Mitigation Subcommittee Meeting Minutes
Craney Island Expansion Feasibility Study
August 26, 2002

1. Introductions. A list of attendees is attached (attachment 1).

2. Goals and objectives of this subcommittee (review) and review of minutes of July 24, 2002 meeting – The goals and objectives of the subcommittee, as presented in previous minutes, were reviewed. The minutes of the July 24 meeting were reviewed and discussed. George Ruddy provided several proposed revisions to the minutes prior to the meeting by e-mail. These included: Paragraph 3, the words "putting together a synoptic document" should be changed to "discussing." Paragraph 4 last two sentences – after some discussion it was decided to revise next to last sentence to read "open water volume" instead of "open water habitat" and to drop last sentence in paragraph. Bert Parolari suggested change in paragraph 6 title to read "Develop Mitigation Weighting Factor" instead of "Develop Mitigation Trade-Off Ratios" – this is a more accurate reflection of what was accomplished as discussion under this heading. Minutes were so amended by consensus.

3. Review Background Environmental Resources Information & Share Additional Information Relative to Project Area – Two hand-outs (attachments 2 and 3) were provided to the subcommittee. An updated summary document citing references pertaining to SAV's, benthos, and finfish was provided. A draft impacts/mitigation table was provided which presents, in condensed tabular format, direct and indirect impacts and proposed mitigation for those impacts. The subcommittee was asked to review this draft document and provide comments, suggested revisions, etc.

4. Patti Jackson brought up the question of where the mitigation would be implemented. After some discussion the group reconfirmed decision presented at first meeting that "…on-site, in-kind mitigation (i.e, grading back waterfront property near Craney Island to create benthic habitat) is not practical or technically feasible. Off-site, out-of-kind

mitigation is, therefore, the focus of this mitigation plan. The geographic region of consideration agreed upon by consensus is the Elizabeth River, Hampton Roads Harbor, and lower James River systems - and the closer to the area of impact the better." (from minutes of June 21, 2002)

5. Develop Mitigation Weighting Factors – A hand-out was distributed presenting two matrices (attachment 4) to be used to evaluate the proposed mitigation alternatives using a benefits scoring analysis. Part 1 uses functional attribute categories to score the various mitigation options. Part 2 presents weighting factors to score the various mitigation options. The subcommittee scored the first category in Part 2 of the evaluation at the June meeting – "in-kind relatedness." The second category was scored at the July meeting - "large scale ecosystem benefits." At this meeting two additional categories were scored – "Publicly Recognized Value" (changed by subcommittee consensus from "Acceptability") and "Risk/Success." Publicly Recognized Value was defined as "the publicly recognized importance of the resource value contributed by the mitigation option which may be reflected in adopted plans such as national or international agreements, or other action plans of public agencies or private groups." Risk/success is defined as "the likelihood of success based upon previous implementation of the mitigation option and consistent production of anticipated benefits." Each person in the group scored the option (1 to 10) and the average score was calculated and assigned to each mitigation option. The following points of discussion and comment surfaced during the course of assigning the numerical scores:

Publicly Recognized Value

<u>Oyster Restoration</u> – generally widely accepted by public and found in goals and initiatives of groups wanting to restore Bay and its tributaries, although some are now questioning restoration techniques, use of native oyster, etc. Score = 8.3

<u>SAV Restoration</u> – generally widely accepted by public and found in goals and initiatives of groups wanting to restore Bay and its tributaries Score = 8.3

<u>Wetland Restoration</u> – generally widely accepted by public and found in goals and initiatives of groups wanting to restore Bay and its tributaries. Score = 8.4

Sediment Clean-Up – generally widely accepted by public and found in goals and initiatives of groups wanting to restore Bay and its tributaries; Elizabeth River is one of three regions of concern because of sediment contamination. Score = 8.0

Riparian Buffers – generally widely accepted by public and found in goals and initiatives of groups wanting to restore Bay and its tributaries. Score = 8.3

Shore-Stabilization – while reducing sediment input is publicly supported, shoreline protection, especially where aquatic habitat is changed/lost, may not be as widely supported. Score = 5.9

Fish Habitat Enhancement through Dam Removal, Fish Ladders, Removal of Obstructions – generally accepted by public and found in goals and initiatives of groups wanting to restore Bay and its tributaries; specific benefits may not be as well known by the public. Score = 6.3

Clam Management Sanctuary – not as widely supported or known about as some other restoration goals and initiatives. Score = 5.2

Bird Management Plan at Craney – not as widely supported or known about as some other restoration goals and initiatives; doesn't appear in regional goals and plans. Score = 4.5

Storm Water Retrofit – generally accepted by public and found in goals and initiatives of groups wanting to restore Bay and its tributaries. Public generally understands importance of controlling stormwater and water quality related effects of stormwater run-off. Score = 7.3

