



CANAL DE PANAMÁ

MARKET RESEARCH ANNOUNCEMENT

NAVIGATION CHANNEL DREDGING TO EL. 7.62 m (25 ft)

1. GENERAL

1.1 GENERAL CONSIDERATIONS

The Panama Canal Authority (ACP) is conducting market research, for information purposes only, to confirm if there are contracting companies interest in the type of work described in this study. **THIS IS NOT A SOLICITATION FOR PROPOSALS, AND NO CONTRACT WILL BE AWARDED FROM THIS MARKET RESEARCH.** No reimbursement will be made for any costs associated with providing information in response to this announcement or any follow-up information requests. The information gathered will be treated as confidential. Respondents will not be notified of the market research results.

1.2 BACKGROUND

The ACP is responsible for the administration, operation, conservation, maintenance, and modernization of the Panama Canal (the Canal), as well as its pertinent activities and related services, pursuant to legal and constitutional regulations in force, so that the Canal may operate in a safe, uninterrupted, efficient, and profitable manner.

Meeting the Panama Canal operational needs and ensuring municipal and industrial (M&I) water requirements has created excessive demands on the Canal watershed's limited water supply resources. This puts long-term sustainability of Panama Canal operations at risk; and impacts the Canal's global competitiveness.

To address these concerns, the ACP is working on an economically justified and environmentally sustainable Integrated Water Resource Management (IWRM) Plan, with the objective of optimizing the Canal's reliability over a 50-year planning horizon, including specific measures to maximize water resources yields within the ACP watershed.

One of the proposed measures included in the IWRM Plan, consists of dredging the navigation channel from Cocoli Reach, north of Cocoli Locks (Pacific Access Channel) to Gamboa Reach in Gaillard Cut and

portions of the Gatun Lake; in order, to increase the draft available for Neopanamax vessels when the Gatun Lake level is lower than EL 25.91 m (85.0 ft). See figure 1.

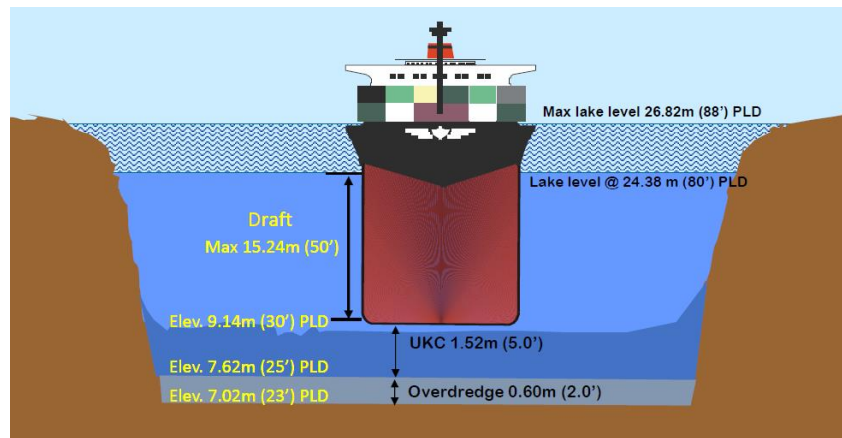


Figure 1. Illustration of dredging to EL 7.62 m (25.0 ft) PLD with 0.61 m (2.0 ft) Overdredge.

The purpose of this market research is to gain knowledge of the interests, capabilities, and qualifications of interested parties in the industry.

1.3 SCOPE OF WORK

The ACP is conducting market research for the dredging of the navigation channel, **without the use of drilling and blasting**, from the current base navigation channel elevation of 9.14 m (30.0 ft) PLD to elevation 7.62 m (25.0 ft) PLD, with an overdredge of 0.61 m (2.0 ft.). The location of the work would be from Cocoli Reach at the Pacific Access Channel (PAC) to the Chagres Crossing Reach in Gaillard Cut. (See Figure 2).



Figure 2. Area of interest

1.4 DREDGING VOLUME ESTIMATES:

The dredging volumes have been estimated for each of the dredging regions based on the following assumptions:

- Existing Navigation Channel widths will remain the same for each reach.
- Side slopes of all dredging measures will be 2H:1V.
- The minimum dredging width in Gaillard Cut and PAC will be 180m on the straights and 207 m on the curves.
- All dredging will include the specified elevation at Precise Level Datum (PLD) plus an additional 0.61 m (2.0 ft) of overdredging.

Based on these assumptions the estimated associated volumes for a dredging measure to achieve EL 7.62 m (25.0 ft) PLD are shown in table 1.

Table No. 1 Estimated Dredging Volumes Associated with a Navigation Channel Elevation of 7.62 m (25.0 ft) PLD.

