

# ***Auckland Transport Operations Centre (ATOC) Amalgamation***

## ***Single Stage Business Case***

***FINAL***

***Auckland Transport  
New Zealand Transport Agency***

***November 2018***

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# 1. Executive summary

## 1.1 Introduction

Auckland Transport (AT) and the New Zealand Transport Agency (NZTA) have prioritized customers and are jointly transitioning to a customer-centric service model. This means focusing on all customer journeys (road, freight, public transport and active modes) and managing a customer's entire journey as one, ie the way customers experience it, rather than in discreet parts.

The Auckland Transport Operations Centre - Smales (ATOC Smales) and Auckland Transport Operations Centre - Central (ATOC Central) are jointly operated by AT and NZTA and they have collective responsibility for managing the Upper North Island State Highway network and all other transport operations in the Auckland region – including all roads, public transport facilities, parking operations support, special events, etc.

ATOC Smales is located in Takapuna and was originally established by AT and NZTA under a partnering agreement and the governance of a Joint Management Board (JMB). ATOC Central is a separate centre that was established in downtown Auckland by AT alone to provide services not covered by ATOC Smales. ATOC Central has recently also moved under informal JMB governance and a common manager.

The current organisation is structured around delivering functional outputs rather than customer outcomes. The two centres provide complementary functions but they have different areas of responsibility, are physically separated, and have a number of different systems and processes, so operate in distinct silos. Both ATOCs also rely on external, and also siloed, AT and NZTA functions and partner agencies. Managing operations across different transport modes out of inter-organisational silos located across different sites, and with multiple processes and systems is inefficient. It results in fragmented, sometimes slow, and less effective responses to incidents and optimisation opportunities because each TOC focuses on its own functions and areas of responsibility rather than a “one network”, customer-journey-centric model that supports the way our customers travel.

AT and NZTA's joint priorities are to enable customers to make informed choices about the way they travel and to optimise the Auckland region's transport network *across all modes*. The purpose of this project is to investigate ways that these outcomes will be supported through amalgamating the two current ATOCs.

## 1.2 The case for change

Our existing TOCs and partner agencies deliver their respective functions to a very good standard. However, these functions are currently delivered in a way that suits our operation, rather than being delivered in a way that best suits our customers' needs. Our customers expect us to manage their entire journey as they experience it – as one seamless journey, but the current ATOC structure and physical dislocation fails to enable this.

ATOC amalgamation will deliver a number of benefits which will accrue equally to AT and NZTA and our customers. Of primary importance is the positive impact on the customer journey and customer experience across all modes, including public transport and freight. Internal benefits arise from a more efficient and effective operating model and improved relationships with external stakeholders.

Both customer and internal problems and benefits are outlined in Tables 1 and 2 below.

Table 1: Customer experience problems and benefits

<b>Problems</b>	<b>Benefits</b>
<ul style="list-style-type: none"> <li>• Lack of customer journey reliability</li> <li>• Lack of integrated, multi-modal management of customer journeys</li> <li>• Unplanned events cause excessive delays for customers</li> <li>• Safety and security implications - caused by different processes disjointed communications</li> <li>• Delays to freight journeys through the network</li> <li>• Poor 'planned event' planning and execution – only special events are managed in a coordinated manner</li> </ul>	<ul style="list-style-type: none"> <li>• Improved integrated customer journey information and reliability</li> <li>• Improved safety and reduced delay through faster and more effective responses</li> <li>• Improved customer travel experience and satisfaction</li> <li>• Transport choice for customers is improved</li> </ul>

Table 2: Internal – organisational and operational – problem and benefits

<b>Problems</b>	<b>Benefits</b>
<ul style="list-style-type: none"> <li>• Roles and responsibilities lack clarity in the current organisation structure – silos and duplication</li> <li>• Lack of standardised processes and reporting</li> <li>• Disparate systems, information is not integrated</li> <li>• Business functions not aligned to strategic and customer outcomes</li> <li>• Unclear governance and oversight</li> <li>• Inefficient use of resourcing and capability</li> <li>• Current ATOCs do not provide operational resilience</li> </ul>	<ul style="list-style-type: none"> <li>• More efficient and effective operating model that aligns to journeys/outcomes</li> <li>• Improved decision making, faster responses</li> <li>• Operational excellence – moving from function to outcome focused</li> <li>• Better situational awareness and planning through data, information and intelligence sharing</li> <li>• Improved relationships building trust and alignment</li> <li>• Removing duplication to deliver better value for money</li> </ul>

### 1.3 Strategic alignment

The ATOC Amalgamation project aligns to a range of strategy documents such as the Government Policy Statement on Land Transport (GPS), NZTA and AT's statements of intent and the Auckland Transport Alignment Project (ATAP) through:

- prioritising customer journeys and customer experience to deliver improved journey reliability and better travel information to support transport choice
- operating and optimising the entire transport network as one connected and coordinated system to support reliable and connected urban and regional customer journeys
- enabling better resilience – both operationally and in the transport network itself
- increasing safety
- improving relationships with stakeholders and partners to achieve joint outcomes
- adopting creative, innovative approaches to improve operational efficiency, effectiveness and resilience
- enabling future growth to meet demand – both organic growth and new transport modes

- making better use of our existing assets through optimising the management of the transport network

## ***1.4 Alignment with local and international practice***

### ***Network Operations***

Both KiwiRail and Transpower are good examples of network operators that have multiple operations centres but which can operate their entire national network from a single centre, enabled by highly standardized systems and processes. NZTA's strategy is to achieve the same with ATOC and its other TOCs in Tauranga, Wellington and Christchurch. It does not currently enjoy this level of standardization (nor, due to the way the road network is constructed, is it ever likely to) but has a technology-enabled strategy to mitigate this issue.

### ***Multi-modal Operations***

While there are many international examples of combined network (e.g. road and rail) and combined network and law enforcement operations centres, full multi-modal transport centres don't exist.

A good example of an "all-in" operations centre would be the New York Emergency Operations Centre. This hosts all agencies, and all transport modes and operators, but it is primarily a law-enforcement led incident management facility, not a day-to-day operations centre. The sheer number of participants would make this centre unworkable for normal day-to-day transport operations.

A full multi-modal TOC would simply be too hard to achieve in most jurisdictions because of the sheer number of different operators and agencies involved. Auckland (and NZ) is uniquely placed to succeed in that it has a small number of agencies e.g. a single police force and AT being the single authority responsible for all public transport in Auckland. This makes it easier for ATOC to shift to a more proactive, predictive and actioning organisation.

### ***Anticipating more technology and automation***

The international trend is a reducing requirement for human operators as the benefits of technology, and automation in particular, are realised. The impact of this on ATOC is difficult to estimate at this time because, at the same time as the road network technology is maturing and becoming more automated, Auckland's multi-modal landscape is becoming increasingly complex and will require increasing levels of human operator input for the foreseeable future.

The key risk is the amalgamated ATOC being built for today's level of staffing but then, as technology and automation is deployed, being left with surplus resources. Our key mitigation has been to not overestimate additional capacity for future modes e.g. City Rail Link (CRL) and light rail but to assume technology and automation will reduce the resources they will need and also progressively reduce the footprint of existing modes to make room.

## ***1.5 Option development and evaluation***

A 2017 AECOM study reviewed international best practice for transport network operations. Four options were developed for improving the performance of the two ATOCs based on that information:

1. Virtual amalgamation – retain two locations with a single leadership structure
2. Amalgamate and integrate – co-located and integrated ATOC with a single leadership structure
3. Amalgamate, integrate and expand – co-located, integrated and optimised ATOC with a single leadership structure
4. Create a 'Super' TOC – an all-in super TOC

An evaluation framework was developed with nine criteria based on project objectives to deliver the potential benefits. Figure 1 summarises the assessment of the four options.

Figure 1 Evaluation framework and assessment

Criteria	Option A	Option B	Option C	Option D
	Virtual amalgamation	Amalgamate and integrate	Amalgamate, integrate and expand	'Super' TOC
Improved customer experience				
Efficient and effective operating model, timely and responsive				
Improved decision-making				
Improved relationships between AT, NZTA and third parties				
Value for money, resilient and sustainable				
Promotes safe environments				
Multi-modal				
Supports national standards				
Multi-disciplinary integrated teams				

Key:					
	Good	→			Poor

## 1.6 Preferred option

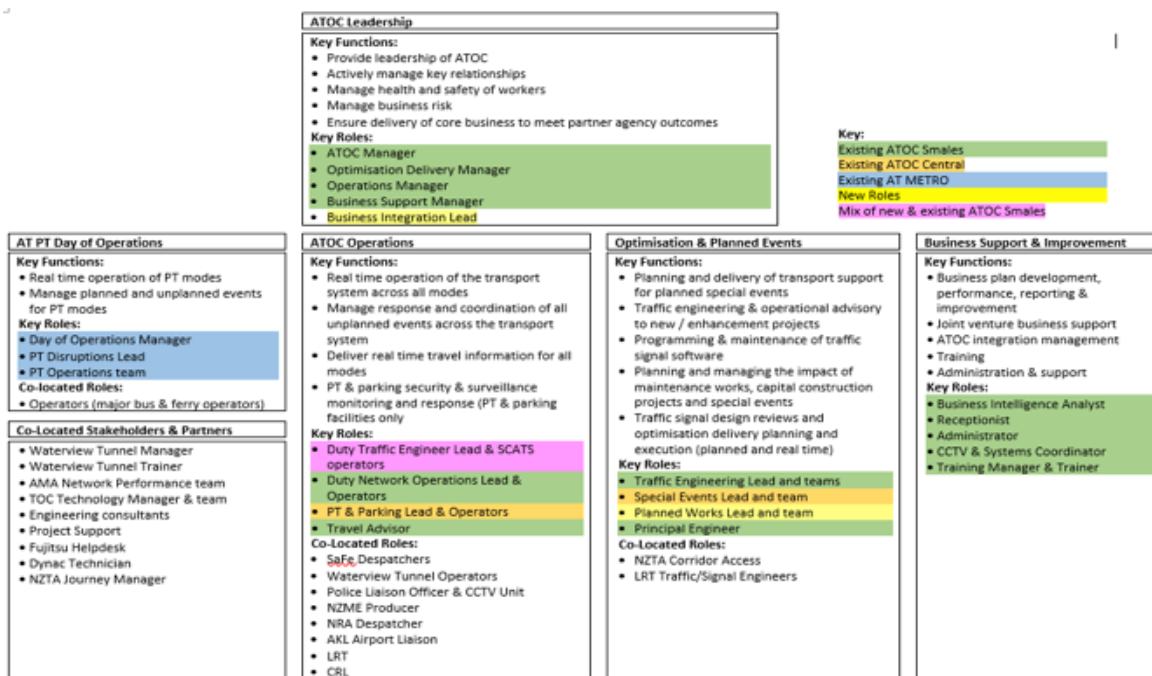
Option C – Amalgamate, integrate and expand was identified as being the preferred option overall across the nine criteria, having the following characteristics:

- Enables multi-modal, multi-organisation transport operations
- Much better co-ordination between different functions and modes
- Improved integrated customer journey information provides informed decision making and reliability improvements for customers
- Expansion to include:
  - Enhance optimisation capacity by increasing existing capacity and capability in traffic engineering and signal operations
  - Introduce planned works function for coordination of disruption caused by planned maintenance and construction projects
  - Better integration with Police and road network support providers
  - Police commitment to 7 day/week coverage and increased presence including permanent Police Liaison Officer
  - Ability to include further future functions as/when required
- Co-locating existing and new functions with a modest headcount uplift (11 net uplift)
  - Amalgamating Smales (67 existing FTE), Central (19 existing FTE), transferring accountability for ITS asset management out of ATOC (7 FTE) and introducing new positions and functions (11 FTE) – 108 total staff in the amalgamated ATOC
  - Ability to upskill existing staff adding to resilience
- Increase in space required

- Smales Farm lease has already been extended and expanded by NZTA
- Standardise processes and systems over time
- Improved resilience (Business Continuity and Disaster Recovery)
  - Existing Auckland Harbour Bridge site backup for Smales and ad-hoc AT Viaduct backup for Central does not provide a current viable DR capability, and will not support future amalgamated ATOC needs
  - To support continuity of all critical ATOC functions through the most likely DR scenarios – a localised utility outage or building/site evacuation impacting Smales Farm – as well as less likely Region-wide scenarios, a local (Auckland) hot backup site that can be activated within 1 hour will be established
- Propose utilising space at AT Albany Hub (pending technical evaluation)

The proposed future ATOC organisation structure is described in Figure 2, which highlights the mix of existing, new and co-located roles.

Figure 2 Proposed future organisation structure



### Preferred option cost impacts

- \$6.4 million capex and \$1.09 million opex for amalgamation
- \$793,000 (4%) annual increase in ongoing operational cost
- Police to cover their own direct costs (eg personnel and systems)

### Delivering benefits

It is difficult to directly quantify benefits due to the number and variety of influencing and changing factors that impact the performance of the transport network, and availability of current performance metrics. Modelling of scenarios for non-environmental Level 3 and higher incidents using ATOC incident data from 2016 (the most recent year for which complete data is available) shows the potential for reduction in incident related delay of up to 220,000 person-hours per annum providing an economic benefit of up to \$5 million.

This only accounts for one aspect of the broader benefits that an amalgamated ATOC is designed to deliver, so should not be viewed as absolute. However, even with only modest improvements there is a significant improve that suggests the annual increase in operating cost would be easily offset by this benefit stream alone.

## 1.7 Commercial Case

Amalgamating ATOCs carries four main commercial considerations as outlined in Table 3.





Table 3 Commercial considerations

<b>Consideration</b>	<b>Key discussion</b>
Outsource ATOC	<p>Would be a significant step-change and not considered appropriate in the current national environment:</p> <ul style="list-style-type: none"> <li>• Incompatible with the national model and operating system</li> <li>• Integrated nature of operations with core AT/NZTA business</li> <li>• Need for ATOC to respond quickly and flexibly – outsourcing adds complexity and accountability issues</li> <li>• Potential to review in the future ('Future Journey Centre' to be investigated by the NZ Transport Agency)</li> </ul>
Location	<ul style="list-style-type: none"> <li>• Central not a viable option due to size</li> <li>• Smales Farm delivers all requirements: <ul style="list-style-type: none"> <li>○ 24/7 functionality, access and security</li> <li>○ High capacity data connectivity</li> <li>○ Further capacity to expand</li> </ul> </li> <li>• No rationale to consider alternative location – Smales lease extended</li> <li>• Fit-out to be designed as part of transition, then procured through BAU process</li> </ul>
Systems / IT	<ul style="list-style-type: none"> <li>• Significant integration required for optimisation – attempt to utilise existing systems</li> <li>• Separate AT/NZTA program to align technology roadmaps in development</li> <li>• BAU procurement proposed where required, potential to leverage with Police procurement</li> </ul>
Professional / support services	<ul style="list-style-type: none"> <li>• Implementation likely to require mix of in-source and out-source</li> <li>• Detailed implementation plan will highlight requirements and BAU procurement proposed</li> </ul>

## 1.8 Financial Case

### **Transition/implementation costs**

Total implementation/transition costs are estimated at \$6.4 million capex and \$1.09 million opex.

### **Funding principle**

Based on the current ATOC funding principles, it is proposed that AT and NZTA each carries a 50/50 share per Table 4, subject to transition cost apportionment review through the planning and design process as it may be appropriate for specific costs to be allocated to a single organisation. With the 50/50 split, cost would be \$3.75 million (\$3.2 million capex and \$546,000 opex) per partner.

### **Ongoing cost implications**

There is an estimated \$793,000 (4%) uplift in ongoing annual operating costs due to increased facilities and people costs. It is proposed that this increase be split 50/50 between AT and NZTA as per the current partnering agreement. The increases are described in Table 4.

Table 4 Overall opex cost increases

Item	Current	Future	Change	%	Note
ITS asset management & operation	\$ 4,059,000	\$ 4,059,000	\$ -		
Operations & optimization	\$ 2,821,990	\$ 2,821,990	\$ -		
Real time travel information	\$ 331,391	\$ 331,391	\$ -		
IS/ITS systems	\$ 4,902,400	\$ 4,902,400	\$ -		
Administration	\$ 1,061,135	\$ 1,061,135	\$ -		
Salaries	\$ 6,525,000	\$ 7,170,000	\$ 645,000	10%	1
Facilities OPEX & Rent	\$ 625,565	\$ 773,303	\$ 147,738	24%	2
DR facility	\$ 120,000	\$ 120,000	\$ -		3
<b>Combined ATOC OPEX Budgets</b>	<b>\$ 20,446,481</b>	<b>\$ 21,239,219</b>	<b>\$ 792,738</b>	<b>4%</b>	

Notes:

1. Salary costs increased:
  - Additional capacity added to traffic signals operations team to meet increasing demand for real time optimization
  - Establish 'Planned Works' function to improve planning for and managing impact of planned works, maintenance and capital construction projects
2. Facilities rent and OPEX costs increased:
  - Additional space leased at Smales Farm to accommodate the amalgamated TOC
    - Amalgamation is not physically possible in the current ATOC Central location (downtown ferry terminal building), hence the recommendation to extend at Smales Farm
    - The downtown ferry terminal building is owned by AT and all costs are carried by AT Facilities and AT Metros (ie. no rent or opex is paid by ATOC), hence an increase in rent and opex to accommodate the larger footprint at Smales
    - It is assumed AT will continue to pay rates and utilities at ferry terminal building after it is vacated by ATOC Central so there will be no savings to either ATOC or AT overall
3. Assumes the future DR site carries the same opex cost as the current site at Auckland Harbour Bridge.

**Funding and risks**

- NZTA currently has no capital provision allocated for amalgamation however the estimated spend is within the Chief Executive's delegation.
- AT's share of the opex spend has been included in the budget bid for FY19/20; NZTA's share to be met through the National Land Transport Fund (NLTF).
- It is assumed both partners will adjust future year budgets accordingly to meet the ongoing opex cost requirement, with NZTA's share coming from the NLTF.
- Notable financial risks:
  - Different staffing requirements following detailed organisation design
  - Implementation cost overruns – capex eg fit-out more costly, additional IT costs, unforeseen costs at Central

- Implementation cost overruns – opex eg higher proportion of out-sourcing for transition team (due to internal capacity/capability)

## 1.9 Management Case

### Implementation/transition approach

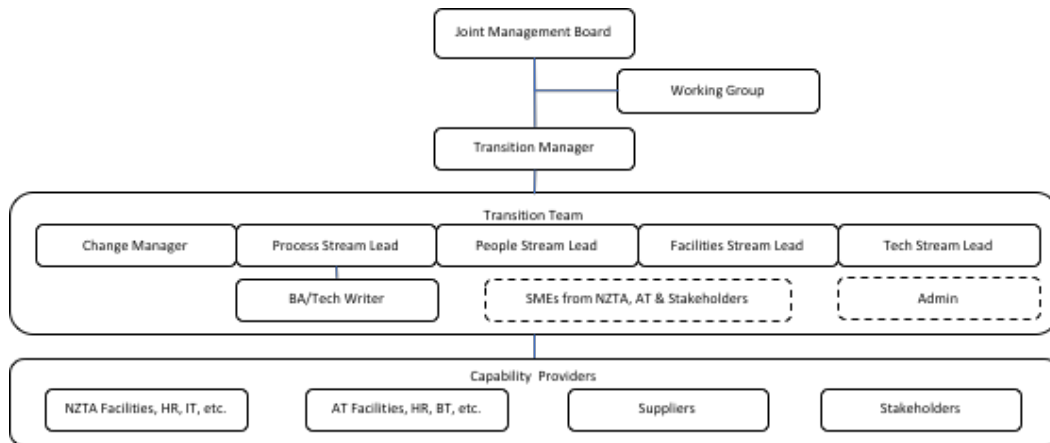
To contain the volume of change occurring at any point and to mitigate the inherent change risk, the amalgamation will be delivered in two phases, with physical amalgamation to occur through 2019 and process improvement through 2020 leaving the amalgamated ATOC ready for the Americas Cup and APEC in 2021.

