

Proactive Release

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Listed below are the most commonly used grounds from the OIA.

N/A - Documents released in full. No information has been withheld for this proactive release

| Section | Description of ground |
|--------------|---|
| 6(a) | as release would be likely to prejudice the security or defence of New Zealand or the international relations of the New Zealand Government |
| 6(b) | as release would be likely to prejudice the entrusting of information to the Government of New Zealand on a basis of confidence by <ul style="list-style-type: none"> (i) the Government of any other country or any agency of such a Government; or (ii) any international organisation |
| 6(c) | prejudice the maintenance of the law, including the prevention, investigation, and detection of offences, and the right to a fair trial |
| 9(2)(a) | to protect the privacy of natural persons |
| 9(2)(b)(ii) | to protect information where the making available of the information would be likely unreasonably to prejudice the commercial position of the person who supplied or who is the subject of the information |
| 9(2)(ba)(i) | to protect information which is subject to an obligation of confidence or which any person has been or could be compelled to provide under the authority of any enactment, where the making available of the information would be likely to prejudice the supply of similar information, or information from the same source, and it is in the public |
| 9(2)(ba)(ii) | to protect information which is subject to an obligation of confidence or which any person has been or could be compelled to provide under the authority of any enactment, where the making available of the information would be likely otherwise to damage the public interest |
| 9(2)(f)(ii) | to maintain the constitutional conventions for the time being which protect collective and individual ministerial responsibility |
| 9(2)(f)(iv) | to maintain the constitutional conventions for the time being which protect the confidentiality of advice tendered by Ministers of the Crown and officials |
| 9(2)(g)(i) | to maintain the effective conduct of public affairs through the free and frank expression of opinions by or between or to Ministers of the Crown or members of an organisation or officers and employees of any public service agency or organisation in the course of their duty |
| 9(2)(h) | to maintain legal professional privilege |
| 9(2)(i) | to enable a Minister of the Crown or any public service agency or organisation holding the information to carry out, without prejudice or disadvantage, commercial activities |
| 9(2)(j) | to enable a Minister of the Crown or any public service agency or organisation holding the information to carry on, without prejudice or disadvantage, negotiations (including commercial and industrial negotiations) |



Cabinet Business Committee

Minute of Decision

This document contains information for the New Zealand Cabinet. It must be treated in confidence and handled in accordance with any security classification, or other endorsement. The information can only be released, including under the Official Information Act 1982, by persons with the appropriate authority.

Land Transport Revenue Action Plan: Time of Use Charging

Portfolio Transport

On 8 July 2024, the Cabinet Business Committee:

Background

1 **noted** that:

1.1 travel times in New Zealand's major cities are worse than in similar Australian cities;

1.2 charges based on time of use have the potential to improve network productivity, but this is not currently enabled in legislation;

Policy decisions

2 **agreed** to enable time of use charging schemes to increase network productivity by sustaining traffic flow, with traffic flow being a combination of travel times and trip volumes;

3 **agreed** that time of use charging schemes be enabled by way of Order in Council, where recommended by the Minister of Transport, who must be satisfied that a proposed charging scheme will improve network productivity and contribute to an effective, efficient, and safe land transport system in the public interest;

4 **agreed** that:

4.1 one or more local authorities can initiate a time of use charging scheme, and that other local authorities in the region can opt in, giving them influence over scheme design and how net revenues are allocated;

4.2 a time of use charging scheme may be proposed by the Government through the New Zealand Transport Agency (NZTA), as a backstop measure;

5 **agreed** that after initiation, a charging scheme partnership be tasked with the development and operation of the charging scheme, consisting of the local authorities that have opted in and NZTA as the majority partner, except for the allocation of net revenues which shall be agreed by the Minister of Transport and the local authority members of the partnership;

6 **agreed** that the cost of proposing and establishing a charging scheme be recovered from charging scheme revenues;

- 7 **agreed** that NZTA will lead the development of a single technological system to enable time of use charging which can be utilised across New Zealand, with the costs of this system being the first priority for any revenues raised from the scheme;
- 8 **agreed** that time of use charging schemes set out:
- 8.1 the scheme area, initial charging area, target service levels, the operating hours within statutory limits, and the charging range within which the target service levels will be achieved;
 - 8.2 the method of charge collection and billing, and the approach to extension of charges within the scheme area if any;
 - 8.3 the charging structure by times and vehicle types, the frequency in which charges will be adjusted within the maximum charge, and the proposed approach to adjusting the maximum charge over time;
 - 8.4 an investment approach setting out the types of land transport activity to be delivered, including the proportion of charging scheme revenues to be allocated to state highways, local roads and public transport, and the principles to be applied in making those allocations;
- 9 **agreed** that charging scheme partnerships must undertake public engagement to ensure their scheme design decisions are well informed, including at least one round of public consultation along the lines of the regional land transport plan consultation process with all necessary modifications;
- 10 **agreed** that:
- 10.1 the charging scheme partnership can vary charges within the maximum charge in accordance with the terms of the charging scheme without public consultation;
 - 10.2 the charging scheme partnership can vary the service levels, charging area, frequency of charge adjustments, and the investment approach, subject to public consultation;
 - 10.3 the charging scheme partnership cannot vary the scheme area, maximum charge or the process for adjusting the maximum charge over time;
- 11 **agreed** that charging scheme proposals and variations subject to public consultation include an impact assessment that sets out:
- 11.1 the anticipated impacts on trips on the regional state highway, local road and public transport networks, and any measures taken in the scheme design to address negative impacts;
 - 11.2 an assessment of the anticipated distributional impacts, summarised in an analysis of the costs and benefits, and any measures taken in the scheme design to address negative impacts;
 - 11.3 a summary of the views of the local authorities within the region that are not part of the charging scheme partnership, if any;

- 12 **agreed** that revenue from approved time of use charging schemes be:
- 12.1 used for land transport activities within the region in which the charges apply in a way that contributes to an effective, efficient, and safe land transport system in the public interest;
 - 12.2 in accordance with the investment approach set out in the charging scheme, including measures to enable transfer of funds between land transport providers;
 - 12.3 allocated in accordance with the investment agreement between the Minister of Transport and the local authority members of the partnership, reported in an annual financial statement, and recorded in the relevant regional land transport plan;
 - 12.4 allocated in a way that supplements rather than attracts National Land Transport Fund funding or substitutes for local share funding;
 - 12.5 subject to the duties that apply to approved organisations, including contingencies to cope with fluctuation in revenues with economic conditions;
- 13 **agreed** that there be the following common requirements across all charging schemes:
- 13.1 exemptions for emergency vehicles with no other exemptions or discounts, similar to road tolling schemes;
 - 13.2 standard privacy and data security provisions similar to those for road tolling schemes;
 - 13.3 standard differential between charges for different vehicle types;
 - 13.4 standard offences, enforcement and penalties, in a similar way to the road tolling regime;
 - 13.5 common data and revenue standards to aid monitoring and reporting and enable consistency with future charging schemes;
- 14 **noted** that NZTA will develop a non-statutory set of standard minimum charging scheme rules that inform the design and operation of all schemes;
- 15 **agreed** that the following powers apply to all charging schemes:
- 15.1 the Secretary for Transport be charged with ongoing charging scheme oversight and reporting to the Minister of Transport, with reasonable costs met from the gross revenues of charging schemes;
 - 15.2 the Minister of Transport, in consultation with the Minister of Finance, may:
 - 15.2.1 before assessing a charging scheme proposal against the statutory criteria, refer the charging scheme back to the charging scheme partnership for clarification;
 - 15.2.2 after assessing a charging scheme proposal against the statutory criteria:
 - 15.2.2.1 refer it back to the charging scheme partnership for amendment;
 - 15.2.2.2 refuse to recommend the charging scheme;
 - 15.2.2.3 agree to recommend the charging scheme;

- 15.2.3 recommend a change to a charging scheme Order in Council relating to the scheme area, maximum charge or the process for adjusting the maximum charge over time, being the matters set out in paragraph 8.3 above that cannot be varied by the charging scheme partnership;
- 15.2.4 intervene in a failing charging scheme proposal or operational charging scheme by appointing a scheme manager to assume the powers and responsibilities of the charging scheme partnership (similar to the power of the Minister of Local Government to intervene in failing local authorities);
- 15.2.5 revoke a failing charging scheme that is not improving network productivity or contributing to an effective, efficient, and safe land transport system in the public interest;

Legislative implications

- 16 **noted** that the Land Transport (Time of Use Charging) Amendment Bill (the Bill) has a category 3 priority on the 2024 Legislation Programme (to be passed by the end of 2024);
- 17 **agreed** that, given the policy development and drafting required to support the matters outlined above, the Bill be progressed on a slower track and instead be accorded a category 5 priority on the 2024 Legislation Programme (to proceed to select committee by the end of 2024);
- 18 **invited** the Minister of Transport to issue drafting instructions to the Parliamentary Counsel Office to give legislative effect to the above decisions (including for primary legislation and any associated regulations), including any necessary consequential amendments, savings and transitional provisions;
- 19 **authorised** the Minister of Transport to make further decisions consistent with the overall policy, provided that any such decisions are confirmed by Cabinet when the Bill is considered for introduction.

Rachel Clarke
Committee Secretary

Present:

Rt Hon Christopher Luxon (Chair)
Rt Hon Winston Peters
Hon David Seymour
Hon Chris Bishop
Hon Dr Shane Reti
Hon Simeon Brown
Hon Paul Goldsmith
Hon Louise Upston
Hon Judith Collins KC
Hon Mark Mitchell
Hon Tama Potaka

Officials present from:

Department of the Prime Minister and Cabinet

IN CONFIDENCE

In Confidence

Office of the Minister of Transport

Cabinet Economic Policy Committee

Land Transport Revenue Action Plan: Time of use charging**Proposal**

- 1 This paper seeks agreement to the policy and issuing of drafting instructions for the Land Transport Management (Time of Use Charging) Amendment Bill (the bill).

Relation to government priorities

- 2 The coalition agreement between the NZ National Party and ACT New Zealand makes a commitment to *“work with Auckland Council to implement time of use road charging to reduce congestion and improve travel time reliability”*.
- 3 The Government Policy Statement on land transport (GPS 2024) states that the Government will *“allow for time of use charging on the most congested parts of New Zealand’s road network, helping to reduce congestion and maximise use of existing assets”* and *“improve travel times and network performance, reducing overall costs for freight businesses and their customers”* [CAB-24-MIN-0057 refers].

Executive Summary

- 4 Travel times per kilometre in our major cities are higher than in comparable cities in Australia, making them less accessible, less productive, and less liveable. We need to lift the performance of our urban networks through a combination of improved conventional traffic management and new charges when networks are subject to excess congestion to maintain and improve traffic flow, as signalled in GPS 2024.
- 5 Time of use charging schemes (Charging schemes) would target the lowest-value trips on congested parts of the network, freeing capacity for higher value trips. The charges would vary by time of day (during morning and afternoon peaks only) to achieve network service levels - travel times and capacity - specified in the charging scheme. The roads subject to charges within a charging scheme’s footprint could be progressively extended.
- 6 Careful design is needed to avoid shifting trips onto other parts of the network that are also operating at capacity or are not intended to carry significant traffic volumes, and to ensure that there is public support for schemes. Net revenues would supplement existing regional investment in the land transport system.
- 7 Once implemented, I expect that time of use charging schemes will have a wide range of positive impacts across our urban areas, improving access to housing, jobs, and education. Charging schemes will also increase business access to customers, labour and resources, and lower the costs of freight.
- 8 The design I have in mind takes a network service level approach to implement our GPS 2024 objectives to improve network performance. Schemes would be initiated by a local authority or group of local authorities with an opportunity for other local authorities in the region to opt-in or by the Government through NZTA. Schemes would be developed and operated by a charging scheme partnership consisting of

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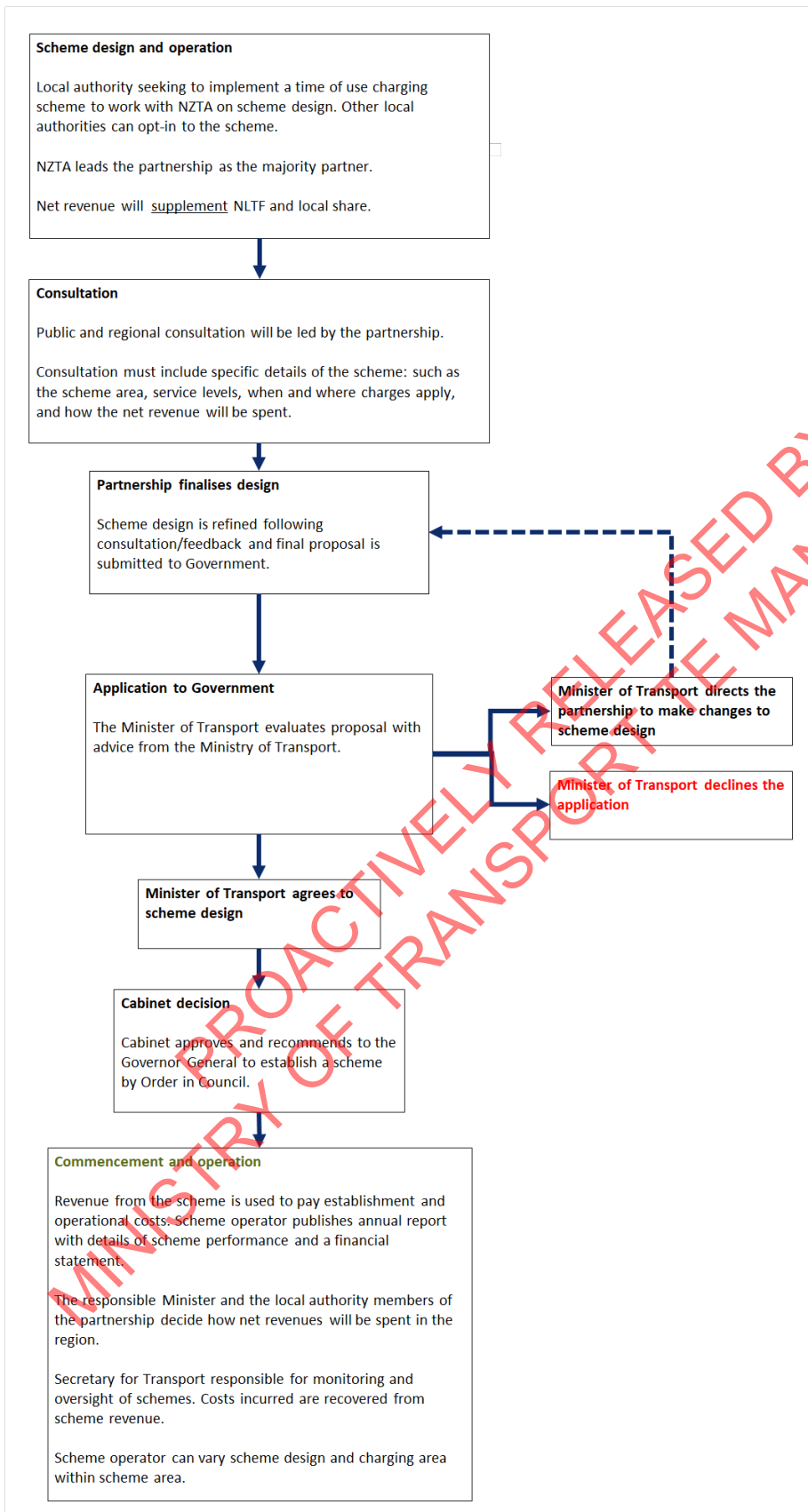
the New Zealand Transport Agency (NZTA) as the lead partner together with the local authorities in the relevant area.

