

Dublin Urban Rivers LIFE (DURL) Project

MISCONNECTION DECISION SUPPORT TOOL WORKSHOP

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AIM OF DECISION SUPPORT TOOL

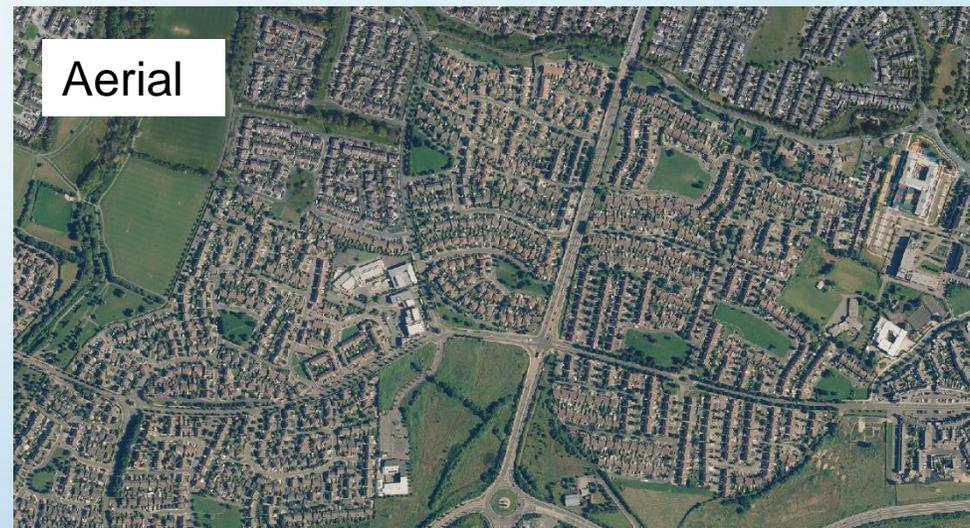
- Help managers decide on options to improve water quality in urban areas
- Provide best practice guidance for Door to Door Assessment work
- Deliver a logical approach to enable user specific requirements
- Identify costs and benefits of improving the function and value of urban rivers

WALKTHROUGH OF DECISION SUPPORT TOOL (DST)

STEP 1 – SOURCE DATA

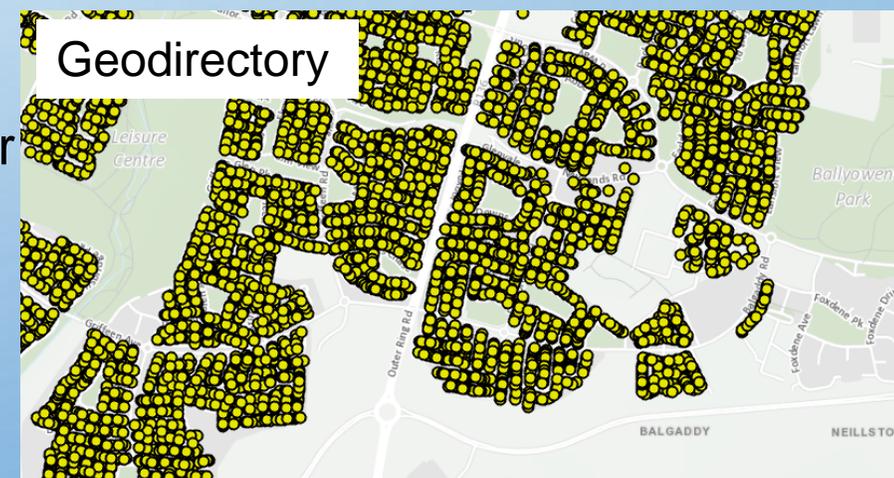
AERIAL PHOTOGRAPHY GRIFFEEN GN016

- Recent high res aerial will aid in identifying extensions/outbuildings



GEODIRECTORY

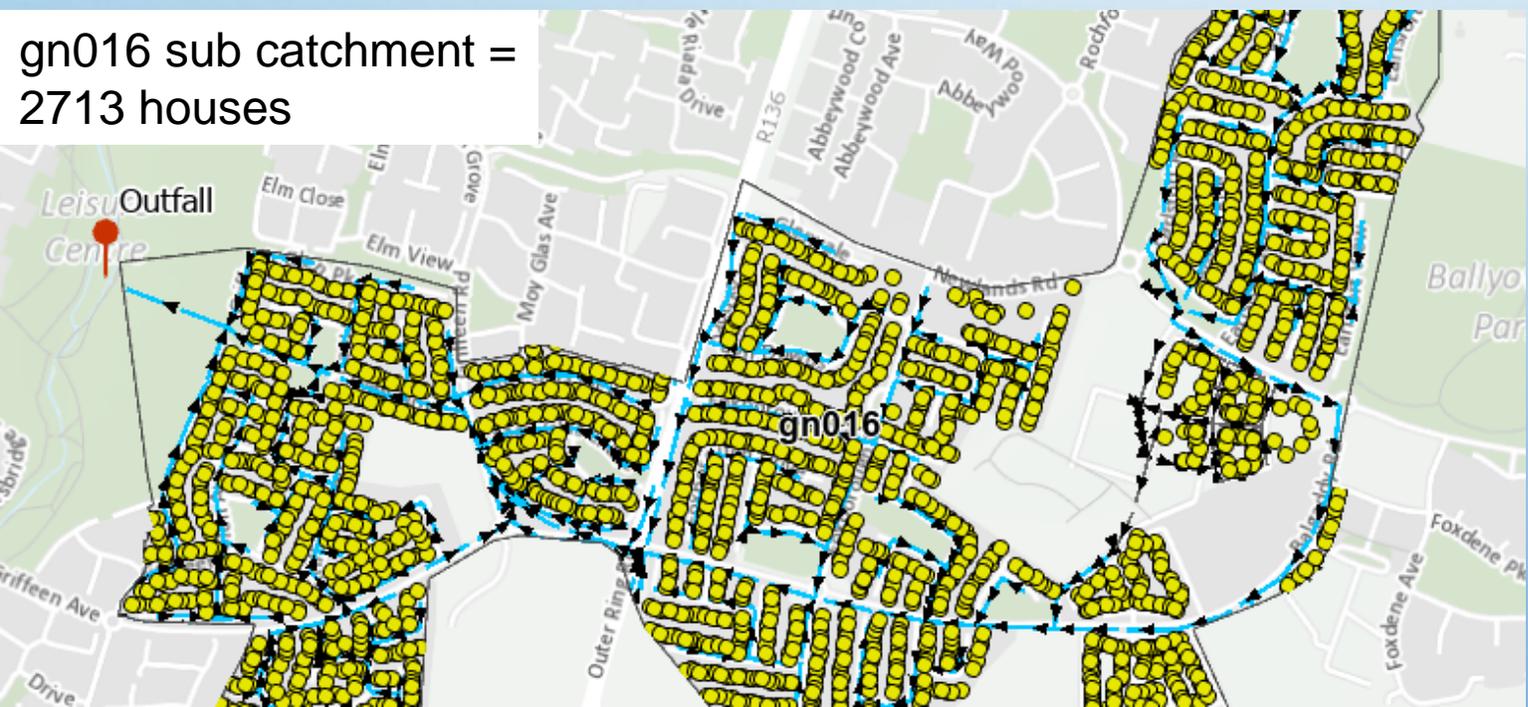
- Location and address of all properties
- Released every quarter
- Decide on what data to include (e.g. we removed all under construction and commercial properties)





