



Saskatchewan 211

Business Plan Report

Prepared by IBM Global Business Services



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Government of
Saskatchewan



United Way of Saskatoon

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Executive Summary

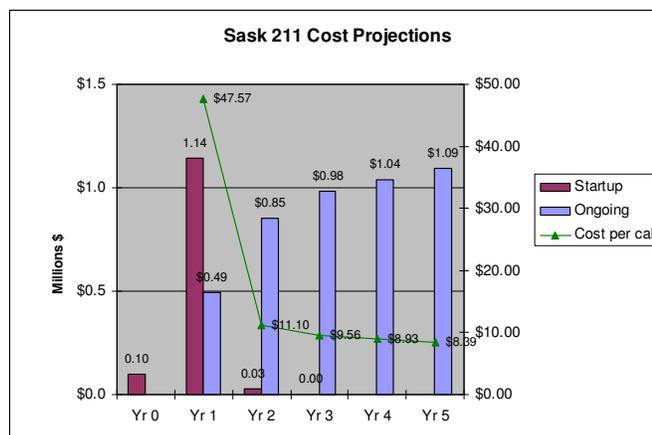
This report builds upon previous work done in the province of Saskatchewan to assess the feasibility and costs associated with a 211 service across the province. The IBM consulting team was engaged to provide a review and re-assessment of the original cost estimates included in the October 2005 *Saskatchewan 211 Operating Model and Business Case*. A comparison of the original cost estimates and the new cost estimates have been provided. As well, opportunities have been identified to reduce the startup and ongoing costs of the service and improve service delivery. These opportunities are documented in Section 4 of this report.

Financial Summary

The consulting team developed financial projections for the startup and ongoing operations of a single 211 centre to service the entire province. The assumptions were ‘build from scratch’, where no existing office space, technology or applications existed. A phased implementation rollout of the service across the province over a six to twelve month period is assumed as part of the new costing estimates.

One time startup funding of \$1,265,300 is required over two and a half years in order to implement the proposed service. Operating costs are estimated to start at \$849,800 per year once the system is fully implemented and grow to almost \$1.1M at year five. Ongoing costs depend primarily on the success of the system and the extent to which the public knows about it and uses it.

The startup and ongoing costs and the cost per call over a six year period is depicted in this graph and the table below.



	Yr 0	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Total
Startup	\$100,000	\$1,140,300	\$25,000	\$0	\$0	\$0	\$1,265,300
Ongoing		\$494,700	\$849,800	\$983,000	\$1,040,400	\$1,093,700	\$4,461,600
Total Yearly Costs	\$100,000	\$1,635,000	\$874,800	\$983,000	\$1,040,400	\$1,093,700	\$5,726,900
Net Present Value	\$100,000	\$1,583,130	\$820,175	\$892,381	\$914,526	\$930,878	\$5,241,089
Cost per call		\$47.57	\$11.10	\$9.56	\$8.93	\$8.39	
Cost per capita	N/A	\$0.51	\$0.87	\$1.00	\$1.05	\$1.10	

Table 1: Cash Flow Requirements

1 Background and Approach

1.1 Project Background

In 2004 a situational analysis was commissioned by the United Way of Saskatoon to assess the need for 211 services in the province of Saskatchewan. As a result, the United Way of Saskatoon engaged Deloitte & Touché in 2005 to develop a business case to justify the costs for the service. The *Saskatchewan 211 Operating Model and Business Case* was the resulting report which evaluated three operating model scenarios for 211, the benefits and costs of the models and a high level roadmap to move forward to implementation.

The *Saskatchewan 211 Operating Model and Business Case* was reviewed by the Government of Saskatchewan, Information Technology Office (ITO) in early 2007. While they found the case for 211 compelling, the implementation and ongoing costs for the service lacked sufficient detail and appeared to be out dated. The ITO engaged IBM Global Business Services to review and re-assess the implementation and ongoing cost estimates in the 2005 *Saskatchewan 211 Operating Model and Business Case* report. The IBM consulting team assigned to the engagement have specific experience with developing similar business plans and cost estimates for 211 in both Alberta and British Columbia. This report is the result of that engagement.

1.2 Approach

The information as provided in the *Saskatchewan 211 Operating Model and Business Case* was used as a baseline and as a critical source of information on the preferred model. The objective of the engagement was to provide a 'refresh' of the cost estimates of the Baseline Scenario operating model. The Baseline Scenario assumes that Saskatchewan operates a self sufficient 211 system with no community or government partners.

The project was conducted using the following approach:

1. A review and confirmation of the preferred Saskatchewan 211 business model
2. A high level review and assessment of the technology and infrastructure requirements, including a re-assessment of call volumes and staffing estimates
3. A review and re-assessment of the operational requirements and of the proposed implementation roadmap
4. A review and re-estimate of the implementation and ongoing cost estimates contained in the 211 Business Plan
5. Meetings with the Department of Health and with the Farm Stress Line
6. Identify gaps or inconsistencies in the costs as estimated and provide commentary on those gaps as they relate to the Saskatchewan 211 Business Plan.

Once the review and reassessment was complete, revised cost estimates for Saskatchewan 211 were developed. Standard 211 estimating approaches and tools were utilized and the experience and knowledge of other 211 implementations were applied. The results were then compared to other 211 initiatives in Canada and the US.

2 Business Plan Analysis & Cost Comparison

2.1 Summary Cost Comparison

The revised costs compare to the original business case costs as follows:

	Original	Revised
Start Up Costs	* \$173,250	\$1,265,300
First Year Operations	\$413,350	\$494,700
Annual Operating Costs at Full Operations	\$756,000	\$1,093,700
Cost Per Call	\$6.15	\$8.39

* not including staff to implement the launch

Table 2: Summary Cost Comparison

A number of factors can be attributed to the differences in the cost estimates and can be summarized as follows. The pages following provide more detail on how the revised costs have been calculated and what has been included.

- Higher call handling times are expected which will drive a 30% increase in staff operator requirements
- Higher estimates for Data Editors, Management and IT support increases staffing requirements by an additional 50%
- Yearly compensation adjustments are included in the revised cost estimate
- Comprehensive estimate for ongoing operational costs is provided based on the revised staff count
- Design and development of the website, database and applications is included in the revised cost estimate; ongoing maintenance for these items included as an operational cost
- Site build out costs include all telecommunications, network and server equipment
- Business Startup, Project Management and Recruiting & Hiring costs now included

Refer to Appendix D for a detailed cost comparison of the original business case costs to the revised cost estimates.

2.2 Call Volume and Staffing Comparison

2.2.1 Call Volume Estimates

The financial projections for 211 are influenced primarily by call volumes and staff requirements. Extensive experience with 211 across North America indicate that call volumes can be projected based upon a number of factors:

- population – the standard formula used is 8% of the population will call 211 1.3 times in a year once the system is fully operational
- adoption rate – an increasing adoption rate year over year based on phased roll out and increasing marketing and awareness
- current call volumes - experience indicates that call volumes will double and in some cases have increased as much as 150%

Call volumes are also very tightly tied to marketing. The more the public is aware of the service, the more calls are received. To date, no 211 operation has found the demand ceiling – most are forced to discontinue marketing campaigns once capacity and funding limitations are reached.

