

IT Strategy and Roadmap 2023-2026



Toronto and Region
Conservation
Authority

BACKGROUND

The Information Technology and Records Management (ITRM) business unit of Corporate Services initiated the development of a new IT Strategy and Roadmap that would help guide technology initiatives and investments over the next four years and develop a roadmap for the future. The strategy development process involved substantial collaboration and support from staff across the organization, encompassing:

- More than 25 interviews of divisional leadership and management;
- A survey of IT service quality and customer service priorities;
- A Digital Maturity survey to assess the readiness of the organization to advance transformative projects;
- A survey of IT functions to assess service delivery across IT domains;
- Environmental analysis workshops to analyze key pressures impacting the organization; and
- Multiple workshops and divisional meetings to review IT priorities and project readiness.

The consolidated results of this process have resulted in the following document that outlines IT project and investment priorities for the term of this strategy.



CONNECTION TO TRCA'S 2023-2034 STRATEGIC PLAN

The IT Strategy and Roadmap is an enabling strategy to support the delivery of the organization's Strategic Plan. The pillars of the IT Strategy have been chosen, reflecting on the priorities identified by the organization, to align with those of the strategic plan:

Pillar 1 – Environmental Protection and Hazard Management

Pillar 2 – Knowledge Economy

Pillar 3 – Community Prosperity

Pillar 4 – Service Excellence

As an enabling strategy for the organization, the role of the IT Strategy is to support the achievement of the vision and mission of TRCA through the use of our technology and information assets. The term of the IT Strategy aligns to the first phase of the corporate strategic plan and playbook, focusing on the next four years of priorities. The IT Strategy will be reassessed within each four-year phase of the corporate strategic plan to ensure it continues to support the progress of TRCA's priorities.

MONITORING PROGRESS

The IT Strategy workplan will be reviewed annually to monitor progress, update initiative priorities and schedules, and address barriers. TRCA has established a working group to monitor the progress in implementing the roadmap and workplan, as well as to maintain a high degree of collaboration with the divisions and business units.

The working group will meet quarterly to review progress on initiatives, prioritize projects, and manage the intake of major initiatives within the term of the strategy. The working group will assess the resourcing needs for its business technologies, including staff roles and skills development, and support requests for capital and operating budget needs. It will also provide input into the development of IT policy and standards.

IT STRATEGY FRAMEWORK

Strategic Priorities

The IT Strategy consists of five strategic priorities covering both business-centric and technology-centric needs.

STRATEGIC PRIORITY	DESCRIPTION
Data Insights	Developing the capabilities of the organization to make data-driven, science-based decisions to better support its goals.
Business Modernization	Increasing organizational capabilities to deliver services through the modernization of business solutions.
Digital Services and Engagement	Supporting stakeholder engagement and organizational transparency through the adoption of digital technologies.
Technical Modernization	Supporting foundational technology services for the organization through effective lifecycle management and service planning.
Information Management and Data Security	Building organizational resiliency through an effective cybersecurity and information asset management program.

Supporting Themes & Actions

To support the delivery of these priorities, the IT Strategy also identifies three action areas that focus on developing the broader digital maturity of the organization.

STRATEGIC PRIORITY	DESCRIPTION
Digital Readiness	<p>Developing the digital maturity of the organization to better adopt transformative technologies through:</p> <ul style="list-style-type: none">• Skills development and technical training• Adopting a customer-centric approach• Promote innovation and experimentation
Resource Capacity	<p>Optimizing the use of resources to implement and support technology through:</p> <ul style="list-style-type: none">• Encouraging collaboration and the adoption of common platforms• Developing effective support models to manage technology platforms• Identifying roles and staffing needs to meet digital service needs
Architecture and Standards	<p>Optimizing technology investments across the organization through:</p> <ul style="list-style-type: none">• Establishing a program for technology lifecycle planning• Defining technology standards and policies to guide investment decisions• Developing an IT audit program to monitor and evaluate services

These themes will focus on the policy and planning activities of the ITRM business unit, as well as the IT&IM Working Group. They will require a broader collaboration across divisions on processes and governance.



Data Insights

GOAL: Developing the capabilities of the organization to make data-driven, science-based decisions to better support its goals.

