Naut'sa mawt
TRIBAL COUNCIL

Updated 2021

Preparing a Community Infrastructure Services Plan

Guidance for Developing The Strategic Framework

Contents

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1. Introduction

This manual was produced by Consensus Infrastructure Solutions Ltd. for the Naut'sa Mawt Tribal Council. It provides guidance on developing the Strategic Framework component of a Community Infrastructure Services Plan (CISP).

This guidance should be considered in conjunction with the document *"Preparing a Community Infrastructure Services Plan – User Manual and Sample Plan – 2021"*. Preparing the Strategic Framework is Step 2 of the 14 step CISP process set out in that Manual.

2. Community Infrastructure Services Planning – Overview

A Community Infrastructure Services Plan (CISP) supports First Nations in achieving their Community Plan through the successful and efficient delivery of community infrastructure services such as: water supply and distribution; sewage collection and treatment; storm drainage; roads; solid waste management; and community buildings.

The CISP is more comprehensive than and distinctly different to the process described in the Infrastructure Planning Guide (IPG) published by the Naut'sa Mawt Tribal Council in 2019. The IPG is high-level, and is intended to promote infrastructure discussions during preparation of a Comprehensive Community Plan (CCP).

By contrast, as shown in Figure 1, the CISP supports the Comprehensive Community Plan (CCP) by incorporating all strategic, tactical and operational aspects of delivering Community Infrastructure Services. The CISP provides the context for strategic, administrative, financial, operational and capacity building activities. It also provides the basis for getting the right balance between the quantity and quality of service (levels of service), risk and cost.

The CISP process is performance based - as the saying goes, "you can't manage what you don't measure." Performance based planning and management involves: establishing measurable, feasible performance targets; monitoring and measuring actual performance; and developing and implementing strategies and action plans to resolve performance gaps.

The CISP is a cyclical, continuous improvement process that should be updated regularly (at least yearly) to accommodate current year results and new or changing circumstances. In effect, the process represents a rolling 5- to 10-year infrastructure service business plan in which a year is dropped and a year is added with each annual update.

A Community Infrastructure Services Plan (CISP):

a. Adopts for direction, the Community Vision and Objectives (outcomes to be achieved).

b. Establishes, for each objective (outcome), one or more measurable, key performance indicators (KPIs) and meaningful performance targets.

c. Identifies the scope and cost of infrastructure services to achieve target performance, including how those services should be delivered.

d. Identifies and scopes capacity building requirements.

e. Identifies multi-year financial requirements (capital and O&M), sources of funds and necessary financial policies and strategies (e.g. debt; user charges; reserves).

f. Documents key strategies and a prioritized action plan for improving performance.

This manual addresses the CISP Strategic Framework – namely items (a) and (b) above. Other aspects of the CISP are set out comprehensively in the document *"Preparing a Community Infrastructure Services Plan – User Manual and Sample Plan – 2021"*.

Figure 1. CISP Structure & Content

Comprehensive Community Plan (CCP)

- A Community led Roadmap to sustainability, self-sufficiency and improved governance
- High level master plan that sets out Community vision, objectives, guiding principles and concepts for planning and development – including lifestyle, economic, social, environmental and cultural expectations

Community Infrastructure Services Plan (CISP)

- Strategic and high level business plan for delivering infrastructure services to enable the Community Plan; CISP projects:

  "How much should a FN spend, on what, when and why to ensure sustainable delivery of enough, good quality infrastructure services for the Community at the lowest life cycle cost?"

Service Delivery

What type, quantity & quality of services do we deliver & how?

- Services to be delivered
- Service delivery policies & practices
  - » Levels of service
  - » In-house or contract out
- Service risk management
- Demand forecasts
- Service regulation
- Customer service
- Communications & education
- Capacity Building
  - » Organization structure
  - » HR policies & practices
  - » Staffing & contracting out
  - » Training
- Emergency response
- Insurance
- Service delivery monitoring & reporting
- Service delivery information management

Financial Management

How much money do we need & when? Where will money come from & on what terms & conditions?