- 9 Allocation of net revenues will be subject to agreement between the responsible Minister and the local authority members of the partnership. Schemes would be assessed and approved by Ministers and subsequently monitored by the Secretary for Transport.
- 10 The time of use charging system legislative framework would have seven key components as follows:
 - 10.1 Purpose – Network productivity
 - 10.2 Scheme content – Service levels and charging ranges
 - 10.3 Consistency – Common characteristics of all schemes
 - 10.4 Impact assessment – regional network and distributional impacts
 - 10.5 Governance – NZTA lead in conjunction with local authorities
 - 10.6 Revenues – Supplementing existing national and local funding
 - 10.7 Oversight – Strong scheme oversight.
- 11 Select Committee consideration of the Bill will provide a forum to test these settings and an opportunity to further refine our approach should this prove warranted.
- 12 This paper provides the basis for introducing legislation to set up a charging scheme development process that is summarised in Figure 1 on the following page.
- 13 The Land Transport Management (Time of Use Charging) Amendment Bill with a priority of category 3 (to be passed by the end of 2024) was included in my transport portfolio bids for the 2024 Legislation Programme. While this Bill provides an appropriate legislative vehicle to implement the policy proposals in this paper, I propose that it be progressed on a slower track to enable a full and robust Select Committee process.

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MINISTRY OF TRANSPORT

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Figure 1: Process for initiating and developing a charging scheme.



Background

- 14 Travel times are increasing in our major cities, with congestion spreading beyond the morning and afternoon peaks across the business day.¹ Average travel times per kilometre are typically 10 to 30 percent slower than in comparable Australian cities.²
- 15 This level of congestion is making our cities less accessible, less productive, and less liveable. Congestion during peak periods limits household access to jobs and education. It also limits people's housing choices. Congestion that spreads into the business day shrinks markets and increases the time cost of doing business. Growing congestion is limiting our capacity to add new housing and services, to move freight and make the timely connections needed if our major cities are to flourish.
- 16 We currently rely on transport charges that average-out the infrastructure related costs and benefits of trips. There is no legislative framework to allow additional charges at peak times and locations to address over-use and under-supply.
- 17 Work done in Auckland³ and a subsequent Select Committee inquiry⁴ showed a charging system that reduces congestion could benefit New Zealand's larger urban areas. Congestion in Auckland costs the economy \$900 million to \$1.3 billion per year. Modelling shows that successful congestion charging could reduce congestion by up to 8 to 12 percent at peak times, improving travel times significantly.
- 18 Freeing up capacity for higher value trips on our existing networks and maintaining traffic flows over time, should enable more housing development, reduce the cost of doing business and improve the quality of life in our major cities.

Time of use charging concept

- 19 Time of use charges improve traffic flow by applying a charge at times when demand exceeds road capacity. The charges can vary by time of day and are typically reviewed periodically to avoid flow break-down or free-flow conditions that reduce network efficiency. It is different from road tolling which aimed at recovering road costs.
- 20 Time of use charging aims to improve the average value of trips by setting charges at a rate that changes the behaviour of those making the lowest value trips. Modelling suggests they are most likely to reroute or retime their trips. In many cases only about five percent of trips need to be moved out of peak times to maintain traffic flow and materially improve service levels for the remaining trips. Charges typically need to be increased over time to maintain this effect.
- 21 Road capacity varies with vehicle speed and numbers. A representative speed-flow relationship is shown in the following figure.⁵ The aim of time of use charging during periods of peak demand would be to keep traffic flowing at service levels between B and C. At times of peak demand traffic speeds of 60 to 70 kilometres per hour on motorways result in the best traffic flow and are most efficient.

¹ *The Congestion Question – Phase One Report 2017*

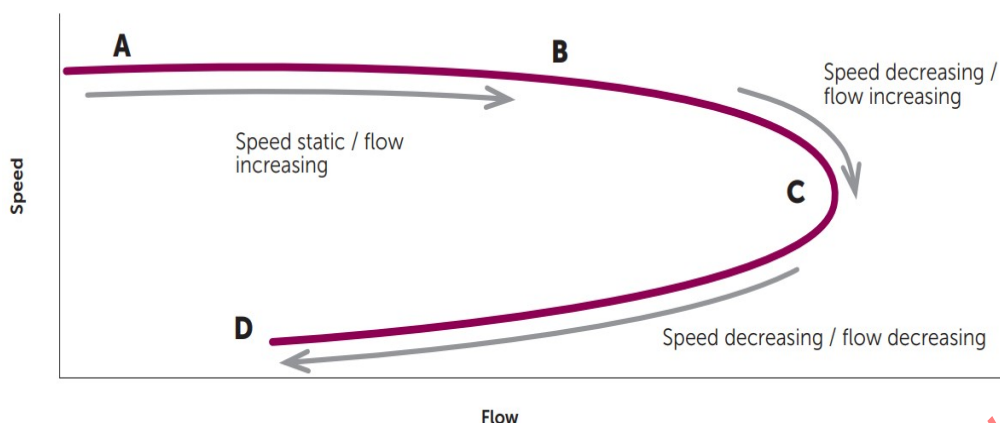
² *TomTom Traffic Index - Average travel time per 10km, TomTom, 2024*

³ *The Congestion Question Main Finding, Auckland City and the New Zealand Government, 2020*

⁴ *Inquiry into congestion pricing in Auckland, Report of the Transport and Infrastructure Committee, 2021*

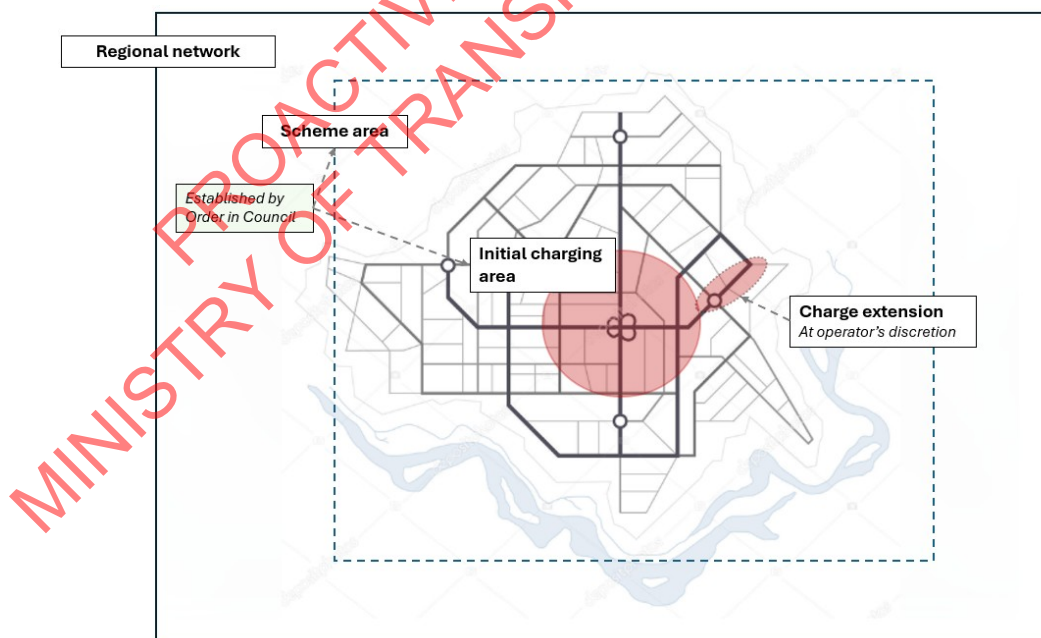
⁵ *The Congestion Question, Technical Report, Ministry of Transport, 2020*

Figure 2: Speed-flow relationship.



- 22 To gain public acceptance, schemes need to be clear about the improvement in service levels and the initial charges needed to deliver those service levels. Careful design is needed to avoid simply shifting trips onto other roads that can't or should not cope with the extra trips., Evidence from overseas suggests that it is essential for the revenues to be invested in a way that those paying the charge will see as delivering additional local benefits, and for the legislation to set specific limitations.
- 23 Charging schemes need to consider the impacts on the roads subject to charges (charging area), how the initial charging area may be expanded into the surrounding areas that are able to be charged (scheme area), and the impact of charges on the wider network (regional network). The key elements that make up the scheme footprint are summarised in Figure 3.

Figure 3: Example of a time of use charging scheme approved by Order in Council.



- 24 The above diagram is only one example of how a charging scheme could be configured. Charging areas could involve charges at selected points on a road (i.e., a corridor charge), all points entering a road or collection of roads (i.e., cordon charge),

or a charge for the distance travelled on a road or collection of roads (area charge). Charging schemes could incorporate a combination of these charge types.

- 25 While in-vehicle global positioning and cellular technology (GNSS) already exists that could facilitate time of use charging, its adoption is likely to take some time in view of public concerns about vehicle tracking. All overseas jurisdictions with congestion charging currently use road-side infrastructure (such as gantries on multi-lane roads and poles on two lane roads) in combination with automatic number plate recognition or in-vehicle transponders detected using short-range radio technology (RFID).
- 26 I expect that initial schemes will not utilise GNSS technology, but over time there will be opportunities to explore more sophisticated approaches to collection and operation, consistent with the direction of the revenue work programme and fleet-wide transition to road user charges. When this happens, local variable charging schemes, such as time of use charging and tolling, will be incorporated into national variable charging using technology likely to be adopted as we modernise the road user charging system.
- 27 I propose that the legislation we progress is technology-agnostic to accommodate ongoing technological developments.. However, it will still be important that scheme design captures economies of scale in data collection and billing, which should be integral to the framework.

Proof of concept in Singapore

- 28 Singapore is the leading international example of charging to improve network productivity. Singapore has progressively introduced charges on its highest capacity roads to maximise traffic flow. Charges vary in small increments reflecting the transition from peak to inter-peak demand. These rates are fixed for three months and revised up or down within a range to optimise traffic flow.
- 28.1 Gantries are used to gather information about trips for billing purposes, with plans to move to in-vehicle devices that utilise the cellular network.
- 28.2 The roads included in the Singapore scheme and the charges are determined centrally, enabling a highly coordinated approach across the Singapore network.
- 29 There are differences between the Singapore and New Zealand contexts. Singapore is much more concentrated than our most populous city, Auckland. Singapore has more than three times as many inhabitants within an area only two-thirds the size of Auckland.
- 30 In addition, charging is only one aspect of Singapore's network productivity regulation. Singapore has also invested heavily in a world-leading public transport network, has extremely high vehicle ownership taxes and low private vehicle ownership rates compared to New Zealand.
- 31 Noting these differences, I consider that Singapore's charging scheme still provides a valuable proof of concept for charging schemes in New Zealand.
- 32 It is worth noting that Singapore currently has in-vehicle devices with RFID technology that automatically collects a fee as a vehicle passes through a gantry. Singapore is beginning a rollout of GNSS devices that would track vehicles, but these have not yet been activated, which I understand is partly due to limited public acceptance of government access to real time vehicle tracking information.

