Design and Construction of Road over Rail Level Crossing Removals

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ABSTRACT

In 2015 the Victorian Government established the Level Crossing Removal Project, tasked with removing existing road-rail level crossings in metropolitan Melbourne. There are four main options for level crossing removals: lowering the road (road under rail), lowering the rail (rail under road), raising the rail (rail over road) and raising the road (road over rail).

As of July 2024, a total of 82 level crossings have been removed, with sites being packaged and delivered by one of five alliances. This sustained program of works has allowed the opportunity for learnings to be applied from previously completed sites. Whilst this has led to the emergence of preferred details, site-specific conditions and constraints still provides the opportunity to develop innovative solutions.

Where site-specific conditions permit, road over rail solutions have proven to be efficient and cost-effective. These solutions minimise impacts to existing rail infrastructure, and realigning the road allows a significant amount of construction work to be completed ‘offline’ thereby minimising disruption to the road.

This paper discusses road over rail level crossing removal projects, focusing on the following:

- Key design considerations at the preliminary design phase
- Bridges, retaining walls and other structures
- Construction methods and programming

The content presented is primarily based on the following sites:

- South Gippsland Highway (Dandenong South) – Opened 2021
- Camms Road (Cranbourne) – Opened 2023
- Calder Park Drive (Calder Park) – Under Construction – completion due 2025