



10 new things you can now do with MOHID

Bentley Systems @ MOHIDing 2019

Bentley[®]
Advancing Infrastructure



ProjectWise
CONNECT Edition

Design Integration
BIM Review
Bid Management

Construction Management
Advanced Work Packaging
Completions



Connected Data Environment

Connection Center
Components Center

Optioneering Center
iModelHub
ContextShare

365 Services
CONNECT services

Asset Lifecycle Information
Management
Asset Reliability

Operational Analytics
Enterprise
Interoperability



AssetWise
CONNECT Edition

ProjectWise Edge Mobile

ProjectWise Worksite

OpenRoads Navigator Mobile

Mobile Apps

Navigator Mobile

Navigator Web

AssetWise Mobile

Map Mobile

CAMPUSES

- Map
- Descartes
- AECOsim
- RAM
- STAAD
- OpenRoads
- gINT
- SITEOPS
- ContextCapture
- LumenRT
- Haestad
- OpenUtilities
- Communications

MINING

- MineCycle
- OpenPlant
- STAAD
- Promis.e
- Map
- Descartes
- ContextCapture
- OpenRoads
- OpenRail
- gINT
- Haestad

ROADS

- OpenRoads
- OpenBridge Modeler
- LEAP
- RM Bridge
- gINT
- Descartes
- SITEOPS
- ContextCapture
- LumenRT
- Map
- Haestad
- SUPERLOAD

WATER & WASTEWATER

- Haestad
- OpenPlant
- AECOsim
- STAAD
- RAM
- gINT
- OpenUtilities
- OpenRoads
- Descartes
- ContextCapture

BUILDINGS

- AECOsim
- RAM
- STAAD
- ProStructures
- Hvacomp
- speedikon
- gINT
- OpenRoads
- OpenUtilities
- Communications
- Haestad
- ContextCapture
- LumenRT
- Descartes

CITIES

- Map
- Descartes
- OpenRoads
- OpenRail
- OpenUtilities
- Communications
- AECOsim
- ContextCapture
- LumenRT
- SITEOPS
- Electronic Plan Review

SUBSURFACE UTILITIES

- OpenUtilities
- Communications
- Haestad
- OpenRoads
- gINT
- Descartes
- ContextCapture

COMMUNICATIONS NETWORKS

- Communications
- STAAD
- Descartes
- ContextCapture

NUCLEAR POWER

- AutoPIPE
- OpenPlant
- AECOsim
- STAAD
- SITEOPS
- Descartes
- ContextCapture

BRIDGES

- OpenBridge Modeler
- RM Bridge
- LEAP
- OpenRoads
- gINT
- ProStructures
- ContextCapture
- LumenRT
- LARS
- Descartes

POWER PLANTS

- OpenPlant
- AutoPIPE
- Promis.e
- STAAD
- ProStructures
- AECOsim
- gINT
- Descartes
- ContextCapture
- OpenRoads
- Descartes
- ConstructSim

PROCESS PLANTS

- OpenPlant
- AutoPLANT
- AutoPIPE
- PlantWise
- Promis.e
- AECOsim
- ProStructures
- STAAD
- gINT
- OpenRoads
- SITEOPS
- ContextCapture
- LumenRT
- Descartes
- ConstructSim

RAIL & TRANSIT

- OpenRail
- OpenBridge Modeler
- RM Bridge
- LEAP
- gINT
- Promis.e
- SITEOPS
- ContextCapture
- Descartes
- LumenRT
- Map
- AECOsim
- STAAD
- RAM
- ComplyPro
- Substation

WIND FARMS

- SACS
- MOSES
- MAXSURF
- AutoPIPE
- ProSteel
- ConstructSim
- OpenPlant
- gINT
- ContextCapture
- Descartes

OFFSHORE STRUCTURES

- SACS
- MOSES
- MAXSURF
- AutoPIPE
- ProSteel
- ConstructSim
- OpenPlant
- gINT
- ContextCapture
- ConstructSim

UTILITY NETWORKS

- OpenUtilities
- Communications
- Substation
- Haestad
- STAAD
- Descartes
- SITEOPS
- ContextCapture
- LumenRT
- InspectTech

CONSTRUCTION

- Navigator
- ConstructSim
- ProStructures
- AECOsim
- Descartes
- OpenRoads
- SITEOPS
- ContextCapture
- LumenRT