OUTCOMES:

- Implement data governance
- Develop a data catalogue
- Develop a lifecycle plan for data assets
- Build an analytics infrastructure
- Improve access to data



The Digital Insights priority was one of the most discussed topics throughout the strategy development process. It aligns directly with TRCA's corporate commitment to science-based decision-making, stakeholder engagement and leveraging data to meet our service excellence goals.

ACTIONS

1.1 Establish a Data Governance model to support the development of a Data Insights program:

- Form a Data Governance Working Group representing TRCA divisions to provide oversight to the Data Insights program; and
- Develop a resource and skills development plan for staff.

1.2 Inventory and catalogue TRCA data assets to provide a resource for the organization to leverage existing data:

- Complete an inventory and catalogue of TRCA data assets;
- Develop data models for core business services; and
- Develop workplans to address gaps in managing data collection, storage, and quality assurance processes.

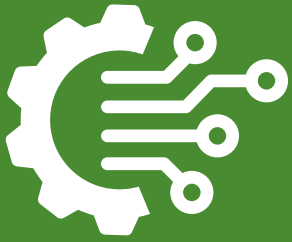
1.3 Develop data lifecycle plans to manage created and acquired data assets:

- Identify and implement an acquisition cycle for critical 3rd-party data assets;
- Develop quality assurance and monitoring processes for data asset creation; and
- Identify and implement retention plans for data assets.

1.4 Develop a solution architecture for data analytics services:

- Research and develop a solution architecture plan for providing data analytics services;
- Develop a corporate data lake/data warehouse service; and
- Develop data visualization services to support corporate and business service dashboards.





Business Modernization

GOAL: Increasing organizational capabilities to deliver services through the modernization of business solutions.

OUTCOMES:

- Implement new business solutions
- Develop application lifecycle plans
- Develop an application architecture
- Develop support resource capabilities



Modernizing corporate and business technologies was another priority identified during the strategy development process. TRCA has made substantial advances in its core technologies, including adoption of the Microsoft O365 suite of collaboration products, a rapid migration to cloud applications and infrastructure-as-a-service on Microsoft Azure, as well as implementation of multi-factor authentication. However, TRCA's business applications are in need of upgrade or replacement to provide the service levels needed for our customers and internal operations.

ACTIONS

2.1 Identify and implement new business solutions to advance core administrative and operational services:

- Implementation of the Permit Application Review and Enforcement System to modernize planning and development operations;
- Complete the implementation of the Asset Management and Maintenance Management platform to deliver a corporate platform for asset lifecycle management processes;
- Gather and evaluate requirements and solution needs for a modernized Enterprise Resource Planning platform; and
- Gather and evaluate requirements and solution needs for a modernized capital planning and project management platform.

2.2 Develop and implement application lifecycle plans to maintain business applications at supported release levels:

- Develop upgrade and release management plans for the business application portfolio;
- Identify and prioritize solution replacements;
- Analyze custom, internally developed applications and develop re-development and re-platforming opportunities; and
- Develop application decommissioning plans, including content and records management.

2.3 Develop a solution architecture for business application services to leverage common platforms and optimize investments:

- Research and develop a solution architecture plan for providing business application services;
- Identify and implement migration projects to leverage common application and/or development platforms;
- Identify and develop opportunities to leverage Microsoft M365 services;
- Identify and develop opportunities for integration; reduce duplicate data entry, combine and analyze data across platforms; and
- Identify and develop opportunities for partnerships with municipalities and other conservation authorities.

2.4 Develop technology support models to leverage business, ITRM and 3rd-party resources:

- Review and develop internal job roles to support business technology solutions;
- Review and align ITRM support functions along core business portfolios;
- Develop a staffing plan to provide joint business and technical support for business solutions; and
- Identify and develop opportunities to leverage 3rd-party managed services to complement operational support and development needs.





Digital Services and Engagement

GOAL: Supporting stakeholder engagement and organizational transparency through the adoption of digital technologies.

OUTCOMES:

- Implement new digital services
- Develop 360-degree customer and stakeholder insights
- Build partnerships and collaboration



TRCA has a diverse portfolio of services with stakeholders that include residents, visitors, commercial clients and government partners. Each service and stakeholder group has unique customer needs and ways they interact with the organization. Internally, TRCA continues to seek options to improve how we work to better share information, streamline processes and increase operational efficiency. The Digital Services and Engagement priority area will focus on transforming the way we work and interact with our customers through digital service.

