

Modernising Landonline The Survey and Title Enhancement Programme – Closure Report

Digital Delivery

Contents

Contents.....	2
Executive Summary	4
1. Landonline: critical economic infrastructure.....	6
2. Modernising Landonline: the case for change	7
3. Business case development	7
4. Cabinet supports rationale for an in-house build.....	8
Estimated capital cost in 2018: \$128 million.....	9
5. Modernising Landonline's objectives	9
Wide-ranging forecast benefits.....	9
2022 reforecast to \$175.7 million.....	10
6. LINZ delivered Horizon 1 on time and within budget.....	11
Transition to a new operating model	11
7. Value delivered to customers and New Zealand.....	11
8. How did we get there: the Delivery approach	14
Scaled Agile Frameworks - SAFe.....	14
A team of staff and specialist contractors.....	15
Executive buy-in	16
Delivery planning	17
Customer engagement - the "co-creation" approach	18
The Voice of the Customer	18
Customer days	18
Two-way communications with individual users.....	19
Proactive, timely, no surprises, tailored and supportive communications.....	19
Using "Quick wins" to build LINZ's SAFe capability	20
9. How did we get there – transition from "Project" to "Product"	22
10. How did we get there - Governance and risk and assurance monitoring	24
Assurance scope and approach	24
Assurance level 1: Agile Quality Management.....	25
Assurance Level 2: Ongoing programme Assurance	25
Governance Boards	25
Assurance Level 3: Independent external assurance	26

Gateway Reviews	26
SAFe assurance	27
Benefits monitoring	27
One-off issue-focused reviews	27
Other monitoring	28
Central agency monitoring	28
Joint Ministers and Cabinet	28
Risks, constraints and dependencies.....	28
Managing STEP-LINZ dependencies.....	29
11. How did we get there: Wider LINZ transformation and leveraging the STEP asset.....	30
12. Lessons Learned and Critical success factors.....	32
Appendix A – Allen & Clarke Final Benefits Assessment May 2025	35
Appendix B - Strategic Risks.....	36
Appendix C: STEP Initiative Master Roadmap (Example as at 23/8/24)	37
Appendix D: STEP Process artifacts.....	38

Executive Summary

1. New Zealand's official record of property ownership and boundary records is hosted on a computer platform called Landonline. Landonline, which has been in place since the early 2000s, is an essential tool for surveyors and conveyancers completing property transactions on behalf of their customers. Landonline is critical underlying economic infrastructure underpinning New Zealand's land-based property transactions. Landonline is administered by Toitū Te Whenua Land Information New Zealand (LINZ).
2. The modernisation of the legacy Landonline system was done via the Survey and Title Enhancement Programme (STEP) following Cabinet agreement to the Programme business case in November 2018. The modernisation of Landonline was completed in 2025, on time and within budget, having delivered almost all of its forecast benefits.
3. The programme is delivering value to New Zealanders through productivity benefits and by greatly improving the reliability, security and durability of the Landonline platform.
4. The programme prioritised being:
 - customer led
 - conducted in-house (no large commercial vendor), and
 - delivered via "Scaled Agile" methodology.
5. Delivering the programme required a strategic shift from traditional end to end programme delivery (also known as waterfall delivery) toward an iterative delivery approach emphasising flexibility and responsiveness to industry changes and needs.
6. Central to the programme's delivery was a customer engagement model built on well-established foundations with key property industry groups – primarily surveyors, lawyers, territorial authorities and financial institutions. Customer and staff working groups and day to day Landonline users were enabled to work directly with software development teams as modernised products and services were developed, allowing customer needs to be well understood.
7. Iterative releases of functionality (the central tenet of Agile methodology) allowed fast moving testing and refinement processes and quick resolution of issues. The result was releases of modernised functionality from 2020 onwards that was fit for purpose and praised for its intuitiveness and ease of use.
8. A key objective of the programme was to establish in-house capability that would allow LINZ to keep enhancing and maintaining Landonline without future one-off technology investments. Replacing the Legacy platform is not viewed by LINZ as

the “end” of the programme. Rather, is a step toward delivery of an on-going evergreen system that placed customers as key strategic partners when decisions on meeting survey and title system needs were made.

9. LINZ has successfully transitioned from a programme delivery focus to an internally governed operating model, with skilled software teams working within Agile frameworks to complete the final modernisation initiatives, maintain the platform and work with customers on future enhancements.
10. Detailed reporting to joint Ministers (Land Information, Finance and Digitising Government) and Cabinet updates were important for maintaining Ministerial trust and confidence in delivery. This reporting supported Joint Minister decision-making when authorising drawdowns of capital contingency funding made available to the programme.

1. Landonline: critical economic infrastructure

11. The LINZ administered survey and title system underpins New Zealand's land-based property rights market and facilitates the sale, purchase, and development of property. New Zealand was ranked by the World Bank in 2020 as one of the best in the world for the ease of registering property.
12. Property is an important source of wealth generation and provides the basis for lending activity. In New Zealand, confidence in property rights and accurate land information is vital for New Zealand's economy and trusted reputation nationally and internationally.
13. Property buyers and sellers rely on Landonline's central register of survey and title information, and the Crown guarantees that the issued property title is correct.
14. Landonline is used by 12,000 – 13,000 registered external customers (primarily conveyancers and surveyors) and 180 LINZ staff carrying out supporting processes. It is accessed by over 4,000 users a day and used annually for hundreds of thousands of property transactions and several million searches for property information. Landonline holds 2.3 million active land titles and 2.6 million surveyed parcels of land, including parcels for road and water such as rivers, lakes, and seabed.
15. Territorial authorities and financial institutions are important third-party system users. Territorial authorities use Landonline to certify that a survey plan complies with district plan and rely on accurate property data provided by conveyancers to update rating information databases when a property changes hands. Financial institutions receive solicitor notifications when a mortgage is registered or discharged against a property.
16. Other Landonline users include providers of property search services for clients such as land developers and the public, and agencies such as Te Kooti Whenua the Māori Land Court, a registry responsible for Māori land transactions. Māori Land Court orders are registered with LINZ to update the Māori Freehold Land Register.
17. There is also a broader community of property data users – for example, platforms such as Google Maps that use LINZ's core cadastral data to enrich their services. Every local council operates a geographic information systems, (GIS), and these systems likewise depend on that same foundational cadastral dataset.

2. Modernising Landonline: the case for change

18. Legacy Landonline's introduction between 1999 and 2003 (and 2003-2007 for customers online) was acknowledged as a world-leading first-generation digital transformation. Paper-based processes were automated (87 percent of title transactions are automated), survey and title data was integrated (a world first) and the efficiency of LINZ provided land transaction services was significantly improved.
19. By the early 2010s, Landonline's technology was reaching the end of its life. The platform was expensive to maintain and unable to respond quickly to changing requirements – for example when implementing legislative changes or keeping up with the modern day-to-day practices and technologies of surveyors, conveyancing professionals and territorial authorities.
20. Furthermore, ensuring the platform's security had become increasingly difficult, with the system's core PowerBuilder software language no longer recommended for use in new software development.
21. Other limitations included the fact users needed specific software to access Landonline, and it only worked on certain identified computers and operating systems.
22. LINZ essentially stopped enhancing Landonline in any major way in 2010. System security maintenance and meeting regulatory responsibilities was always prioritised over customer requirements when upgrades were made.

