Dublin Urban Rivers LIFE (DURL) Project

MISCONNECTION DECISION SUPPORT TOOL WORKSHOP

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Comhairle Contae Átha Cliath Theas
South Dublin County Council

Life

dlr
Comhairle Contae County Council

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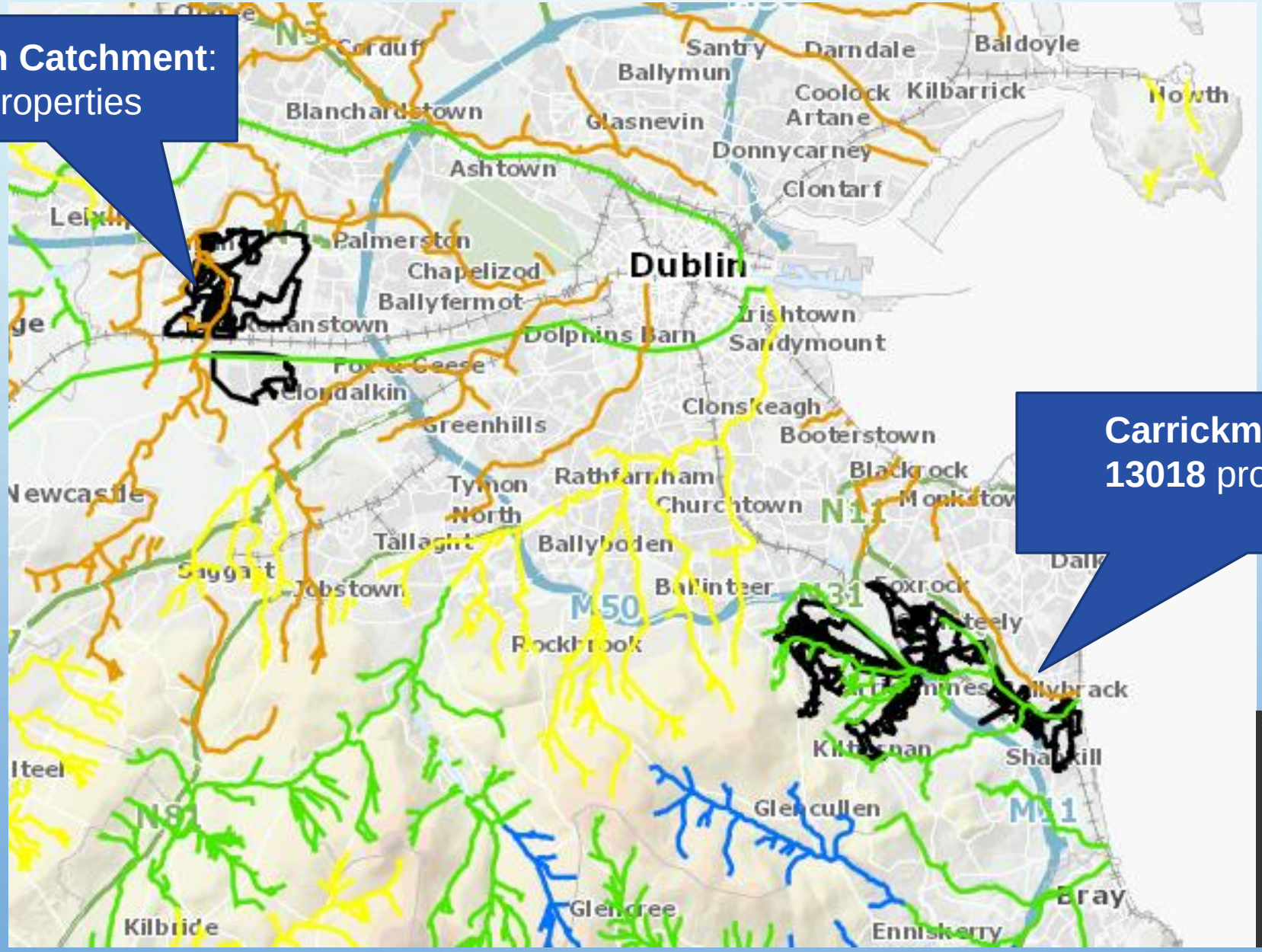
AIM OF DECISION SUPPORT TOOL

- 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)

BACKGROUND

Griffeen Catchment:
14340 properties



Carrickmines Catchment:
13018 properties

River Waterbody WFD Status 2016-2021

- High
- Good
- Moderate
- Poor
- Bad
- Unassigned

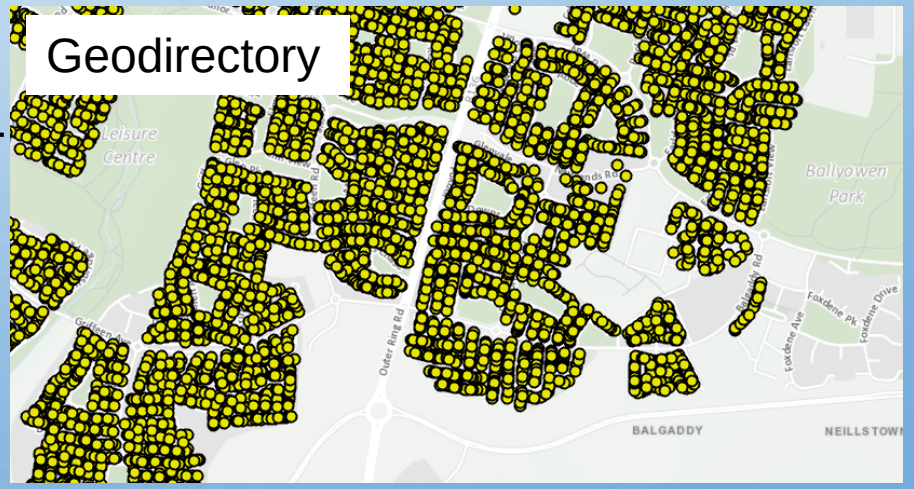
STEP 1 – SOURCE DATA

AERIAL PHOTOGRAPHY GRIFFEEN GN016

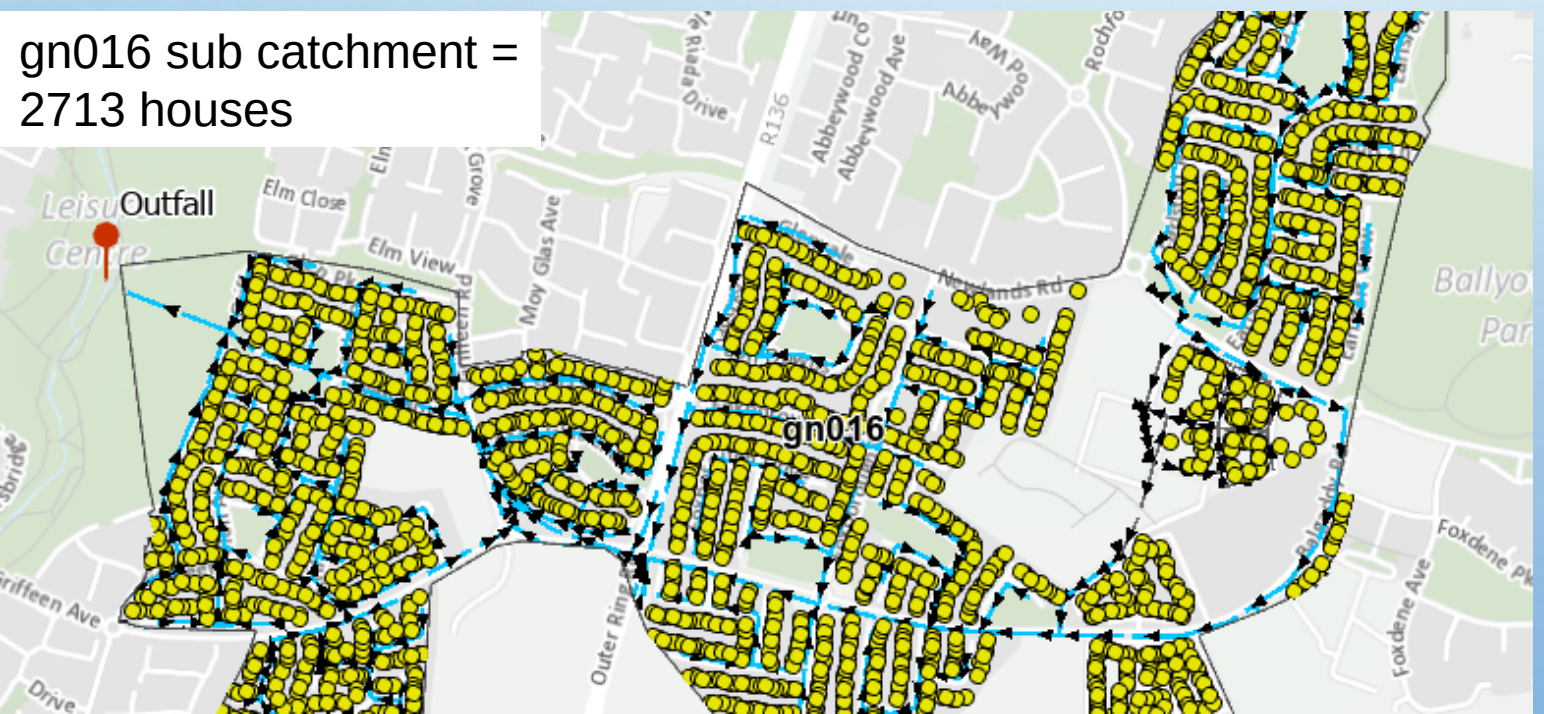
- Recent high res aerial will aid in identifying extensions/outbuildings

