



Interior Health Capital Strategy 2013 – 2023

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Executive Summary

Interior Health is mandated by the *Health Authorities Act* to plan, deliver, monitor and report on publicly funded health services for the people who live within its boundaries. To address these mandate requirements, Interior Health focuses on the continuum of care for residents across the region. This continuum includes staying healthy, getting better, living with illness, and coping with end of life. The need for capital investment across Interior Health to support health service delivery continually grows as facilities age and demand for services increases. The Capital Strategy (2013-2023) provides a framework to strategically deploy capital funds and resources that are aligned with Interior Health's corporate strategy, Ministry of Health directions and the Province's Capital Assets Management framework.

Since Interior Health formed in 2001, the primary focus of Capital Planning has been to ensure a sustainable network of health care. The priority targets identified for capital investment between 2002 and 2012 were: 1) high cost/high volume services; 2) regional hospital sustainability; 3) residential/assisted living beds; and 4) maintenance of existing infrastructure, equipment and information management/information technology. Redevelopment and expansion opportunities were identified through site specific and regional long terms planning efforts, which provided a road map for capital investment. Moving forward, the Capital Strategy builds on these achievements and provides direction for future capital investments.

The development of the Capital Strategy was a collaborative effort of the members of the Capital Strategy Working Committee working closely with Interior Health stakeholders and Senior Leadership. A long-term strategy for capital investment requires assessment of the major key considerations associated with delivering health care services to a large population across a vast geographic region. Considerations include: i) population factors such as health status, growth and aging; ii) sustainability of health and human resources, economic conditions and fiscal environment; and iii) the need to maintain the provision of quality, safe care with consideration for critical mass and competencies.

Given these considerations, Interior Health realizes the Capital Strategy and corresponding capital investments required a guiding set of principles to serve as the basic tenets or rules around which service planning decisions are made as well as a set of assumptions that reflect current state but which are subject to change. In addition to planning principles and assumptions, key drivers for capital investment provide the framework for annual assessment and prioritization of future capital investment. They key drivers for capital investment are: 1) demand for services; 2) innovation and change; and 3) sustainability. Specifically:

<p><u>Demand for services</u></p>	<ul style="list-style-type: none"> • Bed projections • Surgical service capacity • Emergency and Trauma services • Intensive Care services
<p><u>Innovation & Change</u></p>	<ul style="list-style-type: none"> • Evidence Based practice and building standards • Community Integrated Health Services • Transportation of patients and information • Academic capacity • Land transactions
<p><u>Sustainability</u></p>	<ul style="list-style-type: none"> • Technology and Equipment • Facility Condition Index • Operational efficiency

The Capital Strategy aligns with Goals identified by Interior Health and recognizes that many of Interior Health's strategic objectives associated with these Goals require capital investment. Interior Health Goals are:

- Goal 1: Improve Health and Wellness
- Goal 2: Deliver High Quality Care

Goal 3: Ensure Sustainable Health Care by Improving Innovation, Productivity, and Efficiency

Goal 4: Cultivate an Engaged Workforce and Healthy Workplace

Moving forward, prioritization of capital investment requests will be critical to ensure that capital funding capacity aligns with Interior Health capacity to address the most critical capital needs. The purpose of the Capital Strategy is to provide direction to capital investment decisions that acknowledges the following:

- Capital investments that align with the established planning principles and address all three key drivers will realize the most significant return on investment;
- Capital investment planning must align with health service strategic directions;
- Prioritization of capital investments requires an objective tool and process that considers annual and long term strategic directions of the organization; and
- Innovative health service delivery options that address projected health service demands and mitigate capital investments are required for a sustainable infrastructure for the future.

1. Organizational Overview

Interior Health (IH) is mandated by the *Health Authorities Act* to plan, deliver, monitor, and report on publicly funded health services for the people who live within its boundaries. IH's Vision, Mission, Values, and Guiding Principles inform how it delivers on its legislated mandate.

IH provides health services to almost 750,000 people across the large geographic region of the Central and Southern Interior of British Columbia covering almost 215,000 square kilometres – an area larger than England and Scotland combined. The geographic region is rural in nature with many small communities of population spread across the region, and includes several larger urban areas.

With a budget of \$1.8 billion, IH operates and maintains 46 acute sites across the region, which house approximately 1,300 acute care beds. About 6,300 publicly funded residential care beds and assisted living units are operated by IH or through partners under contract. Approximately 19,000 employees and 1,500 physicians with privileges at acute care facilities provide care to our patients, clients and residents.

There is a vast array of services and supports provided by IH and in every instance delivering quality, safe care will be first and foremost. Service delivery is coordinated through a regional “network of care” that includes hospitals, community health centres, residential and assisted living facilities, supports for housing for people with mental health and substance use problems, primary health clinics, homes, schools, and other community settings. Health services are provided by IH staff or through contracted providers.

The network of care facilitates referrals and transfers from rural areas to larger centres for more complex acute care needs. IH has created a system of community, regional and tertiary hospitals where there is access to specialty services within the network.

The need to maintain the provision of quality, safe care leads to questions of critical mass and competencies. IH must ensure providers are performing sufficient number of cases to maintain their skills and deliver safe care. This becomes particularly critical for rural areas that do not see the patient volumes that larger centres do for more complex acute care needs. As the level of speciality increases, it is generally accepted that services should be clustered to ensure safety, quality, sustainability, and efficiency. There is less demand for more specialized, complex services, and subsequently a greater need to cluster. The ability to maintain provision of rural emergency, perinatal and surgical services is of particular concern.

Vision

To set new standards of excellence in the delivery of health services in the Province of British Columbia

Mission

Promote healthy lifestyles and provide needed health services in a timely, caring and efficient manner, to the highest professional and quality standards

Values

- Quality
- Integrity
- Respect
- Trust

Guiding Principles

- Innovative
- Clear and respectful communication
- Continual growth and learning
- Teamwork
- Equitable Access
- Evidence-based practice

IH Goals

Goal 1: Improve Health and Wellness

Goal 2: Deliver High Quality Care

Goal 3: Ensure Sustainable Health Care by Improving Innovation, Productivity, and Efficiency

Goal 4: Cultivate an Engaged Workforce and Healthy Workplace

2. Introduction

In addressing its Health Authorities Act mandate to plan, deliver, monitor, and report on publicly funded health services for the people who live within its boundaries, IH focuses on the continuum of care for residents across the region. This continuum includes staying healthy, getting better, living with illness, and coping with end of life.

Staying Healthy	Getting Better	Living with Illness	Coping with End-of Life
<i>Achieving and maintaining optimum health and wellness</i>	<i>Improving health during an exacerbation or acute event, or moving to a better plateau in a chronic condition</i>	<i>Minimizing deterioration of health and successfully manage long-term condition(s)</i>	<i>Relieving suffering and improving quality of life, as well as maintaining health and wellness of family or caregivers</i>

A range of health needs exists across the continuum. Many people experience good health and the focus of their health service needs is on staying healthy, including health promotion and illness prevention services. Others experience acute or episodic health issues that require short-term or time limited curative services such as physician care, urgent or emergency care, and acute hospital or community care services. A significant proportion of the population experience single or multiple chronic conditions and service needs can include general practitioner and/or specialist physician care, chronic disease management, community care for medical and functional needs, and acute care for exacerbations of chronic conditions. Finally, people have end of life care needs involving a range of physician, community and acute services.

For each community and population served, IH must identify, plan for and deliver the array of direct patient care services and supports required within these sectors to improve the health and health outcomes of the population and achieve its vision – “to set new standards of excellence in the delivery of health services in the Province of British Columbia”.

The need for capital investment across IH facilities to support health services delivery continually grows as facilities age and demand for services increases. In an effort to assess and prioritize multiple capital requests, IH established Long, Medium and Short-term capital planning processes. Long-term (5-10 year) planning includes the Capital Strategy (2013-2023) and is designed to provide a framework to strategically deploy capital funds and resources that are aligned with IH organizational goals and strategic objectives. Medium and short-term planning relies on establishing capital investment priorities through the IH annual capital planning process and addresses routine capital investment, (equipment, building projects and Information Management & Information Technology (IMIT) and priority investments (major capital projects). Capital requests are ranked based on input from stakeholders at the local site level, leadership tables and Senior Leadership and align with Ministry of Health (MoH) Health Service Plans as well as IH established Goals and Strategic Objectives.

IH Capital Planning



3. Capital Investments 2002 - 2012

Since IH was formed in 2001, the primary focus of capital investment has been to ensure a sustainable network of health care delivery through investment in Tertiary and Regional hospitals. Capital investments were made in the following areas from 2002 through 2012.

