

The GN Capital Planning Process
Handbook



The GN Capital Planning Process

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The GN Capital Planning Process

1. Introduction

A capital plan is a tool to assess the long-term capital project requirements to establish funding of high-priority projects in a timely and cost-effective fashion. Development of a capital plan is intended to ensure that decision makers are responsible to residents and businesses of the community with respect to the expenditure of public funds. The capital plan also promotes the provision of continuous efficient services. The plan identifies and describes capital projects, the years in which funding each project is to occur and the method of funding.

The GN provides and maintains facilities and other infrastructure, collectively “capital assets”, which are used to deliver programs and services to Nunavummiut. Capital projects are long-term investment projects requiring relatively large funding to acquire, develop, improve or maintain a capital asset such as to replace, expand, upgrade/improve or reduce infrastructure to meet growing and/or changing demands in the territory. Capital projects are important to effectively meet the government’s mandate and are an important part of the economic development of the Territory.

A Capital Plan proposes work or projects and their estimated costs into the future. This is important because it allows asset users to better understand the future of their buildings and other assets and plan accordingly. It allows asset managers to better plan how they will operate and maintain the assets. It allows funders to plan for future funding requirements and develop budgets. Indeed, funding availability is a big part of capital planning. It allows for land acquisition in a reasonable and efficient manner. It helps with community planning and development of community infrastructure through the community consultation process and the Integrated Community Infrastructure Sustainability Plans. A Capital Plan works in partnership with departments and municipalities for the growth and evolution of programs and services.

It must be appreciated that a Capital Plan is simply a plan, that the projects, the scope of work, the scheduling and cost estimates can and will change over time. It is only when a project receives formal approval, and typically funding approval, through the Capital Planning process, that it becomes a real project. Until a project is approved it must be considered as only a planned project.

Ideally, the growth of programs and services should drive the Capital Plan; however, in cases where asset maintenance has been deferred for too long, the condition of the assets will drive the Capital Plan at the expense of programs and services.

The GN’s annual capital process begins with FMB approval of the current year’s process and schedule. The capital planning process begins with departments reviewing and updating their capital needs assessments. After departments have completed their needs

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assessment to identify their highest priority projects, they will then start preparing their capital substantiation sheets to seek funding for a preplanning study.

The pre-planning study is intended to ensure that the program is clearly defined, and that enough information is available to develop appropriate scope, a reliable cost estimate and schedule, prior to proceeding further in the capital planning process.

The preplanning study will be based on the following:

- *Capital Standards and Criteria (CSC)*
- *20-year departmental capital needs requirement and analysis*
- *Integrated Community Sustainability Plan link, integrated with the community consultation process*
- *Program needs analysis*
- *Operation/Functional Program*
- *Feasibility Study, which will include an option analysis*

The pre-planning phase will form the basis for the business case to support projects for consideration and inclusion in the Five-Year Capital Plan. While business cases are not required for projects less than \$2,000,000, departments must prepare capital substantiation sheets to support funding projects below the \$2 million threshold.

Upgrading, renewing and expanding infrastructure represents a significant capital cost to government and one that must be balanced with all the other funding demands placed on it. Since the GN has limited resources for capital investments, it must have a process to select capital projects with the greatest public benefits. This requires a clear assessment of needs, and an objective process for ranking different projects.

There are 3 primary criteria for ranking or rating projects:

- *Health and Safety – 40%*
- *Mandated Programs and Services – 35%*
- *Sustainability, Economic and Benefits – 25%*

There are also Secondary Criteria that are applied.

The GN Capital Planning process is a means to identify, collect, list and evaluate capital projects in a context that will allow the government to make logical funding decisions so appropriate projects can go forward. It is a committee based approach and involves various levels of government to identify projects, establish priorities, review the projects and recommend the proposed annual capital plan.

The Capital Plan is based on an annual cycle that starts with the Deputy Ministers involved in Capital Projects; reviewing the strategy for the current year and with Departments

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identifying their proposed projects. After a series of iterations, the cycle ends with approval of the plan by the Legislature. The Capital Planning process is dynamic and each year is different depending on the factors influencing government at the time. Some years the changes are slight but in some years they can be significant.

The capital planning process should be based on a rolling 20 year window. While trying to predict capital needs 20 years into the future is challenging, it does provide some insight into future funding needs, asset replacement and refurbishing and land requirements. Each year the process also looks in some detail at the first 5 years and very specifically at the next funding year. The next funding year is the one that receives approval.

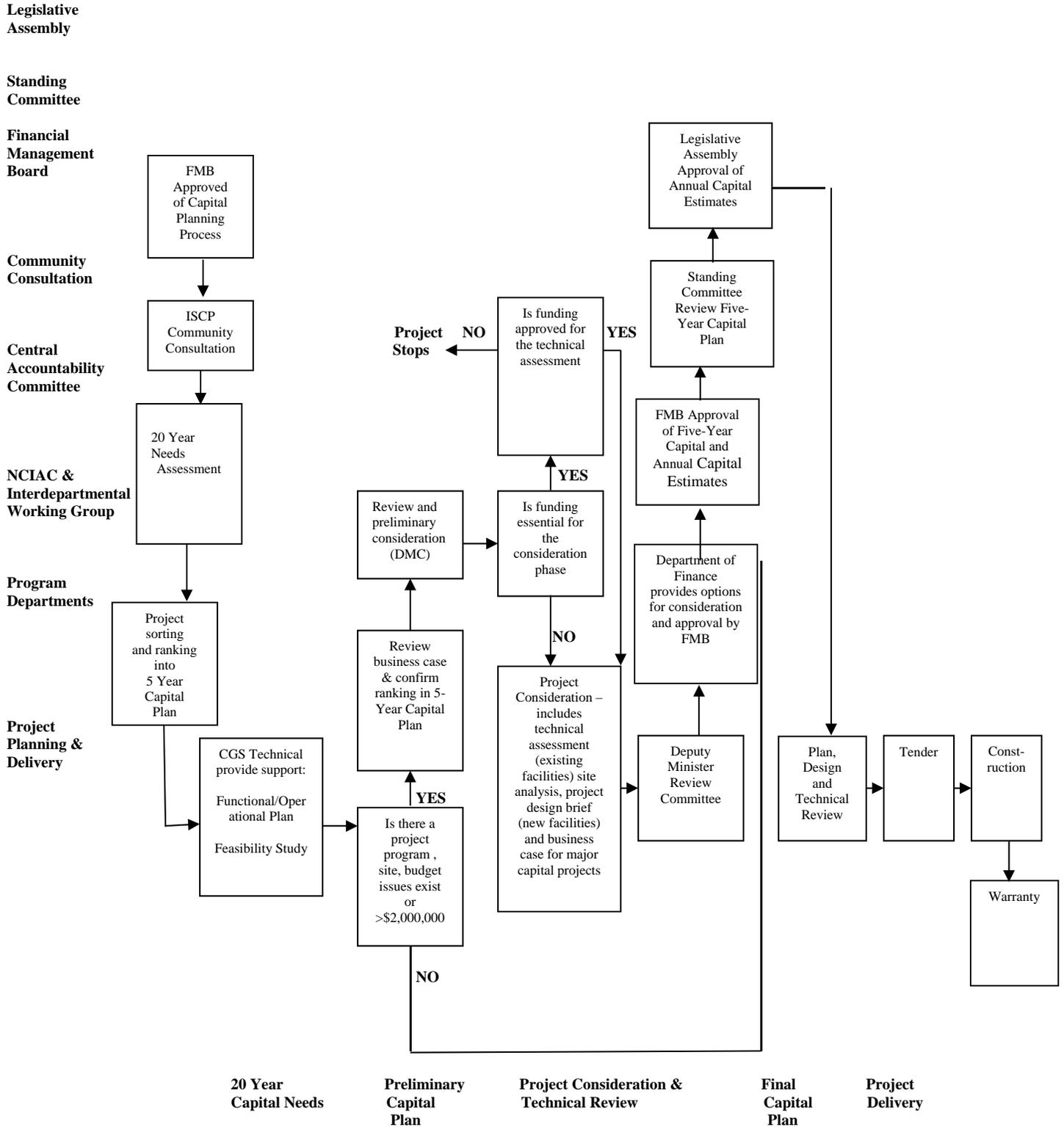
The process requires certain large projects to undergo a business case development phase so that the scope of the project can be clearly defined, and that enough information is available so credible cost estimates and schedules can be developed before significant capital funds are committed to the project.