Amalgamation will be delivered across four workstreams covering people, facilities, process and technology.

### Implementation/transition resources

The proposed transition team and reporting and governance for the project are outlined in Figure 2.

Figure 2 Proposed transition team



### Implementation/transition Risks

While the ATOC Amalgamation project will provide significant benefits, there are some implementation project risks. However, it is expected that these risks can be managed or mitigated as outlined in Table 5.

Table 5 Implementation project risks and mitigations

Risk	Mitigations
Technology integration	<ul style="list-style-type: none"> <li>• Two phase approach – physical amalgamation first</li> <li>• Leverage joint technology program</li> <li>• Fall-back to existing systems</li> </ul>
Delays to the transition programme	<ul style="list-style-type: none"> <li>• Clear deliverables, outcomes, project and programme management (critical path identification)</li> <li>• Regular reporting and monitoring</li> </ul>
People	<ul style="list-style-type: none"> <li>• Early delivery of change management</li> <li>• Support for staff, joint HR engagement (AT/NZTA)</li> <li>• Clear leadership, collaborative direction from JMB</li> </ul>
Funding / cost	<ul style="list-style-type: none"> <li>• Agree funding arrangements at outset</li> <li>• Close project and programme management</li> <li>• Regular financial risk reporting and monitoring</li> </ul>

<b>Risk</b>	<b>Mitigations</b>
	<ul style="list-style-type: none"> <li>• Early identification of cost changes</li> </ul>

### **Benefits monitoring**

The ATOC Amalgamation project is expected to deliver a wide range of benefits as described earlier, but many will be extremely difficult to quantify. Much of what an amalgamated ATOC will deliver is an expansion on existing network operations and operational efficiency gains.

It is important to note that while these metrics are able to be measured, it is, for some of them, virtually impossible to control for the large number of other influencing factors to try to isolate the effect of ATOC only.

*Table 6 Monitoring and measuring benefits*

<b>Benefit</b>	<b>How it will be measured</b>
A safer transport system	Reduction in time taken to detect incidents
	Reduction in incident response time (post detection)
	Reduction in incident resolution time
	Reduction in hazard escalation
More satisfied stakeholders and customers	Customer / stakeholder satisfaction
	Reduction in travel time variability (reliability improves)
	Reduction in incident related delays
Operational efficiency gains	Improvements in staff engagement and satisfaction
	Improvements in staff productivity
	Increased resilience in TOC delivery

## **1.10 Conclusion**

AT and NZTA are invested in a more integrated and coordinated ATOC solution to enable a “one network”, customer journey centred approach to operating the transport network.

This Single Stage Business Case has outlined the problems with the current two ATOC approach and set out the benefits of amalgamating the ATOCs. The benefits are clear and accrue equally to AT and NZTA and their customers. Of primary importance is the positive impact on the customer journey and customer experience, across all modes, including all public transport modes and freight. Internal benefits arise from a more efficient and effective operating model and improved relationships with external stakeholders. While there are risks involved with amalgamation, it is expected that these can be managed to reduce likelihood and mitigate the impacts.

## **1.11 Recommendations**

This Single Stage Business Case seeks formal approval from the AT Board and NZTA Senior Leadership Team to progress the amalgamation of the two ATOCs (ATOC Smales and ATOC Central) at Smales Farm.

It is recommended that the parties:

- approve the business case for the ATOC Amalgamation Project
- endorse the establishment of the transition team to deliver the amalgamation

## 2. Strategic Case

### 2.1 Overview of the project

The Auckland Transport Operations Centre - Smales (ATOC Smales) and Auckland Transport Operations Centre - Central (ATOC Central) have collective responsibility for managing the Upper North Island State Highway network and all other transport operations – including all roads, Public Transport facilities, parking operations support, special events, etc. in the Auckland region.

Auckland Transport (AT) and the New Zealand Transport Agency (NZTA) have prioritised customers and are jointly transitioning to a customer-centric service model. This means focusing on all customer journeys (road, freight, public transport and active modes) and managing a customer's entire journey as one rather than in discreet parts. This will require AT and NZTA to operate the entire transport system in an integrated manner.

ATOC Smales is primarily responsible for monitoring and responding to incidents and events on the entire Auckland road network and the Upper North Island State Highway network, managing, controlling, and optimising traffic and ramp signals, and providing real time (road) travel information to customers. ATOC Smales also has Asset Management and Contract Management functions to support the maintenance and renewal of ITS assets - traffic signals, signage, etc.

AT and NZTA jointly operate ATOC Smales under a formal partnering agreement and governed by a Joint Management Board (JMB). AT and NZTA's joint priority is to enable customers to make informed choices about the way they travel and optimise the Auckland region's transport network across all modes. To date this has only been achieved across the Auckland region's road network.

AT also operates a separate centre, ATOC Central, which is responsible for managing the central city road network (the area within the Auckland motorway loop), providing transport planning and management of special events in the Auckland region, and monitoring and supporting response to incidents occurring at public transport facilities i.e. bus stations, rail stations, and wharves, in Auckland only. Parking support and some public transport (PT) operator staff are also co-located at ATOC Central.

While ATOC Central has recently also come under informal JMB governance, and there is communication and collaboration between them, the two centres have different responsibilities and have historically operated independently. This causes a number of issues and undermines the purpose and goals of the ATOC partnership agreement and impacts the customer and ATOC's ability to improve the way customers experience the transport network.

AT contracts its PT services from a number of providers and has historically only had a contract management function, leaving day-to-day operations up to the individual PT operators. Under newly negotiated contracts, AT has established a Day of Operations (DoO) function comprised of AT and PT operator staff co-located at ATOC Central. This now provides a single point of management for PT but, given the fragmentation of other functions across ATOC Central and ATOC Smales, it still falls short of meeting AT and NZTA's objective of operating the entire transport system across all modes in an integrated manner, with a focus on customer journeys.

In addition, NZTA is seeking to advance its strategy of implementing standardised TOC systems and processes nationally across its TOCs in Auckland, Wellington, Christchurch, and its smaller regional TOCs with the objective of achieving operational efficiency and resilience i.e. the ability to seamlessly distribute and balance services between Auckland and Wellington and, in the event of an outage or disaster, fail over the operation of the entire New Zealand State Highway network to either TOC.

AT and NZTA's joint priorities are to enable customers to make informed choices about the way they travel and to optimise the Auckland region's transport network *across all modes*. The purpose of this project is to investigate ways that these outcomes will be supported through amalgamating ATOCs.

### 2.2 Overview of organisations

#### 2.2.1 Auckland Transport

Auckland Transport (AT) is a Council Controlled Organisation (CCO) responsible for:

- designing, building and maintaining Auckland's roads, ferry wharves, cycleways and walkways
- coordinating road safety and community transport initiatives (such as school travel)

- planning and funding public transport services across Auckland.

Under section 39 of the Local Government (Auckland Council) Act 2009 the objectives of AT are to promote the social, economic, environmental, and cultural well-being of communities, in the present and for the future.

AT delivers multi-modal transport services to Auckland’s 1.65m residents and businesses as well as visitors to Auckland. AT’s responsibilities include:

- managing \$16.6b of publicly held assets
- responding to 240,000 customer emails and inquiries through the AT website per year
- facilitating more than 90m trips made on public transport per year
- maintaining 7,565km of arterial and local roads, and public transport assets, investing over \$370m per year
- collaborating with partner agencies, such as NZTA, to deliver a three-year programme of cycling infrastructure valued at \$200m.<sup>1</sup>

### ***2.2.2 The New Zealand Transport Agency***

The New Zealand Transport Agency (NZTA) is the crown entity responsible for land transport networks across New Zealand, managing the state highway network, and providing access to, and use of, the land transport system.

Under section 94 of the Land Transport Management Act 2003 the objectives of NZTA are to contribute to an affordable, integrated, safe, responsive and sustainable land transport system.

NZTA’s planning and investment functions include:

- giving effect to the Government Policy Statement on Land Transport
- investing in transport activities through New Zealand
- planning and management of the state highway system
- delivering or managing the delivery of activities such as research, education and coastal shipping
- advising and working with approved organisations i.e. regional and local authorities.

NZTA is focused on providing one integrated transport system – to support people and business across New Zealand – to make great journeys to keep New Zealand moving.

### ***2.2.3 The Partnership***

AT and NZTA have a formal partnering agreement that governs their joint operation of ATOC Smales under the oversight of the Joint Management Board (JMB). More recently ATOC Central has also come under the informal governance of the JMB although the partnering agreement has not been updated to reflect this.

The purpose of the partnering agreement is to “operate one transport system that delivers a satisfying experience to our customers by providing an integrated approach to moving people, goods and services safely and effectively”.

The joint goal is “to enable customers to make smarter more informed choices about the way they travel, achieving the most from Auckland’s transport system and infrastructure and keeping Auckland moving by a single network approach” and will be achieved by:

- Operating one reliable network across all modes throughout the region
- Putting customers first by being responsive and providing accurate and timely information
- Creating a jointly governed, managed and staffed operations centre for the region
- Ensuring the safety of all
- Optimising the efficiency and effectiveness of the network through innovation and the operation of appropriate technology in real time

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<sup>1</sup> Auckland Transport, Statement of Intent 2017/18 to 2019/20

- Managing and responding in a timely manner to incidents on the network
- Providing technical advice for operations, strategic planning, investigations, design and construction
- Creating and maintaining a healthy, enthusiastic organisation
- Proactively and collaboratively using our experience, resources and expertise to work together to deliver enhanced value for money
- Ensuring the Joint Transport Operations Centre complies with all relevant laws, in particular NZTA must comply with its obligations under the Land Transport Management Act 2003 and AT must comply with its obligations under the Local Government (Auckland Council) Act 2009.

## ***2.2.4 Other Stakeholders***

Other key stakeholders outside of the ATOCs, AT and NZTA include:

- Customers i.e. the travelling public and commercial users of the transport network.
- New Zealand Police – responsible for responding to and controlling incidents. Police also rely on the ATOCs for intelligence, situational awareness and evidence from CCTV. A Police Liaison Officer is assigned to ATOC Smales during business hours. Other engagements and attendances are as required to support transport or Police operations.
- Fire and Emergency – responsible for responding to incidents. Also, fires and other non-traffic-related incidents will often impact the transport network due to fire appliances and people on the surrounding roads. ATOC Smales has a Fire and Emergency pager in the operations room which provides critical notifications of incidents.
- Lifelines – other lifeline utilities – water, wastewater, energy and telecommunications companies – responsible for providing critical infrastructure services to the community. Utility networks are buried under or alongside or strung over most of the transport network so close collaboration is required to minimise the impact of planned and unplanned utility works on customers.
- Auckland Council (Civil Defence and ATEED) – transport is a lifeline utility so the ATOCs have a statutory responsibility to work with Civil Defence and ensure its services function to the fullest extent possible during and following civil emergencies. The ATOCs provide transport planning and management for ATEED events.
- Northland, Waikato and Bay of Plenty Regional Councils and other local authorities – as with Auckland Council, ATOC Smales works with other councils and local authorities to manage planned and unplanned events occurring within their districts.
- Auckland Airport – is the third Road Controlling Authority in the Auckland region so is responsible for roads and transport services within its jurisdiction and ensuring integration with the wider network (all modes) for the benefit of the region and, as a nationally strategic asset, for all of NZ Inc. Two Auckland Airport operations staff are co-located at ATOC Smales at peak times.
- Public Transport operators – Bus, rail and ferry operators contracted by AT to provide Public Transport services.
- National Recovery Alliance – consortium of eight Auckland vehicle and machinery recovery and transport operators with responsibility (under a contract to Police) for recovering vehicles from the motorway network.

## ***2.3 The case for change***

### ***2.3.1 Current state***

In an attempt to mitigate the challenges inherent in the two TOC model, ATOC Central has recently come under the informal governance of the JMB and the leadership of the same manager, but it remains a physically (and geographically) separate centre which is staffed and managed entirely by AT. The two centres provide complementary functions but have different areas of responsibility and are physically separated so tend to operate in distinct silos. Even with joint governance and leadership, managing operations across different modes out of organisational silos located across different sites and multiple remote third party suppliers/stakeholders is inefficient.

The two centres use multiple Information Systems (IS) and Intelligent Transport Systems (ITS) which generally do not integrate or share information. This often requires operators to monitor multiple screens and manually replicate actions and data entry across more than one system. Although there are some common systems across the two Auckland centres, processes and procedures vary.



At a national level, underlying ITS and IS differ, as do processes and procedures, and this limits NZTA's ability to allocate workload and provide backup and business continuity between ATOC and WTOC.

Our existing TOCs and partner agencies deliver their respective functions to a very good standard. However, these functions are currently delivered in a way that suits our operation, rather than being delivered in a way that best suits our customer needs.

While a significant percentage of Aucklanders still drive a private vehicle to work (65.4%<sup>2</sup>), the number of people using public transport and/or a combination of driving and public transport continues to grow. Customer journeys are currently managed in a siloed fashion with a focus on separate 'legs'. For example, a typical customer may drive from home to a train station. They park in an AT provided parking facility and use the train to travel into Britomart. That customer may then walk to the bus station and board a bus to reach their final work destination elsewhere in the city centre. Each 'leg' of this journey is managed by a different group:

- ATOC Smales is likely to manage, operate and inform the private vehicle 'leg' of the journey;
- AT Parking Services would manage the operation and customer experience for the parking facilities;
- AT Transport Services and ATOC Central would manage the train journey and experience at Britomart;
- ATOC Central would manage the customer journey to the bus station;
- and finally AT Transport Services would manage the bus journey to the customer's final destination.

Our customers expect us to manage their entire journey as they experience it – as one seamless journey. The current ATOC structure and physical dislocation fails to enable this because it does not support an integrated and co-ordinated multi-modal approach to managing the whole network. Speed and effectiveness of network optimisation and response to incidents is sub-optimal, particularly across public transport modes and freight.

AT and NZTA's joint priorities for ATOC are "to enable customers to make smarter, more informed choices about the way they travel, achieving the most out of Auckland's transport system and infrastructure and keeping Auckland moving by a single network approach." Amalgamating the two TOCs and co-locating key capabilities such as public transport operations would enable AT and NZTA to deliver a more customer-centric and fully integrated transport operational service.

Tables 4 and 5 illustrate this by showing how key core and non-core ATOC functions are fragmented across ATOC Smales, ATOC Central and stakeholder providers external to the TOCs.

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<sup>2</sup> 2013 Census

Table 3 Core TOC functions carried out by the ATOCs and key non-ATOC Stakeholders

Function	ATOCs		Key non-ATOC Stakeholders	
	ATOC Smales	ATOC Central	AT Metro DoO	PT Service Operators
Real time operation of the transport system	Operates all State Highways in the upper North Island and all roads in the Auckland region (except for central city during the day)	Dedicated team operates central city roads during the day	Management of planned PT disruption	PT operators responsible for own operations
Real time travel information	Travel Information team communicates Auckland region and State Highway road information through various channels – social media, SMS, radio, etc. and electronic signage (VMS)	Rely on AT Comms team to publish media and social media and ATOC Smales to manage electronic signs (VMS)	Customer comms via social media (via AT Comms team)  Schedule and real-time information for some modes is available via the AT Mobile app.	Some PT operators provide information direct to customers via (separate) apps and social media.
Public Transport & parking safety and security monitoring and response	-	Safety & Security team monitor and respond to CCTV & help points at PT facilities  Safety & Security team monitor critical PT infrastructure out of hours  Parking support team monitors and respond to CCTV and call points (parking machines) in parking buildings	DoO team provides link to PT operators	Individual operators manage the impact of incidents on their own operations
Unplanned event management	Manages unplanned events occurring On State Highways in the upper North Island and all roads in the Auckland region	Provides link to AT Metro to assist with incident management	DoO team provides link to PT operators	Individual operators manage the impact of unplanned events on their own operations

<b>Function</b>	<b>ATOCs</b>		<b>Key non-ATOC Stakeholders</b>	
	<b>ATOC Smales</b>	<b>ATOC Central</b>	<b>AT Metro DoO</b>	<b>PT Service Operators</b>
Planned event management	Support and manage the road network impact of all special events. Coordinate and manage the impact of planned maintenance and capital construction projects	Plan and manage delivery of transport support for special events	DoO team provides link to PT operators	Provides services to support special events
Parking Operational Support	-	Parking support team supports Parking Officers when in the field i.e. incident response	-	

Table 4 Non-core TOC functions carried out by the ATOCs and key non-ATOC Stakeholders

<b>Function</b>	<b>ATOCs</b>		<b>Key Non-TOC Stakeholders</b>	
	<b>ATOC Smales</b>	<b>ATOC Central</b>	<b>Other AT</b>	<b>Other NZTA</b>
Corridor Access Requests, Traffic Management Planning., etc.	-	Manage TMPs for all special event activities in Auckland.	AT Asset Maintenance Group manage all Corridor Access Requests, TMPs, etc. for roads in the Auckland region, including for own work	NZTA , Auckland Motorway Alliance, plans, approves & executes all closures, TMPs, etc. on the motorway network
Intelligent traffic systems contract management	Assets & Contracts team manage contracts to support the maintenance and renewal of IT assets (traffic signals, electronic signage, etc.)	-	Specialist Asset Management capability in AT provided by the Asset Maintenance Group	Specialist Asset Management capability in NZTA provided by System Design and Delivery
Intelligent traffic systems asset management	Assets & Contracts team manages the asset management database and provides data to support ITS asset maintenance and renewal.	-	Asset Maintenance group responsible for other assets within AT	Systems Design and Delivery team responsible for all other ITS assets within NZTA

### **2.3.2 Problems**

There are a range of external and internal problems arising from the current two-ATOC model which are preventing the purpose and goals of the partnering agreement from being realised. These problems will worsen over time as the operational landscape grows more complex e.g. the AT Metro DoO team get up to full strength, as more modes e.g. light rail are added, and, of course, as the number of transport system users continues to grow.

#### *External problems*

The current structure does not support an integrated and coordinated, multi-modal approach to operating and optimising Auckland's transport system and fails to support the goals of the AT/NZTA partnership agreement. The fragmented operational landscape makes managing operations across all modes inefficient and consequently undermines the speed and effectiveness of responses to both day to day optimisation opportunities and unplanned events.

The lack of integrated and proactive planning for all planned events results in reactive management and greater customer impacts from those events. There is currently no single source of truth or clarity of messaging that supports customers making informed decisions on mode and route. This further worsens impacts when there are events, both planned and unplanned, occurring on the network.

These issues are discussed in more detail below and must be addressed as a matter of priority to ensure that a customer first approach is championed for the millions of journeys across Auckland's network undertaken every year – but also to ensure that Auckland is ready for the additional challenges that will be brought by key international events such as the America's Cup and the APEC summit in 2021.

#### **Lack of reliability of customer journeys**

There is no integrated and coordinated management - by the ATOCs and critical third parties - of the customer journey across all modes. Currently customer journeys are managed as individual trips on individual modes rather than as one connected journey.

Information about the transport network such as current travel times for different modes, incidents and delays, alternatives which are available, etc. is provided through multiple separate sources so information is fragmented and, when teams are physically, operationally and technically dislocated, there is a high risk of conflicting information being provided to customers. This creates frustration for customers who cannot proactively plan their whole journey and remain informed throughout their journey.

#### **Excessive delays for customers when there are unplanned events**

The time it takes to respond to and mitigate all the effects of unplanned events such as crashes is longer than it needs to be. This is simply a factor of the multiple parties involved, individual direct responses, the lack of a common operating picture and situational awareness, operating procedures not being aligned and the time it takes to pass information between parties. ATOC Smales plays a significant and effective role in coordinating first responders, contractors, etc. to road incidents but many incidents affect multiple modes which are outside Smales' jurisdiction so there are often delays in, for example, supporting the diversion or replacing buses. In these instances, customer journeys are longer than they need to be and customer frustration is increased due to the difficulty of obtaining useful disruption information for all modes.

