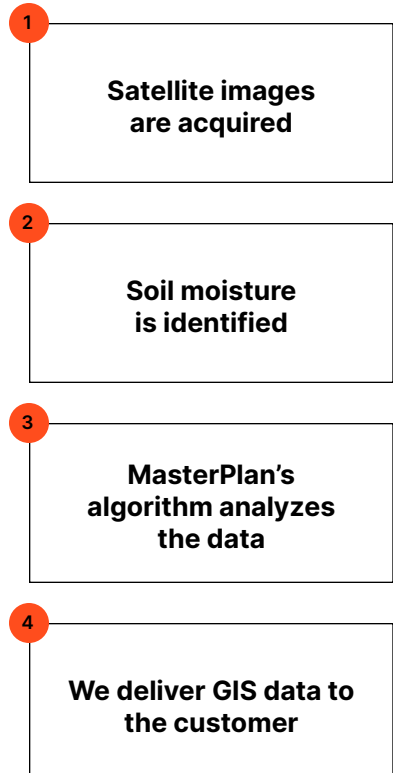# MasterPlan: Water

Pipe Deficiency Assessment

Product Overview

ASTERRA MasterPlan adds actionable data and insights to your asset management plan in one easy data layer. 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 product. The algorithm assesses pipe deficiencies using multiple synthetic aperture radar (SAR) images and can observe an entire pipe system, even for large cities, using multiple satellite passes.

The trained algorithm then scores pipe segments exhibiting non-surfacing leaks detected in one or more images; 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 and 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
We deliver GIS data to the customer

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 1,350-sq-mile coverage area observes and analyzes the most expansive systems with unmatched speed and efficiency.

What's Included?

- GIS dataset with deficiency levels assigned by Pipe ID
- Summary report
- Free online viewer
- ASTERRA customer support

MasterPlan is available as a stand-alone service or as an add-on to ASTERRA Recover leak detection and analysis product. 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 data-driven solutions for water utilities, government agencies, and the greater infrastructure industry. ASTERRA products use synthetic aperture radar (SAR) data from satellites and turns this data into large-scale decision support tools. The company's proprietary algorithms and highly educated scientists and engineers are the key to their mission, to become humanity's eyes, and guide it to act, react, and adapt to Earth's changes.

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 Innovyze

Pipe Deficiency
- High
- Med-High
- Med
- Low-Med
- Low

ASTERRA
Technology by Utilis