The Interdepartmental Committee for Capital Planning (ICCP) reviews and prioritizes project based a ranking criteria. The Central Accountability Committee (CAC) provides overall ongoing direction for the development of the Plan and reviews and recommends the annual Capital Plan to Financial Management Board (FMB). The FMB reviews and approves the plan for approval through the Legislative Assembly.

The following diagram shows the Capital Planning process.

The GN Capital Planning Process

GN CAPITAL PLANNING & PROJECT DELIVERY PROCESS



The GN Capital Planning Process

2. Committee Structure

One of the key elements of the GN Capital Planning Process is the use of committees. The committees define the process, develop and evaluate projects, develop and review the annual draft plan and recommend approval.

Deputy Ministers Committee

The Deputy Ministers Committee (DMC) members include the heads of the following departments and agencies:

- Community and Government Services
- Culture and Heritage
- Economic Development and Transportation
- Education
- Environment
- Executive and Intergovernmental Affairs
- Finance
- Health
- Family Services
- Justice
- Nunavut Arctic College
- Nunavut Housing Corporation
- Qulliq Energy Corporation

Central Accountability Committee

The Central Accountability Committee (CAC) members include the heads of the following departments and agencies:

- Community and Government Services
- Executive and Intergovernmental Affairs
- Finance
- Justice

CAC directs the development of the capital planning process and identifies the issues, principles and ways to manage capital funding. They review the proposed five-year capital plan and may direct revisions to the plan based on their judgment, including projects not initially included in the plan.

CAC recommends the proposed five-year capital plan that is submitted for Financial Management Board consideration.

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Interdepartmental Committee on Capital Planning

The Interdepartmental Committee on Capital Planning (ICCP) includes delegates from departments and agencies who are involved in their department's infrastructure and capital planning. They take their direction from DMC. Their role is to act as liaison between the capital planning process and their departments, to facilitate the review process and complete the analysis that establishes the annual draft five-year capital plan. They ensure that their Departments Capital Project needs are included in the plan. The ICCP reviews the projects and prioritization as assessed by the Departments.

Through the ICCP, capital planning results are communicated to DMC. These results include:

- Preliminary compilation of capital needs data (20 Year Capital Needs Assessment)
- Prioritization criteria and rationale
- Confirmation of departmental priorities and strategies
- List of project anomalies
- Proposed Five Year Capital Plan
- Project business case
- Small Capital Base Allocation

Community and Government Services Technical Division

The Technical Division of Community and Government Services will provide the following support in the developing of the business case:

- Operational/Functional Program
- Feasibility Study

Financial Management Board

The Financial Management Board, which is comprised of departmental Ministers, approves the allocation of capital funding on a GN wide basis for the inclusion of the Five-Year Capital Plan and the Annual Capital Estimates.

Standing Committee

The standing committee, which is comprised of Regular Members, reviews the five-year capital plan and supporting documentation prior to tabling of the annual Capital Estimates in the Legislatively Assembly. The standing committee typically reviews the capital plan in early September.

Departmental Minister and witnesses appear before standing committee to answer questions or concerns that Regular Members may have regarding specific projects. This is a review process only.

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Committee of the Whole

Upon second reading of the Capital Estimates Appropriation Act, the Capital Estimates will be reviewed by the Committee of the Whole (COW) on a project by project basis.

The Minister and departmental witnesses appear before COW to answer questions or concerns that Regular Members may have regarding specific projects. While Regular Members through COW can vote not to approve a project(s) from the Capital Estimates, it does not have the authority to re-profile funds to another project or create a new project.

Once the Capital Estimates are approved through COW, the Legislative Assembly will provide final reading to approve the Capital Estimates Appropriation Act.

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3. Process/Schedule

The Capital Planning process is an annual process composed of a series of sequential steps.

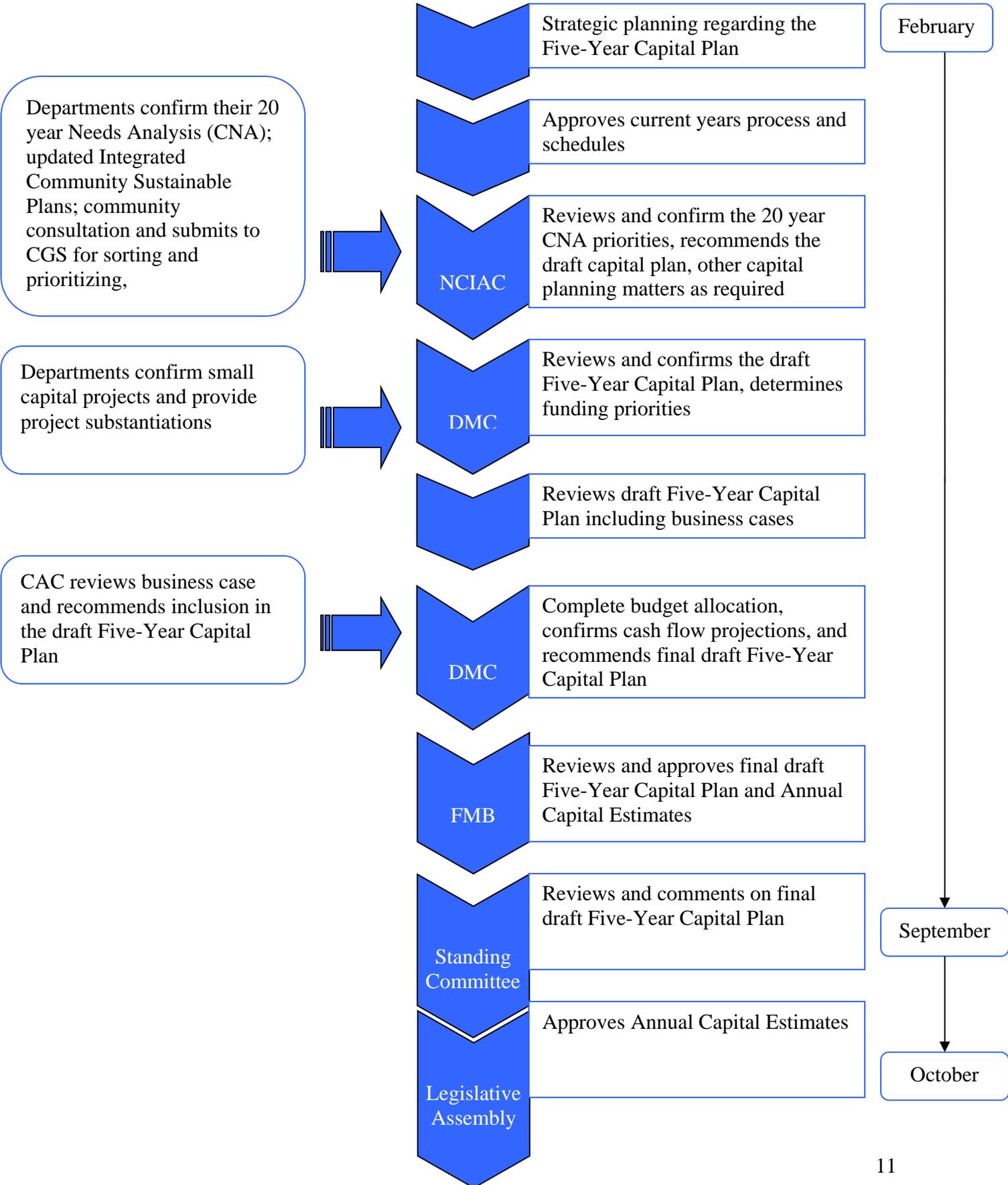
The process typically starts in February and concludes with the fall sitting of the Legislature. Actual dates and specific steps are determined annually.