#### **Safety and security implications**

Involvement of first responders to a public safety incident can be delayed due to unclear communication between the two TOCs and external agencies. For example, if there is an incident between groups of youths at a train station, fragmented monitoring and communication between the TOC and Police can delay a timely response. The delay not only poses an unnecessary safety risk to customers, it also has flow-on implications for public transport as it may erode customer confidence and lead to a loss of patronage.

There are also situations where parties are not aware of a situation and therefore not being able to mitigate risks to public safety. In the example of a security incident at a PT facility, timely workarounds must be developed and provided to PT operators so they can reroute services or arrange alternative stops and not put more patrons at risk.

In the event of a bus breakdown in the Waterview Tunnel, the bus operator would be working to get a replacement bus to the scene and the Waterview Tunnel operators would be concerned with diverting traffic and getting the bus cleared, but there is a significant risk that the safety of the passengers could slip through the cracks between the different teams because each team assumed the other had it in hand.

### *Delays to freight journeys through the network*

The distribution of freight across Auckland and the rest of New Zealand's transport network is essential to the local and national economies. Commercial enterprises within the 'Golden Triangle', the area bounded by Auckland, Hamilton and Tauranga, make up more than half of New Zealand's GDP.<sup>3</sup> Accordingly, proactive planning for planned events and a coordinated response to unplanned events on the network is essential to ensuring businesses can operate as efficiently as possible and freight can move to and from the Ports of Auckland and Port of Tauranga.

As an illustration, the aviation fuel crisis from a damaged pipeline in September 2017 was a critical issue for the road network. Movements of millions of litres of hazardous materials along the State Highway and local roads required a joint and coordinated response. Traffic signals needed to be optimised, road works had to be removed, HOV permits needed to be issued. Although this incident was ultimately successfully managed, it is considered this could have been done even better with a fully integrated ATOC, by enabling a seamless journey from Whangarei to the airport, currently one of Auckland's busiest and most challenging road areas, and coordinating work and engaging with stakeholders through a single co-located team.

The lack of a common operating picture and coordinated multi-modal response means that unplanned events can have a disproportionate impact on freight journeys. For example, if there is a PT incident on a key freight corridor, the PT team's focus is on dealing with the PT aspects and the freight impacts are often overlooked. And mitigating freight impacts is not as simple as rerouting trucks from the nearest turnoff. Careful planning and expert knowledge is required to ensure the alternative routes are suitable for heavy vehicles or dangerous goods.

As with other customer journeys, day to day freight journeys across the network could be more effectively planned and managed if better, fully joined up, real-time information was available to all customers.

### *Issues with planned event planning and execution*

There is a dedicated team located at ATOC Central responsible for planning and executing transport support for special events, generally major events such as sports events, rugby matches, concerts, festivals, etc. ATOC Smales is responsible for managing the impacts of these events on road users. Planning for these events requires coordination across multiple stakeholders. The two TOCs having different areas of responsibility adds complexity to planning and operating a major event. It also has safety implications for event participants and road users.

As an example, the Auckland Marathon traverses local roads and SH1, including the Auckland Harbour Bridge. There are numerous road closures for the event, which means vehicles, including buses, must be diverted from their normal routes. The current approach means that buses running between the North Shore and the city centre receive instructions from both TOCs. There was an instance where jurisdiction and communication was unclear which resulted in a bus travelling the wrong way down a lane creating a significant public safety issue.

If an incident occurs, or the special event has an unexpected issue, the response to manage the issue and mitigate impacts is significantly impeded and often slower because of the physical separation and lack of common operating procedures and systems.

There is an additional problem that currently only "special" events are planned for and supported by the ATOCs. Other planned events that impact the roadways such as maintenance and capital works are managed independently from the TOCs. This is compounded by State Highway works and Auckland road works planning and approvals being managed by different parties who do not collaborate as effectively as needed. This has resulted in customers being diverted off SH1 due to works on the motorway, only to end up on a local road which is closed or has reduced capacity due to local works or a special event. The lack of a single, authoritative view of all planned events increases the impacts these events have on customer journeys.

### *Internal problems*

The two separate TOC model also creates issues from an internal organisation perspective. These are described below. In summary, the two TOC approach causes inefficiencies, fragmented and slow responses to incidents, and duplication of effort due to different areas of responsibility, physical dislocation, few shared processes, and too many systems. Each TOC focuses on its own area of responsibility rather than a "one network", customer-centric model that aligns with the strategic direction of AT and NZTA. There are also AT, NZTA and third party

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<sup>3</sup> <https://www.sunlive.co.nz/news/134738-tauranga-nzs-golden-triangle.html>

functions that impact TOC outcomes (e.g. CARs and TMPs) but which fall between the physical and organisational gaps.

### ***Organisational Structure: Roles and responsibilities lack clarity***

The overall organisational structure across the two TOCs lacks clarity. Lack of definition of service scope, roles and responsibilities results in inefficient working across the two TOCs due to gaps or duplication of effort. Delivery of many services is reliant on individuals rather than agreed structures and processes, creating single points of failure and people risks. Stakeholders are unclear on how to engage the TOCs, resulting in fragmented and duplicated effort due to duplicate requests or the TOCs not being engaged when they should be.

While both TOCs share common stakeholders, stakeholders are not managed collaboratively. Most stakeholder relationships are managed by individuals rather than at an organisational level so TOC engagement with stakeholders and, conversely, stakeholder engagement with TOCs, is often difficult when an urgent response is required and primary contacts are unavailable.

### ***Processes and Reporting: No standardised processes, training, knowledge sharing or performance reporting***

Processes do not support the management of integrated customer journeys. Policies, processes, operating procedures, and training differ between the two TOCs so collaboration and resource sharing is challenging and inefficient. Knowledge and skills are not institutionalised so there is significant reliance on a small number of experienced individuals. Training and development of staff varies across sites. These problems reinforce silos and result in capability and capacity gaps and undermine resilience which ultimately results in an inconsistent and fragmented view of customer journeys across modes.

There is some single-mode reporting but no integrated customer journey performance reporting or other feedback mechanisms that would provide insights on both intra- and inter-modal network-wide improvement opportunities.

ATOC Smales currently has an Assets and Contracts team which is responsible for managing the asset data and maintenance and renewal contracts for ITS (traffic signals, electronic signage, etc.). This is not a core TOC function and, in any event, deeper asset and contract management capability sits elsewhere within the AT and NZTA organisations.

### ***Systems and information: Multiple systems***

To maintain situational awareness, operate the network, and manage incidents, operators work with data and information which is dispersed across many different systems. The human operators are effectively the integration point and, as such, are forced to function at a low level, often monitoring visual information and different data on multiple screens simultaneously and having to enter the same data into several systems. This is inefficient and undermines fast and effective decision-making.

Having different systems across different TOCs and functional streams also inhibits quality integrated network-wide performance reporting.

Duplicated AT and Transport Agency back office systems for people, finance, etc. creates significant non-value-adding work for ATOC Smales management and support staff.

### ***Strategic alignment and culture: Business functions do not align with desired strategic outcomes***

Both NZTA and AT have shifted their focus towards an integrated, multi-modal, customer journey centric view of the network but the teams across both TOCs remain organised in technical capability-based silos so their focus is functional inputs rather than customer outcomes. This is further reinforced by the segregation of responsibility for functions and area.

### ***Governance and oversight: Governance is unclear***

Governance across the two sites is complex and unclear. ATOC Central recently came informally under JMB governance and a single ATOC Manager is now responsible for both sites, but ownership and accountability for collective AT and NZTA outcomes is far from resolved as the joint strategy and partnership agreement have not been formally reviewed and updated. The 2018 GPS aligns AT and NZTA more closely than ever before with NZTA now having accountability for the entire, multi-modal, transport network. With the growing number of alliances, PPPs and other contracted services being developed/considered (CRL, LRT, Puhoi to Wellsford), there is also a need to review and ensure the appropriate representation and governance is able to support the

operation of the future transport system. This also needs to consider other Road Controlling Authorities i.e. Auckland Airport.

***Resourcing and capability: Resourcing has not kept up with growth in demand for services (and the resources we have cannot be efficient)***

Resourcing has not kept up with the growth in Auckland's population and transport network and that is exacerbated by the inefficiencies inherent in the current siloed two-TOC model and technology. Technology should be offsetting growth through automation and enhancing the capabilities of human operators but this has yet to be realised. The current proliferation of separate operational systems and information sources has created more, not less, demand on human operators.

Workload and demand on key staff has increased significantly, and this is creating challenges with recruiting and retaining staff at all levels of the organisation. ATOC Smales is currently critically reliant on casual staff, some of whom are close to full time.

Staff are unable to engage in value-adding proactive work such as providing subject matter expert advisory to support the planning of events, maintenance and capital works. Also, the TOCs are not currently part of the scheduling process for planned events and this has a significant downstream impact on reactive TOC workload and, of course, on customer journeys.

Duplication of roles and tasks across sites i.e. putting SCATS operators into ATOC Central to form the central city network operations (CCNO) team, has divided scarce resources and created a silo where a small group of individuals work in isolation. This is an inefficient and unsustainable strategy and will not scale to meet the needs of Auckland as other future transport projects in the region require a similar focus to CCNO.

***Resilience: The current ATOCs do not support operational resilience***

Having different systems and inconsistent processes, etc. between the two Auckland TOCs and Wellington mean the current model does not support NZTA's national TOC strategy i.e. the ability to seamlessly distribute and balance services between TOCs in Auckland and Wellington and, in the event of an outage or disaster, fail over the operation of the entire New Zealand State Highway network to either TOC.

The current backup plans for the two ATOCs are insufficient and place both AT and NZTA at risk of being unable to support a reasonable level of service in the event of a disaster or significant localised outage.

***Adaptability: Ability to take on new modes and functions***

All of the problems discussed so far are specific to the current TOCs and their current scope. The addition of the new AT Metro DoO function and new/expanded modes (CRL and light rail) will exponentially increase these problems by adding new functions and silos to the already inefficient TOC landscape.

### ***2.3.3 The benefits***

*Customer experience (external) benefits*

***Improved travel information***

Meta-analysis of AT customer satisfaction surveys shows that the number one thing AT customers want is to be informed. The key to enabling this is having a single, consistent, real-time view of what is happening across the entire transport network and having the people responsible for all modes in close proximity and working collaboratively so impacts to customers across the whole journey can be understood and managed faster and more effectively. Amalgamating management of all modes into a single ATOC; integrating the travel information team into the operations room team and expanding their remit to cover all modes will support coordinated communication of information to customers, ensuring the most accurate, real time arrival, demand, congestion, and incident information is available. This will allow customers to make informed mode and route decisions in real time. It will also provide a mechanism for proactively managing and smoothing customer demand across the network by suggesting useful alternatives to congested modes and routes.

***Improved safety***

Co-location of operational transport functions and other responders will enable a faster response to events across the network. Integration of Police, Safety and Security, and Security and Fare Evasion (SaFE) across all modes will promote better monitoring, improved situational awareness, faster and more appropriate responses, and the ability to coordinate responses across all modes. This will ensure incidents are better managed and hazards are removed from the network faster, reducing safety risks to customers and staff, increasing public confidence and use of public transport modes.

### ***Improved customer travel experience and satisfaction***

Delays, traffic congestion and cancelled public transport services significantly impact customers, undermine AT and NZTA's reputations, drive customer dissatisfaction and lead to poor behaviour from frustrated drivers and passengers.

Better informing customers of incidents, planned events, etc. impacting their journeys will address the number one driver of customer dissatisfaction. The ability for the amalgamated TOC to manage and mitigate impacts faster and across all modes will reduce congestion and delays and subsequent dissatisfaction. This will improve journey time reliability and will improve customer satisfaction and increase confidence.

Better collaboration between agencies and functions within the TOC will reduce delays by improving clearance times of unplanned incidents. Impacts across modes e.g. road crash effect on buses and flow-on to other modes will be better managed. Proactive and fully joined up planning of all planned events will help mitigate the impact of these events through better coordinated management and proactive customer communication.

### ***Internal benefits***

The following describes internal benefits that will be available to the amalgamated ATOC. It is important to note that the act of amalgamating the two TOCs will not, in and of itself, enable the full realisation of these benefits, rather the amalgamation will create some short-term gains but full benefit realisation will occur over time as teams, processes and technology are systematically integrated optimised. In most cases, the technology-enabled benefits are full dependent on other AT and/or NZTA programs of work.

### ***More efficient, effective operating model***

Breaking down functional silos and co-locating and aligning the ATOC structure and operating model to outcomes using a teaming model will enable AT and NZTA's stated strategy of supporting customer journeys, not just individual modes. The teaming model will encourage cross-skilling within teams, with operators taking a view across multiple functions and modes, and creating opportunities to develop multi-skilled, cross-modal operators which will increase ATOC operational efficiency and resilience.

Centralised engagement with stakeholders and management of operations and events by teams which are resourced with all the required capabilities, along with clear accountability for outcomes, will ensure more integrated and collaborative operation and optimisation of the network and more effective responses to events across all modes.

### ***Improved decision making***

Integrating the TOCs will make it easier to provide effective, common governance, management, and operational leadership across all teams and functions. Co-location with other key stakeholders will strengthen the TOC leadership and joint decision-making capability to deliver even better outcomes for customers.

Implementing common processes and systems will enable aligned goal setting and measurement of outcomes, support gathering journey-level feedback and meaningful insights from across all modes to enable more transparent, evidence-based decisions and ability to align resource and effort to improving outcomes.

### ***Operational excellence***

Bringing the functions and resources of the two TOCs together will support the development of high performing, customer-centric teams by enabling operators to work with a wider scope of practice and focus on customer outcomes rather than functional inputs. Duplication of effort and unnecessary work that arises through silos and fragmentation can be eliminated.

Levels of service will improve through development of standardised policies and procedures. Co-locating other key stakeholders will further strengthen the development of effective and efficient ways of working and delivering outcomes.

A focus on planning for all planned events, not just special events, will move TOC workload from reactive to proactive delivering operating efficiencies and better customer outcomes.

Standardising policies and processes for all ATOC teams and functions will make it easier for ATOC to build links and evolve common ways of working, processes and systems with WTOC and other TOCs with a view to developing the ability to prioritise and allocate workload and provide backup and continuity across TOCs in accordance with NZTA's national TOC strategy.



### *Data, information and intelligence sharing*

Co-location and integration into a common facility allows all teams, whether doing planning or operations, to operate from the same set of information. This allows, for example, the most appropriate first responders to be guided to an incident using the most accurate real time information available. The close and coordinated working relationships would also enable the responders to be provided with priority signal changes to speed up their journey reducing the response time, providing external benefits as described earlier.

Stakeholders would also be able to share surveillance and sensor assets allowing more complete situational awareness than would be available to any stakeholder individually. Police staff co-located in ATOC will be able to engage in two-way sharing of intelligence and real time information with the Safety and Security and SAFE operators to improve public safety and confidence.

### *Improved relationships*

Co-location with key stakeholders will impact positively on relationships. Empathy, trust, confidence and alignment to collective outcomes will increase as teams plan and operate collaboratively and share facilities.

Formalising ad-hoc person-to-person stakeholder relationships into organisation-to-organisation structures and processes will increase alignment, engagement and collaboration across a diverse, and otherwise potentially divergent, range of stakeholders to improve collective impact on customer outcomes.

### *Better value for money*

Co-location, common processes, functional integration, improved collaboration, and consolidation of systems will provide operating efficiencies that will mitigate both the current resource gaps and the impact of new/expanded modes such as CRL and light rail while delivering greater customer value through better outcomes.

The current functional/area silo approach to building and scaling capability is unsustainable. For example, establishing the CCNO team at ATOC Central performed a critical function and successfully mitigated a significant social/political issue but it also divided Auckland's scarce SCATS operator resources and created a silo of capability and knowledge. There are several similarly impactful projects set to start in the Auckland region over the coming years but the CCNO model cannot be replicated unless significant investment is made to recruit, train and, more importantly, retain senior SCATS operators. Amalgamating into a single location, thus enabling economies of scale and cross-training other TOC operators on basic SCATS operation to free up senior SCATS operators to perform higher value work is just one way an amalgamated ATOC would provide better value.

## **2.4 Strategic alignment**

ATOC Amalgamation supports the strategic direction set by the Boards of both AT and the Transport Agency and is closely aligned with Central Government priorities identified in the Government Policy Statement on Land Transport. Amalgamating the two ATOCs aligns to strategic priorities and objectives by promoting and enabling transport choices, focusing on improving safety and improving resilience through bringing people together and supporting an efficient, integrated, and co-ordinated approach to managing the entire multi-modal network.

Table 6 below outlines the alignment of the ATOC Amalgamation project to a number of important national and regional transport strategies and plans. Strongest aligned themes are highlighted in **bold** type.

