



USING A SAFETY CAMERA SYSTEM (SCS) TO LOWER MEAN SPEEDS AND IMPROVE COMPLIANCE

Contributing towards Road to Zero objectives of reduced deaths and serious injuries

Detailed Business Case

November 2022

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RESOURCES

Key Waka Kotahi strategic, procurement, and programme management artefacts referred to in this business case are listed with their location in the following table. Documents listed here are for the Safety Camera System Programme, unless otherwise stated. Other documents referred to in or supporting the business case are listed in the References, p 1445.

Document	Version	Location
Assurance Plan	Final	Out of Scope
Benefits Realisation Strategy	Final	
Change Management Strategy	Final	
Communications and Engagement Strategy	Final	
Issue Register	Draft (live)	
Point of Entry	Final	
Procurement Plan: Infringements Processing System	Final	

Document	Version	Location
Procurement Plan: Safety Cameras and Safety Camera Management System	Final	<p>Out of Scope</p> <p>Released under the Official Information Act 1982</p>
Programme Advisory Board Terms of Reference	Final	
Programme Blueprint	Final	
Programme Brief	Final	
Programme Definition Document	Final	
Programme Internal Communications and Engagement Framework	Draft	
Programme Risk Register	Draft (live)	
Programme Steering Committee Terms of Reference	Draft v1.3	
Risk Management Strategy and Framework	Draft	

Document	Version	Location
SCSP Stakeholder Engagement	Draft	<h1>Out of Scope</h1> <p>Released under the Official Information Act 1982</p>
Stakeholder Management Plan	Draft	
Stakeholder list	Draft	
Stakeholder Management Approach	Draft	

ACRONYMS

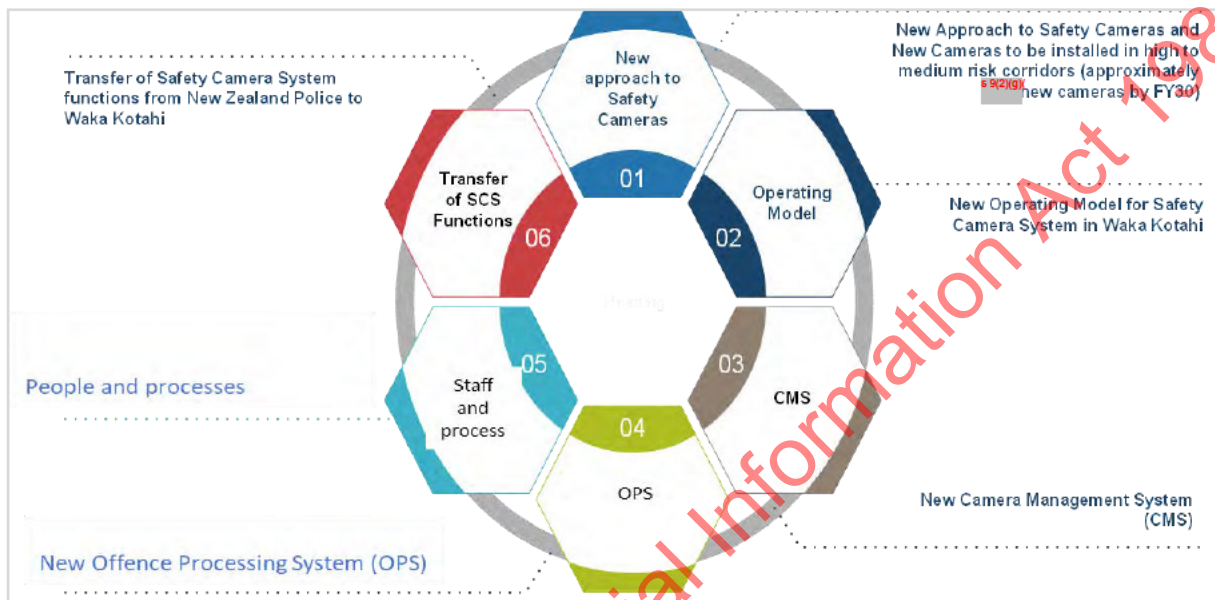
Acronym	Definition
BCR	benefit–cost ratio
CMS	camera management system
DBC	Detailed Business Case
DSI	death and serious injury
ESC	Executive Sub-Committee
FTE	full-time equivalent
GPS	Government Policy Statement on land transport
IBC	Indicative Business Case
ICT	information and communications technology
IQA	independent quality assurance (which may be performed internally by a specific Waka Kotahi team or externally by IQANZ)
IT	information technology
ILM	investment logic map
MCA	multi-criteria analysis
NLTF	National Land Transport Fund
NLTP	National Land Transport Programme
NPV	net present value
OPS	offence processing system
PBC	Programme Business Case
PIPS	Police Infringement Processing System
SCS	Safety Camera System
TUS	Tackling Unsafe Speeds (the current package of work)

EXECUTIVE SUMMARY

Proposed investment will reduce deaths and serious injuries by 4% by 2030 and lower them by 130 annually

ES1 This business case proposes that Waka Kotahi invests in the Safety Camera System (SCS) across the six areas illustrated in Figure 1.

Figure 1: Investment proposed in this business case



ES2 The proposed investment takes a measured approach to implementing new technologies (such as average speed cameras) and the capabilities required to support them (discussed further in the economic case).

ES3 The proposed investment includes implementing an estimated ^{\$9(2)(9)} new safety cameras (^{\$9(2)(9)} total), is expected to lower mean speeds, improve compliance, and deliver a 4% contribution saving in deaths and serious injuries (DSIs) by 2030 and a reduction in DSIs on the road by 130 annually. Together, these outcomes create a total net present value benefit to society of over \$1.5b.

Deaths on NZ roads are not acceptable under the Road to Zero strategy

ES4 NZ society pays a heavy toll from speeding and conditions on the roads. Te Manatū Waka, the Ministry of Transport, estimates the average social cost of death on roads is \$4.9m per death, \$0.9m per serious injury, and \$0.1m per minor injury. In FY20, speeding had a social cost of \$1b to the country with 113 deaths and 508 people seriously injured.

ES5 In November 2019, the Government announced its new national road safety strategy, Road to Zero. The strategy's vision is a "New Zealand where no one is killed or seriously injured and where no loss of life is acceptable on the roads".

ES6 Road to Zero sets a target of a 40% reduction in DSIs by 2030 through 15 priority initiatives, including the new SCS, which is part of the Tackling Unsafe Speeds (TUS) priority initiative expected to contribute 10% of the target.

ES7 Speed as a factor in DSI outcomes for Māori relative to non-Māori is uncertain.

- ES8 He Pūrongo Whakahaumarū Huarahi Mō Ngā Iwi Māori, the Māori road safety outcomes report,¹ was presented to the Road to Zero Executive Sub-Committee in February 2021. This report observed that speeding and driving behaviour creating DSIs on NZ roads may create different outcomes for Māori and non-Māori.
- ES9 The report also identified that Māori were over-represented in road trauma statistics but data to assess performance for Māori road safety across the whole system is incomplete. Therefore, a more up-to-date and detailed understanding of Māori road safety outcomes, starting with existing data, is needed to set a platform for engagement with affected iwi, urban Māori, and central and local government so a partnership can be created to co-design activities and initiatives where appropriate. This will be addressed in the Benefits Management Plan.
- ES10 Tū Ake Tū Māia, the Waka Kotahi regulatory strategy, also describes our way of working as a regulator in line with principles of Te Ao Māori and regulatory good practice. Te Ara Kotahi, the Waka Kotahi Māori strategy, provides strategic direction for how Waka Kotahi works with and responds to Māori as the Crown's Tiriti o Waitangi Treaty of Waitangi partner and what this means for how Waka Kotahi does business.²

Good reasons exist for investing

- ES11 A variety of options for the future SCS at Waka Kotahi were carefully considered by stakeholders and subject matter experts. This consideration led to the development of a preferred option that meets Waka Kotahi investment objectives, has a good strategic fit and aligns with Waka Kotahi business needs, has the greatest potential to be achieved, can be delivered by suppliers with capacity and capability, can be delivered on time, is expected to gain support from the public, and creates the greatest financial value for money as evidenced through financial modelling.
- ES12 The investment in the preferred option (Option 4) will deliver the one substantial benefit set out with its four key performance indicators in Table 1.

Table 1: Expected benefit and key performance indicators

Benefit	Key performance indicator
Road users are safer through lower mean speeds (100%)	KPI 1: Fewer speeding (includes red light running) vehicles in treated corridors and intersections
	KPI 2: Lower mean speed on the roads across NZ
	KPI 3: Increased percentage of the public who agree that safety cameras are an important intervention to the number of speeding vehicles
	KPI 4: Increased percentage of the public who agree that they are likely to get caught when driving above the posted speed limit.

- ES13 A fifth key performance indicator relates to Treasury asset performance reporting requirements.³ This indicator is not in the investment logic map but is discussed in the Benefits Realisation Plan.
- ES14 **Financial benefit** – improving Waka Kotahi efficiency and optimising its capability through investment in a new operating model (people and processes) and an updated technology

¹ Waka Kotahi. 2021. *He Pūrongo Whakahaumarū Huarahi Mō Ngā Iwi Māori: Māori road safety outcomes*. Wellington.

² Waka Kotahi. 2020. *Te Ara Kotahi | Our Māori Strategy*. Wellington. See section 10: Māori and Waka Kotahi.

³ The Treasury. 2017. *Annual Report Guidance for Departments: Asset performance indicators* (version 2). Wellington: www.treasury.govt.nz/sites/default/files/2016-05/annrep-dept-guidance.pdf

stack, including a new camera management system (CMS) and new offence processing system (OPS), will generate a net present value benefit to society of over \$1.5b and save about 1,563 to 2,431 lives over 20 years.

- ES15 In contrast with other options examined, the preferred option best ensures continued delivery of SCS services across the country, minimises the risk of service disruption during the function's transfer from Police to Waka Kotahi, creates the greatest feedback loop by installing cameras in tranches, and provides the greatest basis for implementing safety cameras across the country by FY30.

Preferred option can be funded from the National Land Transport Fund

- ES16 Waka Kotahi has the financial capacity to fund the SCS Programme through the current National Land Transport Fund cycle, with funds being set aside under the latest Government Policy Statement on land transport.

Investment in new operating model and camera management and offence processing systems is required whether the preferred option is approved or not

- ES17 Regardless of whether the preferred option is approved, investment is needed in a new operating model for the SCS, a new camera management system (CMS), and a new offence processing system (OPS). This is because:
- transferring safety cameras (142) and creating the processes and people to do the work requires new ways of working as these capabilities have never existed in Waka Kotahi, so investment in a new operating model is required
 - processing of images captured by transferred cameras cannot be done using current Waka Kotahi technology and Police's current technology is at end of life so cannot be transferred (as PwC found during commercial due diligence), so investment in a new CMS is required
 - processing of infringements generated by the transferred cameras is not a function that exists in Waka Kotahi and Police's technology is at end of life and cannot be transferred across, so investment in a new OPS is required.

Next steps – approve this DBC and requested funds to implement stage 1

- ES18 Assuming the Waka Kotahi Delegation Committee approves this investment proposal, the SCS Programme will continue to de-risk the investment process by developing a detailed design that will be implemented in stages. The DBC will provide decision-makers with greater assurance about actual delivery timeframes and costs for the SCS.
- ES19 This DBC:
- seeks approval to draw down s 9(2)(b)(ii) for the SCS Programme's work planned during 2022/23 and 2023/24.
 - outlines the total funded amount as s 9(2)(b)(ii) to cover the NLTF period FY2021/22 to FY2023/24. Noting that s 9(2)(b)(ii) of this total has already been approved in prior funding requests.
 - revisits and confirms the case for change and refines the problems and benefits from the Indicative Business Case, which continue to reflect the original justification for this investment.

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INTRODUCTION

1. Outline of this introduction

- 1.1 This introduction outlines the purpose of this Detailed Business Case (DBC), proposed investment, and the background to, and structure and content of, this DBC.

2. Purpose of this document

- 2.1 This DBC tests and develops the recommendations from the Programme Business Case (PBC). Specifically, it:
- seeks approval to draw down s 9(2)(b)(ii) for the SCS Programme's work planned during 2022/23 and 2023/24.
 - outlines the total funded amount as s 9(2)(b)(ii) to cover the NLTF period FY2021/22 to FY2023/24. Noting that s 9(2)(b)(ii) of this total has already been approved in prior funding requests.
 - revisits and confirms the case for change and refines the problems and benefits from the Indicative Business Case (IBC), which continue to reflect the original justification for this investment
 - reconfirms the transfer date of safety camera functions from Police to Waka Kotahi in the 2021–24 National Land Transport Programme (NLTP) cycle
 - seeks the Waka Kotahi Board's approval to proceed with the proposed investment under the preferred option (Option 4)
 - confirms the strategic context and fit of the proposed investment in the SCS Programme to help progress the national road safety strategy – Road to Zero (RtZ)
 - provides evidence to support the estimate that the proposed investment will directly reduce deaths and serious injuries (DSIs) on NZ roads by 4% by 2030, which is a 10% contribution to the Road to Zero target of a 40% reduction in DSIs by 2030 (from 2018 levels)
 - confirms the case for investment in and expansion of the SCS, requiring additional capital and operational contributions
 - formalises the delivery of the SCS Programme through various strategic documents, including the SCS Vision, Programme Blueprint, Programme Brief, and Programme Definition Document (links to which are in Resources, p 7)
 - recommends a preferred way forward for the proposed investment and how new SCS functions will be embedded into Waka Kotahi.

3. Proposed investment

- 3.1 The proposed investment, set out in the preferred option (Option 4), takes a measured approach to implementing new technologies (such as average-speed cameras) and the capabilities required to support them (discussed further in the economic case, from p 77).
- 3.2 The preferred option invests in:
- a new approach to operating safety cameras
 - the integration of safety camera functions into the existing Waka Kotahi operating model to support the new approach
 - a new camera management system (CMS)
 - a new offence processing system (OPS)

- the transfer of the operation of 142 safety cameras from Police and Auckland Transport (i.e. Tāmaki Makaurau Acceleration)
 - the transfer of SCS functions from Police to Waka Kotahi
 - an additional ^{s 9(2)(g)(i)} new safety cameras by FY2030.⁴
- 3.3 The preferred option enables Waka Kotahi to evaluate and learn as it delivers, which allows Waka Kotahi to monitor performance and maintain a risk-based and responsive approach to reaching best practice. This includes a legislative review of the penalties which has been identified as an important dependency (discussed in more detail below).
- 3.4 The preferred option delivers an estimated ^{s 9(2)(g)(i)} safety cameras and will lower DSIs by 130 annually and make a 4% DSI saving by 2030.
- 3.5 The main alternative options scale camera expansion and pace of delivery. They are called Option 3: Less Ambitious Way Forward and Option 5: More Ambitious Way Forward.
- Option 3 would deliver an estimated ^{s 9(2)(g)(i)} safety cameras, lower DSIs to 57 annually, and achieve a 2% DSI saving by 2030.
 - Option 5 would deliver an estimated ^{s 9(2)(g)(ii)} safety cameras, lower DSIs to 183 annually, and achieve a 7% DSI saving by 2030.

Table 2: SCS proposed investment options

	Option 3: Less Ambitious Way Forward	Option 4: Preferred Way Forward	Option 5: More Ambitious Way Forward
Whole-of-life costs (over 20 years discounted at 4%)	^{s 9(2)(b)(ii)}		
Number of long-run DSIs saved per year (from FY29)	57	130	183
DSI percentage reduction in 2030	2%	4%	7%
Benefit–cost ratio (20 years discounted at 4%)	^{s 9(2)(b)(ii)}		

Source: Waka Kotahi, SCS Financial Model, 2022.

4. Background

Road Safety Partnership Programme initiated a programme to investigate new ways of using safety cameras to improve road safety and reduce DSIs

- 4.1 The Automated Compliance and Intervention Management programme was initiated in 2018 as part of the Road Safety Partnership Programme between Waka Kotahi and Police. Its aim was to design and implement a national network of automated fixed and mobile devices to improve road safety and reduce DSIs.

In 2019, the Government released its national road safety strategy to prevent people being killed or seriously injured on roads

- 4.2 In November 2019, the Government announced its national road safety strategy to 2030, Road to Zero, and its associated initial action plan for 2020–2022.
- 4.3 Road to Zero outlines a plan to prevent people being killed or seriously injured on NZ roads, with a target of a 40% reduction in DSIs by 2030 (from 2018 levels). The action plan

⁴ The investment in average speed cameras is based on corridors and the number of detection points. Currently, the model assumes about 3.58 detection points per average-speed camera, which are included in the ^{s 9(2)(g)} new cameras.

accompanying the strategy contains 15 priority initiatives within the strategy's five focus areas, one of which is introducing a new approach to tackling unsafe speeds.

- 4.4 Road to Zero places human wellbeing at the heart of NZ's Road transport planning. The vision of Road to Zero is 'a New Zealand where no one is killed or seriously injured in road crashes'⁵ and where no loss of life is acceptable when using the road transport system.

In 2019, Cabinet agreed to the Tackling Unsafe Speeds package, including a new approach to safety cameras

- 4.5 Changing NZ's approach to safety cameras is a key component of the overall approach to tackling unsafe speeds in Road to Zero. The Road to Zero Strategic case was approved in August 2020 and sets out the case for investment in delivery of the Waka Kotahi led programmes within Road to Zero.
- 4.6 The Government announced the Tackling Unsafe Speeds (TUS) package in November 2019.⁶
- 4.7 Cabinet agreed to the following changes in government policies on safety cameras.
- There should be a significant increase in investment in additional safety cameras on the network, prioritised in the Government Policy Statement on land transport (GPS) for 2021/22 to 2030/31.
 - Safety cameras should be located on the highest-risk parts of the network.
 - As part of the investment in additional cameras, safety cameras should be clearly signed, where appropriate, to lower excessive speeds on high-risk roads. Note: subsequently agreement was gained to keep mobile cameras covert, as part of a best practice approach.
 - Ownership and operation of the camera network should be transferred from Police to Waka Kotahi at the appropriate time.

Board agreed to support the Minister and Te Manatū Waka, the Ministry of Transport in reducing DSIs

- 4.8 The Waka Kotahi Board agreed to support the Minister and Te Manatū Waka, the Ministry of Transport in reducing DSIs, stating:⁷

The Transport Agency is fully committed to playing its part in achieving the trauma reduction target ultimately agreed by Government, whether this is 40%, 50% or 60%. If 40% is set, we would welcome opportunities to explore greater levels of ambition as implementation progresses – for instance, developments in technology may enable more rapid progress.

Board made § 9(2)(b)(ii) available to fund the replacement of the Police Infringement Processing System, but later decided to invest in setting up the TUS Programme

- 4.9 In August 2019, the Waka Kotahi Board agreed to invest § 9(2)(b)(i) in supporting Police to upgrade and/or replace the Police Infringement Processing System (PIPS).
- 4.10 In February 2020, the Waka Kotahi Executive Leadership Team agreed to establish the TUS Programme, and the § 9(2)(b)(ii) was used to fund that programme instead of upgrading PIPS.

⁵ New Zealand Government. 2021. *Road to Zero: Annual Monitoring Report 2020*. Wellington: Author, p 2.

⁶ Cabinet. 2019. *Minute of Decision – Tackling Unsafe Speeds Programme (CAB-19-MIN-0575)*.

⁷ Waka Kotahi. 2019. *Tackling Unsafe Speeds Options Paper*. Wellington: Author.

In early 2020, Waka Kotahi and Police initiated programmes to support the transfer of safety camera operations

- 4.11 At the start of 2020, a Programme Business Case (PBC) initiated the TUS Programme to design and implement a new regulatory framework for speed management and to transfer and expand safety camera operations.
- 4.12 Police initiated the Infringements Transformation Programme to enable the transfer of safety camera operations and modernise the processes and system required to support officer-issued infringements.

Board endorsed the TUS PBC in August 2021

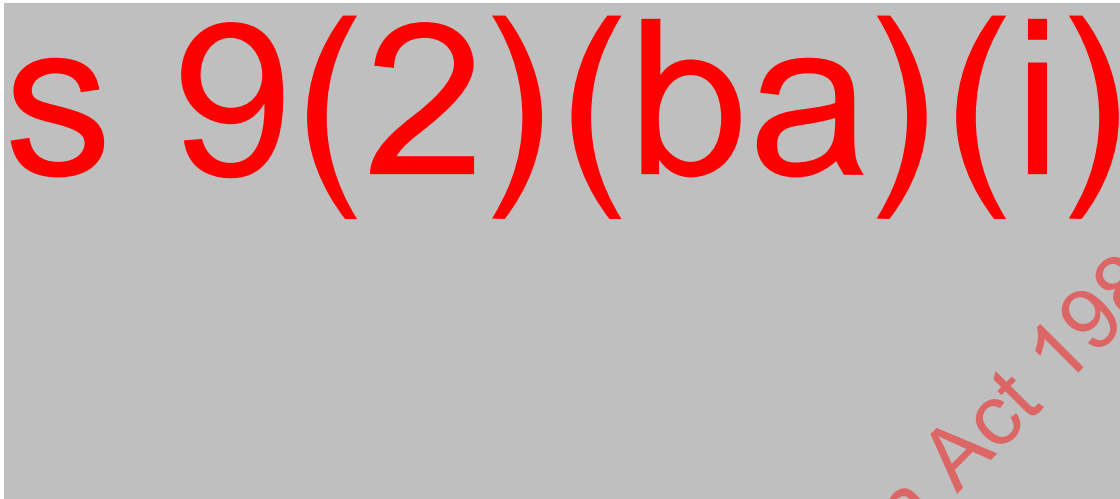
- 4.13 The Waka Kotahi Board endorsed the TUS PBC on 11 August 2021. The PBC sought Board approval for the TUS Programme's three component programmes in the 2021–24 NLTP cycle:
- Speed Management Programme – implementation
 - Safer Speeds Around Schools Programme – implementation
 - SCS Programme – funding for high-level design, a procurement process, and a DBC.

TUS PBC identified problem statements, benefits, and investment objectives for the SCS Programme

- 4.14 The TUS PBC outlined five problem (or opportunity) statements that the investment in the SCS Programme would resolve.
- Problem statement 1 – The most effective volume and mix of safety camera types and their use need to be fully understood to ensure the desired reduction in DSIs is achieved.
 - Problem statement 2 – Waka Kotahi lacks the capability to assume accountability and management of the SCS.
 - Problem statement 3 – Waka Kotahi cannot transfer existing infringements processing technology from Police as it is near end of life.
 - Problem statement 4 – The existing camera fleet does not readily integrate with newer technology.
 - Problem statement 5 – No consistent consultative process or technology exists for capturing speed management plans.
- 4.15 The TUS PBC noted that investment in the SCS would provide three key benefits.
- Benefit 1 – Increased number of road users travelling at safe and appropriate speeds.
 - Benefit 2 – Reduced DSIs by 4%.
 - Benefit 3 – Improved overall wellbeing for individuals in NZ.
- 4.16 Furthermore, the TUS PBC expected these benefits to be delivered by achieving three investment objectives. The objectives were to invest in:
- foundations of a new SCS, including the transfer of ownership and operation of safety cameras (technology and people) to Waka Kotahi
 - implementation of the capabilities required to operate and optimise a new approach to using safety cameras to lower inappropriate speed
 - expansion of the safety camera network over multiple phases.

Independent quality assurance recommended separating the SCS Programme out of the TUS PBC and developing a separate business case

4.17



IQA recommendations led to development of the SCS Programme, an IBC, and this DBC, which provide sound assurance of the proposed investment.

- IQA recommendations led to the development of the SCS Programme and an IBC, which provides sound assurance of the proposed investment. That IBC led to this DBC.

4.18 The SCS Programme completed the identification stage in May 2021 with a Programme Steering Committee established and Programme Blueprint, Programme Brief, and Programme Definition artefacts approved.

4.19 In July 2021, the Programme Steering Committee and Waka Kotahi Delegations Committee recommended that a separate IBC be developed for the SCS Programme.

4.20 The approved IBC led to this DBC which is expected to be approved in 2022.

Minister supports refinements to Cabinet-agreed approach to TUS

4.21 In December 2021, the Minister of Transport:

- Noted: The content of this briefing and the mounting international evidence supporting a mixed approach to safety cameras whereby average speed, fixed and mobile cameras are operated in line with best practice
- Noted: That Waka Kotahi is working in partnership with the Ministry of Transport to further develop the overall best practice framework for safety cameras to deliver on the intended outcomes

4.22 Agreed: A proposed mixed approach to safety cameras including a 'highly visible' approach for certain camera types, as appropriate, and maintaining a general deterrence 'anytime anywhere' component through the use of covert mobile cameras. At the time, the Minister also commented:⁹

s 9(2)(g)(i)

⁸ Waka Kotahi. 2021. *SCS Point of Entry Document*. Wellington: Author.

⁹ Ministry of Transport. 2021. *Tackling Unsafe Speeds*. Wellington: Author.

Next step in confirming the proposed investment

4.23 This DBC is the next step towards confirming the SCS investment proposal.

5. Structure and content of this business case

DBC follows the Waka Kotahi business case process and aligns with Treasury's Better Business Cases framework

5.1 This DBC takes stakeholders through the Waka Kotahi business case process, which aligns with Treasury's Better Business Cases framework. This approach systematically ascertains that the investment proposal:

- is supported by a compelling case for change – the strategic case
- optimises value for money – the economic case
- is commercially viable – the commercial case
- is financially affordable – the financial case
- is achievable – the management case.

5.2 The main components of the DBC are listed in Table 3.

Table 3: Structure and main content of this IBC

Component	Description
Executive summary	Summarises the proposed transfer and expansion of the SCS, which is the purpose of this DBC, the five cases, and next steps.
Introduction (sections 1–5)	Describes the purpose, structure, and content of this document and the proposal.
Strategic case (sections 6–20)	Defines the key problems the proposed investment will resolve and the case for change. Explains the root causes of the problems and identifies the strategic context, organisational context, and partners and key stakeholders involved. Outlines the benefits, investment objectives, risks, constraints, dependencies, assumptions, and overall case for change.
Economic case (section 21–27)	Identifies a preferred option (the Preferred Way Forward – PWF). Describes the long list of options and rationale for short-listed options. Details how short-listed options were evaluated and the results of the assessment to determine the preferred option.
Financial case (sections 28–33)	Demonstrates the affordability of the preferred option. Identifies the costs of implementing the preferred option and how the preferred option will be funded.
Commercial case (sections 34–40)	Outlines proposed procurement arrangements for the preferred option, including the procurement plan, procurement strategy, consenting plan, required services, property plan, contract provisions, and potential risk sharing.
Management case (sections 41–62)	Demonstrates the achievability of the preferred option. Summarises the plan for implementing the preferred option, programme/project management approach for successful delivery of the programme, change management approach, and how benefits, risks, and dependencies will be managed.

Component	Description
References (from p 144)	Lists reports and other documents referred to in or supporting the IBC. (See also the list of Waka Kotahi strategic, procurement, and programme management artefacts in Resources, p 7.)
Appendices	<i>See the separate file.</i>

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STRATEGIC CASE

6. Outline of the strategic case

- 6.1 The strategic case (sections 6–20) revisits the Indicative Business Case (IBC) and confirms the case for change is still relevant.
- 6.2 The Detailed Business Case (DBC) outlines the role and contribution of speed, speeding and running red lights in causing deaths and serious injuries (DSIs) on NZ roads (section 7). It defines the key problems and their root causes that the proposed investment will resolve and the case for change (section 7). The main problems and benefits agreed in the IBC have been revisited and refined in this DBC.
- 6.3 In addition, this case summarises the strategic and organisational context (section 8.40) and the partners and stakeholders involved (section 10). Lastly, this case outlines the benefits; investment objectives; future state operating model; scope; privacy impact; risks; assumptions, constraints, and dependencies; and further justification for why change is needed now (sections 12–19). These sections have been revisited and refined for this DBC.
- 6.4 This case was informed by published articles and their data that supported the case for change for the Safety Camera System (SCS). The research was selected on the basis of their citations, being the best available research, and having been used by Waka Kotahi teams in other internally published documents. This case is not a meta-analysis or systematic review of all available research in this field. For a more detailed list of research in this field, contact the Waka Kotahi research team directly.
- 6.5 Documents, articles, and websites referenced in the DBC are listed in References, p 144. Waka Kotahi strategic artefacts (and their location) are listed in Resources, p 7.

7. Role of speed in deaths and serious injuries on NZ roads

- 7.1 This section outlines the strategic context of speed and speeding and its role as a cause of DSIs on NZ roads. Specifically, this section highlights how:
- Speed lies at the core of the road safety problem¹⁰ and the kinetic energy transferred to vehicle occupants is the key contributor to DSIs.¹¹
 - driving over the speed limit and running red lights¹² is a widespread problem in NZ and contributes to DSIs on the roads
 - safety cameras (fixed speed, average speed,¹³ mobile speed, and red-light)¹⁴ can lower mean speeds and speeding over the limit on the wider network, as part of an overall safe system approach
 - red-light cameras can help reduce red-light running and, therefore, help reduce DSIs.

¹⁰ Job, S. Evaluations of Speed Camera Interventions Can Deliver a Wide Range of Outcomes: Causes and Policy Implications. Sustainability 2022, 14,1765. <https://doi/10.3390/su14031765>

¹¹ ED Richter, T Berman, L Friedman, & G Ben-David. 2006. Speed, road injury and public health. *Annual Review of Public Health* 27, 125–152.

¹² In this DBC, running a red light is included as a type of speeding since the vehicle should be stationary for the duration of the red light.

¹³ Legislative change is under way to enable the use of average-speed cameras, which is not currently permitted in New Zealand.

¹⁴ Job, S. Evaluations of Speed Camera Interventions Can Deliver a Wide Range of Outcomes: Causes and Policy Implications. Sustainability 2022, 14,1765. <https://doi/10.3390/su14031765>

Speed lies at the core to reducing DSIs

- 7.2 Speed lies at the core of the road safety problem in NZ and throughout the motorised world. Although many factors contribute to passenger injury during a vehicle crash, the kinetic energy transferred to vehicle occupants is the key contributor to DSIs.¹⁵ As speed increases, four factors increase with an associated increase in the risk of crash involvement. The four factors are:¹⁶
- stopping distance –the distance travelled both during reaction time and after the brakes are applied
 - the probability of exceeding the critical speed on a curve
 - the chance of other road users misjudging how fast the speeding driver is travelling
 - the probability of a rear-end crash if the driver has not accounted for the increased speed by increasing the following distance.
- 7.3 An enormous volume of research explains the relationship between speed, kinetic energy, and road DSIs globally. The World Health Organization estimates that 1.3m deaths occur globally due to road traffic crashes.¹⁷ Between 20 million and 50 million more people suffer serious injuries.
- 7.4 In addition, the World Health Organization notes that ‘speeding’ is one major factor contributing to DSIs on the road globally, observing that every 1% increase in mean speed produces a 4% increase in fatal crash risk and 3% increase in serious crash risk. Furthermore, death risk for pedestrians hit by car fronts rises steeply with speed – 4.5 times from 50km/h to 65km/h.
- 7.5 See also the table in Appendix 1 showing the number of casualties from all road crashes and where excess or inappropriate speed was identified as a contributing factor.

Speeding is defined as driving too fast for the conditions of the road

- 7.6 Te Manatū Waka, the Ministry of Transport defines speeding as driving above the recommended speed limit of the road, subject to road conditions such as weather and traffic.¹⁸
- 7.7 For the purpose of this DBC, speeding also includes running a red traffic light (running a red light is treated as a different offence to speeding, but is still an offence that can be managed with cameras). According to the NZ Automobile Association, every year, two or three people are killed on NZ roads in crashes involving red-light running and another 30 people are seriously injured, out of 600–700 such crashes.¹⁹
- 7.8 Most of those crashes occur in Auckland, but Hamilton, Christchurch and Dunedin all have significantly higher per capita rates of such crashes than Auckland.

Driving over the speed limit contributes to DSIs on roads

- 7.9 The relationship between speed and road trauma is well established in NZ and internationally, and managing speed continues to remain a primary focus of road safety

¹⁵ ED Richter, T Berman, L Friedman, & G Ben-David. 2006. Speed, road injury and public health. *Annual Review of Public Health* 27, 125–152.

¹⁶ Ministry of Transport. 2021. Speed. Safety: Annual statistics (web page).

¹⁷ World Health Organization. 2021. Road traffic injuries (web page).

¹⁸ Ministry of Transport. 2021. Speed. Safety: Annual statistics (web page).

¹⁹ B Irvine. 2020. Red alert: What can be done about red light runners? *AA Directions* (Autumn).

authorities²⁰. A 2017 study of DSIs in NZ revealed that approximately 87% of all crashes occurred at speeds that were under 10km/h over the posted speed limit.²¹

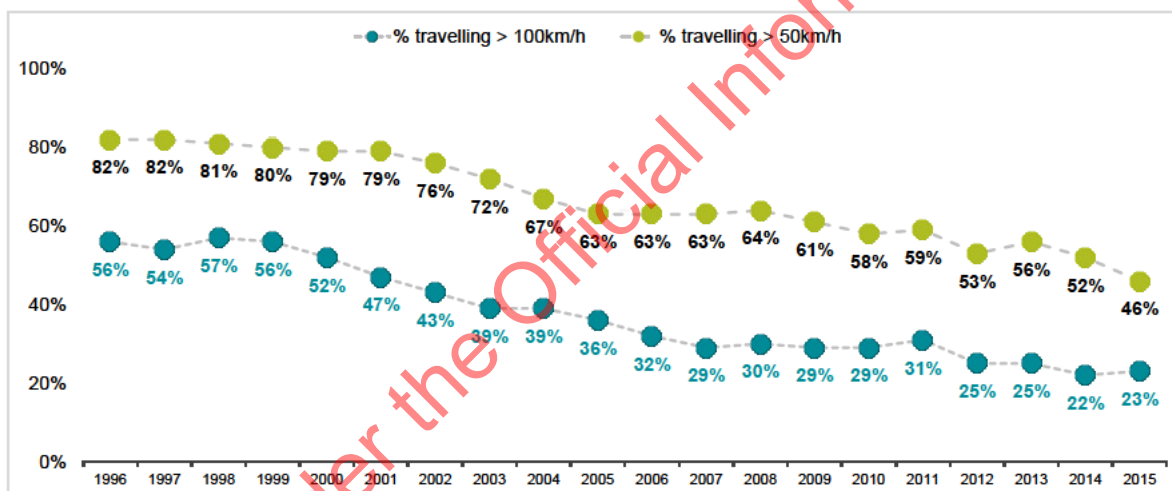
7.10 Te Manatū Waka, the Ministry of Transport used to perform an annual speed survey to gauge the number of vehicles travelling over the posted speed limit around the country. The last survey was in 2015.²² The surveys were conducted at randomly selected sites to provide an estimate of the national speed profile.

7.11 Speed surveys monitored changes in free speeds of vehicles in 100km/h speed limit areas and main urban 50km/h areas. Free speeds are measured when vehicles are unimpeded by the presence of other vehicles (that is, some distance exists between a vehicle travelling at a free speed and the vehicle in front of it) or environmental features such as traffic lights, intersections, hills, corners, or road works.

7.12 The last speed survey found:²³

- 23% of vehicles surveyed on open roads were travelling faster than the 100km/h speed limit
- 46% of vehicles surveyed on urban roads were travelling faster than the 50km/h speed limit (see Figure 2).

Figure 2: Percentage of cars exceeding the speed limit in NZ, 1996–2015



Source: Ministry of Transport. 2015. *Speed Survey Results*. Wellington: Author.

7.13 Figure 3 shows that over the 11 years from FY2010, driving above the speed limit accounted for, on average, 31% of all deaths on NZ roads per year.

7.14 Furthermore, the data highlights that over that 11-year period:

- 31% of all deaths were a direct result of driving above the speed limit – of the 2,483 deaths on the road, 1,099 were due to driving over the limit (Figure 3)
- 30% of all serious injuries were a direct result of driving above the speed limit – of the 19,869 serious injuries on the road, 5,592 were due to driving over the limit (Figure 4).

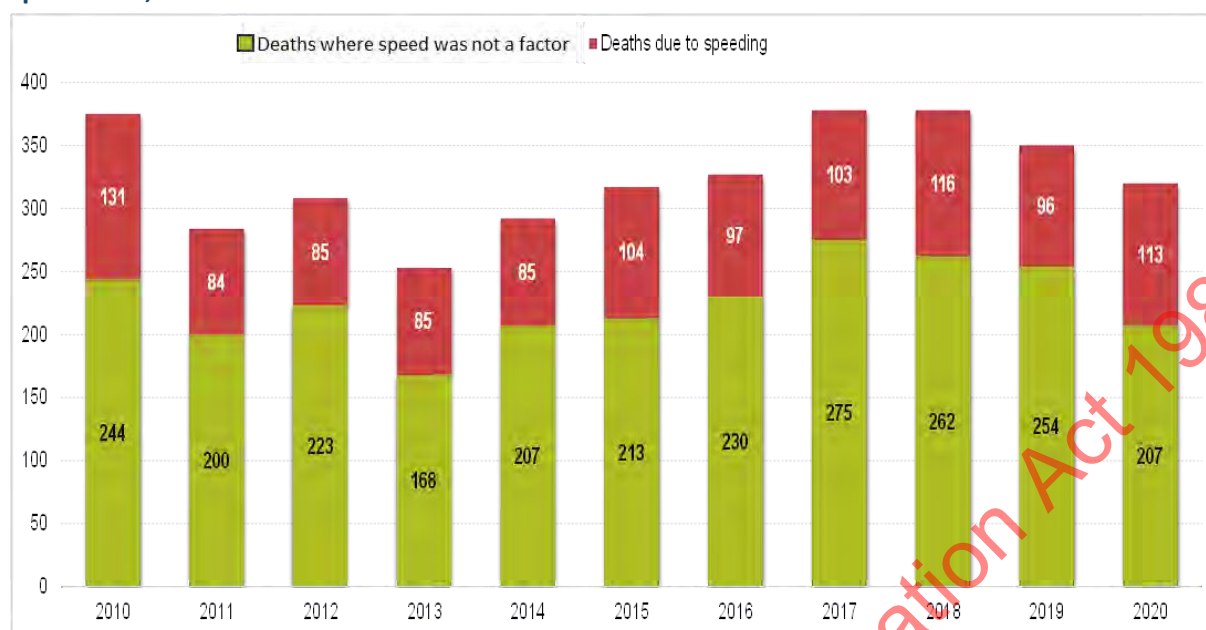
²⁰ Job, S, Brodie, C. 2022. Understanding the role of Speeding and Speed in Serious Crash Trauma: A Case Study of New Zealand. Journal of Road Safety – Volume 33, Issue 1, 2022

²¹ H Mackie, L Hirsch, & I McAuley. 2017. Fatal footsteps: Understanding the Safe System context behind New Zealand's pedestrian road trauma. Journal of Road Safety 33(1), 5–16.

²² The Ministry's reason for not conducting subsequent surveys is unknown.

²³ Ministry of Transport. 2015. *Speed Survey Results*. Wellington: Author.

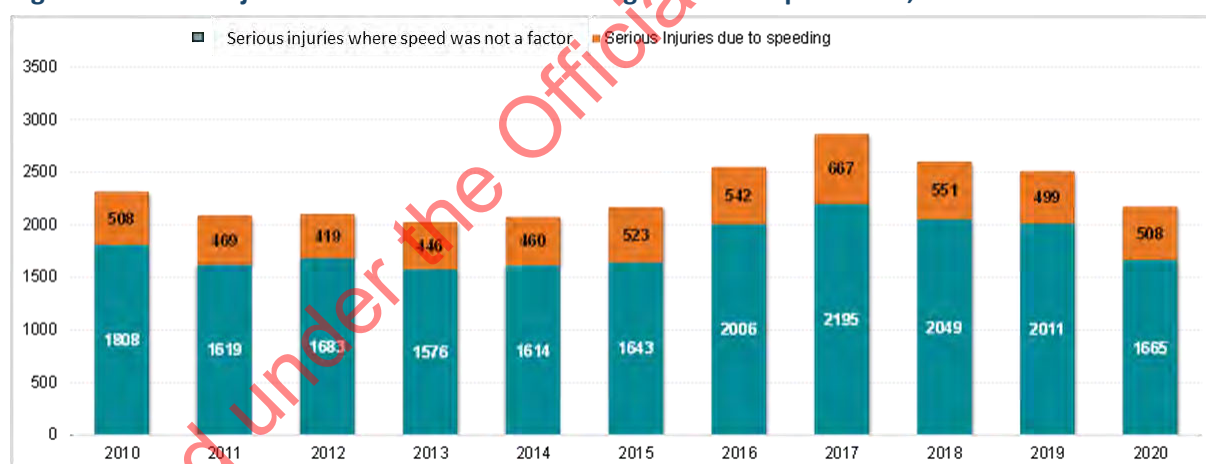
Figure 3: Total deaths on NZ roads compared with deaths on NZ roads due to driving above the speed limit, FY2010–20



Source: Ministry of Transport. 2021. *Te Marutau – Ngā tatauranga ā-tau: Safety – annual statistics* (website).

Note: Crash data is derived from Traffic Crash Reports completed by police officers who attend fatal and injury crashes. The information about crash circumstances and causes is extracted from these reports by Waka Kotahi and Ministry of Transport staff and stored in the Crash Analysis System. The data presented in this DBC (and previously the IBC) is extracted from that.

Figure 4: Serious injuries on NZ roads due to driving above the speed limit, FY2010–20



Source: Ministry of Transport. 2021. *Te Marutau – Ngā tatauranga ā-tau: Safety – annual statistics* (website).