1. The process starts with Central Accountability Committee (CAC) developing strategies and priorities for the current year's process and schedule.
2. FMB approves the current year's proposed process and schedule.
3. Departments review and update their 20-Year Capital Needs Assessment (CNA).
4. The CNA is submitted to the Chair of the ICCP for review and sorting by priority.
5. The sorted CNA is then reviewed by the ICCP for verification and identification of the highest priority large capital projects as well as small capital projects. This forms the basis of the draft capital plan.
6. CAC reviews the draft capital plan, determines funding priorities and identifies those projects requiring planning studies.
7. Departments confirm their small capital projects and prepare Project Substantiations as required for all projects under consideration.
8. Departments complete business case (usually from the previous year's capital process) and submit them to the CAC.
9. The CAC examines the planning studies to ensure they are complete and appropriate. Once reviewed, the recommended planning studies are included in the draft capital plan.
10. Based on the ICCP's review of small capital projects, a revised draft five-year capital plan with the planning studies is submitted to CAC for review.
11. CAC reviews the plan, finalizes funding priorities and recommends the plan to FMB
12. FMB submits the proposed plan to the Standing Committee of the Legislature Assembly
13. FMB reviews the five-year capital plan and submits it to the Legislative Assembly for approval.

The Manager of Capital Budget Development (Finance) and the Director of Technical Services (CGS) acts as co-chairs of the ICCP and facilitates the annual capital planning process.

The following diagram is a schematic representation of the process:

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4. Types of Projects

Large Capital Projects

Large Capital Projects – are projects with an estimated total project cost greater than \$250,000. They are subject to extensive preliminary planning, review and evaluation because of their potential to impact future program and service delivery and operating costs (both building and program operating costs). Major facilities are permanent and, once built, are typically limited to the uses for which they were designed. Inadequate planning can result in inadequate services, financial burdens or the need for expensive alterations. Decision-making is guided by the following factors and considerations:

- Is the capital project linked or identified in a departmental business plan?
- Has due diligence been done, specifically:
 - For existing assets, have current assessments, reports, project design briefs been considered?
 - Are the proposed costs, program, and project data reliable, complete and accurate?
 - How is the project linked to the department strategic plan? Which element(s)?
- Is the capital project important?
 - What is the estimated impact related to public health and safety?
 - What is the estimated impact related to the natural environment?
 - How will the project impact on overall asset-wide deferred maintenance?
- What is the effect of not proceeding with the project?

Small Capital Projects

Small Capital Projects – these are projects with an estimated total project cost between \$50,000 and \$250,000 and a much lesser potential to impact future program and service delivery and operating costs. They are subject to a different & less rigorous evaluation, review & approval process.

IT Projects

IT Projects - The Informatics Policy Committee (IPC) reviews all departments Five-Year Capital IT Plans. IPC recommendations are submitted to the FMB for approval at the same time as the departmental five-year capital plans are under consideration.

Deferred Maintenance Projects

The GN has recognized that in the past inadequate funding was spent maintaining assets and as a result, assets have deteriorated and may not provide accommodation over their expected life. To help correct this situation, they have developed a system to identify asset deficiencies and set a government priority to start to correct these deficiencies. CGS has recommended that an annual allocation \$5.0 million per year be included in the capital plan for Deferred Maintenance projects. Deferred Maintenance projects can be considered separately from the government wide capital review process.

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Pre-Approved Projects

Pre-Approved Projects (PA) – are approved projects with funding requirements in the current capital planning year. They may be multi-year projects that were approved in previous years or projects that arose outside of the capital planning process. Their funding requirements take priority over all other projects. They must have a minimum total value of \$50,000 and:

- Explicit Cabinet and/or Financial Management Board direction or Record of Decision; OR
- Existing legal construction/erection contract in place for the current fiscal year (including the potential of significant penalties for cancellation or delay); OR
- Existing cost sharing agreement with another level of government that contributes to the total value of the project; OR
- Existing “other” legal agreements; OR
- Demonstrable actual work in progress (i.e. including continuation of a multiyear project that is in progress).

The definition of a “previously approved” capital project does not (necessarily) include:

- Political statement, commitment or promise;
- Projects identified in departmental “Strategic Plans”;
- Projects identified in departmental “Business Plans” beyond the current year;
- Pre-feasibility planning/study/design work;
- Design work (Architectural/Engineering) that is not part of the proposed construction/erection work;
- Negotiated contracts;
- Potential commitment of/to a cost-shared project with another level of government that contributes to the total value of the project.

Outside the Plan

Certain capital projects may be funded from sources outside of the typical GN Capital Funding process such as Gas Tax. Even so, these projects can be considered as capital projects and may be included in the plan.

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5. Asset Condition and Planning

Part of the definition of Capital Planning is “maintaining assets to continue services”.

When an asset no longer allows for a service to continue then it’s no longer useful as an asset and something has to be done - a capital project that usually involves replacing, adding to, renovating, upgrading or disposing of the asset.

Putting these projects into a time based plan allows the government to better deal with all the projects, to synchronize with other government and departmental plans, to anticipate funding and to develop opportunities for sharing projects and reducing duplications.

A major challenge in Capital Planning is evaluating projects in relation to each other, determining which projects have greater priority over other projects.

Assets can be thought of as vertical infrastructure or horizontal infrastructure.

Vertical Infrastructure

Vertical infrastructure are typically buildings of some sort: health centres, schools, municipal office buildings, service buildings, air terminal buildings, garages, picnic shelters, tank farms, etc.

The factors that drive the need for Capital Projects in Vertical Infrastructure are age, condition and suitability of the asset. The challenge has been how to measure and compare these factors.

The GN is starting to populate an inventory of vertical infrastructure facilities in the RECAPP database. This database will include all of the facilities owned by the GN and municipalities. It provides a description and photos of each facility, its age, condition and various other data. The database identifies deficiencies at each facility and recommends projects to correct these deficiencies including cost estimates. These deficiencies are referred to as Deferred Maintenance, based on the presumption that with regular routine and preventative building maintenance, these deficiencies wouldn’t exist. The ratio of the estimated cost of deferred maintenance at a facility to the estimated replacement cost is known as the Facility Condition Index or FCI and is a quick measure of the condition of a building (the higher the FCI, the poorer the condition of a building).

The RECAPP database provides an accepted basis for comparing different facilities and for comparing, evaluating and prioritizing various projects. Very simply, projects to replace a facility with a high FCI should take precedence over facilities with a lower FCI; projects that reduce a high FCI should take precedence over projects with a lesser impact on FCI, etc.

Horizontal Infrastructure

Horizontal infrastructure is access roads, bridges and culverts and airport landing strips and runways (including lighting and drainage).

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The factors that drive the need for Capital Projects in Horizontal Infrastructure are similar to Vertical Infrastructure - age, condition and suitability of the asset.

6. Evaluation Criteria

Introduction

A common rating system employing criteria and weightings approved by the Central Accountability Committee is used to identify GN priorities for capital projects and programs across various infrastructure types (Airports, Health Centres, Municipal, health facilities, etc.)

Priority projects and programs submitted by each department that need to commence in the next five years are rated on these criteria and the total score is used to establish relative territorial priority. The rating system will be reviewed annually to ensure that it remains relevant and is consistent with government business plan objectives.

The Peer Review Committees (ICCP and CAC) has a distinct and well defined role in the capital planning process. The Interdepartmental Capital Planning Committee (ICCP) and the Central Accountability Committee (CAC) will continue to screen potential projects and establish priorities. The Peer Review Committee's role is to examine the business cases for major capital projects in detail to ensure that the work is complete, and that the design solutions are appropriate. The work of the Peer Review Committee ensures that consistent review criteria are applied equally for projects from all departments and in all regions.

Following the review, the Peer Review Committee recommends to the Deputy Minister's Committee (DMC) that the projects proceed as planned, proceed with minor modifications, or go back to the planning stage to deal with major unresolved issues.

