

Hands-on sessie

Arcadis, WDOD, Hydroconsult & D2Hydro

17/10/2022

Agenda

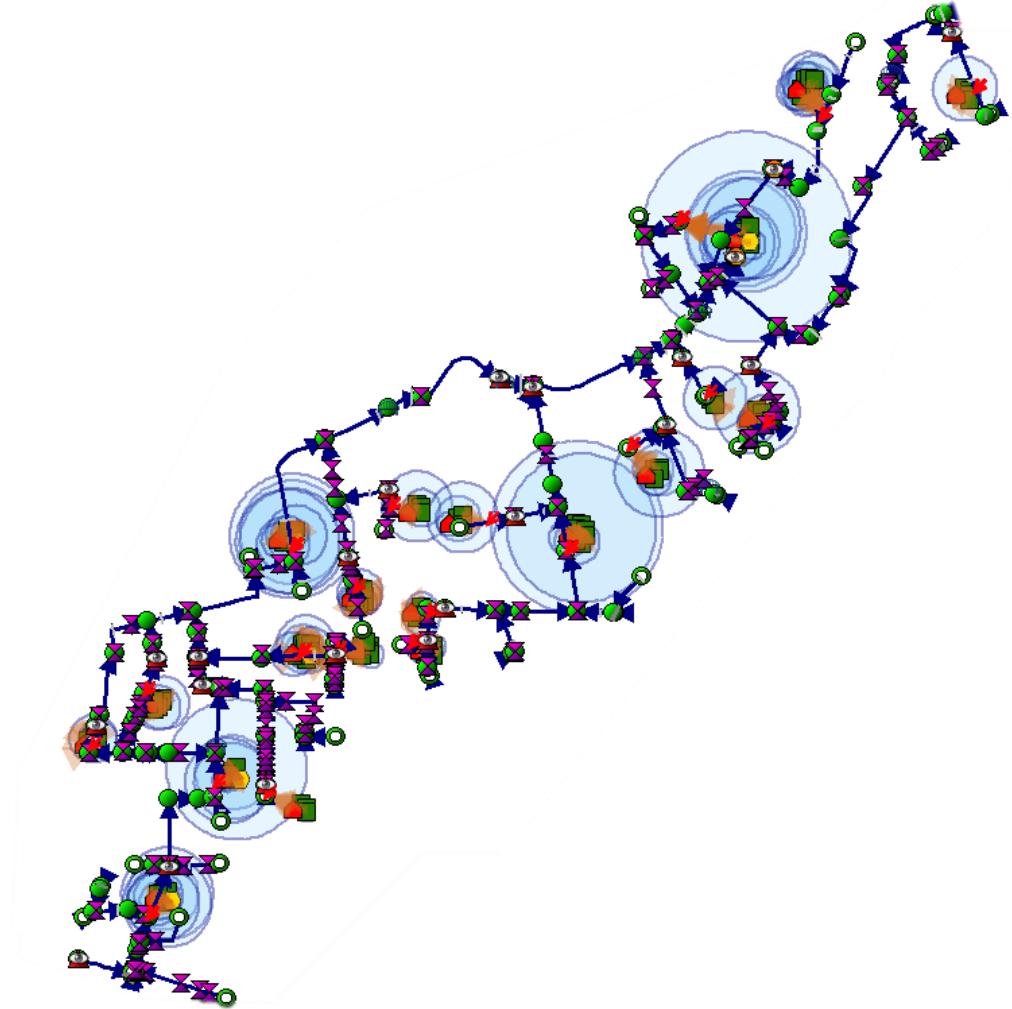
- Voorbereidingen
- Doelen scripts
- Doornemen scripts
- Hands-on uitvoeren in Binder

Vorbereidingen

- Binder
 - Online omgeving voor uitvoeren Python scripts zonder dependencies problemen
 - Opstart tijd
- Stochasten tool

Doelen scripts

- Pilot over stochasten analyses
- Modelopbouw kan via Sobek conversie of D-Hydamo
- Doel van onze scripts
 - Na kalibratie modelvarianten opstellen
 - In reguliere adviesprojecten toepassen



Scripts

1. Analyse dambreak
 2. **Change_depth_crosssections**
 3. **Change_friction_channels**
 4. **Change_initial_channels**
 5. **Check feasibility 1D waterlevels**
 6. Clean_dhydro
 7. **Create_inundation**
 8. Create_obspoints_channels
 9. Export_statistics
 10. **Read_dhydro**
 11. Read_write_fixedweirs
-
- A. Stationpoints
 - B. Voronoi

