

National Ticketing Solution (NLS)

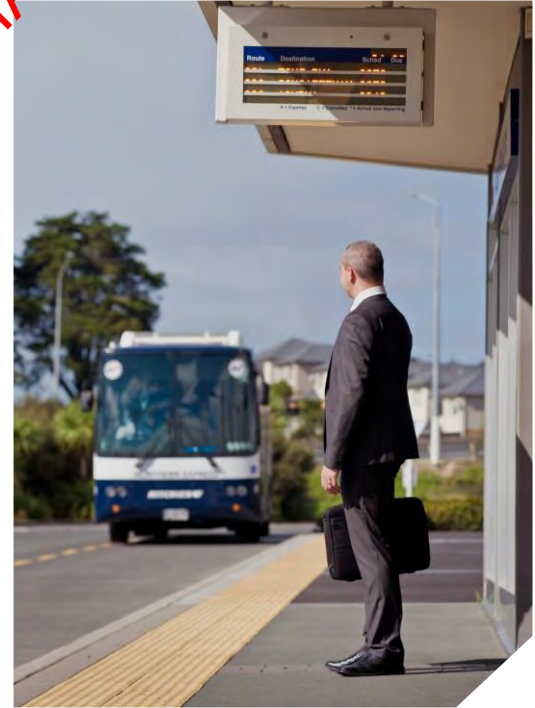
A new approach to ticketing

Making paying for public transport easy and attractive

Increasing the use of travel by public transport will help shape a more accessible, safe and sustainable transport system

The National Ticketing Solution (NTS) is an enabler for change:

- A flexible, modern ticketing system will make it easier for people to pay for public transport anywhere in the country
- This will encourage more people to use public transport, more often
- Increased access will ultimately contribute to reducing New Zealand's carbon emissions and improving safety and congestion on our roads
- Public Transport Authorities will gain a digitally-enabled system with more choice, transparency and simplicity
- A deeper understanding of customer journeys will mean optimised services and better targeted investment



The NTS is a collaboration between Public Transport Authorities and Waka Kotahi



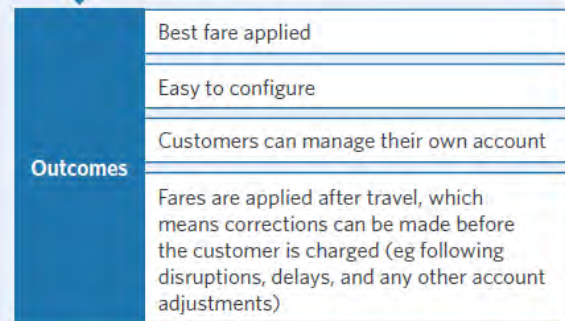
- Northland Regional Council
- Waikato Regional Council
- Bay of Plenty Regional Council
- Taranaki Regional Council
- Horizons Regional Council
- Hawkes Bay Regional Council
- Nelson City Council
- Otago Regional Council
- Invercargill City Council



Unlike the stored value cards of current ticketing, the NTS uses existing contactless debit or credit cards as 'tokens'

- Customers will be able to pay using their own contactless debit or credit card (or digital equivalent)
- Tagging onto a service is their 'authority to travel', replacing a ticket
- Software in the back office will calculate the best fare, will aggregate journeys over a travel day, and charge the card overnight
- Some people, including children, won't have a debit or credit card and will be provided a pre-paid Transit Card
- Cash will be at the discretion of each Public Transport Authority

New system (open-loop account-based system)
(Pay with 'tokens' widely used outside ticketing eg contactless debit/credit card, Google Pay, Apple Pay)



Opportunities and outcomes

Timing is everything

Right now we have an opportunity to align investment nationally in a proven, world-class, public transport ticketing system

Current systems are sub-optimal



Current systems aren't integrated, some are end-of-life, some are interim, or need substantial change

All customers must pay before travelling, tying up \$m on prepaid smart cards

Most systems don't support complex capping or multiple concessions

There is no comprehensive, uniform data about how customers travel across NZ

Partnerships bring scale for small cities



NTS participants have strong relationships, and are working together for better outcomes