Table 5 Strategic alignment

Organisation and Strategy/Plan	Overview and alignment
<p><b>Minister of Transport</b></p> <p>Government Policy Statement (GPS) on Land Transport 2015/16 – 2024/25 and 2018/19 – 2027/28 (Draft)</p>	<p><b>Overview</b></p> <p>The Government Policy Statement (GPS) on Land Transport sets out the government’s priorities for expenditure from the National Land Transport Fund (NLTF) over the next 10 years. The current GPS 2015 has three primary focus areas:</p> <ol style="list-style-type: none"> <li><b>1. Economic growth and productivity</b></li> <li><b>2. Road safety</b></li> <li><b>3. Value for money</b></li> </ol> <p>The Government has recently released a draft GPS 2018 which identifies four strategic priorities for 2018 -28</p> <ol style="list-style-type: none"> <li><b>1. Safety – a land transport system that is a safe system free of death and serious injury</b></li> <li><b>2. Access – a land transport system that:</b> <ul style="list-style-type: none"> <li>• Provides increased access to economic and social opportunities</li> <li>• <b>Enables transport choice and access</b></li> <li>• <b>Is resilient</b></li> </ul> </li> <li><b>3. Environment</b></li> <li><b>4. Value for money</b></li> </ol> <p><b>Alignment</b></p> <p>ATOC Amalgamation will support a safe land transport system through providing better information, for use in land use planning, communication (of incidents and road safety measures) to customers, and incident management and response. Improvements to the monitoring of the transport system in Auckland will assist with safer journeys through earlier identification and resolution of network issues, also making the system more resilient. This will have particular benefits for vulnerable active mode transport users and will provide all customers with better information to optimise their journeys.</p> <p>ATOC Amalgamation will support improved oversight, operation and maintenance of a multi-modal transport system that provides critical access for customers and communities and provides the ability to allow users to make real informed choice through access to information.</p> <p>Environmental outcomes and value for money can be delivered through network operational efficiency improvements that can be delivered through an amalgamated ATOC. A more efficient network will reduce greenhouse gas emissions, and ensure that infrastructure is being used in a more optimal way.</p>

<b>Organisation and Strategy/Plan</b>	<b>Overview and alignment</b>
<b>NZ Transport Agency</b>	<p data-bbox="551 233 685 264"><b>Overview</b></p> <p data-bbox="203 280 517 336">Statement of Intent 2017 - 21</p> <p data-bbox="551 280 2002 400">The Transport Agency’s focus is on providing an integrated land transport system that enables and delivers great journeys, ones that are easy, safe and connected, to keep NZ moving. Three strategic responses describe the direction the Transport Agency will take to deliver value to NZ and ensure that customers and citizens benefit from the rapid changes happening in transport:</p> <ol data-bbox="595 416 1088 544" style="list-style-type: none"> <li data-bbox="595 416 1088 448"><b>1. One connected transport system</b></li> <li data-bbox="595 464 976 496"><b>2. People-centred services</b></li> <li data-bbox="595 512 1021 544"><b>3. Partnerships for prosperity</b></li> </ol> <p data-bbox="551 560 696 592"><b>Alignment</b></p> <p data-bbox="551 608 2002 727">The ATOC Amalgamation Project is aligned to all three of the Transport Agency’s three strategic responses to enabling and delivering great journeys. Amalgamating ATOCs will support the creation of a safe, connected transport system by better integrating operations and management across all modes. It will also support balancing services and provide resilience between Auckland and Wellington TOCs – moving to a truly connected system.</p> <p data-bbox="551 743 2002 927">Customer journeys are one of the main underlying reasons for an Amalgamated ATOC that provides customers with the information they need to optimise their journey decisions. With an eye on safety, real-time operational and incident management is crucial and an Amalgamated ATOC improves the ability of operators to respond faster with appropriate action. Moving from reactive management to integrated proactive planning and management of planned events that impact the transport network will ensure that consideration and mitigation of customer impacts underpins planning for events that will impact the transport network.</p> <p data-bbox="551 943 2002 1031">Finally, ATOC Amalgamation is supported by both AT and the Transport Agency, with the aim of working in partnership to improve the operation of Auckland’s transport network and the prosperity of those people who use it – customers, businesses and communities.</p> <p data-bbox="551 1046 2002 1142">In addition to aligning to the three strategic responses, amalgamating the ATOCs is strongly aligned to four of the eight focus areas that underpin the strategic responses, being “<i>keep people safe</i>”, “<i>improve customer journeys</i>”, “<i>deliver connected journeys</i>” and “<i>achieve organisational excellence</i>”.</p>
<b>NZ Transport Agency</b>	<p data-bbox="551 1166 685 1198"><b>Overview</b></p> <p data-bbox="203 1214 517 1270">National Land Transport Programme 2018-21</p> <p data-bbox="551 1214 2002 1366">The National Land Transport Programme (NLTP) for 2018–21 contains all the land transport activities, including road safety and policing, demand management, public transport (including transitional rail and rapid transit), road maintenance and improvement, and walking and cycling activities, that the Transport Agency anticipates funding over the next three years. There is \$16.95b of investment planned across those activities. It focuses on four outcome themes, underpinned by the continued emphasis on value for money and minimising environmental impacts:</p> <ol data-bbox="595 1382 1066 1414" style="list-style-type: none"> <li data-bbox="595 1382 1066 1414"><b>1. Road safety</b> (26% of expenditure)</li> </ol>

<b>Organisation and Strategy/Plan</b>	<b>Overview and alignment</b>
	<ol style="list-style-type: none"> <li>2. Access to opportunities (40% of expenditure)</li> <li>3. <b>Improved transport choice</b> (15% of expenditure)</li> <li>4. <b>Improved resilience</b> (19% of expenditure)</li> </ol>
	<b>Alignment</b>
	<p>Improved oversight of the transport network will assist with making journeys safer through faster incident response and better communications to first responders.</p>
	<p>Better intelligence and information enabled by amalgamation will help with shaping smart transport choices through a multi-modal TOC. Customers will have the necessary information to optimise their journeys, rather than having to piece together disparate information from multiple sources.</p>
	<p>An Amalgamated ATOC will connect the various networks so they can be more effective together and deliver resilience through connected information to customers. The ability to provide national resilience across Auckland and Wellington is another benefit of amalgamation.</p>
	<p>The NLTP highlights the NZ Transport Agency's commitment to continued investment in multi-agency TOCs and, with partners, seeks new and innovative services to improve outcomes for customers' journeys. There is an ongoing programme of work to strengthen ATOC's capability to reduce disruption and delay along with technology upgrades to improve performance, resilience and customer safety.</p>
<b>Auckland Transport</b>	<b>Overview</b>
Statement of Intent 2018/19 – 2020/21	<p>AT has a vision to coordinate thinking between the Government, Auckland Council, the Transport Agency, and within AT to address Auckland's transport needs. AT's role is to contribute to an effective, efficient and safe transport system that puts people first, and provide choices for a growing, vibrant Auckland. Five strategic themes form the foundation of the Statement of Intent and are central to the three year work plan and performance measures:</p>
	<ol style="list-style-type: none"> <li>1. <b>Improving the safety of the transport system</b></li> <li>2. <b>Deliver an efficient and effective transport network</b></li> <li>3. <b>Focus on the customer</b></li> <li>4. <b>Ensure value for money across Auckland Transport's activities</b></li> <li>5. Urban regeneration and placemaking</li> </ol>
	<b>Alignment</b>
	<p>By improving the collective response to incidents across all modes, ATOC Amalgamation is able to deliver better outcomes for those involved in and affected by those incidents contributing to overall safety improvements across the network. ATOC Amalgamation will support enhanced customer experiences, reducing unnecessary delays and customer frustration, and improving the communication of timely and accurate multi-modal information to customers. It will improve opportunities</p>

<b>Organisation and Strategy/Plan</b>	<b>Overview and alignment</b>
	<p>for optimising the network, which improves the resilience of travel times that customers experience and better utilises the infrastructure that we have, contributing to better value for money outcomes. ATOC Amalgamation will improve the ability to harness the capability of technology that is critical to improve the efficiency of the transport services that are delivered for customers.</p>
<p><b>Auckland Transport, Auckland Council, NZ Transport Agency, KiwiRail</b></p> <p>Regional Land Transport Plan 2018 – 2028 (Draft)</p>	<p><b>Overview</b></p> <p>The Regional Land Transport Plan (RLTP) is a 10-year investment programme for transport in Auckland, developed by AT together with the NZ Transport Agency and KiwiRail to respond to growth and challenges facing Auckland over the next decade. The RLTP is focused solely on transport issues in Auckland, including rail, freight, walking and cycling, road safety, local roads, and motorways.</p> <p><b>Alignment</b></p> <p>The ATOC amalgamation project is identified in the RLTP as a funded project to help deliver the outcomes for Auckland in terms of network management and incident response at the same time as providing the necessary information to customers to allow improved transport decision making.</p>
<p><b>Ministry of Transport, NZ Transport Agency, Auckland Transport, Auckland Council, KiwiRail, Treasury, State Services Commission</b></p> <p>Auckland Transport Alignment Project (ATAP)</p>	<p><b>Overview</b></p> <p>A joint initiative between government agencies, Auckland Transport and Auckland Council, known as the Auckland Transport Alignment Project (ATAP), has been created to develop an integrated strategic approach to managing Auckland's transport system over the medium to long term to address challenges associated with growth.</p> <p>ATAP calls for a mix of approaches to support planned residential and commercial growth with transport services and solutions that enable people and businesses to physically access the destinations or services they need without undermining the wellbeing of local and wider communities. This approach is based on three integrated components:</p> <ul style="list-style-type: none"> <li>• <b>Making better use of existing networks</b></li> <li>• Targeting new investment to the most significant challenges</li> <li>• <b>Maximising new opportunities to influence demand.</b></li> </ul> <p><b>Alignment</b></p> <p>ATOC amalgamation is aligned to two of the three broad aims of ATAP and will improve opportunities for optimising the network, making better use of what we already have. The move to multi-modal journey management will also improve the resilience of travel times that customers experience and provide customers with the necessary information to make informed travel choices. This makes a positive contribution to influencing demand and delivering more efficient network utilization overall.</p>

## 2.5 Risks

There are a number of risks which could threaten the outcomes of the ATOC Amalgamation Project. These are outlined in Table 6 below along with mitigation strategies.

Table 6: Amalgamation outcome risks and mitigations

<b>Risk</b>	<b>Narrative</b>	<b>Mitigations</b>
Resilience and Business Continuity	<p>Amalgamation will increase reliance on a single site for ATOC.</p> <p>Need to ensure resilience and the ability to maintain services to the fullest extent possible during a variety of scenarios from widespread civil emergency to localised utility or system outages.</p>	<p>Site resilience, continuity and recovery to be built into the solution</p> <p>Primary site resilience – all ATOC systems, utilities, etc. to be resilient and backed up</p> <p>Leverage other TOCs (i.e. WTOC or CTOC), use other AT and NZTA facilities in Auckland or collaborate with other emergency management centres such as the Civil Defence bunker at Auckland Council to provide recovery facilities.</p>
Technology	<p>Disparate systems that cannot be integrated will not support efficient and effective TOC operations.</p> <p>Ongoing duplication and overlaps between AT and Auckland Council (AC) specific systems and NZTA national systems will not support efficiencies.</p>	<p>NZTA and AT have established a joint technology programme to align their respective systems programmes, either integrating different platforms or rationalizing to common, shared platforms, building IT independence and logical separation from ITS, developing a common desktop operating environment, etc.</p> <p>The timeline for the joint technology programme is still being developed so, to remove technology dependencies and risks from the amalgamation project, the project will deliver in two phases: amalgamation, which will focus on people and facilities and use existing AT and NZTA technology; and optimisation, which will focus on systems and processes and, where possible, leverage the benefits of the joint technology programme.</p>
Time	Slippage could impact readiness for America's Cup and APEC in 2021	Clarity of deliverables and outcomes, and identification and management of critical path. Project management and governance.
People capability	<p>Amount of change could lead to staff turnover and consequential loss of skills, experience and knowledge.</p> <p>Not getting the right people in the right roles to enable future success.</p> <p>Existing cultural issues may transfer over to the amalgamated ATOC.</p>	<p>Early development and delivery of a change management process, communication and support for staff.</p> <p>Good joint AT and NZTA HR engagement, change management, training and development.</p> <p>Clear leadership and collaborative direction setting from JMB.</p>

<b>Risk</b>	<b>Narrative</b>	<b>Mitigations</b>
Mission creep	Non-core activities e.g. ITS asset management distract from core TOC operations	<p>Clear definition and stakeholder agreement on TOC mission, outcomes, functions, etc.</p> <p>Discontinue or rehome functions and activities that do not contribute to agreed outcomes. This could mean the function remains co-located but reports outside of the ATOC management structure.</p>
National TOC strategy	NZTA national/regional TOC is to be defined so functional and/or geographical scope of ATOC could change and requirements could shift.	<p>NZTA to define strategy and advise how ATOC will work with other national and regional TOCs going forward,</p> <p>Current NZTA advice is to assume no change for ATOC unless advised otherwise. Risk for any change impacts sits with NZTA.</p>
Future flexibility	Failure to balance “sinking lid” impact of emerging disruptive technologies (i.e. reducing need for people watching screens) vs short term need for people to support all modes (plus new modes like CRL and LRT) and manage the effects of upcoming major infrastructure projects.	<p>Flexible facilities lease structure to allow for space to be reduced over time.</p> <p>Org design needs to ensure TOC has capability and capacity to support an ongoing optimisation program in partnership with NZTA &amp; AT IT groups.</p>
Relationship with Police	The co-location of a Police Liaison Officer (PLO) in ATOC is currently by informal agreement. A change in the relationship with Police or a change in Police policy or priorities which caused the loss of the PLO would have a significant adverse impact on the day-to-day effectiveness of ATOC.	<p>ATOC amalgamation aligns with Police plans for Tāmaki Makaurau DCC reorganisation. Police wish to co-locate their new Tāmaki Makaurau CCTV Unit in ATOC and, to support that, are offering 24/7 PLO coverage in ATOC.</p> <p>This has national HQ level commitment and support from Assistant Commissioner John Timms.</p> <p>An MoU will be put in place to formalize the co-location agreement.</p>

## 3. Economic Case

The purpose of the economic case is to explore the available options and identify a preferred option which represents value for money.

### 3.1 Background

The economic case for the ATOC Amalgamation project was informed through review of existing documentation, engagement with key stakeholders and qualitative assessments of options.

The key steps undertaken during the development of the economic case were:

1. Determine criteria for undertaking qualitative assessment of the options, including critical success factors
2. Assess the short-list of options using the criteria to identify a preferred option
3. Recommend an overall preferred option.

There is broad agreement between AT and NZTA to amalgamate the two ATOCs. This has been informed by a review and options paper developed by AECOM in 2017 which was itself informed by AECOM's extensive experience and international best practice. A short-list of options that have the potential to deliver the ATOC Amalgamation project's objectives were initially developed by AECOM. Those options were then refined through the development of the Strategic Case. These options form the basis of the options analysis through the Economic Case.

### 3.2 Evaluation approach

#### 3.2.1 Multi-criteria analysis (MCA)

It is acknowledged that many of the ATOC functions and the objectives of amalgamation cannot be quantified but are critical to operating Auckland and the Upper North Island's transport network and the users of the network. This means that an MCA framework which captures these functional benefits is required and appropriate and has been used to assess the options.

#### 3.2.2 Evaluation criteria

The ATOC Amalgamation project working group developed the MCA framework and criteria which the options would be assessed against, to identify a preferred option. The framework criteria and objectives of the ATOC Amalgamation project are shown below in Table 7.

Table 7 Criteria for multi-criteria analysis of options

Criteria	Objectives sought
Improved customer experience	<p>Improvement in the customer experience of the transport system:</p> <ul style="list-style-type: none"> <li>• Customer insights influence operation of the transport system</li> <li>• Customer satisfaction of ATOC services is improved</li> <li>• Improve real-time information for customers</li> <li>• Maintain and improve traffic signal operational activities</li> <li>• Maintain and improve planned event, planning, coordination and management capability.</li> </ul>
Efficient and effective operating model, timely and responsive	<p>A TOC which is efficient and effective and can respond and react appropriately:</p> <ul style="list-style-type: none"> <li>• Customer insights influence operation of the transport system</li> <li>• Improve operation of key strategic regional and multi-modal urban journeys</li> <li>• Business intelligence influences real-time operation of transport system</li> <li>• Enhance operational management and coordination of key strategic areas of the network</li> <li>• Maintain and improve traffic signal operational activities</li> </ul>



<b>Criteria</b>	<b>Objectives sought</b>
	<ul style="list-style-type: none"> <li>• Maintain and improve special event, planning, coordination and management capability</li> <li>• ATOC is appropriately resourced to deliver required outcomes</li> <li>• Maintain and improve ITS device asset management processes</li> </ul>
Improved decision making	<p>A TOC, processes and systems which supports improved decision making for the transport system and customer:</p> <ul style="list-style-type: none"> <li>• Customer insights influence operation of the transport system</li> <li>• Business intelligence influences real-time operation of transport system</li> <li>• Real-time business intelligence influences and shapes strategic decision making</li> <li>• Improve ATOC leadership performance</li> <li>• Real-time business intelligence capability developed in ATOC</li> </ul>
Improved relationships between AT, NZTA and third parties	<p>Improved relationships between AT and NZTA, and with external parties who interact with the ATOC:</p> <ul style="list-style-type: none"> <li>• Amalgamate and operate a single transport operations centre for Auckland and the Upper North Island</li> <li>• Maintain and improve ATOC stakeholder engagement</li> <li>• Enhance operational management and coordination of key strategic areas of the network</li> <li>• Improve operation of key strategic regional and multi-modal urban journeys</li> <li>• ATOC is appropriately resourced to deliver required outcomes</li> <li>• Build single ATOC culture</li> </ul>
Value for money, resilient and sustainable	<p>A TOC solution which represents value for money that is resilient and sustainable:</p> <ul style="list-style-type: none"> <li>• ATOC (business) delivery plans drive development of the annual budget</li> <li>• Operate within and manage joint budget in accordance with partnering agreement</li> <li>• Achieve savings and efficiencies</li> <li>• Improve financial management capability</li> <li>• Maintain and improve operational input for planned maintenance and capital construction projects</li> <li>• Deliver a resilient operations environment (local and national) and business continuity certainty</li> </ul>
Promotes safe environments	<p>A TOC solution which promotes external and internal safety:</p> <ul style="list-style-type: none"> <li>• Ensure the health and safety and wellbeing of staff</li> <li>• Maintain and improve special event, planning, coordination and management capability.</li> <li>• Improve operation of key strategic regional and multi-modal urban journeys</li> <li>• Business intelligence influences real-time operation of transport system</li> </ul>
Multi-modal	<p>A TOC solution which supports multi-modal journeys:</p> <ul style="list-style-type: none"> <li>• Customer satisfaction of ATOC services is improved</li> <li>• Improve real-time information for customers</li> <li>• Maintain and improve traffic signal operational activities</li> <li>• Customer insights influence operation of the transport system</li> <li>• Improve operation of key strategic regional and multi-modal urban journeys</li> <li>• Maintain and improve public transport and airfield surveillance activities</li> </ul>

<b>Criteria</b>	<b>Objectives sought</b>
Supports national standards	<p>A TOC solution which is aligned to national objectives and standards:</p> <ul style="list-style-type: none"> <li>• Improve operation of key strategic regional and multi-modal urban journeys</li> <li>• Enhance operational management and coordination of key strategic areas of the network</li> </ul>
Multi-disciplinary integrated teams	<p>A TOC solution which supports multi-disciplinary teams:</p> <ul style="list-style-type: none"> <li>• Improve operation of key strategic regional and multi-modal urban journeys</li> <li>• Maintain and improve special event, planning, coordination and management capability</li> </ul>

### ***3.3 Options development***

As noted earlier, there is broad support for the ATOC Amalgamation project. There has been a great deal of thinking about models which would support the strategic objectives of AT and NZTA prior to the commencement of the business case process.

The JMB had previously sought advice from AECOM in early 2017 on what the potential options for the amalgamation of ATOC Smales and ATOC Central would be, including physical or virtual amalgamation and co-location options. There were four options developed through that process:

- Maintain status quo with a single manager
- Physical amalgamation with a single manager
- Physical amalgamation and co-location/integration with other key external stakeholders
- Full amalgamation of all transport operational functions.

Those options were used as a starting reference point to inform the options developed by the ATOC Amalgamation project team early in 2018. Four options, similar to those noted above, were developed through that process and they are described in more detail below.

#### ***3.3.1 Option A: Virtual amalgamation (the do minimum)***

##### ***Functions and functional structure***

This option would maintain the existing staffing and location of ATOC Smales and ATOC Central but would rationalise and simplify reporting lines by appointing a single manager to provide coordination and consistency across both centres.

Option A involves integration of City Centre Network Operations (CCNO), AT Metro Day of Operations (DoO), and safety and security into operations at ATOC Smales as agreed with AT Transport Operations.

No other functional changes are expected to either ATOC Central or ATOC Smales' functions.

Improved virtual linkages and technology improvements are expected to support integration of the TOCs.

##### ***Physical location***

Option A involves continuing to operate the two TOCs at separate physical locations - ATOC Smales and ATOC Central.

Some expansion of the ATOC Central footprint would be required to accommodate DoO, Public Transport and Parking Safety and Security activities once those teams grow to full strength through 2019.

