

STEP 8 TOOLKIT

Identify and Prioritize Infrastructure Needs

What will this Toolkit help you do?

- Identify the community's specific infrastructure needs
- Identify whether each infrastructure need is a high, medium, or low priority for the community
- Summarize infrastructure needs in a way that will help you move forward with feasibility studies
- Greatly enhance the ability of the community to address needs and achieve its vision and goals, because it will help the community allocate effort and resources
- Get ready for Step 9: Create an Implementation Strategy

What Tools are in this Toolkit?

- Infrastructure Needs Table
- Prioritization Process
- Administrative and Operational Tasks Table
- Infrastructure Land Use Considerations List
- Infrastructure Needs Scoping Sheet

When should you use this Toolkit?

- If the community is in the process of developing a Comprehensive Community Plan (CCP), use this Toolkit as you complete Planning Steps 6 and 7 in the *CCP Handbook* (see pages 36-39 of the *CCP Handbook*).
- If the community is going through another planning process, use this Toolkit to help you complete Step 8 in the Guide, to add clarity around infrastructure needs and to prioritize them for implementation.



TIPS:

- Depending on the issue or opportunity that needs to be addressed, infrastructure needs may be studies, plans, strategies, or projects.
- Some of the tools in this Toolkit prompt you to enter specific details about infrastructure needs. It's okay if you don't have all the information the tool asks for—fill out what you can.
- The tools in this Toolkit are not a substitute for a professional study. Most of the information you provide in these tools will need to be confirmed through feasibility studies.
- Complete the Infrastructure Service Profile Templates from the Step 6 Toolkit first—they will be helpful for completing this section.
- Involve Chief and Council in discussions throughout Step 8. The needs identified will only be implemented with the support of elected officials. Step 8 is a great opportunity to build awareness of the importance of infrastructure to the community.
- If the community is developing a CCP, be sure to share completed tools with the entire CCP Planning Team, and if possible, complete all tools in this Toolkit collaboratively with the larger CCP Planning Team.
- When it comes time to prioritizing infrastructure needs, consider the relative priority of each need. A plan that results in a long list of projects that are all “high-priority” is difficult to move forward with.

INFRASTRUCTURE NEEDS TABLE

Use these completed tools to help you fill in this table:

- Infrastructure Service Profile Templates in the Step 6 Toolkit—look at these lists to determine if infrastructure will be needed to address these issues or opportunities, and/or what studies, plans, and strategies may be needed.
- Infrastructure Implications Table in the Step 7 Toolkit—you identified what the community's vision and goals mean for infrastructure. Review this list to determine if new studies, plans, strategies, and/or infrastructure will be needed to achieve them.

“Infrastructure needs” may be infrastructure projects, and/or studies, plans, and strategies that need to be undertaken that will help identify infrastructure projects.

List each infrastructure need identified from these other completed tools. Append additional details/calculations/references to support estimates, if you have this information.

DESCRIPTION OF THE NEED —

Describe the need.

DRIVER OF THE NEED — Why was the need identified?

- Addresses an issue or risk
- Addresses an opportunity
- Accommodates growth
- Achieves community vision or goal

Are there other ways to meet this need (e.g., enter into a service agreement, use an operational solution instead of a capital solution, incentivize a private business to address the need)?

SCOPE — What is required to meet current and future demand?

- Size
- Capacity
- Special features or functions

ESTIMATED COSTS — What is the estimated cost to complete the study/plan/strategy, or to design and construct the project?

ADDITIONAL DETAILS FOR CAPITAL PROJECTS:

ESTIMATED ANNUAL

OPERATIONS AND MAINTENANCE

COSTS – What will it cost each year, on average, to operate and maintain the project?

GENERAL LIFE EXPECTANCY

(YEARS) – How many years will this infrastructure last?

LOCATION AND SITING

REQUIREMENTS – Mark the footprint of the infrastructure on a map of the community. Refer to the Infrastructure Land Use Considerations List in the Step 8 Toolkit for siting considerations when thinking about where the infrastructure will go.

