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A critical component of improving Port Freight Performance is understanding the impact and cost of weather and marine environmental impacts on the port ecosystem, including impacts across the intermodal transportation and logistics system—roads, railroads and airports—that contribute to increased inefficiency and costs.

The port industry remains underserved by the weather enterprise and is not reaping the benefits that current science and technology can offer when precise port weather intelligence is integrated into business systems and solutions. Weather and water disruptions impact ports, and the movement of freight. Today, the port ecosystem comprises many independent entities with differing budgets, needs and business interests—but still benefit from consistent insight in how weather or water impacts will impact others entities and associated interdependencies. Better insight into the impact on others, with a view toward better prediction of impacts by weather and water across the freight movement ecosystem, will allow stakeholders to better manage resources to mitigate the costs associated with those impacts.

One constraint today in improving ecosystem insight is that ports and port stakeholders obtain weather and water data from multiple sources—academic, private and government entities—many of which are not resolute enough or “fit for purpose.” Having port entities receiving conflicting information means stakeholders, dependent on each other, are not making decisions off the same playbook, causing more disruption during weather and water events than necessary. This is the premise that resulted in the FAA’s NEXGEN program to drive higher resolution, dynamically updating weather data provided across the ecosystem to improve the efficiency of the Air Traffic System. The same principles are applicable to Ports and the marine ecosystem.

From a Freight performance perspective, do stakeholders really know what weather and water impacts cost them in incidents and lost productivity? And collectively, does the government have metrics to measure the impacts of the environment to ports and stakeholders at a port-level scale? In any transportation industry, 20-40% of weather and water related costs are avoidable with a consistently executed environmental action plan that includes focused, integrated, and customized weather and water intelligence—more so if the ecosystem is in synch.

NOAA has outstanding port weather measurement systems to detect “real time” impacts, but most predictive products are not granular enough to pick up local scale effects. Nor is the data easy to integrate into predictive weather and water solutions, fit for purpose, decision-ready and easy to consume to paint a common picture about how various entities on ports will be impacted, and how those impacts will reverberant through the system. There are many entities, both in government and private industry, that have on-the-shelf, proven science and technology, that promises to improve port predictive forecasts using big data analytic principles and data generation.

With a “fit for purpose” port weather solutions, focused on the needs of port stakeholders and better integration into decision systems, measureable improvements in the following areas are likely to occur:

- Improve Safety
- Reduce Congestion
- Improve System Reliability

- Improve stakeholder non-productive time
- Improve Port Economic Vitality
- Improve customer satisfaction

The Port Performance Freight Statistics Working Group should consider how port performance statistics that better measure how weather and water impacts freight performance could drive innovation. Shedding light on this will likely drive solutions that can easily pick off long hanging fruit in building more integrated views of weather and water impacts that can reduce impacts and costs to ports and individual stakeholders concerned about freight performance.

Blogs written related to this subject by TruWeather Solutions:

<https://www.truweathersolutions.com/what-drives-efficiency-at-port/>

<https://www.truweathersolutions.com/risky-marine-business-true-cost-weather-water-disruption/>

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