

APPENDIX E: NWB SUMMARY OF MUNICIPAL WATER LICENCES

Community	Licence Number	Licence Issued	Licence Expires (d)	Notes: (i.e. open application currently before the Board)
Baffin				
Arctic Bay	3BM-ARC0810	March 17/08	March 31, 2010	Renewal application received 9Oct07
Cape Dorset	3BM-CAP0810	March 7/08	March 1/10	Renewal Issued, approved by Minister 21Apr08.
Cape Dorset	3BM-CAP0207			Issued with above renewal
Clyde River	3BM-CLY0308	Sept 15/03	Sept 15/08	Amendment Application Received. Upgrade of Waste Water Treatment Facility. Currently out for review. Comment deadline, 21May08.
Grise Fiord	3BM-GRI0308	Nov 15/03	Nov 15/08	No
Hall Beach	3BM-HAL0308	Apr 23/03	Mar 31/08	Renewal Application received 25Feb08, comment period closed 14Apr08; final NWB review in process
Iglolik	3BM-IGL0308	Sept 1/03	Aug 31/08	No
Iqaluit	3AM-IQA0611	May 15/06	May 15/11	Amendment application received Nov 9/06; considerable changes requested in way of errata, removal, and rewording of Licence conditions. Last correspondence indicated to put on hold (Crystal Jones no longer with City)
Kimmirut	3BM-KIM0207	Sept 1/02	Aug 31/07	Renewal application received 20Aug07; considerable concerns with the file and compliance. Letter issued to the Licensee 31Mar08.
Kimmirut	3BM-KIM0207			Amendment application received 18Feb08; Licence renewal not issued, see above.
Pangnirtung	3BM-PAN0207	Dec 1/02	Nov 30/07	Renewal application received 20Nov07; Comment period closed 15Feb08; issues raised and a letter was issued by the NWB requesting a response by 15May08
Pond Inlet	3BM-PON0408	Jan 15/04	Jan 31/08	No
Qiqiktarjuaq	3BM-QIK0712	May 9/07	May 31/12	No
Resolute Bay	3BM-RUT----	July 1/96	June 30/99	New application for Utilidor received Nov 24/06
Resolute Bay	3BM-RES9699			Sorting out correspondence appears the only information on file with the NWB on the renewal/amendment (SWDF) is the application and sketch of where the facility is located (apparently ready to use).

Community	Licence Number	Licence Issued	Licence Expires (d)	Notes: (i.e. open application currently before the Board)
Sanikiluaq	3BM-SAN0308	Nov 29/03	Nov 15/08	No
Kitikmeot				
Cambridge Bay	3BM-CAM0207	Sept 1/02	Aug 31/07	Renewal application received Aug 30/07; advised that file is deficient; Licensing requested outstanding documents required under the licence to be submitted prior to renewal of licence, 6Sep07 (given the direction the Board has gone with other renewals that were in non-compliance, consideration should be given to continue with the process and issue a 2 year licence) Accompanying info indicates a “planned” wetland, however no design information is included. This information, along with numerous other “improvement” options (2008) are included in the Background Report.
Gjoa Haven	3BM-GJO0409	Jan 8/04	Jan 31/09	Amendment application received for infilling of water bodies; distributed for comment, deadline 26May08
Kugaaruk	3BM-PEL0712	Sept 7/07	Dec 31/12	No
Kugluktuk	3BM-KUG0308	Nov 20/03	Nov 30/08	No
Taloyoak	3BM-TAL----	None	NA	No
Taloyoak	1BR-TAL0712	Dec 10/07	Dec 31/12	Licence issued to the Hamlet of Taloyoak separately from Municipal as Hamlet does not have a current Licence.
Kivalliq				
Arviat	3BM-ARV0408	Jan 9/04	Dec 31/08	No
Baker Lake	3BM-BAK9904	Oct 1/99	Oct 1/04	Renewal application received Nov 16/05; went back to applicant 01Jun06
Chesterfield Inl.	3BM-CHE0308	Dec 15/03	Dec 31/08	No
Coral Harbour	3BM-COR0813	April 2, 2008	March 31, 2013	Renewal issued April 2, 2008
Rankin Water	3BM-RAN0207	Dec 1/02	Nov 30/07	No
Rankin Sewer	3BM-GRA0207	Dec 1/02	Nov 30/07	No
Repulse Bay	3BM-REP0409	June 11/04	May 31/09	No
Whale Cove	3BM-WHA0207	Sept 1/02	Aug 31/09	Renewal application received Sept 5/07; letter to be

