

## Regenerative Pavement System (RPS)

Pyro-E's patent-pending RPS can generate renewable electricity from road vibrations and harvest parasitic energy from vehicle rolling resistance. It works by converting mechanical deflections into electricity. Through each wheel contact, there is power generated for battery storage, as well as for monitoring the impact and force of individual vehicle tires. The specific capabilities and features of RPS include:

### User Benefits:

- Lower CAPEX
- Lower OPEX
- Off-grid power
- DC power
- Self-diagnostics

- Uninterrupted self-power for traffic data collection and transmission
- Two-part construction to mitigate failure-modes and improve reliability
- Real-time measurement for vehicle direction, axles, speed, and weigh-in-motion
- Temperature compensation for environmental variabilities
- Hot-swappable power electronics to extend system life

**A 1-km 4-lane highway could power 4000 homes during rush hour traffic.**

RPS combines the functionalities of data integration, analytics, and decision management to monitor structure health. Pavement surfaces, for example, are prone to

damage by overweight trucks. The data network is designed to integrate with the majority of IT environments such as SCADA systems. Once installed, the plug-and-play devices are fully autonomous and requires low-maintenance. RPS data can integrate with those from visual inspections, manual measurements, cameras, and other toll lane technologies. No proprietary software is used to meet client interoperability standards. Overall, the major advantages of RPS include:

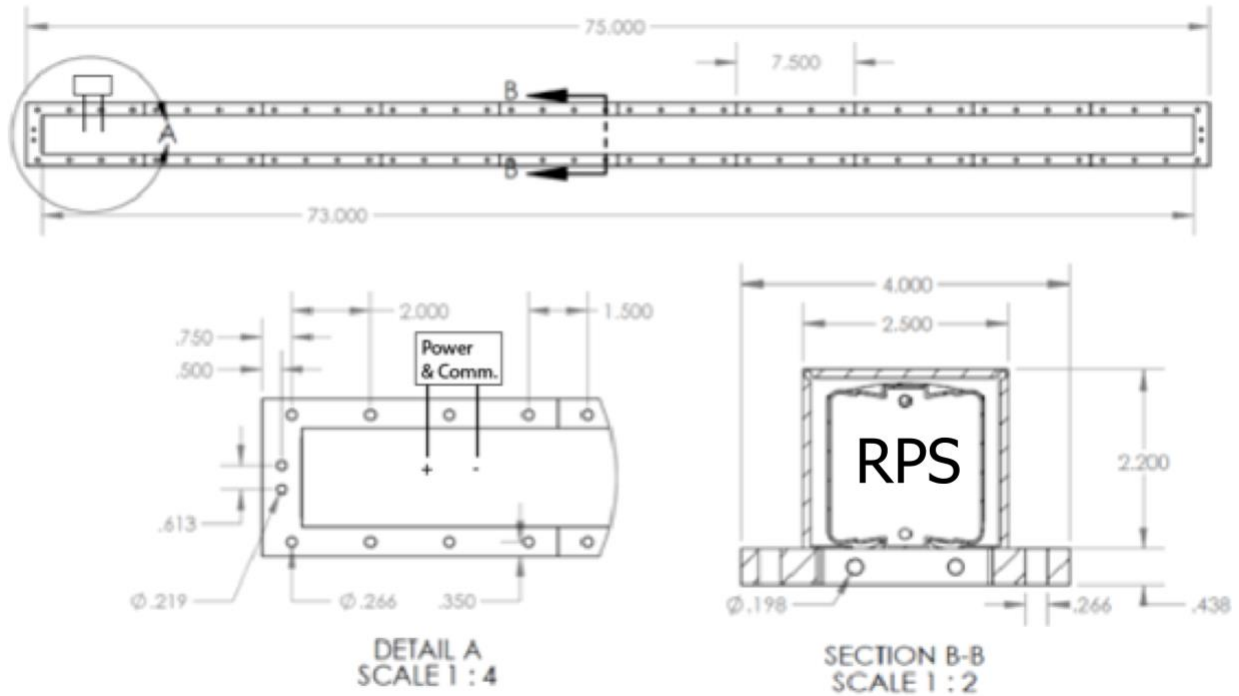


**Photos of exposed RPS during operation.**

- Capital efficient solution with lower equipment cost and ease of retrofit
- Low-maintenance operation with 25-year expected operating life
  - Accelerated timetable with direct 'drop-in' retrofit into existing treadle wells
- Reduced downtime with long-life and low-maintenance operation
- Run-time Security with uninterrupted power supply (UPS)

# Regenerative Roadway Device (RPD)

## Product Dimensions (unit: inches)



## Product Specifications

### Mechanical

Configuration	Sub-surface asphalt
Overlay thickness	< 1.5"
Dimension (LxWxH)	75" x 6" x 0.25" x 2.6" (length customizable)

Max. force	8500 lb per tire
Max. speed	65 mph
Min. load cycles	500 million

### Thermal

Ambient temperature	-40 to 85 °C
---------------------	--------------

### Electrical

Power supply	No need
Output voltage	4.5 VDC to storage
Operating life	25 years
Connectivity	RS-232/485

## Product Information

Pyro-E, Inc.

e: info@pyro-e.com | p: (510) 578 - 8849

