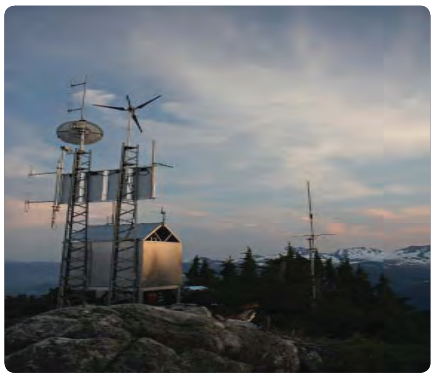
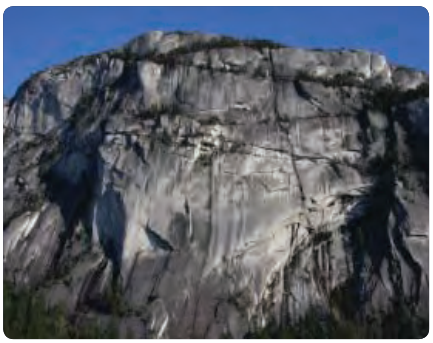
Service Squamish Initiative

SQUAMISH™
OUTDOOR RECREATION CAPITAL OF CANADA

Core Service Review Final Report



Information Services



Contents

Executive Summary

The District of Squamish (District) Information Services (IS) group has demonstrated tenacious initiative to introduce, maintain and grow technology over the last 10 years. The IS group has been at the forefront of most of the technology decisions and projects to date and continues to drive technology innovation for the District.

The challenge now in front of the District is to help the IS function evolve from operating similar to a small independent business to more of a medium size organization support department. A combination of years of minimal stakeholder involvement and/or technology comprehension as well as the natural growth path of a small "start-up" like operation have lead to a function that has been spread too wide and is very disconnected from its customers.

The findings and recommendations in this report surround three major themes;

1. Focus – Although the IS team is very motivated and focused on their activities and truly carry the interests of the District, years of being relatively disconnected with stakeholders and decision makers and taking on a wide variety of projects and initiatives has produced an IS function that is spread too thin and unable to focus on its core services to the degree that it should. This has resulted in a team that is perceived to not have clear set of priorities. Changes are needed to ensure the team is focusing on building and maintaining a technology infrastructure that meets the current and future needs of the District and less on projects that are farther outside the IS teams core competencies.

2. Collaboration – There is a significant disconnection between most of the stakeholders and the IS function. This is partly due to the large gap between how these groups define collaboration. The differences in approach and expectations to all of the elements of productive collaboration, ranging from communications, strategic input, business needs assessments, and finally change management when introducing technology, are significantly contributing to this disconnection. The IS team has not been able to provide the level of collaboration and communication needed to manage the stakeholders interest sufficiently.

3. Discipline – There is a need to move the IS function and the supporting District functions, to a level where there is mandated review processes and closer scrutiny on major strategic and cost (operational and capital) decisions, as well as implementation and management processes relating to technology. These processes should include;
    a. Creating, maintaining and reporting on service level agreements (network, applications)
    b. Conducting regular and pragmatic versions of business cases
    c. Reviewing and adhering to procurement and purchasing policies
    d. Managing performance of individuals and ensuring that they are held accountable for non-performance or non-compliance
    e. Develop and instil a system and culture of document management (record keeping) for key processes and reports

The responsibility for "how did we get there" and "how do we fix this" lies with both the District's Council, the previous and current Senior Management team, the CTO, and the client department leaders. This kind of evolution takes years of unintended actions and non-actions.

The suggested first step, after digesting this report, is to conduct a stakeholder workshop to gauge perspectives on the findings and recommendations and review in detail the Action Plan (Page 25) which provides a summary and estimated budget implications of the recommendations and should assist the District in the decision and execution process.

It is critical to ensure that, with all the good intentions of this review and any resulting change, the risk of the District "over engineering" the solutions are minimized. Municipal organizations are typically efficient at creating a bureaucratic process to support the interests of citizens – the caution and recommendation here is to take a pragmatic approach to solving these issues and make sure that the solution does not become overly controlled and processed. If the solutions are focused on directly solving the issue or meeting a business need, and not on building capacity for predicted need then the District will reduce unnecessary costs and extended processes.

Background

OBJECTIVES

In April 2010 the Service Squamish Initiative was introduced by the District of Squamish to envision a new approach to achieving excellence in local government for its residents, investors, Council and employees. This core service review of the Information Services function is the third in a series of reviews to be conducted in 2010. The core objectives of this review are to;

1. Provide an external view of the District's Information Services (IS) department in terms of structure, focus and effectiveness and share observations and recommendations relating to the IS's capacity for servicing the District's needs.
2. Provide an opportunity for District stakeholders to provide input on the IS's service capacity and quality.
3. Provide an opportunity for ISD members to share ideas and thoughts on the IS's service capacity and quality.

APPROACH

This review was conducted based on two primary approaches;

1. Individual or group discussions (interviews) to get the input of all, or a representation of all, key stakeholders.
2. Independent reviews and comparison of the District's information system environment through documentation (strategy, plans, policy, procedure, contracts, schematics/drawings, etc.)

SCOPE

The scope of the activities for this review included, but were not limited to:

- Interviews with the District's IT staff
- Interviews with a selection of District ISD employees
- Review of Information Systems within municipal operations
- Review of IT operating budget, capital budget, capital projects for xx years, invoices and expenditures
- Review of IT projects related to identifiable corporate need
- Review of internal support, response times, priorities"

REVIEW ELEMENTS

This review generally followed the process used in current and previous District Service Reviews and focused on;

TYPE	ELEMENT
Strategy	Current District IS Roadmap/Strategy including priorities, plans and budget (operational/capital)/forecast and linkages to District plan and priorities. IT governance, Partnership strategies
Policy & Procedures	Operations, Disaster Recovery, Back-up, Vendor/Partner Selection/Management, Stakeholder input/communication, change control, Security, Procurement/purchasing, Service Levels, compliance requirements, auditing process, remote access,
People	Structure, roles & responsibilities, resource plans/issues, group and individual development (skill, knowledge, ability) plans
Service (Help Desk)	Overview of help desk model, resources, tools, processes and measurements/stats and performance
Performance	Priorities, Performance measurements/metrics. Monitoring processes and tools.
Information Systems	Inventory overview – infrastructure, Hardware, Software/Applications, Network, Delivery Models (out/in source), Refresh plans,
Project Management	Project Management Office, Change Management, sample IS project plans, charters, budgets, tools, etc.
Other	Review of major project initiatives

REVIEW AREAS/FUNCTIONS

The review team outlined the main review areas it believed to be important;

1. System Support – enterprise applications (MAIS, CLASS, GIS, etc.) mainframes, servers, network, desktops, mobile commuting
2. System Security – Access (physical and electronic), disaster recovery, back-up, virus and hacker prevention
3. Phone systems and units (landline and mobile)
4. SCADA system – network and devices
5. Radio system - network and devices
6. Council communications – video streaming, projectors
7. District Website
8. Major Infrastructure Projects – Fibre, radio and wireless

STAKEHOLDERS

Here is a summary of the key stakeholder representation utilized in planning and conducting the review.

NAME	TITLE/ROLE
Kevin Ramsay	Chief Administrative Officer - [IS Review Team]
Robin Arthurs	General Manager of Corporate Services – [IS Review Team]
Brian Barnett	Manager Engineering – [IS Review Team]
Janet Gugins	Manager Recreation Services – [IS Review Team]
Tony Roberts	Telecommunication Network and Infrastructure (Fibre Optics) Expert

Findings & Recommendations

1.1 Strategy - FINDINGS

The District of Squamish, like most medium sized organizations, should have and be directed by an Information Services (IS) Strategy that is directly aligned and supporting of the Districts overall strategy, priorities and future.

The key findings relating to Information Services Strategy are;

1.1.1 Generally the CTO and the IS team are progressive and have a good sense of the broad technology that is available for a municipal organization to be considering or implementing.

1.1.2 Generally, documentation regarding IS strategy, including vision, concepts, ideas and plans, is relatively minimal and not located for easy or shared access. For example the most recent copy of the IS strategy that the general managers could access was dated 2000. A 2004 electronic version was provided by the CTO. With the rate of change of technology it is important for the CTO to be constantly assessing the technology fit and rationalization. This same rate of change requires that IS stakeholders (Citizens, Mayor, Council, General Managers, Managers, employees and partners) need to be involved and kept up to date on a regular basis.