3. Business case development

23. LINZ began developing the case for modernising Landonline in 2013. In 2015, Cabinet agreed that the best investment option was to replace Legacy Landonline with a highly flexible second-generation modular IT platform delivered via a "non-capital-funded as-a-service" model.
24. Following a worldwide search for a solution, LINZ entered a discovery phase with an international supplier of electronic land titles services. LINZ concluded the firm's proposal was in fact a bespoke build for New Zealand and not a true as-a-service model based on an established client base and technology. Through the discovery process LINZ concluded instead of replacing its world leading platform, focus should shift toward modernising it. This would retain the system's strengths, including its business rules (the specific instructions built into the system that allowed land title automation and the depth of cadastral richness to be conducted) while addressing the aging platform's shortcomings.

25. LINZ and the international supplier then investigated an alternative capital-funded proposal and compared that with a counterfactual: an in-house LINZ build. This would involve LINZ directly managing programme delivery using New Zealand IT resources that leveraged the existing Landonline platform.

4. Cabinet supports an in-house build

26. In October 2018 Cabinet agreed to the preferred investment option and delivery pathway that would:
- modernise the existing system instead of a “big bang” replacement, and to do this in-house
 - build internal capability to keep the modernised system evergreen and adaptable
 - co-create with customers who would help design, test and promote the system.
27. LINZ’s analysis showed that an in-house build would:
- be more cost-effective (\$75 million cheaper than the technology partner’s offering),
 - deliver the same benefits, security and customer-focused outcomes without the risks of dealing with a third-party provider, and
 - provide more flexibility to adapt to customer needs as it would not be constrained by a commercial construct with a third party.
28. Upgrading the existing system would be less complex than migrating to a new platform, could be developed within New Zealand largely by local providers and developers, and could be designed for New Zealand’s unique requirements – an integrated survey and title platform that had not been replicated anywhere else in the world.
29. Furthermore, an in-house build would allow LINZ to maintain control and ownership of the new system, and the ability to more quickly make changes and deliver better functionality. LINZ could also leverage staff with deep knowledge of Landonline when re-platforming the system.
30. “Scaled Agile” was selected as the preferred approach for delivering an inherently complex large-scale technology programme. The Scaled Agile approach involves close collaboration with customers that allows quick responses to emerging information regarding business requirements and changing technology. In Scaled Agile new products and services are released iteratively (instead of at the end of a programme), an approach that also allows constant refinement of plans and estimated delivery costs during the design, build, piloting and release of new products or services.

Estimated capital cost in 2018: \$128 million

31. The programme's capital cost in 2018 was an estimated \$128 million over a 12 year whole of life period to 2030. This would be partly funded from LINZ capital reserves (depreciation) and the balance from a repayable Crown capital injection of \$103 million to be repaid by 2030.

5. Modernising Landonline's objectives

32. The programme's central objectives were to:
- deliver a flexible, modular, secure and readily adaptable technology platform able to meet customer's future needs
 - improve the quality and range of survey and title services
 - improve productivity and information flows by enabling the future integration of Landonline property data (with systems such as the Māori Land Court's Māori Land Information System)
 - provide better access to property information for the public and decision-makers
 - build a sustainable future for Landonline, with in-house capability to keep Landonline evergreen and a funding model that avoided the need for future large one-off capital investments.
33. The modernised platform would deliver changes to customers more regularly. Its modular design would make it easier to make system changes without having to test the whole system, allowing LINZ to meet current and future customer expectations and business needs in an Agile and proactive approach.
34. The system would also provide an updated and intuitive look and feel requiring less user training. Easily personalised settings would reflect how customers used the system. Information would be easily searchable.
35. The system would also connect with all common modern systems/channels including mobile devices.

Wide-ranging forecast benefits

36. The programme was expected to deliver wide-ranging financial and non-financial benefits to New Zealanders.
37. The highest forecast benefits were non-financial – the delivery of a secure, stable and adaptable technology platform that would obviate the significant risk posed by Legacy Landonline to both the reliability of the platform and confidence in the survey and title system (45 percent of the overall benefits profile). Other non-

financial benefits included an improved ability to meet customer and policy needs (30 percent), and improved productivity (25 percent).

38. Quantified financial benefits were conservatively estimated by the programme business case as being \$119.4 million; this was revised in 2019 to \$124.7 million.
39. Work began on 1 April 2019 with an initial focus on mobilising resources and building Agile delivery capability. The programme was deliberately set up to start small, build capability and allow LINZ to identify, learn and adapt from challenges early in the build. This would put LINZ in a stronger position to carry out more complex work later in the programme and ensure that outputs were properly integrated with the business and aligned with LINZ strategic outcomes – to operate a world class property system and provide high value geographic and property information.
40. In its first two years the programme developed and successfully released a suite of relatively straightforward and low risk customer service improvements. This built LINZ and customer confidence in Agile delivery, with customers being closely involved throughout the development of improved and new services. At the same time proofs of concept were developed and work started on the more complex process of replacing the legacy platform. See the “How Did We Get There” sections below for more on the delivery approach.

2022 reforecast to \$175.7 million

41. The programme navigated significant challenges in these first two years including the impacts of the Covid-19 pandemic. A baseline forecast in August 2020 showed the programme would be completed within its original budget. This position changed markedly through 2021 due to Covid impacts and the unavoidable flow on effects of high workforce turnover that was impacting the IT labour market.
42. Capital costs were subsequently reforecast in 2022 as rising to \$175.7 million, and the delivery timeframe extended by three years to 2026. However, LINZ did not seek additional Crown financial support to cover the increased costs as these could be covered by depreciation generated by New Landonline. Ninety percent of the cost escalation and delays were attributable to post-Covid IT sector job market conditions that caused extraordinary workforce turnover (up to 45 percent). This had significant flow-on effects on productivity and the original delivery timeframe.
43. Under revised settings agreed by Cabinet in 2022, the programme would be completed in two phases or “Horizons”. The Horizon 1 objective was to have all external customers and 80 percent of staff support processes using the upgraded platform by mid-2025. Horizon 2 would involve migrating the Landonline database and remaining staff support functions by December 2026. The revised

settings and funding approach were discussed with and supported by industry stakeholders.

6. LINZ delivered Horizon 1 on time and within budget

44. LINZ delivered the programme's Horizon 1 objective in mid-2025, on time and within budget, and delivered a forecast productivity and system reliability and security benefits.
- Approximately 10,000 titles customers were migrated to the modernised platform in a phased approach during February and March 2025.
 - The last of three surveying applications went to open release to 2000 surveyor customers in July 2025.
 - Titles customer access to the legacy platform was switched off in March 2025 and survey customers in September 2025.
 - Eighty percent of supporting staff processes were live on the platform.
 - Local authorities and financial institutions were receiving timely and accurate notifications of property ownership and mortgage transactions.
 - A highly used public land record search service offering straightforward online access to property information LINZ holds.

Transition to a new operating model

45. Delivery of Horizon 1 allowed LINZ to wind up the programme and complete the planned transition from large programme delivery team to a smaller business as usual team within the LINZ Digital Delivery group. That smaller team is delivering the Horizon 2 initiatives, and forms the core of the enduring in-house capability that will carry on the work of maintaining and enhancing the new platform Landonline into the future, as envisaged by the programme business case