Ranking Priority Guidelines:

The GN has a developed ranking criterion to establish priority listings of projects for funding. The criteria was developed utilizing the following principles:

- Projects shall be ranked in terms of overall priority in numerical order based on the criteria established below.
- The GN shall give due consideration to:
 - technical merits,
 - the NNI,
 - input from CGS Technical Services,
 - economic and community issues and
 - coordination with other infrastructure initiatives in the Territory
- Consideration of climate change, environmental regulations and best building practices must be given considerable weight in the prioritization of projects.

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- The ability to sustain the project must be given due consideration in the prioritization of projects. Identification of lifecycle planning and funding must accompany the ultimate approval of capital funding to undertake the project.
- Projects identified have to conform to funding guidelines outlined by both the Government of Canada (GC) and the Government of Nunavut (GN) where the GC or GN is the primary source of funding.
- Due consideration shall be given to community land availability and land development so as not to place extraordinary pressures on a community in a particular construction season. In addition, where possible, land development as an eligible expense as part of a large project shall be considered.
- Consideration shall be given to combining infrastructure projects so as to provide maximum use of facilities.
- Lifecycle Management, Insurance and Risk Management principles will be used in determining priorities.
- All projects should have community support through Council Motion and community consultations.
- Approved GN Capital Standards and Criteria shall be used in defining project scope. The Technical Services Division (TSD) of CGS may recommend changes to existing Capital Standards and Criteria.
- Information will be shared with the GN Interdepartmental Committee on Capital Planning (ICCP) so as to coordinate community infrastructure development with that of other GN Departments in order to maximize employment potential, economic development potential and training opportunities in a community, in a region and across the Territory.
- The NNI shall apply to all construction projects including projects funded solely by the GN, jointly with the Federal government, or solely by Hamlets.

Ranking Criteria

Health and Safety – Projects that directly alleviate health hazards or directly reduce risks to staff or public would be ranked with this criterion. They must clearly demonstrate imminent danger and/or one of the following:

- Improvement order from authority having jurisdiction
- Legislation which has the authority to close down infrastructure or impose penalties
- Deferred Maintenance projects related to life safety issues and not included in the Deferred Maintenance budget.
- Supports the health & wellness of the community

The following rating scheme is suggested

Critical Risk – The risk of not undertaking a project is a certain infraction of environmental

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law, significant threat to life safety, or failure of a basic service that cannot be delivered in an alternative fashion. Basic services are considered to be airports, schools, health facilities, water, sewage, and solid waste, etc. In addition, the project demonstrates the ability to improve the health and wellness of the community. These projects would be awarded a score of 40 points.

Moderate Risk – The risk of not undertaking the project is similar to critical risk, but for which there is an alternative means of delivery and the project supports the health and wellness in the community. These projects would be awarded a score of 25 points.

Low Risk – The risk of not undertaking the project is a secondary impact not directly related to the piece of infrastructure in question. For example, a community hall is not large enough to hold a special gathering that may occur bi-annually. These projects would be awarded a score of 10 points.

Mandated Programs and Services – While all infrastructure is important as far as the entire territory is concerned, for objectivity and as part of the overall ranking criteria, it is suggested that certain types of infrastructure be given a higher “ranking” based on the importance of the service/program it delivers. Projects can be associated with one or more of the following:

- Risk of structural failure; Infrastructure is critical to program delivery and demonstrated risk from inaction
- Catastrophic equipment (mobile or fixed) failure
- Severe fire, flood or storm damage
- Requirements for demolition of hazardous infrastructure
- Advanced age of infrastructure
- Essential Legislative service
- New, expanded or adapted to meet forced growth – usually associated with demonstrated growth in demographics or demonstrated growth in demand for program services
- Failure to adequately meet demonstrated program requirements

The following is suggested:

Critical Risk – This is infrastructure that is essential for the consistent delivery of all program/services and generally cannot be provided from the private sector. Infrastructure in this category relates to the protection and access to program/services for all Nunavummiut, including essential services needed for day-to-day life. Critical infrastructure would be awarded a score of 35 points.

Moderate Risk – This is infrastructure necessary for the basic operation of program/services and the protection of assets, including infrastructure/equipment needed to address emergency situations, existing conditions, or foreseeable failures. Priority infrastructure projects would be awarded a score of 20 points.

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Low Risk – The risk of not undertaking the project is a secondary impact not directly related to the piece of infrastructure in question. For example, a community hall is not large enough to hold a special gathering that may occur bi-annually. These projects would be awarded a score of 10 points.

Sustainability, Economic and Benefits – Projects that have the support of the community, the general public, and align with GN capital priorities, will be given priority ranking. Infrastructure initiatives identified as sustainable assets through the integrated community sustainability plans, as well as projects that have programs planned or strategies to ensure sustained maintenance and use of the facility through its lifecycle will be given higher priority. Projects can be associated with one or more of the following:

- Formal agreements for investment which requires cost sharing with the Government of Canada
- Potential return on investment which require increased revenues or cost avoidance
- Energy conservation/efficiency achievements
- Environmental protection achievements (i.e. reduction of Greenhouse gas emissions)

Critical Risk – These projects are identified through community consultations and have received unanimous approval by all parties including eligible cost sharing projects through federal government infrastructure programs. The project has been weighed against alternative means of delivery and has been deemed the most cost-beneficial and sustainable for the GN and the community. In addition, all parties have shown an ability and willingness to finance, operate, and maintain the infrastructure, and have the necessary programs and key infrastructure in place to support the new project through its complete lifecycle. Projects that show significant support and sustainability would be awarded a score of 25 points.

Moderate Risk – These projects possess similar support and sustainability to projects in the “significant” category, but may lack certain programs that will ensure adequate use and sustainability of the infrastructure through its complete lifecycle. Projects that show adequate support and sustainability would be awarded a score of 15 points.

Low Risk – These projects are identified through community consultations and have **not** received approval by all parties, including eligible cost sharing through federal government infrastructure programs, and/or the project has an alternative means of delivery that is more cost-beneficial and sustainable for the GN and the community. The community does not have the ability to finance, operate, or maintain the infrastructure and it would be a significant strain on GN resources to sustain the project though its complete lifecycle. Projects that show little support or sustainability would be awarded a score of 4 points.

Health and Safety – 40%
Program/Services – 35%
Support & Sustainability – 25%

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7. **Business Case**

As a project is identified, assumptions are made about the scope, cost and duration. Cost estimates and approvals are made using those assumptions and that tends to define the project. Significant changes in scope of work, cost or duration after approval is difficult to implement, may imperil the approval of the project and tend to frustrate the Capital Planning process. To help avoid this problem, the GN is proposing the implementation of a business case stage for major Capital Projects.

The business case is intended to ensure that the scope of the project is clearly defined, and that enough information is available to develop credible cost estimates and schedules. The business case will include a program needs analysis, an operational/functional plan, a Design Brief and a feasibility study. They conclude with a Class “D” cost estimate. They are required for all large multi-year project or that have program, site or budget issues.

The Financial Management Board approves funding for the business case as the annual Capital Plan is reviewed. Program departments also have the option of funding a business case internally. Funding for the business case is considered operational funding, not capital.

Business cases, once completed, are presented to the CAC for their review. They, in turn recommend that the projects go back to the planning stage to deal with major unresolved issues or recommend to CAC that the project be included in the draft capital plan as presented, or with minor modifications.

Detailed information on Planning Studies is included in the Appendix.

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APPENDIX

Appendix 1 - Glossary

20 Year CNA - see Capital Needs Assessment

Activity – a division of a program

Capital Cost - The total cost of a project; including land, site development, professional services, disbursements, permits, construction, furnishings and equipment; also called Project Cost, Total Project Cost or Project Budget. This is the cost that is used to obtain funding.

Capital Needs Assessment – CNA or 20 Year CNA - A projection of the GN's capital requirements over the next 20 years. The capital projects identified during the needs assessment are prioritized to determine which projects should be submitted for approval in the 5-Year Capital Plan. The Capital Needs Assessment is reviewed and updated annually and will change from year to year. The 20 year CNA develops into the 5 year Capital Plan and the Capital Estimates. The information listed in the 20 year CNA should correspond to the Project Substantiation.

Capital Projects – Projects established for the purchase, construction or betterment of Capital Assets. Typically, a capital project encompasses a purchase of land or equipment and/ or the construction or renovation of a building or other facility.