Reach	Sector	Approximate Dredging Volume (m ³)	Approximate Overdredge Volume (m ³)	Approximate Total Dredging Volume (m ³)
Chagres Crossing	Gaillard Cut	334,429.93	299,385.78	
Bas Obispo	Gaillard Cut	456,900.91	342,188.90	
Cascadas	Gaillard Cut	205,331.57	183,842.12	
Cunette	Gaillard Cut	118,401.31	79,562.05	
Empire	Gaillard Cut	248,871.06	165,494.25	
Culebra	Gaillard Cut	329,527.71	276,296.58	
Cucaracha	Gaillard Cut	235,271.45	146,750.99	
SUBTOTAL		1,928,733.94	1,493,520.67	
Cartagena	PAC	108,404.67	70,445.26	
Cartagena	PAC	580,434.31	328,350.50	
Cocoli	PAC	736,840.00	358,370.19	
SUBTOTAL		1,425,678.98	757,165.95	
TOTAL		3,354,412.92	2,250,686.62	5,605,099.54

For further information on bathymetry and areas to be dredged, see annex 1, which includes the information in DWG and shapefile formats.

1.5 EXISTING CONDITIONS - GEOLOGY

The information in this paragraph is provided for information purposes only, may not be relied upon by in any way or for any reason, and shall not give rise to, form the basis of, or be the subject matter of, any claims of any nature against the ACP.

The materials in the Canal consist of a complex series of igneous flows and intrusive bodies, pyroclastic materials, deposited in a small tertiary sedimentary basin that comprises most of the area of the Panama Canal from the Atlantic to the Pacific Oceans. This basin sits on top of pre-tertiary volcanic rocks associated with the formation of the volcanic arc that forms Panama over its entire length.

The geological formations that are found in the project area can be seen in figure 3, and table 1 summarizes the characteristics of the main geological formations found around the area of interest.

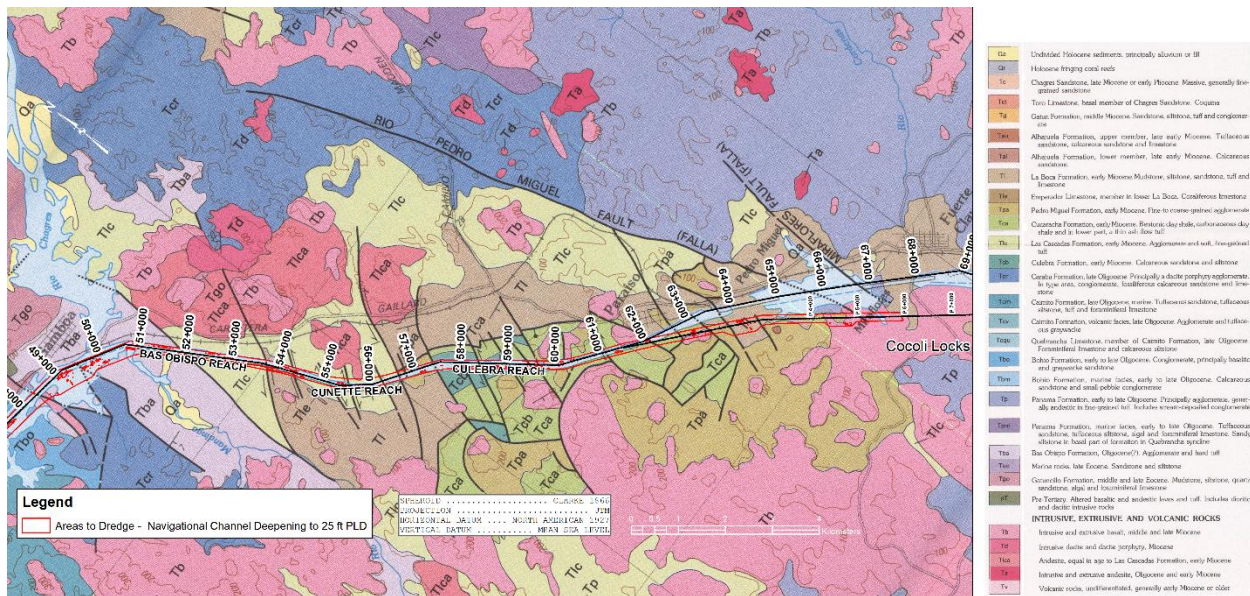


Figure 3. Geology of the Panama Canal and Vicinity (USGS, 1980)

Table 1. Summary of the Geologic Formations found in the area of Gaillard Cut and the Pacific Access Channel (PAC)	
Formations	Description
Holocene Sediments (Qa)	Undivided Holocene sediments, that include alluvium and fills. Pacific Muck: Heterogeneous mixture of swamp, alluvial and marine deposits of silts, clays, and carbonaceous organic matter
Basalt (Tb)	Extrusive, fine-grained, columnar to massive, occurring as flows and sub-intrusive and intrusive, porphyritic, medium to coarse-grained, occurring as dikes, sills, plugs, or laccolites
Pedro Miguel (Tpa)	Pyroclastic, small to very large angular to sub-angular basaltic and andesitic clasts and blocks, in a fine- to coarse-grained sandy, tuffaceous matrix, black, hard, thin tuffaceous layers and occasional basaltic flows.

