

From: "Raybould, Keith" <keith@mbari.org>
Subject: **Costing information for coastal systems**
Date: October 10, 2006 12:16:54 PM HST
To: Douglas Luther <dluther@hawaii.edu>, John Trowbridge <jtrowbridge@whoi.edu>, Deborah Kelley <kelley@ocean.washington.edu>, Uwe Send <usend@ucsd.edu>
Cc: "Au, Doug" <audo@mbari.org>, Kendra Daly <kdaly@marine.usf.edu>, rlunde@joiscience.org, rlunde@joiscience.org, swilliams@joiscience.org, rdetrick@whoi.edu
 6 Attachments, 190 KB 

Doug, John,

I've finally spent some time to generate common cost models for all of the coastal mooring systems so that we can easily update costs if we make revisions and can more readily check that we are using the same assumptions for each coastal system. I have generated the cost sheets for the SAB, Pacific North West and MAB Pioneer arrays, both for capital and for O&M. They are in a similar format to the RCO cost spreadsheets.

The front sheet contains all of the summary costs. The second sheet contains all of the unit costs for items such as benthic nodes, profilers, cable installation costs, labor costs, ship costs etc that are used to generate the system costs on the front sheet.

I have made the assumptions below for the O&M costing that should be checked and confirmed:

- a) on average mooring components are replaced every 3 years (some items such as mooring lines, anchors, shackles etc are replaced annually at each mooring turn around, some items last 3 years such as EOM cables, some items last 10 years such as mooring towers, bridles etc. 3 years is taken as an weighted average)
- b) Gliders and their instruments are replaced every 3 years
- c) on average mooring instruments are replaced every 5 years (this accounts for lost or damaged gliders as well)
- d) benthic nodes and cables are replaced every 10 years
- e) AUV's and AUV docks are replaced every 3 years (this may be optimistic as it needs to include AUV's with adventurous spirits)
- f) on average vertical profilers are replaced every 3 years
- g) I have included:
 - a core team for mooring build, data validation, emergency repairs, procurements, spares handling, mooring turn around cruises, instrumentation calibration, software preparation for mooring turnaround
 - satellite comms connection charges
 - ship time for mooring turn arounds, monthly maintenance visits, and ROV operations for supporting benthic instrument packages
 - instrument calibration costs
 - cable repair maintenance agreements for the cabled systems
 - contingency of 10% for all of the items I have missed

I have version controlled all the files as V1.0 with a release date.

Hopefully the spreadsheets should make costing various options next week quicker.

thanks
Keith

From: Douglas Luther [mailto:dluther@hawaii.edu]
Sent: Tuesday, October 10, 2006 3:48 AM
To: John Trowbridge; Deborah Kelley; Uwe Send
Cc: Raybould, Keith; Au, Doug; Kendra Daly; Douglas Luther
Subject: Proposed Process for STAC Meeting – Respond by 10/11 Please

John, Deb and Uwe,

Given my email of 10/2, I'm sure you've guessed that you all figure prominently in my plans (hopes) for the STAC meeting next week. For the first couple of hours on Tuesday AM we'll have a series of updates from the project office, a discussion of the budget issues, a discussion of the purpose and process of the meeting, and so forth. This information will be presented by Kendra and me.

Pretty much the entire remainder of the meeting will be about producing recommendations for revised CNDs given all the new constraints in my 10/2 email. My initial thought for the process is that we would remain in plenary (not break up into small groups right away) and review each of the CNDs in detail from the top down; that is, highest priority infrastructure/sites/science first. The intent of these reviews in front of the whole STAC will be to

- permit cross-fertilization of ideas and information across the 3 components;
- explicitly and clearly identify the transformative technologies, and the critical science requiring that technology at each of the sub-components (sites) of the CND's, including those that are likely not to be funded (this information is needed for subsequent reviews – the Preliminary Design Review and review by the NSB, both next Fall – as well as by Julie Morris so that she has ammunition to argue for more funds); and,
- identify weaknesses/inadequacies in the science justifications, the technology plans, the cost estimates, etc., for each site, given our current need to explicitly emphasize the transformative technology, and the critical science that will use that technology, while keeping the whole thing within the new budget and other constraints; I don't expect to try to repair the weaknesses/inadequacies in these review sessions, except for obvious errors; to simplify the preparation, I'd suggest just using the CND's themselves as starting points for the discussions, interspersed with updated cost estimate spreadsheets (discussed below).

These reviews should take into account not only what the CNDs contain, but whatever information is available about management (IO) costs, survey costs, EIR/EIS costs, shore station costs, commissioning costs, and contingency costs. Previously, all these costs were left outside our deliberations in constructing the CND budgets. Now, we should bring them inside in order to make the cost estimates for these things more accurate, and in order to de-scope them, as necessary and if possible, along side the de-scoped CNDs. In other words, we don't want to leave any entitlements out there with blank checks.

I'm requesting that each of you be responsible for the reviews, but that doesn't mean you have to do them yourselves. You might want to engage other members of your sub-committees to lead the discussions at times. For instance, there will be Engineering Committee representatives present (Keith Raybould - retiring Chair; Doug Au – new Chair; Dan Frye; and, Bill Kirkwood) who could lead the discussions of the latest cost estimate spreadsheets that were provided to the CDR in August (I'll forward these around to STAC soon).

Following the review sessions, we'll break up into smaller groups to put together recommendations for modifying the CND's in light of the budget and other constraints. At least two scenarios will be considered. We'll discuss what these scenarios might be on Tuesday AM, but, for example, the likely scenarios are (i) a simple de-scoping of all 3 CND's separately; and, (ii) a dramatic re-scoping of the CND's that results in all the assets being placed in the NE Pacific. Of course, I'm asking you to lead these group discussions, as well.

In putting together these scenarios, prioritizing the sites/nodes remains critical, and we need to keep more nodes/sites than we expect to fund in order to provide ammunition for Julie Morris and others to argue for additional OOI funds. Throughout, you should keep a running total of the capital costs and the O&M costs, as was done in the CNDs.

Please let me know if you have any concerns over this proposed plan for the STAC meeting.

Thanks a lot, Doug



[PNW Coastal....xls \(33.5 KB\)](#) [PNW Coastal....xls \(35.5 KB\)](#) [Pioneer Coas....xls \(28.5 KB\)](#) [PNW Coastal....xls \(35.5 KB\)](#) [SAB V1 0.xls \(28.0 KB\)](#)



[SAB O&M V1 0.xls \(29.0 KB\)](#)