Land Information New Zealand
Toitū te whenua

Tranche 1 Single Stage Business Case

Survey and Title Enhancement Programme

March 2019

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EXECUTIVE SUMMARY

This single stage business case (SSBC) sets out how Land Information New Zealand (LINZ) will deliver tranche 1 "Search and Notices" of the Survey and Title Enhancement Programme (STEP). By ensuring service continuity and making land information services more useful, accessible and responsive STEP will provide New Zealanders with continued confidence in property rights in a changing world.

STEP will deliver a reliable, available and secure platform that will:

- improve the agility and efficiency of the survey and title land information services
- enable improved end-to-end processing across the wider property system
- improve the accessibility and quality of property rights information.

Introduction

Confidence in property rights and accurate land information are critical for New Zealand. Property is a key economic asset and buyers and sellers rely on services LINZ provides through Landonline to know the physical extent of their property, legally register ownership in land, transfer property and to have confidence in the Crown guarantee of issued title. Many small businesses secure funding through loans against property. With property as collateral, these businesses could not access finance needed to grow.

At the same time organisations such as territorial authorities depend on the high quality property data generated by Landonline to inform decisions that shape our communities, culture and economic well being.

Built between 1998 and 2003, Landonline is showing its age, and is increasingly difficult to secure. Updates responding to changing customer, LINZ or government policy requirements are slow and costly to make, and the core software language (PowerBuilder) is not recommended for use in new development.

LINZ began developing a case for modernising Landonline in 2013, and in 2015 Cabinet agreed that the best investment option would be a highly flexible second-generation modular IT platform.

Implementation options were investigated and narrowed over 2016 and 2017, and programme funding was approved in Budget 2018. Then in October 2018 Cabinet approved a programme business case (PBC) for an incremental rebuild of Landonline in four tranches over five years using "Agile" methodology. Joint Ministers must approve a SSBC for each tranche before funds can be drawn down by LINZ. Tranche 1 Search and Notices is programmed to run from March 2019 to May 2020.

Tranche 1 Search & Notices - building toward future tranches

In tranche 1 LINZ is deliberately starting out small and building capability for future tranches. The tranche prioritises early delivery of service improvements that will deliver long-awaited public and customer benefits. It also [redacted] lays the ground for work in tranches 2 to 4.

Service improvements introduced by tranche 1 are mainly low-risk initiatives offering significant benefits to customers and the public in the form of much improved real-time accessibility to property information, and time and cost reductions:

- a new website that will allow registered customers and the public to search for and receive products more efficiently, using any device
- automated notifications of property sales for Territorial Authorities
- automated notices to mortgagees when a mortgage is registered or discharged
- automated notice to mortgagees when changes are made to titles that mortgagees have an interest in.

These initiatives are also expected to improve LINZ productivity because less time will be spent processing manual search requests and responding to e-search calls.

Drawing on LINZ's existing expertise in applying Agile methodology on smaller IT projects, and on lessons from other government IT projects, tranche 1 will see Agile methodology applied at scale. What is learned will help LINZ develop the capability needed to deliver the 'heavy lifting' of subsequent tranches. Meanwhile, technical proofs of concept prepared during the tranche will be key inputs for choices about how work programmed for later tranches is delivered.

The rebuild of Landonline will take advantage of technological advancements in the way services are delivered made possible by cloud hosting services like Amazon Web Services. However, a key decision still to be made is whether or not to move Landonline's land register and cadastre from the present New Zealand Government cloud hosting arrangement to an offshore cloud service provider. Due diligence will be carried out in tranche 1 to inform this decision. From a stakeholder and LINZ perspective the privacy, data sovereignty and security challenges of such a move must be fully understood before a decision to proceed is taken. LINZ will work closely with the Government Digital Communications Officer (GCDO) on this work.

Moving to an Agile environment

The use of Agile on a large scale for this programme represents a new way of working for LINZ. Detailed planning has gone into the project build which will use industry approaches known as "DevOps", and "Scaled Agile Framework (or SAFe)". Attention has been paid to how Agile values and principles will be applied, and a governance structure and governance responsibilities have been established. LINZ can be expected to get progressively better at Agile governance. There is strong buy-in and commitment from LINZ's Executive Leadership Team (ELT) and across the organisation.

Alignment to Government priorities

The Government has a strong focus on improving the wellbeing of New Zealanders—beyond their material wellbeing. This programme will directly contribute to 4 of the 12 domains of wellbeing identified in the Treasury's Living Standards Framework. It will also have significant benefits for future wellbeing and New Zealand's ability to safeguard wellbeing over the long term. **Appendix A** shows how each of the benefit areas align to government priorities.

Alignment to the LINZ Outcomes Framework

LINZ is developing property system and IT operating models designed to align operational activities with its 2017 Outcomes Framework. As STEP is an important contributor to achieving these outcomes, governance mechanisms are in place to ensure programme work in tranche 1 and future tranches remain aligned with shifts to operating models LINZ will begin implementing in 2019.

Managing risk and assurance

Strategic and delivery risks will be continuously reviewed and updated throughout each tranche. An independent quality assurance expert will be appointed to the STEP Board, and each tranche will undergo a formal Gateway review. Ongoing quality reviews are built into each three-monthly programme increment (PI). Risk management and assurance plans for tranche 1 agreed between LINZ and GCDO have been created to reflect the Agile programme approach. The latest Gateway review commented that LINZ "has made excellent progress in landing its agreed solution delivery approach and engaging all stakeholders in enthusiastic support of the Program". The review endorsed the emphasis in tranche 1 on developing strong technical and business capability as an essential foundation for organisational readiness for tranche 2.

Procurement and capability

Most procurement needs during tranche 1 are for people and professional services that allow LINZ to build DevOps, Agile and programme capability. A mix of LINZ staff, contractor, consultancy services and capability partner expertise is required.

The LINZ ELT is committed to developing capability internally, and ensuring that business and customer needs are well understood and represented through the 50-60% composition of LINZ staff planned to be involved in key programme roles. This will be balanced with specialist skills required to ensure successful programme delivery. LINZ will also procure software, tools, cloud infrastructure and delivery/management support tools.

All procurement and resourcing will be consistent with LINZ HR and procurement policy and Government Rules of Sourcing. Planning and early market engagement will take place in tranche 1 for aspects of the solution that may come from third-party suppliers in later tranches. Third-party suppliers will be considered where market capability and capacity provides good choice and on-going innovation.

Tranche 1 costs

Results of a quantitative risk analysis (QRA) for this SSBC indicate tranche 1 will require $30.1 million at the 85th percentile, $5 million less than that estimated in the PBC. This variation is the result of a more detailed resource estimates for tranche 1, and lower risks associated with implementation of this tranche. Until future tranches are fully costed it's too early to say whether this is a permanent reduction in the overall programme cost.

Tranche 1 will be funded mainly from accumulated depreciation funding ($26.36 million), and $3.65 million from a repayable Crown capital injection expected in April 2020.

No additional risks or issues to those identified in the PBC were found. The tranche 2 SSBC will update the whole of life forecasts for completion of the programme.

[redacted] LINZ will commence a fee review in 2019, with fees likely to be set before tranche 2 commences in 2020.

Change management

A plan to guide change management (for both staff and customers) during tranche 1 is in place, and customer engagement within STEP is well established. LINZ's ELT fully supports and is leading the cultural and behavioural change necessary for the Agile methodology to succeed.

Customers support the programme and are highly engaged. A significant number of engagement activities have already occurred, and will continue to occur throughout tranche 1.

Customer representative groups have been established for survey and title customers, with a consulting solicitor and surveyor embedded within the programme team. These are critical to ensuring the customers are regularly involved in providing feedback and ensuring products meet their needs.

THE STRATEGIC CASE

The strategic case sets out the big picture context describing how Tranche 1:

- delivers to the priorities of New Zealanders and the Government
- aligns with LINZ's long term strategies
- has taken account of relevant strategies adopted by other organisations, and
- has considered the relevance or influence of future opportunities, strategies or trends that could impact its delivery.

Purpose and outcomes

Tranche 1 involves developing tools that will introduce significant improvements to the way the public and registered customers interact with Landonline. This work has been prioritised to provide early benefits to customers [redacted] Key developments programmed under tranche 1 for completion by June 2020 are:

- Public web search capability which allows registered customers to move off Citrix (the technology allowing transacting parties to connect to Landonline), and customers to readily source survey and title information from any device
- A product search capability providing ability to access LINZ products from within customer software
- Automated notices of property sales for territorial authorities
- Automated notices to mortgagees when a mortgage is registered or discharged
- Proofs of concept to inform the technical pathway for later tranches

Key outcomes for tranche 1

For customer

- Web search capability will allow the public to search, order and pay for LINZ products in real time, resulting in reduced support calls and manual search processing time
- Registered customers (conveyancers, surveyors, search only customers) will be able to obtain Landonline property information from any device
- Territorial authorities can opt to subscribe to automated updates when a property sale is completed. Accurate and timely notification will reduce time spent correcting errors or chasing information received
- Conveyancers will no longer need to manually notify territorial authorities when a sale has occurred
- Financial institutions can opt to subscribe to automated notifications when a mortgage against a property is registered

For LINZ

- LINZ staff will benefit from the new enhanced search functionality and tools to improve their workflow
- Operational support for the STEP environment
- Improved staff productivity, reduced e-search call volumes and reduced manual search processing.

For the Crown

- Increased confidence in LINZ's ability to deliver improved services to its customers.
- A start made on ensuring the ongoing security and stability of the Landonline platform.

Government alignment

The Government has a strong focus on improving New Zealanders' wellbeing. Tranche 1 contributes to four of 12 wellbeing indicators in Treasury's Living Standards Framework:

- **Income and consumption** (household financial wealth) – by enabling people to make better property-related decisions based on more complete and integrated property information. Tranche 1 will introduce better and more accessible property search information.
- **Housing** (housing expenditure) – by enabling central, local government and investors to formulate informed plans for better housing outcomes, including use of land and infrastructure. Tranche 1 starts the delivery to this by introducing better and more accessible property search information.
- **Jobs and earnings** (employment rate) – ICT development will be undertaken in NZ. When completed, the programme will contribute to efficiencies and planning in the property development and construction industries. Tranche 1 begins the use of New Zealand workforce and capability partners to deliver the programme.
- **Civic engagement and governance** (stakeholder engagement for developing regulations) – initial work in tranche 1 will ensure the public's confidence in NZ's property system is maintained.

Alignment with LINZ

LINZ's outcomes framework

By delivering early benefits to customers, tranche 1 contributes to two of the four outcomes in the outcomes framework that guides LINZ's strategic direction:

- World class property system - tranche 1 will improve the agility and efficiency of the survey and title land information services, and enable improved end-to-end processing across the wider property system
- High-value geographic and property information - automated notifications to Territorial Authorities and financial institutions when property transactions are registered in Landonline will help inform decision making on a broad front - infrastructure, urban development, resilience, climate change adaptation, and property transactions.

LINZ Ministerial priorities

Delivering STEP is a Ministerial priority. Tranche 1 aligns with the Minister's priority to secure and modernise the property transacting process to protect the property system for the future, and that key geographic and property information is open, accessible and integrated with other national data.

Statutory obligations

Improvements that maintain certainty of property rights and accurate property information are important contributions to LINZ's statutory obligations (including stewardship) over four regulatory systems:

- Property rights
- Property Information
- Crown Land
- Overseas investment.

STEP will work with the LINZ regulators as tranche 1 progresses to ensure delivery aligns with LINZ's regulatory responsibilities (in particular property rights and property information) and LINZ's regulatory stewardship strategy. This strategy sets out

how LINZ will meet its regulatory stewardship obligations and Government expectations for good regulatory practice.

Operating models

STEP is integral to planned shifts LINZ is making in 2019 to the way it operates. Property system and IT operating models are being developed that aim to ensure LINZ is positioned to help New Zealanders gain cultural, social and economic value from services it provides. Governance mechanisms are in place to ensure STEP's work in tranche 1 and beyond remain aligned with these operating models.

The operating models will set out and coordinate what LINZ is trying to achieve in the property system. STEP and other key initiatives across the property system are intended to drive changes required to achieve the planned future state.

Given Government's significant investment in core survey and title services through STEP, the initial focus of the property system operating model will be on ensuring that the survey and title services component of the system is well defined and necessary improvements are identified. Key shifts that the property system operating model will deliver over time are:

- an end-to-end experience for customers who engage with the property system that meets their needs with minimum effort on their part
- more effective and efficient public services (central and local) that rely on the property system
- seamless integration of property data, so that service providers and end-users are able to easily and quickly access a comprehensive – including 3D – digital picture of any property in New Zealand
- a system that better reflects Māori conceptions of land and property, and is better configured to meet their aspirations.

These shifts are directly aligned with STEP investment objectives and Ministerial priorities.

The IT operating model will define the current and future state of the property system operating model's technology and information layers. The IT operating model will be finalised by early 2019, and a high level target state for the survey and title components of the property system operating model will be completed by mid-2019.

Risk and assurance

Strategic risks, constraints and dependencies

The risk management plan has been updated to reflect the Agile programme approach, and aligned with LINZ's enterprise risk management policy. Key risks the programme will manage during tranche 1 include:

- programme governance and capability set up for successful delivery
- attracting, recruiting, building and retaining capability
- organisation maturity and delivery of Agile and DevOps
- alignment of operating models with STEP
- acceptability of moving to the cloud
- products delivering planned benefits and customer value
- competing priorities or other legislative changes that may impact delivery
- supplier relationship
- identifying a solution with third parties for surveyors.

Appendix B provides further detail on how these risks are being managed, treated and aligned to assurance activity.

Assurance

Assurance is built-in to the development process and aligned to support DevOps and Agile, with specific activities aligned to the "three lines of defence" model.

An independent assurance provider will be involved in planning for each three-monthly programme increment, retrospectives and demonstrations. Stakeholders will also play a key role in providing assurance that products are meeting business and customer needs. An independent assurance advisor will also be added to the STEP Board as a standing attendee.

Assurance that the programme is meeting its objectives, delivering benefits and is addressing key risks to delivery will be provided to the Senior Responsible Owner (SRO) and STEP Board through:

- programme increment plans: the Board will approve a plan for each 3-monthly increment before development activities begin. These plans describe what development squads will be delivering
- programme increment demonstrations: the Board (and all key stakeholders) will be asked to provide feedback and identify additional assurance as required
- programme increment retrospectives: used to identify and consider options for addressing issues that arise
- regular reporting on progress, expenditure, benefits, risks, sprints and programme increment backlogs and overall status
- reviews of proofs of concept
- independent cloud privacy, security and impact assessments
- Gateway reviews
- independent technical and hygiene advice sought as required.

An assurance plan for tranche 1 is being developed by the SRO and GCDO. An assurance plan on a page has been provided in **Appendix C**.

Benefits

Tranche 1 enables STEP to deliver low risk products while still achieving 72% ($90M) of monetary benefits for customers.

Customer productivity will be improved through:

- **Search:** customers having the ability to use new web search functionality
- **Notice to mortgagee:** the ability for banks/lenders to receive automated system notification when mortgages are registered or discharged
- **Notice of sale:** gives conveyancing professionals the ability to automatically notify territorial authorities that a sale has occurred when they have transferred a title in Landonline

These new automated services will reduce the time customers currently spend on manual activities. They are also expected to deliver productivity improvements for LINZ staff – quantifying staff productivity improvements will be further investigated in tranche 2.

Critical also to the success of the programme are the non-monetary benefits for customers, LINZ and the economy that will accrue from reduced risks to business continuity and confidence in property rights, and improved reliability and security. Work on delivering these benefits begins in tranche 1, and this is followed by more significant changes in tranche 2 and 3 that are critical to their full realisation.

Figure 1 shows the alignment of quantified benefits to investment objectives and outcomes.

