

OS ENGINEERING

Experiences with ArcGIS Pro within Ordnance Survey

Technical Meeting of the EuroGeographics

Data Producers 2018

Ian Rolls

Solution Architect

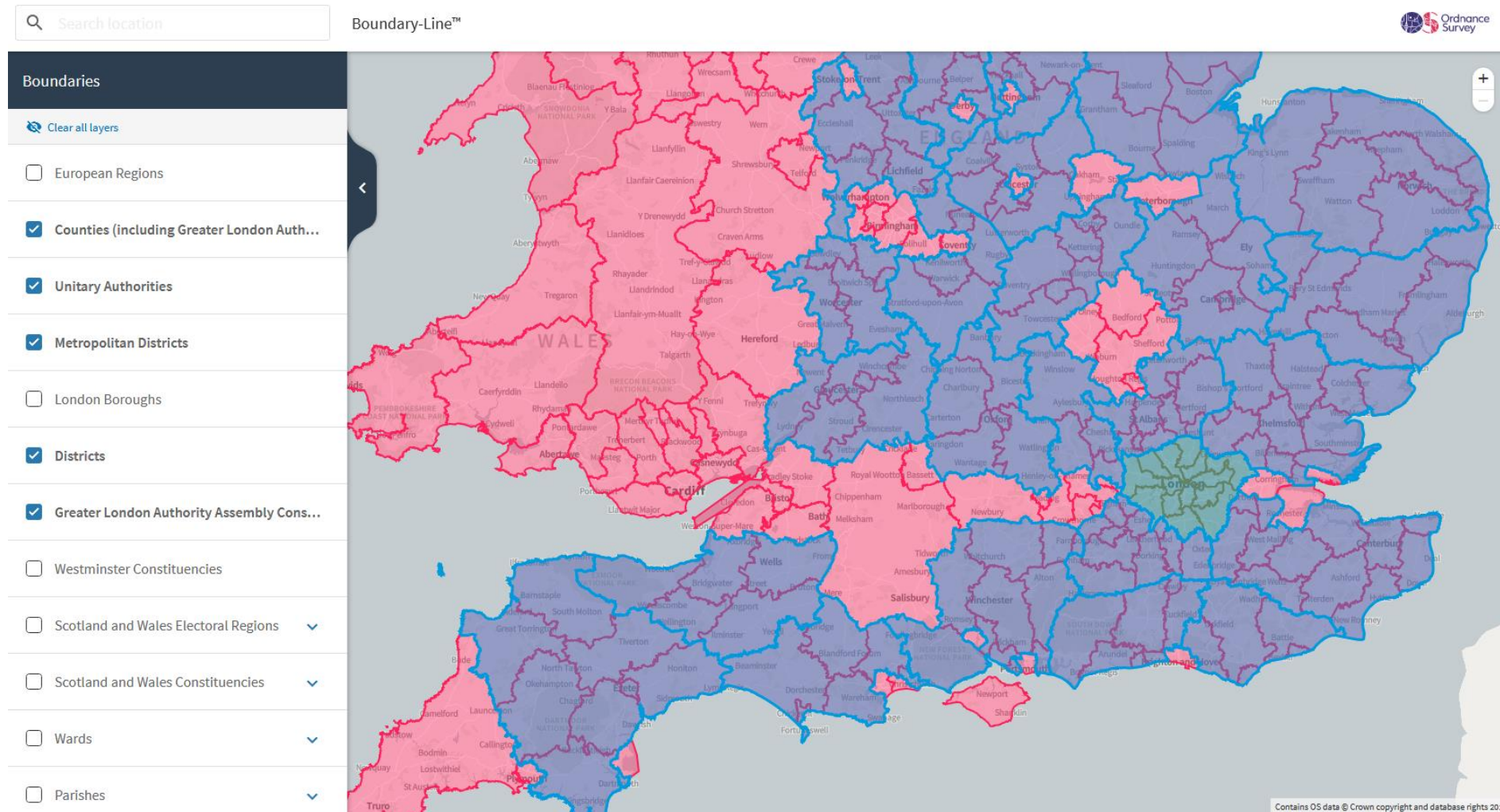
Overview

- What we do at Ordnance Survey (OS)
- ArcGIS Pro in the Boundary-Line™ system
- Why choose ArcGIS Pro?
- Experience of ArcGIS Pro
- Tips for migrating to ArcGIS Pro
- Q&A