1.1.3 Most of the General Managers, Managers and other employees that were interviewed through this review were not aware of the IS Strategy. Although there are a number of new leaders and employees, many of these by nature of their position should be aware of an IS strategy and to what degree it supports their business within 4-8 weeks of starting at the District.

1.1.4 There appears to be a slight disconnect between “owning the responsibility” of an IS strategy and “owning” the IS strategy. What this means is that the IS Strategy, although championed and managed by the CTO, needs to ultimately be collectively and collaboratively owned by all the key District stakeholders in order to be truly effective. This subtle but important difference is specifically important to the findings of this review because there is a general apathy towards the IS strategy and significant lack of understanding of the direction and vision of the CTO. This puts heightened importance on an update and effective IS Strategy and collaborative process.

1.2 Strategy - RECOMMENDATIONS

1.2.2 Review and update the IS Strategy and;

1.2.2.1 Ensure, the IS Strategy review process be thoroughly inclusive of all District functions – not by position, rather by business function and need. A quality inclusive review process does not need to be long, just effective and targeted. Consider a process that requires departments/ functional areas to prepare a head of time to articulate their needs and then a group session that reviews and optimizes all business needs and looks for cross-over and similar initiatives/needs.

1.2.2.2 Ensure that this process appropriately (not micro details) involves the General Managers and gets their input, buy-in and most importantly their FULL understanding of the intent, implications and approach of the Strategy.

1.2.2.3 Consider taking the revised IS Strategy back to Council (for information only) as a way to level-set the years of previous council reports and initiatives that they may or may not be aware of.

1.2.2.4 Include direct references within the IS Strategy made to the corporate Strategy/Plan to demonstrate the linkages from IS strategy to corporate Strategy/Plan.

1.2.2.5 Schedule and conduct regular IS Strategy reviews fro the future. Consider a minimum of every two years with the caveat that a review and update should be made in the event of a major project/initiative or need identified.

1.2.2.6 Ensure the CTO conducts a bi-annual update session with key District Stakeholders to revisit any business changes needs that may have occurred or being contemplate in the near future.

1.2.3 IS to develop a leader/manager orientation process and package that provides both an overview of the IS functions, processes, applications, policies as well as the strategy and how it assists to drive the corporate strategy/plan.

1.2.4 Communicate & post the revised IS strategy in a common electronic document location.

2.1 People & Structure - FINDINGS

This section looked at the People and Structure in terms of skills, knowledge and abilities, team morale, organizational structure and the scope of services.

2.1.1 The IS team appears to have a strong and appropriate level of skills, knowledge and abilities for the Information Technology (IT) industry.

2.1.2 The IS team has a much more diverse scope of services to manage than most in the IT industry. The team has taken on a number of major infrastructure roles outside of a typical IT mandate. A small indication of this is a description of services from a draft 2005 Key Initiatives document. “In short the IT Department is a computer/telephone/mapping/audio-visual/electrical/security/tools/faxing/coping/ documents/archiving and solutions department.” This has caused a number of conditions that reduces the IS teams effectiveness;

2.1.2.1 The team’s energies and efforts are naturally diluted across core IS business activities (network desktop, enterprise applications, special applications, data security, communications, management and leadership) as well as major infrastructure projects (Fibre Optics, Radio, Public Wireless, SCADA, etc.). The symptoms of this diverse scope include rushed services, lack of project management rigor, lack of documentation, lack of direct supervision, lack of strategic work, seriously low levels of engagement with key stakeholders, and other conditions that are covered elsewhere within this report.

2.1.2.2 In many cases the IS team has had to rely on interim and long term specialized contactors in order to maintain the knowledge and skill scope.

2.1.3 The IS team appears to have an above average degree of motivation and commitment to serving their customers in comparison to other IT functions. There is plenty of examples of the IS team working very hard, fast and dropping other priorities to get to a client site to help them out.

2.1.4 The team morale appears to be fairly average, although it is difficult to get a complete sense of with this length of a review. Certainly there is a shared sense of diverse scope responsibilities by the team and they recognize that although the project work can be exciting it is a lot to manage and that does weigh on them heavily to a degree.

2.1.5 By nature of being a small team it is natural to not have formal meetings and processes because the group works closely on most days, however there is sometimes a disconnect between even small teams and the IS team does experience this periodically. Partly this is due to some members of the IS team

being isolated (i.e.; IS resource at Fire Hall No.2 "lab") and they would benefit from spending more time connecting with the other IS colleagues other than by electronic communications. Many of the IS team are often travelling between worksites to service clients or infrastructure projects. It would be worth looking on ways to reduce "windshield time" and use technology solutions at times.

2.1.6 The organizational structure of the IS team is not very relative in terms of the organizational chart view, however in terms of roles and responsibilities the team appears to have good understanding of each others roles and when and who fills in for each other. This has created an informal skill/knowledge back-up system so that the team can fill-in for each other, however the extreme informal nature of these understandings are a risk, although relatively low, for the District.

2.1.7 There is a general sense that there is not enough IS resources to do the work they have. This review reveals that this is may be accurate, although there is some confusion as to what the complete Full-time Equivalent (FTE) compliment of resources is utilized currently. The resource ratio chart below, although two and half years out of date, indicates that the District is somewhat close to the ratio averages.

TABLE 1: BC Municipal Resource Ratios

	BC AVERAGE BC MUNICIPAL RATIO	DISTRICT OF SQUAMISH RATIO
IT staff (FTE including contractors)	2.5	5
IT staff to population	1: 6685	1: 3200
IT staff to desktops	1: 31.09	1: 30
IT staff to Inside employees	1: 23.16	1: 35
IT staff to Outside employees	1: 8.66	1: 10
IT staff to all employees	1: 31.82	1: 45

* 2007 Municipal Information Services Association (MISA) data from Municipalities with a population between 5000 to 30000.

2.1.8 The IS team by nature of there scope & size probably spends too much time on repetitive administrative tasks and could benefit from having those tasks reassigned to another group that is better set-up for managing these. An assessment of the administrative processes and resulting tasks would need to be done to identify and transfer.

2.2 People & Structure - RECOMMENDATIONS

2.2.1 The capacity, skills, knowledge and abilities of the IS group should be reviewed and assessed to ensure that the IS group is best positioned to manage the scope they currently have or created. This review suggests the following considerations for that review;

2.2.1.1 Move all the physical IS infrastructure design and planning responsibilities to the Districts' Engineering teams.

2.2.1.2 Move all the physical IS infrastructure implementation and maintenance responsibilities to the Districts' Operations teams.

2.2.1.3 Ensure the IS team, and specifically the CTO, retain full responsibility for setting specifications, planning, installation, monitoring and maintenance of all the infrastructure (data/VOIP network, radio network, etc.) appliances/devices.

2.2.1.4 Run a collaborative process to determine and manage the details of this change including change in policies, procedures, job descriptions, legal documentation, contracts, supervision, communications, etc.

2.2.2 Starting in January 2011, conduct a review of the resource requirements for the IS team to ensure that there is the appropriate amount and skill type of resources to meet the District's needs. This should include updating the BC Municipal Resource Ratio table (above) with newer MISA data or comparable data sources and present to the General manager of Corporate Services for review.

2.2.3 Create a workable formal and regular communication processes for the IS team to ensure that everyone understands what each other are doing and what the value and purpose is for the work they do.

2.2.4 Create a workable centralized and co-location schedule for the IS team for approx 50% of the work week.

2.2.5 Create an IS resource back-up list/plan showing the individual IS resources referenced against all of the Districts core IS services and skill needs.

2.2.6 Research records and provide an assessment of all resources utilized in the last 5 years towards any District IS services and or projects/initiatives in order to get a true picture of the total resources.

2.2.7 CTO to assess scheduling and technology solutions that reduce driving (windshield time) between physical sites to troubleshoot and resolve IS issues.

2.2.8 Conduct an assessment of the IS administrative and financial processes (technology purchases) and look at moving and/or sharing resources as well as technology productivity tools/applications to alleviate the repetitive administrative tasks required by the IS team. This section will look at the key and core IS services and systems within the District.

3.1 Services & Systems – FINDINGS

3.1.1 Network

3.1.1.1 At a high level the District's network design appears to be built to industry standards and have the basic components either in place or contemplated. There is some cases of contradictory or unclear information regarding the networks design, capability or processes for some of a networks essential features such as data back-up, network redundancy, and file storage protocol.

