

STEP 6 TOOLKIT

Identify Issues and Opportunities Related to Infrastructure Services

What will this Toolkit help you do?

- Characterize how infrastructure services are currently provided in the community
- Identify issues and opportunities related to those services
- Get ready for Step 7: Identify What the Community's Vision and Goals Mean for Infrastructure

What Tool is in this Toolkit?

- Infrastructure Service Profile Template

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 Step 2 in the *CCP Handbook* (see page 31 of the *CCP Handbook*).
- If the community is going through another infrastructure planning process, use this Toolkit once you have gathered background information (see Step 5 in the Guide and Toolkit), so you have a solid basis for identifying issues and opportunities.

**TIPS:**

- Have conversations with many different people to identify issues and opportunities related to infrastructure in the community. Refer to your completed Individuals with Infrastructure Knowledge Table from the Step 2 Toolkit to identify individuals who will be able to help you complete this step.
- Review your completed Infrastructure Studies, Plans, and Reports Table and Asset Inventory Table from the Step 5 Toolkit to help you complete this step.
- When identifying issues and opportunities, consider those that are existing, as well as those that might be encountered in the future. Communities typically make plans to last generations, so it is important to consider both the near term and the long term.

INFRASTRUCTURE SERVICE PROFILE TEMPLATE

Begin by completing a Community Profile (one for each reserve if needed). You will refer to this information to complete the rest of this tool. Then complete an Infrastructure Service Profile for each of the infrastructure services provided in the community. Typical services include:

- Water
- Wastewater
- Drainage and flood protection
- Transportation
- Culture, recreation and parks
- Housing
- Fire Protection
- Solid waste
- Electricity
- Telecommunications
- Community and economic development
- General infrastructure planning and management

An example Infrastructure Service Profile Template is provided for water (see pages 92 and 93).

Pages 94 to 107 include questions (by infrastructure service) to help you identify infrastructure opportunities and issues to document in the Infrastructure Service Profile Template. Your completed Infrastructure Studies, Plans, and Reports Table and Asset Inventory Table in the Step 5 Toolkit will also help you complete this template. Where possible, note the people and/or the studies/plans/reports that provided the information.

Complete each template to the best of the available knowledge. Engage as many people with knowledge of infrastructure issues and opportunities in the community as you can, including the entire Infrastructure Planning Team. Community members can also provide helpful input on issues they are experiencing and opportunities they see.

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COMMUNITY PROFILE

RESERVES

List reserve numbers and names. If the community profile pertains to a sub-set of reserves, note these reserves here.

LOCATION

Provide a map of the community and traditional territory if you have this information.

AREA (HECTARES)

List area by reserve.

DEMOGRAPHICS

Provide available demographic information (such as age, sex, income level) on the community.

POPULATION PROJECTIONS

Provide population projections within a given time period.

OTHER INFORMATION

Note any other information that might have an impact on the overall community (e.g., a major manufacturing plant is just about to open in a neighbouring municipality).

INFRASTRUCTURE SERVICE PROFILE - WATER EXAMPLE

OVERVIEW

SERVICE AREA AND POPULATION

Indicate the reserves served, number of households, number of people, anticipated population growth, and major businesses/industrial users.

Example:

- IR1 and IR2
- 40 Households (80 people)
- No non-residential users
- Households expected to double by 2050

SERVICE TYPE

Identify the types of water services provided (e.g., piped community system, filtered water source, point-of-entry/point-of-use treatment, individual wells or surface water intakes). Itemize each area of the community that receives a different level of service.

Example:

- IR1 – All homes are on a piped community water system
- IR2 – 10 homes on individual wells

SERVICE PROVIDER

List the various service providers (e.g., the First Nation, neighbouring community through a service agreement, or private purveyors).

Example:

- Water provided through a servicing agreement with the Village

ANALYSIS SUMMARY

Using the questions on the following page, summarize the key opportunities and issues related to this service.

OPPORTUNITIES

Example:

- Village is currently studying how to increase the capacity of its water system
- The water source is plentiful and is of high quality

ISSUES AND RISKS

Example:

- The Village's system is nearing capacity
- Cost of needed upgrades is currently unknown

GENERAL COMMENTS

Example:

- The servicing agreement is due to be renegotiated next year
- The Village is willing to partner on upgrades

WATER SERVICE ANALYSIS

Consider the following questions in your analysis of issues and opportunities:

- What is the quality and quantity of information available about this service? Are there major gaps?
- What is the capacity of the water treatment plant? Is it over- or under-sized? Would it be able to support additional demand?
- What is the capacity of the distribution system? Capacity of pumps? Are these components over- or under-sized?
- Does the system provide adequate fire flows to hydrants?
- If services are provided through a service agreement with a neighbouring community, what are the current restrictions on the service capacity?
- Are there issues with availability of water (e.g. seasonal shortages)?
- Is the system compliant with all regulations? Are there water quality issues like chronic boil water advisories?
- What percentage of the population is on the community system (versus individual wells, lake intakes, etc.)?
- What is the condition of assets?
- Are any wells failing?
- Has a watershed risk assessment been conducted?
- Is the source susceptible to contamination?
- Does the community system receive appropriate operations and maintenance?
- Do individual wells receive appropriate operations and maintenance?

