



UNION ROAD, SURREY HILLS
MONT ALBERT ROAD, MONT ALBERT

SELECTING THE BEST DESIGN

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Level crossing at Mont Albert Road in Mont Albert.

Understanding the designs

The Victorian Government has fast-tracked the removal of two of Melbourne's most dangerous level crossings in Surrey Hills and Mont Albert.

The dangerous and congested level crossings at Union Road in Surrey Hills and Mont Albert Road in Mont Albert have recorded at least eight near miss incidents since 2005, with the crossing at Surrey Hills the scene of a tragic incident in 2016.

With 22,000 vehicles travelling through the crossings every day, and boom gates down for up to 40 per cent of the morning peak, removing these crossings will improve traffic flow and make the area safer for commuters and the community.

Following 18 months of technical and engineering assessments, we identified challenges to building two new stations and found that a single station design is the best way to meet modern rail safety and accessibility standards.

The existing stations are located on curved sections of track which obscure sightlines for train drivers and create a dangerous gap between the carriages and platforms. Rebuilding two stations on curved sections of track would be a breach of rail safety standards and cannot be considered.

The new station platforms will be located less than 150 metres from the current Surrey Hills Station and less than 400m from the current Mont Albert Station. There will be entrances at both ends of the station platforms.

The new premium station delivers greater benefits and will mean more frequent services for passengers currently using Surrey Hills and Mont Albert stations.

With roads, businesses and homes so close to the rail line, building two new stations would mean:

- Compulsory acquisition of homes in Mont Albert and the Coles supermarket in Surrey Hills
- Permanent closure of local streets
- More excavation, and more trucks on local roads for months
- Enormous stairs at Mont Albert Station, with a daunting 12 metre climb from the platforms to ground level – equivalent to climbing the stairs in a four-storey building.

This brochure details why a rail trench and one new premium station is the best solution for Surrey Hills and Mont Albert and explains why other solutions have been ruled out.

Project benefits



Less congestion for the 22,000 vehicles travelling through the crossings each day



A new premium station, with entrances at both ends of the station platforms



Opportunity for more frequent services in the future



Improved local connections, with opportunities for new pedestrian and cycling paths



Hundreds of jobs brought to the local area during construction, helping the Victorian economy recover from the COVID-19 pandemic.

Considering the site context and constraints

Each level crossing site has its own set of unique characteristics that must be considered when planning a major project. The sites at Union Road and Mont Albert Road have particular challenges, owing to the topography of the area and the history of residential and retail development close to the rail corridor.

The leafy inner suburbs of Surrey Hills and Mont Albert are steeped in history, with bustling local shopping strips and many Victorian and Edwardian homes.

When determining the design solutions to remove level crossings, we must take local context into consideration and create new infrastructure that fits in with the area, complementing the surroundings while improving the safety, amenity and functionality of the urban environment to leave a positive legacy for years to come.

There are numerous constraints with the Surrey Hills and Mont Albert level crossing removal sites that have influenced the design



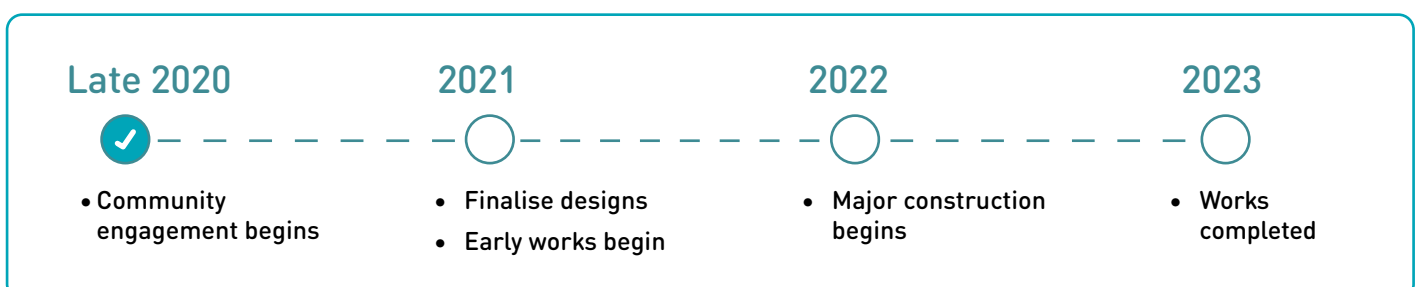
The existing stations are located on curved sections of rail track. Curved tracks obscure sightlines for train drivers and create large gaps between the train and the platform, making wheelchair access more difficult, increasing the risk of trips and falls and potentially trapping limbs or objects such as scooters and prams.

