

**HARBOR MAINTENANCE DREDGING TO ENHANCE MARITIME SUPPLY CHAIN - A CASE STUDY OF
THE HOUSTON SHIP CHANNEL**

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ABSTRACT

Foreign trade represents one third of the US economy. Annually, between 95% -98% of all foreign tonnage moving into and out of the US passes through the nation's ports and harbors. In order for cargo to continue moving, maritime gateways require maintenance dredging to remove material that builds up on the sea floor clogging these critical commercial arteries. As the cargo traffic grows in US ports, the need to devise dredging strategies becomes critical to the nation's economic competitiveness. Serious funding impediments exist and may lead to rising costs of doing business domestically and abroad. However, there is a dearth of research in transportation literature that studies dredging issues of US ports. This paper intends to begin filling this gap and makes contributions to transportation economics literature. The present research develops a unique methodology to study the Houston Ship Channel's dredging practices, strategies, barriers, and improvement opportunities. Transportation and legal literature and archival data related to the Port of Houston are critically reviewed. The Houston Ship Channel case study conceptualizes the determinants and impacts of a port's dredging strategies. Finally, this paper discusses the legislative efforts to sustain constant dredging and concludes with a summary and future research directions.

Keywords: *Maritime Transportation, Maintenance Dredging, Port Operations, Cargo Movement*