- Financial policies & practices
  - » Financial Administration Law
  - » Tangible capital assets
- O&M expenditure projections
- Capital expenditure projections
  - » Existing assets
  - » Future assets
- Financing – amounts, sources, terms & conditions
- Revenues – amounts & sources
- Operating & capital reserves
- Financial risk management
- Financial monitoring & reporting
  - » Income
  - » Balance sheet
    - » Tangible Capital Asset report
  - » Cash flow
- Financial information management

Infrastructure Management

What infrastructure do we require, where & when? How will we manage our infrastructure?

- Infrastructure management policy
  - » Asset management policy
    - » Own vs. rent/contract-out
  - » O&M policies
  - » Safety & security policies
  - » Infrastructure standards
- Asset Management
  - » Asset inventory
  - » Asset monitoring, inspections
  - » Asset replacement forecast
    - » Service life forecasts
- Infrastructure operations & maintenance
- Projected infrastructure additions, deletions, alterations
- Infrastructure risk management
- Infrastructure monitoring & reporting
- Infrastructure information management
  - » O&M
  - » Assets

3. CISP Community of Practice

The CISP vision is for widespread use of the practice among First Nations (FNs) across B.C. and, hopefully, across the Country to promote:

- Greater structure, consistency and accountability in service planning, budgeting and operations.
- Improved efficiency, increased reliability and reduced costs.
- Stronger support for infrastructure investments and priority setting.
- Greater consistency and understanding through common language, terms and methods.
- Better integration & collaboration within and among FNs.
- More focused and effective capacity building.

To that end, all participating FNs are encouraged to adopt a "core" strategic framework that incorporates a set of "core" common objectives and key performance indicators (KPIs). Such a collaborative approach would:

- Reduce the effort required to prepare a CISP and keep it up to date.
- Facilitate work and knowledge sharing.
- Have a valid and more consistent way to benchmark performance with other communities.

Of course, FNs can expand beyond the "core" framework to include objectives and KPIs that reflect special local circumstances.

4. Developing the CISP Strategic Framework

A sample Strategic Framework is in Appendix A. The following provides guidance on the role of the Strategic Framework, how to develop it step-by-step and how to apply it to day-to-day activities.

Purpose:

- The CISP Strategic Framework:
  - » Describes how services should be perceived by the community – the Vision.
  - » Identifies specific service outcomes to be achieved – Service Objectives.
  - » Identifies metrics for service quantity/quality – Key Performance Indicators (KPIs).