The revised call volume estimates were developed using the National 211 Call Volume Estimator and then compared to the actual call volumes being experienced in other Canadian 211 operations. The following table shows the original business case call volume estimates and the revised estimates, as well as the population and adoption rate forecasts that were applied.

	Original						Revised				
	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5
Population Served	995,085	995,085	995,085	995,085	995,085	995,085	200,000	981,759	988,631	995,551	1,002,520
Adoption Rate	3%	5%	7%	9%	11%	13%	4%	6%	8%	9%	10%
Annual Call Volumes	29,853	49,754	69,656	89,558	109,459	129,361	10,400	76,577	102,818	116,480	130,328
After Hours Call Volumes	1,612	2,687	3,761	4,836	6,239	7,374	0	0	5,141	6,989	10,426

Table 3: Call Volume Comparison

The primary reasons for the differences are as follows:

Population – in the original business case, population was kept flat at 995,085. In the revised estimates the 2006 Census was used as the basis for forecasting population growth with a .7% increase in population applied to each year.

Adoption rate – a faster initial adoption rate is assumed in the revised estimates.

Experience with other 211 operations – the National Call Volume Estimator used in the revised estimates predict 1.3 calls from each of the citizens based on the adoption rate; the original business case predicted 1 call from each citizen.

After Hours Call Volumes

In Year 1 and 2 it is envisioned that the 211 centre operate for 16 hours per day (7 a.m. to 11 p.m.) as it establishes itself. Based on after hour call projections of 5% in year 3 growing to 8% in year 5, after hours call volumes do not reach critical mass to support 1 FTE until year 5. An acceptable strategy is to route after hours calls to a 24 hour Distress Line until call volumes warrant an FTE. The original business case forecasted after hours calls as 6% of the daytime calls.

Please refer to *Appendix A - Projected Call Volumes and Staffing Requirements* for a detailed 5 year view of estimated call volumes, population forecasts and projected adoption rates.

2.2.2 Staffing Requirements

Call volumes and call handling time are the main factors in determining the number of I&R Specialists (I&RS) that will be required. Experience in this area indicates that the time it takes to handle an I&R call will improve as I&RS become familiar with the new systems and processes.

Staffing requirements for 211 Information & Referral Specialists have been based on the following assumptions:

- An estimate of the amount of time currently being spent with I&R calls is in the range of 5 to 15 minutes,
- Call handle time will average 11 minutes per call in the first few years as I&RS will have a learning curve due to the new system, processes, data and services,
- Call handle time will improve to 9 minutes per call once operators become familiar with the systems and data,
- Minutes available per operator are 101,790 per year based on the Available Time Calculation in Appendix A.

The following table shows the I&RS staffing requirements based on the estimated call handle time and call volumes.

	Original						Revised				
	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5
Annual Call Volumes	29,853	49,754	69,656	89,558	109,459	129,361	10,400	76,577	102,818	116,480	130,328
Annual Calls per I&RS	10,000	10,000	10,000	11,000	12,000	14,000	9,600	9,600	10,500	10,500	10,500
I&RS Required	4	6	7	8	10	10	2	8	10	11	12

Table 4: I&RS Required

Assumptions and criteria used to estimate other staffing requirements include:

- 1 Data Specialist is required to maintain 1,500 records in the Community Resource database; a total of 7,500 records is estimated to be in this database.
- A ratio of 1:10 supervisors or managers to staff

- Two FTE's are assumed to handle all aspects of managing the operations of the centre and of the staff, marketing, and accounting.
- One IT resource with the requisite skills to manage all facets of the technology – network, telephony, database, and to develop the analytical reporting for the centre.

The following table shows the revised staffing requirements compared to the staffing requirements in the original business case.

	Original						Revised				
	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5
I&RS Required	4	6	7	8	10	10	2	8	10	11	12
Data Specialist	2	2	2	2	2	2	3	5	5	5	5
IT Specialist	0.5	0.5	0.5	0.5	0.5	0.5	1	1	1	1	1
Mgmt & Admin	1	1.0	1.0	1.0	1.0	1.0	2	2	2	2	2
Total Staff	7.5	9.5	10.5	11.5	13.5	13.5	8	16	18	19	20

Table 5: Staff Requirements Comparison

2.3 Supporting Technology

2.3.1 Telephone System

A key component in the 211 system is a common redundant telephony platform that will support the entire province and potentially in the future, link 211 call centres and remote agents together for back-up purposes and shared after-hours services while remaining as cost effective as possible. The solution that has been costed in this re-assessment includes one call centre site where the technology can easily be geographically “spread apart” so that if one call centre is out of service, another call centre can easily pick up those calls. If the 211 call centre site is not accessible (due to a pandemic for instance), remote agents can service 211 callers from either their homes or other remote locations that have Internet connectivity. The telephony solution is also intended to be scalable and will at minimum meet the fifth year estimated call volumes and staffing requirements.

The proposed solution is a new build of a Cisco-based Internet Protocol (IP) Telephony platform consisting of Cisco Unified Call Manager with Unity voicemail, Cisco IP Phones, and Cisco Unified Call Center Express.

IP Telephony represents a major step toward a completely unified user interaction by providing a bridge between the worlds of IP and telephony. An IP Contact Centre solution combines data and voice technologies to facilitate geographically independent multimedia customer interaction. This technology enables customer interactions from any kind of contact channel like voice, e-mail, web site enquires and chat to be intelligently distributed to agents or resources over both a traditional circuit-switched and an IP infrastructure. With this technology, Saskatchewan 211 can create an open communications platform leveraging voice

and data technologies to facilitate geographic and media independent customer interaction. Through these applications, Saskatchewan 211 can move into a cost effective converged network.

The IP Contact Centre technology will do away with the separate, incompatible technologies of the past by providing a converged IP network infrastructure that can accommodate data, voice, and video on a single network and support new classes of applications, which will be to take advantage of these multiple media types. The IP Contact Centre architecture provides a seamless migration path from the legacy call-centre infrastructure to the IP-empowered, multimedia contact centre. Deployment can be incremental, adding IP telephony, new media channels, and new IP-based services at a rate that meets Saskatchewan 211 demands and budget constraints. As existing solutions mature and new Saskatchewan 211 interaction requirements emerge, such as Web collaboration and Internet voice, the IP Contact Centre architecture will provide a seamless and flexible path for migration.

Typical IP Contact Centre technology capabilities include:

- intelligent contact routing,
- automatic call distribution (ACD),
- interactive voice response (IVR) integration,
- network-to-desktop computer telephony integration (CTI),
- web collaboration and e-mail response management, and
- real-time and historical reporting.

The IP-centric architecture of IP Contact Centre technology utilizes existing IP network thus optimizing investments in wide area network (WAN) infrastructure and lowering administrative expenses. It is typically designed for implementation in single-site and multi-site contact centres as well as service provider hosting environments. IP Telephony can readily accommodate Saskatchewan 211 requirements regardless of the operating model decided upon.

