent of the nation's major roads are in poor or mediocre condition and… over 2,000 bridges on the interstate highway system are in need of an overhaul." [13] Compounding the issue is the fact that the interstate system comprises only about 50,000 miles of total roadway. The remaining, "4 million miles of U.S. roadway are typically in worse stages of disrepair and many rural counties with declining tax bases are responsible for maintaining road segments that provide important connectivity between distant population centers or freight ports and marketplaces."[14]

Naturally this has dented the cost efficiency of the trucking industry in the form of both congestion and collisions. Congestion, "which is measured as wasted fuel and delay, cost the U.S. trucking industry over $23 billion in 2010."[15] While it is clear that significant improvements to the roads must be made, no one is quite sure where the glacial amount of funding required will come from. Estimates predict that nearly half a trillion dollars would be

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[11] US highway system is badly in need of repair: John W. Schoen August 3, 2007. *available at* http://www.msnbc.msn.com/id/20095291/ns/business-eye_on_the_economy/t/us-highway-system-badly-need-repair/

[12] Congestion cost trucking 23 Billion in 2010: Deborah Whistler Oct, 5 2011. *available at* http://fleetowner.com/management/news/congestion-trucking-billions-1005

[13] US highway system is badly in need of repair: John W. Schoen August 3, 2007. *available at* http://www.msnbc.msn.com/id/20095291/ns/business-eye_on_the_economy/t/us-highway-system-badly-need-repair/

[14] An Analysis of the Operational Costs of Trucking: Todd Trego and Dan Murray, American Transportation Research Institute August 1, 2009. *available at* http://www.atri-online.org/research/results/ATRITRBOpCosts.pdf

[15] :Congestion cost trucking 23 Billion in 2010: Deborah Whistler Oct, 5 2011. *available at* http://fleetowner.com/management/news/congestion-trucking-billions-1005

needed to repair and maintain the US National Highway System.[16] In addition to economic pressures, trucking faces severe environmental constraints as well. By 2030, the carbon dioxide emissions caused by freight transport are forecast to increase 30%.[17] Southern California serves as a good case study as more than 40% of freight that arrives in the U.S. via shipping containers comes through the ports of Long Beach and L.A.[18] Then more than *10,000* trucks then offload the cargo, in a daily process that, "affects almost 17 million people and causes billions of dollars in health-related costs annually, according to a 2011 report from the South Coast Air Quality Management District."[19] As the District Executive Officer simply stated, "goods- related movement remains our largest source of air pollution in Southern California." [20]

Engine Troubles

Yet while the cargo transport potential of waterborne shipping is promising, it too struggles with infrastructure issues namely, Category 3 Marine Diesel Engines. Category 3 engines are some of the largest engines in the world, with greater than 30 liters displacement per cylinder, and are used in containerships and tankers around the globe.[21] The primary reason for these emissions is that these engines burn "bunker fuel", which is a byproduct of refining crude oil into higher-grade products and tends to have higher ash, sulfur, and nitrogen content than

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[16] Americas Infrastructure Report Card: American Society of Civil Engineers, 2009. *available at* http://www.infrastructurereportcard.org/fact-sheet/roads

[17] An electrifying freight solution on the 710? Siemens working on it: Susan Carpenter. May 15, 2012. Los Angeles Times. *available at* http://articles.latimes.com/2012/may/15/local/la-me-gs-an-electrifying-freight-solution-from-siemens

[18] *Id.*

[19] *Id.*

[20] *Id.*

[21] Bluewater Network v. E.P.A., 372 F.3d 404, 406-08 (D.C. Cir. 2004).

other fuels. [22] Residual fuel oil also has a higher variability than other fuels, which makes engine emissions more difficult to control. [23] Specifically, "category 3 engines use emission control technology that is comparable to that used by non-road engines in the early 1990s, and use fuel that can have a sulfur content of 30,000 ppm or more."[24] In 2009 alone, emissions from category 3 engines accounted for about 80% of mobile source emissions sulfur oxides, and this number is expected to increase to 93% by 2020." [25] Consequently, in July of 2010 the EPA finalized its rule stating that, "any fuel oil used or sold for use in Category 3 marine vessels will go from uncontrolled sulfur levels to no higher than 1,000 ppm by January 1, 2015. [26]

Complicating this issue is the question of how you enforce national laws on an international shipping industry. Especially considering that roughly 80 percent of the world fleet today operates under a flag of convenience from an "open" registry, in which over 90 percent of its registered vessels are foreign-owned. [27] Open registries are particularly attractive as they do not subject owners to any inspection of their vessels, relying only upon the classification society and insurance underwriters. [28] Yet these loose inspection standards are effectively

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[22] Id.