NUNAVUT WATER BOARD
 SUMMARY OF 2008 WORKSHOP ON MUNICIPAL WATER LICENSING IN NUNAVUT
 SEPTEMBER 2009

Community	Licence Number	Licence Issued	Licence Expires (d)	Notes: (i.e. open application currently before the Board)
				prepared to send to GN CGS as application is very minimal, 3page form with no background information
Whale Cove	3BM-WCL0712	Sept 27/07	Sept 30/12	Whale Cove Land Farm

Yellow = Expired Licences

Grey = Expiry in 2008

Green = Recently issued

APPENDIX F: INAC PRESENTATION

Municipal Water Licensing

Nunavut Water Board/ Government of Nunavut
Working group on Municipal Water Licensing issues
Iqaluit, Nunavut
March 8th and 9th, 2008

Presented by Andrew Keim
Water Resource Officer

Peter Kusugak
Manager, Field Operations

Indian and Northern Affairs Canada
Nunavut Regional Office

INAC Nunavut Regional Office

Our Mission

To work in partnership with all stakeholders to help improve quality of life for Nunavummiut through economic and social development, environmental stewardship, and the effective management of natural resources.

Our Responsibilities

- Environment, Water Resources, and Inspections
- Inter-governmental Affairs
- Inuit Development Programs (Youth Employment Strategy, Training)
- Economic Development (Northern and Aboriginal Programs)
- Natural Resource Development
- Mineral Resources
- Land Administration
- Contaminated Sites

Field Operations Unit - Inspections

- Co-Manage water in Nunavut on behalf of the Minister under the *Department of Indian Affairs and Northern Development (DIAND) Act*.
- Enforces the *Nunavut Waters and Nunavut Surface Rights Tribunal Act* and/or conditions of licences issued by the Nunavut Water Board
- Inspectors based in Iqaluit, Rankin and Kugluktuk

Water Resource Officers

- Enforce the Terms and Conditions of Water Licences issued by the NWB.
- Guided by the *Nunavut Water and Nunavut Surface Rights Tribunal Act*, which sets penalties for failing to comply with the licence

Nunavut Water Board



- Created under the *Nunavut Land Claims Agreement (NLCA)*
- Given authority through the *NWNSRTA*
- Approves water use and waste disposal in Nunavut
 - NLCA states: No use or deposit of waste into water without NWB approval

Licence Conditions

- Water Use
 - Domestic & Industrial
- Waste Disposal
 - Bulk metals, Landfill, Lagoons
- Components to be constructed
 - Dumps, lagoons, treatment systems
- Plans and manuals to be submitted
 - Contingency Plans, Operating manuals
- Studies and Monitoring programs
 - Sampling and reporting

Municipal Water Licences

- Regulates the amount of water that can be withdrawn from a source
- Regulates the quality and quantity of waste water released back into the environment
- Water quality issues related to the modification of the beds and shores of bodies of water
- Ensures water quality standards are met and protection of the environment

Municipal Deliverables

- Operate in accordance with licence
- Provide an Annual Report indicating amount of water used and sewage generated
- Inform the Board on projects that affect water
- Collect, analyse and provide results of water samples
- Comply with sewage and dump leachate discharge limits
- Manage waste water

Inspections

- Inspectors contact the communities
- Arrange cooperation of SAO and Municipal Water Treatment Staff
- Visit the following:
 - Potable water source
 - Municipal dump and bulk waste area
 - Sewage lagoon (s)
- Meet with Municipal Staff to review licence conditions and identify deficiencies

Potable Source

- Inspecting for the following:
 - Intake system , screens and draw
 - Meters for recording water volume
 - Records
 - Chlorination system – in operation
 - Fuel and other sources of contamination
 - Sampling and quality assurance
- Inspector will collect samples for analysis

Municipal Dump and Bulk Waste Areas

- Segregation of hazardous materials and bulk wastes
- Water Management
- Management of sludge from Mechanical treatment or Lagoon source
- Inspector will sample any leachates entering the environment from run-off

Sewage Lagoons

- Inspect for freeboard (1 meter min)
- Inspect for leaching of effluent from toe or berm
- Inspect and sample downstream of lagoon for quality of treatment
- Inspect decant structure or process