Artificial Reefs – not as widely supported or known about as some other restoration goals and initiatives; doesn't appear in regional goals and plans; because of increased fishing pressure may not be supported by some segments of public. Score = 5.2

Nesting Islands – not as widely supported or known about as some other restoration goals and initiatives; doesn't appear in regional goals and plans. Creating new islands (in open water) may actually be counter to some bay goals and initiatives. Score = 3.2

Waterfront Conservation/Preservation Areas – Public support/acceptance should be high except in cases where there are developmental pressures; priority in goals and initiatives of groups wanting to restore Bay and its tributaries. Score = 7.6

Risk/Success

Oyster Restoration – some oyster restoration projects to date have not produced anticipated benefits; there is some risk involved in oyster restoration; new techniques such as seeding reefs with disease-resistant oysters may increase success and reduce risk; adaptive management should increase chance of success . Score = 5.3

SAV Restoration – best chance of success is with careful selection of restoration sites; select sites near existing or expanding SAV beds; unforeseen events (storms, freshets, disease, etc.) can unexpectedly impact SAV beds. Score = 4.5

Wetland Restoration – generally widely known and proven techniques to restore tidal wetlands. High degree of success. Score = 8.7

Sediment Clean-Up – sediment clean-up has been accomplished successfully world-wide; specific clean-up techniques have not yet been employed or results monitored for effectiveness in Elizabeth River; clean-up of hot spots like Eppinger & Russell should have a pronounced positive impact, even if not accomplished with 100% effectiveness Score = 6.1

Riparian Buffers – generally widely known and proven techniques to restore riparian buffers. High degree of success.. Score = 8.3

Shore-Stabilization – generally widely known and proven techniques to protect shorelines. May not always be able to realize projected environmental benefits. Score = 7.8

Fish Habitat Enhancement through Dam Removal, Fish Ladders, Removal of Obstructions – generally widely known and proven techniques to provide fish passage to historical spawning grounds (e.g., fish passages in James R. at Richmond). If not designed correctly, some fish passages (fish ladders, notches, etc) may not adequately allow fish to pass. Score = 8.4

Clam Management Sanctuary – Chance of success may be compromised by predation on smaller clams placed in sanctuary; no good monitoring information available on success of sanctuary area Score = 6.7

Bird Management Plan at Craney – Could provide restoration benefits to bird populations but only if the plan can successfully accommodate ongoing activities at the dredged material placement site. Score = 6.6

Storm Water Retrofit – Chance of success largely dictated by effectiveness of designed retrofit and by periodic required maintenance Score = 5.5
Artificial Reefs – Success defined as ability of fish reef structure to provide ecological benefits and habitat and population diversity, not by fish attraction; Score = 6.8
Nesting Islands - Chance of success may be compromised by erosion of the island or by predation. Score = 5.8
Waterfront Conservation/Preservation Areas – Very little risk associated with this option since land already is contributing functional benefits. Score = 8.5

During the course of the voting, there was a discussion about riparian buffers vs. (riparian or waterfront) conservation/preservation areas as one of the mitigation options that the subcommittee has been evaluating. After some discussion, it was generally agreed that these are not the same thing and that for clarity they should be divided into two different categories as mitigation options. This apparent confusion required a re-vote to score these options separately. Lee Hill said that he would provide a precise definition of riparian buffer and the rationale that was used to develop definition (these were provided and appear as attachment 5). The scores furnished above represent the revised scores after this distinction was made and the re-vote was taken. Re-voting in the weighting categories of "in-kind relatedness" and "large scale ecosystem benefits" will be required at the beginning of the next meeting for these two mitigation options.

6. Concluding Group Remarks, Set Date for September Meeting – The follow-up meeting will complete the process of assigning numerical scores to the mitigation options in the weighting categories and making continued progress through the three-step Plan of Action. After checking calendars, it was agreed that the next meeting will be on September 23, again at VIMS if the facility is available on that date.

7. The meeting adjourned at 3:30 pm.

August 26, 2002 Meeting
List of Attendees

Participant's Name	Agency	Phone Number
Craig Seltzer Dave Schulte Pete Kube (Keith Lockwood - observer)	Corps of Engineers	(757) 441-7390 (757) 441-7007 (757) 441-7504
Heather Wood	Virginia Port Authority	(757) 683-2152
George Ruddy	U.S. Fish and Wildlife Service (Chesapeake Bay Field Office)	(410) 573-4528
Morris Roberts Walter Priest Tom Barnard	Virginia Institute of Marine Science (VIMS)	(804) 684-7260 (804) 684-7385 (804) 684-7383
Bert Parolari	Dept. of Environmental Quality (DEQ)	(757) 518-2166
Ruth Boettcher	Virginia Dept. of Game & Inland Fisheries (VDGIF)	(757) 442-2429
Joe Thomas	Elizabeth River Project (ERP)	(757) 625-3648
Lee Hill	Dept. Conservation & Recreation	(804) 786-3998
Patricia A. Jackson	James River Association	(804) 730-2898

