

GULF OF HONDURAS DETAILED HYDROGRAPHIC ACTION PLAN

Task Group 1: Mesoamerican Demonstration Project

Objective 1: Regional Planning and Coordination for the Development of the Gulf of Honduras

Hydrographic Action Plan

Activity 1) Regular meetings of the MACHC in the region will serve as venues for the *Gulf of Honduras (GoH)* Project participating countries to define and develop the framework and functional arrangements for regional hydrographic collaboration. The outcome of these meetings will be consensus on how to allocate resources at both national and regional levels to achieve sustainable hydrographic capacity. MACHC representatives will also participate in GoH Project planning and implementation committees.

Needs/Strategies	WHO	WHEN	STATUS
1. Workshops / Meetings			
a) Fifth Meeting of the MACHC, Biloxi MS, USA	<i>all project partners</i>	<i>November 3-4, 2002</i>	√
b) Initial GoH Project Meeting, San Pedro Sula, Honduras	<i>all project partners</i>	<i>November 20-21, 2002</i>	√
c) Second GoH Meeting—Presentation of the Preliminary TDA, Guatemala City, Guatemala	<i>all project partners</i>	<i>March 20-22, 2003</i>	√
d) MACHC Electronic Chart Committee (ECC), Biloxi, Mississippi, USA	<i>all project partners</i>	<i>March 24, 2003</i>	√
e) Third GoH Meeting—Presentation of the Project Brief, Belize City, Belize	<i>all project partners</i>	<i>June 12-13, 2003</i>	√
f) Fourth GoH Meeting—Final Project Meeting, Tegucigalpa, Honduras	<i>all project partners</i>	<i>October 9-10, 2003</i>	√
g) Sixth GoH Meeting of the MACHC, Cartagena de Indias, Colombia	<i>all project partners</i>	<i>Aug. 30 – Sept. 3, 2004</i>	√
h) Guatemala City meeting	<i>all project partners</i>	<i>Dec.2004</i>	√
i) Ad Hoc ECC Meeting, Monaco	<i>all project partners</i>	<i>April 2005</i>	√
j) ECC–Task Group 1 Workshop, Cartagena de Indias, Colombia	<i>all project partners</i>	<i>May 29 – June 1, 2005</i>	√

k) Third IHOCBC Meeting, Cartagena de Indias, Colombia	<i>all project partners</i>	<i>May 30 – June 2, 2005</i>	√
l) Extraordinary Meeting of the MACHC, Veracruz, Mexico	<i>all project partners</i>	<i>November 9–10, 2005</i>	√
m) Seventh Meeting of the MACHC, Acapulco, Mexico	<i>all project partners</i>	<i>October, 2006</i>	√
n) Gulf of Honduras Project Kick-Off Meeting	<i>all project partners</i>	<i>December, 2006</i>	X

2. Develop Hydrographic Activity Implementation Plan

a) Facilitate Production of GoH Hydrographic Action Plan	<i>MACHC-ECC</i>	<i>Nov. 2005</i>	√
<ul style="list-style-type: none"> • Countries to provide summary of status of National Hydrographic Committee effort 	<i>participating countries</i>	<i>Jan. 2006</i>	√
<ul style="list-style-type: none"> • Provide budget costs and in-kind contributions (all activities) for inclusion on Action Plan 	<i>all project partners</i>	<i>Jan. 2006</i>	√
b) Produce and disseminate copies of Plan and post it to website	<i>U.S.</i>	<i>Dec. 2006</i>	√
c) Countries to advance Action Plan through their respective channels/project structures, and copy of Action Plan to be provided to COCATRAM and CCAD.	<i>MACHC and participating countries</i>	<i>August-December 2006</i>	√
d) Present Plan at GoH Project Kick-off Meeting	<i>MACHC and participating countries</i>	<i>December 2006</i>	X

3. Create Gulf of Honduras Project website (in English and Spanish) to facilitate communication between project partners and participating agencies, and to organize the materials produced by the MACHC Electronic Chart Committee (ECC). The site will contain an overview of the project; all project related documents, project partners' contact information, and links to project partners' websites.

a) Design of web site	<i>U.S.</i>	<i>Oct. 2005</i>	√
b) Collect and organize documents, images, photos	<i>U.S.</i>	<i>Nov. 2005</i>	√
c) Finalize web site	<i>U.S.</i>	<i>Jan. 2005</i>	√
d) Translate web site into Spanish	<i>U.S.</i>	<i>ongoing</i>	√

Objective 2: National Level Institutional Capacity in Each Country

Activity 1) Establish national hydrographic coordinating entity to assist with resource allocations and product dissemination.

