Economic Benefits of the PORTS system in Maryland

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In 2018, Cargo ships brought in over 10 million tons of international cargo

The Port of Baltimore, which accommodates a lot of ships recorded a total of $15.7 billion in exports and $38.1 billion in imports in 2017 (AAPA report, 2018)

The Chesapeake Bay is shallow

Maryland Port Administration is providing a navigational system which costs over $400,000 a year
What is P.O.R.T.S?

Physical Oceanographic Real-Time Systems

It was started in Tampa, FL in 1990

PORTS® installations provide near-real time information and, in some cases, forecasts about water levels and currents at specific points in a coastal water body

The state of Maryland pays over $400,000 annually, to support the system
In order to provide insight into the potential economic impacts of PORTS we are going to:

- Conduct semi-structured interviews to inform an economic analysis
- Documenting historical and current use of Maryland navigational waterways through literature review
My Tasks

- Literature Review
- Semi-Structured Interview
- Data Analysis
Volume of trade has increased, ships have also gotten bigger, longer and deeper (Wolfe & MacFarland, 2013)

Sensors have undergone rigorous testing and field tests (Bushnell, 2005 and Edwing, 2018)

These sensors needed to work in different weather conditions and undergo instrument calibration

The systems provide new data every 6 minutes (Appell et al, 1994)
PORTS Analysis in other states (Kite-Powell 2005a, 2005b, 2007, 2010)

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<th>Safety</th>
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| • Avoided groundings, commercial vessels  
  • Avoided distress cases, recreational vessels | • Increased cargo carried per ship call  
  • Improved SAR performance | • Improved hazardous material spill response  
  • Improved environmental restoration/conservation activities | • Enhanced value from boating decisions (power, sail, windsurfing, kayaking, etc.)  
  • Enhanced value from fishing decisions  
  • Enhanced value from beach visit decisions | • Improved general weather forecasts  
  • Improved coastal marine weather forecasts  
  • Improved storm surge forecasts |
AIR GAP AT CHESAPEAKE BAY BRIDGE, SOUTH SPAN CENTER OF MAIN CHANNEL

WESTERN SHORE

185.1 ft. (56.4 m.)

CENTER OF CHANNEL

EASTERN SHORE

EDGE OF NAVIGATION CHANNEL

https://www.youtube.com/watch?v=Sa7xqDOA_PE
Semi-structured Interview

- Drafted questions to interview
- Technique used in social sciences
- Maryland law which states a foreign vessel must have a Maryland state licensed pilot navigating Chesapeake Bay

Interview Guide for Use of PORTS in the Chesapeake Bay

(This guide is to facilitate a semi-structured interview with pilots and shipmasters to better understand the use and economic implications of PORTS in the Chesapeake Bay.)

1. How long have you been a shipmaster/pilot?
   a. How long have you been navigating the Chesapeake Bay?

2. What are your navigational challenges?
   a. How do you mitigate them?
Data Analysis

- Retrieved data from Maryland Ports Administration
- Preliminary analysis of how vessel size has changed over the years
Average cargo in tons by the no. of vessels
Average TEUs by the no. of vessels

Average TEU per vessel

0  100  200  300  400  500  600

Years

Next Step...

Developing a survey

I've invited you to fill out a form:

Survey for Association of MD Pilots

Thank you for taking the time to fill out this survey as part of a study conducted by Morgan State University. We are interested in hearing from Maryland pilots to better understand the use and economic implications of PORTS in the Chesapeake Bay. We hope to learn about the use of navigational systems in the Chesapeake Bay and the benefits they may provide. The study is being conducted by Dr. Scott Knoche of Morgan State University. You were selected as a possible participant in this study because you are a shipmaster or pilot with experience navigating the Chesapeake Bay.

If you have any questions, please do not hesitate to contact us. If you have any additional questions later about the study, please contact Kaitlynn Ritchie at 443-855-5934 or Dr. Scott Knoche at 443-885-5931 who will be happy to answer them.

Your help in this research is valuable to us and we appreciate your perspective and experiences.

FILL OUT FORM
THANKS FOR LISTENING!

QUESTIONS?