3.1.1.2 The District's data and application back-up capacity and processes were still not completely clear by the end of the review. In some instances it appears that there is reasonable capacity and capability to recover data in the event of minor data loss. Although there was some examples cited that data was not recoverable or the time frame was not extensive enough to go back farther than 4-5 weeks.

3.1.1.3 There was some verbal indication that basic capacity and processes were in place in the case of a disaster, however there was not a Disaster Recovery Plan produced for review. This poses a potential risk for the District. The District key stakeholders should expect and understand the capacity limits and process for getting the District's key information systems up and running in a post disaster scenario. There is certainly plenty of vision surrounding application of Fibre Optic Infrastructure, Emergency and Operations Radio Infrastructure, and the Data Radio network projects and all are, in part, intended to support this.

3.1.2 Desktop - There is some indication that although many District desktop's are adequately meeting the business need, there are also many examples of others who are either over or under served. This in part seems t o be a product of the process, or lack there of, for conducting users needs and managing the change of technology with users.

3.1.3 Printers – a blended printer strategy appears to be used at the District and it raises some efficiency questions. Although the current printer rationale revolves around utilizing printers that are older and only partially functioning, there may be an opportunity to scale back the printers used in some facilities thus saving effort to manage and maintain, as well as reduce energy consumption and even possible free up valuable floor space. There will be the need for some confidential printers, however a relatively quick review of the printers would be worthwhile and any attempts to reduce the number of printers will be a win back in effort and energy savings. A recent CIO.com article suggests that a modern office employee to printer ratio should be about 1:25. For the District this ratio would most likely be difficult to achieve, however it does provide an opportunity to challenge the need and costs of printing.

3.1.4 Facility Access/Security - Having the IS team managing the Facility Access/Security infrastructure is a logical process from a technical perspective. However there may be a history or expectation of the IS team setting policy & procedures and determining which employee gets access to which buildings and for which time periods. The Corporate Services and Human Resources areas are most likely better suited to develop and manage that aspect of the business.

3.1.5 District Applications

3.1.5.1 MAIS – There was mixed feedback on the performance of the MAIS enterprise financial system/software. The issues are most likely a combination of application performance, database maintenance, server storage capacity, network performance depending on connection method (Municipal Hall versus the Works Yard). Potential issues identified include;

3.1.5.1.1 Payroll processing varies significantly and given the District's payroll size it seems to be much longer than it should really take.

3.1.5.1.2 Some of the facilities, such as Brennan Park have significant slow downs when working in MAIS compared to similar equipment at other facilities.

3.1.5.1.3 Custom reports for some of the business areas are apparently not available and would greatly enhance management capacity.

3.1.5.2 GIS – Like many other municipal organizations, a Geographical Information System (GIS) has been started at the District and is considered to be a key enterprise application for managing, presenting and data and assets both internally and externally for the public.

3.1.5.2.1 There is generally good support form stakeholders for continue to build out the GIS system.

3.1.5.2.2 There are some areas who do not have, or believe they have access to the GIS data for their business, either the Arcview (desktop application) or MapGuide (web-based) version.

3.1.5.2.3 There is many people who have access that do not feel that they know how to use the access they have.

3.1.5.2.4 There is a desire to extend the GIS data to mobile devices.

3.1.5.3 CLASS – This recreational management system resides at the Brennan park facility and is a third party vendor supplied and maintained application.

3.1.5.3.1 There are concerns regarding the state and dependency of the CLASS database.

3.1.5.3.2 There is a sense that there is much more opportunity to take advantage of other features and modules within the CLASS system

3.1.5.3.3 There is a perceived need for additional and specific CLASS resource support beyond what is available through the IS team despite all the appreciated efforts.

3.1.5.4 Web

3.1.5.4.1 The 'squamish.ca' site is technically supported by IS with the content being managed by Corporate Services via a Content Management System (CMS) that was set-up by IS. Generally this technology and process appears to be working well. There is some need for the two teams to sit down and review what remaining elements or work is needed and how IS can support.

3.1.5.4.2 Intranet – There was an Intranet built at one time and it was the understanding of IS that it was available and being managed by Corporate Services. However we were unable to bring it up during the review.

3.1.5.4.3 Extranet – There is an Extranet (external/public link to a separate and secured intranet) set-up off the District's 'squamish.ca' website (via a URL link 'squamish.tv'. This review did not have time to explore this intent and use of this more.

3.1.5.4.4 Various related websites and URL (website address) registrations that were not looked into in details during the review, however there is a need to consolidate a list and summary of ownership for each District owned URL.

3.1.5.5 FMT – This Fire Management software seems to be operating reasonable well for the Protective and Support Services however there is some issues surrounding application vendor licenses and version updates that needs to be resolved.

3.1.6 Phone system - the District is only a few offices away from completing its Voice Over Internet Protocol (VOIP) phone system. It is unclear on the original business case for moving to a VOIP phone system, however with the capital and operational effort invested to date this system appears to be operating very well, effective features, minimal support calls, reasonable reduction in telecommunication line lease costs, and future opportunity to add productivity features.

3.1.7 Mobile

3.1.7.1 The District has been implementing mobile computing (BlackBerries, Laptops w/VPN access, and Tablet computers) for a number of years from a technology driven perspective. IS needs to work with the business units more and earlier in the process to articulate the need, determine the level of technology (change scope and price) that is appropriate for the need.

3.1.7.2 There is a lack of understanding on the rationale and process for maintaining mobile computing devices such as BlackBerries. When a device fails wholly or partially, why can it not be repaired or replaced. In some cases there is a sense of why bother with the progressive technology if we cannot maintain its performance?

3.1.8 Technology Procurement – The IS team has been responsible for acquiring the Districts technology (hardware, software) over the years. It appears that technology has come from a wide range of sources ranging from enterprise software providers (CLASS, MAIS, etc.) to used hardware (VOIP, Blackberries, etc.) from the online retailer eBay. Aside from the possible cost savings from some of these procurement approaches, they raise a number of questions and concerns that should be reviewed and decided on;

3.1.8.1 Policy – Are all of the IS procurement policies covered within the corporate policy, and if not should they be included or ceased?

3.1.8.2 Authentication – How does IS ensure that they are getting delivery of what is ordered?

3.1.8.3 Warranty – to what degree does this effect the long term cost of these items?

3.1.8.4 Brand/Perception – There may be some considerations on the perception of others of the District purchasing technology hardware on eBay?

3.1.8.5 There is also some discrepancies regarding the distribution and reallocation of technology assets (computers, printers, BlackBerries, etc.) for some departments and employees.

3.1.9 Key Service Levels

3.1.9.1 Network Outages – The CTO has recently produced a summary report of the network monitoring software and all indications are that the District's network and server "uptime" is level with industry standards of 99% – 99.9% depending on the critical nature of the application, server or network device.

3.1.9.2 Helpdesk – The current process for managing IS needs ranges from walking over to talk to one of the IS teams, to individual phone calls, emails to system monitoring software that provides system warnings directly to IS team members. Generally it appears as though this works quite well … until it doesn't. Because there is not a standard Help Desk process to log and manage calls, sometimes service calls are not attended to in a timely manner, or not at all until follow-up calls are made to IS (estimates range from 10-30%). This lack of process adds to the IS teams needs to "bounce" between facilities and clients needs. Again the team is very responsive, however it is natural to see dropped commitments within this type of environment. The diverse scope adds to this situation as well. Further the off-hours support model relies completely on the CTO.

3.1.10 Technology Training - there are many instances of stakeholders feeling like they are not trained nearly close to the degree that they feel is required. Lack of training was one of the most common concerns raised throughout this review. There are also situations cited where the IS team had set-up and communicated software training, with reminders and there was a very small response/showing. In other cases third party trainers were brought in by departments and the technology infrastructure (network and/or internet connection, projectors, etc.) was not working or it took significant time to get it set up.

3.1.11 Other – there a other services and systems that will have been missed by this review or there was not time to cover them off in this review. Examples such as District web cams, virus protection, environmental impacts (greening the technology through acquisitions and recycling), document management systems/processes. There are also a number of specific and individual examples of positive service or system delivery by the IS team who generally are well respected for their efforts.

3.2 Services & Systems - RECOMMENDATIONS

3.2.1 Network

3.2.1.1 Establish an overview document of the District's network design, functions and processes for essential functions [back-up, redundancy, disaster recovery, file storage] in order to provide details of to what degree the District is protected.