[23] *Bluewater Network v. E.P.A.,* 372 F.3d 404, 406-08 (D.C. Cir. 2004).

[24] Control of Emissions From New Marine Compression-Ignition Engines at or Above 30 Liters per Cylinder, *available at* http://epa.gov/

[25] *S. Coast Air Quality Mgmt. Dist. v. E.P.A.*, 554 F.3d 1076, 1078 (D.C. Cir. 2009)

[26] Control of Emissions From New Marine Compression-Ignition Engines at or Above 30 Liters per Cylinder, *available at* http://epa.gov/

[27] Comparison of US and Foreign Flag Operating Costs: US Department of Transportation Maritime Administration September 2011. *available at* //www.marad.dot.gov/documents/Comparison_of_US_and_Foreign_Flag_Operating_Costs.pdf

[28] *Id.*

counterbalanced by MARPOL, a global environmental treaty to which nearly 90% of global shipping tonnage is subject.[29] MARPOL consists of two related marine environmental treaties to which the United States is a party, the 1973 International Convention for the Prevention of Pollution from Ships and the related Protocol of 1978. [30] The Act to Prevent Pollution from Ships ("APPS") represents Congress' implementation of these treaties and generally referred to as MARPOL, whose jurisdictional reach extends to all U.S.-flagged ships worldwide and foreign-flagged ships in the navigable waters of the United States.[31]

MARPOL has six annexes which contain guidelines for regulating vessel discharges of oil, noxious bulk liquid substances, harmful packaged substances, sewage, garbage, and air pollution. Annex I (oil) and II (noxious liquid), were enacted in 1983 and are mandatory for all 152 signatory countries.[32] Annex III (packaged hazardous substances), IV (sewage), V (garbage) are voluntary yet have almost unanimous acceptance among all countries, with notable exceptions including the United States which has yet to ratify Annex IV regulating sewage.[3334] As for the last Annex (VI), which regulates air emissions, 72 countries representing over 94% of

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[29] Status of Multilateral Conventions: International Maritime Organization, January 3, 2013 *available at* http://www.imo.org/About/Conventions/StatusOfConventions/Pages/Default.aspx

[30] *Id.*

[31] *Nw. Envtl. Advocates v. U.S. E.P.A.*, 537 F.3d 1006, 1025 (9th Cir. 2008)

[32] Status of Multilateral Conventions: International Maritime Organization, January 3, 2013 *available at* http://www.imo.org/About/Conventions/StatusOfConventions/Pages/Default.aspx

[33] *Id.*

[34] Annex IV, which originally went into force on September 27, 2003 prohibits the discharge of sewage into the sea, except when the ship has in operation an approved sewage treatment plant or when the ship is discharging comminuted and disinfected sewage using an approved system at a distance of more than three nautical miles from the nearest land; sewage which is not comminuted or disinfected has to be discharged at a distance of more than 12 nautical miles from the nearest land. In July 2011, IMO adopted the most recent amendments to MARPOL Annex IV which are expected to enter into force on 1 January 2013. The amendments introduce the Baltic Sea as a special area under Annex IV and add new discharge requirements for passenger ships while in a special area.

global tonnage are now signatories.[35] The United States just recently became one as well by, "depositing its instrument of ratification with IMO on October 8, 2008. This was preceded by the President signing into law the Maritime Pollution Prevention Act of 2008 on July 21, 2008, that contains amendments to the Act to Prevent Pollution from Ships." [36]