Meet With Municipal Staff

- Inspectors will review the terms and conditions of the Water Licence with staff to identify areas of concern for the Inspector
- A plan is then developed to bring the Municipality into compliance with any outstanding issues
- A Municipal Inspection form is completed that outlines the concerns of the inspector with the Operators and acts as a record for future inspections

Inspection follow-up

- Inspectors will liaise with Municipal leaders, Government officials and the Nunavut water Board to monitor compliance
- Inspectors work proactively with all stakeholders to identify areas of concern
- Inspectors will review annual reports and sampling analysis submitted by the Municipalities to monitor public safety

Questions

Contact us at:

Iqaluit : Andrew Keim	867-975-4289
Iqaluit: Peter Kusugak	867.975.4295
Iqaluit: Jim Rogers	867.975.4550
Iqaluit: Carl McLean	867.975.4546
Nunavut Water Board:	867.360.6338

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APPENDIX G: GN-CGS PRESENTATION

Iqaluit
March 8-9, 2008

**Community and
Government Services
(CGS)
Project Delivery Process**

Government of Nunavut Department of Community & Government Services

Iqaluit
March 8-9, 2008

Good morning, ladies and gentlemen. We are here today to discuss issues that are important to Nunavut and our common object is how we address them in a most effective and efficient way. I am going to elaborate the theme of CGS, how we as a department are trying to achieve this with partnership of other stakeholders.

Government of Nunavut Department of Community & Government Services

Iqaluit
March 8-9, 2008

One of the services that CGS provides is the delivery of capital infrastructural projects to our Nunavut communities. These capital projects run the full range of infrastructure in the North: airport runways, territorial government buildings, arenas, community halls, roads, bridges, sewage systems, water systems, municipal waste facilities, tank farms, and so on. In fact, we deliver every kind of infrastructure project except individual homes.


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Iqaluit
March 8-9, 2008

Nunavut territory has an area of approximately one fifth of Canada's entire land mass. It is divided into three regions for administrative purposes. Our population is approximately 30,000. Essentially, Nunavut consists of 25 tiny communities spread out across a large area. The community sizes vary from populations of 6,000 to not much more than one hundred.

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Iqaluit
March 8-9, 2008



Government of Nunavut Department of Community & Government Services

Iqaluit
March 8-9, 2008

Each of the three Regions has its own CGS Projects Division. This division is responsible for the management of these capital infrastructural projects, from concept to reality. As each new project is funded, the Regional Project Manager will assign it to one of the regional Project Officers, whose job it will be to manage the project throughout its life and keep it within budget.

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Iqaluit
March 8-9, 2008

The process of our infrastructural projects delivery, from initial needs identification to commissioning and hand-over:

- Capital Planning and Prioritization
- Project Delivery

Government of Nunavut Department of Community & Government Services

Iqaluit
March 8-9, 2008

Capital Planning and Prioritization

There are several ways that a potential project becomes part of the Five Year Capital Plan:

1. Through annual community consultations
2. Through Regional Municipal Planning Engineers
3. Through direct contact from each hamlet

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Iqaluit
March 8-9, 2008

Capital Planning and Prioritization

Annual Community Consultations:
The Nunavut Community Infrastructure Advisory Committee (NCIAC) is composed of members of CGS Capital Planning Department, representatives from the hamlets, and also from the Nunavut Association of Municipalities (NAM).

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Capital Planning and Prioritization

It is a requirement for gas tax funding that consultation is done with each community before the projects are approved for inclusion in Five Year Capital Plan. Thus each year members of NCIAC visit each community, in collaboration with Regional CGS offices. The consultation with the community is finished by end of March, and last year's Five Year Plan is updated according to any new priorities.

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Capital Planning and Prioritization

During this consultation process, each Hamlet is also requested to provide a list for long term planning as they see the priorities should be for their community vision. They also have ample opportunity to present their needs at the annual Regional meeting of mayors and Senior Administrative Officers (SAOs).

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March 8-9, 2008

Capital Planning and Prioritization

2. Through Regional Municipal Planning Engineers

On-going consultation with each Regional Office is also done and priority list for five year capital plan is prepared by them c/w Substantiation Sheet for each project. The two lists, one from the NAM and NCIAC, and second from the Regional Offices are compiled.