Needs/Strategies	WHO	WHEN	STATUS
1. National Committee Building Actions in Belize			
a) Identify senior-level agency representatives related to maritime transportation, marine environmental protection and other sectors with interest or use for hydrographic information to contact in each country.	<i>Belize</i>	<i>Jan. 2005</i>	√
<ul style="list-style-type: none"> Country will provide a member list and/or organization chart of its National Coordinating Committee to the IHO, and the MACHC. 	<i>Belize</i>	<i>Jan. 2005</i>	√
<ul style="list-style-type: none"> Initiate conferences calls with all parties on issues related to the creation of the NHC. 	<i>Belize</i>	<i>Jan. 2005 - Mar. 2005</i>	√
b) Request from other countries models/examples used to create hydrographic committees.	<i>Belize</i>	<i>Apr. 2005</i>	√
c) Identify sources of funding to support committee functions, including formal budgetary support.	<i>Belize</i>	<i>Apr. 2005</i>	√
d) Assign Port Authority as country point-of-contact for execution of hydrographic activities under the Gulf of Honduras project.	<i>Belize</i>	<i>Apr. 2005</i>	√
e) Establishment of national hydrographic committee (National Maritime Safety Committee)	<i>Belize</i>	<i>Apr. 2005</i>	√
f) Establish legal mandate for Port Authority to have national responsibility for hydrography	<i>Belize</i>	<i>Nov. 2005</i>	√
g) Organize meeting(s) with high level visit by IHO with national committee members	<i>Belize</i>	<i>Mar. 2006</i>	√
2. National Committee Building Actions in Guatemala			
a) Identify senior-level agency representatives related to maritime transportation, marine environmental protection and other sectors with interest or use for hydrographic information to contact in each country.	<i>Guatemala</i>	<i>Nov. 2005</i>	√
<ul style="list-style-type: none"> Country will provide a member list and/or organization chart of its National Coordinating Committee to the IHO, and the MACHC. 	<i>Guatemala</i>	<i>Nov. 2005</i>	√
<ul style="list-style-type: none"> Initiate conferences calls with all parties on issues related to the creation of the NHC. 	<i>Guatemala</i>	<i>Nov. 2005 - Mar. 2006</i>	√
b) Organize visits of IHO representatives to fortify the efforts of formation of the NHC.	<i>Guatemala</i>	<i>Nov. 2005</i>	√
c) Request from other countries models/examples used to create hydrographic committees.	<i>Guatemala</i>	<i>Nov. 2005</i>	√

d) Identify sources of funding to support committee functions, including formal budgetary support.	<i>Guatemala</i>	<i>Nov. 2005</i>	√
e) Establishment of national hydrographic committee	<i>Guatemala</i>	<i>Jun. 2006</i>	√

3. National Committee Building Actions in Honduras

a) Identify senior-level agency representatives related to maritime transportation, marine environmental protection and other sectors with interest or use for hydrographic information to contact in each country.	<i>Honduras</i>	<i>Nov. 2005</i>	√
<ul style="list-style-type: none"> Country will provide a member list and/or organization chart of its National Coordinating Committee to the IHO, and the MACHC. 	<i>Honduras</i>	<i>Nov. 2005</i>	√
<ul style="list-style-type: none"> Initiate conferences calls with all parties on issues related to the creation of the NHC. 	<i>Honduras</i>	<i>Nov. 2005 - Mar. 2006</i>	√
b) Organize meeting to brief Director of National Port Authority about the GoH project and the need to have a National Hydrographic Commission (NHC)	<i>Honduras</i>	<i>Feb. 2006</i>	X
c) Organize a meeting (Portuaria-IGN) in Tegucigalpa or Puerto Cortes to revise/negotiate previous agreements.	<i>Honduras</i>	<i>Mar. 2006</i>	X
d) Organize a meeting with the Commander of Navy to discuss the initiative of formation of the NHC.	<i>Honduras</i>	<i>Mar. 2006</i>	X
e) Organize visits of IHO representatives to fortify the efforts to form NHC.	<i>Honduras</i>	2007	X
f) Organize a meeting(s) with all main parties to finalize details of the Agreements and Statutes document for its approval and signature (Establishment of national hydrographic committee).	<i>Honduras</i>	2007	X

