

Evaluation of the NWT
Water Stewardship Strategy
Action Plan 2016-2020
Final Report



Northern Voices, Northern Waters

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10 September 2020

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Acronyms

AEMP	Aquatic Effects Monitoring Program
ARI	Aurora Research Institute
ASC	Aboriginal Steering Committee
CABIN	Canadian Aquatic Biomonitoring Network
CBM	NWT-wide Community-based Water Quality Monitoring Program
Dechinta	Dechinta Centre for Research and Learning
Dehcho AAROM	Dehcho Aboriginal Aquatic Resource and Oceans Management Program
ECCC	Environment and Climate Change Canada
ENR	Department of Environment and Natural Resources, GNWT
GNWT	Government of the Northwest Territories
HSS	Department of Health and Social Services, GNWT
Lands	Department of Lands, GNWT
LWB/IWB	Land and Water Boards (Gwich'in Land and Water Board, Mackenzie Valley Land and Water Board, Sahtú Land and Water Board, and Wek'èezhìi Land and Water Board) and Inuvialuit Water Board
MACA	Department of Municipal and Community Affairs, GNWT
MRBB	Mackenzie River Basin Board
MVEIRB	Mackenzie Valley Environmental Impact Review Board
MVLWB	Mackenzie Valley Land and Water Board
MVRMA	Mackenzie Valley Resource Management Act
NWT	Northwest Territories
NWT CIMP	NWT Cumulative Impacts Monitoring Program
QA/QC	Quality Assurance/Quality Control
SMART	Succinct, Measureable, Appropriate, Relevant, Time bound
SNP	Surveillance Network Program
SRDP	Slave River and Delta Partnership
SRRB	ʔehdzo Got'Inę Gots'ę Nákedı (Sahtú Renewable Resource Board)
WLWB	Wek'èezhìi Land and Water Board
WLU	Wilfrid Laurier University
WRO	Water Resource Officer
WP	Water Partner

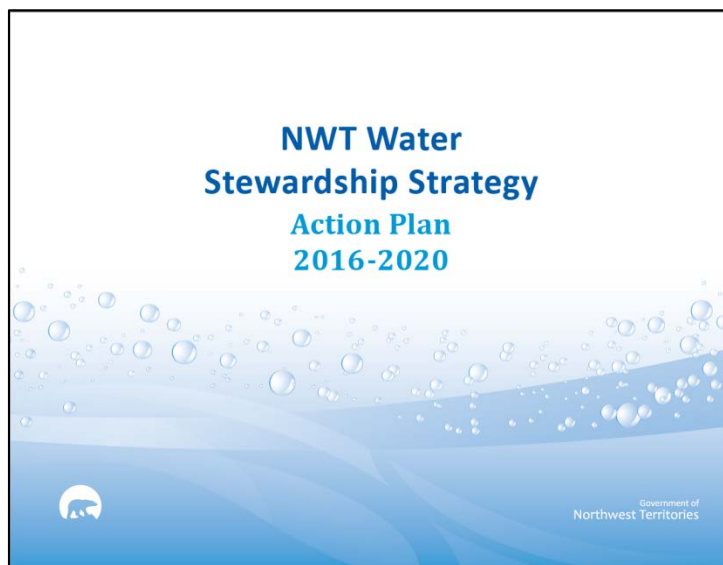
WSS	Water Stewardship Strategy
WSS-AP	Water Stewardship Strategy –Action Plan for 2016-2020

Executive Summary

The *Northern Voices, Northern Waters: NWT Water Stewardship Strategy* (Water Strategy) was developed through an extensive collaborative process in 2010.¹ The evaluation of the Water Strategy Action Plan 2016-2020 (WSS-AP) took place between March and July 2020. The evaluation focused on interviews with 51 Water Partners and community members, and reviews of documentation, reports and websites. The objective of the evaluation was to assess work done in advancing the goals of the WSS-AP and making succinct recommendations for the 2021-2025 Action Plan.

No trip to the region was completed due to the COVID 19 pandemic. All interviews were conducted by telephone and followed up with summary notes.

The results based on the evaluation criteria are summarized below:²



Evaluation Results from Criteria					
Highly Satisfactory	Satisfactory	Moderately Satisfactory	Moderately unsatisfactory	Unsatisfactory	Highly unsatisfactory
Relevance: Satisfactory (S)		The overall implementation and monitoring design of the WSS-AP meets its goals and vision, with minor shortcomings. A high portion (86%-75%) of the Action Items and Keys to Success are clear, reasonable and achievable, and Performance Indicators are SMART. ³			
Effectiveness: Satisfactory (S)		Level of Keys to Success and Action Items achieved was as expected (90%) and/or there were moderate short comings.			
Efficiency: Highly efficient (HE)		The benefits and advantages of participating in the Water Strategy far outweighed the level of effort and resources spent by the Water Partners.			
Sustainability: Likely (L). There is little or no risks to sustainability,		Less than 5% of Action Items at risk of not being continued or not having benefits post 2020.			

¹ NWT Water Stewardship Strategy (May 2010)

² For a full list and explanation of the evaluation criteria see [Annex C](#)

³ Succinct, Measurable, Appropriate, Relevant, Time Bound

Building Awareness: Unsatisfactory (U)	The Water Strategy is not commonly known among the general public or communities.
Transparency: Satisfactory (S)	The WSS-AP is transparent, with minor shortcomings: a website is fully operational with access to all the data and reports, and is updated on a quarterly basis; Aboriginal Steering Committee meetings are held when they are planned; information is sent out on a scheduled basis; annual reporting is conducted; and decision-making is open and transparent. The WSS transparency of the WSS-AP is delivered as expected.

Overview:

- The WSS-AP was generally very well received by those interviewed and there is a unanimous sense that water is an important issue demanding greater attention in the future.

“Water is a huge issue. Everything on the land is associated with water, we need a strategy.” (Tim Heron)
- The WSS-AP has commendable achievements considering the limited financial resources that support it. It has done this through a “collective action approach” - working with a variety of Water Partners (approximately 40) to outline the common set of goals, and helping to align and link their respective activities.
- One of the core functions of the WSS-AP has evolved to provide a communication and network platform between the different Water Partners. This has stimulated new relationships and has resulted in:
 - Enhanced outcomes (for example, the Mackenzie River Basin Board is working on a *State of the Aquatic Ecosystem Report* with input from people connected through the Water Strategy);
 - New activities through collaboration (for example, Environment and Climate Change Canada is now working to develop a CABIN monitoring plan in the NWT);
 - Peer to peer learning (for example, communities and Renewable Resource Boards mentioned that they have met other communities doing similar work and can share experiences and knowledge at a more profound level).
- The Annual Water Strategy Implementation Workshops are respected, providing one of the main ways for Water Partners to update and network within the WSS-AP. In some respect, they are the flagship of the Water Strategy and provide the opportunity to highlight activities to the general public. However, several interviewees noted these could be more focussed with themes, such as the climate change theme in 2019.
- The WSS-AP is very transparent, and in general, information is easy to access on the various websites.