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March 8-9, 2008

Capital Planning and Prioritization

3. Through direct contact from each hamlet

In addition, throughout the year hamlet administrations often find new priorities, and may contact Regional CGS offices directly.

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Capital Planning and Prioritization

The projects are evaluated by: CGS capital planning and NCIAC, using preset criteria. The projects are then rated and prioritized based on their merits as determined by the committees using set criteria.

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Capital Planning and Prioritization

The list is refined by CGS Capital Planning, with further consultation from NAM, NCIAC, the Regional Offices and Technical Services for inclusion in Five Year Capital Plan. The final list is submitted to the Financial Management Board (FMB) and to the Legislature for their approval, and a budget is voted on.

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Capital Planning and Prioritization

Once each year's budget has been voted on, it is not possible for CGS to add to the total

Multi-year projects are identified and the list is rectified every year based on other factors e.g. health and safety, political reality and emergencies etc.

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Capital Planning and Prioritization

However, it is recognized that not every project progresses at the same pace, so every month Variance Reports are prepared by CGS according to the Financial Administration Act to reorganize funding as required.

- Each month, the chairman of the FMB will provide the Standing Committee on Government Operations with a report, by Department, that identifies all capital adjustments made.

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Capital Planning and Prioritization

In cases where the adjustment significantly affects the scope of work, project budget, or timing, a letter is sent by the Minister of CGS to the local MLA from where the money is taken from a project/ projects represented by that MLA, with a copy sent to the Mayor of a particular community affected by this adjustment.

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Project Delivery

Project Delivery: Once a "need" becomes an official project, the Regional Project Manager will assign it to a particular Project Officer for delivery.

Due to our limited staff, CGS generally delivers capital projects with the help of professional services of private consulting firms, usually Architectural and/or Engineering (A/E) firms.

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Project Delivery

A Request for Proposals (RFP) for A/E consulting services is written by either the Regional Municipal Planning Engineer or by an experienced Project Officer (PO).

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Project Delivery

This RFP will generally request a full-service proposal, whereby the successful consultant will provide a wide range of services, from initial analysis right through construction tender documents, drawings and specifications, and on-site inspection during construction.

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Iqaluit
March 8-9, 2008

Project Delivery

A successful project requires an effective project team. No one person can do it all. Projects involve many different groups and disciplines, including government departments, boards and agencies, community councils, staff, user groups, planners, consultants and contractors. Communities are playing an increasingly important role in projects, taking on many of the responsibilities formerly handled directly by government.

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Project Delivery

Once a site for the particular project is selected with consultation from the community, a resolution is passed by the Community Council to go ahead. The proposed site is evaluated by the Regional Office with a help from the consultant if required. The evaluation is done based on:

- Health and Safety of the Community;
- Environmental Impacts;
- Social and Economic Benefits;
- Impacts on Wildlife; Ecosystem, Capital Cost; Operation and Maintenance Cost, etc.

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Project Delivery

The first step is to ensure the land is owned by the Hamlet and the lease agreement is signed by CGS. If the land in question needs to be transferred from the Commissioner's land to the Hamlet, then the arrangements are made by through CGS Planning and Lands to do that.

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Project Delivery

CGS has staff trained in regulatory compliance and project management, and can help all of the players on the team work together and contribute their skills to benefit the project.

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Project Delivery

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March 8-9, 2008
Project Delivery

Work plans are updated as the project proceeds i.e. schedule and budget are revised regularly (bi-weekly/monthly based on the size and type of the project). An in-house designed project budget tracking software, called "PO Tools", is used by the PO to keep on top of project progress and budget. Each month the Pos send an updated statement to Capital Planning in Iqaluit so they are informed.

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March 8-9, 2008
Project Delivery

A formula for successful projects:

Good Planning	+	Effective Project Management	=	Successful Projects
<ul style="list-style-type: none"> needs analysis feasibility studies operational plan functional program effective budgeting 		<ul style="list-style-type: none"> community consultation cost control construction approaches technical standards scheduling 		<ul style="list-style-type: none"> community/client satisfaction quality design increase local employment quality construction economical NVVB/regulators satisfaction

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Iqaluit
March 8-9, 2008
Project Delivery

Government of Nunavut Department of Community & Government Services

Iqaluit
March 8-9, 2008
Project Delivery Stage 1: Initiation

This is when the need for the project is first defined, and the approximate size and cost of the infrastructure are determined. From the client's point of view, this is when most of the critical decisions about the project are made.