4. Raise awareness (at high levels) of importance of hydrography. Involve high-level MACHC members and IHO members as needed.

a) Develop presentation materials on importance of hydrography.	<i>U.S.</i>	<i>Jan. 2005</i>	√
<ul style="list-style-type: none"> Provide PowerPoint presentation on "Power of Hydrography" to all project partners. 	<i>U.S.</i>	<i>Sept. 2004</i>	√
<ul style="list-style-type: none"> Assist with preparation of advance materials, tailored to perspective of relevant ministries as needed and translated to Spanish. 	<i>U.S.</i>	<i>Jan. 2005</i>	√
b) Organize high-level country visits by IHO Director	<i>Participating Countries/IHO</i>	<i>2005</i>	√
<ul style="list-style-type: none"> Provide fact sheet on Importance of Hydrography to all GoH project partners. 	<i>U.S.</i>	<i>Jan. 2005</i>	√
<ul style="list-style-type: none"> Outline strategy for GoH points-of-contact (POCs) to build relationships with appropriate ministries in preparation for IHO visit. 	<i>U.S./IHO</i>	<i>Jan. 2005</i>	√
<ul style="list-style-type: none"> Identify level of support from high-level entities in each country (to be determined during IHO visits). 	<i>all project partners</i>	<i>Jan. 2005</i>	√
<ul style="list-style-type: none"> Visit from high-level IHO officials to support creation of hydrographic committee. 	<i>IHO</i>	<i>Feb. 2005 and 2007</i>	√

c) Organize high-level country visits by UKHO officials to brief senior government people on importance of hydrography and opportunities	U.S./UKHO	Mar. 2006	✓
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Activity 2) Each country's hydrographic committee will establish consensus on the capabilities, products, and services that should be developed for the nation.

Needs/Strategies	WHO	WHEN	STATUS
1. Define national requirements for training, expertise, and equipment required for hydrographic data collection, processing, paper and ENC production, distribution, and safe navigation.			
a) Use IHO's S-55 Questionnaire to identify, assess, and prioritize national hydrographic needs.	<i>participating countries</i>	Nov. 2005	✓
<ul style="list-style-type: none"> IHO and MACHC to send letters to POCs requesting completion of S-55 Questionnaire. Belize, Guatemala, and Honduras to provide POC information to IHO and MACHC. POCs include a principal coordinating POC and a technical POC (i.e., for continuity of hydrographic surveys and to avoid duplication of training), both to be available over the five-year life of the GoH project. 	<i>IHO, MACHC, and participating countries</i>	Sept. 2004	✓
<ul style="list-style-type: none"> S-55 Coordinator will provide electronic copies of questionnaire directly to TG1 members. 	<i>U.K. Hydrographic Office (S-55 Coordinator)</i>	Sept. 2004	✓
<ul style="list-style-type: none"> Establish linkage between ECC website and MACHC section of IHO website to facilitate access to S-55 Questionnaire. 	<i>U.S.</i>	Sept. 2004	✓
<ul style="list-style-type: none"> IHO to make report from 2000 visit to Central America available to POCs in individual countries to support completion of S-55 Questionnaire. 	<i>IHO</i>	Sept. 2004	✓
b) Complete IHO's S-55 Questionnaire.	<i>participating countries</i>	2007	X
<ul style="list-style-type: none"> Liaise with IHB Technical Experts to complete questionnaire. 	<i>participating countries</i>	ongoing	✓
<ul style="list-style-type: none"> Conduct analysis of GoH countries' needs for GoH project based on results of S-55 Questionnaire 	<i>participating countries, S-55 Coordinator, and other members of ECC</i>	ongoing	X
c) Officially request copies of data from cooperative hydrographic offices.	<i>participating countries, S-55 Coordinator, and other members of ECC</i>	Nov. 2004 mtg, June 2005 mtg, and Nov. 2005 mtg	✓
d) Commander of U.S. Naval Oceanographic Office to provide, upon formal written request, data from recent cooperative hydrographic surveys.	<i>participating countries, S-55 Coordinator, and other members of ECC</i>	Sept. – Nov. 2004	✓