- The NWT-Wide Community-Based Water Quality Monitoring (CBM) Program (run through ENR) was seen as a fundamental element of the WSS, and there was a strong desire to see it expand. Likewise, there is strong support for enhancing community based capacity in monitoring and information development through other partnerships including academia.
- The approach underlying the WSS-AP - to incorporate traditional and local knowledge, as well as improve decision-making through the Aboriginal Steering Committee - was well regarded by all those who commented on it during the interviews. Concerted efforts have been made to enhance the input of traditional and local knowledge, including:
 - Developing research on Traditional Knowledge inclusion and the Aboriginal Steering Committee providing guidance for researchers, communities and resource boards;
 - Including traditional and local water-related knowledge in existing school curriculums and science fairs;
 - Supporting intergenerational on-the-land camps;
 - Greater opportunities for incorporation in the review process for licensing and aquatic ecosystem monitoring programs (AEMP);
 - Capacity building through the CBM Program and other related projects.
- Community members emphasized the importance of advancing not only traditional and local knowledge into decision-making, but also in enhancing governance aspects of communities over their water resources. While there are aspects of this addressed in regulatory processes and hearings, a desire was expressed to be more pro-active. The idea of developing local and/or regional WSS was seen as an initial step.
- It was noted by several interviewees that the WSS-AP can be seen as a model of action planning incorporating Traditional Knowledge that can be replicated in the South. It is a true ***“Made in the North”*** model. However, despite advances in promoting Traditional Knowledge more work is needed to improve its use, particularly in terms of decision-making (see recommendation 7).

Clearly, the Action Plan 2021-2025 for the Water Strategy should continue with the successes that it has achieved in many areas, such as communications and networking, as well as CBM. The following recommendations are focused on advancing the next five-year Action Plan (2021-2025) to be more effective at achieving the overarching goals of the Water Strategy.

Recommendations for consideration in the 2021-2025 Action Plan:

- **Structure and focus in achieving the goals of the Water Strategy:**
 - The updated 2018 Water Strategy noted *“all Water Partners, including all water users, are encouraged to embrace the Strategy as a starting point for future actions.”* This was supported by at least 30% of those interviewed, primarily from agencies, academia and LWBs. It was strongly felt that the next Action Plan should provide more direction for agencies and organizations by identifying priorities or areas of direction in the water sector, to balance its role as a reporting and networking platform. For example, it could

identify upcoming issues such as climate change causing more dissolved organic carbon in the drinking water requiring higher levels of treatment. Moreover, the 2021-2025 Action Plan should help inform specific activities such as the *Waters Act* Review, not only keep track of which reviews and updates are being made.

**Recommendation
1**

Develop the Water Strategy Action Plan 2021-2025 to be a forward-looking plan that emphasizes direction to agencies, LWBs, RRBs, and academics.

- There are several other programs and initiatives, both within and outside the GNWT which need to be considered and incorporated in the developing the 2021-2025 Action Plan. This will improve its support and potential for collaboration with other initiatives.

**Recommendation
2**

Improve linkages developed with other initiatives including the NWT CIMP (which is currently developing its 2021-2025 Action Plan – consider a NWT CIMP person involved in the development of the Water Strategy 2021-2025 Action Plan and vice versa), the 2030 NWT Climate Change Strategic Framework and its 2019-2023 Action Plan, and GNWT Land Use Sustainability Framework, amongst others.

- The Aboriginal Steering Committee was viewed as a highly effective mechanism for helping to manage and provide direction during the implementation of the 2016 – 2020 Action Plan. Similarly, the development of a Water Partnership Advisory Committee should be considered (though with less meetings than the Aboriginal Steering Committee to save costs/ or have virtual meetings).

**Recommendation
3**

Create a Water Partner Advisory Committee (with TORs) alongside the Aboriginal Steering Committee to provide ongoing guidance and revision during the course of the implementation of the 2021-2025 Action Plan.

- There are a number of outstanding issues which require support and input from a variety of Water Partners and would benefit from a taskforce approach to addressing the issues over a set time frame.

**Recommendation
4**

Use the structure of creating taskforce groups (ad-hoc or as needed) to tackle certain issues, based on the technical Inter Departmental Committee on Drinking Water.

- There are a number of areas where on-going work is reflected in the WSS-AP Action Items (e.g. regulatory work) and would be best placed in an initial description section which outlines the overall activities in the water sector. For example, much of the work

of LWBs is reflected in the WSS-AP and consequently they are reporting multiple times on the same issue. This is similar with drinking water and waste, licensing, and cumulative effects, amongst others. Moreover, interviewees noted the importance to reduce and simplify reporting for the WSS-AP.

Recommendation
5

The 2021-2025 Action Plan should be simplified by identifying ongoing activities, such as regulatory activities, and outline how they link to the goals of the WSS. Meta performance measures should be reported on, such as “% of communities in compliance with licenses”. Detailed and specific Keys to Success and Action Items should be elaborated that are only addressed under the 2021-2025 Action Plan.

Recommendation
6

Conduct a review of annual reporting requirements of Water Partners (WPs) (data, timing, etc.) and assess how to streamline reporting for the 2021-2025 Action Plan.

- Performance Indicators should be more focused on key information. The Performance Indicators do not have targets, and are heavy on data such as “number of monitoring stations”, but limited on “information”. Moreover, with new technology on the ground stations for certain parameters may not be needed. Moreover the # of stations or # of gaps filled tells little about the % of coverage which is the key interest. For example, it would be more meaningful to have “% of coverage with a target of 75% coverage by 2025”.

Recommendation
7

A thorough review of Performance Indicators should be done to ensure they are more meaningful, and targets should be developed. Action Items should be reviewed to have specified deliverables associated with them.

➤ **Advancing Traditional Knowledge and decision making**

- Advances have been made to include Traditional Knowledge and promote its acknowledgement and use (See [Section 7](#)). Interviews indicated that continued work is needed to promote traditional and local knowledge in decision making, and communities expressed the need for a greater sense of ownership over the strategy and its work.