Cost Comparison

It is difficult to ascertain the telephony solution priced in the original business plan. The total dollars that were allotted to “telecommunications, telephone equipment, agent software, servers and network equipment” is approximately \$70,000. The total dollars for the solution described here is close to \$277,000 including web and application servers and all installation services.

See Appendix D Technical Solution for a description of the solution components. Appendix C Detailed Cost Comparison contains a line by line comparison of the costs in the original business case to the costs for the re-assessed solution.

2.3.2 Database, Website and Applications

Core to the operations of any I&R service is a comprehensive, up to date, human services information database. I&R specialists use this database, or its associated printed directory, to identify the human service agency that can meet the needs of their caller.

The primary scope of the data management solution, in the above context is to create a sustainable solution for collecting human services data from across the province into a single data repository. The Data Management solution scope also includes:

- The development of a data gathering approach and related management processes suitable for the province of Saskatchewan
- Various data repositories
- The operational applications with appropriate functions and security that is necessary for various types of users involved in collecting, managing, updating, searching, accessing, publishing and providing referrals from the human services data repository across the province.

Data Gathering Approach

The data gathering approach is to effectively create a single and centralized Human Services Database (HSDB) for the province. Such a database will not only serve the 211 Information and Referral needs but will also be valuable to other organizations such as HealthLine.

As is typical in any province, several types of organizations are involved in providing human services across the province. These include:

- Government ministries that provide direct human services falling within their responsibilities. Most of the ministries also provide funding under contract to local agencies for providing specific services on their behalf.
- Municipal Governments that provide certain types of human services.
- Federal Government Ministries that provide some direct human services that fall under federal mandates.
- Provincial Health Authorities provide direct health related human services. Most of the Health Authorities also provide funding under contract to local agencies for providing specific services on their behalf.
- Independent Not-for-Profit Agencies that provide services within a limited geography such as a city or a community.
- Non-government agencies with a province-wide mandate for providing specific human services.
- Community based organization that provide services specific to the need of the served community

Gathering data *directly* from all of the above mentioned organizations and keeping it up-to-date will be a monumental task risking the success of the 211 service. The bulk of human services data has to be gathered from independent not-for-profit agencies which are spread across the province. Forming partnerships with organizations that currently gather such data will alleviate the risk.

Saskatchewan 211 can directly collect human services data from large organizations such as relevant provincial government ministries, federal government ministries and agencies, Provincial Health Authorities, and large Not-for-Profit province-wide agencies. Dedicated Saskatchewan 211 data specialists may focus on collecting and keeping the data up-to-date from each of these groups of data providers. This approach will provide continuity and maintain relationships with the data providers. This approach also minimizes the data provision fatigue that can occur when several organizations are asking for the same data. Initially this process will be manual. Automation and further improvement of this process can be achieved in a future project phase.

The bulk of human services data has to be gathered from independent not-for-profit agencies which are spread across the province. The gathering of human services data from these service providers can be based on forming partnerships with organizations that already collect data from such organizations.

The approach is to select capable organizations that are active and prominent in regional communities. The optimum number of data partners may be determined by the analysis of provincial population, geography, and number of organizations providing human services within the geographical regions for which the data has to be collected and maintained.

Saskatchewan's Ministry of Agriculture and Food manages a web-based on-line directory of available human services and programs under the "Farm Stress Line" program. Establishing a partnership with this organization will give Saskatchewan 211 a substantial baseline of data that can be further enhanced and expanded. The data from the "Connection Services Directory" will have to be extracted, re-classified into the appropriate AIRS taxonomy categories and loaded into the 211 Human Services Directory database.

Applications

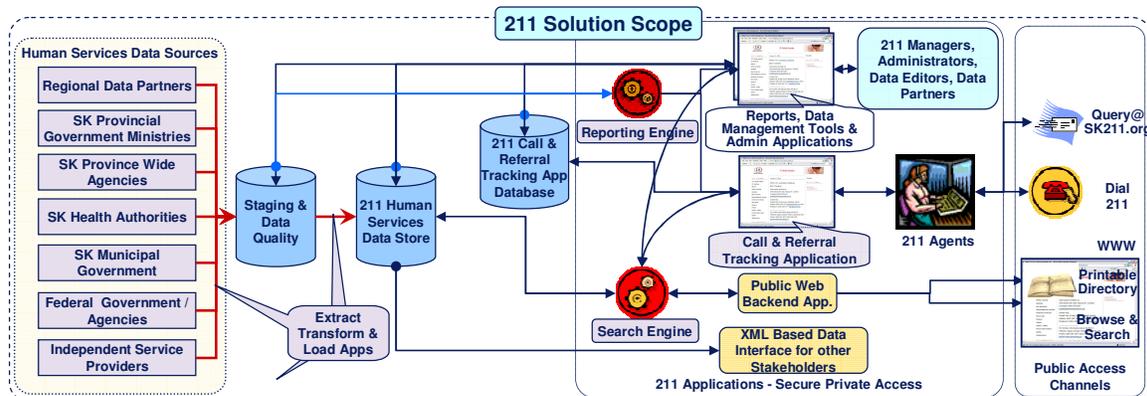
There are four fundamental Operational Areas of a 211 Information and Referral Software Application.

1. Data Management:

- Software tools, applications and repositories to facilitate and manage gathering of Human Services Data, its classification and indexing, and continuous data quality assurance
- Securely accessible to 211 Data Specialists including access by Data Partners to manage data they own

2. 211 Public Web Site:
 - Public web access channel to Human Services Data with basic search capabilities
 - May include enhance facilities for paid members including advance search
 - Access to an online application that includes capability to generate mini-directories of services in PDF format
3. Call Tracking and Referral Tracking:
 - Software application to support I&R Specialists to take a call
 - Advanced Searching of Human Services Database
 - Capability to record which services a caller was referred to
 - Application Functionality to support advocacy and follow-ups when required for a call
4. Reporting (Regulatory, Management, Operational etc) and Printed Directory Production
 - Software tool to generate internal and external reports
 - Generate a printed directory of Human Services

The following diagram describes the interaction and dependencies between the above mentioned operational areas:



Cost Comparison

It is estimated that approximately \$670,000 will be required in order to build the data management solution. This includes all aspects of design, test and build of the necessary applications and website described here. Data gathering and population of the database with the categorized data will be performed by the Data Specialists during the organizations start up year. Salaries for these resources have been included in *Table 7: Ongoing Costs* in the Year 1, start-up year.

The original business case included \$16,950 over six years to “host the website, perform one time transfer of data, and for ongoing data transferring”. The

consulting team could find no costs included in the original business case for development or purchase of the database application, call tracking application or website. There is an indication in the original business case, but it is not explicitly stated, that the existing Community Connections database and/or library directories would be utilized by Saskatchewan 211. It is the opinion of this consulting team that this is not a feasible solution given the nature of the data management solution required.

See Appendix C Detailed Cost Comparison for a line by line comparison of the costs in the original business case to the costs for the re-assessed solution.