Note: Crash data is derived from Traffic Crash Reports completed by police officers who attend fatal and injury crashes. The information about crash circumstances and causes is extracted from these reports by Waka Kotahi and Ministry of Transport staff and stored in the Crash Analysis System. The data in this DBC (and previously the IBC) is extracted from that.

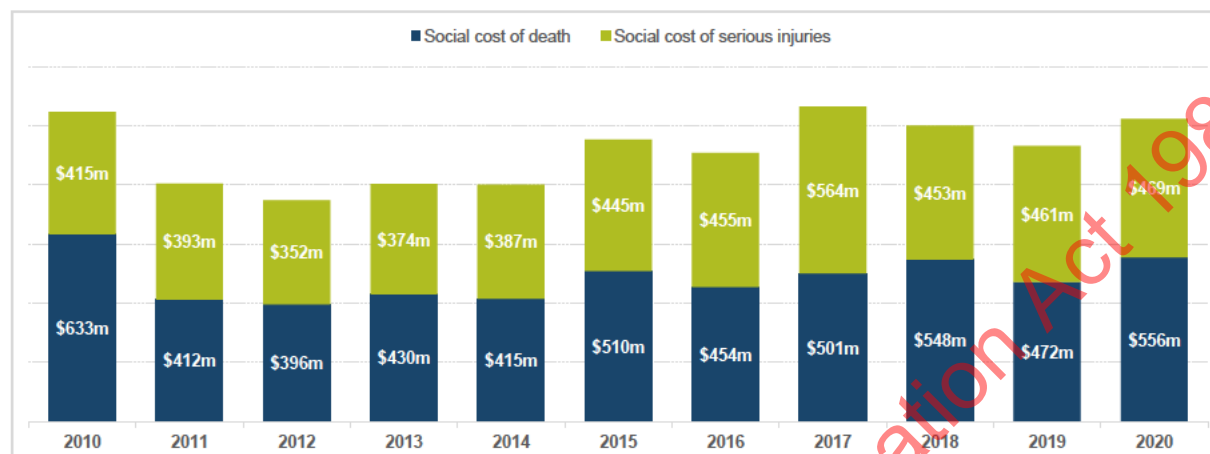
7.15 Te Manatū Waka, the Ministry of Transport notes that road deaths and injuries (serious and minor) impose intangible, financial, and economic costs on society. These costs include loss of life and reduced quality of life, reduced output due to temporary incapacitation, and medical, legal, and vehicle damage costs.

7.16 The Ministry equates the average social cost to society of death on roads to \$4.9m per death, \$0.9m per serious injury, and \$0.1m per minor injury (as at 2017).²⁴ These figures are used to calculate the cost-benefit ratio in monetised terms in the economic case (from p 77).

²⁴ These are the most up-to-date values from the Ministry.

- 7.17 Based on the Ministry's estimates, in FY2010–21, driving above the speed limit on NZ roads cost society \$10.1b, comprising \$5.3b from deaths and \$4.8b from serious injuries (see Figure 5).
- 7.18 In FY20, driving above the speed limit had a social cost to the country of \$1b, with 113 deaths and 508 serious injuries on NZ roads (see Figure 5).

Figure 5: Social cost to NZ of DSIs from driving above the speed limit, FY2010–21



Source: Ministry of Transport. 2021. *Te Marutau – Ngā tatauranga ā-tau: Safety – annual statistics* (website).

Note: Crash data is derived from Traffic Crash Reports completed by police officers who attend fatal and injury crashes. The information about crash circumstances and causes is extracted from these reports by Waka Kotahi and Ministry of Transport staff and stored in the Crash Analysis System. The data in this DBC (and previously the IBC) is extracted from that.

Safety cameras (fixed speed, average-speed, mobile speed, and red light) will contribute to reducing DSIs

- 7.19 International evidence demonstrates that safety cameras are highly effective at reducing DSIs with an overall positive road safety impact for all users.^{25,26,27}
- 7.20 As concluded by Job (2022) “the data irrefutably demonstrate that speed-camera programs lower speeds and reduce road-crash trauma”. The meta-analysis [of safety camera studies] reported by Elvik et al “found an overall decrease of 16% in the number of injury crashes and a 39% decrease in fatal crashes”.
- 7.21 Such findings have been consistent over long periods as the first study to examine the use of safety cameras was conducted in West London and published in 1994.²⁸ This study noted that speed cameras very successfully reduced speed.
- 7.22 There is a wealth of international evidence supporting the use of different camera types as part of an overall best practice safety camera programme. There is a strong consensus in literature that corridor speed cameras are an effective tool for managing speed and reducing crashes. De Ceunynck concludes:²⁹

²⁵ S Job, D Cliff, JJ Fleiter, M Flieger, & B Harman. 2020. *Guide for Determining Readiness for Speed Cameras and Other Automated Enforcement*. Geneva, Switzerland: Global Road Safety Facility and the Global Road Safety Partnership.

²⁶ C Sakashita, JJ Fleiter, D Cliff, M Flieger, B Harman, & M Lilley. 2021. *A Guide to the Use of Penalties to Improve Road Safety*. Geneva, Switzerland: Global Road Safety Partnership.

²⁷ S Job. 2022. *Evaluations of Speed Camera Interventions Can Deliver a Wide Range of Outcomes: Causes and Policy Implications*. Sustainability 2022, 14, 1765. <https://doi.org/10.3390/su14031765>

²⁸ M Winnett. 1994. *A review of speed camera operations in the UK*. Paper presented at the 22nd European Transport Forum PTRC.

²⁹ T De Ceunynck. 2017. *Installation Of Section Control & Speed Cameras*. European Road Safety Decision Support System, developed by the H2020 project SafetyCube.

“[...] there is ample evidence that both section control and fixed speed cameras improve road safety. All effect studies report a decrease in at least some types of crashes at locations that are equipped with section control or fixed speed cameras.”

- 7.23 A meta-analysis reports a decrease of 30% in injury crashes and crashes of unspecified severity, and a decrease of 56% in killed or seriously injured crashes as a result of installing section control.³⁰ The meta-analysis indicates fixed speed cameras reduce injury crashes and crashes of unspecified severity by 20%, killed or seriously injured crashes 15%, and fatal crashes 51%.
- 7.24 Several more recent studies about both topics largely confirm the results from the meta-analysis.
- 7.25 Based on this research, Waka Kotahi assumes the following:
- A 56% decrease in DSIs for average speed (point-to-point) cameras (is possible).
 - However, as NZ has low infringement fees and no demerit points, the severity of the deterrence effect will not be as high in NZ as it is in Europe. To account for this, the 56% effectiveness may be lower.
 - A 15% decrease in DSI is assumed for static cameras (fixed and red light).
- 7.26 In NZ, Keall and colleagues found that over the first year of a hidden speed camera trial, open road mean speeds fell by 2.3km/h in speed camera areas and 1.6km/h elsewhere when compared with the rest of the country³¹. There were estimated net falls of 11% in the open-road crash rate, 19% in the casualty rate, and 8% in the number of injured vehicle occupants per crash. It was concluded that the changes in crashes, casualties and opinions were predominantly due to the effect of the hidden cameras and associated publicity over and above the effect of the overtly operated speed cameras.
- 7.27 In the Netherlands, the effect of mobile speed cameras was examined in the province of Friesland.³² The study included 28 roads with a speed limit of 80km/h and with a high number of crashes. In 1998–2002, mobile cameras were deployed at various locations along these roads. This research compared speed behaviour and crashes on these roads with 28 similar roads without speed enforcement. Average speed lowered from 82.6km/h to 78.6km/h (a reduction of 4km/h or nearly 5%) on the enforced roads with a reduction of 21% in injury crashes.
- 7.28 The NSW speed camera strategy reflects research which shows that best practice mobile camera programs with sufficient hours, a high number of enforcement sites, unmarked and marked operations and highly randomised deployment can deliver consistent, network wide 20-30 per cent reductions in casualty crashes³³. In November 2020, changes were announced to NSW's mobile speed camera program, which included increased enforcement hours, as well as a reduction in high visibility livery on vehicles and the removal of warning signs.³⁴
- 7.29 A Monash University Accident Research Centre (MUARC) report identified that these enhancements to the NSW mobile camera program may save between 34 and 43 lives and

³⁰ R Elvik. 2016. Association between increase in fixed penalties and road safety outcomes: A meta analysis. *Accident Analysis and Prevention* 91, 202–210.

³¹ Keall et al. 2000. The relative effectiveness of a hidden versus a visible speed camera programme. *Accident Analysis and Prevention* 33 (2001) 277–284.

³² C Goldenbeld & I van Schagen. 2005. The effects of speed enforcement with mobile radar on speed and accidents: An evaluation study on rural roads in the Dutch province Friesland. *Accident Analysis and Prevention* 37(6), 1,135–1,144. doi: 10.1016/j.aap.2005.06.011.

³³ Centre for Road Safety. 2020. Mobile speed cameras in other Australian jurisdictions. Research report. Transport for New South Wales 2020.

³⁴ <https://roadsafety.transport.nsw.gov.au/speeding/speedcameras/mobile-speed-cameras.html>

prevent around 600 serious injuries in NSW each year.³⁵ A MUARC review of the Queensland program noted that “covert car-based mobile operations were found to produce around double the crash savings per hour of enforcement compared to overt operations.”³⁶

- 7.30 As noted in 7.4, a 1% increase in mean speed produces a 4% increase in fatal crash risk and 3% increase in serious crash risk. Therefore, a 1% reduction in speed may result in a 4% reduction in DSIs. Based on this, Waka Kotahi accepts that a 22% decrease in DSIs can be assumed for mobile cameras.
- 7.31 In 2014, Abley (a NZ-owned transport planning consultancy)³⁷ undertook an internet search to identify published studies that had quantified the road safety benefits of dual speed/red light cameras over single use cameras such as red-light cameras and speed cameras. The review focused on findings from Australia where dual speed/red-light camera technology has been deployed relatively extensively in recent years. As transport in Australia is governed by a similar design, operating and legislative framework to transport in NZ, it was considered findings from Australia would provide a useful indicator of the scale of benefits that could be expected in NZ.
- 7.32 A 2011 report from MUARC was the most comprehensive and provided the best insight to the potential road safety benefits of installing a dual speed/red light camera at signalised intersections in NZ.³⁸

The most relevant aspects of that report are as follows:

- The study reviewed dual speed/red-light cameras installed at 77 intersections in Victoria, Australia.
 - The study included a high ratio of control sites to treatment sites to ensure the statistical significance of the estimated effectiveness of dual cameras was robust.
 - The study reported effectiveness in terms of reduction in crashes on the treatment approach, reduction in targeted crashes at the intersection, and reduction in crashes across the entire intersection.
- 7.33 The study found significant reductions in injury crashes associated with the introduction of dual speed/red light cameras compared with the control sites. The main (statistically significant) findings were:
- injury crashes on the treatment approach reduced by 47%
 - targeted injury crashes at the intersection reduced by 44%
 - all injury crashes across the entire intersection reduced by 26%.
- 7.34 In 2022, a literature review commissioned by Austroads concluded:³⁹

Enforcement of the legal speed limit is a very powerful safety measure and, while officer led roadside enforcement reinforces the importance of the issue with the community, automated speed enforcement systems are a very

³⁵ Newstead, S. Analysis to estimate road safety benefits of expanding the NSW mobile speed camera program. MU Accident Research Centre (MUARC), Monash University

³⁶ Newstead, S. et al. 2020. Evaluation of The Road Safety Benefits of The Queensland Camera Detected Offence Program (CDOP) in 2017. MU Accident Research Centre (MUARC), Monash University

³⁷ Abley. 2020. Who we are (website).

³⁸ L Budd, J Scully & S Newstead. 2011. Evaluation of the Crash Effects of Victoria's Fixed Digital Speed and Red-Light Cameras (MUARC report 307). Victoria: Monash University Accident Research Centre.

³⁹ Austroads is formed from the collective of Australian and NZ transport agencies. It represents all levels of government and provides high-quality, practical, and impartial advice, information, tools, and services to help its members deliver efficient, reliable, and safe mobility to customers. For more information, see the Austroads website: <https://austroads.com.au>

efficient delivery mechanism. The major automated systems each play a significant and distinct role [see Table 4]:

- Fixed speed cameras – to deter speeding at specific (midblock) locations.
- Fixed combined red light and speed cameras – to deter red light running and/or speeding at specific (intersection) locations.
- Average-speed cameras – to deter speeding along specific corridors.
- Mobile speed cameras – to deter speeding across a network.

Table 4: Summary of the effectiveness of automated enforcement systems

Method	Average speed reduction (%)	Speeding reduction (%)	Casualty crash reduction (%)	Fatal & serious injuries reduction (%)	Recommended use*
Fixed speed camera	3–9	60–90	20–40	25–75	Location specific, specific deterrence
Mobile speed camera	6–7	30–50	10–50	5–20	Network, general deterrence
Fixed combined red-light/speed camera	*	*	15–70	30–50	Location specific, specific deterrence
Average-speed camera	3–11	40–80	20–50	40–50	Corridor, specific deterrence

* No rigorous study found that investigated this criterion.

Source: Austroads commissioned literature review. 2022.

- 7.35 Speed cameras were introduced in NZ around October 1993. They were initially placed on stretches of road with a record of speed-related crashes. The stretches of road were signposted with 'Speed Camera Area' signs, and cameras were highly visible. At rural sites, cameras were mobile, and vehicle mounted. At urban sites, cameras were mobile, and vehicle mounted or were fixed and mounted on poles ('static').
- 7.36 Police studied crash data in the 20 months following the introduction of static cameras. It found a 23% reduction in DSIs at urban static camera sites and an 11% reduction in DSIs at rural sites.⁴⁰
- 7.37 While NZ research into safety cameras has been limited to the one Police study, international research has been rigorous. Evidence demonstrates that in NZ we can achieve safety benefits by implementing safety cameras in line with best practice with an appropriate mix of safety cameras on high-, medium-, and low-risk corridors (see Table 5).

Table 5: Evidence of reductions in DSIs from using different safety cameras

Camera type*	Impact expected on DSIs	Evidence^
Fixed	Reduce DSIs by 20% within 250–500m of the camera	Høye. 2014. Speed cameras, section control, and kangaroo jumps: A meta-analysis.
Average speed	Reduce DSIs by 56% over the treated corridor	Høye. 2014. Speed cameras, section control, and kangaroo jumps: A meta-analysis.

⁴⁰ New Zealand Police. 2021. [Why do we have safe speed cameras](#) (web page).

Camera type*	Impact expected on DSIs	Evidence^
Mobile	Reduce DSIs by 21–30% across the network	Keall, Povey, & Frith. 2002. Further results from a trial comparing a hidden speed camera programme with visible camera operation. Cameron & Delaney. 2008. <i>Speed Enforcement: Effects, mechanisms, intensity and economic benefits of each mode of operation</i> . Cameron. 2008. <i>Development of Strategies for Best Practice in Speed Enforcement in Western Australia: Supplementary report</i> . Cameron. 2009. <i>Safety Benefits of Speed Cameras</i> .
Red-light	Reduce DSIs by 20% at the intersection of installation	Cohn, Kakar, Perkins, Steinbach, & Edwards. 2020. Red light camera interventions for reducing traffic violations and traffic crashes.

* For an overview of the camera types, see Appendix 2.

^ For bibliographic details, see References, p 144.

7.38 Based on the studies described above, Waka Kotahi has concluded the four types of safety camera will be effective, but each type will have different levels of effectiveness. Table 6 shows the expected effectiveness at reducing DSIs for each camera type.

Table 6: Expected DSI reduction from different camera types

Camera type	Intended use	DSI reduction effectiveness
Average speed (point to point)	Site-specific deterrence on high-risk corridors at least 4km in length where a steady speed can be maintained (for example, where there are no intersections)	(up to) 56%
Fixed (static)	Site-specific deterrence on high-risk corridors not suitable for average-speed safety cameras	15%
Mobile	High, medium, and low-risk corridors	11% (rural) 23% (urban)
Red-light/speed	High-risk intersections	26% (all approaches)

Safety cameras (fixed, average, and mobile) reduce speeding on the wider network

7.39 A safety camera programme utilising fixed, average speed, and mobile camera can achieve what researchers call a halo effect – a reduction in speed beyond the immediate location of a safety camera. This is an important element of achieving general deterrence, a critical component of an effective safety camera programme and the ability to reduce DSIs. That being, the perception that speeding is likely to be detected and incur an appropriate penalty. This principle of *deterrence before detection* is that people change their behaviour without having to be caught.

7.40 Researchers observe two types of halo effect: distance and time.⁴¹

- **Distance halo effect** – the distance (usually measured in kilometres) on either side of the enforcement site over which a reduction in speeding behaviour occurs.

⁴¹ P Champness, M Sheehan, & L Folkman. 2015. *Time And Distance Halo Effects Of An Overtly Deployed Mobile Speed Camera*. Centre for Accident Research and Road Safety Queensland.

- **Time halo effect** – the time (in days) from the enforcement activity during which speeds at the enforcement site are reduced.

7.41 International research has found that safety cameras can effectively achieve a halo effect beyond the immediate location of a camera site when operated effectively and in line with best practice. Two examples are as follows:

- NZ researcher Barnes found that a distance halo effect was created from a marked mobile traffic police vehicle, where speed reduction began more than 2km before the site and lasted for 6km after the site – a total of up to 8km.⁴²
- American researchers Brackett and Edwards found that a stationary traffic police car randomly moved from place to place along a stretch of road created an impression of a massive concentration of enforcement along that road. This created a reduction in speed of up to 20km from either side of the stationary car.⁴³

7.42 Findings from other international research into the halo effect are summarised in Table 7.

7.43 Based on the above research, as the SCS spreads across the road network and the other Road to Zero interventions are applied, Waka Kotahi expects mean speeds across NZ to lower.

Table 7: International evidence of reduction on speeding on wider network

Country	Reduction in speed across the network	Findings and evidence*
UK	30%	A study of 1,000 safety cameras installed across the UK between 1992 and 2016 found that safety cameras lowered overall speed across the network by 30%. Evidence: Tang. 2017. <i>Do Speed Cameras Save Lives?</i>
France	20%	Safety cameras lowered speed across the French network by 19.7%. Evidence: Blais & Carnis. 2015. Improving the safety effect of speed camera programs through innovations: Evidence from the French experience.
UK, France, Australia, and other countries	Varying	Safety camera networks and speed-calming interventions led to large sustainable and highly cost-effective decreases in average speed across the UK, Australia, France, and other countries. Evidence: Richter, Berman, Friedman, & Ben-David. 2006. Speed, road injury and public health.

* For bibliographic details, see References, p 144.

Waka Kotahi can manage investment in safety cameras as speed management tools

7.44 Police currently have the responsibility for operating the current camera network and processing offences. The safety camera network is a sizeable asset, and additional investment in cameras will only increase the scale of the network and the associated asset management responsibilities. A goal of Waka Kotahi will be to ensure that the NZ public understand that safety cameras are a road safety tool as part of an overall approach.

7.45 A transfer of ownership allows Waka Kotahi to incorporate investment and placement of new safety cameras into its broader speed management and planning. This approach will also

⁴² Barnes (1984) cited in D Zaal. 1994. *Traffic Law Enforcement: A review of literature* (report 53). Monash University Accident Research Centre. Prepared for Federal Office of Road Safety, Canberra & Institute for Road Safety Research.

⁴³ JB Edwards. 1999. Speed adjustment of motorway commuter traffic to inclement weather. *Transportation Research Part F2* 2(1), 1–14.

support public understanding of safety cameras as a speed management tool to improve road safety outcomes.

- 7.46 When Te Manatū Waka, the Ministry of Transport consulted with key stakeholders on the proposal, they were supportive of transferring ownership of the camera network to Waka Kotahi.
- 7.47 Other jurisdictions typically have a land transport authority responsible for safety cameras, rather than the police. New South Wales (NSW) is in the process of transferring responsibility for safety cameras from the police to the land transport authority. Advice from NSW is that the purpose of safety cameras should be clearly communicated to the public to help ensure the success of a safety camera programme.⁴⁴

8. Defining the problem for the SCS

- 8.1 This section outlines the root causes of the current problems for the SCS and strategic documents that contain additional information about the root causes.
- 8.2 A facilitated investment logic mapping workshop with key stakeholders was held between 6 and 20 October 2021 to gain a better understanding of issues and business needs and why Waka Kotahi needs change or investment, or both, now.
- 8.3 In May 2022, the investment logic map (ILM) was revisited (using an accredited facilitator) to confirm the logic was still acceptable and relevant to the Programme Steering Committee. Based on that activity, the ILM was updated. Both the original and updated ILMs are in Appendix 3 (which also contains the benefits logic map).
- 8.4 Two key problems and their weightings and root-causes were agreed in the updated ILM.
- Problem 1 – The SCS uses old, manual technology and has limited geographic coverage, which significantly reduces and delays the ability to reduce speeding and lower average speeds (80%).
 - Problem 2 – The Police SCS is at end of life and is not compatible with the (planned) Waka Kotahi SCS; continuing it will increase total costs and reduce effectiveness and efficiency opportunities (20%).
- 8.5 The Programme Steering Committee when authorising this DBC will be asked to take particular attention to the strengthened ILM and problem statements.
- 8.6 The next sections discuss the rationale for the problem statements.

Problem 1: The SCS uses old, manual technology and has limited geographic coverage, which significantly minimises and delays the ability to reduce speeding and average speeds (80%)

- 8.7 Problem 1 reflects the multiple roles that a mix of safety cameras (and camera types) can play on the NZ network and their ability to improve compliance and reduce road DSIs on the network.
- 8.8 The root causes of this problem are complex, and pressure arises mainly from a combination of four root causes.
- Root cause 1 – The safety camera⁴⁵ technology that Police use is older generation compared with the new generation technology available today (for example, average-speed cameras), making current cameras less effective at improving compliance.

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⁴⁵ Including red-light cameras.

- Root cause 2 – NZ has the lowest number of safety cameras per capita on its network compared with other jurisdictions (based on our research). The intensity of enforcement limits NZ's ability to reduce DSIs.
- Root cause 3 – NZ currently has relatively low penalties for speeding offences, and camera-issued offences do not attract demerit points. There are also limitations to the ability to effectively serve notices. Together this undermines overall deterrence and NZ's ability to reduce DSIs.
- Root cause 4 – Safety cameras have not been sufficiently targeted at high-risk parts of the road network to reduce DSIs (in part, due to the low number of cameras).

Note: safety cameras are targeted to the highest risk parts of the network that are suitable and safe for camera deployment as a speed risk option. Cameras are not a viable treatment for large tracts of the network, and it makes poor investment sense to deploy cameras to parts of the network where the crashes are contributed to by unsafe speeds that are within the legal speed limits than driving in excess of the limit.

Root cause 1: The safety camera technology Police uses is older generation compared with the new generation technology available today (for example, average-speed cameras), making current cameras less effective at improving compliance

- 8.9 Commercial due diligence of Police by PwC on behalf of Waka Kotahi between August and November 2021 revealed a large proportion of Police safety cameras use older generation technology, which is less efficient and less effective. Since then, Police have replaced the mobile camera fleet.
- 8.10 Current Police safety camera technology has five main issues. Compared with newer technology, it:
- is up to 10 years old (depending on the specific technology)
 - has been less efficient at processing images and capturing non-compliant drivers, with only approximately 70% of images being captured accurately and 30% of non-compliant drivers not being processed. This has changed significantly with the replacement of mobile cameras, image quality has improved, and rejection rates significantly decreased
 - is less effective in terms of integration and back-office processing; for example, new mobile cameras are capable of being downloaded remotely but are currently downloaded by the operators working in the vans with the cameras
 - does not include average-speed cameras, which are highly effective in improving road user compliance and reducing DSIs
- 8.11 Average-speed cameras are highly effective in reducing DSIs. International findings on DSI reductions following the introduction of average-speed cameras are noted in Table 8.

Table 8: Evidence about the impact of average-speed cameras on DSIs in treated corridors

Country	DSI % change after the introduction of average-speed cameras
Norway	Decrease in DSIs by 49%
Netherlands	Decrease in DSIs by 50%
Australia	Decrease in DSIs by 50%
Italy	Decrease in DSIs by 51%
United Kingdom	Decrease in DSIs by 50%

Source: HS Lahrmann, B Brassøe, JW Johansen, & JCO Madsen. 2016. Safety impact of average speed control in the UK. *Journal of Transportation Technologies* 6(5), 312–326. [10.4236/jtts.2016.65028](https://doi.org/10.4236/jtts.2016.65028)

- 8.12 Police do not use average-speed cameras for several reasons, including that:

- average-speed cameras require legislative change in NZ (enabling legislation was blocked by the government of the day when 110km/h speed limits were enabled and funding for investment in average-speed cameras and a more modern processing system for Police was a decision for Waka Kotahi)
- average-speed camera technology was relatively expensive until about 2015 after which the cost of installing and operating the technology decreased from \$1.5m/km to less than \$100,000/km.
- the Police Infringement Processing System technology is not able to manage average-speed cameras.

Root cause 2: NZ has the lowest number of safety cameras on its network compared with other jurisdictions, which limits our ability to reduce DSIs effectively

- 8.13 NZ's current 'anytime, anywhere' enforcement approach to safety cameras means fixed and mobile cameras are not signposted and mobile speed enforcement can occur anywhere on the network. The main purpose of this approach is to make drivers think speeding can be detected at any time and in any place on the network.
- 8.14 However, NZ has relatively few safety cameras per capita compared with other jurisdictions (see
- 8.15 Table 9) a low proportion of safe and appropriate speed limits, and very low penalties for speeding (see Root cause 3: NZ has relatively low penalties for speeding offences, and camera-issued offences do not attract demerit points
- 8.16 NZ's relatively low penalties for speeding offences (see **Error! Not a valid bookmark self-reference.** and Table 11) currently undermines deterrence and the ability to reduce DSIs. Road safety penalties will be reviewed as part of Road to Zero. This falls outside the scope of the DBC but it is acknowledged as being a critical element of a successful safety camera programme.
- 8.17 The SCS Programme supported by other key initiatives in Road to Zero such as the review of road safety penalties and a number of other legislative and operational changes serve to strengthen both specific and general deterrence and more effectively achieve a reduction in DSIs.
- 8.18 Table 10 and Table 11), which greatly undermine the effectiveness of the enforcement approach, particularly, the ability to achieve the necessary level of general deterrence. Further, NZ has not yet operationalised camera types that have proven highly successful overseas (that is, average-speed and dual function red-light-speed cameras), which can effectively complement an 'anytime, anywhere' approach.
- 8.19 Police (including cameras owned by AT) has about 142 safety cameras across its road network: 45 red-light, 54 fixed speed, and 43 mobile cameras.

Table 9: Safety cameras and road fatalities per capita

Note: It should be noted that the jurisdictions in Table 10 below have identified and enforced Safe speeds for their network.

Jurisdiction	Safety cameras per 100,000 population	Road fatalities per 100,000 population
Sweden	>11	2.5
Netherlands	9.4	3.6
France	7.5	5.2
Victoria (Australia)	6.6	3.3
New South Wales (Australia)	4.7	4.6
United Kingdom	4.2	2.8
New Zealand	2.3	7.9

Source: Ministry of Transport. 2019. *Impact Summary: Tackling unsafe speeds* (version released under the Official Information Act 1982). Wellington: Author; NZ Police research, November 2018, updated for additional cameras and population changes; International Transport Forum. 2018. *Road Safety Annual Report 2018*. OECD/ITF; NSW Government. 2020. *Speed Camera Programs: 2017 annual review*. Sydney: Author.

Note: These figures include fixed, mobile, point-to-point, red-light, and combined red-light–speed cameras. NZ does not have operational point-to-point or combined red-light–speed cameras.

Root cause 3: NZ has relatively low penalties for speeding offences, and camera-issued offences do not attract demerit points

- 8.20 NZ's relatively low penalties for speeding offences (see **Error! Not a valid bookmark self-reference.** and Table 11) currently undermines deterrence and the ability to reduce DSIs. Road safety penalties will be reviewed as part of Road to Zero. This falls outside the scope of the DBC but it is acknowledged as being a critical element of a successful safety camera programme.
- 8.21 The SCS Programme supported by other key initiatives in Road to Zero such as the review of road safety penalties and a number of other legislative and operational changes serve to strengthen both specific and general deterrence and more effectively achieve a reduction in DSIs.⁴⁶

Table 10: How NZ speeding infringements compare with those in other jurisdictions (NZ\$)

Country	Urban roads fines	Open roads fines
Sweden	1–10km/h over 30km/h limit = \$370 11–15km/h over limit = \$430 16–20km/h over limit = \$504 +21km/h over = \$611 plus licence suspension for 2–6 months	+21km/h over any limit = \$611 plus licence suspension for 2–6 months
Norway	+21km/h over limit = \$1,625 plus licence suspension for 3–36 months	+21km/h over limit = \$1,225 plus licence suspension for 3–36 months
Netherlands	+20km/h over 30km/h limit = \$344 plus licence suspension for a minimum of 1 month +20km/h over 50km/h limit = \$1,225 plus licence suspension for a minimum of 1 month	+20km/h over open road speed limit = \$240 plus licence suspension for a minimum of 1 month (Note: Penalty updated by consumer price index yearly.)

⁴⁶ Global Road Safety Facility. 2021. *Guide for Road Safety Interventions: Evidence of what works and what does not work*. Washington DC: World Bank.

Country	Urban roads fines	Open roads fines
Britain	+21km/h over limit = \$203 +41km/h over limit = \$232–2,025 plus licence suspension	+21km/h over limit = \$203 +40km/h over limit = \$232–2,025 plus licence suspension for 2–6 months
France	+20km/h over limit = \$232 +40km/h over limit = \$232 plus licence suspension for 2–6 months	+20km/h over limit = \$232 +40km/h over limit = \$232 plus licence suspension for 2–6 months
New Zealand	Up to 10km/h over limit = \$30 11–15km/h over limit = \$80 16–20km/h over limit = \$120 +20km/h over limit = \$170–400 +40km/h over limit = \$510–\$630	Up to 10km/h over limit = \$30 11–15km/h over limit = \$80 16–20km/h over = \$120 +20km/h over limit = \$170–400 +40km/h over limit = \$510–630 and licence suspension for period depending on speed.

Source: New Zealand Police. 2021. [What are the fines for speeding?](#) (webpage).

Table 11: How NZ compares with Australian jurisdictions on demerit points for speeding

Jurisdiction	Fines (in NZ dollars)	Demerit points
Victoria	Up to 10km/h over limit = \$220	1
	10–24km/h over limit = \$355	3
	25–29km/h over limit = \$488 plus licence suspension for 1 month	4
	30–34km/h over limit = \$577 plus licence suspension for 1 month	4
	35–39km/h over limit = \$665 plus licence suspension for 6 months	6
	+40km/h over limit = \$755–888 plus licence suspension for 6–12 months	6 (12 demerits in 3 years leads to licence suspension)
Queensland	Less than 13km/h over limit = \$191	1
	13–19km/h over limit = \$287	3
	20–29km/h over limit = \$479	4
	30–39km/h over limit = \$670	6
	+40km/h over limit = \$1,341 plus licence suspension for 6 months	8 plus licence suspension for 6 months (12 demerits in 3 years leads to licence suspension)
New South Wales	Up to 10km/h over limit = \$131	1
	10–19km/h over limit = \$303	3
	20–29km/h over limit = \$520	4
	30–45km/h over limit = \$995	5
	+45km/h over limit = \$2,682	6
	(Higher penalties apply for heavy vehicle speeding and speeding around schools)	(13 demerits over 3 years results in licence suspension)
	Up to 10km/h over limit = \$30	

Jurisdiction	Fines (in NZ dollars)	Demerit points
New Zealand	11–15km/h over limit = \$80	No demerit points for offences detected by safety cameras
	16–20km/h over = \$120	
	+20km/h over limit = \$170–400	
	+40km/h over limit = \$510–630 plus licence suspension	

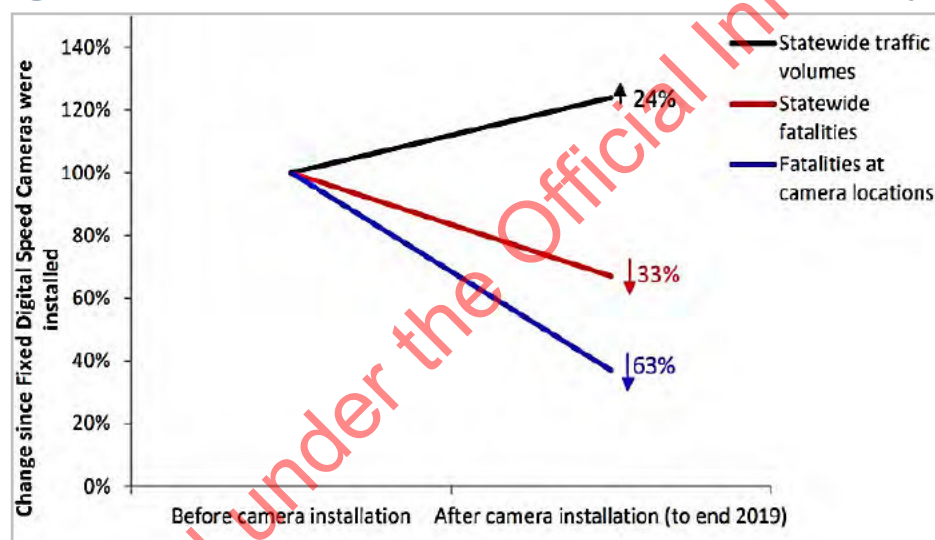
Source: Ministry of Transport. 2018. *Road Safety Strategy Speed Reference Group*. Wellington: Author; New Zealand Police. No date. [What are the fines for speeding?](#) (webpage).

Root cause 4: Safety cameras have not been sufficiently targeted at high-risk parts of the road network to reduce DSIs (in part, due to the low number of cameras)

8.22 Safety cameras have been highly effective at improving safety outcomes in other jurisdictions⁴⁷, particularly when installed in high-risk areas of the network. For example, in New South Wales, as at 31 December 2019:⁴⁸

- 140 cameras are installed in 110 locations
- fixed speed cameras have reduced casualty crashes by 40%, fatalities 63%, and injuries 45%
- the reduction in DSIs equates to a saving to the community of AU\$529m
- cameras reduced fatalities at camera locations and state-wide (see Figure 6).

Figure 6: New South Wales reduction in deaths after installation of fixed speed cameras



Source: NSW Government. 2020. *Speed Camera Programs: 2020 annual review*. Sydney: Author, p 7.

8.23 Cameras are targeted to the highest risk parts of the network that are suitable and safe for camera deployment as a speed risk treatment option. Without average speed camera legislation, spot speed cameras are not a viable treatment option for large tracts of the network. It makes poor investment sense to deploy cameras to parts of the network where the crashes are contributed to by unsafe speeds within the legal speed limits than driving in excess of the limit.

⁴⁷ These jurisdictions have safe speed limits in place already, so there is a direct correlation to reduce DSIs which cannot be only attributed to safety cameras

⁴⁸ NSW Government. 2020. *Speed Camera Programs: 2020 annual review*. Sydney: Author.

- 8.24 In the 2019 Cabinet paper for the TUS Programme, the Associate Minister of Transport observed that nearly 'half of all DSIs are concentrated on the highest risk 10 percent of the network'.⁴⁹
- 8.25 As with the current camera deployment, future deployment of safety cameras will be risk-based; that is, roads will be treated based on their risk profiles.

Problem 2: The Police SCS is at end of life and is not compatible with the (planned) Waka Kotahi SCS, continuing it will increase total costs and reduce effectiveness and efficiency opportunities (20%)

- 8.26 Stakeholders agreed the four underlying root causes of problem 2 during the ILM session.
- Root cause 1 – PIPS is at end of life, leading to reduced efficiency and effectiveness in processing non-compliant driving behaviour and will have no ability to integrate with the expanded and technically enhanced system that Waka Kotahi expects to implement if this proposal proceeds
 - Root cause 2 – Public attitudes towards speeding and its impact on safety are negative
 - Root cause 3 – The public has little understanding of Road to Zero and the overall approach to road safety
 - Root cause 4 – A proportion of the NZ public do not agree that safety cameras are operated fairly and used as a road safety intervention.

Root cause 1 – PIPS is at end of life, leading to reduced efficiency and effectiveness in processing non-compliant driving behaviour

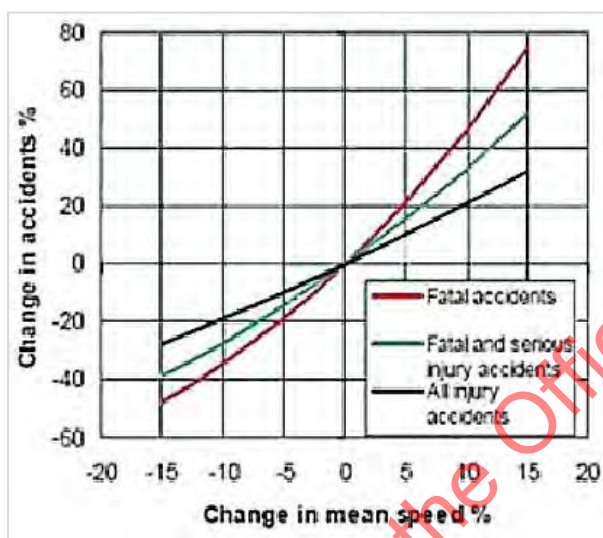
- 8.27 All incidents detected by safety cameras are processed by the Police Infringement Bureau using PIPS. A high-level overview of PIPS is in Appendix 4.
- 8.28 Commercial due diligence found PIPS is at end of life and requires significant capital and operational investment to keep functioning. This ageing technology and system, which costs around \$18m per year to run, means it would not be possible to integrate significant portions of the Police SCS with the Waka Kotahi SCS. Replacing the Police technology and integrating it with the new Waka Kotahi system would be a duplication of effort and investment and will add additional layers of implementation and ongoing cost. It is likely Waka Kotahi will have to build a new offence processing system (OPS) and move the Police cameras to that system (PIPS will be redundant and decommissioned when Waka Kotahi has its own OPS, all safety camera functions have been transferred, Police have finished processing any residual safety camera offences and Police have implemented a new system to handle officer issued infringements).
- 8.29 PIPS is less efficient in offence processing and less effective in managing prosecution activities such as sending out infringements than newer processing systems available today, which can process infringements in real-time if so enabled. If the new camera management system (CMS) and offence processing system (OPS) do not allow for real-time processing, there will be a negative impact on the enforcement regime. A key principle of enforcement is that infringements are issued as quickly as possible to deter the behaviour.

⁴⁹ Associate Minister of Transport. 2019. Tackling Unsafe Speeds Programme (Cabinet paper, redacted version released under the Official Information Act 1982), para 95.

Root cause 2: Public attitudes towards speeding and its impact on safety are negative

- 8.30 The most recent public attitude survey found most New Zealanders are generally comfortable with speeding and don't consider speeding a safety risk when driving on the network:⁵⁰
- 50% of New Zealanders enjoy driving fast along the open road
 - 35% of New Zealanders believe driving over the speed limit is not speeding
 - 30% of New Zealanders believe that if you speed and you're careful there is not much chance of an accident.
- 8.31 The evidence on speed, however, clearly shows a strong correlation between speed and road crash frequency and severity. When speed increases, the risk of a crash and of its severity increase as well.
- 8.32 This correlation is well supported by the widely accepted Nilsson power model,⁵¹ which observes that a 1% reduction in speed yields a 2% reduction in all injury crashes, a 3% reduction in DSIs, and 4% reduction in fatal crashes (see Figure 7 and Figure 8).

Figure 7: Nilsson's power model

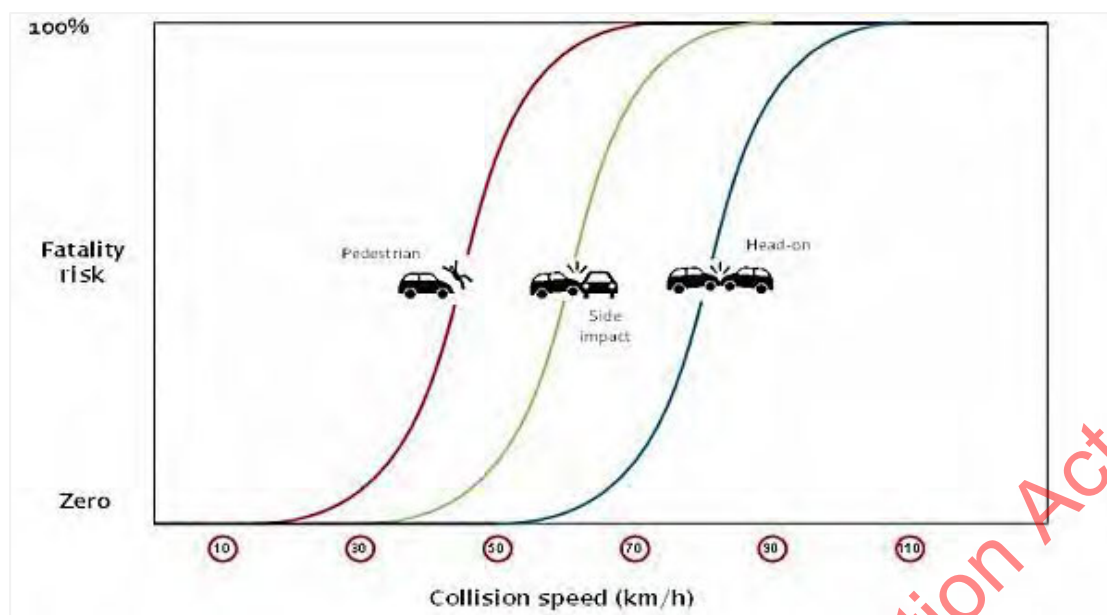


Source: Nilsson (2004) cited in MH Cameron & R Elvik. 2010. Nilsson's power model: Connecting speed and road trauma. Applicability by road type and alternative models for urban roads. *Accident Analysis & Prevention* 42(6), 1,908–1,915.