New Zealand cities are small by global standards and most lack the scale to afford a modern ticketing solution

Customers expect modern technology



Customers are using contactless debit and credit cards for retail payments and expect the same for public transport

Investment in digital systems is required to meet current and future customer and business needs but implementation takes time, so we need to get started

All current ticketing contracts end within the next five years

National ticketing has been considered for more than ten years, and now we are close to aligning systems and contracts by the end of 2026

Public Transport Authority	Ticketing status	Contract end date	Possible extensions
Environment Canterbury	Metrocard system (INIT) is end of life now; tag on only system	28 Feb 2022	2 x 1-year extensions
Regional Consortium	Bee card (INIT) interim solution now in operation	31 May 2023	2 years on same terms plus cost indexation
Auckland Transport	AT HOP (Thales) in operation	31 May 2024	2 years to 2026
Greater Wellington Regional Council	Snapper on buses; rail pilot to be trialled	'Evergreen' with review points	Subject to Dec 2021 contract review

Improved outcomes for New Zealand are at the heart of the NTS

Improved customer experience



- Convenient - no need to buy and top-up a transit card, find cash, queue to get tickets or prepay for travel
- Intuitive system that's easy to use
- People can use the same card or device on any bus, ferry or train across the country
- People charged the best possible fare, benefiting from daily or weekly fare capping

Supports mode shift



- People can simply tag onto a bus, train or ferry using bank cards or mobile devices they already have
- Reduces barriers to using public transport – including infrequent users and visitors
- Easier ways to pay work alongside other investment activity to support mode shift and reduce emissions
- Ability to easily change fares to drive demand

Better insight and flexibility



- Better data about public transport usage to optimise network design, scheduling and fares
- More flexibility to act on insight - supports easy, cost-effective changes to public transport networks and services
- Helps support regional fare policies
- Easier to apply local and national concessions
- Supports easier inter-regional travel for customers and easier revenue allocation for councils eg Te Huia Auckland/Hamilton train

Improved outcomes for New Zealand are at the heart of the NTS

Value for money



- Collective buying of hardware for NZ supports flexibility of bus fleet between regions
- Equalises ticketing capability across the country for the benefit of all NZers
- Costs of fare collection can be managed on a NZ-wide basis
- Reduces fare evasion

Digitally-enabled system



- Easier to integrate with new digital technologies
- Can be integrated with existing systems where sensible
- Can potentially integrate with third parties to provide wider services

Supports health and safety



- Supports rapid change during disruption (eg COVID-19) providing a level of contact tracing for registered customers, and facilitates the elimination of cash
- Lessens the need for cash use – supporting the safety of drivers
- Drivers can focus on those with additional needs

What is the NTS?

What are we buying and what might it cost?

We are buying a single ticketing solution for public transport bus, rail, and ferry trips across New Zealand

An account-based solution using contactless bank cards where people can pay after they travel



Software licences & support to access electronic ticketing software from a global ticketing solution provider



Integration with a variety of **financial service** providers, including a Merchant Acquirer, Transit Card Programme Manager and Retail Network Manager to support Transit card issue and top-up



Customer facing **hardware** in the form of gate-lines, validators, inspection devices, bus driver consoles ("front office")



A supplier-operated **central back office** to collect taps, construct journeys, charge customers & provide information



Interfaces and processes to support regional operations

Establishment and ongoing operating costs of shared services operation to manage all contractual relationships between Waka Kotahi and each supplier, and between Waka Kotahi and each NTS participant (underpinned by a Participation Agreement)

Consistency in data collection across New Zealand public transport

Systems to support a consistent public transport payment experience across the country

The NTS opens up new functionality not available in today's systems or under most of the 'Do minimum' scenarios

- Only Aucklanders will benefit from account-based, contactless functionality in the 'Do minimum'
- GWRC will extend Snapper to rail
- ECan will join the Bee Card system
- Regional Consortium will maintain existing features and functionality until system next re-procured
- 'Do minimum' means three separate ticketing systems for NZ: Auckland, Wellington, and the rest of NZ