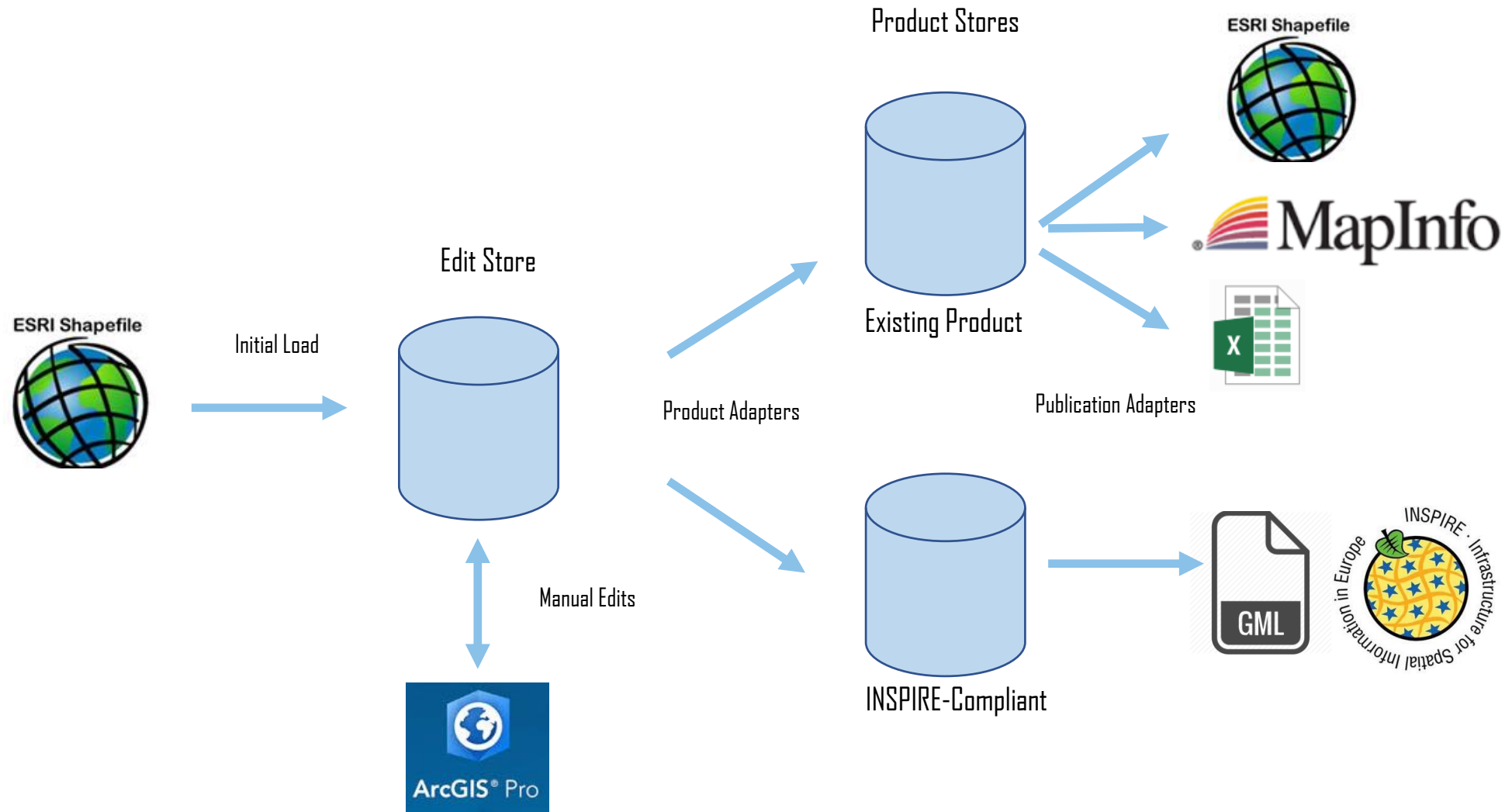
What we do



ArcGIS Pro Case Study – Boundary-Line™ Production System



ArcGIS Pro Case Study – Boundary-Line™ Production System



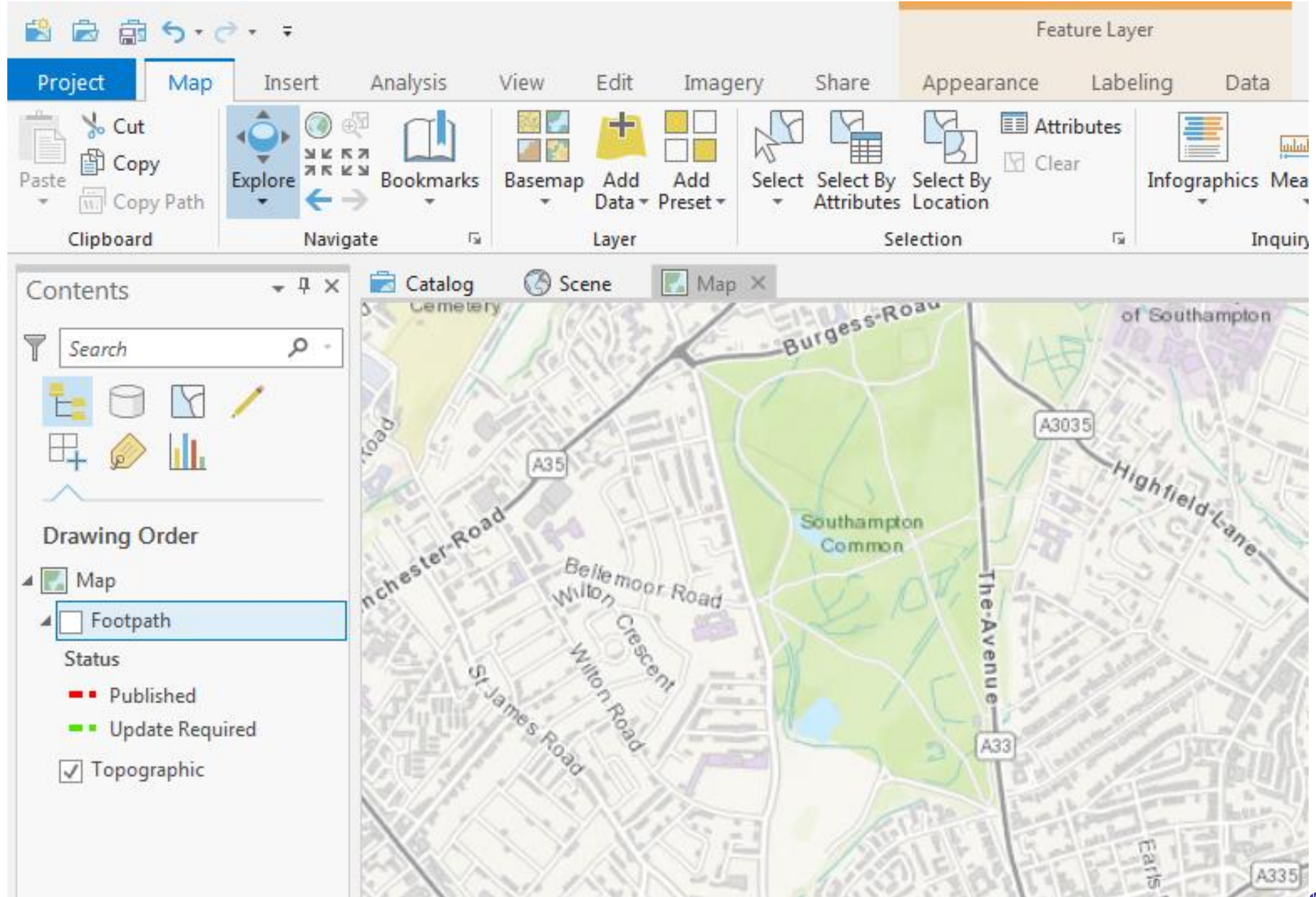


Why choose ArcGIS Pro?

- Preferred Corporate GIS technology at OS
- Part of ESRI ArcGIS Desktop stack – doesn't cost any extra!
- User friendly modern ribbon-based interface
- Customisable interface i.e. python automation
- Built on .NET architecture and fully 64bit enabled.
- Workflow Manager Integration



Experience of ArcGIS Pro



ArcGIS Pro - BL_Test - WL_1660

Project | Map | Insert | Analysis | View | **Edit** | Imagery | Share | Workflow | Add-In | Appearance | Labeling | Data

Clipboard | Manage Edits | Snapping | Features | Selection | Tools | Elevation | Data Reviewer

Contents

- WL_1660
 - Working Lines
 - working_lines_point
 - working_lines_polyline
 - working_lines_poly
 - Background
 - VML
 - Boundary
 - Footprint
 - Image
 - OSMM Text Live
 - OSMM Live