3.2.1.2 Conduct an independent review of all elements of the network to ensure that all technical standards are at least met and look for recommendations for areas where the District should exceed the standards.

3.2.2 Desktop - Conduct a desktop needs assessment and acquire or redistribute desktop computers and relative peripherals (speakers, external storage, etc.) according to the need.

3.2.3 Printers – Conduct a printer assessment and consider reducing the number of printers in some facilities. If a decision is to reduce any printers, it is critical to understand that this is a change for many people and full and well articulated communication and opportunity to provide input to the process will be important prior to implementing.

3.2.4 Facility Access/Security

3.2.4.1 Consider moving the decision making and administration elements of the facility Access/Security processes to the Corporate Services and/or Human Resources areas. IS continues to manage the technical implementation of the security systems.

3.2.4.2 Corporate Services and Human Resources to conduct a needs assessment of all facility security and work with IS to implement any changes.

3.2.5 District Applications

3.2.5.1 MAIS – IS and Corporate Services to work with the vendor and end users to collaborate on a priority plan for identify and addressing all outstanding MAIS issues, from connection speeds to reporting. This should also include collaboration on a strategy for identify the end of its usable life and what process and when should replacement options be explored.

3.2.5.2 GIS – With the current transition of the GIS responsibilities to Engineering, a suggestion is to have Engineering and IS work with the application vendors and end users to collaborate on a priority plan with roles and responsibilities to identify and address all outstanding and future need features. This plan should include a training needs assessment and implementation plan.

3.2.5.3 CLASS – IS and Parks to work with the vendor and end users to collaborate on a priority plan for identify and addressing all outstanding CLASS issues and collaboratively explore the opportunities to leverage additional CLASS features and/or modules.

3.2.5.4 Web

3.2.5.4.1 IS and Corporate Services to collaborate on a Web Asset Inventory to identify all the websites, URL's (active and parked) , and accountabilities and authority for managing them.

3.2.5.4.2 Asses the current Intranet and work with all stakeholders to decide on the need for an intranet and if there is a need then develop a plan, schedule, roles & responsibilities for executing and maintaining the site.

3.2.5.4.3 Assess the extranet strategy and purpose and report to the Corporate Management team for support and input.

3.2.5.4.4 Review the current roles, policies and procedures for registering and monitoring URL/Domain registrations on behalf of the District. If a policy and/or procedure does not exist, then consider establishing them

3.2.5.5 FMT – IS to schedule a review of the fire management software with Protective and Support services to resolve any outstanding issues surrounding application vendor licenses and version updates.

3.2.6 Mobile – Corporate Services to review, verify and communicate the rationale and process for rationalizing, acquiring, reallocating, maintaining and retiring mobile computing devices such as BlackBerries and tablets.

3.2.7 Technology Procurement – IS and Corporate Services assess the IS procurement activities and determine if they comply or if changes are need to the policies or activities.

3.2.8 Key Service Levels

3.2.8.1 Helpdesk

3.2.8.1.1 Implement a standard and pragmatic call/service management process (call log). If acquiring a technology is central to the process, ensure that a solid requirements list is documented and used to determine which technology is the proper fit and be aware of acquiring a technology that is significantly more than is need or requires significant customization or up keep.

3.2.8.1.2 Consider assigning IS team members to sit with select department representatives once a month as a way to experience the customers view and needs for technology and technology support.

3.2.8.2 Off-Hours – review and make recommendations to provide a more stable and realistic IS (helpdesk, network monitoring) off-hours support strategy.

3.2.9 Technology Training

3.2.9.1 Review the benefits of moving the technology training function somewhere within the organizational that is a best fit for the technology training, including looking at the HR function or where ever other enterprise wide training is coordinated through.

3.2.9.2 Review and update if required the technology training strategy including looking at the benefits of extended eLearning options, internal train-the-trainer programs for the vendor supplied enterprise applications (MAIS, GIS, CLASS), training skill inventory for sharing super user/trainer skills across departments, more webinars, etc.

4.1 Leadership & Management - FINDINGS

This section of the review looked at the overall leadership and management of the IS function, including communication, project management, financial management (budgeting, business cases, authority, approval, purchasing), policy and procedures, working organization (documentation, etc.).

4.1.1 Innovation - The IS team is generally progressive in terms of current technology and at times quite innovative in acquiring, building, installing/implementing, and maintaining technology. Examples include the VOIP phone network and radio data connections.

4.1.2 Intent - the IS team is very sincere in its objectives and intent when planning, building and implementing technology solutions. The team is very interested in improving the District both from an internal employee productivity perspective as well as a taxpayer perspective. Examples include the implementation of individual productivity tools like mobile pc's (tablets, laptops), BlackBerry devices and in some cases specific notification software.

4.1.3 Collaboration - there is a significant disconnection with many of the current business stakeholders. Generally there has not been honest dialogue regarding the understanding and needs of technology from the departments perspective. Also, there is a sense from IS that they already generally know what the department need is and therefore only minimal and cursory engagement is required when assessing technology needs and implementing.

4.1.4 Communication – the type, style and frequency of most of the IS communication appears to not be working for many of the stakeholders.

4.1.5 Financial Management – There does not appear to be or have been a high expectation for thorough business cases for technology acquisitions, development or implementation. There are some high-level reports but it was difficult to find documentation of the return on investment type metrics. There appears to be possible gaps in following procurement/purchasing policies and procedures.

4.1.6 Change Management - there is significant gaps in the approach and degree to which the IS team is able or chooses to help stakeholders/users through the process of adapting to new technologies. There were many examples of stakeholders perceiving to have technology chosen for them and "dumped" on their desktops with little support, explanation or training.

4.1.7 Document Management – There is minimal documentation regarding many aspects of the IS business/function. It is difficult to determine if this is similar to other departments, however there is a more recent expectation being communicated from the members of the current Corporate Management team for an improved level and access to key documentation.

4.1.8 There is a significant difference of opinion in the area of to what degree the individual District departments are being serviced by IS.

4.1.9 There is a significant gap and disconnect between the business units/leaders and the IS team in terms of technology needs assessment, planning (strategic, business case development, and/or project management), implementation and training.

4.1.10 It is unclear to what degree the business unit leaders and the IS team are addressing ongoing issues and/or gaps with each other. This is part of a condition that appears to exist where there is very little dialogue between the two groups.

4.1.11 There is also a significant difference in opinion in terms of the completeness of projects and initiatives of all sizes. It is fair to say that for a number of reasons, there are many projects and initiatives that are or are perceived to be unfinished and stakeholders are unclear as to the status and when they will be completed or worked on further.

4.1.12 There appears to be very little documentation or controls over the selection, hiring and management of contractors.

4.1.13 There appears to be a significant lack of priority setting with key stakeholders

4.2 Leadership & Management - RECOMMENDATIONS

4.2.1 The IS team should be both recognized for their innovation efforts as well as coached to develop a process and skill of assessing and determining the appropriate level of innovation required.

4.2.2 Coaching and/or training should be provided to the IS team relating to industry standards for stakeholder engagement at all stages of technology development and management. Further, a brainstorming session should be coordinated with stakeholders to devise the best and pragmatic approach to involving stakeholders in the future.

4.2.3 Coaching and/or training should be provided to the IS team relating to industry standards for stakeholder communications at all stages of technology development and management.

4.2.4 Corporate Services should determine the best approach to narrow the gap for Financial Management rigor within IS. Strong considerations and priority should be given to;

4.2.4.1 Business Case training

4.2.4.2 Supply or creation of District business case templates/standards

4.2.4.3 Review of District purchasing policies and procedures with IS team

4.2.5 Coaching and/or training should be provided to the IS team relating to industry standards for change management at all stages of technology development and management.

4.2.6 Corporate Services to set and manage expectations and performance for the level of document management, collaboration and shared access or IS information.

4.2.7 IS to develop a project and stakeholder communication tool (dashboard)and processes to ensure stakeholders are aware of project or initiative status and any deviations and revised expectations.

4.2.8 IS to work with Corporate Services to understand and manage the IS contracts.

5.1 Projects - FINDINGS

As noted in section 2 “People and Structure” the scope of the District’s Information Services team is wide and extends farther than a typical organization. One of the products of this scope extension has been the creation of a number of medium to large projects/initiatives. These projects range in size and funding sources, including major capital expenditures. This review has addressed each of these projects findings and recommendations separately;

5.1.1 Fibre Optics Infrastructure Project

5.1.1.1 There is a significant lack of awareness regarding the purpose, status and value of the District’s Fibre Optics Infrastructure Project (FOIP) amongst District stakeholders, including senior leaders.