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)

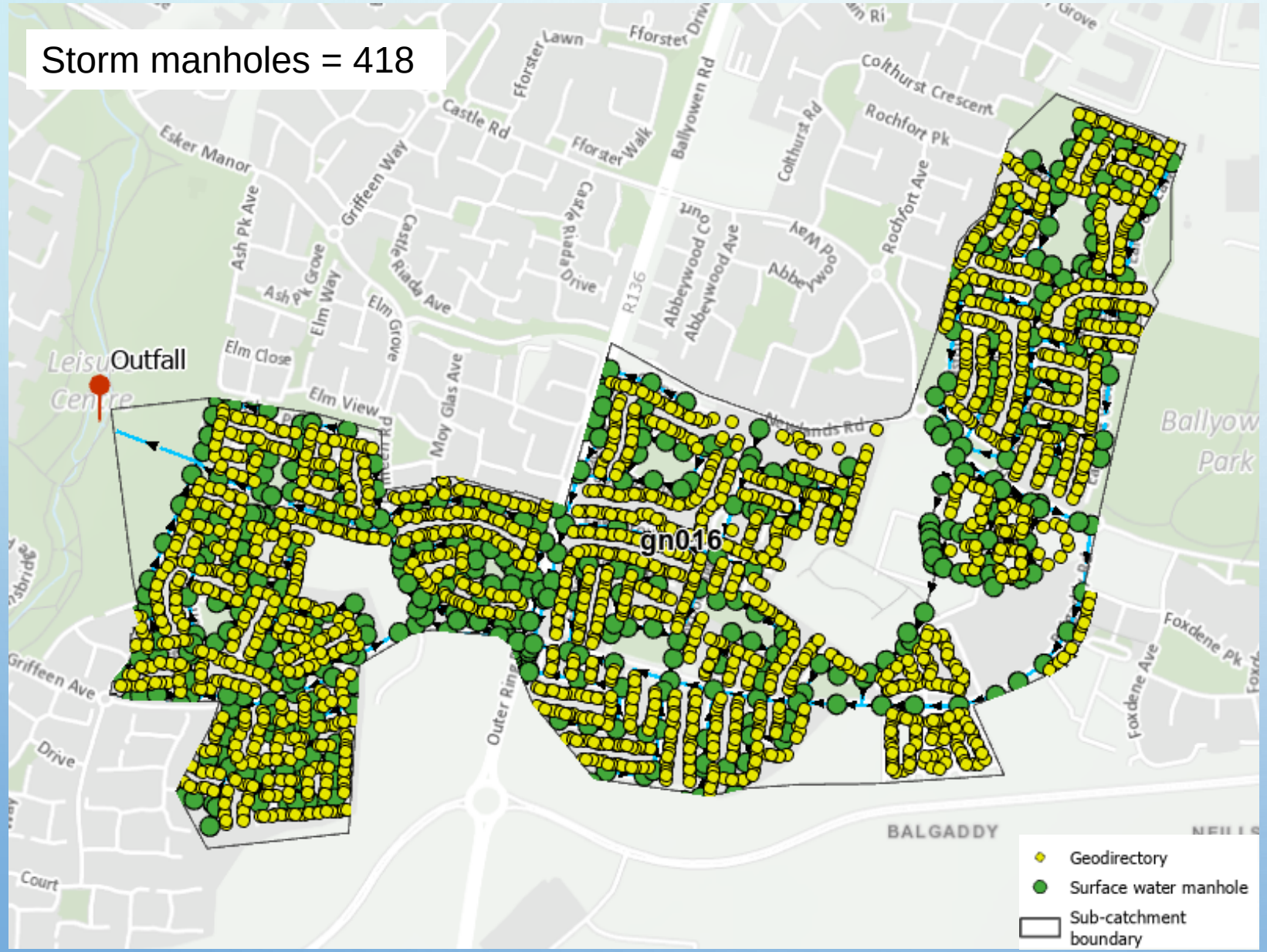


gn016 sub catchment = 2713 houses



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



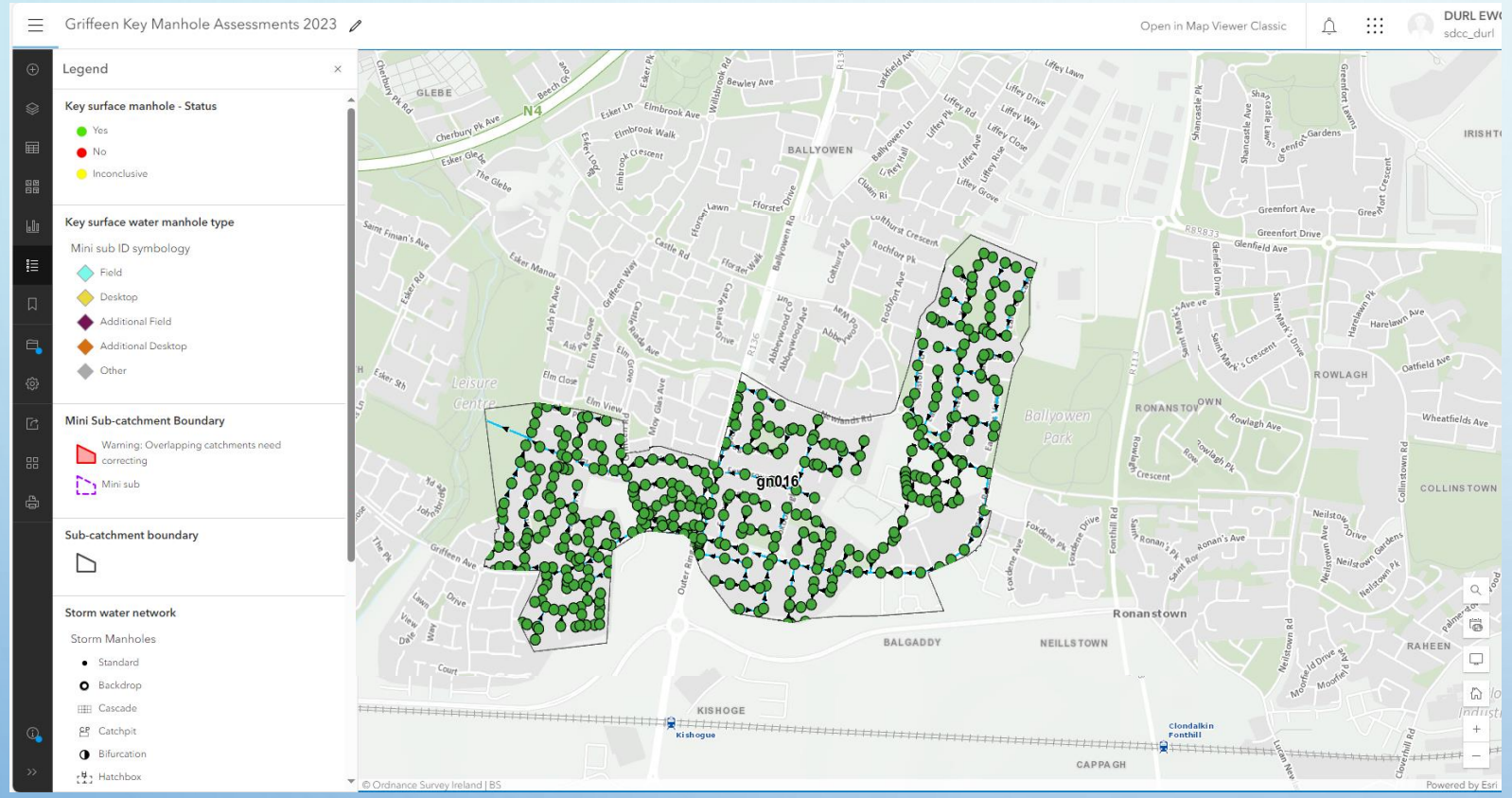
STEP 3 – MANHOLE SCREENING

STORM WATER MANHOLES

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