ACTIONS

3.1 Identify and implement new digital services to modernize service delivery and customer experience:

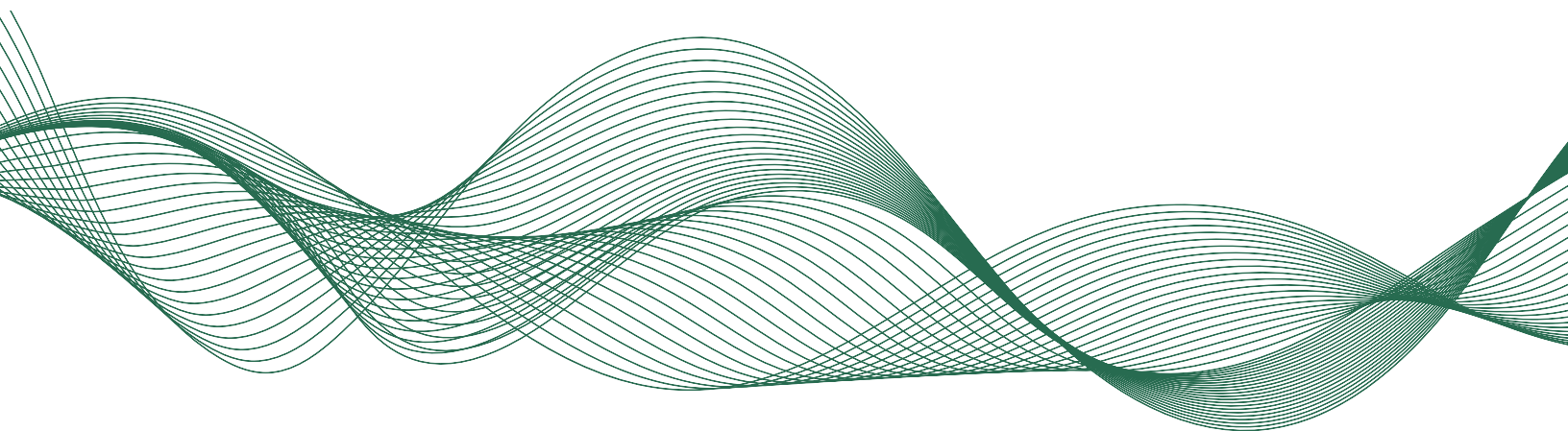
- Implement admission and membership systems to improve visitor experience, improve efficiency and provide customer insights;
- Implement program registration and management systems to streamline services for education programs;
- Streamline digital services across channels to simplify user experience, including web content, online store and order management, and payment processing; and
- Support automation and self-service features through digital services.

3.2 Develop stakeholder relationship management capabilities to provide 360-degree views of TRCA customer and stakeholder interactions:

- Research and develop a solution architecture plan for customer and stakeholder services;
- Leverage internal and 3rd-party sources to develop data insights for customer and stakeholder interactions and behaviours; and
- Identify and implement customer and stakeholder management solutions to provide integrated views of customer activity.

3.3 Develop partnership with conservation authorities and municipalities to promote integrated services:

- Participate in partnership forums and working groups to develop shared service and collaboration opportunities;
- Identify and develop projects to converge on common technologies; and
- Identify and develop projects for system integration.





Technical Modernization

GOAL: Supporting foundational technology services for the organization through effective lifecycle management and service planning.

OUTCOME:

- Implement lifecycle plans
- Maintain service levels
- Develop a technical architecture
- Develop support resource capability
- Deploy modern, secure and efficient technology tools



TRCA has a good foundation of core technologies that leverage cloud services. These services provide increased flexibility and resiliency for critical business services, such as email, productivity and collaboration tools, data center and communications infrastructure. However, TRCA continues to rely on a wide range of legacy technologies that have limited scalability and require updates or replacement to deliver required service levels and maintain supportability. Remote offices and parks locations also have continued network communication challenges due to service limitations and/or outdated equipment.

ACTIONS

4.1 Develop and implement technology lifecycle plans to maintain warranty coverage and operational performance:

- Develop maintenance and refresh plans for the technical infrastructure and device portfolios;
- Identify and prioritize solution replacements; and
- Analyze locally deployed solutions to identify consolidation opportunities on common platforms.