Lead Role	Tasks
Client	Define the services to be delivered in the Community. For example, what kind of infrastructure is required in the Community?
Client	Conduct a needs analysis to determine the number of users, basic demographic information, and future needs.
Client/COG	Outline the scope of work. For government projects, these are determined by Capital Standard, regulatory compliance requirements and other Criteria.
Client/COG	Consult with the community about service levels.
Client/COG	Generate some site alternatives, and select and obtain the preferred site.
Client/COG	Consider some development options such as renovation, adding on to an existing infrastructure or new construction.
COG	Establishment of initiation cost estimate for early budget provision - CLASS "C"

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Project Delivery Stage 1: Initiation

Most of the work in the project initiation stage, by its nature, must be provided by the client, however CGS through NCIAC and NAM consult each community for:

- ✓Capital Standards and Criteria

The Project Team at CGS has extensive experience with a wide range of infrastructure and ensure "Capital Standards and Criteria" are developed.

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Iqaluit
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Project Delivery Stage 1: Initiation

- ✓Technical Assessments and Development Options

Technical assessments by our Technical Services Division (TSD) can determine if existing infrastructure can be renovated or expanded, and outline the scope of work needed to meet current standards and guidelines. In addition, a Facility Planner from TSD may write a Project Brief which explains the scope of work to be designed.

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Project Delivery Stage 1: Initiation

- ✓Cost Estimates

CGS has cost data for a wide range of projects across Nunavut. Cost Estimates are identified by Cost Estimate Class – a different estimate class is required during each stage of the project completion. A brief definition, describing each Cost Estimate Class, is as follows:

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Project Delivery Stage 1: Initiation

Initiation Stage – Estimate Class "X" - This is the first stage in the project cost estimate process. This cost estimate class is prepared based on a general concept with no design information - e.g. request for a Sewage Lagoon based on the size of community, total volume (capacity) required for the life of the project.

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Project Delivery Stage 1: Initiation

Pre-design Stage - Estimate Class "D" - a Project Brief is developed using information gained from past experience on projects and incorporates developed STANDARDS & GUIDELINES. This is then discussed with the community and decision is made whether or not to proceed with the project.

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Project Delivery Stage 1: Initiation

Conceptual Design Stage – Estimate Class "C" – design decisions are made at this time, including completion of 10% - 60% of project drawings; life cycle costs are reviewed and "Value Management/Engineering is considered. The Pre-Design stage is taken into consideration at this point and the Class "D" Estimate is adjusted accordingly to suit the information being produced for the design report.

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Project Delivery Stage 1: Initiation

Design/Development Stage – Estimate Class "B" - this is prepared by the Designer/Consultant after the selection of infrastructure along with other components of systems. The Consultant at this stage has outlined the specifications and design drawings for the project. This should be the estimate upon which the final financial decision is made.

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Project Delivery Stage 1: Initiation

Pre-Tender Stage – Estimate Class "A" – a Cost Report is submitted at the end of this stage, which provides confirmation that tenders will be within the cost limit. This Cost Estimate is used as an elemental cost analysis for use on future projects and includes a trade breakdown for use during the construction period.

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Project Delivery Stage 1: Initiation

Consultation with Nunavut Water Board and other Stakeholders (Regulators) – Where required, application is made for amending the existing water license or applying for a new one for the community. Although each hamlet is responsible for its own water license, often they designate the Regional Municipal Engineer as their technical representative. The Regional Engineer will work with the consultant to provide this service.

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Project Delivery Stage 2: Detailed Project Planning

Project Initiation focused on service delivery and operational planning. Stage 2: detailed project planning, develop more detailed infrastructure requirements.

Lead Role	Tasks
CGS/Client	Develop a functional program (a description of the Sewage System in the community, operational requirements and maintenance and the total cost of the project).
CGS/Client	Consult with the community on program issues, as well as business development, employment and training.
CGS	Identify any special technical requirements.
CGS	Conduct geotechnical and environmental investigations, and legal and topographic surveys as required.
CGS	Determine the best delivery method for the project, such as: public tender, negotiated work order, design/build, lease.
CGS	Update cost estimates and re-evaluate for CLASS "D".
CGS	Assemble information (service delivery, operational plan, functional program, schedule and budget) into a proposal.
Client	Have budget approval to proceed with design and tender.

