Final
CRCIP AMT Quarterly Meeting Notes
July 13, 2011

The CRCIP Adaptive Management Team held its quarterly meeting from 9:30 am – 3:50 pm on July 13, 2011 at the 10th Summit Room, Robert Duncan Plaza. The following AMT members, technical support personnel, and invited guests participated in person:

Jessica Stokke, USACE	Marc Liverman, USACE	Steve Bartell, E2 Inc.
Greg Smith, USACE	Robert Anderson, NMFS	Patty Snow, ODFW
Agnes Lut, ODEQ	Doris McKillip, USACE	Kathy Roberts, FWS
Perry Lund, WDOE*		

*participated via teleconference

The following topics were addressed by the AMT participants during the July 2011 quarterly meeting:

October 2010 and April 2011 AMT Meeting Notes

The AMT meeting notes for the October 2010 and April 2011 quarterly meetings were approved. The final versions will be uploaded to the E2 CRCIP web site.

2010 Annual CRCIP AEM Report

Steve Bartell stated that all comments received from the AMT on the draft 2010 annual report had been incorporated into the final annual report. The final report has been uploaded to the E2 CRCIP web site.

O&M and Project Mitigation Update

Jessica Stokke stated that As-Built reports and O&M plans for the mitigation sites were being developed with completion of draft plans scheduled for the end of September 2011.

Jessica also provided a brief update on Project mitigation efforts underway on Cottonwood Island. Planting of native species of riparian vegetation remains scheduled for November 2011.

AEM Workbook 2nd Quarter Review for 2011

Relevant components of the AEM Workbook were discussed at the July 2011 quarterly meeting.

MA-1 CORIE Analyses

Additional CORIE data had become available since the 1st quarter summary prepared for the April 2011 AMT. Nevertheless, significant gaps in data remain for 2011 and the subsequent MA-1 analyses reflect missing data, mainly for the cnbc3 and dsdma stations.

Temperature

Water temperature data were available through June 2011 for the tansy and grays stations. Data were not available for the cbnc3 station. The tansy data demonstrate that the winter of 2011 was somewhat colder with daily average temperatures tending towards the lower values of the monthly decision criteria from January through mid-April. Values for the first half of March were lower than the decision criteria. Temperatures from mid-April through June shifted towards warmer than average values, but were within the monthly decision criteria.

Temperature data analyzed for the grays station indicated somewhat cooler than historical temperatures at this location for most of the January – June timeframe. Values were lower than the monthly decision criteria in early March, as observed for the tansy station. In contrast to tansy, several daily values in June were also cooler than the monthly decision criteria.

Temperature data became available for the woody station. So normalized temperature plots were developed for the tansy and grays stations. The data points determined for 2011 are well within the cluster of variability in the normalized data based on the pre-Project construction period for both tansy and grays stations.

The monthly summary of the available 2011 temperature data confirmed that, except for March, values were within the 20 – 80 percentile decision criteria for the tansy station. The March monthly value for tansy of 6.8 C was just slightly less than the 20th percentile decision criterion of 6.9 C. Monthly summaries for grays also showed values that were within the 20 – 80 percentile criteria for January – March and May. Monthly temperature values were cooler in April and June, but still within the 5th – 20th percentile decision criteria.

The post-Project construction data available for 2011 continue to suggest that the channel improvements did not have any measurable impact on water temperatures recorded at the MA-1 stations.

Salinity

Salinity data were also available through June 2011 for the tansy and grays stations. Data were not available for the cbnc3 or the dsdma station. Daily salinity values were available from the end of January through June for the tansy station. These values indicated somewhat lower salinities with values mainly between the 5th and 20th percentile values.

Values in May and June were lower than the 5th percentile and essentially zero psu's. Daily salinity values for January and through June recorded at the grays station were approximately zero psu's (near detection limits of the device). Monthly average salinity values for the tansy were within the decision criteria for January through April. Monthly values for May and June were equal to the 5th percentile decision criteria. Monthly values calculated for the grays station were all effectively zero; the 5th percentile decision criteria are 0.2 psu for these months, except May which has a monthly criterion value of 0 psu.

The post-Project construction data available for 2011 continue to suggest that the channel improvements did not result in any significant saltwater intrusions according to the salinity values recorded at the MA-1 stations.

Depth

Depth data were available for the grays station through June 2011. Daily median depths were well within the previously established AMT decision criteria.

The results of the July 2011 MA-1 analysis have been posted in the MA-1 folder of the AEM Workbook on the E2 CRCIP web site.

MA-2 Construction and Disposal of Dredged Materials

Final volumes have been provided under MA-2; future reporting will be in accordance with regular annual O&M procedures.

As a reminder, the 2010 construction and disposal spreadsheets have been included in the Final 2010 CRCIP AEM Annual Report. The final 2010 report can be accessed at the E2 website (*.doc and *.pdf files are available).

MA-3 Crossline Surveys

The 2011 crossline surveys have been delayed because of high flow conditions on the Columbia River. However, it is anticipated that the surveys will be performed and the results presented at the October 2011 AMT meeting.