Enabling time of use charging

- 33 GPS 2024 signals that we need to lift the performance of our urban networks through a combination of improved traffic management and new charges that reflect the extra benefits and costs of travelling during periods of peak demand.
- 34 The time of use charging design I have in mind would have a clear line of sight between the input (price signals from time of use charges), output (measurable improvement in traffic-flow) and the outcome (a systemic improvement in productivity). To gain public acceptance time of use charges need to focus on lifting services levels through improved traffic flow and investing net revenues in a way that delivers local benefits.
- 35 I am seeking your agreement to a policy design that enables time of use charging with Ministerial approval. The design and operation of schemes would be led by the NZTA in partnership with interested local authorities. Independent oversight is needed to provide the public with assurance that schemes are delivering the service levels being claimed and to manage the risk that schemes over or under charge.
- 36 Development and implementation of time of use charging schemes should be led by the NZTA. It has the key capacity and capability on which we can build. As the state highway provider, it operates the busiest roads in each region. Its funding allocation role requires a network wide perspective and a sharp focus on network performance. Its collection role in RUC and road tolls means it understands the challenges involved in collection and billing. I have considered the merits of local authorities being primarily responsible for the design and operation of schemes in their areas. On balance I consider that an approach where local authorities initiate schemes and then work in partnership with NZTA is preferable to ensure a network approach with consistency between schemes to reduce scheme costs (e.g. by using a common collection and billing system).
- 37 There are seven key components to the policy design I envisage. The key aspects of these components are unpacked in the following sections.

1. Purpose – Network productivity

- 38 I propose that we make improving network productivity the primary purpose of charging schemes. The key to public acceptability is improving traffic flow. The key to improving traffic flow while also improving productivity is the removal of the lowest value trips. A focus on network impacts will also help distinguish charging from tolling of individual roads.
- 39 The improved access provided by successful charging schemes will flow through into greenfield housing, brownfield housing and business land markets. The impact of charging schemes on development potential will need to be considered in RMA decision making in accordance with existing RMA provisions.

2. Scheme content – Service levels and charging ranges

- 40 Schemes should clearly set out the improvement in service level to be delivered. This is the key to public acceptance of time of use charging. Charges should be able to vary within a specified range to achieve the stated network service level.
- 41 I propose that mandated scheme content include the proposed charging structure by time, charge review frequency, the approach to revenue collection and billing, the investment approach, and monitoring and performance measures. The nominated

charging ranges should escalate to reflect change in ability to pay, such as change in regional GDP, to maintain charge effectiveness over time.

- 42 The initial cost of proposing and establishing a charging scheme will need to be covered from existing national and local sources, but ultimately will need to be recovered from charging scheme revenues. This repayment of initial costs from scheme revenues will need to be factored into scheme design.

3. *Consistency – Common characteristics*

- 43 There are some aspects of charging schemes that need to be common between schemes:

EITHER

- 43.1 Charges should be permitted during weekday morning and evening peaks and prohibited on weekends, on statutory holidays and inter-peak to build public confidence that charges will be focussed on the busiest times.

OR

- 43.2 Charges should not be allowed overnight, at weekends or on statutory public holidays or inter-peak to assure the public that there will be periods when charges don't apply.

AND

- 43.3 Exemptions are limited to emergency vehicles to avoid erosion of the effectiveness of charges by multiple exemptions.
- 43.4 Privacy should be handled in the same way as in road tolling where personal information is confined to what is necessary to operate or enforce the scheme.
- 43.5 Larger vehicles cause more delay than smaller vehicles, and a standard differential should apply between the charges applied to different types of vehicles to reflect their different impact on traffic flows.
- 43.6 Data generated by schemes needs to be inter-operable across the country to aid monitoring and reporting and to reduce the barriers to future scheme development.
- 43.7 I anticipate that NZTA, in its role as lead partner, will want to develop a non-statutory set of standard minimum charging scheme rules that inform the design and operation of all schemes.

- 44 The first of these has the greatest risks. Limiting the times when charges can apply risks undermining the effectiveness of charges, but on balance I consider that it is warranted to build public confidence that schemes will focus on the busiest times and that there will be periods when charges won't apply.

- 45 The proposals will nevertheless mean that congestion occurring during the business day, at the weekends and around some public holidays will fall outside the scope of charges.

4. Impact assessment – regional network and distribution impacts

- 46 I propose that charging scheme proposals should consider two main forms of impact - impacts across the transport system and distributional impacts across society.
- 47 The transport impacts would identify anticipated impacts on the regional state highway, local road and public transport networks. These could include new choke points on the existing network or increased demand on public transport routes.
- 48 The distributional impacts should reveal the anticipated impacts across financial, economic, social, housing and environmental factors and anything in the scheme design or investment approach that addresses these impacts.
- 49 Distributional impacts on people, roads and public transport all will be considered in designing the footprint of schemes rather than through ad hoc exemptions.

5. Governance – NZTA lead in conjunction with local authorities

- 50 A partnership approach between central and local government will be needed that delivers a seamless experience to network users. A system is needed that works coherently across the state highway and local road networks and considers users entire trip, not just the part subject to charges.
- 51 These will be challenging partnerships given that most of the highest volume roads are state highways and motorists will continue to hold us accountable for vehicle-based charges rather than local authorities. We need to find a balance between charges that reflect local political conditions while still delivering material improvements in traffic flow and efficient collection. We also need local time of use charges that can transition smoothly into any national variable charging we introduce through the RUC system.
- 52 I propose that charging schemes should be able to be initiated by a local authority or a group of local authorities or by the Government through NZTA. Other local authorities within the region would be able to opt-in, giving them influence over how charges are set and revenue allocated under a scheme. Schemes would then be jointly developed by interested local authorities and the NZTA as lead partner.
- 53 Gaining public acceptance of charging will be critical to the success of schemes. Meaningful public engagement and effective communications will be an important part of securing this acceptance. Scheme development needs to include a robust phase of public engagement. The engagement needs to be undertaken in a way that gives the public a clear understanding of the design and how it will affect them. The partnership will need to show in its proposal to Ministers how it has made use of submissions to improve the design of schemes.
- 54 I envisage that at least one round of statutory consultation will be undertaken by the charging scheme partnership using the same process as used for regional land transport plans with all necessary modifications. This is a proven multi-agency consultation approach familiar to the charging scheme partners.
- 55 The process I propose for introducing a charging scheme is summarised in Figure 1 above.
- 56 If we are to hold the scheme partnership accountable for achieving the service levels identified, then they need to be able to adjust the charges periodically in the

approved charging area without the need for lengthy public consultation. The focus should be on regularly spaced well signalled charge updates that allow the responsible agencies to fine tune the charges, while still providing stable price signals to users between reviews.

- 57 There are other aspects of the scheme design that if changed would materially change the distributional effects of a charging scheme. These include changes to the service levels, charging area, hours of operation within any statutory limits, frequency of charge reviews, and the investment approach. Changes to these aspects of a charging scheme need not go back to Ministers but should be subject to a variation process that includes public consultation supported by an impact assessment.
- 58 Changes to the scheme area, maximum charge and the processes for adjusting the maximum charge over time, should go back to Ministers as these amount to a change in the scope of the taxation power granted when a charging scheme is approved.

6. Revenues – Supplementing existing national and local funding

- 59 The public will expect charging scheme revenues to be spent on transport activities in the region in which they are raised. Net revenues need to supplement rather than substitute for existing national and local funding and should not result in eligibility for additional funding from the National Land Transport Fund (NLTF).
- 60 Each scheme should include an investment approach that identifies the proposed allocation of scheme revenues between activity classes across state highways, local roads and public transport networks in the region and the principles to be applied in making those allocations.
- 61 The specific activity to be funded should be agreed by the responsible Minister and local authorities in a scheme partnership in accordance with the principles in the investment approach in the scheme, and duties under the Land Transport Management Act 2003 (LTMA) to invest in a way that is effective and efficient.
- 62 As already required under the LTMA, these activities should be incorporated into Regional Land Transport Plans (RLTPs) to provide a complete picture alongside projects seeking local and national funding. RLTPs set out each region's strategic approach to transport and project bids for local and national funding.
- 63 Investment of time of use charging scheme net revenues must:
- 63.1 be consistent with the investment approach set out in the charging scheme
 - 63.2 be consistent with the GPS on land transport and the strategic direction in the RLTP
 - 63.3 identify any improvement in service levels for those affected by the charges
 - 63.4 identify the actual proportion of scheme revenues that have been allocated to state highways, local roads and public transport since the start of charging scheme investment.
- 64 The net revenues from charging will vary depending on the nature of the charging design. For example, options identified in 2018 for the Auckland Congestion Question work were assessed as generating between \$21 million and \$261 million

annually in gross revenues, with annual operating costs of \$10m to \$267m. In addition, scheme revenues would need to cover capital costs of between \$46m to \$580m, and renewal costs of \$14m to \$174m.⁶ While these figures are no longer current, they illustrate the potential for wide variation in scheme costs and net revenues depending on the charging design in the scheme.

- 65 The collection costs and GST associated with these schemes will materially reduce the net revenues available for investment. Irrespective of the totals involved, scheme net revenues need to be integrated with and supplementary to existing NLTF and local funding in RLTPs. They shouldn't be substitutes for existing funding that is already under pressure. The entities spending scheme revenues should be subject to the same disciplines that apply to approved organisations under the Land Transport Management Act 2003. This includes managing scheme revenues in a way that copes with fluctuation in revenues with economic conditions.
- 66 The revenue raised from state highways and local roads is also likely to vary widely with schemes. It is nevertheless likely that a significant amount of revenue will come from use of state highways given that these are often the busiest roads in our regional networks. I propose that all schemes be required to specify in scheme proposals the proportion of revenue if any to be allocated to state highways depending on the characteristics and expected traffic flows of the scheme.

7. Oversight – Strong scheme oversight

- 67 Strong oversight of the responsible agencies will be essential. We need to ensure they focus on service levels rather than revenue and working collaboratively in the interests of users. Charging scheme partnerships will be public monopolies setting tax-like charges and spending a share of the revenue.
- 68 I propose that the Secretary for Transport be responsible for overseeing all time of use charging scheme, and reporting to the responsible Minister on whether scheme charges are achieving the targeted service levels. For example, if an Auckland partnership puts in place a scheme, it will be required to publish data and evidence that will show if the scheme is or is not performing to expectations. The Secretary of Transport would be responsible for assessing the robustness, accuracy, and transparency of the information, supporting possible decisions by Ministers whether to intervene. The reasonable cost of this oversight should be met from gross scheme revenues.
- 69 Ministers should have a range of ways of intervening where a proposed scheme isn't progressing or where an approved scheme isn't delivering, like those in the Local Government Act relating to local government oversight powers.
- 70 Additionally, Ministers should be able to revoke operative schemes that in practice are not meeting the statutory criteria for their establishment. While assessing schemes against what they claim to achieve will be important, an overarching test should be whether a scheme is contributing to an effective, efficient, and safe land transport system in the public interest – the purpose of the Land Transport Management Act 2003.

⁶ Congestion Question, Technical Report, 2020

Financial Implications

- 71 This paper has no direct financial implications for the Crown. Schemes will need to be self funding, including covering establishment costs advanced by the charging partners and the cost of oversight by the Secretary for Transport.
- 72 It potentially has indirect implications if the investment approach in a charging scheme proposes investment in state highway or railway networks within a region. This could also include a proposal to raise debt against future revenue from the charging scheme.
- 73 The requirement to set out a proposed investment approach will enable these implications to be identified and addressed during Ministerial assessment of proposed schemes, including any implications under the Public Finance Act 1989.

Legislative Implications

- 74 Amendments to the Land Transport Management Act 2003 will be required. There is a bid on the 2024 Legislation Programme that has a priority 3 - to be passed by the end of 2024. However, given the policy development drafting required and likely level of public interest I proposed that the Bill be progressed on a slower track and instead be referred to select committee by the end of 2024.
- 75 The Bill would bind the Crown.

Regulatory Impact Statement

- 76 As this paper proposes new legislation the regulatory impact analysis requirements apply. A Regulatory Impact Statement (RIS) has been prepared and is attached to the Cabinet paper.
- 77 This Regulatory Impact Statement (RIS) has been reviewed by a panel of representatives from the Ministry of Transport. It has been given a 'partially meets' rating against the quality assurance criteria for the purpose of informing Cabinet decisions.
- 78 The RIS is relatively clear and concise but lacks depth of analysis for addressing the problem identified beyond the preferred time of use option. The panel considers that this RIS provides a sufficient basis for informed decisions on the preferred proposal, but not the alternative options.
- 79 Legislative timeframes have limited the amount of research and consultation able to be undertaken and the RIS lacks analysis of Treaty of Waitangi implications, which the panel considers could be significant and should be explored further prior to legislation being progressed.

Climate Implications

- 80 The impact of time of use charging on transport climate emissions would vary widely depending on the charges, scale of implementation, and the number of cities included. Supporting policies (such as enhanced public transport and land use change) could encourage mode shift, which would enhance emissions reductions from this policy.
- 81 The work undertaken on Auckland congestion charging options as part of the Congestion Question work illustrates the degree of likely variation and the potential scale of impacts. Auckland option modelling reports estimated CO₂ transport

emissions reductions valued at between \$0.2 million and \$1.3 million a year.⁷ The larger figure represents the value of a 2 percent reduction in CO² emissions, accounting for less than 1 percent of the benefits associated with a comprehensive strategic corridor option.⁸

82 International research findings on emissions impacts are mixed and dependent on details of scheme design.

83 Any charging scheme presented to Cabinet for consideration will include an analysis of expected emissions impacts as part of the distributional impact assessment.

Population Implications

84 The charging schemes enabled by this paper would potentially have a range of distributional implications, including for different income groups and those living in inner and outer parts of our main cities. Those implications will vary with the design of each scheme.

85 The policy proposals include a duty on those proposing charging schemes to report on the distributional implications of the schemes and associated charges to support well informed decision making.

Human Rights

86 The proposals in this paper are consistent with the New Zealand Bill of Rights Act 1990 and the Human Rights Act 1993. The framework will include strong oversight powers to ensure scheme authorities don't set monopoly prices that would likely impact disproportionately on low-income households.

87 The same privacy regime will apply to time of use charging as currently applies to road tolling schemes.

Use of external resources

88 No external resources such as contactors or consultants will need to be engaged to implement the proposals in this paper.