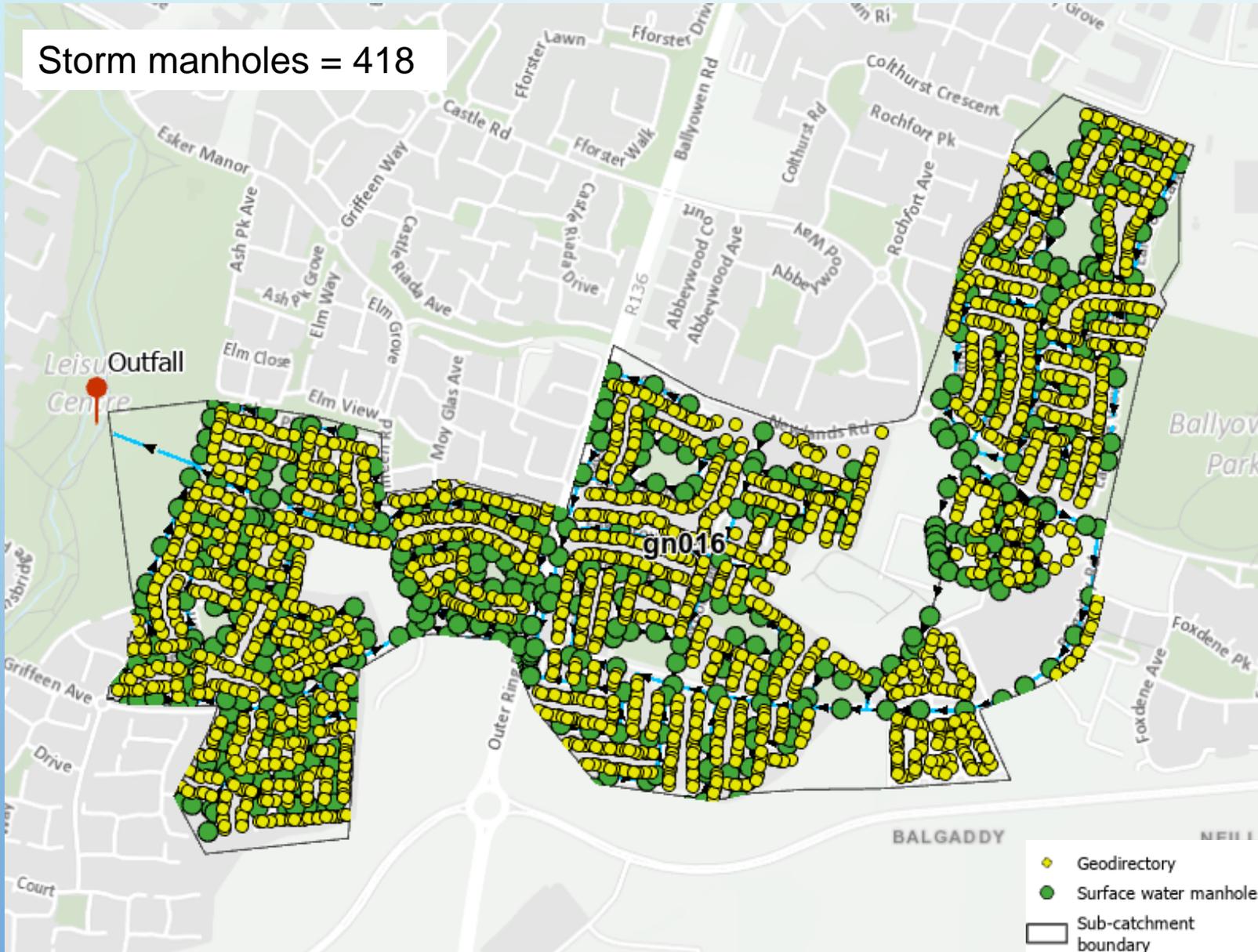
STEP 2 – DRAW DRAINAGE BOUNDARY

- Use utility network tracing tool to find all storm water pipes upstream of outfall



- Digitise around the houses and storm water network draining to this outfall

Storm manholes = 418



STEP 3 – MANHOLE SCREENING

STORM WATER MANHOLES

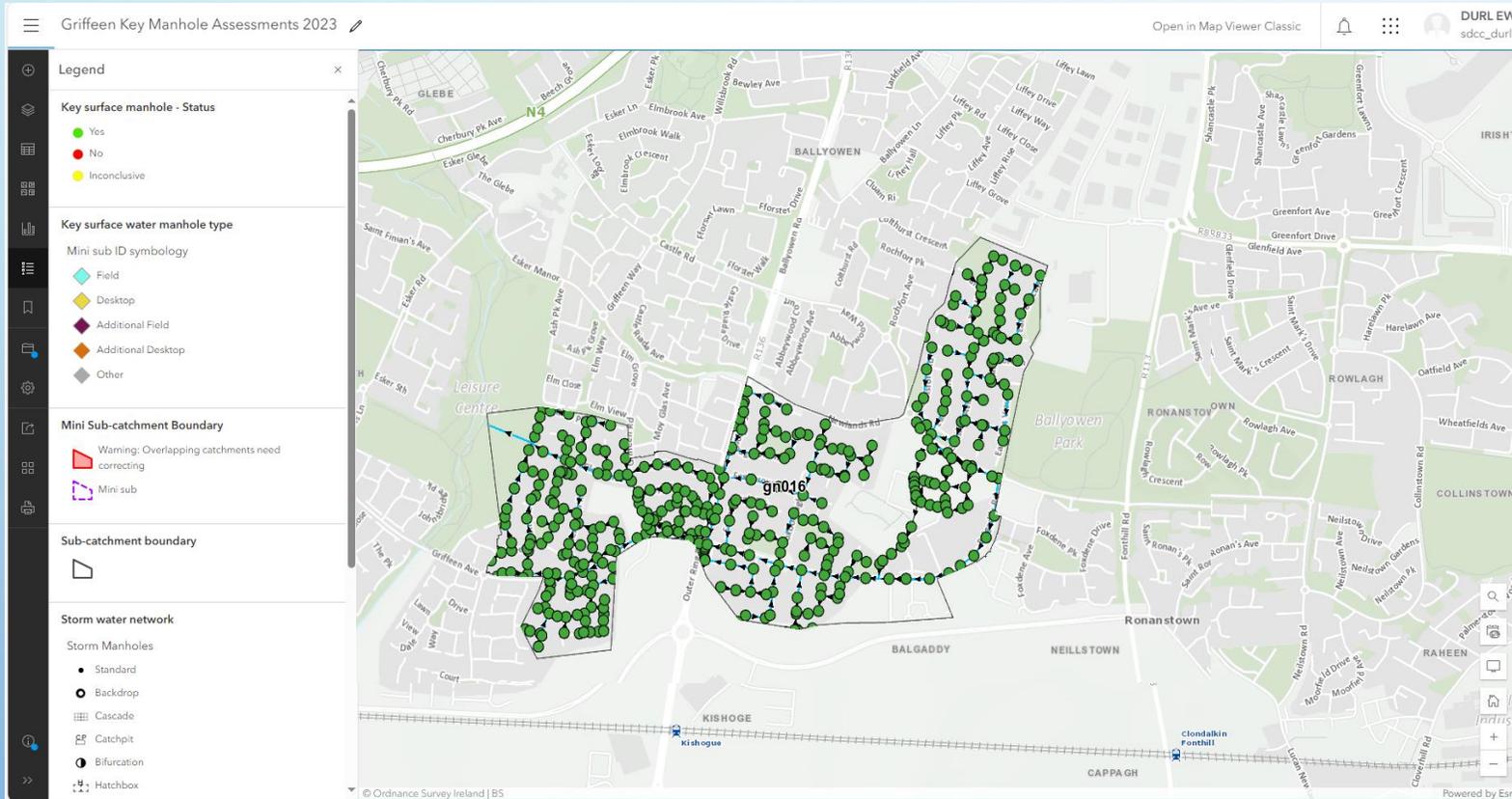
- Add fields in preparation for field data collection
- *MiniSub_ID* unique identifier that links manholes to houses