**BENTLEY'S
APPLICATION
PLAYBOOKS**

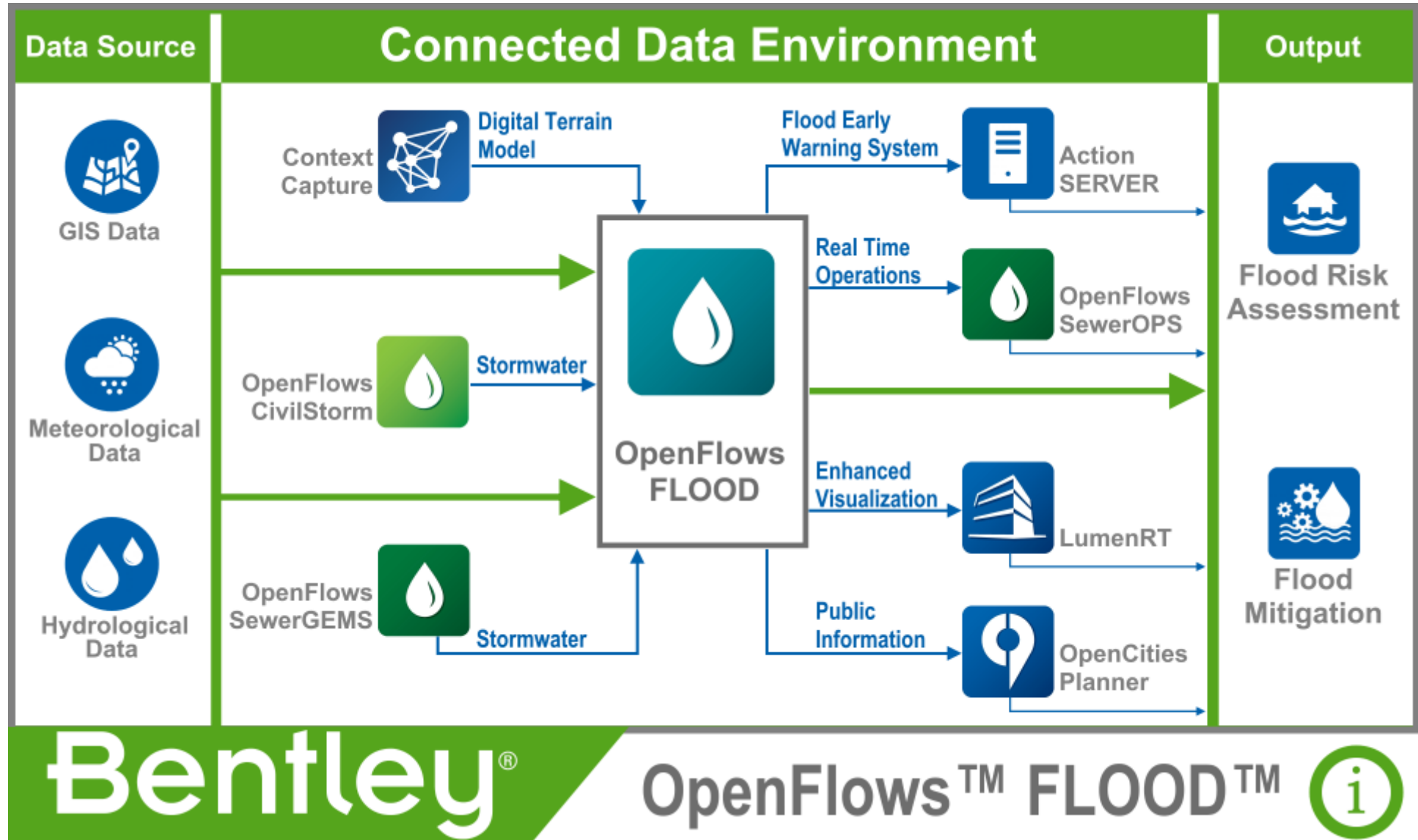


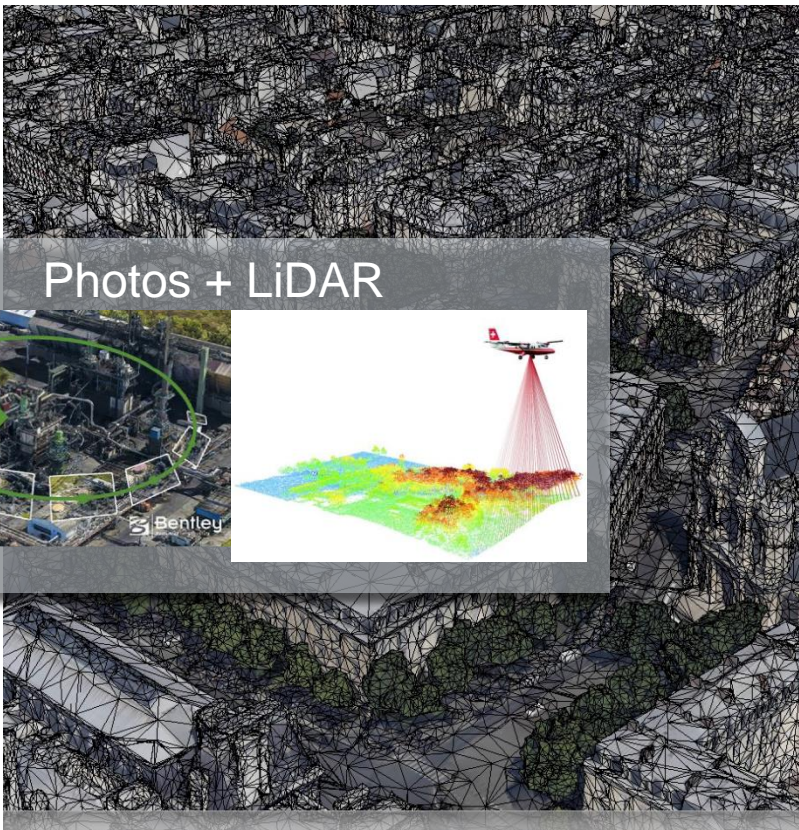
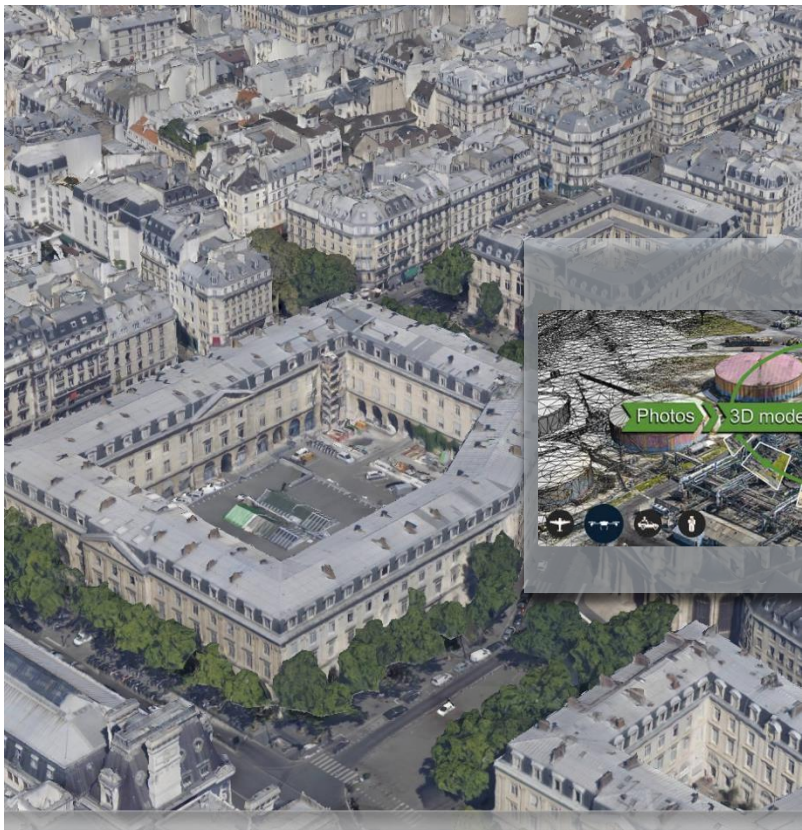
MicroStation
CONNECT Edition

Bentley

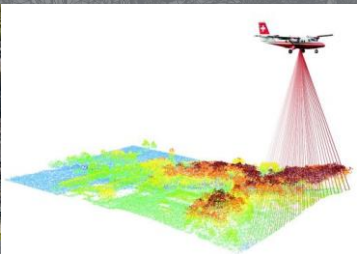
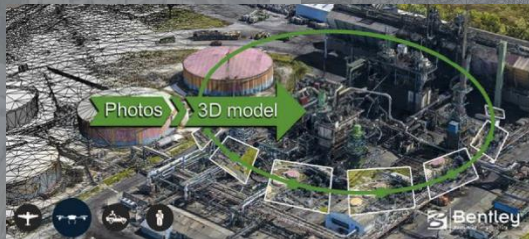
Bentley's OpenFlows™ FLOOD™



