Why LoRa and Nodelets Matter

Eliminating Single Points of Failure

Most modern transportation systems depend entirely on smartphones, cellular towers, or satellite signals. If any of those go down-or are inaccessible-so is your ride. That's not acceptable for people relying on life-critical transport.

With LoRa and Nodelets, ride requests can be sent without smartphones, internet access, or even power. Nodelets can run on low-energy batteries or manual crank power. That means passengers can request rides even during outages, in remote areas, or in crisis conditions.

Truly Accessible by Design

Nodelets don't require vision, dexterity, or digital literacy. They're tactile, button-based devices-similar to Life Alert fobs-that let anyone summon a ride. This empowers:

- Seniors

- Visually impaired users

- People without smartphones or stable housing

- Anyone overwhelmed by app-based systems

This isn't "compliance"-it's dignity-first engineering.

Decentralized and Open Source

Every Nodelet acts as a trustless access point in a decentralized mesh. The entire system is:

- Open-source: Anyone can audit, build, or improve the code and hardware.

- Locally manufacturable: Specs are designed to be simple, replicable, and low-cost using 3D printing and common components.

- Globally resilient: The system doesn't rely on any one company, cloud service, or centralized controller.

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This keeps costs down while making the network resistant to both failure and capture.

Scalable and Cost-Effective

For a city the size of Anchorage (approx. 290,000 people), we estimate:

- 5,000-7,000 Nodelets would serve the highest-need 2-3% of the population (ADA riders, seniors, Medicaid NEMT-eligible)

- At $30-$50 per unit (mass-manufactured), that's an initial hardware cost of roughly $150,000-$350,000

- These devices are reusable, durable, and don't require monthly subscriptions

Compared to the millions wasted annually on missed appointments and inefficient dispatch, this is a high-impact, low-cost investment in equity and efficiency.