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Project Delivery Stage 2: Detailed Project Planning

✓ Functional Programming
CGS help the client to prepare a functional program. If the program isn't complete, many basic issues will be left up to the Project Officers to determine. No matter how experienced the designers are, they'll design the project according to their own experience and point of view, and may not appreciate special needs or conditions unless they've been identified during the planning stage.

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Project Delivery Stage 2: Detailed Project Planning

✓ Community Consultation and Delivery Methods
CGS can work with community governments and local contractors to identify training and employment opportunities.

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Project Delivery Stage 3: Design

Once the detailed planning is complete and a project brief is prepared, the next stage is to hire consultant and start design, consistent with budgeting approval.

Lead Role	Tasks
CGS	Request proposals from consultant
CGS/Client	Evaluate the proposals, select the successful consultant and award the contract.
Consultant	Prepare several different conceptual design alternatives
CGS/Client	Review the conceptual design alternatives and choose the viable options. This is also a good time for community consultation.
Consultant	Prepare a schematic design package including site plans, geotechnical plans, cross sections, simple diagrams of mechanical and electrical systems if it is going to be a Mechanical Plant for Sewage Treatment for CLASS "B".

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Project Delivery Stage 3: Design

Lead Role	Tasks
CGS/Client	Review and approve schematic design. Community consultation may be needed here as well.
Consultant	Prepare a design development package, which includes a specification as well as more detailed drawings and a more detailed cost estimate.
CGS/Client	Review and approve design development.
Consultant	Prepare detailed contract documents (plans and specifications) that will be used for tender and construction, along with a detailed pre-tender cost estimate CLASS "A".
CGS/Client	Review and approve contract documents.
Client	Have funding approved for the tender in accordance with CLASS "A" construction estimate and total project requirements.

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Project Delivery Stage 3: Design

✓ Consultant Selection

CGS prepares terms of reference for consultants and issues a Request for Proposal, evaluate proposals in committee, and awards the municipal/engineering contract based on a pre-determined rating system. The design process begins, with site visits, community consultations and presentations, and a series of studies, conceptual, and schematic designs – each stage further refining the design.

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Project Delivery Stage 3: Design

✓ Design Review

CGS manages the design process to the client's satisfaction and with the client's full participation. CGS can also conduct technical reviews of the project at the schematic and design development stages through its TSD team of Technical Officers, based on technical standards that have a strong performance history. Finally, the consultant prepares final drawings, specifications, and contract documents for construction.

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Project Delivery Stage 3: Design

✓ Financial Management

Through its PO Tools spreadsheets, CGS administers the contract and makes progress payments to the A/E consultants, and provide the client with regular financial reports.

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Project Delivery Stage 4: Tender

At this point the project has been designed, and funding for construction has been approved. The next step is to get bids from contractors and award construction contracts.

Lead Role	Tasks
CGS	Advertise the project, and distribute drawings and specifications to contractors.
CGS	Issue addenda if required.
CGS	Consider and approve contractors' requests for options and substitutions.
CGS	Receive and evaluate bids. Negotiate reductions if required.
CGS	Administer the Nunavutmi Nangminiqapunik Ikaquti or "NIN Policy", which applies to all projects that receive at least half of their funding from the Government of Nunavut.
CGS	Award construction contracts.

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Project Delivery Stage 4: Tender

✓ **Claims:** The contractors and consultants may submit claims for extra costs during the course of construction. CGS provides qualified review of these claims based on technical merit and contract law, and issue change orders if required.

Financial Reporting
CGS provides the client with regular financial reports and cash flow estimates.

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Project Delivery Stage 5

After construction is substantially complete, the infrastructure is ready for the client to use. However there may be some minor deficiencies to complete and the infrastructure will be under warranty for one year or more.

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Project Delivery Stage 5

Construction can begin once the contracts are awarded.

Lead Role	Tasks
Consultant	Review and approve contractor's shop drawings.
Contractor	Purchase materials
Contractor	Deliver materials to the site by barge or seairlift, often limited to one or two boats per year. If shipping deadlines aren't met, the only alternative may be airfreight, which is generally much more expensive.
Consultant/ CGS	Inspect the progress of construction to ensure that the work is being done according to contract.

