

Subject	LGWM – initial indication of construction disruption
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1. Introduction

This background note has been prepared to give an indication of possible construction disruption associated with the different investment scenarios. This information will be used to support the public consultation in November 2017.

2. Summary construction periods and level of disruption

SCENARIO	KEY INTERVENTIONS	CONSTRUCTION DURATION
Scenario A	<p>Dedicated bus lanes on the Golden Mile, improved walking and cycling environment in the central city, with lower CBD speed limits</p> <p>Use traffic signalling and other intelligent transport systems to align waiting times at junctions and crossings with agreed priorities for different users of the transport system</p>	<ul style="list-style-type: none"> Golden Mile: 1.5 to 2.5 years of construction Scenario A construction duration: 1.5 to 2.5 years
Scenario B	<p>Scenario A plus:</p> <p>Basin Reserve grade separation, Mt Victoria tunnel duplication and Ruahine/Wellington St widening (with public transport, active mode and high occupancy vehicle priority), enables extension of continuous prioritised public transport spine to the hospital, Kilbirnie and the airport</p>	<p>Scenario A plus:</p> <ul style="list-style-type: none"> Basin : 1.5 to 2 years of construction Mt Vic tunnel and Ruahine Street: 2 to 2.5 years of construction Scenario A + B construction duration: 5 to 7 years
Scenario C	<p>Scenario B plus:</p> <p>Shift eastbound State Highway 1 from Vivian St to Karo Drive alignment with cut and cover sections</p> <p>Change priorities on Vivian Street to reduce severance and improve amenity</p>	<p>Scenario B plus:</p> <ul style="list-style-type: none"> SH1 move to Karo Drive: 2.5 to 3.5 years of construction Scenario A + B + C construction duration: 7 to 10 years
Scenario D	<p>Scenario C plus:</p> <p>Duplication of Terrace Tunnel, an additional southbound lane on State Highway 1 between Ngauranga and Aotea Quay and removal of traffic lane on waterfront quays</p>	<p>Scenario C plus:</p> <ul style="list-style-type: none"> Terrace tunnel: 2 years of construction Approach to terrace Tunnel from north: 1 year of construction SH1 4-laning southbound: 1.5 to 2.5 years of construction Scenario A + B + C + D construction duration: 10+ years

3. Construction disruption

When considering interventions within each scenario and the disruption that will occur during construction, it should be understood that disruption is specific to each individual/company and also depends on choice of mode. For example, pedestrians can generally be accommodated through, or diverted around, a construction zone with minimal disruption. Cyclists that dismount and join pedestrians can also be accommodated in this manner. For all other modes and users that occupy road space the amount of disruption is generally based around delay. Businesses may be disrupted during construction works through the removal of parking for customers, removal of loading bays, diversion of passing traffic or through preventing access.

4. Construction on line and off line

Applying the principles above to each intervention, then the least disruptive interventions are those with construction zones that are off-line from the existing transport corridors e.g. duplicating Mt Victoria or Terrace Tunnels. Although the construction of these interventions may take up to 2 years each, the amount of disruption to current users and businesses is minimal. At the other end of the spectrum, interventions that cause traffic to be diverted to other routes may:

- Be disruptive to users due to longer travel times or changes to public transport services
- Pose access difficulties to properties within the construction zone
- Be disruptive to businesses within the construction zone due to passing trade being diverted or from a lack of access (including temporary loss of parking) to their businesses
- Be a nuisance to the transport corridors that receive the diverted traffic.

5. Improvements for active modes

The assessment of interventions associated with improving walking priority, CBD cycle lanes, clearways on Vivian Street, reducing vehicles on waterfront quays, PT lanes and priority at intersections assumes that the existing transport corridor is wide enough to accommodate these facilities through the removal of parking (either temporarily via clearways at certain times or permanently) and the removal of lanes on the quays. Construction is therefore assumed to be undertaken during off-peak periods, with any site being up to a maximum 300m in length, which would be progressively moved along a transport corridor as the work is completed. Therefore the disruption and nuisance would be confined to a maximum 300m length at any one time, with the works on each 300m length taking approximately one month to complete. Overall, the time to complete all these works is envisaged to take approximately 1.5 to 2.5 years, depending on the number of interventions adopted.

6. Improvements for Mass Transit – duplicating Mount Victoria Tunnel and widening Ruahine Street

The construction works associated with Mass Transit would be managed in a similar manner to the above, with the exception of the second tunnel under Mt Victoria and widening of Ruahine Street to four lanes, which could involve the construction of a dedicated lane for mass transit and a dedicated lane for general traffic in each direction. As mentioned previously, the construction of the second Mt Victoria tunnel itself would have minimal disruption and nuisance effects apart from where the road ties into the existing transport corridor, and at existing intersections and the properties along Wellington Road. Depending on where the additional lanes along Ruahine Street were located, the disruption and nuisance from construction activities could range from minimal to significant, with the significant disruption likely to be confined to tie in locations. A construction timeframe of 2 to 2.5 years is envisaged.

7. Basin Reserve improvements

The construction works associated with Basin Reserve are considered to have significant levels of disruption and nuisance. Due to a lack of space, the likely scenario will be that new works will be undertaken directly within the transport corridor with all modes of travel interacting with each other directly adjacent to the construction site, which will occupy at least 50% of the existing transport corridor at any one time. Access to schools, adjacent properties and through to the hospital and airport will need to be maintained, and the likely outcome during construction is that traffic will voluntarily divert to the adjacent transport network, with some routes eg Tasman Street and Oriental Parade experiencing an increase in traffic volumes. A construction timeframe of 1.5 to 2 years is envisaged.

8. Moving State Highways to Karo Drive

The construction works associated with increasing the number of lanes on Karo Drive are considered to have significant levels of disruption and nuisance. Eastbound state highway traffic will likely be diverted down Taranaki Street to Vivian Street, with Vivian Street being one way westbound to join the state highway at the Terrace tunnel portal. The currently closed off ramp to Ghuznee Street from the Terrace tunnel will be reopened and an eastbound one way system installed on Ghuznee Street down to Taranaki Street and along the section of Vivian Street from Taranaki Street to Kent Terrace. North/south movements along Cuba Street, Victoria and Willis Streets will have less disruption during this period but will have significant disruption, property impacts and nuisance whilst the underpasses are constructed. The section of new state highway from Abel Smith Street to the Terrace tunnel will have significant property impacts and disruption to cyclists, walkers and local road traffic on Buller Street but, once properties are cleared, the disruption to road users will be minimal. Overall, the timeframe for construction from the Basin Reserve to the Terrace Tunnel is likely to take 2.5 to 3.5 years.

9. State Highway 1 Bolton Terrace to Terrace Tunnel

The construction works associated with the motorway section of the state highway from Bolton Street to the Terrace tunnel would be mostly off road except at the northern tie-in and the tie-in to the Terrace exit ramp. The disruption and nuisance to state highway users is considered to be medium over a period of 12 months, with the remaining works considered to have a low level of disruption and nuisance over a further 12 months. The existing carpark is likely to be out of use for a period of 12 months.

10. 4-laning southbound SH1 from Ngauranga to Aotea Quay exit ramp

The construction works associated with 4-laning the southbound lane of SH1 from Ngauranga to Aotea Quay exit ramp is considered to mostly have a medium level of disruption and nuisance, with a period of significant disruption to road users and potentially rail and ferry operations whilst constructing the 4th lane adjacent to the existing Thorndon overbridge. A 1.5 to 2.5 year construction timeframe is envisaged.