



# AI Fleet Asset Utilization

## Client

Construction Equipment Fleet  
in Denver, Colorado

## Industry

Heavy Equipment  
Construction Services

## Solution

Smart Asset Management  
Utilization Optimization  
System

## Challenge

Denver construction company with 180 heavy equipment units (excavators, bulldozers, cranes) experienced 52% average utilization rates, \$15M in idle equipment costs, poor visibility into equipment location and status, and 67% of projects experiencing equipment shortages while other assets sat unused across Colorado job sites.

## AI Consulting Approach

- **Asset Intelligence Audit:** AI specialists implemented comprehensive tracking systems analyzing equipment usage patterns, project demands, and geographic distribution to optimize allocation across Denver metropolitan construction projects.
- **Predictive Demand Modeling:** Machine learning algorithms forecasting equipment needs based on project types, seasonal patterns, and historical usage data.

## AI Solution

- **Equipment Tracking AI:** IoT-enabled real-time location and operational status monitoring with geofencing capabilities
- **Dynamic Allocation Engine:** Machine learning optimizing equipment assignment based on project requirements, travel distances, and availability
- **Predictive Demand Planning:** AI forecasting equipment needs 2-8 weeks ahead using project schedules and historical patterns
- **Automated Logistics Coordination:** Smart routing for equipment transport between job sites minimizing deadhead miles



## Implementation (32 weeks total)

- Discovery (5 weeks)
- IoT Deployment (10 weeks)
- AI Development (12 weeks)
- Integration (5 weeks)

## Key Results

### Utilization Excellence:

- 84% equipment utilization (vs. 52%), \$9.8M reduction in idle asset costs, 91% project equipment availability, 47% fewer equipment shortages

### Operational Efficiency:

- 62% reduction in equipment transport costs, 38% faster project setup times, 156% improvement in cross-project sharing

### Financial Impact:

- \$16.4M annual value creation, 34% improvement in fleet ROI, ability to serve 28% more projects with same assets, 425% consulting ROI

### Technologies:

- IoT tracking
- machine learning
- predictive analytics
- route optimization