Lakes Creek Road Waste Transfer Station – High Level Overview

Ben McMaster
AECOM Rockhampton
Presentation Outline

- Two part presentation – this part focusses on how the WTS fits in with the overall site strategy and how complimentary projects were required to achieve the overall objectives.

- Format of this first part of the presentation:
  - Introduction and Background.
  - Site Layout.
  - Lakes Creek Road Landfill Masterplan.
  - Lakes Creek Road Wast Transfer Station project.
  - Dean Street / Lakes Creek Road Intersection Upgrade project.
  - Lakes Creek Road Trunk Sewer Protection project.
Rockhampton Regional Council (RRC) own and operate the Lakes Creek Road Landfill, which has been in formal operation since 1983.

- Landfill is due for closure in the future.
- RRC required the development of a Waste Transfer Station.
  - To be located on the Lakes Creek Road site.
  - Complimentary to existing facilities (recycling drop-off, site weighbridge and ‘Trendy Trash’).
  - Includes upgraded entry road, education facility & staff offices.
  - Green waste / C&D waste continue to be processed at LCR site.
- AECOM commissioned for concept design, options analysis, geotechnical investigations, instrumentation design, monitoring assistance, detailed design, tender support and construction support.
Site Layout

Existing Landfill Access

Stage 1 Landfill

Stage 2 Landfill

Stage 3 Area
Waste Transfer Station (WTS) Overview

- Flat Floor, Push Pit and Walking Floor Hybrid configurations considered.
- Push Pit selected as preferred configuration:
  - Waste delivered to a central pit, compacted by dozer.
  - Waste pushed through loading slot into top-loading trailers.
  - 8m high super-structure over 3 levels.
  - 3600m² floor area, including commercial recycling area.
  - 10 domestic bays, 6 commercial bays.
  - Sub-structure fully supported on more than 150 driven piles.
  - Western approach roads suspended bridges on piles.
  - Eastern approach roads on fill platform.
Dean Street Intersection Upgrade Overview

- B-Double waste transfer fleet to be used. Existing landfill access and intersection was deemed unsuitable.

- Options analysis and stakeholder consultation carried out.

- Preferred option was upgrading existing 3 leg Dean Street / Lakes Creek Road intersection to a 4 leg intersection.
  - Filling and preload.
  - Pedestrian crossing across Lakes Creek Road.
  - Relocation of memorial trees.
  - New Open Level Crossing on the Yeppoon Branch Rail Line and incorporation into signal phasing.
  - Closure of the existing access to the landfill and decommissioning existing Open Level Crossing.
  - Services relocation, installation and protection (gas, telstra, water service, sewage infrastructure, power).
  - Upgrades to rail line (raised to provide flood immunity requirements, bonded ballast works undertaken, etc).
  - Intersection lighting upgrades.
Dean Street Intersection – General Arrangement
An existing trunk sewer system traverses the extents of the intersection upgrade:

- 450mm diameter relined concrete gravity sewer;
- 675mm diameter relined concrete gravity sewer;
- 750mm diameter relined concrete gravity sewer;
- 3.0m diameter cast in situ concrete access chamber.

Sewer was previously damaged as a result of the filling associated with the previous landfill access.

Geotech investigation and analysis confirmed that loads imposed by the new intersection works would result in pipe deflection greater than allowable.

Four sewer protection options considered. Options analysis undertaken.

Option 1 taken forward: Realignment / diversion of the trunk sewer mains away from the project area.
Handover to Michael