Recommendation
8

Create a taskforce to produce a White Paper by 2021 on enhancing the use of Traditional Knowledge (TK) in decision-making and research. Examine: if people are using the tools, is there a lack of communication and reporting? What other issues can be advanced?

The taskforce should include a broad range of Water Partners to ensure a range of perspectives are considered including governments, academia and public agencies, amongst others. Additionally, it should examine other examples of guidelines regarding the incorporation of Traditional Knowledge in research and management of water.

- One of the key issues raised by communities was that “knowledge” was not always flowing in both directions. Often communities would not understand research being proposed due to the language used; not receive results from studies conducted in their communities; or when they did receive the results, they would simply be in the form of data which has little to no intrinsic meaning. A series of pH values for instance does not tell people if the aquatic ecosystem is good for fish, or drinking. While a great deal of good work has been done to bridge the gap between Traditional Knowledge and Western science, the 2021— 2025 Action Plan needs to further advance this goal.

**Recommendation
9**

Make mandatory the presentation (in-person, video or phone) of monitoring results for any research or development related studies using either local guidelines (if available) or templates developed by ARI - a simple “Findings Description” that could be read on the radio or at meetings.

- The CBM program was strongly viewed as a very important element of the Water Strategy and its Action Plan. Interviewees indicated that there is a desire to expand the program in scope to include other parameters (there is interest in expanding CABIN at the community level) as well as expanding it to other communities. However, this will require additional financing. Moreover, there was a sense that as more communities engage or expand their expertise and take greater ownership of data gathering and information generation that the experience of communities or organizations, such as the Dehcho with the AAROM and Guardian programs, could provide a focus for peer to peer learning and training between communities. It was forwarded that this could provide opportunities for expansion even with limited resources (keeping costs down in terms of travel and personnel) and often may be easier for communities to learn through.

**Recommendation
10**

Create a taskforce to develop a strategy to encourage/promote peer to peer learning between communities. This could include activities/initiatives such as: explore the option of opening up the Dehcho Guardian training course to other organisations; build local capacity to conduct training, not only in sampling but also in applying guidelines for research; and promote local sustainability and awareness, amongst others.

- Community members emphasized the importance of advancing not only traditional and local knowledge into decision making, but also in enhancing governance aspects of communities over their water resources. While there are aspects of this addressed in regulatory processes and hearing, amongst others, a desire was expressed to be more pro-

active. The ideas of developing local or sub-regional Water Strategy and action Plan was seen as an initial step

**Recommendation
11**

Encourage local and/or regional water stewardship strategies that help inform the territory wide strategy to help advance awareness and input at the local and regional level.

➤ **Improving the collective nature of the Water Strategy and awareness of its activities**

- Many interviewees, particularly at the local level, expressed concern that the Water Strategy and its Action Plan was very much set by policy in the GNWT. Many did not understand the role of the Aboriginal Steering Committee, for example, in advancing issues surrounding water from the community perspectives. In short, the WSS-AP is not seen as a collective initiative despite the networking of its various Water Partners. Consideration should be given to developing options to increase community involvement and attitude towards the Water Strategy and its Action Plan.

**Recommendation
12**

Improve the web site to reflect the variety of the partners and perspectives to give it a more collective feel and less of a government feel. For example, while improving the content, also the colours and font should be changed.

**Recommendation
13**

Consider moving some of the meetings of the Aboriginal Steering Committee around the NWT to provide exposure in smaller communities, based on logistics and financing.

- Interviews indicated that there is likely a very low appreciation and understanding of Water Strategy by the public and at the community level.
- Of the 24 websites referenced in this evaluation, only 6 linked to the Water Strategy webpage.

**Recommendation
14**

Create a taskforce to produce a simple “awareness building strategy” for Water Strategy and water issues to the public which considers, for example:

- Create anchor points for media reporting each year (Water Week – March, Annual Conference –November, and develop one for the summer);*
- Encourage Water Partners to put links to the Water Strategy on their sites;*

- Provide simple “Findings Descriptions” that are ready to be broadcast on the community radio or read at meetings.
- Approach partners to write a short article each month for newspapers or for CBC or Cabin radio (contact media agencies to discuss the possibility).
- Use the transboundary work to galvanize public interest.

The Aboriginal Steering Committee emphasized the importance of gaining the perspectives and opinions of the communities during the 2021-2025 Action Plan.

**Recommendation
15**

Ensure that during the last year of the 2021-2025 Action Plan community members (public) are consulted regarding their perspectives on and the opinion of the Water Strategy Action Plan.

➤ **Priorities and areas of focus**

- It is acknowledged that many issues are linked. For example, climate impacts and warming are likely to affect dissolved organic carbon in water which in turn can impact drinking water quality and treatment. In discussions with interviewees, climate change and water quality were typically the areas of primary focus. This is in keeping with a survey conducted in 2017.⁴⁴ Indeed, virtually everyone interviewed highlighted climate change impacts as being of critical importance in terms of erosion, changing freezing and melting times, releasing pollution, affects to the permafrost, amongst others.

**Recommendation
16**

The introduction to the 2021-2025 Action Plan should emphasize the importance of climate change concerns which should be an underlying thread weaved throughout the Action Plan.

- Key water quality issues included concerns related to upstream activities in Alberta and BC; localized activities like leachate from landfills and industry discharge, oil and gas etc.; and lack of trust in drinking water (consequently spending money on expensive bottled water that impacts local economies).

**Recommendation
17**

*Drinking water is important to communities and information should be easily accessed from a variety of websites (including WSS). Create a **single page** accessed by HSS and MACA with all relevant information and eventually have updated data, maps, and explanations allowing easy access of “information” for the public.*

Recommendation

For the 2021-2025 Action Plan, conduct a review of community

⁴⁴ GNWT (2017) [NWT Water Strategy Research Priorities](#): Summary of Survey Results and 2017 NWT Water Strategy Implementation Workshop Discussion

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concerns for providing direction for research and activities. Areas of concern and research topics should be reviewed annually by the Aboriginal Steering Committee (and new WP Advisory Committee). Maintain a discussion session at the Annual Workshop to ensure continued appropriateness.

➤ **Sustaining activities and financing**

- Many interviewees indicated concern over future resources for continuing programs like the CBM program. Maintaining activities, particularly those sponsored under a private company, academia or NGO is not guaranteed as funding priorities and research interests may change. Nevertheless, part of the strength of the Water Strategy and its Action Plan is that it is collective in nature and being implemented by a variety of partners. The Gordon's Foundation for example has expressed an ongoing interest to support the Makenzie DataStream and is creating other ones.