- Does the system have excessive leakage or too many breaks?
- Does the community have the human resources (expertise/knowledge) to operate and maintain this system in the future?
- Is this system exposed to hazards (like floods, landslides, earthquakes, wildfires, etc.)?
- Is there an opportunity to share services with neighbouring communities?
- Does the community have adequate financial resources to provide this service?

WASTEWATER SERVICE ANALYSIS

Consider the following questions in your analysis of issues and opportunities:

- What is the quality and quantity of information available about this service? Are there major gaps?
- What is the capacity of the wastewater treatment system? Is it over- or under-sized? Would it be able to support additional demand?
- What is the capacity of the collection system? Lift stations? Are these components over- or under-sized?
- If services are provided through a service agreement with a neighbouring community, what are the current restrictions on the service capacity?
- Is the system compliant with all regulations (for effluent disposal, etc.)?
- What percentage of the population is on the community system (versus on-site septic systems)?
- Are any on-site septic systems failing? What are the environmental threats associated with failure?
- Does the community system receive appropriate operations and maintenance?
- Do on-site septic systems receive appropriate operations and maintenance?
- Are there any issues with odour or noise?
- What is the condition of assets?
- Does the system have excessive leakage or too many breaks?
- Does the community have the human resources (expertise/knowledge) to operate and maintain this system in the future?

- Is this system exposed to hazards (like floods, landslides, earthquakes, wildfires, etc.)?
- Are there opportunities to share services with neighbouring communities?
- Does the community have adequate financial resources to provide this service?

DRAINAGE & FLOOD PROTECTION SERVICE ANALYSIS

Consider the following questions in your analysis of issues and opportunities:

- What is the quality and quantity of information available about this service?
Are there major gaps?
- What is the capacity of the drainage system (including culverts, storm sewers, ditches, ponds)? Are components over- or under-sized?
- Does the community experience regular flooding events? What causes the flooding?
- What percentage of the community is protected by dykes?
- Are dyke heights adequate?
- Are there erosion issues?
- Is the community susceptible to increased extreme rain events or rising sea level due to climate change impacts?
- What is the condition of assets?
- Do assets receive appropriate operations and maintenance?
- Does the community have the human resources (expertise/knowledge) to operate and maintain this system?
- Is this system exposed to hazards (like floods, landslides, earthquakes, wildfires, etc.)?
- Does the community have adequate financial resources to provide this service?

TRANSPORTATION SERVICE ANALYSIS

Consider the following questions in your analysis of issues and opportunities:

- What is the quality and quantity of information available about this service?
Are there major gaps?
- Does the road network have needed capacity? For current uses?
For future uses?
- Are there safety issues with the transportation network?
- Are residents satisfied with the current level of service? Are there frequent complaints about road conditions?
- Does the community have adequate transportation infrastructure for pedestrians and cyclists?
- What is the condition of assets?
- Are roads and other transportation assets maintained to extend their life?
- Are some roads impassable at certain times of the year?
- Does the community have multiple points of entry?
- What are the weight limits of bridges within the community?
- Does the community have the human resources (expertise/knowledge) to operate and maintain this system?
- Is this system exposed to hazards (floods, landslides, earthquakes, wildfires, etc.)?
- Does the community have adequate financial resources to provide this service?

CULTURE, PARKS, AND RECREATION SERVICE ANALYSIS

Consider the following questions in your analysis of issues and opportunities:

- What is the quality and quantity of information available about this service?
Are there major gaps?
- Do the culture and recreation buildings have the needed capacity?
- Do the parks and/or sports fields have the needed capacity?
- What is the condition of buildings?
- What is the condition of parks and/or sports fields?
- Are the buildings appropriately maintained to extend their life?
- Are sports fields and playgrounds appropriately maintained to extend their life?
- Does the community have the human resources (expertise/knowledge) to operate and maintain the buildings and parks?
- Does the community have the money to properly operate the building (like heating and cooling)?
- Are the buildings exposed to hazards (like floods, landslides, earthquakes, wildfires, etc.)?
- Are the sports fields exposed to hazards (like floods, landslides, earthquakes, wildfires, etc.)?
- Does the community have adequate financial resources to provide this service?

HOUSING SERVICE ANALYSIS

Consider the following questions in your analysis of issues and opportunities:

- What is the quality and quantity of information available about this service?
Are there major gaps?
- Are housing levels sufficient to meet the community's current needs? What about future needs, with population growth?
- What is the condition of homes in the community?
- Are homes appropriately maintained to extend their life?
- Does the community have the human resources (expertise/knowledge) to maintain homes?
- Does the community have the funds to build and properly maintain homes?
- Does the community have any existing policies in place that relate to housing?
- Are any homes exposed to hazards (like floods, landslides, earthquakes, wildfires, etc.)?