1. **Tertiary and Regional hospital sustainability:** Capital investments to maintain facility infrastructure and to renovate/expand hospital areas where made to ensure the two tertiary hospitals and 4 regional hospitals were sustained to provide health services to their immediate and referral communities.
2. **High cost/high volume health services:** Certain programs within the health system are characterized as having high volumes of activity and high costs associated with delivering the services. Examples of these services include: Emergency Departments (ED); Intensive Care Units (ICU); Surgical Suites; and Diagnostic Imaging (DI). Capital investments in these areas focussed on redesign/expansion projects to achieve improvements in patient flow and workflow efficiency. Projects often included significant investment in equipment as well.
3. **Residential/assisted living beds:** Since 2002, IH has worked to redesign residential care options for seniors as part of the overall initiative by the MoH, which included the creation of the Assisted Living classification of care and the increase provincially of 5,000 net new residential care and assisted living beds. In 2002, IH had 4,708 residential and 20 assisted living beds. With the completion of the new beds, the last of which open May 2013, there are 5,563 residential beds and 922 assisted living beds, a net increase of 1,757 beds in IH.
4. **Maintenance of existing infrastructure, equipment and IMIT:** Each year capital investments are made on a prioritized basis to maintain infrastructure (e.g. plant equipment, security systems, etc.) and replace hospital equipment and IMIT systems. Annual capital

priorities are established through consultation with departments, program areas and leadership teams.

5. **Transportation of patients and information:** IH has made significant investments into patient transportation to support the sustainability of a network of care. Improvements in efficient and cost effective administrative and clinical services were achieved as a result of capital investments for IMIT. Single business and clinical platforms along with implementation of tele-health and tele-technologies across IH, including provincial ehealth integration, provided the IMIT foundation for further expansion of electronic services as well as advanced clinical systems.
6. **Land acquisitions and dispositions:** Land acquisition and disposition activities supported the development and expansion of services at selected Tertiary and Regional hospital sites. Additional land transactions occurred throughout IH between 2002-2012 that supported strategic directions and service delivery partnerships.
7. **Capital planning for redevelopment and expansion opportunities:** In an effort to assess and prioritize multiple requests, IH invested in the development of strategic capital planning documents designed to identify site-specific immediate, short-term and long-term capital projects. Specific documents developed include: i) Master Site Plans¹; ii) Functional Programs²; iii) Concept Plans³; and iv) Business Plans⁴.

Please refer to Appendix A - Summary of IH Capital Investment 2002-2012 for details on IH's capital investments over the previous 10 years.

4. IH Capital Strategy 2013-2023

The development of the Capital Strategy was a collaborative effort of the 2013 Capital Working Committee members, working closely with IH stakeholders and Senior Executive Team (SET). (see Appendix B: Capital Strategy Working Committee Membership). This Capital Strategy provides a framework to deploy capital funds and resources that are aligned with IH organizational goals and strategic objectives and focuses on the continuum of care. Development of this Capital Strategy carefully considered key factors that drive capital investment including demand for services, innovation & change, and sustainability.

4.1. Capital Strategy Principles

The principles underpinning the development of the Capital Strategy are taken from the organization's planning principles as established in Charting the Course: IH's Planning Principles and Consideration for Change. These principles are the basic tenets or rules around which service planning decisions are made.

¹ Master Site Plans provide a strategic road map for select sites by projecting future growth needs for all programs and services on-site based on best practice standards and defining the physical capacity and options for service expansion based on five, ten and fifteen+ year horizons

² Functional Programming further defines space and resource requirements for selected priority programs and services at a site and permit order of magnitude capital cost estimates to be developed for these projects.

³ For major capital projects, the next stage of planning following functional programming is the development of a Concept Plan, which outlines capital and operating impacts based on functional program information, indicative design level drawings, procurement screening and human resource planning.

⁴ The final stage of planning for major projects is a Business Plan. MoH approval is required to launch the Business Plan phase. Building on the Concept Plan, the Business Plan provides a more detailed financial impact summary and project schedule as well as procurement options analysis and risk assessment.

The Capital Strategy's principles are:

1. Quality, safe clinical care will be delivered. Individuals will have a positive experience with how health services are delivered, and provincial and national standards and guidelines will frame service delivery;
2. Individuals will have access to health services in a manner that will facilitate equitable outcomes. Access might look different depending on the community. Innovative ways to support access through non-traditional service delivery models such as tele-health, outreach, or by using skilled practitioners in new roles will be pursued;
3. Health services provided will be sustainable. Sustainability will be achieved by focusing on staying healthy and minimizing demand. Services will be affordable in terms of finances, achievable in terms of the availability of health human resources, and able to be maintained over time. Consolidation may be a solution to sustainability challenges; however, this does not always mean geographically centralized, but rather networked or integrated to support coordinated care;
4. Service delivery will be evidence informed and based on population need. Population health indicators will be used to identify disparities and identify populations with the greatest health needs. Prioritization of needs will be based on defined criteria, and resources will be placed where the gains in health improvement and disease management can be most effective;
5. Services and supports will not be viewed in isolation of each other or in isolation of the community or population they serve. Their interconnectedness and impact to a community will be considered;
6. Staff will be supported. They will have safe and healthy working environments, be engaged, and work in a positive culture and climate;
7. We will endeavor to engage stakeholders in dialogue when significant changes in the planning and delivery of services are being considered within their communities;
8. Collaboration with other provincial system partners will occur. This includes other health authorities and provincially organized programs;
9. Service quality and operational efficiencies will be pursued through integration and economy of effort or the consolidation of resources. Innovation will support these efforts; and
10. Clear lines of accountability and communication will exist.

4.2. Capital Strategy Planning Assumptions

The Capital Strategy has been developed based on available information; moving forward, the planning assumptions may evolve, will be verified, and revised as necessary through the annual capital prioritization process. The following assumptions have been applied to the Capital Strategy:

1. Bed modeling and forecasting will adopt and incorporate new and innovative types of care delivery to match the needs of patient care. This approach ensures care is delivered in the most appropriate setting to reduce Alternate Level Care (ALC) levels in acute care. The updated bed modeling and forecasting will inform long term capital planning.
2. Pre-approved changes to referral patterns, including repatriation from Alberta or the Lower Mainland, are those contemplated in the Cardiac Service program, Surgical Services Review and East Kootenay Regional Hospital (EKRH) ICU Redevelopment and Electrical Upgrade Business Plan.
3. Future changes to acute care service levels at specific sites will be incorporated into the annual capital prioritization process.
4. Additional residential/assisted living capacity will be achieved by considering alternate funding arrangements (P3, partnerships with BC housing and partnership with other community groups).
5. All future developments will incorporate single rooms, both in acute and residential care, to comply with CSA and residential care regulations.

- IH will pursue opportunities for consolidation of services where and when possible. This includes vehicles such as Alternative Delivery Models and the use of technology and IMIT systems.

4.3. Key Drivers of Capital Investment

This section provides an overview of the key drivers for capital investment that provide the framework for annual assessment and evaluation of potential capital projects as well as serve as the platform for an updated Capital Strategy. These drivers include: 1) demand for service; 2) innovation and change; and 3) sustainability. These drivers consider the achievements made as a result of capital investments 2002-2012 and were developed through careful consideration of the factors that drive capital investment. Annual capital planning initiatives and project requests will be reviewed to determine support and alignment with the key drivers for capital investment in this Strategy.

4.3.1. Key Driver: Demand for Services

4.3.1.1. Bed Projections

Population growth projections indicate the need for an increased number of acute and residential beds for IH. Acute beds projections assume IH achieves the 10% ALC target and meets the bed occupancy targets of 95%. For residential/assisted living bed projections, the target is 93 beds per 1,000 age 75+ years. (For details on bed projections see: Appendix C: Bed Projection Calculations 2012; and Appendix D: Regulations/Standards for Residential Care).

Initial conversations are underway as health authorities discuss the benefits and limitations to the current assisted living model given the increasing complexity of clients. In the next few months, more detailed bed planning will commence to the period up to 2016/17. This planning will assume maintaining the current target of 93 beds per 1,000-population aged 75+. Moreover, this planning will look at existing buildings that are not appropriate for residents with complex care needs but rather are suitable to address alternative care/housing models for special populations. In the next ten years, IH will need to add approximately 2,000 beds in order to maintain the target of 93 beds per 1,000 age 75+. This equates to 593 beds by 2017 and an additional 1,371 by 2022 or a 30% increase in capacity. These projections are based on P.E.O.P.L.E⁵. 36 data. This bed forecast subject to population forecasts and the information currently available.

⁵ *Population Extrapolation for Organizational Planning with Less Error (P.E.O.P.L.E)*

The following is a high-level summary of the projected additional beds required based on the above targets.