In the late 1800s, when the stations at Surrey Hills and Mont Albert first opened, this was not considered a problem. Today, modern safety and disability access standards require stations to be built on straight tracks to minimise the gaps and their inherent risks.

The need to position the platforms on straight tracks meant that we could not rebuild both stations in their current locations, and was a factor in the decision to combine the stations into one set of central platforms with separate entrances for Surrey Hills and Mont Albert.

Image left: Curved platforms leave dangerous gaps. We will build the new premium station on straight tracks, improving safety and accessibility.

Project timeline





Considering the natural and built environment

Topography

The landscape through Surrey Hills and Mont Albert – as the suburb names suggest – is naturally undulating.

From Union Road in Surrey Hills, the land slopes upwards to a peak near the current Mont Albert station. To follow this slope without becoming too steep for trains, the rail trench becomes deeper towards the top of the hill at Mont Albert.

This topography has influenced decisions around the placement of the station entrance at Mont Albert. For example, towards the peak of the hill, where the trench is deepest, a station entrance would mean climbing 12 metres of stairs to get from the platforms up to ground level – the equivalent of climbing the stairs in a four-storey building.

The topography also influenced the design of the Surrey Hills entrance to the combined station, with the need to keep the trench shallow at that end requiring a slightly elevated entry.

Narrow rail corridor

The rail corridor between Mont Albert and Surrey Hills is very narrow, with residential and retail precincts built up around the train line, and narrow roads next to the tracks with mature trees screening the rail line.

Lowering the tracks results in a wider rail corridor, with extra room required to fit the walls of the trench and barriers on top. Placing a station in the trench requires it to be wider still to accommodate the platforms.

At Surrey Hills and Mont Albert, stations would be unable to fit within the rail trench without increasing the impacts to the surrounding area – like removing more trees, closing local roads and compulsorily acquiring homes and businesses.

Consolidating the two stations means platforms need only be fitted within the trench in one location, lessening the impact on surrounding areas, and avoiding undesirable compulsory acquisitions of homes and businesses.

Selected design – rail trench with one, premium station

Extensive engineering and technical assessments have determined that the best way to remove these level crossings is with a rail trench and one new premium station, with entrances at each end to maintain convenient access for the Surrey Hills and Mont Albert communities.

Less visual impact

A rail trench solution has less visual impact than elevated rail and can be constructed without compulsory acquisition of homes or businesses.

Less impact to the surrounding area

The combined station delivers the best outcomes for the community overall – building only one set of platforms reduces the impact on the surrounding area compared to a two-station solution.

A premium station, with premium facilities

The new station will provide both Surrey Hills and Mont Albert with access to a premium station, which will allow for more frequent services.

When the station opens both communities will have access to premium facilities with toilets, a kiosk and staff present from the first to last train.

Convenient and more accessible

The Surrey Hills entrance will be less than 150m from the current Surrey Hills Station and the Mont Albert entrance will be less than 400m from the current Mont Albert Station.

Unlike the stations that they replace, the new entrances will be fully compliant with disability access standards. There will be ramps and stairs into each entrance, and lifts and stairs to the platforms. There will be two lifts for each platform so that access is maintained even if a lift breaks down.