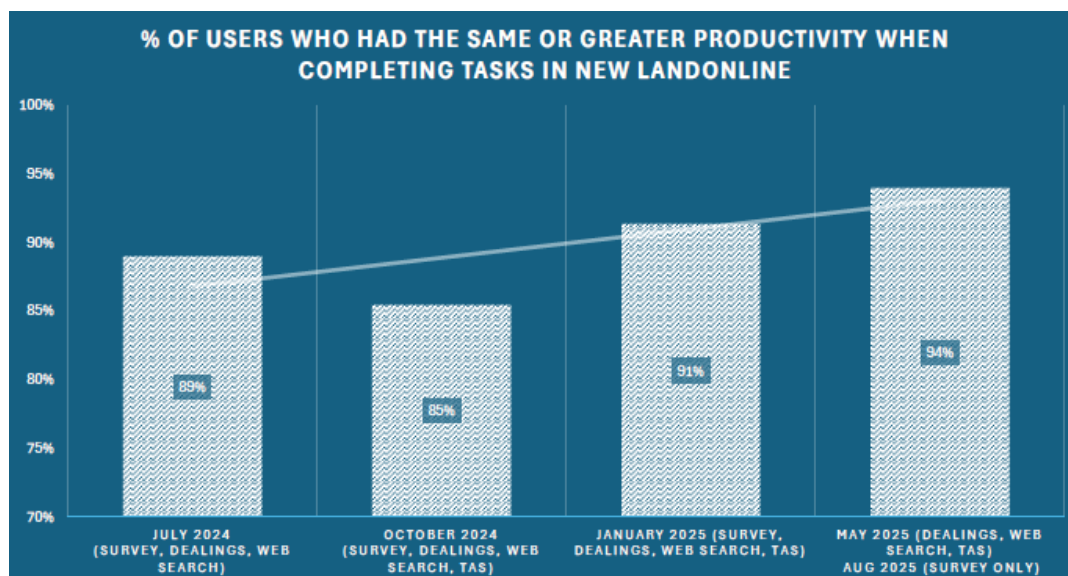
7. Value delivered to customers and New Zealand

46. An independent assessment of benefits to 31 March 2025 when Horizon 1 was completed [Appendix A] summarised what the programme has delivered:

"Modernised Landonline is a flexible, modular, secure and adaptable technology platform, offering higher quality survey and title services and able to cover a broader range of transactions. It has an improved user interface, can be accessed by modern internet browsers, system changes can be more quickly implemented than its predecessor, is highly reliable (typically over 99.6% uptime) and more available (an additional 25% more hours user accessibility per annum)... the associated financial benefits are substantial, and these improvements are expected to have a flow-on effect in terms of improved economic value."

47. The assessment concluded the programme had delivered almost all non-financial and financial benefits forecast in the 2018 programme business case. This included financial benefits totalling \$124.7 million over the programme's 12 year whole of life period to 2030 (the bulk of which was enabled with the release of Search and Notices products in 2020/21).
48. Delivery of non-financial benefits, the programme's primary drivers, mean New Zealanders can continue to have confidence in the security and reliability of the Landonline platform because risks to system security and reliability posed by the Legacy platform had been substantially reduced, and LINZ's ability to meet customer and policy needs has significantly improved.
49. Overall, the assessment found total benefits were likely to exceed original expectations because modernised Landonline offered better functionality than envisaged, use of some products was higher than forecast (e.g. the public land record search service), and new sources of value (emerging benefits) had been identified as the programme progressed:
 - a. a public land record search service that was forecast to deliver real-time access to 26,000 records a year via the LINZ website has proven extremely popular, delivering just under 200,000 records in 2025.
 - b. a prototype digital survey plan viewer with potential to render plans in minutes compared with weeks in the case of complex survey plans, will deliver substantial productivity gains for surveyors once implemented.
 - c. automated data exchange notifying banks and territorial authorities of mortgage transactions and ownership changes was delivering time savings to those institutions. District valuation roll data (all information a council holds about individual properties) from each council was now available from LINZ for local and central government purposes.
50. Customers and staff have reported productivity uplifts. Over 90% of customers surveyed by LINZ (June 2025) reported the same or greater productivity when

completing tasks in New Landonline. Thirty-three percent reported productivity uplifts of between 20% and 50%, and 10% reported a higher than 50% increase.



51. A small number of forecast benefits were still to be delivered at the end of Horizon 1. These included benefits attributable to modernising the Landonline database, development of 3D cadastral survey plans, development of application programme interfaces (APIs)¹ and further automation of survey and title transactions from the current 87%.
52. The flexibility built in to Scaled Agile development allowed delivery of these initiatives and associated benefits to be reprioritised after consultation with customers and major stakeholders (covered in more detail below). Crucially, their delay did not prevent delivery of the programme's core objectives.
 - The database modernisation will now be completed as the last deliverable at the end of Horizon 2.
 - 3D survey functionality was deferred after industry advised they were not ready for its delivery.
 - APIs are best provided after the database modernisation, furthermore, experience from similar programmes suggested that implementation of an API channel requires considerable planning and ongoing business effort to maintain.

¹ APIs would provide direct access to Landonline data - viewed in the business case as a useful contributor to improved sector productivity.

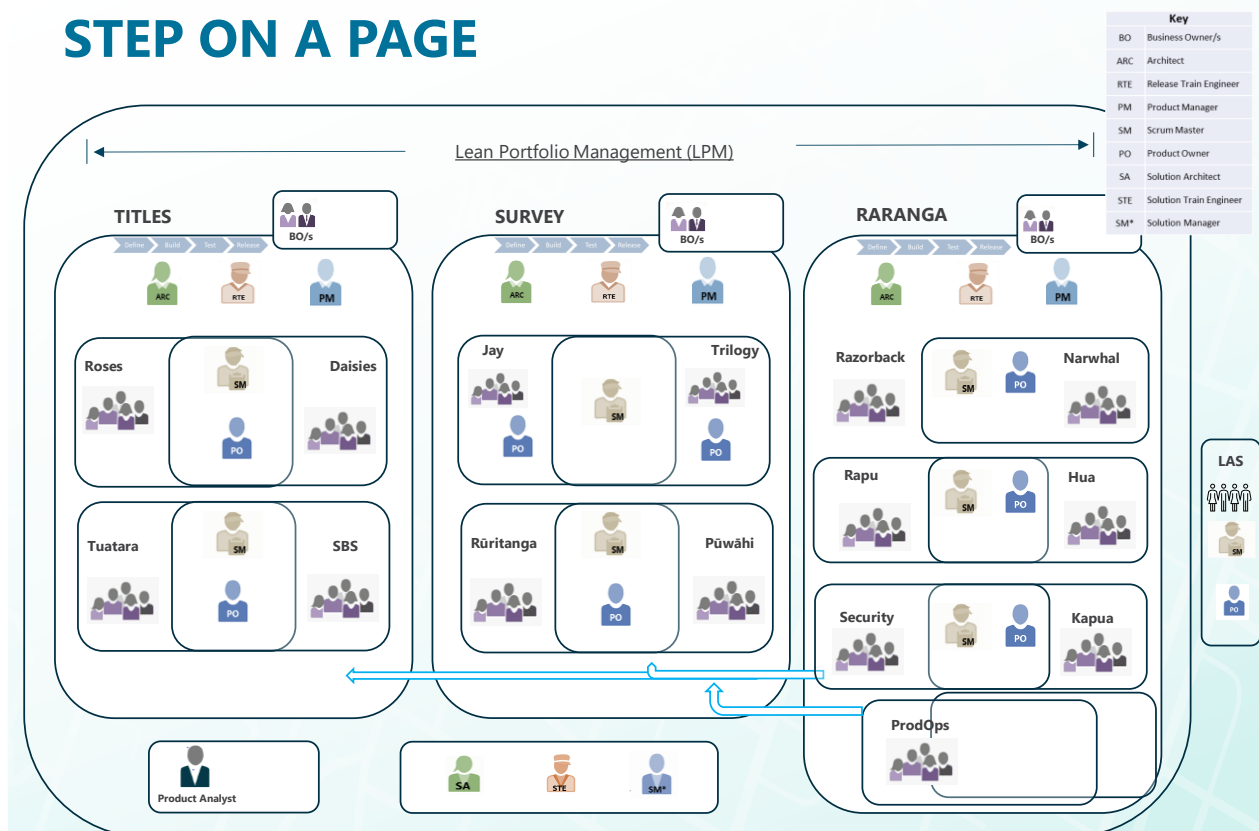
8. How did we get there: the Delivery approach

53. The delivery approach LINZ adopted for STEP differed from many other large Government technology programmes in being an 'Agile', customer-led, in-house development using New Zealand IT resources. The key features of this approach are discussed below.