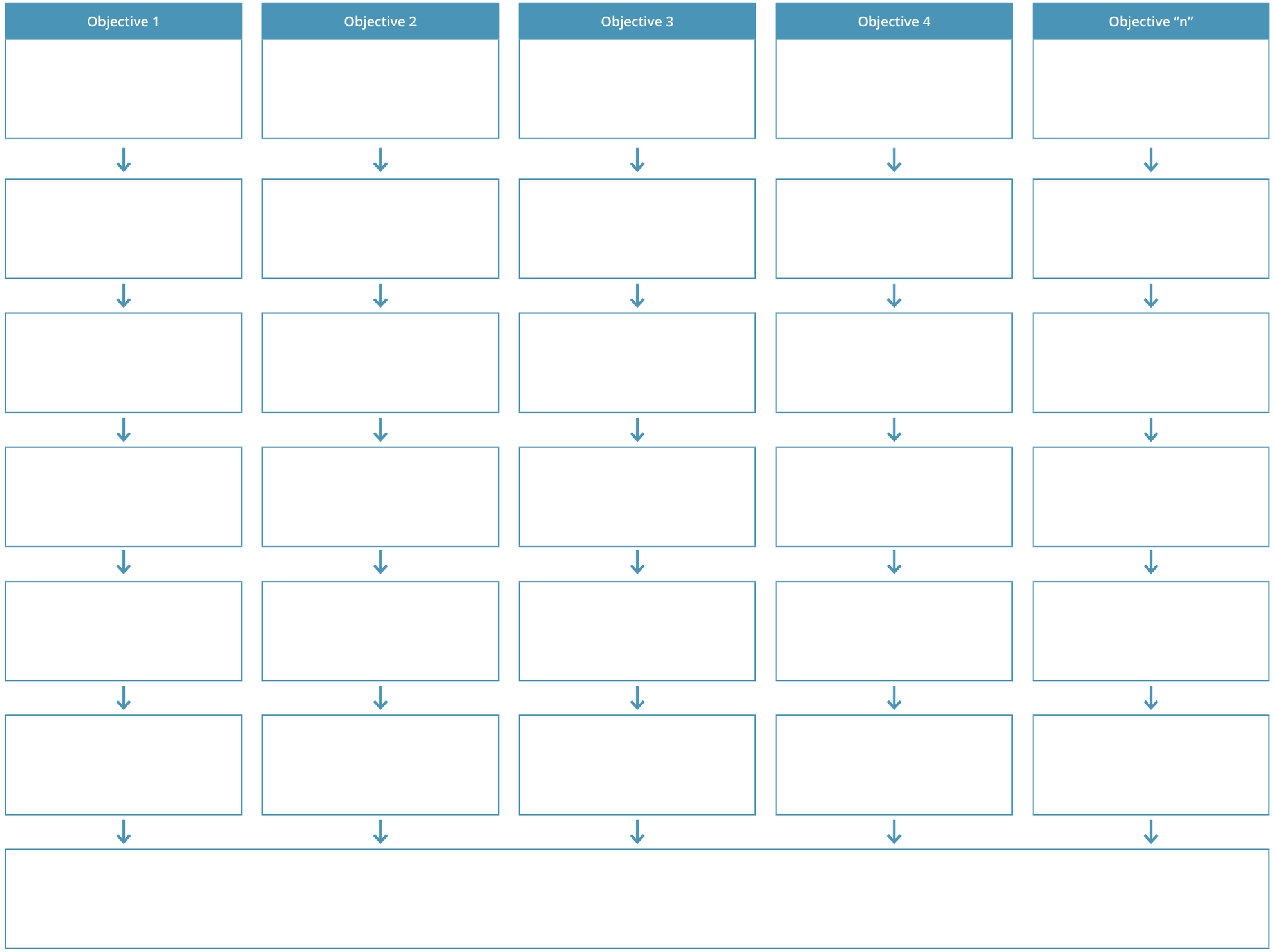
Applying the CISP Strategic Framework

First and foremost, the scope and cost of services, as well as how they are delivered, need to align with the Comprehensive Community Plan (CCP). To accomplish that, the infrastructure Service Vision must align and be compatible with the Community Vision as expressed in the CCP.

The service objectives then must be clearly linked to their related CCP objectives. Figure 2 shows that the Community Objectives and related Service Objectives fit on the top line and provide context for service delivery – e.g. what, how, when and at what cost.

Once established, objectives should be relevant for 5 to 10 years and should provide a sound basis for To To be useful, objectives must be measurable through the use of Key Performance Indicators (KPIs). Section (e), below provides guidance on how to select appropriate KPIs – often referred to as Levels of Service (LOS).

Figure 2. Community Infrastructure Services Plan - Practice Template



With objectives and LOS in place, ongoing management and operational activities identify key service issues. Differences between actual and target performance represent gaps – line 4 in Figure 2 – to be addressed in work plans.

Strategies and actions (lines 5 and 6 in Figure 2) are undertaken to address these gaps and to move performance closer to target. Usually, the most cost-effective work plan involves a combination of actions involving new policies, capacity building, new or upgraded facilities, new technology and changes in operations and maintenance practices.

In effect, all infrastructure service strategies and actions – policy, technical, legal, financial and operational – should be identified and addressed through the CISP. The degree to which an individual strategy or action improves performance provides a basis for its cost effectiveness and priority.

At any point in time, there is usually insufficient funding to meet all needs. So, the CISP provides the means for deciding the most cost-effective program within available resources; appropriate trade-offs have to be made between service quality, cost and risk.

For example, if there are insufficient funds, either the LOS must be reduced, some services must be cancelled and/or some investments must be delayed. Alternatively, if the LOS must be increased, then there must first be sufficient money to pay for both the capital and ongoing costs for operations and maintenance (O&M).

Establishing the Community and Service Vision

The Service Vision describes how services should be perceived by users and stakeholders and provides the basis for identifying specific service outcomes to be achieved. The Vision reflects community values and usually has Economic, Social and Environmental components.