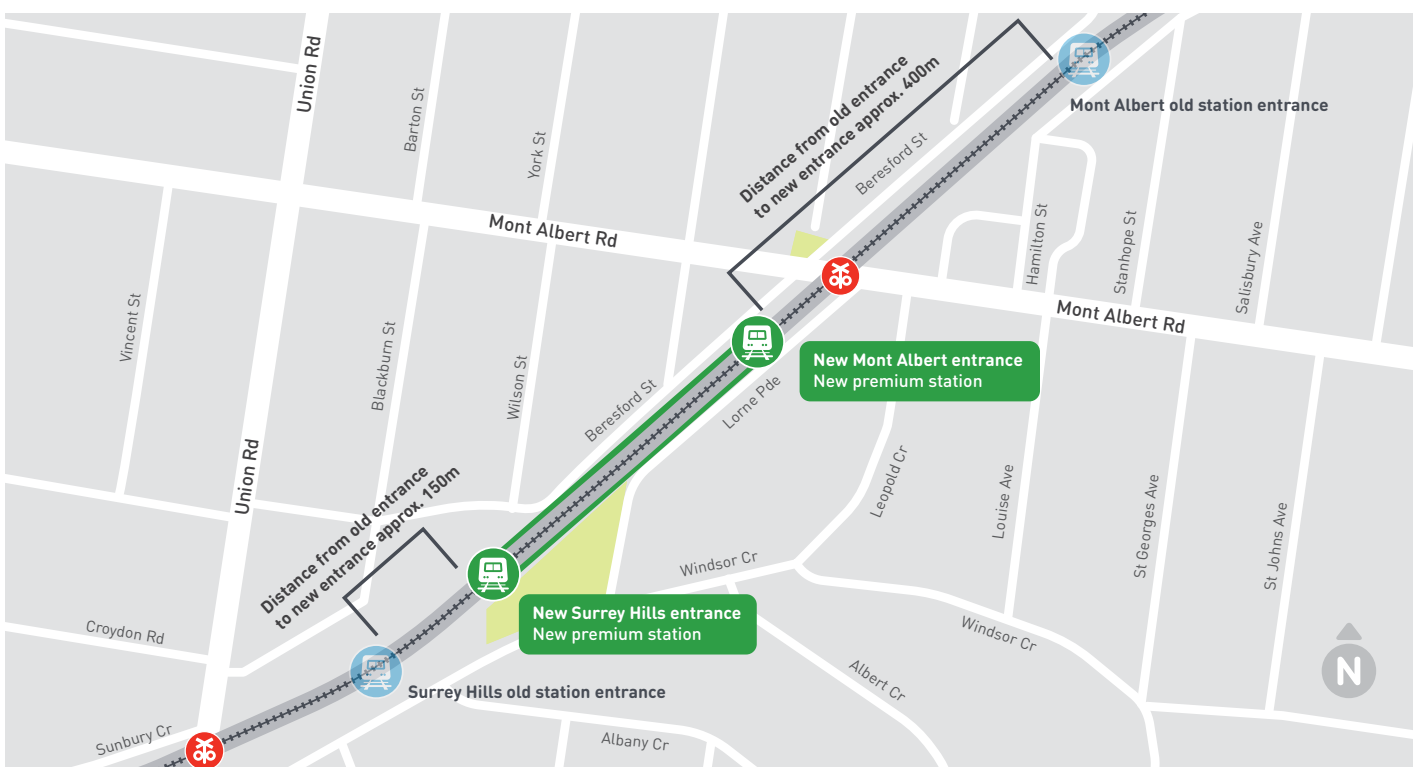
Safer for everyone

Removing the boom gates means safer journeys and the new station will have straight platforms removing the dangerous gaps between curved platforms and trains. There will be new cycling and pedestrian links and an additional set of pedestrian lights at Mont Albert Road to provide a safer connection between the Mont Albert shopping village and the Mont Albert station entrance.

In addition, a new pedestrian bridge at Mont Albert will allow people to cross the rail corridor at ground level – providing a safer, more accessible connection than the existing underpass.