SOLID WASTE SERVICE ANALYSIS

Consider the following questions in your analysis of issues and opportunities:

- What is the quality and quantity of information available about this service?
Are there major gaps?
- What is the capacity of the landfill and/or transfer station?
- Is the landfill compliant with all regulations?
- Are the collections assets (like trucks, bins, etc.) adequate for current demands?
- If services are provided through a service agreement with a private business or neighbouring community, what are the current restrictions on the service capacity?
- Are there current issues with noise, odour?
- What is the condition of assets?
- Do assets receive appropriate operations and maintenance?
- Does the community have the human resources (expertise/knowledge) to provide this service?
- Is this service exposed to hazards (like floods, landslides, earthquakes, wildfires, etc.)?
- Is there an opportunity to share this service with neighbouring communities?
- Does the community have adequate financial resources to provide this service?

FIRE PROTECTION SERVICE ANALYSIS

Consider the following questions in your analysis of issues and opportunities:

- What is the quality and quantity of information available about this service?
Are there major gaps?
- Does the fire department have the necessary equipment?
- Does the fire department have a sufficient volunteer pool?
- Does the fire department have the needed capacity and training?
- Are any areas of the community not provided with fire protection?
- If services are provided through a service agreement with a neighbouring community, what are the current restrictions on the service capacity?
- What is the condition of assets?
- Do assets receive appropriate operations and maintenance?
- Is the fire hall located in the right location?
- Is this service exposed to hazards (like floods, landslides, earthquakes, wildfires, etc.)?
- Is there an opportunity to share this service with neighbouring communities?
- Does the community have adequate financial resources to provide this service?

TELECOMMUNICATIONS SERVICE ANALYSIS

Consider the following questions in your analysis of issues and opportunities:

- What is the quality and quantity of information available about this service? Are there major gaps?
- Which areas in the community have broadband internet service?
- Which areas in the community have only dial-up internet service?
- Which areas have no internet service?
- What is the condition of assets?
- What is the capacity of the provided service? Does it meet current demands?
- Is the system appropriately operated and maintained?
- Does the community have the human resources (expertise/knowledge) to operate and maintain the infrastructure?
- Does the community have adequate financial resources to provide this service?

ELECTRICAL POWER SERVICE ANALYSIS

Consider the following questions in your analysis of issues and opportunities:

- What is the quality and quantity of information available about this service? Are there major gaps?
- Are there limitations in the community to connecting to electrical service?
- Are generators in place for critical infrastructure?
- Are there local renewable energy sources in the community (like solar, micro hydro, etc.)?
- What is the condition of assets?
- Do assets receive appropriate operations and maintenance?
- Does the community have the human resources (expertise/knowledge) to operate and maintain any infrastructure owned by the community (like generators, renewable energy installations, etc.)?
- Is there an opportunity in the community for renewable energy?
- Does the community have adequate financial resources to provide this service?

COMMUNITY AND ECONOMIC DEVELOPMENT BUILDINGS SERVICE ANALYSIS

Consider the following questions in your analysis of issues and opportunities:

- What is the quality and quantity of information available about this service? Are there major gaps?
- What is the capacity of community and economic development buildings? Are certain buildings over- or under-sized?
- Do buildings adequately serve their purpose?
- What is the condition of assets?
- Do assets receive appropriate operations and maintenance?
- Does the community have the human resources (expertise/knowledge) to operate and maintain community and economic development buildings?
- Does the community have the funds to properly operate buildings (like heating and cooling)?
- Are certain buildings exposed to hazards (like floods, landslides, earthquakes, wildfires, etc.)?
- Does the community have adequate financial resources to provide this service?

INFRASTRUCTURE PLANNING SERVICE ANALYSIS

Consider the following questions in your analysis of issues and opportunities:

- Is the community located in an area where it is exposed to any natural hazards (like flooding, landslides, earthquakes, wildfires, etc.)?
- Is the community expected to experience significant population growth?
- Are there any activities in or around the community that present potential hazards to the community or the natural environment?
- Are there any neighbouring communities or businesses that the community has a service agreement with? Is there a good relationship in place with any current service providers? How often are service agreements reviewed and discussed?
- What is the First Nation's organizational capacity to manage existing infrastructure?
- Does the community have the capacity to take on the management of new infrastructure?
- How strong are current capital planning processes?
- What is the quality and quantity of infrastructure-related information like? Are there any major gaps in each service type? Refer back to your completed Infrastructure Studies, Plans, and Reports Table and Asset Inventory Table in the Step 5 Toolkit.
- Does the community currently have adequate levels of funding for operating, maintaining, and replacing current infrastructure?
- Are current relationships with consultants or other service providers serving the community's best interests?