Now that the U.S. has ratified Annex VI it can fully realize the scope of the treaty and designate vast areas as Emission Control Areas (ECA). The North American Emissions Control Area (ECA) became enforceable on August 1, 2012 and extends 200 nautical miles off of most of the continental U.S. and Canada.[37] Vessels in this massive zone must now burn low sulfur fuel oil (not exceeding 1.00% or 10,000 ppm) or install and use an equivalent means of compliance approved by its flag State, including installing Exhaust Gas Scrubbers or (SCRs) or convert to liquid natural gas (LNG), which eliminates almost all sulfur and about 90% percent of nitrogen, with no particulate matter.[38]

Yet this means purchasing more expensive fuel, and many including the State of Alaska, which receives most of its goods by ocean, feel that the new ECA rules will do little for cleaner air but will boost the state's cost of living."[39] One of the primary shipping companies that supply goods to Alaska, Totem Ocean Trailer Express, estimates that ECA's low-sulfur requirements

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[35] Summary of Status of Conventions: International Maritime Organization, January 3, 2013 *available at* http://www.imo.org/About/Conventions/StatusOfConventions/Pages/Default.aspx

[36] Control of Emissions From New Marine Compression-Ignition Engines at or Above 30 Liters per Cylinder, *available at* http://epa.gov/

[37] Totem Ocean Trailer Express Pursue LNG conversion: Maritime Connector. August 9, 2012 *available at* http://maritime-connector.com/news/general/totem-ocean-trailer-express-pursue-lng-conversion/

[38] *Id.*

[39] In Alaska, will EPA rule for low-sulfur fuel cause out-of-control food and fuel prices?: Alex DeMarban Alaska Dispatch. July 29, 2012. *available at* http://www.alaskadispatch.com/article/alaska-will-epa-rule-low-sulfur-fuel-cause-out-control-food-and-fuel-prices

will increase shipping costs to Alaska by 8%.[40] They say these increased costs will be passed on to consumers, "effectively resulting in a tax increase on all Alaskans."[41] Consequently, upon the adoption of the ECA, Alaska filed a lawsuit claiming that formation of the ECA was unconstitutional.[42] Alaska claimed that the EPA and Secretary of State exceeded their authority under the Treaty Clause and the Separation of Powers Doctrine.[43] The case is still pending in Federal District Court and recently, the Center for Biological Diversity, Environmental Defense Fund, Friends of the Earth, and Natural Resources Defense Council filed a Motion to Intervene on September 27, 2012.[44]

Yet US Constitutional issues aside, other international ECA's belie the claim of economic ruin and suggest that any upgrade costs are worth the benefits. Both the Baltic and North Sea, have been operating under an sulfur ECA for about five years. In addition both have a significant amount of "domestic traffic", as it is projected that by 2030 a total of 21,600 ships will operate in the North Sea, and of those 40% operated in both the Baltic and North Sea.[45] A recent report investigating the creation of a new Nitrogen ECA found that the indirect economic effects would increase in total operating costs for vessels is less than 2%. The increase in freight rates is for short-sea shipping is estimated at 1-2% and only 0.2%-0.6% for long

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[40] In Alaska, will EPA rule for low-sulfur fuel cause out-of-control food and fuel prices?: Alex DeMarban Alaska Dispatch. July 29, 2012. *available at* http://www.alaskadispatch.com/article/alaska-will-epa-rule-low-sulfur-fuel-cause-out-control-food-and-fuel-prices

[41] *State of Alaska v Clinton* 3:12-cv-00142-HRH. Filed 07/13/12

[42] *State of Alaska v Clinton* 3:12-cv-00142-HRH. Filed 07/13/12

[43] *State of Alaska v Clinton* 3:12-cv-00142-HRH. Filed 07/13/12

[44] *State of Alaska v. Clinton* Case No. 3:12-cv-00142-SLG. Filed 09/27/2012

[45] Special Areas Under MARPOL: International Maritime Organization. *available at* http://www.imo.org/ourwork/environment/pollutionprevention/specialareasundermarpol/Pages/Default.aspx

distance shipping. [46] Based on this the Danish Ministry of the Environment, "overall conclusion was, that establishing a North Sea NECA is a socio-economic cost-efficient measure with benefits exceeding costs, which is in line with the findings in the economic studies of the Baltic ECA and the North American ECA." [47] [48]