Variation from PBC to SSBC

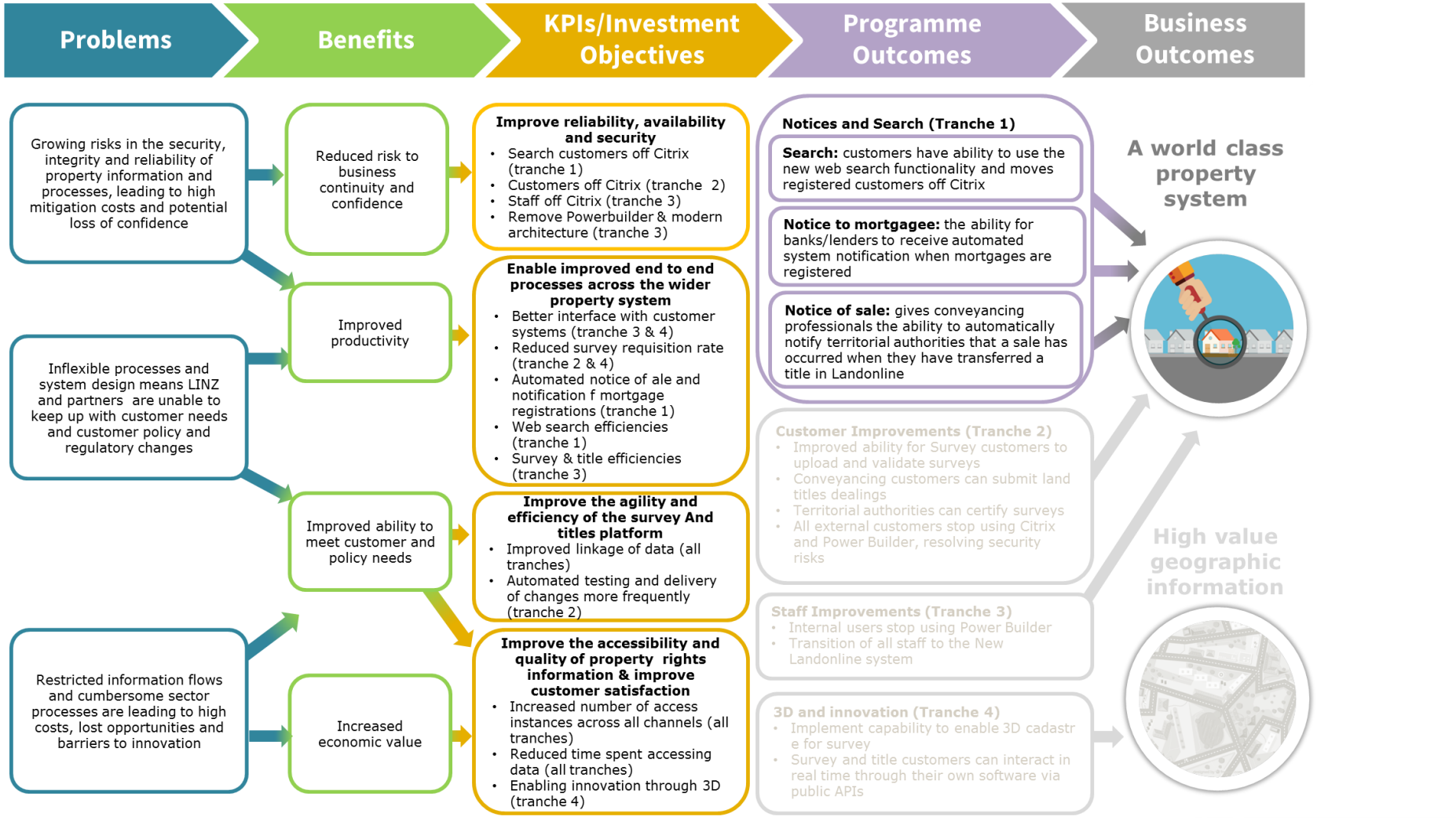
The primary variation from PBC to SSBC is related to a $5 million reduction in tranche 1 costs as a result of:

- a more accurate assessment of the costs of tranche 1 resources
- specific rates assigned to roles instead of the ranges that informed the PBC
- a significantly lower risk that tranche 2 will be impacted by delays to work in tranche 1.

… and benefit quantification numbers as a result of:

- increased accuracy on tranche 1 product delivery timeframes
- updated transaction data for the 2018/19 financial year.

Figure 1: Benefit alignment to outcomes



THE ECONOMIC CASE

The economic case describes how the preferred option represents value for money, including:

- detailed analysis on the tranche 1 solution
- evidence that the preferred option is the best way to respond to the problem, provides value for money and delivers the expected benefits
- costs, risks, mitigations, benefits, investment objectives, measures and baselines for tranche 1.

Proposed solution for tranche 1

A solution document has been developed and agreed with key internal stakeholders with support from the GCDO. The document articulates the architectural vision and technical plan needed to meet business and customer outcomes and service requirements. The solution is focused on progressively rebuilding Landonline in four tranches over five years. The legacy front-end Powerbuilder client and Citrix software will be removed and new modern web front-end interfaces introduced. Landonline's existing business logic and database design will be retained, and will be designed specifically for LINZ customer and staff needs.

The system architecture delivered by the programme will provide more flexibility, security and ability to scale for performance. This will involve a transition from the existing 2-tiered client–server architecture to a 3-tiered architecture in which the user interface (UI) presentation, business application processing, and data management functions are physically separated.

Moving LINZ's key services into the public cloud is a strategic move supported by the Government's Cloud First Policy and the LINZ Information Systems Strategic Plan 2018. Stakeholders have raised a number of concerns about the proposal to move the land register and cadastre to the cloud. The PBC approved by Cabinet made clear due diligence would be undertaken before a decision is made. This due diligence will be completed during tranche 1 to ensure LINZ is well informed of the risks relating to cloud usage, its security obligations, alignment with relevant legislation, and awareness of privacy issues. A key consideration is the movement of personally identifiable information from New Zealand to overseas jurisdictions, also referred to as 'data sovereignty'.

Production readiness timings for tranche 1

The timeframes in **table 1** are subject to change upon validation of the product backlogs with the development squads, as well as prioritisation and on-going alignment to wider LINZ initiatives.

Table 1: Production readiness timings for tranche 1

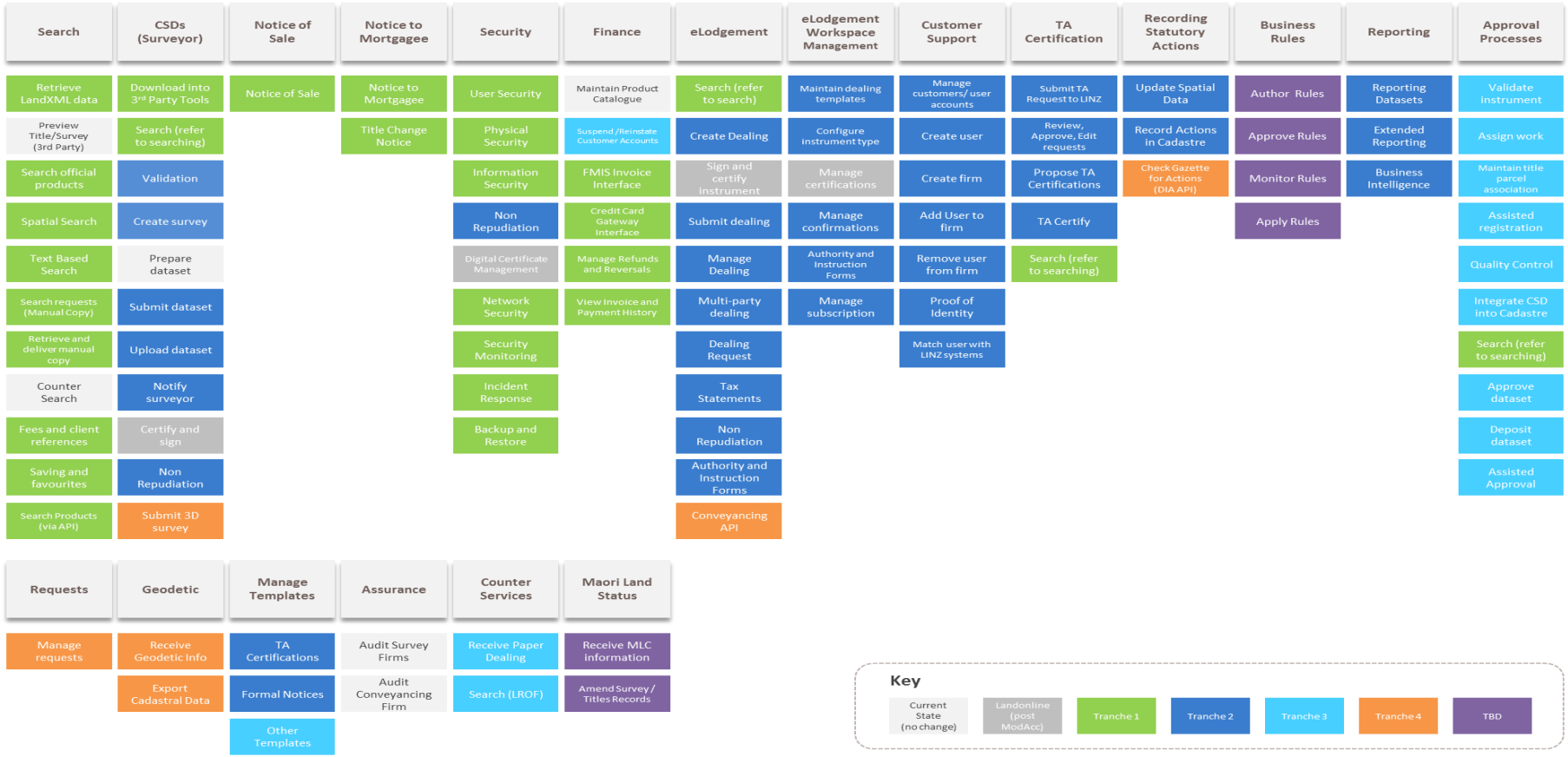
Product	Indicative release ready state
Search API[1]	Initial (Product Request) June 2019
	Final (Search) September 2019
Notice to Mortgagee	Initial (email push) September 2019
	Final (API) March 2020
Notice of Sale	Initial (email push) December 2019
	Final (API) March 2020
Web Search	Initial (Public) December 2019
	Final (Registered) June 2020
POCs	Fully complete by June 2020

[1] Application Programming Interface – an API allows software used by a member of the public or Landonline customer to access and interact with Landonline data.

Transition plan

Transitions have been organised to provide early benefits and value to customers, reduce security risk, enable efficient maintenance and enhancements and manage delivery risks by making pieces of work more independent. **Figure 2** provides a detailed view of functionality being delivered by tranche. How these relate to internal and external user groups is provided in **Appendix D**.

Figure 2: functionality by tranche



Current to future state

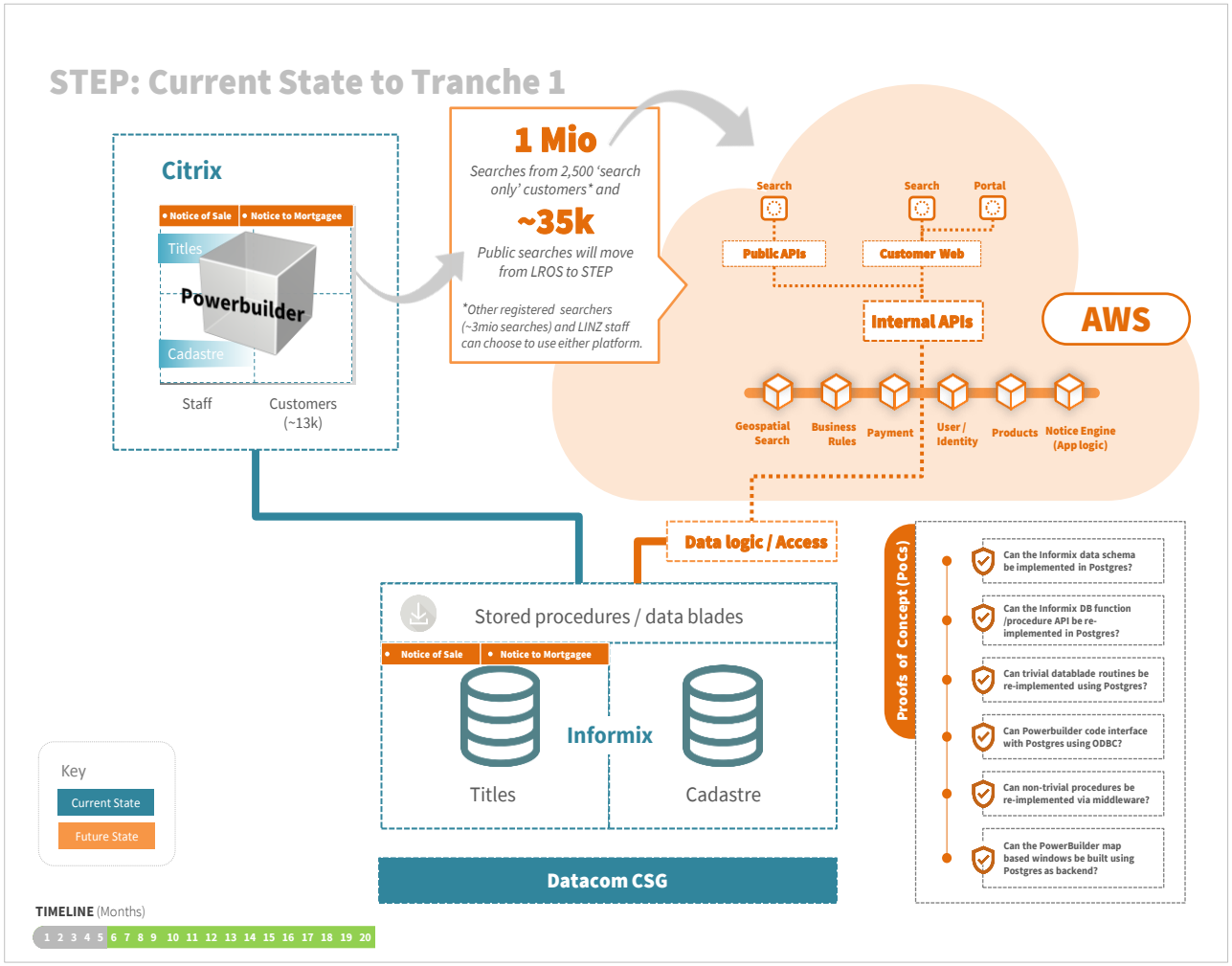
Tranche 1: Search and notices (March 2019 – May 2020)

- Build a public web search capability that is available to public users, current registered users and staff
- Electronically notify banks and Territorial Authorities for changes in ownership or mortgage
- Public APIs to provide search products.

At the end of tranche 1:

- Existing Landonline will continue to function via Citrix, Powerbuilder and Datacom-hosted infrastructure. LINZ staff, conveyancers, surveyors and territorial authorities can still use Citrix to access and carry out functions they do today. External users can choose whether to use the new search function as the legacy search continues to be available.
- Proofs of concept to confirm the planned approach for delivery of functionality under later tranches.

Figure 3: Current state to tranche 1 future state



Future system to system integration and business to system interactions

Appendices E and F show system to system integration and business to system interactions that will be implemented by the end of tranche 1.

Critical success factors

Table 2: Critical success factors for tranche 1

Critical success factor	How criteria is met by solution	Measures
Strategic fit and business needs	• Streamline conveyancing processes • Addressing business needs and customer pain points	Reporting on alignment of product to benefit
Solution quality	• Better understanding of Landonline for future tranches • Proofs of concept for assurance • Focused engagement with 3rd parties on UI and APIs	Proof of concept reviews and Surveyor software solution
Delivery confidence	• Start building capability • Resourcing plan achieved	Under development
Value for money	• 72% of monetary benefits delivered • Cost controls in place.	Reporting on alignment of product to benefit

Benefits

Tranche 1 will deliver the first public-facing components of STEP that will allow the public to easily obtain LINZ products. This will reduce time spent by LINZ staff searching for and selecting LINZ products on behalf of customers, and rectifying errors caused when a customer has struggled to find the correct product.