Read_dhydro

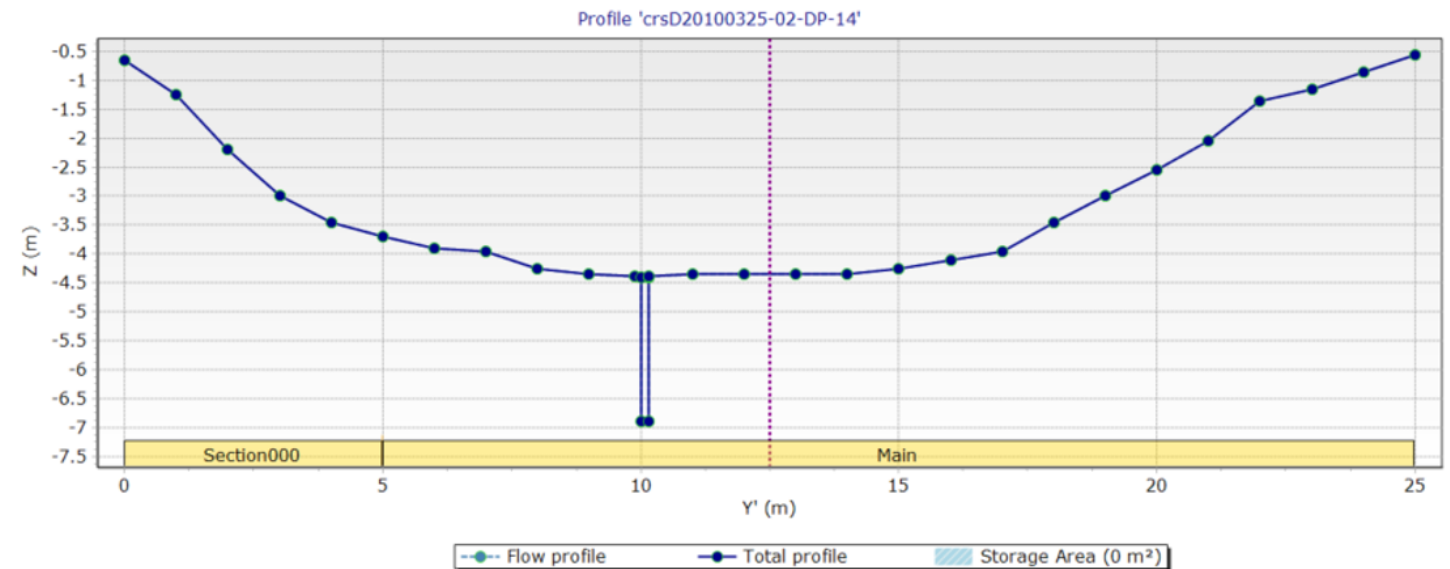
- Bestanden worden omgezet naar Geopandas objecten.
- Optie om weg te schrijven naar shapefile, excel, etc.
- Readers:
 - *_map.nc
 - *_his.nc
 - *_net.nc
 - *.ini
 - *.gui

Change depth crosssections

- Simuleren baggeren of slibaanwas
- Polygoon met gebied

Input

- Breedte in meters
- Verticale afstand
 - Afvlakken tot bepaalde hoogte
 - In mNAP of vanaf laagste punt
- Makkelijk droogvalgeulen verwijderen
- Shared definitions worden gefilterd