Consultation

89 The Treasury, Department of Internal Affairs (DIA), Ministry of Housing and Urban Development, New Zealand Infrastructure Commission, and the New Zealand Transport Agency were consulted. The Department of Prime Minister and Cabinet was informed.

90 Treasury, DIA, and the Infrastructure Commission observed that the level of NZTA control in this design means local authorities would have little incentive to propose schemes (Recommendation 5 refers). Limiting NZTA's role to areas like collection and billing would leave scope for local authorities to add value in designing schemes and allocating revenues.

91 Treasury, the Infrastructure Commission and the NZTA recommend against the use of primary legislation to limit charges to predefined periods (Recommendation 13.1 refers). This advice recognises that scheme designers will benefit from flexibility to tailor schemes to meet local traffic patterns.

⁷ Congestion Question, Cost benefit analysis, 2020

⁸ Congestion Question, Environmental Outcomes, 2020

NZTA comment

- 92 NZTA is concerned that the proposal to restrict scheme operating hours to weekday peak periods will compromise the effectiveness of schemes in optimising traffic flows to an extent that affects their viability. Internationally most charging schemes operate all day; many schemes charge differentially between peak and off-peak times. Some road users will respond to schemes by choosing to travel immediately before or after peak periods to avoid the charge, thereby shifting congested flows into the shoulder periods. A small shift only (<5% of traffic) can trigger congested conditions in already-busy periods.
- 93 If Cabinet wishes to assure the public via legislation about scheme operating times, NZTA recommends that the current recommendation 13.1 be amended to state when schemes cannot operate - schemes may not operate overnight, at weekends or on statutory public holidays, and must have at least one extended period during the day when they do not operate.
- 94 While more restrictive than desirable, NZTA considers that this change would make a material difference to the effectiveness of schemes and still give the public assurance about scheme operating times.
- 95 The Ministry of Transport considers that if Ministers want to provide certainty for the public this is best achieved by setting out when schemes can operate during the week and rule out weekends and public holidays.

Proactive Release

- 96 I intend to proactively release the Cabinet paper and minutes in whole within the 30-day release period to give interested parties as much time as we can to assess the implications of the policy design ahead of the select committee phase.

Communications

- 97 I plan to release a press statement outlining our approach to time of use charging at the same time as the proactive release, and to work with interested local authorities to assist them in understanding the Government's policy intent.

Recommendations

The Minister of Transport recommends that the Committee:

- 1 **note** that travel times in our major cities are worse than in similar Australian cities, that charges based on time of use have the potential to improve network productivity, but that this is not currently enabled in legislation;
- 2 **agree** to enable time of use charging schemes to increase network productivity by sustaining traffic flow, with traffic flow being a combination of travel times and trip volumes;
- 3 **agree** that time of use charging schemes be enabled by way of Order in Council, where recommended by the Minister of Transport, who must be satisfied that a proposed charging scheme will improve network productivity and contribute to an effective, efficient, and safe land transport system in the public interest;
- 4 **agree** that one or more local authorities can initiate a time of use charging scheme, and that other local authorities in the region can opt-in, giving them influence over

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scheme design and how net revenues are allocated, or a scheme can be proposed by the Government through NZTA;

- 5 **agree** that after initiation a charging scheme partnership be tasked with the development and operation of the charging scheme, consisting of the local authorities that have opted-in and the New Zealand Transport Agency as the majority partner, except for allocation of net revenues which shall be agreed by the Minister of Transport and the local authority members of the partnership;
- 6 **agree** that the cost of proposing and establishing a charging scheme met by charging scheme partners be recovered from charging scheme revenues;
- 7 **agree** that NZTA will lead the development of a single technological system to enable time of use charging which can be utilised across NZ, with the costs of this system being the first priority for any revenues raised from the scheme.
- 8 **agree** that time of use charging schemes set out:
 - 8.1 the scheme area, initial charging area, target service levels, the operating hours within statutory limits, and the charging range within which the target service levels will be achieved;
 - 8.2 the method of charge collection and billing, and the approach to extension of charges within the scheme area if any;
 - 8.3 the charging structure by times and vehicle types, and the frequency in which charges will be adjusted within the maximum charge, and the proposed approach to adjusting the maximum charge over time;
 - 8.4 an investment approach setting out the types of land transport activity to be delivered, including the proportion of charging scheme revenues to be allocated to state highways, local roads and public transport, and the principles to be applied in making those allocations;
- 9 **agree** that charging scheme partnership must undertake public engagement to ensure their scheme design decisions are well informed, including at least one round of public consultation along the lines of the regional land transport plan consultation process with all necessary modifications;
- 10 **agree** that
 - 10.1 the charging scheme partnership can vary charges within the maximum charge in accordance with the terms of the charging scheme without public consultation;
 - 10.2 the charging scheme partnership can vary the service levels, charging area, frequency of charge adjustments, and the investment approach subject to public consultation;
 - 10.3 the charging scheme partnership cannot vary the scheme area, maximum charge or the process for adjusting the maximum charge over time;
- 11 **agree** that charging scheme proposals and variations subject to public consultation include an impact assessment that sets out:

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- 11.1 the anticipated impacts on trips on the regional state highway, local road and public transport networks, and any measures taken in the scheme design to address negative impacts;
 - 11.2 an assessment of the anticipated distributional impacts, summarised in an analysis of the costs and benefits, and any measures taken in the scheme design to address negative impacts;
 - 11.3 a summary of the views of the local authorities within the region that are not part of the charging scheme partnership, if any;
- 12 **agree** that revenue from approved time of use charging schemes be:
- 12.1 used for land transport activities within the region in which the charges apply in a way that contributes to an effective, efficient, and safe land transport system in the public interest;
 - 12.2 in accordance with the investment approach set out in the charging scheme, including measures to enable transfer of funds between land transport providers;
 - 12.3 allocated in accordance with the investment agreement between the Minister of Transport and the local authority members of the partnership, reported in an annual financial statement, and recorded in the relevant regional land transport plan;
 - 12.4 allocated in a way that supplements rather than attracts National Land Transport Fund funding or substitutes for local share funding;
 - 12.5 subject to the duties that apply to approved organisations, including contingencies to cope with fluctuation in revenues with economic conditions;
- 13 **agree** that there be common requirements across all charging schemes:
- EITHER**
- 13.1 specifying that charging can apply during the weekday morning and evening peak periods, but not at weekends, on statutory holidays or at least one period between the peaks;
- OR**
- 13.2 specifying that charges may not apply overnight, at weekends or on statutory public holidays, and must have at least one extended period during the day when they do not operate;
- AND**
- 13.3 exemptions for emergency vehicles with no other exemptions or discounts, similar to road tolling schemes;
 - 13.4 standard privacy and data security provisions similar to those for road tolling schemes;
 - 13.5 standard differential between charges for different vehicle types;

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- 13.6 standard offences, enforcement and penalties, in a similar way to the road tolling regime;
- 13.7 common data and revenue standards to aid monitoring and reporting and enable consistency with future charging schemes;
- 14 **note** that NZTA will develop a non-statutory set of standard minimum charging scheme rules that inform the design and operation of all schemes;
- 15 **agree** that the following powers applying to all charging schemes:
- 15.1 that the Secretary for Transport be charged with ongoing charging scheme oversight and reporting to the Minister of Transport, with reasonable costs met from the gross revenues of charging schemes;
- 15.2 that the Minister of Transport have powers:
- 15.2.1 before assessing a charging scheme proposal against the statutory criteria may refer the charging scheme back to the charging scheme partnership for clarification;
- 15.2.2 after assessing a charging scheme proposal against the statutory criteria may
- 15.2.2.1 refer it back to the charging scheme partnership for amendment
- 15.2.2.2 refuse to recommend the charging scheme
- 15.2.2.3 agree to recommend the charging scheme
- 15.2.3 to recommend a change to a charging scheme Order in Council relating to the scheme area, maximum charge or the process for adjusting the maximum charge over time, being the matters set out in Recommendation 8.3 that cannot be varied by the charging scheme partnership;
- 15.2.4 to intervene in a failing charging scheme proposal or operational charging scheme by appointing a scheme manager to assume the powers and responsibilities of the charging scheme partnership – similar to the power of the Minister of Local Government to intervene in failing local authorities;
- 15.2.5 to revoke a failing charging scheme that is not improving network productivity or contributing to an effective, efficient, and safe land transport system in the public interest;
- 16 **note** that there is a Land Transport (Time of Use Charging) Amendment Bill (Bill) with a priority of category 3 (to be passed in 2024) on the 2024 Legislation Programme;
- 17 **note** that given the policy development and drafting required to support the matters outlined in this paper, I propose the Bill be progressed on a slower track and instead proceed to select committee by the end of 2024 (priority of category 5);

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- 18 **invite** the Minister of Transport to issue drafting instructions to the Parliamentary Counsel Office to give legislative effect to the policy proposals above (including for primary legislation and any associated regulations) including any necessary consequential amendments, savings and transitional provisions;
- 19 **authorise** the Minister of Transport to make decisions that are consistent with the overall policy provided that these decisions are confirmed when the Bill is considered for introduction.

Hon Simeon Brown

Minister of Transport

PROACTIVELY RELEASED BY
MINISTRY OF TRANSPORT TE MANATU WAKA

Regulatory Impact Statement: Time of use charging

Coversheet

| Purpose of Document | |
|---|---|
| Decision sought: | To inform Cabinet decisions on the policy design of the Land Transport Management (Time of Use Charging) Amendment Bill |
| Advising agencies: | <i>Ministry of Transport</i> |
| Proposing Ministers: | <i>Hon Simeon Brown, Minister of Transport</i> |
| Date finalised: | <i>30 May 2024</i> |
| Problem Definition | |
| Road taxes based on fleet averages and current traffic management practices are resulting in increasingly sub-optimal traffic-flows on the road network - increasing travel times, impacting on productivity and reducing liveability. | |
| Executive Summary | |
| <p>Current practice (Status Quo) has not been effective in maintaining network services levels in our major urban areas over the last 25 years. TomTom traffic data reports that Auckland, Christchurch and Wellington are all under performing in terms of travel time compared to similarly sized Australian cities - Perth, Canberra and Hobart.</p> <p>Three responses have been identified capable of delivering a systematic improvement in traffic-flow:</p> <ol style="list-style-type: none"> 1. Improve traffic management practices (network optimisation) 2. Variable road charging on parts of the road network (time of use charging) 3. Variable charging of all vehicle trips anywhere on the network (national network charging) <p>The Ministry of Transport’s assessment of these options finds that all three options need to be advanced in series or in parallel if service levels are to be restored and maintained.</p> <p>The cost-benefit at the end of the analysis in this statement focusses on the potential impacts of time of use charging as that is the option currently being enabled in the Land Transport Management (Time of Use Charging) Amendment Bill. It identifies moderate net benefits.</p> <p>To gain public acceptance time of use charging schemes need to set and refine charges that will deliver a clearly stated and measurable improvement in service levels. Charging schemes will also need to be designed in a way that minimise cost transfers to other road uses due to traffic diversion and retiming. Charges will need to be regularly varied and collection costs kept in check if net welfare gains are to be achieved and sustained. Revenues will need to be reinvested in the region in a way that those who pay see as adding local value.</p> | |

Limitations and Constraints on Analysis

Time of use charging features in the coalition agreement between the NZ National Party and ACT New Zealand, which makes a commitment to “*work with Auckland Council to implement time of use road charging to reduce congestion and improve travel time reliability*”.

As part of implementing that commitment the draft Government Policy Statement on land transport 2024 states that the Government will “*allow for time of use charging on the most congested parts of New Zealand’s road network, helping to reduce congestion and maximise use of existing assets*” and “*improve travel times and network performance, reducing overall costs for freight businesses and their customers*”.

These commitments to reduce congestion and maximise use of existing assets are examined in this assessment.

There are known limitations on the analysis we have been able to undertake.

There is limited local information on traffic management tools that improve traffic-flow as many of them haven’t been used systematically for some time

- Only limited local information is available about the net benefits of the type of traffic-flow investments identified in this assessment. Many of them have not featured in local work programmes for some time.
- Data on the efficiency and effectiveness of interventions, like clearways and traffic light rephasing, was available before 2008, when there was a specialised transport funding agency and works of this nature were more common. However, that data is now dated.
- Australian data is available under the Austroads umbrella as traffic-flow improvements are still in common use in Australia. Australian values of time and construction costs differ so the Australian material only gives an indication of the magnitude of net benefits.
- These indicative net benefits are consistent with the more limited recent local data.
- This gives confidence that the recent local data on traffic-flow improvements is indicative of the magnitude of gains that may be possible.

There is considerable technical work on local variable charges but limited public input

- Considerable technical work on congestion charging has been undertaken since 2018 in Auckland under The Congestion Question banner, including one reference group engagement.
- In 2021, there was a Select Committee Inquiry into Congestion Charging that provided an opportunity for stakeholders and the public to share their views with elected representatives.
- Cross-party discussions occurred following the select committee process centred on the Congestion Charging Bill developed by the government of the day. The legislative design has been held tightly as part of the political negotiations and officials have not undertaken any public consultation or stakeholder engagement beyond that undertaken by the Select Committee.
- Experience with road tolling provides an example of possible public responses to road charges among those unwilling to pay the charge. Road toll reporting indicates:
 - the main responses have been to reroute and retime. Shortening trips, changing modes, or not making the trip only account for a small proportion of the responses.
 - a relatively large response (i.e. typically 30% diversion) occurs at relatively modest charges (e.g. \$2.50).

- the actual effect of road charges will not be revealed until a scheme starts operating.