MINI SUB CATCHMENT BOUNDARY

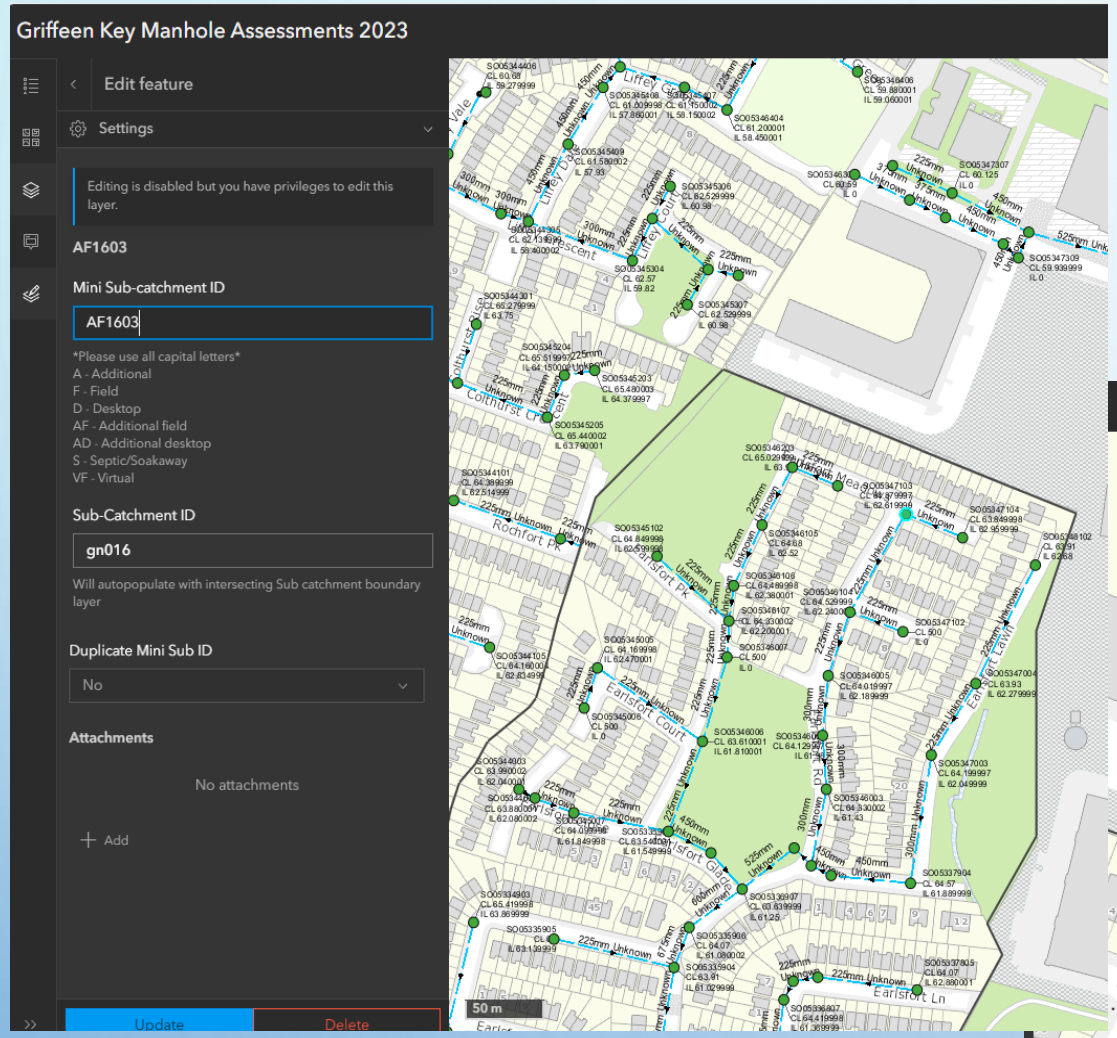
- Links manholes to houses

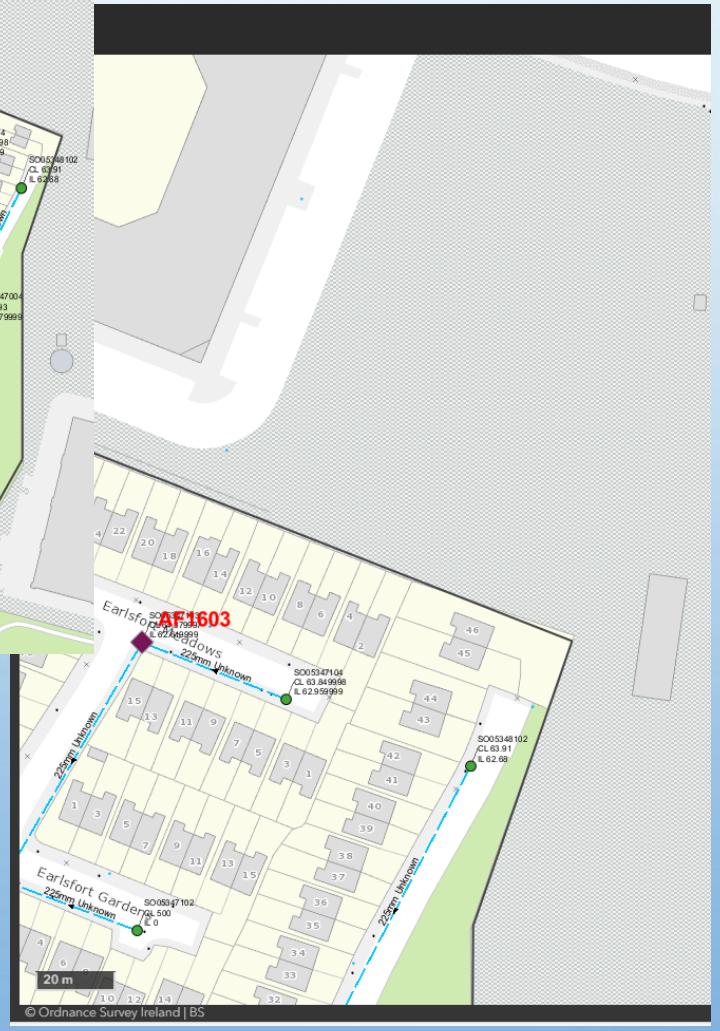


STEP 3 – CREATE MANHOLE SCREENING APP

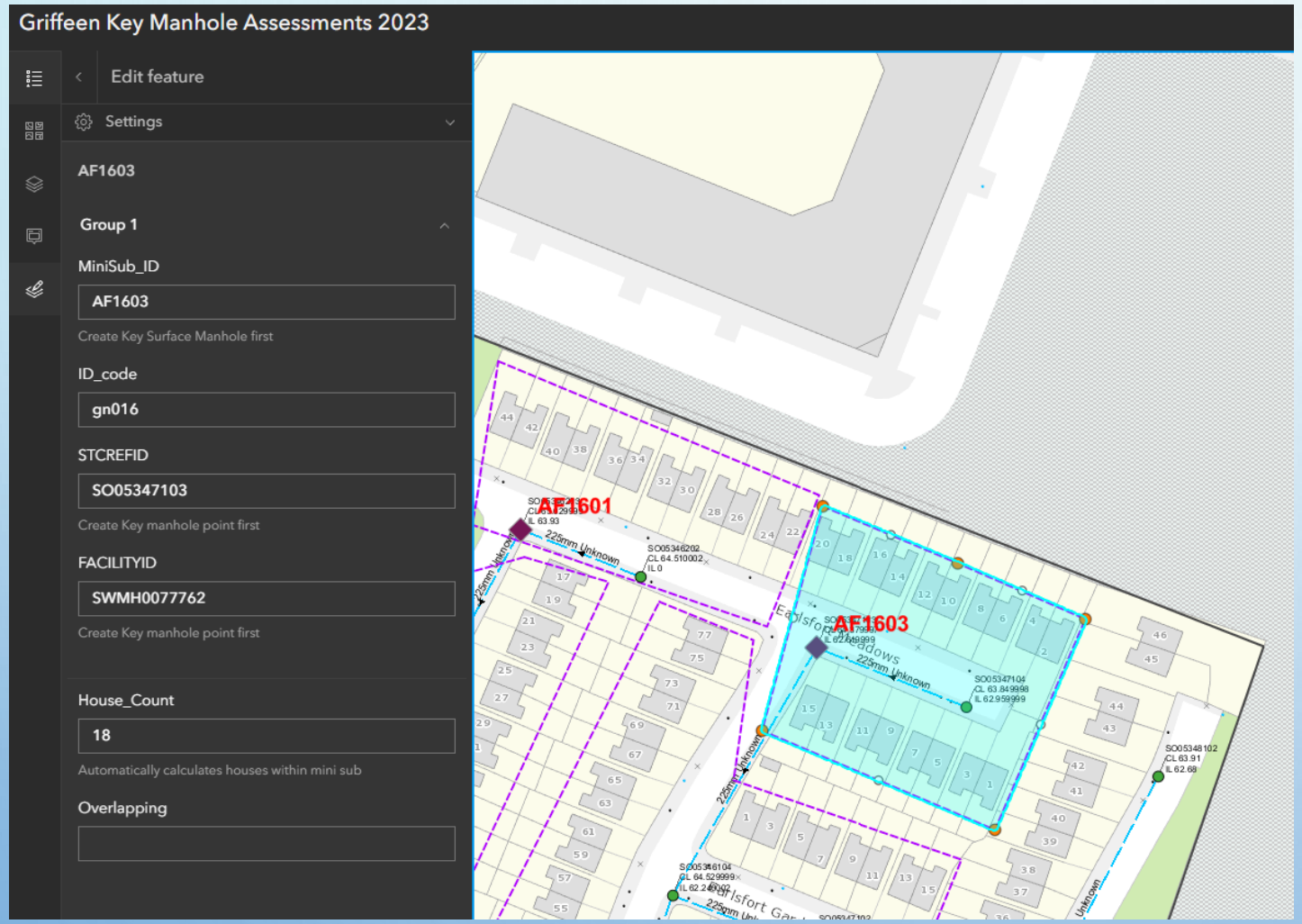
- Publish data to ArcGIS Online
- Using the **Map Viewer** assign symbology and labels