MINI SUB CATCHMENT BOUNDARY

- Links manholes to houses

STEP 3 – CREATE MANHOLE SCREENING APP

- Publish data to ArcGIS Online
- Using the **Map Viewer** assign symbology and labels
- Create smart forms – used to automate calculations and pull attributes from one layer to another
- Create instant app – 10 clicks



Edit feature

Settings

Editing is disabled but you have privileges to edit this layer.

AF1603

Mini Sub-catchment ID

AF1603

Please use all capital letters

- A - Additional
- F - Field
- D - Desktop
- AF - Additional field
- AD - Additional desktop
- S - Septic/Soakaway
- VF - Virtual

Sub-Catchment ID

gn016

Will autopopulate with intersecting Sub catchment boundary layer

Duplicate Mini Sub ID

No

Attachments

No attachments

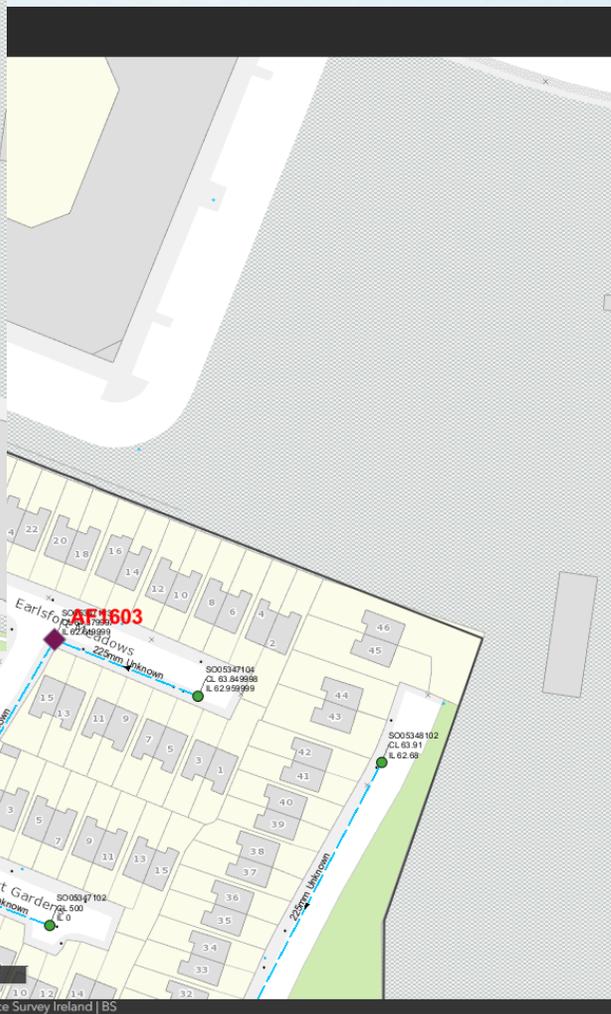
+ Add

Update Delete



STEP 4 A – IDENTIFYING MANHOLES FOR SCREENING

- Manholes chosen at
 - junctions with other pipes
 - on pavements
- Analysed distance from screened manhole to all houses on that line
- Median 100 meters