**Recommendation
19**

Assess the commitments of partner organizations in terms of their projected activities and timelines for inclusion in the 2021-2025 Action Plan.

Conclusions:

The Water Strategy has been a cornerstone in helping to solidify and coalesce water initiatives in the NWT. As such it has provided a strong platform for communication, networking, and synergy building between the various Water Partners, agencies and communities. The underlying approach to integrate and promote traditional and local knowledge is impressive and worthy of recognition. This approach should be continued and emphasized in the 2021-2025 Action Plan. With some managerial and structural adjustments, the 2021-2025 Action Plan could be even more successful at advancing the goals of the Water Strategy than its predecessor.

Background

In 2010 the Government of Canada,⁵ The Government of the Northwest Territories (GNWT), Indigenous governments, NWT communities, regulatory boards, environmental organizations, industry, academic institutions and the general public developed the first NWT Water Stewardship Strategy (Water Strategy),⁶ followed by a Plan for Action (2011-2015) to implement the Water Strategy.⁷ In 2014, the responsibilities for water resources were transferred from the Federal Government to the GNWT Department of Environment and Natural Resources (ENR). An independent evaluation of the Plan for Action took place in 2015⁸, resulting in 30 recommendations which helped inform the *Action Plan 2016-2020*.⁹ The Water Strategy was updated in 2018¹⁰ and continues to set “*a common path forward to steward our waters.*” The overall vision and goals have remained the same:

Vision: “the waters of the Northwest Territories will remain clean, abundant and productive for all time.”

Goals:

- 1. Waters that flow into, within or through the NWT are substantially unaltered in quality, quantity and rates of flow;**
- 2. Residents have access to safe, clean and plentiful drinking water at all times;**
- 3. Aquatic ecosystems are healthy and diverse;**
- 4. Residents can rely on their water to sustain their communities and economies;**
- 5. Residents are involved in and knowledgeable about water stewardship; and**
- 6. All those making water stewardship decisions work together to communicate and share information.**

*“The Strategy addresses gaps and weaknesses in collective water stewardship efforts at all levels. It is intended to help make the best use of our current capacity and to build capacity where it is lacking”.*¹¹

⁵ At the time through AANDC (Aboriginal Affairs and Northern Development Canada)

⁶ *NWT Water Stewardship Strategy* (May 2010).

⁷ *A Plan for Action 2011-2015: NWT Water Stewardship Strategy* (May 2011).

⁸ *Independent Evaluation of the NWT Water Stewardship Strategy Implementation: Evaluation Report*, Harry Cummings and Associates and Shared Value Solutions Ltd. 22 September 2015.

⁹ *Action Plan 2016-2020: NWT Water Stewardship Strategy* (July 2016).

¹⁰ *NWT Water Stewardship Strategy* (January 2018).

¹¹ *Water Stewardship Strategy* (revised) GNWT (2018).

Objectives of the Evaluation

This evaluation assesses implementation of the WSS-AP between 2016-2020,¹² and draws lessons learned that can both improve the sustainability of the benefits from the Water Strategy and aid in the formulation of future action plans. In particular, the objectives of this evaluation are to:

- Ensure activities undertaken under the WSS-AP were effective in achieving the goals and vision of the Water Strategy;
- Review implementation and progress of the Water Strategy and WSS-AP against Performance Indicators;
- Assess the relevance and effectiveness of Performance Indicators for measuring implementation progress;
- Identify and recommend how to address emerging challenges and build on successes to inform the development of the 2021-2025 Action Plan;
- Ensure transparency and accountability in the delivery of water stewardship actions and decisions; and
- Inform Water Partners and the public about the implementation progress of the Water Strategy and WSS-AP.

¹² *Action Plan NWT 2016-2020 - Water Stewardship Strategy (2016).*

Parts of the Evaluation

The evaluation was conducted in the following three phases:

Phase 1 9 March to 9 April

Phase 1 involved coordination with ENR, Evaluation Committee (EC), and Aboriginal Steering Committee to determine the scope and Evaluation Plan (Work plan, Engagement Plan, Evaluation Criteria, and Guideline Questions). See [Annex B](#).

During this period the EC and Aboriginal Steering Committee convened on 2 April, 2020 to provide input into the Evaluation Plan. The input included 3 written updates, and also included initial information gathering and appraisal to identify possible information gaps, and develop mitigation measures to fill the gaps.

Phase 2 10 April to 24 June

Phase 2 contained the core of the information gathering, and involved a detailed desk review of relevant documents and websites, as well as engagement with the EC, Aboriginal Steering Committee, Water Partners, and other relevant experts. The “engagement plan” is discussed in the Evaluation Plan ([Annex B](#)) and contains a [Guideline for Questions](#) developed for both Water Partners and communities.

During this phase, 79 people were individually solicited to provide input for the evaluation, which resulted in 51 people being interviewed (See [Annex A](#)).

The EC was convened on 4 May, 2020 to review the interview process and provide guidance.

This Phase also provided initial findings to the EC (5 June, 2020) following the 1st round of information gathering. The “initial findings” presentation was also sent to the Aboriginal Steering Committee. The “initial findings” allowed for input and provided an opportunity to receive direction from the committees, identify gaps, and ensure the final report represents the progress of the Water Strategy adequately.

Phase 3 25 June to 31 July

This Phase involved analysis using the evaluation criteria, ensuring a transparent and credible evaluation. It included a review of existing materials, and an opportunity to conduct a 2nd round of information gathering, including conducting any new or follow up interviews as was determined following the “findings presentation” to the EC on 5th June 2020.

This phase also involved writing and submitting draft reports for consideration by the EC, and based on comments provided, a *final* draft and an *Extended Executive Summary* which was shared with the Aboriginal Steering Committee. Comments from the both committees were considered for incorporation into the *final report*.

Evaluation Process and Methodology

The evaluation of the WSS-AP was conducted in three phases consisting of six key steps (Figure 1). A more detailed description of the [evaluation process](#) can be found in the approved [Evaluation Plan](#).

Step 1 involved close coordination with ENR, the EC, and the Aboriginal Steering Committee and resulted in the **Evaluation Plan** containing a [Work plan](#), [Engagement Plan](#), and [Evaluation Criteria](#)¹³.

Step 2 involved implementing the engagement plan. This included conducting interviews with stakeholders using the questionnaire as a guide. Not all questions applied to all interviewees. Following the interviews, an interview summary was made for each of the interviewees and sent to them for review of content and accuracy. The interviewees had the option to consent to the summary being submitted anonymously along with a final report, as a means to support the report findings.