Scaled Agile Frameworks - SAFe

54. Agile delivery is an approach that enables programmes to:
- respond quickly to change
 - focus on continually delivering value to customers
 - endeavour to make work open and transparent
 - build and maintain a learning culture.
55. Agile allows rapid design, testing, piloting and iterative releases of new functionality. Instead of waiting months for results, customers can see prototypes within days and working solutions within weeks. This speed and flexibility are a big shift from traditional IT projects where customers are typically introduced to new products toward the end of a development without the same level of customer input and testing.
56. The programme adopted "Scaled Agile Frameworks" (also known as SAFe methodology), a scaled-up version of Agile for managing larger and more complex programmes. A team of up to 180 at its peak (about half of whom were specialist software experts) delivered products to customers regularly, with detailed planning and delivery conducted in 12-week cycles called Programme Increments, further divided into six two-week delivery "sprints".
57. The workforce comprised small teams or squads of approximately 12 specialists working to deliver the 40 initiatives (known pieces of work that would take more than an increment to complete) LINZ estimated would need to be completed to reach the Horizon 1 goal. To keep momentum running, these cross functional squads were given freedom to act (within guide rails) to solve problems and make decisions quickly.
58. These teams were clustered into three groupings known as Agile release trains. Two focused on survey and title product delivery and a third built components and capabilities shared by customers and across the programme.

STEP ON A PAGE



59. The process of iterative releases to customers would typically involve:
- direct input from customers and “voice of the customer” staff (discussed below) as software teams developed a product or service,
 - initial pilots with small groups of users allowing issues to be identified and resolved,
 - expanded pilots followed by a full open release to all customers who are supported by customer engagement teams throughout the onboarding process.

A team of staff and specialist contractors

60. Specialist contractors (primarily software developers) made up 60 percent of the programme workforce at the height of the programme. This was higher than anticipated because of ongoing difficulties securing permanent staff in post-Covid IT recruitment market conditions.
67. The skillsets utilised in delivering the programme are listed below:

- Product Management & Business Ownership – to maintain on behalf of the customers a prioritised backlog of Initiatives and smaller work items and approve scope and delivery into production.
- Architects – to build an architectural roadmap allowing LINZ to plan and ensure the squads had enough runway to build the solution (to avoid re-work).
- Product Owners – manage the backlog of products a team is developing and is accountable for their delivery.
- Business Analysts – to work ahead with the architects and product owners to build the backlogs for delivery. Ensuring enough work and steady flow to the squads.
- Release Train Engineers and Scrum Masters - with SAFe and big programme delivery experience. This was essential for implementing a sustainable way of working (SAFe) and building resilience to drive delivery.
- User experience and User interface specialists – to design modern and user-friendly interfaces for our customers.
- DevOps and Cloud expertise – fundamental in enabling automated continuous delivery (e.g. Daily deployment to production) and implementation and support of the modern public cloud services/products.
- Change managers – responsible for managing change impacts for customers and staff.

Executive buy-in

62. Executive buy-in to SAFe methodology was essential, with a deputy chief executive installed as the programme's senior responsible owner. One of the most significant shifts undertaken by the organisation – including at the executive level – was the transition to Agile based decision making. The effectiveness of the Agile model is realised when small, cross-functional squads are established and empowered to resolve specific problems, such as developing new components of a system. To enable this, the organisation needed to provide teams with the autonomy to act within clearly defined guiderails while ensuring overall momentum was maintained.
63. Within Agile practice, there is frequent reference to “feeding the standing army.” This reflects the need to keep a sizeable pool of resources consistently productive. Achieving this requires rapid and well-timed decision making. As an organisation it was necessary to learn the cadence of Agile delivery, to recognise when decisions needed to be escalated, and to understand when teams should be entrusted to make those decisions independently.

64. The organisation approached this by developing a clear understanding of Agile principles, determining how they would be applied, identifying key ceremonies and decision points, and ensuring appropriate leadership engagement at those moments. For instance, the programme conducted 12-weekly increment planning to determine the work to be undertaken in the upcoming cycle. To ensure effective business involvement, business owners were appointed for different components of the system, enabling stronger alignment and maintaining connection to the wider organisation.

Delivery planning

65. In the early stages of the programme, substantial effort was invested in developing comprehensive roadmaps and identifying the full set of activities required to demonstrate delivery against the business case. These activities were structured into approximately 40 defined initiatives.
66. Delivery roadmaps [Appendix C] generated short to long term views on forecast delivery timings. These were based on current knowledge and subject to ongoing refinement based on reprioritisation and knowledge gained as the programme progressed.
 - A **Solution Roadmap** provided a long-term (1-3 year) view showing the key milestones and deliverables needed to achieve programme objectives over time.
 - A **programme increment roadmap** – a one-pager describing commitments for each 12-week increment and an idea of the epics (specific packages of work toward delivery of a product or feature), milestones and initiatives expected over the next 2-3 increments.
 - A **product roadmap** – a working document that provided much of the detail needed for increment planning and inform higher level documents.
67. While roadmaps provided a clear path to the programme's objectives, individual components were only activated when required. At that point, they were assigned to squads, which determine the specific work needed based on current information. Rather than relying on an outdated, static requirements document created years in advance, requirements were developed collaboratively with customers at the time each system component was ready for development. This ensured that the solution remains current, relevant, and aligned with customer needs.
68. Throughout this work, the programme balanced key questions regarding remaining scope, cost, and overall achievability. To support this, sophisticated forecasting and estimation tools were used to assess expected effort, with progress and technical complexity reviewed every two weeks. Reporting drawn from day-to-day activity was evaluated against long-term objectives, enabling the programme to maintain clear visibility of its trajectory.

Customer engagement - the “co-creation” approach

69. The programme’s customer engagement teams were closely involved throughout the delivery cycles, engaging with and preparing customers for product releases. LINZ leveraged long-standing stakeholder and customer relationships forged during the original Landonline project (1999-2003) and the external transition phase (2003-2007) to build the partnership approach essential to successful Agile delivery.
70. Two innovations – dedicated voice of the customer representatives and quarterly customers days were key to the partnership’s success.

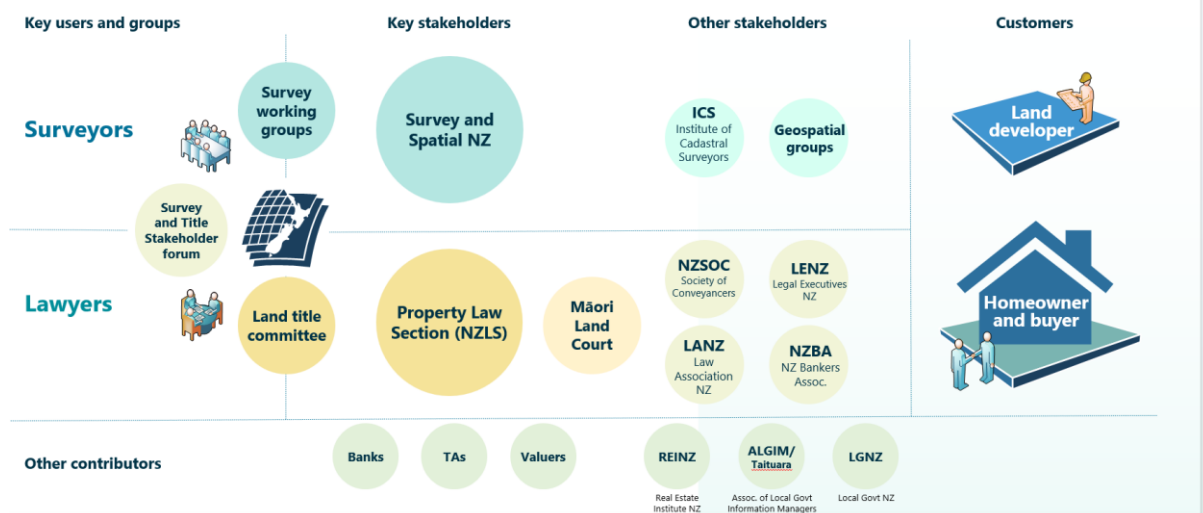
The Voice of the Customer

71. Two dedicated full-time voice of the customer roles representing the two major customer groups were embedded in the programme: a consulting surveyor and legal practitioner. These roles had a dual purpose:
 - carrying expertise from the legal and cadastral surveying professions directly into the development squads, ensuring that when features were developed, squads understood how they would work in a business setting.
 - taking products and services back to their respective communities, helping drive adoption and uplift of new functionality.

