

Built for the **Front Range** · deploying in **Boulder, Colorado** & surrounding water districts Reads **your** existing utility meter · no plumbing, no meter swap

See your water use in real time, before the bill arrives.

PHOA is a two-tier wireless telemetry system that reads your utility water meter over the air and lands every reading in a database on your own network. A **Node** locks onto the meter you own and decodes it over 900 MHz; a **Gateway** aggregates one or many Nodes over a 433 MHz mesh and uploads to a PC on your LAN. Off-the-shelf ESP32 hardware, proprietary firmware, over-the-air updates.

RECEIVER

Water Meter Node

\$120 / ea

Hears the utility meter you own, validates it, and shows that one meter live on a built-in dashboard, then relays it to the Gateway.

- **Two FSK radios, one firmware** — autodetects SX1276 or SX1262 at boot.
- **Three meter protocols** — P223 / P282 (50-channel hopping) / P290 (200 kbps).
- **Privacy by default** — surfaces only your meter; neighbors withheld at the source.
- **Daily email reports** + JSON API + OTA from any browser, iPhone included.
- **Powers off the irrigation 24 VAC** — no new outlet, reuses existing wiring.

MESH HUB

Water Meter Gateway

\$200 / ea

The seam between the radio mesh and your network. Collects readings from every Node and POSTs them to a PC ingest service on the LAN.

- **Up to 32 Nodes** over a multi-hop, ACKed 433 MHz mesh.
- **Retry buffer** — queues locally if the PC is offline, so no reading is lost.
- **Fixed / static IP** option & optional W5500 wired Ethernet uplink.
- **Fallback WiFi AP** so distant Nodes can always phone home.
- **Daily "By Node" email** + remote mesh commands (set meter, reboot, ping).

WHY BOULDER OPERATORS CHOOSE PHOA

- **Catch leaks between billing cycles.** A stuck irrigation valve or slab leak shows up in hours, not on next month's invoice.
- **Water-conscious by design.** Per-meter consumption patterns make out-of-range use stand out, supporting Front Range conservation and tiered-rate budgets.
- **No plumbing, no meter swap.** Reads the utility's own meter wirelessly; no per-zone flowmeter retrofit cost.
- **Right-sized.** One Node runs standalone for a single property; add a Gateway when an HOA, park, or campus needs many meters in one database.
- **You own the data.** Readings land in MySQL on your LAN, not a third-party cloud.

EXAMPLE QUOTE · BOULDER HOA / SMALL PARK

ITEM	QTY	UNIT	EXT.
Water Meter Node	6	\$120	\$720
Water Meter Gateway	1	\$200	\$200
System total			\$920

Single-property standalone: **one Node, \$120**, no Gateway required. Scales one Gateway to dozens of Nodes. Volume pricing available, contact us for a site-specific quote.

900 MHz

METER READ BAND

433 MHz

MULTI-HOP MESH

32

NODES PER GATEWAY

3

METER PROTOCOLS

Privacy & liability, handled

The 900 MHz band is shared, so a receiver can physically hear many meters. PHOA deliberately does not act on that: each Node is bound to the single meter its owner configures, and the dashboard, API, email, and upload all surface **only that meter**. The full in-range view requires a password-gated, RAM-only debug mode that is off after every reboot, so you collect and store only your own consumption data.

Ready to scope a Boulder deployment?

Request a site-specific quote at eheuristics.com/contact.html or email support@eheuristics.com · replies within one business day.

[Get a Quote](#)