Sustainability Initiative: Smart Spoil Tracking

Rozelle Interchange
WestConnex
JOHN HOLLAND | CPB CONTRACTORS

The Challenge

With approximately 11 million tonnes of spoil to be removed between June 2019 and 2024, coordinating truck movements on the Rozelle Interchange represented one of the most significant logistical challenges ever faced by a Sydney-based construction project. The site is bordered by two of Sydney's busiest roads and has scarce queuing and laydown areas.

To comply with rigorous regulations, a manual spoil tracking system would typically be implemented, with paper spoil dockets entered into a central register. However, such a system is prone to inaccuracies and requires a large team of administrators to maintain.

Australian First Innovation

To overcome the evident logistical challenges, the spoil team collaborated with Teletrac Navman to create a bespoke, Australian-First spoil tracking and compliance system that seamlessly and efficiently tracks waste.

A device is installed on all trucks moving spoil to track in real time:

- vehicle registration and driver,
- time/date,
- weight,
- disposal location,
- waste classification, and
- truck location and route taken.

Geofences (virtual perimeters) set up by engineers automatically notify the spoil team of any non-compliances so that immediate rectifying action can be taken.

In addition, drivers approaching site are automatically allocated a gate entry via an algorithm to prevent on- and off-site congestion due to truck queuing.

Benefits

Environmental:

- The auto-allocation system reduces onsite truck wait times, reducing the overall carbon footprint.
- Reduction in paper consumption by replacing physical dockets (circa 260,000 pages replaced)
- Improved compliance: reduction of erroneous disposal of material and incorrect use of truck routes through enhanced driver accountability
- Increased reporting transparency and accuracy sets new industry benchmarks (>95% spoil diverted from landfill)

Social:

- The GPS system tracks vehicle speed, reducing the likelihood of reckless driving.
- Enables preventative action for community complaints rather than reactive investigation
- Improved safety due to reduced on-site personnel (fewer traffic controllers), reducing people/plant interaction
- Transparent system facilitates trusting relationship with subcontractors

Economic:

- Better allocation of staff resources through system automation, thereby improving project efficiencies
- Reduced redirection of trucks results in reduced truck cancellations
- Enhanced truck efficiency due to reduced queuing time

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