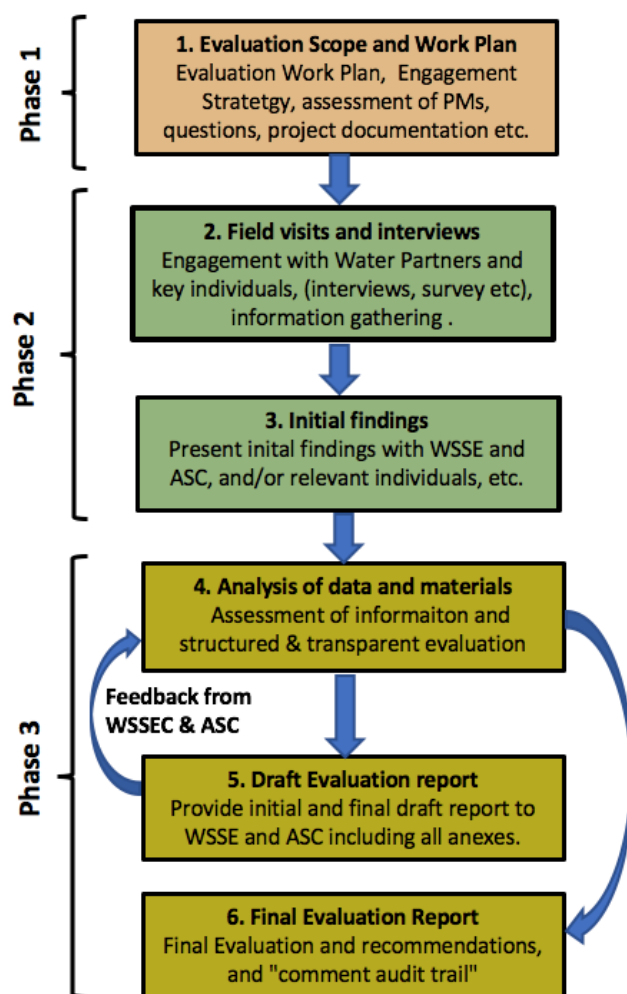
Step 3 involved initial presentation of the findings to the EC on June 5th in order to assess the direction the evaluation was proceeding in and provide guidance if necessary.

Step 4 involved analysis and a review of documentation and interview summaries to help triangulate findings in the evaluation.

Step 5 consisted of developing a 1st draft report for the EC, followed by an amended 2nd draft and a stand-alone *Extended Executive Summary* for the Aboriginal Steering Committee and EC.

Step 6 involves the final analysis of the evaluation, clarification of any outstanding issues, writing, and presentation of the final report. As an associated document to the final report, a “Comment Audit Trail” will be provided which shows the comments to the drafts and how they are addressed in the *final report*.

Figure 1: Key steps in the evaluation process



¹³ The evaluation criteria for sustainability was modified by the Evaluation Committee on 5th June 2020. The criteria for environmental

Specific Issues addressed and Evaluation Criteria

The specific issues addressed during the evaluation included:

- the contribution of the WSS-AP to advance the goals and vision of the Water Strategy;
- the structure of the WSS-AP and how it can be improved;
- the main achievements within the implementation of each Key to Success;
- the challenges for Water Partners to implement the Keys to Success under the WSS-AP;
- the Keys to Success and associated Action Items that remain priorities and what new areas are recommended for inclusion in the next Action Plan;
- improving the value of the Water Strategy for Water Partners; and,
- ways in which Water Partners can more effectively participate.

A series of guideline questions were developed in consultation with the EC and the Aboriginal Steering Committee. They form part of the Evaluation Plan ([Annex C](#)).

The criteria used in this evaluation were developed into a series of six level scales as described in in the Evaluation Plan (Annex C- [Evaluation Criteria](#)):

Relevance: Relevance is an assessment of the design of the WSS-AP in terms of meeting the goals and objectives of the Water Strategy. The key assessment relates to the appropriateness of the design of the WSS-AP for meeting the overall vision and goals (including an assessment of the Key to Success and associated Action Items, Performance Indicators being SMART).¹⁴

Effectiveness: This evaluation criterion provides an assessment of the extent to which the Water Strategy has advanced towards its goals and vision in the time planned (2016-2020). This is done primarily through an assessment of the level completion of the Action Items and achieved Keys to Success.

Efficiency: The criterion will be addressed in a qualitative manner with respect the extent to which results have been delivered in relation to the resources spent. It helps determine the basic question “were the results obtained from the WSS-AP worth the financial and human resources needed to implement it”? It is assessed by cost effectiveness and human resource efficacy (the level of effort which Water Partners spent in implementing the Action Items). The efficiency will be addressed primarily through interviews. It has a “rating scale” associated with it which will help with the development of the 2021-2025 Action Plan.

Sustainability: Sustainability was assessed by taking into account the risks of achieving the goals of the Water Strategy related to continuing Action Items post 2020 based on financial, socio-political, and institutional sustainability. The overall sustainability was assessed using a four-point scale.

Transparency: This is an assessment of whether the WSS-AP is being implemented in a transparent and open way. This includes access to information, reporting, and transparency in decision making.

Public Awareness of the Strategy: This criterion assesses the level of awareness and understanding of the strategy from the standpoint of the general public.

¹⁴ Succinct, Measureable, Appropriate, Relevant, Time Bound

Limitations and Challenges of the Evaluation

The principal limitation of the evaluation has been the lack of ability to engage in face to face meetings due to the COVID pandemic and the subsequent travel restrictions that were set in place. As a consequence, interviews had to be conducted via teleconferencing. This has its advantages, but also its limitations in terms of interpretation and confirmation. One of the challenges to the review is that of the 38 summaries sent (one summary was sent to 12 people based on a focus group meeting)¹⁵ only 20 were returned, one interviewee declined to have it be submitted, and two interviewees declined having summaries sent to them for review, stating that they were satisfied that the points raised would be included.

The lack of returned summaries is problematic in that concepts and details captured may not be entirely accurate. This was mitigated by:

1. Triangulation of specific details with documentation (for example, reports, websites, and publications).
2. Ensuring that key concepts were repeated back during the interview session.

Another limitation of the evaluation is in applying the Effectiveness Criteria, which focusses on an assessment of how well Action Items and Keys to Success have been achieved. No attempt has been made to emphasize the relative importance of one Action Item or Key to Success over another - they are all viewed as equally important.