La Boca (TI)	Thick, horizontal deposits of sandy siltstones and silty Sandstones, some conglomeratic, lenticular layers.
Cucaracha (Tca)	Weak clay shales (locally bentonitic) interbedded with fine tuffaceous sandstones, siltstones and conglomerates, and carbonaceous material. Contains a marking bed of ignimbrite.
Las Cascadas (Tlc)	Dacitic andesite, tuff breccias or agglomerates, welded tuff or ignimbrites, and weak, highly altered argillaceous tuffs.
Culebra (Tcb)	Calcareous, light gray to white sandstone layers, alternating with well laminated, black, carbonaceous, shaly siltstones, is considered of deltaic origin.
Bas Obispo (Tba)	Pyroclastic, basaltic, and andesitic sub-angular to angular clasts varying from pebble to large block sizes in a hard, basaltic matrix, sometimes matrix is hard, and tuffaceous.
Bohío (Tbo)	Series of Sandstones and conglomerates, crudely bedded with Tuff beds at scattered localities.

For further information on the geology of the area, refer to annex 2 (*Geotechnical Data*) which includes: geological field logs of coreholes, the study of “Electrical Resistivity for the Panama Canal Authority” made by Hydro Geophysics, Inc. in 2008, and a Map of Navigational Channel Bottom Hardness 2023 (approximate interpretation by ACP) at Gaillard Cut and PAC.

1.6 PROGRAMMING AND SCHEDULING REQUIREMENTS

The work requires special attention to the scheduling, programming, and implementation of all activities that may affect the ACP operations at the work site and surrounding areas. ACP operations adjacent to the work site will continue throughout the work performance period; these operations include but are not limited to Canal transit operations, and floating equipment operations. Work operations should be programmed to avoid interfering with any of the ACP’s operations near the work site and comply with Section 8 “*Dredging Operations and Navigational Aids*”, of the Vice-Presidency for Operations, Operation Manual, and Windows and Restrictions-Navigation Dredging at Gaillard Cut and PAC. (See Annex 3).

1.7. RELEASE OF LIABILITY

This request to participate in the Market Study and everything necessary to present the reply to the study, as well as the associated costs, will be assumed by the participants, therefore, it will not represent chargeable costs or responsibility of ACP. The response to this request is only for the purpose of knowing your interest in participating under the conditions and scope general included. This Market study does not represent an opportunity to hire, nor ACP’s commitment to tender the works.

1.8. CONFIDENTIAL INFORMATION

The information submitted in reply to this market study will be treated confidentially. As well, the participants of this Market Study must maintain and protect the classified information that is stated as reserved or confidential in nature provided by ACP, except for those who require handling that type of information for the evaluation and presentation of their reply to this study.

2. SUBMITTALS

Respondents interested in participating in this market research may send their reply, or any questions regarding this market research, in digital format to Mr. Rigoberto Delgado at RHDelgado@pancanal.com and copy to address ACP-PH@pancanal.com. The response to the market research shall include the following information:

- a) Provide the company's name, address, point of contact, phone number, and e-mail address.
- b) Provide the type of dredging equipment and general methodology suggested to do the work, during the allowed time windows. Indicate, as well, if the work would require extended time windows, or if it could be performed in between transits. For the allowed time windows, please review the information in the attached file "Dredging Operations and Navigational Aids".
- c) Provide approximate production rate and hourly cost during production and on standby, and any other cost associated with this work.
- d) Any other information the Respondents may consider pertinent.
- e) If the Respondents consider that performance of the dredging work without the use of drilling and blasting is not convenient, please include a brief explanation.

All information regarding this market research must be submitted not later than November 15, 2023.

Attachments:

1. Annex_1_Bathymetry_and_Surfaces
2. Annex_2_Geotechnical_Data (Confidential)
3. Annex_3_Operations_Manual_Sect8

Available at the following link: <https://pancanal.box.com/s/s0rr5i9zitzbg3r4tcvajcy9rwrtxfzv>