Features available across New Zealand	NTS	'Do minimum'	'Do minimum' comments
Payment by contactless card	✓	✗	Only AT will have this feature
Payment from mobile device	✓	✗	AT customers using contactless can use a mobile device to tap
Pay after travel	✓	✗	AT customers using contactless can pay after travel
Correct journeys before being charged	✓	✗	AT may have this feature for contactless card users, not existing users
Offer national concessions	✓	✗	National concessions would be configured in all three systems
Consistent national data around PT travel	✓	✗	Will be at least three sources of travel data

The wider benefits of an account-based solution are significant

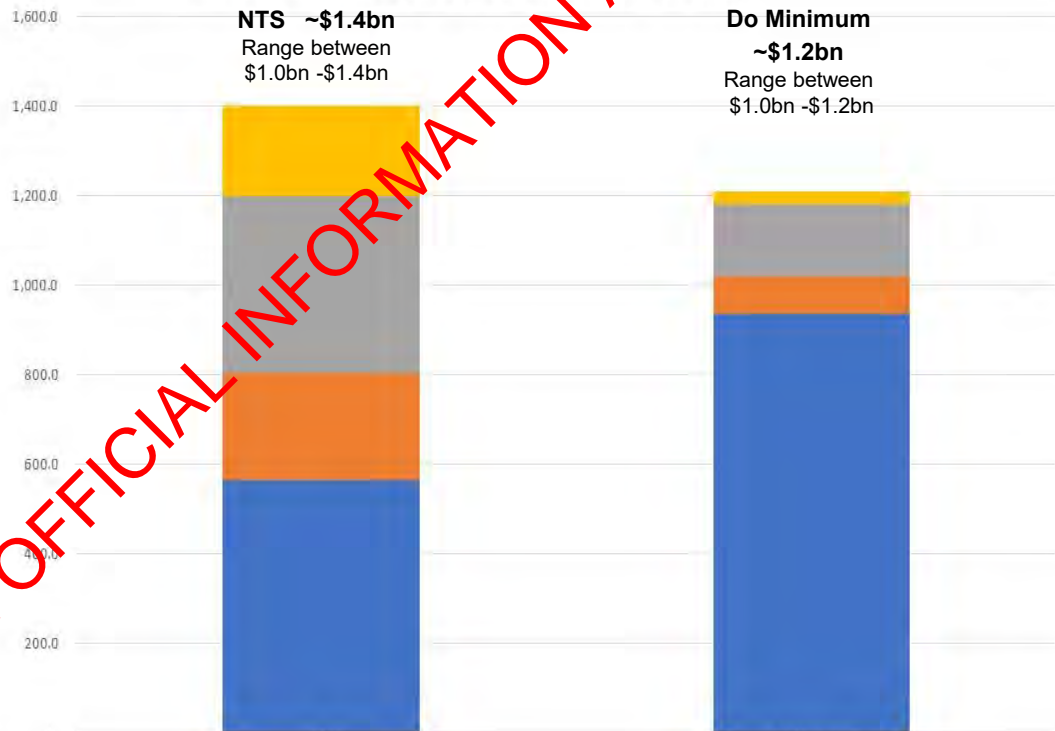
Customer benefits	Operational benefits	Government and regional policy benefits
<ul style="list-style-type: none">• Convenience• Payment choice• Lowest fare guarantee• Nationally consistent customer experience• Better information• Improved accessibility both local and visitors• Patronage growth and flow on effects through mode shift	<ul style="list-style-type: none">• Detailed travel data including start and end points of journeys, transfers and journey patterns• Ability to quickly introduce/change fare products and policies• Reduce cash on board• Revenue protection• Easier adoption of new technologies	<ul style="list-style-type: none">• Simplified deployment of government policy – supporting national concessions• Significant improvements in data collection and information• Ability to quickly implement changes• Support for national emergencies• Enables seamless transition for other transport operators• National efficiency with one development path

The NTS cost is similar to the 'Do minimum'

- while providing greater functionality, wider benefits and a national approach

- The 'Do minimum' will result in three separate ticketing systems offering different functionality across NZ at broadly the same operating cost
- Re-procurement of existing systems will cost more in the future, and councils can't simply re-appoint the existing suppliers they have today
- An integrated approach to re-procurement is key