INFRASTRUCTURE NEEDS - STUDIES, PLANS, STRATEGIES, AND CAPITAL PROJECTS					ADDITIONAL DETAILS FOR CAPITAL PROJECTS		
DESCRIPTION OF THE NEED	DRIVER OF THE NEED	SCOPE	ESTIMATED COSTS	ESTIMATED ANNUAL OPERATIONS AND MAINTENANCE COSTS	GENERAL LIFE EXPECTANCY (YEARS)	LOCATION AND SITING REQUIREMENTS	
Example: Administration Building Roof Replacement	Addresses current issue: current roof is old and leaking	New roof needs to have capacity to support solar panels that will be installed in the future	\$95,000	\$700	25	Yes, see attached map	

PRIORITIZATION PROCESS

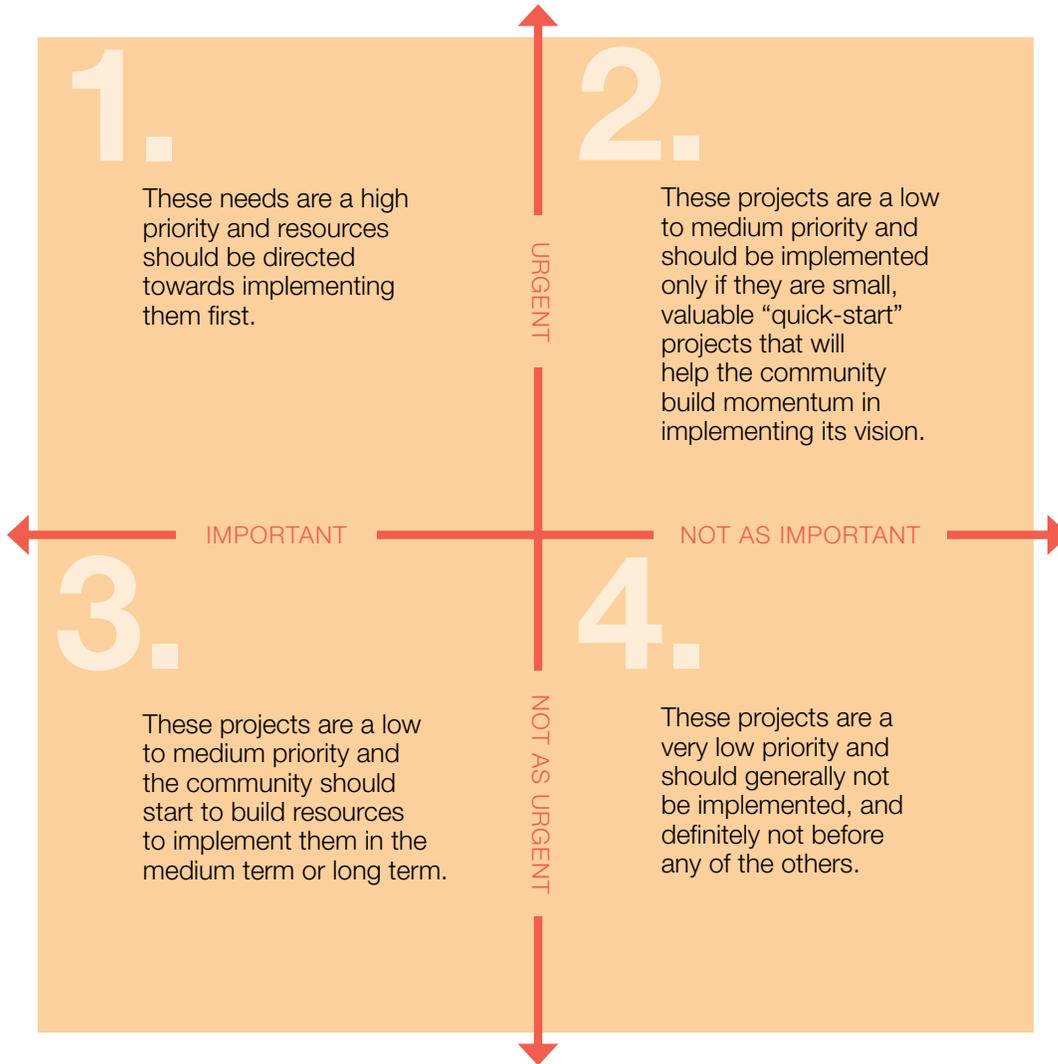
Provided below are two steps to work through a prioritization process that results in a list of prioritized infrastructure needs. You can modify the suggested Prioritization Framework and Priority Ranking Scale if needed, but note how robust they are and make sure your process is too. You want to avoid ending up with a list of projects that are all “high-priority”, or with a list of projects that represents just a few people’s wishes and that aren’t actually in the best interest of the entire community.

