



GROUP

## Memo

To: [Redacted - Out of scope]  
From: [Redacted - Out of scope]  
CC: [Redacted - Out of scope]  
Date: 22 June 2021  
Re: Do Minimum Assumptions

### PURPOSE OF THE DO MINIMUM

This memo sets out the Do Minimum (DM) assumptions for the CC2M 2021 project that will explore the best route and mode for rapid transit along the corridor between Auckland's city centre and Mangere, including the Auckland International Airport. These assumptions were workshopped with the wider team on 21 May 2021. Both NZ Treasury and Waka Kotahi provided guidance on the development of the DM through published documents on their websites.

#### NZ Treasury Guidance (IBC template 2020)

The NZ Treasury provides the following guidance for the development of a Do Minimum as contained within the following guidance document: Template and Guidance - Project Indicative Business Case (IBC) –September 2020.

The paragraphs relevant to the development of a Do Minimum are listed below (underlining added for relevance to CC2M decision):

- *"A base case option must be included as a baseline for comparing marginal costs and benefits of alternative investment options or courses of action. It provides the benchmark for determining the relative marginal value added by the other short-listed options under consideration. This is the 'Do nothing' or 'Status quo'. In some cases, maintaining the current level of services is not a viable option."*
- *"Note that 'Do nothing' or 'Status quo' may not be an option, especially when faced with a legislative or regulatory change that requires some action; in that case "Do nothing" should simply be listed and immediately discounted (rejected) with a very brief explanation. The case, in these situations, should start with an assessment of 'Do Minimum'".*
- *"The long-list must also include a realistic 'Do minimum' option based on the core functionality and essential requirements for the project."*

## Waka Kotahi Guidance

Waka Kotahi provides the following guidance for the development of a Do Minimum” listed on their website:

- *“In developing business cases, the do-minimum option should represent the minimum level of expenditure required to maintain a minimum level of service, not the minimum level of investment required to achieve the investment objectives. For example, the most likely transport situation over the course of the appraisal period if no further intervention were to occur.”*
- *“In theory, every option should be compared with the option of doing nothing at all, that is, the do-nothing option; however, for many transport activities it is not practical to do nothing at all.”*
- *“It is important not to overstate the scope of the do-minimum option, that is, it should only include activities that are absolutely essential to preserve a minimum level of service. Where network interdependencies exist, the do-minimum option should take into account other activities elsewhere on the network where these other activities have a commitment to funding, and where they affect the demands and level of service at the location of interest.”*
- *“The minimum level of investment to achieve the investment objectives is explored through the use of further options, in addition to the do-minimum. The do-minimum option is used as a baseline for comparing marginal costs and benefits of alternative activities. It provides the benchmark for determining the relative marginal value for money added by the other options under consideration.”*

In addition to the business case development guidance Waka Kotahi also provides guidance for the consideration of a Do Minimum in the Monetised benefits and cost manual, February 2021 – Version 1.4:

### Section 1.4 from the manual “Counterfactuals and the do-minimum”

- *“Typically, a CBA will analyse counterfactuals known as the ‘do-nothing’ and the ‘do-minimum’”.*
- *“There should be careful consideration of what the counterfactual is, as this is what the activity will be measured against. Overstating or understating the counterfactual can have an adverse effect on the CBA. Effort should therefore be applied early in the development of the analysis to define the future state if an activity did not proceed in order to establish a realistic baseline that options can be assessed against.”*
- *“It is entirely possible that through a comprehensive CBA it is determined that the counterfactual is the preferred activity.”*

#### Do-nothing

- *“Most forms of activity evaluation involve choices between different options or courses of action. In theory, every option should be compared with the option of doing nothing at all, i.e. the do-nothing. This is often not practical due to limitations in analysis techniques and tools.”*

#### Do-minimum

- *“For many transport activities, it is often not practical to do nothing. A certain minimum level of expenditure or activity may be required to maintain a minimum level of service. This*

*minimum level of expenditure or activity and the resultant performance is known as the do-minimum, and should be used as the basis for evaluation, rather than the do-nothing. It is important not to overstate the scope of the do-minimum.*

- *“The do-minimum may include maintaining the status quo and should account for committed and funded transport activities. For the purposes of this manual, the do-minimum is defined as the least cost option that provides a minimum level of service”.*
- *“Particular caution is required if the cost of the do-minimum represents a significant proportion of, or exceeds, the cost of the options being considered. In such cases, the do-minimum should be re-examined to see if it is being overstated.”*
- *“If an activity’s option results in cost savings compared with the developed do-minimum, then the option becomes the new do-minimum that all other options should be assessed against”.*