Forecast costs over 15 years NTS vs Do Minimum (\$m NZD)



	NTS	Do Minimum
Shared services costs (TTP)	203.9	27.6
PTA ticketing solution costs	394.1	162.0
Financial services costs	240.7	85.3
Ticketing provider costs	563.7	934.8

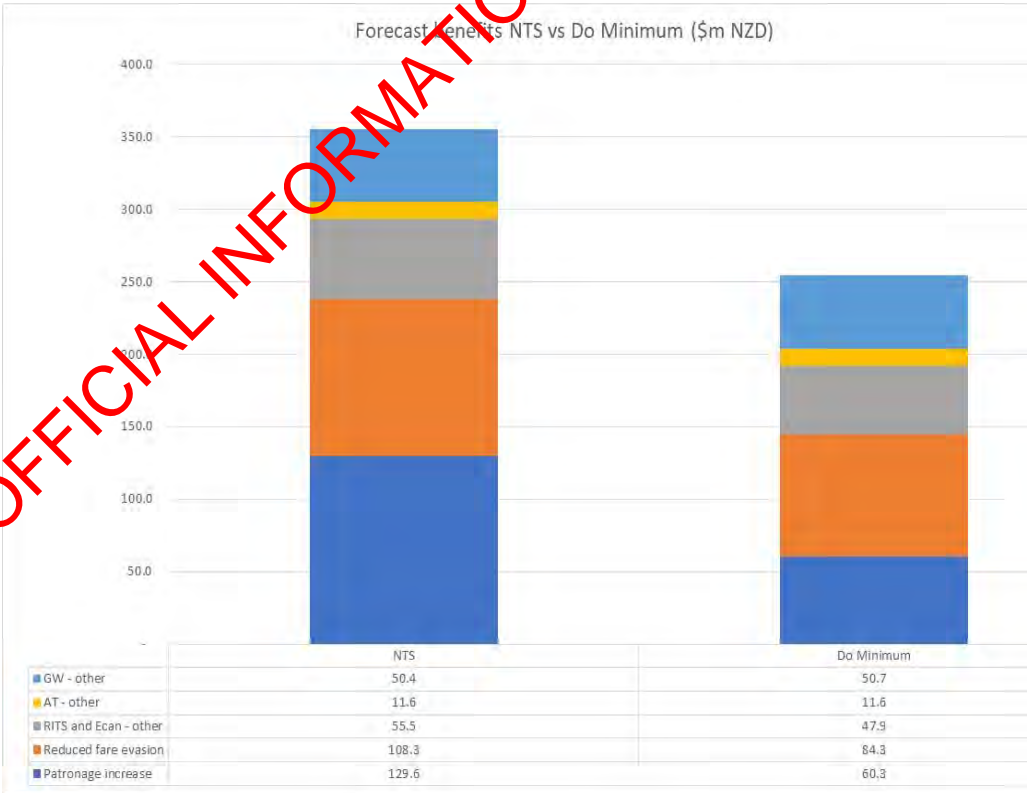
The NTS will provide value for money

The NTS could cost ~20% more than systems do today, but will bring significant customer and business benefits and increased utility to all New Zealand

Nationally-consistent new ways to pay will enable national policy initiatives and provide opportunities for future innovation, not possible with the 'Do minimum' alternative

Value for money can be measured in many ways:

- **Economy** – the NTS will provide ticketing services to all NZ regions; many don't have the scale for this today
- **Efficiency** – the TTP shared service function will enable a consistent and efficient use of resources across NZ
- **Effectiveness** – delivery from a central core using a proven global solution enhances PT ways to pay
- **Equity** – the same system across NZ, with new features to improve accessibility and access for all



Funding is proposed to be met through the National Land Transport Fund (NLTF)

- subject to prioritisation and approval from the Waka Kotahi Board




This is a different funding model to the usual Waka Kotahi co-funding approach for the following reasons