Table 3: Projected Additional Acute and Residential Care/Assisted Living Beds

Fiscal	Acute Care								Residential Care & Assisted Living
	CMH	EKRH	KGH	KBRH	PRH	RIH	SLGH	VJH	
Current Acute Beds 2011/12	28	69	351	75	134	216	40	148	6,472
Additional beds required 2016/17	0	9	41	0	32	30	7	15	593
Additional beds required 2021/22	3	6	33	4	13	21	4	14	1,371
Total New	3	15	74	4	45	51	11	29	1,964
Current ALC ⁶	13%	9%	15%	15%	14%	30%	13%	17%	
Current Occupancy	93%	99%	104%	94%	109%	106%	109%	105%	

To mitigate demand for acute and Residential Care/Assisted Living services, alternate housing options will be considered moving forward.

Note: Cariboo Memorial Hospital (CMH), Kelowna General Hospital (KGH), Kootenay Boundary Regional Hospital (KBRH), Penticton Regional Hospital (PRH), Royal Inland Hospital (RIH), Shuswap Lake General Hospital (SLGH), and Vernon Jubilee Hospital (VJH).

4.3.1.2. Surgical Services Capacity

IH has 17 facilities (ranging from Tertiary hospitals to community health centres) providing various levels of day care and inpatient surgery. Many of these sites face challenges in meeting local and Regional demands on services and accessing targeted funding from the province.

To address wait time pressures, take full advantage of provincial targeted funding, and meet public and MoH expectations in providing sustainable, equitable access to surgical services on a health authority-wide level, IH engaged an external consultant to review how surgical services are delivered across all sites and provide recommendations on how to improve the system for the future. This review is now complete and the final report has been released publicly.

The final report includes a number of recommendations for consideration across the health authority. They include measures to enhance patient access and efficiency in surgical programs today, as well as initiatives and investments to consider meeting future demands for service. The report will provide valuable information in guiding the planning for surgical services throughout IH over the next five years.

The external consultant recommendations in the Surgical Services Review highlight the need for capital investments in several sites/program areas.

It is anticipated that with capital investments and adaptation of other program recommendations from the Surgical Services Review, IH will be in a better position to achieve its goals. However, given the scope of Surgical Services across the health authority, it will take some time for IH to consider recommendations, determine priorities, and develop an implementation plan. The resulting implementation plan will link closely to capital planning and budget management planning cycles over the next 5 years.

⁶ The current ALC and occupancy rates are based on fiscal 2011/12. The ALC and occupancy targets are significant goals for IH to achieve. If not achieved, the acute bed projections are understated.

4.3.1.3. Emergency and Trauma Services

Emergency and Trauma Services are working to achieve Trauma System Accreditation. A coordinated, integrated system of care approach that will facilitate patient care and flow from the scene of the injury, transport to ED, standardized stabilization in the ED and transfer to a higher level of care (if required). IH has two Level II Centres (KGH and RIH), five Level III Centres, (EKRH, KBRH, PRH, VJH, and CMH) and one Level IV Centre, (SLGH). The remaining 25 centres are designated as Level V. The Tertiary and Regional sites have a Trauma Registry Analyst who is required to collect data on trauma patients that meet the British Columbia Trauma Registry inclusion criteria. These seven centres also require data collection and/or monitoring at slightly different levels, the scope and details of this role is currently underway.

At a provincial level, there is ongoing work that is focusing on standardizing physical work environments and/or management of care practices in the ED with the goal of improvement to patient care and patient outcomes. Ongoing provincial work includes:

- Access and flow of the ED – Key indicators: length of stay, time to disposition, time to physician assessment, time to inpatient bed, direct discharge from the ED, left without being seen;
- Seclusions rooms – physical space, care, resources;
- Victims of a sexual assault – care, resources;
- National Ambulatory Care Reporting System (NACRS) and improvement to overall utilization of standard language for ‘chief complaint’ and discharge diagnosis’ of ED patient visits;
- Clinical Care Management Guidelines – 48/6 Model of Care for hospitalized seniors; and
- Reduce number of return visits to the ED in <24hrs.

Ongoing collaboration with EDs that have submitted requests for expansion to their EDs will continue with the intent of facilitating efficient and optimal patient care and meet necessary provincial and operational needs and expectations.

4.3.1.4. Intensive Care Services

In 2010, the MoH conducted a province wide survey of critical care services within British Columbia. Although IH has eight sites currently designated to provide critical care services, for the purpose of the 2010 survey, only seven sites were included. Units that have limited ability to care for patients that require ventilation were excluded from the final analysis of this survey. IH ICU's included were CMH, EKRH, KGH, KBRH, RIH, PRH, and VJH. SLGH was excluded from the published survey analysis.

Conclusions from this survey and subsequent recommendations have provided a guide for provincial critical care planning and targets. Common challenges identified were:

- Lack of coordination and standardization to oversee the provision of critical care services and patient access, ensuring that critical care patients receive appropriate care in the right setting within a reasonable time frame;
- Difficulties with patient flow, leading to patients being cared for in sub-optimal settings and resources not being used to the maximum potential;
- Capacity and human resource planning that goes beyond physical bed capacity and reflects the level of acuity for the patients being cared for in the ICU's; and
- Effective transportation of critically ill patients.

A key recommendation to address some of these common challenges included, but was not limited to, development of a critical care measurement framework utilizing a common database for standardized critical care data collection.

Since the 2010 survey was completed, significant progress has been made within IH to address local and province-wide challenges. At this time, and in light of one of the largest challenges - access to care ensuring that critical care patients receive appropriate care in the right setting within a reasonable time frame - it is likely that two of IH's regional referral centres, EKRH and KBRH would benefit from an

increased ability to better serve their communities. In 2010, SLGH was not included in the MoH Critical Care Survey due to the limited ability to care for ventilated patients. Consideration should be made to conduct a review that would explore the feasibility and need of an expansion of the local ICU at SLGH. Further, consideration should be given to the current PRH planning to include any necessary changes to the ICU to ensure alignment with current provincial standards. For remaining ICU's, CMH, KGH, RIH, and VJH, future planning for critical care services within IH should be aligned with any future changes, or expansions, of surgical services within IH. When possible, it is recommended that all ICUs within IH have access to a common database for standardized critical care data collection. This information has been helpful as an additional resource to help address the remaining challenges that exist within the province that physical space does not address (e.g. patient flow, including resource utilization and human resource capacity planning).

4.3.2. Key Driver: Innovation and Change

4.3.2.1. Evidence Based Practice and Building Standards

As we strive for quality care, implementation of evidence based practice will require capital investment. Canadian Standards Association (CSA) and Building codes increase requirements for health care facilities and their operations. One of the more significant impacts of evidence based practice, CSA and building code requirements is bed configuration.

The configuration of beds and bedrooms has significant impact on patient outcomes. Many older hospitals and care facilities have four beds in one room along with a shared bathroom. Research now indicates single-bed rooms improve patient outcomes, due to lower infection rates, improved healing and recovery. The average length of stay is shorter, thus increasing flow and access in the hospital as well as positively impacting cost containment and reduction strategies. Moreover, single patient bedrooms have become a standard in the latest edition of the Canadian CSA Z8000-11 (Canadian Health Care Facilities).

The benefits of a single-bed room also apply in a residential setting where clients stay at a residential facility for a much longer period of time. Although IH has some residences with single-bed rooms, the majority of residents living in IH-owned and operated sites share rooms. IH is committed to reducing density within IH sites where and when it is feasible to do so.

4.3.2.2. Community Integrated Health Services

The Community Integrated Health Services (CIHS) portfolio was formed to bring together Home and Community Care (HCC), Promotion and Prevention, Aboriginal Health, Primary Care (PC) and Mental Health and Substance Use (MH&SU) under one leadership structure. The purpose was to facilitate integration within community services and to integrate IH community services more closely with Primary Care Physicians. Although investment in CIHS programs and services primarily comes from operating funds, there is a need for capital investment to support space and technology requirements for the strategic directions of CIHS.

Over the past two years, significant progress has been made in collaborating with local General Practitioners (GP) around improvement in care. There are formal structures within the GP in place to facilitate this collaboration between the health authority and GPs at the local levels throughout IH. The longer term vision includes deeper collaboration with all community partners, which will lead to future co-location of services and result in seamless integration of services for the patient/client. Moreover, a shared infrastructure and a common IMIT platform will be the key to taking community collaboration and innovation to the next level.

There is a shift in care practice from home visits for clients to more centrally located facilities for access to care which require patients to travel. This practice change combined with shifting services from acute

sites to the community will result in more co-location opportunities as programs become less independent and programs/services expand.

This portfolio is in the early stages of its program plans and a supporting capital and leased space strategy is required to be developed. In the upcoming years, the full capital requirements for this portfolio will be identified.