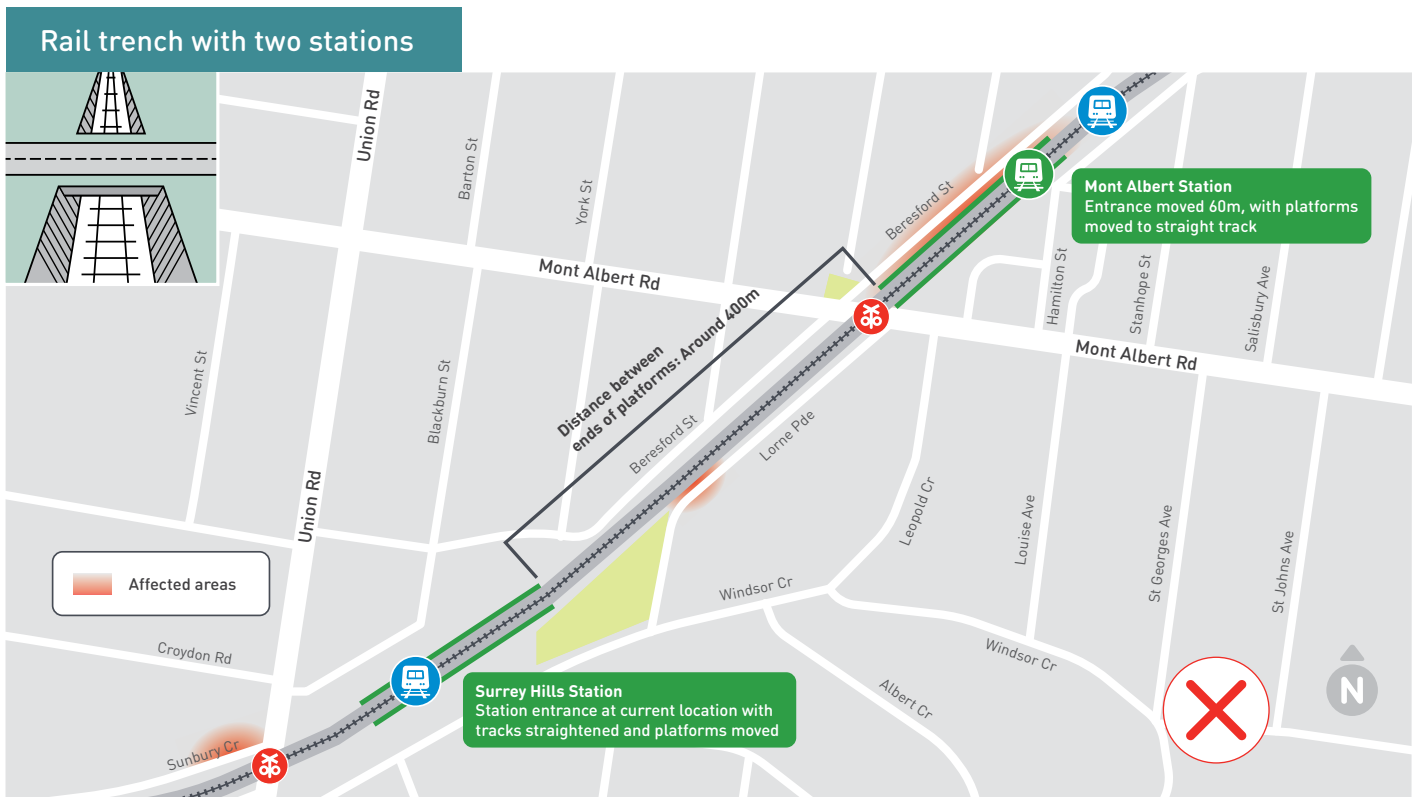
Each station entrance will be designed to be open and inviting, with good visibility and no dark corners. As a premium station, staff will be present from the first to the last train.

The car parks at Surrey Hills will also be completely rebuilt. The existing car parks are poorly configured, and vehicles often block each other. The new car parks will have a better layout that complies with modern standards, new lighting and CCTV, and no net loss of spaces.



Designs that were ruled out

The following is a summary of designs that were considered and ruled out.



Key challenges:

- Both stations need to move to straight track, pushing them closer together.
- Fitting two stations means the rail corridor needs to be widened in two locations, with more impacts.
- A station north of Mont Albert Road would likely require acquisition of homes
- Poor user experience at Mont Albert, and limited scope to improve facilities or services.

To fit platforms into the rail trench, we would need to widen the rail corridor into the adjacent roads.

Detailed technical investigations and engineering assessments found that building a station north of Mont Albert Road is highly impractical.