2.4 Implementation Roadmap

The following diagram depicts the key milestones, major implementation steps and the estimated timeframe for the project.

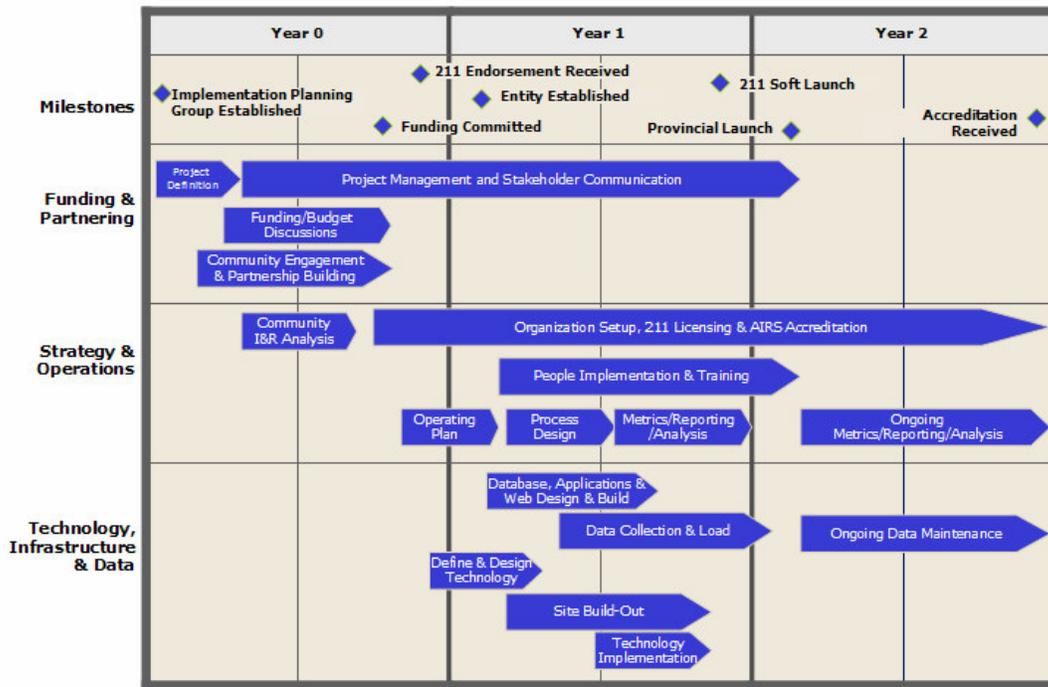


Figure 1: Implementation Roadmap

The implementation roadmap assumes approximately 9 months to complete the necessary community engagement and partnership building and to secure the necessary funding for the initiative. After this milestone is achieved, the detailed implementation planning can commence. It is expected that within one year, the service will be ready for a three month ‘soft launch’ in a specific community. This would be followed by a planned roll out of the service across the balance of the province.

The Implementation Roadmap Details contained in *Appendix E* provide a detailed description of the activities in each of these implementation work streams including:

Description	<ul style="list-style-type: none">• A definition of the work stream
Approach	<ul style="list-style-type: none">• The activities, milestone, deliverables and definitions of success
Timing & Resources	<ul style="list-style-type: none">• The weekly effort in days• The total duration of the work stream• The target start date• The cost and effort drivers that will determine the timeline
Key Assumptions & Dependencies	<ul style="list-style-type: none">• The assumptions that affect the work stream• Factors upon which the work stream depends on for success, or that are affected by it
Opportunities	<ul style="list-style-type: none">• Opportunities that exist to either reduce cost and/or improve service delivery

This revised Implementation Roadmap suggests that the implementation of the 211 service can be completed over a 2 ½ year timeframe as opposed to 5 years in the original business case. It also suggests a three month time period in which the system is tested in a ‘soft launch’, as opposed to two years in the original business case. Reducing the timeframe for testing will benefit the community through earlier service delivery, as well as benefit all aspects of the implementation project plan.

3 Revised Financial Projections

3.1 Startup Costs

The costs projected below total \$1,265,300 over a two and a half year implementation period as defined in the Implementation Roadmap, and assumes a single 211 Centre is established.

Resources will be required from various government and community agencies in order to participate in the community engagement, partnership building and funding and budget discussion activities as described in the Implementation Roadmap. These resources would also likely participate by being members of the Implementation Planning Group who will oversee the initiative. The costs for these resources have not been included in these estimates.

In the Startup year it is assumed that the 211 Centre staff will perform the implementation tasks associated with data and processes as defined in the Implementation Roadmap. The costs for installation of hardware, software and site build activities are included in the estimates below.

		Yr 0	Yr 1 (Startup)	Yr 2
1	Hardware & Software		\$206,500	
2	HW & Telephony Services		\$76,800	
3	Database, Website & Application Build		\$670,000	
4	Desktops & Software		\$20,000	
5	Furniture & Equipment		\$30,000	
6	Site Build		\$45,000	
7	Project Management & Startup	\$75,000	\$50,000	
8	Travel	\$5,000	\$5,000	
9	Public Awareness		\$20,000	\$15,000
10	Training & Certification		\$7,000	\$10,000
11	Organization Start Up	\$20,000	\$10,000	
	Total	\$100,000	\$1,140,300	\$25,000

Table 6: Startup Costs

Notes

- 1 All servers, o/s, network equipment, telephony equipment
- 2 Services to install and configure equipment
- 3 All applications design, build and test
- 4 20 PC's @ 1000 each
- 5 \$1500 per person
- 6 Build out of new office space and HVAC room
- 7 PM for 2 years plus other startup costs for pre-planning
- 8 8-10 trips per year for community engagement
- 9 Marketing materials & advertising
- 10 \$1000 per new staff plus Accreditation in Yr 2
- 11 To setup new entity, legal, recruiting & hiring new staff

3.2 Ongoing Costs

The estimated annual costs to operate a single 211 centre for Saskatchewan are as shown in the table below.

	Year 1 (Startup)	Year 2	Year 3	Year 4	Year 5
Salaries & Benefits	\$389,400	\$727,600	\$816,800	\$860,200	\$902,500
211 I&R Specialists	\$82,600	\$330,400	\$413,000	\$454,300	\$495,600
Data Specialists	\$123,900	\$206,500	\$206,500	\$206,500	\$206,500
Management	\$73,160	\$73,160	\$73,160	\$73,160	\$73,160
IT & DBA	\$64,900	\$64,900	\$64,900	\$64,900	\$64,900
Admin, Finance, Marketing	\$44,840	\$44,840	\$44,840	\$44,840	\$44,840
Compensation Adjustments	0	\$7,800	\$14,400	\$16,500	\$17,500
Telecommunications & Systems	\$54,300	\$61,200	\$71,200	\$71,200	\$71,200
T1 Lines (voice & data)	\$12,000	\$12,000	\$12,000	\$12,000	\$12,000
Telephone Long Distance	\$500	\$1,200	\$1,200	\$1,200	\$1,200
HW & Software Maintenance	\$41,800	\$43,000	\$43,000	\$43,000	\$43,000
Website hosting & domain	\$0	\$5,000	\$5,000	\$5,000	\$5,000
Application maintenance	0	0	\$10,000	\$10,000	\$10,000
Operating Costs	\$51,000	\$61,000	\$95,000	\$109,000	\$120,000
Public Awareness & Promotion	\$0	\$0	\$10,000	\$10,000	\$10,000
Audit, Legal & Professional Fees	\$6,000	\$6,000	\$6,000	\$6,000	\$6,000
Building Occupancy	\$30,000	\$30,000	\$30,000	\$30,000	\$30,000
Training & Development	\$0	\$0	\$4,000	\$8,000	\$9,000
After Hrs Call Handling	\$0	\$0	\$20,000	\$30,000	\$40,000
Supplies & Services	\$15,000	\$25,000	\$25,000	\$25,000	\$25,000
Total	\$494,700	\$849,800	\$983,000	\$1,040,400	\$1,093,700