⁵⁰ Kantar. 2021. *Public Attitudes to Road Safety 2020*. Wellington: Waka Kotahi.

⁵¹ MH Cameron & R Elvik. 2010. Nilsson's Power Model: connecting speed and road trauma. Applicability by road type and alternative models for urban roads. *Accident Analysis & Prevention* 42(6), 1,908–1,915.

Figure 8: Impact of speed on death and serious injuries



Source: International Transport Forum. 2018. *Speed and Crash Risk*. Paris: OECD/ITF.

Root cause 3: The public has little understanding of a 'Safe System' and how safety cameras are part of an overall system response to keep people safe

8.33 A Safe System approach recognises that people make mistakes and are vulnerable in a crash.⁵² This approach reduces the price paid for a mistake, so crashes don't result in loss of life or limb. Mistakes are inevitable – DSIs from road crashes are not.

8.34 According to the Waka Kotahi *Standard Safety Intervention Toolkit* (2021), a safe system is where:⁵³

The selection of treatment measures starts with the objective of implementing primary Safe System interventions, which are most likely to eliminate the occurrence of fatal and serious injuries. Often ... a suite of interventions ... can be implemented to manage a particular risk, with some measures typically being more effective than others.

8.35 System responses include speed limits that match the environment and characteristics of the road, infrastructure improvements and the installation of interventions such as median barriers, and vehicle safety standards that protect occupants (and other road users) in the event of a crash.

8.36 Encouraging drivers to comply with rules and regulations is also critical to achieving safety outcomes. This involves the effective use of education and engagement to encourage safer driving behaviours and enforcement to deter drivers from breaking the rules. These are all part of the new investment in the SCS, including investment with the wider Road to Zero portfolio on marketing and communication (education campaigns) to change the public's hearts and minds.

8.37 Currently, 88% of the NZ public believe NZ has 'safe roads' and 89% believe 'speed limits at 50km/h for urban and 100km/h for open roads are adequate'.⁵⁴ However, public perception is much further from reality. Of NZ roads, both urban and rural, 88% have an inappropriate speed limit given the type of road (see Table 12). Note: The Tackling Unsafe Speeds (TUS)

⁵² Waka Kotahi. 2021. *Standard Safety Intervention Toolkit*. Wellington: Author, p 6.

⁵³ Waka Kotahi. 2021. *Standard Safety Intervention Toolkit*. Wellington: Author, p 10.

⁵⁴ Kantar. 2021. *Public Attitudes to Road Safety 2020*. Wellington: Waka Kotahi.

programme will address the inappropriate speed limits. This is outside the scope of the Safety camera system programme.

Table 12: Proportion of roads with incorrect speed limits for their conditions

Land use	National strategic roads (high volume) (%)	National strategic (%)	Regional strategic (%)	Arterial (%)	Primary collector (%)	Secondary collector (%)	Access (%)	Total (%)
Rural	73	57	82	77	85	90	99	93
Urban	54	59	39	23	39	87	79	69
All	68	58	72	54	73	90	95	88

Source: from Ministry of Transport. 2018. *Road Safety Strategy Speed Reference Group*. Wellington: Author.

- 8.38 The Road to Zero portfolio includes using safety cameras to support a Safe System alongside speed management and infrastructure improvements. For example, to improve safety around schools, a Safe System approach would ensure safe and appropriate speed limits, introduce physical speed management infrastructure devices, install safety cameras, and run education campaigns.
- 8.39 Safety cameras have proven to be highly effective at improving safety outcomes in other jurisdictions as part of an overall Safe System approach when installed in high-risk areas of the network and accompanied with safe speed limits and effective penalties. See the example from New South Wales in Table 13.

Table 13: New South Wales safety camera effectiveness

Camera type	Benefits as at 2020
Fixed speed	40% reduction in casualty crashes 63% reduction in fatalities 45% reduction in injuries
Red-light	35% reduction in DSIs 77% reduction in fatalities 36% reduction in serious injuries 59% reduction in pedestrian casualties
Average speed	29% reduction in casualty crashes 51% reduction in fatalities 18% reduction in serious injuries
Mobile speed	Reduction in speed across the state network Reduction in speed on average by 10km/h High driver compliance at 99%

Source: NSW Government. 2020. *Speed Camera Programs: 2020 annual review*. Sydney: Author, pp 6, 9, 10, and 33.

- 8.40 Root cause 4: A proportion of the NZ public do not agree that safety cameras are operated fairly. In the most recent public attitudes survey, 36% of the NZ public reported that they did not think safety cameras were being operated fairly.⁵⁵
- 8.41 An objective of this investment proposal is to improve perceptions of safety cameras as a road safety intervention as part of the overall approach in Road to Zero.

⁵⁵ Kantar. 2021. *Public Attitudes to Road Safety 2020*. Wellington: Waka Kotahi.

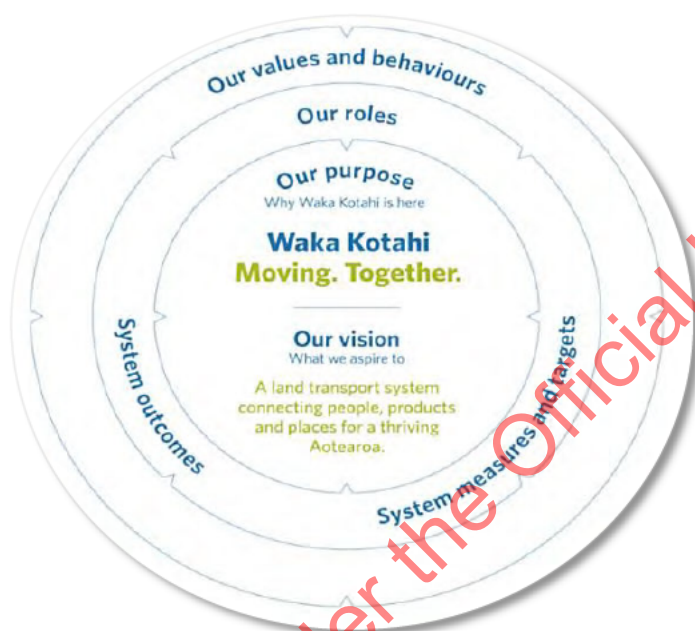
9. Strategic and organisational context

- 9.1 This section overviews the environment in which the proposed investment will take place and summarises relevant national, sector, and organisational strategies and how the proposed investment aligns with other work being undertaken across the transport sector.
- 9.2 The Government Policy Statement on land transport 2021 (GPS) sets out investment outcome expectations that align with the Ministry of Transport's Transport Outcomes Framework. The Road to Zero strategy and its targeted 40% reduction in DSIs work toward the safety outcomes in the GPS. How this investment addresses these expectations is discussed below.

SCS Programme aligns with the Waka Kotahi vision and strategic direction – Te Kāpehu

- 9.3 Waka Kotahi launched its strategic direction, Te Kāpehu, in 2020. It sets out our vision of 'a land transport system connecting people, products and places for a thriving Aotearoa' (see Figure 9).

Figure 9: Waka Kotahi strategic direction – Te Kāpehu



- 9.4 The vision will be achieved through investment in four long-term strategic outcomes. Table 16 summarises how the proposed investment in the SCS will support these outcomes.

10. Māori and Waka Kotahi

- 10.1 Waka Kotahi is committed to embedding Te Tiriti o Waitangi and upholding its principles in our leadership and culture as an organisation, including continuing to build effective relationships with Māori to achieve mutually beneficial outcomes.
- 10.2 Waka Kotahi developed Te Ara Kotahi: Our Māori strategy.⁵⁶ The name Te Ara Kotahi symbolises the pathway that Māori and the Crown walk together on as envisaged by Te Tiriti. It also signifies kotahitanga – unity and inclusion of all cultures on the foundation of Te Tiriti.
- 10.3 Te Ara Kotahi outlines five strategic pou (pillars) that support te whakakitenga (the vision). Each pou has captured our intentions for how we will develop in the area of working with Māori. Priorities have been identified under each pou to focus our efforts and to operationalise and drive the implementation of Te Ara Kotahi in our work. A programme of

⁵⁶ Waka Kotahi. 2020. *Te Ara Kotahi: Our Māori strategy*. Wellington: Author.

work is being undertaken to make this happen. The SCS Programme will integrate with this programme.

- 10.4 Te Ara Kotahi belongs to everyone at Waka Kotahi – we all have a contribution to make to move us closer to our vision:

Ko koe ki tēna ko au ki tēnei kiwai o te kete.

Waka Kotahi and Māori working together to succeed for a better New Zealand.

- 10.5 The objective of Te Ara Kotahi is to provide an overarching strategic framework that:

- connects Māori to what we do
- fulfils our statutory obligations to Māori and affirms our commitment to the principles of Te Tiriti o Waitangi
- embraces te reo Māori and Māori values
- contributes to the whole-of-government approach to provide for Māori aspirations and improve Māori economic, social, cultural, and environmental outcomes
- empowers us to respond to Māori aspirations and partner in the work we do for mutually beneficial outcomes
- builds our capability and capacity to include Māori confidently and effectively
- supports and adds value to the Crown Māori relationship
- provides guidance on how to respond to Māori aspirations
- supports the delivery of the overarching Waka Kotahi strategy.

11. Tiriti partners and key stakeholders

- 11.1 See the management case for a description of what the SCS Programme team will do to implement the intention of Te Ara Kotahi and Tū Ake Tū Māia.
- 11.2 The SCS Programme is currently recruiting contracted Māori roles into the Programme and have established an internal working group to develop the Māori work programme with the incoming contracted staff. The Programme has established a wider network of colleagues from across Waka Kotahi working on Māori issues including Road Safety to ensure alignment and integration.
- 11.3 The Benefits Realisation Plan has identified that Te Mana Raraunga, the Māori Data Sovereignty Group, will be engaged to understand the questions they want answered as part of benefits realisation. This will require early engagement so data and metadata needs can be designed into the solution.
- 11.4 Further to this, a proposal for roles to embed Tū Ake Tū Māia and progress Te Ara Kotahi priorities in the SCS Programme has been developed. This work is being informed by reports commissioned by Waka Kotahi⁵⁷ and Auckland Transport.⁵⁸
- 11.5 The proposed investment has several internal stakeholders whose involvement is needed to develop and implement a successful programme. Table 14 identifies key external stakeholders and their primary areas of interest for investment in the SCS. Internal stakeholders and their interests in the SCS are in Appendix 6.
- 11.6 Detailed information on how key stakeholders will be managed during the SCS Programme is in the management case (see section 49). Supplementary information developed by the Programme for stakeholders and endorsed by the Programme Steering Committee is in the References, p 144.

⁵⁷ M Sweeney, T Breitenmoser & I Dickson. 2022. *A Pathway Towards Understanding Māori Aspirations for Land Transport in Aotearoa New Zealand* (research report 688). Wellington: Waka Kotahi NZ Transport Agency.

⁵⁸ MRCagney (NZ) Ltd. 2020. *Equity of Road Safety Fines and Penalties*. Prepared for Auckland Transport.

Table 14: External stakeholders relevant to the proposed investment in the SCS

External stakeholders	Focus areas
Minister of Transport	Is keen to ensure SCS outcomes support Transport Outcomes objectives.
Minister of Police	Is keen to ensure community safety outcomes are attained.
Ministry of Transport	Is keen to ensure changes to policies required to get safety camera technology operational are implemented and the intent of policy changes is applied across the transport sector.
New Zealand Automobile Association – Board and National Governance Team	Is a road user association interested in road safety and providing input into local road safety landscape; that is, safety cameras are installed in appropriate locations for maximum speed enforcement.
Ia Ara Aotearoa Transporting New Zealand	Is a heavy vehicle association interested in ensuring heavy vehicle drivers can get to where they are going efficiently and safely and in safety cameras and speed enforcement.
New Zealand Taxi Federation and Bus and Coach Association New Zealand	Are industry associations whose members are keen to understand how safety cameras will be implemented nationally and how speed enforcement changes will be linked to the camera changes.
New Zealand Police	Is a key partner in the SCS Programme and is running a parallel programme: Traffic Safety Camera Transition to assist Waka Kotahi to transition safety camera operations from Police as well as developing a new technology and business solution for Officer-issued infringements to replace PIPS.”.
Ministry of Justice	Is interested in ensuring a smooth transition for safety cameras and the infringement process so infringement processing, fine collection, and prosecutions are not interrupted. If an infringement is not paid within the legislated period of 56 days (plus a grace period for late payments), the file is transferred to the Ministry of Justice for collection. Thirty percent of camera-issued infringements and 46% of officer-issued infringements are transferred to the Ministry of Justice as unpaid fines.
Auckland Transport	Is a key road controlling authority that will have a major component of safety camera enforcement on its network. Waka Kotahi will process its safety camera infringements (currently, for red-light running). It will have significant input into the placement of safety cameras.
Road controlling authorities	Are interested in road safety and speed management in their territories. Provide input into safety camera sites assessment, camera placement, and consent for site construction and installation.
Regional Transport Committees	Are decision-making bodies of elected members responsible for regional speed management plans and key consulting bodies for safety camera placement and expansion.
Regional councils	Have a delivery role in transport planning and consultation on regional speed management planning. Speed management planning and processes is a new function for regional councils and they are interested in the placement of safety cameras.
Iwi and hapū	Ensure Treaty of Waitangi principles are applied. Are interested in policy around enforcement levers and Māori road safety outcomes.

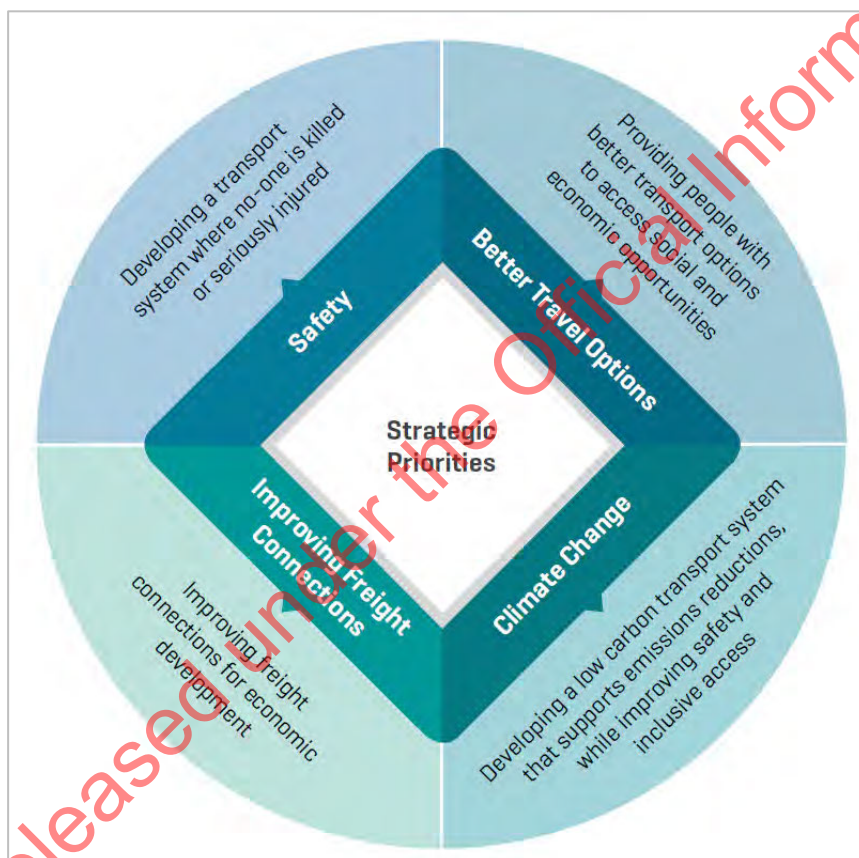
External stakeholders	Focus areas
The Treasury	Is keen business case development follows its Better Business Cases guidance and benefits are realised appropriately (through NLTP spend).
Government Chief Digital Officer (Department of Internal Affairs)	Is interested in ensuring new Waka Kotahi systems and processes adhere to government digital standards.
Government Chief Information Security Officer (Government Communications Security Bureau)	Is interested in ensuring new Waka Kotahi systems and processes adhere to government information security standards.
Privacy Commission	Is interested in ensuring risk of privacy breach is mitigated. Provides guidance and input into privacy issues.
Media	Are likely interested in the people transfer, safety camera expansion, and infringement processing timings. Have a role in changing public behaviours, helping them to understand why driving slower is better - safety - reduce DSIs
Public	Need to understand what they need to do – how to pay infringements, what the new, highly visible, no surprises approach means for them, and how and why they need to change behaviour (that is, understanding why driving slower is better).
Unions – Police Association, PSA, E tū, and Police Guild	s 9(2)(g)(i)
Technology suppliers	Are keen to provide the best technology solution to support business operations.
Other suppliers	Are keen to provide business services and solutions to support business operations.
ACC (Accident Compensation Corporation)	Is keen to ensure the SCS reduces DSIs, which relates to injury prevention.
WorkSafe New Zealand	Is keen to ensure new employees coming into Waka Kotahi will be kept safe and that the organisation has appropriate health and safety measures in place. They will have a particular interest in anyone that has to maintain the cameras on the roadside.
Walking and cycling disability groups	Need to understand what they need to do and what the SCS means for them.

SCS Programme aligns with the Government's Safe System outcomes in GPS 2021

- 11.7 The GPS sets the strategic direction for the land transport system and Waka Kotahi over 10 years. The GPS is updated every three years and guides how Waka Kotahi invests the National Land Transport Fund (NLTF).
- 11.8 The GPS is how the Government sets the direction of work that Waka Kotahi needs to do to deliver on the Transport Outcomes Framework. The GPS centres on the wellbeing and liveability of places as the purpose of the transport system.
- 11.9 The SCS Programme supports delivery of the four GPS strategic priorities (shown in Figure 10) 2021 in the following ways.

- **Improving 'safety'** – The programme will improve compliance and lower average speeds across the network, thereby reducing DSIs. This is the highest priority for the programme.
- **Developing 'better travel options'** – The programme will improve compliance with road safety measures (speed and driving behaviour), which will allow people to feel safer on the road and consider using alternative modes of transport to cars such as bicycles, e-bikes, and scooters.
- **Improving 'climate change'** – If by changing driver behaviour and the perceptions are roads are safer places for other modes of transport, this will improve climate change outcomes as people take up 'non-pollutant' modes of transport. The programme will also improve network speed across treated roads, which will create uniform speeds and reduce amounts of acceleration, de-acceleration, braking, and over-taking. This change will reduce greenhouse gas emissions and also improve climate change outcomes.
- **Improving 'freight connections'** – The programme will support uniform speed across the network, reduce crashes, reduce DSIs, reduce congestion, and improve the overall flow of traffic. All these value-add elements will improve freight connection time, which will enhance economic development regionally and nationally.

Figure 10: Government Policy Statement on land transport 2021/22 – 2030/31



SCS Programme aligns with Waka Kotahi statutory functions

11.10 Waka Kotahi is a Crown entity governed by a statutory board. Under the Land Transport Management Act 2003, the objective of Waka Kotahi is 'to undertake its functions in a way that contributes to an effective, efficient and safe land transport system in the public interest'.⁵⁹ Under that Act, Waka Kotahi has three broad functions: regulatory; infrastructure, planning, and investment management; and general and other functions.

⁵⁹ Land Transport Management Act 2003, s 94.

11.11 The SCS Programme will support Waka Kotahi to meet its three main statutory functions as noted in Table 15.

Table 15: Waka Kotahi statutory functions that the SCS Programme supports

Functions	How supported by SCS Programme
1 Regulatory function includes: <ul style="list-style-type: none"> contributing to establishing, operating, and enforcing regulation of the land transport system managing and overseeing regulatory requirements for land transport. 	The SCS Programme will: <ul style="list-style-type: none"> transfer safety camera functions from Police to Waka Kotahi. Police will replace their back-office system (PIPS to meet the requirements for processing officer-issued infringements. invest in a new operating model (people, processes, technology), which will modernise the safety camera function, creating large efficiency gains by deploying safety cameras across the network to support broader speed management and planning, and taking a risk-targeted approach to enable the greatest DSI savings invest in and expand safety camera operations to align with planning and delivery of safety infrastructure transport; thus, making cameras an additional tool for Waka Kotahi when evaluating interventions for a particular site to reduce DSIs and encourage greater road compliance behaviour.
2 Infrastructure, planning, and investment management functions include: <ul style="list-style-type: none"> managing the state highway system overseeing the planning and delivery of public transport 	
3 General and other functions include: <ul style="list-style-type: none"> delivering or managing the delivery of activities for ticketing system and payments promoting safe road user behaviour and vehicle safety promoting a safe system of rules governing road user behaviour 	

SCS Programme aligns with the government's strategic objectives to improve individual and collective wellbeing for all New Zealanders

- 11.12 The proposed investment is linked to Te Kāpehu, the Waka Kotahi strategic direction, which, in turn, is linked to GPS 2021 and Ministry of Transport outcomes, which, in combination, all link to the Treasury outcome 'improve individual and collective wellbeing' (see Figure 11). The long-term strategic outcomes of Waka Kotahi are linked to the proposed investment in the SCS in Table 16.
- 11.13 The proposed investment is expected to create DSI savings of 4% by 2030, which is expected to be a present value saving of approximately \$1.5b. This is a significant economic benefit to the country.
- 11.14 Road crashes impose intangible, financial, and economic costs on society through impacts on individual and collective wellbeing (see from 7.15).
- 11.15 In 2019, the 14,742 injuries on NZ roads had an annual average cost to society of \$4.9b (in 2019 prices).

Figure 11: SCS proposed investment alignment to wider government strategies

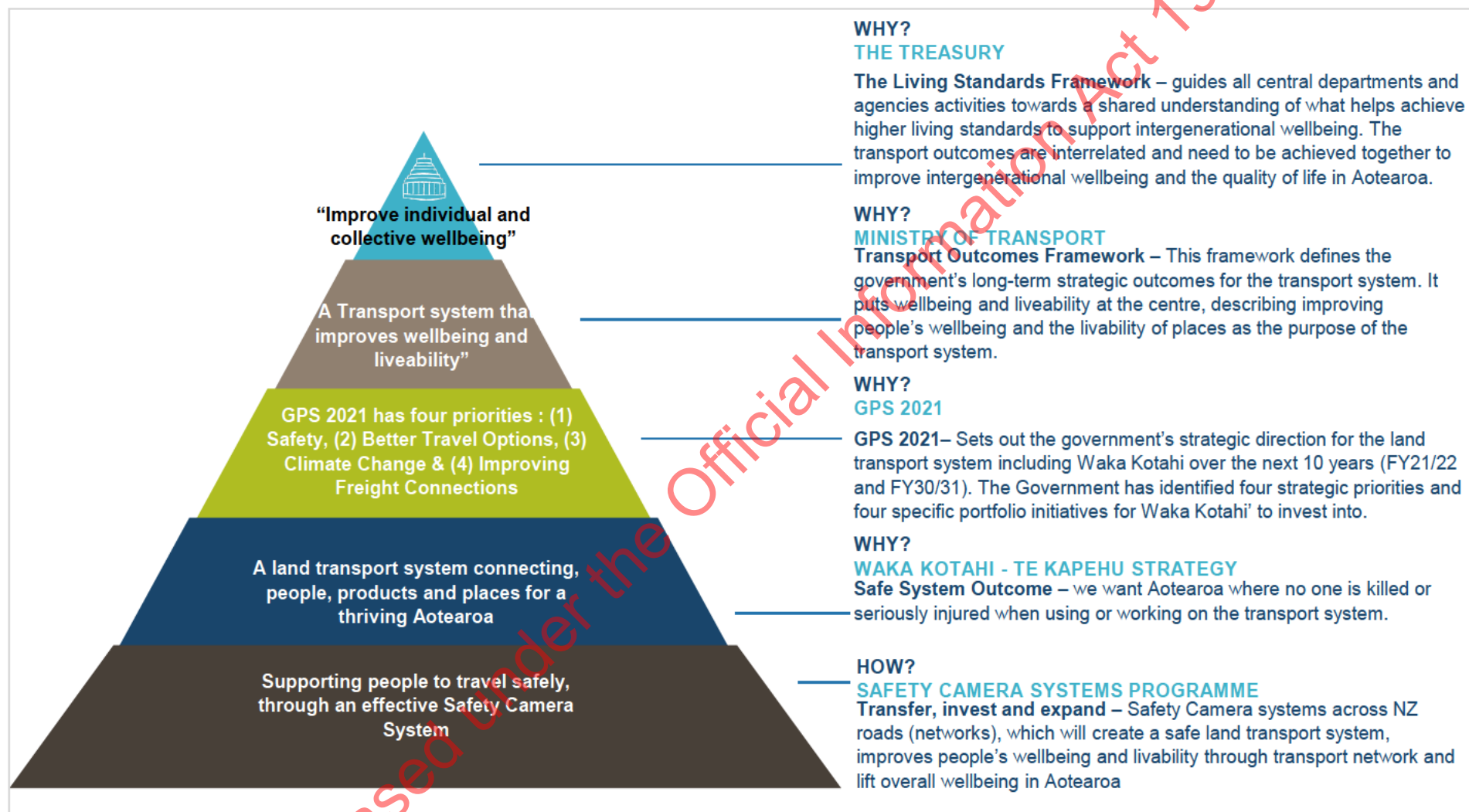


Table 16: Waka Kotahi long-term strategic outcomes mapped to the proposed investment

Strategic outcome*		Proposed investment	
Safe – ensuring no one is killed or seriously injured when using or working on the transport system	Invests in additional cameras to encourage motorists to travel at safe and appropriate speeds across a broader portion of the network, which will reduce DSIs by 4% by 2030 (from 2018 levels).	Safety cameras need to be considered alongside other Road to Zero interventions to determine the ideal mix and type of camera for the site selected. Other Road to Zero interventions relate to safe speeds around schools, speed infrastructure, and speed management.	Evaluate the site to determine the most appropriate form of camera type and intervention tool. Focus will be to review all high- to medium-risk corridors.
Environmentally sustainable – reducing harm to, and improving, the environment with a focus on reducing greenhouse gas emissions	Invests and expands cameras across the road network to reduce non-uniform speeds, acceleration, braking, and speeding, which all contribute to greenhouse gas emissions.	Safety cameras create a halo effect across the network. International research has found overall speed drops significantly (by as much as 20%) when speed cameras are implemented. ^	
Effectively and efficiently moving people and freight – ensuring networks are available and reliable at consistent levels of service with a focus on increasing the uptake of efficient, cost effective, low carbon transport options	Invests in and expands the number of cameras across the network to reduce DSIs on the road, which affects freight and people moving between points A and B.	Investment in new technology to support the new fleet of cameras such as average-speed cameras to ensure travel flows smoothly and uniformly across high-risk corridors, which are key for moving people and freight.	Average-speed cameras will be installed in corridors important for people and freight movement. International research, for example in Great Britain, found average-speed cameras reduced speeding by 30%.#
Meeting current and future needs – ensuring we have access to the people, funding, and system we need	Investment in CMS, OPS, and new cameras will future proof the system for the next 10 to 15 years.	Once legislation allows, the SCS will be able to fine speeding drivers who are not complying with current rules (for example, texting while driving and driving someone else's car without a licence).	

* Waka Kotahi. 2021. *Waka Kotahi NZ Transport Agency Statement of Intent 2021–26*. Wellington: Author.

^ DW Soole, BC Watson & JJ Fleite. 2013. Effects of average speed enforcement on speed compliance and crashes: a review of the literature. *Accident Analysis & Prevention* 54, 46–56.

R Owen, G Ursachi, and R Allsop. 2016. *The Effectiveness of Average Speed Cameras in Great Britain*. Britain. London: RAC Foundation.

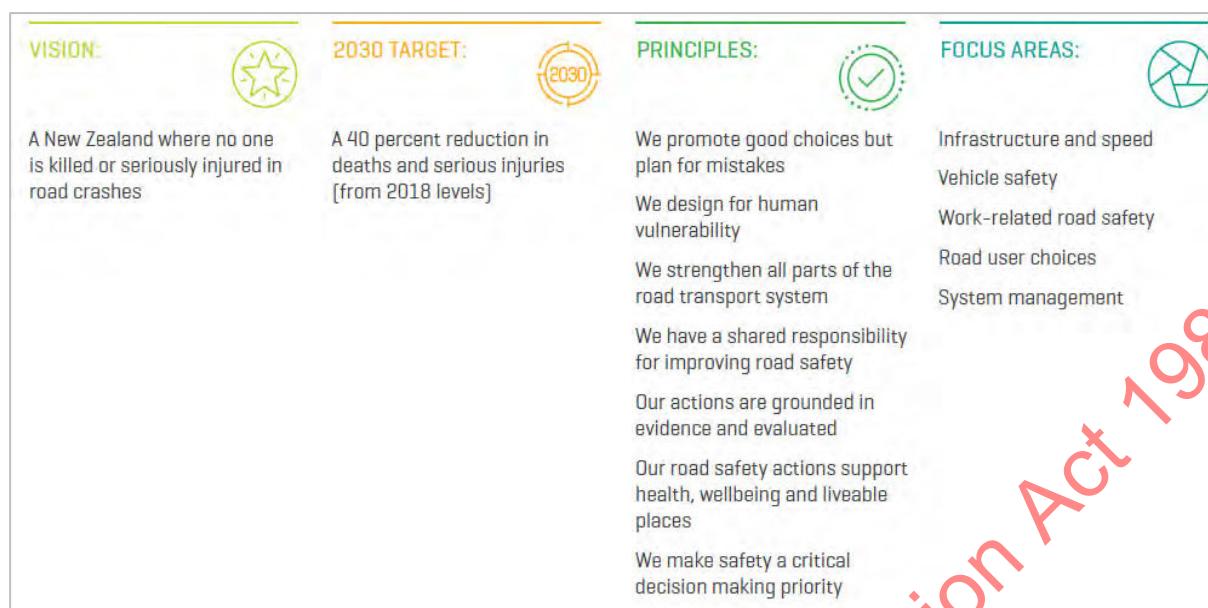
SCS Programme is a key Road to Zero intervention

- 11.16 Waka Kotahi is committed to delivering Road to Zero and its target of a 40% reduction in DSIs by 2030. The vision of Road to Zero is 'a New Zealand where no one is killed or seriously injured in road crashes'⁶⁰ and where no loss of life is acceptable in the transport system.
- 11.17 The Road to Zero vision is based on Vision Zero. First launched in Sweden in 1997, Vision Zero provided a common vision that brought together stakeholders, changed public attitudes, and raised public expectations.
- 11.18 Vision Zero and the guiding Safe System approach are now considered best practice. They have been adopted in many countries, including Canada, the Netherlands, Sweden, the UK, the US, Norway and New York, and road trauma has significantly decreased.
- 11.19 In Sweden, Vision Zero has led to infrastructure improvements (for example, road barriers that separate cars from bikes and oncoming traffic, safer pedestrian environments), increased use of public transport, lower urban speed limits, and much safer and generally newer vehicles. In the almost 20 years since the vision's launch, road deaths in Sweden have halved.⁶¹
- 11.20 The Safe System approach is underpinned by the seven principles and five key focus investment areas illustrated in Road to Zero initiatives will be implemented over the 10 years to 2030 through a series of action plans. The initial action plan for 2020–2022 contains 15 priority initiatives, including TUS (focus area 1, action 2). This will be supported by a wider system response that includes investing in safety treatments and infrastructure improvements, prioritising road policing, and reviewing road safety penalties.
- 11.21 Figure 12.
- 11.22 Road to Zero initiatives will be implemented over the 10 years to 2030 through a series of action plans. The initial action plan for 2020–2022 contains 15 priority initiatives, including TUS (focus area 1, action 2). This will be supported by a wider system response that includes investing in safety treatments and infrastructure improvements, prioritising road policing, and reviewing road safety penalties.

⁶⁰ New Zealand Government. 2021. *Road to Zero: Annual monitoring report 2020*. Wellington: Author, p 2.

⁶¹ International Transport Forum. 2020. *Sweden: Road Safety Report 2020*. Paris: International Transport Forum, OECD.

Figure 12: Road to Zero, NZ's road safety strategy



Source: New Zealand Government. 2021. *Road to Zero: Annual monitoring report 2020*. Wellington: Author, p 2.

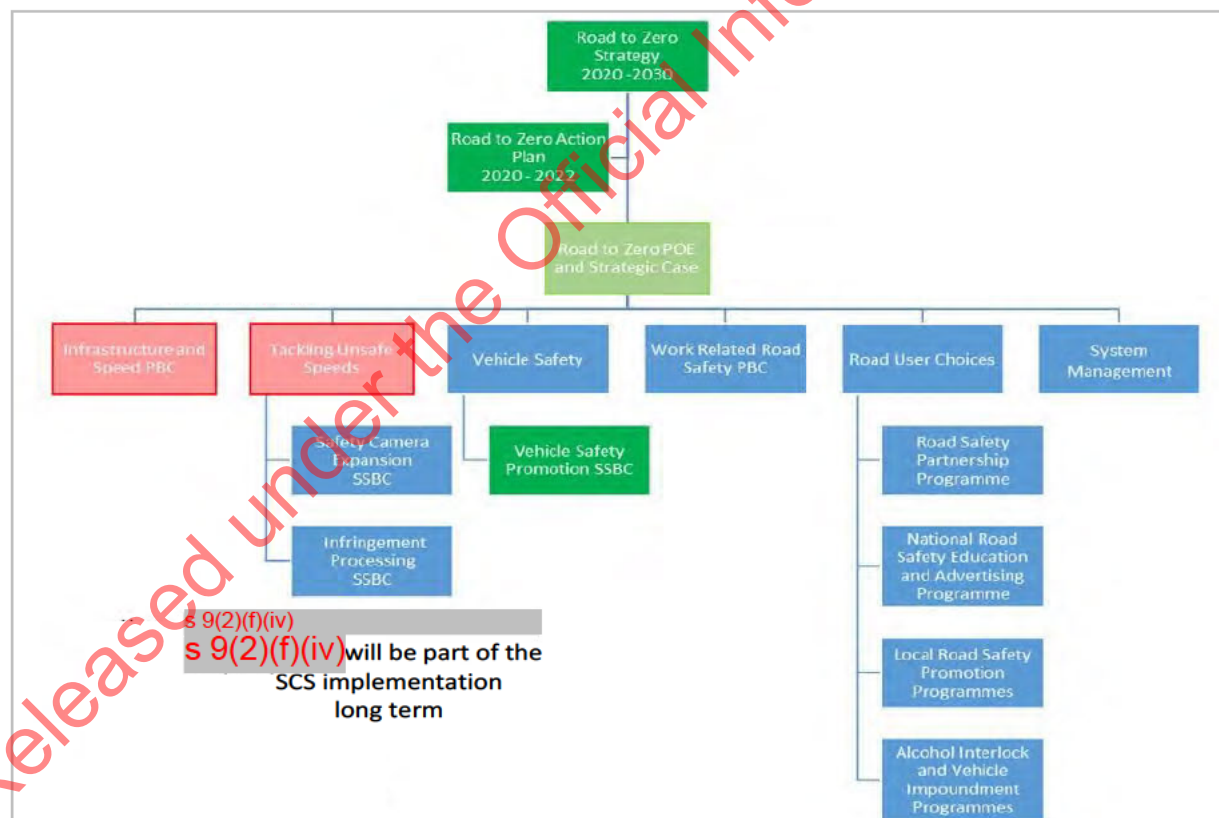
SCS Programme is a significant programme aligned in Road to Zero

- 11.23 The SCS Programme is a significant change programme for Waka Kotahi. It is a critical component of TUS and enabled development of the IBC and now this DBC.
- 11.24 The programme's vision is 'supporting people to travel safely, through an effective SCS'. This vision supports the wider Road to Zero portfolio of initiatives, and the changes Police and the Ministry of Justice need to implement for the road transport system to operate safely, effectively and efficiently.
- 11.25 The research discussed in section 7 implies an effective SCS should reduce DSIs by 31%. However, the SCS Programme is part of a package of road safety interventions that will work together and are being implemented simultaneously to reduce DSIs. The SCS Programme will focus on reducing speed and speeding, and reduced DSIs will be monitored at the integrated Road to Zero portfolio level. In the cost-benefit analysis, we use the 31% for quantification of the benefit. This approach is also partly driven by a Gateway Review recommendation that reduced DSIs be measured at the Road to Zero level.
- 11.26 Safety cameras can make a significant contribution to reducing DSIs, but they need to be integrated into the overall approach to tackling unsafe speeds to have the biggest impact and achieve safety outcomes. The Road to Zero strategic case recognised that 'There is no single intervention that can address the level of transport related harm on our transport system', because 'The transport system in New Zealand is largely designed and operated outside the bounds of a Safe System resulting in a failure to prevent transport related deaths and serious injuries'.
- 11.27 Road to Zero acknowledges that people make mistakes and that a system response is required in order to achieve road safety goals.
- 11.28 The Road to Zero strategic case recognised that 'about half the people who were harmed did not contribute to the crash. They were harmed by other people's errors in judgement and were let down by a system that failed to protect them from those mistakes'.
- 11.29 To achieve a safe system, key interventions are being implemented across five key areas of system response:
- infrastructure improvements and speed management
 - vehicle safety

- work-related road safety
- road user choices
- system management.

- 11.30 Critical to this contribution is having safe and appropriate speed limits on all roads, as the benefits of a SCS or other speed enforcement measures cannot be fully realised if speed limits are higher than safe speeds. People will continue to be killed and seriously injured when mistakes are made within legal but unsafe speed limits.
- 11.31 The impact on benefits monitoring is that to identify reduced DSIs solely from the SCS intervention requires a multivariate analysis that isolates the SCS contribution from the other Road to Zero interventions.⁶² This means the initial multivariate analysis answers the question: 'Did the Road to Zero interventions make a difference?' If yes, then which of the variables contributed or did not contribute, and how much?
- 11.32 Attempting to measure reduced DSIs at the SCS level requires data input from all Road to Zero programmes. The same would apply to the other programmes. Therefore, reduced DSIs can be effectively measured only at the Road to Zero level. The SCS Programme will monitor reductions in speed and speeding and feed this data to the Road to Zero evaluation.
- 11.33 The proposed suite of programmes for Road to Zero is summarised in Figure 13, which shows how this SCS is part of a comprehensive and coordinated approach to delivering reduced DSIs.

Figure 13: Portfolio of activities that will deliver reduced DSIs



How Road to Zero will monitor DSI benefits

- 11.34 Regular monitoring and reporting is critical to keep Road to Zero on track towards the 2030 target and provide a transparent way to assess and review progress on actions. Road to Zero

⁶² Multivariate means involving multiple dependent variables resulting in one outcome. In this case, five sets of programmes will deliver one outcome – reduced DSIs.

has an outcomes framework that covers programme delivery, system performance and outcomes across five focus areas. The SCS Benefits Realisation Plan provides details on how SCS benefits realisation will integrate with Road to Zero benefits realisation.

- 11.35 Improved safety performance indicators are what Road to Zero monitor to assure successful programme delivery. These indicators are enduring and will be monitored throughout the duration of the strategy. Outcome indicators relate closely to the overarching goal, which is a 40 percent reduction in the number of deaths and serious injuries by 2030.
- 11.36 The key performance indicators for the SCS Programme align with the Road to Zero indicators as shown in Table 17. This means Road to Zero and the SCS Programme will be able to take stock of progress, identify areas where more action is needed, and report on progress on an annual basis.
- 11.37 Intervention indicators will be updated in each annual action plan so they remain relevant.

Table 17: Alignment of SCS Programme outputs and KPIs with Road to Zero indicators

Road to Zero indicator	Related SCS Programme output	Related SCS Programme KPI
1.1.9 Mobile speed camera deployment activity (hours)	Mobile cameras	KPI 5 detailed in Benefit Realisation Plan around Treasury reporting requirements
1.2.3 Percentage of high-risk intersections treated to operate within Safe System limits	Red light cameras	KPI 1
1.2.8 Percentage of traffic travelling within speed limits (by rural, urban and urban centres)	SCS overall	KPI 1
1.2.9 Mean speed of vehicles (by rural, urban and urban centres)	SCS overall	KPI 2 (lower mean speeds across the network)
1.2.10 Percentage of the public who understand the risk associated with driving speed	SCS with dependency on education, s 9(2)(f)(iv)	KPI 4
1.2.11 Percentage of the public who agree that they are likely to get caught when driving over the posted speed limit	SCS with dependency on education, s 9(2)(f)(iv)	KPI 4
1.2.12 Percentage of road network covered by automated safety cameras	SCS overall Dependent on the full SCS expansion out to 2030	KPI 1 and 2 Note that KPI 2 has a dependency on the greater expanded network before a measurable difference is expected. See Strategic Case Risks section.
1.2.13 Percentage of the general public who agree that safety cameras are an important intervention to reduce the number of road deaths	SCS with dependency on education, s 9(2)(f)(iv)	KPI 3

- 11.38 The Gateway Review conducted for the IBC made several observations about benefits:

- The Review Team heard strong acknowledgment that safety cameras and related data are a key part of enforcement, and critical to achieving the wider Road to Zero benefits related to DSI reduction. However, it was unclear how the co-dependencies work to deliver optimum benefits.
- The Review Team considers it would be difficult to fully distinguish the benefits the SCS delivers from those delivered by co-dependent Road to Zero initiatives. For example, if a change of speed limit and new cameras are applied to a site, and an education campaign has also been running, how will resulting DSI reductions be attributed across contributing projects? What is the proportional benefit realisation from interdependent activities?
- The Review Team considers that benefit management and monitoring may be better governed at the ELT Road to Zero Sub-Committee level across the whole portfolio, with the SCS Programme then focussing on the delivery of its outcomes (and the lead indicators showing it is on track to achieve that).

