



BCTS LRM GIS – Training Guide

BLOCKS

Land Resource Manager

Revision History

Revision	Date	Author	Description of change
0.1	2017/07/10	M. Datta	Initial Version
0.2	2017/07/31	J Forster	Update
0.3	2018/04/03	D Sabatino	Update
0.4	2018/04/13	J.Forster	Formatting
0.5	2018/06/06	L Harris	Update

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1. Overview

This Training session is intended to introduce the BCTS GIS Staff and Contractors to some of the basics of editing spatial data using the LRM SpatialView.

The exercises are intended to be carried out in the BCTS Development environment where users will be able to return to the data created in the training after the session to continue to improve their skills.

This Training session is targeted toward the BCTS GIS Staff and Contractors with familiarity with the ArcGIS toolset and with the Data Rules and Standards in the LRM application configured for BCTS.

2. Open Spatial and Start an edit Session

STEPS

- Open Spatial View and start an edit session.
 - Ensure that you have 3 toolbars visible using View/Toolbars
 - Tools (Land Resource Manager)
 - Editor (Land Resource Manager)
 - Editing Commands (Land Resource Manager)
 - Stop editing
- Navigate to the Tabular record for the Cut Block Shape in the Tree View
- Arrange the LRM Panels: Tabular View, Spatial View, Working Set
- Establish/Turn-on Layers that will be used to create a Cut Block.
 - Cut Block Shape
 - Road Shape
 - Imagery Layers (Note: This layer should be at the bottom to make other layers visible).
- Zoom into the area where the new/edited feature will reside. (Note – Scale=1:10000 MAX)
- In Spatial View, Choose Start Editing
 - Verify the 'Edit Feature Layer' is set to feature you wish to edit.
- Send feature to Spatial View

3. Delete Shapes only (Update Area)

PRE-CONDITIONS

- A feature has a shape that needs to be deleted.

STEPS

- Select the Shape record in the treeview.
- Start an edit session
- Click the 'Delete Shape' tool 
 - The Current Edit feature will update to say the current feature has no shape.
- Click Save

POST CONDITIONS

- The delete shape tool will only delete the shape.
- The GIS area of the feature will updated to 0
- The shape tabular record will remain but with no shape

4. Delete Shape and Shape record

PRE-CONDITIONS

- A feature has a shape that needs to be deleted but user does not want to affect the areas in the tabular record.

STEPS

- Select the Shape record in the treeview.
- Start an edit session
- Click the 'Delete Feature' tool 
 - User will get a confirm delete box to ensure the user wants to delete the record.
 - The Current Edit feature will update to say there is no current Edit Feature.
- Click Save

POST CONDITIONS

- This will delete the tabular record as well as the shape record.
- The Shape record will no longer be in the treeview.
- The GIS Area on the parent tabular record will not be updated and remain as the area prior to deleting the shape.

5. Create a New Block

PRE-CONDITIONS

- A Tabular record must exist for a Block in the Tabular View under Licence > Cut Permit > Mark and the tabular record (Cut Block Shape) must be highlighted in the TreeView.
- On the Spatial View Table of Contents, the Cut Block Shape Layer should be selected and the Identifier should show the name of the current Cut Block Shape.
- Any needed Shape files should be uploaded to a known location on the network.

STEPS

- Navigate to the Tabular record for the Block in the Tree View.
- Open Spatial View
 - o Establish/Turn-on Layers that will be used to create a Block.
 - Block Shape
 - Imagery Layers (Note: This layer should be at the bottom to make other layers visible).
 - o Zoom into the area where the new block will reside. (Note – Scale=1:10000 MAX)
 - o In Spatial View, Choose Start Editing
 - Verify the 'Edit Feature Layer' is set to 'Block'
 - Confirm that the current feature has no shape

OPTION 1 - USE 'DIGITIZE TOOL' TO DRAW THE BLOCK

This Option will generally be used to sketch out Blocks for Planning Purposes.