Geoprocessing

Update Working Lines Geodatabase

Parameters | Environments

Job ID: 1660

Ingest

Points

Lines: Export_Output.shp

Polygons

Run

Update Working Lines Geodatabase Completed successfully

1:338,238 | 3.8096213°W 54.4275669°N | Selected Features: 0

ArcGIS Pro - Boundary-Line Production - WL_1054 St. Edmundsbury W SI. 118

Project | Job | Insert | Analysis | View | Share | Add-In

Clipboard | View | Assign | Workflow | Manage | Job

osvm1337 | WL_1054 St. Edmundsbury W SI. 118

Job Type - Job ID
Working Lines Ingest - 1054

Created By
Robbie Franklin at 16/10/2018 14:20

Assigned to
Robbie Franklin

Days Active
1

LOI Not Defined

Job Notes

Workflow | Descriptive Information | History | Extended Properties | Holds

Working Lines Workflow v0.4

```

graph TD
    A[Create Clean Working Lines Folder] --> B[Create Working Lines Geodatabase]
    B --> C[Copy Working Lines Template]
    C --> D[Quality Check Working Lines]
    D --> E{Validation Complete?}
    E -- No --> D
    E -- Yes --> F[Create Edit Job/s]
    F --> G{Validation Complete?}
    G -- No --> D
    G -- Yes --> H[Notify]
  
```

Job Status: Working, 0% Complete

Current Step(s): Create Clean Working Lines Folder

Catalog

Project | Portal | Favorites | Notifications*

Search

- Toolboxes
 - Boundary-Line Production.tbx
 - Boundary_Line_Tools.tbx
 - 1.General
 - Update Working Lines Geodatabase
 - 2.Management
 - Compress Boundary Line Database
 - Release Edit to Content
 - Remove Content Records
 - 3.Administration
 - Decode Password from Configuration
 - Encode Password for Configuration F
 - Set NULL constraint on Geometries
 - Setup Boundary Line Databases
 - Tear Down Boundary Line Databases
- Databases
- Geoprocessing History
- Styles
- Folders
- Workflows
- Locators

ArcGIS Pro - Boundary-Line Production - EJ_1055*

Project Job Insert Analysis View Share Add-In

Paste Cut Copy Zoom to Current Step Fit To Window Current User Execute Step Mark Step Complete LOI Attachments Holds Refresh Take Offline Bring Online

Clipboard View Assign Workflow Manage Job

Contents

osvm1337 EJ_1055*

Job Type - Job ID
Create Edit Job - 1055

Assigned to
Unassigned

Created By
Robbie Franklin at 16/10/2018 14:29

Days Active
1

LOI Defined

Job Notes

Workflow | Descriptive Information | History | Holds

Job Details

Job Name
EJ_1055

Priority
Medium

Assignment
Unassigned

Parent Job
WL_1054 St. Edmundsbury W SI. 118

Owner
Robbie Franklin

Dates

Scheduled Start Date
Actual Start Date
Not Started

Scheduled Due Date
04/01/1900
Completion Date
Not Completed

Job Status: Ready To Work, 0% Complete

Current Step(s): Check AOI

Select Parent Job

None

By Job ID
1054

From Job List

ID	Job Type	Name	Assigned to
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OK Cancel