Griffen Key Manhole Assessments 2023

Edit feature

Settings

AF1603

Group 1

MiniSub_ID

AF1603

Create Key Surface Manhole first

ID_code

gn016

STCREFID

SO05347103

Create Key manhole point first

FACILITYID

SWMH0077762

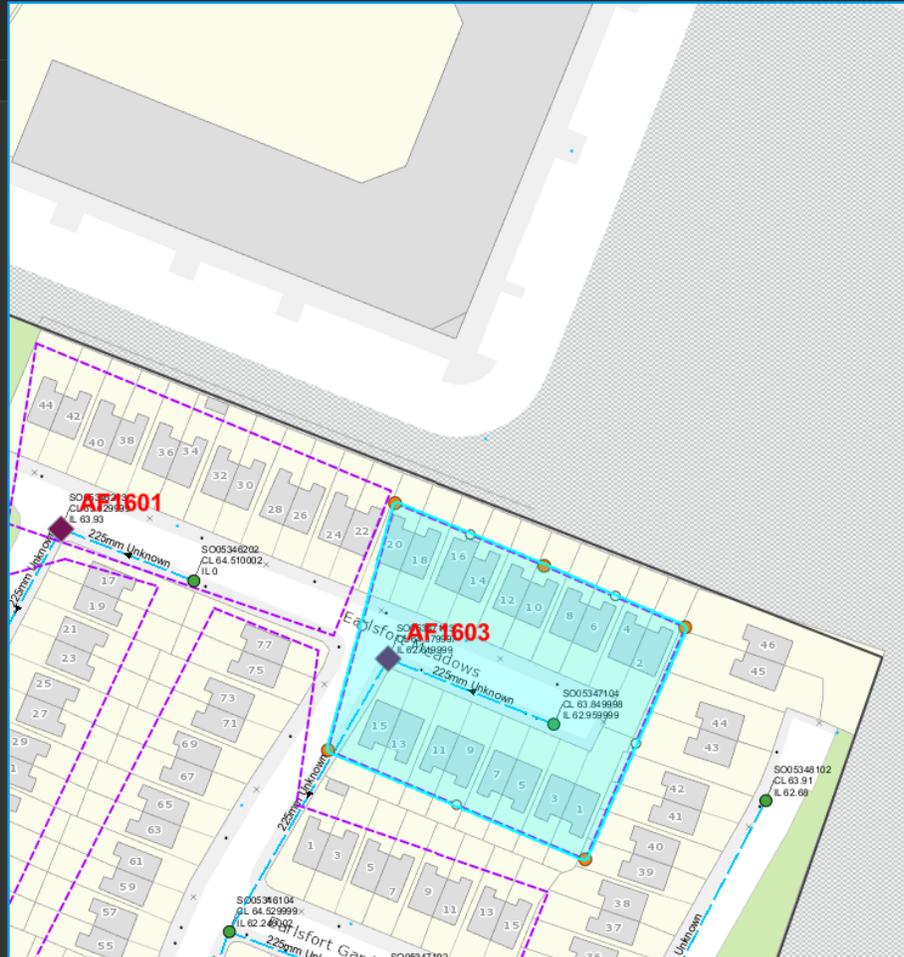
Create Key manhole point first

House_Count

18

Automatically calculates houses within mini sub

Overlapping



STEP 4 A – IDENTIFYING MANHOLES FOR SCREENING

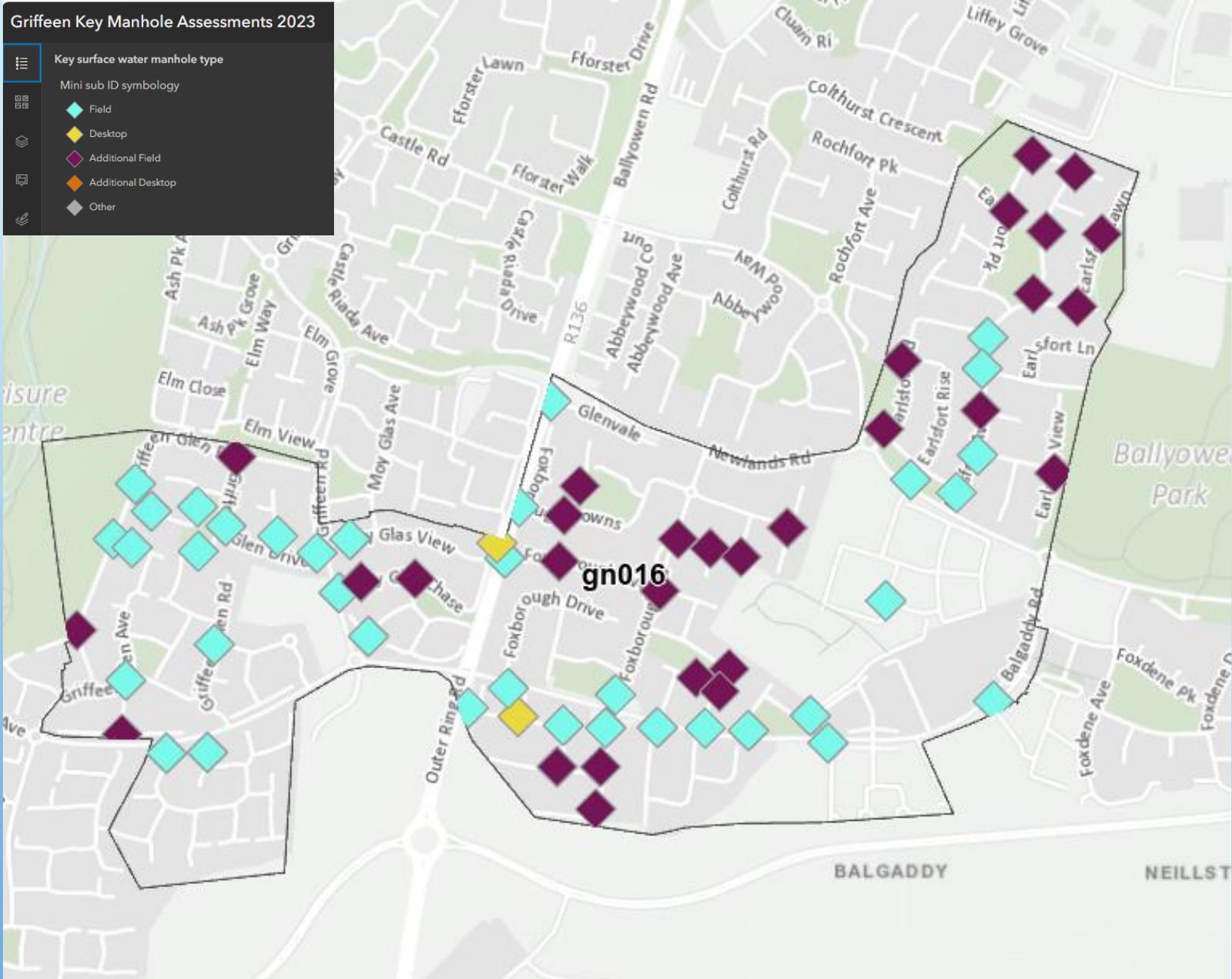
- Create boundaries around the flagged manhole and houses draining to it

Griffen Key Manhole Assessments 2023

Key surface water manhole type

Mini sub ID symbology

- ◆ Field
- ◆ Desktop
- ◆ Additional Field
- ◆ Additional Desktop
- ◆ Other



STEP 4 A – IDENTIFYING MANHOLES FOR SCREENING

- 68 manholes identified for screening
- Live process and visible to all staff working on the project
- Multiple editors