4.3.2.3. Transportation of Patients and Information

A supporting mechanism and strategic enabler to enhance quality and sustainability is effective transportation of patients and information. Transportation of patients relies on a sustainable network of care. Transportation of information relies on implementation of information systems and technologies. As noted in the background section of this document, IH has made significant inroads and investments with patient transportation. Future capital investment for new and/or existing heliports will be based on community capacity for funding.

IH investments in transportation of information involve implementation of information management platforms and information technologies. Moving forward, IH will build on the clinical and business platforms and continue to expand tele-health and tele-technologies across IH, especially to support Chronic Disease Management. This next phase of our journey involves two major initiatives computerized provider order entry (CPOE) and electronic clinical documentation.

Capital investment in transportation of information initiatives will shift the organization from paper-based ordering processes to electronic ordering for diagnostic testing and medications. Expected benefits include improved communication across clinical departments, improved accuracy of ordering, improved patient safety, and improved turn-around time for diagnostic results and medication administration.

4.3.2.4. UBC Faculty of Medicine – Distributed Medical Program

An ongoing challenge of providing health services is the recruitment and retention of physicians outside of the lower mainland. In recognition of these challenges in 2010, the UBC Faculty of Medicine expanded its medical program to include education, training and residency to be delivered in the Central and Southern Interior. By allowing physician learners to study, work and live in communities such as Kelowna they will have a presence in the community and will be more likely to stay.

In 2010, the KGH Clinical Academic Campus was opened. This 34,000 square foot building included a 180-seat lecture theatre, library, classroom and clinical space. To support the distributed teaching model at specific acute hospitals, creation of academic space is required in Kamloops, Penticton, Trail and Vernon and for post graduate residency. IH is working closely with the UBC Faculty of Medicine and MoH to develop a plan to complete the space requirements.

4.3.2.5. IH Land Transactions

To support needs identified in the Capital Strategy, land requirements include all acute and non-acute sites in communities throughout IH. The existing inventory of vacant and/or holding properties will be reviewed on an annual basis to confirm potential for future development or use. Retention or disposition decisions will be assessed annually as part of the IH Capital Planning decision-making process.

4.3.3. Key Driver: Sustainability

4.3.3.1. Technology and Equipment

Major equipment is a critical component of the Capital Strategy. Examples of major equipment include: DI, surgical, MDR, lab, plant, and support services as well as simulators used in education for clinical staff and students. Capital investment in major equipment ensures that departments work together effectively to ensure patient flow and access to acute services are efficient. Regular capital investments address replacement needs of existing equipment due to aging or equipment failure. However, with growing demand for services, technological advances, change in practice, and requirements for teaching and training, there are multiple capital investment opportunities related to standardizing equipment and processes across IH to improve access to services and gain operational efficiencies. Specific capital investment targets will be identified as part of IH annual capital planning with consideration given to the impact of equipment purchases on corresponding requirements for operating, renovation and facility condition.

4.3.3.2. Facilities Condition

The majority of the IH health services are provided in a physical setting including hospitals, residential care facilities, health centres, and commercial office space. While significant investments have been made in the last few years on new buildings, the majority of the owned assets are old. Due to the age and high utilization of the assets, IH invests annual capital dollars to maintain them. An assessment of the owned facilities is critical to know the physical condition of individual buildings and to provide a means of comparing the relative condition of facilities or groups of facilities. The work is carried out by a group of qualified technical professionals who assess the physical condition of facilities that may vary in terms of age, design, construction methods, and materials.

The Facility Condition Index (FCI) is an industry standard and provides a benchmark for comparison of the condition of facilities regardless of their size, design or function. It is calculated for each asset by comparing the capital cost to maintain and renew the building with the cost of replacing it. $FCI = (\text{deferred maintenance costs} + \text{system renewals}) / \text{asset replacement cost}$.

The following table is a high-level overview of IH's average FCIs.

Table 4: Facility Condition Index by Asset Type 2013

Asset Type	FCI – September 2013
Acute	0.39
Residential	0.31
*Other	0.42
Grand Total	0.37

Note: *Other: Includes health promotion and prevention offices, mental health programs, office space, residential houses, community health centres, maintenance buildings and nurse residences.

Given that the results of the FCI will play an important role in guiding capital investment decisions, IH recognizes that these assessments need to be updated in order to prioritize investments and accurately compare facilities within the portfolio. Working in collaboration with MoH, IH participated in a joint procurement effort for a five-year contract to update these assessments with an option for the Province to renew for two additional five-year terms. The company, VFA who is an experienced facility assessment firm, will complete condition assessments of all BC owned health-care facilities, upload the results of the assessments into their facility management software and host and manage the system. They will assess approximately 20% of the facilities per year based on total floor area to complete assessments of all BC facilities over five years.

4.3.3.3. Operational Efficiencies

To support IH capacity to address demand for service, implementation of innovation and change initiatives and ensuring sustainable services it is necessary to identify capital investment that reduce operating costs and increase productivity.

Consolidation and co-location provide physical solutions for service delivery and to meet, space and efficiency targets across a variety of IH services and programs. Given the challenges to the delivery of health care services reviewed at the beginning of this document, there is a need to carefully consider consolidation and co-location opportunities across the continuum of care. Consolidation and/or co-location can include a variety of acute care services (including DI, lab, pharmacy, and clinical support) as well as community and corporate programs. Further planning is required to determine the appropriate options for consolidation across acute care and clinical support services. However, there are more immediate opportunities for community integrated and corporate service consolidation and/or co-location.

Approximately 30% of the buildings housing IH community and corporate services (IMIT, finance, pharmacy, logistics etc...) are leased properties. The needs for capital infrastructure investment in leased buildings (tenant improvements and/or capital upgrades)⁷ means we need to consider the condition of the facility and the opportunity for improved access to services. Current strategic consolidation and/or co-location opportunities for IH include CIHS services in the communities of Kamloops, Kelowna, Salmon Arm, Vernon and Williams Lake to improve access to services for clients, achieve operational synergies and provide a long-term solution to space needs in the community.

4.4. Summary of program and/or service targets by key driver

The table below provides a high-level overview of the key drivers for capital investment and corresponding key targets IH is working towards. To date, not all areas discussed have defined targets; these will be developed through future planning.

Table 5: IH Capital Strategy Drivers by Programs and Targets

<i>Driver</i>	Investment Area	Targets
Demand for Services	Acute Beds	<ul style="list-style-type: none"> • Utilization Targets <ul style="list-style-type: none"> ○ Urban 475 days per 1,000 population ○ Rural 525 days per 1,000 population ○ Remote 575 days per 1,000 population • Less than 10% of ALC days • Less than 95% occupancy rate (excluding newborns)
	Residential/Assisted Living Beds	<ul style="list-style-type: none"> • 93 beds per 1,000 population 75+ years of age • Greater than 60% of clients to first appropriate residential bed within 30 days
	Housing/Care Options	<ul style="list-style-type: none"> • Identify capital investments necessary to support housing/care options for specialized populations.
	Surgical Service Capacity	<ul style="list-style-type: none"> • Reduce wait times / achieve provincial wait time targets/avoid provincial wait time penalties • Less than 10% of hip or knee patients waiting longer than 26 weeks. • 95% of hip fractures are completed within 48 hours. • Less than 10% of cataract surgeries waiting longer

⁷ Tenant improvements consist of the construction of the internal elements, which can either start from a shell space or a space with existing improvements from previous tenants. Tenant improvements are costly. Other capital requirements include repair and replacement of capital infrastructure for a building in a current operation, or construction required for program changes. Depending on the terms negotiated within the lease agreement, capital replacement items it may include any portion of the building and building systems.

