

Section A – Standards that Apply

1. Security & Risk Assurance

General	• Installation, support, development and enhancements of solutions should be performed on-site. If this is not possible, then remote access will be provided by Strathcona County using one of our existing remote access solutions. • For systems containing personal information, the addition of a new application or system or changes to an existing system or applicaiton may require a Privacy Impact Assessment to address the requirements set out in privacy legislation
Infrastructure	• All County-managed computers (server, desktop, laptop) require a working, properly configured endpoint protection software that meets the County standard. • Solutions deployed to personal computing devices must not require users to have elevated permissions to operate. • Local connections to the Strathcona County network must be done with County-managed devices. Direct connection of non-County devices is not permitted. • Our wired network is built on a common standards (1Gbps Ethernet, IPv4, etc.). Any less common, unique or specific requirements (for example, multicast, QoS, POE) must be clearly identified. • Remote access to the Strathcona County network is limited to use of Strathcona County approved and managed access solutions.
Authentication (GOV-003-001S-101)	• Where public-facing services process, store, or provide access to sensitive information, the solution must support integration with Strathcona County's Microsoft Entra External ID • The solution must support authentication and single sign-on (SSO) through Microsoft Active Directory and/or Microsoft Entra ID using Microsoft-supported standards for Strathcona County staff or contractors.
Internal Solutions	• Information stored on mobile computing devices must be protected by the approved data and information security classification (more information provided upon request).

Information Technology Standards

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External Solutions

- Any secure Internet site which Strathcona County is required to use as part of a solution must be signed with a valid and trusted TLS certificate.
- TLS 1.2 or higher will be used and all encryption methods and protocols must meet the requirements of NIST SP 800-131A Rev 2.
- Extranet SharePoint sites, OneDrive, or SFTP are the only permitted methods of file transfer (no FTP).
- Self-signed TLS certificates are not accepted by Strathcona County
- Any communication over a publicly accessible network that involves the transmission of County information must use a minimum of AES-128 encryption.
- Data stored externally should be protected with a high level of physical security.

2. Hardware

Mobile Devices

- End user applications must work on iOS devices (iPad/iPhone) will be supported and will be managed through Microsoft Intune MDM solution.
- Must be compatible with Strathcona County cell service provider: Bell Canada/Mobility.

3. Enterprise Solutions

ERP Applications

- Oracle Fusion is the current application for Supply Chain, HR and Finance. This is a cloud hosted solution; integration is provided through Strathcona County's ESB.
- Central Square - Tempest is used for utility billing

Enterprise GIS Platform

- ArcGIS Enterprise 11.5
- ArcGIS Pro 3.5.4
- ArcGIS Server 10.9.1
- ArcGIS Online (current release)

Information Management and Personal Information Protection

- MS Office 365
- MS Azure
- Systems must have a way to remove specific information on a specified schedule meeting records retention requirements as identified in the Records Retention Schedules. Provisions need to be in place for protecting personal information aligned to security classification. See the Agreement for further details on the related records types or additional guidance specific to the Agreement.

Open Data

- Strathcona Open Data Portal (ArcGIS Online HUB)

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Payment Processing	- Bambora (https://www.bambora.com) is County's standard for payment processing. - Solutions must support the follow payment methods - Visa - Mastercard - American Express - Contactless payment (aka Tap)
Data Integrations	- Solutions must be compliant with PCI-DSS v4 - Non-spatial: MuleSoft Anypoint Platform - Geospatial: see 'GIS Enterprise ETL Standards' below - SQL Server: SSIS (on-premise), Microsoft Fabric
Java	Java is not supported by the County and any applications requiring Java will be managed by exception.

4. Geodatabase

Enterprise Geo Database	- Esri Enterprise Geodatabase 10.8.1 - SQL Server 2022 - Detailed standards (naming conventions, historical data, etc) provided upon request
MetaData Standard	ISO 19115 NAP (at a minimum we expect the following fields: Summary, Description, Field-level descriptions, Date of Capture, Date of Processing, method of processing, lineage.
Data Model Standard	Tabular format for tables, fields, types, etc in .xlsx and visual format showing relationships with other tables, keys, etc. in .vsdx format. Templates provided on request
Geospatial file format	Esri File Geodatabase (Shapefiles are also acceptable if that is the only option)
Coordinate System	WKID 3776 – NAD83 3TM 114