To fit the extra width of the platforms north of Mont Albert Road, the trench would need to be wider and would use the full width of Beresford Street.

This would likely require full closure of the road and acquisition of the homes that lose access.

The only alternative would be to build a cantilevered road, partially overhanging the trench - a complicated and costly solution that would still mean residents would need to move out for around 10 months during construction.

Given that Surrey Hills Station platforms would also need to move closer to Mont Albert, the two stations would be very close together - in fact, the platforms would be just 400m apart.

Moreover, the low patronage at Mont Albert Station means it would remain a local station without premium facilities, and there would be no opportunity to provide more frequent services.

The depth of the trench in that location would also mean the stairs would be 12 metres high - almost twice the height of the stairs at Mitcham Station, and equivalent to climbing the stairs in a four-storey building.

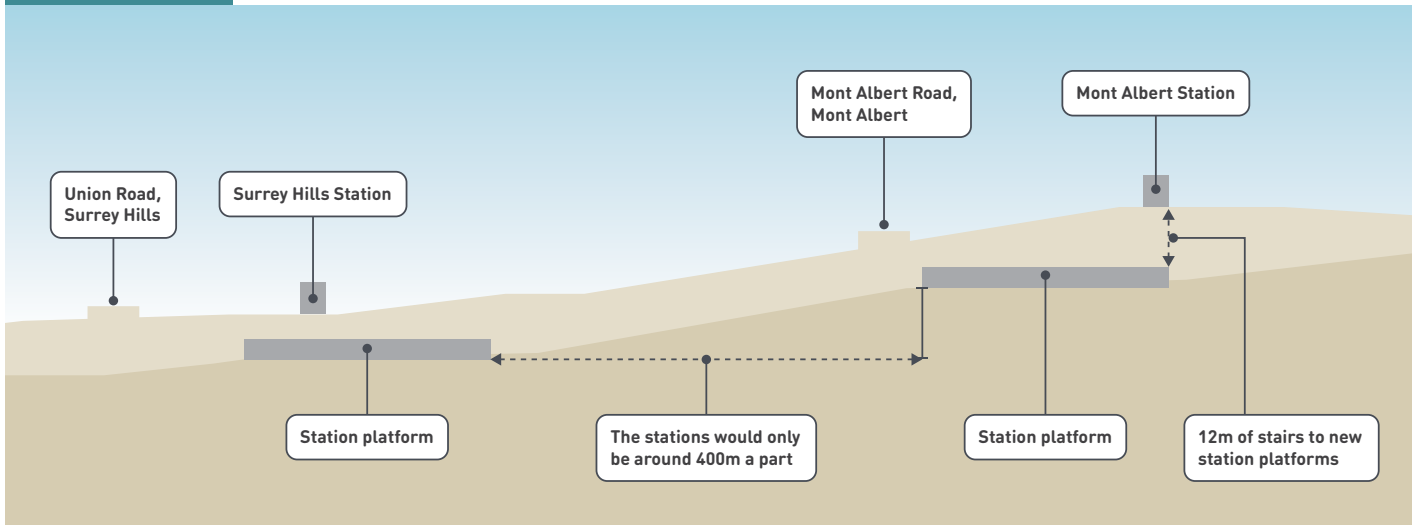
Temporary impacts would also be greater - with more excavation required, meaning a longer construction time and more trucks carting the excavated soil and rock through the area, as well as more road works and tree removal.

Overall, a two-station solution offers limited benefits, but significantly increases the negative impacts to the local community.