Customers will enjoy an improved self-service experience, be able to accurately identify property parcels and select the correct products relating to their inquiry. They will also experience faster product delivery and reduced costs (when using Landonline third party search agents).

Territorial authority subscribers to the new notice of sale service will receive timely and accurate information about parcel ownership. This will significantly reduce the time territorial authorities spend correcting errors or chasing information received. At the same time conveyancers will save time because they will no longer need to manually notify territorial authorities when a property is sold.

Automated notifications to banks when a mortgage is registered against a title, or when actions affecting mortgagees' interests occur, will result in time savings those institutions. Minimal investment is required on their part to receive these benefits. This service also eliminates the need for conveyancers to manually send mortgage registration information to lenders, resulting in time savings for conveyancers and lower costs for their clients.

Realising benefits

A benefits baseline obtained through a customer survey in 2014 was updated at the end of 2018 through direct engagement with customers. To ensure a reliable and repeatable method is used to update benefit measures, customer surveys at regular intervals/milestones will be conducted throughout the programme. The next survey is scheduled for the second quarter of 2019. If necessary the programme will engage directly with

customers if more specific information relating to benefit realisation is needed.

Monetary benefits

Table 3 below provides the quantified benefits for STEP. Rows highlighted in grey are not being measured in tranche 1.

Table 3: Tranche 1 quantified benefits

Benefit measure groups		NPV ($m's)	
Quantitative	**Tranche**	**SSBC (low)**	**PBC (low)**
Better interface with customer systems	2&4	31.0	34.9
Reduced survey requisition rate		1.4	1.1
Automated notice of sale*	1	44.3	39.3
Automated notification of mortgage registrations**	1&2	45.1	42.0
Web search efficiencies	1	2.8	2.0
Total discounted***		124.7	119.3
Total tranche 1**		**90.0**	**N/A**

*Note it is assumed conveyancers will pass on time savings to clients through lower fees, and that territorial authorities will adopt the service.

** Note that while these benefits are all being delivered in tranche 1, $2.3M of these benefits are not being realised until tranche 2 as this is depends on banks implementing supporting functionality.

***Calculations use the current Treasury ICT discount rate of 7%.

Risks to achieving tranche 1 benefits

The risk that registered customers don't adopt new search functionality is low as the benefits of adoption and ease of use are greater than the current process. However, even if some customers don't adopt the new functionality, the impact on total quantified benefits will be minimal as this only relates to less than $1M. The move away from Citrix for customers in tranche 2 will also fully address this. This will be carefully managed through the programme's change management approach. Note that this risk doesn't apply to public search customers as the current search function will be decommissioned and replaced in tranche 1 with a modern web interface. There is a risk conveyancers won't pass on notice of sale time savings to clients, and that territorial authorities don't opt to use the service offered. The programme will use customer surveys and direct engagement with these stakeholders to test the extent to which this benefit is being realised.

Non-monetary benefits

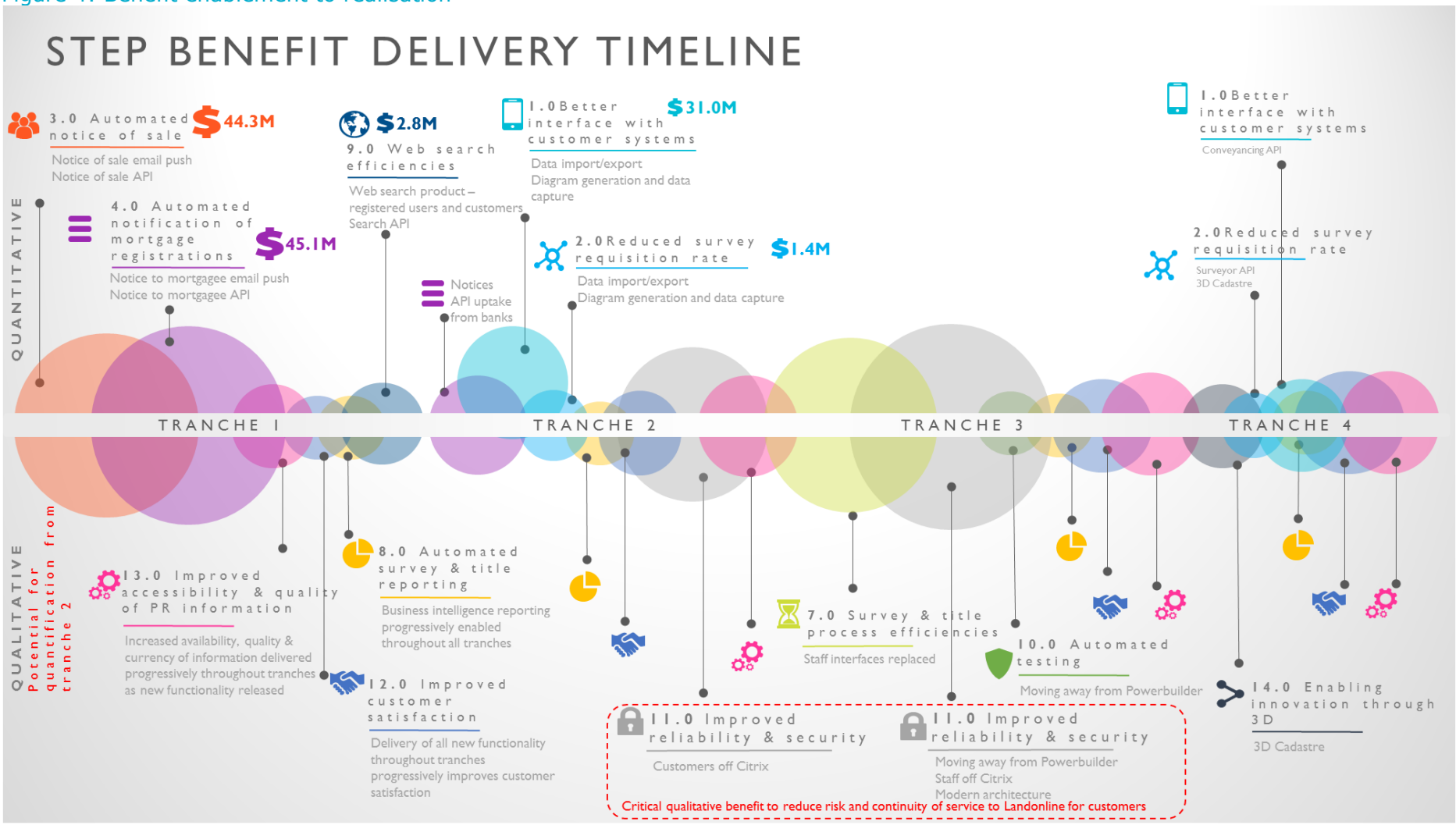
Table 4 provides the qualitative benefits for STEP. The rows highlighted in grey are not being delivered in tranche 1. A process for measuring these benefits will be worked through in tranche 1.

Table 4: Tranche 1 qualitative benefits

Benefit measure groups	
Qualitative	**Tranche**
Survey and title process efficiencies	3
Automated survey and title reporting	Progressively through all tranches
Automated testing	3
Improved reliability and security	1, 2 & 3
Improved customer satisfaction	Progressively through all tranches
Improved accessibility & quality of PR information	Progressively through all tranches
Enabling innovation through 3D	4

Figure 4 provides a view of both quantitative and qualitative benefits being delivered across all tranches.

Figure 4: Benefit enablement to realisation



Development of tranche 1 cost model

Background

The tranche 1 cost model was developed using a conservative approach based on the approach adopted for the PBC. The model is informed by the product roadmap and underpinned by detailed resource and technical transition plans:

- start with small blocks of work giving direct value to customers and enabling LINZ to build capability, confidence and achievement of productivity goals
- do proofs of concept and identify solution fall-backs early
- development and testing effort is built around respective team structure and overheads
- benchmarking costs against development parameters for other projects, and overhead against other NZ government projects
- adopting a cautious approach to validation of inputs
- identifying required personnel types (LINZ, contractor and capability partner), along with the number of FTEs and expected utilisation by project phase and stage
- identifying non-personnel costs, incremental to those incurred in baseline
- commissioning an independent quantitative risk assessment to model risk and sensitivities.

Incremental modelled costs

Costs are considered incremental to the LINZ baseline expenditure and are estimated without provisioning for contingency (which has been accounted for during the quantitative risk assessment process—discussed in the Quantitative Risk Assessment section below). The model does not calculate or attempt to update the whole of life costs over the 12 year forecast period that were contained in the PBC. The SSBC for tranche 2 will include updated whole of life costs for the programme.

Costs in this section are in nominal terms and do not include depreciation or capital charge. The financial case considers the affordability of the tranche, comparing this to the PBC and the timing of the crown capital injection.

Table 5 shows a breakdown of the tranche 1 costs by capital and operating expenditure at the 85th percentile and compares this to the PBC estimate for tranche 1. At the 85th percentile the tranche 1 capital and operating costs are less than forecast in the PBC.

Forecast for LINZ direct personnel costs for tranche 1 are $4.4m lower than estimated in the PBC due to improved phasing of squad on-boarding and ensuring programme support personnel are only brought on as the work programme scales.

The reduced cost is primarily due to a refined understanding of the people resource costs and the amount of actual training and change management required during the tranche.

Table 5: Incremental tranche 1 costs at the 85th percentile

Project period costs ($m) *At the 85th percentile*	**Tranche 1 SSBC**	**Tranche 1 PBC**
Capital expenditure		
Outsourced System Implementation	2.04	2.45
LINZ direct personnel cost for build	24.90	29.28
Assurance and other costs	3.07	3.31
Total incremental capital expenditure	**30.01**	**35.04**
Operating expenditure		
Operations/ Maintenance	1.75	1.91
Hosting	0.91	1.36
Training, change management & engagement	0.72	2.09
Ongoing LINZ support, licenses and software	-	0.08
Total incremental operating expenditure	**3.38**	**5.44**
Total incremental tranche 1 costs	**33.39**	**40.48**

Quantitative risk assessment

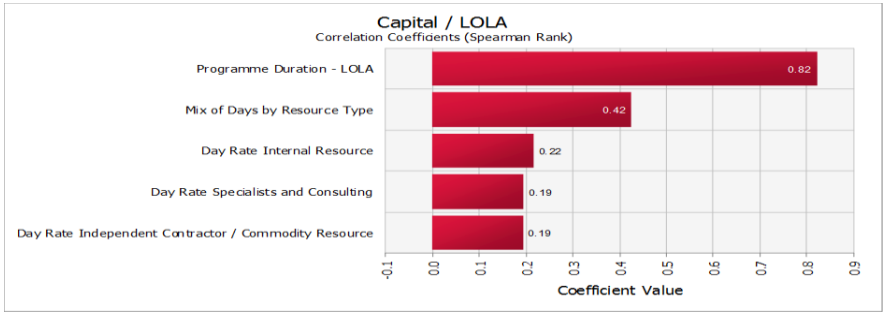
The modelled costs were subject to a Quantitative Risk Assessment (QRA). The objective of the QRA process was to develop a picture of the potential impact that risk could have on the costs of the investment (both positive and negative). The QRA quantifies the probability of occurrence and the potential impact of key risks.

The detailed description of the risks, key assumptions and inputs for tranche 1 are in **Appendix B** and can be compared to those contained in the PBC.

Relative significance of risks

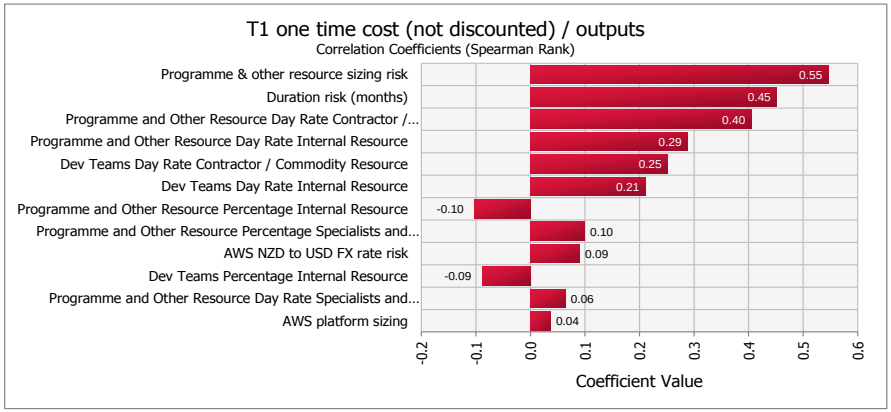
Programme duration was the key risk identified in the assessment of key cost risk drivers (**figure 5**). This reflects the scope of the tranche 1 work programme and being better informed by the approach outlined in the solution design.

Figure 5: PBC cost key risk drivers



The most significant risks impacting tranche 1 costs under the QRA are represented graphically and in order of relative significance in **figure 6**. The sizing of the effort to support delivery of the tranche (excluding the three development squads), tranche duration (development effort) and the actual cost of resources represent the six most significant cost drivers.

Figure 6: Tranche 1 cost key risk drivers



Summary of the cost range

The results of the QRA relate to the tranche 1 costs at the 50th and 85th percentile cost points. The QRA 50th percentile has been adopted as the expected/most likely programme cost with the QRA 85th percentile used as the cost including contingency. These cost ranges have been used to inform the proposed funding delegations. **Table 6** displays the results of the QRA and the movement in both capital and operating costs between the 50th and 85th percentile cost points.

Table 6: Quantitative risk assessed cost range

Expenditure category ($m)	**Modelled Cost**	**Expected Cost** *(QRA 50th percentile)*	**Cost including contingency** *(QRA 85th percentile)*	**Contingency %** *(between 50th and 85th percentile)*
Tranche 1 costs				
Capital Expenditure	26.86	28.04	30.01	7.00%
Operating Expenditure	3.03	3.16	3.38	7.00%
Total incremental costs	**29.89**	**31.20**	**33.39**	**7.00%**

LINZ considers the resulting level of cost contingency (7% between the 50th and 85th percentiles) is appropriate for the programme risk profile for tranche 1 (noting that later tranches will have a different risk profile). The rationale for a relatively tight contingency for tranche 1 includes:

- the scope of tranche 1 has been better informed by the solution design, is technically not challenging and allows time for squad velocity to get established
- resourcing for tranche 1 allows for a 'learning by doing' approach so that LINZ is well prepared for the more demanding scope of later tranches
- refined resource planning (including job sizing) and completion of the initial recruitment round has significantly narrowed the cost range for tranche 1 resources
- accounting for any optimism bias from LINZ modelling in terms of assuming greater and less costly use of LINZ resource over contracted resource
- the size, configuration and contract terms of the programme team enables scaling to closely reflect the three squads i.e. manage the right ratio of "enablers to "doers"
- mapping and modelling of possible financial risks indicates that most risks will impact programme duration. The impacts of this risk have been built with the PSO and can be managed by:
  - offsetting the phasing and duration of squads
  - re-prioritising the product backlog.

THE COMMERCIAL CASE

The commercial case sets out the plans for procurement arrangements required to implement tranche 1, including:

- services and capability that are being procured in tranche 1
- procurement strategy, approach and plan
- how risk will be allocated between LINZ and suppliers
- payment mechanisms for purchasing products or services
- performance management and capability building
- how contracts will represent high quality and cost effective outcomes and identify any potential contractual issues.