Customer days

72. Quarterly “customer days” allowed software teams and programme leaders to showcase programme progress and hear feedback from the two longstanding reference groups LINZ has worked with since the original Landonline build: the **Land Titles sub-Committee** of the New Zealand Law Society and the **Cadastral Survey Working Group** convened by LINZ with Survey and Spatial New Zealand. Each group is comprised of professional practitioners from around the country.
73. Customer day meetings with those groups were followed by meetings with a Survey and Title **Stakeholder Forum**, a senior reference group for the LINZ Chief Executive. This strategically important group included the President of Survey and Spatial New Zealand, the Chief Registrar of the Māori Land Court, and the Chair of the Property Law Section of the New Zealand Law Society, among others. This group helped LINZ share the programme’s roadmap and major milestones with its members and provided high-level input on how LINZ could better serve their communities. They were also a sounding board on financial matters such as project funding and industry fees.

Customers and broader sector enablement



74. These same relationships were leveraged in other ways. Customer engagement team members routinely presented at national conferences and regional meetings of professional bodies, contributed to professional publications, participated in or ran webinars on new functionality as new releases neared, and used social media to build awareness of new services or functionality

Two-way communications with individual users

75. Individual platform users were able to provide immediate feedback or raise issues with a product owner via an on-screen button that opened a free text messaging screen. Later in the programme formal customer feedback on Landonline performance and productivity impacts was sought via quarterly surveys.

Proactive, timely, no surprises, tailored and supportive communications

76. The key features of the communications approach included:
- Taking a proactive approach to ensure key stakeholders and customers have accurate, timely information and a good understanding of what was happening and when.
 - Operating a 'no surprises' policy by providing regular information and updates to target audiences.
 - Ensuring key messages were tailored for specific target audiences so they were clear, concise, and easy to understand.
 - Designing and updating instructional support content to help customers use the new Landonline tools.
 - Using a range of channels to provide information.

- Monitoring customer sentiment so emerging issues are recognised and quickly addressed.
- Working closely with the Product Managers/Owners to identify opportunities for customer perspectives to influence feature design and implementation.
- Encouraging a culture of customer-centricity.

Using “Quick wins” to build LINZ’s SAFe capability

77. “Quick wins” – a suite of relatively straightforward to develop and low risk customer service improvements – were planned and delivered within the programme’s first two years. This allowed LINZ to build its capability in SAFe delivery and deliver proofs of concept for the more complex work of replacing Landonline that would follow. Importantly it built customer support and stakeholder confidence for working with LINZ in an Agile approach.
78. Quick wins were designed to address pain points felt by the public, territorial authorities, conveyancers and financial institutions when accessing property information. Called “Search and Notices” products, these were mortgage and property transaction notification services for banks and territorial authorities, and web-based property search services for the public and registered Landonline users. These were designed to improve access to property information, streamline aspects of the conveyancing process, and provide territorial authorities and banks with accurate and timely notifications of property transactions for rating and mortgage registration purposes. Their successful delivery would unlock most of the \$124 million in financial benefits forecast in the programme business case.

Notice of Change of Ownership

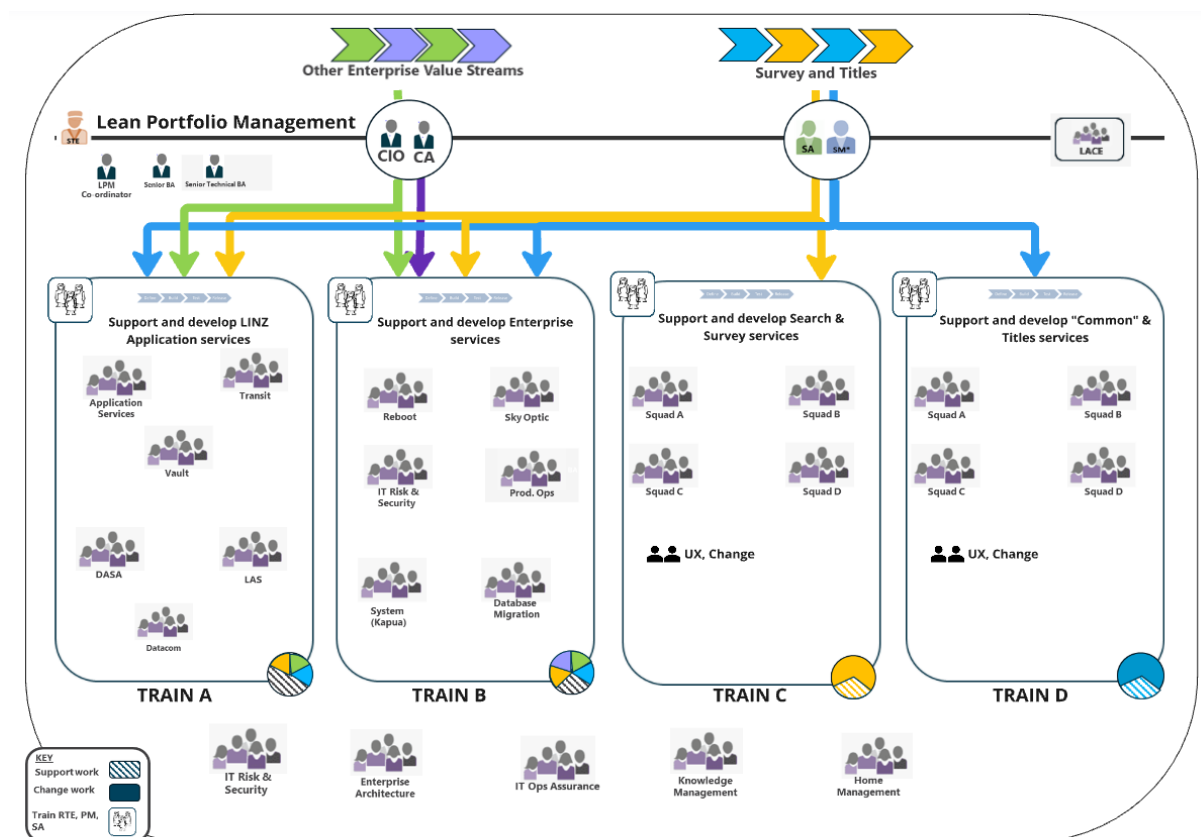
LINZ identified a pain point affecting two customer groups: councils and lawyers. Councils need timely and accurate ownership change data to update their rating databases but were receiving poor-quality data from lawyers. Meanwhile, lawyers were frustrated by having to manually duplicate ownership change information in two separate systems—one for councils and one for LINZ.