The United States may be coming around to this conclusion as well. The Coast Guard recently issued a conditional waiver from ECA plans to Totem Ocean Trailer Express (TOTE), one of the companies at the center in the Alaska v EPA case. The waiver was issued to give time to allow TOTE to convert its two ORCA Class ships to burn Liquefied Natural Gas. [49] The design and installation of the engine kits and construction of the LNG plant could cost $84 million and take up to five years, yet the shore side LNG infrastructure that that will be built to support its operations could also help other transportation industries in Puget Sound. [50] In fact, "TOTE believes the conversion to LNG assures long-term access to low cost sources of energy, enabling the company to provide economical service to Alaska for many years to come."[51] Therefore, rather than litigating for years against the EPA, instead industry and administration worked together to invest in new ships that are immune to diesel price fluctuations and environmental costs. In addition, the new LNG fueling infrastructure created will serve as a

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[46] Economic Impact Assessment of a NOX Emission Control Area in the North Sea: Danish Ministry of the Environment, Environmental Protection Agency.2012. Environmental Project no. 1427. *available at* http://www2.mst.dk/Udgiv/publications/2012/06/978-87-92903-20-4.pdf

[47] Id.

[48] Denmark is a signatory to all MARPOL annex and home to the world largest ocean shipping company, Maersk.

[49] Totem Ocean Trailer Express Pursue LNG conversion: Maritime Connector. August 9,2012 available at http://maritime-connector.com/news/general/totem-ocean-trailer-express-pursue-lng-conversion/

[50] *Id.*

[51] *Id.*

catalyst for other companies to make the switch. In short, this is the business model required to build the fleet of the future.

In addition, no one is waiting for the US to figure it out. Specifically in the North Sea, "from 2009 to 2030, around 12,500 ships will be scrapped – equivalent to approximately 600 ships per year, on average. [52] The existing fleet will be gradually replaced by new ships, so the technology installation expenditure will be spread out over the period".[53] Yet if the U.S. needed any further evidence Maersk has provided it. Maersk Line is the largest container shipping company in the world, comprising more than 500 vessels and 1,900,000 TEU." [54] Maersk Line's massive container vessels calling on ports around the globe are currently running on fuel containing 0.5 percent sulfur," which is nearly two times more efficient the mandated ECA standards. [55]

In addition, Maersk views compliance as a competitive advantage versus another massive shipping nation, China. Hong Kong permits ships calling on its ports to, "use fuel that contains up to 3.5 percent sulfur, whereas the comparable limit in Northern Europe is 1 percent"[56] Recently, Maersk, "along with 17 other carriers voluntarily used low-sulfur oil for the last two years in a Chinese government-sponsored incentive scheme." [57] However, Tim Smith, Maersk

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[52] Economic Impact Assessment of a NOX Emission Control Area in the North Sea: Danish Ministry of the Environment, Environmental Protection Agency.2012. Environmental Project no. 1427. *available at* http://www2.mst.dk/Udgiv/publications/2012/06/978-87-92903-20-4.pdf

[53] *Id.*

[54] Maersk Line calls for ban on dirty fuel in Hong Kong: January 11, 2013. *available at* http://www.maerskline.com/link/?page=news&path=/news/story_page/13/hong_kong

[55] *Id.*

[56] *Id.*

Line's North Asia CEO states that voluntary schemes are not enough as, "some carriers turn up here, they don't switch to low-sulfur fuel, and they get a cost advantage, and we don't think that's right…we want the government to regulate." [58]

State Action

Aside from judicial action, under both the CAA and CWA, states are responsible for setting their own policies which are enacted into Federal law. Therefore, if states want to enact their own standards, may they? The answer is yes, if they follow the correct process. One unsuccessful action involved an attempt by California to regulate air emissions from ships. On January 1, 2007, the California Air Resources Board began enforcing stringent state regulations called the "Marine Vessel Rules," which limited emissions from the auxiliary diesel engines of ocean-going vessels within twenty-four miles of California's coast.[59] The Pacific Merchant Shipping Association, a group of companies that own or operate ocean-going vessels subject to the Marine Vessel Rules, filed suit to enjoin their enforcement claiming that they were pre-empted by the Clean Air Act.[60] The 9th Circuit agreed stating that the CAA, "creates a sphere of implied preemption surrounding those regulations for which California must obtain authorization." [61]

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[57] Maersk Line calls for ban on dirty fuel in Hong Kong: January 11, 2013. *available at* http://www.maerskline.com/link/?page=news&path=/news/story_page/13/hong_kong

[58] *Id.*

[59] *Pac. Merch. Shipping Ass'n v. Goldstene*, 517 F.3d 1108, 1109-10 (9th Cir. 2008).