- Create smart forms – used to automate calculations and pull attributes from one layer to another
- Create instant app – 10 clicks

STEP 4 A – IDENTIFYING MANHOLES FOR SCREENING



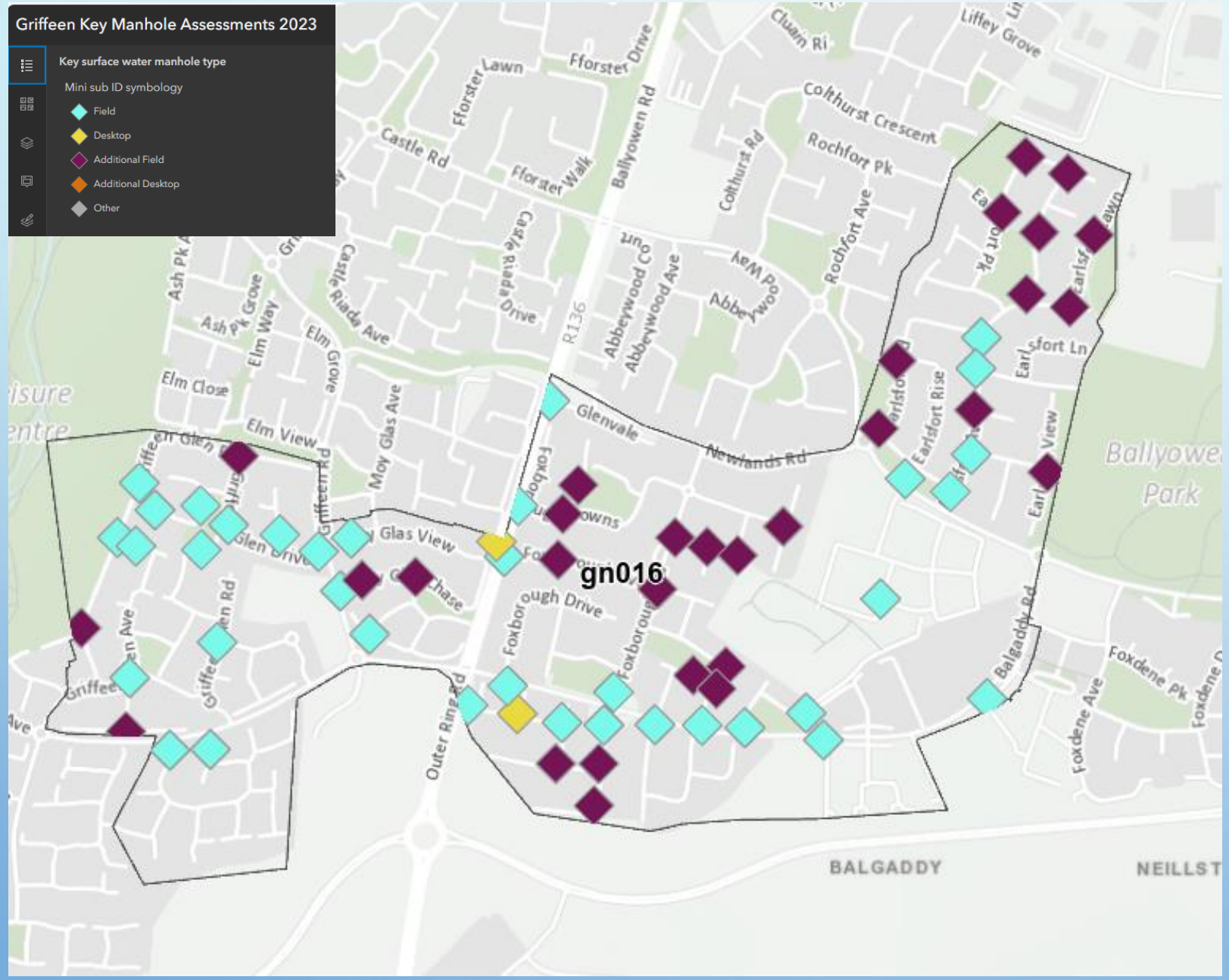


- Manholes chosen at
  - junctions with other pipes
  - on pavements
- Analysed distance from screened manhole to all houses on that line
- Median 100 meters