Table 7: Ongoing Costs

Ongoing costs shown here assume:

- Some Year 1 costs are associated with system startup. For example, in Year 1, staff will perform implementation tasks in preparation for the system launch.
- System 'soft launch' will take place in month 10 of Year 1; call volumes in this first year are expected to be very low as a result.
- Full roll out of the system will commence approximately 3 months after the soft launch. This will allow for system testing and fine tuning of processes.
- The system is fully launched within year 2 after which call volumes increase based on increased adoption rates and marketing.
- Hours of operation in Years 1 and 2 will be 16 hours per day; at full launch hours of operation will increase to 24 hours with after hours calls 'outsourced' to a crisis line or other community I&R provider who is already staffed between 11 p.m. and 7 a.m.

See Appendix D for the details regarding the ongoing costs.

3.3 Cash Flow Projection

The initiative will require approximately \$1.26 million over 2.5 years for startup. Ongoing costs for the first 5 years of operations total approximately \$4.46 million. A total of \$5.73 million is required over 5 years, or \$5.24 million using a Net Present Value annual interest rate of 3.25%.

	Yr 0	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Total
Startup	\$100,000	\$1,140,300	\$25,000	\$0	\$0	\$0	\$1,265,300
Ongoing		\$494,700	\$849,800	\$983,000	\$1,040,400	\$1,093,700	\$4,461,600
Total Yearly Costs	\$100,000	\$1,635,000	\$874,800	\$983,000	\$1,040,400	\$1,093,700	\$5,726,900
Net Present Value	\$100,000	\$1,583,130	\$820,175	\$892,381	\$914,526	\$930,878	\$5,241,089
Cost per call		\$47.57	\$11.10	\$9.56	\$8.93	\$8.39	
Cost per capita	N/A	\$0.51	\$0.87	\$1.00	\$1.05	\$1.10	

Table 8: Cash Flow Requirements

These costs represent a cost per call starting at \$11.10 in Year 2 and leveling off to \$8.39 at year 5. This represents a cost of \$1.10 per citizen of Saskatchewan.

For comparison purposes:

- The cost per call for US 211 sites range from \$3.71 at the Minneapolis site to just over \$20 in Albuquerque; the average cost per call is \$11.38.¹
- The cost per call for the Toronto 211 service in 2005 was \$10.02.²
- The BC 211 Implementation Plan³ estimated total startup costs of \$4.6 million over 18 months and ongoing costs of \$5.6 million per year at year 5, to service a population of 4.4 million. This equates to a cost per call of \$8.52 at year 5.
- The cost estimate to provide 211 to 7.7 million people in Ontario⁴ indicated total startup costs for a phased rollout of eight Regional Information Centres across the province would be \$6M with total costs over 5 years of \$64M.

¹ *National Benefit/Cost Analysis of Three Digit-Accessed Telephone Information and Referral Services* - Ray Marshall Center for the Study of Human Resources; December 2004; page 45.

² *Findhelp Information Services Annual Report 2005*

³ *BC 211 Implementation Plan* - IBM Global Business Services for the United Way of Lower Mainland, October 2006

⁴ *211 for all Ontario: Bringing People and Services Together*; Inform Ontario; United Ways of Ontario; Community Information Toronto, United Way of Greater Toronto; Woods & Eyre; July 2003.

4 Opportunities for Saskatchewan 211

As indicated in Section 1.2 of this report, this cost reassessment has been based on a Baseline Scenario Operating Model which assumes that Saskatchewan operates a self sufficient 211 system with no community or government partners. This however, is not necessarily the optimum model for the service to operate. There are a number of opportunities to reduce costs and improve service delivery across the province and the initiative should pursue these before proceeding. These opportunities include:

1. Identify an existing community based I&R provider to participate as a partner in 211 service delivery

211 is a standards based service with the Alliance of Information and Referral Systems (AIRS) standards as its basis. An existing community based I&R provider will have the requisite skills, knowledge, processes and people already in place. Knowledge of how to deliver I&R will greatly enhance and strengthen the ability to deliver high quality 211 services, as well as reduce the time and effort to develop the processes, train the resources and implement the service.

2. Partner with a government ministry such as Health, who currently have a call centre facility in place, or utilize the hosted services of a data centre or call centre

A significant portion of the implementation costs (over \$378,000) relate to the physical build of a site in which to house Saskatchewan 211. Office space needs to be acquired and configured and a complete network and telephony infrastructure purchased and installed. A major portion of these costs can be avoided, or at least significantly reduced, if Saskatchewan 211 can share or utilize an existing call centre facility.

3. Identify partners to share in the development cost and the ongoing data management of the human services database.

Approximately \$670,000 of the implementation costs are associated with building the human services database and applications for 211. It is recommended that Saskatchewan 211 investigate alternatives to building a database on their own. Those would include:

a) Negotiate with another Human Services database owner to utilize their application

Currently, both Toronto and Alberta have database applications that support 211. Since 211 is a standards based service, either of these applications should meet the requirements of Saskatchewan 211. The cost to subscribe or license an application would be a considerable cost saving at startup.

b) Partner with Health, Community Connections or other community or government agencies to build a shared database

There are likely a number of government agencies who would benefit from a province wide human services database. Community Connections already have a significant portion of the data required for a province wide Human Services Database. The Farm Stress Line would likely benefit from a more robust, web based application as well. In addition to Health, others who may be interested in participating are those with responsibilities in the areas of community, family, seniors and children. An example of where this is working currently is in Alberta. HealthLink Alberta and Calgary 211 have been successfully meeting their individual requirements with shared use of the InformAlberta database.

Appendix A - Projected Call Volumes & Operator Requirements

With the experience of other 211 implementations across North America, we can calculate projected call volumes based on an expected % of the population (Adoption Rate) making 1.3 calls per year.