15:18

Collect

702804.76E 734926.40N

Review Number Houses Assigned to this Manhole?
No

Based on the number of houses above

Date of Assessment
18 Dec 2023 15:18

Warning: Check Date!
Date Okay

Multiple Inflow Pipes of Different Pollution Status *
No

Clean *
No value

Required

Sewer Over Flow Evident *
No

Obvious Source *
None

Comment *
Required 0



15:33

Filter Clean CANCEL

No value

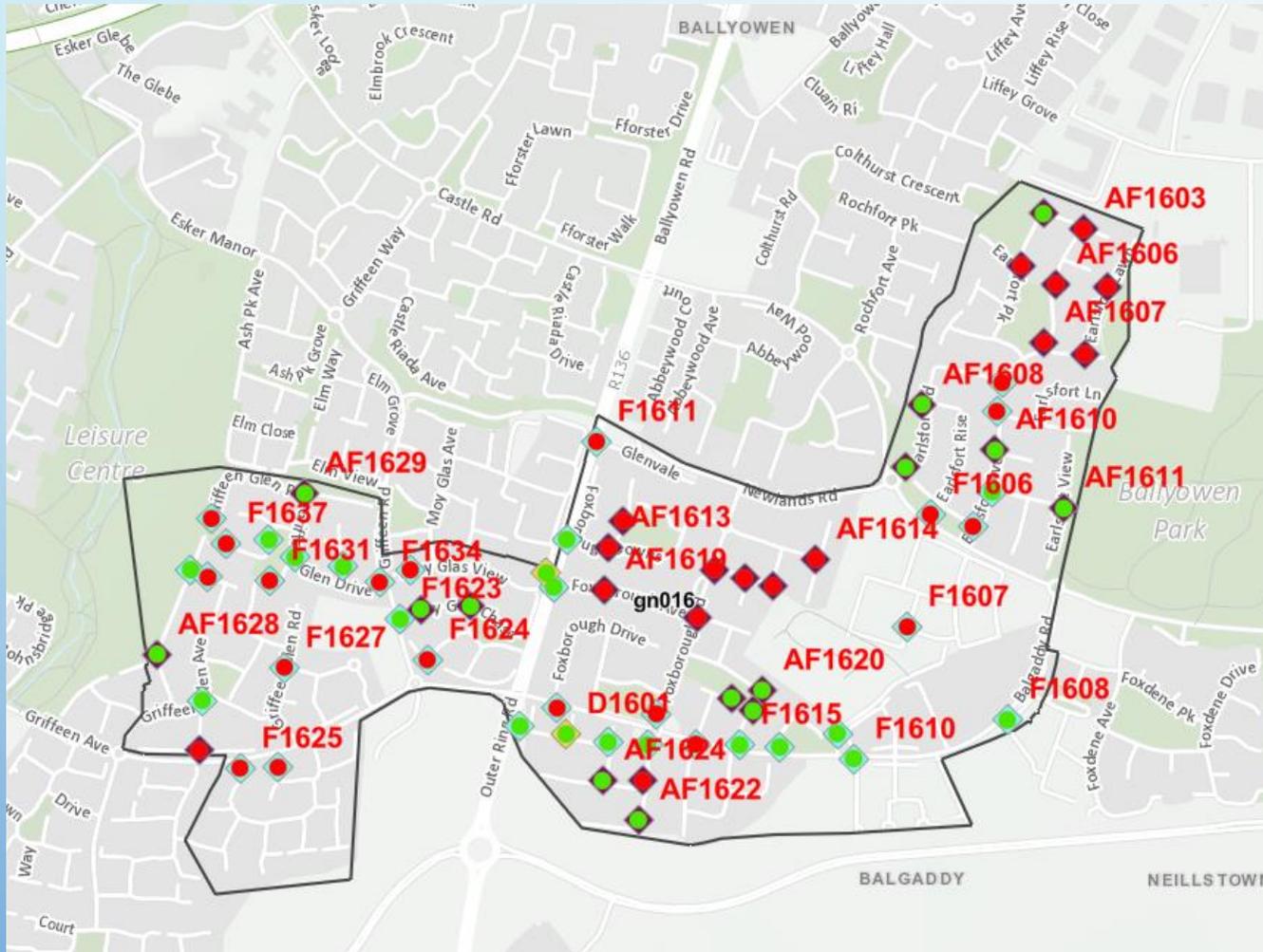
Yes

No

Inconclusive

STEP 4 B – SCREENING MANHOLES

- Using **Field Maps** mobile app for mobile data collection



STEP 4 B – SCREENING MANHOLES

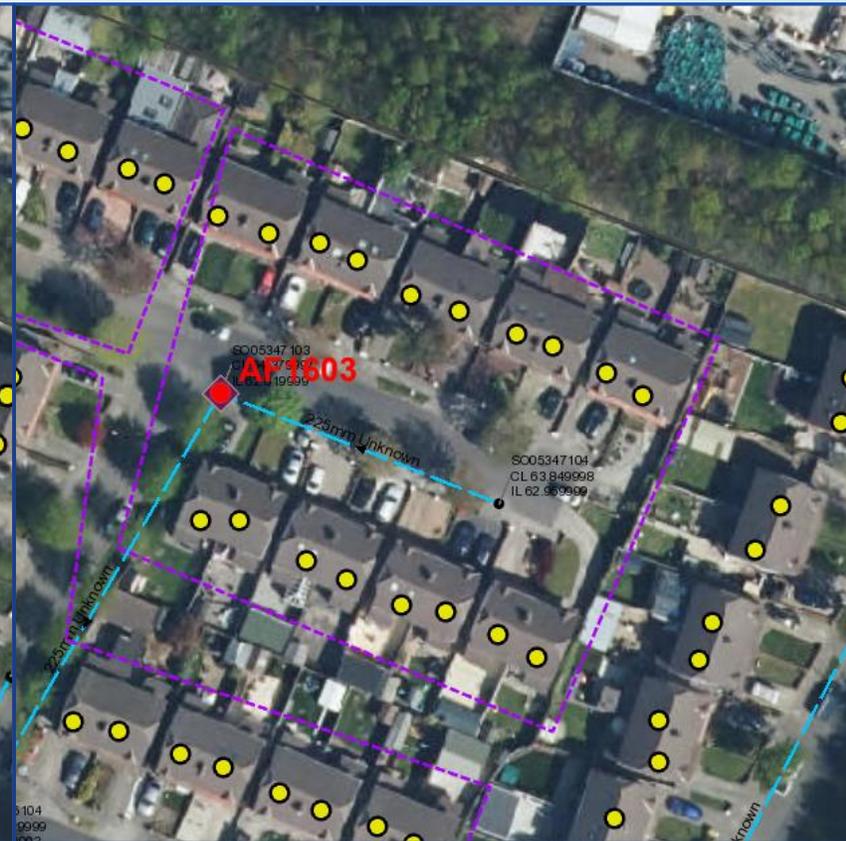
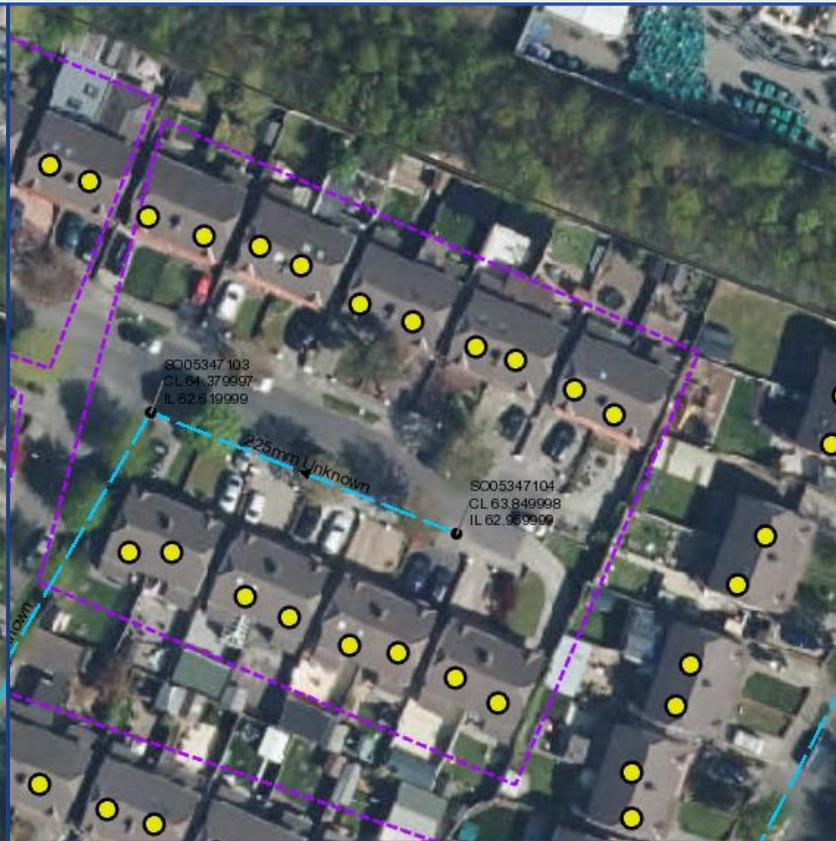
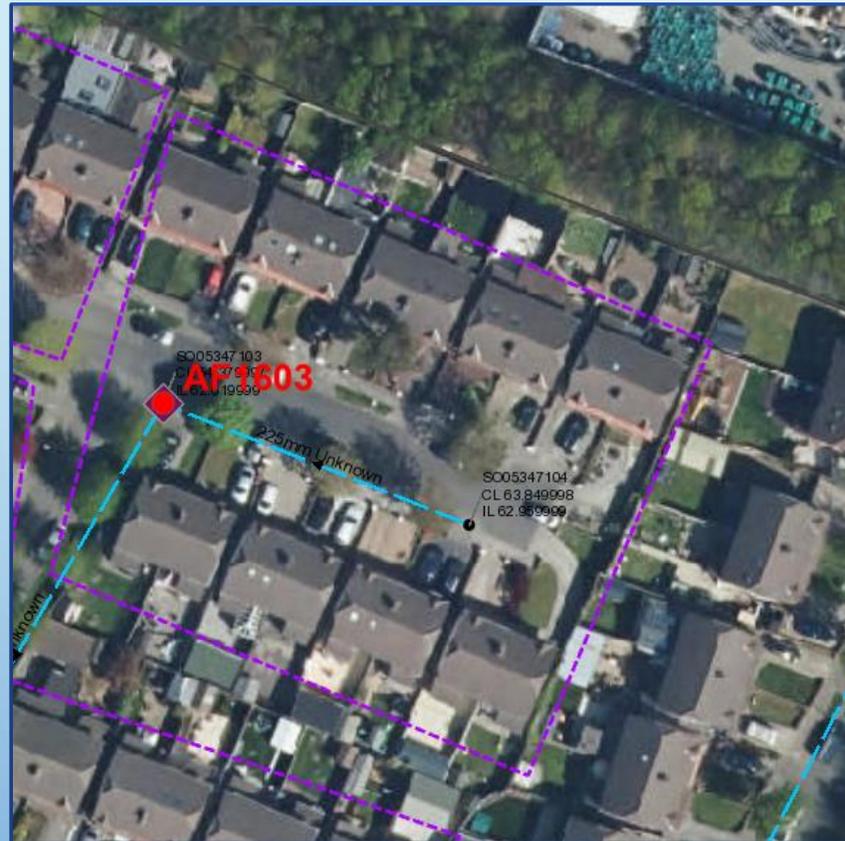
- Surveys submitted by field staff instantly visible to office staff