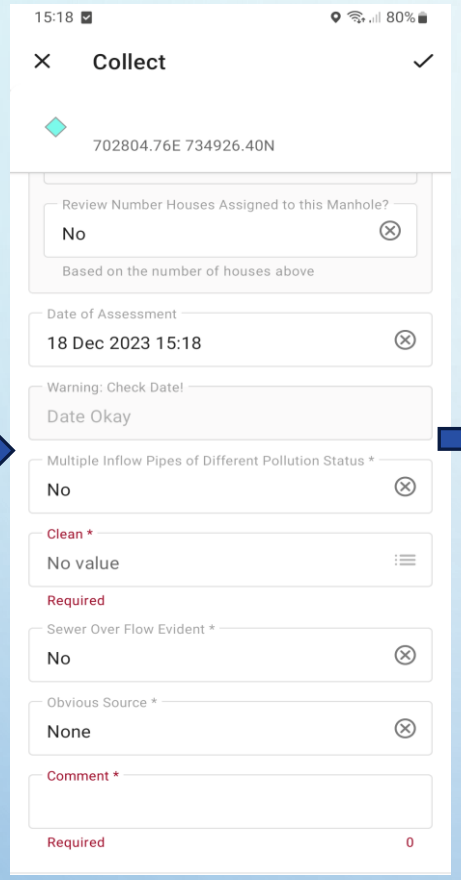
STEP 4 A – IDENTIFYING MANHOLES FOR SCREENING

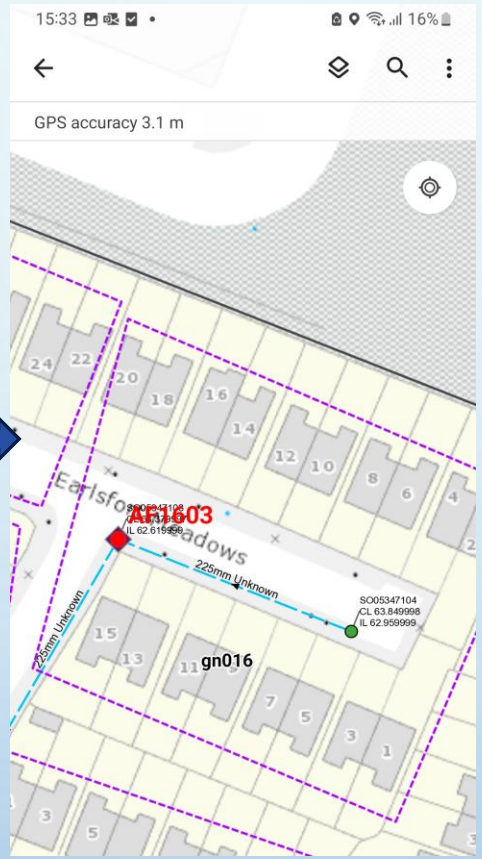
- Create boundaries around the flagged manhole and houses draining to it