Procurement strategy, approach and plan

- Most procurement is for people and professional services.
- A combination of LINZ staff, contractor, consultancy services and capability partner expertise is required.
- Market engagement including recruitment for six key roles during November and December confirmed market capability and capacity can meet our resourcing needs.
- All procurement will be consistent with LINZ HR and procurement policy and the Government Rules of Sourcing. STEP will source from AoG and GCDO Marketplace solutions where possible.
- Contractual commitments to suppliers are intended to be by tranche to avoid lock-in and allow for NZ ICT market involvement however the procurement strategy will also facilitate continuity and retention of knowledge/IP.
- Application of the SAFe methodology, supported by use of appropriate tools and adherence to the programme management model, including business engagement points, will enable IP to be shared and retained, whether generated or used by contractor or LINZ resource.
- Supplier and contract management is key for success, and frameworks will be established consistent with MBIE's Significant Service Contract Framework. This includes management of Datacom for on-going Landonline support.
- STEP will build LINZ's commercial, DevOps, Agile and programme capability.
- LINZ may procure some aspects of the solution from 3rd party suppliers, where market capability and capacity provides good choice and ongoing innovation.
- It is important some roles are filled by LINZ people (e.g. System Architect, Product Owners and Product Manager).
- An aligned Procurement Strategy, Resource Strategy and Resource Plan will inform the 'what' and 'when'.
- All resources will have a home manager (responsible for performance management) and a functional manager (responsible for the day to day priorities).
- Tenders will be advertised and managed via the Government Electronic Tender Service (GETS) and the STEP web page will provide guidance to suppliers.

During tranche 1 LINZ will procure and manage:

- resources from suppliers with demonstrable depth in required Agile skillsets and programme delivery
- specific consulting and advisory services including assurance, legal, communications and technical advice
- software, tools, cloud infrastructure including [redacted] cloud hosting, delivery/management support tools and APIs
- LINZ contingent labour—independent contractors or consultants directly engaged by LINZ
- LINZ staff roles (fixed term, fulltime or possibly backfill)
- current Landonline support arrangements (incl Datacom)
- engagement with 3rd party suppliers to see if surveyor products can integrate with LINZ processes
- corporate support capabilities (via LINZ corporate).

Risk allocation

- LINZ will seek value for money arrangements getting the right people for the role and culture, not lowest cost.
- A key tenet of contracting in Agile is to 'design for exit' (i.e. plan for exit by design) and commercial arrangements in tranche 1 will reflect this while being cognisant of continuity, retention of knowledge and transfer of IP.
- LINZ will not contract significant risk transfer to suppliers in tranche 1 given it needs to first learn about Agile.
- As relationships with suppliers mature, outcomes-based Agile contracting may be investigated for tranche 2 e.g. story points and target pricing models.
- The resource plan has a target mix of contractors, consultants and FTE's (42%, 2%, and 56% respectively) to balance capability and development of internal resources. If suitably capable FTE's are not found the mix will use more contractors and consultants. The financial impact of this has been considered as part of the QRA.

Performance management

- Performance management arrangements with suppliers will focus on measuring current performance with timely review. LINZ proposes to use a supplier scorecard model similar to the one ACC and IR have successfully used.
- Measures will reflect the culture and operating environment STEP is trying to create to motivate and retain highly capable resources. Scorecards will be discussed with suppliers at scheduled reviews. This environment should enable suppliers who are confident in their capabilities to recognise that continued engagement of their services will be based on quality and performance.

Payment mechanisms

- Contract resources will be paid on a daily rate or pro-rata if less than 8 hours per day. Effort will time-sheeted weekly by the Project Management Office (PMO) (entered by the contractor). Invoices will be submitted monthly and reconciled with the weekly timesheets before approval for payment.

- Payment terms for contract resources will be by the 20th of the month following the date of invoice, consistent with the payment terms in the relevant AoG panel contract.

Managing expiry and extensions (people resources)

- A register of current contracts will be maintained. Six weeks before contract expiry a performance review and decision to complete or extend will be made. Contract reviews will include contractor/supplier scorecard reviews
- If an extension is agreed, a procurement plan to extend will be completed and approved before finalisation.

Conflicts of interest and procurements

- The Procurement Manager is responsible for conflict of interest declarations to be in place as appropriate.
- STEP will ensure that team members are aware of what a conflict of interest is and how they should be disclosed and managed. Awareness will be created for new starters as part of induction and via periodic team reminders
- For STEP procurements a conflict of interest declaration will be completed by all participants that may be able to influence the outcome (regardless of their role).
- Tender documents will request that suppliers disclose any conflicts of interest and proposed management plans.
- Conflict management plans will be approved by the business owner or procurement business partner (responsible for ensuring a CoI Register is maintained and updated including declarations and management plans).
- STEP will apply a permissive communications model where dialogue with suppliers is encouraged, but on the basis that supplier information shared is not considered confidential. Programme and Procurement Guidance will guide team members on working within this model.

THE FINANCIAL CASE

The financial case will determine any cost and revenue implications of the preferred options and plan the funding requirements, including:

- A financial costing model
- Costs, funding and affordability analysis of tranche 1
- Variation of costs from PBC tranche 1 forecast to SSBC tranche 1 forecast. A high level forecast of the total PBC costs compared to tranche 1 shows that there is sufficient remaining funding to complete the remaining tranches.

Financial case overview

The PBC contained full detail supporting the financial case for the programme. This financial case updates content relevant for tranche 1. During the modelling and analysis for the tranche 1 financial case no additional risks or issues were identified that were not contained in the PBC. The tranche 2 SSBC will update the whole of life forecasts for completion of the programme.

Table 7 summarises the tranche 1 modelling against the PBC estimated costs. The PBC estimated the capital cost for tranche 1 at the 85th percentile to be $35.0 million. The results of the QRA indicate tranche 1 will require $30.1 million at the 85th percentile.

Table 7: Tranche 1 modelled costs against PBC estimated costs

	Modelled Costs (Base)	QRA 50th Percentile	QRA 85th Percentile
PBC - Capital Expenditure (Tranche 1)	***28.67***	***29.13***	***35.04***
Tranche 1 - Capital Expenditure	**26.86**	**28.04**	**30.01**
Variance to PBC	*1.81*	*1.09*	*5.03*
Capital expenditure funded by:			
Available LOL depreciation	26.36	26.36	26.36
Crown capital injection	0.50	1.69	3.65
TOTAL TRANCHE 1 COSTS:			
Capital Expenditure	**26.86**	**28.04**	**30.01**
Operating Expenditure	**3.03**	**3.16**	**3.38**
Total Expenditure	**29.89**	**31.20**	**33.39**

Funding for capital expenditure

LINZ has $32.9m of capital funding available to contribute towards the programme. This is primarily sourced from accumulated Landonline depreciation funding. The capital funding shortfall is proposed to be sourced via a repayable Crown capital injection. As large scale IT projects are recommended to be provisioned for at the 85th percentile, LINZ's funding request is also at the 85th percentile (consistent with advice from Treasury).

Tranche 1 at the 85th percentile will be funded mainly from the accumulated depreciation funding ($26.36 million), and require $3.65 million of Crown capital injection commencing from April

2020. The remaining $6.54 million of depreciation funding will be used in years 3 and 4 (in following tranches).

Survey and title third party fee levels

[redacted] LINZ will commence a fee review to consider options, including the wider policy implications of changes for individual fee payer groups, and report on progress to Ministers in August 2019. Fees will be set and approved by Cabinet after public consultation.

THE MANAGEMENT CASE

The management case sets out how the programme will be planned, managed, monitored and executed. It outlines the programme structure, management, control and processes that guide the full range of activities required to implement the programme in an Agile manner.

Managing the programme context

Organisation and programme set up

The LINZ outcomes framework and development of its supporting operating models are key drivers for STEP to address the limitations of Landonline and provide continuity for our customers.

LINZ is confident that progressively rebuilding Landonline will improve its ability to best respond to customer needs and continue to meet regulatory requirements.

Nonetheless, it remains a complex undertaking which has driven the considered approach being taken. The programme will be delivered in four tranches over five years, starting with small blocks of work that give direct value to customers and enable LINZ to build capability and confidence.

Analysis demonstrates that rebuilding Landonline in an Agile manner, using predominantly New Zealand ICT resources, is best for our customers, has a lower risk profile and meets expectations in terms of quality and cost. Starting small means introducing the organisation to Agile before scaling up and the staged approach to delivery will help embed change.

The changes planned in tranche 1 allow the organisation to focus on the following key areas as the new technology and services introduced will not significantly impact existing services, customers, staff, or the existing Landonline system:

- grow and mature our capability over time
- build a culture with an empowered workforce
- mature Agile practices, governance and decision-making to support the new ways of working
- implement our operating models
- measure development velocity
- continue to better align with the rest of the organisation
- ensure operating and regulatory delegations across the property business groups are appropriate for new STEP environment.

This will ensure that lessons learned throughout the tranche while the organisation embarks on a significant change journey, can be understood before later tranches introduce more impact on the business and the underlying Landonline platform.

Methodology: SAFe & DevOps

The basis of the programme delivery approach is an application of 'DevOps', a software engineering culture and practice that aims at unifying software development (Dev) and software operation (Ops), and 'Scaled Agile Framework' (SAFe), a way of achieving scale in software development.

DevOps

DevOps is a mindset, a culture, and a set of technical practices. It provides communication, integration, automation, and close cooperation among all the people needed to plan, develop, test, deploy, release, and maintain a solution. **Table 8** describes how DevOps will benefit LINZ in tranche 1.

SAFe

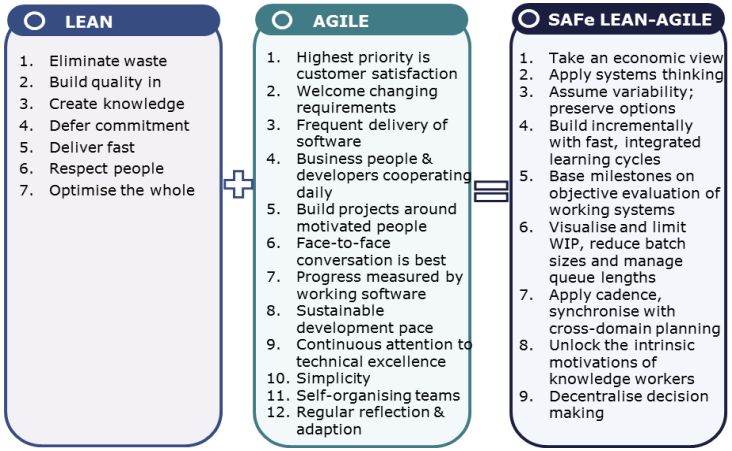
SAFe is an Agile framework for software development that keeps the customer at its centre. Agile is an approach that is incremental and iterative, breaking down the primary programme components of scope and timeline to complete smaller portions of work in more frequent, repeated cycles. The goal is to be more flexible and responsive to customer change and needs. SAFe combines "Lean" and Agile practices to form SAFE Lean-Agile principles as shown in **figure 7**.

While the programme is adopting a SAFe methodology, the Agile values and principles will be used (which SAFe values and principles are derived from) during tranche 1. The development teams will draw from both concepts as required to ensure momentum and successful of achievement of their sprint goals.

Table 8: DevOps working at LINZ

Improvement	Benefit of DevOps improvements for LINZ
Shorter development cycles, faster innovation	• Visible proof of progress for stakeholders, leading to better stakeholder engagement and change acceptance • Ability to share ideas and progress, leading to better informed solution and change acceptance
Reduced deployment failures, rollbacks, and time to recover	• More time to devote to creating the solution instead of remediating problems • Faster deployment times means more frequent and automated deployments possible, leading to faster visibility of working software and deployment for realising value
Improved communication and collaboration	• Involvement of customer directly in the cycle, along with exposure, influence on prioritisation, and the ability to share a working demo
Increased efficiencies	• More time and coordination devoted to creating the solution.

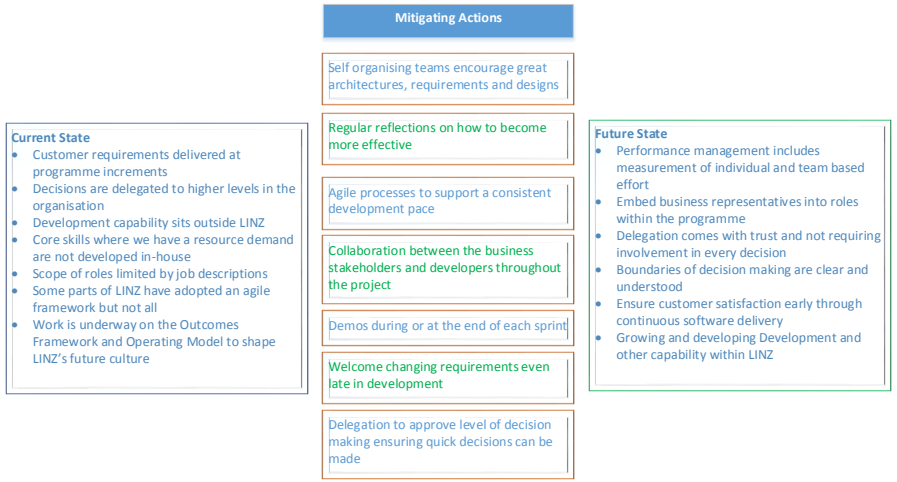
Figure 7: SAFe Lean-Agile Principles



Applying Agile values and principles

Four foundational values and 12 supporting principles lead the Agile approach to deliver high-quality, working software. Transitioning from the current to future ways of working is depicted in **figure 8**.

Figure 8: Adoption of Agile values and principles



Combining with cross-Agile and Waterfall practices

While most of the programme will be run using the SAFe methodology, at times a waterfall[2] approach or approaches drawn from other Agile methodologies may be required. For example organisations will use a mixture of Agile techniques and traditional approaches e.g. working with a 3rd party vendor or internal teams that are not Agile. The SAFe methodology supports a hybrid approach to software development. The different methods can be complementary for complex and multi-tier architecture development, providing standardisation and regulatory requirements that may be required. During tranche 1, the following are examples that may be required to take a more hybrid approach:

[2] Waterfall is generally viewed as a rigid approach to software development, whereas Agile methodology is known for its flexibility.

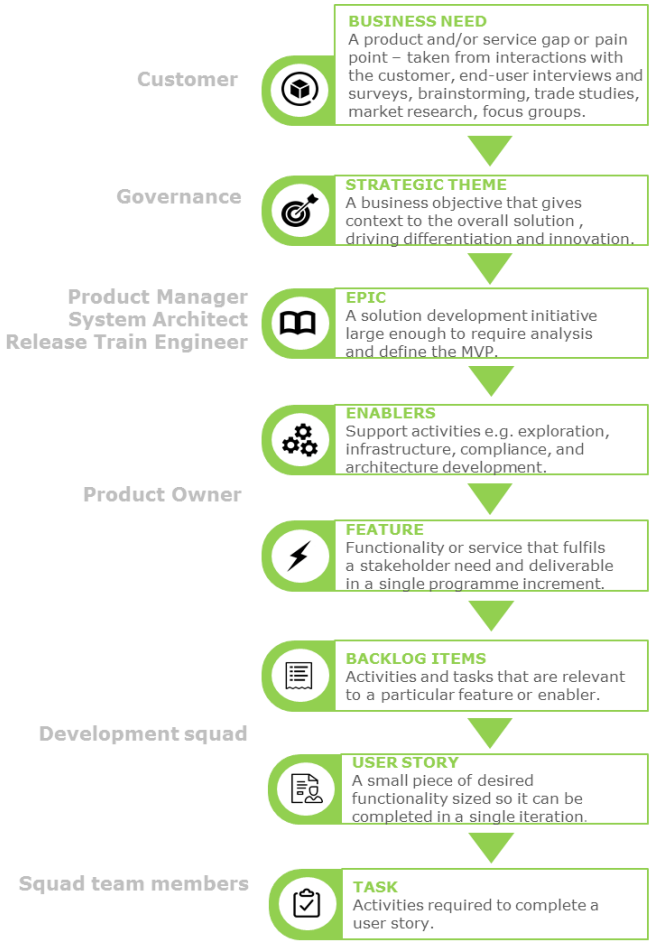
- STEP team working with Datacom: complex interface with the existing Landonline system
- Datacom: Landonline functional changes (e.g. to hold new data for the notices, the product request API)
- STEP team working with Customer Relationship Management (CRM) provider: interface between CRM and Landonline
- STEP team working with Finance: for interface between STEP and Tech One.