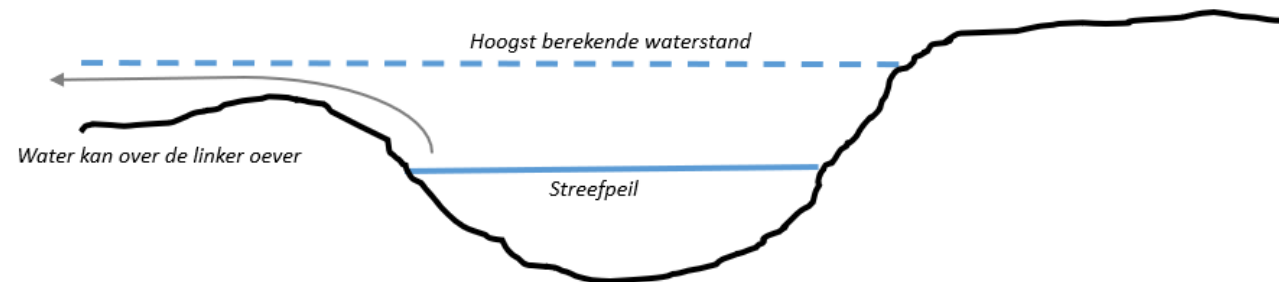


Extreem hoge ruwheid NVO

Normale ruwheid watergang

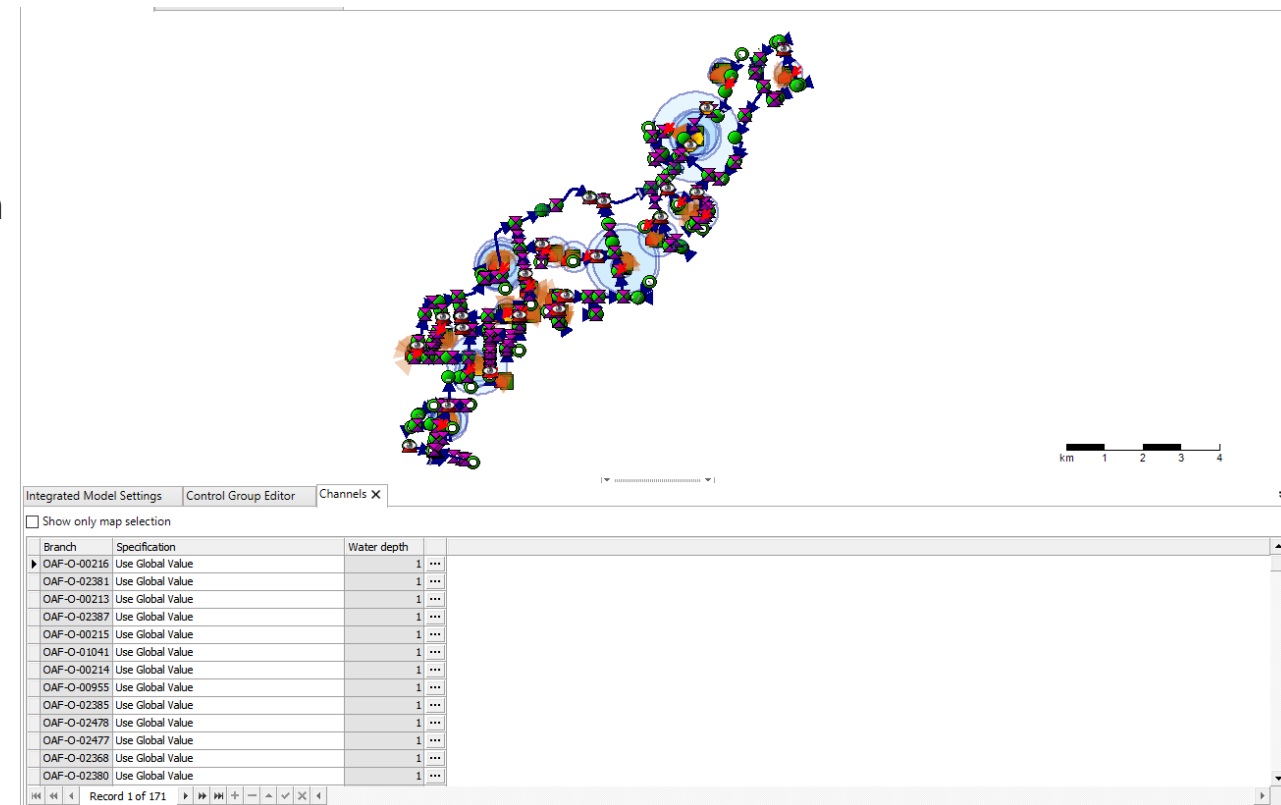
Post-Processing: Check feasibility 1D waterlevels (in ontwikkeling)

- Doel script:
 - Falen van kades in beeld brengen
 - Check waar 2D toegevoegd moet worden aan model
- Bepalen kade/insteekhoogtes per dwarsprofiel
- Bekijk maximale berekende waterstand bij dichtbij liggende rekenpunten
- Waterstand komt boven maaiveld: wellicht beter om 2D te modelleren.