## Recommendation on Do Minimum approach

At the meeting the parties agreed to the approach as set out in the guidance above, i.e. a philosophy of a lean Do Minimum. Specifically, this implies that:

- The option of developing a Do Nothing will be discarded since an agreed and funded list of transport interventions already exists as published through the Auckland RLTP.
- Only two planning horizons will be developed for the analysis – 2031 and 2051. This will allow assessment of outcomes against a Do Minimum ‘at opening’ as well as an outcomes assessment 3-decades later.
- The approved and funded 2031 RLTP will be the Do Minimum for the 2031 scenario.
- Assumptions for the 2051 scenario are discussed further in this report.

## DO MINIMUM LAND USE ASSUMPTIONS

Auckland Council advised that the latest Scenario I-11.6 anticipates light rail along the CC2M corridor. It therefore already includes household and employment distribution towards the light rail corridor.

The Do Minimum land use assumption will reverse these allocations as follows:

**For 2031:** The DM will assume the land use scenario and distribution within Scenario I-11.6 without any adjustments.

**For 2051:** The DM Land Use will be based on Scenario I-11.6 but with the following adjustments:

- **Households:** The number of households will be reduced within the zones listed in Appendix 2 without changing the overall regional household total for Auckland. This will remain the same as in Scenario I-11.6.
- Households removed from zones within the light rail corridor was re-distributed to other zones in the region – in line with original Scenario I-11.3 forecast.
- Education roll was adjusted to match the revised household totals per zone.
- **Employment:** Redistribute 4,000 jobs away from the corridor (excluding city centre zones).

# WIDER TRANSPORT POLICY ASSUMPTIONS IN THE DO MINIMUM

## Road pricing

The ATAP21-31 work recognises that a congestion pricing scheme for Auckland would complement investments in helping to reduce congestion.

The Congestion Question (TCQ) identified the City Centre Cordon and Strategic Corridors options as having the most potential for Auckland. It also recommends a phased implementation of congestion pricing, starting as early as 2025.

However, no date has been set by Government for a decision to proceed and no funding has been committed for its implementation through the RLTP.

**It is therefore recommended to that the CC2M project exclude road pricing from its Do Minimum scenario as it is not a committed nor a funded project at this stage.**

It is however recommended that a sensitivity test be developed to explore impact of road pricing on the Do Minimum.

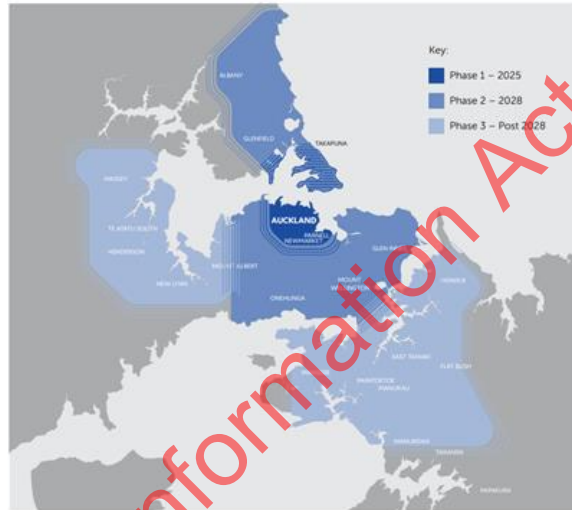


Figure 1: Phased implementation as recommended by The Congestion Question

## Fleet electrification

### Bus fleet

Auckland Transport has adopted a Low Emission Bus Roadmap (October 2020). The document states that:

- *“In our latest greenhouse gas emission inventory, operation of the bus fleet accounted for 93,200 tonnes of CO<sub>2</sub>e. This is the largest source of greenhouse gas emissions in Auckland Transport’s operational carbon footprint.”*
- *“The Low Emission Bus Roadmap presents a baseline for transitioning the bus fleet to lower emissions, with key milestones at 2020, 2025, and 2030. It supports the C40 Fossil Fuel Free Streets Declaration, signed by Mayor Phil Goff at the Together4Climate event in Paris, which commits Auckland to procuring zero-emission buses from 2025 onward.”*

The roadmap recommended to seek funding as part of the Regional Land Transport Plan (RLTP) funding prioritisation to accelerate the transition to zero-emission bus fleet, targeting 2030 for completion. This funding has not been committed (at time of developing the Do Minimum) and it is therefore recommended to retain the transition to zero emission fleet based on assumptions documented within the Vehicle Emissions Prediction Model VEPM 6.1.