[60] *Id.*

[61] *Id.*

However, while California is required to obtain EPA authorization before adopting "standards or other requirements relating to the control of emissions," fees may be acceptable. Specifically, recent rules adopted elsewhere in California required owners to register and pay fees for certain kinds of diesel engines used in agricultural production.[62] The 9th Circuit found in this case that since the rules contain no reference to emissions they were not preempted by the CAA.[63] This could serve as excellent guidance to states wishing to enact tougher emissions standards while at the same time avoiding the wide berth of accorded to Federal preemption.

Ballast Battle

Yet while emissions control settles into international and domestic standardization, the fight over ballast is in its infancy. Unlike engine emissions the US is slightly ahead of the international community on the issue. On the domestic front, the CWA, "prohibits the discharge of any pollutant from a point source into navigable waters of the United States without a permit."[64] [65] Yet in 1973, the EPA inexplicably exempted vessels from several categories of discharges including marine engine discharges, graywater discharges (sink and galley wastes)

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[62] *Jensen Family Farms, Inc. v. Monterey Bay Unified Air Pollution Control Dist.*, 644 F.3d 934, 940 (9th Cir. 2011).

[63] *Id.*

[64] Under the CWA, "Pollutant" is defined as "dredged spoil, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste discharged into water

[65] *Nw. Envtl. Advocates v. U.S. E.P.A.*, 537 F.3d 1006, 1021 (9th Cir. 2008)

and, "any other discharge incidental to the normal operation of a vessel."[66] The third category, "any other discharge," includes, among other things, ballast water from ships.[67] [68]

All told, "more than 10,000 marine species each day hitch rides around the globe in the ballast water of cargo ships."[69] Not all of these organisms make it but those that do, arrive in an environment without natural predators allowing them to take over an ecosystem, threatening both the native species and economic well-being of coastal waters.[70] Specifically, one study by the General Accounting Office concluded that total annual economic losses and control costs are about $137 billion a year, more than double the annual economic damage caused by all natural disasters in the United States.[71] This is easier to grasp when one considers that the highest volume U.S. ports are located in California, New York, New Jersey, Louisiana, Texas, Washington, Illinois and Florida, all of which have massive tourism and fisheries industries that depend on the health of the oceans.[72] For example, zebra mussels, native to Asia, were brought into the Great Lakes where they have clogged the water pipes of electric companies and other industries costing power plants and industrial facilities almost $70 million between 1989 and

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[66] *Nw. Envtl. Advocates v. U.S. E.P.A.*, 537 F.3d 1006, 1011 (9th Cir. 2008).

[67] Ballast is water that is taken on by cargo ships to compensate for changes in the ship's weight the ballast fluctuates as cargo is loaded or unloaded, and as fuel and supplies are consumed

[68] *Nw. Envtl. Advocates v. U.S. E.P.A.*, 537 F.3d 1006, 1012 (9th Cir. 2008)

[69] *Id.*

[70] *Id.*

[71] *San Francisco Baykeeper v. U.S. Army Corps of Engineers*, 219 F. Supp. 2d 1001, 1007-08 (N.D. Cal. 2002)

[72] Waterborne Commerce of The United States: Army Corps of Engineers 2010. *available at* http://www.ndc.iwr.usace.army.mil/wcsc/pdf/wcusnatl10.pdf

1995."[73] As another example, according to a 2001 EPA report, a strain of cholera bacteria, possibly released from the bilge water of a Chinese freighter, caused the deaths of 10,000 people in Latin America in 1991. [74] The Cholera was then imported into the United States in the ballast tanks of ships that anchored in the port of Mobile, Alabama and infected oyster and finfish samples in Mobile Bay, yet thankfully it was caught by U.S. officials and no additional deaths occurred from exposure to this pathogen."[75]