The way the programme works with the organisation and suppliers is expected to change as experience working in a more Agile way grows. The PMO will maintain core traditional functions e.g. reporting and controls, but apply these using SAFe concepts and techniques. Communication and collaboration between all teams, regardless of the methodology used, will be key to the programme's success.

Flow of programme artefacts

Figure 9 provides details of the SAFe components and how these flow from conception through to delivery.

Figure 9: Flow of Agile artefacts and identification levels



Agile tools

Agile tools and practices will be determined by development teams/squads as they join the programme. The programme team will use JIRA and Confluence as the primary tools for recording information relating to products, and managing their teams, with key artefacts saved in LINZ's Objective document management system.

The platform team will ensure the base levels of tooling are present and maintained, with individual squads customising them for their needs.

In a traditional plan-driven environment, the process and the chosen tool manages the effort of everyone on the team. In an Agile environment, a lot more flexibility and adaptivity is needed so any tool that is used should play a supporting role rather than a controlling role.

The Agile tools used need to:

- maximise flow of work and efficiency
- accommodate a dynamic environment where plans are continuously updated and refined
- track delivery of value against a high level roadmap
- support communication and collaboration
- be available to all team members to update information continuously, allowing anyone to view progress any time.

Programme governance & structure

Governance

The PBC sets out the delivery expectations of STEP. LINZ has reviewed the lessons learned from previous Gateway reviews and considered options for enhancing its prospects for successful delivery, including constituting a specific programme governance board for STEP. The roles (and their accountabilities) and structures established:

- ensure that STEP is aligned to LINZ's objectives, delivered efficiently, and is sustainable
- are driven by and aligned to behaviours at the top of the organisation
- ensure the SRO has the authority to bring stakeholders together and the ability to overcome resistance to the programme
- ensure the Deputy Chief Executive (DCE) Property Rights leads the design of the overarching vision of LINZ's property system operating model to ensure the need to maintain business as usual work is balanced against the changes required for the new system.

The STEP programme relies heavily on progress on reworking the property system and IT operating models. As shown pictorially in **figure 10**, large elements of the operating model change relate to STEP. For example:

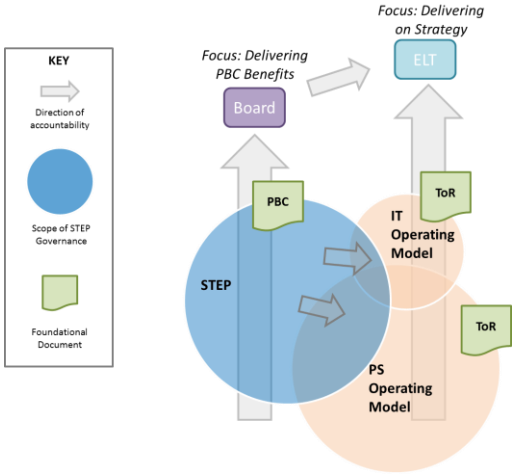
- the central LINZ IT team (Information System & Delivery) will be standing up a new practice leadership in software development for the product squads to use
- the survey and title team in Property Rights is rethinking the process of registration. This will be an input into the detailed product backlog, but will also have implications wider than STEP.

At its most simple, the DCE's leading the respective elements will work collectively in executing the parts. At a formal level, this involves exercising any delegations with advice from the STEP Board – but in reality there will be close collaboration as problems and opportunities are understood, and new processes developed and implemented.

The PBC is the primary reference point for the STEP Board. The role of the Board includes ensuring LINZ makes the necessary shifts to the property system and IT operating models, which will have wider LINZ impacts beyond the boundaries of STEP, to support the successful delivery of the programme.

The STEP Board is responsible for accepting and signing off deliverables and business outputs, and will recommend continuation to the next phase on successful completion of all deliverables. Board members take both a supplier and end user interest in ensuring the programme's success and take personal responsibility for ensuring a successful outcome. Board members should provide thoughtful, constructive input and commit the time required to attend and actively participate in the Board meetings throughout the programme. The inclusion of external members is to augment management capability.

Figure 10: Scope of STEP governance



Governance roles and responsibilities

LINZ is prioritising building programme delivery capability for tranche 1 so has appointed the following to the STEP Board:

- DCE Property System Infrastructure as SRO with overall responsibility for the programme. The CE has provided delegated authorities for the programme to the SRO, which are exercised through the Board
- DCE Property Rights as the business owner and custodian of the operating model for the property system
- DCE Corporate Services, recognising the value that a high performing IT operating function would have for successful delivery of the programme, and for wider LINZ initiatives
- Chief Financial Officer (responsible for managing financial links between LINZ's overall finances and STEP)
- DCE Location Information, recognising the importance of data and data customers
- DCE Strategy & Stewardship, recognising Landonline's criticality to the regulatory system

The Board will have up to three experienced external members with subject matter expertise to augment management's capabilities and provide advice and support to the DCEs. One of these independent members will chair the STEP Board to provide additional support to the SRO as capability is built. The Chair will meet with the CE regularly to provide perspective and to escalate issues of concern.

The Board's primary conduit of advice will be through the Programme Director (PD) who is responsible to the SRO for delivery. They will be supported by the System Architect, Product Manager, Release Train Engineer, Director Engagement, Change Management Lead, and the Programme Manager. The

Programme Manager will collate progress information across the work on the two operating models.

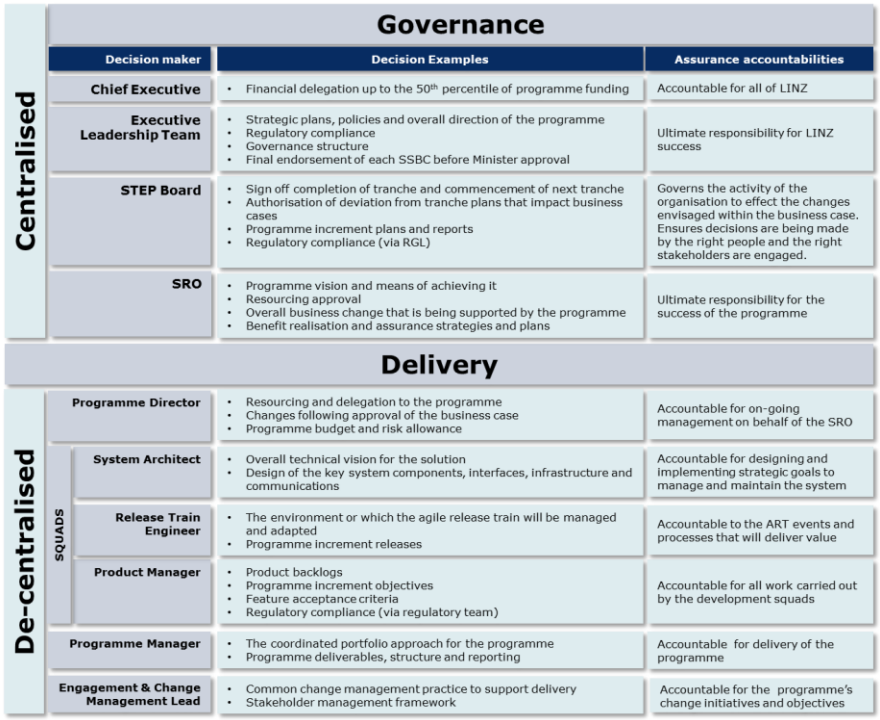
After consultation with the Chair and (where relevant) other members of the Board, the SRO may commission other advice from time-to-time which will normally be provided to the full Board.

Decision-making

Decentralised decision-making is a key Agile principle required to ensure value is delivered in the shortest sustainable lead time. While recognising this, centralised decision-making is still required as there may be decisions that have far-reaching impacts that require broader perspectives. This will assist the decision-maker on whether escalation may be required.

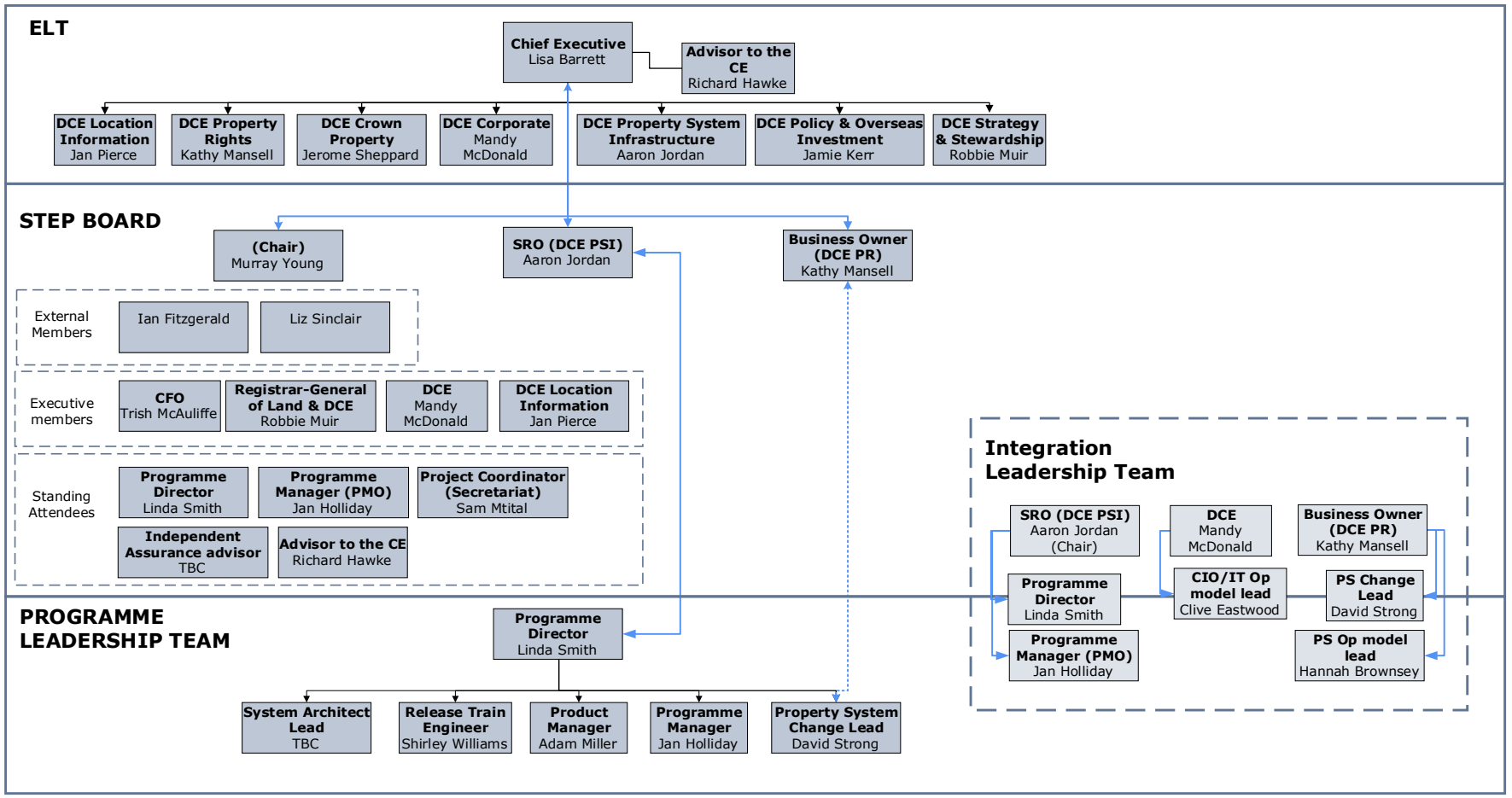
Characteristics of centralised and decentralised decision-making applied to the STEP governance structure is provided in **figure 11**. The STEP governance structure is depicted in **figure 12**.

Figure 2: Centralised and decentralised decision making in STEP



Governance structure

Figure 32: STEP governance roles and responsibilities structure



Programme team responsibilities

Below is a summary of the programme team's responsibilities. A resourcing plan contains full details of resources for tranche 1 and their roles and responsibilities.

Squads

Squads will be made up of approximately eight resources and are based on specific areas of responsibility. For tranche 1, the following squads will be established:

- Platform – develop, design and maintain the technical foundations and development tool chains and undertake proofs of concept
- General (Notices) – develop, design and maintain product features for *Notice of Sale* and *Notice to Mortgagee*
- Search – develop, design and maintain product features for *search API* and *search website.*

Technical team

A technical team sourced from LINZ Information Strategy and Delivery business unit will support the establishment and maintenance of infrastructure requirements and on-going technology system needs.

Programme

The PD leads the programme, supported by the solution and product management team (System Architect, Release Train Engineer and Product Manager), responsible for driving product strategy, delivery, and engineering across the solution, the Programme Manager, and the Engagement and Change Management Lead. The programme will also be supported by the Programme Management Office, responsible for the hygiene of the overall programme, governance and internal and external reporting requirements.

The solution management team and the product management team are critical in providing the overall direction and support for product development and alignment with LINZ's outcomes framework.

Change Management & Engagement

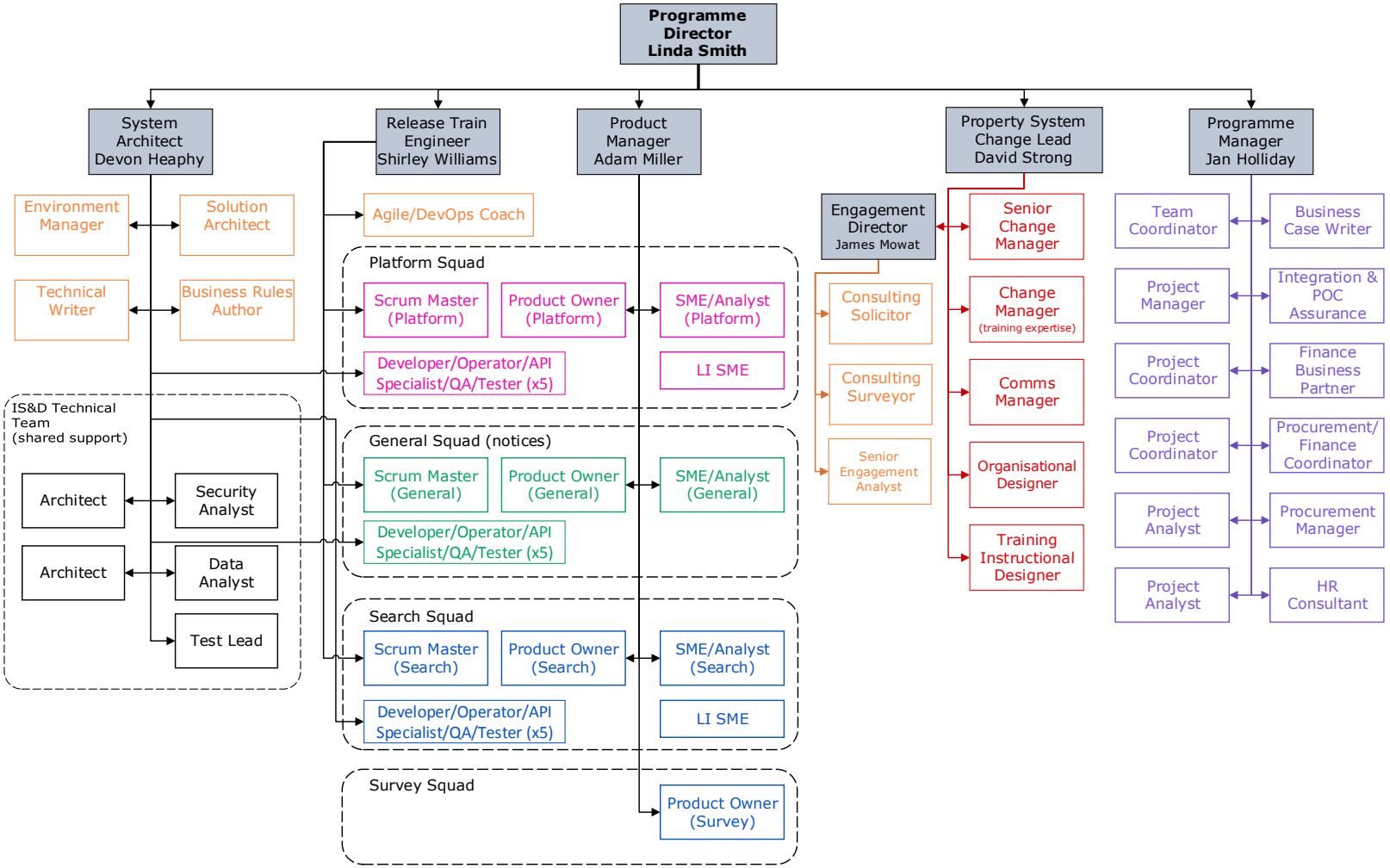
Responsible for transitioning customers and LINZ staff from current state to the future state.