11.39 s 9(2)(g)(i)

11.40 Each year, Te Manatū Waka the Ministry of Transport publishes the Road to Zero Annual Monitoring Report, which includes tracking of progress towards the 40% DSI reduction target.⁶³ This tracking occurs at three levels, as described in the monitoring report:⁶⁴

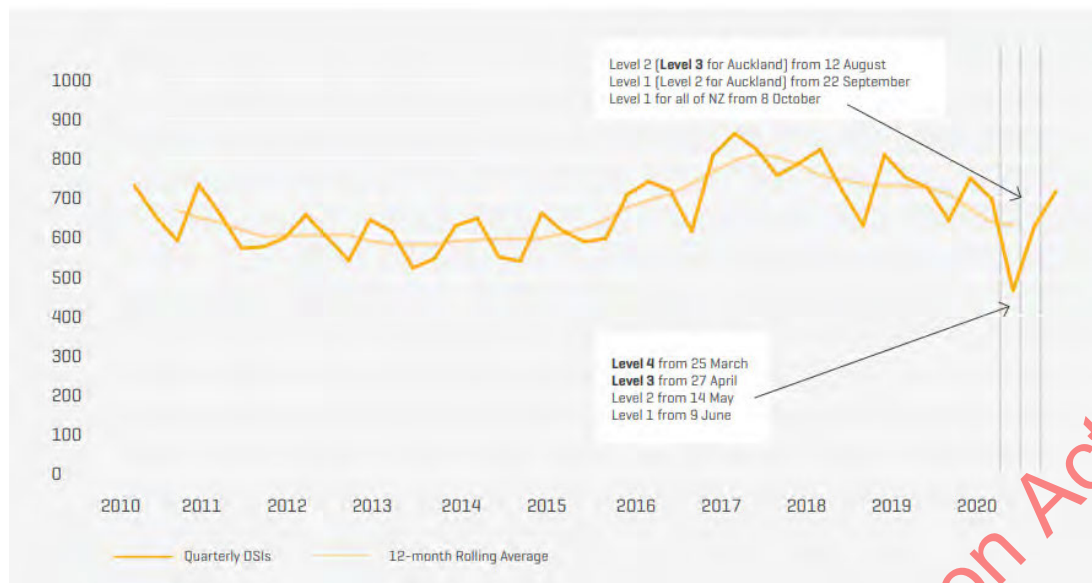
- Intervention indicators measure progress of specific action plan initiatives. These will be published in each action plan to show how we intend to monitor the progress of those actions. The intervention indicators will be updated in each action plan to ensure that they stay relevant.
- Safety performance indicators are what we seek to improve through successful programme delivery. The safety performance indicators are enduring and will be monitored throughout the duration of the strategy.
- Outcome indicators relate closely to the overarching goal, which is a 40 percent reduction in the number of deaths and serious injuries by 2030. Like the safety performance indicators, these indicators are enduring and will be monitored throughout the duration of the strategy.

11.41 SCS benefits will be measured primarily using intervention indicators and safety performance indicators. These will enable a degree of attribution to the outcome indicators, which will be tracked using graphs like that shown in Figure 14)

⁶³ New Zealand Government. 2021. *Annual Monitoring Report 2020*. Wellington: Ministry of Transport.

⁶⁴ New Zealand Government. 2021. *Annual Monitoring Report 2020*. Wellington: Ministry of Transport, p 4.

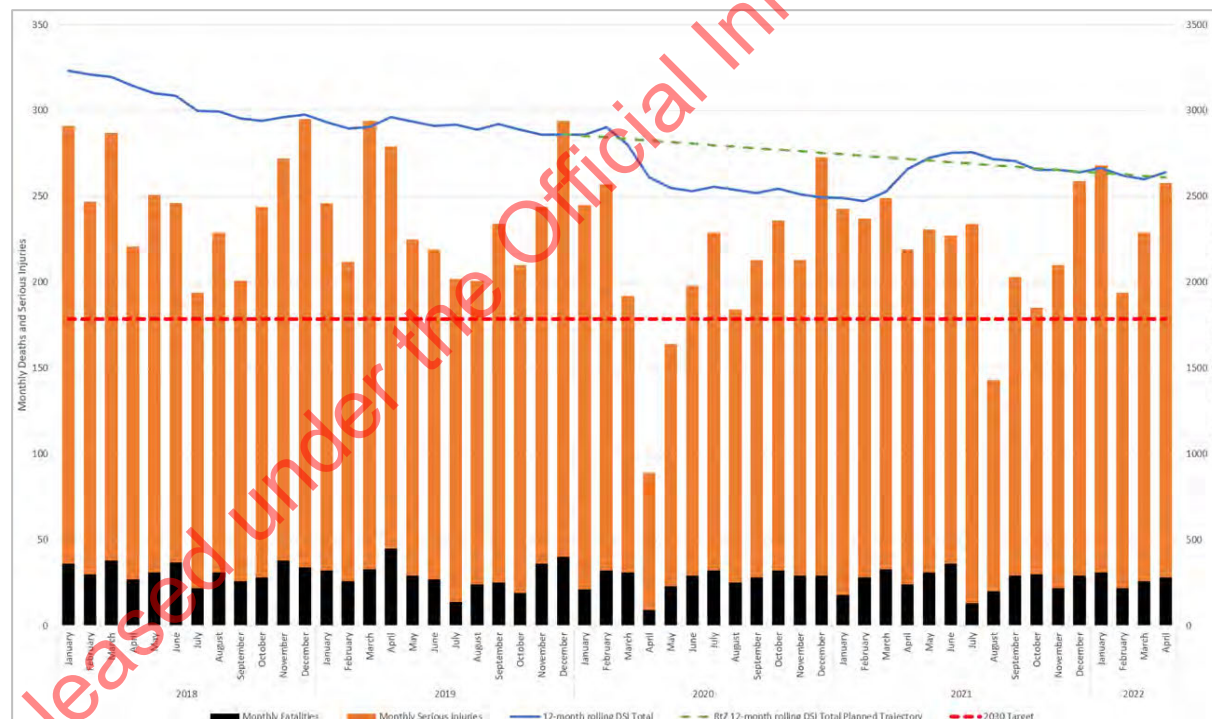
Figure 14: Quarterly number of DSIs, 2010–2020



Source: New Zealand Government. 2021. *Annual Monitoring Report 2020v*. Wellington: Ministry of Transport, Figure 2, p 7.

11.42 In addition, the Road to Zero Executive Sub-committee receives monthly reports that track progress on outcome indicators (including graphs such as that shown in Figure 15).

Figure 15: DSIs, 2018–2022



11.43 These reports also look at scenarios and forecasting at an intervention indicator level such as for kilometres of median barriers and mobile safety camera deployment (see Figure 16 and Figure 17).

Figure 16: Median barrier (km), 2020/21 – 2032/33

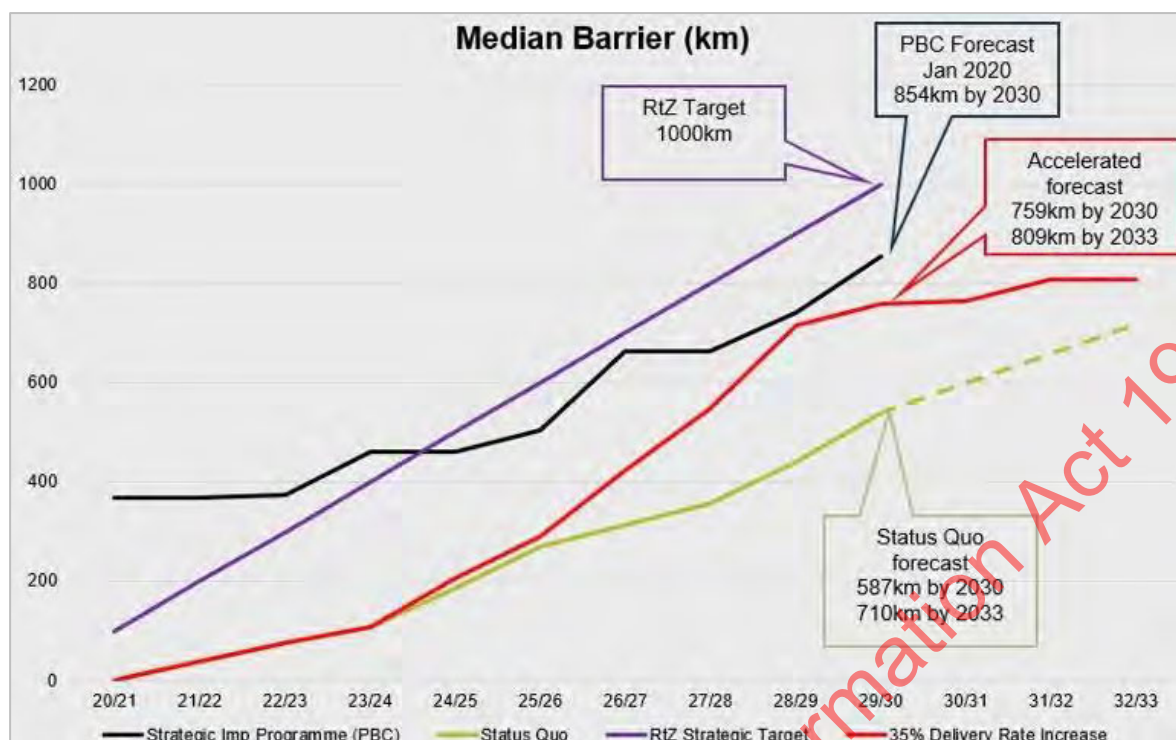


Figure 17: Total mobile speed camera deployment activity (hours)



Note: The aspirational target of 80,000 hours is not achievable with current TCO resourcing.

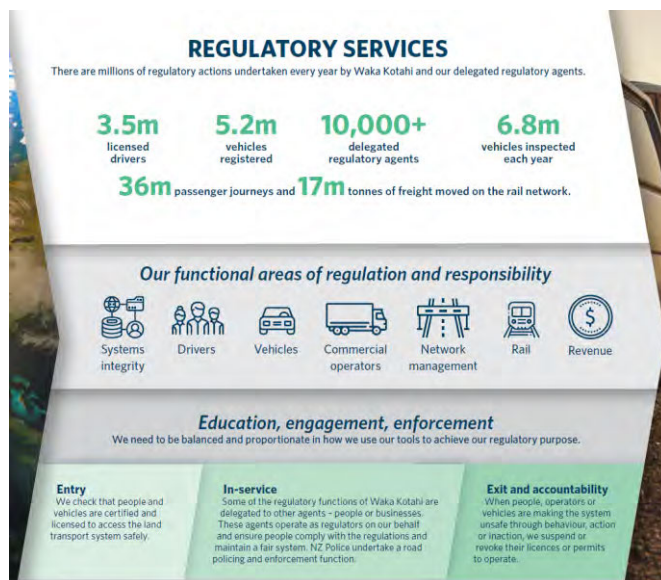
11.44 In line with its vision, the SCS Programme has an immediate focus on financial years 2021/22 to 2023/24 (FY22–24) and to get the proposed investment approved at the DBC level by the end of 2022 for approval in the last quarter of 2022. With an approved DBC, the programme will be able to start its implementation stage.

11.45 The programme must be informed by evidence and intelligence if it is to be effective and innovative to keep pace with change (for example, by building capability to integrate complementary technologies in the future). This will be factored into the SCS Benefits Management Plan (available from the link in Resources, p 7).

SCS Programme aligns with Tū Ake, Tū Māia, the Waka Kotahi regulatory strategy

11.46 The SCS Programme is aligned with the approach and direction of Tū Ake, Tū Māia, the Waka Kotahi regulatory strategy 2020–2025.⁶⁵ The programme supports key functional areas such as Network Management and Drivers as shown in **Error! Not a valid bookmark self-reference..**

Figure 18: Regulatory Strategy of Waka Kotahi



11.47 Waka Kotahi does not regulate alone – an effective regulatory system relies on everyone contributing to keep NZ safe. Waka Kotahi plays a vital role in strengthening engagement and alignment with other regulators and key stakeholders. This means working closely with the Ministry of Transport, Police, government organisations, regional, district and city councils and road controlling authorities, iwi and Māori, delegated agents, industry groups, and regulated parties.

11.48 Tū Ake, Tū Māia supports wider Waka Kotahi strategies and the GPS. Its vision is a safe, fair, and sustainable transport system for everyone, and it has a goal of contributing to a 40% reduction in DSIs by 2030, of which 10% will be delivered through the support of this investment proposal.

Speed as a factor in DSI outcomes for Māori relative to non-Māori is uncertain

11.49 Te Ara Kotahi, our Māori strategy, provides strategic direction for how Waka Kotahi works with and responds to Māori as the Crown's Tiriti o Waitangi Treaty of Waitangi partner and what this means for how Waka Kotahi operates.⁶⁶

11.50 *He Pūrongo Whakahaumarū Huarahi Mō Ngā Iwi Māori*, the Māori road safety outcomes report,⁶⁷ was presented to the Road to Zero Executive Sub-Committee in February 2021. This report observed that speeding and driving behaviour creating DSIs on NZ roads creates different outcomes for Māori and non-Māori.

⁶⁵ Waka Kotahi. 2020. *Tū Ake, Tū Māia (Stand Up, Stand Firm): Regulatory Strategy 2020–25*. Wellington: Author.

⁶⁶ Waka Kotahi. 2020. *Te Ara Kotahi | Our Māori Strategy*. Wellington: Author. See section 10: Māori and Waka Kotahi.

⁶⁷ Waka Kotahi. 2021. *He Pūrongo Whakahaumarū Huarahi Mō Ngā Iwi Māori: Māori road safety outcomes*. Wellington: Author.

SCS Programme will continue to work with Police to deliver a Safe System on NZ roads

- 11.51 Police's vision is for NZ to be the safest country.⁶⁸ This means everybody can be safe and feel safe in their homes, in their communities, and on the roads. (The Police vision is illustrated in Appendix 5.)
- 11.52 The NZ road safety record is unacceptable. In 2019 alone, 352 people died on the country's roads – an average of almost one person per day.⁶⁹
- 11.53 Police is one of several agencies responsible for ensuring NZ's roads are safe for all road users. Alongside Waka Kotahi and the Ministry of Transport, Police committed to Road to Zero as a sector partnership strategy with a collective vision.⁷⁰
- 11.54 Police made considerable commitments to road safety through the Road Safety Partnership Programme 2018–2021 and identified operational priorities for road safety that directly address the factors known to contribute to the greatest harm.
- 11.55 Police will continue to prioritise road safety, which includes deterring people from engaging in risky driving behaviours. Its key tools in this work are safety cameras (until their transition), compliance checkpoints, and a visible presence in marked police vehicles.
- 11.56 The key indicator of success for Police aligns with the SCS Programme – a reduction in DSIs.

12. Benefits

- 12.1 The benefits were revisited as part of the ILM update, and it was decided to strengthen and refine them. This refinement was based on two drivers:
- a Gateway 1 recommendation that Road to Zero benefits of reduced DSIs be monitored at the Road to Zero portfolio level
 - at the SCS Programme level, the primary benefit sought is fewer speeding vehicles (including red light running) at treated areas and intersections and a lowered average speed overall.
- 12.2 The SCS Programme Benefit Management Plan is available from the Programme Director.

One benefit is sought from the proposed investment

- 12.3 The original benefits from successful delivery of the proposed investment were identified as part of ILM workshops held between 6 and 20 October 2021 with key stakeholders. They were later refined as part of DBC activities in May 2022 (see discussed in 8.2 and 8.3). The original and updated ILMs are in Appendix 3.
- 12.4 The revised benefit is shown in Table 18. For more information, see the benefit profile in the Benefit Realisation Plan.

⁶⁸ New Zealand Police. 2020. *NZ Police Statement of Intent 2020–2025*. Wellington: Author, p 10.

⁶⁹ Ministry of Transport. 2022. Daily updated provisional road deaths. Te Marutau – Ngā tatauranga ā-tau: Safety – annual statistics (website).

⁷⁰ New Zealand Government. 2021. *Road to Zero: Annual monitoring report 2020*. Wellington: Author, p 2.

Table 18: Benefit and key performance indicators for the proposed investment in the SCS

Benefit	Key performance indicator
Road users are safer through lower mean speeds (100%)	KPI 1: Fewer speeding (includes red light running) vehicles in treated corridors and intersections
	KPI 2: Lower mean speed on the roads across NZ
	KPI 3: Increased percentage of the public who agree that safety cameras are an important intervention to reduce the number of speeding vehicles
	KPI 4: Increased percentage of the public who agree that they are likely to get caught when driving above the posted speed limit.

- 12.5 Note there is a fifth indicator due to Treasury reporting requirements on asset performance.⁷¹ It is not included in the ILM but is discussed in the Benefits Realisation Plan.
- 12.6 The benefit sought through the SCS Programme aligns with Road to Zero outcomes and indicators. This is discussed above in section 9. It also provides a sound rationale for the proposed investment in the SCS, as described in 11.7–11.10.
- 12.7 Note there has been a shift from the IBC where the benefits focused on reducing DSIs. Based on a recommendation from the Gateway Review team, that was later supported by the revised ILM, the SCS Programme is now focused on reducing speed and speeding. This is because reduced DSIs will be due to the package of Road to Zero interventions and a safer system. Attributing reduced DSIs solely to reduced speeds is not practical and does not account for the other interventions. Therefore, the decision was made for the SCS Programme to focus on reducing speed and speeding. The Road to Zero team will monitor reduced DSIs and then evaluate within the context of the safer system the contribution of the SCS.
- 12.8 **Fewer speeding vehicles in treated corridors and intersections** will lead to DSI reduction due to improved compliance – this investment will have a direct impact on DSIs. Modelling by Waka Kotahi and the Ministry of Transport shows a reduction in DSIs by 4% by FY2030, which aligns with the Road to Zero strategy. International evidence shows that safety cameras are a powerful deterrent for speeding. Compliance is encouraged merely by having cameras on the road, as the perceived threat of getting a fine as a result of speeding improves compliance across the network.
- 12.9 **Lowered average speed across the network** will reduce risk of harm for all road users – this investment is expected to also lower speed across the network. A substantial body of evidence demonstrates a close correlation between speed and road crash frequency and severity. When speed increases, the risk of a crash and crash severity also increase. Lower mean speeds across the network will make roads safer for all commuters and encourage people to use alternative modes of transport such as walking, cycling, and public transport.
- 12.10 **Increased percentage of the public who agree that they are more likely to get caught when driving over the posted limit** - Road users will be more aware that speeding will be detected due to marketing and the presence of more cameras.
- 12.11 **Increased percentage of the public who agree that safety cameras are an important intervention to reduce the number of speeding vehicles.** This investment will contribute to

⁷¹ The Treasury. 2017. *Annual Report Guidance for Departments: Asset performance indicators* (version 2). Wellington: Author.

the wider education and marketing work in Road to Zero to not only support behaviour change but build awareness of the overall approach of Road to Zero.⁷²

- 12.12 **Return on investment in safety cameras is optimised** – This investment will make a significant and tangible (monetised) benefit to society in terms of DSI savings, which create a flow-on benefit to everyone. The estimated value of statistical life is \$4.53m per fatality (at June 2019 prices).⁷³ This investment will save approximately 120 lives per year from 2030, which is a benefit to the wider society of an estimated \$543.6m. This benefit will be addressed in the Quantitative Risk Assessment in the economic case (see section 26).
- 12.13 Stakeholders also agreed qualitative (non-monetised) benefits – see Appendix 8.

Benefits are developed further in the Benefits Management Plan

- 12.14 Benefits will be developed further in the Benefits Management Plan (available from the Programme Director), including baselines, clear accountabilities, and reporting requirements.
- 12.15 This includes how Māori will be engaged and included in designing Benefits monitoring and reporting to ensure their expectations and interests are met.
- 12.16 Further information about benefits is throughout the economic case and in the management case (section 58), with all details summarised in the Benefits Management Plan.

13. Investment objectives – one objective is pursued from the current SCS investment

- 13.1 ILM workshops held with key stakeholders between 6 and 20 October 2021 identified existing business problems, expected benefits, and investment objectives for the investment proposal and the wider SCS Programme. These were refined during DBC activities in May 2022 by an accredited ILM facilitator.
- 13.2 It was agreed that the investment objective set out in Table 19 is appropriate.

Table 19: Investment objectives for current SCS proposal

No.	Investment objective
1	<p>Waka Kotahi will establish (by 2030), in stages (aligned with the National Land Transport Fund), a single, secure SCS with expanded and enhanced capability to reduce speeding (including red-light running) and overall average speed, beginning with high-risk areas across New Zealand.</p> <ul style="list-style-type: none"> This DBC seeks funds and approval to proceed with stage 1, which will be completed by the end of 2023/24.

14. Operating model (end point) for the SCS by 2030

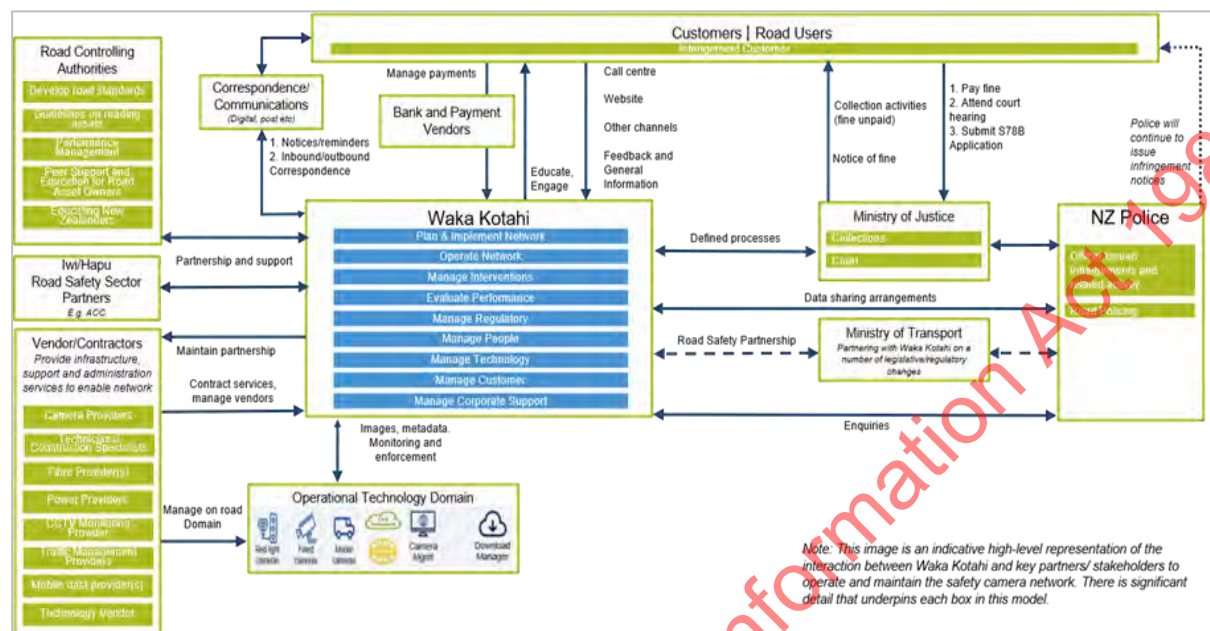
- 14.1 Waka Kotahi has limited capability and capacity for operating an SCS. Operation of the SCS will be a new function dispersed across Waka Kotahi.
- 14.2 Figure 19 illustrates the target operating model. This model includes the ability to detect infringements and automatically transfer the detection electronically to the office systems at Waka Kotahi. The operating model will support prosecutions as well as system maintenance and upgrades. Road users will be able to pay infringements in various ways.
- 14.3 Figure 19 provides a high-level view of the operating model, including interfaces with vendors, partners, processes, and technology.

⁷² New Zealand Government. 2020. *Road to Zero. New Zealand's Road Safety Strategy 2020–2030*. Wellington: Ministry of Transport.

⁷³ Ministry of Transport. 2020. *Social Cost of Road Crashes and Injuries: June 2019 update*. Wellington: Author.

- 14.4 The operating model will be managed by the new Waka Kotahi workforce defined in the high-level organisational design.
- 14.5 The new operating model will be powered by a cloud based SCS technology solution that is integrated into existing Waka Kotahi technology infrastructure.

Figure 19: Future state operating model for the SCS

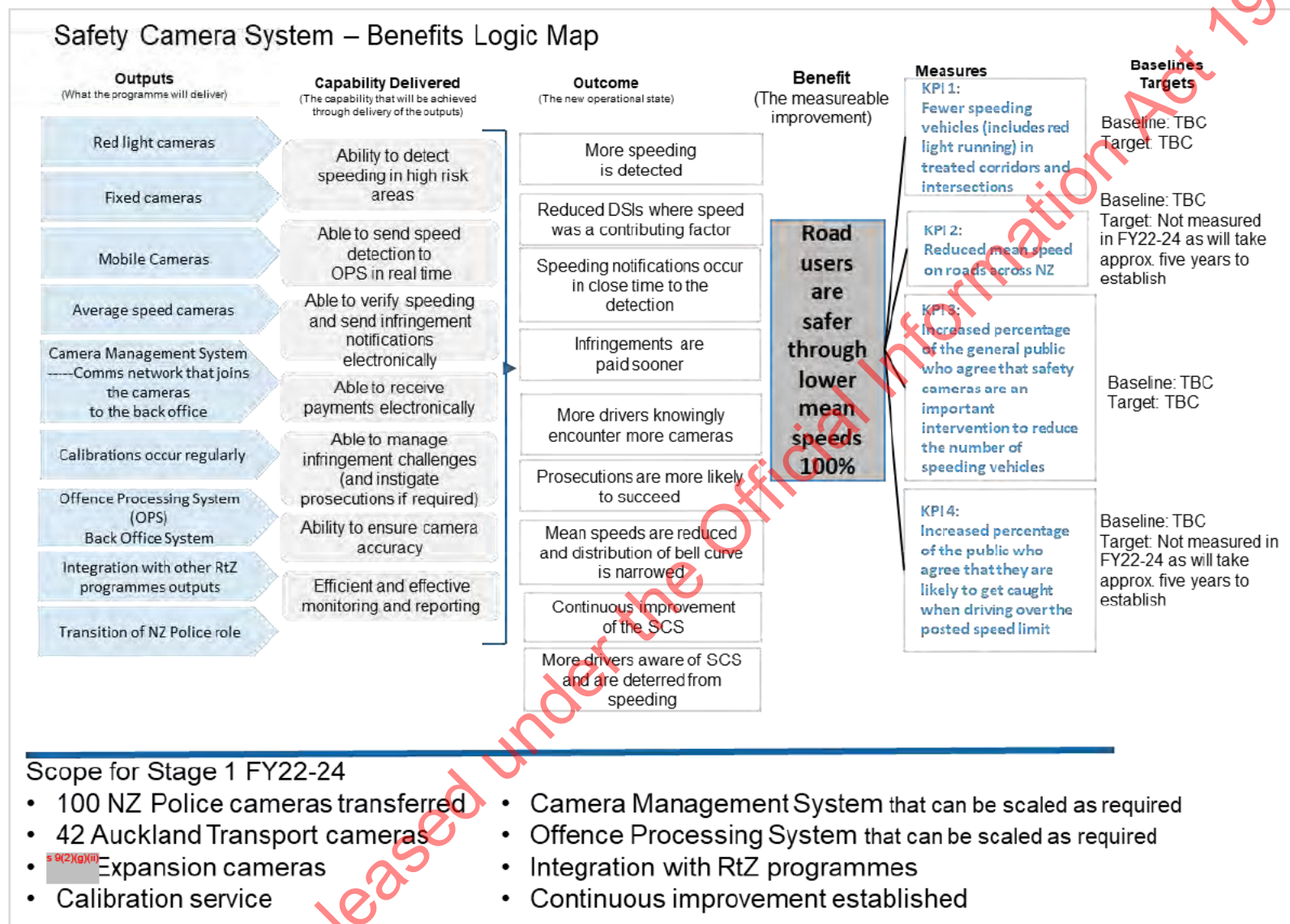


- 14.6 The proposed technology solution is illustrated in Appendix 9.
- 14.7 This detailed business case is seeking funds and approval to proceed with stage 1, which will be completed by the end of FY24 (that is, 30 June 2024).

15. Scope for stage 1, FY21–24 – benefits logic map and capability change

- 15.1 Figure 20 shows the key outputs, capability shift, outcomes, and benefits for the entire programme and the high-level scope for stage 1 FY21–24. See also Appendix 10.
- 15.2 Detailed design of the SCS will be completed during stage 1 (FY21–24). This work will allow Waka Kotahi to better understand the capability requirements, which may require refinement or further development of the detailed design, which, in turn, may affect the final scope out to 2030 and the scope for the full stage 1 period (FY21–24).
- 15.3 An implementation approach is still being developed (discussed in the management case). The agreed solution for implementation may affect how many cameras are rolled out in FY21–24. This may also require further refinement to financial modelling once actual camera numbers for FY22–24 are finalised.

Figure 20: Benefits logic map – scope of the proposed investment in the SCS



16. Gateway review and privacy impact assessment

Gateway recommendation

- 16.1 The Gateway review recommended DSIs be monitored and reported at the Road to Zero portfolio level. This means the SCS will focus on reducing speeding.
- 16.2 The new generations of safety cameras have broader privacy implications than has previously been the case. Current speed cameras use radar to detect a speeding offence, and then capture an image of a vehicle as evidence of that offence. Newer technologies such as average-speed (point-to-point) cameras capture images of all vehicles passing a camera and use those images to determine whether an offence has occurred. Average-speed cameras also use automated number plate recognition, which has its own privacy implications and is of concern to privacy and civil liberties advocacy groups.
- 16.3 Future technologies, such as those Waka Kotahi is trialling, use safety cameras to detect the use of mobile phones and seatbelts, so are even more intrusive since the cameras take images looking through the windscreen and into the front seats of vehicles.
- 16.4 With the ability to potentially detect and capture what people are doing in their cars, privacy must be considered. If the public does not have faith in the ability of security cameras to be managed with appropriate privacy and security safeguards that could significantly undermine the public support needed to expand the safety camera network. This, in turn, could have wider implications for Road to Zero and Vision Zero as a whole.
- 16.5 The report from the Gateway Review conducted at the time of the IBC stated:
- The Review Team is also concerned that the SCS changes may well have broader public policy implications (for example, related to surveillance and data sharing), which will need to be properly considered and the appropriate authorisations put in place. Involvement of agencies that deal with related issues (for example, the Ministry of Justice, the Government Chief Digital Officer and the Office of the Privacy Commissioner) will be critical for this.
- 16.6 The Gateway Review team made the following recommendation.
- Strengthen the Safety Camera System Programme by incorporating stronger policy involvement and improved inter-agency policy planning (including involving the Ministry of Justice, the Government Chief Digital Officer and the Office of the Privacy Commissioner as well as Ministry of Transport and NZ Police, given broader policy implications).
- 16.7 In response to this recommendation, the SCS Programme established a Policy and Governance project to ensure privacy requirements are fully understood and addressed.
- 16.8 The programme will ensure privacy principles are designed into the SCS. A copy of the privacy impact assessment is available on request. The main features of the report follow the Privacy Act 2020.⁷⁴
- 16.9 The 13 privacy principles are:
- collect only personal information that is necessary for a lawful purpose
 - collect personal information directly from the person concerned
 - tell people why information is required, how it will be
 - used, and who it may be shared with
 - collect personal information in ways that are fair and lawful particularly when children or young people are the subjects

⁷⁴ On 1 December 2020, the Privacy Act 2020 came into effect.

- take reasonable steps to keep personal information safe and secure
- enable individuals to access information about them
- enable individuals to correct their information if it is wrong
- take reasonable steps to ensure that personal information is accurate before using it
- keep personal information only for as long as it is needed
- use personal information only for the purposes for which it was collected
- disclose personal information for defined purpose or where an exception applies
- take care when disclosing personal information outside NZ
- take care with unique identifiers.

Privacy by Design

16.10 The Privacy Act 2020 and the privacy principles are complemented by the seven principles of Privacy by Design.⁷⁵ These seven principles aim to build privacy controls into systems, technologies, and processes. If systems, technologies, and processes are implemented correctly, individuals should not have to take any action to protect their privacy – the system's design achieves this by default. For Waka Kotahi, these principles can helpfully inform a process that facilitates good privacy outcomes, when deploying systems on the roading network.

16.11 The Privacy by Design principles are:

- privacy measures should be proactive not reactive
- privacy should be the default setting
- privacy should be embedded into design
- aim for full functionality rather than viewing privacy in opposition to other interests
- ensure end-to-end information security
- promote visibility and transparency of risks and solutions
- make sure systems are user centric.

17. Risks and issues

17.1 A risk is an uncertain event or circumstance that, if it occurred (that is, because of an issue), would have a material negative effect on at least one investment objective or benefit.

17.2 Senior stakeholders and the SCS Programme team are confident that the risks of the proposed investment are manageable. Risk requires careful and active management.

17.3 Participants in a workshop identified the risks to the programme and identified that KPI 2 (lower overall mean speeds across the road network) would not be achieved during the current NLTP cycle, as not enough cameras will be rolled out initially to make a difference across the road network in the first two years. It will likely take five years to see a measurable difference.

17.4 The main risks to successful delivery of the investment objective or benefit are in Table 20 . These risks are to be expected when transferring or replacing functions from one agency to another and are consistent with transfers observed by the Public Service Commission.⁷⁶

⁷⁵ A Cavoukian. 2010. *Privacy by Design: The 7 foundation principles* (revised 2011). Ontario: Information and Privacy Commissioner of Ontario.

⁷⁶ Public Service Commission. 2017 (last modified 2 October). Machinery of government: Guidance and information (webpage). www.publicservice.govt.nz/our-work/mog/

- 17.5 Risks will be managed in accordance with good practice. The SCS Programme will regularly report on risks across its workstreams. The programme's approach to risk identification and mitigation is based on the Road to Zero Portfolio Management Office approach, which aligns with the Waka Kotahi Z/44-Risk Management Standard.
- 17.6 Risk will be regularly reported to the Programme Director, Programme Steering Committee, Programme Advisory Board, Road Safety Partnership Governance Group, Road to Zero Executive Sub-committee, and Waka Kotahi Board. Escalation and reporting thresholds for risks are in the programme's risk register.
- 17.7 Additional information about risks, the risk register, and governance is in the management case of this DBC.
- 17.8 Table 20 shows the main risks to successful delivery of the proposed investment benefits. The SCS Programme's success has a high dependency on other Road to Zero programmes and the legislative changes under way with Te Manatū Waka.

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Table 20: Main risks to successful delivery of the proposed investment

#	Main risk	Impact	Likelihood	Mitigations in place	How to recognise the risk is about to become an issue
1	Public support If the public support to expand the SCS solution is not established and maintained, then communities may not support or buy-in to the SCS, resulting in a slow down or even potentially halting the SCS rollout.	Critical	High	<p>Coordinate with other Road to Zero programmes. The SCS Programme has identified a critical dependency on the Road to Zero programme that will be communicating and educating with the public and building social licence.</p> <p>Develop and deliver comprehensive communications and engagement plans (together with relevant road controlling authorities), which adopt narratives for change approach.</p> <p>Coordinate with other Road to Zero programmes, including the workstreams engaging and educating the public and behaviour change workstream on which the SCS Programme has a dependency to deliver Road to Zero education and marketing (including about speed/safety cameras, as appropriate).</p>	<p>The programme will have regular meetings with teams responsible for engaging with the public to seek advice on an ongoing basis. This will happen each time a new area is about to be treated.</p> <p>Any conflicts notified by the engagement team to the SCS team will be escalated to the Programme Steering Committee immediately.</p>

#	Main risk	Impact	Likelihood	Mitigations in place	How to recognise the risk is about to become an issue
2	Public support If road users do not understand the SCS as a road safety intervention, then the risk of it being seen as not operated fairly may increase, which, if that occurs, will increase the public's negative perception of the SCS solution	High to critical	High	<p>Follow best practice, which supports a mixed approach to enforcement where fixed cameras are clearly signed, and mobile ones remain unsigned.</p> <p>This will achieve both site-specific and general deterrence across the network.</p> <p>Use Tū Ake, Tū Māia, the Waka Kotahi regulatory strategy and the Principal Advisor Māori to guide our approach, decision making and way of working.</p> <p>Develop and deliver comprehensive communications and engagement plans (together with relevant road controlling authorities) which adopt narratives for change approach.</p> <p>Coordinate with other Road to Zero programmes, including any team members responsible for engaging with and educating the public and behaviour change workstream which SCS has a dependency on to deliver Road to Zero education and marketing (including about speed/safety cameras as appropriate).</p> <p>Note: The SCS Programme has identified a key dependency on the Road to Zero programme to build awareness, understanding and broad support for Road to Zero.</p>	<p>The programme will have regular meetings with the teams responsible for engaging with the public to seek advice on an ongoing basis. This will happen each time a new area is about to be treated.</p> <p>Any conflicts notified by the engagement teams to the SCS team will be escalated to the Programme Steering Committee immediately.</p>

#	Main risk	Impact	Likelihood	Mitigations in place	How to recognise the risk is about to become an issue
3	Policy or legislation If the legislative changes required to enable average-speed cameras are not made in time, then that function of these cameras will not be useable.	High to critical	High	Install and operate average-speed cameras as fixed speed cameras until the legislation changes. Apply a dependency management approach with Te Manatū Waka on legislative change progress. Note: Evidence shows average-speed cameras have a high impact on speeding*	The programme will have regular engagement with the Policy team to seek advice on the progress of the legislation change. Any delays will be escalated to the Programme Steering Committee immediately.
s 9(2)(f)(iv)					
5	System accuracy If the cameras and infringement notices are not continuously confirmed as accurate, then they may be challenged through the courts, leading to a loss of public trust.	Critical	Low	Ensure safety cameras are regularly calibrated and accurate Ensure back-office systems are accurate. Perform controls assurance reviews and internal audits	The number of infringements that are challenged will be monitored on a regular basis. Any trends that indicate camera calibrations are inaccurate will be escalated to the Programme Steering Committee immediately.

#	Main risk	Impact	Likelihood	Mitigations in place	How to recognise the risk is about to become an issue
6	Complexity If the SCS Programme is unable to simultaneously manage a new offence processing system, transfer functions from Police to Waka Kotahi new generation safety cameras, introduce average speed cameras, and expand the network then there will be delays to the realisation of benefits	High	High	Use best practice programme management techniques Sequence work to manage competing priorities Spread implementation activities over time	The implementation plan will include trigger points and milestones. If they are not being met, then delay is expected.
7	Security If there is a security breach then this could result in reputational harm to Waka Kotahi, undermine public confidence and cause significant damage to information systems.	High	Low	Use best practice security design and management	Security certification has not been achieved or updated recently.
8	Tolling system If there is a delay in completing the tolling system that will be adapted to provide the offence processing system, then there may be a subsequent inability to process infringements. This will diminish: <ul style="list-style-type: none"> the KPI of fewer speeding vehicles the ability to change behaviour programme credibility 	High	Medium	Work with the supplier to establish an integrated delivery plan that supports the issuance of infringements within an agreed timeframe. A plan B interim utilisation of a bureau service via third party to issue infringements (third party yet to be confirmed as the concept is yet to be actioned).	The delivery plan will include trigger points and milestones. If they are not being met, then delay is expected.

#	Main risk	Impact	Likelihood	Mitigations in place	How to recognise the risk is about to become an issue
9	Tolling system If the tolling system is found to be insufficient to adapt for the offence processing system, then workarounds will be needed to manage the issuing of infringements with the subsequent increased operational burdens and inefficiencies across the system. The probable result is reduced or delayed benefits.	Low	Low	SCS will develop a detailed solution design with the supplier based on already reviewed requirements that supports the capability required. None of the requirements raised a response where the supplier said they could not meet the requirement (that is, the supplier indicated all requirements can be met).	We will know at the conclusion of the detailed design phase. During the design phase, we will see if the risk will materialise, and during build and test we will keep a high awareness of ensuring delivery of key functionality. Note: a test lead is working on a test plan.

* R Owen, G Ursachi, & R Allsop. 2016. *The Effectiveness of Average Speed Cameras in Great Britain*. London: RAC Foundation.

18. Assumptions, constraints, and dependencies – senior stakeholders' shared understanding

- 18.1 Assumptions are made to simplify decision-making on an investment proposal.
- 18.2 Constraints are limitations imposed on an investment proposal from the outset.
- 18.3 Dependencies are external influences on the success of the SCS Programme, where success is contingent on the actions of others.
- 18.4 This proposal is subject to the assumptions, constraints, and dependencies noted in Table 21, Table 22, and Table 23, respectively. Management strategies and registers have been developed, and assumptions, constraints, and dependencies will be monitored and reported.