- Choose the 'Digitize Shape' Tool  from the 'Editing Commands' Toolbar
- Sketch your new block shape by clicking on points around the Block
- End your sketch by Double Clicking the last point.
- Choose Edit/Stop Editing to Validate, Run Overlays and Save your new Block Shape.

OPTION 2 - USE 'LINK TOOL' TO COPY BLOCK SHAPE FROM EXISTING SHAPE IN A FILE.

This Option will be used to bring in updated Shape information from files for existing Shapes.

- Add your shape file to the TOC using the File/Add Other Data Menu item and zoom to the new shape.

- Choose your added layer from the Picklist in the 'Link Layer' Tool  from the 'Editing Commands' Toolbar
- Hover your mouse over the shape and when it highlights left click to confirm.
- Choose Edit/Stop Editing to Validate, Run Overlays and Save your new Block Shape.

OPTION 3 – USE 'FLATTEN TOOL' TO CREATE SHAPE FROM EXISTING FEATURES AND TEMPORARY LINES

This option can be used anytime it is needed

- Add your shape file to the TOC using the File/Add Other Data Menu item and zoom to the new shape.
- Choose the 'New Temporary Line' option from the 'Editor' Toolbar.
- Sketch your new line, double click to end sketch.
- Ensure feature you are editing is the editable layer.
- Turn off any layers that are not required in the flattened geometry. (ie: any imagery data)
- Choose the 'Flatten Geometry' Tool  from the 'Editing Commands' Toolbar.
- Draw a rectangle to cover all areas that will be part of your new Block
- Parts of the Block will automatically highlight as you move your mouse over them.
- Left click to select the first part of your Block
- Shift Left click to select subsequent portions of your block.
- Ctrl Left click to de-select portions of your block.
- Choose Edit/Stop Editing to Validate, Run Overlays and Save your new Block Shape.

POST CONDITIONS

- Cut Block Tabular Record will be updated with Gross Area
- Spatial View will automatically locate your Block shape when you select the Cut Block Shape node in the TreeView.
- The following overlays will run:
 - Gross Area (ha) on the block allocation table will be updated
 - Latitude, Longitude, Gross Area (ha) values will be updated on the cut block table

6. Create New Block Where Overlap Exists

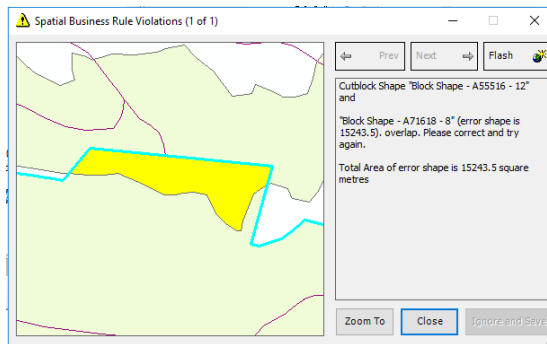
PRE-CONDITIONS

This exercise will be used to create a new Block Shape using a few different methods to digitize in LRM SpatialView. The editing exercise will create a new Block that overlaps with an existing Block in order to allow the user to be introduced to the Spatial Validation dialogue screens.

- A Tabular record must exist for a Cut Block in the Tabular View.
- On the Spatial View Table of Contents, the Block Shape Layer should be selected Identifier should show the name of the current Cut Block selected.

STEPS

- On the Spatial View Start Editing
- Use digitize tool to draw Block boundary that overlaps existing Block Shape. Or edit an existing block boundary using the Edit Feature  tool or the Reshape Feature  tool.
- Validate Block Shape. The Spatial Business Rule Violations dialogue box will display the area of overlap. It will prevent the user from saving until the overlap is fixed.
- You can use the editing tools to clean up the feature error.



- Stop Editing

POST CONDITIONS

- The user will not be able to save until the Spatial business rules are corrected.
- The saved data will pass all business rule validations.