Ensures there is effective and comprehensive communication and engagement with all impacted stakeholders, in order to achieve a high degree of understanding and support for the programme.

Activities required to transition people include identifying impacts, stakeholder engagement, communications, training and change readiness.

Programme delivery team structure

Figure 4: STEP programme team structure (at tranche 1 peak)



Building capability and culture

Resourcing strategy

The resourcing strategy and approach is based on an HR employee resourcing strategy for a modern, rapidly changing organisation that has been adapted to fit a large business transformation programme.

Given that the STEP implementation phase is scheduled to take five years, there is the opportunity for LINZ to mix pure project delivery resourcing with career and development opportunities for permanent staff.

Building an Agile culture

STEP will build an Agile delivery culture that aligns to LINZ's BEST (Bold, Expert & Stronger Together) culture, with particular focus on the recruitment and retention of new people.

Agile thinking often challenges traditional command and control models, putting more emphasis on self-organised teams that have the autonomy to make decisions at a lower level. This represents a shift in approach from LINZ's historical way of working. Building an agile culture will allow people to be resilient and thrive within an adaptive and innovative environment. For LINZ to do that, it needs to progressively embed some foundational behavioural changes into all parts of the organisation.

An identified challenge will be how we organise contractor resources, who will work alongside LINZ staff on the programme. The way we onboard staff, manage their performance, develop talent and retain momentum on the project will be key to its success. Working in an agile way, with squads who are self-managing is a different style and approach for most of LINZ. How we manage a way of working that may differ from their Home team needs to be understood and supported so staff feel empowered in the programme and its environment.

Embedding the culture

There is no doubt that part of the shift in mindset and in behaviours to an Agile way of working will be uncomfortable for some and welcome for others. Moving to an agile culture requires a fundamental shift from the current approach of decision-making under delegations which are held at a high level in the organisation. Referring back to the four Agile values and 12 principles will help the organisation achieve this.

Capability

The retention strategy aims to ensure that key people stay with the programme/organisation and that costs of turnover are minimised.

For permanent LINZ resources the retention, training and development of an employee will be developed by the LINZ line manager in conjunction with the STEP team. As part of the ongoing desire to grow internal talent, an important part of the retention strategy will be to develop staff over time in order to reduce the need for contractors on the programme.

Where additional contract talent is brought on as the programme progresses, it is intended that LINZ employees are given the opportunity to understudy key roles so that sustainable capability can be grown.

Coaching model

Coaching is a core expectation for leadership roles within the programme and is linked with LINZ's leadership capability model. These skills enable leaders to be long-term champions of change, even as the organisation's methodology, process and tools change over time.

Physical setup

Accommodation and tools for the programme staff have been discussed with the LINZ corporate team.

LINZ Facilities is currently preparing options for ELT relating to accommodation across the organisation. For the programme, this will establish the location of the programme near other relevant business units, the type of environment, and desk usage patterns (agile *vs* assigned location).

LINZ Information Strategy and Delivery is currently improving the service offerings to mobile users at LINZ and will provide a range of thin clients, standard corporate build laptops, and two types of lightly managed higher specification laptops targeted at developers. All will come with support from the service desk and access to key corporate resources.

Programme plan and transitions

The sequencing of transitioning to the new system has been developed based on lessons learned during the definition phase, mitigating any risks of non-delivery through tranche programme increments and to meet the following outcomes:

- deliver customer value and benefits early
- [redacted]
- enable enhancements and maintenance to be done more efficiently
- reduce the risk of managing delivery of large pieces of work by making them smaller, more independent pieces.

Integrated programme plan

An integrated programme plan has been developed with the property system and IT operating model delivery teams. This includes dependencies between each of these workstreams. This is being closely managed through weekly meetings between each team at both a delivery and executive level.

Planning

Programme planning will start at the programme increment (PI) stage, aligning all teams to a shared mission and vision, progressing through to Agile scheduling as shown in **table 8**.

Table 8: Agile Planning Process

PI Planning	• PI planning produces two primary outputs: Committed PI objectives with business values assigned by business owners, and a programme board which highlights new feature delivery dates, dependencies and milestones.
Release Planning	• A high level plan for multiple sprints within an iteration which reflects the features that will be implemented and when they will be completed. Serves as a base to monitor project progress • Features are continually built and deployed into production. These can be released incrementally or immediately to end users depending on needs. A customer experience wheel is being developed to help determine if it makes sense to release features, or hold for later.
Task Planning	• Development team breaks the feature down into smaller daily tasks to reduce uncertainty, foster successful completion, and enable easier time estimation for tasks.
Agile estimating	• Estimating effort to completion based on past successful feature delivery.
User story development	• Engage with customers to deliver goal for iteration/sprint • Rely on this goal to develop feature/user story priorities which guide selection of features/user stories to develop during the iteration/spring.
Backlog management	• Product backlog - master list to build product • Iteration/sprint backlog - priority items to be built during iteration • Work with customers to ensure most important features are delivered. Priorities shift so checking in with customer periodically to ensure each iteration is planned and prioritised appropriately.
Agile scheduling	• Schedule detail only for the immediate iteration involving the entire team for accuracy and buy-in • Ensure time is allocated for design, testing and system demos • Plan sprints to avoid dependencies by developing tasks at a granular feature level rather than with overall project in mind.

Change management

A change management approach has been developed for tranche 1 based on recognised best practice. One of the key principles for STEP is 'business led, programme enabled', recognising that the programme will sometimes need to push the business over a change hurdle. The business must drive the direction of the change, be its greatest advocates, and have primary responsibility for achieving programme benefits. The rapid pace of change under Agile means the change management team must refine and focus their work behind the product teams – and supporting them to know where to flex and where to relax the change management rigour.

Change management resources will work horizontally across scrum teams to ensure team engagement and to identify impacts on end users. Activities required to transition people from their current state to the future state will be prepared at a scrum team

level, and checked at a programme change level to ensure activities are considered holistically and not in silos.

Tranche 1 business and change impacts

Table 9 illustrates how stakeholders are impacted by changes tranche 1 introduces. In general, Landonline customers are expected to positively receive these initiatives. The effort required by customers to transition to new services will be low, and the business as usual (BAU) workload is likely to reduce. One known exception is the transition effort required for territorial authorities and financial institutions, which would increase if they elected to change their technology systems to take advantage of Notice of Sale and Notice to Mortgagee services. These assumptions will be validated once impacts are fully understood, [redacted]

Although the impact on customer groups is low, Notice of Sale and Notice to Mortgagee affects 7680 conveyancers, and web search impacts both conveyancers and 1600 Surveyors. Given this, and that 78 Territorial Authorities and New Zealand's financial institutions are also impacted, the tranche 1 change needs to be carefully managed.

Tranche 1 also impacts high volume search users such as CoreLogic, and other law firms and financial institutions. STEP will investigate what customer types could make use of APIs and work with them to understand their needs.

At LINZ, property rights support and customer support staff appear to be the main impacted groups. For property rights support, there may be increases to workload when transitioning to the future state, and business as usual due to supporting new functionality. Customer support staff based in Hamilton and Christchurch will need to understand how the new functionality works in order to support customers. The main impact however, occurs once web search is live, and the potential change this has on customer support officers.

Activities required to manage impacts generally fit into the following categories: stakeholder engagement, communications, learning and development (training), and organisational design.

Table 9: Impact of future state solution on stakeholders

Impacted Stakeholder	Impacts	BAU Workload	Transition Workload	Perception
LINZ Customer Support Officer	Web search will mean staff won't have to manually locate and send products to customers.	↓		☺
LINZ support teams	As customers use new functionality, there will be an increase in support required.	↑		?
LINZ sign up support	New customer signup process will reduce workload for LINZ staff.	↓		?
LINZ Registration Authority	Decreased workload, as Search only customers (real estate agents, lending institutes etc.) won't have to have Digital Certificates to search and access LINZ products.	↓		?
LINZ TBC	New process will need to be created to ensure all lenders have a valid email address for Notice to Mortgagee.	↑		?
Public	Web search will enable everyone to be able to search, pay for, and obtain LINZ products in real time.	↓		☺
Registered search only users	Web search will enable registered search only users to access products without having a digital certificate, and improved search functionality.	↓		☺
Search companies	Web search may take business away from search companies.	↓		☹
Conveyancers	Notice of Sale and Notice to Mortgagee will remove tasks currently completed outside of Landonline. They will also have the option of using the improved web search function.	↓		☺
Surveyors	Surveyors will have the option of using the improved web search function.	↓		☺
Territorial Authorities	Notice of sale will be automatically emailed to TAs from Landonline. To realise the full benefit, technical changes need to be made to their systems.	↓		☺
Financial institutions	Notice of Mortgage being registered or discharged and notice of additional interests registered against the title will be automatically emailed to lenders (who subscribe) from Landonline. To realise the full benefit, technical changes need to be made to their systems.	↓		☺
Quotable value	QV software currently used for notice of sale will not be needed.	↓	?	?

Perception			Transition Workload		BAU Workload		
	☺	Positive Change		<½ hr actionable activity		↑	Increased workload
	☹	Negative Change		½ -2 hrs actionable activity		↓	Decreased workload
	?	Unsure		>2 hrs actionable activity		-	Neutral impact on workload

Engaging with customers

Customer engagement within STEP is already well established. A significant number of engagement activities have occurred, and will continue to occur throughout tranche 1, including face-to-face meetings, emails, co-design, workshops, surveys, updates to sector boards, and presentations at industry events. It's critical the customer voice is captured, understood and proactively used new technology and ways of working are developed. This is being addressed through established customer representative groups (CRG) for survey, spatial and title customers - a key interface between the programme and the recipients of the change. A property system stakeholder forum has been created to address wider New Zealand property system issues and concerns as well as providing stakeholder strategic input into STEP.

A consulting solicitor and a surveyor are embedded in the programme to help represent the customer community and actively engage with financial institutions and Territorial Authorities. They are the conduit to the CRGs and their wider community, and also keep the programme abreast of global and local trends in the customer environment that may cause disruption.

Agile sprint cycles keep the customer at the centre of the programme. Both the customer representative groups and consulting customer roles will be actively involved in programme increments to ensure customers have multiple opportunities to give feedback, and for LINZ to understand their needs. This will mean that functionality created is more likely to meet customer needs.

Tranche 1 engagement tools

Product roadmap: Will be used as a tool to engage with our internal and external stakeholders. This will help stakeholders understand what they will be engaged on and when, and helps the programme understand customer priorities.

System demos: Will be regularly undertaken during programme increments to gather feedback from stakeholders and customers on features. This will ensure feedback is captured early, in order to build the right end solution.

Customer experience wheel: Although features are continually built under Agile, the customer experience wheel will be used to determine whether it makes sense to release functionality to customers, or hold for later.

Learning and development

For tranche 1, the learning and development needs are not anticipated to be extensive, although this will be validated during programme increments. At this stage, most of the change impacts will be managed through stakeholder engagement, communications, go-live support, eLearning for customers, and targeted training sessions for LINZ staff.

Controls and processes

Programme control

Governance structures must be able to govern innovatively and be focused on creating value, with minimised documentation and without a pre-set plan. The following are key to achieving this:

- a consistent understanding of Agile, intentional change with iterative, incremental and adaptive lifecycles

- a high level vision that is developed progressively, focused on creating value
- clear separation and understanding of responsibilities between maintenance and enhancement[3] *vs* new system build[4]
- alignment to the rest of the organisation (e.g. Property Rights, Property System Infrastructure, Information, Strategy and Delivery groups).

Table 10 summarises the programme controls and how these will be planned, executed, monitored and controlled.

Table 10: Programme controls

Control	Management
Scope	• PI planning sessions will ensure scope and context is fully understood and exposes any new or existing high level scope items not originally planned for. These will then be prioritised to meet requirements as they occur.
Schedule	• PIs will consist of fixed time box sprints for building, developing and implementing the new system. • PI planning will identify new feature delivery dates and relevant milestones and team velocity, fixed sprints and PI durations will monitor and control scheduled activities.
Budget	• Each SSBC will forecast the costs for each tranche. Cost assumptions will be validated and continually tested & updated as the programme progresses. • The CE holds delegation up to 50th cost percentile. Contingency funding between 50th and 85th percentile is held externally by joint ministers. Delegation from the CE to the SRO and PD. • Regular Board meetings will be supported by transparent financial forecasting and up to date information to the programme's financial position.
Quality	• Continuous integration, automated unit testing, pair programming, test-driven development, design patterns, behaviour-driven development, domain-driven design, and other techniques will be used to improve quality and enhance product development.
Benefits	• Benefits will be managed in collaboration with the programme and Business Integration Director (as the benefits owner). • Benefits management is a whole of life-cycle approach to getting beneficial returns on investments, starting with identification of benefits through to their delivery and evaluation after delivery of any change in order to check the expected benefits have

[3] **Maintenance and enhancement** requires; assurance and governance (focused on time between system failures, backlog sized and time in queue, customer satisfaction, work completed, value creation vs. cost of maintenance), has a stable team, includes backlog management and prioritisation, customer engagement, has challenges with future vision of enhancements, value proposition is owned by the business and KPIs are carefully designed.

[4] **New system build** requires; different assurance and governance (focused on objectives that are defined, prioritised, are being achieved and managed, value creation vs. cost of development, traditional controls are not much use), adapted project management, an agile product creation method using management of resourcing, organized, supported, and controlled to achieve objectives, KPIs are also carefully designed.

Control	Management
	been delivered and identify any new potential benefits. This cyclic process is important to ensure the activities of development squads are not constrained by pre-defined benefits and that value can be maximised through the ability to change. • The approach to benefits management is provided in **Appendix H**.
Resource	• Resource planning will be done through regular evaluation of team capacity. • Squads will be reviewed and monitored during the sprint and PI timeframes as a guide to understanding capacity and capability. • Established routines will provide guidance on the speed at which additional squads will be introduced for additional development and build.
Comms	• Daily stand-up meetings, sprint demos and retrospectives will support the communication planning activities required to execute on daily kanban boards. • Collaboration and lean portfolio metrics will monitor and control the continuous communication management.
Change	• Change & stakeholder planning will be done through the identification of business partners and aligning to a common vision. • Collaboration and team agreements will support the execution with limited team interference to ensure on-going management

Control	Management
	of monitoring and control.
RAIDD	• Risk, assumption, issue, dependency and decision (RAIDD) planning will be carried out through regular squad meetings (sprints, PI reviews, demonstrations, stand-ups etc.). • A centralised register will be held to capture, monitor and control all RAIDD, ensuring appropriate mitigations are in place and reported on accordingly.
Procurement	• Planning and execution through establishing strategic relationships and developing business/capability partners. • Monitoring and control will be managed through Lean and Agile practices and contract closure.