- To simplify the commercial relationship between TTP and the PTAs
 - PTAs will receive full fare revenue, collected by TTP
 - TTP will bear all operating cost, including banking fees
- To avoid duplication of investment, and enable more efficient hardware purchasing so hardware can be moved between regions easily
- To control ticketing costs nationally and strengthen bargaining power



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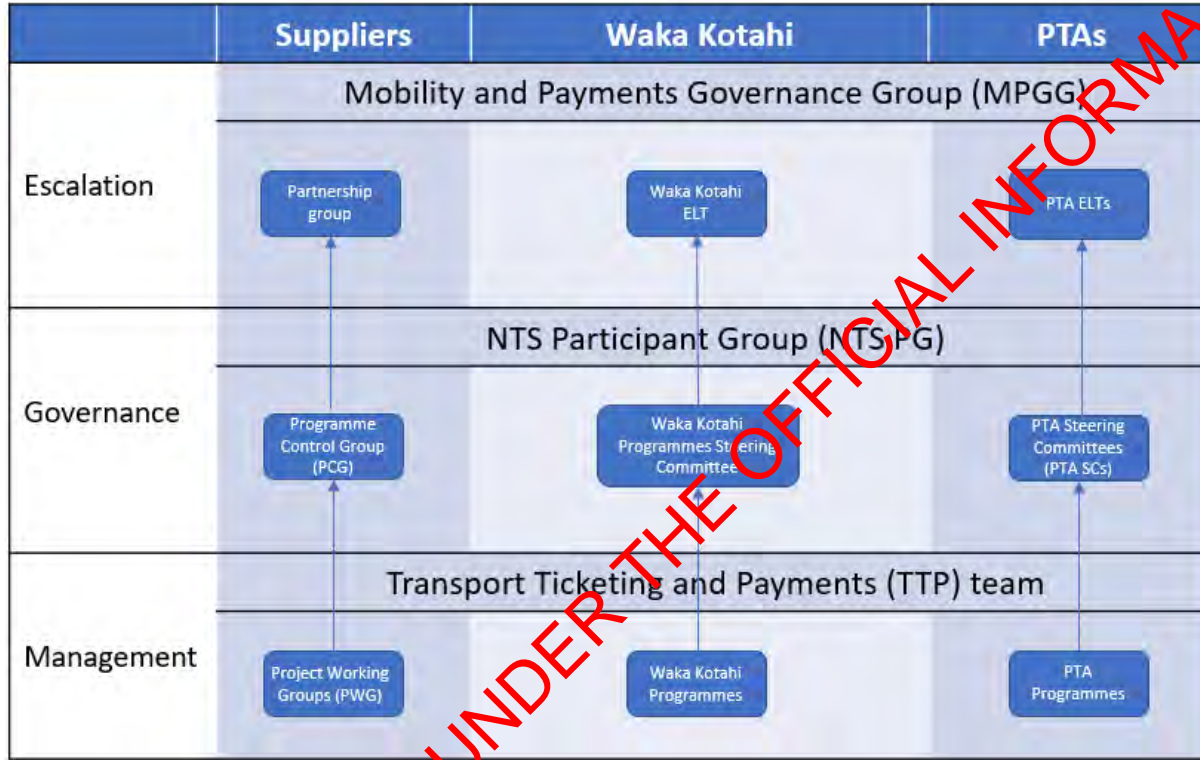
- subject to prioritisation and approval from the Waka Kotahi Board

	Cost type	Funding from NLTF
	Capital Costs Includes software and licences, equipment, compliance/ certification, design build & test, Merchant Acquirer setup, Transit Card setup, Retail Manager setup, TTP setup	100%
	Operating Costs Includes Ticketing Provider costs, Merchant Acquirer costs, Programme Manager costs, Retail Network costs, TTP support costs	100%
	Other Costs Includes transition costs, phase out of existing systems, local networks, local participant ticketing solution costs	Normal FAR (51% assumed at this point)

How and when will it be delivered?