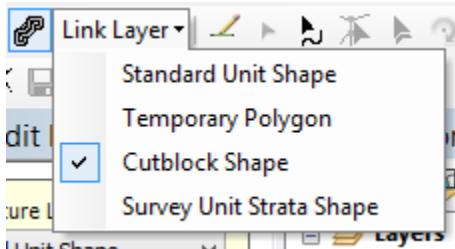
7. Create Block Child Features using Buffer

PRE-CONDITIONS

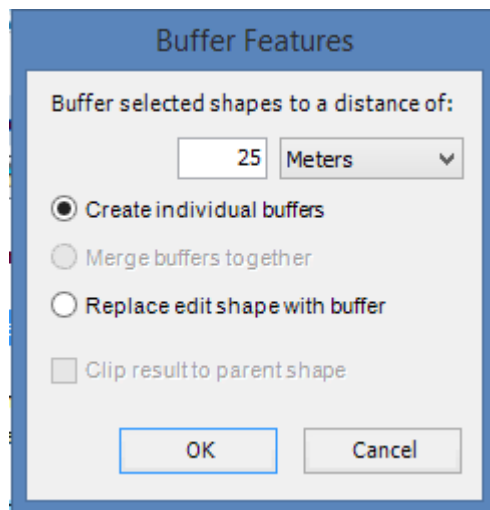
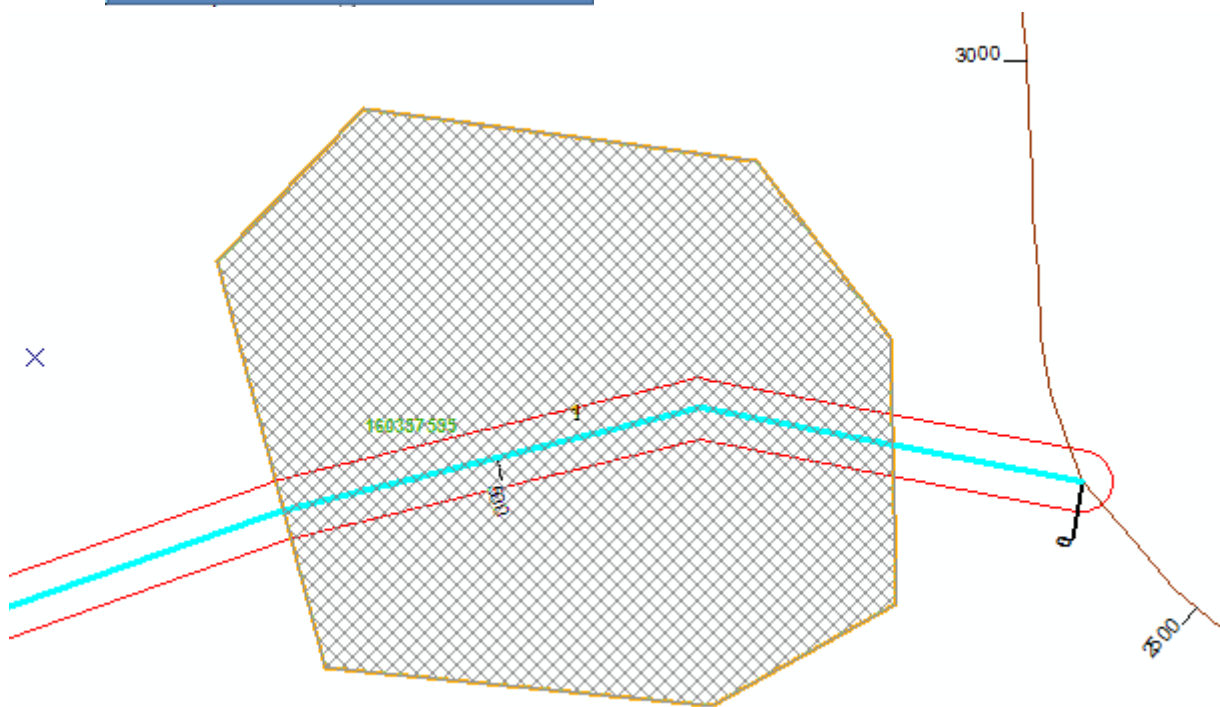
- Silviculture module is open
- Block has shape and contains tabular records for two SU records.
 - o SU 1 – PROD
 - o SU 2 - NPPERMACC
- Each SU has a tabular shape record.
- Road needs to be buffered and shapes need to be added to the 2 SUs
- Road and Cut block layers are loaded in the TOC