4.2 Develop and implement service level plans for core technologies to meet the needs of the organization across locations:

- Develop a network and communications plan to maintain consistent services and eliminate gaps in coverage;
- Develop a storage management strategy to manage files and content efficiently for active, backup and archival records;
- Identify and implement identity and content management solutions to support the lifecycle of staff and non-employee users;
- Evaluate requirements and end-user device needs, and work with divisions to manage the lifecycle of the device fleet; and
- Identify and implement performance monitoring and infrastructure management tools.

4.3 Develop a technical architecture for core services to leverage cloud platforms and optimize investments:

- Research and develop a solution architecture plan for providing network, communications, storage and security services;
- Identify and implement migration projects to leverage common platforms for network attached devices;
- Identify and develop opportunities to leverage Microsoft M365 services; and
- Identify and develop opportunities for partnerships with municipalities and other conservation authorities.

4.4 Develop technology support models to leverage business, technical and 3rd-party resources:

- Review and develop internal job roles to support enterprise architecture and IT planning services;
- Develop a staffing plan to support solution delivery and operational services; and
- Identify and develop opportunities to leverage 3rd-party managed services to complement operational support needs.





Information Management and Data Security

GOAL: Building organizational resiliency through an effective cybersecurity and information asset management program.

OUTCOME:

- Develop a comprehensive cybersecurity program
- Develop a security architecture
- Support a business continuity framework
- Develop information asset lifecycle plans



IT security and maintaining a resilient organization are continuing priorities, given the increasing activity and threats from cyberattacks globally. TRCA needs to maintain a multi-layered and evolving approach to protect its information assets from external threats. In addition, TRCA needs to maintain its ability to respond to major service disruptions through an effective disaster recovery and business continuity plan. Further, TRCA must maintain an effective information asset management program through effective records and data management.

ACTIONS

5.1 Develop and implement a comprehensive cybersecurity program:

- Assess existing technology infrastructure and develop a continuous improvement approach to mitigate risks;
- Identify and implement cyber-security plans/best practices;
- Identify and implement security monitoring tools;
- Develop a user cybersecurity awareness and education program; and
- Update security incident and response plans.

5.2 Develop a security architecture for managing information assets across business, application and technology domains:

- Research and develop a security architecture plan to guide policy, process and technical investments to optimize cybersecurity capabilities;
- Identify and develop opportunities to leverage Microsoft M365 services; and
- Identify and develop opportunities for partnerships with municipalities and other conservation authorities.

5.3 Support corporate initiatives in Business Continuity and Disaster Recovery planning:

- Assess current state backup and recovery services and define baseline recovery objectives; and
- Support Risk Management in business continuity planning.

5.4 Develop the Records and Information Management (RIM) program to support business needs for the protection and management of information assets through their lifecycle:

- Modernize RIM technologies to provide a comprehensive solution for managing physical and electronic records;
- Support divisions to classify information and manage records and information in line with policy;
- Implement a Privacy Impact Assessment process to manage information privacy and security risks; and
- Develop a staffing plan to support information management across TRCA business lines.



SUPPORTING THEMES AND ACTIONS

Where the IT Strategy Priorities provide a focus for project investments in technology, TRCA must also invest in building the digital maturity of the organization. The following Supporting Themes and Action areas are intended to address the TRCA's capability and capacity to adopt digital tools to transform the organization.

Digital Readiness

GOAL: Developing the digital maturity of the organization to better adopt transformative technologies

OUTCOMES:

- Skills development
- Value-driven priorities
- Business transformation focus
- Partner collaboration

ACTIONS

A.1 Develop organizational capabilities through skills development and technical training:

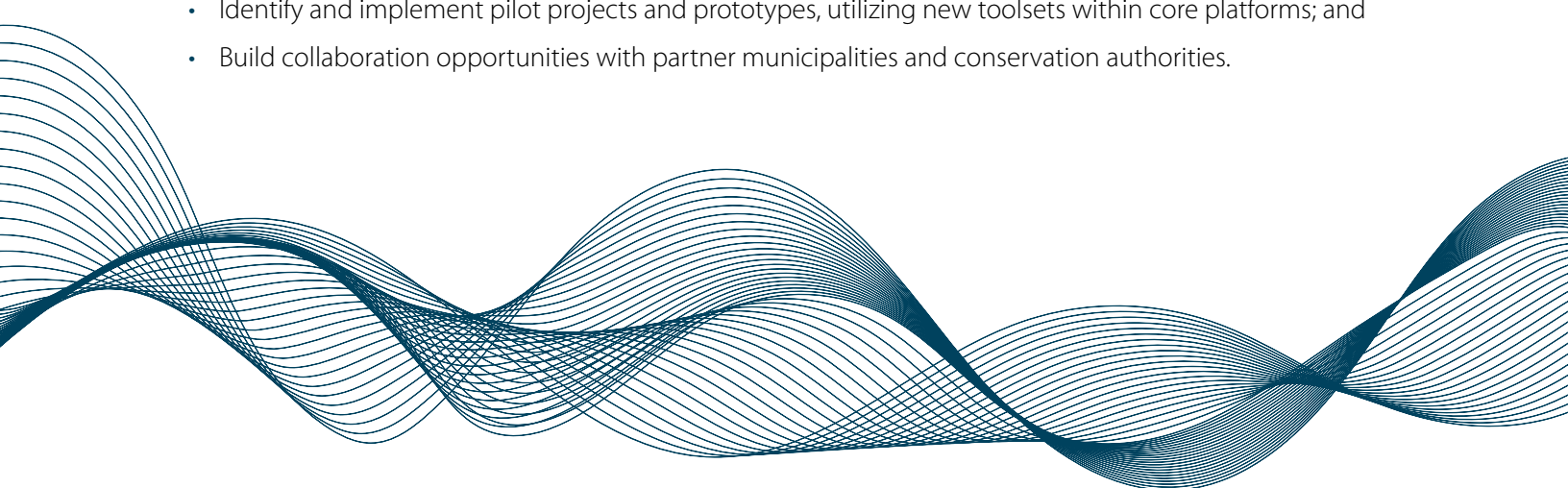
- Identify and promote training opportunities for staff on core technology platforms;
- Investigate and adopt industry methodologies; and
- Encourage learning opportunities through projects and pilot innovations.

A.2 Develop a Business Transformation approach to identifying priority projects and initiatives:

- Evaluate digital transformation opportunities through Stakeholder Journey Mapping, focusing on high return value streams;
- Develop Journey Maps for key business services; and
- Incorporate digital transformation priorities into broader corporate planning.

A.3 Promote and enable innovation and experimentation:

- Identify and implement pilot projects and prototypes, utilizing new toolsets within core platforms; and
- Build collaboration opportunities with partner municipalities and conservation authorities.



Resource Capacity

GOAL: Optimizing the use of resources to implement and support technology.

OUTCOMES:

- Focus on common platforms
- Shared Business and IT support
- Develop roles and capacity
- Develop sustainable operational resources and budgets

ACTIONS

B.1 Encourage divisional collaboration and adoption of common platforms:

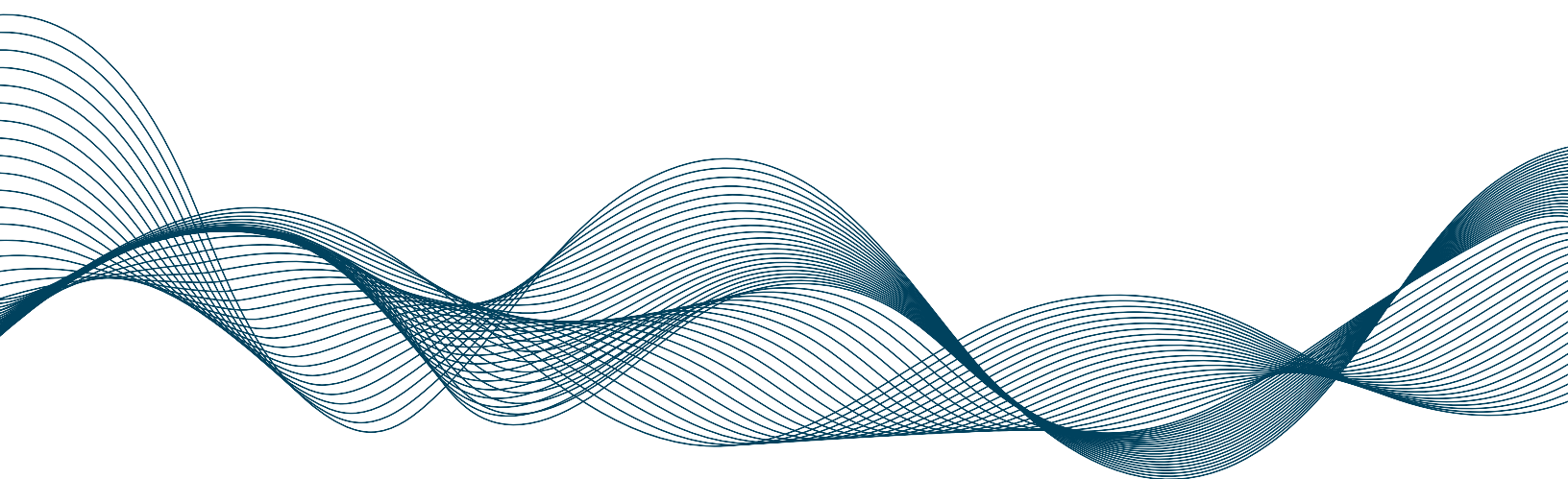
- Identify and promote the use of common technology platforms to support multiple business services;
- Minimize support resources through the adoption of Cloud-first services and limiting custom development for business solutions; and
- Focus custom development on common platforms.