5.1.1.2 A current state and future state plan was discovered on the internet, which is different than the GIS and hand drawn versions presented during the review. (see Appendix 2)

5.1.1.3 This review struggled to identify clear authority and decisions for all of the decision and or capital approved or used to date. This may exist, however it was difficult to trace within the timeframe of the review.

5.1.1.4 There has been discussion, and at least verbal agreements, made with Bell telecommunications regarding the sharing or leasing conduit and/or Fibre Optic lines. This review was unable to verify this agreement in writing or otherwise.

The following statement appears on the 'squamishbusiness' website (www.businesssquamish.com/squamish_first/facilities_amenities/broadband) and describes the District's position on this project;

> *"In partnership with Bell Canada, the District of Squamish is developing a fibre optic loop throughout the community of Squamish. Although initially this backbone will be for government, education and the high tech sector to utilize, emerging market needs lead us to believe that use of this infrastructure will extend offerings such as fibre to the home, and wi-max deployment.*
>
> *For more information on Squamish's Broadband and wireless capabilities, please contact Garry Broeckling, Chief Technology Officer for the District of Squamish, gbroeckling@squamish.ca"*

As well as there is reference to the project in the District's 2008 Annual Plan;

> *"Installation of the fibre optic ring section along the Corridor Trail underway to bring reliable highspeed data infrastructure to Squamish (fibre conduit now spans from the Business Park to the Adventure Centre).*

5.1.1.5 There appears to be a number of purposes for this project which include;

5.1.1.5.1 Providing a robust and advanced technology link (data, voice) between current District facilities/buildings.

5.1.1.5.2 Entering into a partnership with a telecommunications company (like BELL) to share infrastructure which would enable redundant infrastructure capabilities.

5.1.1.5.3 There was some indication at one point that the idea of the District operating as an Internet Provider (IP) was discussed. There does not appear to be an appetite by the IS team to continue to explore that avenue at this time.

5.1.2 SCADA – The District's water and sewer infrastructure monitoring system - SCADA (Supervisory Control And Data Acquisition) has been a major project for a few years and is currently set-up to monitor approximately 50% of the District's water and sewer infrastructure control points (water, storm water/ dyke gates, wells, reservoir, etc.). The findings relating to this project/system are;

5.1.2.1 This infrastructure is mostly designed and managed by the IS team with inputs from Operations and with assistance from a number of external contractors who specialise in different aspects of the infrastructure elements. The radio infrastructure is a major aspect of communicating the data monitoring control points across the water and sewer infrastructure.

5.1.2.2 There is generally a shared understanding of the value of a completed and/or fully operational SCADA system and excitement about the opportunities that will come with system wide monitoring, reporting and control. There was valuable ideas shared for scenario planning controls for emergency situations (i.e.; water flow control with high tides and high run off)

5.1.2.3 A demonstration of the SCADA control/monitoring panel at the Works Yard revealed that there are gaps between system expectations and what is working including gaps in reporting, feature consistency, and understanding (training) of all the data and labels.

5.1.2.4 The expertise of the system is spread amongst a number of the IS team as well as part-time contractors. This appears to make managing the system and the stakeholders difficult.

5.1.2.5 Many of these findings lead to a general lack of confidence in the system and it is generally not consider to be of a great use until both the feature and function gaps are narrowed. The IS team seems aware of the gaps and is trying to address them with their other priorities. It is hard to tell to what degree these issues are being discussed between the two groups.

5.1.3 Radio Infrastructure - there appears to be three radio infrastructures that are built and managed by the IS team on behalf of the District and other agencies (RCMP, EOC, Search and Rescue);

5.1.3.1 District Operations Radio – a radio network used for the District's operations employees for employee work and safety communication - as well as a few other District employees. These radios and network appear to be working fine.

5.1.3.2 District Emergency Radio – The review was not able to spend enough time on the details of this technology area of involvement of the IS team except to understand that there is ongoing infrastructure work as well as some liaison and assistance for emergency radio procurement and strategies with emergency operations such as Fire (Protective & Support Services) RCMP and to some degree Search and Rescue.

5.1.3.3 District Data Transmission Radio – for a number of the District facilities/buildings the IS team is utilizing radio/microwave infrastructure to provide connectivity (District network, internet and VOIP). It appears that this infrastructure is mostly supporting secondary (back-up) connection and in two cases it is the primary source of connectivity.

5.1.4 Public Wireless - the IS team has developed, with a partner (Base Technology Ltd., www.basetechnology.net) a pay-for-service wireless network through out many areas of Squamish. See Appendix 6 for a list of access points.

5.1.4.1 There was a significant lack of awareness of this project and service in all areas of the District. There was some indication that there was a token program used by local business, including the library, to hand out to members of the public. The review could not find any documents describing this project or service. Many people are intrigued by the concept and would like to know how it is being leveraged to provide a value to the District and/or the community.

5.1.4.2 There is reference to this initiative in the District's 2008 Annual Plan;

"Offer full wireless access in Downtown Squamish."

5.2 Projects - RECOMMENDATIONS

5.2.1 Fibre Optics Infrastructure project

5.2.1.1 Conduct a review of the Fibre Optical Infrastructure Project

5.2.1.2 Cease all project activity until a review, presentation to senior management, and decision are made as to the business value, approach and appropriate project management resources. Someone will need to assess all outstanding commitments and contracts to ensure that this strategy is not violating agreements previously made on behalf of the District.

5.2.1.3 Change the ownership and management of the Fibre Optic project and operations;

5.2.1.3.1 District of Squamish Engineering take the lead and be responsible for the design and planning elements.

5.2.1.3.2 District of Squamish Operations take the lead and be responsible for placing, managing and maintaining the conduit infrastructure, as well liaising with third party Fibre Optic experts during installation and connection of the Fibre Optics.

5.2.1.3.3 District of Squamish Information Systems be responsible for planning, managing and maintaining the network that runs on the Fibre Optic Infrastructure. This includes providing advice and specifications for the selection, purchasing and installation of the Fibre Optic cables, and connection points along the network. Information Services will continue to be responsible for planning, selecting, installing and managing the hardware (panels, connectors) required at the access points (facilities).

5.2.1.4 Engineering and Operations work with Information Services to identify and document the location of the conduit infrastructure. If and when the fibre optic cable is placed, then tracing methods can be used to locate the cable run in the BC Once Call mapping system. This would allow the District to be aware of any threats to its network and or conduit infrastructure. Further a procedure or procedure update with regards to roles and responsibilities between the District functions would be needed for when a notice is received. This is a key element for identify and managing the Districts risk associated with managing right of ways, safety and due diligence when a BC Once Call is received from contractors working on behalf of the district.

5.2.1.5 Confirm that there is an infrastructure sharing agreement with Bell Canada to swap conduit access and use and what expectations and conditions are attached to that.

5.2.1.6 Conduct a Fibre Optic Trial build between City Hall and the library next door as a way for the District resources to gain experience in preparing and implementing a fibre optic based network

5.2.1.7 Consider, as a first step, placing Fibre Optic lines between the three District buildings that are in the middle and at each end of the soon to be completed phase one FOI project conduit. This would allow improved speed and reliability of data and allow full roll-out of the VOIP phone system.

5.2.1.8 If the Bell deals fall through, which would mean the full Fibre Optic Infrastructure Ring vision would consider significant capital to complete, enter into discussion with Shaw Cable as they tend to like their own conduit customers and it would be possible to recover some or possibly all of the conduit placement costs to date. Also consider contacting small telecommunications companies/ wholesalers like East Link, Urban Networks, Navigata/TELUS and gauge their interest in accessing the conduit system.

5.2.2 SCADA

5.2.2.1 Cease all current infrastructure project work and conduct an external review/assessment of the project strategy, plan, resource strategy, financial assessment, measurements and bring forward a recommendation to the Corporate Management Team with recommendations on the best approach for managing this initiative including ownership and accountability, priorities and special attention to the process of engaging and collaborating with key stakeholders.

5.2.2.2 In the short term, IS to work with Engineering and Operations to assess and provide “just in time” training/orientation to the Engineering and Operations stakeholders in order to maximize the data and features that are available today.

5.2.2.3 Change the ownership and management of the SCADA project and operations;

5.2.2.3.1 District of Squamish Engineering take the lead and be responsible for the design and planning elements.

5.2.2.3.2 District of Squamish Operations take the lead and be responsible for placing, managing and maintaining the SCADA infrastructure, as well liaising with third party SCADA experts during installation and connection of the network, hardware and software.