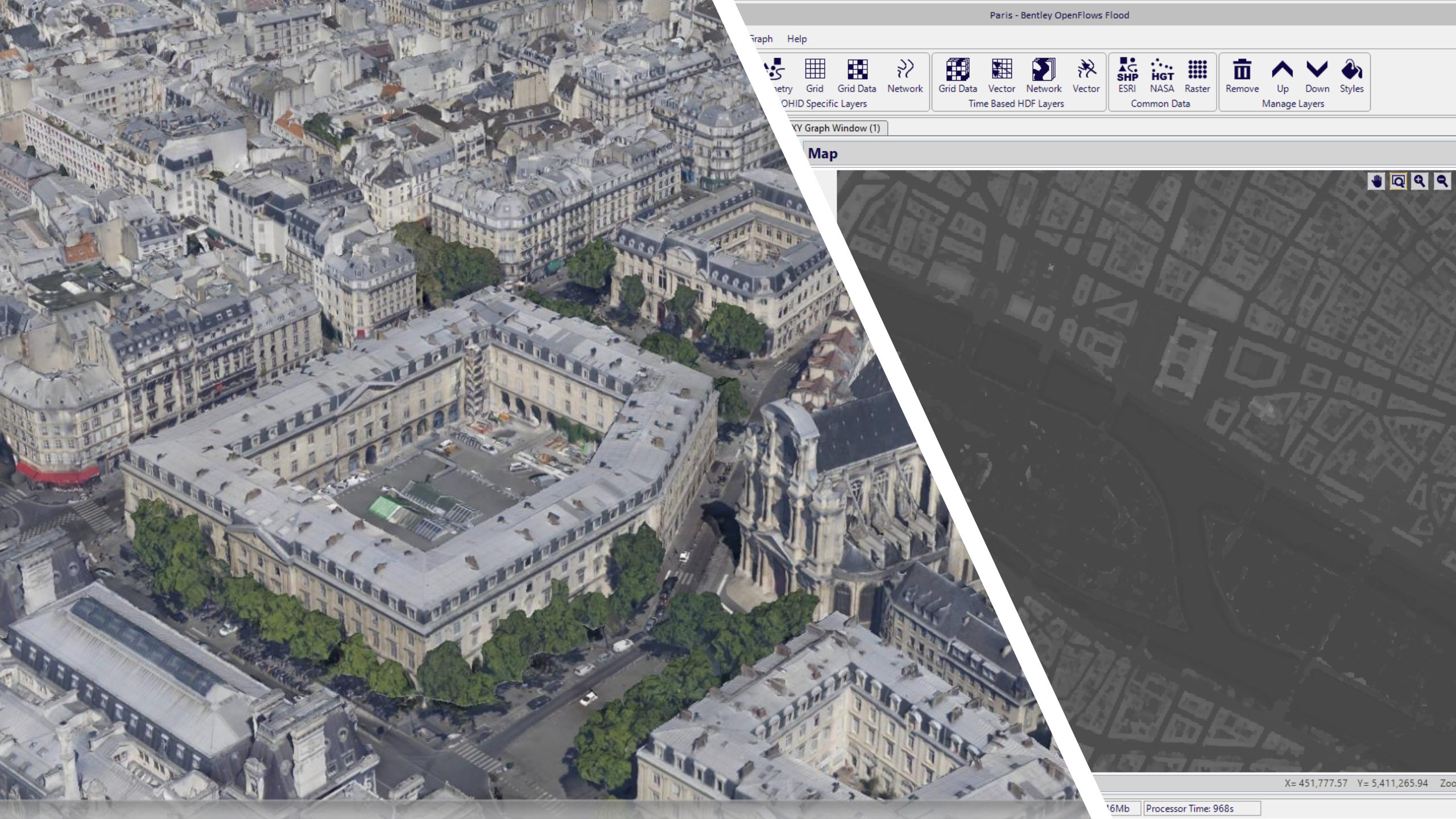




Photos + LiDAR



ContextCapture | 3D mesh model



Geometry

Grid

Grid Data

Network

OHID Specific Layers

Grid Data

Vector

Network

Vector

Time Based HDF Layers

ESRI SHP

NASA HGT

Raster

Common Data

Remove

Up

Down

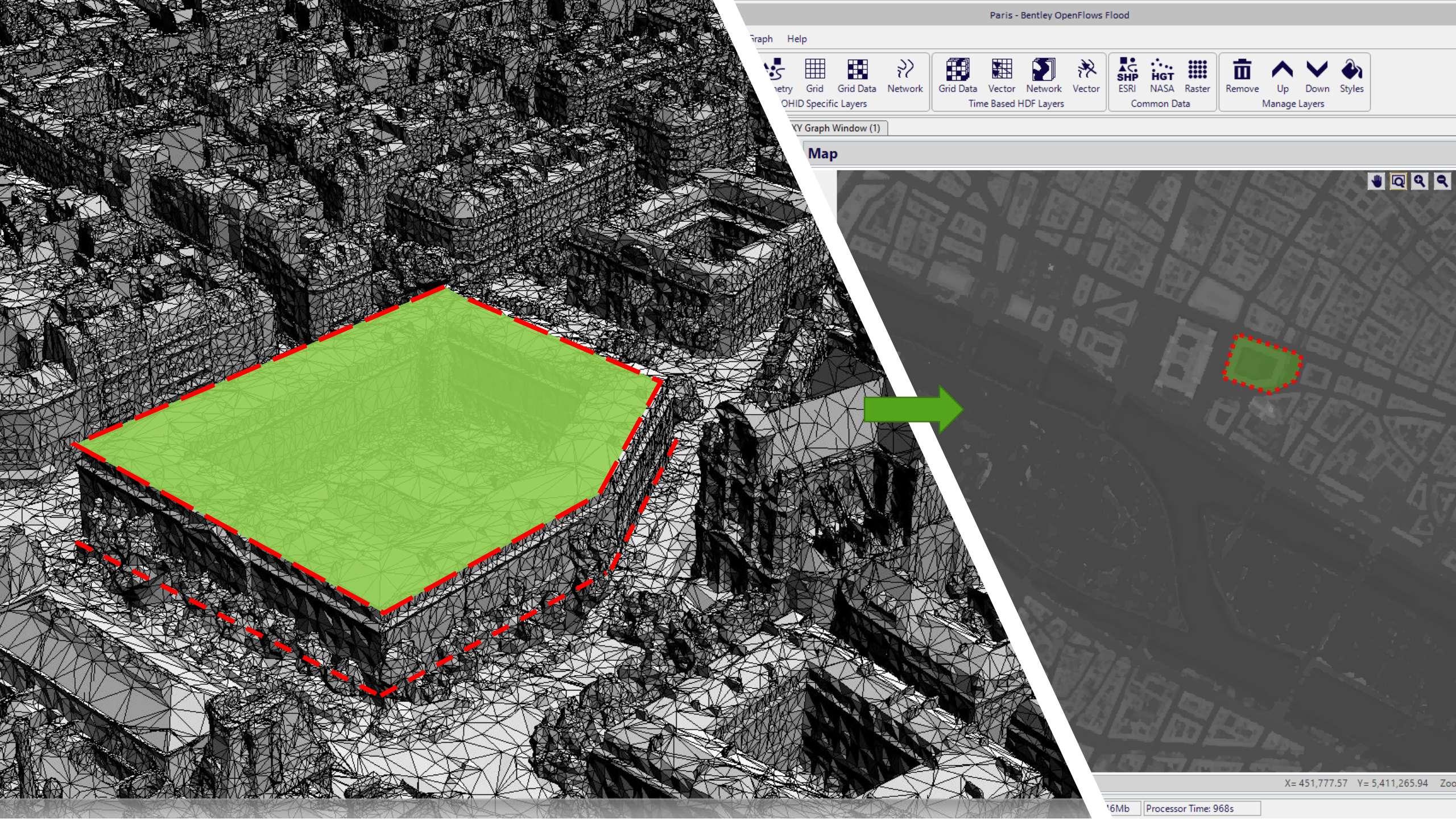
Styles

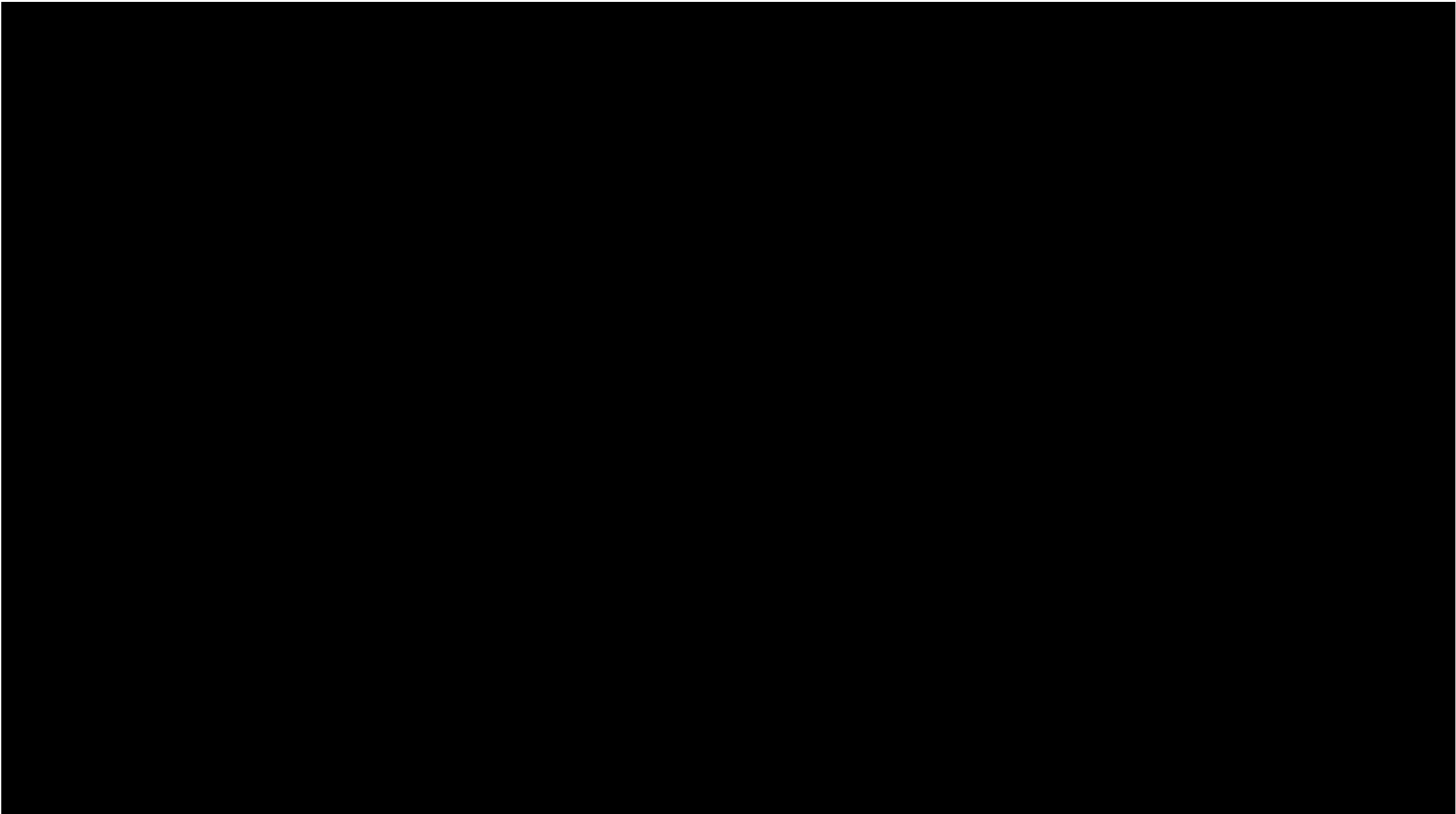
Manage Layers

XY Graph Window (1)