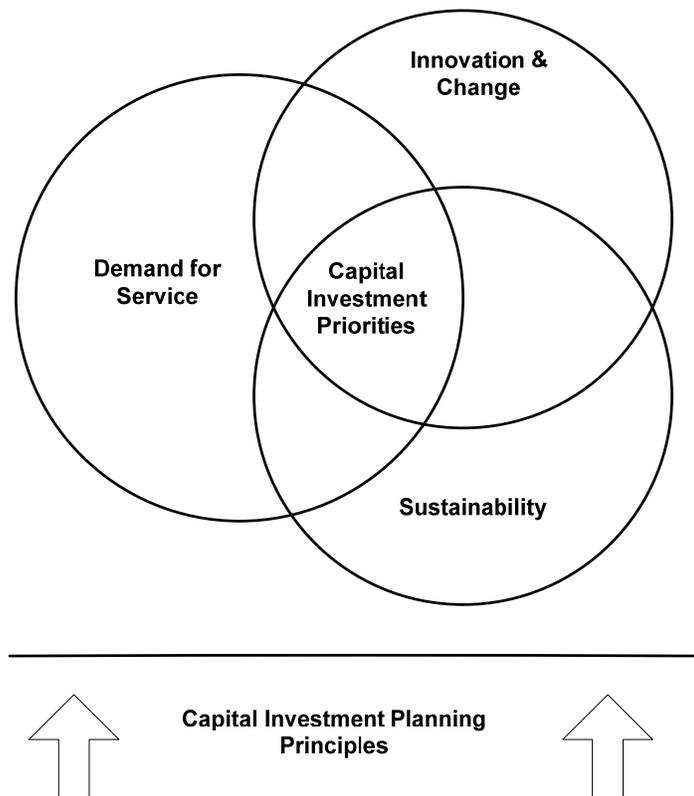
<i>Driver</i>	Investment Area	Targets
		<p>than 16 weeks.</p> <ul style="list-style-type: none"> • % of non-emergency surgeries completed within the benchmark wait time
	Emergency and Trauma Services	<ul style="list-style-type: none"> • Increase number of CTAS 1, 2, 3 patients that get through the ED in less than 4 hours • Increase number of CTAS 4, 5 patients that get through the ED in less than 2 hours • If an ED patient is deemed to be admitted into the hospital, ensure they are admitted within 10 hours • Improve access and flow through redesign and implementation of infection control recommendations
	Intensive Care Services	<ul style="list-style-type: none"> • Identify capital investment requirements resulting from recommendations of the Critical Care Survey Analysis (October 2010).
Innovation and Change	Evidence Based Practice and Building Standards	<ul style="list-style-type: none"> • Identify capital investment requirements to support evidence based practices • Achieve building standards as per the CSA Z8000-11 for Canadian Health Care Facilities and BC Building Codes • Achieve requirements for appropriate building requirements for residential/assisted living as per the Community Care and Assisted Living Act, Residential Care Regulations (2012)
	Community Integrated Health Services	<ul style="list-style-type: none"> • Integrate programs and information across multiple care settings • Identify opportunities to shift patients from acute setting to community • Identify opportunities to shift from inpatient to ambulatory care services • Identify co-location and consolidation opportunities for appropriate space and technologies
	Transportation of Patients and Information within the health service delivery network	<ul style="list-style-type: none"> • Improve sustainability of rural health services • Improve access and flow • Implement advanced clinical systems functionality • Increase utilization of tele-health services
	Academic Capacity	<ul style="list-style-type: none"> • Identify and provide capital investments necessary to support academic spaces at targeted sites
	Land Transactions	<ul style="list-style-type: none"> • Land disposition and acquisition to align with service expansion needs
Sustainability	Technology and Equipment	<ul style="list-style-type: none"> • Invest in DI, surgical, MDR, lab, plant and support services to meet health service plans that provide benefit to outcomes and/or operations • Investment in change in technology that provide benefit to outcomes and/or operations
	FCI	<ul style="list-style-type: none"> • Address capital investment targets based on assessment of the physical condition of IH facilities
	Operational Efficiency	<ul style="list-style-type: none"> • Identify capital investments that reduce operating costs and increase productivity • Consolidate services in targeted areas to improve access, gain operational efficiencies and provide long term space solutions

4.5. Alignment of Key Drivers for Capital Investment with IH Annual Capital Planning

In the summer of 2012, the MoH created new categories of capital to help clarify the processes for approval and to provide health authorities with more control with local decision-making. This Capital Strategy focuses on both Priority Investments (PI) and Routine Capital Investments (RCI). This includes capital requests for equipment, building projects and IMIT.

IH will continue using its current practice of ranking capital requests, which includes input from stakeholders at the local site level, leadership tables and final approval from the SET and/or IH Board. As concerns are raised within IH, managers have been instructed to bring those concerns forward through submission of requests as per the annual capital planning process. An IH committee, with representation from the acute, community and finance portfolios, works collaboratively to assess the Business Plans and prioritization based on defined criteria. Using a consistent scoring tool, the Business Plan is assigned points on the following categories: strategic alignment; innovation; health outcomes; access and flow; human resources; safety and risk management; and urgency. For more details on the scoring tool and its corresponding category weights, (see Appendix F: MoH Capital Short Form Business Plan Scoring Tool).

The planning principles serve as the basic tenets or rules around which service planning decisions are made and the key drivers for capital investment will provide the framework for annual assessment and prioritization of future capital investment.



4.6. Key Considerations

4.6.1. Population: Overall Health Status and Variations

Improving health and health outcomes requires that services are planned and delivered using a population needs-based approach. When the health status of the IH population is analyzed, it is clear the

prevalence of chronic conditions is increasing. Not only do chronic conditions account for the majority of deaths among IH residents; they also account for a significant proportion of health care services used by IH's population. Circulatory system, malignant neoplasms, and respiratory diseases are the leading causes of death. As IH's population ages, the burden of chronic conditions will increase.

IH is home to 55 First Nations. While improvements have been made in overall mortality and increasing life expectancy in the Aboriginal population, significant gaps between Aboriginal and non-Aboriginal populations still exist. As with IH's total population, the overall prevalence of chronic disease is increasing for the Aboriginal population⁸.

Within IH, there are notable variations in health status and the social determinants of health. Premature mortality has been generally accepted as an indicator of health status and health needs in the population.⁹ Vital Statistics data for potential years of life lost index (PYLLI) indicate significant variation in premature mortality across IH Local Health Areas (LHA), with Summerland having very low ranking on the index and South Cariboo, Lillooet, 100 Mile House, Kamloops, Keremeos and Merritt having high premature mortality. Provincial socio-economic risk indices highlight the relatively low socio-economic status for Cariboo Chilcotin and South Cariboo LHAs. Rural areas are often at increased risk of poorer health outcomes and socio-economic risk measures. These areas often have the highest proportion of Aboriginal peoples; significant gaps in health status and health outcomes exist between Aboriginal and non-Aboriginal populations¹⁰. These variations in health needs are important for planning future services.

4.6.2. Population: Forecast Population Growth and Aging

In 2012, the total population of IH was estimated to be 744,340 residents. By 2017, it is projected that almost 777,000 people will be living within IH's boundaries (an increase of 4.4% from 2012). With this population growth, there will be an increased demand for all patient services, although the IH growth rate is forecast to be lower than the British Columbia population growth rate in the next five years (BC = 5.9% growth from 2012 to 2017).

IH's overall population is not only growing, it is also aging. In 2012, 19.4% of the population (144,177 people) were aged 65+ years. By 2017, it is expected this will rise to 22% of the total population (170,601 people). Demand for services increases with age as people are more likely to experience one or more chronic conditions requiring diagnosis, ongoing monitoring including primary care and chronic care management, primary and secondary prevention activities and acute care in response to exacerbation of these conditions. The projected increase in the number of people age 65+ years will place increasing demands on the health system, including prevention, primary and community care, acute care and end of life services.

Within IH, differential population growth is expected in the future, with some areas expected to see declining populations and other areas experiencing rapid growth. For example, the Princeton, 100 Mile House, South Cariboo, and Trail LHAs are forecast to experience a net decline in population in the next five years while other LHAs (e.g. Castlegar, Revelstoke) are forecast to remain fairly stable in population size. Areas with the greatest forecast growth are Armstrong-Spallumcheen, Central Okanagan, Lillooet, Golden and Salmon Arm LHAs. For example, the Central Okanagan LHA is forecasted to have nearly 8% population growth from 2012 to 2017.

The health service needs of individual LHAs will vary as the age distribution of their populations vary. Some areas have relatively younger populations with significant growth in expected births while other areas have older populations and different health care needs. The Thompson Cariboo Shuswap (TCS) area is forecast to experience the most rapid growth in the 75+ population in the next five years (~19%), with attendant impacts for community, acute and facility-based care.

⁸ British Columbia Provincial Health Officer (2009). *Pathways to Health and Healing – 2nd Report on the Health and Well-being of Aboriginal People in British Columbia. Provincial Health Officer's Annual Report 2007*. Victoria, BC: Ministry of Healthy Living and Sport.

⁹ Cohen. Manitoba Centre for Health Policy; Watson, Centre for Health Services & Policy Research.

¹⁰ British Columbia Provincial Health Officer (2009). *Pathways to Health and Healing – 2nd Report on the Health and Well-being of Aboriginal People in British Columbia. Provincial Health Officer's Annual Report 2007*. Victoria, BC: Ministry of Healthy Living and Sport

4.6.3. Sustainability: Health Human Resources

Health Human Resources. Anticipated retirements by physicians and clinical staff in the coming five to ten years are expected to contribute additional challenges for health service delivery. Approximately 45% of IH's permanent workforce is currently 50 years of age or older. By 2022, 54% of IH staff will be of retirement age (55 years or older).¹¹ It is also expected that physician recruitment challenges will continue to grow in the future. Although education programs for physicians in British Columbia have increased, research also suggests that younger cohorts of physicians generally work fewer hours compared with older cohorts.¹² This is often compounded in rural areas, where difficulty recruiting and retaining physicians and clinical staff can limit sustainability of services. Not only is the recruitment and retention of medical and clinical staff expected to be a challenge in the future; the needs of the work force are changing in response to the health care needs of the population. The World Health Organization has highlighted the need for different skills and experience to meet the challenge of delivering chronic care services to the population, including the need for team-based care.