STEPS

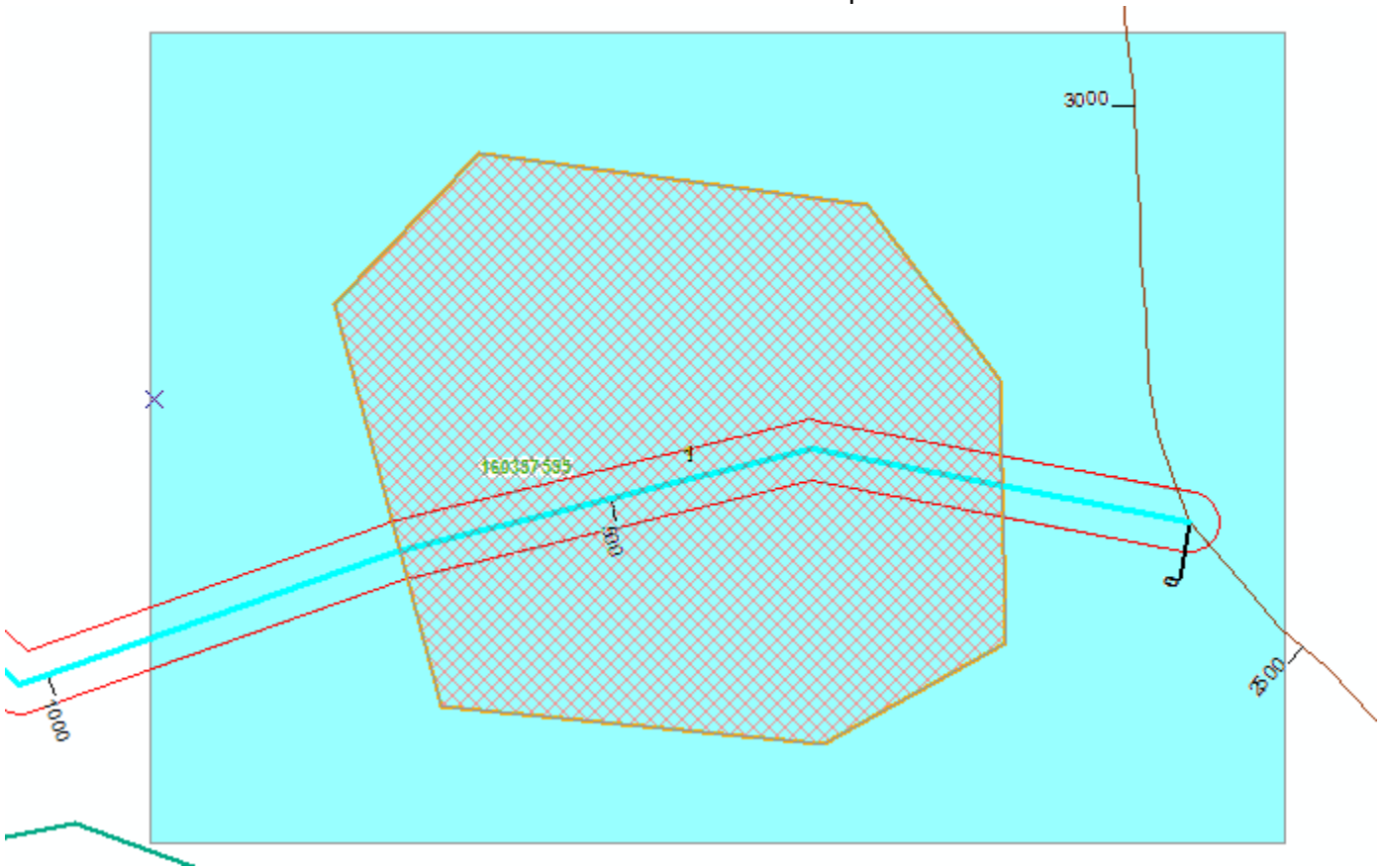
- Select the Standards Unit Shape record in the treeview.
- Open Spatial and start an edit session
 - o Ensure SU 1 is selected as the current edit feature
- Using the Link Layer tool; ensure the Cutblock shape is checked on



