



# MasterPlan: Water

Pipe Deficiency Assessment

## Solution Overview

ASTERRA MasterPlan provides actionable insights to your water system asset management plan. Our patented system uses a newly developed algorithm that's been trained on five years of system leaks discovered by ASTERRA Recover, our leak detection and analysis service. The algorithm assesses pipe deficiencies using multiple synthetic aperture radar (SAR) images and can monitor an entire pipe system, even for large cities.

The trained algorithm scores pipe segments exhibiting non-surfacing leaks detected over time; it also analyzes leak location clusters within them. Data points are then scientifically combined into a single GIS data output with pipes scored on a 1 – 5 scale: 1 indicates low levels of deficiency observed; 5 denotes high levels of deficiency. The data inputs easily to any GIS system or asset planning model.

Utilities and engineers use MasterPlan to gain insight into the pipes' actual condition. The system is compatible with all GIS-based asset planning model software and integrates with attribute data such as pipe age, material, and work orders from surfacing leaks. MasterPlan adds a valuable level of refinement to pipe replacement planning models or water system master plans.

## How ASTERRA MasterPlan works

1

**Satellite images  
are acquired**

2

**Soil moisture  
is identified**

3

**MasterPlan's algorithm  
analyzes the data**

4

**Provided as a  
subscription through  
the EO Discover  
platform**

## The MasterPlan Differentiators

MasterPlan provides unique insights that are not available elsewhere, such as an actual measurement of non-surfacing pipe leaks — not a predictive analysis. The system is completely non-invasive as data is collected via satellite, and the pipes' size and composition do not matter. The large area observed from satellites analyzes the most expansive systems with unmatched speed and efficiency.

## What's Included?

- Pipeline deficiency monitoring service assigned by Pipe ID
- Summary report
- Free online viewer
- ASTERRA customer support

MasterPlan is available as a service with ASTERRA Recover leak detection and analysis. MasterPlan provides customers with pipe deficiency information in a fast, affordable, efficient manner. We help customers improve operational efficiency and optimize budgets with intelligence that facilitates proactive repair and planning.

## About ASTERRA

ASTERRA (formerly Utilis) provides underground soil moisture data on pipes, roads, rails, dams, and mines to water utilities, government agencies, and infrastructure managers. Using SAR (synthetic aperture radar) data from satellites and a series of proprietary algorithms, ASTERRA turns the data into actionable intelligence that supports large-scale decisions and Earth's resource resilience. Since 2017, in 64 countries, ASTERRA technology has saved over 368 billion gallons of water, 920,000 MWH of energy, and 235,252 metric tons of carbon. ASTERRA is headquartered in Israel with offices in the U.S., the U.K., and Japan.

## Why Choose MasterPlan?

- A full system-wide view to set replacement priorities
- Efficient deployment of fixed acoustic assets
- Easy input to a replacement planning model or water system master plan
- Non-invasive assessment means no cost or disruptions from crews digging
- Completely pipe-agnostic, working on pipes of any size or material
- Easily integrates with all GIS and asset management tools such as those from partners Esri and Innozyze