Sask 211 5 Yr Projection					
	Population Served	% of total Population	Adoption Rate	Projected Call Volume	I&R Specialists
Year 1	200,000	21%	4%	10,400	2.0
Year 2	981,759	100%	6%	76,577	8.0
Year 3	988,631	100%	8%	102,818	9.8
Year 4	995,551	100%	9%	116,480	11.1
Year 5	1,002,520	100%	10%	130,328	12.4

Projected Staffing Assumptions

Staffing requirements have been based on the following assumptions:

- Operators will have a learning curve in the first few years due to the new system and processes and new data and services to become familiar with
- Call handle time will improve once operators become familiar with the systems and data and the system is fully implemented across all regions
- Once operators are through the learning curve, they will become more productive
- Minutes available per operator is based on the Available Time Calculation below.

	Mins per call	Calls/Yr/ I&RS	Mins available/ I&RS*	Projected Call Volume	Total Mins Needed	# of I&RS Needed
Year 1	11	9,600	101,790	10,400	110,273	2.0
Year 2	11	9,600	101,790	76,577	811,957	8.0
Year 3	10	10,500	101,790	102,818	996,743	9.8
Year 4	10	10,500	101,790	116,480	1,129,186	11.1
Year 5	10	10,500	101,790	130,328	1,263,433	12.4

*see Available Time Calculation following

Available Time Calculation

The following assumptions were used in determining the available minutes per operator to be used for call handling.

One Full Time Equivalent =	260.00	Annual Number of Work Days
Less	<u>-26.00</u>	20 Paid Time Off Days
(sick, vacation, personal days & holidays)		
Number of Work Days	234.00	Net Annual Number of Days
One Full Time Equivalent =	8.00	Number of Paid Hours per day
Less Non Phone Time	<u>-0.75</u>	Off Phone Time (see below*)
	7.25	Number of Hours on Phone per Day
number of minutes worked/day	435.00	7.25 hours x 60 minutes
number of minutes worked per year	101,790	435 minutes x 234 days

*Time (minutes) off phones, per month:

Training/"Breaks"/Meetings (Assume that staff take "breaks" of about 30 minutes per day, have weekly meetings and monthly trainings.) **Average # of minutes off phones per day**
45.00

Appendix B - Technical Solution

The proposed solution for Saskatchewan 211 is based on Voice over IP (VoIP) technology. The benefits of IP Contact Centre technology includes:

- Enhanced productivity through new IP-based applications such as integrated multimedia queuing
- Enterprise-wide contact management based on a single set of business rules and supported by normalized consolidated reporting
- Geographic independence of both agent resources and IP-based application servers through the ubiquity of IP transport
- Lower total cost of ownership, lower capital-equipment investment, single network, and single support staff eliminating the overhead of multiple diverse data, voice, and video networks
- Leverages the existing provincial WAN backbone in multi site deployment scenarios

The following diagram depicts a high-level representation of the overall technology solution including the telephony infrastructure.

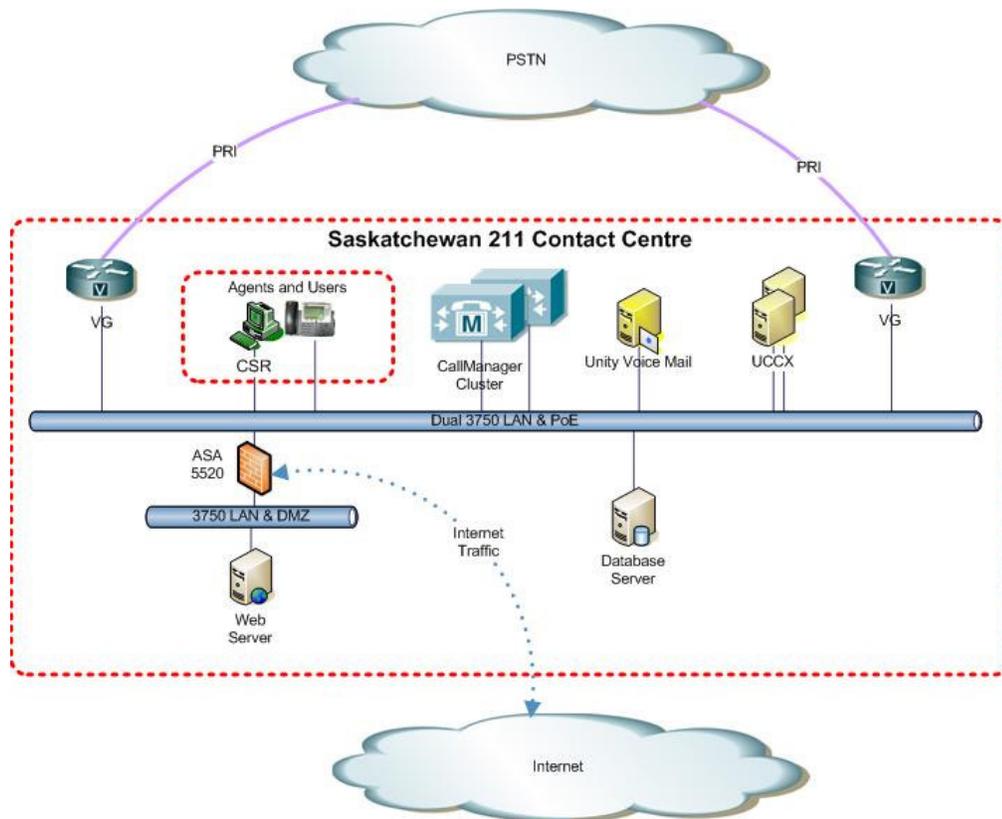


Figure 2: Solution Overview

Solution Components

The recommended IP Telephony solution is based on the Cisco Unified Contact Centre set of products.

Cisco Unified Call Manager

Cisco Unified CallManager software is the call-processing component of the Cisco Unified Communications system. It is a scalable, distributable, and highly available enterprise IP telephony call-processing solution.

Cisco Unified CallManager extends enterprise telephony features and capabilities to packet telephony network devices such as IP phones, media processing devices, voice over IP (VoIP) gateways, and multimedia applications. Additional services such as unified messaging, multimedia conferencing, collaborative contact centers, and interactive multimedia response systems are made possible through Cisco Unified CallManager open telephony APIs. Cisco Unified CallManager is installed on the Cisco Media Convergence Server 7800 Series of server platforms and selected third-party servers.

Cisco Unified CallManager includes the following features:

- Highly scalable, supporting up to 30,000 lines per server cluster
- Ability to support a full breadth of communications features and applications, including SIP-based applications
- Highly available for business continuity, supporting multiple levels of server redundancy and survivability
- Support for a broad range of phones to suit varying user requirements
- Choice of operating system environments: Windows server-based implementation or Linux-based appliance model implementation

Cisco Unified Contact Center Express

Designed for enterprise departments, branch locations, and small to medium-sized companies that want to deploy an entry-level or midmarket contact center solution, Cisco Unified Contact Center Express can help these organizations enhance operational efficiency, reduce business costs, and improve customer response.

