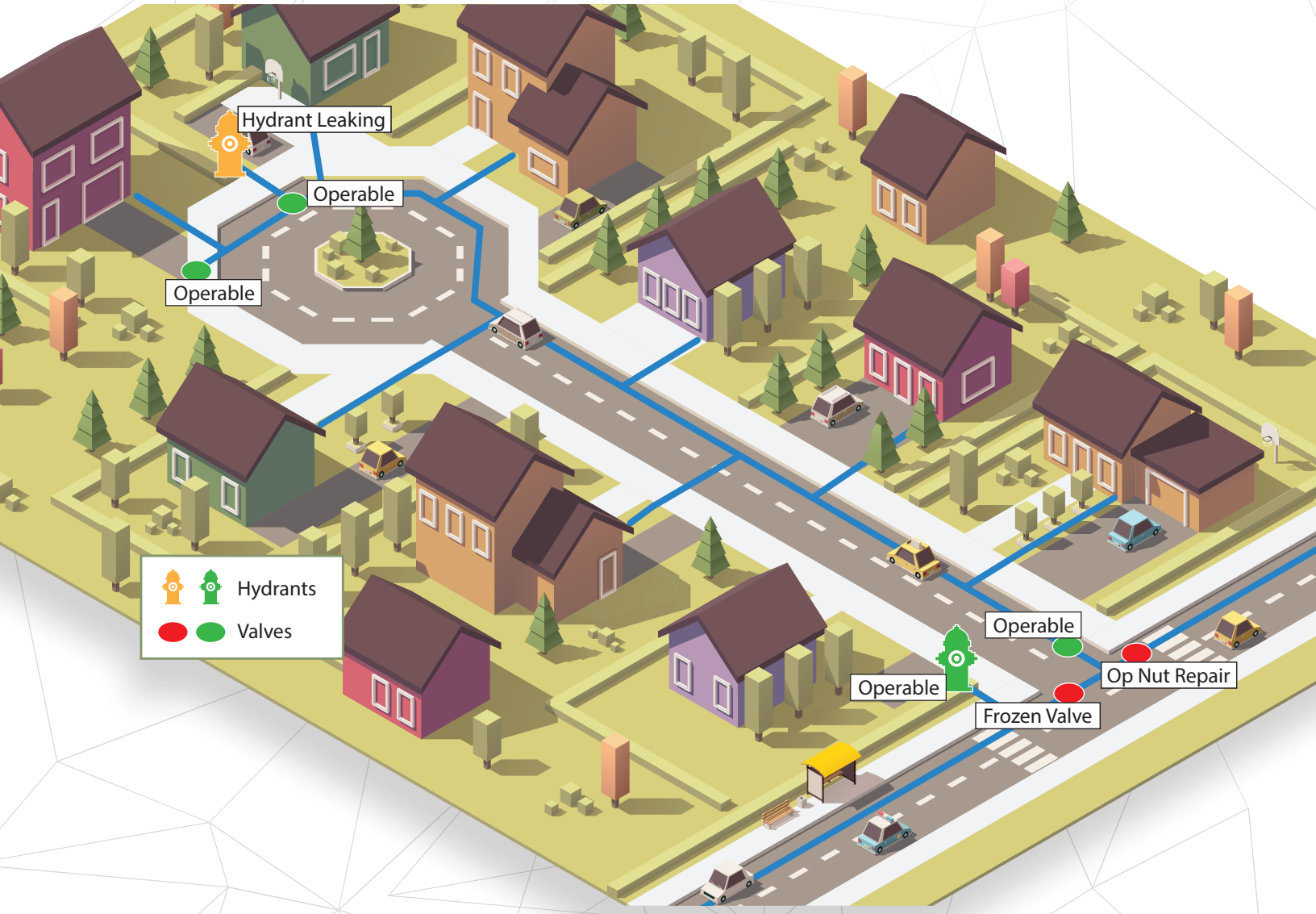
HYDROMAX USA
Innovative Water/Wastewater Solutions



Valve & Hydrant Condition Assessment

Empowering Infrastructure Asset Managers

understand the present | **protect the future**

Empowering Infrastructure Asset Managers

Gain Confidence in Your Distribution System. Efficiently Utilize Limited In-House Resources.