Table 21: Key assumptions

ID	Description
A1	Benefits monitoring for DSIs is at the Road to Zero level and attribution of those benefits to the various interventions, of which the SCS is one, is determined by the Road to Zero evaluation.
A2	Benefits monitoring at the SCS level focuses on the reduction in speeding (including red-light running) and in average speeds across the network. This is the main contribution of a SCS to the main goal of reduced DSIs. The SCS DSI contribution is 4%.
A3	The governance body accepts there will be no measurable difference for KPI 2 in the period to 30 June 2024 as more time is needed for the network to expand to a scale sufficient to deter speeding across the entire network.
A4	Police and Waka Kotahi enter into a legal agreement to guide the transfer of safety camera and offence processing operations
A5	Relevant Police supply and services contracts are novated to Waka Kotahi or used as the basis for negotiating a new agreement.
A6	The first phase of expansion of the safety camera network is procured through a variation of the existing Redflex supply and services contract.
A7	The preferred technology suppliers have the capacity and resources based in NZ to deliver the programme.
A8	The technology solution for safety cameras automates camera management activities and at least some back-office functions, wherever possible and appropriate.
A9	Mobile safety camera operators are based in Waka Kotahi regional offices, if they are currently within a 30-minute drive of that office. All other safety camera operators will need suitable accommodation and secure parking to be found.
A10	Accommodation for about 100 people is required in a central offences processing location potentially from 2023, with the option to expand to 150 people by 2030.
A11	Waka Kotahi will need to secure calibration service to support the transferred safety cameras and the expanded network.
A12	Other Road to Zero programmes are responsible for the education and communications aspects of the Road to Zero and SCS intentions, and the SCS Programme will be tightly integrated with these other programmes.

Table 22: Key constraints

ID	Description
C1	Cabinet agreed ownership and operation of the camera network should be transferred from Police to Waka Kotahi.
C2	Police retain and administer officer-issued infringements.
C3	The Road to Zero Executive Sub-committee (ESC) agreed all existing camera types (red-light, mobile speed, and static speed) are to transfer from Police to Waka Kotahi.
C4	The Road to Zero ESC agreed core safety camera operation and offence processing functions would not be outsourced.
C5	Operation of point-to-point (average-speed) cameras requires a change to legislation through the Regulatory System (Transport) Amendment Bill 2, which was expected to pass in 2022 and come into effect from January 2023. Currently the Bill has not yet been passed.
C6	Implementation timeframes are subject to change, if agencies' change programmes are delayed (for example, if Police is not ready to transfer processes and systems by the transition period).
C7	Implementation timeframes for IT systems are subject to detailed planning with selected vendor(s) and the deployment requirements of the type of solution(s) offered.
C8	Implementation timeframes for IT systems are subject to dependency constraints on integration to Waka Kotahi internal systems and the availability of nominated subject-matter experts who can participate in solution configuration and design with the programme and vendor teams after contract(s) are signed.
C9	Cabinet agreed there should be a significant increased investment in additional safety cameras on the network, prioritised in the GPS.
C10	DBC's will be prepared to secure funding for the safety camera expansion and procurement of the IT systems for safety camera management and offence processing once a preferred supplier/s has been identified and costs confirmed.

Table 23: Critical dependencies

ID	Description
D1	Dependent on road controlling authorities to set speed limits to ensure the enforced limit is safe and appropriate to reduce DSIs.
D2	<p>Dependent on building public support which is managed in the Road to Zero portfolio programme to manage the delivery of marketing/awareness campaigns to change public attitudes towards safety cameras.</p> <p>The ultimate success of the SCS Programme is closely linked with the other Road to Zero programmes. They are designed to work together (as part of a safe system) to reduce DSIs. In particular, building public support for the cameras has been identified as a significant risk to the SCS successful rollout.</p>
D3	<p>Dependent on policy setting changes under way and being managed by Te Manatū Waka. Based on overseas experience the success of the SCS is dependent on:</p> <ul style="list-style-type: none"> ensuring penalties are aligned with risk and effectively deter unsafe behaviour s 9(2)(f)(iv)
D4	Dependent on development of the (off-the-shelf) tolling system platform being successfully completed by June 2023, because the back-office offence management system will be a cloned version and then modified.

ID	Description
D5	Dependent on Police to deliver activities required to effect the transition of the Police SCS role.
D6	Dependent on Police to provide support and advice to assist Waka Kotahi securing safety camera gazetting and calibration services.
D7	Dependent on the Speed and Infrastructure Programme, part of the Road to Zero portfolio, to manage the safety camera site design and construction required to deliver the safety camera expansion across the national road network. Note: This work is well under way with the relevant teams.
D8	Dependent on an information sharing agreement or memoranda of understanding being agreed between Waka Kotahi and several central agencies to share data, enable point-to-point cameras, and enable automated issuing of infringements.
D9	s 9(2)(f)(iv) Note: Legislative changes have been identified as a significant risk to the SCS successful rollout.
D10	Dependent on the Speed Management Programme, in the Road to Zero portfolio, to implement the National Speed Limit Register to provide a centralised and definitive record of speed limits at safety camera locations.
D11	Dependent on the Safety, Health & Environment Programme, in the Road to Zero Portfolio, to research and advise on Māori road safety outcomes to inform safety camera placement, signage design, and consultation.
D12	Dependent on the Electric Vehicle Transition Project to monitor requirements for mobile camera vehicles to meet government expectations of a low emission fleet by 2025.

19. Additional information about the current and future SCS

- 19.1 This section contains additional information about the current state of the SCS and how the desired future state will be achieved.

Number of Police personnel operating and managing safety cameras and prosecutions

- 19.2 Most safety camera functions (apart from camera maintenance) are carried out by Police personnel. About 71 full-time equivalents (FTEs) operate mobile cameras and about 96 FTEs process about 1m safety camera infringements annually as well as officer-issued infringements.
- 19.3 About 11 FTEs in the Police Prosecution Service handle about 1,100 safety camera prosecutions annually.

Cameras and vehicles are increasingly leased instead of owned

- 19.4 Some cameras and vehicles are owned, but leasing is becoming the preferred approach.

Police cameras use old technology requiring largely manual management

- 19.5 Camera management is largely manual with data transferred by DVD to maintain a secure chain of evidence.
- 19.6 Incidents are verified manually through a robust process, and infringement notices are issued using physical post.
- 19.7 The manual nature of the end-to-end process means notices are issued several days after an offence occurs, and this can be more than a week during periods of high volumes.

Moving to the future state with changed attitudes to speed, more cameras, and cameras in high-risk locations

- 19.8 This proposed investment enables a step change in culture and attitudes around speed. The SCS Programme will work with sector stakeholders and partners, including iwi, hapū, and local communities, to emphasise that safety cameras are about improving safety on roads and reducing DSIs.
- 19.9 This proposal will expand the camera network significantly with s 9(2)(g)(ii) cameras (fixed, red-light, average speed, and mobile) by 2030.
- 19.10 Fixed cameras will be more visible and clearly signed. Mobile cameras will likely be used in a more covert, general deterrence, mode.
- 19.11 High-risk sites will be chosen for cameras based on historical data about harm and modelling of underlying risk factors, and as part of the broader approach to speed management.
- 19.12 The gap between the current state of the SCS and the desired future state is summarised in Table 24. Supplementary information on enabling technology, security considerations, and future proofing is in Appendix 11.
- 19.13 The SCS Programme will be implemented over an extended timeframe, so it is likely technological advances may occur such as autonomous cars or real-time data availability on individual driver behaviour. The programme will design a continuous improvement function into the SCS that not only considers ways to optimise the existing SCS but may also provide advice on other technologies that may help reduce speeding.

Table 24: Proposed investment to drive the change from current state to future state

Category	Current state	Future state
Roles and responsibilities	<p>Police is responsible for its safety camera network and the handling of all associated offences, including prosecution.</p> <p>Police personnel carry out most safety camera functions (apart from camera maintenance).</p> <p>Cameras implemented by road controlling authorities such as the red-light cameras implemented by Auckland Transport are the responsibility of the road controlling authority (with Police undertaking the associated offence processing).</p> <p>Police provides infringement processing functions for Auckland Transport and Christchurch City Council red-light cameras.</p>	<p>Waka Kotahi is responsible for the SCS to allow better integration with the speed management planning process. It changes public perceptions about the use and role of safety cameras.</p> <p>Police retains responsibility for officer-issued infringements.</p> <p>Cameras implemented by road controlling authorities are the responsibility of the road controlling authority (with Waka Kotahi undertaking associated offence processing).</p>
Public attitudes	<p>Two-thirds of the public perceive safety cameras as being used to improve safety and used fairly, but some perceive cameras are used unfairly,</p>	<p>A step change occurs in the prevailing culture and attitudes around speed.</p> <p>Waka Kotahi works closely with its partners, including iwi, hapū, and local communities, supported by marketing programmes to build awareness, understanding, and support for the need for interventions such as safety cameras to reduce DSIs.</p>

Category	Current state	Future state
Camera network	<p>About 135 fixed and mobile safe speed cameras operate across the country under an 'anytime, anywhere' model.</p> <p>There is no overt signage about the location of cameras.</p> <p>Camera sites are selected based on historical crash data, behavioural data, and predictive analysis.</p> <p>Safety cameras have a broader range of functions than can be used.</p>	<p>The safety camera network is expanded significantly with s 9(2)(g)(ii) safety cameras (fixed, red-light, average speed, and mobile) by 2030.</p> <p>Cameras are placed on high-risk sites chosen based on a combination of historical data about harm and predictive modelling of underlying risk factors.</p> <p>Fixed cameras are more visible, with average speed and fixed cameras clearly signposted.</p> <p>A broader range of safety camera functions are used.</p>
Camera management	<p>The management of cameras is largely manual with data transferred via DVD to maintain a secure chain of evidence.</p> <p>About 71 FTEs operate the mobile cameras.</p>	<p>Camera management is more automated, with secure electronic transmission of data.</p> <p>s 9(2)(f)(iv)</p> <p>Efficiencies are achieved while maintaining and building robustness, integrity, and trust and confidence in the system.</p>
Offence processing	<p>Incidents are verified manually through a highly robust process, so infringement notices are often issued (via physical post) days or weeks after an incident is detected.</p> <p>About 96 FTEs process about 1 million safety camera infringements annually as well as officer-issued infringements.</p> <p>The Police Prosecution Service has an estimated 11 FTEs handling about 1,100 safety camera prosecutions annually.</p>	<p>The number of infringements may initially rise but will eventually reduce as compliance improves.</p>
Enabling technology	<p>The Police Infringement Processing System (PIPS) and related systems are at or approaching end of life and overdue for replacement.</p>	<p>Modern technology platforms incorporate innovation to support new ways of working that are more efficient and s 9(2)(f)(iv)</p> <p>while complying with security and privacy standards. This enables the integration of technologies from different suppliers and ensures capability to support future technologies as they emerge.</p>

20. Optimism bias – how Waka Kotahi will mitigate such bias

- 20.1 Waka Kotahi acknowledges the SCS solution is ambitious. Transferring the Police function is a large task by itself, building a new SCS at Waka Kotahi is also a large task by itself, and expanding the network over multiple years with different camera types is another large task.
- 20.2 To ensure success, the SCS Programme will implement in stages. With each stage having multiple layers of assurance and review, from internal and external reviewers, including a quantitative risk analysis. The programme will continue to engage with overseas jurisdictions that have implemented such systems. Each stage will have a deep dive review, including of lessons to take into the next stage, and a continuous improvement approach will be taken to programme activities.
- 20.3 A benefits realisation review will take place every 6 months, with a deep dive benefit review at the end of stage 1 (30 June 2024). This pattern will be repeated in later stages. The information from these reviews and the staged approach will help mitigate optimism bias and create frequent opportunities to make course corrections as the programme advances.

ECONOMIC CASE

21. Outline of the economic case

- 21.1 The DBC process included re-evaluating the preferred way forward from the IBC and confirmed Option 4 remains the preferred option.
- 21.2 For a description of the long list, including the assessment criteria, see Appendix 12. The optioneering process to identify the preferred option is in Appendix 13 (and the participants in the process), which defines the do minimum option as a baseline comparator, identifies and assesses a long-list of options, and explains the rationale for establishing the shortlist. Subsequently, it describes the evaluation of the short-listed options. The resulting preferred option is then described and evaluated for its value for money.
- 21.3 The economic case summarises the costing model developed (section 22) then defines the preferred option (Option 4) (section 23). It then, for the preferred option sets out the delivery arrangements and assesses value for money (section 25). The outcomes of sensitivity and risk analyses are in section 26. The case concludes by reconfirming the investment prioritisation profile of the preferred option (section 27).

22. Financial benefits and costs

Bottom-up costing model used to assess costs and benefits for each short-listed option

- 22.1 A bottom-up costing model was developed for the SCS. It looks at costs and their drivers at the lowest level of activity possible, then rolls the costs up to an aggregate level.
- 22.2 This model was developed according to the following principles.
- Build separate financial outputs for each short-listed option.
 - Identify individual cost drivers for the lowest level of functions performed by the safety camera systems.
 - Test key assumptions with stakeholders at an activity level before rolling up the costs for an SCS function.
 - Note all assumptions that have a material impact on the model.
 - Produce a comprehensive suite of financial statements for each option.
 - Flex the financial model to adjust for camera volume, camera operating costs, FTE costs, FTE numbers, and efficiency gains (resulting from new technology).
 - Assess the remaining options on a financial basis.

Quantitative analysis of monetary benefits and costs

- 22.3 The five short-listed options were appraised using benefit–cost ratio (BCR) analysis on the estimated costs, benefits, and risks that could be valued in monetary terms. The general assumptions made for the purposes of the benefit–cost analysis are in Table 25.

Table 25: General assumptions for benefit and costs analysis

#	Assumption	Factor
1	Investment horizon – The proposed economic life is 20 years, from 1 July 2021 to 30 June 2040.	20 years
2	Discount rate for net present value (NPV) & whole-of-life cost – The discount rate is 4.30% per annum (using the current Treasury current long-term nominal forward discount <u>rate</u> , updated for June 2022. The nominal rate is used as inflation has been allowed per point 3 below).	4.30%
3	Inflation rate – inflation has been applied at the <u>Treasury forward CPI Assumptions</u> as of 30 June 2022	3.87%- 1.76%
4	Income tax rate – The tax rate is 0%, as tax is not specific to this project.	-
5	Depreciation, capital charges, interest, and other financing costs are excluded from the analysis.	-
6	Contingency adjustment – An allowance for underestimating costs is applied at a specified rate for some cost categories in operating (OPEX) and capital (CAPEX) camera costs.	50%-0%
7	Programme & change team asset life – Implementation of the overall programme is for three years, from FY21–24.	3 years
8	Technology & vendor asset life – Technology platforms such as the CMS and OPS have a useful life of 7 years.	7 years
9	Signage – This asset has a life of 8 years.	8 years
10	Safety cameras – A leasing model is followed and is cost neutral for whole-of-life cost estimates.	-
11	Capital costs – These are identified for each option and detailed in Appendix 17.	-
12	Operation costs – These are identified for each option in Appendix 17. They include camera running costs, FTEs, and salaries.	-

Contingency adjustment applied in modelling BCR

- 22.4 A contingency adjustment of approximately 13% (this is a blended rate across cost categories) was applied to provide an allowance for underestimated costs (OPEX and CAPEX) in the financial model. The contingency has been applied specifically when calculating camera costs.

Benefit–cost ratio for short-listed options

- 22.5 This section presents the results of the BCR and WMCA analysis conducted with stakeholders at the short-list options workshop on 24 November 2021. Table 27 outlines the total cost for each option and its additional cost on top of the ‘Do Minimum’ option.

- 22.6 The BCRs for the five options are:

- Option 1, Do Nothing: s 9(2)(b)(ii)
- Option 2, Do Minimum: s 9(2)(b)(ii)
- Option 3, Less Ambitious Way Forward s 9(2)(b)(ii)
- Option 4, Preferred Way Forward s 9(2)(b)(ii)
- Option 5, More Ambitious Way Forward: s 9(2)(b)(ii)

22.7 A sensitivity analysis has been conducted to consider two additional scenarios for option four:

- A non-inflationary scenario at a discount rate of 4% that complies with standard Waka Kotahi practise. This gives a BCR range of s 9(2)(b)(ii)
- A non-inflationary scenario at a discount rate of 6% to give an indication of the impact of likely higher discount rates in the future (given current economic conditions). This gives a BCR range of s 9(2)(b)(ii)
- Note this BCR range is slightly different to the ranges above for option 4 because of those different scenarios providing a different inflationary rate.
- The following table shows the two scenarios in further detail, summarising total cost on a non-inflationary basis and discounted at both 4% and 6% as outlined above showing that while we have used inflation and a nominal rate, if we use non-inflationary rate there is no change to the BCR and the preferred option.

Table 26: Results of BCR analysis and WMCA for short-list options

	Option 4: non inflated, DCF rate at 4%	Option 4: non inflated, DCF rate at 6%
Total costs, FY21–40 (20yrs)	s 9(2)(b)(ii)	
Total benefits, FY21–40 (20yrs)		
NPV costs*		
NPV benefits*		
BCR (non-present value)		
BCR (net present value)		

Table 27: Results of BCR analysis and WMCA for short-list options

	Option 1: Do Nothing	Option 2: Do Minimum (baseline)	Option 3: Less Ambitious Way Forward	Option 4: Preferred Way Forward	Option 5: More Ambitious Way Forward
	Leave the SCS with Police and continue to fund as is	Transfer the SCS from Police to Waka Kotahi, new operating model, new CMS, new OPS	Transfer the SCS from Police to Waka Kotahi, new operating model, new CMS, new OPS, new cameras on high-risk corridors	Transfer the SCS from Police to Waka Kotahi, new operating model, new CMS, new OPS, new cameras on high- to medium-risk corridors	Transfer the SCS from Police to Waka Kotahi, new operating model, new CMS, new OPS, new cameras on high- to low-risk corridors
WMCA scores	44	54	76	84	63
WMCA %	42%	51%	72%	79%	59%
Number of Police cameras	142	142	142	142	142
Number of new cameras	0	0	s 9(2)(g)(ii)		
Total cameras	142	142			
Total costs*, FY21–40 (20yrs)	s 9(2)(b)(ii)				
Total benefits*, FY21–40 (20yrs)					
DSIs by 2030	32	32	57	130	183

	Option 1: Do Nothing	Option 2: Do Minimum (baseline)	Option 3: Less Ambitious Way Forward	Option 4: Preferred Way Forward	Option 5: More Ambitious Way Forward
4% target (% of DSI target achieved)	1.12%	1.12%	1.99%	4%	6.96%
NPV costs*	s 9(2)(b)(ii)				
NPV benefits*					
BCR (non-present value)					
BCR (net present value)					

22.8 Note: While the “Do Nothing” option BCR of s 9(2)(b)(ii) is compelling at face value, this option has been discounted as transfer of ownership was mandated by the Minister of Transport and agreed by Cabinet in 2019. Further, this does not enable the significant reduction in DSIs through option four. In short, Waka Kotahi cannot prefer Option 1 Do Nothing, as the direction has been set by Cabinet.

Appraisal summary table and benefits management plan for short-listed options

22.9 Appraisal summary tables and benefits management plans summarise monetised and non-monetised benefits and whole-of-life costs (see Appendix 19). The tables summarise information from the wider economic case, which was developed in accordance with the Waka Kotahi *Monetised Benefits and Costs Manual*⁷⁷ and *Non-monetised Benefits Manual*.⁷⁸

23. Preferred option

23.1 This section sets out the selection process for the preferred option (Option 4), describes the preferred option, and outlines what is in and out of scope for the preferred option. The value for money (economic) evaluation of the preferred option and sensitivity and risk analyses are in subsequent sections.

Selection of the preferred option – Option 4

23.2 The optioneering process conducted 25 October to 2 December found Option 4 to be the preferred option. Option 4 remains the preferred way forward.

23.3 Option 4 was selected through the Waka Kotahi optioneering process. This process took the option through multiple screening processes and evaluation with key stakeholder groups. The option was:

- assessed initially in the early assessment sifting tool
- rigorously scrutinised through the long-list options workshop under MCA
- evaluated again in the short-list using WMCA
- assessed in terms of its benefits and costs to society through BCR analysis.

Description and scope of the preferred option

23.4 Option 4 takes a gradual approach to the adoption of new camera technologies and a measured approach to rolling out new technologies. A continuous improvement approach will be designed into the rollout and evaluation. This will enable Waka Kotahi to evaluate and learn as it delivers the SCS Programme.

23.5 Activities in-scope and out-of-scope for the preferred option are in Table 28.

⁷⁷ Waka Kotahi. 2020. *Monetised Benefits and Costs Manual*. Wellington: Author.

⁷⁸ Waka Kotahi. 2020. *Non-monetised Benefits Manual*. Wellington: Author.

- 23.6 The items deemed out of scope for now are at the early stages of the policy or trials process. It is unclear which items will be adopted, how they will be adopted, and when they will come into effect. We propose these features are out of scope of the detailed design for now, but also have them noted in our high-level design as future opportunities. Once there is more clarity about what, how, and when, the SCS Programme will go through a formal process to identify the design implications, have this formally approved through a change request, and factor these into a design, build, and test cycle at the appropriate time.

Table 28: Activities in scope of the preferred option

In-scope (by 30 June 2024)	
<ul style="list-style-type: none"> • Ensure the new Waka Kotahi SCS is secure at every point as part of detailed design. • Transfer SCS functions from Police to Waka Kotahi. • Transfer cameras from Police to Waka Kotahi (some cameras may need upgrading or replacing to integrate with the Waka Kotahi SCS). • Include the Tāmaki Makaurau Acceleration project * • Transfer camera operations and management to Waka Kotahi. • Transfer end-to-end processing (that is, processing of infringements as well as processing and prosecution of high-speed traffic offences detected by safety cameras). • Agree on data sharing between Police and Waka Kotahi. • Develop a new operating model (people, processes, and technology) for the SCS. • Implement a new CMS and OPS to capture and process images from safety cameras at Waka Kotahi. • Expand the camera network by about s 9(2)(g) cameras. (By FY30, install and expand new safety camera numbers and types across high- and medium-risk corridors – about s 9(2)(g) new cameras. • Develop and deliver education initiatives or wider awareness campaigns as appropriate to support programme outcomes. 	
Out of scope (future opportunities) – see 23.6	
<ul style="list-style-type: none"> • Ongoing delivery of officer-issued infringements (Police). • Operation and management of existing safety cameras (existing road controlling authorities). • Further expansion of the camera network beyond agreed numbers (subsequent phases). • Awareness campaign requirements not related to the SCS. 	

* The Tāmaki Makaurau Acceleration project came about following a ministerial requirement to fast-track camera expansion. The senior manager – road safety tasked the TUS team with working with Auckland Transport to accelerate installation of safety cameras across Auckland Transport local roads. See further the management case, section 54.

SCS is being designed to take advantage of future opportunities

- 23.7 Several elements of the SCS are at the early stages of policy or trials processes, and it is unclear which elements will be adopted, how they will be adopted, and when they might come into effect. In the high-level design, these elements are called future opportunities.

- 23.8 Once there is more clarity about what, how, and when, the programme will go through a formal process to identify the design implications, have the elements formally approved through a change request, and factor them into a design, build, and test cycle at the appropriate time. These elements are:

s 9(2)(f)(iv)

s 9(2)(f)(iv)

- changes to the mobile camera operating model (for example, the use of trailers)
- electric vehicles for mobile cameras
- safety cameras for road worker safety
- variable speed corridors (for example, smart motorways or outside schools with variable speed signs).

24. Delivery arrangements for the preferred option

- 24.1 Since the IBC, the SCS Programme gathered further information on the challenges and opportunities impacting on the preferred implementation approach and reconfirming the confidence levels on the IBC planning assumptions. The programme has developed a new long list of implementation options to address implementation challenges and opportunities. Analysis to determine a short list using criteria to enable selection of a preferred implementation solution is well under way. The SCS Transition Manager is responsible for developing the implementation pathway.
- 24.2 The Management Case discusses implementation and includes site selection for the initial cameras, an update on engagement meetings with road controlling authorities, and more details about the Tāmaki Makaurau Acceleration project.

Table 29: Explanation of terms

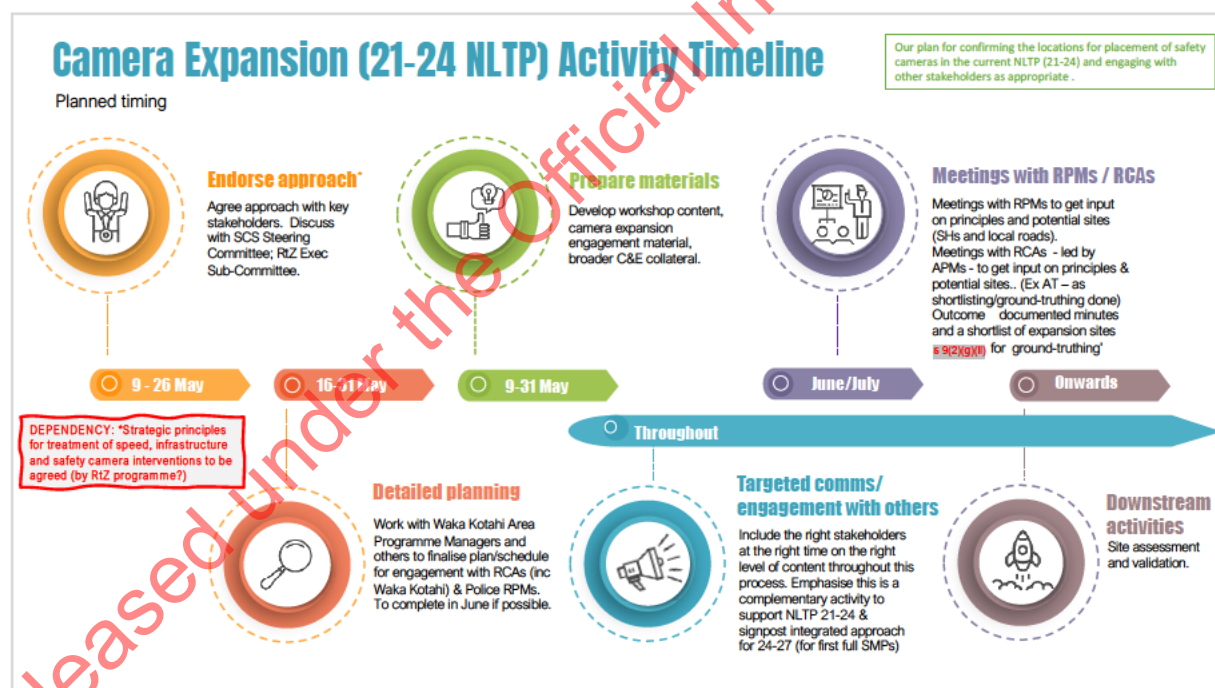
Area	Description
Partners & suppliers	Defines the relationships with partners (for example the Ministry of Justice, Police, road controlling authorities, iwi and hapū, the AA, and the Office of the Privacy Commissioner) and suppliers (for example, suppliers of the cameras and other physical assets, technology, and other systems and solutions) that are critical to delivering an efficient and effective safety camera system and service. These include relationships that are required to meet obligations of Waka Kotahi and the wider government to road users/customers (for example, through legislation, policy, standards or other mandated requirement).
Service experience	Defines the inputs (for example, policy, legislation, mandates, and guidelines) that define the standard of service that must be delivered through the SCS, and the service experience road users/customers will have when interacting with the safety camera system, and related Road to Zero initiatives, through Waka Kotahi operations (for example, developing understanding of the role of safety cameras in reducing harm and improving road safety within communities).
Assets & infrastructure	Defines the physical assets required (for example, secure offices, garages and parking, cameras, vehicles, and calibration and maintenance equipment) and infrastructure (for example, across sites and technology and telecommunication networks) that must be in place across New Zealand to enable and support the effective implementation, management/maintenance and operations of the safety camera system.

Area	Description
Organisation	Defines organisational functions and related capabilities required to deliver and operate the safety camera system. Functions include engagement and partnership (for example, with Police, iwi and hapū), transport services (for example, camera/asset deployment and management), human resources/personnel management, technology/digital delivery and management, regulatory services and policy (for example, advice on current and future regulation and policy), safety, health and environment, and corporate services (for example, research and analytics, legal, and finance).
Interactions	<p>Interactions defines the integration and sharing that is required across the network of partner and supplier solutions/systems, processes, technology and organisational capabilities to support and enable the safety camera system, including enterprise services and systems integrations.</p> <p>Enterprise services defines the interaction and sharing that occurs across Waka Kotahi and third parties to support the safety camera system (for example, postal service, call centre service, camera management services, and content management services).</p> <p>Systems integrations defines the specific integrations required across both front-end and back-end capabilities to orchestrate and operate the safety camera system and related service. This includes internal integrations across Waka Kotahi core enterprise capabilities (for example, the enterprise correspondence system, common payment service, FMIS, enterprise data warehouse, and other registers), systems (for example, with the motor vehicle register and driver licence register) and external integrations across government, partner and provider systems (for example, Police, the Ministry of Justice, RedFlex, and NZ Post).</p>
Process	Defines the processes (and related procedures, tasks and other activities) that are required across business and technology to enable the delivery of an end-to-end safety service and enabling functions that will support management and operation through into business as usual. This includes an overarching process architecture across the stages of plan and implement, operate and maintain, manage interventions (including verify and manage intervention, support customer, and manage outcomes), and evaluate performance.
Channels	Channels defines the way in which Waka Kotahi and supporting third parties engage, communicate and interact with road users/customers, partners/suppliers and other key stakeholders/groups. This includes the mix of channels required to optimise engagement, meet safety camera system and Road to Zero outcomes, and deliver an effective service. Defined channels include digital (for example, email, website, social media, and self-service), phone (for example, contact centre), face-to-face (for example, Waka Kotahi, NZ Post, other agents), broadcast (for example, media and newsletters), paper (for example, post) and physical (for example, road signage).

Area	Description
Technology, data and information	<p>Defines the technology, data and information required to be in place to support and enable the delivery of an efficient and effective safety camera system and related service.</p> <p>Technology architectures (for example, enterprise and solution architectures) are defined for both internal and third-party solutions/applications to establish an effective system that leverages technology capabilities appropriately and can be maintained within the Waka Kotahi operating context.</p> <p>Technology includes utilisation of Waka Kotahi core enterprise capabilities and systems, third-party solutions, and 'as a service' offerings.</p> <p>Data and information requirements are defined to support the safety camera system and related services delivered through Waka Kotahi and other agencies or bodies (for example, Police, the Ministry of Justice, and road controlling authorities).</p> <p>Reporting requirements (for example, dashboards and forecasting) are defined to support effective use of data in reporting on operations and road safety outcomes across Waka Kotahi and other agencies and third parties where required. This includes relevant architectures and guidelines and standards to ensure appropriate treatment (for example, collection, ingestion, management, use, and storage) of all data types and information through design, development and operation.</p>

24.3 The general approach to expanding the camera network during stage 1 is in Figure 21.

Figure 21: Approach for camera expansion, stage 1

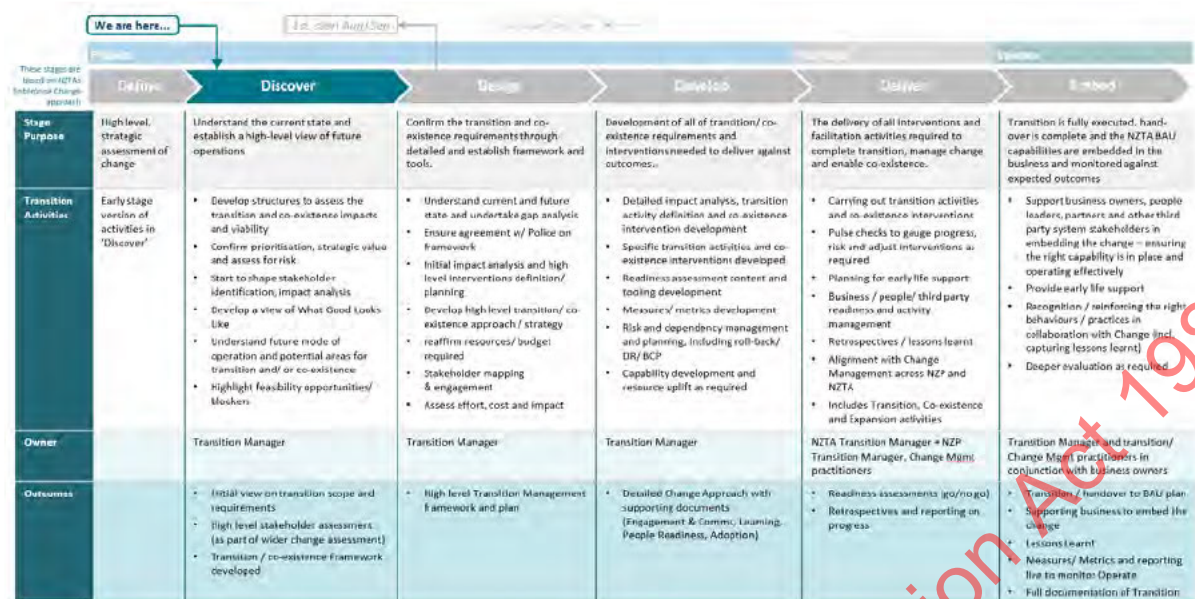


24.4 A comprehensive methodology (outlined in Appendix 20), using robust selection criteria has been developed to support the selection of camera sites on both local and highway networks. For the tentative camera locations, see Appendix 21. See also the management case, section 53.

24.5 Figure 22 outlines the proposed high level transition stages, key activities and outcomes, including the transfer from Police to Waka Kotahi and the camera network expansion.

24.6 Transferring the safety camera function in a staged approach will ensure the stability of the system while establishing the Waka Kotahi camera expansion stage.

Figure 22: Conceptual high level transition stages, key activities, and outcomes



25. Value for money of preferred option

25.1 This section sets out the benefits, costs and benefit–cost ratio (BCR) for the preferred option (Option 4).

Financial benefits of the preferred option

25.2 The economic benefits of the preferred option (Option 4) are summarised in Table 30.

25.3 The main assumption is that reduced speeds lead to fewer DSI.

Table 30: Economic benefits of the preferred option

Item	Benefit
Number of DSI savings to the society	s 9(2)(b)(ii)
Nominal DSI saving (20 years)	
Total net present value benefit	
DSI percentage reduction by 2030	4%
Improve driver behaviour and compliance	✓✓✓
Reduce emissions	✓✓✓
Improve network efficiency	✓✓✓
Improve emergency response	✓✓✓
Reduce cost avoidance	✓✓✓
Improve overall network safety	✓✓✓

Costs of the preferred option

25.4 Capital and operating costs were developed and considered through the optioneering process. Individual cost elements were broken down to the most granular level for activity-based accounting, and then rolled up with subject-matter experts. The two cost areas are the camera network and the programme and technology.

25.5 Table 31 summarises for the preferred option (Option 4) the 20-year CAPEX costs.

25.6 The total CAPEX cost is s 9(2)(b)(ii) The total expected net present value (NPV) CAPEX cost is s 9(2)(b)(ii)

Table 31: CAPEX costs – preferred option

CAPEX items	Cost (\$m)
1. Camera network costs (over 20 years)	
New camera set-up costs	s 9(2)(b)(ii)
Mobile cameras renewal costs	
Mobile camera site signage & safety costs	
2. Programme and technology costs (over 20 years)	
Programme change team costs	
CMS – vendor implementation costs	
CMS – ICT professional implementation costs	
OPS – vendor implementation costs	
OPS – ICT professional implementation costs	
Payment processing – Ministry of Justice implementation costs	
Payment processing – vendor implementation costs	
Waka Kotahi overhead	
Total CAPEX costs	
Total expected CAPEX costs (NPV)	

25.7 Operational costs have been supplied in a net present value (NPV) format, as varying costs per year due to different functions and phasing of programme implementation mean a typical yearly figure can't be provided.

25.8 NPV figures have been calculated over a 20-year period. Table 32 summarises the OPEX costs for the preferred option.

25.9 The total OPEX cost is s 9(2)(b)(ii) The total expected NPV OPEX cost is s 9(2)(b)(ii)

Table 32: OPEX costs – preferred option

OPEX items	Cost (\$m)
1. Camera network costs (20 years)	
Camera operating costs	s 9(2)(b)(ii)
Camera network costs	
Verification costs	
Enforcement costs	
Peak load penalty costs	
Infringement payment processing costs	
Calibration technology costs	

OPEX items	Cost (\$m)
2. Programme and technology costs (20 years)	
CMS – ongoing maintenance & support costs	s 9(2)(b)(ii)
OPS – ongoing maintenance & support costs	
Waka Kotahi overheads	
Total OPEX costs	
Total expected OPEX costs (NPV)	

Benefit–cost ratio for the preferred option

25.10 The BCR was calculated using the NPV total benefits and costs for the preferred option (Option 4) (see Table 33).

25.11 The BCR for the preferred option is s 9(2)(b)(ii)

Table 33: BCR – preferred option

Item	Cost
Total NPV benefits	s 9(2)(b)(ii)
Total NPV costs	
BCR	

26. Quantitative risk analysis

26.1 A quantitative risk analysis (QRA) was conducted for this DBC in July 2022.

26.2 The QRA assessed the risks to costs for the Preferred Way Forward option.

26.3 The QRA used a Monte Carlo simulation with changes to the following variables:

- total new camera volume
- percentage of red-light cameras
- rate of implementation
- camera operating costs – camera lease
- camera operating costs – non-camera lease costs
- camera set-up costs
- safety camera management system implementation costs
- infringement processing system implementation costs
- programme team costs
- people cost for verification, enforcement, and peak load.

26.4 The results of the sensitivity analysis, which tests the impact of different assumptions is in Table 34.

Table 34: Sensitivity test results on programme costs

Sensitivity	Base case (before inflation)	Base case excluding optimism bias	Mean of distributions	15th percentile (85% chance of exceeding)	85th percentile (15% chance of exceeding)
Three-year costs (current 2022–24 NLTF period)	s 9(2)(b)(ii)				
10-year costs					
Total costs (to 2040)					
NPV of total costs (to 2040)					

*As calculated at the time the QRA process took place.

27. Reconfirming investment prioritisation profile for preferred option

- 27.1 This section reconfirms the investment prioritisation profile for the preferred option (Option 4) (see Table 35).
- 27.2 Option 4 remains the preferred way forward; that is, transfer of the SCS from Police to Waka Kotahi, a new operating model, a new camera management system (CMS), a new offence processing system (OPS), and a new camera on high- to medium-risk corridors (about s 9(2)(g) by FY30) – eventual target of s 9(2)(g). In FY21–24 (stage 1) the programme intends to deliver up to s 9(2)(g) new cameras.
- 27.3 Investment prioritisation is the basis for including an activity in the NLTP. Depending on the amount of funding available for an activity class, activities with a priority order above an investment threshold in that activity class are included in the NLTP.
- 27.4 The GPS alignment for safety cameras is based on the forecast DSI reduction and the current risk of the corridors. The programme has calculated a weighted average DSI reduction for the Safety Camera programme to estimate the DSI on treated corridors and intersections, this comes out at about 28%. The DSI reduction combined with the project targeting medium-to-high and high-risk corridors gives this programme a High GPS alignment.

Table 35: Investment prioritisation profile for the preferred option

Factor	Rating
GPS alignment	High
Scheduling	High
Efficiency	Low
Priority order	5
No variances from the existing NLTP priority order	
The investment priority order of 5 is consistent with the PBC priority order of 5.	

FINANCIAL CASE

28. Outline of the financial case

- 28.1 The SCS Programme seeks s 9(2)(b)(ii) from the National Land Transport Fund (NLTF) to implement stage 1 during FY2021–24.
- 28.2 As agreed by Cabinet, the expansion will be fully funded out of the GPS for FY2021–30.
- 28.3 No funding is sought from partners for stage 1. Subsequent stages may use data from stage 1 benefits realisation to inform an evidence-based conversation with road controlling authorities about a shared funding model. This will be decided during the stage 1 review. Waka Kotahi may consider a Budget bid for future stages.
- 28.4 The financial case outlines the costs (section 30) and funding arrangements (section 34) for the preferred option (Option 4). Financial modelling assumptions are in section 32, and funding risks in section 33. This case also provides assurance that the preferred option is affordable for Waka Kotahi.

29. How the financial model was developed

- 29.1 See section 22 for an outline of how the financial model was developed.
- 29.2 Table 36 outlines the percentage of cost summarised by cost category and compares the long range 20-year view against the current funding request. It shows technology and programme team costs to establish the SCS make up 77% of the current NLTP funding request.

Table 36: Percentage of cost summarised by-cost category, 20-year view compared with current funding request

Cost category	20-year cost	Current NLTF
Camera infrastructure	40%	18%
Technology (including cameras)	46%	51%
People cost	11%	5%
Programme team	3%	26%

30. Cost of the preferred option

- 30.1 The estimated total NPV cost of the preferred option (Option 4) is s 9(2)(b)(ii) (see Table 37), and includes contingency funding.

31. Ongoing funding of safety camera operations

- 31.1 As agreed by Cabinet in the TUS Cabinet paper at the end of 2019 the expansion will be fully funded out of the GPS for FY2021–30.
- 31.2 Funding has subsequently been allocated through the RtZ Activity Class, including funding for ongoing safety camera operations for FY2021–30.
- 31.3 For Budget 2021 and Budget 2022 analysis was conducted to enable a budget bid to be submitted to secure Crown funding for ongoing safety camera operations. On both occasions the Minister of Transport declined to put forward a Budget bid. However, this remains an option for future Budgets.