Assurance & quality

An assurance plan for tranche 1 has been developed and agreed with the GCDO. LINZ will bolster its quality assurance approach by procuring an independent quality assurance provider/s with a focus to:

1. contribute to the STEP Board
2. take deeper dives into specific areas of programme delivery as required
3. participate in regular programme process activities e.g. sprint and/or programme increment planning.

Further independent assurance is provided to the programme by the Gateway review process for each SSBC. The programme will continue to align activity to the three lines of defence model, supported by the following principles that underpin the assurance activity in **Appendix C** for tranche 1:

- sevelopment squads are self-managing
- Agile follows 'just enough' and 'just in time' practices with regards to documentation
- team processes are subject to continuous improvement
- working software is the primary illustration of progress
- assurance is built in throughout sprints and PIs via demonstrations and retrospectives
- internal and external customers are embedded throughout to ensure a continuous feedback loop and assurance that the product is right and the right product is produced to meet business and customer needs
- technical advice will be sought throughout the development process as required
- assurance should be a non-intrusive process that uses conversations and engagement through sprint reviews, planning, PI reviews etc. as opportunities for input, recommendation and review. The need for independent assurance can be determined at any point throughout this process.

Risk management

LINZ utilises an Enterprise Risk Management Policy based upon the ISO 31000 Risk Management Standard and administered by the LINZ internal Risk and Assurance team. The programme will apply an agile approach to risk management for the technical delivery and transition of the system in a manner that is consistent with the preferences and principles of the LINZ Enterprise Risk Management Policy. This includes a proactive/communicative approach which looks into the future to identify, assess, treat, monitor/control and report on all risks.

Reporting

Reporting will be created at an adequate level, recognising that less is more, to track success and measure performance. As the programme matures under a SAFe environment, reporting will be pivotal to the success of each release cycle by enabling effective management and allowing the business owner and key stakeholders, including joint Ministers, to:

- monitor progress to ensure alignment with LINZ outcomes
- provide a channel for issue and risk escalation
- control budget, resources, schedule and deliverables associated with the programme to ensure overall objectives and benefits are delivered
- engage effectively with the programme's stakeholders

A summary of reporting purpose, frequency and intended audience is provided in **table 11**.

Table 111: Programme reporting

Report	Purpose	Frequency	Audience
Sprint report	Used to foster quality communication with the organisation and to show the value being achieved at a sprint level. Includes the following: • Achievements from the most recent sprint; commitment for build next sprint; any blockers/challenges disabling the team from delivering • Burn down chart(s) for current sprint and projecting across the increment • Dependencies and risks for both sprints and increments.	Fortnightly	PD/SRO/Squad
Programme Increment reporting	Used to foster quality communication with the organisation and to show the value being achieved at an increment level. Includes the following: • achievements across the increment; any blockers/challenges disabling the team from delivering • burn down chart for the increment highlighting any increase in scope or changes to decisions made at Increment planning • update on capability and capacity of the train to deliver as forecast at increment planning (including financials, recruitment, procurement, etc) • value achieved throughout the increment and how this maps to benefits • benefits measurement and analysis updates • dependencies, blockers (issues) and risks • tranche roadmap update.	Monthly	Board/ELT/ EPMO/Central Agencies/ Risk & Assurance Committee
Major project reporting	To ensure LINZ satisfies that the programme: • is aligned to Government's direction and policy • has the capacity and capability to effectively manage and deliver on time and within budget • is fit for purpose • maintains Ministerial confidence in the outcome of the programme • is realising anticipated benefits.	Quarterly	Joint Ministers/ Treasury/EPMO

Getting started for tranche 1

The following steps highlighted in green have been completed or will be completed prior to the commencement of tranche 1. The remaining steps will be taken early in tranche 1.

1. Identify the Senior Responsible Owner
2. Understand the business drivers
3. Identify the strategic themes
4. Identify value streams (product lines) and allocate budgets
5. Identify ARTs dedicated to product line teams
6. Identify RTE and Scrum Masters
7. Create initial epic backlog (un-validated by squad)
8. Identify programme roles
9. Identify ART teams
10. Start pulling epics from the backlog
11. Craft features from the epics
12. Derive stories from the features
13. Schedule first face-to-face planning session.

Preparing for tranche 2

Objective and high level activities

The current objective for tranche 2 is to replace the customer access to Landonline with new web-based tools, improving the workflow and removing constraints on the way they work. The Programme will deliver tranche 2 from June 2020 to November 2021 and anticipates mobilisation activities to commence in October 2019. LINZ intends to submit a single stage business case for tranche 2 at the start of 2020, subject to tranche 1 progress and assurance activities, including:

- request of funding for drawdown
- draft product backlog and estimates
- validate transition and integration plan based on tranche 1 releases and POCs
- confirm resourcing and procurement arrangements
- stakeholder engagement and communications planning with customers and staff
- high level impact analysis (detailed impact analysis will happen within each tranche)
- workshops with customers before implementation to determine how they want to be involved
- commencing dataset capture and diagram generation design
- gateway review
- complete single stage business case for tranche 2.

What is being delivered in tranche 2

- Movement of Landonline database [redacted] (dependent on successful POCs and due diligence)
- Customer portal for managing firms / users
- Surveyor portal
- 100% e-Lodgement titles portal
- Territorial Authority eCertification by councils
- Continuous enhancements from tranche 1 products: search, search API and notices.

Appendix A: Benefit alignment to government priorities

Note: Areas highlighted in grey are not being measured in tranche 1; however, will be delivered in future tranches.

Benefit groups	Living Standards Framework					Wellbeing			
Quantitative	**Income**	**Housing**	**Jobs & earnings**	**Civic engagement**	**Safety**	**Building financial/physical capital**	**Maintaining natural capital**	**Building social capital**	**Resilience**
Better interface with customer systems	✔	✔	✔	✔	✔	✔	✔	✔	
Reduced survey requisition rate		✔	✔			✔	✔	✔	
Automated notice of sale		✔							
Automated notification of mortgage registrations		✔							
Web search efficiencies	✔								
Qualitative									
Survey and title process efficiencies		✔							
Automated survey and title reporting									
Automated testing									
Improved reliability and security				✔	✔	✔	✔	✔	✔
Improved customer satisfaction									
Improved accessibility & quality of PR information	✔	✔				✔	✔	✔	
Enabling innovation through 3D		✔	✔			✔	✔	✔	

Appendix B: Key Programme and delivery risks

Description	Mitigation	Owner	Assurance activity	Probability/ Severity
Attracting, recruiting, building and retaining capability If LINZ is unable to find, recruit, build and retain the capability required to deliver STEP successfully using a DevOps and SAFe approach, then the speed and quality of product development, and ability to deliver value to customers may be impacted, causing delays and increased costs.	The right balance of LINZ staff and contractor capabilities is required to ensure capability can be built, in parallel to maturing Agile within the programme and organisation, for successful delivery. Mitigating actions include: • resourcing and procurement strategies agreed with the Board and ELT • procurement for tranche 1 resources is underway with key roles commencing before tranche 1 • the STEP Board is discussing a criteria for measuring the success of capability • regular programme reporting on velocity, burn rate, benefits, programme increments, sprints etc. will allow for continuous measurement of development squads productivity and achievement of benefits • budgeting to pay market rates to ensure cost alone is not a determinate to supplier and resource relationship quality • STEP will apply the LINZ and MBIE strategic supplier relationship management model.	SRO	Assurance is built in to the development squad process. Programme reporting on development squad performance will allow for this to be addressed throughout product development. Intention to procure a permanent Independent Assurance Advisor to the programme.	Possible Major

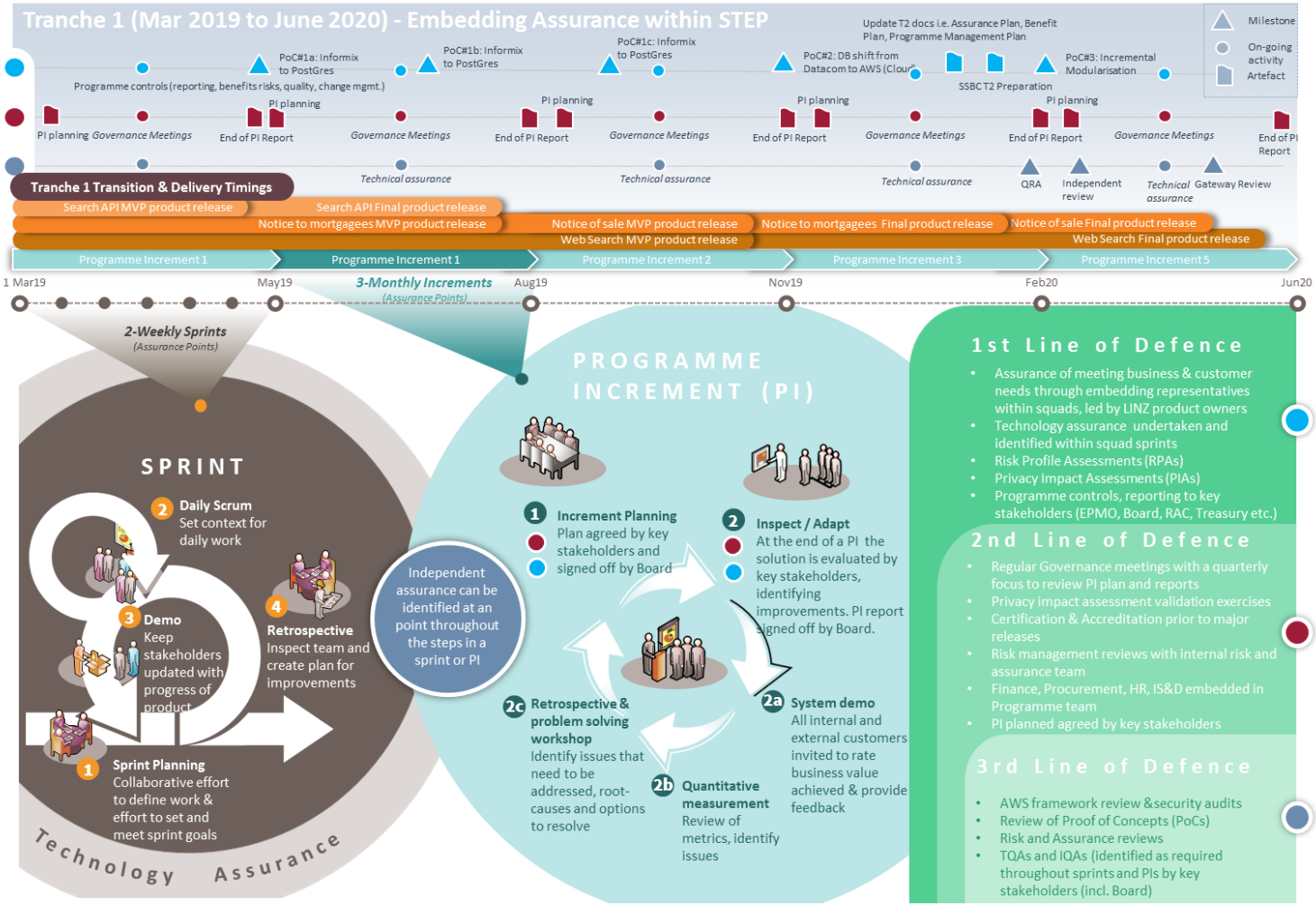
Description	Mitigation	Owner	Assurance activity	Probability/ Severity
Organisation maturity and delivery of Agile and DevOps If there is a poor adoption of Agile and DevOps practices (e.g. empowerment and de-centralised decision making) from either programme team members or supporting organisation governance structures (e.g. STEP Board, ELT and other LINZ BAU roles the programme is dependent on to deliver products) this will impact the successfully delivery of products that meet customer and business needs, and benefits.	• Agile expertise recruited to undertake training with key programme stakeholders at both executive and team levels • Governance roles and responsibilities agreed by STEP Board and ELT. This will be further developed into a terms of reference which will include decision making arrangements • Expressions of Interest are being sought for Product owners within LINZ and a Product Manager within LINZ has been appointed • Agile and DevOps lessons learned from existing LINZ teams/projects is currently being drafted for ELT.		Board to agree criteria for how they will continue to monitor progress of this risk and what assurance is required to support this.	Possible Major
Alignment of operating models with STEP The operating models for property system infrastructure and IT continue to be developed. If dependencies between the operating models and the programme are not identified early, or they are not managed effectively, there may be misalignment to achieving the programme and organisation's outcomes.	• Weekly meetings at both an executive and team level have been established to build an integrated plan and manage dependencies • Programme Manager appointed to provide oversight and integration across operating models • Terms of reference for both operating models agreed by the STEP Board • Regular reporting to STEP Board from operating model teams • DCEs appointed to the STEP Board with accountability of these operating models.	SRO/ DCE Property Rights/ DCE Corporate	Intention for an Independent Assurance Advisor to sit on STEP Board.	Possible Major
Acceptability of moving to the cloud Perceived concerns regarding the security of customer information and data may mean the business and customers won't accept public cloud usage. Alternative hosting options may need to be used if these concerns cannot be overcome, resulting in increased programme costs and delays.	• Terms of reference for approach to moving to the cloud in development • Specific 'cloud' communications and engagement plan with stakeholders planned for development • Customer (internal SMEs, customer representatives in the programme, and external customers) embedded into the development process to ensure the products delivered meet their needs.	Programme Director	• Privacy impact assessment • Security assessments • Due diligence • [redacted] • Proofs of concept reviews • Cloud risk assessment	Possible Major

Description	Mitigation	Owner	Assurance activity	Probability/ Severity
			• Stakeholder engagement and acceptance	
Products delivering planned benefits and customer value If development squads and product owners deliver products that do not deliver customer value as a result of lack of understanding of customer and business needs, and ability to develop and prioritise backlogs that deliver to the programme's benefits, then benefits may not be achieved within expected timeframes.	• Programme Agile and tranche approach allows for scope decisions and trade-offs for a specific tranche to be made, with sufficient detail for timing • Duration risk provisioned for in QRA • Draft product backlog and transition delivery timings created and awaiting validation/re-creation from squads in tranche 1.	Product Manager	STEP Board to review programme increment plans and end of increment reports to ensure they are aligned to programme benefits	Possible Major
Competing priorities Competing priorities or other legislative changes may impact LINZ's ability to deliver its agreed investment objectives within the timeframes set.	LINZ will continue to regularly monitor the political environment for any indications of legislative change or competing priorities.	SRO	Sprint planning and programme increment planning of backlogs to ensure appropriate prioritisation and consideration of external influences - programme increment plans and end reports will require Board sign off	Possible Major
Identifying a solution with third parties for Surveyors Inadequate engagement with surveyors and survey software providers could impact the experience and expectations of surveyors without a clear vision for a compelling customer experience and software solution.	• Develop 3rd party approach to inform procurement activities and build the necessary API capabilities • Surveyor representative embedded into the programme and product development • Regular engagement with Surveyor community.	SRO	Assurance is built in to the development squad process. Surveyor representation in squads and programme increment demonstrations to the survey working group to ensure products meet customer needs.	Possible Major