Geoprocessing

Create New Jobs

Parameters | Environments

Input Database Path (.jtc)
C:\Users\rfranklin\Documents\ArcGIS\Projects

Job Type
Create Edit Job

Assignment Type
Unassigned

Priority

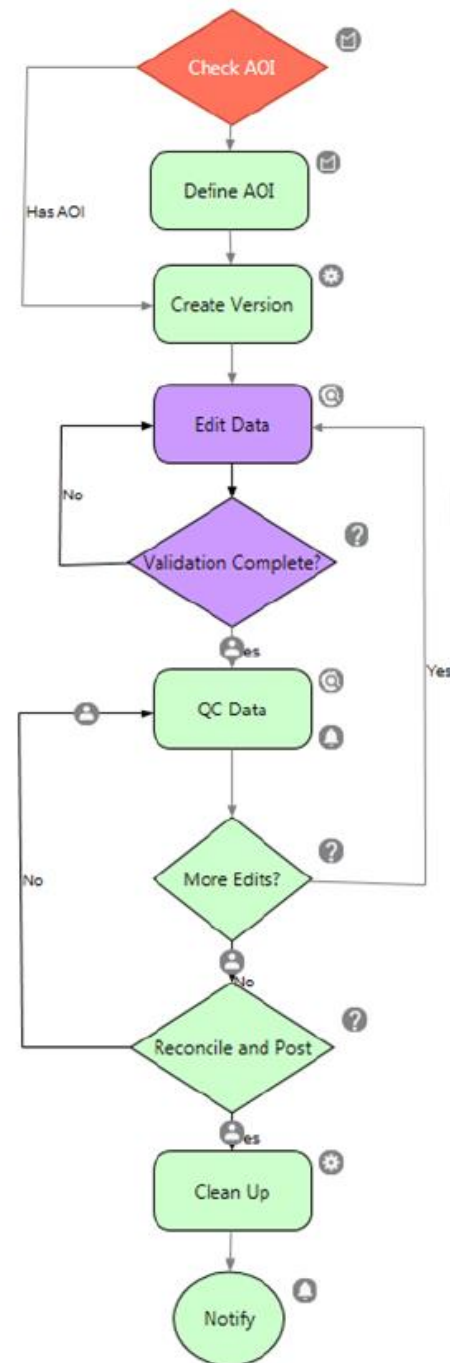
LOI Extent
BL_EDIT_AOI_AREAS

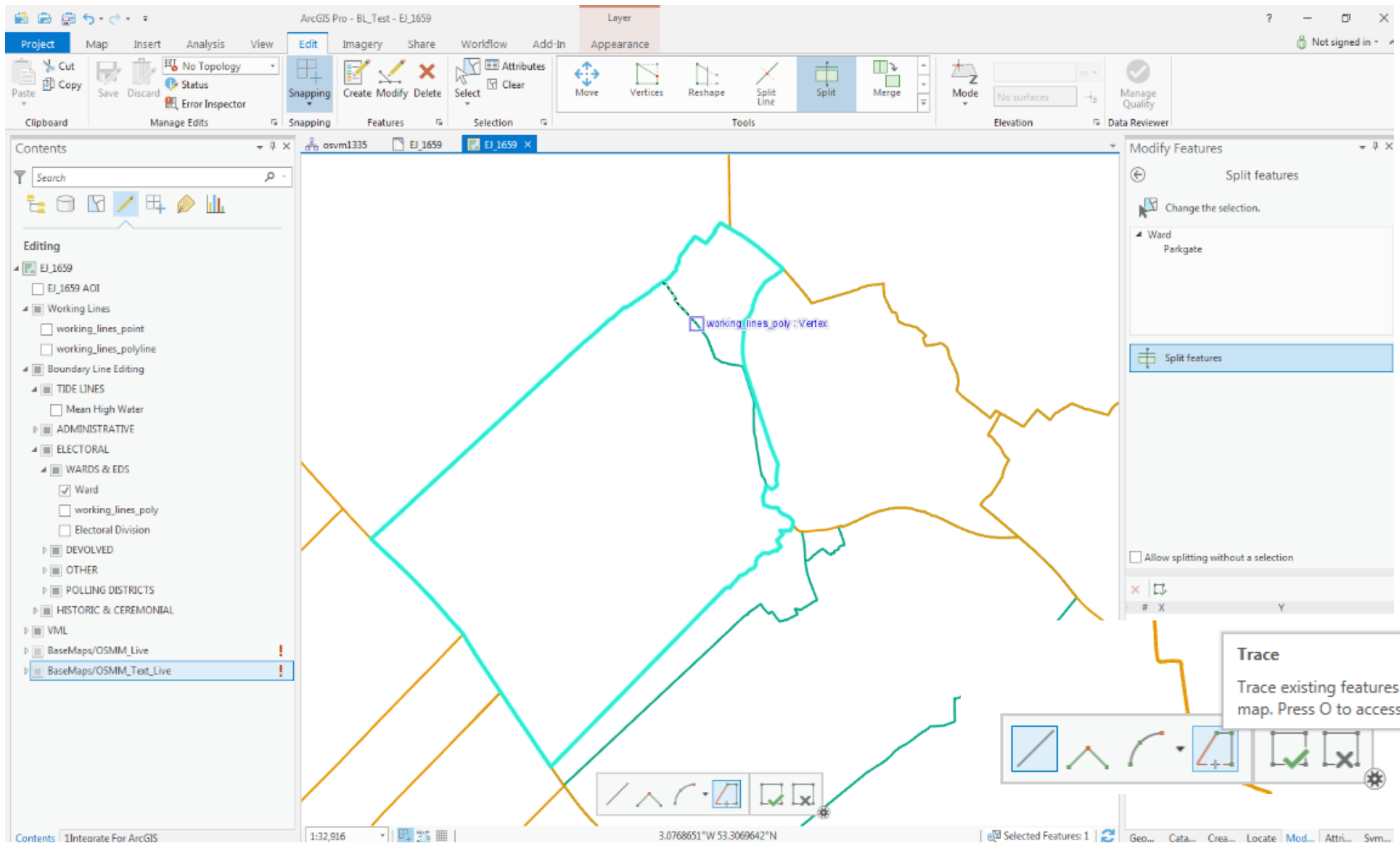
Merge features to create one LOI

Run

Create New Jobs
Completed successfully

Geo... Cat... Loc... Mo... Sym... Cre... Attri...





ArcGIS Pro - BL_Test - EJ_1656

Project Map Insert Analysis View Edit Imagery Share Workflow Add-In

Clipboard Manage Edits Snapping Features Selection Tools Elevation Data Reviewer

Contents

Search

Drawing Order

- EJ_1656
 - ☒ EJ_1656 Cheshire West and Chester AOI
 - ☒ Working Lines
 - ☒ working_lines_point
 - ☒ working_lines_polyline
 - ☒ Boundary Line Editing
 - ☐ TIDE LINES
 - ☒ Mean High Water
 - ☐ ADMINISTRATIVE
 - ☒ ELECTORAL
 - ☒ WARDS & EDS
 - ☒ Ward
 - ☒ working_lines_poly
 - ☐ Electoral Division
 - ☐ DEVOLVED
 - ☐ OTHER
 - ☐ POLLING DISTRICTS
 - ☐ HISTORIC & CEREMONIAL
 - ☐ VML
 - ☐ BaseMaps/OSMM_Live
 - ☐ BaseMaps/OSMM_Text_Live

1:44,842 3.1492084°W 53.2544090°N Selected Features: 3

Modify Features

Merge

Existing Feature | New Feature

Change the selection

Layer: Ward

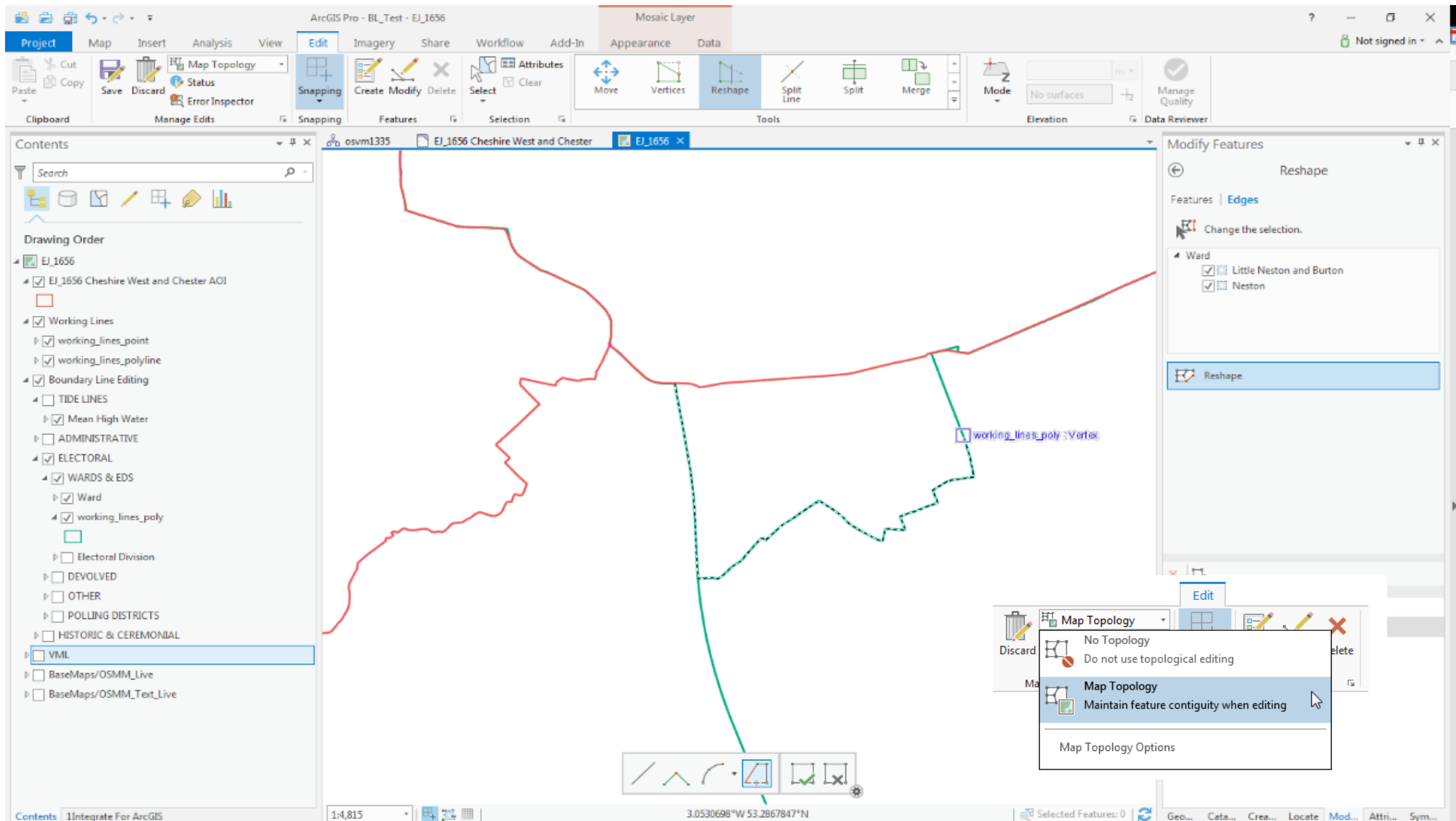
Features to merge: Neston (preserve), Parkgate