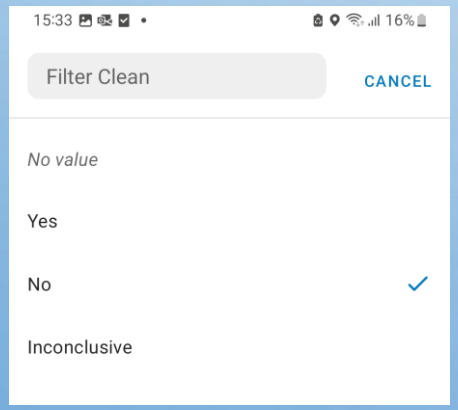


STEP 4 A – IDENTIFYING MANHOLES FOR SCREENING

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

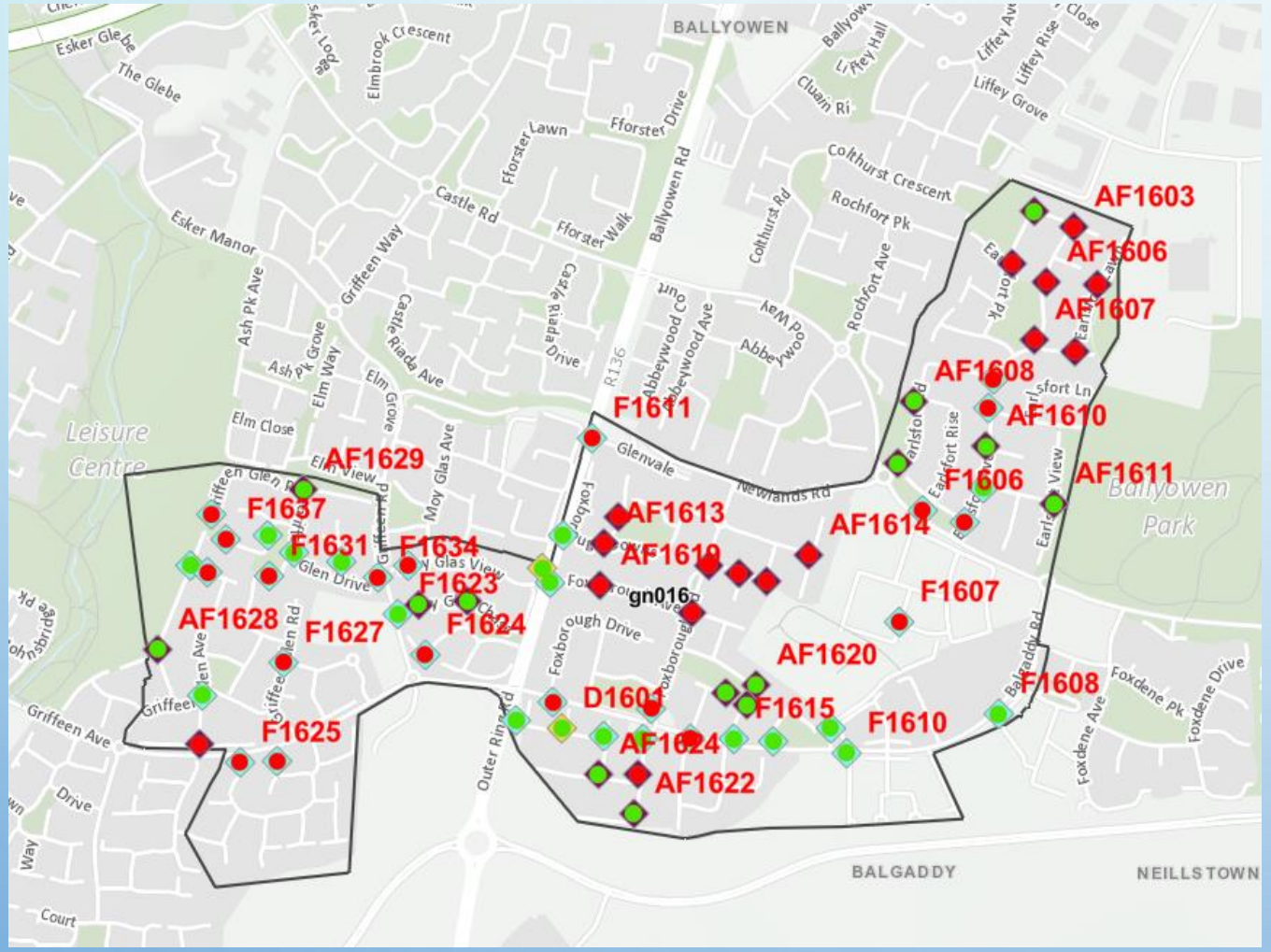






STEP 4 B – SCREENING MANHOLES

- 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

Step 1
- Source Data

Step 2
- Drainage boundaries

Step 3
- Manhole Screening App

Step 4 a
- Identify Manholes for Screening

Step 4 b
- Screen Manholes in the field

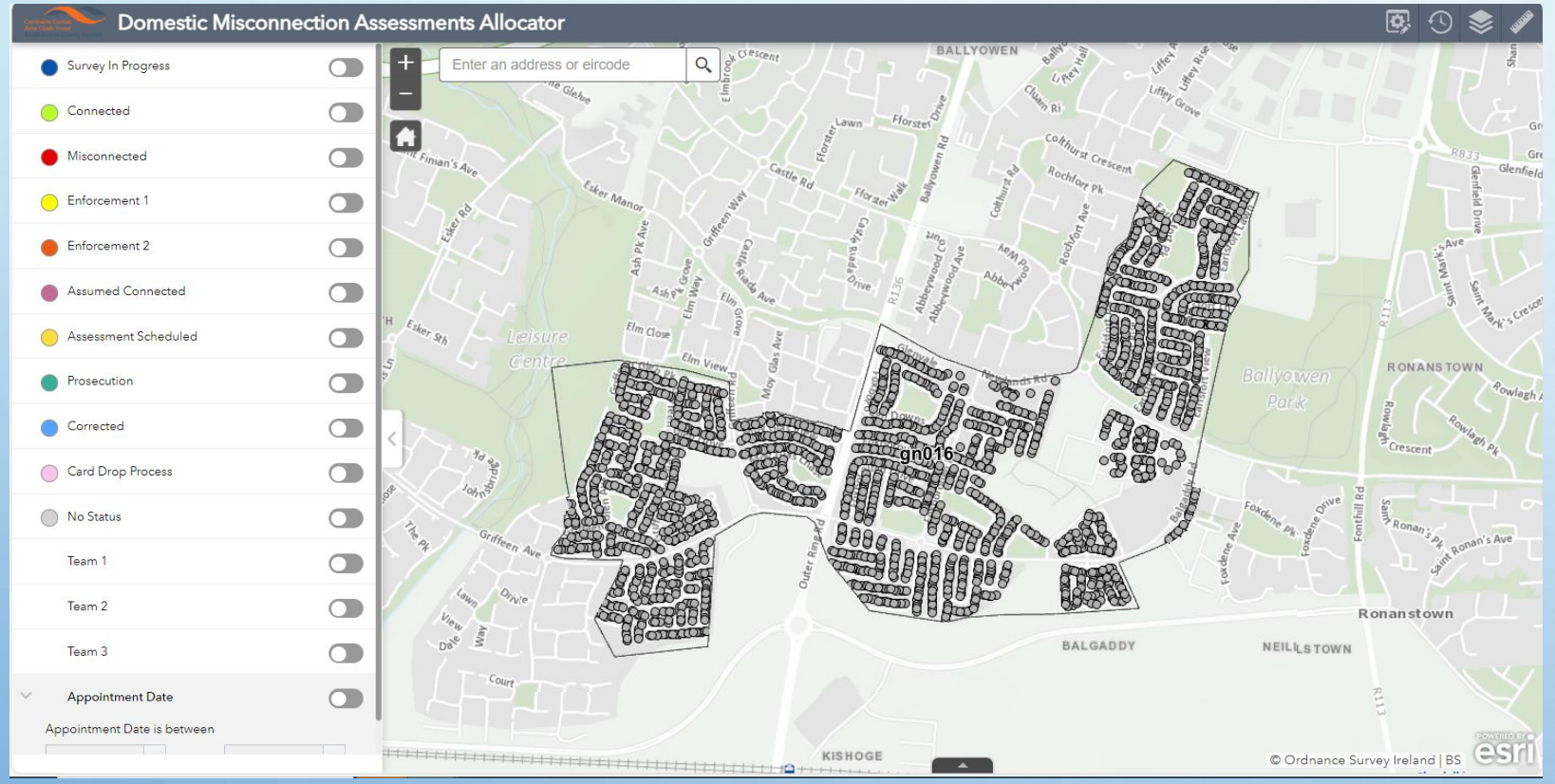
Step 5
- Process manhole screening results