e) Bilateral Agreement Actions	<i>UKHO and participating countries</i>	ongoing	√
• Countries to consult with high level officials to determine if data can be made available before bilateral agreements are in place	<i>participating countries</i>	2006	√
• Belize's visit to UKHO to sign bilateral agreement	<i>UKHO and Belize</i>	2006	√
• Guatemala and Honduras to provide official response to UKHO on legal agreement and policy review and finalize agreements	<i>UKHO and countries</i>	2006-2007	√
f) Training Needs / Opportunities	<i>all project partners</i>	ongoing	√
• UKHO to include one representative from Belize, Guatemala, and Honduras in its 5-week Hydrographic course	<i>UKHO</i>	2007	X
• Provide to participating countries contact information in the U.S. Embassies to whom requests for Security Assistance Funding should be directed.	<i>U.S. NAVOCEANO</i>	Jan. 2006	√
• Participate in IHO-MACHC regional basic survey training course	<i>Participating countries</i>	Spring 2007	X
• Provide pre- and post-survey technical assistance	<i>IHO/CBC</i>	2007	X
• Create by source (country) an inventory of available training opportunities	<i>U.S.</i>	ongoing	√

Objective 3: Technical Support for Demonstration Projects

Activity 1) Hydrographic Survey Operations (Executed by Each Country)

Needs/Strategies	WHO	WHEN	STATUS
1. Pre-survey planning			
a) Identify a "Gulf of Honduras Marine Highway" to support safe navigation in the region which benefit all three countries.	<i>participating countries and members of ECC</i>	<i>July – Aug. 2005</i>	√
b) Technical Advisor to visit Guatemala and Honduras for detailed survey assessment, planning, and budgeting.	<i>U.S. NAVOCEANO</i>	<i>July – Aug. 2005</i>	√
c) Evaluate the Belize Harbor survey data to determine if these are suitable for use/release for project	<i>U.S. NAVOCEANO</i>	<i>Dec. 2005</i>	√
d) Technical Visit to Belize for detailed survey planning and high level briefings	<i>MACHC-ECC reps.</i>	<i>March 2006</i>	√
e) Project Technical Specifications Finalized	<i>participating countries</i>	<i>July 2006</i>	√

2. Survey Planning and Execution (Each country's In-Kind Contributions found at last page of each one's Survey Technical Specification, Annex A)			
a) Equipment Familiarization (dry-testing)	<i>participating countries</i>	2007	X
b) Survey Area Recognizance	<i>participating countries</i>	2007	X
c) Prepare Survey Layout and Supporting Files	<i>participating countries</i>	2007	X
3. Geodesy / Tides (this is part of survey execution)			
a) Establish Geodetic/Tide Benchmarks	<i>participating countries</i>	2007	X
b) Re-Occupy Existing Geodetic / Tide Stations	<i>participating countries</i>	2007	X
c) Perform Geometric Leveling to Local Datum	<i>participating countries</i>	2007	X
d) Install Tide Gauge Below Datum	<i>participating countries</i>	2007	X
e) Test DGPS Over Geodetic Point	<i>participating countries</i>	2007	X
4. Equipment Work			
a) Procurement of 3 sets of minimal equipment for each country to allow completion of hydrographic surveys at IHO Order 1 Standards. Details found on page 24 (Belize), page 18 (Guatemala), and page 28 (Honduras) of their individual Survey Technical Specifications)	<i>GoH Project Office</i>	2007	X
b) Training on new equipment for each country	<i>Equipment Vendor</i>	2007	X
c) Installation	<i>Equipment Vendor</i>	2007	X
d) Sea Trials (using in-kind vessels provided by each country--see last page of individual Survey Technical Specifications, Annex A))	<i>participating countries w/ MACHC technical assistance</i>	2007	X
5. Conduct survey (One in each country as identified in their Technical Specification in Annex A)			
a) Conduct CTD Deployments	<i>participating countries</i>	2007	X
b) Deploy Current Meters	<i>participating countries</i>	2007	X
c) Start Data Collection	<i>participating countries</i>	2007	X
d) Process Data	<i>participating countries</i>	2007	X
e) Complete Survey Area Data Collection and Processing	<i>participating countries</i>	2007	X
6. GIS/smooth sheet production			
a) Create CARIS File	<i>participating countries and members of ECC</i>	2007	X