Merged Feature Attributes

Creator	<Null>
Creation_Date	<Null>
Last_Editor	<Null>
Last_Edited_Date	<Null>
name	Neston
nameAlternate	<Null>
unitID	43565
polygonID	123367
gssCode	E05008686
classification	English Unitary Authority Ward
isDetached	false
linkToDocument	http://www.legislation.gov.uk/uksi/

Merge

Geo... Cata... Crea... Locate Mod... Attri... Sym...



ArcGIS Pro - BL_Test - EJ_1656

Project Map Insert Analysis View **Edit** Imagery Share Workflow Add-In Appearance Data

Clipboard Manage Edits Snapping Features Selection Tools Elevation Data Reviewer

Move Vertices **Reshape** Split Line Split Merge Mode

Not signed in

Contents

osvm1335 EJ_1656 Cheshire West and Chester EJ_1656

Search

Drawing Order

- EJ_1656
 - ☒ EJ_1656 Cheshire West and Chester AOI
 - ☒ Working Lines
 - ☒ working_lines_point
 - ☒ working_lines_polyline
 - ☒ Boundary Line Editing
 - ☐ TIDE LINES
 - ☒ Mean High Water
 - ☐ ADMINISTRATIVE
 - ☒ ELECTORAL
 - ☒ WARDS & EDS
 - ☒ Ward
 - ☒ working_lines_poly
 - ☐ Electoral Division
 - ☐ DEVOLVED
 - ☐ OTHER
 - ☐ POLLING DISTRICTS
 - ☐ HISTORIC & CEREMONIAL
 - ☐ VML
 - ☐ BaseMaps/OSMM_Live
 - ☐ BaseMaps/OSMM_Text_Live

Modify Features

Reshape

Make a selection.

Features | Edges

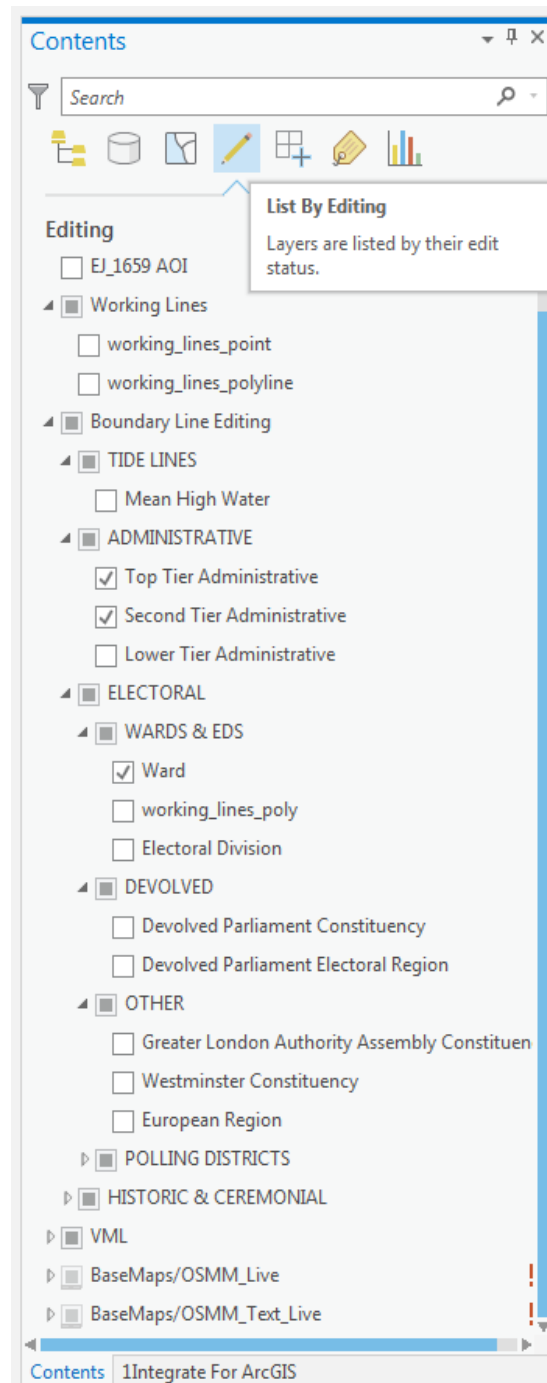
Change the selection.

Ward

- ☒ Little Neston and Burton
- ☒ Neston

Reshape

1:3,287 3.0614744°W 53.2837497°N Selected Features: 0



Options



Project

Current Settings

Units

Tasks

Application

General

Map and Scene

Navigation

Selection

Editing

Geoprocessing

Raster and Imagery

CAD

Display

Layout

Metadata

Indexing

Location Referencing

Language

Customize the Ribbon

☒ Show feature symbology in the sketch

☒ Show the editing toolbar on the map

Position ☐ Left ☒ Bottom ☐ Right

Size ☐ Small ☒ Medium ☐ Large

☐ Magnify Toolbar

Session

☒ Automatically save edits

☒ Time interval (minutes)

