

# Greater Lafourche Port Commission

## Technical Assistance Grant # DTPH5615GPPT16

### Overview:

The project, funded through grant # DTPH5615GPPT16, continued to advance the significant progress made through previous PHMSA investments, including DTPH5614GPPT19, in the area of marine pipeline safety. This innovative project, which includes ground-breaking new technological solutions to critical pipeline safety issues, is truly taking marine pipeline safety to the next level.

This project involves the integration of radar and AIS vessel tracking data in to PortVision 360 as well as the layering of pipeline location data so that mariners operating vessels are able to know in near-real time when they are approaching pipeline assets. This same system is also able to alert marine pipeline operators when vessels are operating over or near their pipeline assets, and also to analyze vessel traffic data in relation to the pipelines, so that both vessel operators and pipeline owners are able to better understand the most trafficked pipeline routes, and take risk reduction measures to reduce the likelihood of a interaction between a vessel and a pipeline.

In this way, this project is greatly reducing risks to pipelines, mariners, and the environment in and around the Port Fourchon area. Port Fourchon is the services hub for over 90% of oil and gas production in the US Gulf of Mexico, and one of the busiest ports in the Nation, by sheer volume of traffic in and out of the Port.

### **1 - A comparison of actual accomplishments to the objectives established for the period; The project was designed to take a phased approach to achieving two Objectives.**

**Objective 1** – Develop a “Dashboard” of marine pipeline information for mariners would realize the collective goal of our Port, marine operators, and oil and gas pipeline stakeholders in addition to the USCG and other key regulators and first responders. This “Dashboard” will enable mariners to obtain real time information on their risk of interacting with marine pipeline infrastructure, thereby greatly enhancing their situation awareness and thus lowering the likelihood of vessel interactions with pipeline infrastructure. The specific tasks required to assemble this “Dashboard” and the timelines projected in the project application are:

- 1. October-December 2015** The collection and integration of radar data with AIS data to develop a complete picture of vessels moving through pipeline corridors. This includes the extraction of the radar data at the source, the software development to convert the radar target data into a NMEA format that can be processed jointly with the AIS vessel data into a live display, the ability to properly label these unidentified targets so that they can be displayed properly along with AIS data so that there is no repetitive or overlapping data, adjustment to current software to allow this new data to trigger real-time alerting the same as AIS vessel traffic, develop methods to archive the radar target data so that it can be retrieved historically for playback or reporting purposes.

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#### **Section 10.02 Federal Financial Status Report**

*During the performance of the grant, the Recipient must submit a mid-term Federal Financial Report, Standard Form 425 (SF-425), to report the status of funds. In addition to SF-425, the Recipient should provide a breakdown of costs for each object class category (Personnel, Fringe Benefits, Travel, Equipment, Supplies, Contractual, Other, and Indirect Charges). This report must be submitted to the AA in electronic form via e-mail no later than thirty (30) days after the reporting period. The reporting period for the Federal Financial Status Report, is half-way through the grant Project/Period of Performance, as outlined in the grant agreement.*

2. **December 2015 – June 2016:** Development of software tools to analyze all available vessel crossing detail data collected around pipeline segments.
3. **April 2016 – July 2016:** Development of software tools to identify vessel owner/operator details for vessels and correlate that data to the AIS data that is actively monitoring for vessels that appear to be threatening a pipeline. Identify all open source databases like NOAA, Coast Guard, and commercially published vessel owner contact details. Construct and maintain a database that retains the most up-to-date vessel or fleet dispatch numbers or designated points of contact.

**Objective 2** - Conduct targeted outreach and communication efforts based on this comprehensive study with a focus applied on making positive communications with all regional pipeline operators, regional maritime training facilities and vessel owner/operators, and regional environmental and pipeline regulators. This includes the development of curriculum materials targeted for maritime training facilities and vessel owner/operators with the objective of the inclusion of this material in their safety systems and required trainings for employees. Additionally, local regulators (Coast Guard, PHMSA, state/federal environmental stakeholders) will be briefed on the findings and lessons learned from the development of the “dashboard” tool and how these systems may be used to actively monitor real-time threats. The pipeline vulnerability and risk assessments and statistics resulting from this effort will be developed into a report that can be presented to all pipeline organizations with infrastructure in similar coastal environments as a “best practice”. The specific tasks required to assemble this “Dashboard” and the timelines projected in the project application are:

1. **November 2015 – August 2016:** Stakeholder identification and outreach to marine stakeholder groups operating in near-shore waters, develop outreach materials, and deliver and measure the successful delivery of these messages. The pipeline vulnerability and risk assessments along with the statistics resulting from this effort will be developed and presented to pipeline organizations with infrastructure in similar coastal environments as a “best practice”. Material will be developed for maritime training facilities and vessel owner/operators with the objective of their inclusion of this material in their curriculum. Local regulators (Coast Guard, PHMSA, state/federal environmental stakeholders) will be briefed on project findings and how these systems are used to actively monitor real-time threats.