Work hasn't been done on national network wide variable charging since the 1990s

- Enabling national variable charges has not been investigated systematically since the Ministry of Transport's Road Pricing work in the late 1990s.
- Much of the problem analysis and options analysis undertaken at that time is still relevant as network conditions and provision have not changed materially.

There is limited international experience with variable charging that is relevant

- There is limited relevant international experience with charging schemes.
 - Only Singapore operates a system that is comparable, but Singapore has a much larger population living at much higher density than any New Zealand city.
 - City centre congestion management schemes in London, Stockholm, Gothenburg, Milan, Oslo and Bergen do not address network wide congestion.

Timeframes have limited the amount of consultation on the time of use proposals

- The time available for developing this assessment has been compressed to enable the legislation to get to Parliament this year.
- Consultation with anyone other than Departments has been limited to Ministerial engagement with Auckland Council in advance of the policy design being determined by Cabinet.

Responsible Manager(s)



Matt Skinner
 Manager - Revenue
 Ministry of Transport
 30 May 2024

Quality Assurance

Reviewing Agency: Ministry of Transport

Panel Assessment & Comment:

This Regulatory Impact Statement (RIS) has been reviewed by a panel of representatives from the Ministry of Transport. It has been given a 'partially meets' rating against the quality assurance criteria for the purpose of informing Cabinet decisions.

The RIS is relatively clear and concise but lacks depth of analysis for addressing the problem identified beyond the preferred time of use option. The panel considers that this RIS provides a sufficient basis for informed decisions on the preferred proposal, but not the alternative options.

Legislative timeframes have limited the amount of research and consultation able to be undertaken and the RIS lacks analysis of Treaty of Waitangi implications.

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THE MINISTRY OF TRANSPORT TE MANATŪ WAKA

Section 1: Diagnosing the policy problem

What is the context behind the policy problem and how is the status quo expected to develop?

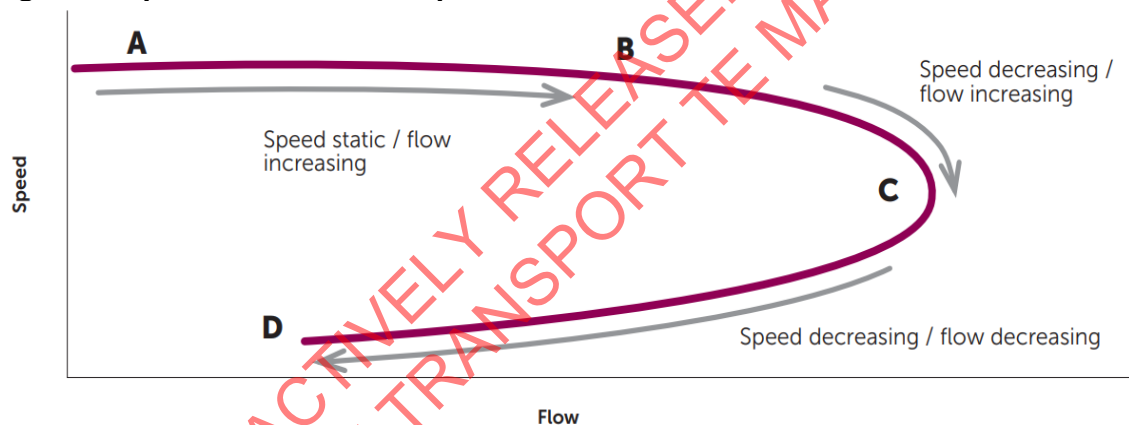
Definitions and current context

1. There are key components of the problem that need to be understood to enable realistic interventions to be identified. These include:
 - a. traffic-flow and peak periods
 - b. travel time budgets and travel distance
 - c. average and variable charges
 - d. taxes, charges and fees

Traffic flow

2. Road capacity varies with vehicle speed and numbers. A representative speed-flow relationship is shown in the following figure.¹

Figure 1: Speed-flow relationship



3. Roads operating between A and B (free-flow) will be operating at close to the posted speed limit but supporting modest traffic volumes. A road operating between B and C (optimal capacity) will have slightly lower speeds but higher traffic volumes. Road operating between C and D (flow-breakdown) will have lower speeds and lower volumes.
4. A motorway lane operating optimally at peak times will support over 2,500 vehicle trips an hour with traffic speed of about 60 to 70 kilometres an hour.² At off-peak times they are likely to operate at close to their posted speed limits. This capacity can be reduced by a range of factors, particularly the frequency of onramps. It can be maintained by measures like ramp metering³. Capacity will be reduced by more than 15 percent where large vehicles make up more than 10 percent of traffic.

¹ *The Congestion Question, Technical Report*, Ministry of Transport, 2020

² *Guide to Traffic Management, Traffic Studies and Analysis Methods*, Austroads, 2020.

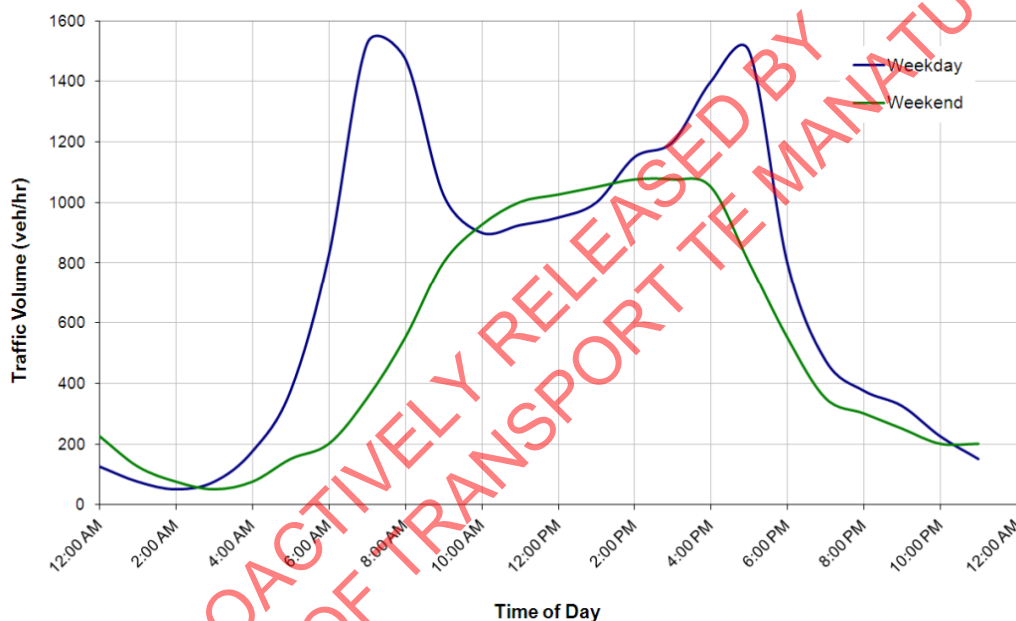
³ Ramp metering is a signal-based system that regulates traffic flow according to current traffic conditions.

- An optimised arterial road lane at peak times will support up to 1,500 vehicles an hour at speeds of about 30 to 40 kilometres an hour. At off-peak times they are also likely to operate at close to their posted speed limits. This capacity can also be reduced by a range of factors, like the frequency of unsignalized intersections, the length of the green phases on signalised intersections, and the number of usable approach lanes at roundabouts. Occasional parked vehicles will reduce capacity by a third.

Peak periods

- People travel most during the weekday morning and afternoon commutes, and on weekend mornings. The following figure uses a Christchurch example to illustrate the concentration of weekday trips into morning and evening peaks and absence of peaks at weekends.

Figure 2: Typical daily traffic volumes (Source - NZTA)



- Our networks are under most pressure during the weekday morning and evening commutes to and from work and education. People respond by avoiding peak periods, making trips earlier or later than their optimal time. This is called peak-spreading. Peak-spreading into the inter-peak can result in congestion spreading over longer periods into the business day.
- Often these capacity constraints are in one direction in the morning, with flows reversing in the evening, but there are examples of corridors that are approaching capacity in both directions throughout the weekday, a trend evident to any regular users of the Auckland southern motorway.⁴

Travel time budgets

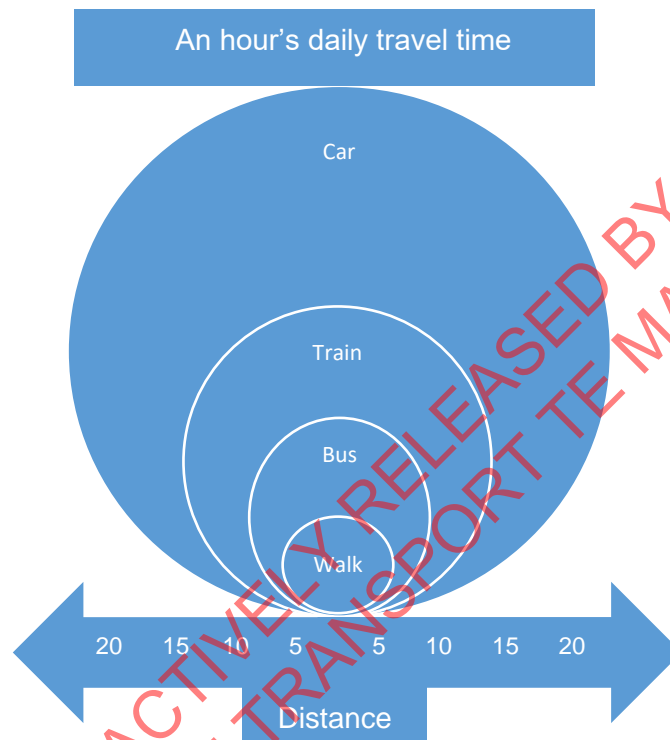
- Increasing travel times due to congestion matters to people because they tend to have a fixed 1-hour travel time budget a day. This 1-hour budget is evident in most

⁴ Auckland Transport Alignment Project, Technical Reports, Ministry of Transport, 2016.

developed countries and is known as the Marchetti constant.⁵ As developments in vehicle technology and network design have enabled us to travel faster, we have tended to travel further, maintaining about on hour's daily travel time.

10. Marchetti's constant applies in New Zealand across all modes.⁶ The following figure sets out the average return journeys able to be undertaken within 1 hour a day using our different modes.

Figure 3: Marchetti's constant (Source - Household Travel Survey)



11. The Household Travel Survey reveals that people have moved to faster modes to access more jobs, services, and friends within their 1-hour travel budget. Firms can access more customers, labour, and resources. Any reduction in travel time will increase access, while any increase will reduce access.
12. Roughly a third of the daily travel hour is allocated to work and education trips. Another third goes on supermarket and retail shopping. The final third goes on social visits, personal services, sports and transporting others.

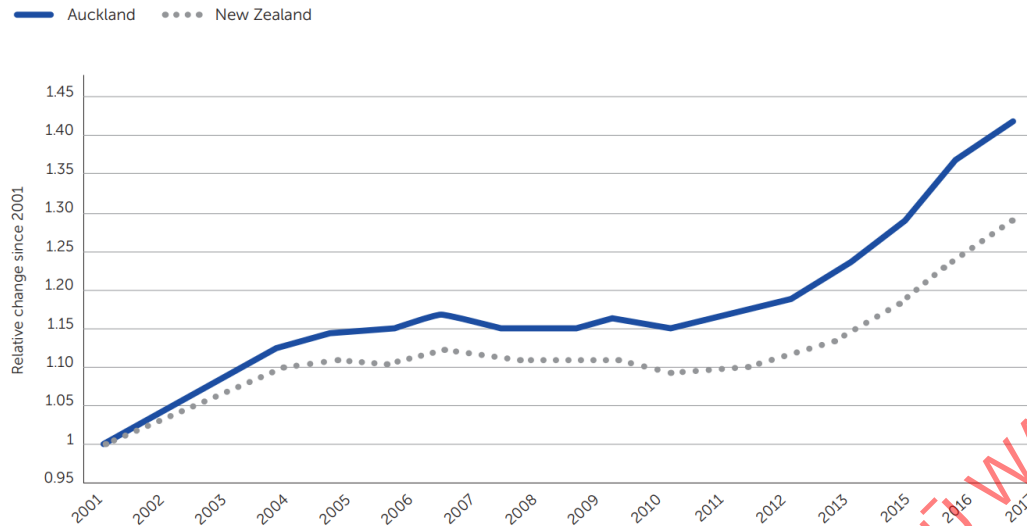
Travel distance

13. The distance people cover varies with economic conditions, but has been tending to increase, with associated increases in safety risks and emissions. The increase has been particularly marked in Auckland, as illustrated in the following figure.

⁵ *Anthropological invariants in travel behaviour*, C Marchetti, 1994

⁶ *The Household Travel Survey – 1989 to 2021*, Ministry of Transport, 2023

Figure 4: Increase in travel – Auckland compared to the rest of New Zealand



Source: MoT Transport Dashboard

14. While the average distance Aucklanders cover is less than the national average it has been growing faster than in the rest of the country. Dwelling consents and job location data shows that households have been spreading into less expensive outer areas and firms have been concentration close to the motorways.⁷
15. Travel distances per person have increased from 25 to 29 kilometres a day per person since 1990. Over that period the population has increased from 870,000 to 1,700,000. This suggests the total distance travelled has increased from 22 million kilometres a day to almost 50 million kilometres a day. Over 95 percent of this distance is covered using private transport, although public transport has a larger role at peak times.

Averaging charges compared to variable charges

16. Our current way of funding land transport improvements and operation using average charges. Most transport funding comes from fuel excise duty and road use charges that are the same irrespective of where and when a vehicle is on the network.
17. Trips on parts of the network approaching capacity delay other trips being made at the same time and place. Added together these small delays add up to a substantial increase in total individual and collective travel time (congestion). Average charges mean that users enjoy the greater benefits of travelling at peak times and locations, with the cost reflected in congestion rather than in higher charges.
18. Network providers also only receive average revenues, even though increasing capacity is typically more expensive at locations of peak demand than elsewhere on the network. This can suppress the supply response at points on the network experiencing high levels of ongoing demand.