Map



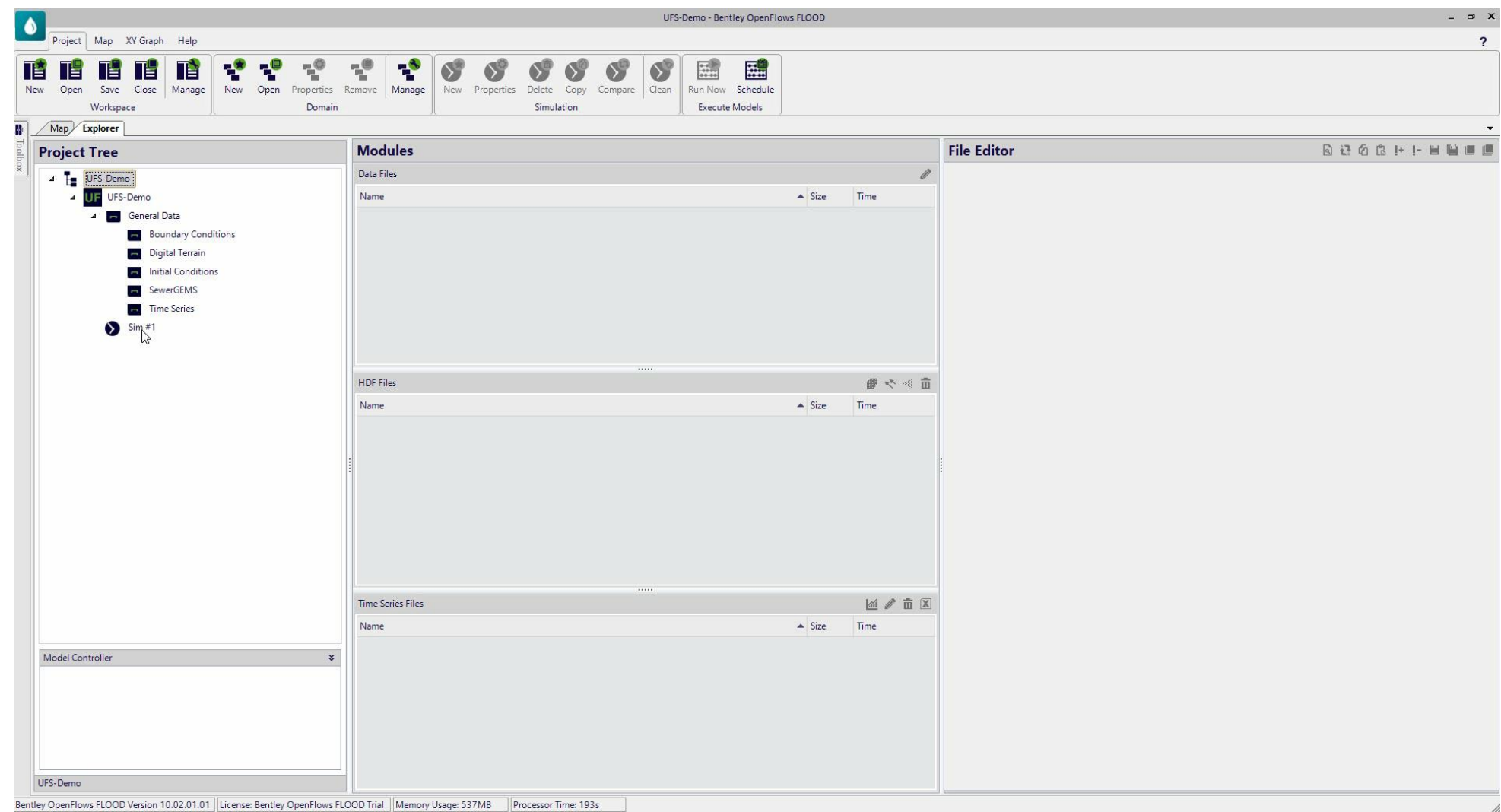








Bentley's OpenFlows FLOOD – SewerGEMS/CivilStorm



10 new things you can now do with MOHID

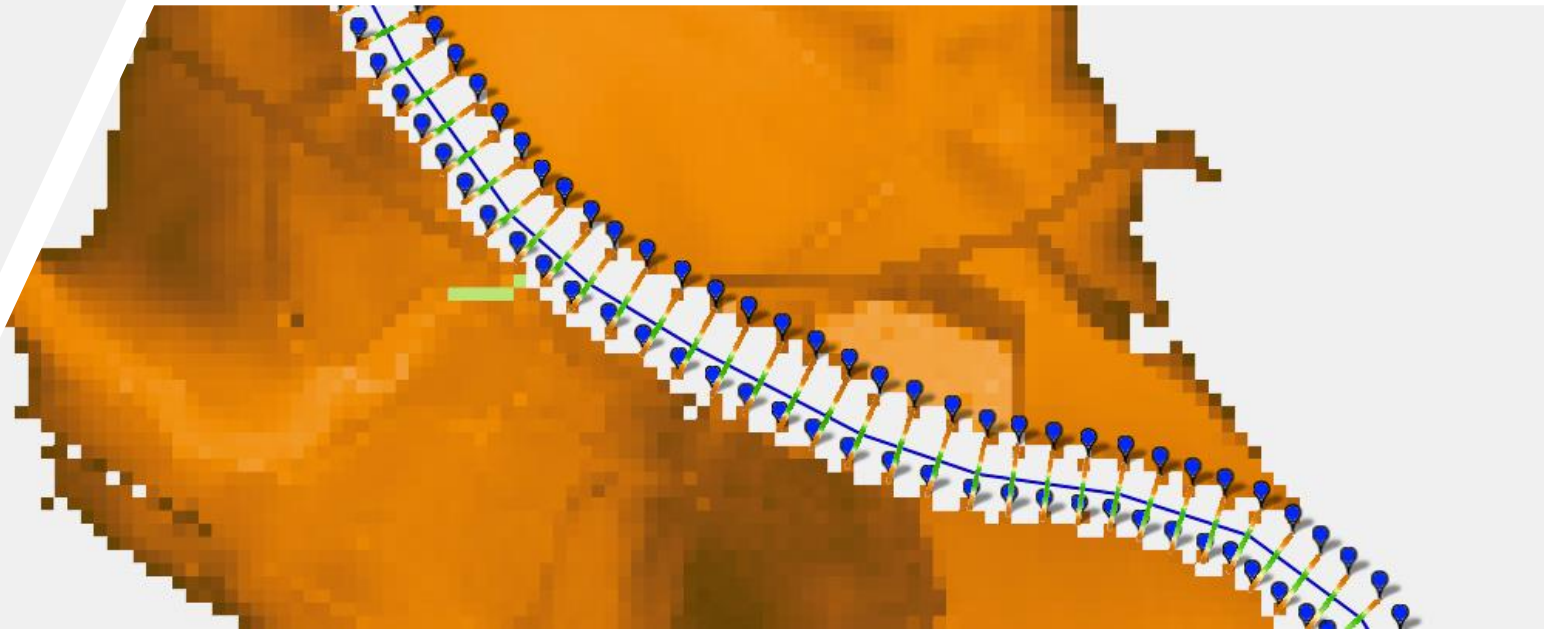
1

1D network does not need to be contained inside 2D domain

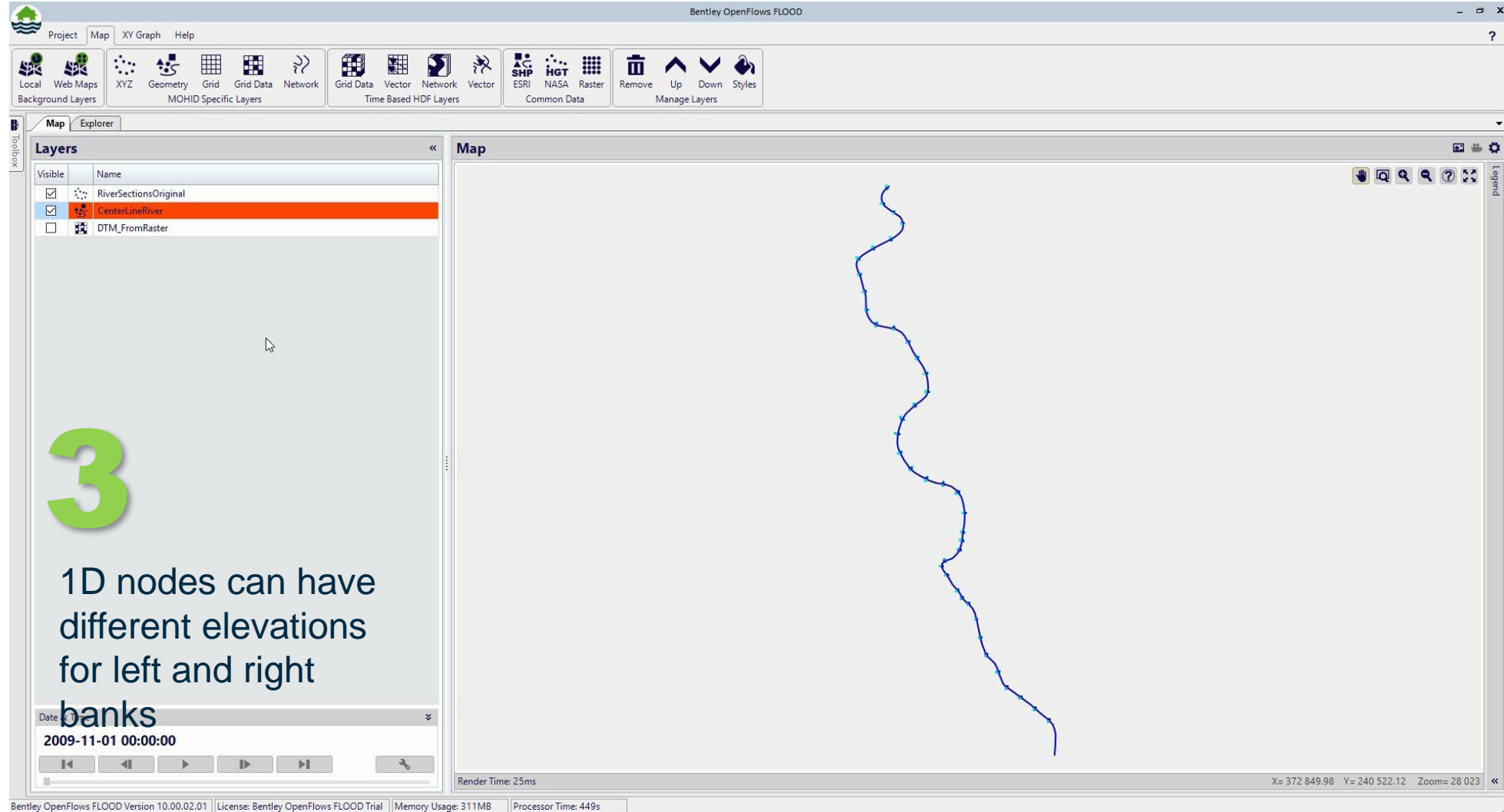


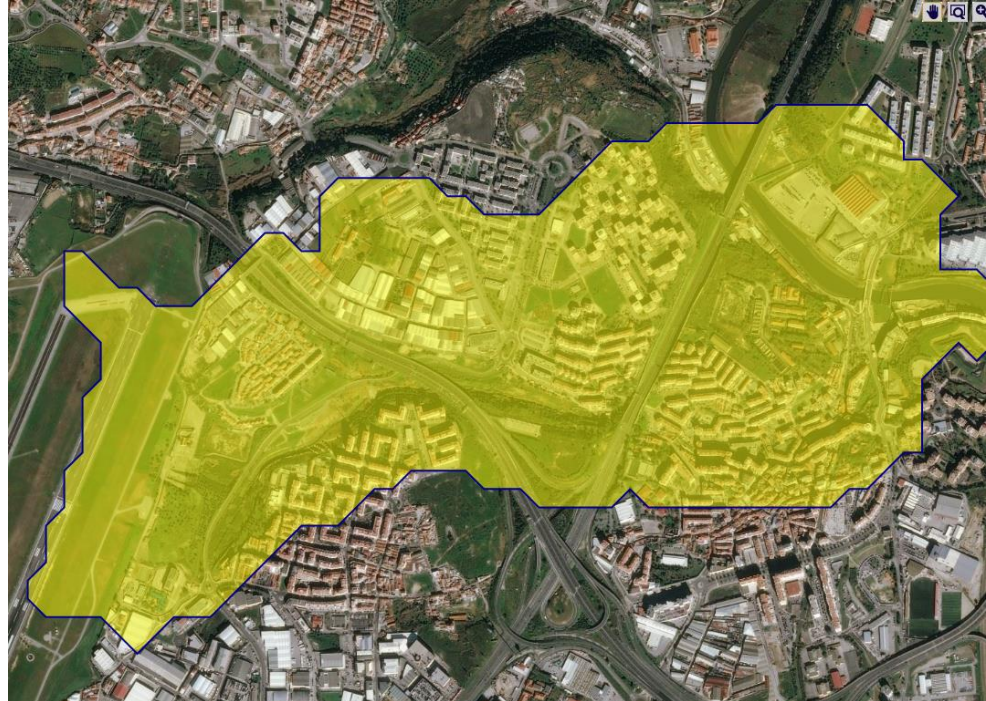
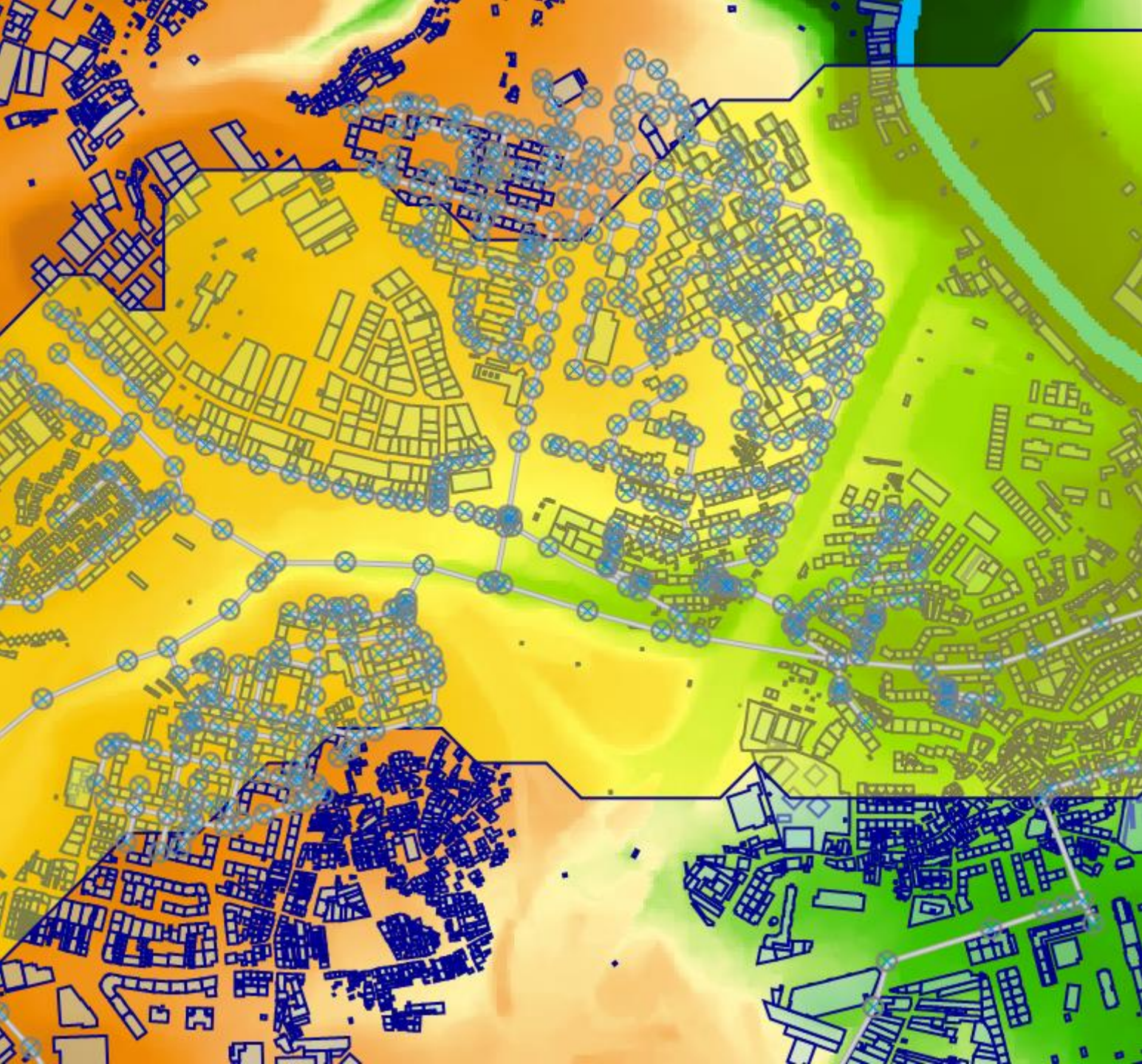
2