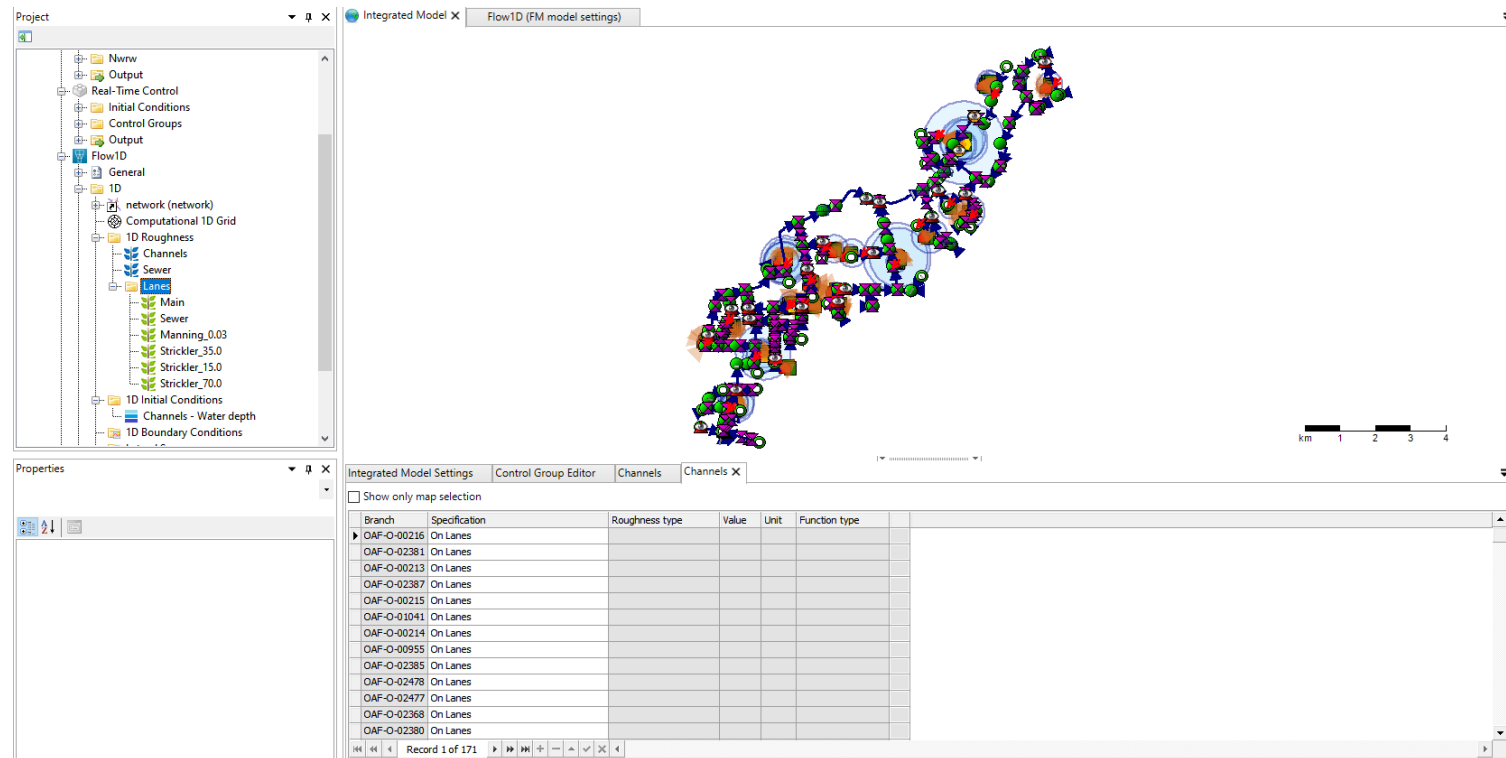
Change initial channels

- Doel script:
 - Aanpassen initiële waterstanden obv shapefile
 - Toepasbaar voor Stochastentool
- Maakt gebruik van chainage: Lange watergangen kunnen opgesplitst worden qua waterstand



Change friction channels

- Doel script:
 - Aanpassen fricties obv shapefile
 - Toepasbaar voor Stochastentool
- Kenmerken
 - Aanpassen, overschrijven of verwijderen



The screenshot displays the software interface for managing friction channels in a sewer network model. The interface is divided into several panels:

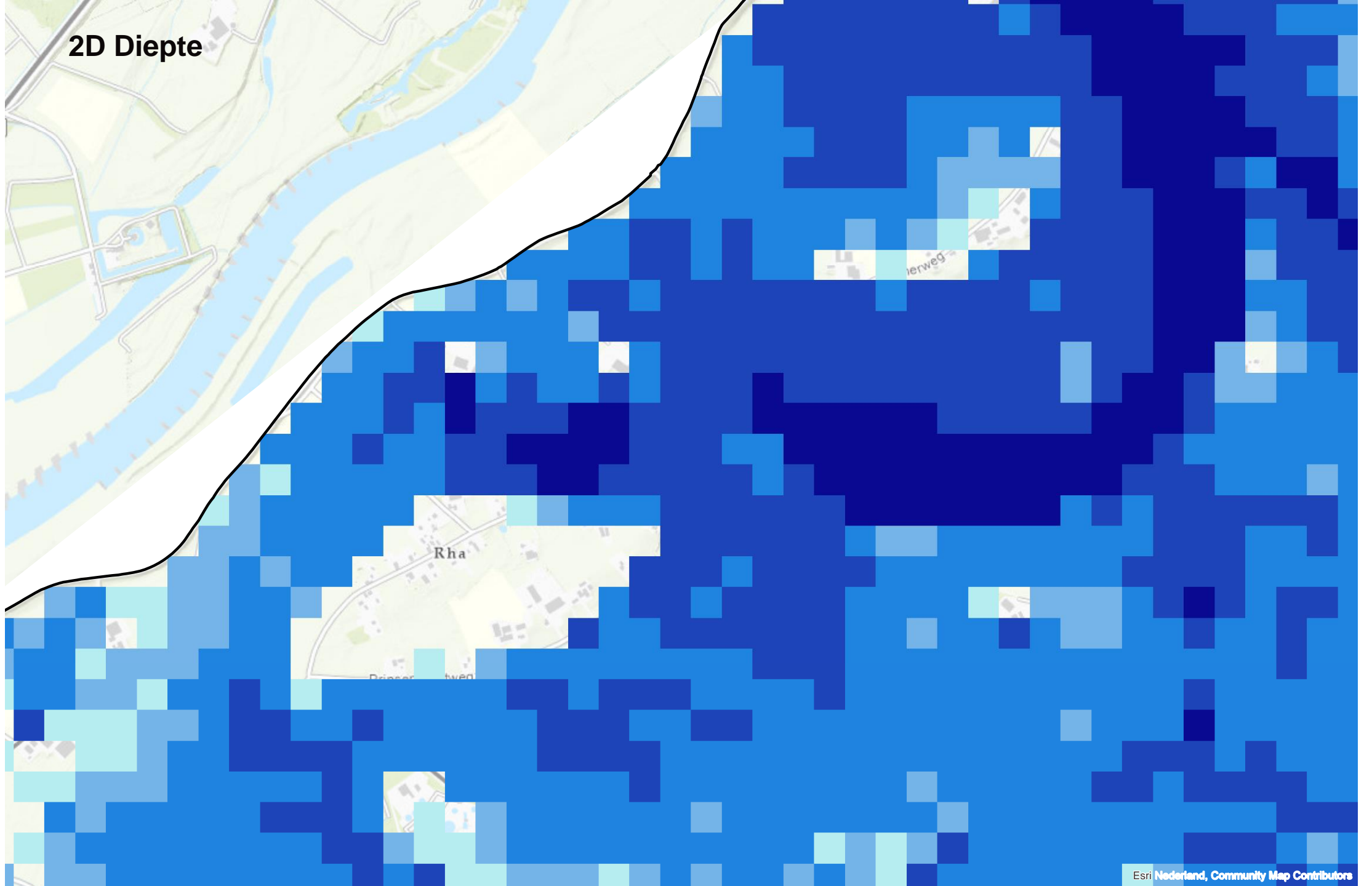
- Project Panel:** A tree view showing the project structure. The 'Flow1D' folder is expanded, showing sub-folders for 'General', '1D', 'network (network)', 'Computational 1D Grid', '1D Roughness', 'Channels', 'Sewer', 'Lanes', 'Main', 'Sewer', 'Manning_0.03', 'Strickler_35.0', 'Strickler_15.0', 'Strickler_70.0', '1D Initial Conditions', 'Channels - Water depth', and '1D Boundary Conditions'.
- Map View:** A 3D visualization of the sewer network, showing a complex network of pipes and manholes. A scale bar at the bottom right indicates a distance of 4 km.
- Properties Panel:** A panel for editing the selected channel's properties.
- Channels Table:** A table listing the channels and their specifications. The table has columns for Branch, Specification, Roughness type, Value, Unit, and Function type.

Branch	Specification	Roughness type	Value	Unit	Function type
DAF-O-00216	On Lanes				
DAF-O-02381	On Lanes				
DAF-O-00213	On Lanes				
DAF-O-02387	On Lanes				
DAF-O-00215	On Lanes				
DAF-O-01041	On Lanes				
DAF-O-00214	On Lanes				
DAF-O-00955	On Lanes				
DAF-O-02385	On Lanes				
DAF-O-02478	On Lanes				
DAF-O-02477	On Lanes				
DAF-O-02368	On Lanes				
DAF-O-02380	On Lanes				