Governance, implementation, phasing

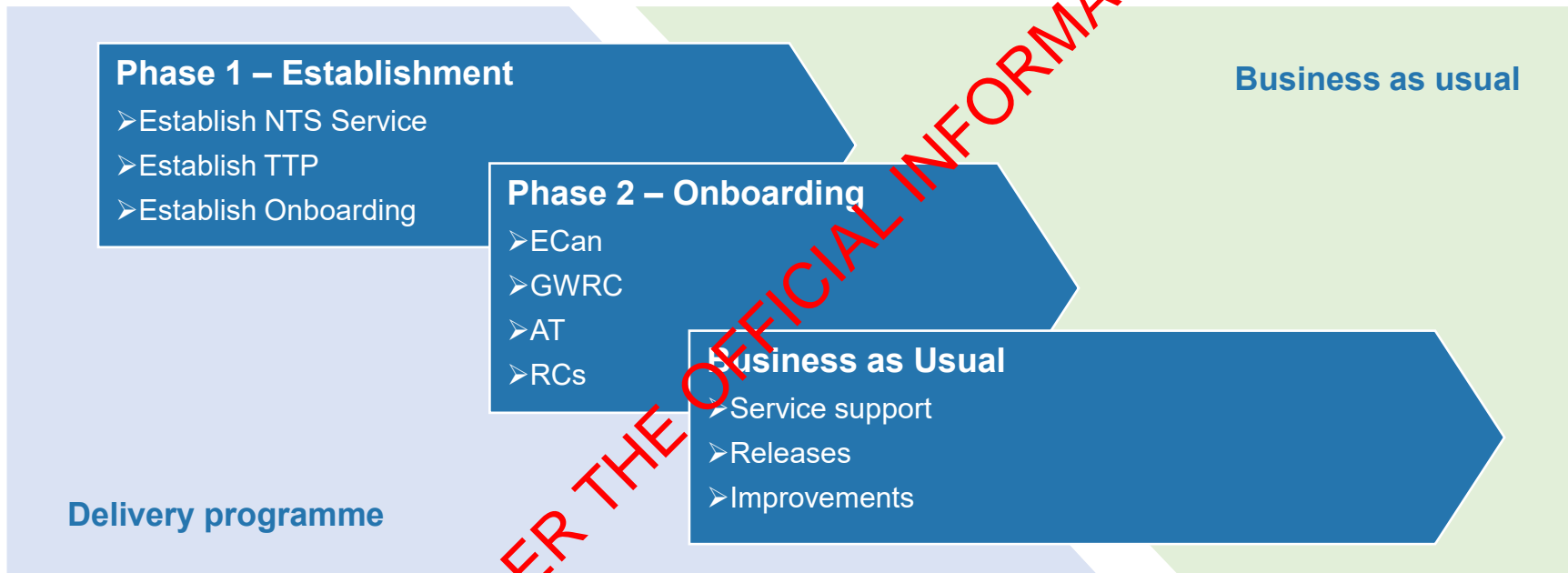
Delivery of the NTS will be governed by a participant group and managed through a shared services function in Waka Kotahi



The Transport Ticketing & Payments team (TTP) will operate as a shared service organisation - the 'glue' connecting ticketing suppliers to regional Public Transport Authorities (PTAs)