The VEPM 6.1 fleet projection is unchanged from VEPM 6.0. This fleet data used in model outputs to reflect the 'Base Case' as described in the Transport Outlook: Future State report (MoT, 2017).

Emissions are projected to fall by 31% from 2015/16 to 2039/40, despite an increase in the size of the vehicle fleet and distance travelled.

Appendix 3 summarise the bus fleet evolution contained in the Base case as described above.

## Covid-19

The CC2M DM case will make no specific provision for Covid-19 impact on demand for travel, other than the adjusted land use totals contained within Scenario I-11.6, that anticipates slightly lower growth rates to 2051 compared to previous forecast scenarios.

## Transport concessions

The CC2M DM will make no specific allowance for transport fare concessions. Fares within the DM will reflect the fare structure as contained in the RLTP 31 scenario.

## APPROACH TO MINIMUM LEVEL OF SERVICE PROVIDED BY BUSES IN THE DO MINIMUM.

### Bus capacity in the Do Min

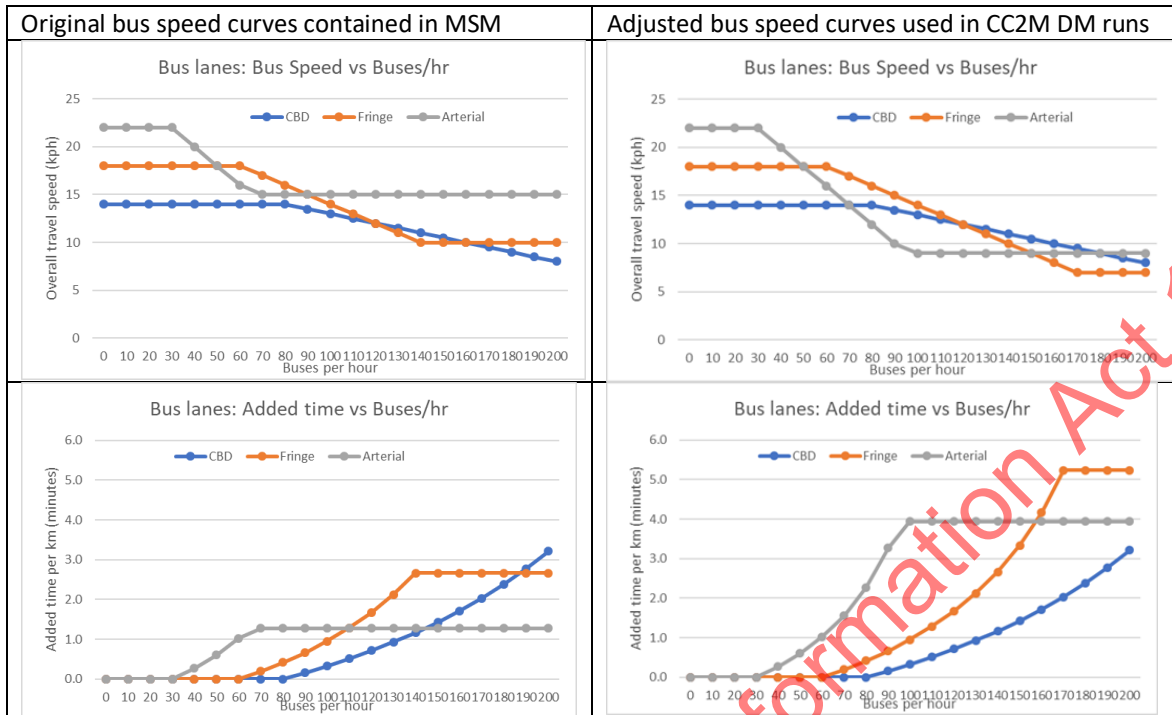
2031 DM: The CC2M Do Minimum PT frequencies reflect the service pattern contained within the 2031 RLTP scenario.

2051 DM: This scenario reflects adjusted bus frequencies to meet the uncrowded demand for PT services based on the 2031 network structure. (i.e. no allowance for enhancements to the rapid transit network beyond what is available in the 2031 RLTP Scenario.) Additional bus services were also included for the greenfield networks to service new developed areas. Appendix 4 provides detail on the additional bus services allowed for in the do minimum.

