

WHY RAIL OVER?



At each level crossing removal site, every engineering option was considered by the expert project team – including digging trenches in the corridor to put the rail underneath the road crossings.

Option considerations

Engineering and technical challenges

The rail over solution has been designed to minimise impact to local utilities. A major gas transmission main runs directly across the rail corridor next to Grange Road – meaning that this level crossing had to be removed by elevating

the rail over the road. Relocating the gas main would have been incredibly disruptive to gas supply to a large part of Melbourne and would have taken many years to complete at significant cost.

- An extended open cut trench solution would effectively cut off or redirect natural overland flood paths which impacts the viability of existing vegetation and risks flooding of the trench and tracks (and significantly disrupts rail services).
- The presence of a high water table along the corridor presents significant engineering challenges. An extended open cut trench solution would cause temporary and possibly long-term changes to groundwater conditions. Impacts of changing the groundwater conditions can result in settlement and potential damage to surrounding residential properties and vegetation.
- Additionally, a high water table along the corridor means water needs to be removed to construct an extended open cut trench solution. This would present significant delays to construction and includes the need to pump out and treat contaminated groundwater.
- An open cut trench design would also require the relocation of substantial existing in-ground utilities which cross the corridor, including the Murrumbeena water main, the 66kV transmission line at Poath Road, and telecommunications services at all road crossings along the 20km rail corridor.
- The location of Mile Creek in Noble Park means that an open cut trench solution is not a feasible option to remove the Chandler Road level crossing.



Mature trees and vegetation

A rail over solution allows for the retention of many more mature trees and the opportunity to plant new larger species of trees adjacent to the rail line, as well as in the new areas of open space that are created.

An open cut trench would require the removal of the majority of trees within the rail corridor to allow for construction. Larger species of

trees could not be planted adjacent to a cutting due to space and safety issues associated with larger trees falling across the lowered rail tracks. In addition, any remaining trees would be significantly impacted by reduced water to the root systems.

The removal of any vegetation has a significant impact on local fauna – noting that in some of the local precincts the rail corridor is heavily populated by local bird and wildlife species that are of significance to the local community.

Elevated rail

While open trench solutions can work well in some areas, particularly for stand-alone level crossings, in this project we are removing nine level crossings close together – the single biggest level crossing removal project in Melbourne’s history. An open cut solution would see large and long trenches through local areas that would divide communities and, given the associated engineering and construction challenges, would mean the project would take longer to build with a lot more disruption to the local community during construction and operation.

The elevated rail avoids important gas, electricity and water services in the region, meaning that it can be completed quicker and without disrupting water, electricity and gas supplies to homes. It does not require the acquisition of any houses or parks, allows mature trees to be retained in the local area, reduces the number of trucks that would need to carry dirt around local streets. The proposed design can also be built without a large number of railway line and road closures meaning streets won’t be clogged with traffic and locals won’t have to catch replacement buses for months on end.



Avoiding significant road and rail disruptions

Delivering all nine level crossing removals in an open cut trench would require around 230 days of rail line closures over 2 years of construction - three times the amount of disruption to the community compared to the current proposed design.

Under the proposed design there will be much less construction disruption to the local community as well as a dramatic reduction in the number of local truck movements (by up to 70,000 less movements) when compared to an open cut trench solution due to much less excavation.

In addition, the design also minimises impact to rail freight movements. An extended rail closure to construct an open cut trench solution would require approximately 11,000 more freight truck movements on local Melbourne roads.

Significant delay to level crossing removals

Engineering and technical challenges mean that an open cut trench solution has the potential to significantly delay the removal of level crossings on Melbourne's busiest train line, where boom gates stay down for an average of up to 87 minutes in the morning peak.

Closer and safer access to stations

This proposal provides safer and better access for locals and for bus users and car drop offs at the stations.

Open space

The open cut method may require long stretches of deep trenches so limits the amount of new community space, and may even take away from existing areas.

The elevated proposal removes the "no go" zones that currently separate local suburbs into "north and south" of the rail line, and provides much needed open space for bike paths, walking tracks, playgrounds, vegetation and other community facilities.

Bus/train interchanges

Any extended rail closure normally needs to take place during the school holidays, when school buses are available as replacements to trains. The proposed design allows for rail closures to be accommodated during school holidays when patronage is expected to be approximately 50 per cent of normal levels and the roads are generally quieter.

With an open cut solution, the shutdown would extend past the school holiday period and so availability of buses would be extremely limited. The higher volumes of traffic on the roads outside of school holidays means significant delays would be caused by putting around 120 extra buses on local roads twice daily during the already congested peak period.

The proposed designs, and associated shorter rail disruptions and decreased replacement bus requirements, will help reduce congestion on local roads.

No compulsory acquisitions

A major benefit of the elevated proposal is that it does not require the acquisition of any residential homes, business properties or parklands.



Retail precincts

An open cut trench solution at Koornang, Murrumbeena, Poath, Clayton and Heatherton roads would require lengthy closures of the roads for months at a time. These road closures would clog up residential streets and divide critical local retail strips causing disruption to local businesses by reducing foot traffic and street access.

A rail over solution will have minimal impact on local retail precincts on either side of the corridor.

Fewer road closures and shorter closures of the railway line mean a reduced period of disruption to local traders.

Premium infrastructure

A large portion of open cut trench construction costs are expended in the excavation of material, the relocation of utility assets (power, water, gas etc.) and replacement bus services during extended periods of rail closure. The cost of these staging works are extensive and can consume large portion of an overall project budget.

A rail over solution minimises these staging costs and allows project funds to be re-allocated to the delivery of premium infrastructure solutions (i.e. stations with full canopy wraps) and community open spaces (parks, shared user paths etc).



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