Since LINZ sits in the middle of the process, it proposed the Notice of Change of Ownership service that aimed to collect the data once – accurately and legally – and then sharing it with both parties. Using Agile methodology, LINZ UX designers went out to lawyers' offices and sat with legal executives. They used simple tools like paper and pencil to co-design an ownership change notification form that would fit naturally into their workflow. With that input, development squads turned that into a modern, intuitive form that lawyers could use and share with councils

LINZ piloted Notice of Change with Tauranga City Council and local lawyers in May 2020. The pilot was a success and was eventually rolled out to all lawyers and territorial authorities over the next two years.

9. How did we get there – transition from “Project” to “Product”

79. The planned transition from programme delivery to a smaller business as usual team within the LINZ Digital Delivery group responsible for the ongoing development of our Survey and Titles Products, formally took effect from 1 April 2025. STEP squads needed to complete residual business case deliverables (database migration, staff support functions, ongoing platform maintenance and enhancement) were combined with the group’s Information Strategy and Delivery (IS&D) teams responsible for providing LINZ information technology services.
80. Planning for the transition took place over the preceding year with development of an operating model (aligning work to support LINZ value streams), a workflow model (how work would be prioritised and delivered) and an organisational structure.
81. The new Digital Delivery operating model has two value streams: Survey and Title (encompassing the ongoing work of the survey and title teams); and Enterprise Services with its broader remit of providing LINZ IT infrastructure, platforms, application and desktop services, and application development.



82. Four Agile release trains reflecting different capabilities work together to deliver value across the two value streams. Small enablement teams such as IT risk and

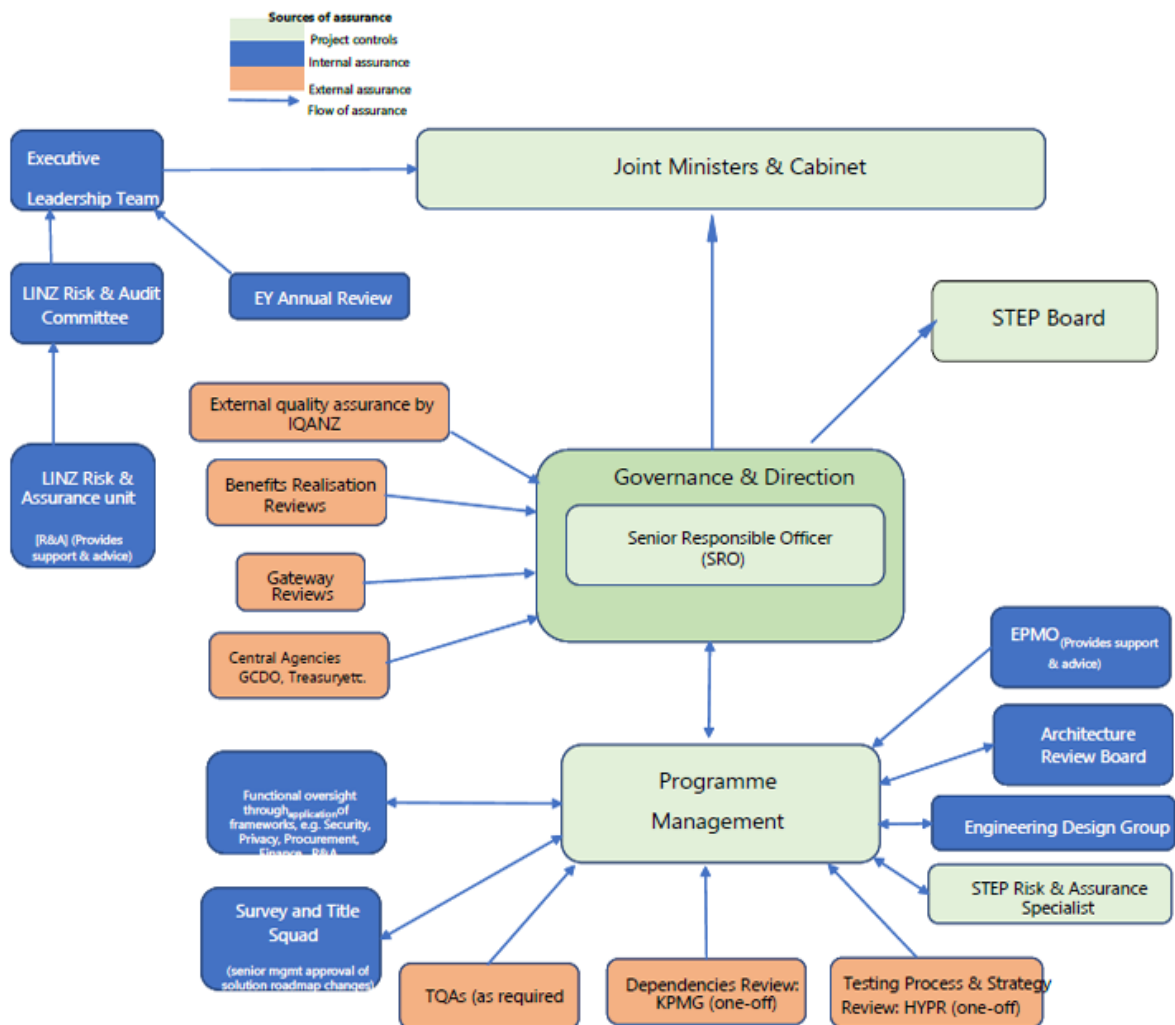
security, Enterprise Architecture, and Knowledge Management sit outside the release trains. SAFe “Lean Portfolio Management”² works across the portfolio to maintain transparency and alignment of the group’s work.

83. Customer-centricity is paramount to the ways of working model, with scaled Agile (SAFe) the framework of choice for delivery. This shift for teams providing Enterprise services was supported by training initiatives.
84. Effective leadership, good communication and transparency was central to the transition which was introduced gradually in the months up to March 2025. At the same time considerable effort went into finalising and introducing the new workflow model, including high level analysis of the work needed for completing the STEP business case and bringing forward higher risk work to mitigate risk.
85. Governance was embedded into our day-to-day business, with the LINZ executive taking over from the programme’s external board and an Internal Survey and Title Squad taking a greater role in work prioritisation.

² Lean Portfolio Management is a SAFe capability that helps organizations adapt to the fast-paced and uncertain digital era by aligning strategy and execution, optimizing investment decisions, improving value delivery, and enhancing transparency over value delivery.

10. How did we get there - Governance and risk and assurance monitoring

87. The diagram below illustrates the assurance model in place for the programme



Assurance scope and approach

88. The programme's multi-layered approach to assurance was aligned with Government Chief Digital Officer's "lines of assurance":

1. **Agile quality management** – Agile employs multiple tools, techniques, and ways of operating at a team level that provide assurance over the team activities. This aligns to GCDO “first line of assurance” which includes the day-to-day Agile delivery processes and controls. The first line of assurance also included the function of STEP Risk and Assurance Specialist.
2. **Ongoing programme assurance** – controls to manage the programme and provide assurance to its governance layer (Product Governance) and LINZ’s governance layer. This aligns to GCDO’s “second line of assurance”, related to the governance and oversight arrangements.
3. **Independent external assurance** – to control for bias and the perception of bias. This aligns to GCDO’s “third line of assurance” – the independent assurance obtained from internal and third-party assurance providers.

Assurance level 1: Agile Quality Management

89. Quality management activities in Agile were built into delivery using inspections, reviews and retrospectives; Agile delivery encourages continuous identification and implementation of improvements and identification of risks. Reviews were undertaken throughout rather than waiting until the end of the process (as is often the case with waterfall). Reviews were performed in the cadence of the programme to evaluate the major project processes. These reviews evaluated sprint planning activities, daily stand-ups, sprint reviews and retrospectives, backlog grooming, stakeholder engagement, and management of impediments or other issues.