5. Raster and Lidar Data Standards

Metadata Standard	ISO 19115 NAP
Oblique Imagery	Cloud-based solution delivery via API
Orthophoto Imagery	Mosaiced imagery delivery delivered via web services
Coordinate System	WKID 3776 – NAD83TM114
Lidar data – point cloud	.zlas (.las is acceptable .xyz can be, on case-by-case scenario)
Lidar derived – DEM, DTM, DSM	.tiffs in the Enterprise GIS coordinate system
Derived deliverables from Lidar data in vector forms	File geodatabases using Enterprise GIS coordinate system and metadata standard

6. Enterprise GIS ETL Standards

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ETL Platform of choice – database to database	- FME Server 2024.2.2 using FME Desktop 2024.2.2 - SQL Server 2022 - Esri Distributed Collaboration by Copy - Python 3.11.10
ETL Platform of choice – integration between systems/applications	REST Endpoints
FME Workbench annotation	All workbenches will have title, history, transformers described where function is not obvious from transformer name. They will be clean and easy to read (e.g. they will not have crossing lines, unnecessary annotation)

7. Desktop Software

The software detailed here is available on all standard desktop installations at Strathcona County.

Operating System	The supported operating system for all desktop and laptop computers is Windows 11 Enterprise.
Productivity Software	MS Office 365 (P5)
Web Browsers	- Microsoft Edge (preferred) - Google Chrome
Endpoint Protection	Endpoint protection services are provided to all desktop, laptop and Windows tablet-installations. Strathcona County uses Microsoft Defender P2.

8. Content Management Systems / Records Management

The software detailed here is hosted in the cloud and used and supported by Strathcona County.

Content Management System (CMS)	- DjangoCMS 5.0.2 - ESRI Hub / Story Maps will be available - SharePoint (Online)
Records and Information Management	- SharePoint - Microsoft Purview to support Data Loss Prevention (DLP) - Digital preservation content stored as PDF/A

9. Web Standards

Google PageSpeed Insights	- Performance Score: 60 or higher - Accessibility Score: 90 or higher - Best Practices: 90 or higher - SEO Score: 90 or higher
User Experience	- Clear and intuitive site navigation to help users find information quickly and efficiently. - Minimal use of disruptive elements (e.g., pop-ups) and ensuring that interactive elements are easy to use and enhance the user experience.

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| Google Analytics | <ul style="list-style-type: none"> • All applications must support GA4 Analytics. |
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10. Email & Calendar

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| Email & Calendar | <ul style="list-style-type: none"> • M365, Exchange Online • Filtering of email for spam and security purposes (malware, anti-spoofing, anti-phishing) is actively performed • Use of attachments is discouraged |
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11. Development Tools

These standards only apply to solutions that Strathcona County will be directly supporting in a fashion that requires changes to implementation code.

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| Application | <ul style="list-style-type: none"> • .NET 10+ • SQL Server Manager Studio • Microsoft Power Apps |
| Database | <ul style="list-style-type: none"> • SQL Server 2022 (Standard and Enterprise) – preferred standard for all applications |
| Version Control | <ul style="list-style-type: none"> • Azure DevOps |
| Web Development | <ul style="list-style-type: none"> • IIS 10+ • ASP.Net 4.8+ |
| Integration | <ul style="list-style-type: none"> • Mulesoft Anypoint Platform • SQL Server Jobs (SSIS) • FME Server 2021.2 using FME Desktop 2021.2 workbenches • Python Scripts |
| Reporting and Analytics | <ul style="list-style-type: none"> • Power BI |

12. Integration Standards

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| Protocols | <ul style="list-style-type: none"> • REST Endpoints. Preferred thoroughly documented with Postman/Swagger, etc. • SOAP • ODBC • OGC based Web Services |
| Preferred Data Formats | <ul style="list-style-type: none"> • Strathcona County limits the use of direct database integrations. • JSON/XML • CSV is not a preferred data exchange format |

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Section B – Standards that Apply to County Hosted Solutions

These standards apply where the services or servers are to be located at the Strathcona County datacenter.

1. Computing Facilities

General

- Strathcona County maintains two primary computing facilities. All solutions that are hosted by the County should be capable of being hosted from these facilities with ability to failover to either facility as required.