4.6.4. Sustainability: Economic and Fiscal Considerations

Health spending as a percentage of total government spending has been increasing. Wages and compensation, the cost of pharmaceuticals and new treatments, and infrastructure investments have been the primary drivers of this increase. It is generally accepted by system partners that there is a need to contain future spending increases. As health care spending continues to climb, it restricts funding available for other provincial priorities. However, there are also funder opportunities that support capital investment in health care that require careful considerations.

The Canadian Institute for Health Information has highlighted the impact of pharmaceutical and technological advances on the growth in health care services and expenditures in the last decade.¹³ Although new technologies have contributed to increasing costs of health care, there are also opportunities to use new technologies to support innovative delivery of services, including e-Health, new approaches to providing care in rural and remote areas using tele-health and new methods of delivering care using ambulatory, day care and minimally invasive surgery to reduce acute inpatient stays.

¹¹ Data notes: i) permanent Staff includes Full-time and Part-time Active IH employees only; ii) projection for 2022 includes all staff Active IH employees; Full-time, Part-time and Casual; iii) current age is based on the employee's birth date and their age as of today, Jan 25th, 2013; iv) future age is based on the employee's birth date and their age as of Jan 25th, 2023; and iv) duplicates of employees with multiple employee ids were removed.

¹² Watson DE, Katz A, Reid RJ, Bogdanovic B, Roos N, Heppner P. *Canadian Medical Association Journal*. 2004 August 17; 171(4):339-342.

¹³ Canadian Institute for Health Information, *Health Care in Canada 2009: A Decade in Review* (Ottawa, Ont: CIHI, 2009).

5. Risks

The key risks to the Capital Strategy include:

- Unanticipated changes in Provincial funding, policy direction or other financial changes beyond the control of the health authority;
- Anticipated alternative financing, procurement or service delivery options become not feasible;
- Construction/capital maintenance is delayed or deferred due to unforeseen construction industry capacity constraints;
- Unforeseen limitations or changes to health human resources capacity may impede timely implementation of capital projects; and
- IH health service delivery strategic directions change to align with Provincial initiatives.

6. Conclusion

Moving forward, prioritization of capital investment requests will be critical to ensure that capital funding capacity aligns with IH capacity to address the most critical capital needs. The purpose of the Capital Strategy is to provide direction to capital investment decisions that acknowledges the following:

- Capital investments that align with the established planning principles and address all three key drivers will realize the most significant return on investment;
- Capital investment planning must align with health service strategic directions;
- Prioritization of capital investments requires an objective tool and process that considers annual and long-term strategic directions of the organization; and
- It will be necessary to identify innovative health service delivery options that address projected health service demands and mitigate future requests for capital investment.

Appendices

Appendix A: IH Capital Investments 2002-2012

Background

Since IH was formed in 2001, the primary focus of capital investment was to ensure a sustainable network of health care delivery through investment in Tertiary and Regional hospitals. The priority targets identified for capital investment between 2002 and 2012 were: i) Tertiary and Regional hospital sustainability; ii) high cost-high volume services; iii) residential/assisted living beds; and iv) maintenance of existing infrastructure, equipment and IMIT. Redevelopment and expansion opportunities for future investments were identified through site specific and regional long -term planning efforts, which provided a road map for capital investment planning.

Regional Hospital Sustainability

Capital investments over the past 10 years targeted upgrading infrastructure for IH's two Tertiary referral hospitals KGH and RIH along with its Regional service area hospitals EKRH, KBRH, PRH and VJH. This capital priority was to ensure these six sites were sustainable for providing health services to not just their communities but also to their referral communities. Investments focused on both upgrades to building infrastructure, along with significant renovations to support health care service delivery required. The following table provides a spending summary of both equipment and buildings for IH's Tertiary and Regional Sites for the period 2002-2012.

Table 1: Spending Summary (Figures in millions) 2002 – 2012

(000's)	Equipment		Building & Projects		Grand Total
	Under \$100k	Over \$100k	Under \$100k	Over \$100k	
EKRH	\$9.0	\$8.3	\$0.5	\$39.5	\$57.3
KGH	\$24.1	\$27.7	\$1.7	\$358.5	\$412.0
KBRH	\$8.3	\$8.7	\$0.9	\$9.1	\$27.0
PRH	\$10.7	\$10.5	\$1.3	\$8.3	\$30.8
RIH	\$16.9	\$18.3	\$0.9	\$64.0	\$100.0
VJH	\$15.1	\$11.7	\$0.7	\$187.5	\$215.0

Note: In addition to the investments noted above, there is one additional very large project in progress at KGH, the Interior Heart and Surgical Centre Project with a total project value of \$370m.

High Cost – High Volume Services

Certain programs within the health system are characterized as having both high volumes of activity and high costs associated with delivering the service. Examples of these services include i) ED, ii) Intensive care units; iii) Surgical suites; and iv) DI. Additional programs often include laboratory services, MDR and ambulatory care. Capital investments in these areas between 2002 and 2012 focussed on redesign and expansion projects targeting improvements in patient flow and workflow efficiency.

Major equipment purchases included: i) CT scanners, MRIs, Automated Medication Dispensing Systems, Gamma cameras, nurse call systems, angiography system, mammography system and physiological monitoring equipment for ICU and Emergency Rooms. Other equipment investments range from ovens, dishwasher, and laundry washer to fleet vehicles. Since IH was created, capital investments averaged \$28 million annually for equipment. These investments have allowed IH to provide quality care by reducing medical errors and increasing efficiencies. IH would not have been able to purchase these without the support of the local hospital foundations and the Regional Hospital Districts.

The following table provides a high-level summary of capital investments made toward high cost – high volume services as well as Regional Hospital Sustainability. The capital cost associated with these projects is captured in table 1 above.

Table 2: High Level summary of select capital investment for projects and/or major equipment by Hospital Site (Tertiary, Regional and Community), 2002-2012

	Emergency	Specialty Inpatient Units	Surgical Services	MDR/CSR	Ambulatory Care	Diagnostic Imaging	Laboratory	Pharmacy	Site Access (Parking/Heliport)
Tertiary									
KGH	X	X	X	X	X	X	X	X	X
RIH	X	X		X		X	X	X	X
Regional									
EKRH	X	X		X	X	X	X		X
KBRH		X	X			X	X		X
PRH						X		X	
VJH	X	X	X	X	X	X	X		X
Community									
100 Mile	X								
CMH						X			
Dr. Helmecken (Clearwater)	X					X			X
Invermere	X								X
KLH	X		X			X	X		
Lytton	X					X			
SLGH	X					X	X	X	

Pharmacy investments also included: i) unit dose packaging machines at KGH, RIH; and ii) implementation of an inventory carousel at KGH in 2005.

Residential Care/Assisted Living Beds Investment

Since 2002, IH has also worked to redesign residential care options for seniors as part of the overall initiative by the MoH, which included the creation of the Assisted Living classification of care and the increase provincially of 5,000 net new residential care and assisted living beds. In 2002, IH had 4,708 residential beds and 20 assisted living units. With the completion of the new beds, the last of which opened May 2013, there will be 5,563 residential beds and 922 assisted living units, a net increase of 1,757 beds. Many of the new beds are provided by private partners.

Table 3: Overall net change in bed numbers for Residential Care and Assisted Living beds by Health Service Area

Health Service Area	RC	AL	Total Net Change
East Kootenay	(33)	92	59
Kootenay Boundary	(156)	102	(54)
Okanagan	617	472	1,089
Thompson Cariboo Shuswap	427	236	663
IH Total	855	902	1,757

Tertiary Mental Health Beds

In addition to acute and residential/assisted living beds, significant capital investments were made to develop the current 176 Tertiary Mental Health (TMH) beds as a result of the devolvement of Riverview Hospital.¹⁴ Major Capital/bed investments in IH for TMH from 2002-2012 was \$26M. The first building completed was South Hills in 2003; the last facility was a retrofit in 2011. The tables below provide a summary of capital investments to establish TMH beds as well as a current inventory of beds by site.

Table 4: Summary of Capital Investments for TMH Beds 2002-2005.