☐ Number of operations

☐ Save edits when saving project

☒ Show dialog to confirm save edits

☒ Show dialog to confirm discard edits

☐ Deactivate an active editing tool when saving or discarding

☒ Make newly added layers editable by default

Versioning

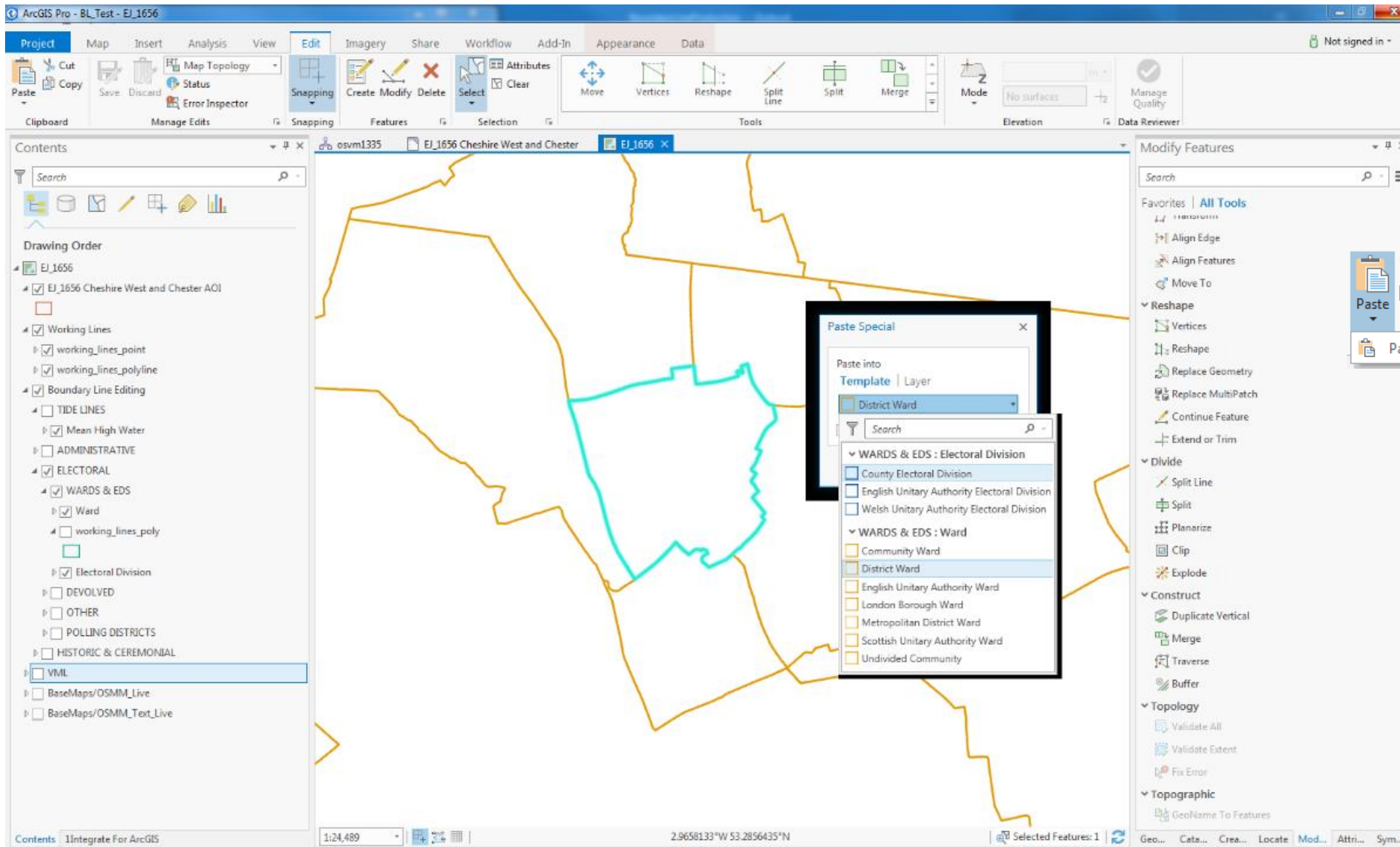
How do you want conflicts to be resolved?

☒ In favor of the edit version

[Learn more about options for saving edits](#)

OK

Cancel



1Integrate
For ArcGISAllocate
New IDs

Enterprise Data Management Manage IDs

1Integrate For ArcGIS

Get Rulesets

003 Boundary C

Get Schema

Validation

Enhancement

- ☒ Fix Essential Geometric Errors
 - ☒ Remove_Dup_Feature
 - ☒ Remove_Kickbacks
 - ☒ Remove_Spikes