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

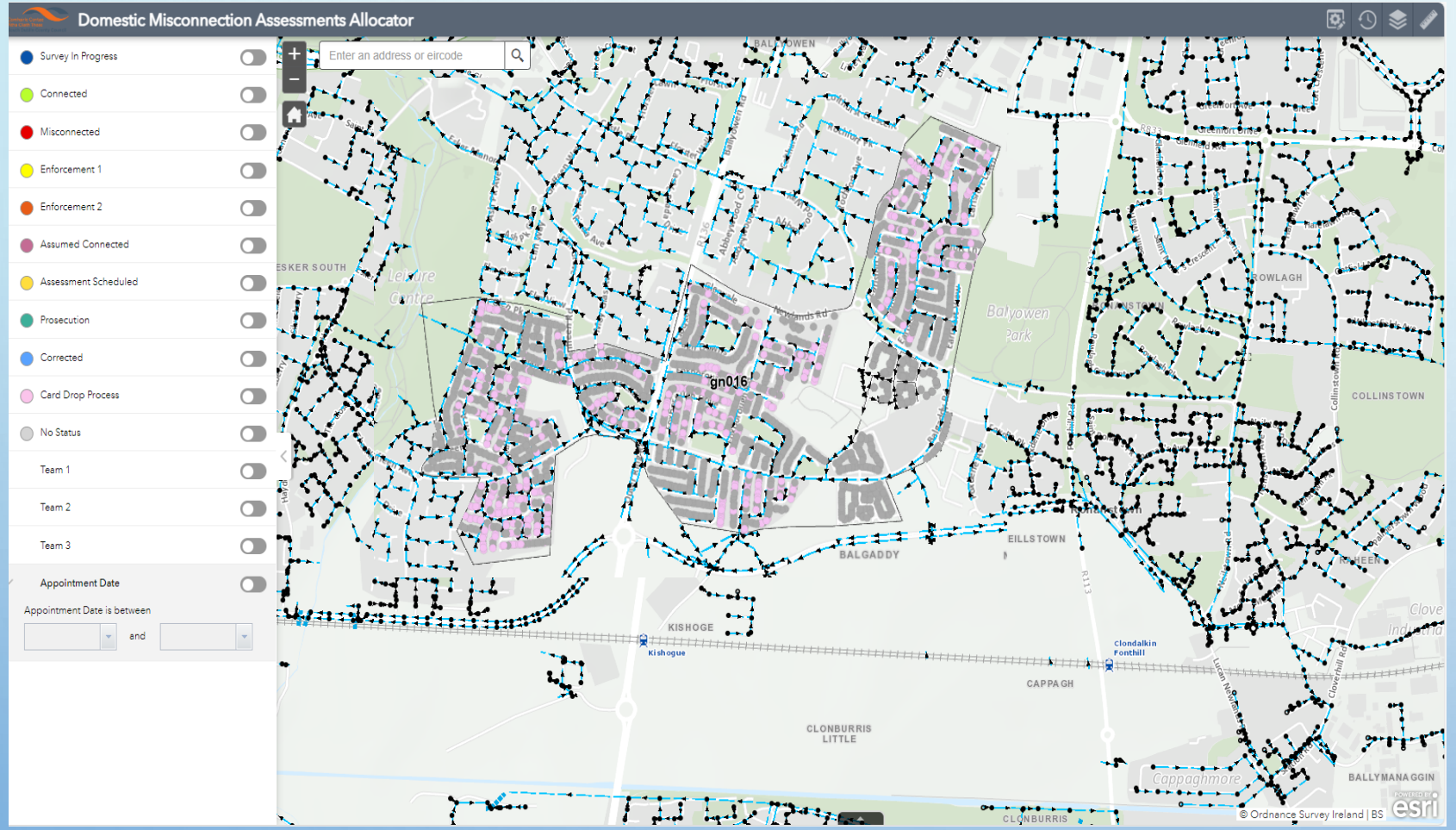
STEP 6 – DOOR TO DOOR ASSESSMENT SURVEY

- 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



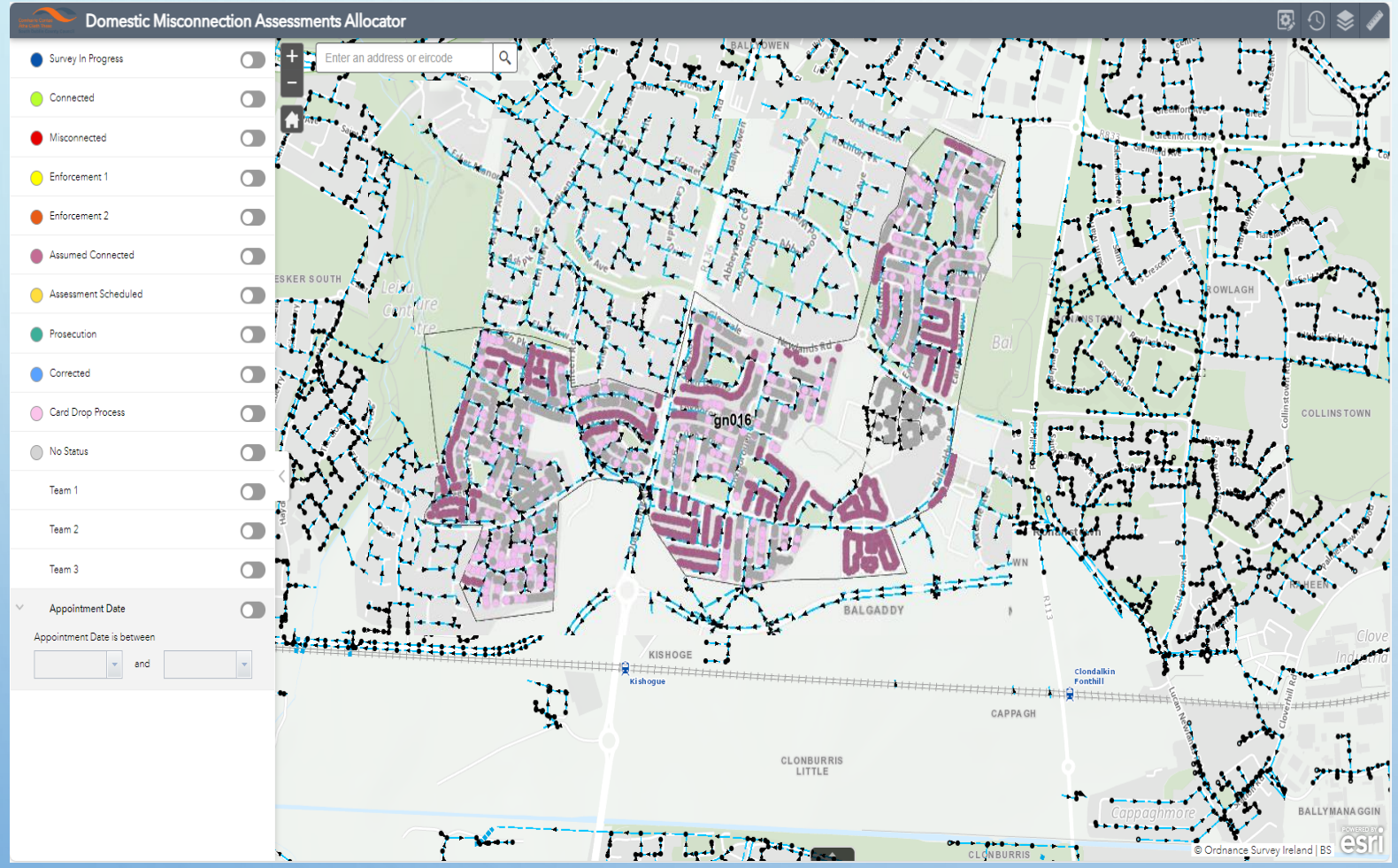
STEP 7 – CREATE ALLOCATOR APP

- 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

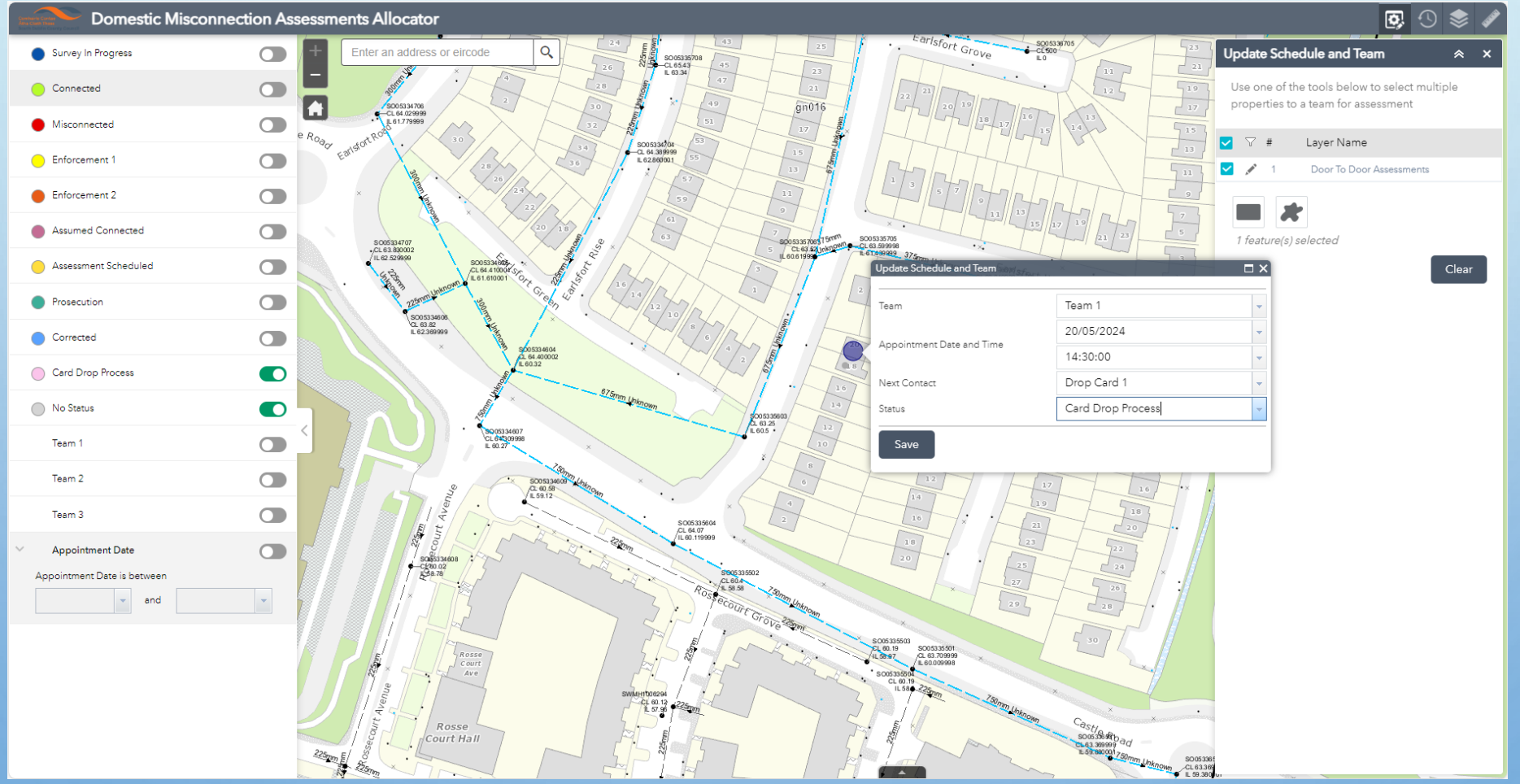


STEP 7 – ALLOCATOR APP

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

STEP 7

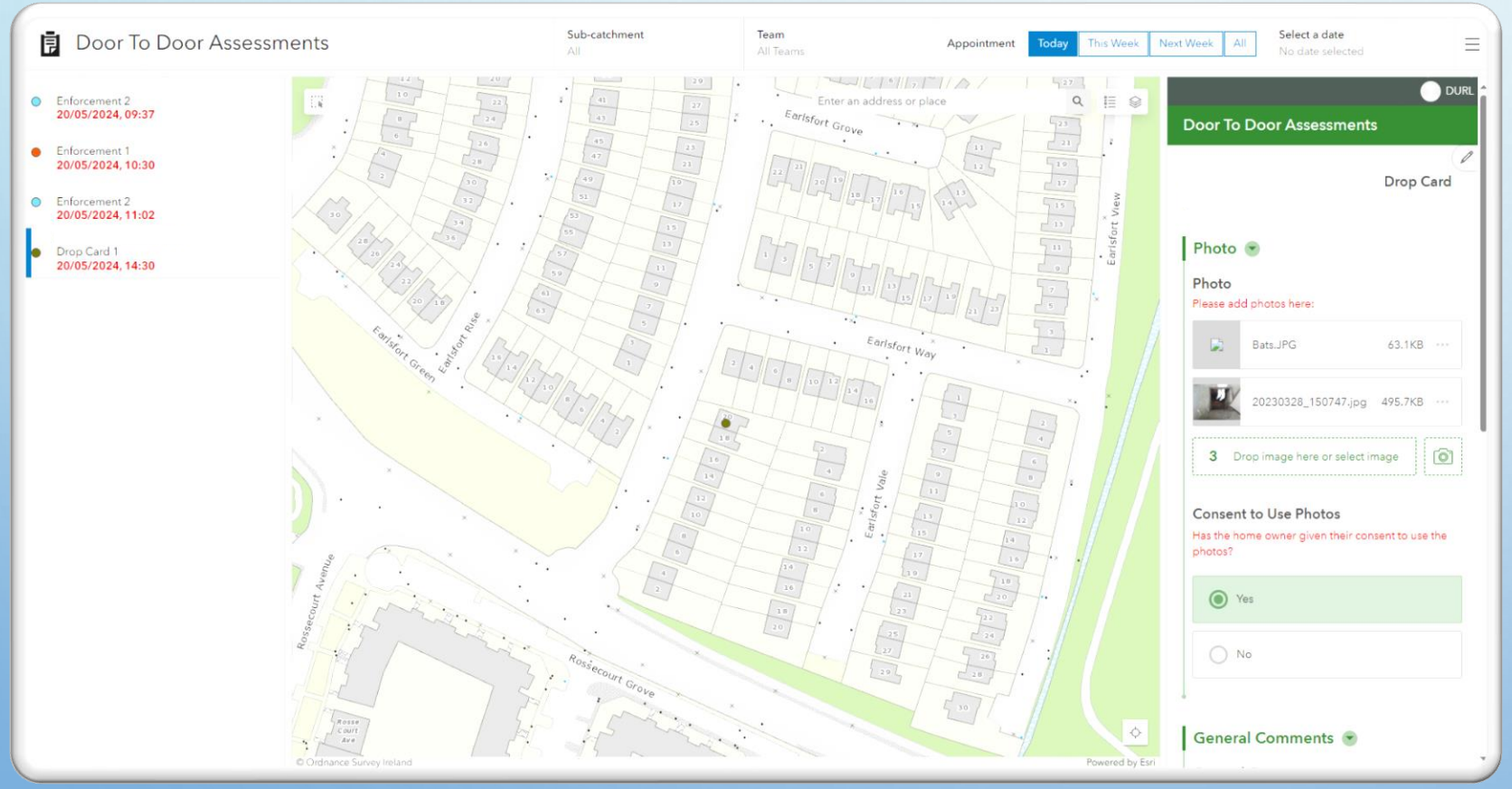
- Use the Allocator app to assign houses to a Team, add an Appointment Date and Time and Next Contact