B.2 Develop effective support models to manage technology platforms:

- Plan sustainable operating budgets and resources for technology investments;
- Build partnerships for shared support responsibilities with business units; and
- Leverage SaaS and 3rd-party managed services to complement internal support resources.

B.3 Identify roles and staffing needs to meet digital service needs:

- Develop roles and job descriptions to support modern technology needs; and
- Develop a long-term technology staffing plan to support business and ITRM resource demands.



Architecture and Standards

GOAL: Developing a technology planning framework to optimize investments across the organization

OUTCOMES:

- Improved technology planning
- Modernized technology standards and policies
- Improved monitoring and capacity management
- Continuous improvement of service levels and solution delivery

ACTIONS

C.1 Establish a program for technology lifecycle planning:

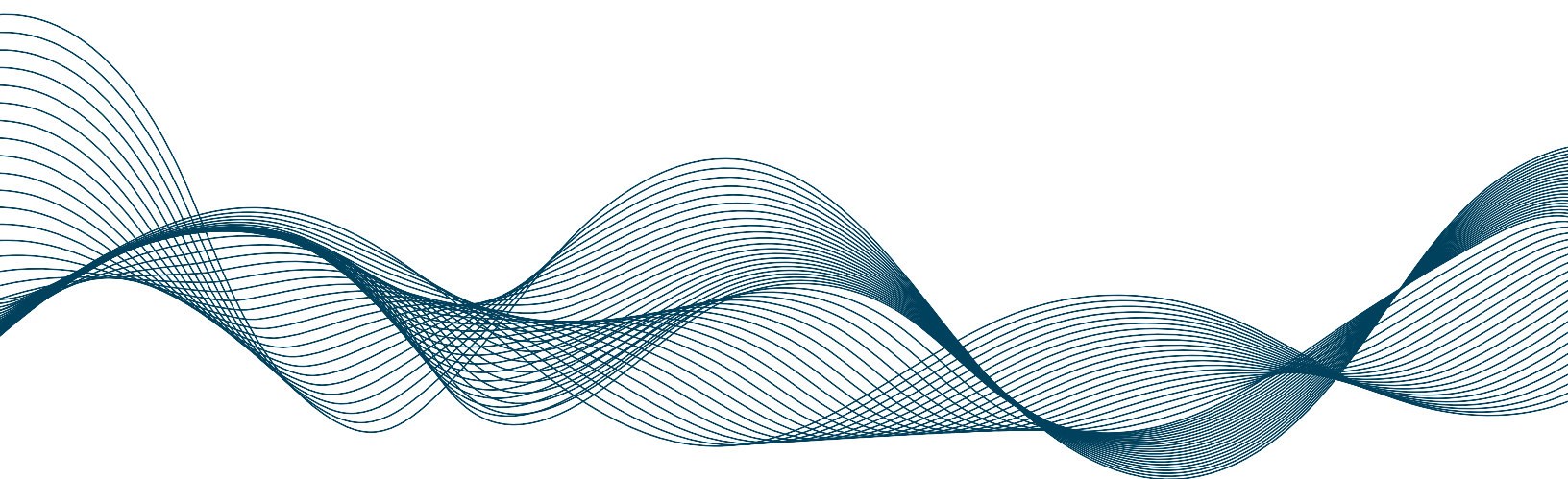
- Identify and adopt an Enterprise Architecture framework to guide technology planning;
- Document current state architecture domains; and
- Develop a technology asset lifecycle plan.