STEP 5 – PROCESS MANHOLE SCREENING RESULTS

- Now have results of manhole screening
- Validate and QA the data
- Need to link the manhole screening results to the houses
- No spatial relationship between manholes and houses
– closest manhole is not always right

STEP 5 – PROCESS MANHOLE SCREENING RESULTS



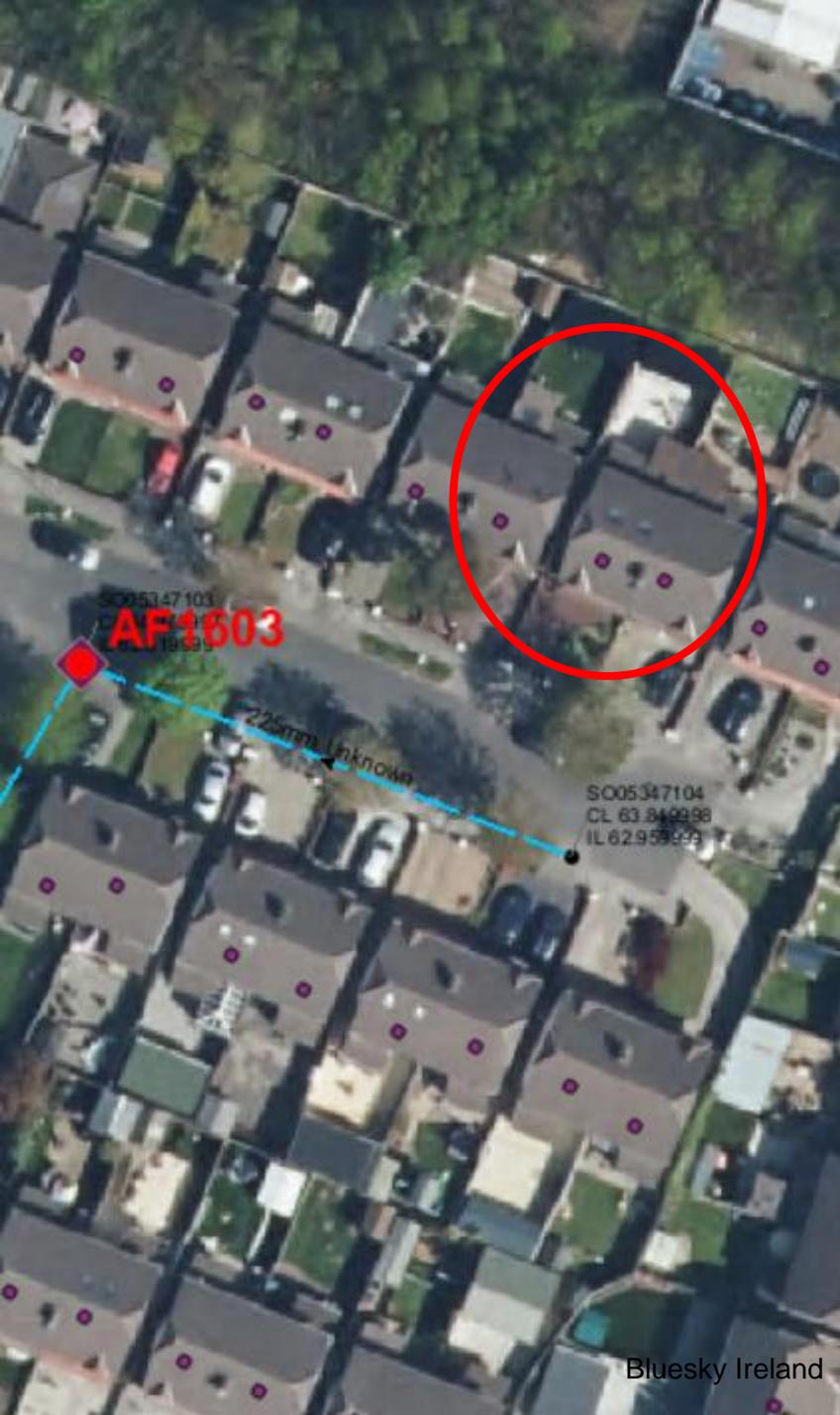
Screened manhole intersects with boundary and boundary pulls unique ID across

Boundary intersects with houses and pulls unique ID across

Houses and manhole both have common unique ID and can be joined
Transfer the *Clean* and *Comment* fields