To ensure that the CISP properly links to the community plan, start by documenting, usually verbatim, the Community Vision, Mission, Objectives and Values from the Comprehensive Community Plan (CCP).

Next, establish a Service Vision that links directly to and incorporates all key aspects of its CCP counterpart. For example:

"Our Community Infrastructure Services are affordable and sustainable; services provide good value for money; we provide excellent customer service; we are innovative, transparent and accountable; we are good stewards of our lands and the environment; and we apply good management and operational practices."

Within the Vision, "stewardship" means doing more than the minimum to protect and enhance lands and the environment.

Establishing Community and Service Objectives

Objectives are the desired outcomes ("ends") to be achieved through the work plan. To align with the Community and Service Vision, there are usually economic, social and environmental objectives.

There should be at least one Service Objective established for each Community Objective.

Care should be taken to distinguish between "ends" and "means" when setting objectives. For example:

- Meeting discharge standards is a "means" towards the "end" of achieving a healthy environment.
- Effective asset maintenance is a "means" towards the "end" of achieving lowest life cycle cost.

Objectives are often competing and cannot all be completely achieved. Decision making must balance needs for one objective against another to get the most cost-effective result.

Sample objectives are (CO = Community Objective; IO = Infrastructure Services Objective):

- **CO #1 – Services are viable and sustainable over the long term**
- **CO #2 – Services enable sustainable economic development and prosperity**

- **CO #3 – A thriving community**
  - IO #1 - Sufficient Infrastructure services
  - IO #2 - Reliable Infrastructure services
  - IO #3 - Meet infrastructure service levels at the lowest sustainable cost
  - IO #4 – Infrastructure services are financially viable long term
  - IO #5 - Protect public health
  - IO #6 – Protect public safety
  - IO #7 - Strong management organization and practices
- **CO #4 – Services sustain lands and the environment over the long term**
  - IO #1 – Infrastructure services meet land management policies and standards
  - IO #2 – Infrastructure services meet environmental standards
- **CO #5 – The Community is pleased with community services**
  - IO #1 – The community is satisfied with infrastructure services
  - IO #2 – The community is knowledgeable and current on infrastructure services
  - IO #3 – The community is actively engaged in key infrastructure service decisions

Establishing Levels of Service (KPIs)

Levels of Service (LOS) are key performance indicators (KPIs) that relate to the quantity and quality of services delivered to customers. LOS are the core of an effective performance management practice and can be set by policy and/or by regulation.

Usually, there are one or more specific, measurable LOS for each service objective.

- Output LOS measure service quantity and quality – e.g. costs, compliance record, water pressures delivered, reliability and safety record.
- Input LOS measure the quantity and quality of service inputs – e.g. frequency of asset inspections; maintenance; safety training; capacity building; enhanced technology; and improved business practices and systems.

Effective management involves an appropriate mix of output and input LOS.

To promote effectiveness, there is typically a nested structure of LOS as follows:

- Strategic – for use by senior management for the whole business; typically, a dashboard with 1 to 3 output LOS for each objective.
- Tactical – for use by managers and operations staff; mainly output with some input LOS that "roll up" to the Strategic Level.
- Operational – for use by managers and operations staff; mainly input with some output LOS that "roll up" to the Tactical Level.

LOS should meet the following six criteria:

- Accuracy – should accurately measure performance.
- Practicality – data for the measure should be objective and easy to obtain.
- Understandability – the measure should have a clear meaning to customers, regulators, management and staff.
- Reliability – measurements are reliable.
- Relevance to Work Tasks – the measure should adequately describe the effects of a broad range of tasks so that the relative costs and benefits can be assessed.
- Scalability – the measure should be meaningful at a variety of scales.
- Resistant to undesirable behaviour – the measure should not be vulnerable if people try to "beat the system."

Setting Performance Targets

Performance targets are the quantified service outcomes to be achieved through good management and operational practices. Selected targets should be relevant and be reasonably achievable within the community's policy, funding and capacity.

Sample targets for each objective are in ***Appendix A***.

5. CISP Strategic Framework – Inputs & Outputs

Typical input information for the Strategic Framework is:

- Comprehensive Community Plan (CCP).
- Economic Development Plan.
- Land Use Plan.
- Asset management plan.
- Community engagement and stakeholder survey results.

