Dataets	Data extraction	Quality control	Hidded data extraction and generation	Data and model preparation	Hydrological modelling	Hydrodynamic modelling	Visualisation

Additional data

Trash screen
Image feed (1 feed, 1hr) → read_trash.py → Machine learning blockage identification

Wind speed
ADD → read_wind.py → Woody debris model

Lidar
Point cloud data → Prepare and upload

Vehicle database
Car dimensions (height, length, weight) database → Prepare and upload → Debris object identification
ADD

Satellite images
ADD → Prepare and upload → Machine learning floating object detection
ADD

National rainfall data

Met Office
C-band composite, processed weather radar data (1km, 5min) → read_met_office.py
ADD

Environment Agency
Tipping bucket rain gauges (13 sensors, 15min) → read_ea.py
ADD

ADD

Local rainfall data

National Green Infrastructure Facility
Tipping bucket rain gauges (1 sensor, 1min)

Citizen Science
Tipping bucket rain gauges (1 sensor, 5min) → read_cs.py → Quality control (INTENSE) → Prepare rainfall data
ADD

Urban Observatory
Tipping bucket rain gauges (11 sensors, 1-60min)
High-resolution X-band weather radar (250m, 1min) → read_uo_radar.py
ADD

Pre-processing

HIPIMS
ADD

Prepare visualisation

ADD

Additional data

Prepare SHETRAN

SHETRAN input files → Prepare and upload
ADD

SHETRAN hotstart

Soil moisture sensors
ADD → read_soil.py → Data assimilation

Temperature sensors → read_temp.py → Data assimilation

Visualisation database
ADD

Visualisations (external)