The bus speed curves in the Do Min were adjusted to better reflect bus to bus interference at high bus volumes within bus lanes. Appendix 5 contains justification for the change in speed curves applied to the CC2M 2021 project. The adjusted bus speed reduction curves applied to the DM scenario is shown in the chart comparison below.

These charts reflect a lowering of the minimum speed for buses travelling in bus lanes located in the city centre fringe (lowered from 10 km/h to 7 km/h) and suburban arterials (lowered from 15 km/h to 9 km/h).

Bus lanes in CBD arterials retain minimum speed of 5 km/h.



## TRANSPORT NETWORK ASSUMPTIONS IN THE DO MINIMUM

### Networks within greenfield growth areas

**2031 Do Minimum network in greenfield areas:** These networks reflect the RLTP 2031 scenario but with and adjusted Mill Road Corridor, to reflect the latest changes to the NZUP programme as announced by the Government on 4 June 2021. Mill Road will reflect a single lane per direction and portions of the corridor through Opaheke were removed. Appendix 6 provides details on the changes to the Mill Road Corridor in the 2031 DM.

**2051 Do Minimum network in greenfield areas:** These networks were scaled back from the recommended networks in the Strategic Growth Alliance work to reflect a minimum case that 'opens up' greenfield land for development. Changes are summarised in Appendix 6, but notable infrastructure improvements not included in the DM include:

- scaled back version of Mill Road;
- removal of the proposed Kumeu bypass;
- removal of bus rapid transit from southern growth area to airport;
- removal of rapid transit that connects north-western growth area with the central city; and
- removal of rapid transit connection that connects northern growth area with Albany

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## OTHER STRATEGIC ROADING NETWORK ASSUMPTION IN THE DO MINIMUM

The following major projects were included/excluded as part of the DM Assumptions for CC2M 2021 project.

Project	2031	2051	Notes
SH1: Six lane SH1 from Albany to Silverdale	N	N	Not funded
Penlink	Y	Y	Funded through NZUP
SH1 Extra NB Lane from Akoranga to Constellation	N	N	Not funded
SH1 Extra SB Lane from Tristram to AWHC	N	N	Not funded
SH1: AWHC	N	N	Not funded
SH18: Extra WB lane on upper harbour bridge	N	N	Not funded
SH16: 8 laning between Te Atatu and Westgate	N	N	Not funded
SH20: 8 laning between SH20A and MHX	N	N	Not funded
SH1: Additional NB lane from SEART to Penrose	N	N	Not funded
2X East West Links to Highbrook	N	N	Not funded
SH20A: six laning	N	N	Not funded
The full Mill Road corridor	N	N	Note – recent baselining announcement has now made this uncommitted project. Scale back to 1 lane south of Murphys Road and remove section between Hunua Road and SH1
SH1: 8 laning between Orams Rd and Takanini I/C	N	N	Not funded
SH1: 6 laning from Drury up to Bombay I/C	N	N	Not funded

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## OTHER STRATEGIC PUBLIC TRANSPORT NETWORK ASSUMPTIONS

The following major projects were included/excluded as part of the DM assumptions for CC2M 2021 project.

Project	2031	2051	Notes
City Rail Link + improvements to the rail network to maximise day-one operation of the City Rail Link	Y	Y	Funded. The 2051 train plan assumes additional capacity through more rolling stock and larger trains (more services to be 6 car trains). Details provided in Appendix 4.
Extension of the Northern Busway to Albany	Y	Y	Funded through RLTP 31
The Eastern busway (Panmure-Botany)	Y	Y	Funded through RLTP 31
Auckland Transport Connected Communities programme	Y	Y	Only the component funded through RLTP 31
Rail electrification between Papakura and Pukekohe	Y	Y	Funded through NZUP
Rail upgrades between Wiri and Quay Park			
Enhancements to North Shore Busway	Y	Y	Upgrades at stations to reduce dwell times.
Rapid transit to North-west	N	N	Not funded
Rail rapid transit to North Shore (AWHC)	N	N	Not funded
Airport to Botany	Y	Y	Only the interim stage funded through RLTP 31
Enhanced ferry frequencies	Y	Y	Considered minimum service level improvement (apply only to ferry routes in operation by 2031)
Enhanced rail frequencies	Y	Y	Considered minimum service level improvement (as approved in CRL train plan)
Enhanced bus frequencies	Y	Y	Considered minimum service level improvement (scaled up to match unconstrained demand)

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