Note that this tool is set up to help the community with long-term capital planning prioritization. It is also a good idea to prioritize capital projects each year as the First Nation prepares its annual budget, but to do so, the criteria will need to be modified to consider more specific criteria, such as funding opportunities available at that time.

DEVELOP A PRIORITIZATION FRAMEWORK

This is a preliminary “filter” to help you identify relative infrastructure priorities and develop a rough timeline for implementing infrastructure projects. A suggested framework is provided below. The questions on page 119 will help you determine which category each infrastructure need belongs in.

Note that you can also use this filter to work through a broader priority-setting process if the community is developing a Comprehensive Community Plan—that is, when you consider infrastructure needs alongside all the proposed projects and initiatives you are identifying in the CCP process.



Answer the following questions for each infrastructure need to determine which category it belongs in.

HOW IMPORTANT IS THE INFRASTRUCTURE NEED?

The need is likely **IMPORTANT** if you check most of these statements. All other needs are **NOT AS IMPORTANT**.

- The need addresses a risk to community health and safety.
.....
- The need will support meeting regulatory standards.
.....
- The need supports multiple community goals or objectives.
.....
- The need benefits many members of the community.
.....
- The need is important to many members of the community.
.....
- The need will help build the community's capacity—there are opportunities for training and education by implementing the project.
.....