C.2 Define technology standards and policies to guide investment decisions:

- Develop and document baseline technology standards;
- Develop policies to guide procurement of new technology assets; and
- Implement Privacy Impact Assessment and Threat Risk Assessment processes for new acquisitions.

C.3 Develop an IT audit program to monitor and evaluate services:

- Implement a Root Cause Analysis process to analyze disruptions and recommend changes; and
- Identify and develop system performance, capacity and security monitoring capabilities.



ROADMAP AND WORKPLAN

The development of the IT Strategy Roadmap and Workplan involved several workshops with ITRM and Divisional representatives to review inflight and backlog projects. A wide range of technology needs were identified, covering enterprise system projects, business program solutions, data and analytics services, legacy system upgrades, and custom development, as well as a large number of ITRM initiatives related to core infrastructure and service operations. A prioritization model provided a framework for an initial workplan of initiatives to be scheduled over the next four years of the IT Strategy, based on their strategic alignment and implementation readiness.

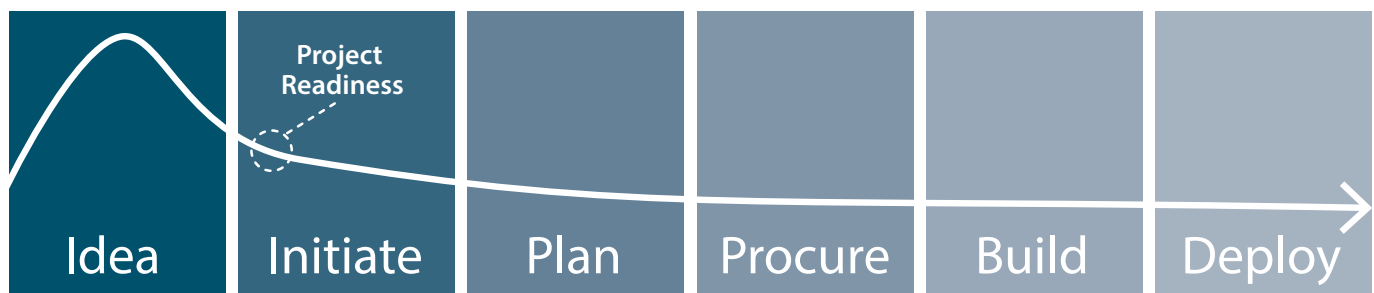
Business Support for Backlog Projects and Service Requests

The initial workplan focuses on several active projects and immediate business priorities, there is a substantial backlog of project and service requests. Most requests were assessed as being at the Idea or Initiation stage, requiring further investigation and scoping to advance further toward implementation.

There is a need to address this backlog through support with maturing these project ideas. This would involve support in developing more defined scopes of work, estimating resources and develop business cases for approval and funding allocations.

ACTIONS:

- Develop a project intake and review process to support the introduction and lifecycle management of projects; and
- Develop organizational capabilities to support business analysis and project management to assist with managing projects through their lifecycle.



Project Costing and Approvals

A critical challenge in mobilizing projects is the difficulty in estimating the costs and resource needs in order to demonstrate the business case for an investment in technology. The organization identified the need to have additional support to estimate project and operational costs, including a toolkit to be developed to assist with project intake and funding estimates. This would also include the development of a business case model that would support the Statement of Interest (SOI) process for approvals.

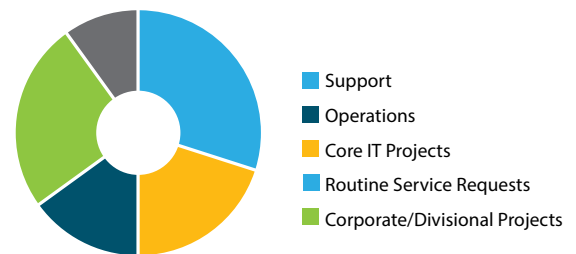
ACTIONS:

- Develop a Total Cost of Ownership toolkit to assist with project budgeting, including capital and operational impacts; and
- Develop a Business Case framework that supports funding and resourcing decisions through the Statement of Interest (SOI) process and other approval mechanisms.