Taking a deeper look

Topography

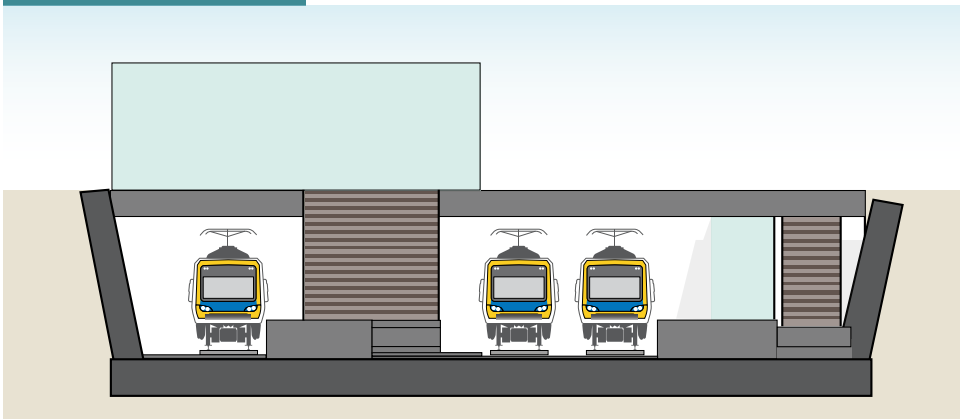
A wider and deeper trench would be required at Mont Albert, resulting in compulsory property acquisition and a daunting 12m from the station platform to ground level.



Not to scale - Illustrative purposes only

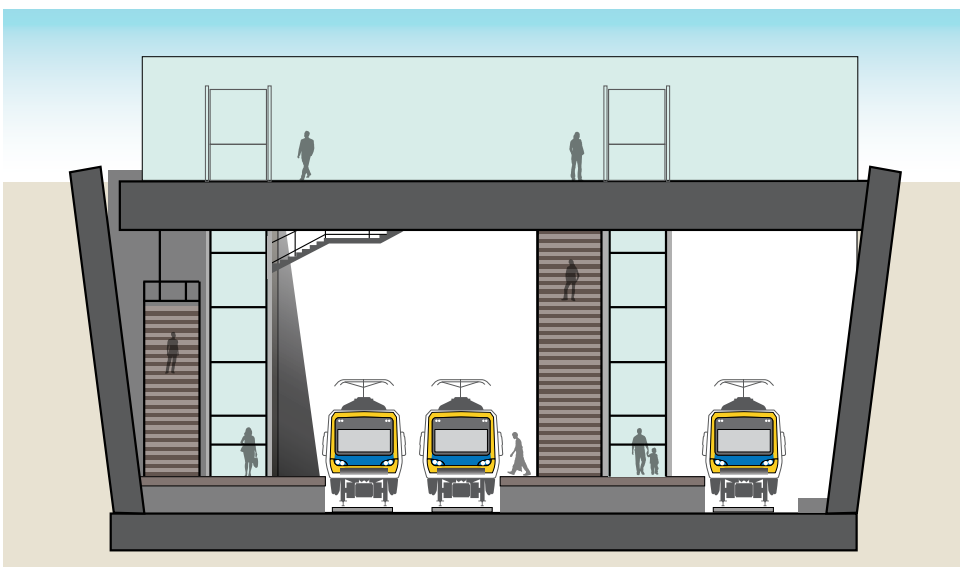
Two station option

Comparison to a typical Rail Under Road design



Example of a typical Rail Under Road solution

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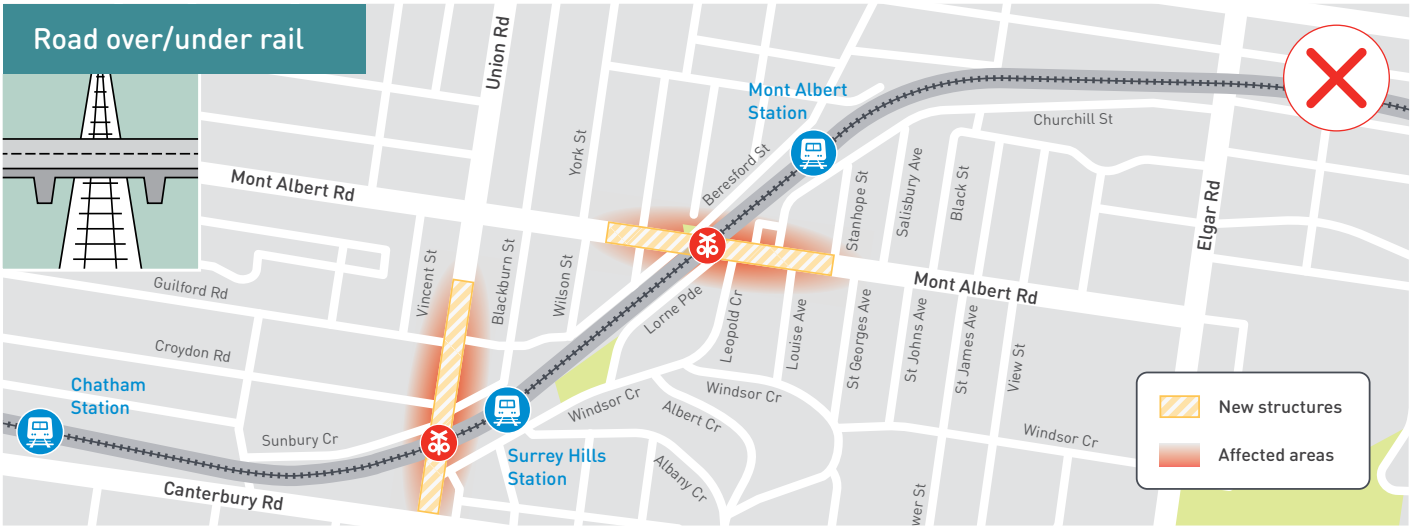