Cisco Unified Contact Center Express simplifies business application integration, eases agent administration, increases agent flexibility, and provides efficiency gains in network hosting. Designed for formal and informal contact centers, this unified communications solution also delivers:

- Sophisticated call routing
- Contact management
- Administration features
- Simplified installation, configuration, and application hosting

A single-server, integrated "contact center in a box," the Cisco Unified Contact Center Express:

- Allows independence in agent location
- Improves agent scalability
- Provides powerful automatic call distributor features, including conditional routing, call-in-queue and expected-wait-time messages, enterprise data displays, real-time data, and historical reporting

Cisco Unity Messaging

Cisco Unity delivers powerful voice, integrated, and unified messaging options that transparently integrate with Microsoft Exchange, Lotus Domino, and Novell GroupWise. It scales to meet the needs of large, multisite organizations and offers extensive personalization options, a broad range of productivity enhancing features, and powerful migration tools, including:

- Interoperability with existing voice messaging and telephony systems
- Custom keypad mapping of the telephony interfaces
- Integrated context-sensitive help

Unity Productivity Enhancing Features

- Desktop voice message access using Cisco Unified Personal Communicator
- Mobile voice messages access across a variety of handsets and operating systems using Cisco Unified Mobile Communicator
- Alternative Device Recognition: Cisco Unity automatically recognizes alternate devices, such as mobile phones, when accessing the system to streamline access.
- Secure Messaging: Encrypted voice messages can be retrieved only through authorized clients connected to the network.
- Message Monitor: Listen to and pick up calls while a message is being recorded.
- Interrupted Session Recovery: You can automatically return to in-progress message composition or playback if you ended a session prematurely.
- Cisco Unity Phone View: Use the display of a Cisco Unified IP Phone to view, sort, search, and play back voice messages.
- Speech Access: Press or say commands and message addressing deliver "hands-free" operation.

Appendix C - Detailed Cost Comparison

The following shows a line by line comparison of the original business case costs to the revised cost estimates. The main difference is in the staffing requirements, driven primarily by the difference in Annual Calls per Specialist and estimate of requirements for Data Editors.

	Original Business Case							Revised Estimates				
	Yr 0	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5
Population Served	200,000	995,085	995,085	995,085	995,085	995,085	995,085	200,000	981,759	988,631	995,551	1,002,520
Calls per Capita	5%	3.00%	5.00%	7.00%	9.00%	11.00%	13.00%	4.00%	6.00%	8.00%	9.00%	10.00%
Annual Calls Received	5,000	29,853	49,754	69,656	89,558	109,459	129,361	10,400	76,577	102,818	116,480	130,328
% of calls answered	90%	90%	90%	90%	90%	95%	95%	100%	100%	100%	100%	100%
Annual Day Volume (94% of calls from 8am to 12 am)	4,230	25,255	42,092	58,929	75,766	97,747	115,519	10,400	76,577	102,818	116,480	130,328
Annual After Hours Volume 6% (12 am to 8 am)	270	1,612	2,687	3,761	4,836	6,239	7,374					
% of Year 10 Volume	4%	22%	36%	51%	66%	85%	100%	8%	59%	79%	89%	100%
Annual Calls per Specialist	10000	10000	10000	10000	11000	12000	14000	9,600	9,600	10,500	10,500	10,500
I&R Specialists - Day	1.5	3.0	5.0	6.0	7.0	9.0	9.0	2.0	8.0	10.0	11.0	12.0
I&R Specialists - After Hours	0.8	1.0	1.0	1.0	1.0	1.0	1.0					
Data Editors	2.0	2.0	2.0	2.0	2.0	2.0	2.0	3.0	5.0	5.0	5.0	5.0
Management	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Marketing								1.00	1.00	1.00	1.00	1.00
Fundraising												
Productive Enterprise												
Database	0.50	0.50	0.50	0.50	0.50	0.50	0.50	1.00	1.00	1.00	1.00	1.00
Total Staff	5.75	7.50	9.50	10.50	11.50	13.50	13.50	8.00	16.00	18.00	19.00	20.00

Items in yellow italics not included in original business case estimates. Revised estimate for Staffing is higher due to larger staff requirements. Telecommunications appears to be not fully costed in original business case.

	Original Business Case							Revised Estimates				
	Yr 0	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5
Staffing												
I&R Specialists - Day	57,000	114,000	190,000	228,000	266,000	342,000	342,000	70,000	280,000	350,000	385,000	420,000
I&R Specialists - After H	30,000	40,000	40,000	40,000	40,000	40,000	40,000	-	-	20,000	30,000	40,000
Outsourced Calls												
Data Editors	80,000	80,000	80,000	80,000	80,000	80,000	80,000	105,000	175,000	175,000	175,000	175,000
Management	55,000	55,000	55,000	55,000	55,000	55,000	55,000	62,000	62,000	62,000	62,000	62,000
Marketing	-	-	-	-	-	-	-	38,000	38,000	38,000	38,000	38,000
Fundraising	-	-	-	-	-	-	-					
Productive Enterprise	-	-	-	-	-	-	-					
Database	25,000	25,000	25,000	25,000	25,000	25,000	25,000	55,000	55,000	55,000	55,000	55,000
Benefits	49,400	62,800	78,000	85,600	93,200	108,400	108,400	59,400	109,800	126,000	134,100	142,200
Training	3,750	7,500	12,500	15,000	17,500	22,500	22,500	5,000	8,000	6,000	9,000	10,000
<i>Salary Increases</i>								-	7,788	14,396	16,520	17,582
<i>High Est</i>	300,150	384,300	480,500	528,600	576,700	672,900	672,900	394,400	735,588	846,396	904,620	959,782
<i>Low Est</i>	238,865	309,580	390,100	430,360	470,620	551,140	551,140					
Site and Launch Costs												
Site Build Out	60,000							121,800				
Technology - PCs	18,000	6,000	6,000	3,000	3,000	6,000	0	20,000				
AIRS Accreditation	5,000							2,000	2,000	2,000		
<i>Business Set Up</i>								10,000				
<i>Project Startup and Proj Mgmt</i>								50,000				
<i>Recruitment & Hiring</i>								10,000				
Technology Replacement (5 Years)						18,000	6,000					
Furnishings	9,000	3,000	3,000	1,500	1,500	3,000	0	30,000				
Telecommunications Eq	1,800	1,800	1,800	900	900	1,800	0	192,400				
Call Agent Software Lic	2,400	1,200	2,400	1,200	1,200	2,400	0	3,000				
Telephone Equipment	45,000							5,000				
<i>High Est</i>	141,200	12,000	13,200	6,600	6,600	31,200	6,000	444,200	2,000	2,000	0	0
<i>Low Est</i>	87,100	6,800	7,700	3,850	3,850	16,700	3,000					

Items in italics not included in original business case costs.