Hydromax USA's valve and hydrant condition assessment solutions enhance the capability to establish schedules for repair and replacement well in advance of predictable failure; allowing the utility to better plan capital and operating budgets.



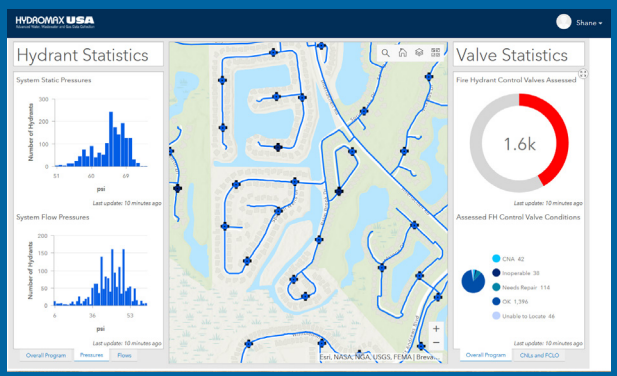
Additional Benefits:

- Optimized performance of distribution system assets
- Foundational for GIS-centric utility management
- Allows utilities to utilize limited in-house resources for other system demands
- Provides data-driven decisions for:
  - Capital investment
  - O&M planning
  - Risk management
  - Critical asset continuity

Valve & Hydrant Condition Assessment – Driven by Real Data

Data without insight doesn't manage your assets.

Distribution system assessment and maintenance enhances the utility operator's capability to effectively control the flow of water within the distribution system, prolong the life of the system assets and ensure fire flow capacity. Malfunctioning, inoperable and lost assets can make isolating for emergency or routine repairs difficult and often have a substantial impact on system performance.



At Hydromax USA, we put our data to the test every day. We are laser-focused on assuring our clients have operational control over their system. Our programs provide the precise insight needed for both short-term maintenance requirements and long-term capital planning. Hydromax USA's data collection and analytics drive asset management across our clients' organizations:

- **Field Operations** – Mobile access to infrastructure data and prioritized activities
- **Operations** – Desktop access to system operability and field labor management
- **Engineering/GIS** – Foundation for communicating data throughout the organization
- **Management** – Decision support system driving financial and human capital planning

UNIDIRECTIONAL FLUSHING

Improve Service Delivery, Prolong System Life

UDF is a long-term preventative program that drastically reduces the amount of customer water quality complaints. The program consists of an engineered workflow designed to systematically close system valves and open hydrants to obtain a one-way, high-velocity flow to flush debris and dirty/discolored water from the system.

Program Benefits:

- A dramatic improvement in biofilm and sediment removal
- Long-term water quality improvement
- Diminishes potential for waterborne disease outbreaks
- Customer complaints significantly reduced
- Reduces pumping costs
- Discovers problems, e.g., partially closed valves
- Uses 40-60% less water than conventional flushing
- Leverages hydraulic model/GIS investment
- Prolongs system life

CASE IN POINT:

Nashville Condition Assessment and GIS/CMMS Integration

60,000 Valves including 1,500 Large Valves and 35,000 Hydrants

NEED: Help improve Metro Water Services' (MWS) ability to manage and maintain its water system by locating and assessing the condition of water valves and hydrants throughout its service area.

HURDLE: Routine and emergency valve maintenance and repair was considerably difficult, and in some cases impossible, because locations of many of the valves were never recorded when installed between 1950 and 1970. In addition, maintaining system-wide maintenance schedules for hydrants required extra support to ensure regulatory requirements were met.

SCOPE: Locate and assess the operational condition and accessibility of all valves and hydrants. Leverage project data to improve the accuracy of the MWS GIS database and update its Infor Hansen computerized maintenance and management system.

FINANCIAL RESULTS

- 230% ROI on large valve assessment program based on valves recovered
- Identified $800k of previously unknown infrastructure needs
- Real data to develop budgets rather than statistical models

OPERATIONAL RESULTS

- Lowered operating torque on large valves by an average of 101ft/lbs
- Identified 10% of critical large system valves inoperable or not found
- Located previously unmapped valves, providing the utility with added system control

GIS RESULTS

- Identified and corrected GIS data source errors, including information related to valve size and location
- Information used to update and refine system hydraulic models
- Captured physical and operational attributes for 60,000 valves and 35,000 hydrants, helping to make their GIS a true "decision support system"

HYDROMAX USA

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