



SEPTA - RAIL ASSET MONITORING PLATFORM

Expression of Interest (“EOI”)

Date: March 25, 2026

1.0 Introduction

The Southeastern Pennsylvania Transportation Authority (SEPTA) is the Nation’s 6th largest provider of Public Transportation service in the City of Philadelphia and the five surrounding Counties in Southeastern Pennsylvania and also provides service to residents of New Jersey and Delaware. SEPTA provides bus, trolley, subway, and commuter rail services and employs over 9,500 union and non-union employees.

2.0 Objectives

SEPTA is soliciting an Expression of Interest (“EOI”) from qualified firms to implement a comprehensive Rail Asset Monitoring Platform to enhance visibility, reliability, and performance of rail infrastructure and rolling stock assets. The proposed solution leverages modern data integration, IoT, analytics, and visualization technologies to provide real-time insights and predictive capabilities for asset management.

The purpose of this EOI is to gain interest from qualified firms to partner with SEPTA to provide a Rail Asset Monitoring Platform that will achieve the following:

- 2.1 Provide a centralized platform for monitoring all critical rail assets
- 2.2 Enable real-time visibility into asset condition and performance
- 2.3 Support predictive maintenance and reduce unplanned outages
- 2.4 Improve safety, compliance, and operational efficiency
- 2.5 Facilitate data-driven decision-making

The objective of this EOI is for qualified firms to provide a solution that will assist SEPTA to achieve the following:

- 2.6 Increase asset reliability and reduce downtime
- 2.7 Improve maintenance planning and cost optimization
- 2.8 Enhance safety through proactive monitoring
- 2.9 Improve regulatory compliance and reporting
- 2.10 Improve operational transparency

3.0 Scope of work

The selected vendor(s) will be responsible for delivering an end-to-end Rail Asset Monitoring Platform, which may include the following components:

3.1 Data Acquisition Layer

- 3.1.2 Deployment of IoT sensors across critical assets (tracks, signals, rolling stock, bridges)
- 3.1.2 Integration with existing monitoring systems
- 3.1.3 Edge computing for real-time data processing

3.2 Communication Network

- 3.2.1 Secure, resilient communication using LTE/5G, fiber, or radio networks
- 3.2.2 Data transmission with redundancy and failover mechanisms

3.3 Data Management Platform

- 3.3.1 Cloud-based data lake for scalable storage
- 3.3.2 Real-time data ingestion and processing pipelines
- 3.3.3 Data normalization and quality management

3.4 User Interface & Integration

- 3.4.1 Role-based dashboards for operations and maintenance teams
- 3.4.2 Mobile access for field technicians
- 3.4.3 Integration with enterprise systems (CMMS, ERP, GIS)

3.5 Real-Time Monitoring

- 3.5.1 Live dashboards for asset health and operational status
- 3.5.2 Alerts and notifications for anomalies and threshold breaches
- 3.5.3 Geographic visualization of assets using GIS mapping

3.6 Predictive Analytics

- 3.6.1 Machine learning models for failure prediction
- 3.6.2 Condition-based maintenance recommendations
- 3.6.3 Trend analysis and performance forecasting

3.7 Reporting and Compliance

- 3.7.1 Automated reporting for regulatory compliance
- 3.7.2 Historical data analysis and audit trails
- 3.7.3 Customizable reporting dashboards

3.8 User Experience

- 3.8.1 Role-based access and personalized dashboards
- 3.8.2 Mobile-friendly interface for field personnel
- 3.8.3 Intuitive visualization tools for operational and executive users

4.0 Technical Approach

The solution will adopt a modular and scalable architecture:

- 4.1 Cloud-based or hybrid deployment model
- 4.2 API-driven integration framework
- 4.3 Secure data ingestion and processing pipelines
- 4.4 Scalable data storage (data lake/warehouse)
- 4.5 Advanced analytics and visualization layer

5.0 Implementation Strategy

The implementation will follow a phased approach:

Phase 1: Assessment & Planning

- Stakeholder engagement
- Asset inventory and criticality assessment
- Solution architecture design

Phase 2: Pilot Deployment

- Sensor installation on selected assets
- Platform configuration and integration
- Performance validation

Phase 3: Full-Scale Rollout

- System-wide deployment
- Training and change management
- Operational handover

Phase 4: Continuous Improvement

- Model tuning and optimization
- Ongoing support and maintenance

6.0 Risk Management

- 6.1 Cybersecurity risk mitigation
- 6.2 Data privacy compliance
- 6.3 Redundancy and disaster recovery planning
- 6.4 Change management strategy

7.0 Vendor Qualifications

Proposing vendors must demonstrate experience in:

- 7.1 Enterprise asset management systems
- 7.2 Data integration and IoT platforms
- 7.3 Cloud architecture and analytics solutions
- 7.4 Transportation and rail domain technologies

8.0 Submission Details

- 8.1 Deadline: April 24, 2026 by 3:00 pm ET
- 8.2 Format: PDF or Word document, maximum 15 pages
- 8.3 Contact: Karen Cyphers - karen.cyphers@septa.org
- 8.4 Subject Line: "EOI - Rail Asset Monitoring Platform - [Firm Name]"

Submissions should clearly describe the firm's approach, methodology, relevant experience, and proposed engagement model for implementing a Rail Asset Monitoring Platform at SEPTA.

SEPTA will review all submissions and develop a shortlist of qualified firms. Selected firms may be invited to engage with SEPTA stakeholders to further discuss their approach and demonstrate alignment with SEPTA's technical and business requirements.

Information gathered through this EOI will inform SEPTA's development of a formal competitive solicitation.

9.0 Disclaimer

This Expression of Interest is issued for information-gathering purposes only and does not oblige SEPTA to issue a solicitation or award a contract. SEPTA reserve the right to modify, cancel, or take no further action related to this EOI at its sole discretion.