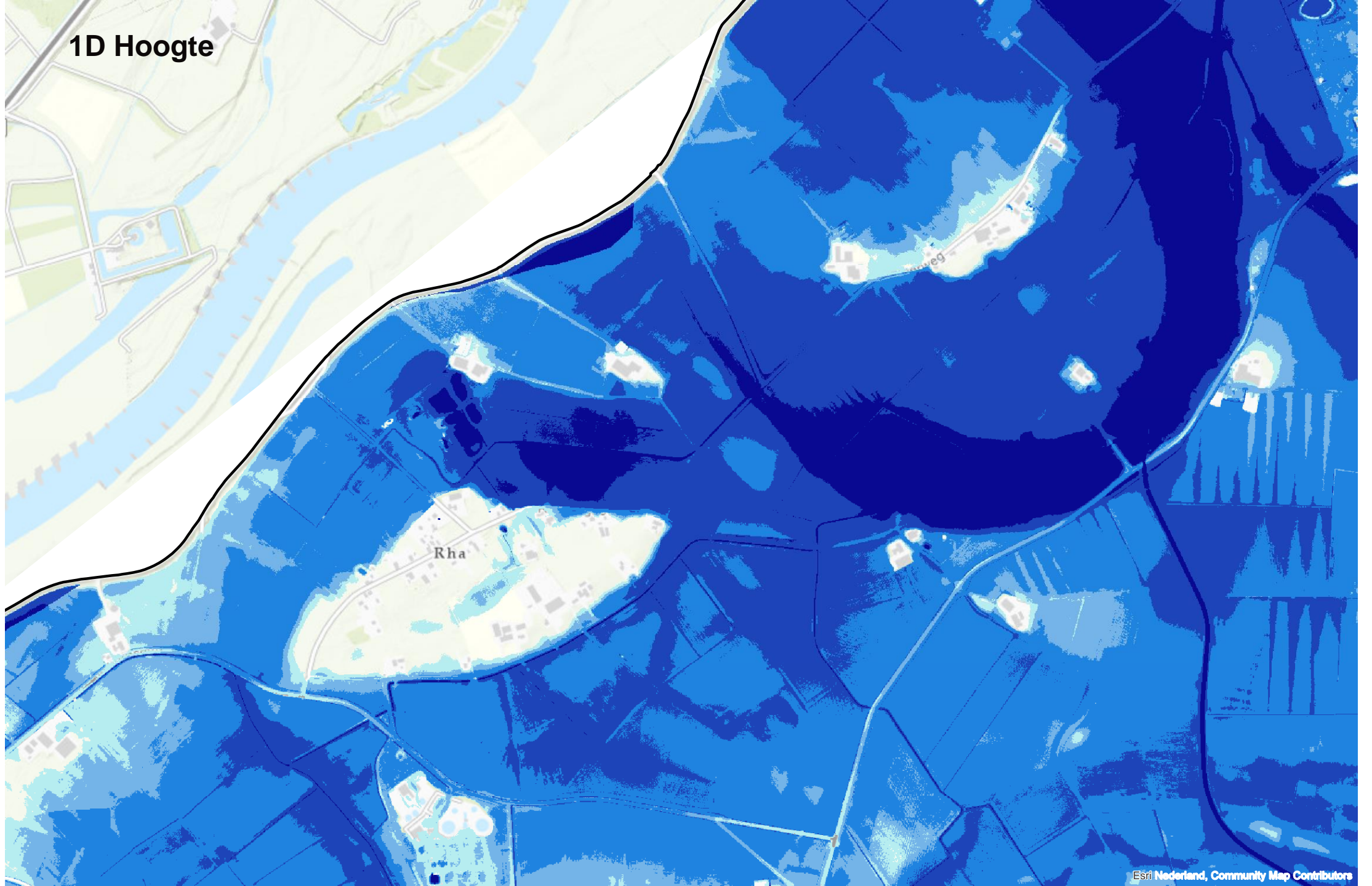
Create inundation

- Doel script:
 - Genereren inundatiekaart obv modelresultaten
- Unieke eigenschappen
 - Combinatie van 1D en 2D resultaten
 - Filteren en verfijnen van inundaties

