

THE MARIPORT GROUP LTD.

REPRESENTATIVE PROJECTS IN RIVER NAVIGATION

Kaolin Clay Movements - Rio Capim, Brazil¹

Analyzed the possible movement of slurried Kaolin Clay nearly 400 km down a shallow river that had significant seasonal variations in depth. Study also involved transfer to drying plant near Belem and ship loading for export cargo.

Mackenzie River - Canada¹

Undertook an analysis of tug/barge operations and costs on Canada's Mackenzie River system to provide input to a CCG cost benefit study of possible dredging projects to improve navigational safety and barge lift.

In a later project for Transport Canada Marine Safety carried out a risk assessment of transportation for the Mackenzie Gas Pipeline. This analysis looked at pipeline, community and resource needs during a number of years and took into account deep-sea service opportunities. An operational model of the river was created to determine system capability to handle demand under various draft and seasonal characteristics.

Further projects, for the Government of NWT have included:

A review of ferry fleet management and operations; Terms of Reference for a technical review of two ferries; delivery of underwater cable via the Arctic and the river to Great Slave Lake and a preliminary evaluation of the "Over the Top" route to the Alberta oils sands for large process modules.

Yangtze River Operations-Peoples Republic of China¹

As part of a team studying the proposed Three Gorges Dam in China, undertook a thorough analysis of shipping on the Yangtze between Yichang and Chongqing. Also reviewed upstream and downstream obstacles and activities with a view to determining the impact of the dam on navigation. Developed a unique transit model to determine river capacity before, during, and after dam construction.

Tug/Barge Fleet Operations and Emergency Procedures Manuals

For one of the largest tug barge operators on the Mackenzie River, updated their fleet operations manuals and rewrote their emergency procedures manuals. Manuals addressed both river and arctic activities.

Tug/Barge Fleet Cost and Rate Analysis - Ghana¹

For the Ministry of Fuels and Power in Ghana, reviewed petroleum products distribution on Lake Volta. The study developed proforma costs for regional product distribution including coastwise shipments by conventional tanker.

Conceptual Tug/Barge System - Thelon River, NWT, Canada¹

As part of a broader study into the resupply of a proposed mine at Lone Gull in NWT, undertook a conceptual analysis of a shallow draft river operation from Baker Lake to Aberdeen Lake. Identified hydrological data needs to confirm system feasibility.

¹ Projects undertaken wholly, or in part, by Mariport principals prior to formation of company.

Calcined Bauxite Movements - Demerara River, Guyana¹

Analyzed the shipment of calcined bauxite from Linmine to transfer station in Georgetown and to international markets. Recommended new system to reduce costs and improve product marketability.

River Navigation Study – Bangladesh²

Undertook an analysis of the Surma/Baulai and Kalni/Kushiyara river systems in Bangladesh to determine the economic impact of dredging shallow reaches. This required trade and population analyses to determine the beneficiaries. A comprehensive model was developed for sensitivity analysis. Also included in the analysis was the potential impact of redesigning the river fleet to a vessel configuration adapted to shallow draft operation.

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EXPERTISE IN RIVER NAVIGATION

Navigation on unimproved or only marginally improved rivers is still an essential means of transportation in many parts of the world.

Such activities can offer marked reductions in transportation capital and operating costs for product shipment, mine or community resupply. In addition, the environmental impact of a properly engineered and operated waterborne system can be significantly less than a surface system.

Passenger services can also be readily supplied, either by low-wash high-speed craft for transit type access, or by slower, more capacious accommodation for tourists seeking a new itinerary.

Proper attention to navigation hazards, from trees to sandbars is essential, as are the operating and emergency procedures to ensure appropriate reaction by crews. Safety can, in many instances, be engineered into the system by providing redundant systems, recognizing the potential for groundings and strengthening equipment as appropriate.

The Mariport Group has the knowledge of, and experience with, shallow draft ferry, ship and tug/barge systems to evaluate the practicality and commercial economics of such systems.

¹ Subcontract to prime consultant.