#### **Actual Progress to date as of 11/30/2016:**

##### **Objective 1: Develop a “dashboard” of marine pipeline information for mariners**

- **Phase 1 (Radar integration) 100% complete**
- **Phase 2 (Development of software reporting tools) 100% complete**
- **Phase 3 (Vessel Identification tools) 100% complete**

*Taken together, these phases have put together a platform for capturing/displaying owner/operator data which will lead to the real reduction of risk by allowing pipeline and marine vessel operators to finally have a true picture of the movements of the marine fleet in relation to pipeline assets. This robust vessel and asset tracking system provides the following software tools to analyze all available vessel crossing detail data collected around pipeline segments. This data gathering and integration will give both mariners and the pipeline asset owners the analytical tools needed to allow them both to determine which areas of operation represent the*

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highest risks of vessel/pipeline interaction events. This will allow both mariners and asset owners to better communicate their risks to each other, and make further improvements in processes to further reduce risks.

- **Total count of vessels crossing for an entire pipeline system for a designated period of time.**
- **Total count of vessels crossing for a designated pipeline segment for a designated period of time.**
- **Evaluation of all segments of pipeline monitored for an entire pipeline system to rank segments based on highest crossed segment to lowest. Results can be listed in relevant order or visually represented via color coding in a map view**
- **Export or integration of vessel position data crossing pipeline system for a designated period of time in a format that can be layered with pipeline survey (depth of cover) data**
- **Include options to filter vessel counts and reporting based on vessel; type, reported size and dimensions, and vessel owner**

## **Objective 2: Targeted Outreach and Communications Activities**

- **Stakeholder Engagement Activities 80% complete:**  
*Stakeholder identification and engagement at traditional forums is ongoing. The project included staffing a booth at the 2015 International Workboat Show, the peak trade show for mariners and vessel operators in the energy and marine safety industries. This show is attended by approximately 15,000 individuals each year, and served as a vital opportunity to make meaningful connections with mariners and vessel operators as well as distribute pipeline safety DVDs, printed materials, and other communications collateral to encourage marine pipeline safety. As part of this effort, reprints of existing DVDs, printed materials, and promotional items to drive traffic to the project website were made and distributed to a vital segment of the target audience. This grant project is also allowing the team to exhibit at 2016 Workboat Show, which commences on November 30, 2016. Curriculum development to support the technical solutions and rollout of the “Dashboard” referenced in Objective 1 of this project is advancing.*

## **2. Where the output of the project can be quantified, a computation of the cost per unit of output;**

A single incidence of a vessel striking a pipeline is known to cause hundreds of thousands of dollars in damages, and brings with it the potential loss of human life and environmental damages.

While it is difficult to “prove” that any one action or program definitively prevented an incident, it is safe to say that this \$100,000 investment by PHMSA is responsible for further reducing the risks associated with marine traffic in the heavily trafficked waterways in and around Port Fourchon. Each risk reduction measure brings with it a real value, not just in dollars, but also in human life and environmental condition.

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### 3. The reasons for slippage if established objectives were not met.

While this progress to date has been somewhat behind the original schedule of the grant, much of that delay can be attributed to the launch of PortVision360, which was a significant upgrade in the underlying vessel-tracking technology this project is designed to integrate with. Simply put, it was necessary to hold back on the development of the project until the underlying platform was upgraded so that this project would be compatible with the most updated version used by industry.

Because curriculum materials could not be developed to provide guidance on these new systems until these new systems were completed and brought online, the outreach component of this project has slipped, and remains approximately 80% complete. It is still the intent of the project team to complete these materials and distribute them to mariners and pipeline owners alike, as the broader Coastal and Marine Operators (CAMO) coalition remains intact beyond the grant project period, and this task is in support of their mission to reduce the risks of pipeline and vessel interactions.

Members of the project team will be participating in the 2016 Workboat Show November 30-December 2, 2016 in New Orleans again this year, in order to continue reaching out to mariners, vessel owners and operators as well as other industry stakeholders including the US Coast Guard to continue to inform them of these continuing improvements to marine pipeline safety through this investment by PHMSA.

If you have questions regarding this project, please feel free to contact me via email at [jonit@portfourchon.com](mailto:jonit@portfourchon.com) or via phone at (985) 632-1122.

Sincerely,

Joni Tuck  
Grants Administrator  
Greater Lafourche Port Commission

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