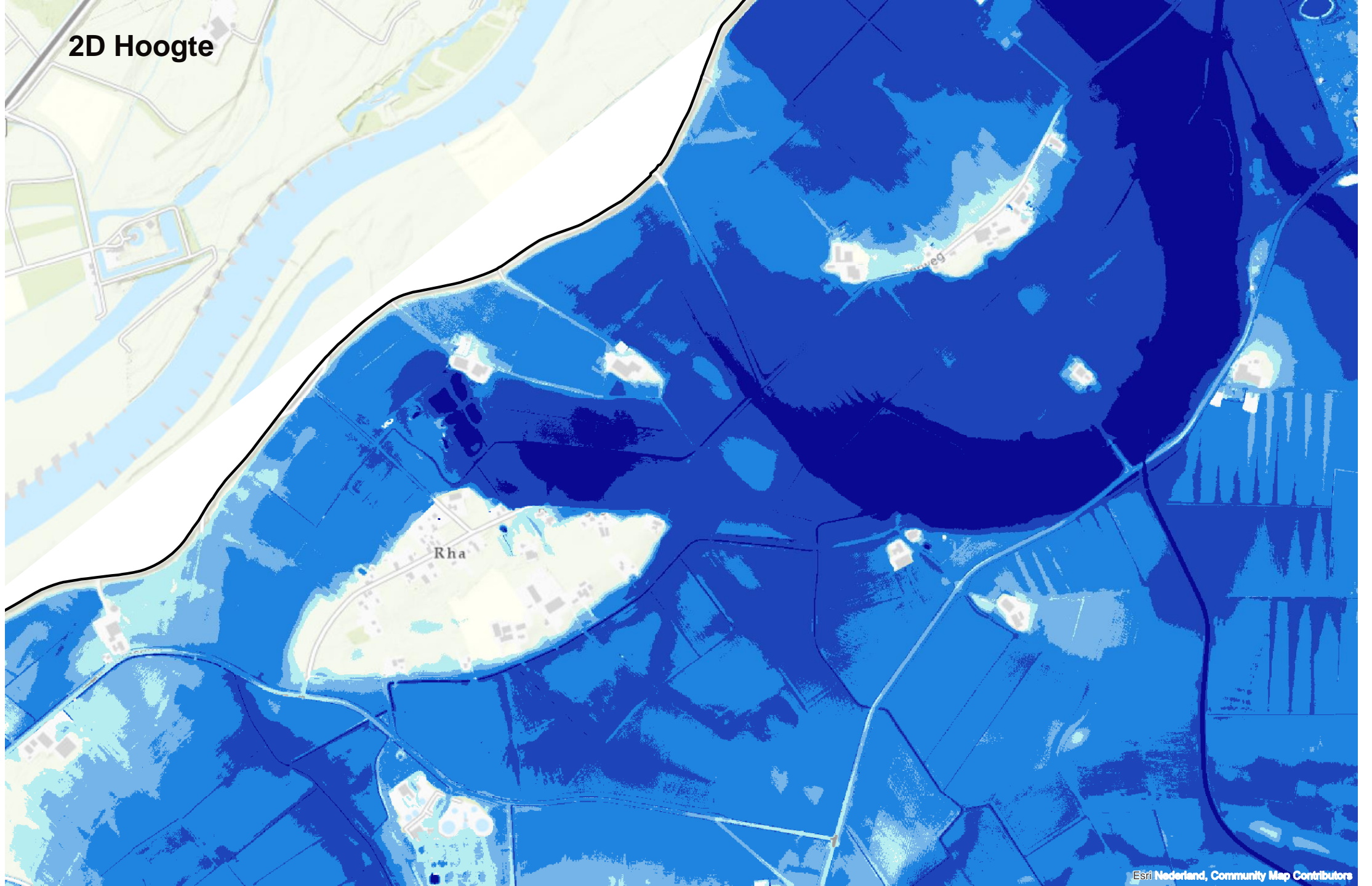
2D Diepte



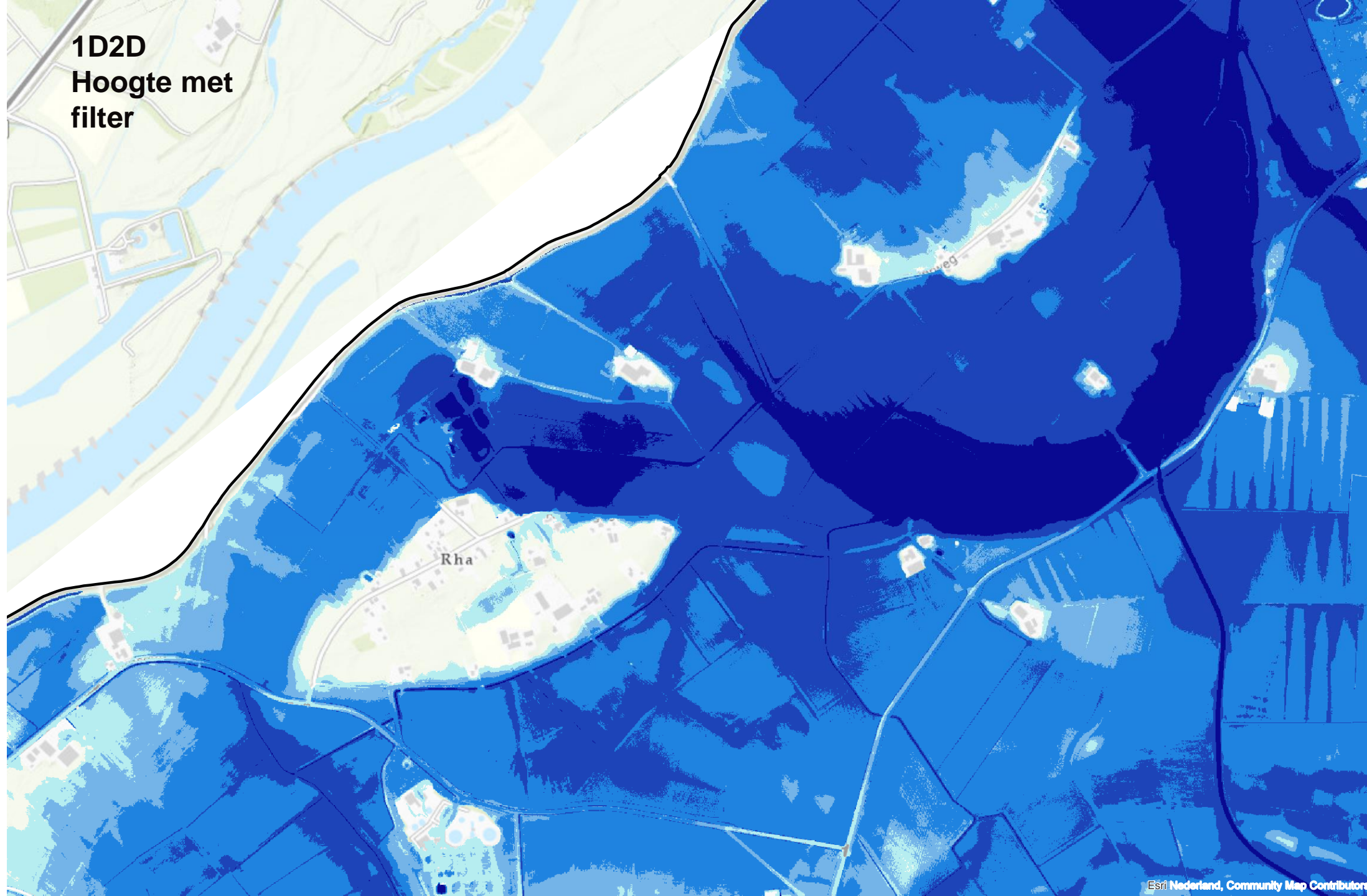
1D Hoogte



2D Hoogte



1D2D
Hoogte met
filter



Hand-on sessie

- Open het Dellen Model in D-Hydro (gedeeld door Siebe Bosch)
- Run of probeer enkele scripts in de Binder
- Onder “output” kan de output van de scriptst gedownload worden, en achterlangs in de modellen worden geplakt (in de “dflowfm” map. Bekijk de resultaten achterlangs of importeer ze naar D-Hydro.

HYDROLIB > contrib > Arcadis > scripts > exampledata > Dellen > Model > dflowfm

Name	Date modified	Type	Size
output	14/10/2022 12:39	File folder	
branches.gui	05/10/2022 08:54	GUI File	0 KB
crsdef.ini	05/10/2022 08:54	Configuration sett...	217 KB
crsloc.ini	05/10/2022 08:54	Configuration sett...	66 KB
dellen_net.nc	05/10/2022 08:54	NC File	191 KB
dellen_new.ext	05/10/2022 08:54	EXT File	17 KB
Flow1D.mdu	05/10/2022 11:12	MDU File	23 KB
Flow1D_boundaryconditions1d.bc	05/10/2022 08:54	BC File	1 KB