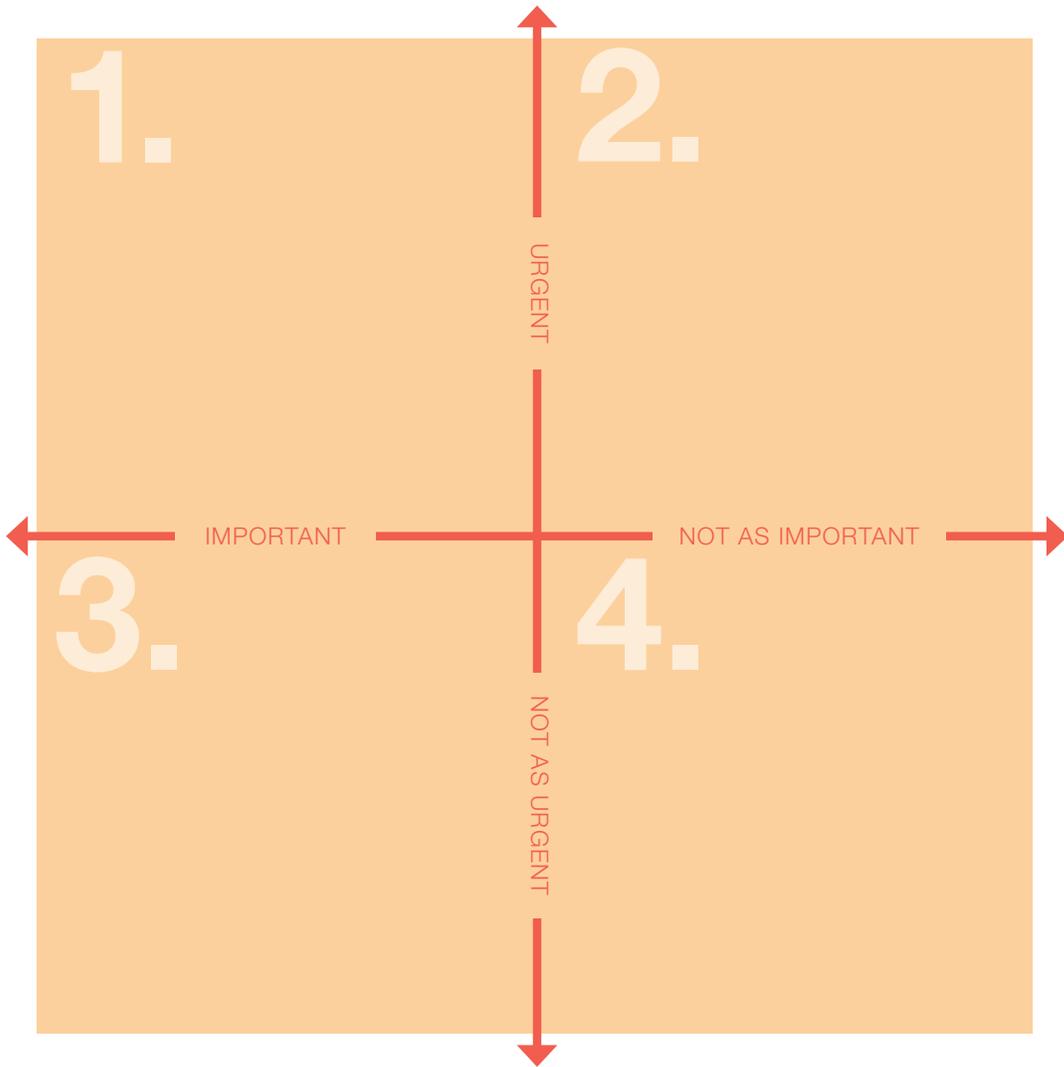
HOW URGENT IS THE INFRASTRUCTURE NEED?

The need is likely **URGENT** if you check this statement. All other needs are **NOT AS URGENT**.

- The need addresses an existing issue.
.....

List the prioritized infrastructure needs in the matrix based on your answers to the questions on the previous page.

Once you have everything listed in the matrix, evaluate the needs together and work through the questions one more time. Consider how important and urgent they are relative to one another, and if necessary move the needs around between categories.



FURTHER PRIORITIZE “URGENT AND IMPORTANT” INFRASTRUCTURE NEEDS

Often, communities end up with many projects in the “urgent and important” category. It is helpful to further prioritize these projects so that you have an idea of which ones should be acted on first. Do this by assigning a “priority rank” to each infrastructure need.

A sample priority ranking scale is below. A rank of 1 is the highest priority, and a rank of 3 is the lowest (all within the “urgent and important” category). If you find that any of the “urgent and important” needs don’t meet the priority ranking criteria, and instead meet any of the other ones shown, it means they do not actually belong in this category. If you end up with any like this, go back to the framework and see which category the infrastructure need belongs in.

PROJECT TYPE

PRIORITY RANK 1	Needs that address critical health and safety needs, or meet regulatory requirements.
PRIORITY RANK 2	Needs that upgrade or extend the life of existing infrastructure and support the community vision.
PRIORITY RANK 3	Needs that will address the current needs of many people in the community and support the community vision.

If an infrastructure need meets any of the following criteria, go back to the prioritization framework and see which category it belongs in.

- **The need accommodates growth and supports the community vision.** The infrastructure need may actually belong in the “important but not urgent” category.
- **The need will address a future issue in the community, benefit many people in the community, and support the community vision.** The infrastructure need may actually belong in the “important but not urgent” category.

- **The need addresses an existing but minor issue and only benefits a few community members.** The infrastructure need may actually belong in the “urgent but not as important” category.
- **The need does not support the community vision.** The infrastructure need may actually belong in the “not as urgent and not as important” category. These are no-go initiatives. Time and resources are better allocated to important needs.

