

 SMART METERING USE CASE



# LoRa Technology: Eliminating Water Waste and Leakage

APANA DECREASES COSTCO'S WATER USAGE BY 20%



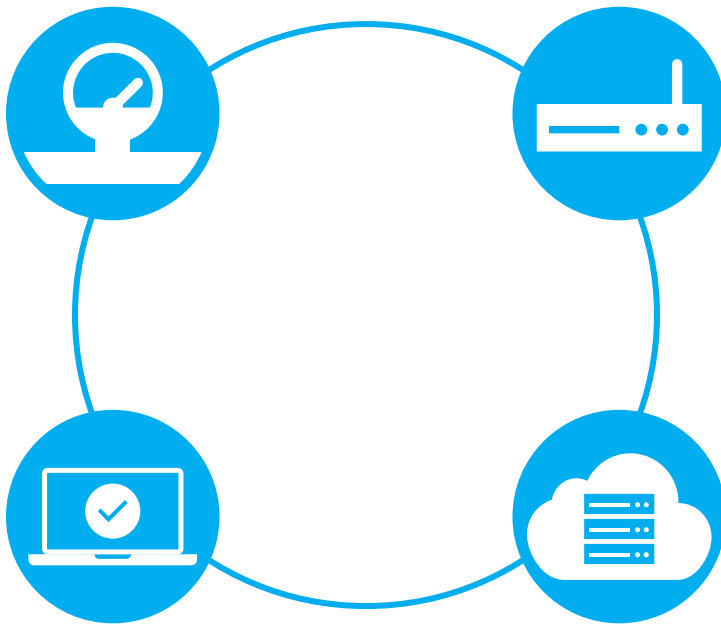
## REAL TIME SMART WATER MANAGEMENT

Founded in 2014, Bellingham, Washington-based Apana set out to become the “security system for water consumption.” The Apana water management solution provides businesses with detailed insight into their total water footprint by identifying process drift, mechanical malfunctions and failure points.

“Almost all buildings experience water waste. Using our Apana system, clients immediately begin receiving real-time help. Anomalies in water use are identified and actionable information is delivered to facility managers to guide quick response and resolution.”

Apana’s innovative IoT solution has over 500 installations worldwide and has saved over 500 million gallons of water to date. The company serves a wide range of water-intensive businesses including supermarkets, hotels, car washes, food & beverage processors, industrial, and commercial buildings.

### HOW IT WORKS: APANA



*The step-by-step process of Apana’s LoRa-enabled solution.*

# DNA of IoT Use Case

## IoT Challenge

- Inability to monitor water consumption remotely and in real-time
- Leaks and other waste events went unnoticed until they eventually became expensive problems
- Cellular technology was too power hungry for a device transmitting frequently while targeting a 10 year battery life
- Wired sensors were cost prohibitive to deploy

## LoRa Technology Used

- Apana selected LoRa radio transceivers to create a Low Power Wide Area Network for connected water utility meters – the Apana LiNK network – for easy deployment and flexibility
- LoRa Technology is used to wirelessly connect sensors throughout a commercial or industrial property and communicate data to Apana’s cloud analytics platform

## Business Value

- Apana’s solution provides 18 – 25% reduction of water and sewer usage
- Customer receives return on investment in 18 months or less on average
- Successful pilot project with Costco expands to over 500 locations globally



APANA PROVIDES

**22%**

average water and sewer reduction



APANA PROVIDES

**18**

months average return on investment



APANA HAS OVER

**500**

installations worldwide



APANA HAS OVER

**2.3**

billion gallons of water under management

### AFTER TESTING, COSTCO INSTALLS ACROSS NORTH AMERICAN LOCATIONS

Costco Wholesale was an early adopter of Apana and continues to be one of its largest customers. The company was able to get a deeper, minute-by-minute look into how much water was being used at what time in their buildings. This made it possible to see unusual spikes in water use and identify if it was from faulty equipment like a malfunctioning cooling tower or wasteful operational practices.

After testing, the company noticed an average of a 20% reduction in water use and also saw about a 22% savings in their water bills. Following the successful rollout in Southern California, Costco deployed Apana's LoRa-based water management solution across the rest of its North American locations.



### SCAN, PINPOINT AND GUIDE RESOLUTION

The early stages of Apana's product development presented some challenges, according to Matt Maher Peterson, CTO of



Apana. The solution was designed to track water usage every minute. Cellular technology was evaluated and found too power hungry to meet 1-minute requirements while maintaining a 10 year battery life. In addition, water meters are often located in difficult to reach areas for direct wiring and replacing batteries for frequently transmitting device was not an option.

To solve this situation, Matt selected Semtech's LoRa transceivers for the backbone of its IoT device due to its robust, long-range, low- power capabilities.

“What’s great about LoRa is the easy deployment. Any plumber can survey the environment and install our LoRa-based sensors for a fraction of the cost of previous wired solutions.”

Apana water solutions are deployed by placing LoRa-connected waterflow sensors throughout a company's water infrastructure – both inside and outside of a facility. The sensors measure flow and pressure through piping networks and equipment. With the ability to handle millions of unique messages per day, Apana's solution continually scans and sends real-time sensor data via LoRa Technology to Apana's secure, Cloud-based analytics engine.

If a malfunction occurs or an anomaly is detected, the solution pinpoints and sends alerts to staff with actionable information over the customer's medium of their choice. Automated alerts contain step-by-step instructions informing frontline operators that there is a problem, where to look, and how to resolve it. Rapid notification and response are key to eliminating waste, cutting cost and reducing compliance risk.

Need a real-time water monitoring solution:  
[www.apana.com](http://www.apana.com)

## Contact Us:

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Semtech's LoRa devices and wireless radio frequency technology is a widely adopted long-range, low-power solution for IoT that gives telecom companies, IoT application makers and system integrators the feature set necessary to deploy interoperable IoT networks, gateways, sensors, module products, and IoT services worldwide. IoT networks based on the LoRaWAN™ specification have been deployed in over 100 countries and Semtech is a founding member of the LoRa Alliance™, the fastest growing IoT Alliance for LPWAN applications.



Semtech Corporation is a leading supplier of high performance analog, mixed-signal semiconductors and advanced algorithms for high-end consumer, enterprise computing, communications, and industrial equipment. Semtech, publicly traded since 1967, is listed on the Global Select Market under the symbol SMTC and has more than 32 sales and application support offices in 14 countries as well as representatives and distribution support locations in more than 30 countries. Semtech is dedicated to providing proprietary platforms, differentiated by innovation, size, efficiency, performance, and reach.



The LoRa Alliance is an open, nonprofit association that has become one of the largest and fastest-growing alliances in the technology sector since its inception in 2015. Its members closely collaborate and share experiences to promote the LoRaWAN protocol as the leading open global standard for secure, carrier-grade IoT LPWAN connectivity. With the technical flexibility to address a broad range of IoT applications, both static and mobile, and a certification program to guarantee interoperability, the LoRaWAN protocol has already been deployed by major mobile network operators globally and connectivity is available in over 100 countries, with continuing expansion ongoing.