Attachment 1

Craney Island Dredged Material Management Area – Proposed East Expansion Aquatic Resources Summary – SAV, Benthic Populations, Finfish and Crabs

Submerged Aquatic Vegetation (SAV)

Orth, Robert J., J.F. Nowak, G.F. Anderson, and J.R. Whiting. 1999, 2000, 2001. Distribution of Submerged Aquatic Vegetation in the Chesapeake Bay and Tributaries and Chincoteague Bay. Data download from www.vims.edu/bio/sav.

Orth, R.J. et al. 2001. 2000 Distribution of SAV in the Chesapeake Bay and Coastal Bays. Virginia Institute of Marine Science (VIMS). November 2001.

The proposed Craney Island eastward expansion lies almost entirely within an SAV Exclusion Zone (Chesapeake Bay Program, March 2002). A SAV exclusion zone is an area defined as never supporting SAV historically nor able to support SAV now or in the future. A small area that includes part of the northern portion of the proposed eastward expansion does not lie within this SAV Exclusion Zone. This area does not lie within the Tier III SAV distribution goal, which represents a return of SAV to its historical distribution in the Bay, to a depth of six feet in areas capable of supporting SAV growth (Chesapeake Bay Program, 1992). The water depth in the area is about twelve feet deep. Within the Chesapeake Bay, SAV currently cannot grow below three feet deep in most areas and was never found growing in twelve feet of water near the mouths of the James and Elizabeth Rivers, known for their high total suspended solids (TSS) which limits light penetration in the water to a few feet in this portion of the Bay. SAV have not been found in the area historically and, based on TSS and water depth, will not be found in the project area in the future.

Benthic Populations

Dauer, D.M. and R.M. Ewing. 1984. Macrobenthic communities of the lower Chesapeake Bay. Old Dominion University, Dept. of Biological Sciences, Norfolk, VA.

Dauer, D.M. and R.M. Ewing. 1986. Macrobenthic communities in the vicinity of Craney Island. Prepared for the US Army Corps of Engineers, Norfolk District. Old Dominion University, Dept. of Biological Sciences, Norfolk, VA.

Dauer, D.M. 2000. Benthic biological monitoring program of the Elizabeth River Watershed (1999). Prepared for Virginia Dept. of Environmental Quality, Tidewater Regional Office. Old Dominion University, Dept. of Biological Sciences, Norfolk, VA.

Dauer, D.M. 2001. Benthic biological monitoring program of the Elizabeth River Watershed (2000). Prepared for Virginia Dept. of Environmental Quality, Tidewater Regional Office. Old Dominion University, Dept. of Biological Sciences, Norfolk, VA.

Gapcynski, P., and R.J. Diaz. 1988. Sediment profile camera sampling at the Craney Island Disposal Area. Prepared for the US Army Corps of Engineers, Norfolk District, Contract Report. Virginia Institute of Marine Science, Gloucester Point, VA.

Mann, Roger. 2002. Fishery independent standing stock surveys of hard clam populations in the Chesapeake Bay and a comparison with continuing estimates from fishery dependent data. Annual progress report for Chesapeake Bay Stock Assessment Committee (CBSAC)-NOAA project #NA07FU0535. Virginia Institute of Marine Science, Gloucester Point, VA and Virginia Marine Resources Commission, Newport News, VA.

Benthic population studies conducted in the vicinity of Craney Island by both Dauer et al (1986) and Dauer (1984) found benthos were dominated by species that are usually characterized as ubiquitous in all types of sediments (e.g., the polychaete Paraprionospio pinnata, the cumacean Acteocina canaliculata) or as euryhaline opportunists (e.g., the polychaetes Glycinde solitaria, Nereis succinea, Streblospio benedicti). Dauer and Ewing (1986) also demonstrated a similarity between the communities in two studies using a Principal Components Analysis Model.

According to Appendix E, Environmental Information Report, Norfolk Harbor and Channels, Virginia, Long-term Disposal (Inner Harbor), the three sediment studies (Byrne et al, 1982; Dauer and Ewing, 1986; and Gapcynski and Diaz, 1989) found similar distribution of sediment types in the vicinity of CIDMMA, with nearshore areas dominated by finer materials and offshore areas having higher percentages of coarse materials (i.e. sand).

Comparison of the results for the Elizabeth River watershed to the Chesapeake Bay Benthic Restoration Goals shows that the macrobenthic communities of the Elizabeth River can be characterized as having lower than expected species diversity and biomass, abundance levels generally higher than reference conditions, and species composition with levels of pollution indicative species higher than reference conditions and levels of pollution sensitive species lower than reference conditions (Dauer, 2000).