Flow1D_lateral_sources.bc	05/10/2022 08:54	BC File	1 KB
Flow1D_meteo.bc	05/10/2022 08:54	BC File	1 KB
initialFields.ini	05/10/2022 08:54	Configuration sett...	1 KB
InitialWaterDepth.ini	05/10/2022 08:54	Configuration sett...	1 KB
obsFile1D_obs.ini	05/10/2022 08:54	Configuration sett...	4 KB
roughness-Channels.ini	05/10/2022 08:54	Configuration sett...	1 KB
roughness-Main.ini	05/10/2022 08:54	Configuration sett...	1 KB
roughness-Manning_0.03.ini	05/10/2022 08:54	Configuration sett...	1 KB
roughness-Sewer.ini	05/10/2022 08:54	Configuration sett...	1 KB
roughness-Strickler_15.0.ini	05/10/2022 08:54	Configuration sett...	1 KB
roughness-Strickler_35.0.ini	05/10/2022 08:54	Configuration sett...	1 KB
roughness-Strickler_70.0.ini	05/10/2022 08:54	Configuration sett...	1 KB
routes.gui	05/10/2022 08:54	GUI File	0 KB
structures.ini	05/10/2022 08:54	Configuration sett...	189 KB
structures.ldb	05/10/2022 08:54	Microsoft Access ...	87 KB