In clarifying the scope of the evaluation, the documentation review was conducted to determine if certain Action Items have been achieved. For example, a review was conducted of annual progress reports, reporting files, some products (for example, ECCC Northern Remote Landfill guidelines for waste management, etc.), and relevant websites (for example, Mackenzie DataStream, Discovery Portal, etc.). However, an assessment of the quality or effectiveness of the product was for the most part beyond the scope of the evaluation.

Findings

The findings are based on interviews, documentation and websites ([Annex E](#)), and annual progress reporting data. The progress across each activity between 2016-2020 has been summarized in tables in [Annex B](#)

1. *Relevance:*

Satisfactory (S)	The overall implementation and monitoring design of the Water Strategy 2016-2020 Action Plan meets the goals and vision, with minor shortcomings. A high portion (86%-75%) of the Action Items and Keys to Success are clear, reasonable and achievable, and Performance Indicators are SMART.
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¹⁵ Déljné members of the Nę K'ə Dene Ts'ı́łı Forum – 3rd June 2020.

Relevance of goals and objectives

- 95%+ of the people interviewed felt the goals and vision of the Water Strategy remained relevant. Around 30% wanted to add some form of comment to emphasize resilience or climate change. Changing the “goals” of the Water Strategy may be cumbersome as it was revised in 2018. Nevertheless, emphasis should be placed on climate change concerns in the 2021-2025 Action Plan.
- At least 30% of those interviewed, primarily from agencies, academia and LWBs, felt the 2016-2020 WSS-AP should have provided more direction for agencies by identifying priorities in the water sector. The updated 2018 Water Strategy noted *“all Water Partners, including all water users, are encouraged to embrace the Strategy as a starting point for future actions.”* A lot of knowledge has been gained through the implementation of the WSS-AP, and it should be harnessed to provide guidance to Water Partners in the next five years through the 2021-2025 Action Plan.
- There are other initiatives which should be assessed and integrated into the 2021-2025 Action Plan including:
 - NWT CIMP is developing its own action plan 2021-2025 - the Water Strategy 2021-2025 Action Plan should be integrated with this to avoid double reporting on the aspects of aquatic environment and fish.
 - The 2030 NWT Climate Change Strategic Framework (CCFS) and its [2019-2023 Action Plan](#). The framework notes the importance of monitoring “changes to water quality and quantity, and impacts on wildlife, fish and marine mammal health and distribution” (Goal 2) and “importance of water and sanitation” (Goal 3), and comments on consistency with the Water Strategy. Section 2.7 of the CCFS 2019-2023 Action Plan overlaps with the WSS-AP, including to continue NWT water quality and water quantity monitoring which can contribute to the assessment of climate-related changes in quality and flow over time (including community-based Water Monitoring Programs). However, the CCFS 2019-2023 Action Plan does not specifically reference the Water Strategy.
 - The GNWT Land Use Sustainability Framework for decision processes affecting land, water and natural resources. It notes: “Ecosystem goods and services (including clean air, clean water) are an important source of wealth and benefits to NWT residents” and “[w]ater quality, quantity, and flow are maintained in a sustainable manner to support the health and well-being of NWT residents, land and animals” and it also mentions the Water Strategy.

Recommendation

Develop the 2021-2025 Action Plan to be a forward-looking plan that emphasizes direction to agencies, LWBs, RRBs, and academics.

Recommendation

Improve linkages developed with other initiatives, including the

NWT CIMP 2021-2025 Action Plan (which is currently in development). Consider including a NWT CIMP person in the development of the Water Strategy 2021-2025 Action Plan and vice versa. Also the 2030 NWT Climate Change Strategic Framework and its 2019-2023 Action Plan, and the GNWT Land Use Sustainability Framework, amongst others.

Structure of the Water Strategy – Action Plan (WSS-AP)

- The overall implementation and monitoring design of the WSS-AP clearly meets the goals and vision of the Water Strategy as it is detailed and covers a wide range of sectors. Most interviewees felt that the structure of the WSS-AP was well developed with the Components, Keys to Success and Action Items with specific tasks. However, virtually all the interviewees noted the size and extent of reporting should be reconsidered. Several interviewees indicated that in its current form, the WSS-AP requires extra reporting that is unnecessary.
- Interviewees noted the importance of having a single platform in which to gauge activity in the water sector, particularly for communities. However, it was noted that there is considerable overlap in reporting.
- There are a number of areas where ongoing work, such as regulatory, is reflected in the WSS-AP Action Items and would be best placed in an initial description section outlining the overall water sector in the NWT and who is responsible for what – this would be different from the WP description that currently exists. To name a few:
 - Much of the work of LWBs is reflected in the WSS-AP and is thus reported multiple times;
 - Municipal and Community Affairs (MACA) has its own mandate regarding infrastructure and training for drinking and wastewater. It is basically resulting in double reporting to include these activities in the WSS-AP. It might be better to simply have macro PIs such as “% of communities with certain levels of wastewater treatment” or “% of communities with access to drinking water” etc.. Specific macro PI’s will be needed, but would eliminate the detailed reporting currently in the Water Strategy Action Plan;
 - Issues of water licensing and compliance inspections are mandatory, thus, it would be better to report on meta data such as how many licenses there are, and estimates as to what percentage are in compliance. This is also related to including Traditional Knowledge in licensing (3.1 D2) in the form of announcements, meetings etc., or ensuring unauthorized waste is not accepted at municipal landfills (3.1 C5);
 - Some reporting is legislated, such as the State of Environment Reporting (required under the *Environmental Rights Act* (2019));
 - The Actions Related to Action Item 2.1 E and cumulative effects are predominantly done under NWT CIMP. Reporting to the WSS-AP should be related to the higher-level objectives.