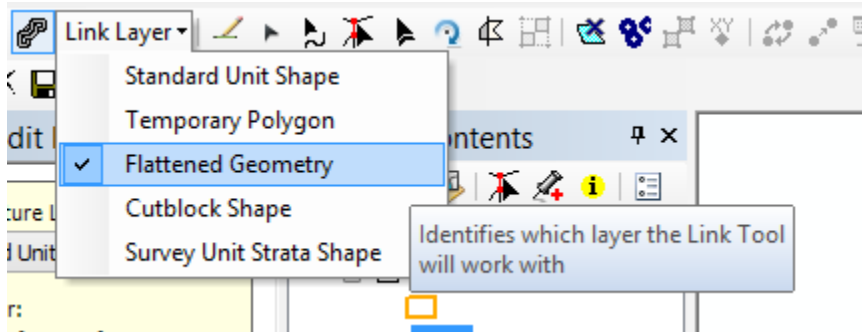
- Hover over the Cutblock Shape; it will highlight
 - o Click to copy the Cutblock Shape to the SU
- Buffer Road
 - o In the TOC select the Road layer so it is selected
 - o Using the 'Select Features' tool  select the road in the spatial view
 - o Click the Buffer' tool 
 - o Set the buffer amount and units



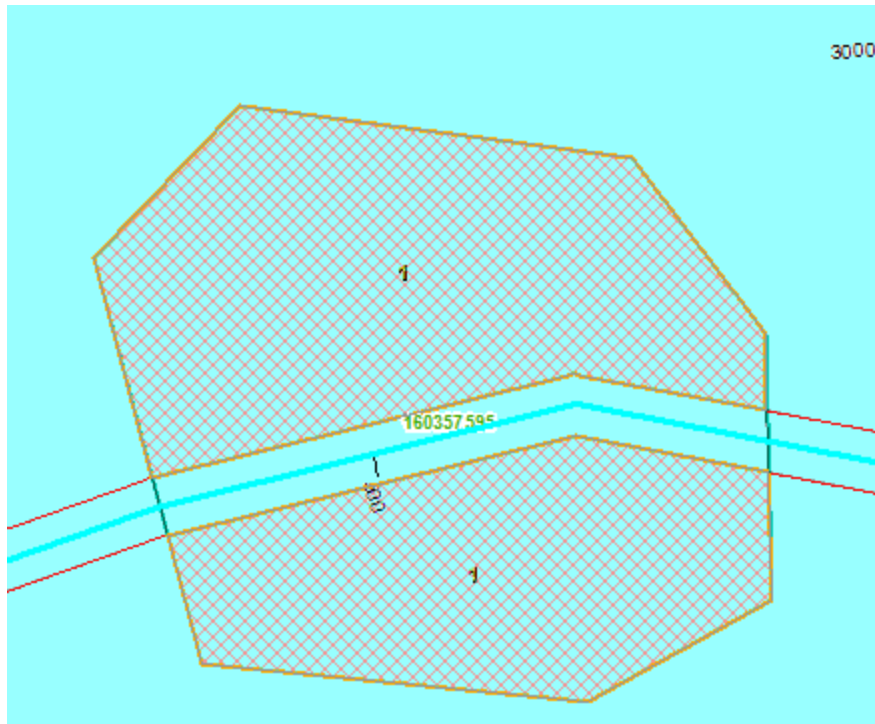
Use the 'Flatten' tool  and draw a box around the buffer and block shape