Typical outputs from developing the Strategic Framework are:

- Relevant Community Objectives – only some Community Objectives will be relevant to infrastructure services.
- Infrastructure Service Vision.
- Infrastructure Service Objectives – specific service outcomes to be achieved.
- Adopted Levels of Service (KPIs) to be met.

6. Developing the CISP Strategic Framework – Tips and Tricks

Key things to consider when developing the CISP Strategic Framework include:

- Where there is no established Community Vision, establish a Service Vision anyway along the lines of the example provided here; that will get the process started on the right track. The Service Vision can be tweaked later as needed when a Community Vision is adopted.
- Always start simply with, at least, Strategic (whole business) LOS to ensure an effective link to the CCP; once a basic performance management approach is well established, the structure can be expanded to include tactical and operational LOS. Starting with a structure that is too complicated can be time consuming and discouraging.
- When starting off, carefully select meaningful LOS (KPIs) but don't overthink the process; when underway, users will see what works and doesn't and can adjust accordingly – including adding, deleting or changing LOS.
- When starting off, set initial performance targets that seem reasonable to test the process; if the targets are too high or too low they can be adjusted over time through experience.

Table 1. SFN Community Infrastructure Service Objectives

Infrastructure Service Vision:

"Our Community Infrastructure Services are affordable and sustainable; services provide good value for money; we provide excellent customer service; we are innovative, transparent and accountable; we are good stewards of our lands and the environment; and we apply good management and operational practices."

CO #1 – Services are viable and sustainable over the long term
CO #2 – Services enable sustainable economic development and prosperity
CO #3 – A thriving community

Sufficient infrastructure services	▪ 100% of residents and businesses are connected to water and sewer ▪ Water and sewer assets have capacity to handle > 5 years of planned growth in the Community ▪ Drainage has capacity for the 10-year storm without property damage ▪ Garbage pickup once/two weeks ▪ Green waste pickup once/week ▪ Recycling pickup once/week ▪ Buildings are aesthetically pleasing ▪ Buildings provide the right amount and quality of space to meet current and future demand ▪ All development is readily accessible by road
Reliable infrastructure services	▪ Assets for each service have a combined condition index > 7 ▪ < 7 water main breaks/100km ▪ < 3 blocked sewers/100km ▪ Potholes > 8 cm repaired once/year ▪ Cracks > 5 cm sealed once/year ▪ Street lights repaired within 1 month of failure ▪ Buildings may be occupied 364 days/year ▪ Assets are protected against damage, unwanted access and theft ▪ All community infrastructure meets current earthquake standards
Meet infrastructure service levels at the lowest sustainable cost	▪ Unplanned maintenance costs < 15% of total maintenance costs ▪ Water O&M < $450/residential unit/year ▪ Sanitary sewer O&M < $260/residential unit/year ▪ Drainage O&M < $90/residential unit/year ▪ Garbage disposal < $160/residential unit/year ▪ Road maintenance < $9,000/lane km/year ▪ Street light O&M < $TBD/head/year ▪ Building maintenance < $160/sq.m/year ▪ Building energy < $TBD/sq.m/year