- **Keys to Success:** Most interviewees felt that there was a full spectrum of Keys to Success and no additional ones were needed. Indeed, most declined to comment on the full range of Keys to Success as they did not have sufficient knowledge about the WSS-AP, and felt limited to comment on their specific focus. There are areas of overlap, such as between 3.1 B and C regarding municipal waste, which could be combined for simplicity.
- **Performance Indicators:** There has been a good effort at making the Performance Indicators SMART.¹⁶ However, some comments for consideration include:
 - There are no targets so it is hard to determine if the WSS-AP has achieved its anticipated level of results. For example, under 3.2 C, the “# of water regulations reviewed or updated” is a PI, however there is no indication if 1, 3 or 5 reviews are needed. In developing the 2021-2025 Action Plan, it should be determined which, or how many, regulations or guidelines need review (either due to obsolescence or because a review may be mandated every 5 years or so). This would become the target for the Performance Indicator.
 - Many PIs indirectly represent the issue and should be revised. For example:
 - The PI associated with 2.1C (maintain and enhance monitoring) is very similar to 2.1A (prioritize and address monitoring gaps). They could be combined.
 - 3.1 B states “there are supporting guidelines identifying how Northern Performance Standards can be achieved (# of standards with supporting guidelines)”. However, the number of guidelines does not tell us whether the Northern Performance Standards still have gaps or not. A better PI would be the % of standards that have guidelines.
 - 2.1 C states “[t]he current water quality and quantity monitoring networks are maintained and/or expanded by involved partners (# of stations and location of stations).” The number of stations and their locations does not tell us about the coverage that we are interested in. Moreover, it focuses on numbers rather than information. This is particularly relevant because many measurements can be done using remote sensing (such as snowpack) and thus may not require additional stations for greater coverage. A better PI would be % of coverage, or related to 2.1 A, % of prioritized stations installed. Again, in 2.1 A “[m]onitoring gaps are identified and prioritized (# of gaps identified and prioritized).” The # of gaps is not as important as whether “gaps have been identified and prioritized over the whole of NWT or only portions”. For example, if a complete review of the Dehcho regions has identified gaps and priorities, then the PI should tell us how well we are doing at filling those gaps. The PI for 2.1 A could be “% of identified priority monitoring gaps filled”.

¹⁶ Succinct; Measurable, Appropriate, Reasonable, Time bound

- Overall, a review of PIs would help develop more targeted meta-level information. For example, improving municipal water license compliance (the measurement could be % of communities in compliance with a target of 60% by 2025) measured by inspection reports and municipal reporting. If specific indicators are not easy to determine, then proxy indicators should be sought to inform the overall point of interest –even if this is done through a combination of data and expert judgement. For example – estimating % of compliance based on a variety of data (inspections reporting, municipal annual reporting, and extent of boil water advisories, amongst others).
- Some PIs are either difficult to measure or are not being responded to consistently. For example, 2.2 B: “[c]ommunities have a sense of leadership in projects (low-medium-high, survey to community partners).” The reporting has revealed that an assessment of research licenses issued by ARI can help track if communities are participating or even leading research projects. Another example is “[s]tudents and public increase their water stewardship awareness as a result of Canada Water Week and other initiatives (change in awareness, e.g. exit surveys, community surveys).”

Surveys should be used sparingly and only as supporting indicators or when no other means is available.

➤ **Action Items:** Interviewees generally found Action Items to be reasonable, however noted that in some cases there could be more clarity. Some points for consideration include:

- developing more concrete measures and deliverables, examples include:
 - 1.1B2: “[i]dentify Challenges for Water partners”. This could be a document or White Paper.
 - 3.1 D1 discusses “setting priorities for research in waste impacts”. However, the reporting indicates that the NWT CIMP blueprints for fish and water are to be used, which make reference only to “anthropogenic impacts.” It is unclear, for example, if this meets the deliverable associated with the Action Items.
- Lead partners are not always clear (particularly within ENR where there are many divisions).
- There are places of redundancy. Examples include:
 - 1.5 A3 which is redundant based on 1.5 A1.
 - 3.1 C7 and 3.1 B1 overlap in terms of developing the same templates and guidelines.
 - There is a level of redundancy/duplication associated with reporting and updating Water Partners and Indigenous governments and organizations.

Recommendation

The 2021-2025 Action Plan should be simplified to reflect ongoing activities, such as regulatory activities, outlining how they link to

the goals of the WSS. Meta performance measures should be reported on, such as “% of communities in compliance with licenses”. Detailed and specific Keys to Success and Action Items should be elaborated that are only addressed under the 2021-2025 Action Plan.

Recommendation

Conduct a review of annual reporting requirements of Water Partners (data, timing, etc.) and assess how to streamline reporting for the 2021-2025 Action Plan.

Recommendation

A thorough review of Performance Indicators should be done to ensure they are more meaningful, and targets should be developed. Action Items should be reviewed to have specified deliverables associated with them.

2. Effectiveness

The reporting tables are summarized in [Annex B](#). Of the 147 Action Items, 18 were determined to be sufficiently lacking in completion so as to be considered “not completed” or “needing special attention”. This represents 12% of the Action Items and the effectiveness is thus determined as:

Satisfactory (S)	Level of Keys to Success and Action Items achieved was as expected (90%) and/or there were moderate short comings.
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It should be noted that no assessment was done regarding the importance of one Action Item over another and all were considered as equal for the purposes of this criterion.

1.0-Work Together

1.1 Partnership <i>Partnerships are essential for water stewardship in the NWT. No one partner is entirely responsible for water stewardship and no partner or individual is without responsibility. Partnerships can take many forms including partnerships for decision-making, funding, networking and data sharing, among others</i>	S
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Highlights:

- The Water Strategy is becoming increasingly integrated into other documents and is referenced:
 - in seven policy and framework documents¹⁷;
 - by NGOs such as Ecology North (which has a [website](#) linked directly to the WSS website) and Ducks Unlimited (which mentions the Water Strategy on its [website](#));
 - by academia such as the Wilfrid Laurier University's Centre for Cold Regions and Water Science, which has a partnership agreement with the GWNT until 2030. This partnership spawned Wilfrid Laurier's Yellowknife research office, which opened in 2017 to establish a year-round presence and deepen partnerships. Also, there are plans to develop a polytechnic university in the Northwest Territories¹⁸ and thus potential opportunities for further academic collaboration; and,
 - by several Lands and Water Boards, for example the Mackenzie Valley LWB, and the Inuvialuit Water Board (which has an active [website](#) link to the WSS).
- Annual Water Strategy Implementation Workshops held each year in Dettah (7th in November 2016; 8th in November 2017, 9th in October 2018, and the 10th in October 2019). The workshops were viewed as extremely useful. 45 out of 51 interviewees specifically noted their importance in building relationships and maintaining momentum. Interviewees supported the themes, although some felt there could be more targeted themes. Each year there are different themes: for example, the 2018 theme was "Linking Knowledges and Ways of Knowing," and it focused on the need to draw from the strengths of different knowledge systems to achieve the vision of the Water Strategy¹⁹. The 2019 Workshop had a theme of "Northern Waters in a changing climate."²⁰

1.2 Information Management

Water stewardship activities, including decision-making at all levels, must be supported by adequate, accurate, current and accessible data and information. This can be achieved by enhancing, gathering, storing, processing and delivering scientific, local and Traditional Knowledge, and developing standard protocols for data collection, storage analysis and sharing. Traditional Knowledge is an inherent part of the Water Strategy and Action Plan. Established Traditional Knowledge protocols ensure the collection and application of Traditional Knowledge is conducted in a respectful manner

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¹⁷ Northern Lands, Northern Leadership: The GNWT Land Use Sustainability Framework; Sahtù Land Use Plan Background Report; NWT Power Corporation Strategic Plan; the 2030 NWT Climate Change Strategic Framework; the 2019-2023 Climate Change Strategic Framework Action Plan; the Waste Resource Management Strategy Discussion Paper; and the Draft Waste Resource Management Strategy.