⁷ Auckland household travel over 30 years, Ministry of Transport, 2021

The difference between taxes, charges and fees within the funding system

19. The land transport funding system is how money is raised and spent (Revenue and Expenditure). Funding is sourced as taxes, charges and fees. Treasury guidance draws a distinction between taxes, charges and fees as follows:
 - a. Taxes make transfers between groups
 - b. Charges make transfers within groups
 - c. Fees reflect costs incurred by individuals.
20. The current land transport funding system includes transfers between road users and public transport users and property owners and land transport users. Revenues are raised like charges and spent like taxes.
21. This assessment explores options that would introduce new forms of charge that are more like fees than taxes. Charges that reflect the time and location of travel, not just the distance covered or the weight of the vehicle making the trip.

Status quo response to congestion

22. The status quo transport response to rising demand has been to:
 - a. add more road lanes and more public transport lines
 - b. increase the frequency of public transport services
 - c. reallocate road capacity to encourage uptake of public transport, walking and cycling
 - d. aim for mixed use development where people will live work and play (quality containment).
23. The returns from large road and public transport projects are typically marginal (less than \$2 per \$1 spent).⁸ Increased public transport services have not increased public transport's share of travel distance per capita.⁹ Reallocation of road space has not reduced vehicle kilometres travelled or associated congestion.¹⁰ Employers have concentrated their operations rather than disperse into suburbs.¹¹
24. Under the status quo approach, network service levels are forecast to decline. Modelling suggests average speeds in already congested areas will decrease further and additional parts of the network will move into congested conditions.¹²

⁸ State highway Investment in New Zealand, Michael Pickford, 2013

⁹ Household Travel Survey, Ministry of Transport, 2023

¹⁰ Evidence review of road space re-allocation, NZTA, 2024

¹¹ Auckland employment over the next 30 years, NZIER, 2016

¹² Congestion Question, Technical Report, 2020

What is the policy problem or opportunity?

The problems

- 25. There are three primary problems:
 - a. Congestion is worse than in comparable Australian cities
 - b. The productivity dividend we get from our main cities is declining
 - c. Residents are leaving cities like Auckland and Wellington

Congestion is worse than in comparable Australian cities

- 26. Our three largest cities are 10 percent to more than 30 percent more congested than comparable Australian cities with similar population sizes and densities, as set out in the following figure.¹³

Table 1: Comparison of annual commuter times between similar-sized New Zealand and Australian cities (Source - TomTom Traffic Index)

| City | Time commuting a year (20k a day) | Time Difference | Difference |
|--------------|--------------------------------------|-----------------|------------|
| Auckland | 80 hours | 20 hours | 30% longer |
| Perth | 60 hours | | |
| Christchurch | 69 hours | 18 hours | 35% longer |
| Newcastle | 51 hours | | |
| Wellington | 58 hours | 6 hours | 11% longer |
| Hobart | 52 hours | | |

- 27. Differences in how we plan and manage our networks is likely to be a significant factor. Commuting mode shares by car are similar so this doesn't explain the differences.¹⁴ Other significant factors include topography and the ratio of roads to houses.

The productivity dividend we get from our main cities is declining

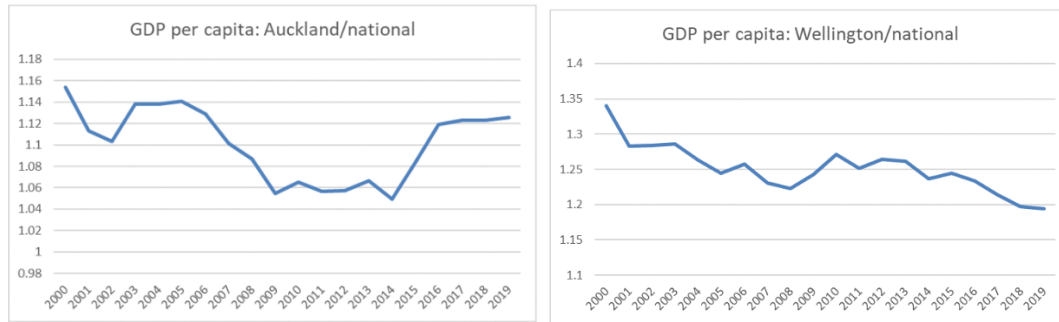
- 28. Clustering of people and resources in our cities makes them more productive.¹⁵ In urban economics these are known as agglomeration effect. Cities like Auckland and Wellington generate more GDP per capita compared to the national average. In both cases this premium has been declining as shown in the following figure.

¹³ TomTom Traffic Index, Average travel time per 10km, TomTom, 2024

¹⁴ Australian and New Zealand Census data, 2018

¹⁵ Economics of Transportation: Existing evidence and future directions, DJ Graham and S Gibbons, 2019.

Figure 5: Urban productivity dividend is declining (Source – Statistics NZ)

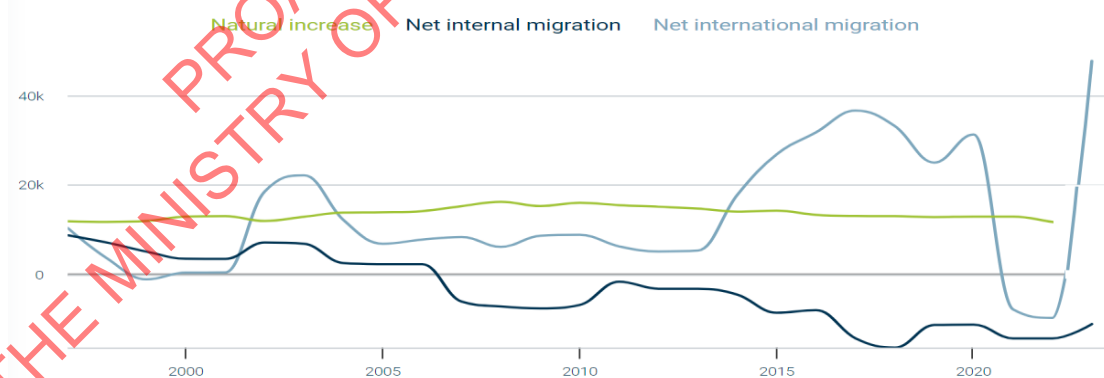


29. The level of congestion is likely to be one factor contributing to this decline in urban productivity. Agglomeration effects arise because clustering makes it easier for people to do business. Agglomeration benefits are eroded when it gets harder for people to make connections. Increasing housing density only improves access if transport costs, like travel time and emissions, fall.
30. Congestion costs are a material contributor to the cost of doing business. The cost of flow-breakdown at current service levels in Auckland has been assessed as ranging between \$250 million¹⁶ and \$927million¹⁷ a year. When comparing current service levels with free-flow conditions the studies identified annual costs ranging between \$1,250 million and \$1,392 million respectively.

Residents are leaving cities like Auckland and Wellington

31. Existing residents have been leaving cities like Auckland and Wellington in increasing numbers. In the case of Auckland this trend has been evident for the last 30 years. Outflows now match the national increase, with net international migration determining future population growth, as shown in the following figure.

Figure 6: Source of Auckland population growth (Source - Infometrics regional profile 2024)



32. Working age families are leaving Auckland in unprecedented numbers.¹⁸ This is on top of the long-standing trend for older Aucklanders to leave. Auckland still has more people of working age than other parts of the country, but this is being eroded by the

¹⁶ *Cost of congestion reappraised*, Wallis and Lupton, 2013

¹⁷ *Benefits from Auckland Road Decongestion*, NZIER, 2017

¹⁸ 2018 Census analysis, Statistics NZ, 2020

outflows. The cost of housing and difficulties of moving around the city are likely to be significant contributors to this outflow.

The opportunities

33. Three main opportunities have been identified to improve traffic flow and therefore improve access.
 - a. We could adopt more effective traffic management practices
 - b. We could apply higher charges at congested times and places
 - c. We could vary all charges up and down with service levels

We could adopt more effective traffic management practices

34. Local area traffic management to optimise traffic-flows has not been systematically implemented in New Zealand's main cities and Austroad guidance is only applied selectively.
35. Neighbourhood precincts have not been systematically created by restricting connections to district distributor roads and installing slow-points on local distributor roads within neighbourhoods to make slower-speeds self-explaining to drivers. As a result, rat running has not been addressed and residential amenity continues to be compromised.
36. Capacity on district distributor roads has been limited due to factors like poor traffic light co-ordination, inefficient lane markings at traffic lights and roundabouts, the number of side-streets into neighbourhoods and the proliferation of property driveways along main roads due to housing intensification. In addition to these factors the capacity on primary distributors has been limited by the lack of peak-period clearways, limited use of contra-flows, and re-allocation of road space to lower capacity modes.
37. In contrast our motorways have benefitted from significant initiatives to improve their operation, most notably ramp metering on the Auckland network, variable speed signs on parts of the Auckland and Wellington networks, and moveable contra-flow barriers on the Auckland harbour bridge.

We could apply higher charges at congested times and places

38. Legislation does not currently allow for congestion (and its associated costs) to be addressed using a charge. Demand exceeds network capacity at times of peak demand in our major cities. Constrained revenues and construction capacity, ongoing demand growth, and investment in alternative forms of transport means it is unlikely to be feasible to solely address congestion on the supply side through improving existing infrastructure and investing in new projects (status quo).
39. There are likely to be two forms of benefit if charges reduced congestion in Auckland and elsewhere. Economic benefits, including increased productivity for businesses and individuals, increased per capita GDP and reductions in vehicle operating costs. Social benefits, including shorter commuting times, improved access to work, education and leisure opportunities, and environmental benefits (reduced emissions).
40. Overseas jurisdictions (for example, London and Stockholm and Guttenberg) have had some success in reducing inner-city congestion by introducing an additional charge to

fund additional public transport (London) and roading (Stockholm and Guttenberg). These schemes while initially opposed by many residents have been accepted once the amenity gains in the city centres became apparent.

41. Singapore has had considerable success in improving traffic-flow on the strategic network through an additional charge that varies by time of day. Charging people to access congested parts of the network at certain times encourages people to rethink the route, timing, destination and mode of their journey, and potentially whether the journey needs to occur at all.
42. Work in Auckland estimated that rolling out congestion charging across the Auckland strategic network (State highways and major arterial roads) would produce a sustained eight to 12 percent reduction in congestion, like what happens during school holidays in Auckland.

We could vary all charges up and down with service levels

43. A charging system that reduces charges as well as increasing them consistently across the entire network would avoid some of the distortions inherent in apply higher charges in some locations in addition to average charges.
44. Our national land transport revenue system relies heavily on averaged charges, through fuel excise duty, road user charges, property rates and increasingly general taxation.
45. Replacing average charges with variable charges would provide stronger signals to users about the actual cost of trips, reducing over and under use of parts of the network. Variable charges would also provide stronger signals to network providers about user willingness to pay and better align their supply decisions with demand.
46. A closer link between use and provision also suggests a reduction in the transfers currently make between different groups of network users, and an ongoing reliance on general taxation to fund merit goods like public transport and cycling.
47. Moving to variable charges that more closely reflect network use would also be an opportunity to move to delivery arrangements that more closely aligns with how our networks are used.

What engagement with the public and stakeholders has been undertaken on the problems and solutions?

48. The Select Committee inquiry into congestion charging in 2021 accepted written submissions and held public hearings in Auckland, Wellington and via Zoom videoconference. Submitters raised some common themes:
 - concerns about equity of access to areas that might have congestion charges
 - the potential for exemptions from congestion charges
 - the capacity and reliability of public transport options in Auckland
 - how revenue from congestion pricing should be used
 - the potential for congestion pricing to lead to a reduction in transport emissions

- concerns that “rat running” could lead to increased congestion on roads not included in a congestion pricing scheme
- agreement that congestion in Auckland is a significant problem.

The inquiry concluded that equity should be considered in implementing congestions charging schemes, that equity concerns needed to be balanced against the fact that a high number of exemptions would increase operating costs and could reduce scheme effectiveness. The inquiry went on to note that consideration should be given to compensation for congestion charging through schemes for supporting low-income people, such as the Community Services Card.¹⁹

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¹⁹ *Inquiry into congestion pricing in Auckland*, Report of the Transport and Infrastructure Committee, 2021

Section 2: Deciding upon an option to address the policy problem

What objectives are sought in relation to the policy problem?

50. To improve traffic-flow in our main urban areas currently experiencing congestion, to improve access, productivity, emissions and liveability.

What criteria will be used to compare options to the status quo?

51. The options will be evaluated against four key criteria – effective and efficient land transport in the public interest that is feasible.
- **Effective** means magnitude that people will value and use the policy
 - **Efficient** means using resources in the most productive way
 - Land transport means surface transport by any means
 - **Public interest** means the common interests of people in society including:
 - Accountability – the link between providers and those who pay
 - Safety – the impact on traffic safety
 - Equity – the impacts on different groups
 - Privacy – the impact on personal information
 - Climate emissions – the impact on greenhouse gas emissions
 - **Feasible** means achievability in the prevailing political economy.

What scope will options be considered within?