Cash Flow – Cash flow is a schedule of estimated revenues and /or expenditures over time.

Class of Estimate - The categories of cost estimates used by the GN to forecast budget requirements. Estimates are refined from the initial Class D estimate to the final Class A estimate.

Construction Cost – the cost of building a project, typically the amount awarded to or negotiated with a contractor for the construction of a project. Not to be confused with Project or Capital Cost.

Contingency - Reserves for unplanned events or alternative solutions, usually money incorporated into the project budget.

Contract Documents - The contract documents are the detailed arrangements of the agreement between the contractor and the owner. For a construction contract this would include the working drawings, specifications, amendments, general conditions, contract change orders, site instructions and the signed articles of agreement.

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Deferred Maintenance – Deferred maintenance is a practice of allowing infrastructure to deteriorate by postponing prudent but non-essential maintenance and repairs to save costs, labour and/ or material. Deferred maintenance includes routine maintenance, preventative maintenance, existing major repairs and replacements; it does not include future maintenance, capital improvements, or grandfathered code issues. Generally, continued deferred maintenance will result in higher maintenance costs, poor building performance or building failure than if the required maintenance had occurred.

Department – An organizational entity established by Cabinet to deliver programs and services within a specified mandate. Departments are further divided into Activities.

Design-Bid-Build – the traditional project delivery process. The client (typically CGS working with or on behalf of a Department) develops a set of requirements then retains building consultants (architects and engineers) to prepare a building design and construction documents. The project is then put out to tender and a contractor (usually with the lowest bid) is selected and constructs the project. This process allows the client a lot of control over the design & construction however it takes longer and spreads the risk and responsibility over a number of parties.

Design-Build – a project delivery process where a developer delivers the building. The client develops a set of requirements and a developer is retained to provide a building to meet those requirements. Responsibility for design and construction rests with the developer. This process is usually faster however the client's control over the design and construction is limited.

Design-Lease – a project delivery process similar to Design-Build, except that the developer retains ownership of the building, acts as a landlord and leases it back to the client. This is also known as Build to Suit. A Design-Lease project would involve operating funding for lease payments not capital funding.

Design Development - The phase following schematic design during which preliminary drawings and outline specifications are developed.

Due Diligence – A measure of prudence, activity, or assiduity, as is properly to be expected from, and ordinarily exercised by, a reasonable and prudent person under the particular circumstances. Alternatively, due diligence means to reasonably identify and take into account all relevant factors before making a decision, taking action or taking no action.

Economic Life - The period of time over which costs are incurred and benefits are delivered to the owner of an asset.

Facility Condition Index (FCI) - the ratio of the total cost of remedying deferred maintenance requirements to the current replacement value. Generally the higher the FCI, the poorer the condition of the facility

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Functional Program - A description of the facility required to support a specific program, including objectives, operational plans and physical requirements.

Inflation – A rise in the general price level (e.g. as measured by the Consumer Price Index); also described as a general decrease in purchasing power of a given amount of funds. Inflated project cost estimates are the current cost times the forecast inflation rate, as illustrated below.

Budget Year	Year 1	Year 2	Year 3	Year 4	Year 5
Cost in Current Dollars	\$500,000	\$500,000	\$500,000	\$500,000	\$500,000
Forecast Inflation Rate	20%	5%	5%	4.5%	4.5%
Inflation Factor	0	1.105	1.10	1.15	1.20
Inflation – Adjusted Cost	\$600,000	\$630,000	\$661,500	\$692,268	\$722,375

*NOTE: The **Inflation Factor** is based on the initial budget compounded by the forecast inflation rate.*

In the Capital Plan, all costs are considered as current year costs.

Infrastructure – the permanent facilities and organization structure in place for the purpose of delivering government programs

Infrastructure Contribution – A contribution made to a third party by the GN to purchase, construct, develop or acquire a Tangible Capital Asset, where the ownership of the asset is retained by the third party such as municipal infrastructure

Horizontal infrastructure - Horizontal infrastructure refers to access roads, bridges and culverts and airport landing strips and runways (including lighting and drainage)

Life Cycle Cost - The Life Cycle Cost is the total cost of a facility over its anticipated life, including initial capital costs plus the annual cost of operations and maintenance plus any renovation costs.

Large Capital Asset – projects that have an estimated cost greater than \$250,000

Needs Assessment - An evaluation of the services required to meet client program objectives.

Payback Period – Payback period is an investment analysis method which finds the length of time between the initial project investment and the date when the value of the future savings equals the initial investment. In the following example, the payback period on the \$1,000,000 investment is 4 years.

Year	Initial Investment	Annual Savings	Cumulative Cost/(Savings)
0	\$1,000,000		\$1,000,000
1		(\$150,000)	\$850,000
2		(\$250,000)	\$600,000
3		(\$300,000)	\$300,000
4		(\$300,000)	\$ 0

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If future savings are going to be uniform each year, the payback period can be simply calculated by dividing the investment by the annual savings; e.g. $\$1,000,000/\$200,000 = 5$ years.

Business Case – Studies completed by departments and CGS Technical Division to plan capital projects, which include information about:

- Needs analysis (population projections, demographics, service standards).
- Operational planning (staffing, hours of operation, service delivery).
- Functional program (building size, rooms and areas).
- Evaluations of existing facilities. Is there a way to better use existing assets without the need for additional space or capital? Can a building be renovated economically? Can costs for operation and maintenance be reduced?
- Site (alternative locations, preferred site).
- Project delivery alternatives (design/bid build, construction management, design/build, repeat design, prefabrication etc).
- Schedule (including milestones for design, mobilization and construction).
- Development of the schematic design or RFP documentation.
- Cost (including design, construction, site development, engineering reports, furniture and equipment, management costs, risk factors etc).

Post-Occupancy Evaluation/Inspection (POE) - A survey and/or inspection taken after project completion to assess end users' level of satisfaction with the various aspects of the facility. A POE is also used to determine whether any value engineering achieved its objectives. These reviews will provide a mechanism for audit and accountability to ensure that projects have met the conditions of their approval. It is also important to ensure that 'lessons learned' are incorporated into the capital planning and project delivery process. POE's are also known as Building Performance Reviews (BPR).

Preliminary Design – see Schematic Design.

Prior Years Funding - prior funding is the total of all project specific funds spent prior to the current year.

Prior Approval – see Previously Approved

Project Cost – see Capital Cost

Design Brief - A Design Brief describes the requirements of a project, including the functional program, budget, cash flow, schedule, and special technical requirements.

Project Management - The management of all the steps and procedures necessary to take an idea of a facility or need from a program through to a building or facility on the ground in the community.

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Public-Private Partnership (P3) – a project delivery process based on a partnership between public and private sectors for some combination of ownership, design, construction, financing, operation and/ or maintenance of public assets.

Schematic Design - This is a design solution illustrating the general arrangement of spaces and systems. This may also be called preliminary design

Shop Drawings – Drawings and submittals from contractors that communicate the contractor's intent to supply products, as well as how they will be fabricated and, in many cases, installed.

Small Capital Asset – projects that have an estimated cost between \$50,000 and \$250,000.

Tangible Capital Asset – A non-financial asset of physical substance that is purchased, constructed, developed or otherwise acquired and has the following characteristics:

- It is held for use in the production or supply of goods, delivery of services or program outputs
- It has a useful life extending beyond one fiscal year and is intended to be used on a continuing basis
- It is not intended for resale in the ordinary course of operations

The major categories of tangible capital assets are:

- Land (other than land acquired at no cost to the government)
- Access Roads and Bridges
- Airstrips and Aprons
- Buildings
- Water and Sewer Works
- Leasehold Improvements
- Other Major Equipment
- Major Medical Equipment
- Tank Farms

Total Project Cost – see Capital Cost

Value Engineering (VE) - An organized effort to analyze the functions of systems, equipment, facilities, services, and supplies for the purpose of achieving the essential functions at the lowest life cycle cost consistent with required performance, reliability, quality, and safety. VE seeks to lower life cycle costs, while maintaining the same level of system service (performance, reliability, quality, and safety). Another definition of VE is to generate design alternatives that maintain the cost level while increasing the level of service.