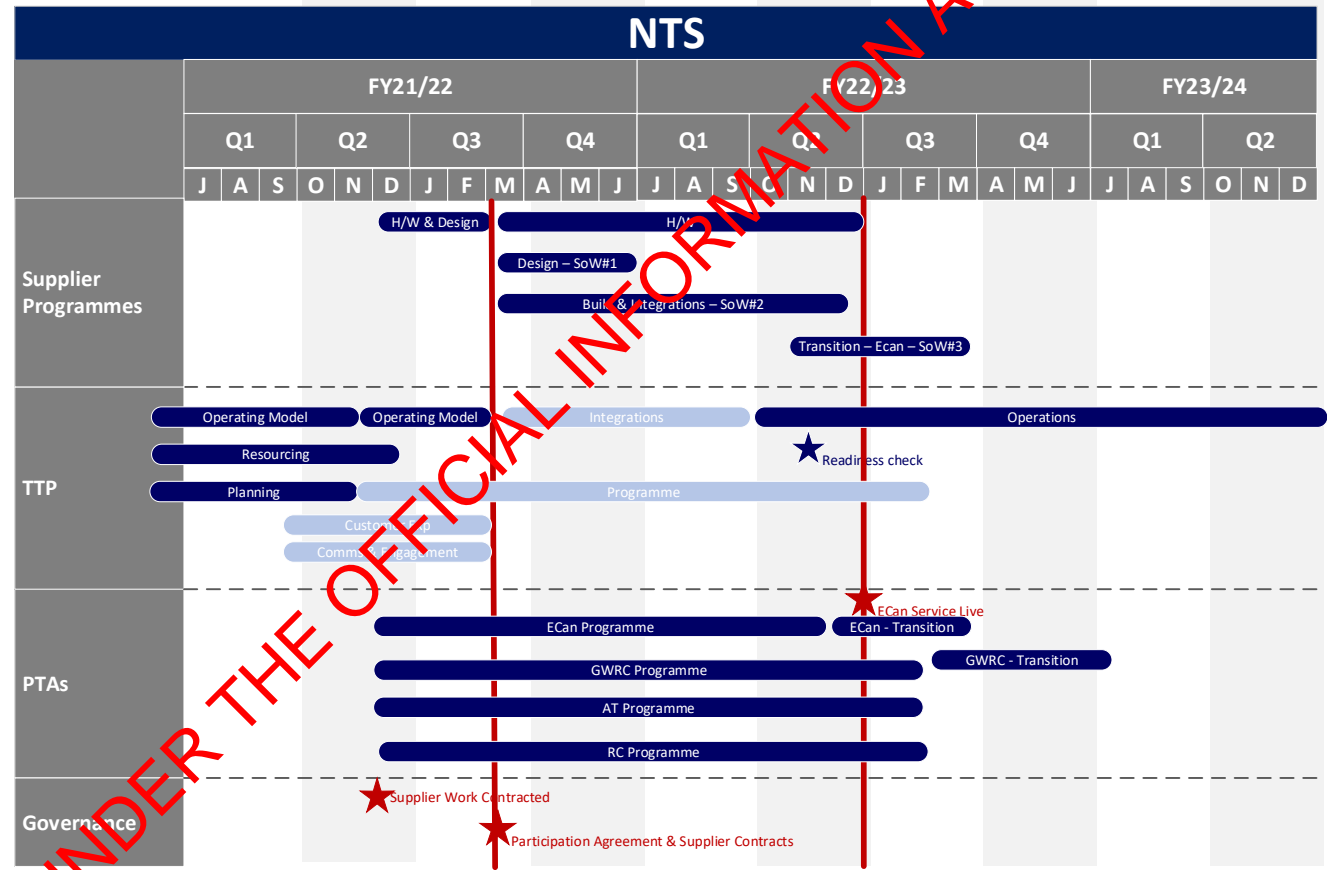
- The NTS Participant Group is made up from senior leaders from each NTS participant
- The Mobility Payments Governance Group (MPGG) is the CE of NTS participants
- The TTP team will be accountable to the NTS PG for delivery

Implementation and transition to BAU will involve two phases – establishment and onboarding



Note, this is intended to illustrate the sequencing and does not represent a timeline

Contract arrangements involve four activity streams with completion targeted for end February 2022



Risks will require strong management

Large projects and multiple parties always pose risks. The strong NTS governance and management arrangements are key to effective mitigation

- Customer and reputational risk
 - Risk of poor transition experience
 - Failure of system or breach of security/privacy
- Participant risks
 - Political will and capability to collectively deliver for NZ
 - Alignment and timing to contracts and regional plans
 - Governance and collective decision making
 - Capability and capacity to deliver
- Supplier risks
 - Technology tie in for 15 years
 - Capability to deliver over long-time horizon
- Funding risks
 - Affordability, phasing, and funding assistance rate



NTS opens opportunities for national initiatives and innovation

Opportunities to integrate with other transport areas

- Support a wider Transport Broker model with a core customer focus
- Support a wider Mobility as a Service deployment
- Link payments for first and last mile trips into wider journeys
- Incentivise mode shift through linking fares pricing to future congestion charging regimes
- Offer more dynamic fares than today to balance public transport capacity and service