Year complete	IH - Project	BEDS / Placements	Total Capital Funding (in Millions)
Kamloops			
2002/2003	Adult Tertiary Rehabilitation Kamloops	40	\$5.M
2003/2004	Adult/Geriatric tertiary Acute	22	\$7.5M
2003/2004	Neuro Psychiatry Tertiary Acute	22	\$7.5M
Sub Total		84	\$20M
66 Beds			
2003/2004	Adult Rehabilitation	39	\$3.M
2003/2004	Geriatric Rehabilitation	10	\$1.3M
Sub Total		49	\$4.3M
2004/2005	Adult or Geriatric Tertiary Rehabilitation	7	\$0.9
2004/2005	MHP Adult or Geriatric Tertiary Rehabilitation	10	\$1.3M
Sub Total		17	\$2.2M
Total		150	\$26.6M

¹⁴ Prior to IH establishment in 2001, all TMH services were provided in the Lower Mainland.

Table 5: Currently inventory of IH TMH beds by site (2012)

Facility	# of beds
Aberdeen House	7
Apple Lane	6
APU	8
Braemore Lodge	4
Cara Center	10
Country Squire	8
FW Green	2
Harbour House	9
Hillside Center	47
Hilltop House	7
McBride Manor	8
Polson Special	6
Renee House	6
South Hills Center	40
Tamarack Cottage	8

Transportation of Patients and Information

IH has also made significant inroads and investments with patient transportation to support the sustainability of a network of care including i) BCAS to implement a dedicated Air Ambulance (Helicopter) service based out of Kamloops; and the creation of HART based at IH Regional Hospitals whose responsibility it is to respond to outlying rural/remote facilities to provide “mobile intensive care” services; ii) Partnering with an alternative service provider for lower-cost; iii) Inter-facility transportation for low acuity patients; iv) Partnering with BC Transit to ensure Health Connection routes are meeting the needs of rural and remote patients; and v) Fully integrated patient care support at the Regional Hospitals when not performing transfers.

Table 6: Summary of Heliport Capital Investment 2002-2012

Location	Complete
Cranbrook	X
Grand Forks	X
Invermere	X
Kamloops	X
Kelowna	X
Trail	X

Finally, significant improvements in efficient and cost effective administrative and clinical services were achieved as a result of capital investments for IMIT 2002-2012. Single business and clinical platforms along with implementation of tele-health and tele-technologies across IH, including Provincial ehealth integration, provided the IMIT underpinning for further opportunities and further expansion of services as well as advanced clinical systems. The following is a list of some of the major IMIT investments made between 2002-2012:

- High speed Data Network Investment (most end points of all health authorities in BC);
- Data centre consolidation from 51 to 2 (Primary in Kelowna and backup in Kamloops);
- Telephone Systems Network to support toll free dialing throughout IH (leading practice in 2001; now mainstream);
- Single Business System platform in 2002;
- Single Clinical System platform in 2005;
- First in Canada to implement Quality and Patient Safety Clinical System in Oliver Hospital 2006;
- Clinician to Clinician Wireless Communications (Vocera) to support staff safety and efficiency;

- Regional PACs installation including a partnership with Private Providers (unique in BC);
- Home Support Scheduling System; Residential Care Information System; and Community Care Information System;
- Provincial eHealth integration (led the province on many fronts e.g. provincial master patient index active integration);
- Business Intelligence Reporting Tools and Performance Dashboard; and
- Wireless data network access expansion (will be expanded more fully in the future).

In addition to the numerous achievements noted above, implementation of tele-health was expanded throughout IH between 2002-2012 resulting in a total of 279 site end points with 25 clinical services provided (excluding PACS/CPACS).

Table 7: Number of tele-health sites end points

Clinical / Admin / Educational	168
Personal and Meeting Room Via Video	85
Emergency Department Videophones for Centralized Registration	26
Total	279

Through 2008-2012, IMIT has predominately focused on upgrading the Meditech clinical information systems platform to the vendor's latest technology and version. The initiative CONNEX, focused on an investment of people, process and technology. More than two thirds of the funds spent involved people (employee and physician engagement, change management and training) and process (nomenclature standardization and process optimization) and the remaining funding was applied to infrastructure (hardware and software).

This initiative focused on establishing the foundation for the implementation of advanced clinical information system functionality such as electronic clinical documentation, provider order entry, bedside medication verification and clinical decision support at the point of care. More than 300 physicians use smart phones to conduct their patient rounds and many others are accessing patient records using physician owned tablet devices to access and interact with the electronic medical record.

Land Transactions

In 2001, properties were transferred from numerous legal entities that were consolidated to form IH. In accordance with the IH 2005/06 Capital Plan strategic directions, land acquisitions for the period 2007-2010 directly supported the development and expansion of services at selected Tertiary and Regional Hospital sites.

For the period 2007-2010, the following land was acquired

Table 8: Land Acquisitions

Location	Acres	Parcels
Kamloops	1.40	1
Kelowna	1.49	8
Penticton	nil	nil
Salmon Arm	0.28	1
Vernon	0.57	1
Total	3.74	11

Additional land transactions occurred throughout IH between 2001-2012 that supported strategic direction for major capital projects and service delivery partnerships such as expanded residential and assisted living. Table 9 provides a summary of land transactions by region for the time period 2002-2012.

Table 9: Summary of Land Acquisitions / Dispositions by Region, 2002-2012

Location	Acquisitions		Dispositions
	Parcels	Acres	Parcels
East Kootenay	1	1	4
Kootenay Boundary	6	6	17
Okanagan	33	17	11
Thompson Cariboo Shuswap	19	25	13
Total	59	49	45

Capital Planning for Redesign and Expansion 2002-2012

The need for capital investment across IH facilities to support health service delivery continually grows as facilities age and demand for services increases. In an effort to assess and prioritize multiple requests, over the past 10 years, IH invested in the development of strategic planning documents¹⁵ designed to identify site-specific immediate, short-term and long-term capital projects. Specifically: i) Master Site Plans; ii) Functional Programs; iii) Concept Plans; and iv) Business Plans.

Master Site Plans provide a strategic road map for select sites by projecting future growth needs for all programs and services on-site based on best practice standards and defining the physical capacity and options for service expansion based on five, ten and fifteen+ year horizons. Functional Programming (FP) further defines space and resource requirements for selected priority programs and services at a site and allow order of magnitude capital cost estimates to be developed for these projects. For major capital projects, the next stage of planning is the development of a Concept Plan (CP), which outlines capital and operating impacts based on FP information, Indicative Design (ID) level drawings, procurement screening and human resource planning. The final stage of planning for Major Projects is development of a Business Plan (BP) which builds on information captured in the Concept Plan and provides a more detailed financial impact summary and project schedule as well as procurement options analysis and risk assessment. Confidence in capital and operating cost estimates associated with Major Capital Projects is most certain at the Business Plan stage of planning.

Master Site plans are not required prior to major project development however, it is recommended that Master Site Plans be completed for sites where facility capacity for future expansion is uncertain, or there have been multiple major project completed on-site and future direction is required, or a major capital project is being considered and it is necessary to ensure strategic alignment with future growth of other services on-site. Functional programming is recommended for all Major Capital projects to ensure best practice standards and LEAN processes are applied.

The following table summarizes major site planning completed since 2002.

Table 10: Major Capital Planning by Site. 2002-2012

Planning	Project Status
Tertiary	
<i>Kelowna General Hospital</i>	
• Master Site Plan	
• Ambulatory Care, Emergency Services Expansion and UBC Medical School Program	Complete
• Adult Inpatient Psychiatric Services	Complete
• Adolescent Psychiatric Services	Complete
• Clinical Support Building	Complete
• Interior Heart and Surgical Care Project	In progress
<i>Royal Inland Hospital</i>	
• Master Site Plan	
• Emergency Services Expansion	Complete
• Medical Device Reprocessing Expansion	Complete
• Diagnostic Imaging Expansion	Complete
• Laboratory Expansion	Complete
• Clinical Services Building	In Progress
Regional	
<i>East Kootenay Regional Hospital</i>	

¹⁵ Planning of health services and associated capital infrastructure requirements involves a number of factors: population growth/aging, occupancy rates, self sufficiency targets, referral patterns, considerations for efficiency adjustments such as technology and clinical practice, unmet demand and growth in chronic diseases

Planning	Project Status
• Master Site Plan	
• Emergency Services Expansion	Complete
• Inpatient Unit Redesign	Complete
• Medical Device Reprocessing Expansion	Complete
• Ambulatory Care Expansion	Complete
• Diagnostic Imaging Expansion	Complete
• Laboratory Expansion	Complete
• ICU and Electrical Upgrade	In Progress
<i>Kootenay Boundary Regional Hospital</i>	
• Emergency Services Expansion	Complete
• Surgical Services Expansion	Complete
• Diagnostic Imaging Expansion	Complete
• Laboratory Expansion	Complete
<i>Penticton Regional Hospital</i>	
• Master Site Plan	
• Diagnostic Imaging Expansion	Complete
• Patient Care Tower	Business Plan
<i>Vernon Jubilee Hospital</i>	
• Master Site Plan	
• Diagnostic and Treatment Building	Complete
• Medical Device Reprocessing Expansion	Complete
• Ambulatory Care Expansion	Complete
• Laboratory Redesign	Complete
• Specialty Inpatient Unit Redesign	Complete
• Inpatient beds Expansion	In Progress
• Pharmacy Expansion	In Progress
Community	
<i>100 Mile House District Hospital</i>	
• Emergency Services Expansion	Complete
<i>Cariboo Memorial Hospital</i>	
• Master Site Plan	
<i>Dr. Helmecken Memorial Hospital</i>	
• Emergency Services and Diagnostic Imaging Expansion	Complete
<i>Invermere & District Hospital</i>	
• Emergency Services Expansion	
<i>Kootenay Lake Hospital</i>	
• Emergency Services Expansion	Complete
• Surgical Services Expansion	Complete
• Diagnostic Imaging Expansion	Complete
• Laboratory Expansion	Complete
<i>Queen Victoria Hospital</i>	
• Master Program ¹⁶	

¹⁶ Master Program is a high level Functional Program that allows for order of magnitude site planning. The Queen Victoria Hospital (QVH) Master Program focused on consolidation of acute, residential and community care services for the Revelstoke LHA 19 on the QVH site.