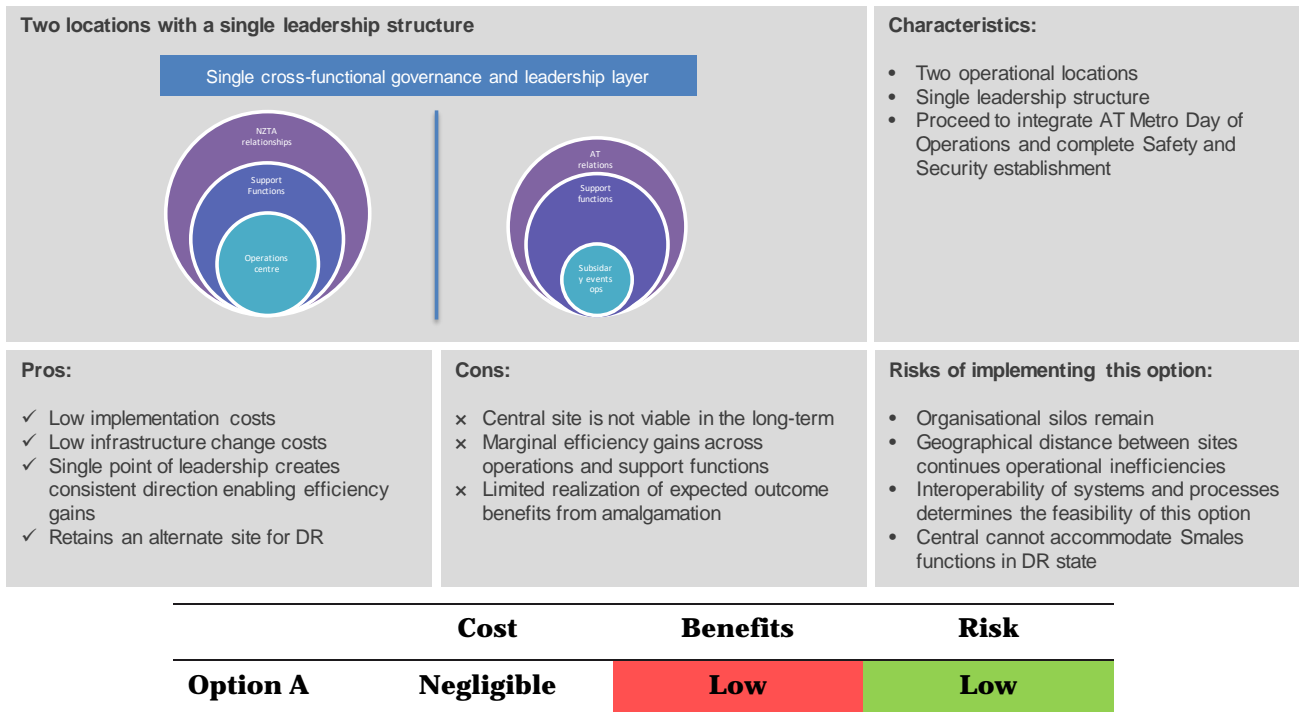
##### ***Governance***

Option A has joint, cross-functional governance and leadership layers, which, subject to review, are expected to comprise AT, NZTA and other stakeholder staff. With the increase functional and organisational scope of the amalgamated TOC, the executive and leadership governance structure needs to be fully reconsidered and the partnership agreement revised accordingly.

Figure 1 summarises Option A and provides an initial assessment of pros, cons, risks, expected costs and ability to deliver the desired benefits. The detailed assessment of the options using the MCA framework is discussed at the conclusion of this section.

Figure 1: Summary of Option A

### Option A – Virtual amalgamation



### 3.3.2 Option B: Amalgamate and integrate

#### Functions and functional structure

This option would combine the two ATOCs at one site (potentially, but not necessarily Smales Farm) to further enhance coordination and collaboration. As with Option A above, the amalgamated ATOC would be managed by a single manager and management team. This option would require the consolidation of existing teams from within the two ATOCs, with high level areas for consideration including:

- Consolidated operations
- Create a joint business support team
- Extend responsibilities of the special events team
- Review traffic signal engineering team
- Transfer assets and contract services
- Extend level of service for National Travel Information Services team (NTIS)

#### Physical location

The location of an amalgamated TOC would have the following requirements:

- Available from 2019
- Floor space of approximately 1,800m<sup>2</sup>
- Space to be included to allow for future co-location of SAFE teams
- Ability to integrate and consolidate existing systems
- 24/7 facility with need for secure parking within a safe compound to support shift workers
- Ability to maintain a secure control room within a wider facility
- Ability to maintain current capability to enable key stakeholders to periodically work within the facility.

Under Option B, ATOC Central will be vacated as all operations currently performed there will be migrated to the new location.

The base assumption for the new location has been assumed to be Smales Farm. Additional floor space will be required at Smales Farm to accommodate the additional functions and staff, relocated from downtown Auckland and an initial review suggests this would be available by extending the existing Smales Farm lease.

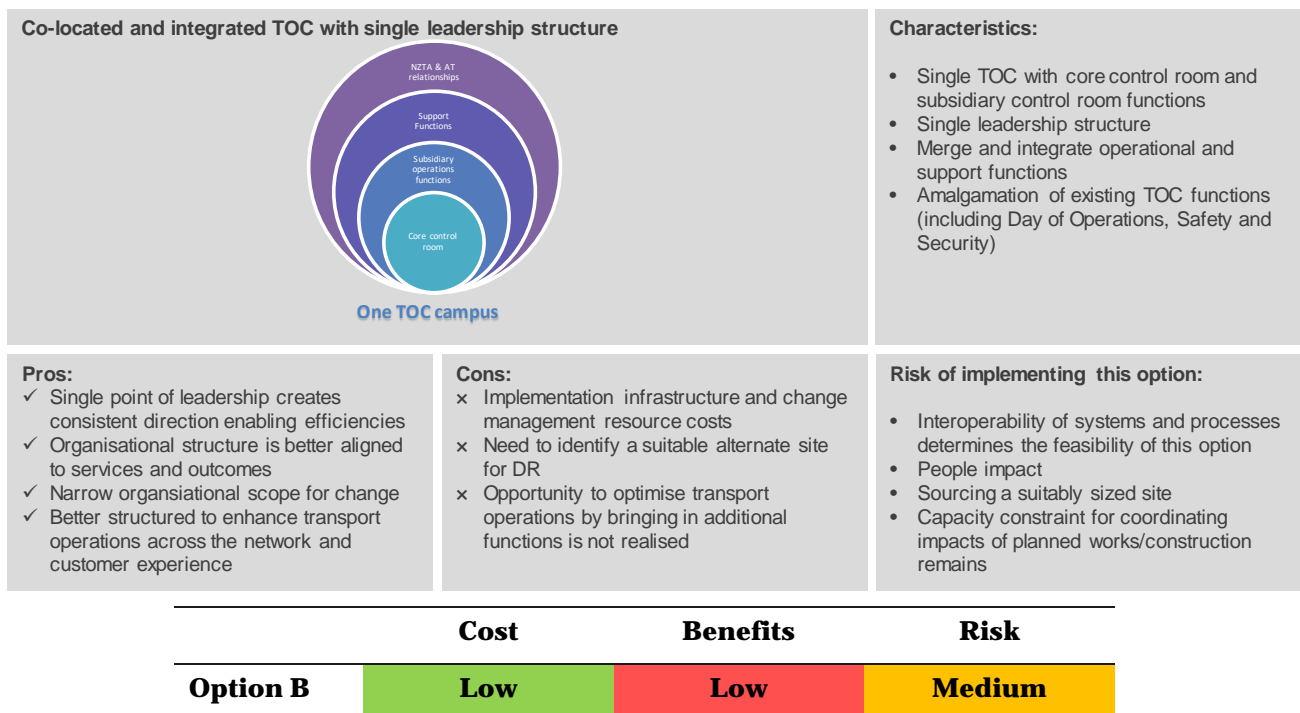
**Governance**

As for Option A, Option B has joint, cross-functional governance and leadership layers, which, subject to review, are expected to comprise AT, NZTA and other stakeholder staff. With the increase functional and organisational scope of the amalgamated TOC, the executive and leadership governance structure needs to be fully reconsidered and the partnership agreement revised accordingly.

Figure 2 summarises Option B and provides an initial assessment of pros, cons, risks, expected costs and ability to deliver the desired benefits.

Figure 2: Summary of Option B

**Option B – Amalgamate and integrate**



**3.3.3 Option C: Amalgamate, integrate AND expand**

**Functions and functional structure**

This option is similar to Option B but with the addition of co-locating and/or integrating other key functions or teams from external stakeholders. The key stakeholders to be considered would be those who play a key role in the operation of the transport system. This option would also include exploring other functions and teams within AT and NZTA to determine if there is any benefit in bringing those into the amalgamated ATOC (co-located or amalgamated).

One of the considerations of co-location with ATOC is whether that should be a permanent arrangement, or situational depending on the circumstances being managed. This can include Police, temporary traffic management (TTM) representatives, ATEED etc. There is no operational requirement for ATEED or TTM representatives to be permanently located at ATOC. Police however could offer significant value across a much broader range of functions. It would therefore make sense to further explore a permanent arrangement with Police.

There are a number of internal (AT and NZTA) and external functions/agencies which could be considered for amalgamation/co-location with the amalgamated ATOC. This is summarised in Table 8 below.

Table 8: Internal functions and external agencies for potential co-location at the amalgamated ATOC

Internal functions	External agencies
Corridor access request	Police
Traffic signal engineering	Fire and ambulance
Network performance monitoring and reporting	Tow, recovery and clearance of transport network
Enhanced support to the Harbour Master	Public transport service providers
SAFE	Contractor support
Communications	Auckland Airport
NZTA journey management	Civil Defence/ Lifelines
TOC technology management support	

Support functions would be consolidated at the amalgamated ATOC site.

### Physical location

The location of an amalgamated and expanded TOC would have similar requirements to Option B, but with further floor space being required to accommodate the expansion:

- Available from 2019
- Floor space of approximately 1,800m<sup>2</sup> to accommodate the base amalgamation
- Co-location space to support external stakeholders of 1,000m<sup>2</sup> or more (*dependent on level of functional expansion*)
- Extended incident management room facilities
- Space to be included to allow for future co-location of SAFE teams
- Ability to integrate and consolidate existing systems
- 24/7 facility with need for secure parking within a safe compound to support shift workers
- Ability to maintain a secure control room within a wider facility
- Ability to maintain current capability to enable key stakeholders to periodically work within the facility
- Ability to support additional parking for extended incident response capabilities.

As for Option B, ATOC Central would be vacated under Option C as all operations currently performed there will be migrated to the new location.

The base assumption for the new location has been assumed to be Smales Farm. Additional floor space will be required at Smales Farm to accommodate the additional functions and staff, relocated from downtown Auckland as well as the staff performing the expanded TOC operations who relocate from other locations. An initial review suggests this would be available by extending the existing Smales Farm lease.

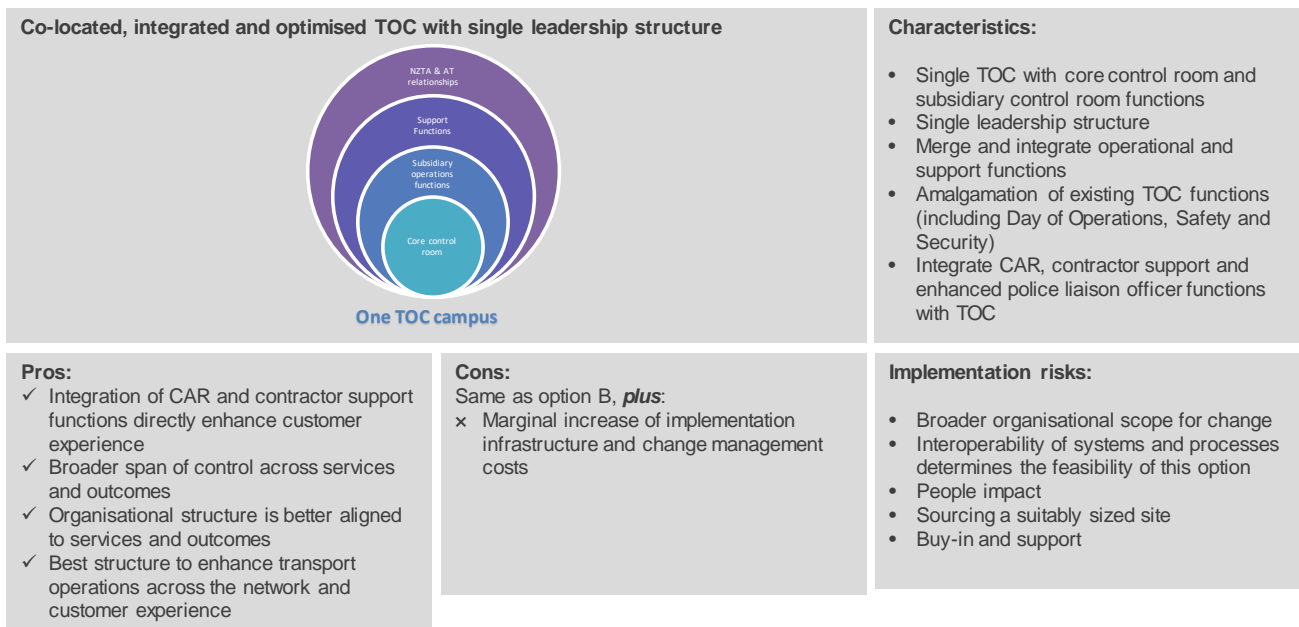
### Governance

As for Options A and B, Option C has joint, cross-functional governance and leadership layers, which, subject to review, are expected to comprise of AT, NZTA and other stakeholder staff. With the increase functional and organisational scope of the amalgamated TOC, the executive and leadership governance structure needs to be fully reconsidered and the partnership agreement revised accordingly.

Figure 3 summarises Option C and provides an initial assessment of pros, cons, risks, expected costs and ability to deliver the desired benefits.

Figure 3: Summary of Option C

### Option C – Amalgamate, integrate and expand



	Cost	Benefits	Risk
<b>Option C</b>	<b>Medium</b>	<b>High</b>	<b>Medium</b>

### 3.3.4 Option D: ‘Super’ TOC

#### Functions and functional structure

This option essentially builds on the full amalgamation and additional functions/teams as described in Option C, with the addition of the proposed Integrated Rail Management Centre (IRMC). AT Metro have developed a business case for the proposed co-location of the AT Metro operations functions within an IRMC. The proposed CRL Station Group Control Centre (SGCC) functions will be relocated into an IRMC which will provide train control and above rail support functions (this includes KiwiRail and Transdev). Also included will be AT Metro’s DoO and surveillance teams, who will contribute to coordinating the delivery of reliable and integrated public transport services on the network. This facility will provide resilience for KiwiRail, providing national rail operations should Wellington’s National Train Control Centre be unavailable for any reason. It will also include the bus and ferry service providers.

#### Physical location

Given the necessary floor space requirement to accommodate the significant expansion of functionality beyond the approximate 2,800m<sup>2</sup> required to deliver Option C, Smales Farm would not be able to house a Super TOC and it would be necessary to create that in a new, bespoke location.

#### Governance

Governance of a ‘Super TOC’ would be complex, given the range of organisations (and potentially competing priorities) involved. A single cross-functional and leadership layer would still be desirable (as for the other options), expected to comprise a combination of AT, NZTA and KiwiRail. Further consideration would need to be given to the role that operation/support functions (eg Transdev) and other stakeholders and partners would have at a governance level should a Super TOC option be preferred.

Figure 4 summarises Option D and provides an initial assessment of pros, cons, risks, expected costs and ability to deliver the desired benefits. Of note is the initial assessment of the benefits only being considered to be ‘medium’. This reflects the complexity that would be associated with a Super TOC and the natural conflicts among the multitude of functions that would be difficult to navigate on an operational basis.

Figure 4: Summary of Option D

Option D – ‘SuperTOC’

**Build an all-in “Super-TOC”**

**One “Super-TOC”**

**Characteristics:**

- Single TOC with a single large control room
- All transport related functions collocated into a single control room, (i.e. KiwiRail, Ferry and Bus operators, TransDev)
- Merge and integrate support functions
- Multiple leadership groups

**Pros:**

- ✓ “One room” approach logically promotes highest opportunity for integration and collaboration across all functions
- ✓ Co-located stakeholders enhances transport operations across the network and customer experience

**Cons:**

- × Complex decision making
- × Significant implementation infrastructure and change management resource costs
- × Operationally inefficient for all operators to function in one room
- × Single control room is not conducive to current operating model of external parties

**Implementation risks:**

- Significant challenges with interoperability of systems and processes
- People impact
- Significant challenges with sourcing a suitably sized site
- Governance

	Cost	Benefits	Risk
<b>Option D</b>	<b>High</b>	<b>Medium</b> <i>(due to complexity)</i>	<b>High</b>

### 3.4 Options assessment

The initial assessment of the expected costs, risks and ability to deliver the desired benefits for each of the four Options is summarised in Table 9 below.

Table 9: Initial options assessment

	Option A	Option B	Option C	Option D
<b>Cost</b>	<b>Negligible</b>	<b>Low</b>	<b>Medium</b>	<b>High</b>
<b>Benefits</b>	<b>Low</b>	<b>Low</b>	<b>High</b>	<b>Medium</b> <i>(due to complexity)</i>
<b>Risk</b>	<b>Low</b>	<b>Medium</b>	<b>Medium</b>	<b>High</b>

The JMB assessed the short list options in a workshop facilitated by the ATOC Amalgamation project team in March 2018 utilising the MCA framework described in Section 3.2.2. The scoring of each option against the various criteria used a 5 point scale. The results of the multi-criteria assessment are summarised in Table 10.

Table 10: Multi-criteria assessment of the options

Criteria	Option A	Option B	Option C	Option D
	Virtual amalgamation	Amalgamate and integrate	Amalgamate, integrate and expand	'Super' TOC
Improved customer experience				
Efficient and effective operating model, timely and responsive				
Improved decision-making				
Improved relationships between AT, NZTA and third parties				
Value for money, resilient and sustainable				
Promotes safe environments				
Multi-modal				
Supports national standards				
Multi-disciplinary integrated teams				

Key:

Good → Poor

### 3.4.1 Discussion and recommendation

The assessment of the options showed that the virtual amalgamation option (Option A) would be the poorest performer of all options considered.

Based on the assessment, it was clear that a physical amalgamation of the two ATOCs will achieve the best outcomes for all parties, the performance of the transport network and the customers using it. It was also evident that significant additional benefit can be achieved if other key stakeholders are included in either an integrated and/or a co-located arrangement.

An integrated centre cannot succeed without the support of a wider group of key stakeholders. Meeting the needs of its customers and communities requires the ATOCs to collaborate with those key stakeholders who are critical to achieving their common outcomes. An integrated centre therefore also includes the physical co-location with external partners.

A move to a 'Super' TOC was viewed as an overly complex development currently. It was agreed that it would likely be almost too unwieldy to deliver the necessary functionality, agility and outcomes that are sought from the amalgamation. However, a future shift to such a model would not be precluded by moving to Option C in the immediate future

The assessment of the four different option concluded that **Option C - Amalgamate, integrate and expand** provides a good balance between improved functionality, benefit to the operation of the network, benefit to stakeholders and benefit to the customer.

## 3.5 Preferred option – Amalgamate, integrate and expand

### 3.5.1 Summary

The preferred option is Option C, an amalgamated ATOC with expanded functionality. The default location for the amalgamated TOC is Smales Farm, as initial reviews confirmed there is the necessary space available for incorporating into a revised lease agreement.



The preferred option delivers a more mature model with a significant increase in benefits over virtual amalgamation. It is aligned to the principles defined in the co-design phase and delivers the greatest benefits including:

- clear governance and reporting to enable clear decision-making, prioritisation of activities, in line with strategic goals
- teams organised into communities of practice for core TOC functions to promote integrated interdisciplinary and multi-organisational transport operations service delivery
- enhanced capability and resourcing to improve functional services i.e. coordination of planned works and construction projects
- standardised processes, operating procedures and systems to reduce duplication of effort and inefficiencies
- transfer of knowledge and capability development will help to build resource capability and enable teams to contribute to business activities that add value and reduce unnecessary rework
- sufficient space for transport operators to undertake their role with direct access to supporting functions, in dedicated operations space, avoiding unnecessary disruptions and distractions
- on-campus capacity for appropriate NZTA, AT functions and relationship partners to provide proximity co-locate for planning and operational/incident support.

A proposed joint Rail Operations Centre – for Transdev Metro, KiwiRail’s regional operations centre (plus KiwiRail’s national DR location), and future CRL operations - has been removed from the scope of this Business Case. There remains the option for those groups to pursue co-location at Smales Farm independently, noting there may be benefits from co-location, but it is not critical to the amalgamation of the ATOCs. Note that a Transdev representative remains in the amalgamated ATOC.