5.2.2.3.3 District of Squamish Information Systems provide consulting and support regarding network efficiencies and monitoring, software and hardware selection and installation.

5.2.3 Radio Infrastructure – Hire external expert(s) to review and provide recommendations on the best strategy for each of the District's radio systems.

5.2.4 Public Wireless – IS to provide and overview of the main elements of the Public Wireless project demonstrating the business case, value to the District and the community, operational structure (how it works, who does what), an employee communication draft (explaining the who, what where, and why's) and the marketing plan to engage users and ensure success.

6. Findings and Recommendations from previous Core Service or other Reviews

We have documented Information System related findings and recommendations from previous core service reviews in order to ensure that any duplications are noted and linked.

This review recommends that future reviews ensure that appropriate review decisions and implementations take into consideration findings, recommendations and action plans from other reviews.

Review	Finding and/or Recommendations	Reference
1. OPERATIONS – Executive Summary	"Upgraded technology, especially improvements and access to a fully functional GIS system is a prime need to make for a amore functional work program. As well the present SCADA system needs to be utilized to its full effectiveness. There are other areas where technology can assist in making the work more efficient and are listed in this report."	Page 5
2. OPERATIONS – Service Levels: 4.2 Recommendations	"4. A review of the SCADA system must be undertaken with the goal of addressing gaps in the online monitoring and control system for key elements of the water utility, such as disinfection and reservoir levels."	Page 21
3. OPERATIONS – Service Levels: 4.2 Recommendations	"6. As part of the service level improvements, the Utilities Department should be directly responsible for SCADA management including WWTP, WD,WWC storm water and electrical maintenance. Staff requirements, job functions and work programs should be reviewed."	Page 21
4. OPERATIONS – Organization of Staff: 5.2 Recommendations	"8. Include the SCADA function in the Utilities team versus Information Technology"	Page 25
5. OPERATIONS – Process Improvements/Efficiencies: 7.1 Key Findings	"Technology is a key area for improved efficiencies. Currently staff in Operations must travel to Municipal Hall to search out hard copy maps to find out where different types of infrastructure are located prior to undertaking work. The introduction of an effective GIS system and access to that system by way of computer at the works yard would introduce a much more efficient process for achieving the same results. As well, although the SCADA system is installed at many locations within the District, it is not operating fully and effectively, and has resulted in the current Operations staff not trusting the system."	Page 31
6. OPERATIONS – Process Improvements/Efficiencies: 7.2 Recommendations	"5. Establish an up to date GIS database for Operations staff at the works yard.	Page 32
7. OPERATIONS – Process Improvements/Efficiencies: 7.2 Recommendations	"6. Finalize installation and proper operation and use of SCADA systems throughout the Municipality."	Page 32
8. OPERATIONS – Financial/Budgeting: 8.2 Recommendations	"5. A high-speed connection to be provided to the Works Yard. Allowing for financial system access."	Page 34

9.	OPERATIONS – Financial/Budgeting: 8.3 Further Study Required	"6. Business case required to determine most cost effective service provisions for electrical and instrumentation services, including facilities, street lighting, traffic signals, SCADA systems, pump stations, etc."	Page 35

Action Plan

Below is a list of actions derived from the previously described findings and recommendations section. Please refer to the Findings and Recommendations section for more details. All Budget implications are high-level estimates and would most likely change once more in-depth assessments within each recommendation are conducted.

No.	Category	Action Item	Priority	F&R	Budget Implications
1	PROJECTS	CEASE all NON-CORE projects [Fibre Optic Infrastructure, SCADA, Public Wireless, RADIO Tower construction/retrofit] where possible and review projects and engage corporate leaders appropriately. This review should provide an understanding of the business drivers, previous approval decisions, costs, stakeholder involvement, and work schedule. Assess all outstanding commitments and contracts to ensure that this strategy is not violating agreements previously made on behalf of the District.	HIGH	5.1 & 5.2	NET ZERO - some budget savings of ceasing work would be offset by hiring a short term resource to review all projects, validate value and review results with Corporate Management Team. [~ $20k (4 weeks effort]
2	PROJECTS	Change the ownership and management model for Fibre Optics, SCADA and review for Radio infrastructure. See recommendations section for more information.	HIGH	5.1 & 5.2	To Be Determined (TBD)
3	STRATEGY	Review and update the IS Strategy and ensure that the review and update process be thoroughly inclusive of all District functional representation – not by position, rather by business function and need. Further, ensure that this process appropriately achieves key stakeholder input, buy-in and most importantly their FULL understanding of the intent, implications and approach of the Strategy. Communicate & post the revised IS strategy in common document location.	HIGH	1.2.2 & 1.2.4	None – work to be conducted by the District's current resources and within their current responsibilities.
4	STRATEGY	Consider taking the revised IS Strategy back to Council (for information only) as a way to level-set the years of previous council reports and initiatives that they may or may not be aware of.	MEDIUM	1.2.2.3	TBD
5	STRATEGY	Schedule and conduct regular IS Strategy reviews for the future. Consider a minimum of every two years with the caveat that a review and update should be made in the event of a major project/initiative or need identified.	HIGH	1.2.2.5	None – work to be conducted by the District's current resources and within their current responsibilities.
6	STRATEGY	Ensure the CTO conducts a bi-annual update session with key District Stakeholders to revisit any business changes needs that may have occurred or being contemplate in the near future.	MEDIUM	1.2.2.6	None – work to be conducted by the District's current resources and within their current responsibilities.
7	STRATEGY	IS to develop a leader/manager orientation process and package that provides both an overview of the IS functions, processes, applications, policies as well as the strategy and how it assists to drive the corporate strategy/plan.	MEDIUM	1.2.3	None – work to be conducted by the District's current resources and within their current responsibilities.

8	PEOPLE & STRUCTURE	Review and assess the capacity, skills, knowledge and abilities of the IS function to ensure that the IS team is best positioned to manage the scope they currently have or created. This review suggests the following considerations for that review; ▪ Move all the physical IS infrastructure design and planning responsibilities to the Districts' Engineering teams. ▪ Move all the physical IS infrastructure implementation and maintenance responsibilities to the Districts' Operations teams. ▪ Ensure the IS team, and specifically the CTO, retain full responsibility for setting specifications, planning, installation, monitoring and maintenance of all the infrastructure (data/VOIP network, radio network, etc.) appliances/devices. ▪ Run a collaborative process to determine and manage the details of this change including change in policies, procedures, job descriptions, legal documentation, contracts, supervision, communications, etc.	HIGH	2.2.1	Efficiency gains and no cost implications – generally there should be some efficiencies by organizing this work with teams that are better positioned to manage the infrastructure services.
9	PEOPLE & STRUCTURE	Starting in January 2011, conduct a review of the resource requirements for the IS team to ensure that there is the appropriate amount and skill type of resources to meet the District's needs. This should include updating the BC Municipal Resource Ratio table with newer MISA data or comparable data sources and present to the General manager of Corporate Services for review.	MEDIUM	2.2.2	None – work to be conducted by the District's current resources and within their current responsibilities.
10	PEOPLE & STRUCTURE	Create a workable formal and regular communication processes for the IS team to ensure that everyone understands what each other are doing and what the value and purpose is for the work they do.	HIGH	2.2.3	None – work to be conducted by the District's current resources and within their current responsibilities.
11	PEOPLE & STRUCTURE	Create a workable centralized and co-location schedule for the IS team for approx 50% of the work week.	MEDIUM	2.2.4	Efficiency Gains – the District should see modest efficiency gains.
12	PEOPLE & STRUCTURE	Create an IS resource back-up list/plan showing the individual IS resources referenced against all of the Districts core IS services and skill needs.	MEDIUM	2.2.5	None – work to be conducted by the District's current resources and within their current responsibilities.
13	PEOPLE & STRUCTURE	Research records and provide an assessment of all resources utilized in the last 5 years towards any District IS services and or projects/initiatives in order to get a true picture of the total resources.	LOW	2.2.6	None – work to be conducted by the District's current resources and within their current responsibilities.
14	PEOPLE & STRUCTURE	CTO to assess scheduling and technology solutions that reduce driving (windshield time) between physical sites to troubleshoot and resolve IS issues.	LOW	2.2.7	Efficiency Gains – the District should see modest efficiency gains.