Resource Capacity, Operations and Project Delivery

All divisions and business units must manage their resource capacity as part of their project and operational planning. Divisions need to allocate resources to cover program operations, administrative functions, and support projects and initiatives. In the case of ITRM, this includes:

- User Support and Issue Management
- Routine Service Requests
- Operational Monitoring and Management
- Divisional and Corporate Projects
- IT Infrastructure Projects



Project resource planning needs to account for staff availability across business and IT resources and build in appropriate backfill or supplementary resources.

ACTIONS:

- Incorporate human resource capacity into project budgeting and resource planning;
- Develop a balanced approach to resource allocation to provide support across project and operational functions, as well as across corporate, business program, and core infrastructure priorities; and
- Leverage major projects to provide backfill and staff augmentation to support broader operational priorities.

PLANNING AND LIFECYCLE MANAGEMENT

The implementation of the Roadmap and Workplan will need to overcome several challenges in order to be effective.

Setting Workplan Priorities and Timelines

Following the workshops, the project team held individual meetings with each division to review their individual project backlogs and set specific priorities for the term of the Strategy. As noted above, the majority of the identified projects require further assessment and scoping in order to be advanced further. However, the remainder provide the basis for an initial workplan. Divisions provided input on the potential timing and activities for each project, which translated into a quarterly workplan schedule.

The focuses on quarterly activities through 2023 and 2024, with annual targets in the final two years of the Strategy. The Workplan will be reviewed quarterly for progress and updated to reflect changes due to:

- Intake of new priority divisional projects and corporate initiatives
- Budget and/or resource impacts
- Project scheduling impacts of inflight projects
- Review and reassessment of project priorities

The Workplan includes projects that are business-delivered, ITRM-delivered, as well as jointly delivered initiatives in order to provide visibility to the utilization of internal resources, as well as the interdependency of initiatives.

Operational Impacts and Budget Planning

The IT Roadmap and Workplan contains many projects that will transform how TRCA engages with its customers and stakeholders, utilizes data and promotes a continuous modernization and upkeep of technology assets. It will require the investment of staff and financial resources in order to implement these projects. In addition to the upfront investments, projects may have an ongoing operational impact in order to maintain services. These operational impacts may result from such costs as:

- Subscriptions or licenses for software
- Hardware technology maintenance contracts
- Staff resources to support and administer technology systems
- 3rd-party services for operational support or managed services
- Future projects due to periodic maintenance and upgrades

These operating costs directly relate to the sustainability of the systems and continued delivery of program services.

Cost Drivers and Priorities

When considering projects and operational needs there are sources of cost pressures that can influence the priority of investments. These include both discretionary and non-discretionary pressures.

COST DRIVER	DESCRIPTION
Base or contractual increases	These include market or contractual drivers that are imposed on future costs
Growth-related pressures	These costs are related to increased usage of services due to the growth in staff or program activity
Legislative pressures	These costs are related to legislative or regulatory requirements imposed on operations
Service Enhancements	These costs result from discretionary investments in business operations

A further consideration is related to managing the useful life of the technology or system. Like any tangible asset, even with ongoing maintenance, there will be a time in the future where it reaches the end of its useful life and its ability to deliver effective service for the business. ITRM will work with TRCA business units to manage the eventual replacements of technologies and systems.

CONCLUSION

The IT Strategy development process provided the ITRM team an opportunity to reconnect with the organization, allowing staff to interact and collaborate throughout the project journey. The process provided insights on the perception of IT services and identified key areas where ITRM can provide added value in providing support and operational functions, as well as to advance business transformation across TRCA's services. The project team learned about key internal and external environmental pressures that continue to influence how we will prioritize work, interact with our customers and stakeholders, and how we utilize our available resources.

The new strategy framework will provide structure to support project planning and delivery, as well as focus investment on five business priorities:

- Data Insights
- Business Modernization
- Digital Services and Engagement
- Technical Modernization
- Information Management and Data Security

The supporting themes will help develop broader organizational capacity to adopt digital transformation through investments in digital readiness, resource capacity and architecture standards. In addition, updated processes to manage project intake and prioritization, along with toolkits to assist with business case development and resource planning will help with overall project approvals and lifecycle management.

Over the next four years of the IT Strategy, ITRM will work with divisional stakeholders to monitor progress and adapt the workplan to deliver on the key priorities and projects. The Strategy will continue to be reviewed to ensure it continues to support and enable progress on the pillars of TRCA's corporate strategy.