### ***3.5.2 Future ATOC functions***

Throughout the process of developing the Strategic Case, extensive work was done with ATOC leadership, staff and stakeholders to unpack current ATOC Smales and ATOC Central functions, validate what the amalgamated ATOC will actually do and the functions and capabilities it needs to do it. The following section discusses core (ie. mission-critical) ATOC functions and the various ATOC-specific, supporting, and related functions which directly enable and support core functions. There is also a section for non-core functions which the ATOC has historically undertaken but which are better aligned with other areas of AT and/or NZTA.

#### ***Core ATOC functions***

- Real time operation of the transport system (multi modal)

Using operational insights to deliver tactical level, real time operation of the existing transport system in order to improve the movement of people and freight. Specifically this means monitoring the transport system and optimising real time operation under BAU conditions for all of Auckland, and the state highway network in the upper North Island (Auckland, Waikato, Bay of Plenty and Northland).

This includes heightened monitoring and optimisation during high risk periods (e.g. AM peak), and at key strategic locations (including CBD, Auckland Airport).

Using engineers’ modelling capability to optimise the network.

- Real time travel information (multi modal)

Providing meaningful real time travel information to customers to promote smarter travel decisions (about when, where, how and whether to travel), and to keep them informed of events which may impact their journeys.

This includes under BAU conditions as well as in support of planned and unplanned events.

This requires collaboration with those responsible for the various modes to ensure real time information for customers is coordinated and consistent across all modes.

- Public transport and parking safety and security monitoring and response

Monitoring and responding to any issues that will or are affecting the safety of customers using public transport and parking services and staff operating those services.

- Unplanned event management (multi modal)

Coordinating and managing the response to and clearance of incidents and other unplanned events and minimising the impact to transport network users from events that affect people movement and parking activities. Minimising the impact to customers includes through optimisation, implementing alternate transport options (detours, services etc.), or simply advising customers of the disruption to influence their behaviour and/or decision making about their current or future journeys.

Scope includes safety of people (i.e. safety of individuals inside a facility, rather than the physical infrastructure)

Planning and intelligence cell (readiness for C&M, eg emergency management plans)

- Planned event management (multi modal)

Support the delivery of planned events (which are the responsibility of other organisations/parties), and minimise the impact to transport network users from those events that introduce significant delay or pose significant risk of disruption to customer journeys. This requires ATOC to undertake planning and coordinating the transport support for and impact of planned events. Planned events includes roadworks, Capital construction projects, expected weather events, holiday periods and special events such as concerts, festivals, parades, motorcades etc. There is a significant level of stakeholder engagement and negotiation required across multiple external agencies and organisations required. For special events this function includes the execution of the Transport support plan for the event.

This includes ATOC taking a role in Road Corridor Access and TMP approvals.

#### ***Additional ATOC-specific functions***

- Traffic engineering and operational advisory for new/enhanced projects

Providing technical advice about ATOC core functions in relation to proposed projects for new/enhanced transport network physical infrastructure, systems, processes, services etc.

It includes operational advice about the introduction and renewal of new transport network assets (i.e. CCTV cameras, a bridge, a new busway etc.).

- Programming and maintenance of traffic signals software

The design review and signal engineering programming of the traffic signal operating system (SCATS) to support transport network operations.

This primarily relates to permanent changes, but can also support temporary changes if required.

#### ***Supporting functions***

- Business performance, improvement and reporting

Managing and coordinating TOC business and financial planning processes, as well as monthly, quarterly and annual business performance reporting.

- Joint venture business support

Managing and coordinating administrative functions across ATOC and stakeholder teams

- ATOC integration management

Managing and coordinating TOC stakeholder relationships and internal communications within and between ATOC teams, and in support of partner agency outcomes.

The key outcome will be building and maintaining a cohesive multi-agency culture.

All supporting functions are undertaken in close consultation and partnership with partnering/relevant agencies

#### ***Related functions***

- Police Liaison Officer and CCTV Unit

- Public Transport service providers
- Support to AT and NZTA for non-transport related emergency situations

### ***Non-core functions***

While these functions have historically been undertaken by ATOC, they are non-core and do not support core TOC functions, and they are better aligned to other areas of AT/NZTA. The business case is recommending they are moved, however it is ultimately up to AT/NZTA whether they elect to do that or leave them with ATOC.

- Intelligent traffic systems contract management

Managing Contractors to deliver maintenance (preventative and reactive) and renewal of ITS assets (traffic signals, CCTV cameras, electronic signs and red light cameras).

- Intelligent traffic systems asset management

Managing the asset database for all ITS assets (traffic signals, CCTV cameras, electronic signs and red light cameras).

This includes ensuring all new assets and enhancements are validated and registered, all maintenance and renewal activities are captured, and analysis of the assets to support future renewals programmes.

- Transport facilities maintenance

Taking calls from staff and contractors, logging facilities entries and exits, and logging and coordinating facilities maintenance activities (repairs, graffiti removals, etc.).

- Parking compliance and notices

Back office administration in support of parking operations. Functions include: managing refunds, reminder notices.

- Systems access and control (CCTV, Vidsys, Riskshield)

Manage approval and set up of new user access to AT CCTV, Vidsys and Riskshield systems.

### ***3.5.3 Governance and overall structure***

#### ***Governance***

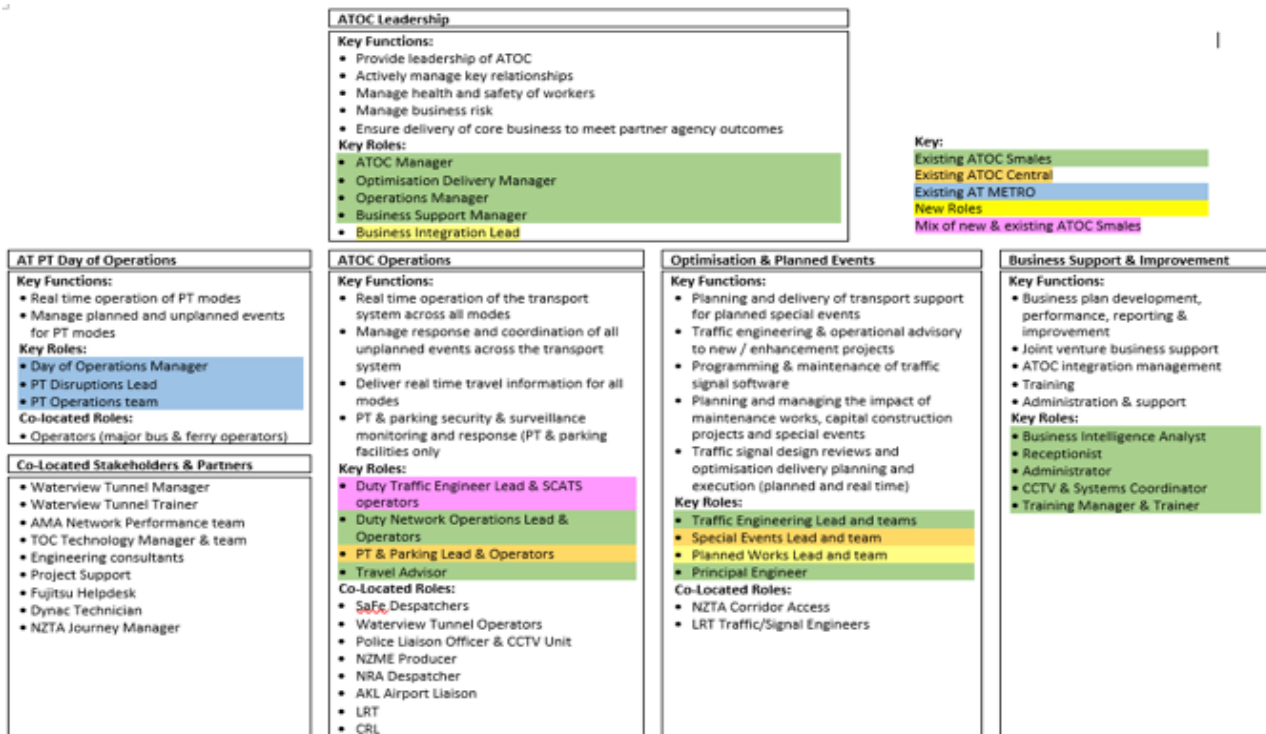
The governance structure needs to be reviewed for both consistency across AT and NZTA, and should also consider other key stakeholders i.e. AT's new Integrated Networks Division and NZ Police. The review should also understand and identify what the delegated authority of the JMB is, and who it reports to or how it connects back into respective agencies as this is unclear in the current JMB arrangement. The revised governance group will also need to refine/define the strategic objectives, goals and performance measures of the amalgamated ATOC.

#### ***Operating Structure***

The proposed structure for the amalgamated ATOC is shown below in

Figure 5. At this stage, this is conceptual and the exact positions and number of staff will be confirmed through the detailed organisational design exercise.

Figure 5 Conceptual amalgamated ATOC structure



### 3.5.4 Resource requirements

The amalgamation of the ATOCs provides the opportunity to build capacity and capability by developing skills across lines of service. These are discussed further below.

#### Additional resource requirements

With new functions and capabilities being added to the amalgamated ATOC mean additional resource will be required. It is expected that a modest uplift in current headcount will be required, depending on the exact design of proposed new functions eg planning and requirements for extending operational roles like Duty Engineers to 24/7 functions. This will be in addition to the already approved headcount for new AT functions such as Metro DoO. New roles in the amalgamated ATOC are expected to include

- Duty Traffic Engineers and additional SCATS operators - Traffic signals are one of very few tools we have that can improve the real time customer experience. With over 1,000 signalised intersections (and growing) in Auckland, the current capacity of 2-3 SCATS operators on shift at any one time is not delivering the required level of service. It is proposed that we increase the number of traffic signal operations staff to enhance real time monitoring and optimisation.
- Planned Works Lead and team to include functions of scheduling, Traffic management planning, and coordinate ATOC input into future designs, and advisory for capital improvement works pre construction. ATOC is required to manage the impact of all planned events on customer journeys, and where possible, reduce that impact to deliver reliable journeys for customers. There is currently no formal involvement of ATOC in the approval or planning process. The addition of a planned works team will improve our ability to influence the timing and reduce the impact of planned events on customers.
- Additional Travel Advisor roles to provide shift coverage to support the Travel Information function merging into the Operations team. Travel advice is often one of the only tools we have that can help to manage the impact of unplanned events on customers. Increasingly this needs to be provided 7 days a week rather than the Monday – Friday service currently offered.

- A Business Integration Lead role to assist with the management and coordination of the multiple stakeholders and groups located in the new amalgamated TOC. This role will also play a key role in aligning internal communications in a way that supports the unique one-team culture that will be critical to the success of ATOC.

### *Upskilling existing staff*

Further training and development is required to upskill operations staff to work at their full scope of practice. For example, SCATS operators with training could work at the level of senior SCATS operators, and network operators with training could work at the level of SCATS operators.

The proposed organisational structure puts forward an interim management plan to facilitate this upskilling by having a Duty Traffic Engineer Team Leader Role to provide 24/7 support, with the aim to transfer to a “Duty Traffic Engineer” (present during AM and PM peaks and on call only) when capability increases to an adequate level.

### **3.5.5 Facilities requirements**

More physical space than is currently occupied by ATOC at Smales Farm will be required to accommodate the additional functions to be integrated into the amalgamated ATOC. On the premise that the Smales Farm location is retained, a different configuration of the space will be required to optimise the TOC operations (eg office and operations room layouts, collaborative working spaces, kitchen facilities for more staff),

Major facilities considerations include:

- a main control room (larger than the current Smales control room) plus several subsidiary control room spaces (some adjacent, some completely separate) for incident rooms, Metro DDO, special events, etc.
- more office space will be required, for co-located AT, NZTA and partner teams, some in the same building, others can be spread across the wider campus depending on function, however, these will need to be in close proximity to control and incident rooms.
- establishing a connecting incident management room (and optimising its location to overlook the control room)
- establishing a training room to accommodate all technology functions
- building requirements for 24 hour operations in relation to safety and security.

Additional capacity, or ability to expand in the future, should also be considered for accommodating further functions such as those associated with planned new and expanded modes such as light rail and CRL or improved connectivity with KiwiRail.

Based on the expected staffing requirements, the ATOC Amalgamation project team have confirmed that sufficient space is available at Smales Farm, noting that reconfiguration of the existing space would be required along with expanding the amount of physical space currently available.

In addition to the Smales Farm primary site, a new backup site is required for Business Continuity and Disaster Recovery. The existing Auckland Harbour Bridge backup site for ATOC Smales and ad-hoc AT Viaduct backup for ATOC Central does not provide a current viable DR capability and will not support future amalgamated ATOC needs. To support continuity of all critical ATOC functions through the most likely DR scenarios – a localised utility outage or building/site evacuation impacting Smales Farm – as well as less likely Region-wide scenarios, a local (Auckland) hot backup site that can be activated within 1 hour will be established. Current thinking is to utilise space available at AT’s Albany Hub, pending a successful technical evaluation.

### **3.5.6 Standardised processes and systems**

The initial amalgamation phase will focus on the physical relocation of functions to Smales Farm but to realise the full benefits of amalgamation there will be a second optimisation phase which will focus on sharing or integrating systems and processes. Where possible, one system for both AT and NZTA will be used, particularly for back office functions, such as timesheets and administrative duties. Where possible, systems which are

widely used and supported by key stakeholders will be used (such as project management tools used across Auckland Council).

Duplication of data entry and rework should be reduced as part of optimisation and integration of systems.

In addition, enabling ATOC's network operation functions to be delivered by WTOC will require significant standardisation of processes and systems (or a new systems-independent front end).

It is expected that a dashboard performance reporting tool to promote continuous quality improvement that reports performance in real time will be developed. Furthermore, standardised risk management, risk identification and reporting procedures will be integrated into routine business practices.

During detailed implementation planning, a plan to standardise operating procedures and establishing guidelines to promote collective, integrated working will be developed.

### ***3.5.7 Estimated costs***

The estimated total cost associated with the amalgamation is:

- \$6.4 million capex
- \$1.09 million opex.

Ongoing annual operating cost following amalgamation is estimated as \$21.24 million. This reflects an approximate \$793,000 (4%) increase over the current combined ATOC opex budget.

The increase in direct costs (eg personnel and systems) associated with inclusion of a greater Police presence in the amalgamated ATOC will be met by Police.

### ***3.5.8 Estimating benefits***

The preferred option of amalgamation, integration and expansion is expected to deliver the benefits that are outlined in the strategic case, but many of these benefits are qualitative in nature such as customer satisfaction, improved relationships or improved business intelligence. They are inherently desirable, but when it comes to making an investment decision, it is helpful to also consider the potential return on that investment, which requires a level of quantification.

Attempting to quantify the benefits (economic or otherwise) of an amalgamated ATOC, or even the current value of the two ATOCs is challenging. Assessing the operation and performance of the transport network is a complex task due to the sheer number of influencing factors at play such as traffic volumes, time of day and weather to name a few. This is in part due to not being able to measure the counterfactual (ie no network operational management) and also that ATOC's direct influence is unable to be controlled for amongst that wide range of other influencing factors on network performance.

Existing performance metrics or reporting are currently limited, but below we present some scenarios in an attempt to quantify some of the potential improvement that amalgamation could deliver.

Due to a change in business reporting in the current situation making up-to-date/recent data unavailable, we have used incident data from 2016 to conduct the analysis. In 2016, there were over 35,000 incidents logged by the two ATOCs.

To estimate the potential improvement that amalgamating the ATOCs could deliver, we have:

- Only included incidents classified as Level 3 or 4 (there were no Level 5 incidents in 2016)
- Excluded incidents related to environmental impacts being slips, flooding or weather events which often have long resolution times (eg clearing a slip)
- Used the time taken for traffic to return to normal metric, noting that this is somewhat subjective as it is based on the ATOC Operator's observations.

Table 11 Summary of 2016 incident data

<b>Level 3 or 4 incidents</b>	
Number of incidents	478
Total time for traffic to 'return to normal'	1,625 hours
Average 'return to normal' time (per incident)	3.4 hours

Source: ATOC

This means that over that year, there were 1,625 hours of disrupted travel due to non-environmental Level 3 or 4 incidents on the network in Auckland and the Upper North Island.

Using this data (as the only real data available), we are able to make an estimate of the potential benefit that amalgamating the ATOCs could bring to this aspect of measured performance by reducing response times and therefore reducing the time taken to return to normal conditions. The assessment requires some further data which is not available and means we must make a number of assumptions relating to the:

- Number of vehicles affected by an incident (translated to people by an average occupancy of 1.2 people per car)
- Additional delay experienced by them as a result of the incident (since the total time of disruption is not equivalent to delay)
- Reduction in 'return to normal' time as a result of faster, more appropriate intervention by an amalgamated ATOC.

There are obviously large variations across incidents in terms of these impacts, but we have applied some assumptions on an average basis. We do not make any assumptions about the overall reduction in the number of incidents.

With an average return to normal time of over 3 hours, the potential for large volumes of people to be impacted is high (eg a single lane of traffic could have 1,500 vehicles per hour travelling in it – so over 4,500 people *could* be impacted). However, as incidents occur at all times of the day<sup>4</sup>, and on roads with vastly different traffic volumes, we have assessed a range of values.

To provide an indicative economic assessment, we have applied the composite value of time for urban arterial (all periods) travel from the Economic Evaluation Manual<sup>5</sup>, which when updated to 2017 dollars equals \$23.92 per hour. This will allow the potential benefits to be considered in the context of the costs of amalgamation.

As the analysis is based on a number of assumptions,

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<sup>4</sup> Detailed analysis of the 2016 Level 3 and 4 data confirms that there is no bias to certain times of day when incidents occur.

<sup>5</sup> \$16.27 per hour (2002 dollars), Table A4.3 of the EEM



Table 12 presents a range of impacts by varying the average number of people affected by each incident, an estimate of the proportion of delay within the disruption time and ATOC's ability to reduce the overall length of disruption, based on the observed incident data from 2016.

Table 12 Estimated range of potential benefits from ATOC amalgamation

<b>People impacted by each incident</b>	<b>Total person-hours of disruption</b>	<b>%of disrupted time that is delay</b>	<b>Amalgamation benefit (reduction in disrupted time)<sup>6</sup></b>	<b>Potential person-hours of delay avoided</b>	<b>Potential economic benefit (per year)</b>
1,500	2.9m	10%	10%	29,000	\$699,000
1,500	2.9m	25%	15%	110,000	\$2,623,000
2,000	3.9m	10%	10%	39,000	\$932,000
3,000	5.8m	25%	15%	220,000	\$5,246,000

Source: Analysis of 2016 ATOC incident data

The range of benefits presented above only account for one aspect of the broader benefits that an amalgamated ATOC is designed to deliver, so should not be viewed as absolute. However, even with only modest improvements there is a significant improve that suggests the annual increase in operating cost would be easily offset by the conservative estimate of this benefit stream alone.

<sup>6</sup> An amalgamation benefit of 10% would see the average return to normal time reduce to approximately 3 hours.

## **4. Commercial Case**

*The commercial case sets out the process to procure the proposed investment.*

### **4.1 Introduction**

The purpose of the Commercial Case is to develop an appropriate procurement approach to achieve the amalgamated ATOC. Given the nature of this project, procurement activities are not expected to be significant or complex. There will need to be a new lease or additional office space, acquire/modify systems and IT and possibly procure specific professional services as part of the implementation project, such as project management services or legal/structuring advice.

For an amalgamated ATOC, there are therefore four main commercial considerations which are discussed below:

- Outsourcing the ATOC functions
- Location
- Systems and IT
- Professional and/or support services.

### **4.2 Outsourcing**

The current ATOCs are resourced by employees of AT and NZTA and there is considerable interaction and integration of business systems. It is expected that an amalgamated ATOC would continue to be delivered in the same manner.

An alternative approach would be to outsource the delivery of the functions fulfilled by the amalgamated ATOC. This has been thought through, but is not considered appropriate or practical in the current national environment for the following reasons:

- It would be incompatible with the current national model and operating system which has the aim of delivering national resilience amongst the different TOCs
- Integration of operational and business systems is much lower risk with the retention of the current model (noting the potential for improvement to some of those systems as part of the amalgamation project)
- Increased complexity of decision making, governance and accountability that would accompany an outsourced model
- Need for ATOC to respond quickly would be hampered through an outsourced model.