WORKFLOW





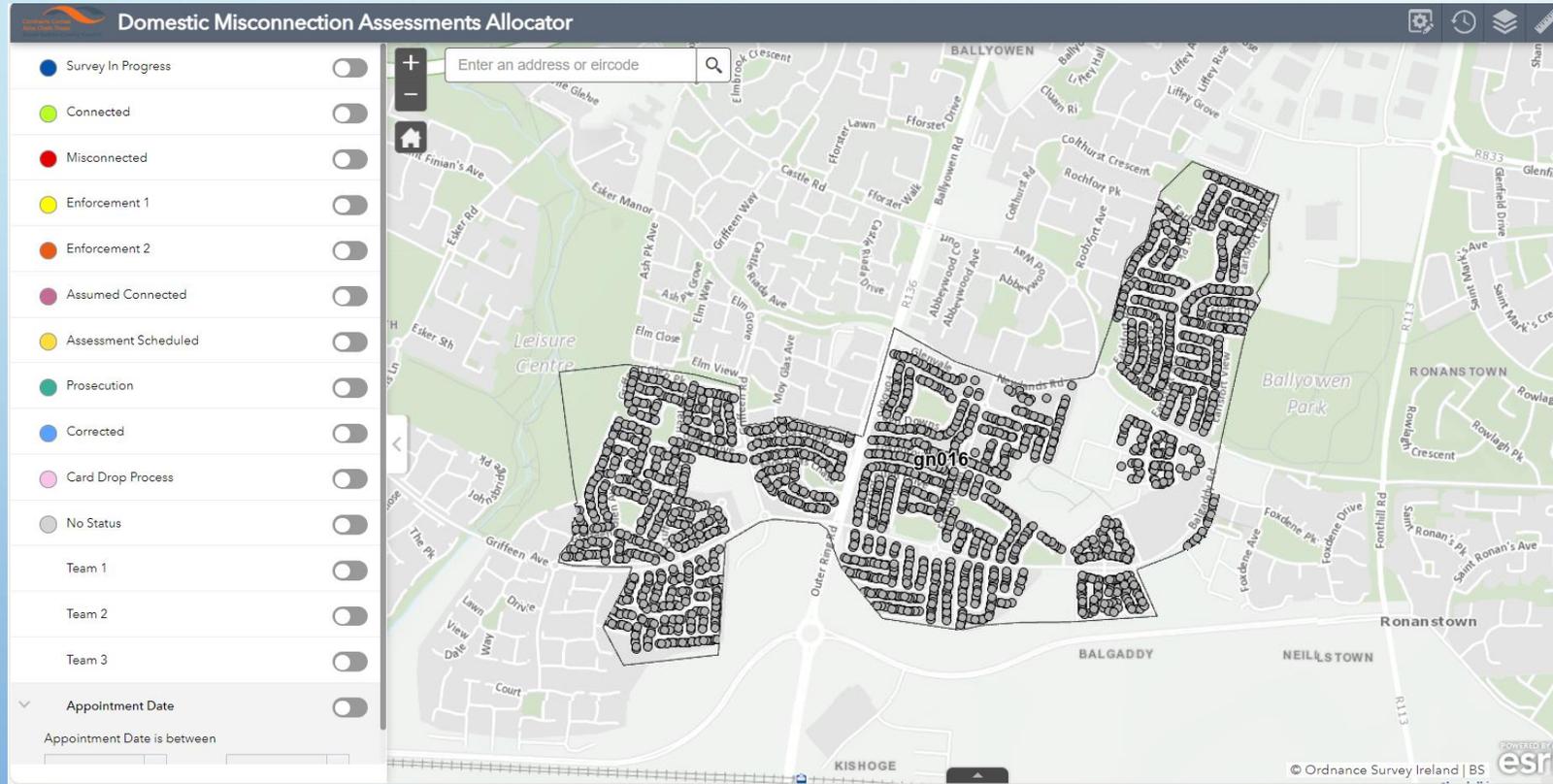
WHICH HOUSES TO TARGET FOR ASSESSMENT?

- Recap: have locations of all houses in sub catchment, have screened all manholes
- Narrowed houses down to those on polluted lines – 1796 houses
- We used aerial photography and Google Earth to flag houses as ‘high probability’
- Quality and year of aerial photography used is important
- Narrowed down to 700 houses

STEP 6 – DOOR TO DOOR ASSESSMENT SURVEY

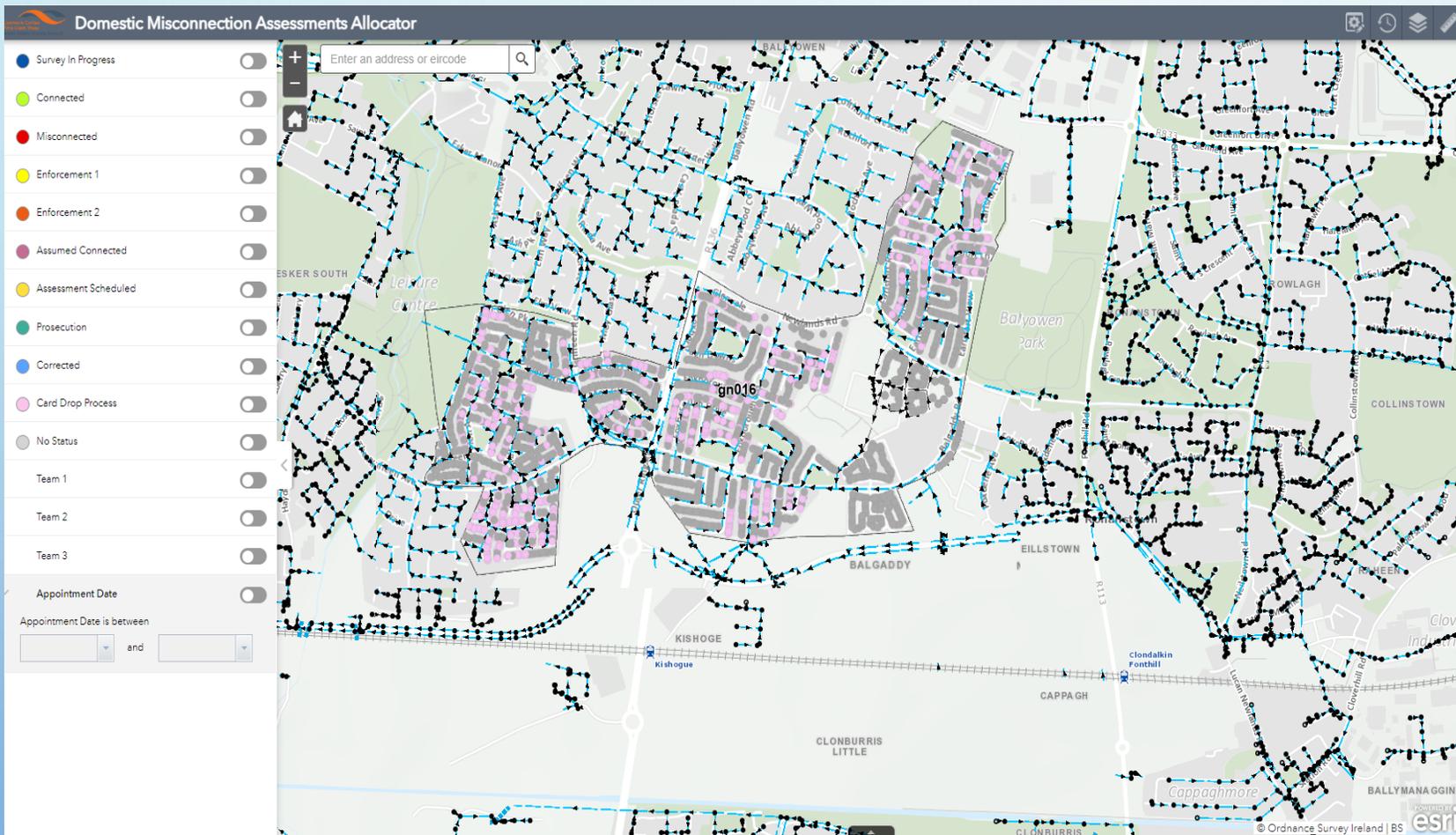


- Now need to add door to door misconnection assessment questions
- Use **Survey123 Connect** to create the behaviour of the survey
- Add the 30+ survey questions using [DURL template](#)
- Publish to ArcGIS Online