15	PEOPLE & STRUCTURE	Conduct an assessment of the IS administrative and financial processes (technology purchases) and look at moving and/or sharing resources as well as technology productivity tools/applications to alleviate the repetitive administrative tasks required by the IS team.	MEDIUM	2.2.8	None – work to be conducted by the District's current resources and within their current responsibilities.
16	SERVICES & SYSTEMS	Establish an overview document of the District's network design, functions and processes for essential functions [back-up, redundancy, disaster recovery, file storage]	MEDIUM	3.2.1.1	None – work to be conducted by the District's current resources and within their current responsibilities.
17	SERVICES & SYSTEMS	Conduct an independent review of all elements of the network to ensure that all technical standards are at least met and look for recommendations for areas where the District should exceed the standards.	HIGH	3.2.1.2	COST - core network function consulting costs [~ $15k – 4 weeks effort]
18	SERVICES & SYSTEMS	Desktop - Conduct a desktop needs assessment and acquire or redistribute desktop computers and relative peripherals (speakers, external storage, etc.) according to the need.	LOW	3.2.2	None – work to be conducted by the District's current resources and within their current responsibilities.
19	SERVICES & SYSTEMS	Printers - conduct a printer assessment and consider reducing the number of printers in some facilities. If a decision is to reduce any printers, it is critical to understand that this is a change for many people and full and well articulated communication and opportunity to provide input to the process will be important prior to implementing.	LOW	3.2.3	None – work to be conducted by the District's current resources and within their current responsibilities.
20	SERVICES & SYSTEMS	Consider moving the decision making and administration elements of the facility Access/Security processes to the Corporate Services and/or Human Resources areas. IS continues to manage the technical implementation of the security systems.	MEDIUM	3.2.4.1	None – work to be conducted by the District's current resources and within their current responsibilities.
21	SERVICES & SYSTEMS	Corporate Services and Human Resources to conduct a needs assessment of all facility security and work with IS to implement any changes.	MEDIUM	3.2.4.2	None – work to be conducted by the District's current resources and within their current responsibilities.
22	SERVICES & SYSTEMS	District Applications: MAIS – IS and Corporate Services to work with the vendor and end users to collaborate on a priority plan for identify and addressing all outstanding MAIS issues, from connection speeds to reporting. This should also include collaboration on a strategy for identify the end of its usable life and what process and when should replacement options be explored.	MEDIUM	3.2.5.1	TBD
23	SERVICES & SYSTEMS	District Applications: GIS - With the current transition of the GIS responsibilities to Engineering, a suggestion is to have Engineering and IS work with the application vendors and end users to collaborate on a priority plan with roles and responsibilities to identify and address all outstanding and future need features. This plan should include a training needs assessment and implementation	MEDIUM	3.2.5.2	None – work to be conducted by the District's current resources and within their current responsibilities.

		plan			
24	SERVICES & SYSTEMS	District Applications: CLASS – IS and Parks to work with the vendor and end users to collaborate on a priority plan for identify and addressing all outstanding CLASS issues and collaboratively explore the opportunities to leverage additional CLASS features and/or modules.	MEDIUM	3.2.5.3	TBD
25	Services & Systems	District Applications: Web ▪ IS and Corporate Services to collaborate on a Web Asset Inventory to identify all the websites, URL's (active and parked) , and accountabilities and authority for managing them. ▪ Asses the current Intranet and work with all stakeholders to decide on the need for an intranet and if there is a need then develop a plan, schedule, roles & responsibilities for executing and maintaining the site. ▪ Assess the extranet strategy and purpose and report to the Corporate Management team for support and input. ▪ Review the current roles, policies and procedures for registering and monitoring URL/Domain registrations on behalf of the District. If a policy and/or procedure does not exist, then consider establishing them	MEDIUM	3.2.5.4	None – work to be conducted by the District's current resources and within their current responsibilities.
26	SERVICES & SYSTEMS	Mobile - Corporate Services to review, verify and communicate the rationale and process for rationalizing, acquiring, reallocating, maintaining and retiring mobile computing devices such as BlackBerries and tablets.	LOW	3.2.6	None – work to be conducted by the District's current resources and within their current responsibilities.
27	SERVICES & SYSTEMS	Technology Procurement – IS and Corporate Services assess the IS procurement activities and determine if they comply or if changes are need to the policies or activities.	MEDIUM	3.2.7	None – work to be conducted by the District's current resources and within their current responsibilities.
28	SERVICES & SYSTEMS	Helpdesk ▪ Implement a standard and pragmatic call/service management process (call log). If acquiring a technology is central to the process, ensure that a solid requirements list is documented and used to determine which technology is the proper fit and be aware of acquiring a technology that is significantly more than is need or requires significant customization or up keep. ▪ Consider assigning IS team members to sit with select department representatives once a month as a way to experience the customers view and needs for technology and technology support.	HIGH	3.2.8.1	TBD
29	SERVICES & SYSTEMS	Off-Hours – review and make recommendations to provide a more stable and realistic IS (helpdesk, network monitoring) off-hours support strategy.	MEDIUM	3.2.8.2	None – work to be conducted by the District's current resources and within their current

					responsibilities.
30	SERVICES & SYSTEMS	Technology Training ▪ Review the benefits of moving the technology training function somewhere within the organizational that is a best fit for the technology training, including looking at the HR function or where ever other enterprise wide training is coordinated through. ▪ Review and update if required the technology training strategy including looking at the benefits of extended eLearning options, internal train-the-trainer programs for the vendor supplied enterprise applications (MAIS, GIS, CLASS), training skill inventory for sharing super user/trainer skills across departments, more webinars, etc.	MEDIUM	3.2.9	None – work to be conducted by the District's current resources and within their current responsibilities.
31	LEADERSHIP & MANAGEMENT	The IS team should be both recognized for their innovation efforts as well as coached to develop a process and skill of assessing and determining the appropriate level of innovation required.	MEDIUM	4.2.1	None – work to be conducted by the District's current resources and within their current responsibilities.
32	LEADERSHIP & MANAGEMENT	Coaching and/or training should be provided to the IS team relating to industry standards for stakeholder engagement at all stages of technology development and management. Further, a brainstorming session should be coordinated with stakeholders to devise the best and pragmatic approach to involving stakeholders in the future.	MEDIUM	4.2.2	TBD
33	LEADERSHIP & MANAGEMENT	Coaching and/or training should be provided to the IS team relating to industry standards for stakeholder communications at all stages of technology development and management.	MEDIUM	4.2.3	TBD
34	LEADERSHIP & MANAGEMENT	Corporate Services should determine the best approach to narrow the gap for Financial Management rigor within IS. Strong considerations and priority should be given to; ▪ business case training ▪ Supply or creation of District business case templates/standards ▪ Review of District purchasing policies and procedures with IS team	MEDIUM	4.2.4	None – work to be conducted by the District's current resources and within their current responsibilities.
35	LEADERSHIP & MANAGEMENT	Coaching and/or training should be provided to the IS team relating to industry standards for change management at all stages of technology development and management.	MEDIUM	4.2.5	None – work to be conducted by the District's current resources and within their current responsibilities.
36	LEADERSHIP & MANAGEMENT	Corporate Services to set and manage expectations and performance for the level of document management, collaboration and shared access of IS information,	MEDIUM	4.2.6	None – work to be conducted by the District's current resources and within their current responsibilities.