Table 37: Indicative funding required – preferred option

Cost category	Three-year NLTP funding periods (\$m)						Total cost (20 yrs)
	2021–24	2025–27	2028–30	2031–33	2034–36	2037–39	
Operating costs	s 9(2)(b)(ii)						
Camera operating							
Camera network							
Verification							
Enforcement							
Peak load penalty							
Infringement payment processing							
Calibration technology							
CMS ongoing maintenance & support							
OPS ongoing maintenance & support							
Total operating costs							
Capital cost							
New camera set-up							
Mobile camera renewal							
Mobile camera site signage & safety							
Programme change team							
CMS – vendor implementation							
SCMS – ICT professional fees, implementation							
Offence processing (OPS) – vendor implementation							
OPS – ICT professional fees, implementation							
Payment processing – Ministry of Justice implementation							
Payment processing – face-to-face payment implementation							
Total capital costs							
Overhead charges (opex & capex)							
Total operating & capital costs							
Contingency adjustment							
Note: Included in total cost above							
Discount rate	4.3%	4.3%	4.3%	4.3%	4.3%	4.3%	4.3%
NPV of total costs	s 9(2)(b)(ii)						

32. Financial modelling assumptions

- 32.1 From 1 to 15 November 2021, meetings were held with key stakeholders who understand the areas of the business to agree the modelling assumptions, which are set out in Table 38.
- 32.2 A detailed estimate of whole-of-life costs for the preferred option (Option 4) is in Appendix 17.

Table 38: Main modelling assumptions

Assumptions	Driver or value	Source
Inflation	3.87% – 1.76%	Treasury forward CPI Assumption June 2022
Number of cameras per average speed corridor	3.58	Derived from subject-matter experts – Cameras and Camera Technology
Discount rate	4.3% – discount rate	Treasury long-term nominal forward discount rate
Mobile camera vehicle asset life	7 years	Current police renewal rate
FTEs required to operate mobile cameras	2.22	Current police numbers required to run two shifts per day
Base salary	\$100,000	Assumed average base salary amount
Improvement in driver compliance	60%	Derived from subject-matter experts – Cameras and Camera Technology
Efficiency gain ratio – verification	200%	Derived from subject-matter experts – Cameras and Camera Technology
Efficiency gain ratio – enforcement	15%	Derived from subject-matter experts – Cameras and Camera Technology
Technology platform asset life	8 years	Derived from subject-matter experts – Camera Technology
DSI social cost value	\$1,360,158	Te Manatū Waka Ministry of Transport

33. Funding risks

- 33.1 The financial model considers funding risks and uncertainties associated with cost estimation (see Table 39).

Table 39: Key funding risks and uncertainties associated with costs

Costs	Type	Risk
Camera system setup costs	Operational	Optimism bias adjustment of 115%
Camera system implementation	Capital	Optimism bias adjustment of 115%

34. Funding arrangements and affordability

Preferred option is affordable

- 34.1 The preferred option (Option 4) is expected to cost s 9(2)(b)(ii) over the implementation period for the 10 years 2022 to 2031. Whole-of-life costs are estimated at s 9(2)(b)(ii) over the 20 years of the expected service life of the assets.

- 34.2 The Waka Kotahi Investment and Finance team assessed the impacts of the proposal on the operating statements and balance sheet as being accurate and robust to changes in key assumptions. Appropriate contingencies have been included for risk and uncertainty.
- 34.3 The Waka Kotahi Finance team agrees that, on this basis, the **preferred option is affordable** within the NLTP cycle. A letter of commitment from the Finance team or Executive Leadership Team will be supplied on approval of this DBC.

Preferred option impact on Police

- 34.4 Police receives from the Waka Kotahi Road Safety Partnership Programme s 9(2)(b)(ii) for operating its SCS and a further s 9(2)(b)(ii) for the mobile cameras. As the Waka Kotahi SCS is implemented, the two systems will have to run in parallel for a period, which will incur additional costs temporarily. Over time, the Waka Kotahi SCS will incrementally replace the Police SCS, resulting in a ramp down of the Police need for funding. Therefore, the s 9(2)(b)(ii) per year will eventually be returned to the Road Safety Partnership Programme. This will start in year 1 and probably take two or three years before Police no longer requires funding. See Figure 23.

Figure 23: Expected profile of the ramp down in the Police Road Safety Partnership Programme appropriated spend over three years



Note: With an ongoing requirement to maintain technology (PIPS) to manage the residual infringements, it would require forecasting to determine both technology and people costs based on the SCS final solution.

- 34.5 Police currently operates safety cameras and processes the associated infringements, along with the infringements issued by about 1,000 road policing officers around NZ. These activities are funded by the National Land Transport Fund through the Road Safety Partnership Programme. Waka Kotahi commissioned PwC to perform a financial due diligence review of current Police safety camera operations to assist with current state assessments. The Due Diligence report is available on request.

COMMERCIAL CASE

35. Outline of the commercial case

- 35.1 The SCS Programme procured two main suppliers which were endorsed by the Waka Kotahi Board in April 2022, plus the programme team resources.
- Redflex will supply the cameras and the camera management system (CMS).⁷⁹
 - The offence management system vendor will provide the back-office offence processing system (OPS).
 - The programme team is resourced using a mix of Waka Kotahi permanent employees and skilled and specialist contractors acquired through various recruitment agencies and includes a consultancy partnership with PwC.
- 35.2 The commercial case outlines proposed procurement arrangements for the preferred option (Option 4). These arrangements include required services, the procurement strategy, the procurement plan, contract provisions, and potential risk allocation (sections 36–39, respectively).
- 35.3 This DBC details procurement activities for safety cameras, a CMS, and an OPS.
- 35.4 Documents referenced in the DBC are listed in the References, p 144. Waka Kotahi procurement artefacts (and their location) are listed in the Resources, p 7.

36. Required services

SCS Programme will undertake commercial activities, some of which have been approved in respective procurement plans

- 36.1 The preferred option (Option 4) requires a variety of capabilities, spanning camera hardware, technology systems, and support services to enable the establishment, management, and operation of the safety cameras and office processing functions in Waka Kotahi. Commercial requirements are summarised in Table 40.

Table 40: Commercial activities required – preferred option

Commercial capability required	Type	Activities	Status
Safety cameras	Camera technology hardware and maintenance services for IT	Safety cameras: <ul style="list-style-type: none">• average speed• fixed speed• red-light• mobile• maintenance and support services	Procurement plan approved November 2021 Redflex has been procured. Note: The following number and type of cameras have been ordered: <ul style="list-style-type: none">• 15 red-light cameras• 0 mobile cameras• 3 fixed cameras• 36 average-speed cameras

⁷⁹ Redflex website, <https://redflex.com>.

Commercial capability required	Type	Activities	Status
Mobile safety camera enforcement	Enforcement system services	Deployment hours <ul style="list-style-type: none"> vehicles and fit-out traffic camera operators 	Transfer to Waka Kotahi from Police to Waka Kotahi by FY23/24
Safety camera testing, calibration and certification	Professional service	Calibration services: <ul style="list-style-type: none"> Gazette testing of new cameras and technology calibration services camera and site certification 	To be established by the end of FY23/24
Safety camera management technology system	Technology systems and services	CMS and services: <ul style="list-style-type: none"> CMS management CMS monitoring CMS reporting CMS data processing 	Procurement plan approved November 2021 Redflex has been procured
Infringement processing technology system	Technology systems and services	OPS and services: <ul style="list-style-type: none"> OPS data entry OPS verification OPS adjudication OPS payments OPS customer services 	Procurement plan approved October 2021 Offence Management System has been procured and being negotiated
Civil engineering works (design and construction)	Physical infrastructure services	Civil engineering works: <ul style="list-style-type: none"> site designs construction construction supervisor safety audit 	Delivery arm of the Speed and Infrastructure Programme will implement
Specialist programme services	Professional service	Professional services to support delivery of SCS Programme: <ul style="list-style-type: none"> quality assurance privacy impact assessment quantitative risk assessment organisation design and operating model probity procurement programme delivery change management subject-matter expertise 	Various procurement agreements approved, depending on the service, July 2021 to December 2023

37. Procurement strategy

Procurement strategies for different commercial activities were developed, approved, and noted in respective procurement plans

- 37.1 The SCS Programme developed a procurement plan for each commercial capability required to ensure the requisite due diligence and procurement processes were undertaken to:
- meet Waka Kotahi and programme strategic fit and business need
 - meet capability and capacity required by the supplier to meet programme objectives
 - understand whole-of-life cost and contract terms
 - understand contract type
 - understand any transition period if required.
- 37.2 The commercial capabilities required for the SCS Programme were procured in accordance with the Waka Kotahi procurement policy and government rules of sourcing set out by the Ministry of Business, Innovation and Employment (illustrated in Figure 24).

Figure 24: SCS Programme procurement will apply Waka Kotahi Procurement Strategy



Why Waka Kotahi did not go to market for the cameras and camera management system

- 37.3 Waka Kotahi did not go to market for a supplier of the cameras as it was decided to novate the Police contract with Redflex to provide cameras and the CMS. The Waka Kotahi Board noted this agreement is subject to the Waka Kotahi master services agreement.
- 37.4 This decision was made because Police had been through an extensive evaluation of potential camera providers and selected Redflex. Redflex is the only provider of authorised cameras with a presence in NZ. Its cameras have been gazetted and certified for use in NZ. If this decision were to be revisited, it might cause an unacceptable delay in the rollout during FY21–24 and, therefore, the subsequent rollouts.

How the offence processing system provider was procured

- 37.5 The preferred supplier for safety camera back-office OPS will be announced shortly, negotiations are currently under way.
- 37.6 In August 2021, Te Hau Ora (the Waka Kotahi Digital Portfolio Office) conducted a strategic options analysis on key technology platforms that were under procurement or nearing selection to assess their ability to meet SCS needs. It found the tolling system provided the closest alignment of functional capabilities required for the SCS and recommended further due diligence be performed to confirm whether the tolling system could meet the SCS infringements processing requirements.

- 37.7 The tolling system vendor, Kapsch, and Redflex responded to the Waka Kotahi request for information (RFI) issued in 2021 and, while their solutions were not capable of supporting both SCS and tolling domains, they indicated they were willing to work with Waka Kotahi to provide the requisite functionality. Their responses indicated their thinking and approach to meeting the needs of both domains on their specialist platforms.
- 37.8 A due diligence process was conducted with the tolling system vendor, which involved:
- provision of detailed SCS requirements documents for each functional area to the vendor for its response and rating on ability to meet the requirements
 - interactive sessions with the vendor on each functional area to clarify requirements and understanding of both parties on the Tolling System's capability in each functional area
 - provision of requirements response and pricing by the vendor.
- 37.9 The outcome of the due diligence on the tolling system was that it can meet SCS requirements. Pricing (10-year total cost of ownership, including implementation, licensing, and ongoing operating costs) offered by the vendor to deliver an integrated tolling and SCS capability on the tolling system provided a cost-benefit of s 9(2)(b)(ii) compared with investment in separate specialist tolling and safety camera back-office processing solutions.
- 37.10 Proceeding with the tolling system means Waka Kotahi accepts that SCS requirements will be met predominantly through delivering purpose-built functionality and services rather than configuration. The architectural approach proposed by the vendor for delivering the purpose-built functionality is considered sensible for delivering current tolling and SCS needs as well as incorporating future changes.
- 37.11 Using the tolling system also means the SCS Programme introduces a risk in that if the tolling system implementation is delayed or otherwise encounters issues, the OPS implementation will be delayed. The advantages of using the tolling system makes this risk acceptable and the SCS Programme will mitigate it by staying closely informed on the tolling rollout. Early notice of any delays or issues will create a risk notification and escalation to governance. The programme will also investigate other contingencies to use a third-party provider to issue infringements and/or develop workarounds, in the event the tolling system is delayed or otherwise not available when required.
- 37.12 McHale Group was engaged to conduct a probity review of the due diligence process. It found the process was robust and noted an exemption from the Government Procurement Rules. That exemption has been approved, communicated to the Ministry of Business Innovation and Employment and the Government Chief Digital Officer and a notice has been published on the Government Electronic Tender Service (GETS).
- 37.13 A master services agreement with the Tolling System vendor has been signed.

Procurement support

- 37.14 The Enterprise Procurement team, which leads the procurement function in Waka Kotahi, supported the SCS Programme to procure the required commercial capability.
- 37.15 Table 41 summarises the procurement strategies followed for the procurement of safety cameras, the CMS, and OPS.

Table 41: Procurement strategies for safety cameras, the CMS, and the OPS

Capability	Brief description	Procurement strategy
Safety cameras and CMS	Novation of existing contracts	<p>A three-step due diligence process was used with the preferred supplier (Redflex) on advice from the Waka Kotahi Procurement and Commercial team.</p> <ul style="list-style-type: none"> • Step 1 – Review the Redflex supply contract – completed. • Step 2 – Review Police’s original procurement RFP and evaluation report – completed. • Step 3 – Undertake Redflex and SCS Programme commercial due diligence on functional and non-functional requirements – completed.
OPS	Conduct due diligence on a Waka Kotahi existing processing system; if not appropriate, undertake open market procurement	<p>The Procurement and Commercial team advised the SCS Programme to follow a two-step process.</p> <ul style="list-style-type: none"> • Step 1 – Conduct due diligence on the Waka Kotahi preferred Tolling Processing System to confirm whether it can meet SCS needs – completed. • Step 2: Undertake open market procurement – not required.

Commercial capability discussions under way will be approved through the DBC

37.16 Table 42 summarises procurement strategies that are still in negotiation, with strategic discussions occurring between the SCS Programme and internal and external stakeholders. These discussions are expected to be completed for the DBC.

Table 42: Procurement strategies being discussed

Capability	Procurement strategy
Safety camera testing, calibration, and certification	Procurement of services. An RFI is expected to be undertaken before the end of 2022.
Civil engineering work (design and construction) for safety camera installation across the country	Internal Waka Kotahi supply agreements – the SCS Programme has engaged with the Speed and Infrastructure Programme to manage all civil engineering work required for safety cameras
Specialist programme services	All-of-government commercial agreements used to procure professional services as required for quality assurance, gazetting, privacy assessment, programme management, and a change team.

38. Procurement plan

Procurement plans were approved and implemented for safety cameras, CMS, and OPS

38.1 Procurement was approved and implemented for the components of the SCS. See:

- Procurement Plan: Safety Cameras and Safety Camera Management System
- Procurement Plan: Infringements Processing System.

SCS Programme will novate Police supplier contracts for safety cameras and CMS for Waka Kotahi

38.2 Key aspects of the procurement activities for safety cameras and the CMS were as follows.

- Several suppliers exist globally for safety cameras: Redflex, Vitronic, Jenoptik, SensysGatso, and RedSpeed.
- Local buyers for safety camera services are primarily Police and Auckland Transport.
- In 2013 and 2014, Police undertook an extensive global procurement process for safety cameras and associated systems and services. This process resulted in Redflex being confirmed and contracted as its supplier of safety cameras.
- Redflex established a maintenance and support presence in NZ for the supply of its safety cameras (fixed speed, red-light, and mobile) to Police and is the only supplier at this stage. Its current models of safety cameras are gazetted as Authorised Vehicle Surveillance Equipment, which certifies them for enforcement in NZ.

38.3 The indicative timeframe for safety camera and CMS procurement milestones is in Table 43.

Table 43: Key procurement activities for safety cameras and CMS

Procurement milestone	Indicative date
Request for information issued as part of Police's Automated Compliance and Intervention Management work	(early) 2019
Joint request for information issued by Waka Kotahi for provision of CMS and/or back-office processing system that could support processing of infringements as well (OPS)	October 2020
Due diligence completed on Redflex for novation and conducted on advice from the Waka Kotahi Procurement and Commercial team	November 2020 – October 2021
Procurement plan approved for safety cameras and CMS	November 2021
Pricing schedule updated – review and update pricing schedules received from Redflex for safety cameras and CMS	November 2021
Commercial negotiations completed between Waka Kotahi and Redflex	February to September 2022
Contracts established and signed – master services agreement signed to establish contract with Redflex	October 2022

SCS Programme conducted due diligence on the preferred Tolling Processing System to assess its fit for purpose

38.4 Table 44 highlights key commercial activities the SCS Programme undertook to assess whether the Tolling Processing System could be used for the OPS and the indicative due diligence timeline.

Table 44: OPS due diligence timeline

Action	Indicative date
Stage 1 – High-level due diligence	
High-level due diligence on preferred tolling processing system	October 2021
High-level due diligence outcome approved <i>If no roadblocks, proceed with Stage 2 otherwise proceed with open market pre-procurement activities</i>	October 2021

Action	Indicative date
Stage 2 – Detailed-level due diligence	
Detailed-level due diligence on preferred Tolling Processing System	November–December 2021
Detailed-level due diligence outcome approved (tolling solution meets SCS requirements – proceed with joint commercial negotiations)	December 2021
Commercial negotiations – joint Tolling and SCS	September 2021 – April 2022
Contract signed:	
• master services agreement	June 2022
• tolling statements of work	June 2022
• SCS statements of work	December 2022
Open market pre-procurement actions	
PwC engaged to support development of a request for proposal	November–December 2021
Probity auditor engaged	
Request for proposal prepared	

39. Contract provisions

Waka Kotahi contractual terms will minimise programme administration costs and time

- 39.1 Copies of the Redflex and Offence Management System vendor contracts are available of request. They include a description of how design, implementation, and ongoing risks will be shared between Waka Kotahi and the supplier.
- 39.2 Standard contractual terms will be used where possible to take advantage of market familiarity and to minimise programme administration costs and time. The main contract provisions for safety cameras and the CMS are in Table 45 and for the OPS in Table 46.

Table 45: Main contract provisions – safety cameras and CMS

Main contractual provision	Description
Duration of contract	s 9(2)(i)
Right of renewal	2 rights of renewal of 2 + 2 years (that is, completion in October 2027)
Total contract term	2 + 2 + 2 = 6 years (including renewals completion in October 2027) The initial term was 6 years but when the relationship is transferred to Waka Kotahi, the remaining initial term will be 2 years so that the total contract term will be about 6 years, including renewal
Contract	Novation – where the relationship transfers subject to amended terms from Police to Waka Kotahi
Service provider	Redflex
Procuring authority	Waka Kotahi, Digital & Workspace
Payment	CMS will follow Payment Car Industry compliance and be organised by the Waka Kotahi Finance team

Main contractual provision	Description
Contract variation and review	Contract review will be agreed between Waka Kotahi and supplier but can include – monthly and quarterly service level agreements and key performance indicators discussion Contract variation (which includes prices increase) will be conducted in writing only once an agreement has been reached between both parties
Intellectual property	Information risk is considered high for this implementation, and the SCS Programme will work closely with the Digital and Workspace security team for inputs into the implementation of this capability
Compliance	Supplier must meet all the required compliance set out in the Procurement plan

Table 46: Main contract provisions – OPS

Main contractual provision	Description
Duration of contract	Initial term is 5 years, commencing in April 2022
Right of renewal	Two rights of renewal of 3 + 2 years
Total contract term	5 + 3 + 2 = 10 years (including renewals) with dates (potentially) aligned to joint Tolling and SCS needs
Contract	Contract template master services agreement – ICT with statement of work to cover build, the service, and ongoing support
Service provider	OPS vendor
Procuring authority	Waka Kotahi, Digital & Workspace
Payment	OPS will follow Payment Car Industry compliance and be organised by the Waka Kotahi Finance team
Contract variation and review	Contract review will be agreed between Waka Kotahi and supplier but can include – monthly and quarterly service level agreements and key performance indicator discussion Contract variation (which include prices increase) will be conducted in writing only once an agreement has been reached between both parties
Intellectual property	Information risk is considered high for this implementation, and SCS Programme will work closely with the Digital and Workspace Security team for inputs into the implementation of this capability
Compliance	Supplier must meet all the required compliance set out in the procurement plan

40. Risk allocation

Commercial risks have been considered and will be mitigated

- 40.1 Risks and mitigation actions have been mapped out in the respective procurement plans and will be managed in accordance with the Waka Kotahi risk framework. This framework is used to assess the level of risk to Waka Kotahi of known and perceived risks to the procurement.
- 40.2 Waka Kotahi has developed a standard table to provide guidance on the allocation of risks (see Table 47).

40.3 The risks in Table 47 do not supersede risks identified under any Conditions of Contract. Where a conflict of meaning or ambiguity exists around risk allocation, the Conditions of Contract have precedence.

Table 47: SCS commercial – risk allocation

Risk	Risk description	Principal retains risk	Supplier retains risk	Comment
Requirements & architecture not adequately defined	<p>If requirements and architecture are not adequately defined, then:</p> <ul style="list-style-type: none"> the selected solution will not deliver required functional and technical capabilities the solution will not be properly configured, leading to operational issues solution delivery will not meet business acceptance criteria 	✓		The principal is responsible for defining requirements and architecture to enable the supplier to understand the functional and technical capabilities required and to deliver a solution configured to meet business requirements.
Supplier implementation delivery does not meet agreed stage gates or acceptance criteria	<p>If supplier implementation delivery does not meet agreed stage gates, then cost and timeframe overruns will occur</p> <p>If supplier implementation delivery does not meet agreed acceptance criteria, then cost and timeframe overruns will occur</p>	✓	✓	Both the principal and supplier retain risk in respect to their accountabilities in enabling agreed stage gates to be met.
Agreed service levels are not met	If supplier does not deliver to agreed service levels, then there will be an impact on principal's business operations		✓	The supplier is responsible for the delivered solution and services meeting agreed service levels.
Agreed warranty conditions are not met	If supplier does not address issues with delivered solution after the solution is operationalised during the agreed warranty period and its conditions, then there will be a large operational impact		✓	The supplier retains the risk to resolve issues with the solution after it is operationalised under an agreed warranty period.

Risk	Risk description	Principal retains risk	Supplier retains risk	Comment
Security and/or privacy is breached	If supplier does not implement adequate security controls and/or processes, then that can lead to loss of information and privacy breaches	✓	✓	The supplier is responsible for ensuring appropriate security procedures and controls are in place within the domains under its management to protect the principal's information.
Intellectual property is not protected	If intellectual property is not appropriately protected, then this can lead to loss of capability	✓	✓	The principal and supplier retain risk to ensure management of intellectual property is agreed and protection mechanisms are in place.

41. Monitoring provider performance

- 41.1 The master services agreement outlines the monitoring and performance agreement and is available on request.

MANAGEMENT CASE

42. Outline of the management case

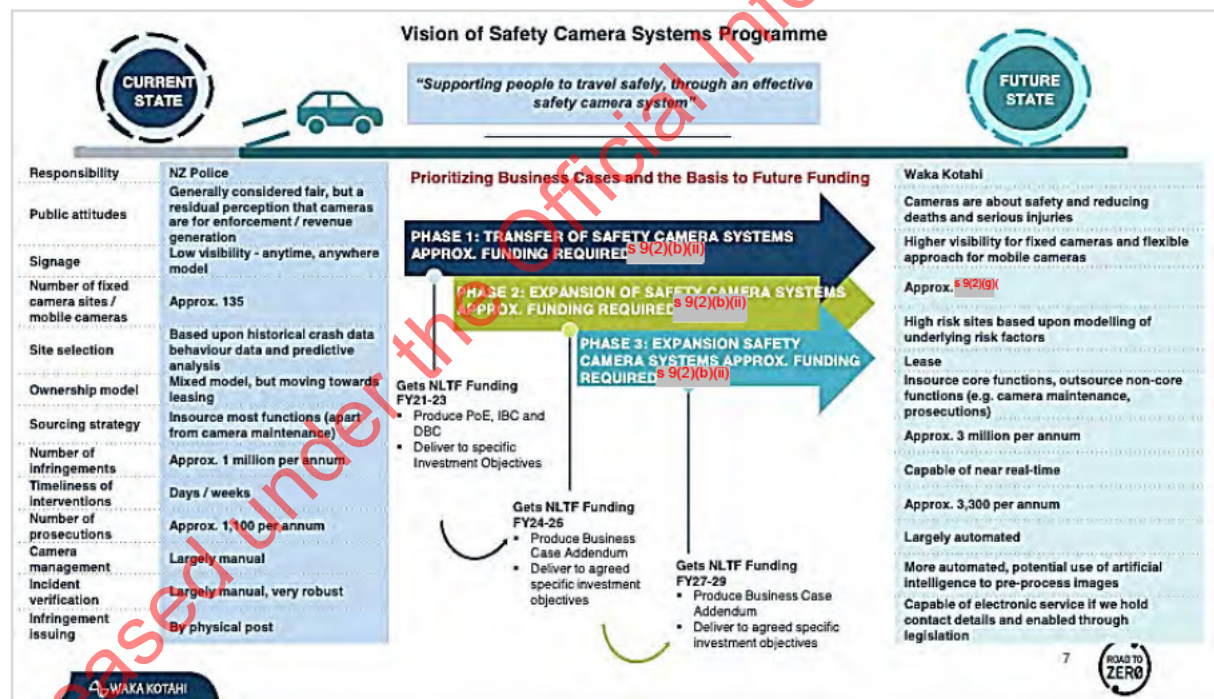
42.1 The management case describes the arrangements that will be put in place to successfully deliver the preferred option for the safety camera system (SCS) and manage programme risks. Its focus is on stage 1 of the SCS Programme, which runs from 2021/22 to 2023/24 (FY21–24).

43. SCS Programme will deliver an effective SCS to help people travel safely

43.1 The programme's purpose is to 'reduce speeding and lower overall mean speeds, through an effective safety camera system'. The programme will achieve this by shifting the current state SCS with Police to a new future state in Waka Kotahi that includes investment in new cameras and the back office to support safety camera functions (see Figure 25).

43.2 New technology assets will be produced, and new people roles will be created to manage the new processes with those assets. The new people roles will be distributed throughout the existing Waka Kotahi current organisational structure. A new unit will not be created. The actual distribution of the people is yet to be confirmed and has a dependency on the detailed design which is part of stage 1 FY21–24 activities.

Figure 25: Current state and future vision of the SCS



44. Governance arrangements

44.1 Governance of the SCS Programme is through the SCS Programme Steering Committee, Road Safety Partnership Programme Governance Group, Road to Zero Executive Sub-committee (ESC), and Waka Kotahi Executive Leadership Team (as illustrated in Figure 27).

44.2 Programme governance is the oversight function that aligns with the Waka Kotahi operating model and encompasses the full programme and project life cycle.

44.3 Programme governance focuses on two critical elements.

- **Alignment with Waka Kotahi strategic and investment objectives** is defined in the Programme Definition Document and Blueprint, which sets out the programme and workstream governance framework, roles and responsibilities, and stakeholder engagement and communication.
- **Longevity, monitoring, and controlling of the governance plan** are elements that come to fruition during the programme life cycle. The Programme Director in collaboration with workstream leads will monitor and control the different parts of the programme and their needs through regular meetings, risk and issue management, assurance reviews, and reviews of programme management and control processes.

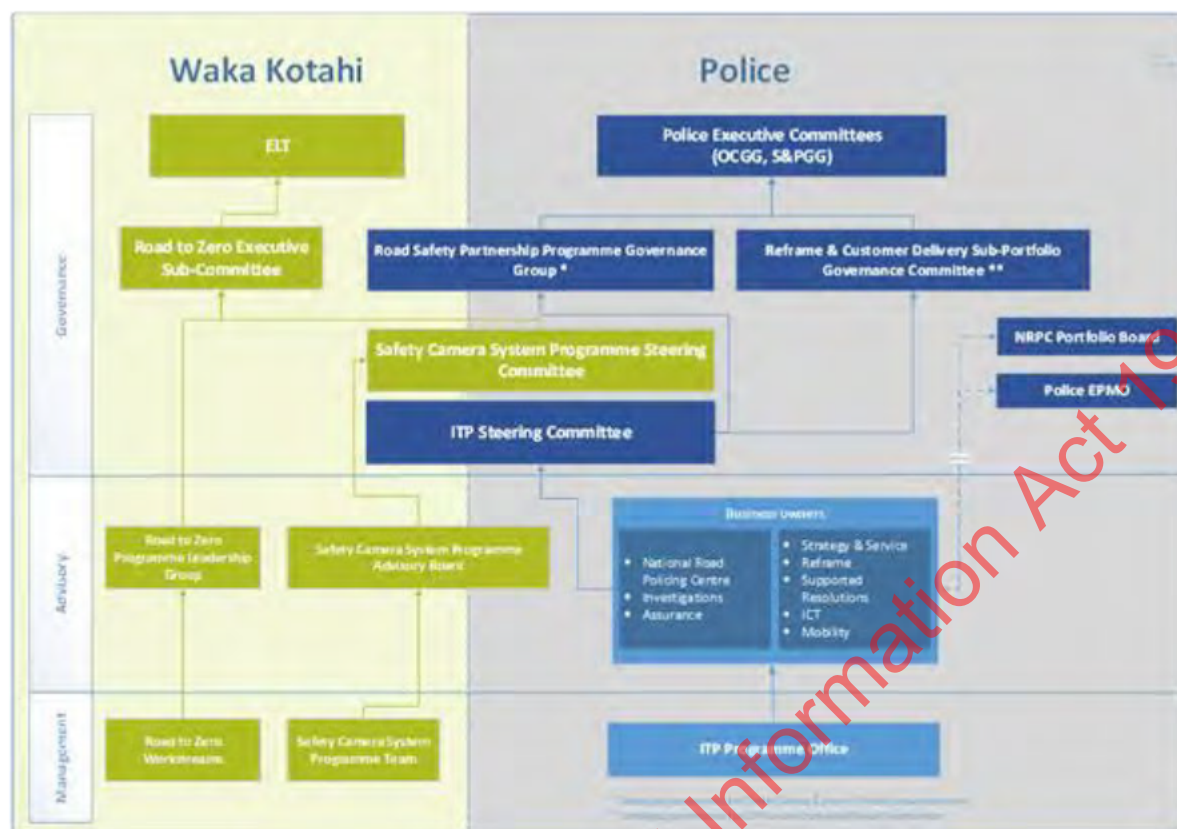
44.4 Programme governance follows the Waka Kotahi Programme Management Framework and is consistent with the Enterprise Portfolio Management Office methodology. Figure 26 illustrates the components of governance that have been endorsed through programme artefacts, such as the Programme Definition Document.

Figure 26: Endorsed components of SCS Programme governance



44.5 The governance bodies provide different inputs and expertise to ensure the programme delivers its overall objective. The governance structure is illustrated in Figure 27.

Figure 27: SCS Programme governance, management, and advisory levels



44.6 The Road to Zero ESC is the sponsoring sub-committee and the forum that resolves portfolio-level risks and issues affecting the implementation of the Road to Zero strategy. It oversees the progress of the development and implementation of the Road to Zero portfolio. Road to Zero ESC membership is in Table 48.

Table 48: Road to Zero ESC roles and members

Role	Member
Chair	General Manager, Engagement and Partnership
Member, Waka Kotahi	Director of Land Transport
	General Manager, Safety Health & Environment
	General Manager, Transport Services
	Director, Office of the Chief Executive
Member, NZ Police	Deputy Chief Executive, Insights and Deployment
Member, Tangata Whenua	TBC
Subject-matter expert	Chief Financial Officer
	Portfolio Manager, Road to Zero
	Senior Manager, Road Safety

44.7 The Programme Steering Committee is chaired by the Business Owner, under authority delegated by the Sponsor (the General Manager Regulatory Services and Director Land Transport). It is responsible for the successful introduction of the SCS into Waka Kotahi and ensuring the system delivers the agreed business benefits. It acts as a forum to resolve issues and risks that impact on the programme. The committee's membership is in Table 49. For more information, see the Programme Steering Committee Terms of Reference.

- 44.8 It is proposed to establish a **Māori Advisory Group** at the SCS Programme governance level to provide advice to the Programme's Business Owner and Sponsor on matters relating to Māori and SCS.

Table 49: Programme Steering Committee roles and responsibilities

Role	Member
Business Owner and Chair	Deputy Director of Land Transport
Member, Waka Kotahi	Principal Advisor Māori
NZ Police Sponsor	Assistant Commissioner, Deployment & Road Policing
NZ Police Business Owner	Co-Director, Road Safety Partnership
Waka Kotahi Senior Supplier (Technology)	Strategic Technology Portfolio Lead
Member, Waka Kotahi	Senior Manager, Road Safety

- 44.9 The **Road Safety Partnership Programme Governance Group** is jointly chaired by the National Manager: Road Policing (Police) and Senior Manager: Road Safety (Waka Kotahi) on an alternating basis. The group's purpose is to ensure Waka Kotahi and Police work in partnership to deliver the Road Safety Partnership Programme, directly contributing to the targeted 40% reduction in road DSIs.
- 44.10 The **Programme Advisory Board's** purpose is to get 'the right people' together to ensure an appropriate variety of perspectives is considered, particularly, people who are likely to be involved in or have experience relevant to the operation of safety cameras and the processing of offences. The Programme Director chairs this board. It doesn't have decision-making authority but advises the Programme Steering Committee on key deliverables and decisions. Membership of this board is in Table 50. For more information, see the Programme Advisory Board Terms of Reference.

Table 50: Programme Advisory Board membership

Group	Role
SCS Programme (Chair)	Programme Director, Safety Camera System
Corporate Support	Manager, Business Operations
	Financial Services Analyst
	Principal Counsel
	Geospatial manager
Member, Tangata Whenua	Pou Arahī, Te Mātangi (Te Waka Kōtuia Engagement and Partnerships)
Engagement and Partnership	Practice Manager, Communications and Engagement Regional Māori Advisor
People	Manager, Business Partnering
Te Waeture Regulatory Services	Senior Manager, Customer Services
	Principal Intelligence Advisor
	Manager, Network Safety
	Manager, Debt Management
Chief of Staff Office	Principal Advisor, Road User Choices
	Lead Advisor, Road Policing

Group	Role
Transport Services	Lead Advisor Safety, Programme and Standards
	Team Lead, Safety Engineers
	Lead Advisor, Urban Transport Manager, System and Safety Performance
Te Aukaha Digital	Product Manager, Transport Technology Operation and Management
	Principal Advisor, Land Transport Security
New Zealand Police	Portfolio Manager, Infringements Transformation Programme
	Manager, Police Infringements Bureau

45. Inclusion of tangata whenua in the safety camera system

45.1 SCS governance will implement Te Ara Kotahi, our Māori Strategy, in the following ways.

- A proposed Māori advisory group at SCS Programme governance level will advise the programme's business owner and sponsor on matters relating to Māori and the SCS.
- Te Mātangi and regional engagements with iwi, hapū and Māori organisations will embed and enable the expansion of the SCS network.
- An internal working group will be established of Waka Kotahi staff to recruit specialist roles and identify the need for other external expertise, support those roles, explore the need for permanent roles to enable the expansion and evolution of the SCS network, and ensure connections with Māori road safety developments across the transport sector.
- Specific specialist roles will be created in the SCS Programme to introduce and embed te ao Māori through each workstream.
- Contributions to and participation in the review of the Road to Zero Portfolio and programmes from the perspective of te ao Māori will identify opportunities to partner with Māori to improve road safety outcomes for Māori.

46. Programme team and work delivery structure

46.1 The Programme Director is responsible for the successful delivery of SCS Programme outputs to achieve its objectives and milestones. They are supported by a Programme Support Office, workstream leads, and a variety of subject-matter experts and advisors from across the ecosystem.

46.2 The programme employs a team of professional programme and project managers (as workstream leads), change managers, business analysts, business architects, and other specialists. SCS staff are listed by role in Table 52. For more information, see the Programme Definition Document.

46.3 The programme works collaboratively with the business to ensure Waka Kotahi and Partners work within an integrated system.

46.4 Figure 28 shows the work delivery structure for the SCS Programme. The programme uses a People, Process and Technology framework to manage work activity. For additional detail about the programme and workstreams, see the Programme Definition Document.

Figure 28: SCS Programme work delivery structure



46.5 Table 51 provides a high-level overview of the programme's delivery structure and role of each workstream (see also Appendix 22). For additional detail about the programme and workstreams, see the Programme Definition Document.

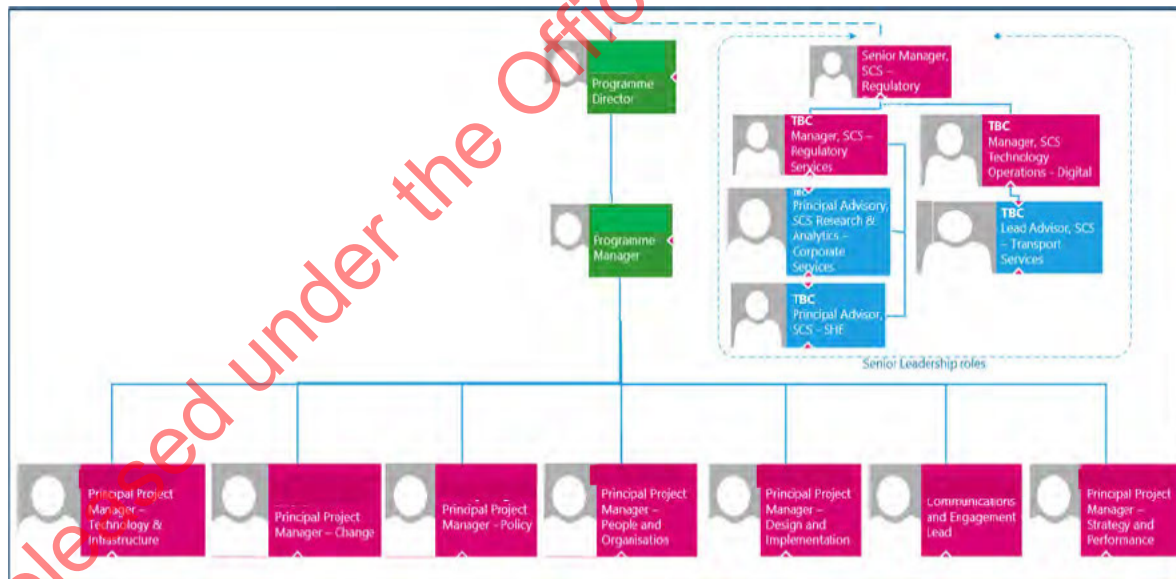
Table 51: SCS Programme workstreams overview

Workstream	Role
Design and Implementation	<p>Is tasked with determining the future state based on the business requirements.</p> <p>Aims to define each process, policy, and procedure that will be required to successfully operate the SCS at Waka Kotahi.</p> <p>Is responsible for all aspects of the design up to user acceptance testing where it will confirm initial business requirements have been met.</p>
People and Organisation	<p>Is responsible for ensuring the right organisational design, structure, and capabilities are in place to manage the people related aspects of the SCS transition from Police to Waka Kotahi.</p> <p>Focuses on ensuring the right people, capability, people process, and practices are in place to ensure a seamless transition.</p>
Change and Transition	<p>Is responsible for ensuring the organisation is ready for change and has change strategy, organisation impact, business readiness and transition management in place.</p>
Communication and Engagement	<p>Is responsible for ensuring correct communication and engagement are being conducted out of the programme to support Waka Kotahi and wider government. Includes developing the communication and engagement strategy, communication framework, and internal and external communications and awareness campaigns.</p>

Workstream	Role
Technology and Infrastructure	<p>Is tasked with providing the technology required to transfer the safety camera and offence processing operations from Police to Waka Kotahi. Police's technology systems supporting these functions are end of life, so Waka Kotahi needs to replace them with modern, fit-for-purpose technology systems and services that can effectively support these functions in Waka Kotahi into the future.</p> <p>In addition, a sub-stream – Camera Network Transition & Expansion – will be tasked with transitioning and expanding the existing cameras and operations from Police to Waka Kotahi. This is a major component of the SCS Programme. It will rely heavily on the technology selected and implemented by Technology and Infrastructure; the process, policy, and procedure changes defined by Design and Implementation; and the people plans led by People and Organisation.</p>
Policy	Deals with legislation, policy frameworks, operational policy, privacy, memoranda of understanding
Strategy and Performance	Provides the overall strategy (the 'why') and framework (the 'how') for overall programme delivery. Is an enabler for the programme to outline strategy, get investments, and deliver towards benefits?

- 46.6 The programme's senior management team structure is shown in Figure 29. The programme's structure is based on good practice functional representation of work areas. The programme is confident the planned outputs for stage 1 be achieved with the planned resources.

Figure 29: Programme team senior management



- 46.7 Key roles and responsibilities identified for different workstreams so leads and analysts can work efficiently towards their milestones are outlined below
- 46.8 The senior roles delivering this programme and their responsibilities are summarised in Table 52. For more details, see the Programme Definition Document.

Table 52: SCS Programme structure – roles and accountabilities

Role	Accountability
Programme Sponsor – General Manager of Regulatory Services and Director of Land Transport	Owns the strategic alignment of the change and the investment. Is accountable for ensuring: <ul style="list-style-type: none"> workstreams and programmes deliver on the planned SCS benefits delivery of the initiative.
Business Owner – Deputy Director, Land Transport	Makes sure the programme is aligned to Waka Kotahi outcomes and investment objectives. Supports securing funding from the Sponsor. Champions the SCS Programme to wider stakeholder group. Assembles the senior programme team.
Programme Director, Safety Camera Systems	Manages programme interaction with governance and advisory groups. Takes the Sponsor and Business Owner's vision and coordinates the work to give effect to it. Maps out the work required to each milestone with workstream leads and finds the right people to do it. Plans for capacity, dependency, risks, and mitigations. Oversees week-by-week planning of work.
Programme Manager, Safety Camera Systems	Takes lead from Programme Director in organising programme vision and coordinating activities with different workstream leads. Creates a detailed activity and milestone map for different workstreams, which feed into a plan on page for the Programme Director. Organises workload planning with different workstream leads. Manages day-to-day risk of the programme.
Strategy & Performance workstream lead	Is accountable for the: <ul style="list-style-type: none"> programme vision programme blueprint programme framework programme business case programme benefit management plan operating model design.
Design & Implementation workstream lead	Is accountable for: <ul style="list-style-type: none"> business process design service design customer experience operational policy and procedures subject-matter expertise.
Technology & Infrastructure workstream lead	Is accountable for: <ul style="list-style-type: none"> camera hardware and infrastructure the camera management system the offence processing system business intelligence.

