# Water & Wastewater Networks — What WaiMAP Does at Every Stage

**From empty site to operation · the modules behind each step**

What WaiMAP does
**#09** · Construction

## 1 Site Screening

- Earthquake, flood, slope, land use for the service area
- Grid, roads and services nearby
- Satellite history and data trust level

▶ **Project Brain · Data Trust**

## 2 Ground & Hazards

- Rock head, groundwater, boreholes
- Trench excavation classes
- Seismic, flood and climate loads

▶ **Ground model · Hazards**

## 3 Survey & Base Map

- Streets, buildings, levels
- Field GPS, drone orthophoto, LiDAR
- DXF / DWG / IFC in and out

▶ **Base map · Point cloud · CAD/BIM**

## 4 Earthworks & Drainage

- Trenching and reinstatement
- Mass haul: borrow, spoil, fleet, $CO_2$
- Catchments, peak flows, culverts

▶ **Terrain Studio · Mass haul · Drainage**

## 5 Water Network

- EPANET-style hydraulics
- Pressures and velocities
- Demand and storage

▶ **Water networks**

## 6 Fire Water

- Fire mains and hydrants
- Fire pumps
- Pressure at the worst hydrant

▶ **Fire-water networks**

## 7 Sewers & Storm

- Gravity sewers downhill
- Storm drains and peak flows
- Pumping stations

▶ **Drainage · Hydraulics**

## 8 Routing

- Mains and sewers on a cost surface
- Crossings and HDD
- Alternatives ranked

▶ **Corridor routing**

## 9 Cost, Schedule & Cash

- BoQ, CPM schedule, crews
- Earned value, cash flow, payments
- Technical due diligence

▶ **BoQ · Schedule · EVM · TDD**

## 10 Observations

- Sentinel-2 old map / new map
- Flood events and new settlements
- Sentinel-1 radar flood mapping

▶ **Observations · Area watch**

## Questions WaiMAP answers on the map

1. Is pressure enough at every node?
2. Can the fire main deliver at the worst hydrant?
3. Do the sewers fall by gravity?
4. Where are pumps needed?
5. Which route for the main?
6. Where is the city growing next?

## Honest limits & coming

- Screening hydraulics; detailed design follows the utility standard
- Coming: leak detection from meter data
- Screening level on open data and your inputs