52. The options have been assessed against the status quo described above, which involves continuation of our current average charging system, reallocation of road space, relatively limited use of traffic management tools, and use of revenues to invest in extending existing roading or public transport linear infrastructure.
53. They include a supply-side option (Option One), that aims to better align supply with demand, a demand-side options that aims to align demand with supply (Option Two), and an option that aims to align both demand and supply (Option Three).
54. The options identify classes of intervention that can improve travel-time rather than specific interventions. The empirical evidence for the options is mixed. The analysis therefore explores the range of impacts these types of tools can have, concluding with a qualitative rather than quantitative assessment of the net value of the options.
55. The options are not mutually exclusive. All options could be undertaken independently or in combination with the other options. They would also combine with the status quo approach, deferring the need for some big projects, bringing forward some or reshaping others.
56. In land transport, Treaty of Waitangi implications mainly arise in connection with measures that are likely to impact on land ownership or control. None of the options considered in this assessment directly impact on land rights, including Māori land rights, beyond any impact improved traffic-flow has on land development potential.

57. The counterfactual is continuation of the status quo, without action on any of the identified options.

What options are being considered?

58. Three options have been identified that are representative of three different ways of improving traffic flow as follows:

- **Option One: Traffic management** - better use of existing traffic-flow tools
- **Option Two: Time of use charging** - enabling a new local variable road charging tool where charges can be adjusted depending on time of use
- **Option Three: Variable road charging** - enabling a sophisticated, national level charging system, that can be adjusted based on location, time of use, distance covered and vehicle weight.

Option One: Traffic management

Description

59. This option involves making better use of the traffic management tools that are currently available. This is the supply-side option. These tools have been used elsewhere to deliver road service levels that exceed those being delivered in our main cities.
60. The option involves having a coherent network wide traffic management strategy and consistent plans for each suburb that improve traffic-flow on main roads and liveability in residential and business neighbourhoods.
61. The core concepts consist of a traffic management plan that identified:
- a. neighbourhoods – residential and commercial - where through traffic will be excluded and traffic slowed in streets where property access has priority over movement of people and goods.
 - b. distributor roads – motorway, arterial and collector roads – where safe traffic-flow will be maximised to support movement of people and goods over access to properties.
62. Interventions in neighbourhoods would include closure of some side-street connections to main roads to vehicle traffic; direction of traffic through a limited number of controlled intersections on main roads: provision of slow points within neighbourhoods to slow traffic: and adoption of subdivisional standards that create neighbourhoods in new developments that conform to this traffic design.
63. Interventions on main road would include traffic light coordination to achieve green waves; clearways at peak times; high occupancy vehicles lanes when that increases peak hour passenger movements, contra-flows at morning and evening choke points, bus-stops clear of traffic lanes, cycle lanes on sections of high cycling demand and pedestrian crossings primarily at controlled intersections.

64. Cost benefit analysis of a selection of traffic management projects of the sort listed above suggests that returns of more than \$12 per \$1 spent (clearways) and \$14 per \$1 spent (traffic light co-ordination) could be anticipated in 2016 dollars.²⁰

Analysis

65. Comparisons with other similarly sized cities in Australia suggests we could reduce travel times in our main urban areas by between 10 and 30 percent using existing traffic management tools that improve traffic-flow.
66. Achieving these results in the New Zealand context, with road deliver split across 68 providers, each with their own priorities, capacity and capability, is likely to prove challenging.
67. The arguments against increased use of traffic management tools include:
- a. ultimately you can't build your way out and need to limit demand
 - b. improving service levels would increase vehicle kilometres travelled (increasing in climate emissions and road crashes) and will induce demand
 - c. developments fronting onto increasingly busy roads have reduced amenity and value
68. The arguments for increased traffic management tools include:
- a. there is considerable scope for high value traffic-flow investments within the existing roading footprint. Service level improvements benefit many more existing trips than they induce.
 - b. increasing household travel, and household and business formation are best responded to by making more use of existing road resources
 - c. reducing travel times and maximising road capacity increases the effective density of our cities, increasing urban productivity and access to opportunities.
 - d. there is an inherent trade-off between movement between properties and property access. Properties fronting directly onto main roads will invariably experience more traffic effects than properties on neighbourhood streets.
69. To be effective the approach to traffic management outlined above would need to be implemented at a regional scale, which would require a consistent shift in approach across the network. The main lever available to a government to incentivise greater use of traffic management tools that optimise traffic-flow would be to link the availability of National Land Transport Funding to the successful adoption of these tools.

Option Two: Time of use charging

Description

70. This option involves additional charges on parts of the network where flow-breakdown is occurring at peak times. This is the demand-side option. Charges of this sort have been used in Singapore to maintain traffic-flow on their main roads.

²⁰ Auckland Transport Alignment Project, Arterial Roads Report, 2016

71. The aim of the extra charge is to encourage those making lower-value trips to avoid that part of the network, freeing up available capacity for higher value trips. Lower value trips are like to be those of least value to users. Those that can be rerouted, retimed, or redirected at least cost to the user. They are not necessarily the trips made by the lowest income users. A trip to work is likely to be more valuable to a low-income user than a trip to the gym for a higher-income user. Only a relatively small number of trips need to be avoided to prevent flow-breakdown and keep networks flowing at optimal capacity.
72. Charging could be applied at selected points on a road (corridor charge), all points entering a road or collection of roads (cordon charge), or for the distance travelled on a road or collection of roads (area charge). Charging schemes could incorporate a combination of these charge types.
73. Cost benefit analysis of a selection of Auckland congestion charging schemes suggests that returns ranging from \$1.70 per \$1 spent (central cordon) through \$1.80 per \$1 spent (Strategic Corridors) and \$0.70 per \$1 (Regional Network) could be anticipated in 2019 dollars.²¹

Analysis

74. The Congestion Question work undertaken in Auckland identified that charges across the Auckland strategic network could reduce congestion by around 10 percent, creating traffic conditions like those during school holidays. That design used number plate recognition to charge those entering the main road network, without charging based on the distance travelled.
75. The arguments against increased use of local variable charges include:
 - a. charges are regressive and inequitable and would fall disproportionately on low-income groups and the disabled. As such, the public transport system needs to be a credible alternative to cars before charging occurs.
 - b. increasing charges for those experiencing the most congestion would be unfair as they have already paid for these roads.
 - c. government tracking of movements is totalitarian and a risk to personal freedom and privacy.
 - d. the net benefits are marginal with considerable risk that actual costs will exceed the benefits.
76. The arguments for increased use of local variable charges include:
 - a. to be effective transport revenue tools need to reflect the costs that users impose on society.
 - b. pricing signals are needed as the existing average charge-based system is poor at identifying the true value of time.
 - c. it is unfair that users are not paying charges that reflect the actual costs of their network use.

²¹ Congestion Question, Cost benefit analysis, 2019

77. Currently there is no legislative provision for local variable charging schemes, limiting the tools available to predict and provide measures. Well-designed and implemented schemes have the potential to deliver net benefits to society if they keep control over costs and are responsive to user willingness to pay. The regional impacts associated with each charging proposal do need to be assessed, including both the impacts on transport networks and on society, to enable well informed decisions to be made about whether a proposed scheme can deliver these net returns.
78. A series of local, regional, and national checks are proposed before schemes proceed. Additionally, the proposed charging regime would enable users to establish if the intended improvement in service levels is being achieved, while scheme providers will be able to respond flexibly to actual revealed willingness to pay.

Option Three: Variable Road charging

Description

79. This option involves charges that vary up and down across the network to reflect actual service levels. Charges of this sort have been investigated in several places, including locally in the 1990s, but are yet to be implemented anywhere.
80. The aim is to move toward charges that better reflect the marginal costs of each trip. Charges that are more like fees and less like taxes. The distance, time, location, and weight of vehicles could all be factored into charges.
- a. In urban areas charges would be at their highest in locations and at times of highest demand, and at their lowest at times and locations of low demand.
 - b. In rural areas charges would be at their highest on low-volume roads with high costs of provision per trip, and at their lowest on higher volume roads with lower costs of provision per trip.
 - c. In both urban and rural contexts, where users prove willing to pay service level improvements should follow.
81. Both demand and the supply response would change under this form of network wide charging.
- a. Users would be faced with the actual costs of their network use, rather than costs averaged across many people and many trips. This should enable them to make better decisions about how they value each trip, reducing over and under use of the network.
 - b. Providers would have access to clear signals about how users value trips at different times and places, rather than receiving funding averaged across many people and many trips. This should enable investment to be better matched to user needs, reducing over and under investment.
82. Four major shifts would need to occur.
- a. Average charges - fuel excise duty, road user charges and rates – would need to be replaced by fees that vary based on actual distance, time, location and weight

- b. Subsidies for merit goods²² – public transport, walking and cycling – would need to be replaced by taxes raised in a way that reflect the benefits conferred on society as a whole
 - c. Governance structures – split across NZTA and 78 local authorities – would need to be replaced by providers aligned with the regional nature of our transport networks²³
 - d. Collection methods – fuel excise duty, road user charges and rates - would need to be replaced by systems capable of identifying the time, location, distance and vehicle weight in real time, probably using in-vehicle GPS tracking and cellular communication systems.
83. No systematic work has been done on network wide variable pricing since the 1990s so its in hard to identify the likely current net value. In 1999 road pricing reforms were expected to deliver net gains within 5 to 10 years equating to 10 to 25 percent of the 1999/2000 land transport budget.²⁴

Analysis

84. Many of the issues raised by local variable charges apply to network wide variable charges, albeit amplified as they would apply to all trips not just those in a few locations subject to local variable charges.
85. Work in the 1990's identified potential net benefits in network wide variable charges (called road pricing) that would extend the benefits able to be secured from local area charging and enable a systematic move away from average charging.
86. This finding was subject to availability of relatively low cost in-vehicle charging technology that would enable cost effective extension of variable charging to the entire network. These technologies have subsequently been proven to be viable as collection systems through adoption of the electronic Road User Charges system for many heavy vehicles.
87. The arguments against increased use of national variable charges are the same as for local variable charging with the addition of the following points:
- a. all movements would be tracked magnifying the implications for personal freedom and privacy.
 - b. the unit cost of installing in-vehicle collection equipment in the entire fleet could make network wide charging uneconomic.
88. The arguments for increased use of national variable charges are also the same as for local variable charging with the addition of the following points:
- a. Extending charges to the entire network has two additional types of benefit compared to congestion focused urban variable charges.

²² Merit goods are services that the government feels people would under-consume if they weren't subsidised.

²³ 98 percent of passenger trips and 95 percent of freight trips start and end in the same region.

²⁴ *Better Transport Better Roads*, New Zealand Government, 1999

- i. It would allow lower charges for trips on parts of the network with lower-than-average costs, such as freight trips on low-cost medium-volume rural state highways.
 - ii. It would enable higher charges for trips that have higher than average costs, such as freight trips on poor quality low-volume rural roads.
- b. it avoids distortions (i.e. traffic diversion) and unfairness (i.e. cross-subsidies) inherent in variable charges that only apply to some parts of the network and some trips.
- c. It would trigger a reconsideration of current delivery arrangements, with their poor alignment between network use (regional) and provision (national and local).
- d. GPS and cellular communication technologies have become less expensive, albeit that the labour costs in installing equipment are significant and there are currently 4.5 million vehicles in the fleet.
89. It is not currently clear if we could achieve the necessary economies of scale, and lift in network productivity in a transport system of our size to deliver fleet wide variable charging in a way that is affordable and efficient.

How do the options compare to the status quo/counterfactual?

90. The following table sets out a qualitative assessment of the three options compared to the continuation of current average charging and network management practice. A qualitative assessment is adopted rather than a quantities assessment as the options are all enabling rather than directive, so the extent to which and way in which they would be taken up by providers can't be known. Additionally, there is little to no international or local experience with the forms of variable charging that would be enabled under Options 2 and 3.
91. A rating of ++ or + suggests results better than the status quo. A rating of -- or - suggests results worse than the status quo. A rating of 0 suggests results about the same as the status quo.

| | Option One: Traffic management | Option Two: Time of use charging | Option Three: Variable road charging |
|------------------------|---|---|---|
| Effective | ++ Proven internationally | + Likely to be effective within selected charging areas | ++ Potentially capable of delivering fleet wide gains and fairer |
| Efficient | + High value in the short to medium term, but in the long-term limited capacity to cope with demand growth | + Potential to influence demand in selected areas but risks diverting demand onto less suitable parts of the network | + Potential to influence system wide demand and supply positively but unproven |
| Public interest | ++ Systemic gains from improved neighbourhood amenity and smoother traffic-flow | + Potential gains in urban productivity, while risking weak accountability and emission, safety and privacy concerns | ++ Potentially systemic gains in productivity and fairness, while risking emission, safety, and privacy concerns |
| Feasible | 0 Patchy institutional willingness to improve arterial | + Cross party support for congestion charging, but | - Expensive to implement and regionalisation of |

| | | | |
|---------------------------|--|---------------------------------|--|
| | road traffic-flows, but growing recognition of the opportunities | technically costly to implement | provision would be challenging for current providers |
| Overall assessment | + | + | + |

What option is likely to best address the problem, meet the policy objectives, and deliver the highest net benefits?