Planning	Project Status
<i>Shuswap Lake General Hospital</i>	
• Master Site Plan	
• Emergency Services Expansion	Complete
• Diagnostic Imaging Expansion	Complete
• Pharmacy	Complete
• Laboratory Expansion	Complete

Appendix B: Capital Strategy Working Committee Membership

Representation/Roles	Title	Name
Executive Sponsor	VP, Residential Services & CFO	Donna Lommer
Lead	Chief Project Officer & Corporate Director	Norma Malanowich
Co-Lead	Director, Capital Planning	Jackie Watson
Tertiary Services	Health Services Administrator-KGH	Tracy MacDonald → Ingrid Hampf
Acute Services	Area Director, East Kootenay	Jason Giesbrecht → Ingrid Hampf
UBC Medical Program	Director, Tertiary Initiatives & Medical School	Colleen McEachern
Medical Directors	Senior Medical Director, Acute Services West	Dr. Jonathon Slater
Medical Affairs	Corporate Director, Medical Affairs & Clinical Networks	Kelly Murphy
Residential	Regional Director, Residential Services	Karen Bloemink
Community Integrated Health Services	Director, Strategic Initiatives	Dianne Kostachuk
Planning	Coordinator, Strategic Initiatives & Acting Corporate Director, Health Systems Planning	Karen Omelchuk → Jamie Braman
Planning	Leader, Health System Planning	Hanifa Keshani
IMIT & Lab	Regional Director, Laboratory Services and CIO	Mal Griffin
Human Resources	Corporate Director, Human Resource Strategic Services	David Bamford
Finance	Corporate Director, Financial Services	Darold Sturgeon
Bed Planning	Director, Information Management	Glenn Kissmann

Appendix C: Acute Care Bed Projections 2012

Updated Bed Planning Data for Capital Strategy:

Fiscal	Acute Care								Residential Care & Assisted Living
	CMH	EKRH	KGH	KBRH	PRH	RIH	SLGH	VJH	
Current Acute Beds 2011/12	28	69	351	75	134	216	40	148	6,472
Additional beds required 2016/17	0	9	41	0	32	30	7	15	593
Additional beds required 2021/22	3	6	33	4	13	21	4	14	1,371
Total New	3	15	74	4	45	51	11	29	1,964
Current ALC ¹⁷	13%	9%	15%	15%	14%	30%	13%	17%	
Current Occupancy	93%	99%	104%	94%	109%	106%	109%	105%	

*Projections for additional beds are based on 10% ALC Rate and 95% Occupancy Rate

*Bed Projection Methodology:

- Five years of historical data (Patient Days from MIS) were used to calculate:
 - o The overall IH growth rate (1.6%)
 - o The number of beds utilized at each hospital in 2011/12
 - o The 5-year average ALC rate for each hospital
- The IH growth rate was applied year-over-year to each hospital
- Average ALC rates were applied to hospitals individually
- Target occupancy of 95% was applied to hospitals individually
- Excludes newborns

¹⁷ The current ALC and occupancy rates are based on fiscal 2011/12. The ALC and occupancy targets are significant goals for IH to achieve. If not achieved, the acute bed projections are understated.

Data Notes:

- Occupancy rates = Inpatient Patient Days excluding newborn & PEDs in the nursery/ Bed Days Staff Acute
- ALC as % of IP = ALC Patient Days / Inpatient Patient Days excluding newborn
- Current Beds = permanently funded beds. (Excludes the 12 winter surge beds at KGH and 9 at VJH.)
- Bassinets are excluded from the bed count
- Data for Residential Care & Assisted Living was not verified or changed

Data Source: MIS/GL; Bed Planning Projections

Prepared by: Sharon McMillan, Strategic Information Analyst and Nathalie Ammaturo, Statistical Analyst

Report Date: January 24, 2013

Appendix D: Regulations/Standards for Residential Care

When expanding residential beds, IH will meet the legislated requirements as well as take into consideration:

- The changing care needs of those who are admitted into residential care;
- The required facility layout and design to positively impact efficiencies for the delivery of care, including the quality of the physical environment for ease of use by the residents;
- The ability to cohort special populations and address their unique needs;
- Reducing any current 3 or 4 bed rooms to two-bed rooms.

Requirements under the Residential Care Regulations state that each bedroom must:

- Meet the needs and provide for the health, safety and dignity of the occupant;
- Directly accessible from a hallway without passing through any other room;
- Entrance to the bedroom lockable from the inside when requested, unless unsuitable given the health and safety needs of the person in care, and that the bedroom entrance can be unlocked from the outside in the event of an emergency;
- Have its own washroom;
- Have at least the following amount of usable floor space:
 - 8 m² if occupied by one person in care who does not require a mobility aid;
 - 11 m² if occupied by one person in care who requires a mobility aid;
 - 14 m² if occupied by two persons in care who do not require a mobility aid;
 - 18 m² if occupied by two persons in care with at least one requiring a mobility aid;
- Usable floor space not including floor space occupied by the entrance and the swing of the entrance door, closets, wardrobe cabinets, fixed furniture or bathrooms;
- Window that provides visibility to the outside from a sitting position and allows natural light to the bedroom, with coverings that block out light and protect the privacy of the occupant and can be easily opened for ventilation, when suitable;
- A facility that is equipped with an air conditioning system or mechanical ventilating system; and
- Bedroom furnishings provided at no cost to the person in care, including a closet or wardrobe cabinet measuring at least 0.50 m², and a safe, secure place to store valuable property

Appendix E: MoH Capital Short Form Business Plan Scoring Tool

Project title:						CRITERIA FORMULAE AND SCORES		
CRITERIA	GUIDELINES FOR RATING					RATING (0-20)	AVERAGE WEIGHT	OVERALL SCORE
<small>Note: see 'comment' for each criteria when rating by moving cursor over red tab</small>	0	5	10	15	20			
Strategic alignment	Does not support a MoH or HA strategy	Aligns with 1 MoH strategy and/or 1 HA strategy	Aligns with 2 MoH strategies and/or 2 HA strategies	Aligns with 3 MoH strategies and/or 3 HA strategies	Aligns with 4+ MoH strategies and/or 4+ HA strategies		15.0	0.00
Innovation	Not innovative	Somewhat innovative	Fairly innovative	Quite innovative	Very innovative		15.0	
Health Outcomes	Poor no improvement	Moderat improvement	Good improvement	Very good improvement	Excellent improvement		20.0	
Access and flow	Negative impact	No impact	Moderate impact	High impact	Very high impact		10.0	
Human resources	Poor	Fair	Moderate	High	Very high		5.0	
Safety and risk management	By not acting, potential for harm does not exist	By not acting, potential for harm is low	By not acting, potential for harm is moderate	By not acting, potential for harm is high	By not acting, potential for harm is extremely high		20.0	
Urgency	Not really that urgent	Fairly urgent	Quite urgent	Very urgent	Extremely urgent		15.0	
<i>Bonus criteria</i>								
Operating Cost Benefit - The net cost or benefit per customer per year (see example below)	net cost the project requires additional funding of over \$3,000 per customer	net cost the project requires additional funding of between \$1,500 to \$2,999 per customer	net cost the project requires funds of \$0 to \$1,499 per customer	break even the project does not require additional funds	net benefit the project has a positive impact (adds funds or reduces costs)		15.0	
Funding partnerships	Up to 40% of project covered by non-MoH sources	40-54% covered by non-MoH sources	55-69% covered by non-MoH sources	70-85% covered by non-MoH sources	86-99% covered by non-MoH sources		10.0	
NOTE: each selection MUST be backed up by evidence in the short form business case attached to this score sheet; ratings that are not backed by								