Assurance Level 2: Ongoing programme Assurance

Governance Boards

90. The STEP programme Board was the programme’s key decision-making forum, maintaining oversight of deliverables, providing direction, monitoring and reviewing delivery status, and benefits realisation. The Board worked through a schedule of activities each programme increment:
- An end of increment review including financials/epic points/minimal responsible product burndown
 - Risk and Assurance review including risk comfort / concern level and effectiveness of controls
 - Benefits progress reporting
 - Squad presentations.
91. Three board structures were used up to delivery of Horizon 1:
- 2017- mid 2020: an independently chaired in-house board comprised of the LINZ executive and three external members focussed on establishing the programme through the Cabinet authorisation phases and establishment

phases

- Mid 2020 to January 2023 – an internal board of solely LINZ Kaihautū (mid 2020 to February 2023) took over to ensure the right level of internal focus and coordination across the organisation for what was a very significant internal delivery for LINZ
 - February 2023 – May 2025: An independent external board (three independent board members and the LINZ chief executive). Governance was returned to the LINZ executive team at the end of Horizon 1.
92. The primary role of the external governance board was to oversee the successful delivery of the programme within scope, time and budget and realisation of forecast benefits. The board was established, after agreement from Cabinet, after post-Covid job market conditions resulted in cost escalations that arose in 2022 (paragraph 41). The board met approximately every six weeks.

Assurance Level 3: Independent external assurance

93. In addition to the independent board, three further strands of independent assurance were in place that provided critical assessments of progress and recommendations for improvements: Gateway reviews, SAFe assurance and benefits monitoring.

Gateway Reviews

94. Two Treasury-led Gateway reviews were conducted after the programme began. The first in 2020, resulted in an Amber/Green delivery confidence rating. The second, in 2021, a “Mid-Stage Strategic Assessment” resulted in a Green rating, the highest possible Gateway outcome. The review found that STEP:
- had established a mature scaled Agile programme
 - had struck a good balance between leadership and delegated decision making
 - had produced products customers liked and that they supported the customer centric approach
 - had exceptional support from industry stakeholders and Central Agencies
 - was delivering at pace, adapting and innovating as new challenges emerge.
95. Several processes and artefacts developed by the programme were identified as best practice:
- A cloud-enabled deployment capability that allowed LINZ to deploy new environments in 15 minutes, removing the typical delays in technical development and enabling delivery in a very Agile way.

- A release process that enabled functionality to be switched on or off in production as needed. This allowed LINZ to selectively deploy functionality when customers were ready to receive it.
- A comprehensive co-design approach with stakeholders and customers
- An Agile culture and way of working throughout the organisation that would benefit the programme, LINZ and the wider Public Service.

SAFe assurance

96. Independent Quality Assurance NZ provided continuous independent quality assurance advice to STEP leadership and governance from late 2019 to mid-2024, based on reviews of activity during each programme increment.
97. Initially IQANZ's focus was on the effectiveness of increment planning processes, the establishment of delivery squads and governance oversight of programme risks.
98. From 2022 targeted assurance was provided on:
 - how well the SAFe framework was being applied to programme control processes,
 - ensuring alignment of communications and prioritisation across programme, release train and squad levels
 - integration of the programme with wider LINZ
 - delivery of planned increment outputs
 - a broader governance assurance focus on planning and prioritisation activities in addition to risk management.

Benefits monitoring

99. Progress delivering benefits was tracked and reported to the governance board every increment by an independent benefits advisor (see paragraph 46).

One-off issue-focused reviews

100. From time to time the programme sought independent technical assurance and reviews of specific aspects of programme delivery. One-off technical quality assurance (TQA) assessments were sought on the programme's database migration strategy, architectural approaches and automated software testing processes; two external reviews were conducted on how well interdependencies between STEP and other parts of LINZ were being managed. The value of these one-off reviews lay in the assurance provided that courses of action (for example the database migration strategy developed by the programme) would deliver their

intended outcomes. In the case of the review of interdependencies, it led to a fundamental shift in delivery approach (discussed in more detail at paragraph 109)

Other monitoring

Central agency monitoring

101. A grouping of “central agencies” was involved in the development of the 2018 programme business case. These agencies included The Treasury, Department of Internal Affairs, Department of Prime Minister and Cabinet, Public Service Commission, Ministry of Business, Innovation and Employment.
102. Central agency monitoring continued throughout programme delivery (primarily The Treasury, DIA, Public Service Commission and DPMC) via regular meetings and updates, or advice when necessary – such as when LINZ navigated cost escalations in 2022. Agency comment was sought when LINZ prepared Ministerial briefings and Cabinet updates.
103. DIA’s Office of the Government Chief Digital Officer monitored delivery as part of its assurance function in relation to major government IT programmes. Investment updates were provided to the Minister of Finance via Treasury’s Quarterly Investment Reporting process.

Joint Ministers and Cabinet

104. The Minister for Land Information updated Cabinet approximately every six-months in the programme’s first three years. This was extended to annual updates once the programme was established and on track.
105. LINZ reporting to joint Ministers (Land Information, Finance and Digitising Government) was aligned to project cadence, with detailed reports provided at the conclusion of each 12-week programme increment. These were designed to provide transparency and confidence in programme delivery. Joint Ministers’ primary responsibility was to approve drawdowns from the \$103 million repayable capital contingency allocated to the programme in Budget 2018. Drawdown requests were planned and timed to ensure a continuous funding stream, avoiding any risk of being forced to stop and start the programme.

Risks, constraints and dependencies

106. Risks were managed and reported at both Board and programme level, and to LINZ’s external Risk and Assurance Committee. The Board monitored seven strategic delivery risks [Appendix B]. Operational programme-level risks were reported to the programme’s SRO. Risk reporting was managed right down to individual squad level with teams assessing and mitigating risks, and escalating risk when needed. The embedding the two “voice of the customer roles”

representing the survey and conveyancing customer groups added a further layer of assurance.

107. Unanticipated delivery complexity was managed throughout the build. It was always understood that initial evaluations of the work required to deliver a new Landonline product or service (in most cases several years prior to work on a feature beginning) could end up needing more effort than estimated. When higher complexity work was encountered SAFe methodology ensured it was detected and managed appropriately, with activity reprioritised where needed.
108. Higher than forecast workforce turnover (discussed in detail at paragraphs 41- 43) was a significant unanticipated risk that resulted in costs exceeding the original 2018 forecast.

Managing STEP-LINZ dependencies

109. The programme's first major challenge arose in its first year (2019) and led to an independent review of how well dependencies between STEP and the rest of LINZ were being managed. The review highlighted shortcomings in the way programme dependencies were being managed across the organisation. Key findings noted the lack of a shared view of the scope and impact of STEP, nor had LINZ developed an integrated view of how change impacts of STEP and other major LINZ activities would be managed.
110. The review led to two key decisions. STEP was rescoped as a business-led transformation with connections across the organisation. Secondly, to support the expanded scope a new role was established – Deputy Chief Executive Business Transformation who would also be the programme's senior responsible owner. The review also led to the placement of "business owners" within STEP workstreams to ensure wider business objectives were being met as products and services were developed.