92. All three options have the potential to improve traffic-flow and advance the objective of improving network capacity in our main urban areas. Each of the options have strengths and weaknesses that largely balance out across the options.
93. In the Ministry of Transport's view all three options are worth pursuing in parallel or in series.
- **Traffic management** could commence immediately without primary legislation, relying on GPS guidance, with implementation ongoing for the foreseeable future. A key challenge is that it depends on securing support across multiple road providers to be fully effective. Draft GPS 2024 renews the focus on getting better value from existing transport infrastructure.
 - **Time of use charging** requires enabling legislation but could be implemented relatively quickly at relatively low risk if initial schemes are limited in scale and designed to provide proof of concept before increasing the scale of the scheme. A key challenge is securing public acceptance of additional charges on a network that users will continue to pay for through fuel excise duty, road user charges and rates. The proposed Land Transport Management (Time of use charging) Amendment Bill would enable time of use charging.
 - **Variable road charging** involves all vehicles in the fleet and lends itself to a more phased and extended implementation, first bring all vehicles into the existing RUC system, then extending charging from distance and weight to include time and location. Transitioning the entire fleet to real-time charges and shifting the provider approach to one that better aligns with network use are key challenges. Draft GPS 2024 commits to transitioning the vehicle fleet from fuel excise duty to road user charges, a step on the path to national variable charging.
94. There is only a limited amount of quantitative evidence available on the relative costs and benefits of the three options, but that evidence reports returns from common types of traffic management in the order of \$12 to \$14 per \$1 spent and returns from local variable charging in the order of \$1.70 to \$1.80 per \$1 spent. Both traffic management and variable charging options are potentially cost effective, with the larger returns per dollar likely coming from traffic management.
95. The Ministry of Transport considers that traffic management practices focussed on improving traffic-flow need to become business-as-usual for the land transport system, while time of use charging should be enabled in legislation and eventually incorporated into fleet wide variable charging.

What are the marginal costs and benefits of the option?

96. The following assessment of costs and benefits deals with time of use charging as this is the only options currently subject to new regulation.
97. Quantified monetised costs from The Congestion Question (TCQ) work are presented in the following table. These reveal net welfare impacts ranging from somewhat positive to negative depending on scheme design. These results should only be taken as broadly indicative of potential welfare impacts.

| Costs and benefits | Impacts | Comment |
|--|----------------------|---|
| Additional costs of the preferred option compared to taking no action | | |
| Capital costs - Roadside cameras and back-office charging systems | \$46m to \$580m | There is likely to be wide variation in capital costs between options. Currently capital costs are typically underestimated. These values should therefore be seen as minimums. |
| Annual operating costs - The annual cost of collection to the public provider | \$10m to \$267m | It is not clear if the cost of time to the public in paying charges is included. As with capital costs, our current capacity to anticipate operating costs is low and these figures should be taken as minimums. |
| Periodic operating costs - The costs of periodically updating the collection systems | \$14m to \$174m | Technology tends to be quickly outdated. Periodic costs are likely to be material. As with other costs, the cost of maintaining operating capacity is commonly underestimated and these values should be seen as minimums. |
| Additional benefits of the preferred option compared to taking no action | | |
| Travel time savings | \$25m to \$190m | These values account for only a proportion of the time cost of excess congestion in Auckland (\$250m and \$927m). This confirms that charges have the potential to reduce rather than eliminate excess congestion. |
| Vehicle operating cost savings | \$2m to \$52m | This result is consistent with needing to only alter the behaviour of a modest number of trips to secure time savings for the remaining trips. |
| Climate and health emission savings | \$0.5m to \$3m | The scale of emission impacts is small, within the margin of error of modelling. This confirms that charging to reduce excess congestion is unlikely to have a material impact on climate and health emissions. |
| Net welfare impacts of TCQ options | | |
| Present value benefits | \$305m to \$2,733m | The value of benefits identified in TCQ modelling exceeds the costs of excess congestion identified in two studies of Auckland congestion costs (\$250m and \$927m). Both can't be right. |
| Present value costs | (\$182m to \$3852m) | Options covering small parts of the network have lower costs and lower benefits. Options covering larger parts of the network have higher benefits but much higher costs. Options that focus on the highest volume parts of the network (motorways) are likely to be more cost-effective, |
| Net present value | \$124m to (\$1.118m) | Net welfare impacts vary widely with scheme design and implementation. |
| Benefit-cost ratio | 0.7 to 1.8 | Well-designed and implemented charging schemes appear to have the potential to make a modest though cost- |

effective contribution to net welfare.

98. Given the potential variation between schemes, limited real world experience with charging and the limitations of current quantitative assessment tools, a qualitative assessment has also been undertaken to complement the quantitative assessment. The results are summarised in the following table.

| Affected groups | Comment | Impact | Evidence Certainty |
|--|--|--------|---|
| Additional costs of the preferred option compared to taking no action | | | |
| Regulated groups – Motorists | <p>Additional compliance and collection costs</p> <p>TCQ identified public sector costs ranging between \$70m (city centre) and \$1b (regional network)</p> <p>Time costs in paying charges</p> <p>There would be additional privacy implications</p> | Medium | High – compliance costs will be material, but the number of trips affected is uncertain due to the enabling nature of the legislative framework. |
| Providers – Territorial Authorities and NZTA | <p>Additional cost and complexity of collection systems</p> <p>TCQ identified operating costs of \$24 million (city centre) and \$441 million (regional network) annually in gross revenues</p> | Medium | High - collection costs will be materially higher than existing costs of collection. |
| Others adversely impacted – property owners and public transport users | <p>Loss of property value due to any increase in the cost of access</p> <p>There is potential for distributional implications for business, if charges exceed the value of time savings.</p> <p>Unanticipated crowding of existing PT services would impose costs on existing public transport users</p> | Low | Medium – The distribution impacts on property values will vary between schemes, with adverse impacts likely to be concentrated among properties where supply exceeds demand. |
| Collective impact – road users not paying charges, safety and climate and health emissions | <p>Loss of value due to traffic diversion and sub-optimal trip times, routes, destinations, or modes</p> <p>Safety and emission are unlikely to be adversely impacted but benefits</p> | Medium | Medium – The adverse impacts will vary with each scheme depending on the locations and charges applied. If charges are set to optimise capacity, rather than raise revenue, only a modest number of lower value trips should be impacted. |

| | | | |
|---|--|---------------|--|
| | identified in TCQ were marginal and could be revealed to be marginally negative. | | |
| Total monetised costs | - | - | - |
| Non-monetised costs | | <i>Medium</i> | |
| Additional benefits of the preferred option compared to taking no action | | | |
| Regulated groups - Motorists | <p>Reduced time for higher value peak period trips</p> <p>TCQ identified public sector benefits ranging between \$27m (city centre) and \$243m (regional network)</p> | Medium | High – Time savings to those who continue to use the charged route are reasonably certain, but those charged off the regulated route would reduce the net value of time savings. The net effect is likely to be a modest gain. |
| Providers – Territorial Authorities and NZTA | <p>Increased user willingness to pay</p> <p>TCQ identified public sector revenues of \$21 million (city centre) to \$261 million (regional network) annually in gross revenues</p> | Medium | High - An effective charging scheme should increase service levels, willingness to pay and therefore provider revenues. However, charges may only need to be moderate to achieve the capacity objective, so net gains to the provider seems likely to be modest. |
| Other beneficiaries - property owners and public transport users | <p>Increased capacity to support new housing and business services</p> <p>The value of time savings to staff or customers may not necessarily translate into market benefits to business where their existing access to markets exceed their current capacity</p> <p>Any increase in investment in public transport would benefit public transport users</p> | Medium | Medium – The distributional impacts on property values will vary between schemes, with impacts varying with the locations and charges applied. Charges are likely to have a moderately positive impact on housing and business capacity if they are successful in materially increasing the effective capacity of existing networks. |
| Collective impact – road users not paying the charges, safety and the environment | <p>Increased number and average value of peak period trips</p> <p>Safety, climate, and health emission benefits seem likely to be nominal.</p> <p>TCQ identified emission benefits ranging between \$0.4m (city centre) and \$3m (regional network)</p> | High | Medium – Successful charging schemes should increase effective network capacity, but if revenue is given priority or charges are poorly designed the scale of benefits may be more limited. |
| Total monetised benefits | - | - | - |

| | | | |
|-------------------------------|---|---------------|--|
| Non-monetised benefits | Increased network productivity in moving people and goods | <i>Medium</i> | |
|-------------------------------|---|---------------|--|

99. The outcome of the time of use charging cost benefit assessment largely depends on the ability of schemes to deliver the collective benefits associate with improved traffic-flow, with the other costs and benefits tending to cancel each other out. Traffic-flow benefits will depend more on how schemes are designed and implemented than on design of the enabling legislation.

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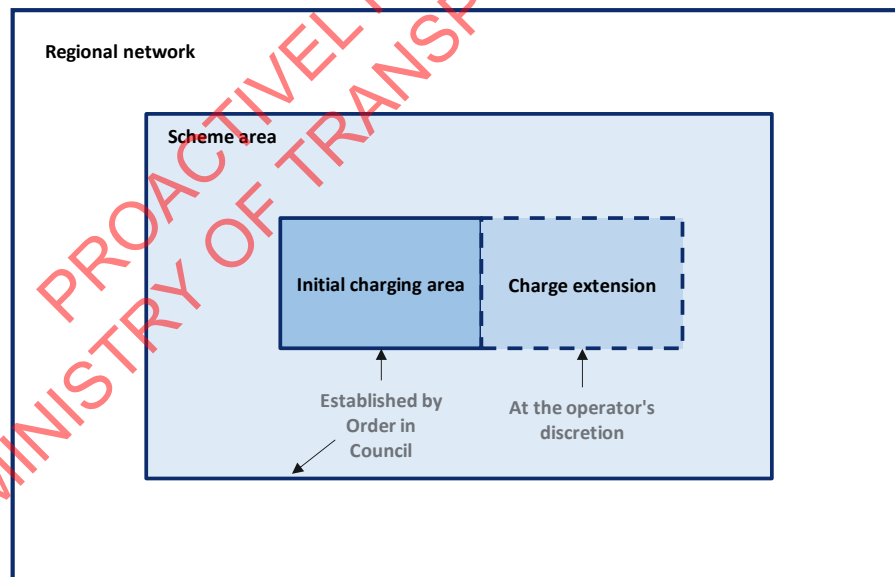
Section 3: Delivering an option

How will the new arrangements be implemented?

Time of use charging concept

100. Enabling legislation is needed to implement time of use charging. The aim is to set charges at a rate that changes the behaviour of those making the lowest value trips. As a rule of thumb, only about five percent of trips need to be moved out of peak times to maintain traffic-flow and materially improve service levels for the remaining trips. The charges need to be increased over time to maintain this effect.
101. Charges could be at selected points on a road (corridor charge), all points entering a road or collection of roads (cordon charge), or a charge for the distance travelled on a road or collection of roads (area charge). Charging schemes could also incorporate a combination of these charge types.
102. Charging scheme proposals will need to consider the impacts on the roads subject to charges (charging area), how the initial charging area will be expanded into the surrounding areas that are able to be charged (scheme area), the impact of charges on the wider network (regional network) and the impacts on society (distributional impacts).

Figure 8: Time of use charging network area, scheme area, and charging area

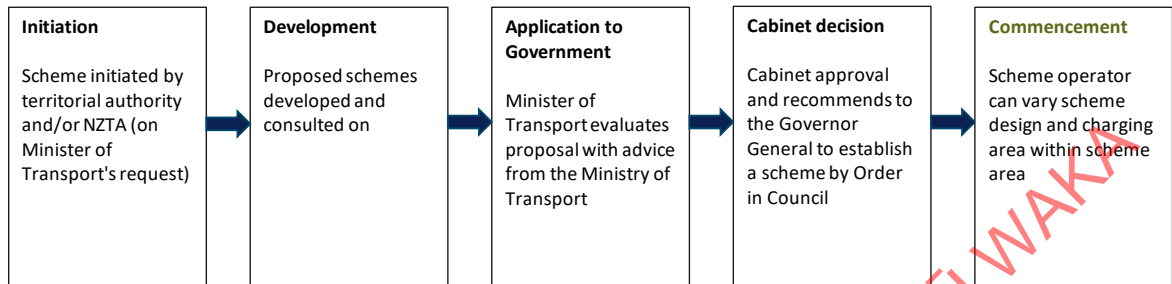


103. To gain public acceptance schemes need to be clear about the improvement in service levels and the initial charges need to deliver those service levels. Careful design is needed to avoid simply shifting trips onto other roads that can't cope with the extra trips. The revenues also need to be invested in a way that those paying the charge will see as adding value locally.
104. Charging schemes should be jointly developed and delivered by the NZTA and any local authorities that initiated the scheme as the scheme agency. Public consultation

would be undertaken on proposed schemes and on extension of the charging area of approved schemes.

105. The process for introducing a charging scheme is summarised in the following flow-chart.

Figure 9: Charging scheme development process



106. Collection arrangements would be determined by each scheme, including the technology used for collection, the back-office and payment arrangements. Standardised data on scheme performance and revenues will need to be produced to aid in scheme monitoring and reporting.
107. In addition to Minister's having to be satisfied schemes are in the public interests before recommending an Order in Council, the responsible Minister would be able to replace a scheme operator or revoke a scheme that wasn't delivering as claimed in the scheme design. The Minister would be assisted by an independent expert advisor, in the form of the Commerce Commission.

How will the new arrangements be monitored, evaluated, and reviewed?

108. A key aspect of the proposed charging scheme design is that they state the improved level of service to be delivered by charges. This should ensure that users and oversight agencies can tell whether the charging scheme is performing as claimed.
109. To enable charge operators to consistently achieve these service levels over time, the proposed design gives operators considerable flexibility in setting charges within an approved range, enabling them to adjust charges up and down to achieve and maintain traffic flow. The charging scheme in Singapore has successfully used this approach to achieve its service level targets.
110. The lead role of the NZTA in charging schemes will maintain the current lines of electoral accountability, with central government setting vehicle charges and local government setting property charge. If enough electors are sufficiently dissatisfied with charging schemes, they can replace their elected representatives. This electoral risk should lead to a reasonable careful approach to new charging scheme design and how schemes are implemented.
111. In addition to these scheme specific measures, Minister's will have a system oversight role, supported by an impartial independent expert with expertise in infrastructure network performance and monopoly pricing. Commerce Commission would be charged with ongoing oversight of scheme operation and performance. The responsible Minister would be able to replace a scheme operator or revoke a scheme that wasn't delivering as claimed in the scheme design.