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Project Delivery Stage 5

CGS	Review contractor's progress billings and make payments.
CGS	Review contractor's and consultant's claims, and issue change orders as required.
CGS	Administer consultant and construction contracts.
CGS	Construction may take two or more fiscal years to complete. If so, budgets for future years must be identified, and funding approved.
CGS	Determine when the infrastructure is substantially complete and ready for use.
Client	Have budget approval for the warranty period.

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Warranty Stage 6

After construction is substantially complete, the infrastructure is ready for the client to use. However there may be some minor deficiencies to complete and the infrastructure will be under warranty for one year or more.

Lead Role	Tasks
CGS	Ensure the contractor completes any construction deficiencies and complete seasonal work.
CGS	Monitor the performance of the infrastructure, and notify the contractor of any work that falls under the contractor's warranty.

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Warranty Stage 6

CGS	Evaluate and trouble-shoot the physical operation of the infrastructure.
CGS	Administer the contractors' and consultants' contracts, and make payments as required.
CGS	Develop and carry out a regular maintenance program.
CGS	Set up contracts with utility companies and make payments, where requested.
Finance	Purchase and maintain insurance policies.

Services available from CGS after the infrastructure is handed over to Client

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Warranty Stage 6

✓ Operations and Maintenance
CGS has qualified maintenance staff in most communities. CGS also prepares estimates for operations and maintenance in order for the client to have appropriate budgets approved.

✓ Contract Administration CGS can manage the contractors' and consultants' work while the infrastructure is under warranty.

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Project Delivery: Life-Cycle Costs

The initial capital cost of a project is only part of the equation. Over the long term, the cost of delivering programs and operating and maintaining the infrastructure will be much higher.

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Project Delivery: Life-Cycle Costs

The initial capital cost of a project is only part of the equation. Over the long term, the cost of delivering programs and operating and maintaining the infrastructure will be much higher.

Capital Costs	Program Delivery Costs	O&M Costs
<ul style="list-style-type: none"> • design fees and expenses • construction contracts • management costs • survey and drilling costs • contingencies 	<ul style="list-style-type: none"> • staff salaries and benefits • supplies and equipment • travel and expenses 	<ul style="list-style-type: none"> • fuel, electricity, water, sewage • snow removal • garbage disposal • routine maintenance • repairs • insurance.

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Project Delivery: Life-Cycle Costs

Capital costs are a small portion of the total life cycle costs of an infrastructure. The best way to save money is to plan for efficient service delivery, followed by economical operation and maintenance.

Every effort to reduce capital costs is made, however, capital costs should not be reduced at the expense of producing an inefficient infrastructure that will increase costs for program delivery and O&M.

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Project Delivery: Life-Cycle Costs

Category	Percentage
Programme Delivery Costs	75%
O&M Costs	15%
Capital Costs	10%

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Conclusion

Community and Government Services is always ready to work on the next project. We assist clients with the planning, design, construction, warranty and post-occupancy stages of a project to ensure the infrastructure will meet their program needs and budgetary realities. We work to keep project dollars here in the north by promoting northern businesses and local workers. We also put effective management tools in the hands of communities to support program transfers to the community level.

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Some Issues to Discuss

- Resolution of Water Licenses
- Resolution of gathering information on the various types of Arctic wetlands that are effective at treating sewage, analyzing it, and developing a model for disposal of Waste Water Effluent in the Arctic.
- Resolution of: regulators' concerns, national standards of compliance, fisheries industries, wildlife and ecosystem.

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Some Issues to Discuss

- Resolution of issues at each Hamlet level
- Lack of proper Infrastructure, but this is being improved with extra funding received from the federal government under: Gas Tax Funding, MRIF, CISC and Capacity Building Fund.
- Funding availability and terms of reference for available funding under different programs

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Some Issues to Discuss

- Resolution of Health and Social Issues
- Environmental Issues
- Issues of: overall shortages of resources, short construction season, the shipment of material to construction sites and supply of other material.
- Nunavut Land Claim Agreement NLCA

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Some Issues to Discuss

- Resolution of Housing shortages
- Socio and Economic Issues
- Devolution
- Need of Education, Training and Development
- Shortage of manpower and limitation of technical expertise in each community

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Some Issues to Discuss

- Impacts of Business Development
- Resolution of Economic Development and Transportation
- Impacts of Development of Mining Industries
- GN Standards and Criteria

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Project Delivery Stage 4: Tender

Malli is a great guy.

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