The following table presents B-IBI information for stations located within the footprint of the proposed eastward expansion of Craney Island.

Table 1. B-IBI Stations Located East of CIDMMA

Monitoring Year 1999
(within footprint of proposed east expansion)

Station	B-IBI Score
Z04	2.33
Z05	4.0
Z06	3.0
Z08	2.0
Z10	2.33

Site Degraded = B-IBI score less than 3.0
Site meets goals = B-IBI score greater than or equal to 3.0

Mann (2002) sampled 24 stations (28 attempted) within a 452 acre area directly adjacent to the east side of the Craney Island Dredged Material Management Area as part of a field estimate of clam standing stock in Hampton Roads in 2001. Each station was

sampled with a hydraulic patent tong with a coverage of one square meter. The entire tong contents for each station were retrieved and returned to the cull board of the vessel (this often being in excess of 50 kg of material including substrate). After preliminary sorting, all molluscs were separated by species and counted and measured. In addition to hard clam (*Mercenaria mercenaria*), data was also collected on distribution and demographics of the razor clam (*Tagelus plebeius* and *Ensis directus*), the angel wing clam (*Cyrtopleura costata*) and the soft shell clams (*Mya arenaria*). The only invertebrate found in 24 stations was a single hard clam (R. Mann and J. Harding, July 18, 2002, personal communication).

Finfish and Crabs

Priest, W. I., editor. 1981. A study of dredging effects in Hampton Roads, Virginia, Spec. Rpt. In Appl. Mar. Sci. and Ocean Eng., No 247, Virginia Institute of Marine Science, Gloucester Point, Virginia.

Lowery, W.A., M.T. Mathes, and P.J. Geer. 2000. Juvenile fish and blue crab stock assessment program bottom trawl survey, annual data summary report. Spec. Rpt. No. 124, Vol 1999, College of William and Mary, School of Marine Science, VIMS, Gloucester Point, Virginia.

Geer, P.J. 2000. Essential fish habitat assessment for the Route I-64 Pinners Point connector. Submitted to Virginia Dept. of Transportation. Virginia Institute of Marine Science, Gloucester Point, Virginia.

Hedgepeth et al (in Priest, 1981), concluded that temperature is the major factor determining the winter distribution of fishes, while food availability is the major factor controlling the summer distribution of fishes. They concluded that three major finfish uses of the Elizabeth River and lower James River are: 1) nursery grounds for juvenile spot, Atlantic croaker, alewife, blueback herring, American shad, striped bass, and weakfish; 2) adult feeding grounds for spot, Atlantic croaker, weakfish, summer flounder, and 3) spawning grounds for important forage species such as bay anchovy and Atlantic silverside.

Birdsong et al (1984) investigated finfish seasonality and utilization of Hampton Roads and the entrance channel, with an additional discussion of fishes of the Elizabeth River. Through trawl surveys at eight stations, along with a gillnet station off Ocean View and a pound net station east of Lynnhaven, the researchers identified 104 species of fishes. Stations 5 (east of Craney Island, west of the ship channel in the mouth of the Elizabeth River) and 6 (Mainstem Elizabeth River off Lamberts Point, west of the ship channel) were located in the present study area. Based on results from the trawl surveys, the top five dominants for Station 5 included, in order, bay anchovy, spot, weakfish, menhaden, and spotted hake. For Station 6, top five dominant included, in order, bay anchovy, spot, Atlantic croaker, spotted hake, and hogchoker.

As part of an evaluation of Essential Fish Habitat (EFH) for the proposed Pinners Point Connector, VDOT contracted with VIMS to conduct sampling of the Elizabeth River. The sampling started in November 1999 and was performed approximately every six weeks until May 2000. In order to evaluate the summer months, data from the VIMS trawl survey (1979 to 1985) was utilized. All stations were located within a 1.5 mile radius of the mouth of the Western Branch of the Elizabeth River (figure 1). Geer et. al. (2000), and Lowery (2000), based on results from trawl surveys from 1978 to 2000, found the top five dominants in the vicinity of Craney Island included, in order, bay anchovy, spot, Atlantic croaker, hogchoker, and weakfish. These five species accounted for approximately 93 percent of catch. Blue crabs accounted for 0.28 percent of the total catch in this area of the Elizabeth River or about 184 crabs caught in 91 trawls (35 present trawls – Year 2000, and 51 historic trawls – Years 1979 to 1985).

Attachment 2

Attachment 3 – Weighting Score Matrix (separate document)

Attachment 4 – Impacts Matrix (separate document)

Attachment 5 – Code of Virginia Title 58.1 "Riparian Buffer" definition (separate document)