PREPARE YOUR PRIORITIZED LIST OF “URGENT AND IMPORTANT” INFRASTRUCTURE NEEDS

List the prioritized infrastructure needs in the following table. Refer to this table when developing Council’s Strategic Plan, annual departmental work plans, the community’s annual budget and capital plan, and the First Nations Infrastructure Investment Plan (FNIIP).

PROJECT NAME	ESTIMATED CAPITAL COST	PRIORITY RANK	PRIORITY SCORE RATIONALE
Example: Water Supply Study	\$45,000	1	Addresses existing health and safety issues.

ADMINISTRATIVE AND OPERATIONAL TASKS TABLE

While using the tools in this Toolkit, you will likely have identified some issues and opportunities that don't require a capital infrastructure project. Instead, the need is more operational or administrative in nature. Use this list to capture these action items so that they can be addressed.

In addition to noting the name of the task, also document its "Driver" (i.e., why the task is needed – Is it to address an issue, risk or opportunity? To provide a new service? Or improve general infrastructure planning and management practices?) Include in the "Description" specific tasks that need to be undertaken. Under "Champion", note the person who will lead the completion of the task.

TASK NAME	DRIVER	DESCRIPTION	CHAMPION
Example: Re-negotiate sewer service agreement	We identified that the current service agreement is about to expire.	<ul style="list-style-type: none"> Update agreement to include 15 new homes Review rates Set up new communication protocol 	Dana Day to contact the Town to set up meeting.

INFRASTRUCTURE LAND USE CONSIDERATIONS LIST

For each “urgent and important” infrastructure need identified in the table on page 122, draw the desired location (or potential locations) and anticipated footprint on a map. Use the list below to think through siting requirements. Add to the list as needed to reflect the community’s specific context. The land use considerations you identify using this tool will be documented in the Infrastructure Needs Scoping Sheet on page 127.

Be sure to consider the following questions for each of your urgent and important infrastructure needs:

- What is the footprint of infrastructure when considering all servicing requirements (e.g., not just a new wastewater lagoon, but all the collection pipes)?
 - Where (relative to other land uses, access routes) should this infrastructure be located? What land uses and features should it not be located near (e.g., schools, environmentally sensitivity areas, and traditional or cultural sites)?
 - Does this infrastructure require special site conditions (e.g., soil, slope, and elevation)?
 - Is it critically important to locate this infrastructure project away from natural hazards (e.g., flooding or landslide zones)?
-

TRANSPORTATION

Roads

- Slope, rock, ground conditions
- Other

Trails

- Maintenance access
- Other

Bridges

- Flood levels
- Span (shortest crossing)
- Other

WATER

Transmission mains

- Not up steep slopes
- Avoid going through rock
- Maintenance access (public right-of-way)
- Other

Water treatment plant

- Ideally near the source
- May need to be connected to the Waste Water Treatment Plant (Water Treatment Plant can create waste)
- Access to power
- Access road
- Other

Pumps

- Need power (and back-up)
- Likely located at the Water Treatment Plant
- Other

Source

- Resistant to future changes (climate, competing land uses, wildfire, contamination)
- Other

Storage

- Higher elevation
- Access road
- Other

WASTEWATER

Septic tank(s)

- Access for pump-outs
- Safe distance from drinking water sources
- Other

Lagoon

- Earthquake and flood protected (design or by siting)
- Aesthetics (technology dept)
- Access road
- Fencing
- Footprint depends on capacity needs
- Other

Forcemains

- No steep slopes
- No rock
- Other

Lift Stations

- Earthquake and flood protected (design or by siting)
- Other

Wastewater treatment plant

- Earthquake and flood protected (design or by siting)
- Aesthetics (technology dept)
- Lower elevation will result in less pumping
- Access road
- Other

Disposal fields

- Not in floodplain
- Not on a slope
- Suitable percolation
- Safe distance from water sources
- Footprint depends on amount to be disposed and soil conditions
- Other