Not all 2D cells intersected by 1D network needs to have a 1D node

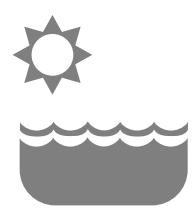


Bentley OpenFlows FLOOD – 1D river/2D floodplain





Culvert



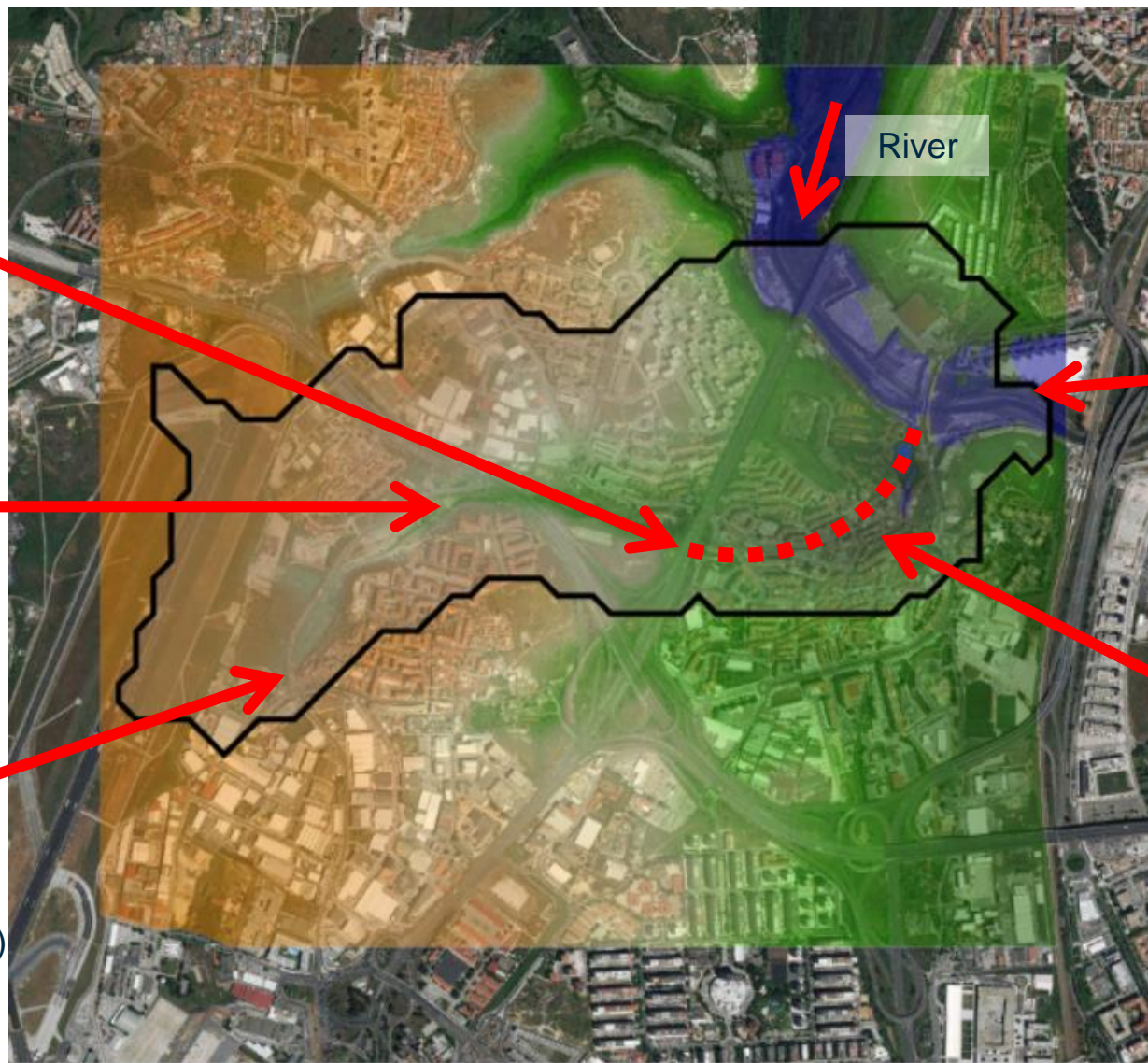
Pond



Culvert



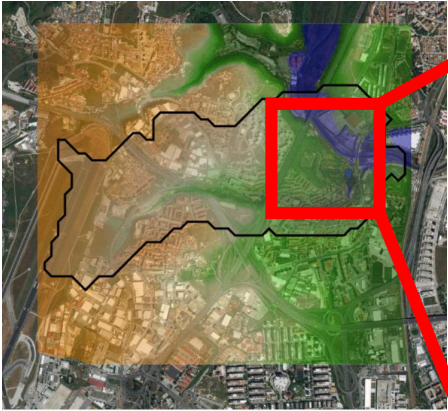
Culvert (conduit under the airport)

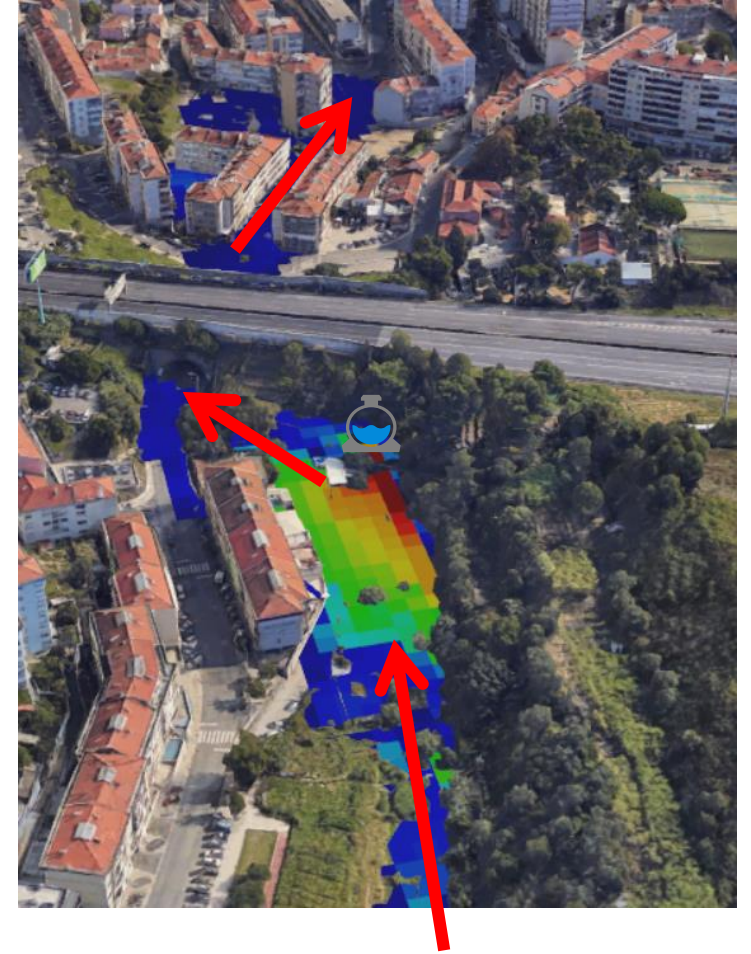
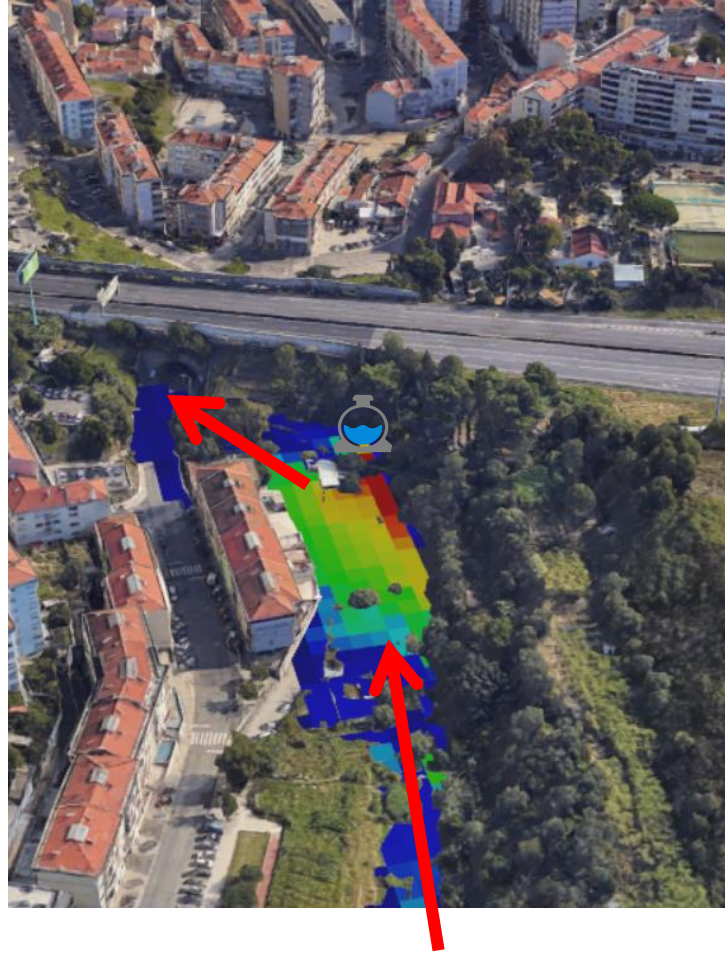
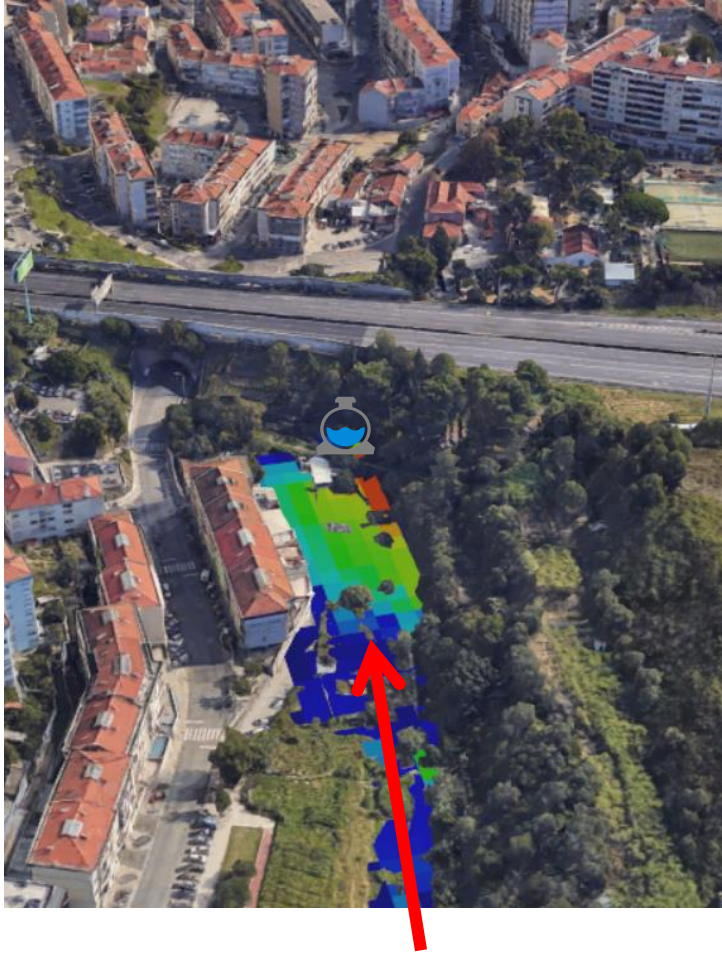