Example of a Rail Under Road solution in Mont Albert

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Comparing the combined station solution with a two-station solution:

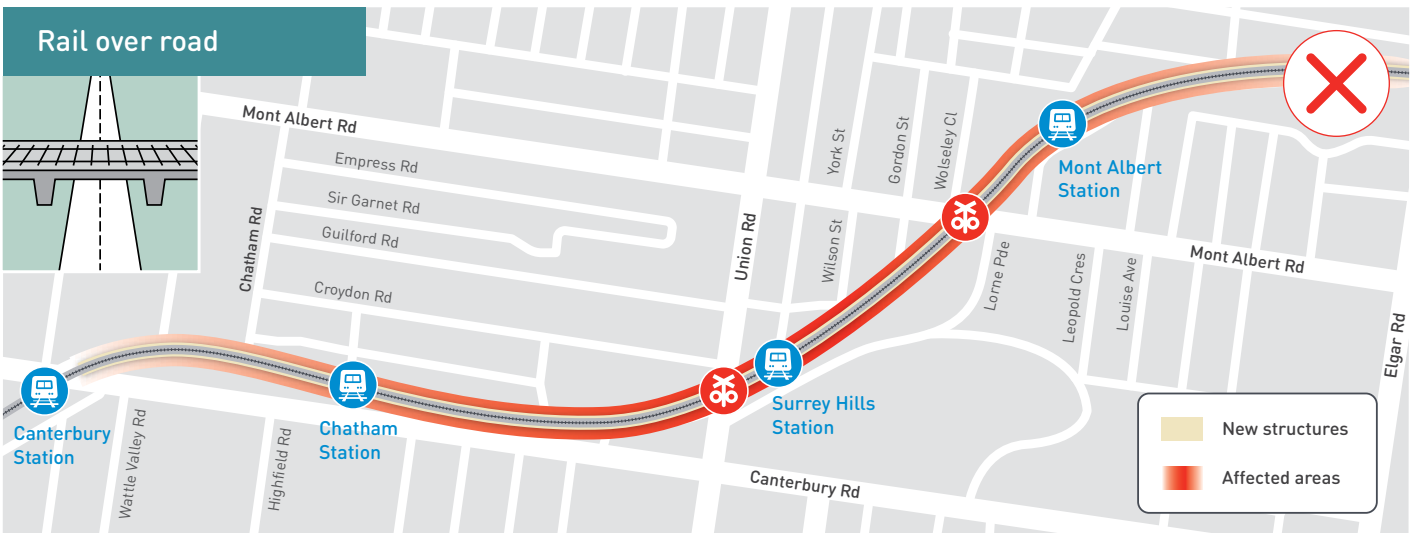
	Confirmed design: Consolidated station with separate entrances for Mont Albert and Surrey Hills	Ruled-out design: Two new stations, one in Mont Albert and one in Surrey Hills
Road closures	<ul style="list-style-type: none"> Roads will need to be modified, but access to all homes and businesses will be maintained. 	<ul style="list-style-type: none"> The roads that need to be modified for the combined station would still need to be modified in the two-station solution. In addition, the full width of Beresford Street north of Mont Albert Road would need to be used to accommodate the wider trench, requiring either compulsory acquisition of homes or extended relocation of residents. The position of the new Surrey Hills Station would also result in additional impacts to Sunbury Crescent and Lorne Parade, requiring both roads to be truncated. Access to the Coles supermarket would be impacted and it would need to be compulsorily acquired.
Compulsory acquisition	<ul style="list-style-type: none"> No compulsory acquisition of homes or businesses. 	<ul style="list-style-type: none"> The two-station solution would likely require compulsory acquisition of homes in Mont Albert due to the full closure of Beresford Street. The only way to avoid acquisition in Beresford Street would be to build a costly and challenging cantilevered road overhanging part of the trench, and residents would still need to be relocated for around 10 months during construction. The position of the Surrey Hills Station would also result in compulsory acquisition of the Surrey Hills Coles supermarket, due to impacts to Sunbury Crescent.
Trees	<ul style="list-style-type: none"> Fewer trees removed, due to reduced impacts north of Mont Albert Road. 	<ul style="list-style-type: none"> Widening the rail corridor north of Mont Albert Road to fit the additional station would require additional tree removal through that area.
Premium station	<ul style="list-style-type: none"> Both Mont Albert and Surrey Hills have access to a premium station with toilets, a kiosk and staff from the first to last train. 	<ul style="list-style-type: none"> Surrey Hills Station would remain a premium station, but Mont Albert Station would remain a local station – meaning it would be unstaffed and would not have facilities like toilets and a kiosk. The station would move from its existing location onto straight tracks closer to Mont Albert Road.