Run

100%

Results

RuleName	FeatureType	FeatureId
----------	-------------	-----------



Modify Features

Edit Vertices

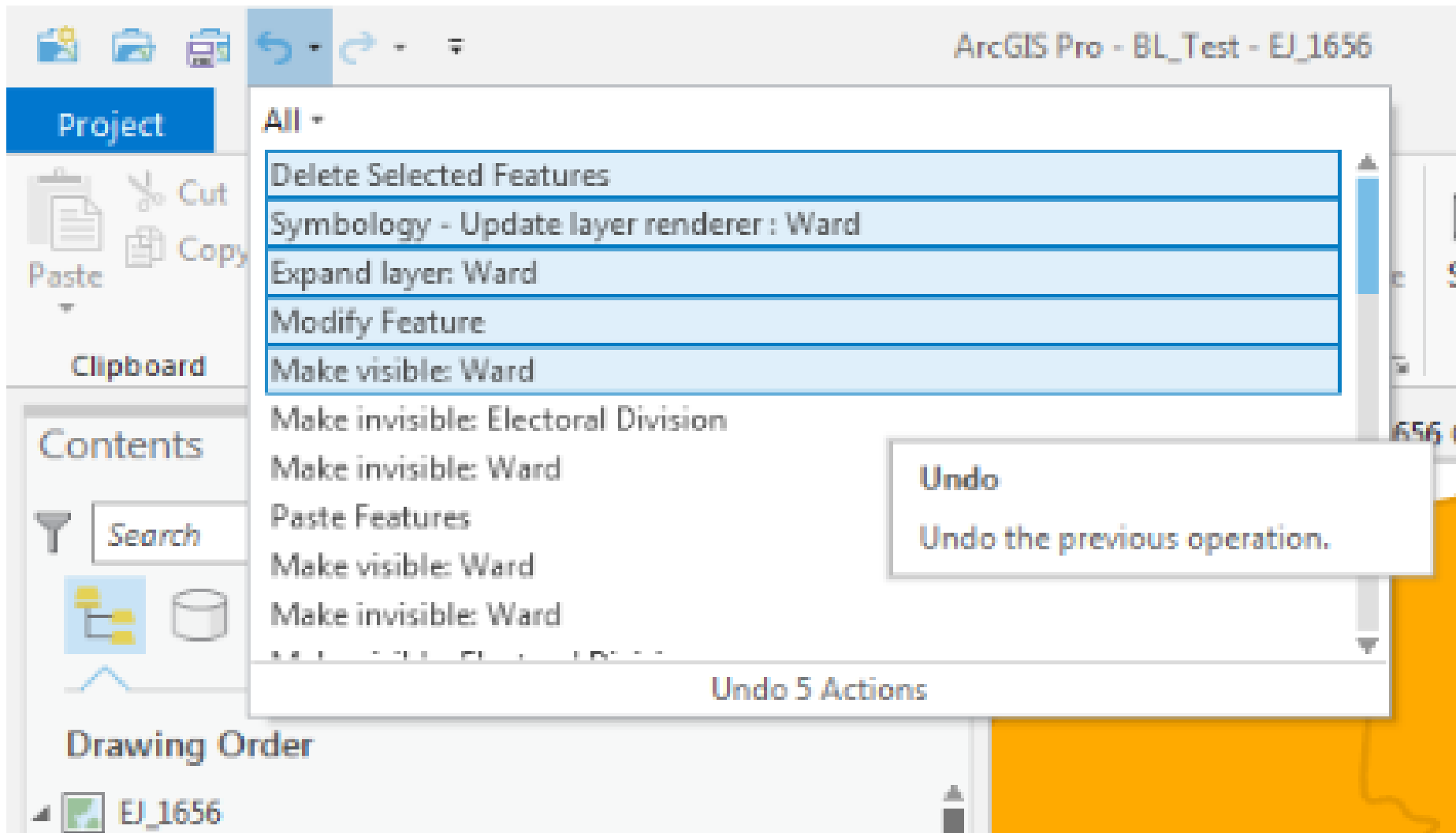
Select one feature

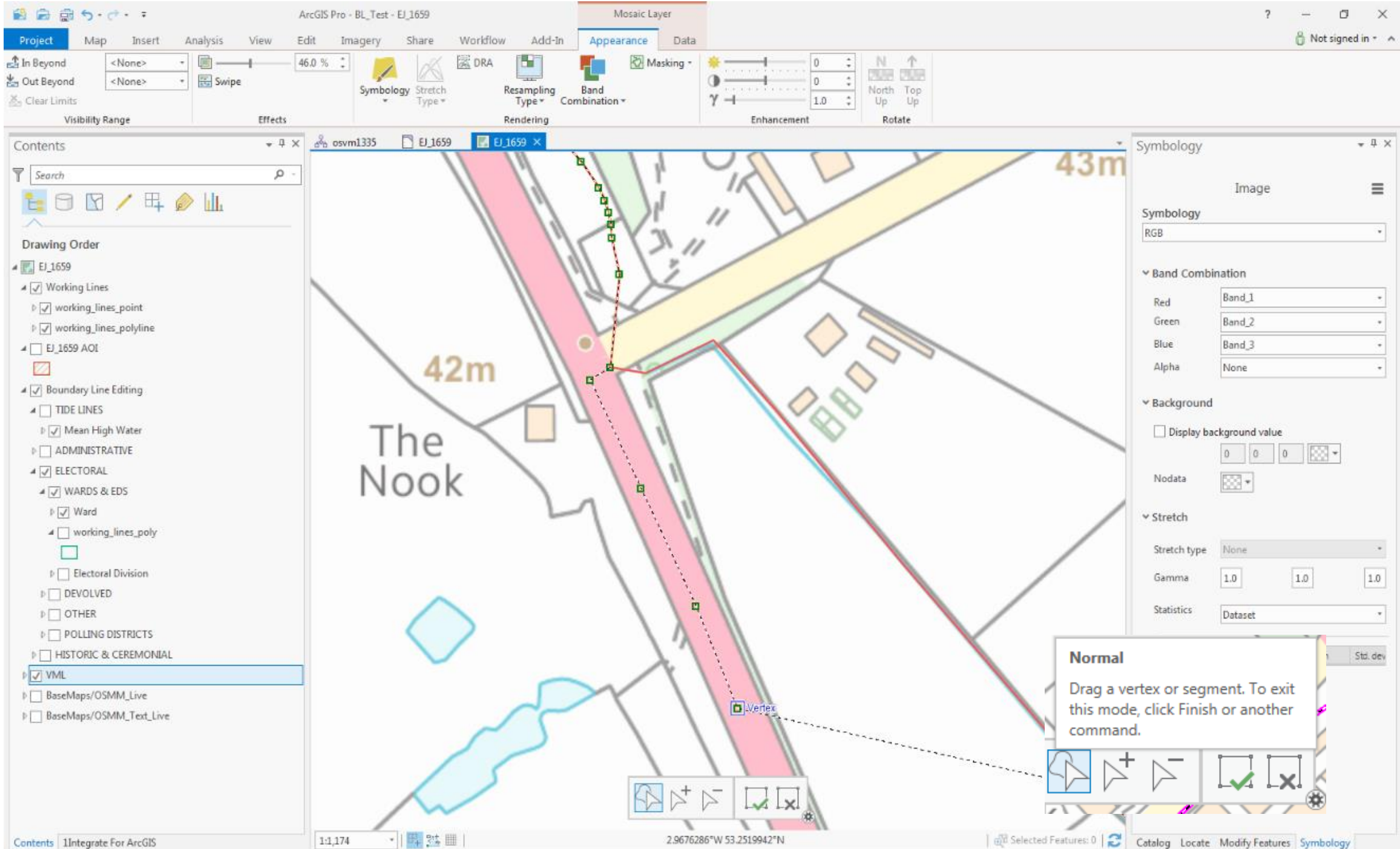
Features | Edges

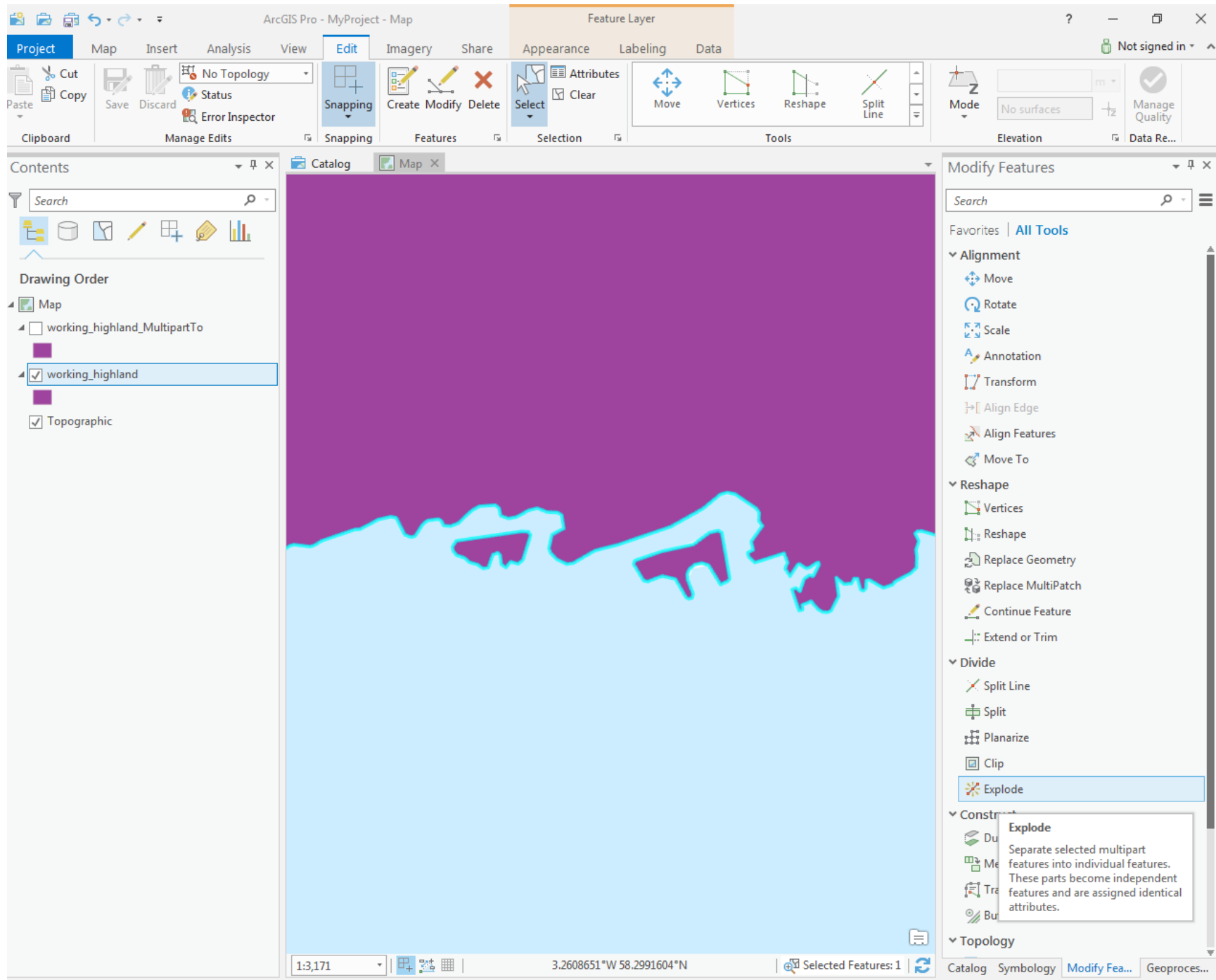
Change the selection.

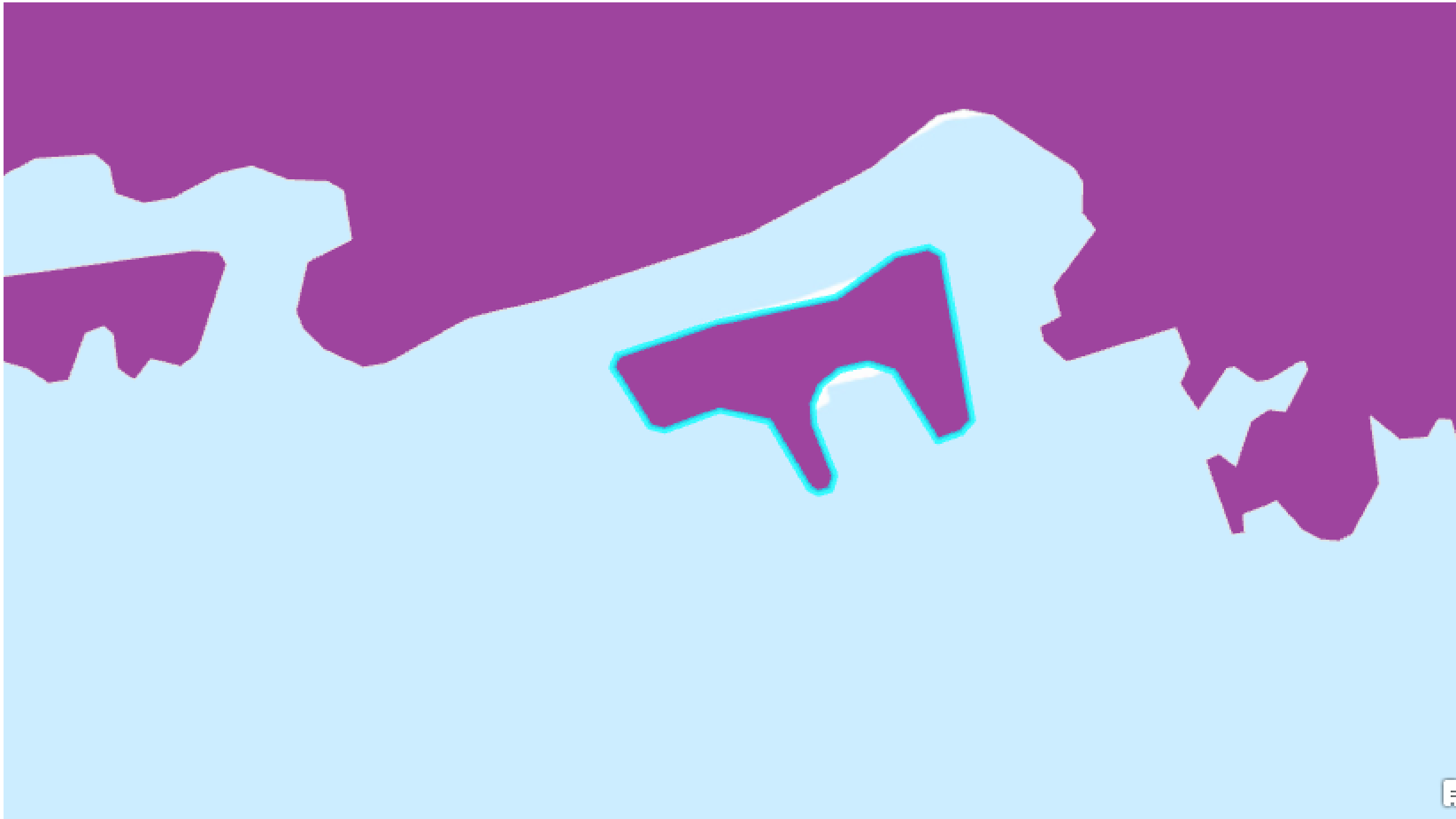
Ward

- Allington
- Beechwood
- Blacon
- Boughton
- Bunbury
- Burton
- Cheshire City









Geoprocessing



Release Edit to Content



Parameters | Environments



i Configuration (INI) File

B:\deployment\1_0_5\prd.ini



Release Name

Boundary-Line

Are You Sure?

Yes



▼ Security

Encryption Key

Run

Geoprocessing

Catalog

Locate

Modify Features

Results

- Editing is 60-70% quicker than old legacy system
- No interruption when publishing data
- Publication is now integrated as part of the system.

Tips for migrating to ArcGIS Pro

- Adoption depends upon maturity level of using ESRI Desktop
- Convert existing Models to Python
- Upgrade Python v2.7 > 3.6
- Minor releases are forward compatible i.e. v. 2.2 features works in v2.3
- Highly recommended to have a physical GPU (Graphics Processing Unit) with a minimum capacity of 2GB

Thank you

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