There is the potential to revisit outsourcing the TOC functions, but this would need to be considered at a national level. The Transport Agency is currently progressing the “Future Journey Centre” project, which would be an appropriate avenue for that consideration.

### **4.3 Location**

When considering where an amalgamated ATOC could be located, it was clear that ATOC Central was not a viable option due to the constrained space at that location. There would be potential for it to be located at ATOC Smales with some expansion of the current space, or alternatively in a completely new location. However, expanding at Smales Farm was identified as the default position given the current site:

- property lease ends in early 2019, and there is a 12 year right of renewal available
- has had considerable investment in the facilities to date (eg video wall)
- delivers the necessary site requirements such as appropriate security and access given the 24 hour nature of operations and high capacity data connectivity
- would be lower risk and less disruptive than undertaking a major re-location in conjunction with the amalgamation

- provides a quality environment for staff in terms of amenity and accessibility (close to transport options like the Northern Busway).

It was therefore considered that unless there were constraints at Smales Farm that would make amalgamation of the two ATOCs impractical (such as insufficient space for expansion), there was no rationale for considering relocation and the best solution would be to remain at Smales Farm.

Discussions with the Smales Farm property managers identified that expansion of the existing space would be possible to accommodate the increased staff numbers and functions.

The lease for Smales Farm has subsequently been renewed for a further 12 years from March 2019. The renewed lease also covers additional space on Level 1B to allow for the amalgamation of ATOC Central and the DoO requirements into the overall site.

Any works such as office fit-out for the expanded space will be confirmed through the design process and procured through business-as-usual procurement processes to ensure value for money is achieved for those works.

#### ***4.4 Systems / IT***

There will be significant systems integration required to optimise the amalgamated ATOC. Where possible, existing business systems will be utilised and ideally one system for both AT and NZTA will be used, particularly for back office functions. A separate NZTA/AT program, to align both organisations' technology roadmaps, is currently in development. The two most immediately beneficial pieces of work from ATOC's point of view are the Riskshield-NIEMS integration and desktop integration projects.

For additional systems or IT that is identified as being required through the detailed implementation planning, standard procurement processes will be undertaken to secure the necessary vendors, hardware etc.

By remaining at Smales Farm, the existing technology fit out can be retained where appropriate to reduce disruption and cost associated with the amalgamation.

There is also a timely opportunity to work with Police and other stakeholders as they work through their own operations/command/communications centre reviews to further leverage any appropriate procurement exercises.

#### ***4.5 Professional and/or support services***

Through the transition period to an amalgamated ATOC, there will be some professional/support services required that will need to be procured. This could include certain roles within the implementation team itself (for example a dedicated project manager). However, it is likely that at least some of the implementation team functions can be delivered by existing AT and/or NZTA staff members, reducing the need for external support as the roles may not require dedicated resource.

Once the necessary services are scoped by the transition team, procurement of any professional/support services would be expected to follow standard AT/NZTA procurement practices.

The Management Case (Section 0) outlines the expected requirements for the implementation team.

## 5. Financial Case

The purpose of the Financial Case is to consider the overall affordability of the project over the life of the investment, including the additional funding requirements.

The ATOC Amalgamation project has two cost components:

- Implementation/transition and optimisation costs which will be incurred over the next three financial years as the two ATOCs are amalgamated and optimised
- Ongoing costs to reflect the additional space required and change in functions delivered by the new amalgamated ATOC.

### 5.1 Implementation/transition costs

The estimated total cost associated with the amalgamation is \$6.4 million capex and \$1.09 million opex, broken down in Table 13.

Table 13 High level capex and opex estimates

Item		Opex	Capex
<b>People</b>	Transition & improvement Team	\$842,600	\$1,016,400
<b>Facilities</b>	Smales design & fit-out	\$ -	\$1,600,000
<b>IT</b>	Smales IT fit-out	\$ -	\$1,933,000
	Desktop Standardisation	\$ -	\$1,000,000
	<b>Sub-total</b>	<b>\$842,600</b>	<b>\$5,549,400</b>
<b>HR</b>	Provision for redundancies	\$250,000	
<b>DR</b>	Local DR site (to be delivered by parent agencies) <sup>7</sup>		\$850,000
<b>Totals</b>		<b>\$1,092,600</b>	<b>\$6,399,400</b>

See section 5.4 below for discussion of assumptions and risks.

Refer to Appendix B for more detail.

<sup>7</sup> NZTA has a national DR strategy ie. being able to operate the entire state highway network from any one of its TOCs so, in future, ATOC will be able to fail that function over to Tauranga, Wellington or Christchurch. Provision has been made for a local (Auckland) DR facility because:

- The NZTA strategy cannot currently be realised as the technology to enable it is still in development
- Other ATOC functions – Auckland regional roads, parking, public transport safety and security, Metro DoO, etc. – require deep and current local knowledge so failing over to a remote centre would require relocating ATOC staff to another centre. This is impractical for short-term (less than two days) outages or issues impacting the Smales site. For a longer-term issues where relocation is feasible, some local continuity capability is still required for the time (6-24 hours) it would take to mobilise and relocate staff.

## 5.2 Ongoing costs

The amalgamated ATOC is expected to cost an additional \$793k (4% uplift on current) opex per year. This increase comes from increased lease cost at Smales and additional personnel cost. Table 14 provides a breakdown of the changes.

Table 14 Opex changes

Item	Current	Future	Change	%	Note
ITS asset management & operation	\$ 4,059,000	\$ 4,059,000	\$ -		
Operations & optimization	\$ 2,821,990	\$ 2,821,990	\$ -		
Real time travel information	\$ 331,391	\$ 331,391	\$ -		
IS/ITS systems	\$ 4,902,400	\$ 4,902,400	\$ -		
Administration	\$ 1,061,135	\$ 1,061,135	\$ -		
Salaries	\$ 6,525,000	\$ 7,170,000	\$ 645,000	10%	1
Facilities OPEX & Rent	\$ 625,565	\$ 773,303	\$ 147,738	24%	2
DR facility	\$ 120,000	\$ 120,000	\$ -		3
<b>Combined ATOC OPEX Budgets</b>	<b>\$ 20,446,481</b>	<b>\$ 21,239,219</b>	<b>\$ 792,738</b>	<b>4%</b>	

Notes:

1. Salary costs increased:
  - Additional capacity added to traffic signals team to meet increasing demand for real time optimization
  - Establish 'Planned Works' function to improve planning for and managing impact of planned works, maintenance and capital construction projects
2. Facilities rent and OPEX costs increased:
  - Additional space leased at Smales Farm to accommodate the amalgamated ATOC
    - Amalgamation is not physically possible in the current ATOC Central location (downtown ferry terminal building), hence the recommendation to extend at Smales Farm
    - The downtown ferry terminal building is owned by AT and all costs are carried by AT Facilities and AT Metros (ie. no rent or OPEX is paid by ATOC), hence an overall increase in rent and OPEX to accommodate the larger footprint at Smales
    - It is assumed AT will continue to pay rates and utilities at ferry terminal building after it is vacated by ATOC Central so there will be no savings to either ATOC or AT overall
3. Assumes the future DR site carries the same OPEX cost as the current site at Auckland Harbour Bridge.

Some of the uplift in facilities costs is as a result of the co-location of other parties eg. Police PLO and CCTV team, NRA Despatcher, etc. While MoUs have not yet been finalized with these parties, it has been discussed and tentatively agreed as a principle that co-located third parties who contribute significantly to ATOC outcomes will not be charged rent. The model that has been discussed with Police is:

- Police will provide and cover costs of staff (24/7 PLO and CCTV Unit supervisor and operators) and carry the cost of any additional carparks required at Smales.
- ATOC will provide accommodation and access to ATOC systems for Police staff. ATOC will also continue to provide one carpark for the PLO.

### 5.3 Total project costs across the RLTP/NLTP period

The amalgamation and improvement costs phase across the three financial years FY19-FY21 as described in Table 15.

Table 15 Phasing for amalgamation and improvement costs FY19-FY21

Cost type	FY19	FY20	FY21	Total
Capex (\$000)	\$ 1,500	\$ 4,579	\$ 320	\$ 6,399
Opex (\$000)	\$ 219	\$ 874	\$ -	\$ 1,093

Costs to be split 50/50 between AT and NZTA subject to a cost apportionment review through the planning and design process as it may be appropriate for specific costs to be allocated to a single organisation.

Ongoing opex costs will be subject to increases due to:

- Five yearly rent reviews on the Smales facility. This is based on local conditions at the time so is challenging to forecast, particularly in the Auckland market.
- Annual Smales facility opex cost reviews in line with the CPI and inflation. Currently ~2-3% per annum.
- Staff salary increases
- Other operating cost increases – utilities, etc.

This project only increases the overall ATOC opex budget by 4% so its impact on future opex costs is relatively small.

### 5.4 Financial risk and uncertainty

People cost estimates assume a mixture of internal and external resources. Using more internal resource would reduce the cost, conversely, heavier use of external resources would increase it.

It has been assumed that not all project costs can be capitalized because some activities will not create new assets. Examples of non-capitalisable costs are:

- Process design and optimisation work that does not result in a new system
- Relocating existing assets
- Staff redundancy costs

Facilities design and fit-out cost and IT costs are uncertain until the physical layout and design is completed. The facilities cost estimate provided is based on a 50% remodelling of Smales Level 1 using the same cost per square metre as AT's most recent fit-out at its Albany hub. IT/tech facilities fit-out costs are included in the IT cost line and include an allowance for additional air conditioning and power to increase site capacity and resilience.

The provision for staff redundancies is an estimate based on advice from AT HR to allow 6 months' salary at the midpoint for the five impacted roles. The actual cost may vary depending on the number of staff electing not to take new roles, their actual salary, tenure, and AT/NZTA HR policies.

## 5.5 Funding

### 5.5.1 Funding principles

In accordance with the current partnership agreement, the increase in ongoing operational costs will be split 50:50 between AT and NZTA.

For the implementation/transition costs, AT and NZTA have agreed in principle to the 50:50 cost split but noted that cost apportionment should be reviewed as it may be appropriate that specific costs (or portions of costs) are borne by one or other of the organisations.

### ***5.5.2 Available funding***

The RLTP has committed funding for:

- ATOC Amalgamation Capex
  - FY 18/19 \$1.5M
  - FY 19/20 \$4.5M
  - FY 20/21 \$320,200
- One Network ITS System Integration (FY19 – FY26) - \$7.9m – although it is unclear at this time exactly how much of this is available to the IT work required for amalgamation as the joint NZTA-AT technology program is still being planned.

NZTA currently has no capital provision allocated for amalgamation however the estimated spend is within the Chief Executive's delegation.

AT's share of the opex spend has been included in the budget bid for FY19/20; NZTA's share to be met through the National Land Transport Fund (NLTF).

It is assumed both partners will adjust future year budgets accordingly to meet the ongoing cost requirement, with NZTA's share coming from the NLTF.



## **6. Management Case**

*The management case sets out the planning arrangements required to both ensure successful delivery and to manage project risks. It demonstrates that the proposed investment is achievable.*

*It outlines how the project will be managed, setting out the project team structure, and the different roles and responsibilities. It also discusses the key risks, constraints and dependencies for the ATOC Amalgamation Project.*

### **6.1 Project plan**

#### **6.1.1 Overview**

In order to minimize change risk and maintain operational effectiveness during the amalgamation, it is planned that the amalgamation and process improvement of ATOC be phased with the initial physical amalgamation phase occurring through calendar year 2019 then the process improvement phase running through calendar year 2020.

Work will be organised across four major workstreams comprising People, Facilities, Process, and Technology. Project timing, phases, workstreams, structure, governance, and resourcing are discussed in the following section.

#### **6.1.2 Implementation/transition timeline**

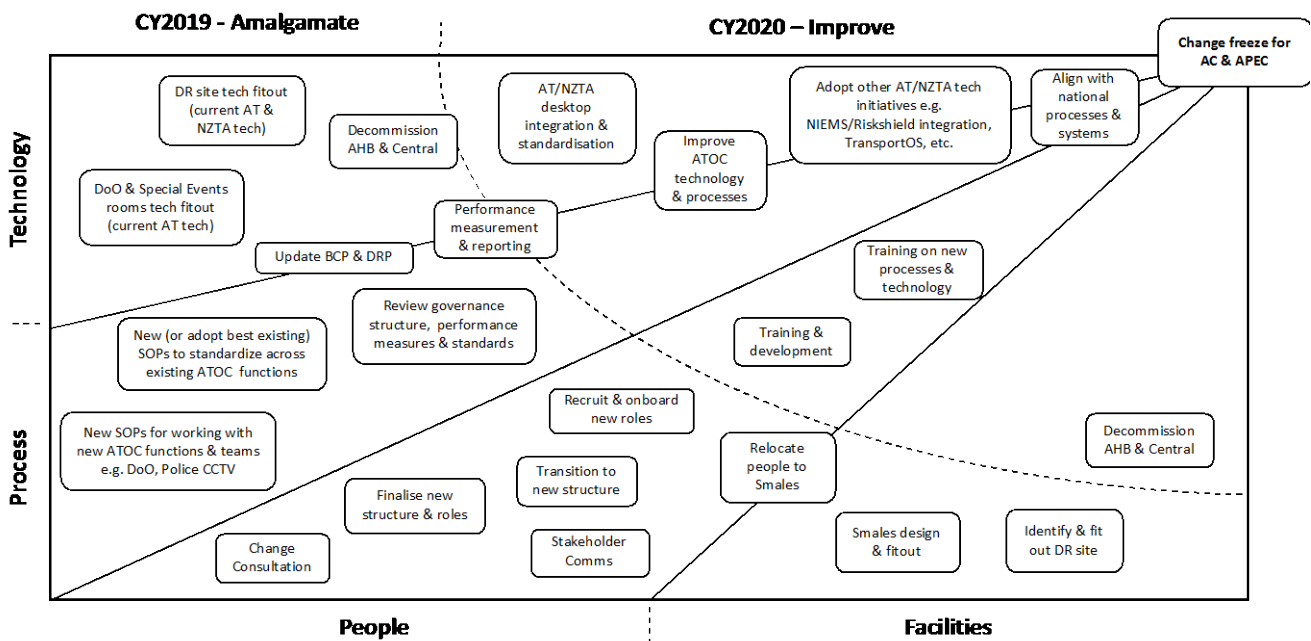
The critical end milestone for amalgamation is readiness for the America's Cup and APEC in 2021. In order to minimize change risk and maintain operational effectiveness during the amalgamation, the amalgamation and process improvement of ATOC will be phased.

The initial phase will deliver the physical amalgamation of ATOC Central and ATOC Smales, and will include:

- finalizing the future organisation structure, roles and responsibilities
- executing the restructure and organisational change
- recruitment of new roles
- reorganisation/fit-out of the Smales facility
- physical relocation of all ATOC people and functions to Smales before the end of calendar year 2019.

The second phase will deliver incremental business process and technology optimisation throughout calendar year 2020 until a change freeze is implemented in late 2020 for the duration of the America's Cup and APEC. It is proposed that a properly resourced AT Customer Central style design hub be established to support the incremental design, development and implementation of optimised ATOC processes and technology throughout this phase. Depending on availability of space and resource, the ATOC process improvement work could be done within Customer Central or co-located with the ATOC at Smales Farm.

Figure 6 Horizon diagram of key activities by phase for each workstream



### 6.1.3 People (HR) plan

In addition to the physical relocation of ATOC Central and other staff to the amalgamated ATOC at Smales Farm, there are a number of proposed changes to existing ATOC functions and roles so a full organisational change process will be followed. Once the business case is approved, key HR steps will be:

- Consult with impacted staff and wider stakeholder groups across AT and NZTA
- Receive and consider feedback from impacted staff and stakeholders
- Finalise the future organisation structure, finalise Job Descriptions, role sizing, banding etc. for new and significantly changed roles
- Communicate changes to wider stakeholder groups
- Transition to new structure, roles and location
- Advertise, recruit, and on-board new roles not filled.

A proposed future functional and organisation structure has been drafted and shared with key senior stakeholders, but impacted staff and the wider stakeholder groups have not been engaged so far.

There are several changes to existing roles so roles, responsibilities, and reporting lines need to be redefined. Even roles which are not impacted by significant change may have some changes to reporting lines and/or responsibilities so will also be subject to some redefinition. In addition, competencies will need to be redefined for all roles to develop standardized roles across service lines. Consistent training and experience development will be implemented to bring resourcing resilience and operational efficiency to the amalgamated ATOC.

As ATOC staff are either NZTA or AT employees, the Human Resources teams from both organisations have been engaged and will form a joint team to support the organisational change process and the transition to the new structure.

### 6.1.4 Facilities plan

#### Physical space

The Smales Farm lease is held by NZTA and has recently been renewed for 12 years from March 2019 and extended to include additional space on Level 1.

The design and physical fit-out of the new/re-organised space will be undertaken by NZTA's existing providers.

The fit-out and team relocations will be staged so that the ATOC remains fully operational throughout the amalgamation.

### *Security*

Being a 24-hour operation with staff arriving and leaving at odd hours, staff safety and security is paramount. The current building meets this requirement as it is physically secured out of hours and has secure basement parking which is made available for staff working outside standard hours. In addition, the Smales Farm site has 24/7 on-site security.

### *Resilience*

Resilience of the Smales Farm building and location will be reviewed and, where feasible, single points of failure (e.g. networks) will be addressed through building diversity and redundancy into infrastructure. Business Continuity and Disaster Recovery Plans will be revised to provide responses to localised issues such as utility outages, fire, etc. and integrated with broader organisation-wide and inter-agency Incident Management Plans to provide for regional events.

ATOC Smales currently has a backup site at the Police Auckland Harbour Bridge (AHB) location that accommodates nine staff and, in the event that the Smales site has to be evacuated, it supports a degraded level of service. The AHB site cannot be expanded to support other functions and, in any event, is not a suitably resilient location.

Furthermore, it has been identified that the Smales building is not sufficiently earthquake-resistant to be hosting a datacentre so NZTA has a program underway to remove the current datacentre away from this location.

Various ATOC Central-located teams have ad-hoc arrangements to use space at AT's Viaduct head office for DR but the current plans do not accommodate the new Metro DoO team and do not provide a "hot" facility with sufficient capacity for all the critical functions currently located at Central and being migrated to Smales. Splitting the amalgamated ATOC during a disaster recovery scenario would introduce communication and resource coordination challenges to already challenging circumstances.

A new DR site will be identified and fitted out to provide a local (Auckland) backup site for all critical functions of the amalgamated ATOC. The currently preferred option is to utilise available space at AT's new Albany hub, pending a successful technical site evaluation.

## **6.1.5 Processes and technology plan**

### *Processes and procedures*

During the amalgamation phase, processes and procedures will be reviewed to accommodate new or changed functions, teams and roles and to integrate them into the amalgamated ATOC environment. The new ATOC operating model will be based on teaming to encourage cross-skilling within teams, and strong, structured interaction between teams.

For the amalgamation phase, the focus will be on integrating the different ATOC and co-located functions to get teams working together effectively to support end to end customer journeys, not individual modes.

The subsequent optimisation phase will focus further on ATOC teams and third-party stakeholders and providers working better across multiple functions and modes to eliminate functional silos and duplication of effort. This will create opportunities within teams to develop multi-skilled, cross-modal operators to increase the operational efficiency and resilience of the amalgamated ATOC.

A further critical outcome of both phases will be developing, implementing and optimising effective, common governance, management, and operational leadership across all teams and functions.

Documentation and training will be developed and rolled out incorporating different scenarios and training modules.

Standardised performance management, risk management, risk identification and reporting procedures will be developed and implemented across all functions and integrated into routine business practices.