We are confident of success

Account-based contactless ticketing has been operating in London since 2012, with many other big cities adopting the approach or in the process of doing so

- Choosing a proven solution deployed in other locations minimises the technology risk
- Appointing a global supplier with many successful deployments minimises the implementation risk
- PTAs are already doing ticketing in various forms today, and leveraging existing expertise and developing a strong internal capability within Waka Kotahi minimises the ongoing operational risk
- Strong regional and central government partnerships ensure the necessary cooperation to make things happen for New Zealand
- Phasing deployments starting with ECan through to GWRC, RITS and AT manages the complexity and embeds learning along the way



¹ Includes Gisborne & Marlborough, not currently Consortium members



Appendix A - What is the alternative to the NTS?

- A 'do nothing' approach is not considered an option so the focus for the counterfactual has been a 'Do minimum'
- 'Do nothing' is not an option because:
 - Customer expectations have changed as payment technology simplifies and makes everyday experiences easier
 - Existing systems obsolescence (paper tickets, end-of-life systems)
 - Requirement for flexibility to respond to challenges like Covid-19 and Community Connect
- 'Do minimum' technically is explained as:
 - AT moves to account-based ticketing (ABT) offering contactless payment options with existing supplier
 - GWRC extends Snapper to rail and integrates fares across modes (not ABT and not contactless)
 - ECan joins Regional Consortium or equivalent (tag on/off; not ABT and not contactless)
 - Regional Consortium (RC) - no change (not ABT and not contactless)
- 'Do minimum' risks that will impact revised costed propositions:
 - Both the AT and GWRC 'Do minimum' assume evergreen contracts with incumbent suppliers, while RC and ECan assumes an indefinite extension of the existing RC contract
 - 'Do minimum' has not included costs of implementing any national policy initiatives which require inter-regional consistency

Appendix B - NTS benefits - quantified

- Benefits amount to about \$355 million (nominal over 15 years)
- Ticketing systems are usually implemented alongside other changes to public transport (such as fare policies) which make it difficult to find evidence that measures the sole impact of ticketing on patronage, revenue protection and so on
- Collective experience of subject matter experts has been used to estimate these benefits:
 - Patronage
 - Reduced fare evasion
 - Other benefits from the 'Do minimum' equally applying to an NTS solution:
 - AT – expected staff efficiency resulting in FTE positions avoided
 - GW – staff efficiency
 - RITS and ECan – Improved information management, reduced fare evasion (bus), enhanced customer retail experience and reduced travel time

	Nominal Benefits over 15 years
Patronage - all at 2% increase - first year only	129.6
Reduced fare evasion - GW Rail	108.3
Other Do Minimum benefits also achieved by the NTS	
- RITS and ECan	55.5
- AT	11.6
- GW	50.4
Total benefits (nominal over 15 years)	355.3
Present value (at 4% over 15 years)	263.4

Operating Cost Comparison to 'Do minimum'

section 9(2)(b)(ii)

- The 'Do minimum' will result in 3 separate ticketing systems offering different functionality across NZ at broadly the same operating cost
- Forecasting to 2036, the premium paid for NTS functionality narrows, while delivering an integrated NZ-wide system
- The NTS provides greater control over ticketing and related costs into the future

Forecast annual operating costs in 2036 - NTS vs Do Minimum (\$m NZD/year)

section 9(2)(b)(ii)

	NTS	Do Minimum
Shared services costs		
Pr ticketing solution costs		
Pr financial services costs		
Pr ticketing provider costs		

section 9(2)(b)(ii)

Capital Cost Comparison to 'Do minimum'

section 9(2)(b)(ii)

- A contactless Transit card is not part of the 'Do minimum' – PTAs will continue with existing closed loop cards for prepaid & concessionary functionality
- No national shared service as part of the 'Do minimum' – Regional Consortium will continue their existing central operations in Otago

Forecast capital costs NTS vs Do Minimum (\$m NZD)

section 9(2)(b)(ii)

	NTS	Do Minimum
Transition costs		
Shared services costs		
Financial services costs		
Existing provider costs		
Equipment - front office		

section 9(2)(b)(ii)



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