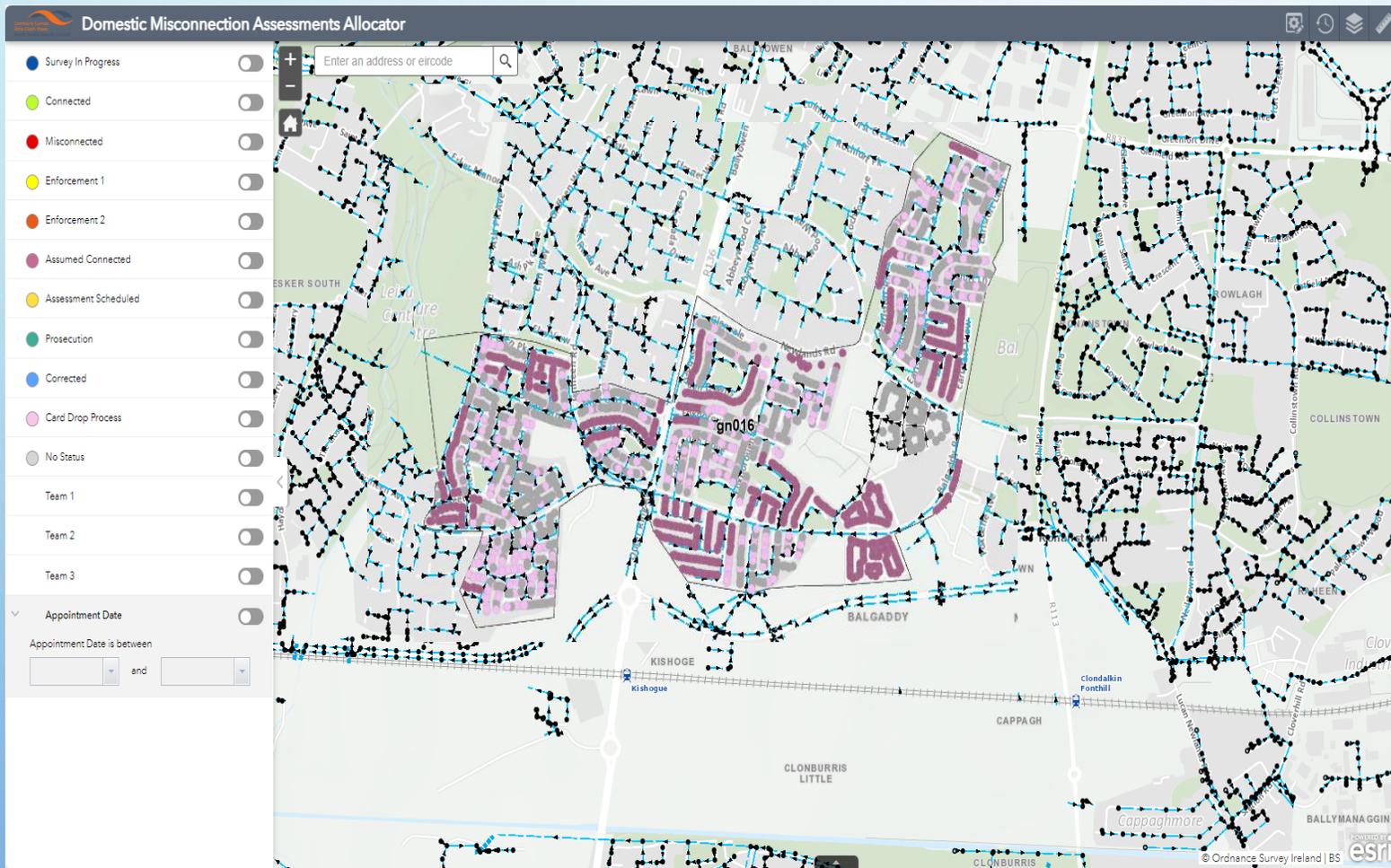
STEP 7 – CREATE ALLOCATOR APP

- Created using ArcGIS Online Web App Builder



STEP 7 – ALLOCATOR APP

- Select houses on polluted manholes and with extensions
- Update Status to Card Drop Process



STEP 7 – ALLOCATOR APP

- Select houses on clean manholes
- Update Status to Assumed Connected

STEP 7

- Use the Allocator app to assign houses to a Team, add an Appointment Date and Time and Next Contact

The screenshot displays the 'Domestic Misconnection Assessments Allocator' application. The interface includes a sidebar with various status filters, a central map showing a residential area with property boundaries and utility lines, and a right-hand panel for updating schedules and teams. A dialog box is open over the map, allowing for the assignment of a team, appointment date, time, and next contact for a selected feature.

Domestic Misconnection Assessments Allocator

Enter an address or eircode

Update Schedule and Team

Use one of the tools below to select multiple properties to a team for assessment

1 feature(s) selected

Update Schedule and Team

Team	Team 1
Appointment Date and Time	20/05/2024
Next Contact	Drop Card 1
Status	Card Drop Process

Save

Filters:

- Survey In Progress
- Connected
- Misconnected
- Enforcement 1
- Enforcement 2
- Assumed Connected
- Assessment Scheduled
- Prosecution
- Corrected
- Card Drop Process
- No Status
- Team 1
- Team 2
- Team 3
- Appointment Date

Appointment Date is between [] and []

STEP 8 – WEB MAP FOR DOOR TO DOOR ASSESSMENTS

- Forms the basis of app
- Create symbology on **Next Contact** field



STEP 9 – DOOR TO DOOR APP

Door To Door Assessments

Sub-catchment: All

Team: All Teams

Appointment: Today, This Week, Next Week, All

Select a date: No date selected

Enforcement 2
20/05/2024, 09:37

Enforcement 1
20/05/2024, 10:30

Enforcement 2
20/05/2024, 11:02

Drop Card 1
20/05/2024, 14:30

Door To Door Assessments

Drop Card

Photo

Photo

Please add photos here:

Bats.JPG 63.1KB

20230328_150747.jpg 495.7KB

3 Drop image here or select image

Consent to Use Photos

Has the home owner given their consent to use the photos?

Yes

No

General Comments

- Created using ArcGIS Online Dashboard
- Choose addresses from list on left
- Fill in survey form on right –
Date of Assessment(s), Card Drops, Misconnected Appliance and Location, Cost of Repairs

WORKFLOW



WORKED EXAMPLE



REPORTING

DOOR TO DOOR ASSESSMENTS DASHBOARD STAKEHOLDER (ARCGIS.COM)



The background is a light blue gradient with several realistic water droplets of various sizes scattered across it. The droplets have highlights and shadows, giving them a three-dimensional appearance. The text 'Thank you' is centered on the left side of the image.

Thank you