MA-4 Habitat Analyses

Discussion of completing the MA-4 requirements continued at the July AMT meeting with a focus on developing a consensus approach to resolution of MA-4 activities. The MA-4 requirements outlined in the BiOp were briefly reviewed. The original approach for MA-4 included funding of additional research efforts of Dr. Bottom and his associates under the Anadromous Fish Environmental Program (AFEP). However, with the termination of the AFEP, this approach was no longer feasible for MA-4. The relevance

of juvenile salmonid studies currently performed by Dr. Bottom (presented at the April 2011 AMT meeting) was discussed in relation to MA-4 requirements. This recent work focused more on the describing the genetics of Columbia River salmonids with an emphasis on fish sampled in the upper reaches of the river. Dr. Bottom and the AMT discussed the relevance of the ongoing work in addressing MA-4 requirements, particularly in relation to characterizing salmonid habitat in the lower river and estuary. The AMT suggested that while potentially useful, the work described by Dr. Bottom would not in and of itself fulfill the needs.

The AMT discussion evolved into considering a series of possible approaches to addressing the key issues associated with MA-4. Each step in the series adds additional detail in relation to the CRCIP conceptual model that describes the growth, survival, and ocean entry of juvenile salmonids. The AMT recognized an initial need to characterize habitat availability (pre- and post-Project) for the various ESUs that utilize the lower river and estuary, including shallow water habitats and deeper water habitats more closely associated with modifications to the navigation channel. A systematic identification and review of existing data sources (e.g., LCREP, technical literature, landscape coverages) should be undertaken to quantify the distribution and amount of suitable habitat. An extension of this review might provide other ecological information (e.g., water quality, food availability, protection from predators) that could be used to further assess habitat quality at different locations throughout the river and estuary. Depending on the quality and amount of data, it may prove possible to address MA-4 requirements using a data-driven empirical approach. GIS technologies might provide a suitable framework for such an empirical assessment.

Partial resolution of MA-4 requirements might be addressed by repeating the calculations of habitat capacity and habitat opportunity performed by Bottom et al. (2005). Drs. Baptista and Bottom suggested this approach during presentations at the April 2011 AMT meeting. Importantly, the revised calculations would be based on an improved hydrodynamic model developed by Dr. Baptista for the Columbia River. The pre-Project calculations also considered only depth and velocity as important components of habitat quality for juvenile salmonids. The revised calculations could add other parameters (e.g., salinity, temperature) to assess pre- and post-Project habitat capacity and opportunity. The results of these calculations estimate the volumes and durations of water that satisfy habitat requirements of different juvenile salmonids in the Columbia River and estuary under different management scenarios, including the channel deepening.

An additional level of ecological resolution could be added to the MA-4 assessment by introducing an aquatic food web or ecosystem model. The purpose of this kind of model would be to extend the habitat descriptions of the empirical approaches or the Baptista and Bottom computations to estimates of juvenile salmonids growth and survival in relation to physical habitat and other controlling factors (e.g., varying nutrients, temperatures, predation, toxic chemicals, etc). The aquatic food web or ecosystem model (e.g., the comprehensive aquatic systems model – CASM) would attempt to translate the juvenile salmonids conceptual model into an operational simulation model that would permit assessment of juvenile salmonids production before and after channel

modification. The CASM (or other similar model) could also examine potential Project impacts on Dungeness crab, sturgeon, and smelt. The data developed through systematic searches described above could be used to construct the model and evaluate its performance. The food web or ecosystem model could use results from physical models (e.g., the Baptista CORIE model, the USACE Adaptive Hydrology Model - ADH, or the publicly available EFDC) in estimating biomass production. For example, population growth and survival in the CASM is influenced in part by depth, velocity, and salinity – which could be provided by available data (e.g., MA-1) or the physical models.

The AMT agreed to further discussions concerning the resolution of MA-4 at the October 2011 AMT meeting. Steve Bartell was tasked with the preparation of a "strawman proposal" will attempt to capture the main points of the MA-4 discussion at the July meeting. This proposal will be circulated prior to the October meeting.

MA-5 Sediment Contaminants

Jessica Stokke provided the report from the Project Review Group (PRG) concerning MA-5. The report evaluated material from the Columbia River Federal Navigation Channel between RM 3 and 106.5, and determined that it is suitable for unconfined, aquatic placement. The material is ranked "very low" so testing is required every 10 years. The next testing will be in 2018. The PRG report has been uploaded to the E2 CRCIP web site and located in the MA-5 reporting link for the electronic version of the AEM Workbook.

MA-6 Fish Stranding

The main objective of the July 2011 AMT discussion concerning MA-6 was to begin to define a consensus process to resolve outstanding issues concerning fish stranding in relation to channel modification. The discussion identified a spectrum of possible activities that range from no action to performing the post-construction stranding studies as originally described in the adaptive management plan and specified in the terms and conditions. Within this broader spectrum, one suggestion was to take action to reduce stranding at possible stranding beaches. It is unknown at this time if this suggestion could replace the post-construction study required by MA-6. The USACE indicated that it would undertake internal discussions to further address the matter.

There was some discussion of possible actions which may reduce stranding risk, such as dredging beyond the 43 foot depth in selected locations to reduce the blockage ratio that appears important in causing fish stranding, or performing shoreline placement or grading, although stranding beaches are good juvenile salmonid rearing habitat and any changes/actions would require further consideration.

There was some discussion of constraining vessel speeds through river segments with known potential stranding areas. However, commercial pilots indicate that speeds must

be sufficient to maintain steering. Vessels also navigate to be in certain locations in relation to tides, which further limits flexibility in managing speed to reduce stranding.

The AMT did not arrive at a consensus process for resolving MA-6 during the July 2011 meeting. The USACE indicated that internal meetings would address potential approaches for meeting the requirements of MA-6 prior to the October 2011 meeting.

October 2011 Agenda Items

The following were identified as possible items for the October 12, 2011 AMT meeting:

- Continued discussion of post-construction MA-4 activities

The July 2011 AMT meeting adjourned at 3:50 pm