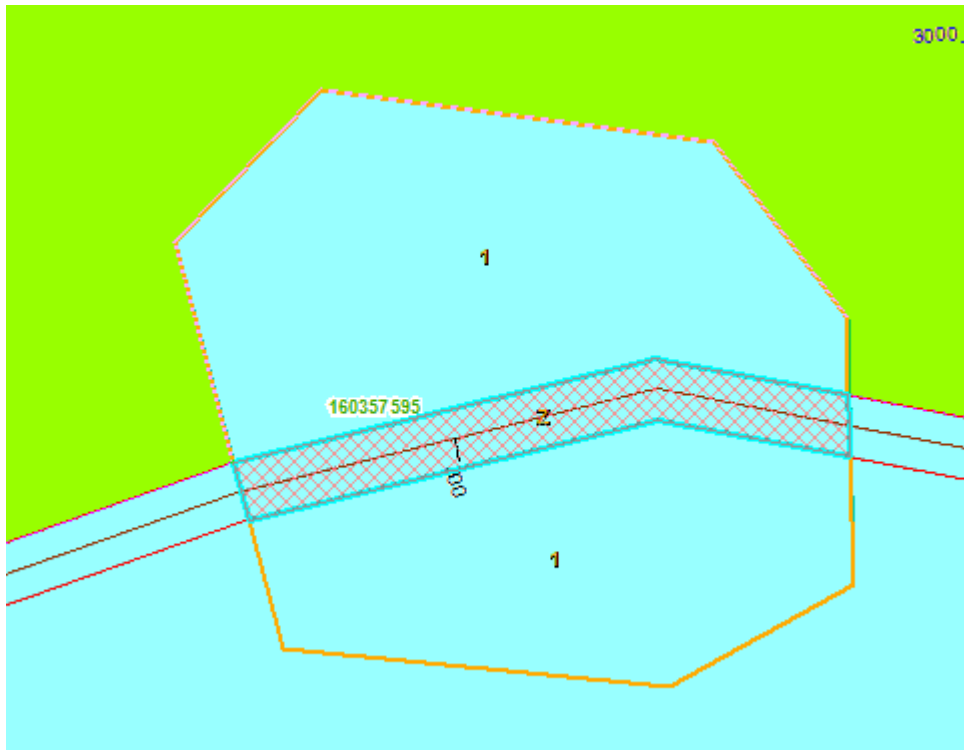
- With your SU 1 still selected as the current edit feature;
 - o Ensure the Link Layer is set to *Flatten Geometry*



- o Hover over the buffered polygon and pressing the Ctrl key click to exclude the buffer from the SU 1 shape.



- In the TOC select the 2nd SU shape record.
 - Ensure it is set to the Current Edit Feature
- Use the Link Layer set to *Flatten Geometry*
 - Click to select the buffer shape;
 - Using the SHIFT key add the 2nd portion of the buffer



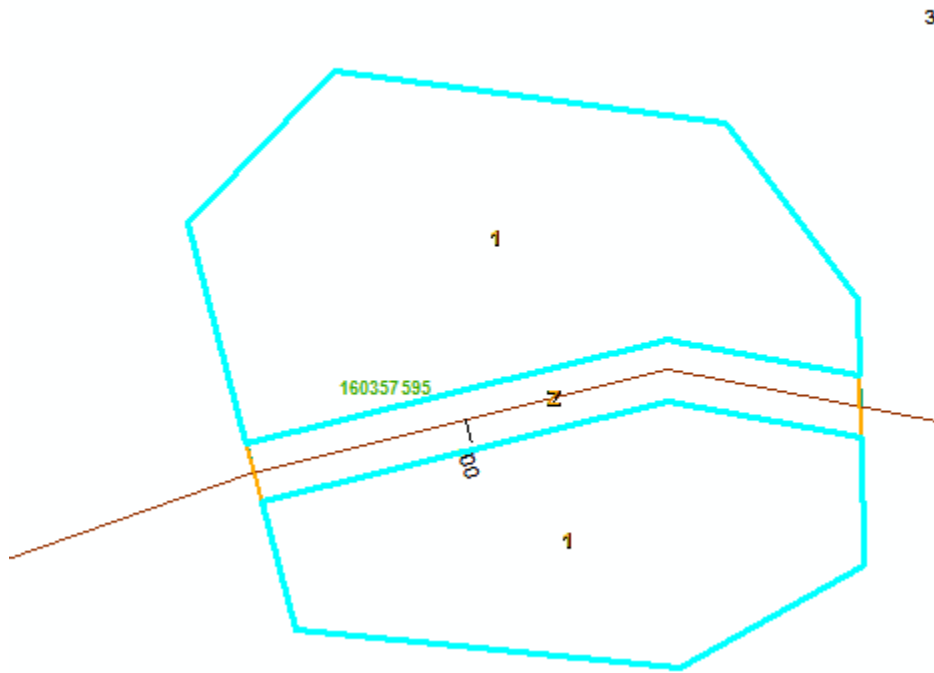
- Click Save
- Click the 'Clear Geometry' tool  to erase any temporary geometry.
- Stop the Edit Session.