37	LEADERSHIP & MANAGEMENT	IS to develop a project and stakeholder communication tool (dashboard) and processes to ensure stakeholders are aware of project or initiative status and any deviations and revised expectations.	MEDIUM	4.2.7	None – work to be conducted by the District's current resources and within their current responsibilities.
38	LEADERSHIP & MANAGEMENT	IS to work with Corporate Services to understand and manage the IS contracts.	LOW	4.2.8	None – work to be conducted by the District's current resources and within their current responsibilities.
39	PROJECTS – FIBRE OPTICS	Engineering and Operations work with Information Services to identify and document the location of the conduit infrastructure. If and when the fibre optic cable is placed, then tracing methods can be used to locate the cable run in the BC Once Call mapping system. This would allow the District to be aware of any threats to its network and or conduit infrastructure. Further a procedure or procedure update with regards to roles and responsibilities between the District functions would be needed for when a notice is received. This is a key element for identify and managing the Districts risk associated with managing right of ways, safety and due diligence when a BC Once Call is received from contractors working on behalf of the district.	MEDIUM	5.2.1.4	None – work to be conducted by the District's current resources and within their current responsibilities.
40	PROJECTS – FIBRE OPTICS	Confirm that there is an infrastructure sharing agreement with Bell Canada to swap conduit access and use and what expectations and conditions are attached to that.	HIGH	5.2.1.5	None – work to be conducted by the District's current resources and within their current responsibilities.
41	PROJECTS – FIBRE OPTICS	Conduct a Fibre Optic Trial build between City Hall and the library next door as a way for the District resources to gain experience in preparing and implementing a fibre optic based network	MEDIUM	5.2.1.6	COST ~$4,000
42	PROJECTS – FIBRE OPTICS	Considered as a first step placing Fibre Optic lines between the three District buildings that are in the middle and at each end of the soon to be completed phase one FOI project conduit. This would allow improved speed and reliability of data and allow full roll-out of the VOIP phone system.	HIGH	5.2.1.7	COST ~$25,000
43	PROJECTS – FIBRE OPTICS	If the Bell deals fall through, which would mean the full Fibre Optic Infrastructure Ring vision could require significant capital to complete, enter into discussion with Shaw Cable as they tend to like their own conduit customers and it would be possible to recover some or possibly all of the conduit placement costs to date. Also consider contacting small telecommunications companies/ wholesalers like East Link, Urban Networks, Navigata/TELUS and gauge their interest in accessing the conduit system.	MEDIUM	5.2.1.8	NO COST
44	PROJECTS -	In the short term, IS to work with Engineering and Operations to assess and provide "just in time"	MEDIUM	5.2.2.2	None – work to be conducted by the District's current resources

	SCADA	training/orientation to the Engineering and Operations stakeholders in order to maximize the data and features that are available today.			and within their current responsibilities.
45	PROJECTS – RADIO	Hire external expert(s) to review and provide recommendations on the best strategy for each of the District's radio systems.	HIGH	5.2.3	COST - core network function consulting costs [~ $20k – 4 weeks effort]
46	PROJECTS – PUBLIC WIRELESS	IS to provide and overview of the main elements of the Public Wireless project demonstrating the business case, value to the District and the community, operational structure (how it works, who does what), an employee communication draft (explaining the who, what where, and why's) and the marketing plan to engage users and ensure success.	LOW	5.2.4	None – work to be conducted by the District's current resources and within their current responsibilities.

Appendices

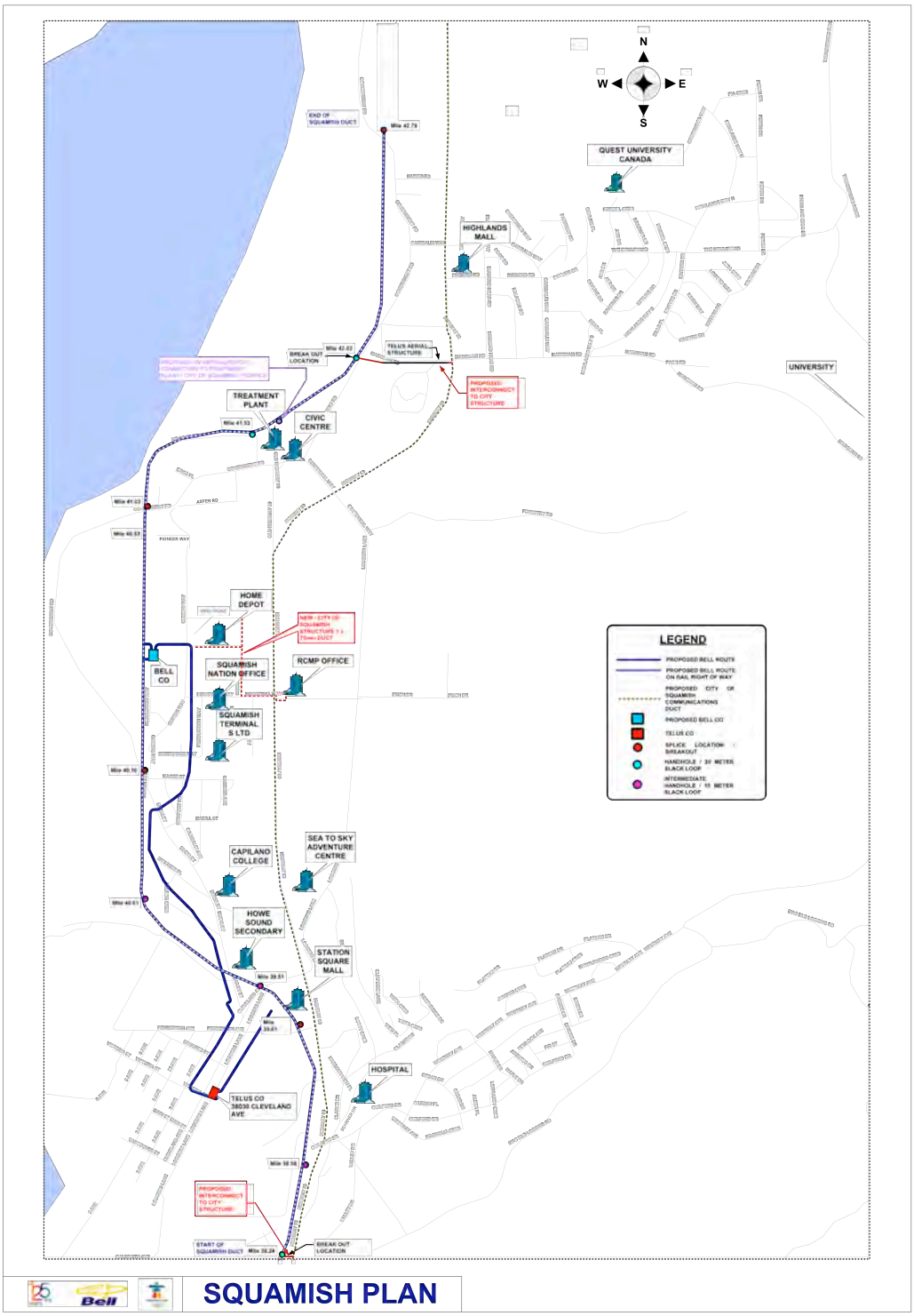
Appendix 1: Interview List

Summary of interviews conducted;

NO.	NAME	TITLE/ROLE
1	Kevin Ramsay	Chief Administrative Officer
2	Robin Arthurs	General Manager of Corporate Services – Review Team member
3	Brian Barnett	Manager Engineering – Review Team member
4	Jim Lang	SEP Coordinator, RCMP Emergency Services, Protective and Support Services
5	Garry Broeckling	Chief Technology Officer
6	Conrad Kordel	Systems Analysts, ISD
7	Gary Sims	IT Support Specialists,
8	Tom Green	ISD Contractor SCADA technologist (long term - 2.5 years)
9 10	Bob Smith Gavin Murga	Manager Operations, Engineering & Parks Foreman Operations, Engineering & Parks
11 12	Tom Easterbrook Mike Adams	Fire Chief Protective and Support Services Assistant Fire Chief, Protective and Support Services
13	Mick Gottardi	Director Community Development
14 15	Chris Bishop Reed Cassidy	Planner, Community Services Building Inspector, Community Services
16 17	Marcia Collier Joanne Greenless	Deputy Treasurer, Financial Services General Manager, Financial Services
18 19 20	Janet Gugins Susan Thompson Shannon	Manager Recreation Services – Review Team member Recreational Programmer Supervisors Recreational Programmer Supervisors
20	TOTAL Interviews	

Appendix 2: Fibre Optic Infrastructure Project Plan

This document was discovered on the squamishbusiness.ca website.



Appendix 3: District of Squamish Public Wireless Project: Access Point List

A list of the access points throughout Squamish for the Districts Public Wireless for-pay-service [basewireless.com]

Squamish District - Nearby Networks

Squamish - Town Center
view details

Squamish - Tower
Service for Squamish Town Center is distributed from our tower behind the Nesters shopping area. view details

Squamish - Tantalus Road
The Galleries and townhouses toward the end of Tantalus Rd. have wireless Internet here.
view details

Squamish - RockCliff
view details

Squamish - Marinas
view details

Squamish - Library
view details

Squamish - Gelato Carina
Gelato Carina on Cleveland has great paninis and Internet view details

Squamish - Garibaldi Estates
Service in Garibaldi Estates is from two locations on Government Road view details

Squamish - Brennan Park
view details

Squamish - Amblepath
view details

Squamish - Adventure Center
view details