Vertical infrastructure - Vertical infrastructure are assets that have a vertical dimension to them, typically buildings of some sort: health centers, schools, office buildings, service buildings, air terminal buildings, garages, picnic shelters, tank farms, etc.

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RECAPP Database – the RECAPP Database is a web-based capital planning and management application that the GN uses to keep track of their assets, monitor Deferred Maintenance and provide FCI scores.

Appendix 2 – Project Prioritization – Details and Ranking Recommendation Peer Committee – Template

Proposed Project:

Department:

Funding Source:

Total Project Cost:

Rating Score:

Rating Recommended By:

Date:

SECTION 1 – PROJECT SUMMARY

Project Description:

Estimated Capital Asset Acquisition Costs and Annual Cash Flow (\$000s)

Prior Years	Year 1	Year 2	Year 3	Year 4	Year 5	Future Years	Total
Vote 02							
Vote 04							
Total Cost							
Incremental Capital Cost							

Explanation of Basis for and Reliability of the Estimated Capital Asset Acquisition

Estimated Incremental Facility and Program Operating Costs (\$000s)

Prior Years	Year 1	Year 2	Year 3	Year 4	Year 5	Future Years	Total
Facility							

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Existing							
Addition							
Total Facility							
Program							
Existing							
Additional							
Total Program							
Total Cost							

Explanation of Basis for and Reliability of the Estimated Incremental and Program Costs

Total Estimated Lifecycle Cost

Cost	Capital	Operation and Maintenance	Total

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SECTION 2 – PROJECT PRE-SCREENING

This section establishes basic condition for a project to be considered for peer committee prioritization. It is expected that positive responses can be made to all questions. If not, there must be a convincing rationale for why the project should be considered.

1. Has the Master Plan been completed, which includes the following?

- Program needs analysis
- Operational/Functional Program
- Feasibility Study

If no, Explain why.

2. Has a business case been prepared for this project?

- If yes, is it included in the capital planning submission?
- If no, on what basis was the project need established?

Explain

3. Has consideration been given to implementation through public private partnership? (Not required for projects less than \$XX million)

Explain why not or P3 potential.

4. Is there a reasonable plan for successful implementation of the project?

What on-going role will the department have?

Where will the leadership and expertise come from to successfully implement the project?

Is there a budget to support the operating costs associated with the project?

Have risk management strategies been identified to deal with potential obstacles?

5. Is the project sufficiently developed to proceed in the proposed time frame?

6. What is the nature and timing of, and funding for, additional planning and design required prior to tender? Explain

7. Will this project have any impact on existing community infrastructure, if so, have the incremental capital and Operations and Maintenance been identified? Has the affected stakeholders been involved in the project?

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SECTION 3 – PROJECT RATING ASSESSMENT

Summary of Scoring

Factor/Criterion	Maximum Score	Score for this Project
Health and Safety Issues (Criticality)		
Critical Risk	40 points	
Moderate Risk	25 points	
Low Risk	10 points	
Total Maximum Points	40 points or 40%	
Service/Program Delivery		
Critical Risk	35 points	
Moderate Risk	20 points	
Low Risk	5 points	
Total Maximum Points	35 points or 35%	
Sustainability, Economic and Benefits		
Critical Risk	25 points	
Moderate Risk	15 points	
Low Risk	5 points	
Total Maximum Points	25 points or 25%	
Total:	100 points or 100%	

Total Rating (Enter on Page 1)

Total Rating

Summary of definition of primary and secondary filters

Health and safety

- Certain Infractions of assets, environmental law or code that will result in immediate threat to life safety or failure of a basic service
 - Examples
 - A utilidor system that fails that will leave a community without potable water and sewage treatment
 - Mould issues in buildings such Health Centres, Schools and other buildings that provide program services to communities
 - Increase in airport traffic that affect public safety and/or significant national code violations

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Program/Services

- Infrastructure that is essential and not currently available or a serve risk for the delivery of mandated programs and services

Examples

- A school that is at or near capacity
- A tank farm that is at or near capacity
- An health centre expansion to meet the growing needs of the community
- A New Mental Health Program

Sustainability, Economic and Benefits

- Projects that demonstrate a cost effective and or cost/neutral solutions

Example

- Federal and municipal cost sharing arrangements such as the Building Canada Fund
- Energy efficient technology that reduces the lifecycle cost of a facility

Critical risk

- Projects are considered to be critical risk when there are no options available to mitigate the risk. Immediate action is required

For example, if the Resolute Bay Utilidor system fails it would result in health and safety issues because there are no other options to provide this essential service

Another example is mould issues in a health centre or school may result in health issues for resident and employees and closure of the facilities

Moderate risk

- Projects are considered to be moderate risk when there are some temporary options available to mitigate the risk. Projects that fall within this category will need to be included in the upcoming capital plan

For example, a school may be nearing capacity for student enrolment; however, there are facilities within the community for temporary classrooms to accommodate students

Low risk

- Projects are considered to be low risk when there are many options available to mitigate the risk. No action is required until future years

New tank farm regulations that do not need to be addressed until major upgrades are required for a tank farm

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Appendix 3 – Scope of Work for Preplanning and Business Cases

Business Cases should be an important part of the GN capital planning process, to ensure that projects are properly defined and planned and that an accurate class “D” cost estimate is obtained before proceeding into plan, design and construction. Business Cases apply to Large Capital projects that have program, site or budget issues.

The three main parts of the business cases are a Program Needs Analysis, an Operational/Functional Plan, a Design Brief/Feasibility study.

Business cases are a collaborative activity between the Program Department and CGS Technical Division staff. The Program Department typically takes the lead on the first two parts and CGS deals with the latter.

The GN investment planning process ensures that initiatives are properly considered and analyzed before proceeding forward for funding consideration. Business Case analysis is an important part of the new process.

Program Needs Analysis

This is normally the responsibility of the program department. The scope of the needs analysis will depend on the type of project, but will generally include the following;

- The range of services to be delivered based on legislation, policy, and territorial or national standards (e.g. what services will be available to patients in a health centre; diagnosis, imaging, in-patient and out-patient treatment, emergency services, referral, wellness clinics, mental health programs, dental care, social services etc.).
- The area to be served (territorial, regional, community).
- Population projections and demographic data.
- Characteristics of the population to be served.
- Recent trends in service delivery.
- Estimated volume of use (e.g. enrolment for a school, the number of visits by service category in a health centre, estimated case load for a courthouse etc.).
- The community where the facility will be located.
- Optimum and maximum utilization or occupancy rates.

Operational/Functional Program

When the needs analysis is complete, the program department will develop an operations/functional program in conjunction with CGS facility and business analysts including;

- Mission statements, core values, guiding principles, and objectives.
- Daily routine and schedule (a day in the life of the facility).
- Hours of operation.
- Customer/client profile

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- Administrative structure and staffing.
- Security and supervision.
- Facility support services (janitorial, maintenance).
- Relationships and potential partnerships with other service providers.
- Possible community use of the facility.
- The sites in a community suggested for the program.
- Estimated annual operating and maintenance costs, including incremental costs over the program life in 3 year increments.
- A "high level" functional program with space and technology analysis.
- A clear problem/opportunity statement.

Feasibility Study

When the operational/functional program is complete, the program department in conjunction with CGS will draft a feasibility study including;

- A functional (space and technology), condition and code/regulatory assessment of the current infrastructure and its capability to support the projected program need (where applicable);
- A community land plan indicating suggested location options – including the current location if capable;
- Environmental analysis of suggested site locations;
- Geotechnical and survey data for each site location;
- Overview of the community utility infrastructure (water/sewer/power/road) required to support the program on the suggested site options;
- Overview of program staffing impact on available housing and community utilities – in the identified community (This effort will include consultation with the selected community, NHC, QEC and other potentially impacted departments/agencies);
- Options to solve the problem defined in the Needs analysis and Operational/functional program.