Role	Accountability
People & Organisation workstream lead	Is accountable for: <ul style="list-style-type: none"> human resources organisation design workforce transition recruitment learning and development.
Camera Network Transition & Expansion workstream lead	Is accountable for: <ul style="list-style-type: none"> the transfer of existing cameras from Police the expansion of new cameras the management of operations of new and existing cameras supporting implementation of technology supporting design of process and policy.
Change & Transition workstream lead	Is accountable for: <ul style="list-style-type: none"> change strategy organisation impact assessment business readiness transition management.
Communication & Engagement workstream lead	Is accountable for: <ul style="list-style-type: none"> the communications and engagement framework internal and external communications awareness campaigns.
Policy	Is accountable for: <ul style="list-style-type: none"> legislation policy frameworks operational policy privacy memoranda of understanding.
Enablers workstream	Contains individual subject-matter experts who support the programme, including in the areas of: <ul style="list-style-type: none"> legal finance risk assurance.

47. Reporting arrangements

SCS Programme and its workstreams will report to governance at different frequencies

47.1 Programme-level reporting is as follows.

- Every month, each workstream lead completes a status report in Waka Kotahi system PlanView.
- Every month, workstream status reports are consolidated into a programme report that is presented to the Road to Zero ESC.
- Every month, the Road to Zero ESC programme report is modified and reused for the Programme Steering Committee and Regulatory Executive Steering Committee.

Governance and advisory groups will receive programme reports during different times of the month

- 47.2 The sequence of reporting to different governance and advisory groups for decision-making and escalating risks and issues is in Table 53. This is endorsed in the SCS Programme Definition Document.

Table 53: Reporting arrangements for SCS governance and advisory groups

Reporting group	Reporting date (cycle)
Programme Advisory Board	Reports every second week of the month
Programme Steering Committee	Reports every third week of the month
Road to Zero ESC	Reports every fourth week of the month
Waka Kotahi Executive Leadership Team	Reports every week

48. Management strategy, framework, and methodologies

SCS Programme will follow the Waka Kotahi Enterprise Portfolio Management Office methodology, which aligns with best practice programme and project management

- 48.1 The SCS Programme will use Agile programme management (AgilePgM),⁸⁰ Managing Successful Programmes (MSP), Agile project management (AgilePM),⁸¹ and PRINCE2, as appropriate for the different workstreams.
- 48.2 The SCS Programme will also ensure it aligns with the Waka Kotahi programme management framework and be consistent with both the infrastructure project methodology (as an NLTP-funded programme) and the technology project methodology (with architecture and design approval stage gates and so on).
- 48.3 The programme will also follow the requirements of the Enterprise Portfolio Management Office and Waka Kotahi change management practice.

49. Integration with other Road to Zero initiatives

- 49.1 The risk analysis shows a dependency on activities and interventions outside the SCS Programme, but part of the wider Road to Zero Programme. To ensure the success of all initiatives, the SCS team will have a dependency management role. This will sit with an individual on the team, but it is yet to be decided whether it will be a single role or part of another function such as change management.

50. Speed and Infrastructure Programme (SIP)

- 50.1 The SCS Programme is integrated with the SIP programme, specifically the SIP workplan. The SIP Programme is preparing its business case for the FY24-27 NLTF cycle. The SCS Programme will develop its next detailed business case at the same time to ensure the Programmes are aligned and to provide an integrated view.
- 50.2 The purpose of SIP is to ensure that Safe System principles are at the forefront of all projects to ensure that every effort is taken to achieve the greatest Safe System alignment possible as part of the development and implementation of speed and infrastructure interventions on the transport network. This is to ensure that each project contributes sufficiently to the outcomes sought by the speed and infrastructure programme.

⁸⁰ APMG International. 2022. [Agile programme management \(AgilePgM\)](#) (webpage).

⁸¹ APMG International. 2022. [Agile project management \(AgilePM\)](#) (webpage).

51. Stakeholder engagement approach

- 51.1 The SCS Programme has developed five important stakeholder engagement artefacts: the Communications and Engagement Strategy, Change Management Strategy, Stakeholder Management Approach, the Stakeholder List and the Stakeholder Engagement Guide.
- 51.2 The SCS Programme is developing a stakeholder management plan that will detail specific actions and strategies in managing key stakeholders, both internal and external. The stakeholder management plan will cover the level of interaction at a high level and current management of key stakeholders. For more details, see SCS Programme Communications and Engagement Strategy, Programme Internal Communications and Engagement Framework, and SCS Stakeholder Engagement.
- 51.3 Key stakeholders that are crucial to the success of this programme, include, but are not limited to Police, Ministry of Transport, E Tū, Public Service Association, New Zealand Police Association, road controlling authorities, as well as local iwi and communities. The SCS Programme will engage with key stakeholders regularly in a cadence observed in the Stakeholder Management Plan. For more details, see SCS Programme Stakeholder Engagement. Stakeholder analysis and interaction is illustrated in Figure 30.

Figure 30: Stakeholder engagement interaction matrix

Classification	Values		
Manage closely	Critical Influence + Low Interest/Involvement	Critical Influence + Medium Interest/Involvement	Critical Influence + High Interest/Involvement
Keep satisfied	High Influence + Low Interest/Involvement	High Influence + Medium Interest/Involvement	High Influence + High Interest/Involvement
Keep informed	Medium Influence + Low Interest/Involvement	Medium Influence + Medium Interest/Involvement	Medium Influence + High Interest/Involvement
Monitor	Low Influence + Low Interest/Involvement	Low Influence + Medium Interest/Involvement	Low Influence + High Interest/Involvement
Monitor	No Current Involvement + Low Interest/Involvement	No Current Involvement + Medium Interest/Involvement	No Current Involvement + High Interest/Involvement

- 51.4 The Communications and Engagement Strategy notes the communication principles the SCS Programme must follow in all stakeholder interactions (see Figure 31).

Figure 31: SCS Programme's communication principles



51.5 The stakeholder management approach, stakeholder list and engagement guide outline our overall approach to understanding who our key stakeholders are and indicate for each key stakeholder group:

- the purpose of our engagement with them
- our engagement strategy, using the International Association of Public Participation (IAP2) guidelines (see Table 54)
- other programmes we need to align our communications and engagement plans with
- our communications and engagement plan.

51.6 Programmes with which we need to align communications and engagement plans are Road to Zero, Speed Management, Speed Infrastructure, State Highway Speed Management Plan, Driver Licensing, Low Emission Vehicles, Waste Impact of Electric Vehicles, and Weigh Right.

Table 54: IAP2 guidelines for stakeholder engagement

Degree of stakeholder dialogue and engagement				
1. EMPOWER	2. COLLABORATE	3. INVOLVE	4. CONSULT	5. INFORM
Purpose	Purpose	Purpose	Purpose	Purpose
To place final decision making in the hands of stakeholders	To collaborate with stakeholders as partners throughout the process including in the analyses and development of solutions, and in making decisions	To work directly with stakeholders throughout the process to ensure that their concerns and views are consistently understood and considered	To obtain feedback from stakeholders on the findings of analyses, options and/or decisions	To provide stakeholders with balanced and objective information to assist them in understanding the case for change, opportunities and solutions.
Promise to stakeholders	Promise to stakeholders	Promise to stakeholders	Promise to stakeholders	Promise to stakeholders
We will support you in reaching a consensus and will implement what you decide	We will give an important place to your views and experiences during the process, and will seek your suggestions and advice on solutions. We will take your views into account in the final decision, to the maximum extent possible	We will work with you to ensure that your concerns and views are directly reflected in the analysis and in the solutions developed, and we will provide feedback on how your inputs influenced the final decision.	We will keep you informed, will listen to your views and will provide feedback when the decisions are made (but we do not guarantee that your views will influence the decision)	We will keep you informed (but we will not proactively find out your views to take these into account in any decisions).
Example of techniques	Example of techniques	Example of techniques	Example of techniques	Example of techniques
Individual meetings	Stakeholder advisory groups	Workshops	Focus groups	Newsletters
Regular updates	Consensus-building	Targeted polling	Surveys	OurSpace
	Co-design		Stakeholder meetings	Information Sessions
Feedback	Feedback	Feedback	Feedback	Feedback

52. Implementation approach for stage 1, FY21–24

52.1 The SCS Programme remains committed to delivering the preferred way forward (Option 4).

52.2 An implementation team that includes leadership expertise in programme directing and management has already been formed and is supported by expertise in

- technology and infrastructure, change, policy, people and organisation design, system design and implementation
- communications, engagement, strategy and performance.

52.3 This team has now been working together well for months and have intense quarterly planning sessions together to ensure cohesiveness, clarity of purpose, connectedness and confidence of success remains high and visible to everyone. It can be said that everyone in the team knows in detail what they need to do each quarter and how they impact the work of other team members, and how the outputs of other team members may impact their work.

52.4 Our macro approach to implementation has not changed since the IBC was approved, with a preference to avoid a “big bang” and control volumes through a staged introduction of services, technology and infrastructure into the Waka Kotahi environment.

52.5 The SCS Programme work plan remains highly concurrent and, since the IBC was approved, some key planning assumptions from the high-level design phase has not played-out as anticipated, including:

- our communications and engagement plan
- delays completing high level design along with an extended backlog of unresolved design items carried into detailed design

- delayed commencement of the detailed design phase due to a full-programme pivot to agile delivery tools and techniques to undertake the remainder of design utilising cross-functional squads
- delays to the delivery of safety camera hardware due to supply chain impacts of COVID-19 and the war in Ukraine
- concerns raised by Police and the Police Association about the timing of detailed organisation design consultation
- delays signing contracts with technology suppliers due to the complexity of arrangements and prolonged negotiations
- delays to the Regulatory System (Transport) Amendment Bill 2, which is required to be enacted to enable enforcement of average-speed cameras.

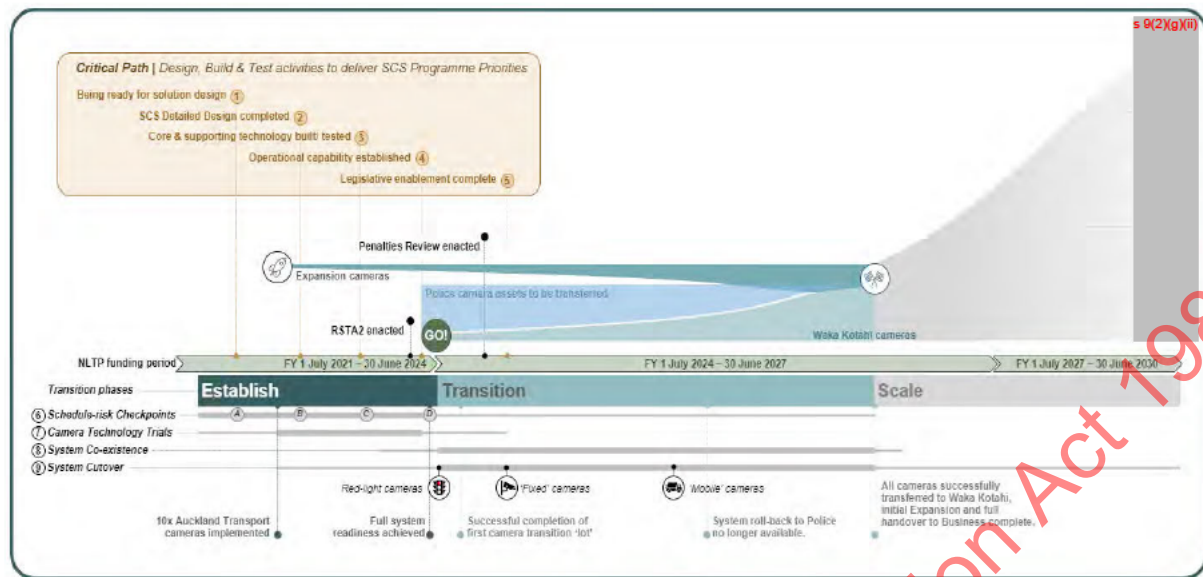
Tāmaki Makaurau Acceleration project

- 52.6 In parallel, there is an increasing need to explore opportunities that enable the programme to accelerate the initiation of DSI benefits, potentially through targeted initiatives that may be delivered in parallel with system design and build activities.
- 52.7 The first of these to be implemented is the Tāmaki Makaurau Acceleration project, and a framework is in place to explore other potential initiative opportunities and implement them where viable, feasible and desirable.
- 52.8 Baseline results so far show that all selected sites have captured vehicles traveling over the speed limit. The lowest site was 16% of vehicles were travelling over the speed limit and the highest was 73%. Most sites sat between 30-40% of vehicles were speeding. This result provides confidence that site selection process is doing a good job so far at selecting potential sites.

Delivery assurance

- 52.9 There will be a need to develop and deliver Trials prior to implementation/ go-live, however, that will enable Waka Kotahi to establish assurance that the core systems and the new point-to-point camera assets are able to perform as designed and required (may include Red-light/Speed cameras). Trials will include clinical, closed-environment and potentially road-side or real-world Trials. These Trials may require support from third parties, where system dependencies exist, and from New Zealand Police where Trial may be established to support system testing of older generation cameras.
- 52.10 Figure 32 represents the SCS Programme's approach, critical path, timeline, and milestones to a staged implementation. The model accounts for the transition of SCS accountabilities and any agreed roles and camera assets from Police to Waka Kotahi and the Expansion of the safety camera network through Waka Kotahi's new camera assets.
- 52.11 The figure shows that the SCS detailed design phase and the camera technology build, test and trials will take place in 2023 and through into early 2024. Operational capability will be established concurrently to the detailed design, build and test phases. The full system will be ready to go live no later than 30 June 2024. The Police transfer will start from 1 July 2024.
- 52.12 A period of 'co-existence' (potentially across people, processes, technology, and information) is expected through the 'Transition' period from Police to Waka Kotahi.

Figure 32: Implementation approach and milestones



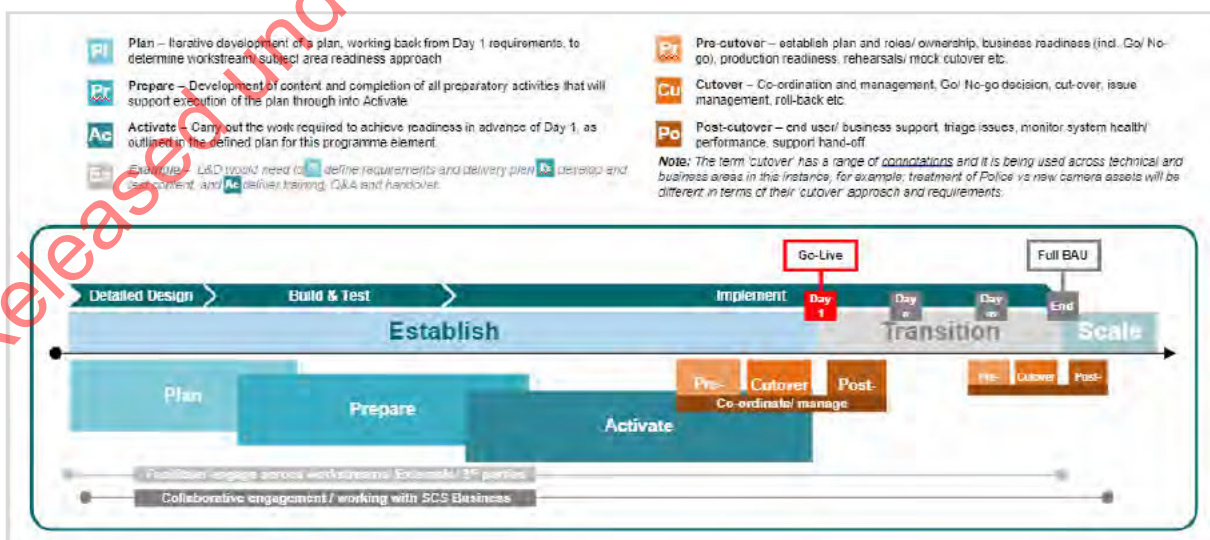
52.13 A period of 'co-existence' will be agreed with Police once the Detailed Design has been completed, (potentially across people, processes, technology, and information) is expected through the 'Transition' period from Police to Waka Kotahi. Figure 33 indicates when the transition will begin and end with ability to scale further and works backwards from the point at which the cameras can be activated on the Waka Kotahi Safety Camera System. Figure 33 also shows the process steps of Plan, Prepare, Activate, Pre-cutover, Cutover and Post-cutover.

52.14 Working backwards from the point at which safety cameras can be achieved on the Waka Kotahi safety camera system, Figure 33 shows the preplanning and preparation prior to transition starting from go-live day 1.

Programme implementation with transition lens

52.15 Figure 33 shows how the SCS programme will first establish the programme outputs and then transition into their use before continuing with scaling out the capability.

Figure 33: Transition



- 52.16 The SCS Programme is committed to safely delivering an effective and fully functional safety camera system that supports modern camera technology, and existing camera assets to be transferred from Police, and is designed to support future innovations, capabilities and scalability that enable safety camera and road safety outcomes.
- 52.17 The SCS programme, with support from Waka Kotahi business functions that include Māori advisors, will design, develop and establish a complete set of capabilities required to effectively operate and manage the SCS. This means the following.
- **Waka Kotahi has the ability to deliver all education, engagement and enforcement** activities associated with safety cameras. It can execute its mandated responsibilities and manage system processes from network planning, implementation, and operation, to managing interventions and evaluating performance.
 - **Supporting and enabling capabilities across people, process, policy, technology and data and information are in place and ready** to effectively operate the SCS and scale as the level of demand progressively increases through the phased implementation. All Establish activities to be defined through the Change and Transition workstream, have been completed to the required level and Business Readiness has been achieved in advance of, and maintained through, Pre-Cutover and Cutover activities.
 - **The public, communities, affected landowners, road users and customers have the ability to engage with Waka Kotahi**, clearly understand their rights where they have received an infringement notification (or other communication) and can efficiently complete the required or appropriate process(es) and activities from queries and payments through prosecution to resolution or conclusion. The public is aware of the mandate and role of Waka Kotahi and understand how, where and when they can engage in relation to safety cameras as part of the wider road safety portfolio.
 - **Enabling and supporting partners have the ability to effectively enable Waka Kotahi to deliver its mandate**, are equipped with appropriate technology, processes and training required to deliver supporting services (eg, cash payments) and can engage effectively with their Customers in support of the safety camera system.
 - **Supporting partners are engaged effectively** through early phases of the programme, before go-live, and are enabled to engage and interact with their own stakeholders in relation to the Waka Kotahi safety camera system and their role in supporting safer communities. (Partners include Police, the Ministry of Justice, New Zealand Post, iwi and hapū, and community groups and associations.)
 - **Flexibility for legislative enablement is maintained.** Several dependencies will be tested through the Design and Build and Test phases of the programme that may affect the scope and/or functionality of the system that is activated at go-live. For example, policy may not be in place to support a level of automation that would be a part of the target state system.
 - **Technology and process architectures and detailed organisational design** will be developed through the Establish phase, will be done so with the system vision in mind and be sufficiently flexible to accommodate potential future changes or refinements defined through operations as part of a continuous improvement mindset.

Our transition approach

- 52.18 Recognising the significant work already completed to date (for example, the Programme Business Case, the Indicative Business Case and high-level design), the programme will continue to deliver across two stages – Establish and Transition – leading into the Scale stage that will be owned and managed in full by the business through the Business Owner, Safety Camera System.

- 52.19 The Transition stage will see a mixed model of ownership between the SCS Programme and the business that will be progressively scaled as business capabilities are enabled or activated.
- **Technology and asset trials** (for example, point-to-point cameras) will be conducted through this stage to inform solution development, detailed organisational design and iteration of the implementation plan to be followed in the Transition stage.
 - The **completion criteria** for this stage is that the safety camera system has been fully defined, solutions are developed and meet the required quality specifications and other business or partner capabilities are ready to be operationalised through Transition.
 - **Governance** plays a critical role in determining readiness and approving the activation of cutover activities and the shift to the Transition Stage. Note, this stage may also include further scaling of the Establishment roles defined through high level design to support broader management and advisory capabilities within Safety Camera function within Waka Kotahi.
 - **Transition focuses on safely operationalising camera assets**, either through transfer (from Police) or expansion of new cameras, through Waka Kotahi's camera management system. A phased roll-out approach will be followed to allow for known and potentially unplanned risks that may impact implementation, and to support safe and effective scaling of capacity within Waka Kotahi to absorb increasing demand.
 - **Transition stage success criteria:** The completion criteria for this stage is that all of the stakeholders agree safety cameras have been transferred from Police to Waka Kotahi, co-existence (where relevant) is complete, all agreed new camera assets have been activated and the Waka Kotahi system is resourced appropriately to meet capacity requirements prior to the Scale Stage.
 - The **established governance bodies and processes continue to play a critical role in determining readiness and approving ongoing cutover activities** as part of transfer and expansion camera activation. Note, this stage may also include further scaling of the Establishment roles defined through high level design to support implementation and a more efficient transition of operations to business-as-usual functions.
 - The **Scale** stage focuses on further progressing and managing the roll-out of camera assets in line with communicated expansion objectives. This stage will optimise the system capabilities and processes through operational continuous improvement, towards the defined SCS vision and target state capabilities, and may progress additional functionality within the safety camera system along with camera asset expansion.

Taking a staged roll-out approach

- 52.20 Based on information currently available, and the communicated priorities from Cabinet, the SCS Programme will progress with activating cameras onto the new Waka Kotahi organisation through Expansion and Transfer (from Police) activities in parallel.
- 52.21 Phasing refers to the camera types being deployed where the current approach will be to prioritise Red Light cameras, followed by Fixed and then Mobile Cameras and associated assets. The implementation guidelines and sequencing criteria will be used to further refine this approach such that Expansion cameras are delivered in parallel to a level that verification, infringement and prosecution volumes can be managed and scaled appropriately.
- 52.22 This approach assumes that the construction components of Expansion may be carried out well in advance of any camera asset being posted at the defined site. The details of the phased roll-out will be further refined through the Detailed Design and Build & Test stages.
- 52.23 Several critical dependencies and assumptions will be tested through those phases, along with the introduction of new information and data gathered through trials, which will affect

where, how, when and which camera assets are deployed. Our approach will utilise implementation guidelines and sequencing criteria to mitigate risk and focus on delivering the most suitable mix of camera assets that optimise benefits initiation.

- 52.24 **Expansion** is the implementation of additional camera technology owned and to be operated by Waka Kotahi on the new Safety Camera System. These assets will be rolled out using a risk-based profile, aligned with the wider road safety and infrastructure programme and projects, that is designed to enable the most efficient profile for benefits realisation through a risk-based lens.
- 52.25 **Transfer** is the agreed implementation of transferring existing Police camera assets (Red Light, Fixed and Mobile Cameras and associated assets) from Police to Waka Kotahi, and will be done in a manner that best supports road safety outcomes across New Zealand, through a Partnership lens. The Police operate and fund their safety camera activities with support from the National Road Policing Centre. through Districts, with some. Further, these Districts do not necessarily align with Council or RCA boundaries.
- 52.26 The Transfer approach will have to have sufficient flexibility to support meet potential difference across Districts, align with expansion work and, where possible, support effective operational scaling within Waka Kotahi.

Supporting a safe implementation

- 52.27 Waka Kotahi is going through a period of significant organisational change, whilst delivering a significant multi-decade strategy through Road to Zero, establishing a new set of safety camera capabilities across a matrix structure within the organisation, and the transfer of an operational system from Police; the combination of these creates significant risk that must be mitigated and managed effectively.
- 52.28 The implementation guidelines below will be used to manage and iterate the detailed implementation plan and roadmap progressively through Establish and Transition Stages to support risk management and ensure benefits can be safely realised as early as possible.

Critical path

- 52.29 A whole-of-programme approach is being used to identify, set, and manage the Programmes critical path baseline. The implementation critical path for SCS has been developed through a series of planning workshops and activities involving the whole SCS programme and key stakeholders. The planning workshops were designed to map out the high-level programme activities and confirm dependencies and planning assumptions. Planning is a continuous requirement for the SCS Programme and work will be ongoing to buildout the delivery stages.
- 52.30 In mapping the critical path, several environmental factors were identified as having the potential to impact the future delivery timeframe for SCS. These include the dependencies on the legislative changes (RSTA2 and Penalties Review) which will enable key elements of the programme to go-live and the Programme to fully realise benefits.
- 52.31 Other environment factors include the wider Waka Kotahi organisational design changes which are currently underway. If these activities are delayed, they will impact the SCS Organisational Design timelines due to needing to align the SCS design with the outcome. Environmental factors will be carefully monitored to ensure any impacts are identified early and mitigated where possible.
- 52.32 The schedule published in the IBC was developed during the High-Level Design phase and was intended to be refreshed prior to commencing the Detailed Design phase. The Detailed Design schedule refresh is currently underway, and the programme has identified several planning horizons, where more information will be available on the detailed schedule.

- 52.33 A programme-wide or partial schedule refresh will be carried out, which may result in a change to the Programmes approach and/or timeframes. These planning horizons include the conclusion of each programme phase, where a phase end assessment will be carried out and lessons learned gathered, assessed and improvements incorporated in the next phase.

Implementation guidelines

- 52.34 **Risk-based prioritisation** – specifically this relates to the corridor and regional risks that are associated with the existing and new safety camera network. Road corridors with higher risk ratings, based on the agreed road safety risk matrix, will be prioritised over lower risk corridors where other factors may be considered through sequencing approach.
- 52.35 This primarily applies to Expansion camera assets but will also be applied where relevant to Transfer camera assets. Note: this approach may also be extended to recognise where Police are carrying risk in their current network of camera assets eg, if they have particular asset type or Districts that is not effective/ meeting its target, for one reason or another, and Transfer and additional investment in equipment, personnel and training by Waka Kotahi would resolve this effectiveness issue or enable Police to focus resources on their high-risk corridor assets.
- 52.36 **Scale volume to meet capacity** – this recognises the relationship between the activation of camera assets and the ability of Waka Kotahi, and its Partners, to onboard the capacity required to safely operate the safety camera system and manage the call and processing (eg, verifications, infringements etc.) volumes associated with activation of those assets.
- 52.37 **Manage complexity** – Parallel implementation of Transfer and Expansion is highly complex and carries significant risk, as does implementing across multiple jurisdiction types and geographic locations with a complex pool of resources that includes staff, contractors, consultants, Partners, and Providers. The implementation plan must recognise the significance of the complexity risk, constraints of the programme and business capabilities, and the critical roles required to ensure installation and activation of assets meets the required quality standards and manage all of this accordingly (eg, through effective sequencing, and scaling the construction/ testing/ activation activities appropriately).
- 52.38 **Prioritise safety** – this applies to the Public and road users, in terms of mitigating negative impacts to their ability to use the roading network and drive safely, but also to those Waka Kotahi staff and contractors who are completing physical implementation works. Where site safety assessments, engagement with Partners and other stakeholders, and other readiness checks indicate a safety risk, this will be considered and drive a response as part of the implementation plan.
- 52.39 **Sequencing criteria** – the detailed plan for implementation of Transfer and Expansion assets will be informed by the sequencing criteria that will look to manage risks, enable delivery synergies, and cost effectiveness, and optimise benefits initiation by considering:
- **Camera type** – Red Light (or Red Light & Speed), Fixed (NK-7 or other), Mobile, New (eg, point-to-point, NK-8 or other)
 - **Geographic dispersal** – consider the potential location of Expansion camera assets, or existing camera assets, and the delivery of construction, calibration, and activation activities at sites within a working distance of each other. This recognises potential resource constraints and the need to have teams delivering across geographies, which may include significant period away from their respective 'home base'.

External and environmental factors

- 52.40 Contractor availability (regional and seasonal impacts to capacity), weather (including seasonal impacts on roading conditions), strategic initiatives (alignment with Road to Zero and other infrastructure works), alignment with Councils and RCAs works, and holiday

periods (including peak road usage periods and Police black/ brownouts through similar low-capacity/ high-risk periods).

Business and system readiness and acceptance

- 52.41 A staged approach (Plan, Prepare and Activate) will enable readiness that will be facilitated by Change and Transition resources. 'Plan' is where defined owners will develop a view of requirements for their specific capability area to support readiness and will begin as part of the Detailed Design phase of the Programme. 'Prepare' is where those capability owners will develop and test their content/ collateral and 'Activate' is the delivery of any content or onboarding of resources in advance of the Cutover process.
- 52.42 Readiness will be considered across all aspects of the system and will be coordinated such that all Go/ No-go decisions and/ or signoffs are completed in advance of the Cutover process. Where there are elements that are not completed, these will be noted as risks that may be accepted by the business (or other Owner) moving into Cutover or Go-Live and will be managed or mitigated in an agreed manner.
- 52.43 **Co-existence strategy, plan and associated agreement(s)** – Sets out the basis for co-existence across Police and Waka Kotahi, that is, the people, processes and procedures, technology and agreements that will need to be in place through Transfer to ensure system stability is maintained for both parties. Specifically, this will define the activities required of each party to support the transfer of camera assets and any agreed functions, describes the acceptance criteria and agreements required to complete transfer from Police.
- 52.44 It is recognised that through the Transition Stage there may be a need to run some processes in partnership or parallel, and close coordination will be required to ensure there are no unaccounted-for risks to camera operations and that road users are not unduly impacted through the transfer process.

53. Site selection approach and methodology

Engagement with Police

- 53.1 The SCS Programme has engaged with 12 road policing managers at Police about potential state highway and local road sites in their regions for all camera types.
- 53.2 This engagement involved a site-by-site discussion that covered:
- the Waka Kotahi and Police shared understanding of safety camera site alignment with speed limit changes, infrastructure, and safer speeds around schools
 - the Waka Kotahi and Police shared understanding of risk in terms of DSIs
 - feasibility for safety camera deployment
 - feasibility of road policing deployment (for example, safe places for a patrol car to park)
 - sites not on the list that a road policing manager thinks should be a priority for a safety camera
 - NZ Police suggestions for local stakeholders with whom to engage.

Site selection and prioritisation activity already completed

- 53.3 For more details on the safety camera selection process, see Appendix 24.
- 53.4 Abley (an NZ-owned transport planning consultancy) completed an initial camera site risk location identification process, based on the four camera types including s 9(2)(g)(i) [REDACTED], fixed speed s 9(2)(g)(i) [REDACTED] mobile speed s 9(2)(g)(i) [REDACTED] and red-light/speed camera systems. By differentiating the site lists by camera type, the specific potential DSI reduction by camera type could be explored.

Table 55: Site identification criteria by camera type

Camera type	Site identification criteria
Dual function red-light/speed	Average actual and predicted DSI rate for red-light running to determine ranking
Average speed (point to point)	<p>Annual average daily traffic ≥ 1500 vehicles per day</p> <p>Collective risk ≥ 0.07 (DSI/pa/km)</p> <p>Corridor length ≥ 4km</p> <p>One Network Road classification is not 'Access'</p> <p>Average off-peak speed is 85% of the current posted speed limit</p> <p>Infrastructure risk rating alignment category is 'straight' or 'curved' (that is, not 'tortuous' or 'winding').</p> <p>No roundabouts or signals along the corridor (roundabouts or signals at or near the end of the corridor were allowed)</p> <p>Restricted to the top 50 corridors</p>
Static (fixed)	<p>Is not an average speed camera corridor</p> <p>Annual average daily traffic ≥ 1500 vehicles per day</p> <p>Collective risk ≥ 0.07 (DSI/pa/km)</p> <p>One Network Road classification is not 'Access'</p> <p>Corridor length ≥ 0.5km if urban (≤ 80km/hr) or ≥ 1km if rural (≥ 80km/hr)</p> <p>Average off-peak speed is 85% of the current posted speed limit</p> <p>Infrastructure risk rating alignment category is 'Straight' or 'Curved' (that is, not 'Tortuous' or 'Winding')</p>
Mobile	<p>Is not an average speed or fixed speed corridor</p> <p>Collective risk ≥ 0.039 (DSI/pa/km) and personal risk > 5 (DSI/pa/km)</p> <p>Corridor length ≥ 0.5km if urban (≤ 80km/h) or ≥ 1km if rural (≥ 80km/h)</p> <p>Average off-peak speed is 85% of the current posted speed limit</p> <p>Infrastructure risk rating alignment category is 'Straight' or 'Curved' (that is, not 'Tortuous' or 'Winding')</p>

- 53.5 During the development of the site selection criteria and process it was decided the site selection process would not be based on camera type, but rather the most appropriate and workable camera type would be selected for each identified risk area. This ensures the treatment decision reflects the best intervention for each site, considering alternatives to camera installation as part of that appraisal.

54. Engagement with road controlling authorities

- 54.1 Auckland Transport engagement will be tailored to state highway and red-light cameras as a priority, with an update on local road cameras.
- 54.2 The approaches for Tier 1, 2, and 3 road controlling authorities are set out below.

Tāmaki Makaurau Acceleration project

- 54.3 As part of the SCS Programme, Waka Kotahi, Auckland Transport and Police are implementing an accelerated safety camera installation project. s 9(2)(g)(i)

Note:
Based on discussions and formalising any agreement for Police involvement and depending

on funding approval, s 9(2)(g)(i)

- 54.4 This project within the SCS Programme offers the opportunity to 'test' the proposed site selection process, gain lessons learned for future rollout and early realisation of benefits.
- 54.5 The Abley process identified 57 individual local roads within Auckland Transport's catchment. This standalone project was then formally brought in to the SCS Programme after an initial shortlisting process. That process involved:
- online site shortlisting with Auckland Transport, Police and SCS Programme to work through the list corridor by corridor, which was completed over three six-hour sessions and involved using the Safety Camera Planning Tool (a spatial tool) to explore each corridor
 - reducing the list (to 35 sites), by rejecting sites with recent or pending improvement works (such as engineering or speed limit changes) or without room to install a camera
 - physical site visits, that reduced the list to 28 to determine the suitability of the shortlisted sites by Auckland Transport, Waka Kotahi, the power supplier, and Vodafone technician to check for:
 - availability of 230-volt 24/7 power
 - sufficient cellular data signal strength
 - physical room to install a camera pole and parking for a maintenance vehicle.
- 54.6 Given the extensive lead time for camera equipment, the SCS Programme has repurposed 10 unused camera systems from the Waterview Tunnel. This allows the prompt installation of 10 spot speed systems at the highest risk corridors identified for such treatment.
- 54.7 Work continues in engaging contractors to undertake the installation work, with October–November proposed for construction.
- 54.8 Baseline data in the 10 sites has been gathered using rubber tubes on the roads and from TomTom.⁸² This has confirmed that speeding is an issue on all 10 corridors. After the first week the lowest rate of offending recorded as 16% on one corridor and the highest rate being 73% of vehicles travelling over the posted speed limit.
- 54.9 Lessons from the Tāmaki Makaurau Acceleration project will be taken into the remainder of the SCS implementation and will further inform the engagement approach for Auckland Transport and other road controlling authorities.
- 54.10 The final list of sites for Auckland Transport local roads is in Table 56.

Table 56: Auckland Transport local roads safety camera sites

Rank	Road name	Locality suburb	Local board	Confirmed camera type
2	Alfriston Road	Alfriston	Franklin	Spot
17	Mill Road	Pukekohe East	Franklin	Spot
29	Cavendish Drive	Papatoetoe	Otara-Papatoetoe	Spot
51	Waiuku Road	Waiuku	Franklin	Spot
59	Glenbrook-Waiuku Road	Waiuku	Franklin	Spot

⁸² TomTom. 2022. [New Zealand traffic](#) (website).

Rank	Road name	Locality suburb	Local board	Confirmed camera type
s 9(2)(g)(i)				
76	Dairy Flat Highway	Dairy Flat	Rodney	Spot
s 9(2)(g)(i)				
143	Papakura-Clevedon Road	Ardmore	Franklin	Spot
s 9(2)(g)(i)				
166	Linwood Road	Karaka	Franklin	Spot
176	Sandspit Road	Warkworth	Rodney	Spot
s 9(2)(g)(i)				
211	Mckenzie Road	Kingseat	Franklin	Spot
s 9(2)(g)(i)				
222	Waitakere Road	Taupaki	Rodney/ Waitakere	Spot
278	Ostrich Road	Patumahoe	Franklin	Spot
292	Clarks Beach Road	Clarks Beach	Franklin	Spot

Shortlisted camera corridors outside Tāmaki Makaurau.

54.11 Table 57 shows the prioritised shortlist as at 4 October 2022 for the first set of expansion cameras outside Tāmaki Makaurau.

Approach for Tier 1 road controlling authorities s 9(2)(g)(i)

54.12 The applicable Area Programme Manager will facilitate engagement with Tier 1 road controlling authorities, with support from the SCS Programme. A Safety Engineer will also attend each meeting. Area Programme Managers prefer face-to-face meetings with road controlling authorities, but it is expected that attendees will be able to join virtually as needed.

54.13 The overall objective of each meeting is to get the road controlling authority's (provisional) agreement on a list of state highway and local road corridors and intersections where safety cameras will be installed. Each engagement will:

- provide the road controlling authority with context about phase 1 of the camera expansion project and how it fits into subsequent engagement activities relating to interim speed management plans and the full state highway speed management plan process for the 2024–27 NLTP
- overview the work done to identify the proposed candidate camera sites in the road controlling authority's area and why the sites are considered a priority for phase 1

- get the road controlling authority's feedback on whether it agrees that the identified camera sites are the priority locations from a risk perspective
- identify whether the road controlling authority's has other corridors or intersections it believes should be a priority for camera installation and the reasons why
- identify whether the proposed sites align with the road controlling authority's plans for speed limit changes and planned infrastructure improvements, which may mean cameras are no longer needed for that corridor or intersection
- identify whether the road controlling authority has any information about the suitability of the proposed corridor or intersection for a camera
- identify whether there are specific locations in the corridor the road controlling authority thinks would be suitable for installing a camera (based on the requirements for suitable camera locations)
- identify local stakeholders who should be consulted for the selected sites.

Approach for Tier 2 road controlling authorities s 9(2)(g)(i)

54.14 The approach for Tier 2 road controlling authorities is as for Tier 1, but the SCS Programme will provide support only if feasible.

Approach for Tier 3 road controlling authorities (no local road cameras)

- 54.15 For Tier 3 road controlling authorities, the applicable area programme manager will engage with the road controlling authority (with support from the SCS Programme, if feasible) to:
- provide a briefing on the programme
 - advise that long-listing for 2024–27 will start later in the year and that road controlling authorities will be engaged if any sites on their local roads are long-listed
 - ask the road controlling authority if it has sites on its local roads, it thinks should be a priority for a static speed, average speed, or red-light camera
 - ask the road controlling authority if it has local stakeholders with a particular interest in safety cameras.

55. Regional engagement meetings

55.1 The SCS Programme is aligning with the SIP and new speed management planning processes.

55.2 For the 2021–24 NLTP, the SIP is locked in and works planned from a safety infrastructure and speed management view. The SCS Programme has worked with the SIP to identify up to s 9(2)(g)(i) installation locations for safety cameras. To that end, the SCS and SIP teams have engaged with 52 road controlling authorities (RCAs) that have potential camera corridors identified in the long-list developed by Abley as set out in Appendix 21.

55.3 The conversations with RCAs were organised by the SIP Area Programme Manager (APM), and were attended by Waka Kotahi APMs, Safety Engineers, Investment Advisors and safety camera subject matter experts. From the RCA the attendees were typically staff involved in speed management planning and safety engineers. The sessions have gone very well, with high levels of engagement from RCAs providing invaluable local knowledge and constructive conversations about how safety cameras could integrate into existing plans for speed limit change and safety infrastructure improvements.

55.4 In addition to the s 9(2)(g) sites listed in Table 56, are a likely s 9(2)(i) additional sites listed in Table 57 following regional engagement. This list is still subject to change, based on additional feedback from the state highway speed management plan process, a national moderation process, physical site visits (to confirm power supply, data signal strength and suitable

roadside real estate to allow installation) and speed surveys using rubber tubes on the roads, and from TomTom to confirm speeding is a problem on these corridors.

Table 57: Additional candidate safety camera sites

Rank	Road name	Regional Council	Locality suburb	Road controlling authority	Suggested camera type
s 9(2)(g)(i)					
Released under the Official Information Act 1982					

Rank	Road name	Regional Council	Locality suburb	Road controlling authority	Suggested camera type
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s 9(2)(g)(i)					
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- 55.5 The SCS Programme is now working with the SIP and State Highway Speed Management Plan (SHSMP) teams to develop a plan for the 2024–27 NLTP process. This is a joint engagement process identifying high-risk corridors and considering an optimal mix of speed limit, safety infrastructure and safety camera interventions to address the risk.
- 55.6 We have incorporated safety cameras into the SIP Pipeline Development Tool (PDT) that is a programme development tool based on spatial/Geographical Information Systems, where interventions can be tested for any corridor to determine which offers the best outcome. The interventions are the full suite of Safe System–based interventions, including safety cameras.
- 55.7 Some RCAs may want to instal more cameras than currently planned by Waka Kotahi. If this is the case, case-by case discussions will be had with the authority. The current position of the SCS Programme is that additional cameras will be paid for by the authority, but the processing of offences will be the responsibility of the Waka Kotahi OPS.

56. Delivery arrangement for transferring the Police SCS

Rules of engagement

- 56.1 Waka Kotahi and Police accept the transition will take place over an extended timeframe that is still being negotiated but have agreed a structured and deliberate approach to engagement activity across Police’s Traffic Safety Camera Transition project and the SCS Programme is required. The structured approach will determine the timeline.