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



- 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

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Step 5
- Process manhole screening results

WORKED EXAMPLE

Step 6
- Door to Door Assessments Survey

Step 7
- Create Allocator App

Step 7
- Allocate houses to field teams

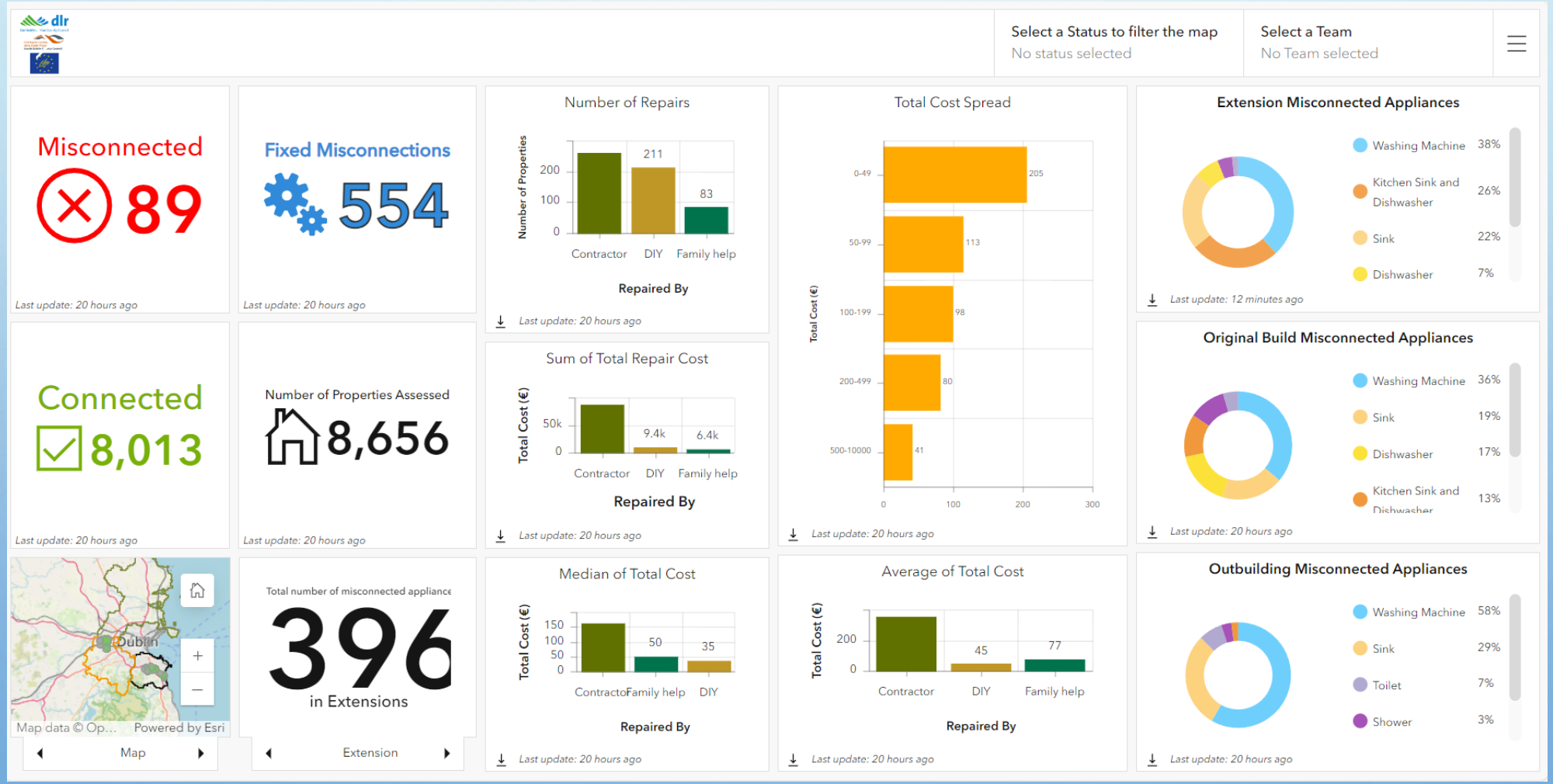
Step 8
- Create Door to Door web map

Step 9
- Create Door to Door App

Step 10
- Follow SOP and download letter templates

REPORTING

DOOR TO DOOR ASSESSMENTS DASHBOARD STAKEHOLDER (ARCGIS.COM)



Thank you