Access	<ul style="list-style-type: none"> The new station will be fully accessible, with ramps and stairs into the entrances and lifts and stairs to access the platforms. 	<ul style="list-style-type: none"> Both stations would be fully accessible with ramps and stairs into the entrances, and lifts and stairs to the platforms. A deeper trench would be required at Mont Albert. This would mean the vertical distance from the station entrance at Mont Albert to the platforms would be around 12m – twice the usual vertical distance at similar train stations and the equivalent of a four-storey building. Resulting in a less convenient station to use, with several flights of stairs or a long lift ride.
Services	<ul style="list-style-type: none"> Consolidating the stations provides the opportunity for more frequent services in the future. 	<ul style="list-style-type: none"> Separate stations close together would mean there is limited opportunity to provide more frequent services in the future to both stations.
Construction impacts	<ul style="list-style-type: none"> Less excavation and shorter construction timeframe with only one set of platforms to build in the trench. To safely build the new trench and complete excavation activities, long rail closures will be required. 	<ul style="list-style-type: none"> The wider, deeper trench would require even more excavation in Mont Albert. In fact, we would need to remove around 3,300 more truckloads of soil and rock. To safely build the wider, deep trench and excavation activities would require more extensive construction timeframes and longer rail closures.



Key challenges:

- Ramps restrict access to shops and homes
- No room for service roads to provide alternate access
- Extensive property acquisition due to the loss of access

Raising or lowering the roads would require long approach ramps and, with no room for an additional service road, there would be no way to provide access to the existing homes and businesses along each road. As a result, a number of homes and businesses would need to be acquired compulsorily.



Key challenges:

- Wide, visually imposing structure required to accommodate the three sets of tracks
- Long bridge required to follow the slope of the land, meaning a bigger project area, more materials, and more homes and businesses impacted during construction
- Likely compulsory acquisition of homes and businesses near Chatham Station

The elevated structure would need to be wide enough to accommodate three sets of tracks and, due to the steep hill through Surrey Hills and Mont Albert, it would need to be built at a significant length and height, impacting a greater number of properties along the rail line.

In order to safely accommodate trains, the elevated rail structure would have to extend from Mont Albert to just east of Canterbury Station, and would require Chatham Station to be rebuilt as an elevated station.

Rebuilding Chatham Station would also result in the compulsory acquisition of nearby homes.

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