Outfall

- Maintenance access
- Consider impacts of risk of failure
- Safe distance from water intake
- Other

DRAINAGE/FLOOD PROTECTION

Ponds

- Public safety
- Not on a slope
- Other

Pumps

- Accessibility
- Power source
- Other

Dykes

- Maintenance
- Ability for future increases in height
- Vulnerability to climate change and sea level rise
- Other

ELECTRICAL AND TELECOMMUNICATIONS

- Distance to housing
- Earthquake and flood protected
- Other

PARKS AND RECREATION

Sports fields

- Area that has suitable drainage
- Not on a slope
- Other

Parks

- Accessible to many members of the community
- Other

COMMUNITY BUILDINGS

Schools, arenas, libraries, longhouse, sweatlodge, solid waste buildings

- Earthquake and flood protected (design or by siting)
- Other

ADD OTHER INFRASTRUCTURE SERVICES AS NEEDED

INFRASTRUCTURE NEEDS SCOPING SHEET

Use the information gathered in Step 8 (see the Infrastructure Needs Table, the Infrastructure Land Use Considerations List, and the Prioritization Process in the Step 8 Toolkit).

This Infrastructure Needs Scoping Sheet helps you complete high-level scoping of each high-priority infrastructure need. Much more detailed infrastructure planning work will need to be completed to confirm specific infrastructure projects and to determine if they are feasible.

You may not have all the information at hand to complete every section of this sheet—fill in what you can and make note of any information gaps. These gaps will be filled in subsequent stages of the infrastructure planning process.

DESCRIPTION

Provide a brief description of the infrastructure need, including its name, its drivers, and its general scope. Note why this is a high-priority need. Try to keep this section to one or two paragraphs.

STATE WHICH COMMUNITY GOALS/OBJECTIVES THE INITIATIVE WILL SUPPORT

Copy the goals/objectives directly from the CCP (if you have one) or other community plan. Provide additional commentary if further explanation is needed to show the connection between the community goals/objectives and the identified infrastructure requirement.

LINKAGES AND DEPENDENCIES

Describe any linkages and dependencies related to the specific need (i.e., does it rely on the completion of other community studies, plans, strategies, or projects first?).

CHAMPION

Identify the individual who will champion moving this initiative forward through the next steps of the planning process.

REQUIREMENTS

A) Service Area—Define the area that will be serviced by the infrastructure—specify reserves, or areas of reserves, specific lots, etc. Mark the service area on a map.

B) Capacity/Size and Level of Service—Provide an indication of the required capacity. This could be the number of people the project will serve, actual demand on the service if you know it (e.g., water demand each day), and any other information you know at this time. Define the service level if you know it. Some levels of service are defined by standards.

C) Location and Land Use Considerations—Identify potential locations for the infrastructure. Mark the locations on a map. Describe specific location requirements, such as whether the project should be located at a high point in the community or whether it needs to be set back from environmentally sensitive areas. Identify potential conflicting land uses.

D) Human Resources and Capacity Considerations—What skills /experience are needed to further plan, develop, and then operate and maintain the infrastructure? Does the community currently have adequate human resources, or will you need to hire new people or provide additional training to current staff?

LIFE CYCLE COSTS AND FUNDING SOURCES

Describe the approximate costs (capital and operating) for the initiative and potential funding sources (e.g., different departments, external funding agencies, development charges). What is the lowest life cycle cost? Are there ways you may be able to change the design and construction of the infrastructure to reduce ongoing operations and maintenance costs?

TIMING

When do you need the project to be complete? How long will it take to arrange funding, design the project, and complete construction? When should this process be started?

STAKEHOLDERS

List the key known stakeholders or stakeholder groups who have an interest in, or influence on, the initiative. How will these stakeholders need to be included in the process? Will they need to be informed, consulted, or will they have decision-making authority?

NEXT STEPS

List any studies/plans that need to be completed or any outstanding issues that need to be resolved before moving forward. Next steps might involve getting Council approval to further investigate the identified infrastructure need.