b) Input New Soundings and Create Contours	<i>participating countries and members of ECC</i>	2007	X
c) Update Coastline	<i>participating countries and members of ECC</i>	2007	X
d) Update Floating and Fixed Navigational Aids	<i>participating countries and members of ECC</i>	2007	X
e) Update Wrecks, Shoals, Lights, etc	<i>participating countries and members of ECC</i>	2007	X
f) Create Information Title Block for Survey	<i>participating countries and members of ECC</i>	2007	X
g) Create Plot File	<i>participating countries and members of ECC</i>	2007	X
h) QA and Print Smooth Sheet	<i>participating countries and members of ECC</i>	2007	X

7. Hydrographic survey products

a) Hydrographic Technical Specifications	<i>participating countries and members of ECC</i>	2007	X
b) Geodetic Data / Reports	<i>participating countries and members of ECC</i>	2007	X
c) Tide Data / Harmonic Constituents Analysis	<i>participating countries and members of ECC</i>	2007	X
d) Hydrographic: Final Smooth Sheet	<i>participating countries and members of ECC</i>	2007	X
e) Currents	<i>participating countries and members of ECC</i>	2007	X
f) Report of Survey	<i>participating countries and members of ECC</i>	2007	X
g) Oceanographic Survey Logs: Bottom Sediments	<i>participating countries and members of ECC</i>	2007	X
h) New Information conveyed via Notice to Mariners and GMDSS	<i>participating countries and members of ECC</i>	2007	X

Activity 2) Survey Training

Needs/Strategies	WHO	WHEN	STATUS
1. Explore possibility of training in IHO-certified Category A and B Hydrography (available in Colombia and the U.S.) for key personnel from the three countries.			
a) Provide countries with embassy contacts for Security Assistance for countries to apply for training support (e.g., CAT A and B training in Colombia, and U.S.)	<i>U.S. NAVOCEANO</i>	<i>July 2005</i>	✓

2. Provide training on how to format hydrographic data for integration with the project data and information management system (including GIS), and for use in non-navigation applications (e.g., coral reef mapping, coastal zone management, etc).	Members of MACHC and ECC	2007	X
3. Investigate if Digital Nautical Charts (DNCs) of region could be used to create ENCs, and update with Aids to Navigation. Also, check with NGA regarding status of satellite imagery for Caribbean coral reefs, and see if available for the GoH project.	U.S.	July 2005	√
4. Training on GPS, tide gauge equipment, and SW leveling (Geodesy/Tides)	IHO/CBC and MACHC Members	Spring 2007	X
5. Training on procedures for the installation of equipment such as Navigation System, Hydro, Side Scan Sonar, CTD, Motion Sensor, Collection Computer, and related SW.	Members of MACHC and Equipment Provider	2007	X
6. Training on procedures, data collection, and processing SW for Sea Trials.	Members of MACHC and ECC	2007	X
7. Training on CARIS GIS and MS Office for product generation.	Members of MACHC and ECC	2007	X
8. Basic Course Offered on Cartography (Navy School/EPQ/IGN)	Guatemala	May 2006	√

Activity 3) Paper and Electronic Navigational Chart (ENC) Production and Dissemination