11. How did we get there: Wider LINZ transformation and leveraging the STEP asset

111. Achieving the broader STEP goal of modernising services and reshaping how the property sector worked required LINZ to also look at the extent to which Agile practices were adopted throughout the organisation.
112. Questions from the outset included: How do we move the organisation toward being more agile? How do we make the whole organisation customer centric? And how do we support that with strong core technology? Those ideas became the foundation of the LINZ *Organising Ourselves* programme implemented over 2020-2024.
113. LINZ did not change the organisation to be agile simply for the sake of agility. STEP was made fully agile to prove that it worked, and other areas have adopted Agile practices where they saw value. LINZ will continue to adopt SAFe practices where it makes sense. The Digital Delivery group has fully adopted the SAFe framework, but this was not a good fit for the whole organisation.
114. How LINZ sustains what has been delivered through STEP is a critical strategic question for LINZ. Themes raised at transition workshop involving STEP Board and the LINZ executive team (August 2024) covered:
 - Maintaining momentum, sustaining and building on the STEP asset
 - Embedding STEP ways of working at LINZ
 - LINZ's role as a key enabler in the wider data ecosystem
 - Leveraging LINZ expertise/experience with government agencies
 - Supporting the government drive for innovation and productivity.
115. STEP's independent board believed it essential to ensure momentum was maintained and to avoid the transformation experience of other organisations that lost momentum once a technology build had been completed. "We've built the engine. Don't invest then run and leave ...or revert to old ways of working...think 10-30 years ahead".
116. Having proven the SAFe Agile delivery model, the board urged wider adoption of scaled Agile, voice of the customer and vertical integration through use of business owners.
117. LINZ has a potential role as a key enabler in the wider data ecosystem and the government's drive for innovation, productivity and longer-run system change. STEP is closely aligned to LINZ's strategic and broader public sector context.

Opportunities exist for LINZ to contribute to wider reforms (e.g., housing, planning), particularly through its strengths in data and regulatory functions. LINZ's distinctive strengths included its funding model, strong relationships, and the capability built through STEP.

12. Lessons Learned and Critical success factors

119. The following outlines the key lessons learned through this programme and factors that were critical to its success:

- **An in-house build** allowed LINZ to use resources as it saw fit. LINZ had control over the calibre of people hired and the programme could operate as one team with a strong team culture - which is difficult to achieve with a third party.
- **Choose a methodology (SAFe) and adhere to it rigorously.** This enabled LINZ to build a mature SAFe environment. After initially not taking advice, external SAFe expertise proved valuable (skills were brought in to work with the team, not to tell the programme what to do). This involved considerable effort training and certifying staff in SAFe practices.
- **Integrating customer perspectives** at the delivery and governance levels of the programme was fundamental to its success.
- **Quality was achieved by working in small teams.** Teams were given autonomy and challenged to work with customers to develop products and services together, within the constraint of delivering the minimal responsible product.
- **Tight and transparent forecasting, planning and reporting systems** and regular short delivery cycles (in STEP's case two-week sprints within 12-week delivery increments) delivered productivity gains Delivery cycles were aligned to frequent customer pilots of partial functionality.
- **Investing in building enduring capability** at LINZ to continually develop and enhance systems in response to constantly changing customer needs.

120. Critical Success Factors

- **Early wins** – the early delivery of Search and Notices products put “runs on the board” that built credibility with customers and confidence in LINZ’s ability to deliver using SAFe. Search and Notices products established the programme team’s SAFe credentials and proved its ability to co-create with customers and deliver valuable products at pace.
- **Fact based Management** – considerable effort was put into estimating and tracking work effort. This was invaluable when refining plans or making prioritisation decisions. The Weighted Shortest Job First (WSJF) prioritisation model was used for sequencing work.

- **Transparency** – the same fact base/delivery results were used for monitoring programme progress and decision making at all levels of the programme for individual squad through to Board and Ministerial reporting
- **Scaled Agile** was the right tool for delivering STEP. SAFe attributes that contributed to the programme’s successful delivery included SAFe ceremonies, incremental delivery of value, squads empowered to deliver, and data-driven metrics.
- **Clear direction provided by the Programme Business Case:** the business case was finalised after years of preparation with the simple goal of replacing Landonline. Benefits were achievable, and programme teams learned then ramped up
- **Customer Engagement:** a strongly supportive user community was backed by a dedicated and active engagement team, working groups and survey and legal engagement consultants. Feedback loops were readily accessible, and customers were able to migrate at their pace (followed by well-communicated removal of access to Legacy functionality)
- **A stable and world class legacy platform** that provided a fallback option that customers trusted. Having a stable platform allowed LINZ to do small rollouts of new functionality that allowed for incremental delivery of the new system.
- **Engaged and supportive governance and monitoring:** STEP boards (external and internal) were engaged and supportive. Reporting was transparent with contributions from LINZ Finance, Risk and HR resources. Leaders had political nous to navigate the authorising environment, and external independent quality assurance and benefits management played important roles. Monitoring agencies provided wider government perspectives and confidence when navigating difficult issues requiring Ministerial or Cabinet attention.
- **Strong programme culture:** LINZ fostered a strong “can do” culture, supported by committed executive leadership. LINZ created an environment where everyone contributed at a high level, learning was encouraged, and the work was enjoyable. The team’s ability to pivot quickly to meet new challenges or changing requirements enabled the programme to stay on track. Transparent ways of working, colocation, and empowering teams to make decisions all contributed to effective delivery. Throughout planning and delivery, a servant leadership approach helped teams stay focused, supported, and aligned.
- **Domain expertise:** Having many of the original Landonline team present for the build was extremely valuable, bringing a wealth of subject matter

expertise; strong business ownership and commitment to the programme. Co-locating these people created a very collaborative environment.

- **Technical Expertise**

- Locating the STEP programme within the LINZ Digital Delivery group was crucial.; the team had access to on-site developers responsible for maintenance and support of the legacy platform
- A strong intentional architecture and focus on security provided strong guard rails for squads to work within; balancing their freedom to act with the need to minimise technology risk and future technical debt.
- investment in user experience and user interface expertise was critical to the success of co-creating the system with customers.
- importance of test automation in parallel to software development was critical to achieving a fast and effective software delivery cycle based on Continuous Integration and Continuous Deployment, (CI/CD) principles

Appendix A – Allen & Clarke Final Benefits Assessment May 2025

Appendix B - Strategic Risks

#	Risk Name	Risk Description
1	Architecture (Technical)	If STEP does not adequately manage the technical architecture balance between efficiency and extendibility, then we will lose our ability to flex and change as environments and customer requirements change. Platform and other delivery formats could radically alter, even in the near future.
2	Database Migration (Technical)	If STEP does not undertake the Landonline database migration from Informix to Postgres, then benefits will not be realised and risk of database failure and/or inability to support future STEP increases.
3	Social Licence (Technical)	If LINZ/STEP lose their social licence because of their own actions impacting negatively upon stakeholders (e.g. a drop in Landonline reliability and/or availability) then support for funding will decline and we will face a deteriorating and resistant business environment as regards current operations and future enhancements.
4	Transition	If STEP does not extensively plan its transition from programme to future state, then there may not be full delivery against expectations (i.e. a shortfall) and/or a longer tail (delay) and possible fatigue across all involved as the transition becomes drawn out. With this, resourcing (people management planning and implementation) will be a key activity to ensure we retain both those we want and those we need.
5	Customer Centricity	If STEP does not bring customers/stakeholders with us, then we will be vulnerable to unanticipated demands or new and unusual requirements from customers and be possibly subject to increasing internal inertia (resistance to change) over time and so not be able to deliver successfully in changing environment(s).
6	Benefits Realisation	If STEP does not adequately track and measure benefits, then programme success will be understated, and lessons will not be learned.
7	Asset Value – Broader Public Sector Value	If STEP proves unable to maximise asset value from the program both within and outside of LINZ (sharing lessons, ways of working etc in addition to actual software value) then the NZ public sector will have lost a critical opportunity to improve efficiency and effectiveness, and part of the programme's business objectives won't be achieved.



Appendix D: STEP Process artifacts