Business Case Analysis

At this point in the planning stage, it is assumed the department will have sufficient data and information to draft a Business Case analysis of the identified options. The Business Case template is scalable to support an analysis of the program problem and potential solutions. A business Case analysis will focus analysis on the following areas:

- Project description including – Objectives; Scope; Specific and measurable deliverables; Stakeholders.
- Strategic Alignment with the department, GN and Tamapta priorities.
- Environmental Analysis – what is happening in other jurisdictions on this problem/opportunity issue.
- Viable Distinguishable Alternatives – generated from the Feasibility Study.
 - Reference to GN capital standards, or standards in other jurisdictions

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- Functional programs (list of net room areas; description of functional zones, and relationships between zones, gross up factors for circulation, mechanical and electrical services area, washrooms, janitorial rooms, and structure; site development such as parking, service yards, social and recreational areas, detailed room data sheets).
- Equipment lists for any program specific equipment. This would include new equipment and existing equipment that will be re-used in the project.
- Description of the site including legal and topographic surveys and geotechnical reports
- Functional and technical analysis of existing buildings (where applicable).
- Possible development strategies that have been considered (new construction design-bid build, design-build, renovation, addition, lease etc.) along with reasons for selecting the preferred strategy.
- Energy conservation and environmental design.
- Business and Operational Impacts – associated with identified alternatives.
- Risk Assessment – of each identified alternative.
- Cost/Benefit Analysis – quantitative over the life cycle of the program and infrastructure in net present value (NPV); qualitative, non-financial costs/benefits (e.g. Improved public perception)
 - Project cost estimates (Class “D”), funding and cash flow.
- Conclusions and Recommendations – resulting from the above analysis.
- Implementation Strategy – the implementation strategy recommendation must align with identified risks and costs. This should be the recommended project schedule.

The Business Case should be submitted to the working group for a Peer Review and then recommendations from this Peer Review be assembled for the DMC.

While business cases are not required for projects less than \$2,000,000, departments must prepare capital substantiation sheets to support funding projects below the \$2 million threshold.

Evaluation of the Business Case – Senior Management Committee

Introduction

The Peer Review Committee (PRC) conducts peer reviews of the Business Case Studies for major capital projects in order to control costs, confirm that the needs for projects are well defined, and to ensure that design solutions provide good value.

Role of the Peer Review Committee

The Peer Review Committee has a distinct and well defined role in the capital planning process. The Interdepartmental Capital Planning Committee (ICCP) and the Deputy Ministers’ Steering Committee (DMSC) will continue to screen potential projects and establish priorities. The Peer Review Committee’s role is to examine the planning studies for major capital projects in detail to ensure that the work is complete, and that the design solutions are appropriate. The work of the Peer Review Committee ensures that consistent review criteria are applied equally for projects from all departments and in all regions.

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Following the review, the Peer Review Committee recommends to the Deputy Minister's Steering Committee that the projects proceed as planned, proceed with minor modifications, or go back to the planning stage to deal with major unresolved issues.

Criteria for Peer Review

Program department staff, along with Community and Government Services technical staff to make a concise presentation of the planning study to the PRC according to the following criteria:

Program Needs Analysis

This is normally the responsibility of the program department. The scope of the need analysis will depend on the type of project, but will generally include the following;

- The range of services to be delivered based on legislation, policy, and territorial or national standards (e.g. what services will available to patients in a health centre; diagnosis, imaging, in-patient and out-patient treatment, emergency services, referral, wellness clinics, mental health programs, dental care, social services etc.).
- The area to be served (territorial, regional, community).
- Population projections and demographic data.
- Characteristics of the population to be served.
- Recent trends in service delivery.
- Estimated volume of use (e.g. enrolment for a school, the number of visits by service category in a health centre, estimated case load for a courthouse etc.).
- The community where the facility will be located.
- Optimum and maximum utilization or occupancy rates.

Operational/Functional Program

When the needs analysis is complete, the program department will develop an operations/functional program in conjunction with CGS facility and business analysts including;

- Mission statements, core values, guiding principles, and objectives.
- Daily routine and schedule (a day in the life of the facility).
- Hours of operation.
- Customer/client profile
- Administrative structure and staffing.
- Security and supervision.
- Facility support services (janitorial, maintenance.
- Relationships and potential partnerships with other service providers.
- Possible community use of the facility.
- The sites in a community suggested for the program.

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- Estimated annual operating and maintenance costs, including incremental costs over the program life in 3 year increments.
- A "high level" functional program with space and technology analysis.
- A clear problem/opportunity statement.

Feasibility Study

When the operational/functional program is complete, the program department in conjunction with CGS will draft a feasibility study including;

- A functional (space and technology), condition and code/regulatory assessment of the current infrastructure and its capability to support the projected program need (where applicable);
- A community land plan indicating suggested location options – including the current location if capable;
- Environmental analysis of suggested site locations;
- Geotechnical and survey data for each site location;
- Overview of the community utility infrastructure (water/sewer/power/road) required to support the program on the suggested site options;
- Overview of program staffing impact on available housing and community utilities – in the identified community (This effort will include consultation with the selected community, NHC, QEC and other potentially impacted departments/agencies);
- Options to solve the problem defined in the Needs analysis and Operational/functional program.

Business Case Analysis

- At this point in the planning stage, it is assumed the department will have sufficient data and information to draft a Business Case analysis of the identified options. The Business Case template is scalable to support an analysis of the program problem and potential solutions. A business Case analysis will focus analysis on the following areas:
- Project description including – Objectives; Scope; Specific and measurable deliverables; Stakeholders.
- Strategic Alignment with the department, GN and Tamapta priorities.
- Environmental Analysis – what is happening in other jurisdictions on this problem/opportunity issue.
- Viable Distinguishable Alternatives – generated from the Feasibility Study.
- Business and Operational Impacts – associated with identified alternatives.
- Risk Assessment – of each identified alternative.
- Cost/Benefit Analysis – quantitative over the life cycle of the program and infrastructure in net present value (NPV); qualitative, non-financial costs/benefits (e.g. Improved public perception)
- Conclusions and Recommendations – resulting from the above analysis.
- Implementation Strategy – the implementation strategy recommendation must align with identified risks and costs. This should be the recommended schedule.

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The Peer Review Committee also considers the implications of not proceeding with the project in terms of public safety and program delivery.

Capital Planning Project Executive Summary

PROJECT STATUS:

Department:		Class Estimates	
Project Title:		Multiyear (yes/no)	
Project No:		Project Phase:	
Community:		Preplanning	
Asset Type:		Design	
Asset No:		Construction	
Estimated Lifecycle (yrs):		Warranty	
Land Availability:		Incremental	
Site Development:		CGS (Water & Sewer)	
Approval Status:		NHC (Staff Housing)	
F/Y Approved:		PPD (Fuel)	
Current Fiscal Year:		QEC (Power)	
Previously Submitted?		Date Prepared:	
Eligible Project for 3 rd Party Funding?		Business Case Required (yes/no)	

PROJECT COST ESTIMATE:

Project Phase	Fiscal Year Expenditures							
	Prior Years	2013-14	2014-15	2015-16	2016-17	2017-18	Future	Total
Preplanning Study								\$0.00
Planning and Design								
Construction								
Closeout								
Recoveries/Revenues								
Total Expenditure								
Incremental								
CGS – Water and								

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Sewer								
NHC – Staff Housing								
PPD – Fuel								
QEC – Power								
Total Incremental								
O&M Costs								

Explanation of Basis for and Reliability of the Estimated Fiscal Year Expenditures:

PROBLEM/SUMMARY:

Current Status and Problem

BACKGROUND:

Results of Program Needs Analysis

Linkages to Strategic Plan and/or Business Plan

PROJECT SCOPE:

Description of Asset(s) to be Acquired

Linkages of general project scope of work to standards & criteria to determine the general scope of work. Attach a copy of a summary worksheet for general scope of work where applicable.