It is surprising then that this blanket exemption for not only ballast, but engine and greywater discharge, was in place more than thirty years. Especially considering that the, "Nonindigenous Aquatic Nuisance Prevention and Control Act of 1990 (NANPCA), as amended by the National Invasive Species Act of 1996 (NISA), requires the Secretary of Homeland Security to ensure to the maximum extent practicable that aquatic nuisance species are not discharged into waters of the United States from vessels."[76] Yet what finally ended the exemption was not legislation but a Ninth Circuit decision 2008. *Nw. Envtl. Advocates v. U.S. E.P.A*, permanently vacated the exemption on the grounds that the EPA exceeded its authority by violating the express congressional intent of the CWA, "to prevent discharge of any pollutant from a point source into navigable waters of the United States without a permit."[77] Therefore, after a stay to allow EPA time to implement a means of issuing permits for vessel discharges, the

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[73] *Nw. Envtl. Advocates v. U.S. E.P.A.*, 537 F.3d 1006, 1012-13 (9th Cir. 2008)

[74] *Id.*

[75] *Id.*

[76] Standards for Living Organisms in Ships' Ballast Water Discharged in U.S. Waters: US Coast Guard. March 7, 2012 *available at* http://www.uscg.mil/hq/cg5/cg522/cg5224/docs/2012-06579_PI.pdf

[77] *Nw. Envtl. Advocates v. U.S. E.P.A.,* 537 F.3d 1006, 1012-13 (9th Cir. 2008)

regulation was finally vacated on February 6, 2009. [78] In response to this, the EPA developed a general permit to cover the incidental vessel discharges previously exempted by the regulation in waterways throughout the United States.[79] The EPA received more than 170 comments from the States on the draft permit. [80] Many suggested that, because state water standards differ it would unduly hinder vessels seeking to remain in compliance as they move between the waters of different states. Based on this, a group of consolidated water freight carriers "Lake Carriers" brought the claim that the State regulations constituted a violation of the Dormant Commerce Clause. Specifically they claimed that, "allowing the specter of multiple states imposing differing requirements on vessels that move through their respective waters creates a ... *potentially* impermissible burden on commerce."[81] However the Court stated that the Dormant Commerce Clause doctrine applies only to burdens created by *state* law not federal statute, like the CWA, and a federal regulation, like the VGP. [82]

Subsequent to this, in March of 2012 the Coast Guard issued a federal rule requiring oceangoing freighters entering American waters to install onboard treatment systems to filter and disinfect their ballast water.[83] [84] Until now, they were only required to flush their tanks at sea, a

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[78] *Lake Carriers' Ass'n v. E.P.A.*, 652 F.3d 1, 4 (D.C. Cir. 2011)

[79] *Id.*

[80] *Id.*

[81] *Id.*

[82] Lake Carriers' Ass'n v. E.P.A., 652 F.3d 1, 8-9 (D.C. Cir. 2011).

[83] Invasive species target of new ballast water rule: Felicity Barringer. New York Times. April 7, 2012. *available at* http://www.nytimes.com/2012/04/08/science/earth/invasive-species-target-of-new-ballast-water-

[84] Standards for Living Organisms in Ships' Ballast Water Discharged in U.S. Waters. US Coast Guard. March 7, 2012 *available at* http://www.uscg.mil/hq/cg5/cg522/cg5224/docs/2012-06579_PI.pdf

system called ballast water exchange.[85] About 12,000 oceangoing ships moving through United States waters will be covered by the Coast Guard rules; hundreds reach the Great Lakes system through the St. Lawrence Seaway.[86] Similar to MARPOL, US efforts parallel international ones. The Ballast Water Management Treaty (BWM), to which only 36 countries representing 29% of total world tonnage are signatories, requires that by 2016, the Convention must establish requirements for ballast water management systems on ships which will replace the uncontrolled ballast water uptake and discharge operations.[87] The net effect will be that ballast water will have to be treated on board before being discharged into the marine environment, in compliance with the ballast water performance standards. [88]

Growing Pains

Yet while modernizing the US fleet may be a choice, updating our ports is a necessity. Each year, 15 U.S. seaports handle about 2 billion tons of cargo processing more than $3.8 billion worth of goods each day.[89] Many of our largest ports are in need of dredging and repair. For example in order to allow the new "post-Panamax" container ships to enter and exit the Port or San Francisco's Port, The Army Corps of Engineers recently undertook a plan to dredge forty-