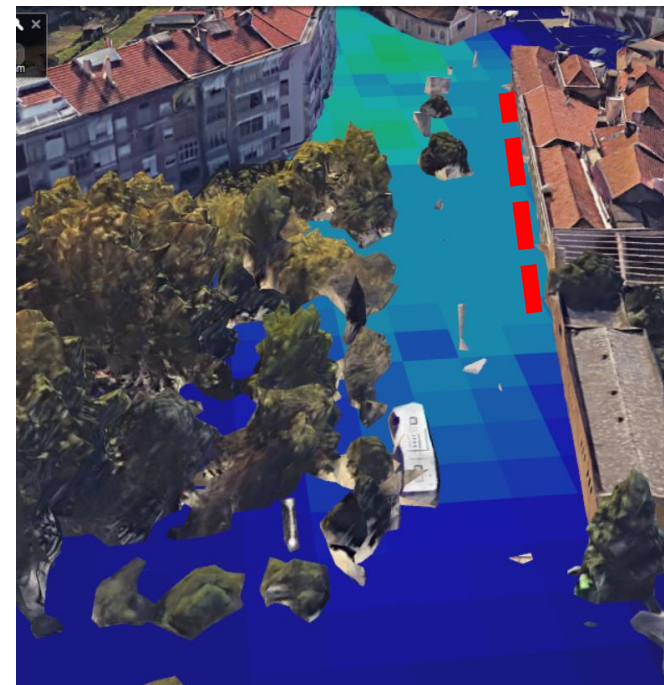
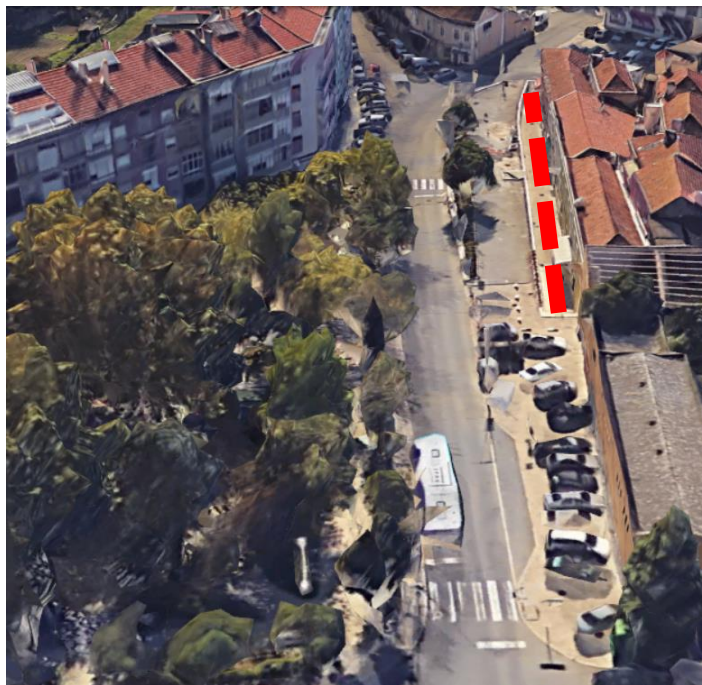
River

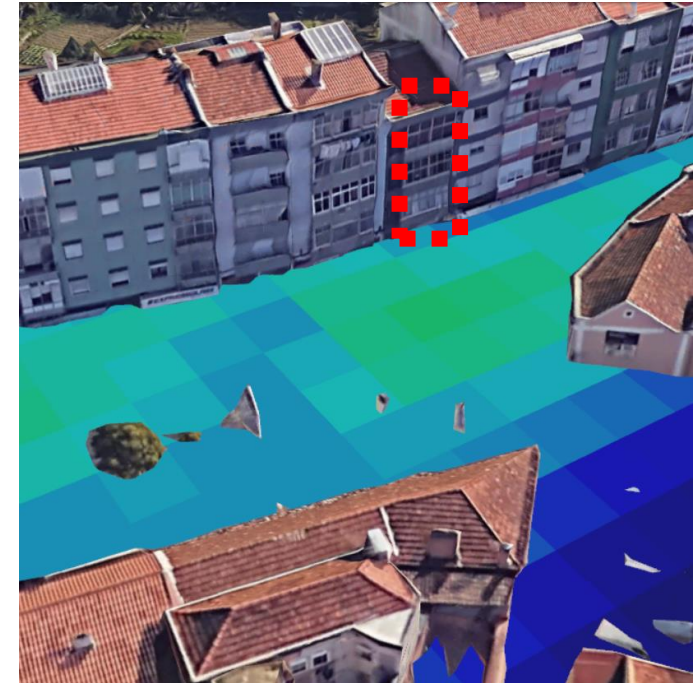
Tide (Estuary)