## IS technology

There is considerable duplication and overlap between AT and NZTA systems and while both organisations have a number of individual and joint systems rationalisation and integration projects underway, those projects are some way away from delivery. In any event, implementing major system changes during the initial amalgamation phase would add considerable risk. In order to minimise the amount of change impact and inherent project risk, current AT and NZTA technology and systems will be implemented at Smales and at the backup site for the amalgamation phase.

This means that the current ATOC Central infrastructure will be shifted or replicated at Smales to support the AT Day of Operations, Special Events, and PT and Parking Safety and Security teams. A scaled-down version of this infrastructure will be implemented to support those teams working out of the backup site. The current NZTA infrastructure at the Auckland Harbour Bridge backup site will be replicated at the new backup site.

Systems duplication and the resulting usability issues, operational inefficiencies, duplication of data entry and rework will be addressed, in conjunction with business process optimisation, during the optimisation phase.

The top technology challenge to be addressed is desktop integration – providing users with full, rich featured access to both NZTA and AT systems from a single, standardized desktop – and single sign-on across all AT and NZTA systems. Currently users are on either an AT or NZTA desktop and access the other organisation's systems via remote access. This requires multiple credentials and provides a poor user experience. Depending on the timing of NZTA's ITS/Corporate network separation project, some desktop integration may be achievable during the amalgamation phase.

Other technology challenges are fully dependent on other AT and NZTA technology projects which are outside the scope of the ATOC Amalgamation project.

- Consolidation or integration of key operational systems e.g. integrating NZTA's NIEMS and AT's Riskshield.
- Enabling ATOC's network operation functions to fail over to other TOCs in Tauranga, Wellington or Christchurch. This will require significant standardisation of systems – ie. a new systems-independent front end UX across the underlying disparate ITS infrastructure – and standardised processes.

### 6.1.6 Project resource requirements

The ATOCs do not have the capability or level of resources to undertake amalgamation and continue their business-as-usual activities at the same time. While the amalgamation and optimisation are critically reliant on ATOC management and staff, additional specialized resource will be required to lead and drive the project.

It is proposed that a Transition Manager be appointed and report to the JMB. The Transition Manager will recruit internal and, where needed, external resources to build the Transition Team and will lead the overall program of work.

Key roles and responsibilities for the Transition Manager and Transition Team are described in Table 14.

Table 14 Transition roles and responsibilities

Role	Responsibilities
Transition Manager (External contractor)	<ul style="list-style-type: none"><li>• Plan and manage overall Transition program</li><li>• Reporting and communication to the governance group</li><li>• Communication with stakeholders</li><li>• Escalation of issues and risks</li><li>• Establish and manage budgets and controls</li><li>• Recruit, engage and manage Transition Team</li></ul>
Change Manager (AT or NZTA Change Manager or external contractor)	<ul style="list-style-type: none"><li>• Develop and implement change plans for all workstreams and overall program</li><li>• Develop stakeholder mapping and communications plan for all workstreams and overall program</li><li>• Communications with stakeholders/media/interested parties</li></ul>

<b>Role</b>	<b>Responsibilities</b>
Process Stream Lead (AT or NZTA PM/Senior BA/Process Analyst or external contractor)	<ul style="list-style-type: none"> <li>• Plan and manage Process workstream</li> <li>• Engage Working Group and Subject Matter Experts to align business processes and develop, document, and implement standardized operating procedures for the amalgamated ATOC</li> <li>• Project and budget reporting to Transition Manager</li> <li>• Escalation of issues and risks to Transition Manager</li> <li>• Maintain risk and issue register</li> <li>• Maintain changes register</li> <li>• Manage inter-stream dependencies</li> </ul>
Business Analyst/Tech Writer (AT BT or NZTA IT BA or contractor)	<ul style="list-style-type: none"> <li>• Support the Process Stream Lead with analysis, facilitation, and documentation</li> </ul>
Tech Stream Lead (AT BT or NZTA IT PM)	<ul style="list-style-type: none"> <li>• Plan and manage Technology workstream</li> <li>• Work with AT BT, NZTA IT and ATOC IT teams and their suppliers to deliver technology outcomes</li> <li>• Project and budget reporting to Transition Manager</li> <li>• Escalation of issues and risks to Transition Manager</li> <li>• Maintain risk and issue register</li> <li>• Maintain changes register</li> <li>• Manage inter-stream dependencies</li> </ul>
People Stream Lead (AT or NZTA HR advisor)	<ul style="list-style-type: none"> <li>• Plan and manage People workstream</li> <li>• Work with AT and NZTA HR teams to manage the Organisational Change process and transition</li> <li>• Project and budget reporting to Transition Manager</li> <li>• Escalation of issues and risks to Transition Manager</li> <li>• Maintain risk and issue register</li> <li>• Maintain changes register</li> <li>• Manage inter-stream dependencies</li> </ul>
Facilities Stream Lead (AT or NZTA Facilities PM)	<ul style="list-style-type: none"> <li>• Plan and manage Facilities workstream</li> <li>• Work with AT and NZTA Facilities teams and their suppliers to design and build the facility for the amalgamated ATOC and relocate staff</li> <li>• Project and budget reporting to Transition Manager</li> <li>• Escalation of issues and risks to Transition Manager</li> <li>• Maintain risk and issue register</li> <li>• Maintain changes register</li> <li>• Manage inter-stream dependencies</li> </ul>
Management Working Group (Senior ATOC and stakeholder staff)	<ul style="list-style-type: none"> <li>• Provide leadership input into requirements, designs, etc. and operational level decision-making for all workstreams and overall program</li> <li>• Day-to-day project sponsorship</li> </ul>
Subject Matter Experts (ATOC, AT, NZTA and stakeholder staff)	<ul style="list-style-type: none"> <li>• Provide specific subject matter expertise to workstreams and program as required</li> </ul>

## 6.2 Structure, governance and transition

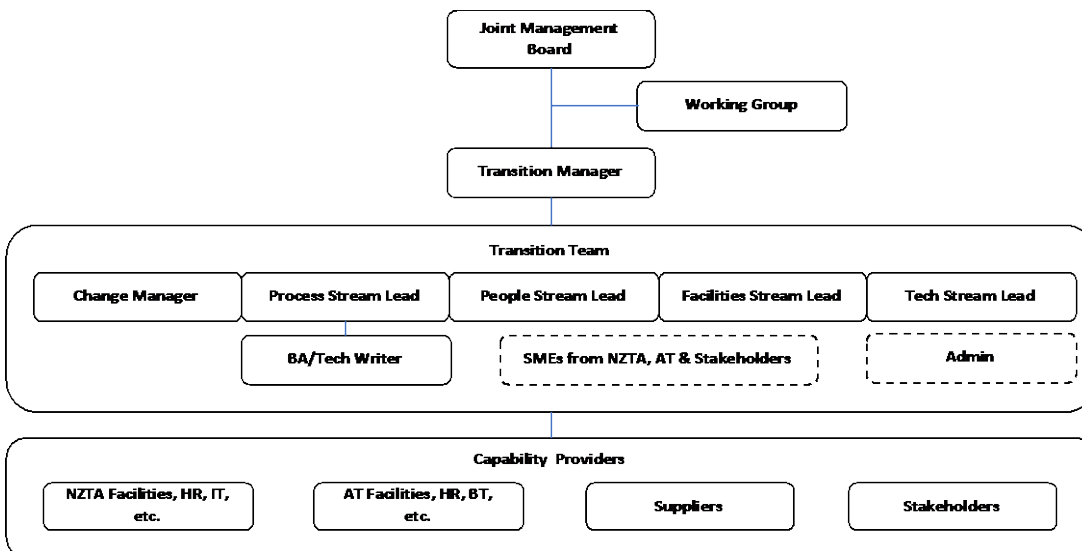
### 6.2.1 Governance

In line with the current partnership agreement, governance of the ATOC Amalgamation Project sits with the existing Joint Management Board (JMB) with an additional AT Integrated Networks representative.

### 6.2.2 Implementation/transition structure

The following diagram describes the suggested governance and reporting structure for the transition. Key roles and responsibilities are covered above in section 6.1.2.

Figure 7 Transition structure



### 6.2.3 Stakeholder engagement

#### Communications plan (internal)

The amalgamation will require relocating a number of staff and some significant structure and role changes. The required consultation process with impacted staff will not occur until after this Business Case has been approved so communications with ATOC staff and other AT and NZTA staff has been minimal except for the group (mostly senior management) involved in designing the proposed future functions and structures and developing this Business Case. Once approved:

- a People Stream Lead will be engaged to work with the AT and NZTA HR teams on starting the consultation and organisational change process, including communications with impacted and non-impacted ATOC staff.
- a Change Manager will be engaged to develop and implement a full Change and Communications plan across AT and NZTA.

#### Engagement with external stakeholders

A range of external stakeholder representatives – mainly senior management from ATOC partners and service providers – were advised of the amalgamation project and were consulted throughout the design process. The Change Manager's Change and Communications plan will also respond to the needs of different external stakeholder groups and ensure they are engaged, or at least kept informed, in accordance with their role and relationship with ATOC. Some stakeholders will implement some significant internal changes themselves. Police, for example, are planning on establishing a new unit and co-locating it in the ATOC which will be a change for the Police staff involved. The Change Manager will work closely with all stakeholders to ensure messaging across internal and stakeholders is consistent and meets the needs of each group.

### 6.3 Benefits monitoring

The ATOC Amalgamation project is expected to deliver a wide range of benefits as described earlier, but many will be extremely difficult to quantify. Much of what an amalgamated ATOC will deliver is an expansion on existing network operations and operational efficiency gains.

A workshop was held with the ATOC amalgamation project team and other senior AT and NZTA staff in July 2018 to identify potential performance metrics relating to the overall benefit categories that could actually be measured. These are presented in Table 15 below.

It is important to note that while these metrics are able to be measured (or in some cases estimated), for some of them, it is virtually impossible to control for the large number of other influencing factors to try to isolate the effect of ATOC only. For example, we acknowledge that ATOC's performance is only one contributing factor to 'more satisfied stakeholders and customers' and it will not be possible to attribute changes to those metrics entirely to the amalgamated ATOC (be they positive or negative).

Table 15 Benefits monitoring

<b>Benefit</b>	<b>How it will be measured</b>	<b>Suggested frequency for measurement</b>
A safer transport system	Reduction in time taken to detect incidents	Quarterly
	Reduction in incident response time (post detection)	Quarterly
	Reduction in incident resolution time	Quarterly
	Reduction in hazard escalation	Quarterly
More satisfied stakeholders and customers	Customer / stakeholder satisfaction	Biannually
	Reduction in travel time variability (reliability improves)	Biannually
	Reduction in incident related delays	Quarterly
Operational efficiency gains	Improvements in staff engagement and satisfaction	Annually
	Improvements in staff productivity	Annually
	Increased resilience in TOC delivery	Annually

The ATOC Amalgamation project team met with the Auckland Motorway Alliance (AMA) to understand some of the metrics and measuring that they currently or are able to do in relation to monitoring the benefits outlined above. This discussion highlighted the complexity of trying to measure the counterfactual and accounting for the myriad of factors at play in the operation of the transport network.

Currently AT and NZTA measure and report differently so there are no single, aligned, and joined up measures for some areas and, where they are joined up, they are still only at a basic level. The revised governance group will need to define and agree the ATOC's joint strategy, metrics and measures going forward and ensure that the systems and processes are in place to capture and report against the appropriate data.

Closer links with the AMA in relation to performance and benefit metrics would be beneficial, including establishing baselines for some of the metrics listed above. This can be progressed in parallel with implementation planning.

## 6.4 Risks, constraints and dependencies

There are a number of risks which could threaten the success of the ATOC Amalgamation Project. These are outlined in

Table 16 below along with mitigation strategies to minimise the risk. These will be monitored, reviewed and updated through the implementation phase and reported through the project management and governance structure outlines in Section 6.2.

Table 16 Project risks and mitigations

<b>Risk</b>	<b>Narrative</b>	<b>Mitigations</b>
Technology integration	NZTA and AT have established a joint technology program to align their respective systems program, either integrating different platforms or rationalizing to common, shared platforms, building IT independence and logical separation from ITS, developing a common desktop operating environment, etc. The program and timeline is still being developed so there are risks that (a) that it will not align with the amalgamation timeline and/or (b) technology change will add risk and complexity to the amalgamation.	To remove technology dependencies and risks from the amalgamation project, the project will deliver in two phases: amalgamation, which will focus on people and facilities and use existing AT and NZTA technology; and optimisation, which will focus on systems and processes and, where possible i.e. where the timelines align, and risk is manageable, leverage the benefits of the joint technology program.
Time	Slippage could impact readiness for America's Cup and APEC in 2021	Clarity of deliverables and outcomes and identification and management of critical path. Optimisation phase will use iterative, sprint-based, Agile delivery. Project management and governance.
People	Physical relocation, role realignment and removal of duplicated roles, and merging two different TOC cultures could lead to staff turnover and consequential loss of skills, experience and knowledge which could slow down the optimisation phase as new staff are hired, inducted, trained, etc..	Early development and delivery of a change management process, communication and support for staff.  Good joint AT/NZTA HR engagement, change management, training and development.  Clear leadership and collaborative direction setting from JMB.
Project Funding	What portion of funding should each party contribute?  AT has committed RLTP (Capex) funding allocated for amalgamation and technology integration.  No NZTA Capex.	Under the (draft) 2018 GPS, NZTA now has full joint accountability for all transport modes so both partners will gain equal benefit from amalgamation and should therefore contribute equally to the amalgamation.



No Opex allocation by either partner	Decision not required for business case approval but, as the project is initiated, the partners need to: <ul style="list-style-type: none"> <li>• Ratify 50:50 Capex (or agree what the split is to be)</li> <li>• Agree on how to resolve Opex funding issue.</li> </ul>
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Table 17 Project dependencies

Dependency	Narrative
Police	Arrangements with Police (the co-located 24/7 Police Liaison Officer in particular) need to be formalized by MoU.
Continuity Site	Site needs to be decided and arrangement formalized.
Continuity IT	Current NZTA project to remove edge infrastructure (servers, storage, network core, etc.) and relocate backup Control Room equipment (desktops, screens, etc.) from current Auckland Harbour Bridge (AHB) backup site to a new site needs to be integrated with the amalgamation project.

## 6.5 Post-project review

A post implementation evaluation will be undertaken within 12 months of the amalgamated ATOC being commissioned. The review will assess whether the project is operating as envisaged, and the extent to which the benefits identified in this business case are being realised.

The purpose of the review is to provide assurance to the AT and NZTA leadership teams and other stakeholders that the centre is delivering the benefits expected, and also to identify any issues or lessons to learn to help the centre operate better.

This review will be undertaken by the project team which developed this business case. This team has the greatest collective knowledge of the project and its expected benefits.

## 6.6 Next steps

This single stage business case seeks formal approval from the AT Board and NZTA Senior Leadership Team to progress the amalgamation of the two ATOCs (ATOC Smales and ATOC Central) at Smales Farm.

Recommended that the parties:

- approve the business case for the ATOC Amalgamation Project
- endorse the establishment of the transition manager role to drive the amalgamation process

## *Appendix A: Glossary*

<b>Acronym</b>	<b>Definition</b>
AC	Auckland Council
AMA	Auckland Motorway Alliance
AT	Auckland Transport
ATAP	Auckland Transport Alignment Project
ATOC	Auckland Transport Operations Centre (Two ATOCs – Central and Smales)
CAR	Corridor Access Request
CD	Civil Defence
CTOC	Christchurch Transport Operations Centre
IS	Information Services/Systems
ITS	Intelligent Transport Systems
JMB	Joint Management Board
NLTP	National Land Transport Plan
NRA	National Recovery Alliance
NZME	New Zealand Media and Entertainment
NZTA	New Zealand Transport Agency
RCA	Road Controlling Authority
RLTP	Regional Land Transport Plan
SOPs	Standard Operating Procedures
TMP	Traffic Management Plan
TOC	Transport Operations Centre
WTOC	Wellington Transport Operations Centre

## Appendix B: Opex and Capex cost breakdown

People	Item	Basis				Total Opex	Total Capex	Notes
		Day Rate	Days/Week	Weeks	% Capitalisable			
	<b>Transition Team (approx 1 calendar year duration)</b>							
	Transition Manager	\$1,600	3	40	80%	\$ 38,400	\$ 153,600	
	Change Manager	\$1,200	3	40	80%	\$ 28,800	\$ 115,200	
	Process Lead	\$1,200	5	40	50%	\$ 120,000	\$ 120,000	Assumes 50% capitalisable as enabling new ATOC asset, 50% opex process improvement
	BA/Tech Writer	\$1,000	5	40	50%	\$ 100,000	\$ 100,000	Assumes 50% capitalisable as enabling new ATOC asset, 50% opex process improvement
	Process design coaching & support				50%	\$ 150,000	\$ 150,000	Assumes 50% capitalisable as enabling new ATOC asset, 50% opex process improvement
	Tech stream lead	\$800	5	40	100%	\$ -	\$ 160,000	Assumes fully capitalisable against new ATOC asset
	Facilities stream lead	\$800	5	40	100%	\$ -	\$ 160,000	Assumes fully capitalisable against new ATOC asset
	Project Admin	\$480	3	40	100%	\$ -	\$ 57,600	Assumes fully capitalisable against new ATOC asset
				<b>Transition</b>	<b>Subtotal</b>	<b>\$ 437,200</b>	<b>\$ 1,016,400</b>	
	<b>Process &amp; Systems Improvement (90 days duration)</b>							
	Transition Manager	\$1,600	3	13	0%	\$ 62,400	\$ -	Assumes 100% opex as all process improvement
	Process Optimisation Lead	\$1,200	5	13	0%	\$ 78,000	\$ -	Assumes 100% opex as all process improvement
	BA/Tech Writer	\$1,000	5	13	0%	\$ 65,000	\$ -	Assumes 100% opex as all process improvement
	Process improvement coaching & support				0%	\$ 200,000	\$ -	Assumes 100% opex as all process improvement
				<b>Improve</b>	<b>Subtotal</b>	<b>\$ 405,400</b>	<b>\$ -</b>	
				<b>People</b>	<b>Subtotal</b>	<b>\$ 842,600</b>	<b>\$ 1,016,400</b>	
	<b>Facilities</b>							
	Smales design & fitout						\$ 1,600,000	Based on refit of 50% of L1 using recent Albany fitout cost. IT/tech fitout costs in IT section
	Central decomm & make good					\$ -	\$ -	Assume no decomm or make good costs as it is an AT owned facility
				<b>Facilities</b>	<b>Subtotal</b>	<b>\$ -</b>	<b>\$ 1,600,000</b>	
	<b>HR</b>							
	Allowance for Redundancies					\$ 250,000	\$ -	Based on 6 months of midpoint salary for the 5 impacted roles
				<b>HR</b>	<b>Subtotal</b>	<b>\$ 250,000</b>	<b>\$ -</b>	
	<b>IT</b>							
	AT Smales site IT fitout						\$ -	
	Room fitouts for DoO, Parking, S&S & Special Events						\$ 173,000	Assumes substantial reuse of Central equipment
	Network, WiFi & UPS						\$ 250,000	
	Building-related services - generator, aircon & telephony						\$ 500,000	
	Delivery Team						\$ 160,000	
	~30% Contingency						\$ 300,000	
	AT DR site fitout						\$ 850,000	Assumes all new equipment
	NZTA IT for expanded Smales Control Room & moving IM Room						\$ 550,000	
	NZTA DR site fitout					\$ -	\$ -	Already budgeted by NZTA and underway as separate project
	Desktop Standardisation						\$ 1,000,000	
				<b>IT</b>	<b>Subtotal</b>	<b>\$ -</b>	<b>\$ 3,783,000</b>	
				<b>TOTAL</b>		<b>\$ 1,092,600</b>	<b>\$ 6,399,400</b>	