Weekly Report

CIRA
STAR/NESDIS
National Oceanic and Atmospheric Administration (NOAA)

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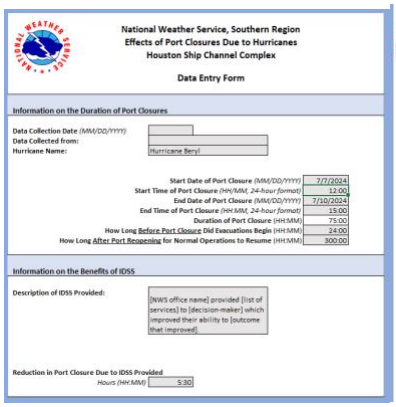
Products and Applications

Shelby Weder, an economics researcher with the Social, Behavioral, and Economic Sciences (SBES) group at CIRA worked with a team of NOAA affiliated economists and NWS Southern Region staff and partners to develop several operational impact-estimate tools to be used by local WFO's for port closures in the Southern Region. These tools focus on costs of port closures due to hurricanes for the Ports of Houston, New Orleans, and Tampa. The local WFOs use these tools to generate a report that estimates the impact of the port closure and the reduction of impact attributed to NWS impact-based decision support services (IDSS) which support managing vessel traffic, operation costs of vessel operators, the volume of cargo transiting the port, and the value of cargo transiting the port. We are further expanding the tools for other severe weather closures such as marine fog. Melissa Huffman, Meteorologist-in-Charge at the NWS Southern Region, will be presenting on their use of the tool at AMS 2026.



National Weather Service, Southern Region
Effects of Port Closures Due to Hurricanes
Houston Ship Channel Complex

Data Entry Form

Information on the Duration of Port Closures

Data Collection Date (MM/DD/YYYY)	
Data Collected From:	
Hurricane Name:	Hurricane Beryl
Start Date of Port Closure (MM/DD/YYYY)	7/7/2024
Start Time of Port Closure (HH/MM, 24-hour format)	12:00
End Date of Port Closure (MM/DD/YYYY)	7/10/2024
End Time of Port Closure (HH:MM, 24-hour format)	15:00
Duration of Port Closure (HH:MM)	75:00
How Long Before Port Closure Did Evacuations Begin (HH:MM)	24:00
How Long After Port Reopening for Normal Operations to Resume (HH:MM)	300:00

Information on the Benefits of IDSS

Description of IDSS Provided:	[NWS office name] provided [list of services] to [decision-maker] which improved their ability to [outcome that improved].
Reduction in Port Closure Due to IDSS Provided Hours (HH:MM)	5:30

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Summary Report on the Effects of Hurricane Beryl

Economic Exposure and Effects of Hurricane Beryl

Hurricane Beryl caused the Houston Ship Channel Complex to close for 75 hours. Accounting for the time needed to evacuate the port prior to closure and the time required for traffic to resume normal flow patterns, this closure fully or partially disrupted marine traffic for 237 hours. This resulted in delays to 383 deep draft marine vessels, costing the operators of those vessels $21.3 million in operating costs. The delayed cargo totaled about 8.5 million tons, valued at $7.9 billion.

Impact-Based Decision Support Services Provided by NWS

In advance of and during Hurricane Beryl, the National Weather Service provided Impact-Based Decision Support Services (IDSS) to key decision-makers responsible for port operations and emergency management.

[NWS office name] provided [list of services] to [decision-maker] which improved their ability to [outcome that improved].

As a result of this support, the duration of the port closure was reduced by 5.5 hours. Based on average vessel traffic flows in the Houston Ship Channel Complex, this enabled another 28 vessels to transit the port, facilitating the movement of an additional 621,000 tons of cargo valued at $578.5 million. Delay costs to vessel operators were reduced by an estimated $1,561,000.

Notes

This report estimates the impact of the port closure and the reduction of impact attributed to IDSS provided by the weather service on:

- *vessel traffic*
- *the operating costs of vessel operators*
- *the volume of cargo transiting the port*
- *the value of cargo transiting the port*

(Data input form and summary report from the port closure tool; Port of Houston, Carol M. Highsmith, Public domain photo.)

Publications (Citation: followed by a short Summary: (Why & so what), & detailed summary):

Awards and Recognition

Media Interactions and Request

Blog Posts and Social Media

Travel, Workshops, Conferences, and Meeting Reports

Training and Education Activities

Future Meetings and Events (dates, meeting/event, location, staff involved)

Other

Manuscript Review: C. Seaman reviewed a manuscript that was submitted to the *International Journal of Remote Sensing*. (POC: C. Seaman, CIRA, curtis.seaman@colostate.edu)