Needs/Strategies	WHO	WHEN	STATUS
1. Address issues related to paper chart updates and ENC production.			
a) Prioritize ENC production for areas where current data exists as a result of HYCOOP surveys and new surveys in compliance with international standards.	all project partners	initiate at Nov. 2005 meeting of MACHC	√
b) Pursue an appropriate bilateral arrangement with the U.K. to update paper charts and to produce ENCs in the short term (1-2 years) and that would include capacity-building training for the long term (3-5 years).	participating countries and U.K. Hydrographic Office	ongoing	√
<ul style="list-style-type: none"> Determine whether CARIS-produced survey smooth sheets are compatible for producing DKART-based ENCs. 	U.S. NOAA and U.K. Hydrographic Office	2006	√
c) Determine potential dates for paper chart updates and ENC production and related costs to finalize GoH plan	UKHO	Feb. 2006	√

d) Determine if/when source data for existing charts can be made available to UKHO (if not already) for ENC production	U.S. NGA	2007	X
2. Data collection (paper/raster chart as source)			
a) Existent Survey Data	participating countries and UKHO	2007	X
b) Other Digital Data	participating countries and UKHO	2007	X
3. Data Inspection and Validation			
	UKHO	2007	X
4. Update of Existing Paper Charts			
	UKHO	2007	X
5. Update Existing ARCS			
	UKHO	2007	X
6. Produce ENC from Existing Paper Charts			
	UKHO	2007-2008	X
7. Produce Re-Schemed New Paper Charts			
	UKHO	2007-2008	X
8. Produce ARCS from Re-Schemed New Paper Charts			
	UKHO	2007-2008	X
9. Produce ENC from Re-Schemed New Paper Charts			
	UKHO	2007-2008	X
10 Data Distribution (initial print of 300 charts)			
	UKHO	2007-2008	X

Activity 4) ENC Production Training

Needs/Strategies	WHO	WHEN	STATUS
1. Hydrographic Data Processing and Marine Cartography (one student from each GoH country - 5 weeks)	UKHO	2006	√
2. Determine future needs	all project partners	2007-2008	X

Activity 5) Contributing to GoH Regional Geographic Information System

Needs/Strategies	WHO	WHEN	STATUS
1. Development of Tool for Converting ENC to GIS formats (ENC Direct to GIS)	U.S. NOAA	2005	√
2. Web-based GIS Data Distribution Tool			
• Design of ENC Direct to GIS Web Page	U.S. NOAA	Feb. 2006	√
• Develop demo on this tool for visiting Belize	U.S. NOAA	U.S. NOAA	√
• Prepare Woods Hole Data and a small ENC for Demo tool	U.S. NOAA	March 2006	√
• Discussions with project partners about physical location of regional web-based GIS data distribution tool server	all project partners	2007	X
• Develop prototype using Belize's data layers and available small scale ENC data in the region	U.S. NOAA	2007	X
• Prepare Data	U.S. NOAA	2007	X
• Obtain inputs/comments on GIS prototype tool from all project partners	U.S. NOAA	2007	X
• Final prototype site preparation	U.S. NOAA	2007	X
• Discuss GIS data sharing issues	all project partners	2007	X
3. Visits to the region to address GIS issues			
• NOAA visit to Belize to demo draft tool	U.S. NOAA	March 2006	√
• NOAA visit to Belize to research GIS capabilities and obtain GIS data layers	U.S. NOAA	Oct. 2006	√
• Technology transfer to the region, including hardware and software installation/settings.	U.S. NOAA	2007	X
• Follow Up NOAA Visit to Region	U.S. NOAA	2007	X

Activity 6) Bring Greater Environmental Awareness to the Mariner

Needs/Strategies	WHO	WHEN	STATUS
1. Conduct an inventory of existing biological and regulatory information for the MBRS	all project partners	2007	X
2. Determine the type of format(s) that information currently exists (e.g., maps/charts, aerial photos, imagery, GIS database, alpha/numeric text)	all project partners	2007	X

3. Determine who, where and how to obtain information (e.g. national, international, universities, etc)	<i>all project partners</i>	2007	X
4. Produce Environmental data layers for ENC's from existing maps/GIS databases	<i>all project partners</i>	2008	X
5. Produce 3 ENC's covering GoH	<i>UKHO</i>	2007	X
6. Test and evaluate successful display of environmental layer w/ ENC's onboard test vessels (recreational, commercial)	<i>all project partners</i>	2008	X
7. Test and evaluate effective display of environmental layer w/ENC's in different chart display systems	<i>all project partners</i>	2008-2009	X
8. Distribution of product(s)	<i>all project partners</i>	2009	X