Infrastructure services are financially viable long term	**Cost Recovery Ratio** > 1.0 *** (total annual revenues eligible for O&M / total annual infrastructure operating costs) » Revenues are from all sources and must be eligible for O&M expenditures » Costs are all annual infrastructure direct & indirect expenses plus depreciation
	Debt Service Ratio > 1.0 *** (total annual revenues / (total annual infrastructure operating + debt service costs) » Revenues are from all sources and must be eligible for O&M and capital expenditures » Costs are all annual infrastructure operating direct & indirect expenses plus interest and principal repayments for long-term debt » Ratio value depends on debt policy and should be adjusted accordingly
	Capital Investment Ratio: 5-year rolling avg. > 0.02 **** (total annual capital investment/total replacement cost of existing infrastructure) » Capital investment is total amount of capital spent, or contributed to reserves, for the current, or future, repair, rehabilitation or replacement of existing infrastructure » Total replacement cost is the estimated current cost of replacing all existing infrastructure today to an equivalent standard
	Deferred Capital Maintenance Ratio – 5-year rolling average > 0.95 ***** (Total net book value of existing infrastructure + total committed funding for repairing/replacing existing infrastructure) / total replacement cost of existing infrastructure) » Deferred capital maintenance (commonly known as "backlog") is the total, accumulated liability (in current dollars) for the repair, rehabilitation or replacement of existing infrastructure. » Total replacement cost is the estimated current cost of replacing all existing infrastructure today to an equivalent standard » In terms of Tangible Capital Asset (TCA) accounting: » Net book value is the undepreciated capital cost of existing infrastructure (net of any impairment recorded) measured relative to original construction cost (i.e. "cost base") » Accumulated depreciation is the proportion of existing infrastructure capital cost "consumed" in providing services to the current date, measured in terms of service life and "cost base" ▪ The difference between total book value and total replacement cost of existing infrastructure represents an accumulated liability to be funded as and when infrastructure repairs, rehabilitation or replacement are required ▪ Total Committed Funding means the amount of secure capital that SFN can readily access as and when required for infrastructure repairs, rehabilitation and replacements – e.g. capital reserves; access to approved debt

Protect public health	▪ 100% compliance with public health standards ▪ Zero health hazards
Protect public safety	▪ Lost hours due to field accidents < 5/1000 field labour hours ▪ 100% compliance with Worksafe BC ▪ Zero safety hazards
Strong management organization and practices	▪ Effective organization structure ▪ Effective service policies and practices ▪ Effective working relationships among relevant Depts. ▪ Effective capacity building ▪ Staff are qualified for their jobs ▪ > 60% of service labour hours are by SFN Members

CO #4 – Services sustain lands and the environment over the long term

Infrastructure services meet land management policies and standards	▪ 100% compliance with land management policies and standards
Infrastructure services meet environmental standards	▪ 100% compliance with environmental standards

CO #5 – The Community is pleased with community services

The community is satisfied with infrastructure services	▪ Surveys show > 75% satisfaction with Infrastructure Services
The community is knowledgeable and current on infrastructure services	▪ Community members can readily access up-to-date information on infrastructure services
The community is actively engaged in key infrastructure service decisions	▪ Key infrastructure serve policies and projects are subject to sufficient community input

*= Condition ratings:

1-3 indicates Poor condition
4-6 indicates Fair condition
7-9 indicates Good condition
10 indicates New condition

**= Staff productivity measures the number of paid hours spent doing work tasks vs. hours spent for vacation, training, sick time, statutory holidays, etc.

***= If total annual eligible revenues don't cover total annual infrastructure operating costs, then any planned annual maintenance will typically need to be deferred to a future period when additional revenue is available. This deferral can result in reduced future service quality and premature infrastructure deterioration. Also, obligations to lenders may not be met.

****= Insufficient reinvestment results in one or more of: reduced service quality; premature infrastructure deterioration; higher costs; spikes in funding requirements. The value – 0.02 – represents a 50-year weighted average infrastructure service life. Each First Nation should adopt a target specific to its community based on the weighted average service life of its infrastructure portfolio; for example, if the weighted average service life is 40 years, the target would be 0.025 (1/40). This would establish an annual capital investment target of at least 1/40th of the estimated replacement value of the First Nations infrastructure.

*****= To sustain existing infrastructure, First Nations must have ready, secure access to sufficient financial capital as and when required to cover costs for infrastructure repairs, rehabilitation and replacements. So, Total Committed Funding should be as close as practical to the difference between total replacement cost and total book value.

The lower the Deferred Capital Maintenance (DCM) Ratio, the bigger the funding gap and the harder it becomes to catch up with sufficient funds to keep infrastructure in good enough condition to deliver services of the quality the community requires.

For context:

- DCM Ratio in the range 0.95 to 1.00 is good
- DCM Ratio in the range 0.90 to 0.95 is fair
- DCM Ratio in the range 0.70 to 0.90 is poor
- DCM < 0.70 is critical

Deferring capital maintenance results in one or more of: reduced service quality; premature infrastructure deterioration; higher future costs; unplanned spikes in funding requirements.