Rack sizes

- All equipment that is to be hosted at a Strathcona County computing facility must use a standard 19-inch rack size able to run on 220V power.

Cabling Standards

- If cabling is included in the performance of the Deliverables, the County cabling standards document will be shared upon request.

Recoverability & Backup Standards

- Document detailing these can be provided upon request.

2. Network

Environment

- Approximately 2000 networked computers distributed among 50 buildings within a 50 km radius of Sherwood Park, with the majority located within 8 km of County Hall in Sherwood Park.
- Approximately 1200 of the estimated 2000 computers are attached with a minimum 100 Mbps connection to the County datacenters.
- The County uses a mixture of fiber optic cabling and point-to-point wireless with some limited use of Telus DSL and Shaw Cable for network connectivity on a routed TCP/IP network.
- BIG-IP F5 LTM for network load balancing
- Solarwinds' Orion is used for monitoring and alerting

3. Data Storage & Backup

Data Storage

- Hosting system for virtual servers is Azure Stack HCI Server 2019+.
- For the purposes of disaster recovery, all data is mirrored between our primary and secondary data centers.

Backups

- All corporate information is subject to regular backups.
- Backups also include off-site storage as part of the County's Disaster Recovery plans.

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4. Server

Operating Systems	• The preferred standard includes Windows Server 2022 and IIS 10+.
Virtualization	• Strathcona County maintains a virtualized environment using Microsoft Azure Stack HCI, Hyper V 2019 and 2022 clusters. The use of virtual servers is strongly preferred for all solutions.
Licensing	• Software licensing models must indicate if and how virtual environments impact the costs and terms of the license. • Licensing must indicate if per user licensing are fixed or fluid (shared).
Remote Access	• No remote access solutions may be installed directly on servers. Only the existing remote access solutions maintained by the County may be used. Built in phone-home processes for specific support scenarios may be permitted.
Endpoint Protection	• All server installations include Defender for Servers P1
Domain Environment	• The current version of Domain Controllers for Active Directory is Windows Server 2019
Windows Test Environment	• A dev/test environment is available which simulates the production environment.

5. Database

Enterprise Environment	• SQL Server 2022
Database Development	• Strathcona County provides limited development support for local and middle tier database applications. Technical support at this level is limited to the provisioning of the database platforms and does not extend to the support of end-user applications developed using these database solutions. Limited “best effort” application support may be available in certain circumstances.

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Section C – Standards that Apply to Externally Hosted Solutions

These standards apply where the services or servers are to be located at allocation managed by a service provider.

1. Business Continuity

Disaster Recovery

- All Strathcona County solutions are required to meet Recovery Point Objectives and Recovery Time Objectives as identified by the Application Owner and ratified by the Application Custodian.

2. Application Design & Configuration

Design

- It is preferred that all applications include an Entity Relationship Diagram (ERD)

Configuration

- The application should allow customization and/or configuration to maintain Strathcona County communications design guidelines regarding the visual look and feel of the application.

3. Integration

Web Services

- The preferred method for accessing County data is web services that use industry standard protocols and message formats. Please review integration protocols within this document, also, the Agreement for more specific requirements.
- CloudFlare front-ends our publicly facing web sites and any unique considerations should be identified.
- The functionality of the application should be consumable via web services to enable real-time integration, or as near to real-time as is reasonable while meeting or exceeding appropriate security standards for the type of information.

Connectors

- If the solution is providing a custom connector for external facing components or functions, it must meet or exceed the same security standards as a standard as web services.

Information Technology Standards

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Data

- It is strongly preferred that County's data be available to other Strathcona County applications including reporting tools and the open data portal. It is also critical to be aware of any personal information that must be protected.
- The Supplier must identify where the County's data will reside if the application is cloud-hosted.
- Strathcona County is the Information Controller for the information assets created by the County. Suppliers and service providers may serve as Information Custodians who support the County's need to manage systems. Through agreements Vendors may own their configuration and system data.
- For cloud solutions, the sensitivity of the information is used to assign appropriate data and information storage locations and protocols. A Standard is in place for data and information security classification aligned to the Government of Alberta and the Government of Canada.

4. Reporting & Monitoring

Service Levels

- Reports should be provided on a regular basis on SLA and uptime as required.
- Any security breach impacting County data or information must be reported within 24 hours. Privacy legislation has provisions for mandatory reporting. Procedures available upon request.