POST CONDITIONS

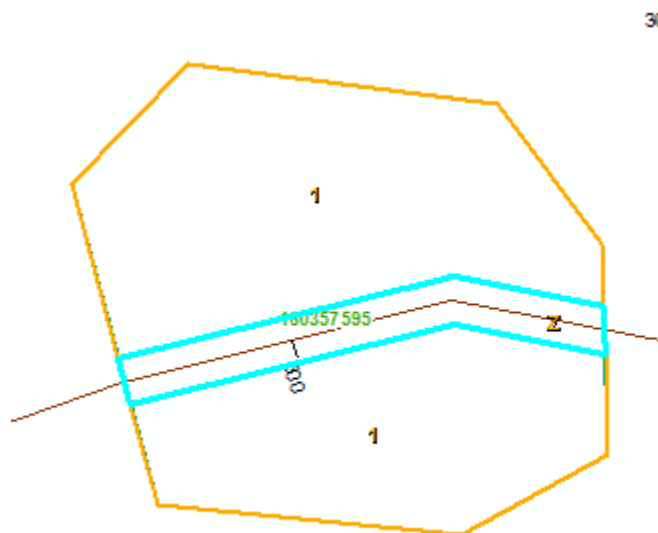
- Block is created with two SUs that fully cover the Block but do not overlap
- SU PROD is that of the Block Shape minus the buffered road shape

BEST PRACTICE:

Create the smaller features first Eg:: roads, NPbr, WTRA and then your productive SU's.



- SU NPPERMACC is that of the buffered road shape

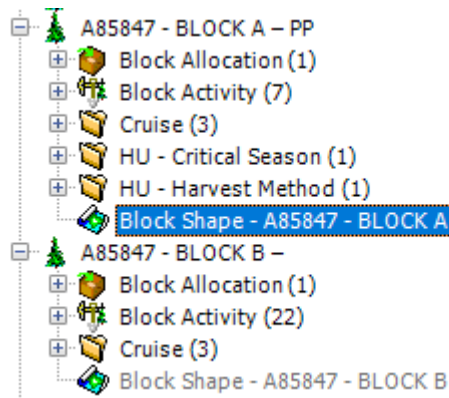


8. Split a Block Creating Two Blocks

PRE-CONDITIONS

- Block A exists tabularly and has shape
- **Block B is created in tabular and has a shape record with no shape**
- Block A's Shape record is selected in the treeview.

Task: Split Block A using a temporary line and link split portion to Block B.



STEPS

- Start an edit session
- Ensure Block A's Shape record is selected in the tree view and is selected as the Edit feature.

OPTION 1 – USE 'SPLIT TOOL' TO SPLIT BLOCK (K7LD FIRST AND K7LF SECOND)

- Use the split tool  and draw a line to split the block.
- Once complete the Link tool  will be enabled
- Hover over the piece of the block to keep and click to select, linking the shape to Block A.
- The other piece will be removed and added to the temporary geometry layer.
- Select Block B shape record in the tree view.
- Hover over the deleted portion and link it to Block B.
- Save

OPTION 2 – USE TEMPORARY GEOMETRY TO SPLIT BLOCK

- Select New > Temporary Line from the New menu 
- Digitize the temporary line
- To add another temporary line, click New > Temporary Line
- Turn off any layers you do not want to include in the flatten
- Ensure your Block A shape is selected in the treeview and is selected in the Edit Feature Dialogue box.