56.2 The following rules of engagement are proposed and are in the process of being finalised.

- When planning engagement activity, we will ensure we are clear who we are engaging with and why we are engaging them and agree what the purpose or outcome is in advance. We will consult, with our engagement leads where required, to validate whether we have the right people involved.
- We will come prepared and able to deliver or participate in a session effectively (including any pre-meetings, pre-reading, and follow ups).
- We will respect the time of each team member when we engage and will keep to the session plan unless mutually agreed otherwise.
- We will respect and act on the advice and expertise provided by our leads and subject-matter experts.
- We will regularly update our own teams on the engagement activities under way or planned to ensure line of sight and avoid duplication and misunderstanding.
- Where information is required or requested, we will provide appropriate context or rationale as part of the request, ensure the information is stored appropriately, and update our records to reduce the risk of duplicate requests.
- Our engagement leads will meet regularly to discuss and share feedback from their respective teams about how we are tracking to the principles and these rules of engagement, and any operational escalations that may be required.
- Where either party feels these rules of engagement are not being applied or adhered to in the spirit intended, then an escalation through managing and/or directing roles will occur.

Waka Kotahi and Police roles and responsibilities

56.3 To provide context for the work required to effectively plan for and execute the safety camera transition and support cross-agency outcomes, the following roles and responsibilities are proposed.

- **Waka Kotahi** is the lead agency driving the transition and will own future operation of all road safety cameras and supporting and enabling systems. Waka Kotahi will define a future mode of operation, describing required functions and capabilities that will enable both parties to effectively deliver services (for example, co-existence) and affect the transition of functions (where required) as part of the establishment of Waka Kotahi as the owner of the SCS. Waka Kotahi will be responsible for and lead all external communication and engagement activity required for the transition and related work.
- **Police** is the supporting partner agency in this transition process and owns the definition of its current state (as an input, where relevant, to design and transition planning) and provide information and insights to support Waka Kotahi where relevant. Where necessary and appropriate, Police will support Waka Kotahi-led external engagement activity through its standard and existing channels and will be responsible for delivery of all internal Police communication and engagement activities.

56.4 The responsibility layers set out in Table 58 will support this approach and the responsible owners will ensure the rules of engagement are upheld and updated, as required, as the collective work progresses.

Table 58: Key Waka Kotahi and Police roles

Layer	Responsible owner	Description
Directing	NZ Police SCS Programme Director	Consultation role for the managing layer and the final escalation point for resolving any challenges before moving resolution or decision-making into governance.
Managing	Traffic Safety Camera Transition Project Lead SCS Programme Manager	Consultation role for the delivery layer where clarity is required across operational management and the first escalation point for challenges that cannot be resolved through subject-matter leads in collaboration with delivery responsible owners.
Delivery	NZ Police Transition Manager Waka Kotahi Transition Manager	Day-to-day management of core relationships and delegated engagement leads of each team, unless otherwise specified
Subject-matter-specific areas in the delivery layer		
People & organisation	NZ Police Waka Kotahi	Direct conversation and collaboration between leads related to people and organisation
Process	NZ Police Waka Kotahi	Direct conversation and collaboration between leads related to process
Change management	NZ Police Waka Kotahi	Direct conversation and collaboration between leads related to change management where a joint approach is required across Waka Kotahi and Police
Co-existence	NZ Police Waka Kotahi	Lead conversation and collaboration related to co-existence
Communications & engagement	NZ Police Waka Kotahi	As required relating to shared communication or engagement where a joint approach is required across Waka Kotahi and Police
Mobile camera expansion	NZ Police Waka Kotahi	TBC
Calibrations	TBC	TBC

57. Programme's change control process

57.1 Within all programmes and projects work activity evidently needs to change as more information becomes available. To mitigate the impacts from unplanned change the programme will have a Change Control process:

57.2 The process for change control is outlined in Appendix 23.

58. Benefit management – measured and managed in accordance with good practice

- 58.1 The SCS Benefits Realisation Plan is available from the Programme Director.
- 58.2 Benefits will start being monitored and reported after the first camera is installed and operational. Therefore, measurable change in KPI 1 and financial benefits will be reported from late 2024.
- 58.3 Reporting will be by individual camera as each comes online, with a focus on the three measures of KPI 1: Fewer speeding vehicles. For each camera, the report will detail the:
- ratio of the number of vehicles passing the camera to the number of vehicles speeding past the camera
 - distribution of speed above the posted speed limit for speeding vehicles
 - ratio of the number of vehicles passing the camera to the number of infringement notices issued.
- 58.4 The report will also show the rollout of the cameras geographically and aggregate, where appropriate, the three measures.
- 58.5 As part of benefits management, the programme will engage with the other Road to Zero programmes, the Ministry of Transport, Ministry of Justice, Accident Compensation Corporation, Ministry of Health, Police, road controlling authorities, and Te Mana Raraunga (the Māori Data Sovereignty Group) and other Mana Whenua groups as appropriate, to determine if they have specific benefits-related questions they would like addressed that will require data collection designed into the solution.
- 58.6 The Road to Zero team has confirmed it will monitor DSIs and the contribution of cameras to that outcome. The team also confirmed the SCS Programme is responsible for monitoring the reduction in speeds and speeding due to the establishment of the SCS.
- 58.7 The Benefits Realisation Plan defines the processes needed to enable the benefit to be realised and to quantify the measures that will be used to track progress. The measures included in the benefit profile (Appendix 7) have been defined according to SMART criteria in line with the Waka Kotahi Investment Approach and Treasury's Better Business Cases guidelines.
- 58.8 The Benefits Realisation Plan will be regularly reviewed and updated over FY21–24 as new information comes to hand.
- 58.9 The programme and Benefit Owner will report regularly on progress to the programme's governance groups. In addition, benefits may be reported in accountability documents such as the Annual Report, Statement of Performance Expectations, and Statement of Intent.
- 58.10 The programme will review the Benefits Realisation Plan at least half-yearly. This review will include:
- an update of the Benefits Realisation Plan because of changes to scope or timelines
 - an update of the benefits register and measures used to track the progress of benefits achievement and realisation
 - an update of the main questions that must be addressed by the benefit and system performance monitoring
 - review and sign-off by the Benefit Owner and appropriate governance group.

59. Risk management

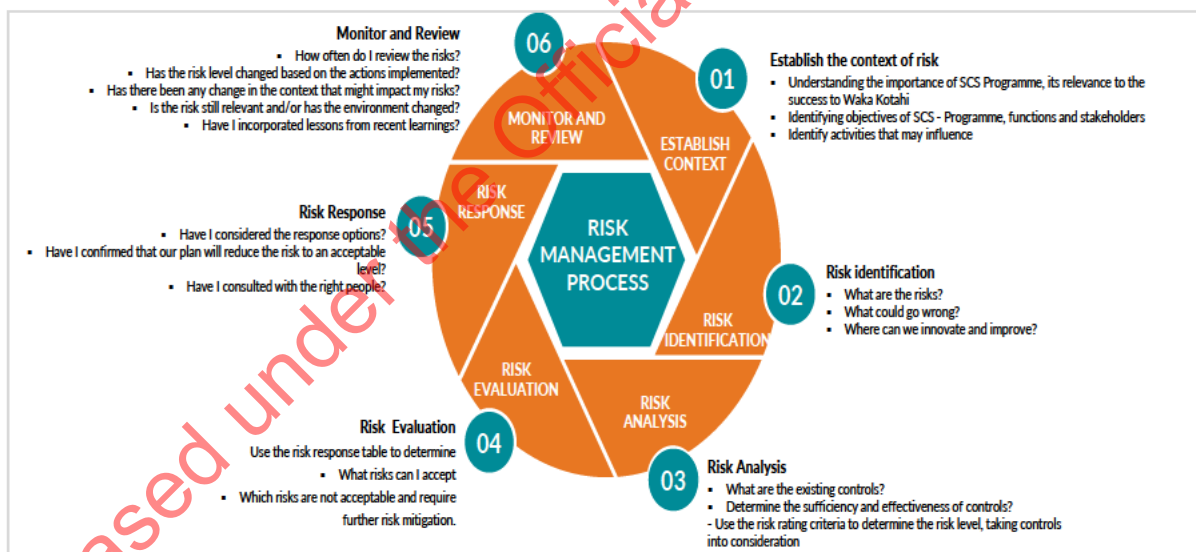
Risks will be managed in accordance with the enterprise risk management framework

- 59.1 The main risks to achieving the investment objective or benefits have been identified in the strategic case. For a comprehensive view of all risks, see the SCS Programme Risk Register, which is available from the Programme Director.
- 59.2 The risk register will be regularly reviewed and updated over FY21–24 as new information comes to hand.
- 59.3 Risks associated with this programme were identified in the strategic case then refined and assessed in the economic case.
- 59.4 This section identifies key risks associated with the SCS investment. The overall investment and programme are rated high risk based on Waka Kotahi Risk-Based Approach and the Treasury Risk Profile Assessment. This rating reflects the size of potential investment, the need for integrated change management across multiple agencies, and the significant requirement for new capabilities in people, processes, and technology. The SCS Programme will deliver brand new functions in Waka Kotahi, which requires a new operating model and new capabilities in the organisation.

Risks are regularly reported, according to agreed escalation thresholds

- 59.5 The SCS Programme will manage all programme risks in accordance with the Waka Kotahi enterprise risk management framework that is based on standard ISO 31000. The risk management process comprises six steps of equal importance (see Figure 34).

Figure 34: Risk management process



- 59.6 A Risk Management Strategy and Framework and Risk Register have been developed for the programme and will be progressively updated as more detailed analysis is undertaken. For details, see the Programme Risk Register. These

60. Programme assurance arrangements

SCS Programme will de-risk programme delivery through a wide range of assurance reviews

60.1 A comprehensive assurance plan has been developed for the SCS Programme. The plan is summarised in Table 59 and programme governance and oversight in Table 60. For more details, see the Assurance Plan.

Table 59: Programme Assurance Plan

#	Activity	Audience	Timing	Line	Provider	Status
	Programme Business Case review	Sponsor, Business Owner	Jul 2020	2. Investment Assurance 3. Independent quality assurance	Transport Services, Investment Assurance, Finance IQANZ	Complete
	Independent quality assurance 1	Sponsor, Business Owner	Oct 2020	3. Independent quality assurance	IQANZ	Complete
	Programme Business Case review	Steering Committee, Delegations Committee, Chief Financial Officer, Executive Leadership Team	Jul 2021	2. Investment Assurance	Transport Services, Investment Assurance, Finance	Complete
	Gateway Review 1	Steering Committee	Feb 2022	3. Independent quality assurance	Gateway review team	Complete
	Programme Health Check 3 IQANZ review	Steering Committee	Feb 2022	3. Independent quality assurance	IQANZ	Complete
	Procurement process probity review	Steering Committee, Chief Technology Officer	Mar 2022	3. Independent probity audit	McHale Group	Complete
	Detailed Business Case review	Sponsor, Business Owner, Delegations Committee, Chief Financial Officer, Executive Leadership Team	Mar 2022	2. Investment Assurance	Transport Services, Investment Assurance, Finance	Date to be confirmed
	Gateway Review 2 (to be confirmed)	Steering Committee	Aug 2022	3. Independent quality assurance	Gateway review team	In progress
	Programme Health Check 4 IQANZ review	Steering Committee	Jul 2022	3. Independent quality assurance	IQANZ	In progress
	Build and test interim IQANZ review	Steering Committee	Sep 2022	3. Independent quality assurance	IQANZ	Date to be confirmed
	Security review Certification & accreditation Penetration testing Chain of evidence	Sponsor, Business Owner, Steering Committee Chief Security Officer Chief Technology Officer	Jun 2023 – Nov 2023	3. Independent security assurance	To be confirmed	Date to be confirmed

#	Activity	Audience	Timing	Line	Provider	Status
	Gateway Review 5 (to be confirmed)	Steering Committee	TBC	3. Independent quality assurance	Gateway review team	Date to be confirmed
	Go live 1 IQANZ review	Steering Committee	Mar 2023	3. Independent quality assurance	IQANZ	Date to be confirmed
	Go live 2 IQANZ review	Steering Committee	Jun 2023	3. Independent quality assurance	IQANZ	Date to be confirmed
	Go live 3 IQANZ review	Steering Committee	Sep 2023	3. Independent quality assurance	IQANZ	Date to be confirmed

Table 60: Governance and oversight for the programme

#	Activity	Audience	Frequency	Provider
1	Programme status reporting	Steering Committee	Monthly	Programme Director
2	Road to Zero status reporting	Road to Zero ESC	Monthly	Programme Director
3	Project status reporting	Programme Director	Weekly	Project Managers/Leads
4	Risk register reviews	Programme Director, Project Managers/Leads	Monthly	Programme Director/Risk Assurance Advisor
5	Strategic risk review	Programme Director, Project Managers or Leads	Quarterly	Programme Director/Risk Assurance Advisor
6	Lessons learned	Steering Committee, Programme Director, Programme Team	As part of stage gate reviews. At least, half yearly	Programme Director, Project Managers/Leads <u>Enterprise Portfolio Management Office</u> <u>Guidance and Repository</u>

SCS Programme deliverables are subject to quality assurance processes

60.2 Deliverables the programme develops are subject to quality assurance and engagement processes to make sure they meet required quality standards. The six key stages in the generic quality assurance and engagement process are as follows.⁸³

- **Commissioning** – The team member and project manager/lead responsible for the deliverable identify the internal and external stakeholders who need to be involved in quality assurance and engagement processes, particularly, business reviewers (and their role in or 'lens' for the review process) and signatories (and their acceptance criteria). These requirements can be documented in the Commissioning Template.
- **Research and analysis** – The team member responsible for the deliverable conducts research and analysis, engaging with internal and external stakeholders as required through interviews and workshops. This process often involves the nominated business reviewers of the deliverable. The Programme Advisory Board may also be used at this

⁸³ Specific deliverables (for example, technology) may have their own quality assurance processes and/or require additional steps to be undertaken.

stage; for example, if an interim decision is required that will fundamentally shape the further development of the deliverable.

- **Development** – A first complete draft of the deliverable is produced. Business reviewers may be informally involved during this stage.
- **Peer review** – One or more members of the programme team reviews the draft and provides feedback. This will typically be done using the review functions in Microsoft Teams and ensures all relevant subject-matter has been covered and that the deliverable is ready for business review.
- **Business review** – Nominated representatives from each team affected by the deliverable will review the revised draft, typically using Microsoft Teams. Further workshops or walk-throughs of the deliverable may be held at this point. Each reviewer will be advised of their specific role or the lens that are asked to view the deliverable through; for example, to check it meets Waka Kotahi technology standards or the policy intent. This is the stage where Programme Advisory Board is most likely to be involved.
- **Sign-off** – The nominated signatory (usually the chair of steering committee, a senior manager, or a general manager) from each team affected by the deliverable is advised that feedback from their team has been incorporated (or advised why it has not been incorporated). The signatory may specify caveats to their sign-off.

60.3 In addition, for business review, the deliverable feedback template can be used if a structured approach is required to capture and respond to feedback. Guidance as to when each team from Waka Kotahi needs to be involved in the deliverable business review process is in Table 61.

Table 61: Business review for different teams

Team	Business review required, if the deliverable...
Office of the Chief Executive	May affect Waka Kotahi performance documents (such as the statement of intent, statement of performance expectations, output class reporting).
Corporate Support	Includes details of one-off programme budgets or changes to on-going operational budgets Relates to the procurement of goods and services Specifies business support and/or property requirements Is likely to result in changes to processes, systems and/or workload in the Corporate Support team.
Legal	Is feedback to the Ministry of Transport or other agencies on the development of legislation or regulations Is an external publication Is a contract or memorandum of understanding Describes how specific parts of legislation or regulations are being applied by Waka Kotahi Contains decisions that may create legal risk for Waka Kotahi Is likely to result in changes to policies, processes, systems and/or workload in the Legal team.
Te Aukaha Digital	Describes requirements, procurement, design, configuration, testing and/or implementation of technology Is likely to result in changes to policies, processes, systems and/or workload in Te Aukaha D&W team.
Te Mātangi Māori Partnerships	Has implications for delivery of Te Ara Kotahi Our Māori Strategy and its supporting action plan.

Team	Business review required, if the deliverable...
Te Waka Kōtuitia Engagement and Partnerships	Is an internal communication, external publication, web content, speech or media release Is likely to result in changes to policies, processes, systems and/or workload in the Engagement and Partnership team.
Pūmanawa Tāngata People	Contains recommendations or decisions about organisation design, headcount requirements, job design, remuneration, recruitment and/or training Is likely to result in changes to policies, processes, systems and/or workload in the People team.
Safety, Health and Environment	Affects directly achievement of the Road to Zero outcomes, the measurement of outcomes and/or achievement of the target reduction in deaths and serious injuries Is likely to result in changes to policies, processes, systems and/or workload in the Safety, Health and Environment team.
Te Roopu Waeture Regulatory Services	Is feedback to the Ministry of Transport or other agencies on the development of legislation or regulations Describes how Waka Kotahi will use its statutory functions and powers to achieve regulatory outcomes Is likely to result in changes to policies, processes, systems and/or workload in the Regulatory Support team.
Transport Services	Is likely to result in changes to policies, processes, systems, technology and/or workload in the Transport Services team.

61. Technology system architecture additional governance and security

- 61.1 SCS Programme outcomes are highly dependent on the successful implementation of the technology component.
- 61.2 The governance for the Architecture Practice will be made up of a Domain Sync-up, Strategic and Technical Architecture Board (STAB) and the Architecture Review Board (ARB). This recognises that a project the size of the SCS requires approval for multiple smaller aspects of the solution, which will vary in size and complexity, and for large and significantly complex aspects, which may include smaller aspects previously approved and, ultimately, the entire solution to also be approved.
- 61.3 At a Domain Sync a domain architect will ensure that the solution aligns with the domain principles and strategies before the solution is submitted to STAB for approval. STAB will be chaired by the Architecture Practice Manager who, along with other board members will determine if the solution can be approved or it is to be rejected, or if it has significant complexity and requires escalating to ARB which is chaired by the Head of Technology Engineering. ARB will have the final decision on whether the solution can be approved or not.⁸⁴
- 61.4 Overall, a solution of this size is required to comply with the *New Zealand Information Security Manual*, which is the Government's manual on information assurance and information systems security.⁸⁵ This manual recognises that safe, secure, and functional

⁸⁴ More details about the structure and process for architecture approval are available at: <https://waka-kotahi.atlassian.net/wiki/spaces/DCP/pages/2187984965/Digital+Architecture+and+Design+Governance>

⁸⁵ Government Communications Security Bureau. 2022. *New Zealand Information Security Manual*. Wellington: Author.

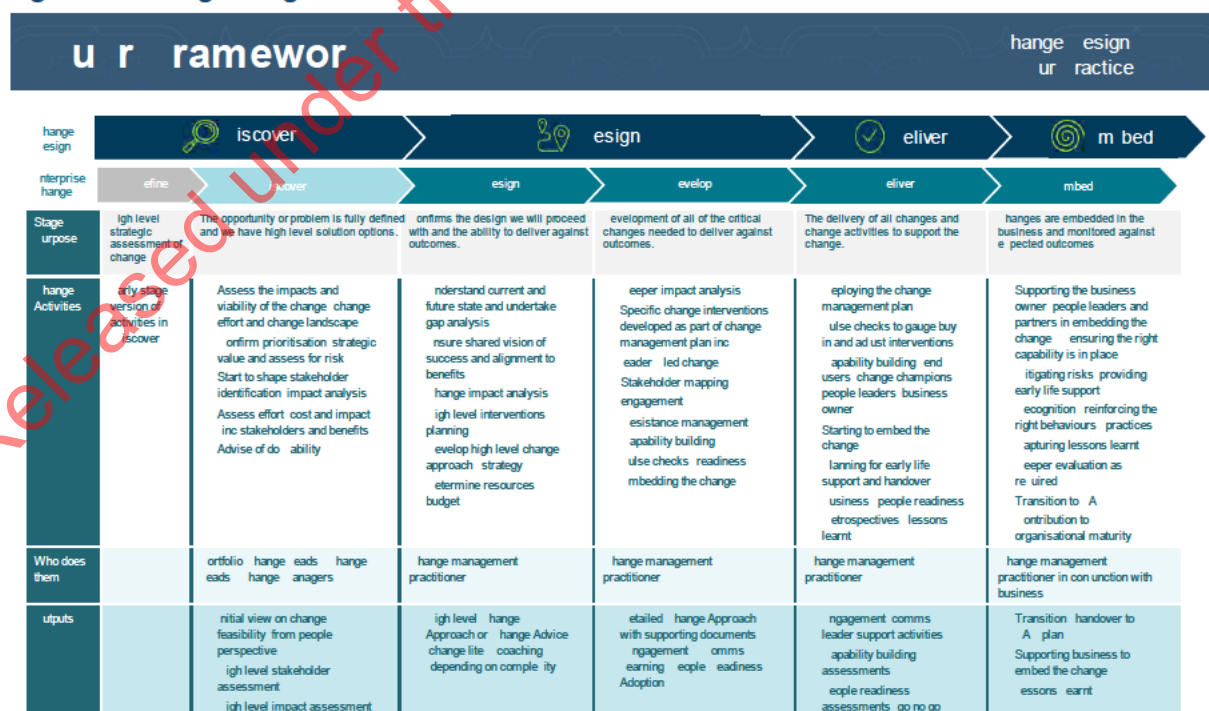
information systems are vital for the successful operation of all government organisations. These systems underpin public confidence, support privacy and security and are fundamental to the effective, efficient, and safe conduct of public and government business.

- 61.5 The consequences of a security lapse can be significant, regardless of where in an organisation it occurs or how severe it is. These consequences can damage an organisation's reputation, undermine public confidence and cause significant damage to information systems. The damage can be intensified where a single system is used by multiple agencies. This has been identified as potential risk to benefits and the programme will ensure that best practice is used when designing and managing the security aspects of the SCS.
- 61.6 Therefore, the *New Zealand Information Security Manual* clarifies governance requirements, the role and authority of the chief executive and senior executives, and the principal assurance process (that is, the certification and accreditation framework).
- 61.7 As part of assessing a project such as the SCS, the assigned solution architect will use the Security Development Lifecycle Tool. The outcome from using this tool will assist the architect to understand aspects of the solution that require attention such as privacy and information management and so on. This process produces a security risk assessment and other information that the security architect will review as part of the complete certification and accreditation process.

62. Change management

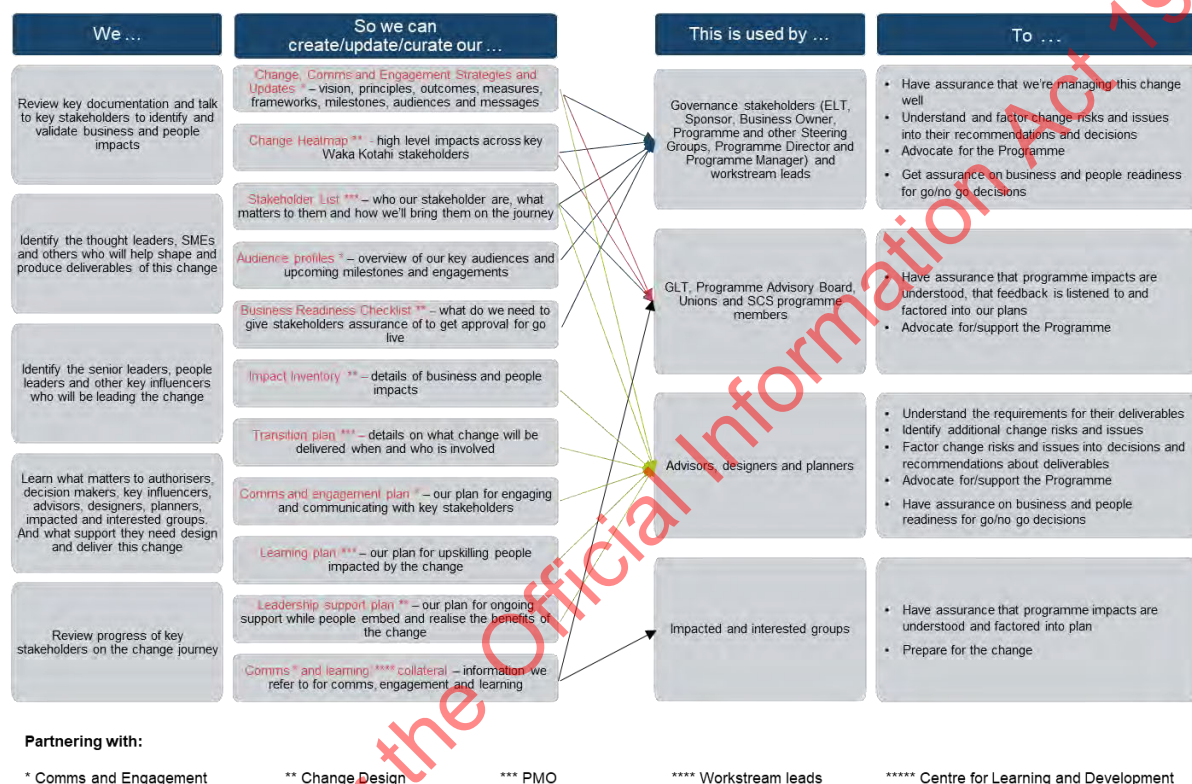
- 62.1 The primary goal of change management is to help our people to go through the transition introduced by the SCS Programme as quickly and efficiently as possible to sustain productivity and mitigate risk.
- 62.2 It is expected that additional accommodation will be required for 100 FTEs. The SCS Programme is working with the business to identify spare capacity and additional space that will be required as the SCS expands.
- 62.3 The change design framework in Figure 35 provides a consistent approach to managing change in line with best practice.

Figure 35: Change design framework



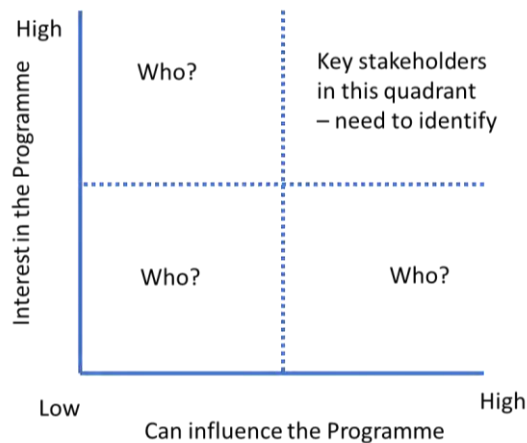
- 62.4 The Programme Steering Committee approved the SCS change strategy in December 2021. The strategy provides direction for informed decision-making, describing who the change will affect and how it will impact on the organisation.
- 62.5 This strategy was reviewed in March 2022. Subsequent updates from high-level design have been incorporated into the draft programme change plan, which is supported by project-level change plans, where required. The change strategy will be reviewed at the end of detailed design. The Change Management Strategy and Impact Assessment is available from the Programme Manager.
- 62.6 Figure 36 show how the change and transition collateral together support change activities.

Figure 36: Change and transition collateral



- 62.7 The public, communities, customers, and road users are at the heart of the SCS. Therefore, how they will be affected by, and experience safety cameras is the key consideration in process design.
- 62.8 For the purposes of SCS process design:
- the **public** means all people (in and outside NZ), including those who may not be road users or customers or a community and including property owners who may have safety cameras installed on or near their property
 - communities** are a person or group of people affected by a safety camera being installed in their community or area
 - road users** are people who uses NZ roads (as per Road to Zero)
 - customers** are a person or organisation who contacts Waka Kotahi or interacts with a service that Waka Kotahi provides (for example, a person who has a question about how to pay an infringement notice).
- 62.9 The influence and interest matrix the programme will use is shown in Figure 37.

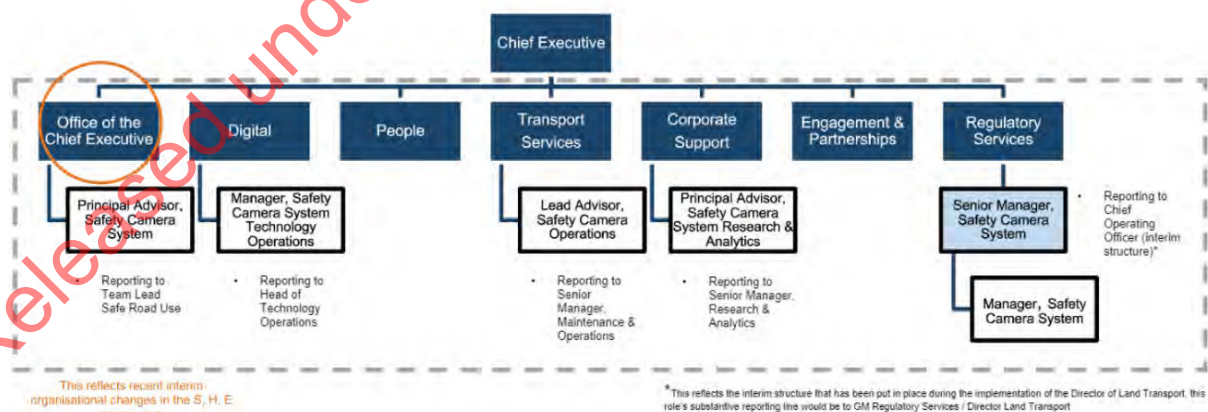
Figure 37: Stakeholder influence and interest matrix



Impact of change across five key areas

- 62.10 The change impact assessment establishes the level of impact a change will have across five overarching areas: policy (including legislation); people (internal and external); process; technology; and property, equipment, and facilities. The assessment enables change planning to be undertaken to define how these impacts will be mitigated as people affected by the change transition from current to target state.
- 62.11 High-level impact assessments were completed for high level design and is available on request. The assessment template has been updated for use during detailed design (July 2022).
- 62.12 The **policy impact** is rated High, recognising new policies and legislation are required to implement the change successfully. A senior policy advisor has been recruited to the programme to support policy coordination and collaboration.
- 62.13 The **people impact** is rated High, recognising the relationships, interactions, and capability requirements required between multiple ministries and Police and across Waka Kotahi. Roles confirmed for establishment from the high-level organisational design are illustrate din Figure 38.

Figure 38: Roles confirmed for establishment from the high-level organisational design



- 62.14 Key activity during stage 1 includes engaging and consulting with the people who will be affected by the changes to gather their feedback to inform the final design. The Waka Kotahi approach to organisational design requires active steps towards honouring te Tiriti o Waitangi and working in partnership. An engagement and consultation process was undertaken during March 2022 on a proposed high-level organisational design, developed to

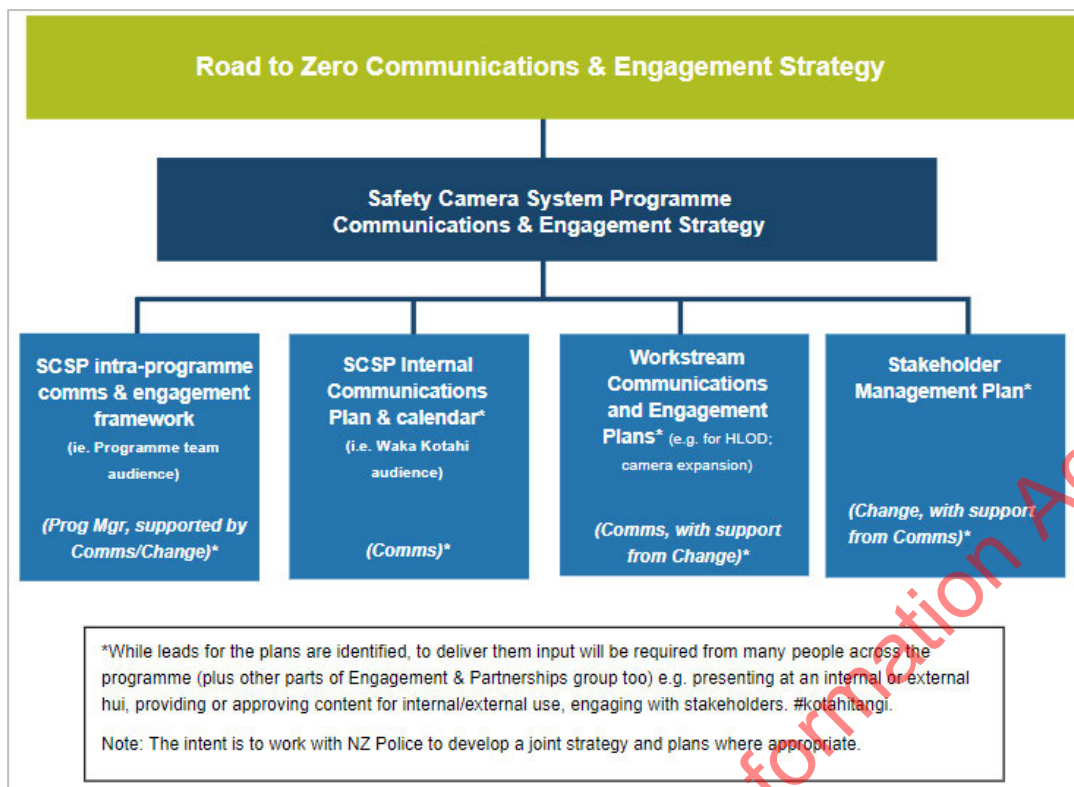
support the continuing work required to transfer safety camera functions from Police to Waka Kotahi. Further engagement and consultation will take place as part of detailed organisational design.

- 62.15 The **process impact** is rated **high**, recognising there will be new safety camera operating, expansion and offence processing processes and sub-processes. Including the also be impacts to existing Waka Kotahi processes, most notably across corporate support functions to enable the effective embedding of the change. Process design is a key activity for FY21–24. The high-level process design was approved by the PSC in April 2022. Preparations for detailed process design is underway to inform the final solution.
- 62.16 The **technology impact** is rated **high**, recognising the scale of new technology, interfaces and equipment required for the change. The new technology domains include: 1. new camera technology; safety camera management; technology platform; and offence processing technology platform. Key activity during FY21–24 will be onboarding the technology suppliers and integrators.
- 62.17 The **property, equipment, and facilities impact** is rated **high**. This includes new assets, signage along with location and equipment requirements to support the new cohort of SCS people coming into Waka Kotahi.
- 62.18 The programme level change plan provides a programme wide overview, while each project workstream within the programme will develop a detailed project change plan which to act as the central place to record the detailed impacts and mitigations as they relate to their workstream, as well as capturing the planning (dates, who is responsible and what is planned to happen) around change management-related activities.

63. Communications and engagement

- 63.1 Communication and engagement will play a critical role in the successful delivery of this change programme, given it directly affects almost every part of Waka Kotahi, Police, and road controlling authorities.
- 63.2 Other stakeholders and the public need to be brought on the journey. This DBC recognises the value of good communications and engagement along with active stakeholder relationship management and the importance of being resourced appropriately.
- 63.3 Communications planning will be a continuous work in progress through to implementation and is integrated with Road to Zero communications as outlined in Figure 39.

Figure 39: Road to Zero Communications and Engagement Strategy



63.4 The Waka Kotahi approach to communications and engagement across the SCS Programme is in line with internationally accepted guidance and frameworks endorsed by the International Association of Public Participation (IAP2) and based on the Waka Kotahi commitment to:

- create and maintain collaborative relationships that foster high levels of trust, respect, and confidence
- deliver clear, consistent, timely, and accurate messages
- communicate and engage in a planned and targeted way
- use best practice to engage with stakeholders.

63.5 A Communications Plan has been developed that included the following objectives:

- Ensure local boards and councillors have an accurate understanding about the expansion of safety cameras in Tāmaki Makaurau, including how the project fits into AT's safety programme to assist in reaching Vision Zero
- Engage with local iwi/hapū about the accelerated installation of safety cameras in Tāmaki Makaurau prior to engaging with local boards
- Advise affected parties (those directly adjacent to the initial 10 camera sites) of the planned installation, potential effects and mitigation measures, prior to informing wider stakeholders and Auckland public about the 10 camera sites
- Inform all other stakeholders and the Tāmaki Makaurau general public about the expansion of the safety camera network
- Raise awareness of the increase of safety cameras with New Zealand public, alongside construction, and ahead of safety cameras operating.

63.6 These communication objectives will be achieved through the following approach:

- Our approach to communications and engagement across the programme is based on trust, transparency, and meaningful relationships. This is embedded by our values and behaviours, which influence how we work within Waka Kotahi and Auckland Transport, and how we engage with treaty partners, stakeholders, and communities.

- The overall approach is to ensure that across Tāmaki Makaurau councillors and local boards; iwi/hapū and those people and organisations with a direct interest in the relevant locations are informed before cameras site construction or installation commences. While there will be a focus on the initial 10 sites, communications and engagement activity will note the plans for additional safety cameras in other sites in future.
- Other stakeholders will be informed over time, with communications and engagement activity increasing as the project progresses and continuing after the cameras have been activated as required.
- Road to Zero branding will be used, together with the three relevant organisations logos (as appropriate and in accordance with Road to Zero branding guidelines and each agencies branding guidelines).
- Key media will also be informed to explain how this expansion fits with responses to previous media enquiries about the “smart” cameras.

Key messages

63.7 The key messages will be:

- Waka Kotahi and Auckland Transport are keeping our communities safe and encouraging people to make safe choices while driving, by installing safety cameras at high-risk locations around Tāmaki Makaurau.
- Safety cameras reminds all of us to travel at the appropriate speed for the surrounding road environment.
- Safety cameras are highly effective in ensuring we can all get to where we’re going by deterring people from driving at an unsafe speed and has been proven in other countries when installed in high-risk streets and roads.
- Safety cameras are just one tool we can use to encourage people to move around the region safely and efficiently to achieve our Vision Zero and Road to Zero goals.
- Safety camera sites have been determined based on risk and considered alongside speed limit changes, safety infrastructure improvements, and Police enforcement.
- In partnership with Auckland Transport, Waka Kotahi is installing an initial 10 safety cameras throughout Tāmaki Makaurau on local roads;
 - Alfriston Road, Alfriston
 - Mill Road, Pukekohe East
 - Cavendish Drive, Papatoetoe
 - Waiuku Road, Waiuku
 - Glenbrook-Waiuku Road, Waiuku
 - Dairy Flat Highway, Dairy Flat
 - Papakura-Clevedon Road, Ardmore
 - Linwood Road, Karaka
 - Sandspit Road, Warkworth
 - Mckenzie Road, Kingseat.
- These 10 cameras are the same models currently operated by NZ Police and are not the new “smart” cameras that received media coverage earlier in 2022.
- Construction will begin in late October through to December 2022, with cameras being installed and operational (subject to final testing), early 2023.

Supporting messages

63.8 Supporting messages will be:

- Average speed cameras which measure a vehicles speed between two points, are intended to be used later, at the additional ^{s 9(2)} sites which have been identified by AT and Waka Kotahi.
- Installing safety cameras will assist in reaching the Road to Zero strategy and AT's Vision Zero goal
- Waka Kotahi and AT will engage with local iwi and hapū on the locations of the cameras to ensure the desired road safety outcomes for Māori.
- As part of the site selection process, a further ^{s 9(2)(b)} locations around Tāmaki Makaurau have been identified for safety camera placement. It is expected that these will be installed from mid-2023.

63.9 As the SCS Programme is both a Road to Zero deliverable of Waka Kotahi, it is important the communications reflect both the Road to Zero narrative and the Waka Kotahi regulatory strategy, Tū ake, Tū māia. Further, the communications for the programme will follow the Narratives for Change approach which is grounded in behavioural science research and uses narratives and storytelling that focus on system change, rather than individual behaviour change, to grow people's understanding, reframe their mindsets and ultimately change behaviour.

63.10 The SCS Programme has an overarching Communications and Engagement Strategy, and plans are developed as required for programme workstreams and key activities. For example, a discrete plan was developed and implemented to support high-level organisation design, the programme has an internal communications plan, and a plan will support the initial safety camera expansion (in the current NLTP period).

63.11 These plans give effect to the strategy and are developed and delivered with input from other teams in the SCS Programme, Police and road controlling authorities, as appropriate. Implementation is supported by relevant specialists within the Waka Kotahi Engagement and Partnership group such as Media Managers, Directors of Regional Relationships, and Te Mātangi as well as Police and road controlling authorities, as appropriate.

63.12 All communications and engagement are designed to be complementary and draw from centrally managed narratives, key message banks, and FAQs, which are regularly updated.

63.13 Effort is made to coordinate activity across Road to Zero programmes and leverage existing Waka Kotahi relationships, forums, and channels.

63.14 Under the Land Transport Rule: Setting of Speed Limits 2022, a whole-of-network approach is required (that is, speed limits must be considered together with safety infrastructure improvements, safety cameras, and Police enforcement). Therefore, the SCS Programme will leverage communications and engagement plans developed and delivered by road controlling authorities for their interim speed management plans in FY21–24 and subsequent speed management plans. These plans will include separate engagement with our Te Tiriti partner.

63.15 As part of a separate RtZ Programme, Waka Kotahi is developing a public awareness campaign to lift public understanding of the Road to Zero approach and support for its tactics. This includes increasing public understanding of the Safe System approach to reducing DSIs on the road network, building on and supporting existing Waka Kotahi advertising and behavioural change programmes.

63.16 The strategic thinking and lessons from the development of this campaign together with customer insights research will inform targeted advertising and education activities to support our mahi to tackle unsafe speeds, which includes safety cameras. Waka Kotahi will lead this mahi with direct input from relevant SCS Programme team members and support

from partners such as the Ministry of Transport and Police. It will be developed a way that honours our commitment to Māori and Te Tiriti o Waitangi. The success of the SCS Programme is critically dependent on the outcomes of this work.

64. Next steps

64.1 s 9(2)(g)(i)

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APPENDICES – *see the separate file*

The appendices file contains:

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