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[85] Standards for Living Organisms in Ships' Ballast Water Discharged in U.S. Waters. US Coast Guard. March 7, 2012 *available at* http://www.uscg.mil/hq/cg5/cg522/cg5224/docs/2012-06579_PI.pdf

[86] *Id.*

[87] Ballast Water Convention: Bundesamt für Seeschifffahrt und Hydrographie 2012. *available at* http://www.bsh.de/en/Marine_data/Environmental_protection/Ballastwater/index.jsp

[88] *Id.*

[89] Seaports and the US Economy:American Association of Port Authorities. April 14, 2012. *available at* http://aapa.files.cms-plus.com/PDFs/Awareness/US%20Economy%20Fact%20Sheet%2012-4-12.pdf

two foot shipping channels and to fifty feet. [90] Absent the dredging project, post-Panamax ships either would have to enter the Port "light loaded" or await high tides to enter and exit the Port.[91] This situation can increase the cost of shipping as vessels carry less cargo in order to reduce their draft or wait for high tide before transiting a harbor. It could also increase the risk of a ship grounding or collision, possibly resulting in an oil spill."[92]

Yet any capital improvement must ensure that it is in compliance with the NEPA and the ESA. The ESA is implemented through a process known as NEPA which is the basic "national charter for protecting the environment." which requires that every federal agency to ensure that any action that it funds, authorizes, or carries out is not likely to jeopardize the continued existence of any listed species or adversely modify the critical habitat of any such species."[93] Subsequent to this, "all federal agencies to prepare an environmental impact statement (EIS) for "major federal actions significantly affecting the quality of the human environment."[94] The NEPA is procedural and does not require "that agencies achieve particular substantive environmental results" just ensure that, "the agency will not act on incomplete information, only to regret its decision after it is too late to correct." [95] If a federal agency determines that a proposed action may affect listed species or their critical habitat, the agency must initiate

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[90] Seaports and the US Economy: American Association of Port Authorities. April 14, 2012. *available at* http://aapa.files.cms-plus.com/PDFs/Awareness/US%20Economy%20Fact%20Sheet%2012-4-12.pdf

[91] *Id.*

[92] Harbor Maintenance Trust Fund Expenditures" Congressional Research Service, John Fritelli, Transportation Expert January 25, 2010. *available at* http://assets.opencrs.com/rpts/R41042_20100125.pdf

[93] *San Francisco Baykeeper v. U.S. Army Corps of Engineers*, 219 F. Supp. 2d 1001, 1007-08 (N.D. Cal. 2002)

[94] *Id.*

[95] *Id.*

consultation with the appropriate consulting agency, either FWS or NMFS. [96] [97] The ESA, therefore, applies to every harbor improvement project in America. It must be certified that dredging, ballast, noise, and discharges do not, "cut, dig up, or damage or destroy any protected species on any in knowing violation of any law or regulation of any State or deliver, receive, carry, transport, or ship in interstate or foreign commerce, by any means whatsoever and in the course of a commercial activity, any such species."[98] This means that our ports will have to be updated in an environmentally compliant fashion.

Conclusion

So in the end the bare facts frame the choice for the future of US shipping. The US must to update its ports in order to sustain current trade levels with the rest of the world and will have to do so in an environmentally sound way due to Federal Law. Simultaneously, the rest of the world is now building the fleet of the 21st century that will reap the economic benefits of these valuable US ports. Therefore, the choice is now up to the American shipping industry to decide whether litigation or innovation prepares the industry to compete in the global shipping industry of the 21st century.

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[96] FWS and NMFS (collectively, "consulting agencies") share responsibility for administering the ESA, with FWS responsible for listing terrestrial and freshwater species, 50 C.F.R. § 222.23(a), and NMFS charged with protecting marine and anadromous species, 50 C.F.R. § 227.4. *See also* 50 C.F.R. § 402.01(b).

[97] *San Francisco Baykeeper v. U.S. Army Corps of Engineers*, 219 F. Supp. 2d 1001, 1007-08 (N.D. Cal. 2002)

[98] 16 U.S.C.A. § 1538 (West)