

SOP 14: Transect Redefinition (KM-A Update)

Version 1.0

Revision History Log:

Previous Version #	Revision Date	Author	Changes Made	Reason for Change	New Version #
	July 2013	S. Hoekman, W. Johnson, B. Moynahan, C. Sergeant	Initial version		1.0

Purpose

The survey designer defined this program's original transects. Over the course of three field seasons (so as to include all panels), actual boat tracks were recorded. These did not exactly coincide with the originals due to presence of physical obstructions as well as slight inaccuracies in the original GIS shoreline features. The KM-A product group was redefined to match these ground-truthed locations and is now expected to be immutable. However, if additional changes in exact transect locations are required in the future, the following tasks should be performed to fully and consistently incorporate them into the program.

SOP 2 requires users to work with GIS and database tools in the internal NPS network under valid Active Directory accounts. Access questions should be directed to the Data Manager.

1. Use Windows explorer to make a copy of the directory containing the certified file geodatabase and MXD file to perform the edits on.
2. Use ArcMap to revise items in the TRANSECT feature.
 - a. Visually hand edit the endpoints – typically to match accurate “on transect” TRACK_LOG items generated during field work.
 - b. Use the “calculate geometry” function to revise the four endpoint columns in the TRANSECT table (i.e., two latitude-longitude pairs).
 - c. Export TRANSECT feature for eventual inclusion into the website KM_A deliverable. (There are typically seven files generated for the feature.)
3. Use ArcMap to revise corresponding items in the TRANSECT_SCOPE feature.
 - a. For a mid-water terminating transect, draw the TRANSECT_SCOPE endpoint to correspond to the same location as TRANSECT.
 - b. For transects terminating shoreward, draw TRANSECT_SCOPE endpoints at the shorter of either the actual shoreline or 150m. That is, the scope endpoint is to extend no more than 150m beyond the boat endpoint.
 - c. Use the “calculate geometry” function to revise the two midpoint coordinate columns in the TRANSECT_SCOPE table.

- d. Export TRANSECT_SCOPE feature for inclusion in the website KM_A deliverable.
(There are typically seven files generated for the feature.)
4. Use ArcMap to create a visual map of transects.
 - a. Display only the boat TRANSECT feature – not TRANSECT_SCOPE.
 - b. Be certain transect ID numbers are properly labeled on all transects – the label engine has historically had problems with this.
 - c. Mark the revision date on the legend.
 - d. Export the map to a JPEG file with resolution of 200x200 DPI for inclusion in the website KM_A deliverable.
5. Use ArcMap to create a new spreadsheet of boat transect endpoints for GPS uploading.
 - a. Note this is required to generate multi-point routes for zigzag transects.
 - b. Create a new TRANSECT_SEGMENTS feature using the Features/Split Line at Vertices tool with an input feature of TRANSECTS.
 - c. Use the “calculate geometry” function to revise the four endpoint coordinate columns in the TRANSECT_SEGMENTS table.
 - d. Add a new field to TRANSECT_SEGMENTS called “unique_id” and use the field calculator to generate this as <Transect_ID & “.” & Object_ID>.
 - e. Export the feature to a DBF.
 - f. Open the DBF in Excel, sort it by unique_id, clean up the headings, and hide any fields not relevant to defining the GPS track.
 - g. Print this sheet out, laminate it, and include it in the data management box for use in the next field season.
 - h. Be sure the revised table gets reflected in the boat GPS used for navigation.
6. Use ArcMap to create a new spreadsheet of transect scope definitions for loading into the SQL database.
 - a. Use a database tool to review the attributes required to be in tbl_km_transect_scope.
 - b. Copy the TRANSECT_SCOPE feature into a new one as the basis for the SQL table.
 - c. Add constant columns (protocol_id, userid, etc.) to the basis. Fill them using the field calculator.
 - d. Join the TRANSECT table to it.
 - e. Turn off extraneous fields.
 - f. Export the feature to a DBF file.
 - g. Use Excel to edit the DBF with column headings that match the database table names and rearrange the table order to match the database order.
 - h. Retain the DBF for updating the SQL database in a subsequent step.
7. Use VisualStudio to update the development website.
 - a. KM_MAIN.ASPX should have its text revised to reflect the new KM_A revision date.
 - b. Zip the exported feature files for TRANSECT and TRANSECT_SCOPE into a single file called KM_A_shapefiles and copy it to the website's AuxRep\KM\KM_A directory.
 - c. Copy the new visual map file to AuxRep\KM\KM_A\KM_A_image.jpg.

- d. Verify the development website reflects the new KM_A components.
8. Propagate the development website through staging to production as outlined in SOP 13.
9. Use a tool such as SQL Server Management Studio or SQL Maestro to replace tbl_km_transect_scope in the Integration database.
 - a. Create a safekeeping copy of the original table and name it tbl_km_transect_scope_obsolete.
 - b. Replace all rows in the existing tbl_km_transect_scope with the contents of the SQL_Table spreadsheet created earlier.
 - c. Verify the development website reflects the new values when doing the “Download Transect Table” function.
 - d. Propagate the Integration database change to the Production database and verify the Production website reflects the revised transect table.
10. Because this deliverable is expected to be immutable, additional formal data validation and certification tasks are not expected to be required.