Underground conduit

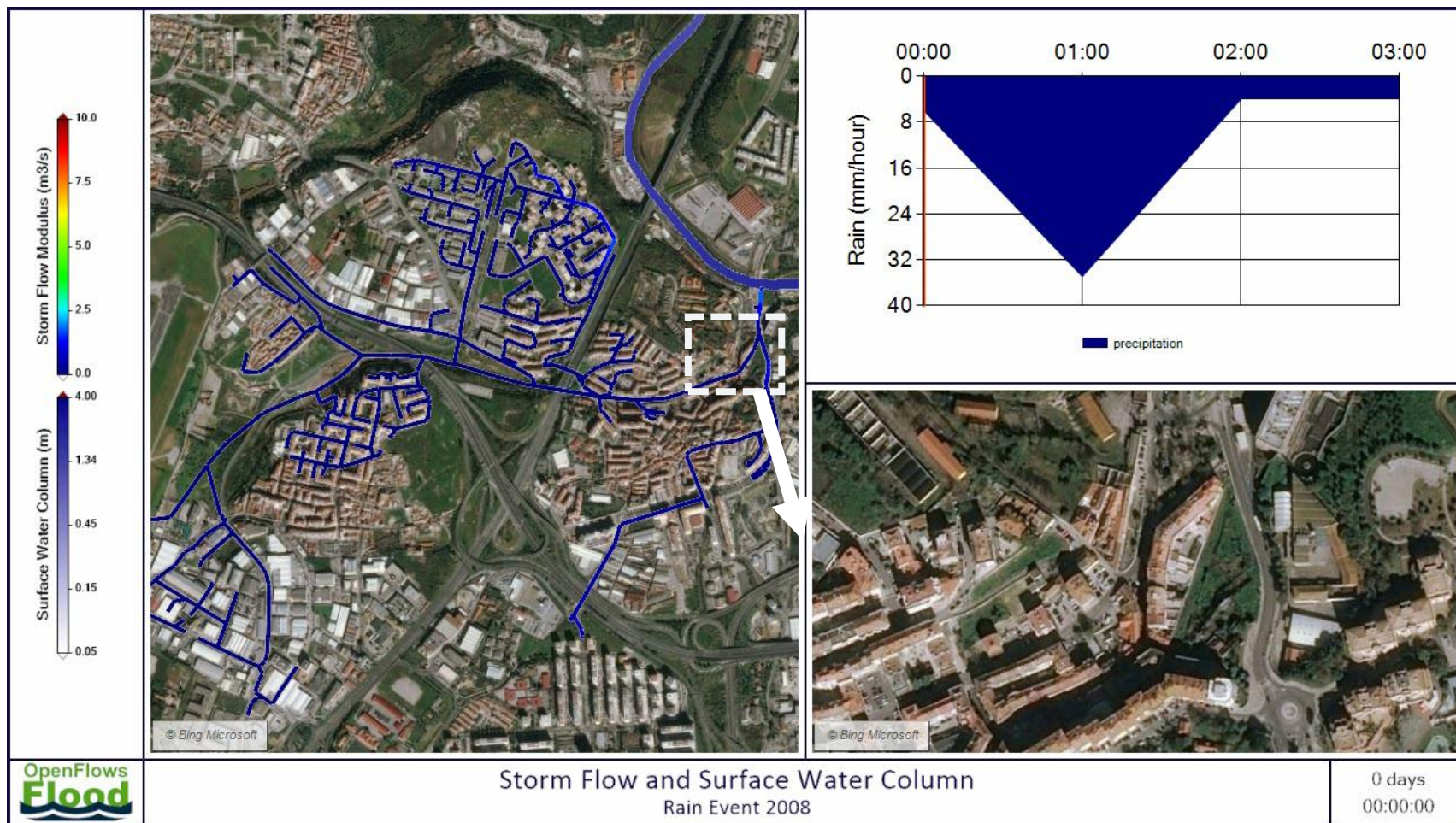


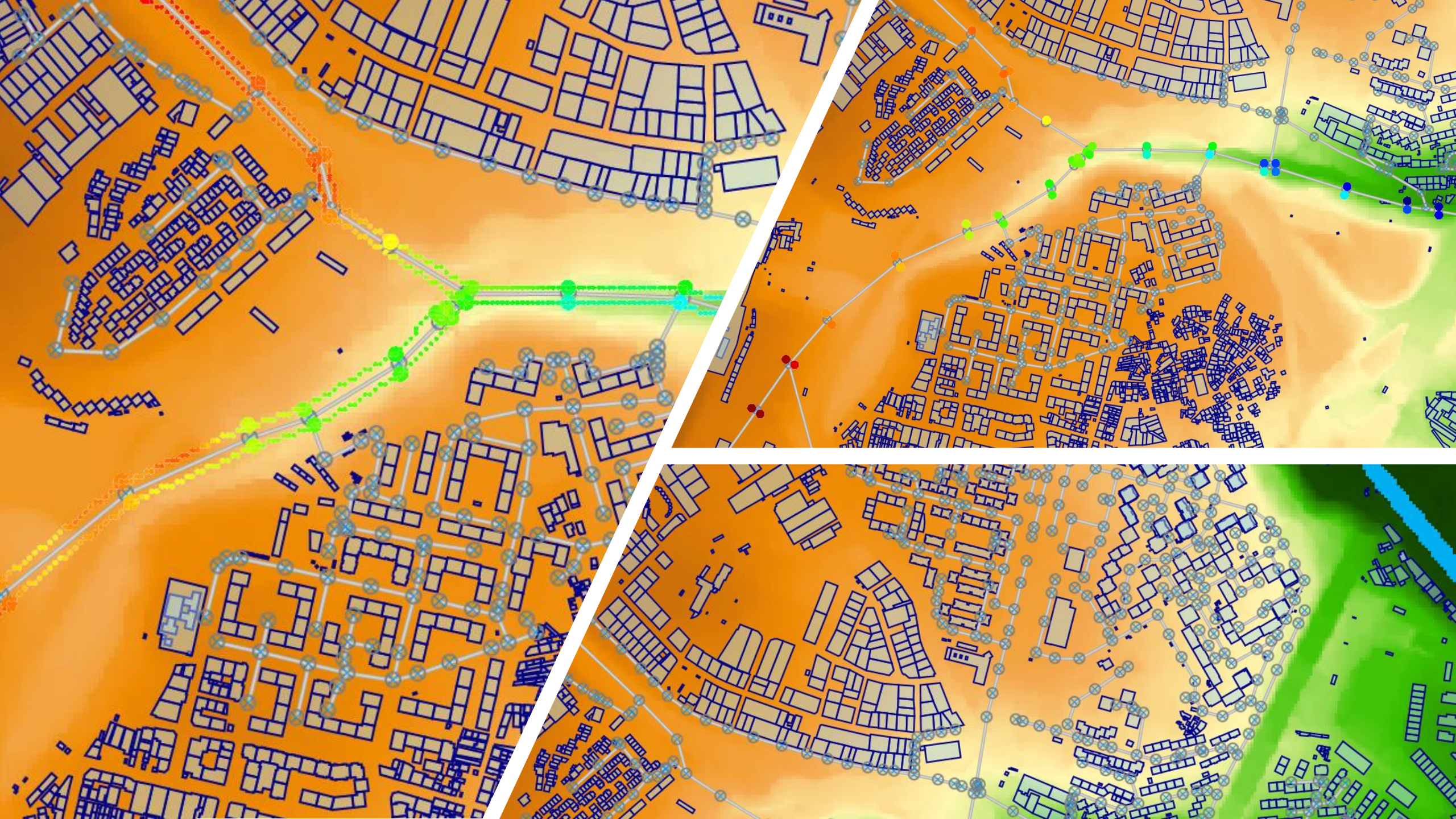


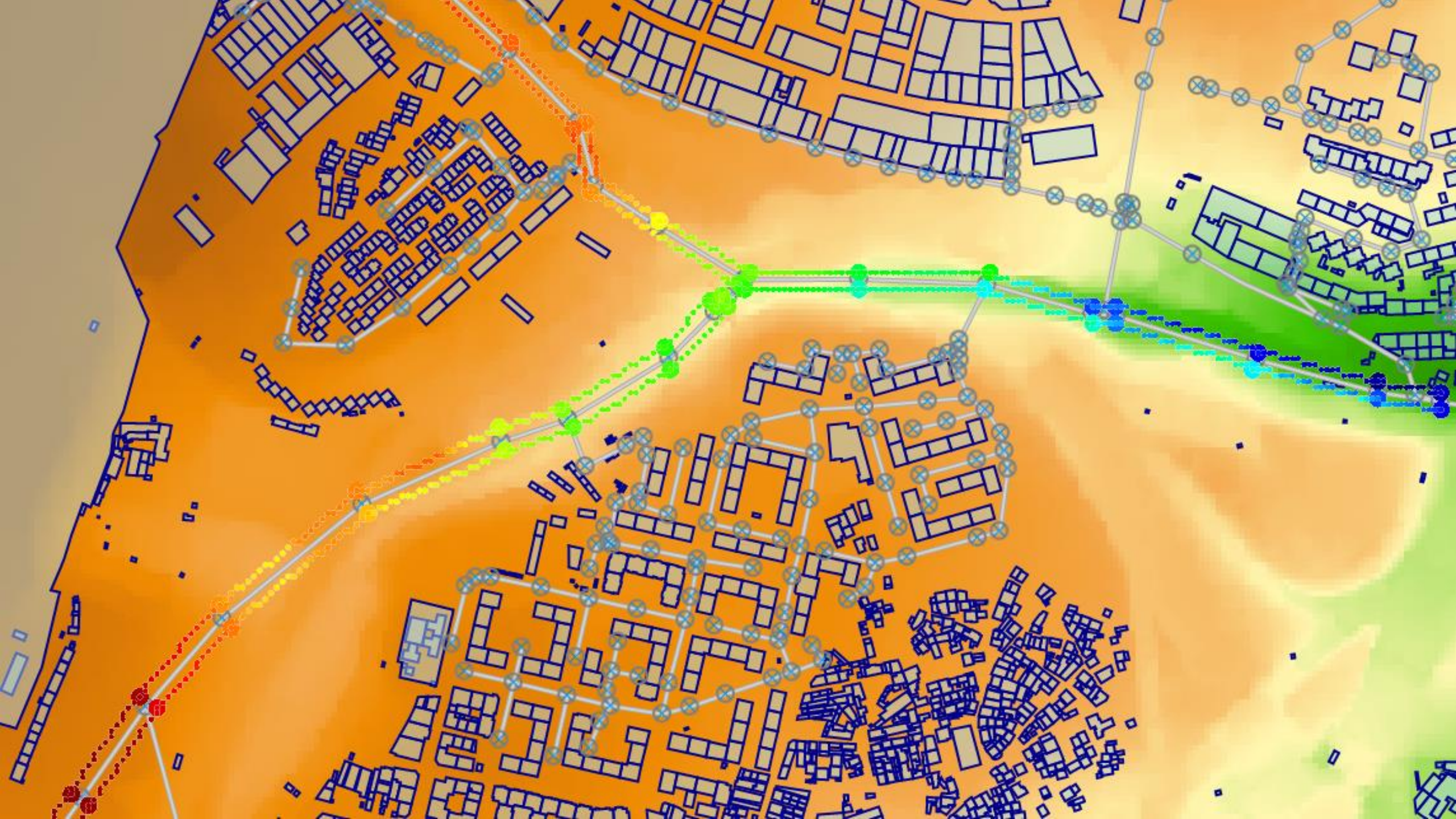




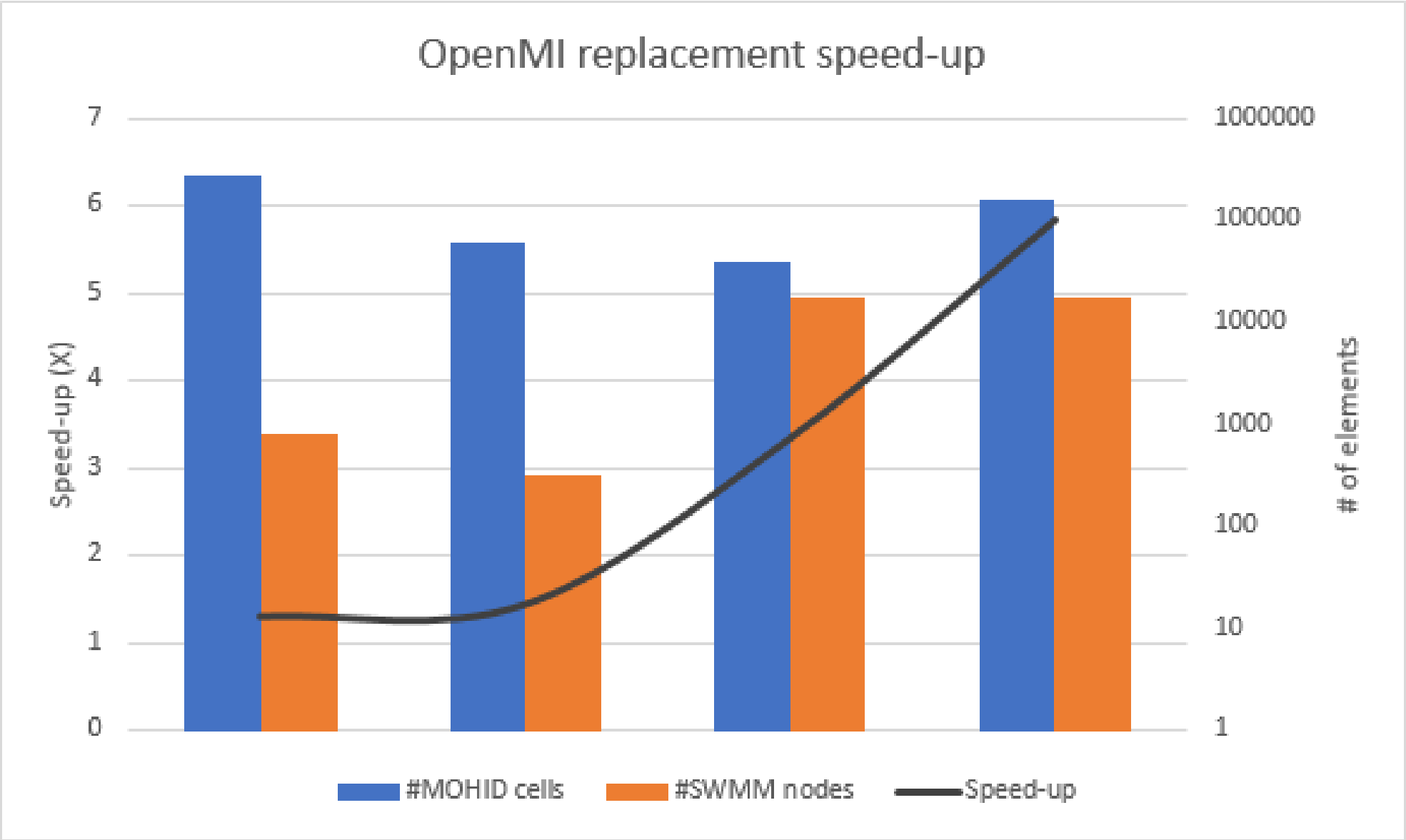




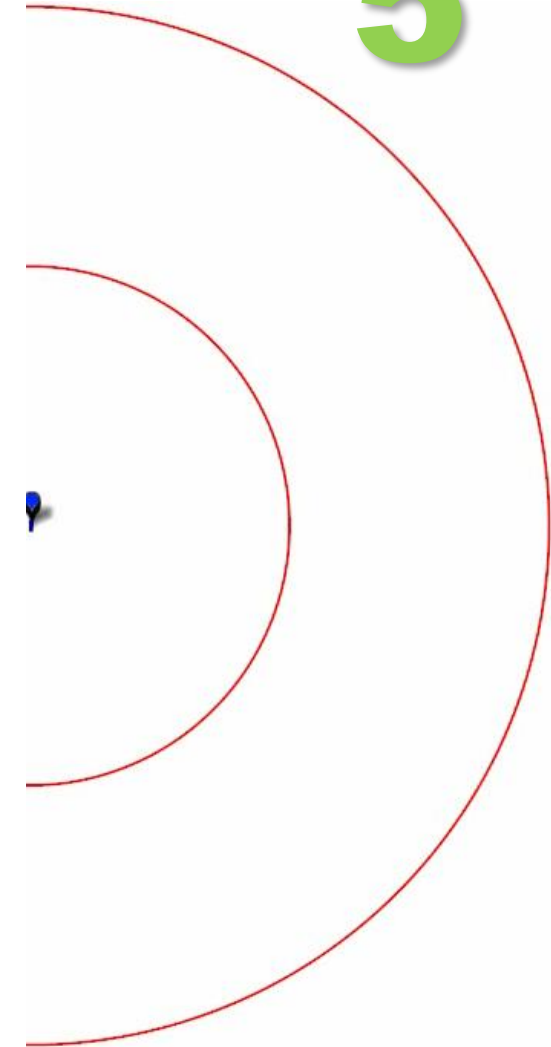
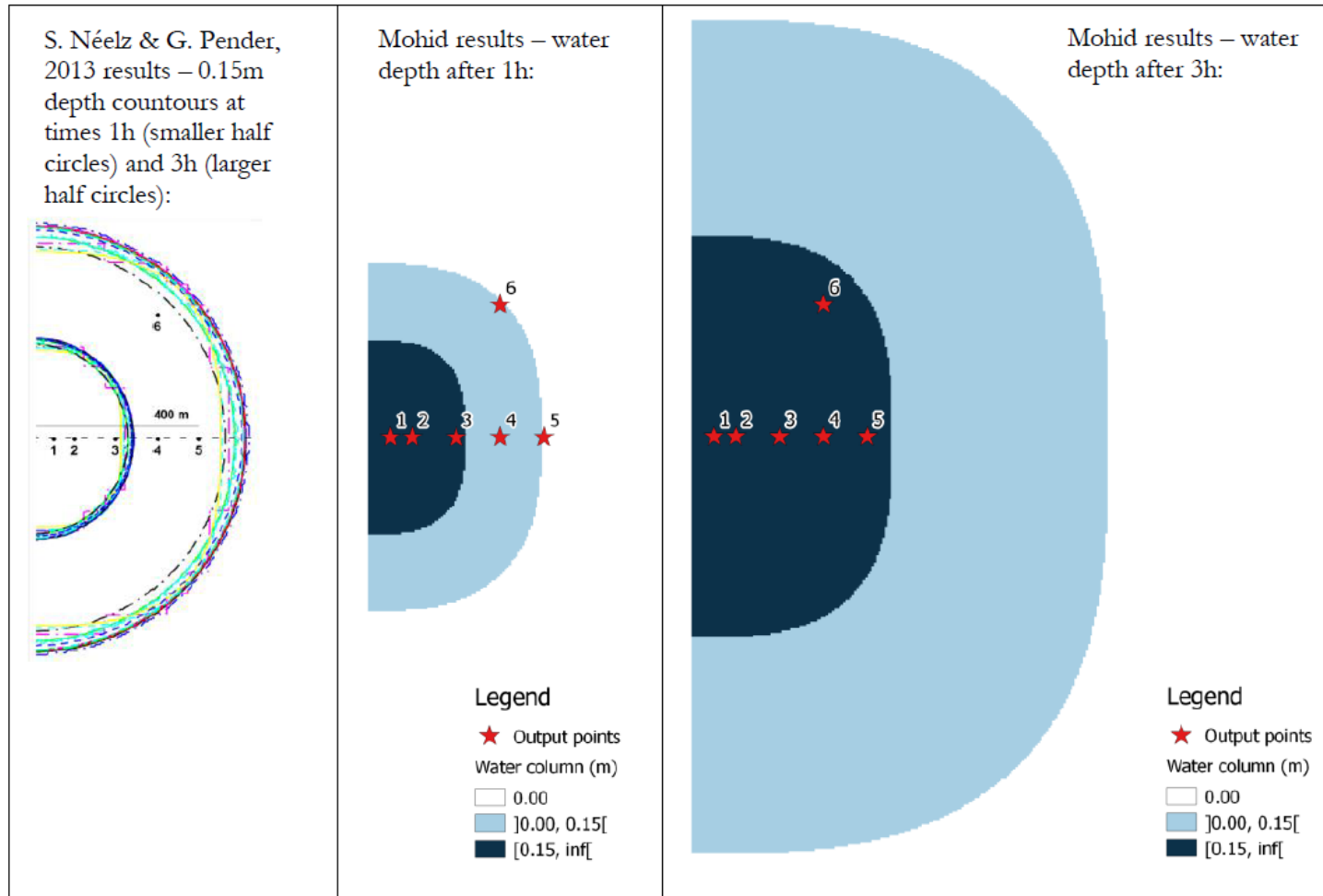




MOHID – SWMM/SewerGEMS



5



New discharge type – Rating curve

6

```
!Outflow
<begindischarge>
NAME                : Outlet
DESCRIPTION          : Rating Curve
DISCHARGE_TYPE      : 5
<<begin_rating_curve>>
2.02 0
2.22 0.028
2.27 0.046
2.37 0.145
2.42 0.211
2.52 0.448
2.57 0.583
2.62 0.757
2.67 0.98
2.72 1.219
2.97 3.904
3.47 13.089
3.57 15.45
3.92 24.788
4.22 34.545
4.32 38.181
5.27 83.078
6.02 128.011
6.12 134.558
7.07 204.77
7.17 212.572
7.62 246.726
7.92 269.22
9.12 407.506
10.13 538.188
10.26 554.072
10.66 588.533
10.75 598.597
10.91 616.391
11.19 632.851
11.38 658.811
11.83 712.399
14.83 1370.361
<<end_rating_curve>>
I_CELL              : 5
J_CELL              : 5
K_CELL              : 0
<enddischarge>
```

DISCHARGE_TYPE : 5

<<begin_rating_curve>>

...

[water_level] [flow]

...

<<end_rating_curve>>

Others

- RunOff – Curvilinear grids
- RunOff – Time series outputs
- Inlets to manhole links visualization
- Drainage Network – Irregular cross-sections

7


8

9

10

Academic licensing

- OpenFlows FLOOD academic licensing in 2020
 - Students (MSc, PhD)
 - Teaching



Bentley Institute Academic Program

Supporting Students and Educators

Obrigado!