You may need to use the select edit feature tool  to make it the editable feature.

- Use the flatten tool  and draw a box to include the cut block and line work
 - This will create temporary polygons using the line work visible in spatial view.
- Select the Link Layer dropdown and ensure it is set to Flattened geometry.
- Hover over each polygon in spatial view
- Using the SHIFT key select the pieces of the block shape to keep on the original block.
- Select Block B's shape record in the treeview
- The Edit feature dialogue box will update with Block B's information
- Link the remaining pieces to Block B.
- Click Save

OPTION 3 – USE LINE WORK FROM ROAD OR STREAM TO SPLIT BLOCK

- Start an edit session
- Ensure Block A's Shape record is selected in the tree view and is selected as the Edit feature.
- Turn off any layers you do not want to include in the flatten
- Use the Flatten Tool  and draw a box to include the cut block and line work
 - This will create temporary polygons using the line work visible in spatial view.
- Select the Link Layer dropdown and ensure it is set to Flattened geometry.
- Hover over each polygon in spatial view
- Using the SHIFT key select the pieces of the block shape to keep on the original block.
- Select Block B's shape record in the treeview
- The Edit feature dialogue box will update with Block B's information
- Link the remaining pieces to Block B.
- Click Save

POST CONDITIONS

- Block A will have its new shape and its area will update to reflect the updated area.
- Block B will have its shape and its area will update to reflect the new shapes area.

9. Explode a Block with Multi-Part Shapes

PRE-CONDITIONS

- A Cut Block has a multi-part shape and is selected in the treeview
- Another cut block is in the treeview but has no shape.

STEPS

- Select the Shape record in the treeview of the cut block that contains the multi-part shape.
- Open Spatial
- Start an edit session
- Click the 'Explode multi-part Geometry' Tool 
 - This will put the multi-part geometry into the Temporary Geometry layer.
 - The 'Link Layer' tool  **Link Layer** will be selected
- Hover over the piece of geometry to keep for the selected cut block. It will highlight in yellow.
- Click to select the shape
- Click on the cut block that does not have shape in the treeview and ensure it is now the current edit feature
- Using the Link tool hover over the temporary geometry and link it to the 2nd cut block
- Click save

POST CONDITIONS

- The multi-part geometry was split and linked to 2 blocks.
- The cut block no longer contains multi-part geometry.

10.Merge Blocks

PRE-CONDITIONS

- Two Block Shapes exist that need to be merged into one.
- Result will be two blocks. 1 with the shape of both blocks; 1 with no shape.

STEPS

- Select the Shape record of one of the cut blocks in the treeview.
- Start an edit session
- Using the 'Select Features' Tool  select both cut block shapes
- Click the 'Merge Geometry' Tool 
 - The Features will be merged into a multi-geometry feature in temporary geometry
 - Hover over one of the shapes; both shapes will highlight in yellow.
 - Click to select the shape
- Select the 2nd cut block shape in the treeview so that it is the current edit feature
- Use the 'Delete Shape' tool  to remove the shape but maintain its shape tabular record.
- Click Save

POST CONDITIONS

- The blocks shapes are merged into one.
- There is only one record in the tree view.

11. Tips and Tricks

- Map directly to the folder location. Eg:
\\BCTSdata.bcgov\data\tba_root\GIS_Workspace rather than a letter drive
F:\\tba_root\GIS_Workspace
- The Flatten Tool is a powerful tool to assist with editing to ensure there are no gaps or overlaps in the data. When you use this tool, it is best to turn off any layers that are not required for the flattening function (eg: Imagery)before you start.
- When you are done with any temporary geometry, it is best to click on the Clear Temporary Geometry before continuing with your edits.
- Link + Shift = Add features to existing selections
Link + Control = Subtracts or deselects portions of the feature selection.
- If you are having editing issues, it is recommended that you stop editing, reconcile and post your version, then start a new edit session.
- Right clicking on the Layer Shape in the tree (eg: Licence Shape – 160177849) and Send to Spatial View is the most consistent way to activate the correct layer shape – sequence number in the edit feature layer window.