

Monitoring Action Number	Indicator	Monitoring Task	Justification	Uncertainty And Risk	Duration	Data Analysis	Trigger For Management Changes
MA-3	Accretion /erosion, bathymetry (main channel).	Main channel bathymetric surveys throughout project area.	Side-slope adjustments are expected to occur intermittently adjacent to the navigation channel.	Accretion /erosion M, L; bathymetry L, M-	7 years: 2 years before, 2 years during, and 3 years after construction	Bathymetric changes will be tracked to determine if habitat is altered.	Habitat alteration in main channel due to side-slope adjustment.

Background: Crossline surveys (survey lines perpendicular to the river channel) will be conducted annually along the length of the navigation channel, RM 3-106. The survey boundaries will be same as those found in February 2002 “Channel Status Columbia River” book of crossline surveys, generally running out to shallow-water on both sides of the river. The survey data will be examined to evaluate the bathymetric changes occurring outside the navigation channel. https://www.nwp.usace.army.mil/op/n/wh/channel_line.htm.

The bathymetric surveys were conducted in December-February time period. This time period follows the dredging season and is consistent with previous surveys to provide reliable comparisons to recent historic surveys. The crossline surveys were posted to the Portland District website (https://www.nwp.usace.army.mil/op/n/wh/channel_line.htm).

Crossline survey data in specific areas where side-slope adjustment is anticipated, as cited in the 2001 Biological Assessment, will be processed for the period from 1996 to 2003. FY 05 activities consisted of transferring the crossline surveys into a GIS format and 2D format. Difference and 2D cross section plots were compared among the selected water years. The crossline survey data used to make the comparisons are compiled by reach and shown in the table below.

Survey Chart	River miles covered in chart	River mile side slope adjustment expected
Morgan Bar	98 to 101	99
St Helens Bar	84 to 87	86
Kalama Bar	73 to 76	75
Upper Dobelbower Bar	70 to 73	72
Westport Bar	45 to 48	46
Wauna and Driscoll	41 to 44	42

Status: The consensus AMT decision criteria for MA-3 are defined as an “envelope” calculated as the minimum surveyed depth + 1 standard deviation and the maximum depth + 1 standard deviation. The envelope is defined across the channel for each survey with particular emphasis on the northern and southern boundaries of the navigation channel. Changes in bathymetry which exceed the criteria defined by these envelopes will be evaluated by the AMT to determine

MA-3

the need for possible modifications to the Project, as summarized in the AEM Plan. This MA will be reviewed quarterly as agreed upon by the AMT.