Description	Mitigation	Owner	Assurance activity	Probability/ Severity
Supplier relationship As our need for Powerbuilder and other support reduces as new functionality is delivered in Landonline, external support providers of the current Landonline system may find it difficult to retain key resources or lose interest in LINZ as a customer due to a lack of volume/revenue in providing support/transition services until transition is completed. This will result in delays and/or on-going stability issues in the current Landonline system.	• Develop and implement supplier management plans for the support provider of the current Landonline system • Ensure alignment between support providers strategies and the LINZ ISSP • Identify key support contracts and renegotiate to reflect LINZs requirements during the period of transition including retention of key resources and additional transition services required.	DCE Corporate	Responsibility of IT operating model with delegation to DCE Corporate sitting on STEP Board	Possible Major
Realising monetary benefits Estimated monetary benefits are at risk if conveyancers and/or surveyors don't pass on time savings realised by STEP, in the form of fee reductions, to their clients.	• Develop and agree benefits realisation plan • Capture and agree critical assumptions in SSBC and benefits realisation plan • Targeted engagement through STEP 'customer' representatives to ensure awareness of functional elements which will drive time savings • Early escalation where benefit measures or levels are identified to be varying from those stated in SSBC • Monthly reporting on progress against benefits management approach - which includes analysis and planning for benefits measurement and timing.	SRO	• Board to agree criteria for how they will continue to monitor progress of this risk and what assurance is required to support this. • Updated baseline survey. • Tranche 2 SSBC preparation. • Monthly risk reporting	Possible Major

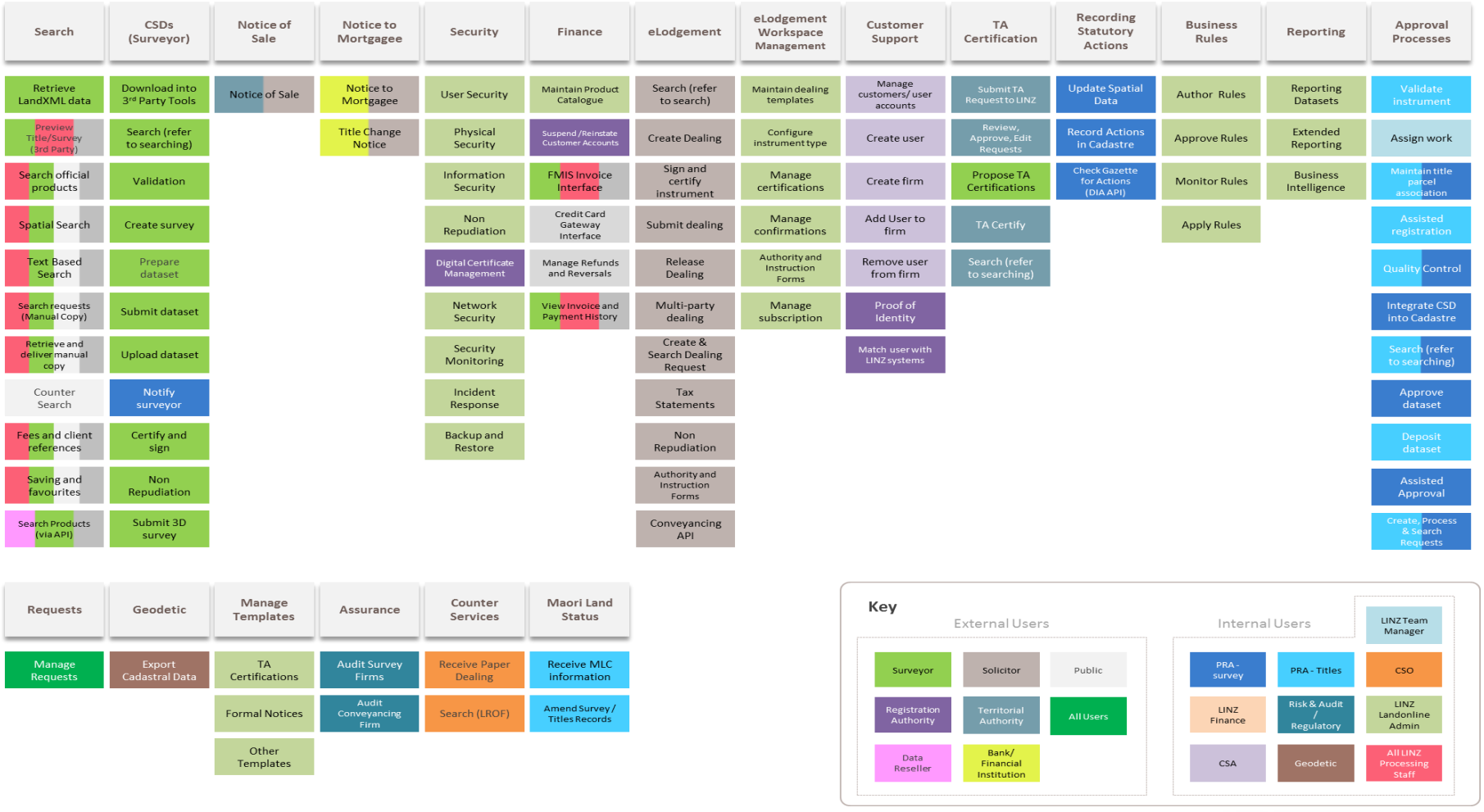
Description	Mitigation	Owner	Assurance activity	Probability/ Severity
Delay to release of "notices" products The release timing for notices products (notice of sale, and notice to mortgagee) may be negatively impacted if the survey and title fees review is not completed by the release date (if the setting of a fee is a mandatory release criterion for these products).	• Monthly reporting to Board • Dependency management to identify any early indications from fees review work • Weekly meetings at both an executive and team level have been established to build an integrated plan and manage dependencies • Consider release to market for a 'limited no fee' period • Consider delaying release timing to align with completion of related fees review work	SRO	• Board to agree criteria for how they will continue to monitor progress of this risk and what assurance is required to support this. • Monthly risk and dependency reporting	Possible Major

Appendix C: Assurance plan on a page



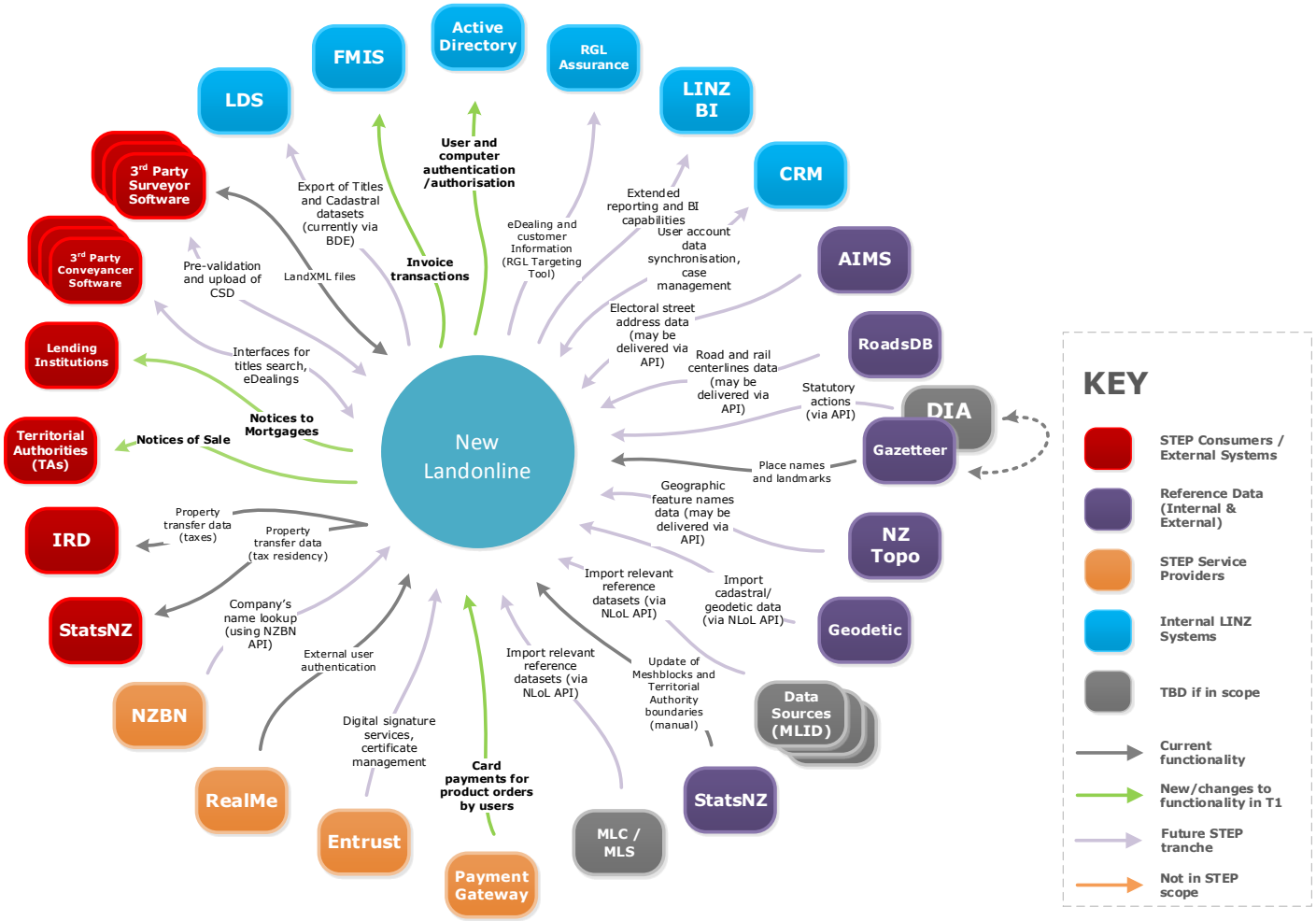
Appendix D: Overview of functional releases by user group

Capability View by User Group

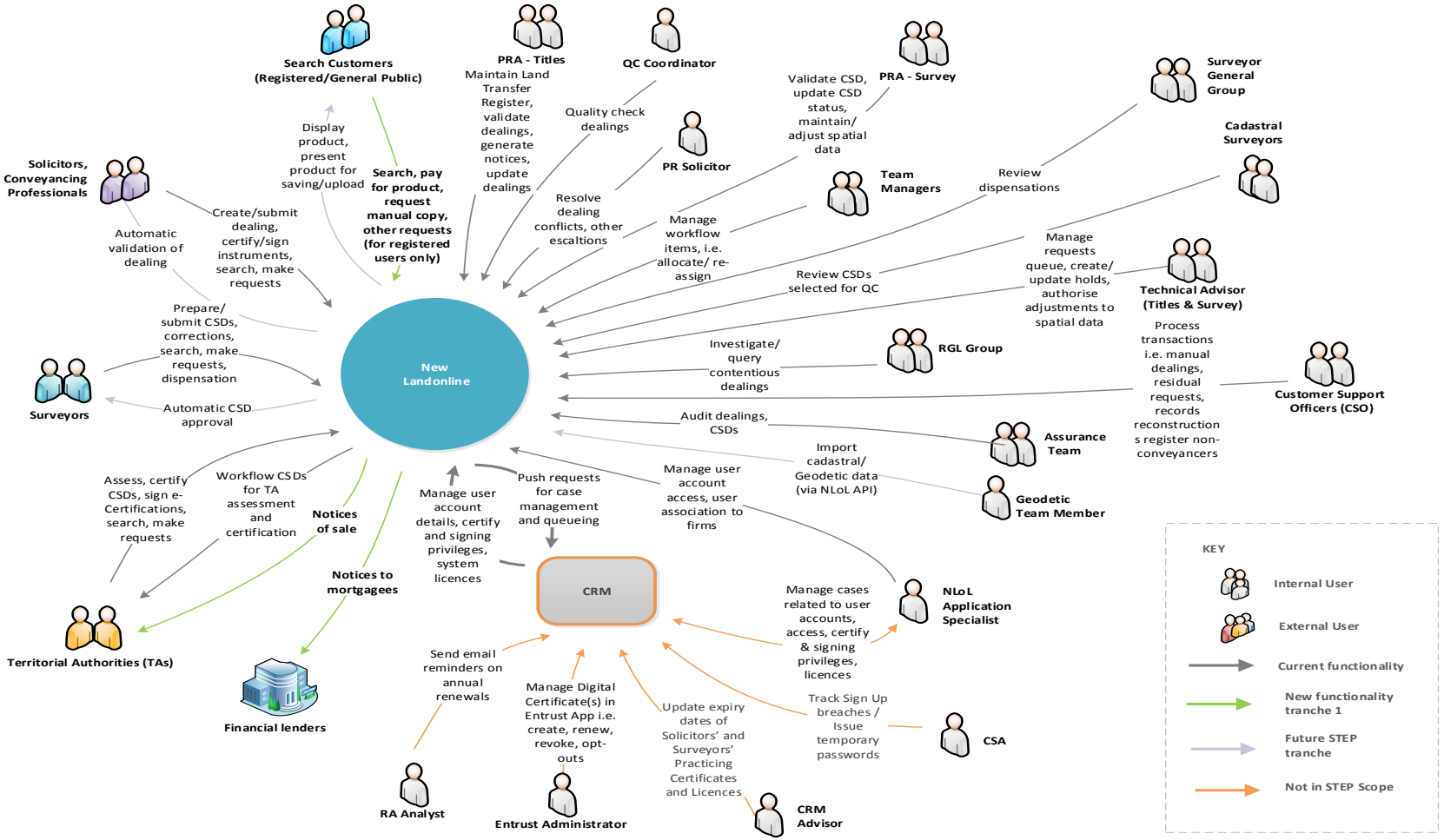


Appendix E: System to system integration by end of tranche 1

Changes from current to future state of system to system integrations during tranche 1 are represented by green arrows.



Appendix F: Business to system integration by end of tranche 1



Appendix G: Tranche 1 model data and key cost risk assumptions

Risks	Percentile	10	50	90
Mix of Days by Resource Type There is uncertainty over the final mix of internal to contractor to specialist consulting, for both development squads and programme support, required to deliver the tranche. This risk reflects this uncertainty.				
Day Rate Internal Resource (Development Teams) LINZ has budgeted to pay the market rate for required internal resource and has provisioned for variation to this. Since the PBC actual job sizing of key roles has enabled refinement of assumptions		[redacted]	[redacted]	[redacted]
Day Rate Internal Resource (Programme and Other Teams) LINZ has budgeted to pay the market rate for required internal resource and has provisioned for variation. Since the PBC actual job sizing of key roles has enabled refinement of assumptions		[redacted]	[redacted]	[redacted]
Day Rate Independent Contractor/Commodity Resource (Development Teams) LINZ has budgeted to pay the market rate for contract resource. The recent market response to LINZ RFQ for key agile roles has enabled refinement of assumptions		[redacted]	[redacted]	[redacted]
Day Rate Independent Contractor/Commodity Resource (Programme and Other Teams) LINZ has budgeted to pay the market rate. Initial appointments and market response to the recent RFQ for key roles has enabled refinement of assumptions		[redacted]	[redacted]	[redacted]
Day Rate Specialists and Consulting (Programme and Other Teams) LINZ expects to pay the market rate for capability partner resource. The recent market response to LINZ RFQ for key agile roles has enabled refinement of assumptions		[redacted]	[redacted]	[redacted]
Tranche 1 duration – months The risk of software development effort in tranche 1. The cost impact of longer duration (e.g. additional complexity or productivity shortfalls within squads) can be mitigated by altering the ramp-up and down of other squads		[redacted]	[redacted]	[redacted]
Programme and other resource sizing risk Risk that the resources needed to support the programme need to be increased		[redacted]	[redacted]	[redacted]
Platform Cost Risk – NZD to USD FX rate risk LINZ will pay for the AWS platform in USD. This risk identifies that the USD could move between USD$0.50 and USD$0.90 based on the trend over the last 10 years		[redacted]	[redacted]	[redacted]
Platform Cost Risk – AWS platform sizing. Risk that the configuration and dimensioning of resources and environments required from AWS to support tranche 1 is incorrect		[redacted]	[redacted]	[redacted]

Development Teams	*Optimistic*	*Expected*	*Pessimistic*
Internal Resource	60%	58%	48%
Independent Contractor	40%	42%	52%
	100%	100%	100%

Programme and Other Teams	*Optimistic*	*Expected*	*Pessimistic*
Internal Resource	60%	51%	41%
Independent Contractor	38%	46%	54%
Specialists and Consulting	2%	3%	5%
	100%	100%	100%

Appendix H: Benefits management approach