	Original Business Case							Revised Estimates				
	Yr 0	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5
Ongoing Administration (Operations)												
Occupancy	14,250	14,250	14,250	14,250	14,250	28,500	28,500	30,000	30,000	30,000	30,000	30,000
Technology Hardware & Telecommunications	3,000	3,000	3,000	3,000	3,000	3,000	3,000	7,800	7,800	7,800	7,800	7,800
<i>Telecommunications Maintenance</i>	20,000	20,000	20,000	20,000	20,000	20,000	20,000	12,500	13,200	13,200	13,200	13,200
Office Supplies & Services	5,750	7,500	9,500	10,500	11,500	13,500	13,500	34,000	34,000	34,000	34,000	34,000
Marketing Launch	25,000							15,000	25,000	25,000	25,000	25,000
Marketing Materials	10,000	50,000	50,000	50,000	25,000	25,000	12,000	10,000	15,000		5,000	5,000
<i>Legal, Audit & Professional Fees</i>								6000	6000	6000	6000	6000
	78,000	94,750	96,750	97,750	73,750	90,000	77,000	115,300	131,000	126,000	121,000	121,000
	<i>57,375</i>	<i>69,000</i>	<i>72,000</i>	<i>73,500</i>	<i>60,000</i>	<i>74,250</i>	<i>66,250</i>					
Website												
Website (Design), Host	900	900	900	900	900	900	900		5,000	5,000	5,000	5,000
<i>Website Design, Build, Test, Deploy</i>								150,000				
One Time Electronic Data	7,500							\$0				
Ongoing data transferring	450	450	450	450	450	450	450	\$0				
<i>I & R Call Tracking Application</i>								250,000				
<i>Human Services Data Management Application</i>								200,000				
<i>Electronic/Printable Directory Production Application</i>								20,000				
<i>Internal & External Reports</i>								50,000				
<i>On going maintenance & upgrades</i>										10,000	10,000	10,000
High Est	8,850	1,350	1,350	1,350	1,350	1,350	1,350	670,000	5,000	15,000	15,000	15,000
Low Est	<i>5,900</i>	<i>900</i>	<i>900</i>	<i>900</i>	<i>900</i>	<i>900</i>	<i>900</i>					

	Original Business Case							Revised Estimates				
	Yr 0	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5
Database												
Database Production Se	15,000							\$6,000				
Operating System	1,500											
Database License	1,500											
Network Switch	3,750											
ISDN to Internet	600	600	600	600	600	600	600					
Service Contract	4,000	4,000	4,000	4,000	4,000	4,000	4,000		\$1,200	\$1,200	\$1,200	\$1,200
<i>High Est</i>	26,350	4,600	4,600	4,600	4,600	4,600	4,600	\$6,000	\$1,200	\$1,200	\$1,200	\$1,200
<i>Low Est</i>	17,700	3,200	3,200	3,200	3,200	3,200	3,200					
Total (High Est)	554,550	497,000	596,400	638,900	663,000	800,050	761,850	1,629,900	874,788	990,596	1,041,820	1,096,982
Total (Low Est)	406,940	389,480	473,900	511,810	538,570	646,190	624,490					

Appendix D - Ongoing Cost Details

Annual Operating Costs Year 1 - 5

	Year 1 (Startup)		Year 2		Year 3		Year 4		Year 5						
	Qty	Price	Qty	Price	Qty	Price	Qty	Price	Qty	Price					
Salaries & Benefits	8.0		\$389,400	16	\$727,600	18	\$816,800	19	\$860,200	20	\$902,500				
211 Operators	2	\$41,300	\$82,600	8	\$41,300	\$330,400	10	\$41,300	\$413,000	11	\$41,300	\$454,300	12	\$41,300	\$495,600
Data Specialists	3	\$41,300	\$123,900	5	\$41,300	\$206,500	5	\$41,300	\$206,500	5	\$41,300	\$206,500	5	\$41,300	\$206,500
Management	1	\$73,160	\$73,160	1	\$73,160	\$73,160	1	\$73,160	\$73,160	1	\$73,160	\$73,160	1	\$73,160	\$73,160
IT & DBA	1	\$64,900	\$64,900	1	\$64,900	\$64,900	1	\$64,900	\$64,900	1	\$64,900	\$64,900	1	\$64,900	\$64,900
Admin, Finance, Mrkt.	1	\$44,840	\$44,840	1	\$44,840	\$44,840	1	\$44,840	\$44,840	1	\$44,840	\$44,840	1	\$44,840	\$44,840
Salary increases @ 2%		0	0		\$7,800	\$7,800		\$14,400	\$14,400		\$16,500	\$16,500		\$17,500	\$17,500
Telecommunications & Systems			\$54,300		\$61,200		\$71,200		\$71,200		\$71,200		\$71,200		\$71,200
T1 Lines (voice & data)	2	\$6,000	\$12,000	2	\$6,000	\$12,000	2	\$6,000	\$12,000	2	\$6,000	\$12,000	2	\$6,000	\$12,000
Telephone Long Distance	1	\$500	\$500	1	\$1,200	\$1,200	1	\$1,200	\$1,200	1	\$1,200	\$1,200	1	\$1,200	\$1,200
HW & Software Maintenance	1	\$41,800	\$41,800	1	\$43,000	\$43,000	1	\$43,000	\$43,000	1	\$43,000	\$43,000	1	\$43,000	\$43,000
Website hosting & domain	0	\$5,000	\$0	1	\$5,000	\$5,000	1	\$5,000	\$5,000	1	\$5,000	\$5,000	1	\$5,000	\$5,000
Application maintenance	0	\$10,000	\$0	0	\$10,000	\$0	1	\$10,000	\$10,000	1	\$10,000	\$10,000	1	\$10,000	\$10,000
Operating Costs			\$51,000		\$61,000		\$95,000		\$109,000		\$120,000		\$120,000		\$120,000
Public Awareness & Promotion	0	\$10,000	\$0	0	\$10,000	\$0	1	\$10,000	\$10,000	1	\$10,000	\$10,000	1	\$10,000	\$10,000
Audit, Legal & Professional Fees	1	\$6,000	\$6,000	1	\$6,000	\$6,000	1	\$6,000	\$6,000	1	\$6,000	\$6,000	1	\$6,000	\$6,000
Building Occupancy	2500	\$12	\$30,000	2500	\$12	\$30,000	2500	\$12	\$30,000	2500	\$12	\$30,000	2500	\$12	\$30,000
Training & Development	0	\$500	\$0	0	\$500	\$0	8	\$500	\$4,000	16	\$500	\$8,000	18	\$500	\$9,000
After Hrs Call Handling	0		\$0	0		\$0	1	\$20,000	\$20,000	1	\$30,000	\$30,000	1	\$40,000	\$40,000
Supplies & Services	1	\$15,000	\$15,000	1	\$25,000	\$25,000	1	\$25,000	\$25,000	1	\$25,000	\$25,000	1	\$25,000	\$25,000
Total			\$494,700		\$849,800		\$983,000		\$1,040,400		\$1,093,700		\$1,093,700		\$1,093,700

Notes:

- Salaries based on similar compensation in the Social Services sector as validated with United Way of Saskatoon.
- Telecommunications cost based on a single centre with redundant lines
- Hardware & software maintenance included for hardware and applications as specified
- Application maintenance costs for minor updates, upgrades and modifications to the developed applications
- Occupancy costs based on Saskatoon commercial rental market
- Initial training costs part of implementation
- 16 hour per day operation in first 2 years; after hours calls transferred to 7x24 Distress Line in year 3.

Appendix E - Implementation Roadmap Details

See File: App E Implementation Roadmap.ppt