Project Type	Replacement (Units)	Renovation (Units)	Addition/Expansion	New Construction (Units)

Estimates Units: Building area (square-meters); Civil works (square meters; linear-meters-etc)

BENEFITS:

Description of Benefits on Program Delivery if the Project proceeds

RISK IMPACT IF DEFERRED:

Description of Impacts on Program Delivery if the Project is Deferred

IMPACTS ON OTHER INFRASTRUCTURE:

Capacity Required:

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- Qulliq Energy Corporation (KW):
- Petroleum Products Division (Liters):
- Water consumption / sewer collection (Liters):
- Access Roads (Km):

CONSULTATION/POLITICAL IMPLICATIONS:

Linkage to Integrated Community Infrastructure Plans

ECONOMIC & SOCIAL IMPLICATIONS:

Local Employment Potential (temporary and/or permanent):

PRIORITY RATING

	Secondary Criteria Ratings		
	Critical	Moderate	Low
Primary Criteria			
<input type="checkbox"/> Health and Safety			
<input type="checkbox"/> Mandated Programs and Services			
<input type="checkbox"/> Sustainability, Economic and Benefits			

ATTACHMENTS

- Project Priority Rating Sheets
- Rationale for Priority Ranking
- Business Case: Projects > \$2.0 Million
- Other (specify):
- Other (specify):

DEPUTY MINISTER APPROVAL

Deputy Minister Signature

Date

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Appendix 4 – Capital Planning Process

The planning and delivery of major capital projects will generally include the following stages and timelines:

Year 1 – Planning Study:

- Allocation of funding for planning studies will undergo a Peer Review as part of the capital planning process
- The scope of the project is identified based on the planning study, which includes a
 - Program Needs Analysis;
 - An Operational/Functional Program Assessment
 - Feasibility Study
 - Alignment with Departmental Standards and Criteria

Year 2 – Detailed Design Development:

- If the project is approved as a result of the planning study, a business case is prepared and reviewed by the Peer Committees
- All projects to be included in the Five-Year Capital Plan for consideration will be based on a ranking criterion.
- Once the Business Case is reviewed by the Peer Committee, it is included in the five-year capital plan for consideration and approval by the Financial Management Board and the Legislative Assembly
- Design development will commence – after FMB approvals

Year 3-4 – Construction:

- Materials are purchased
- Construction commences
- The duration of the project will depend on the size and location of the project

Year 5 – Commissioning:

- Systems are inspected and tested
- Warranty
 - The contractor completes any minor deficiencies
- Post Occupancy Evaluation
 - The facility is evaluated for performance and lesson learned are carried forward to improve future projects

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Appendix 5 – Project Cost Estimates

Departments establish estimated project budgets in their respective Five-Year Capital Plan, using the best information available at the time to define the scope of work and the likely cost of construction. Cost estimates in the Capital Plan are usually in current year dollars. As the project moves forward in the plan, the opportunity exists to further refine the project budget to take into account a better understanding of the scope of work and escalations in construction costs for similar projects.

Once the project budgets are available, the project scope is developed through consultations with the various stakeholders (department, boards, and communities). Communities especially, have become more involved in recent years in the planning and design of construction projects. Very often, over the course of project development, the original project scope increases or grows to account for newly identified program needs or as technical evaluations are completed. The result, sometimes referred to as “scope creep”, often increases project costs. This can be problematic if a project was initially approved with a certain cost estimate which increases as the project develops. Additional funds may have to be found to accommodate these increased costs.

The GN hires consultants to design capital projects, develop plans and specifications and to prepare construction estimates as the project proceeds. During the development of the project, a series of increasingly refined estimates are done, referred to as Class “D”, “C”, “B” and “A” estimates. Needless to say, the accuracy & reliability of estimates varies with Class “D” estimates having the least accuracy or reliability.

Class ‘D’ Estimates

Class D estimates serve to identify the potential solutions to a set of parameter requirements that the Client has identified. These solutions should be based on supporting documentation or substantiation.

The scope definition is only between 1% to 5% at this stage. At the very minimum, the total Gross Floor Area (GFA) should be provided by the Client for each option, although it is highly likely to change at this stage. Gross Floor Area is defined as the area shown on plan of each floor measured over walls and columns or other projections up to and including the external face of external walls and has to include for deductions for voids and other openings. As these are only potential solutions, they have to provide enough accurate information so as to equip the Client to rank all of the options available to them within a pre-identified and communicated budget. At this stage, very often only conceptual drawings or sketches are made available to reflect the proposed solution(s). Since it is a concept estimate, the estimator therefore has to do a very high-level estimate based on historical data that bears the maximum relevance to the building category under scrutiny. Due to the high quantity of unknown parameters, higher contingency allowances have to be carried into the project budget at this stage of estimating. In case of a renovation project, the significance of unknown parameters is significantly higher, resulting in an even higher contingency allowance. Typically, these construction estimates would ideally be prepared in-house.

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Class 'C' Estimates

Class C estimates are reached when the Client has decided on the preferred option. It is an investment making or decision tool to be used to preliminarily identify the preferred project option. The scope definition is only between 5% to 15% at this stage. This is the first opportunity for the Client to relate equate a pre-outlined set of requirement parameters to a budget. This estimate should reflect certain key design decisions. The Client should therefore use this indicative design estimate and make sure the budget requirements are being met. The objective is to identify any budget overruns before basic important design guidelines are laid or formulated. Value engineering should be carried out for identifiable items that are over-budget. At this stage, dimensioned drawings should be made available. The project plan should be identified at this point. In addition, the Gross Floor Area should be more precisely defined. Ideally, although all this information should allow for measuring and pricing of detail quantities, it is expected that a high proportion of the estimate will still be based on lump-sum allowances. Typically, these construction estimates would ideally be prepared by a Professional Quantity Surveyor or by a consulting firm or other construction consultant's office where a Professional Quantity Surveyor is at the very least either directly involved in the preparation, supervising the preparation of the estimate or reviewing the construction estimate.

Class 'B' Estimates

Class B estimates (substantive) is prepared once detailed drawings showing all major building systems/sub-systems are available. At this stage, the scope definition should ideally lie between 20% and 35%. Furthermore, all site investigations and other preliminary studies should be made available as these are likely to influence the construction design. The objective is to use the construction estimate in order to provide a more realistic project estimate. Here we are validating the identified project against the planned budget. Value engineering should be carried out for identifiable items that are over-budget. Design drawings showing all building elevations, sections and floor plans should be made available. Typical building sections showing the major composite building elements, e.g. wall sections, floor and roof construction should be available at this stage. The full set of preliminary structural, mechanical and electrical drawings should be detailed enough, e.g. showing the capacity and location of mechanical and electrical equipment and should be accompanied by outline specifications. The estimate will ideally be based on detailed, measured and priced items, with only very few lump-sum allowances. Typically, these construction estimates would ideally be prepared by a Professional Quantity Surveyor or by a consulting firm or other construction consultant's office where a Professional Quantity Surveyor is at the very least either directly involved in the preparation, supervising the preparation of the estimate or reviewing the construction estimate.

Class 'A' Estimates

Class A Estimates are based on a full, complete set of working drawings and a full set of exhaustive specifications. The main purpose of this estimate is to prove that the project can meet the budget constraints before the tender are received. At this stage, the objective is to enable the Client to reconcile sections of the estimate with the lowest tender or any contractor's

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submissions as the Client sees fit. The project scope should ideally be at least 95% defined at this stage, with the understanding that there will still be room for refinement for a number of building elements even after construction has started. Most of the items should be measured and priced. The only lump-sum allowances at this stage should be the ones that are specifically identified and specified in the construction documents. Typically, these construction estimates would ideally be prepared by a Professional Quantity Surveyor or by a consulting firm or other construction consultant's office where a Professional Quantity Surveyor is at the very least either directly involved in the preparation, supervising the preparation of the estimate or reviewing the construction estimate.

Class 'X' Estimates

Class 'X' estimates is a CGS invention and are tools used to identify an abnormally high number of unknown parameters in construction project. For example, the site might yet need to be identified and the Client might not have the slightest idea of the program areas it requires for a specific facility. Due to the nature of the process, Class 'X' estimates should be purely viewed as the starting grid around which the first very preliminary discussions will be based. To avoid confusion, these estimates should be discarded ignored as and when the Client is in a better position to provide more meaningful building requirement parameters.