¹⁸ <https://www.cbc.ca/news/canada/north/polytechnic-university-feasibility-study-yellowknife-1.4978215>

¹⁹ <https://mackenziedatastream.ca/en/article/ninth-annual-nwt-water-strategy-implementation-workshop>

²⁰ <https://www.nwtwaterstewardship.ca/en/newsroom/northern-waters-changing-climate-10th-annual-nwt-water-strategy-workshop-october-22-23-2019>

Highlights:

- Loadstar appears to be operating well. One of the key areas is standardizing monitoring protocols, which has been quite successful. NWT CIMP and CBM projects are using standardized protocols, as are ECCC (including its promotion of CABIN). By 2019, it was reported that “all 21 communities participating in the NWT-wide CBM Program follow standardized water quality sampling protocols.”²¹
- The LWBs of the Mackenzie Valley adopted the Guidelines for Reporting Water Quality in the NWT, and approvals for the Guidelines are now with the GNWT.
- The GNWT has maintained its 63 snow stations in the 8 regions²² and publishes the information on its website.²³ However, Spring Outlook Reports were not easily accessible.
- The Mackenzie Valley Land and Water Board and the Inuvialuit Water Board have public registries for water licenses issued in their regions. Other LWBs are likely to follow suit (envisioned by 2020).
- The data portals are working well. In the 2018/19 period, the Discovery Portal had 1816 total users, while the Mackenzie DataStream had 5194 total users. The numbers were slightly down in 2019/20. 64% of interviewees felt they had access to up to date water research.
- The Mackenzie DataStream is very comprehensive, covering a large number of sites. However, it only deals with water quality.
- About 60-70% of Water Partners surveyed use western science and just under 50% use Traditional Knowledge to inform decision-making. While these numbers may seem low, they likely reflect a lack of response as opposed to a reality. What is encouraging is that the use of Traditional Knowledge is at a comparable level to the use of western science.
- Advances have been made to incorporate traditional and local knowledge into research and decision-making, as well as exchanging knowledge. The Aboriginal Steering Committee members are strong supporters of this and have links to the communities. Guidelines have been placed on websites (for example, a template is available on the Northwest Territories Métis Nation website, and a generic template has been developed by the Aurora Research Institute (ARI) which are referred to by other organisations such as the ʔehdzo Got’Inę Gots’ę Nákedı - Sahtú Renewable Resource Board (SRRB))²⁴, and a promotional video is being released in July 2020.

Areas to Improve:

- Water Partners are using water quality assurance and quality control protocols but they are not yet standardized across the programs (as was envisioned by 2020), and NWT CIMP and the LWBs are only finalizing water quality reporting guidelines (they were already envisioned to be

²¹ 2018/2019 NWT Water Stewardship Strategy Progress Review Comprehensive Raw Data Spreadsheet.

²² Dehcho Region; Inuvik Region; North Slave Region; Snare Basin; Yellowknife Basin; Sahtu Region; South Slave Region; Taltson Basin.

²³ <https://www.enr.gov.nt.ca/en/services/snow-surveys-0>

²⁴ See SRRB website.

at the implementation phase). Also, ENR and LWBs have worked on a Water Quality Baseline Guideline which is pending final approval (it was envisioned for 2018).

- Meteorological monitoring needs within GNWT still require development (1.2 A7).
- Data sources, such as the Mackenzie DataStream or snow surveys, are not used much by communities *per se*. For example, pH measurements are not as informative as discussing if water is too acidic. Plain language summaries are not necessarily being done or are not making their way to communities in a digestible format. Communities would like some simplified reporting, preferably in person, to help explain the results of research projects. Many continue to feel very much left out of understanding the implications of the research because they do not interpret the data.
- The water classification system with inclusion of traditional and local knowledge and spiritual and cultural aspects of water has been placed on hold. It was suggested this was due to amendments of the *Waters Act*. However, amendments to the *Waters Act* may provide a good opportunity to incorporate additional knowledge and values into water legislation of NWT.
- Overall, respondents to the 2019-2020 Water Stewardship Strategy Progress Review survey indicated that more work is needed in incorporating traditional and local knowledge and values in decision-making. Only 50% felt that Traditional Knowledge was being adequately included in research, and only 30% felt it was adequately incorporated in AEMPs. This is despite Terms of Reference for developers to incorporate Traditional Knowledge into AEMPs and guidance documents for Traditional Knowledge inclusion in research being developed. This was also supported in the interviews where people generally felt that effort was being made to include Traditional Knowledge but that more was needed.

The low estimation of incorporation of Traditional Knowledge into research and AEMPs may be due in part to a lack of communication once research or investigations have been conducted (see 1.3 below). One interviewee noted that it would be beneficial to develop something that university researchers, and others, could read or listen to, or a forum for interaction that focuses on Traditional Knowledge related to water.

Recommendation

Create a taskforce to produce a White Paper by 2021 on improving the use of Traditional Knowledge) into decision-making and research. Examine, if are people using the tools, is there a lack of communication and reporting; or what other issues can be advanced?

The taskforce should contain a broad range of Water Partners to ensure various perspectives are taken into consideration, including governments, agencies, and academia, amongst others. During the final presentations of the evaluation several organisations indicated an interest in participating in such a task force including DFO's Fisheries Joint Management Committee, and Wilfrid Laurier University. Part of the Terms of Reference for the taskforce on Traditional Knowledge should include a review of similar arrangements in other jurisdictions and concerning other sectors, such

as the work done by the Species at Risk team concerning caribou, the Policy Framework for Mobilizing Traditional Knowledge in Fisheries, and the management guidelines developed for Wood Buffalo National Park.

<p>1.3 Communication and Engagement <i>Good communication and engagement are necessary for building effective relationships among Water Partners and the public. Ongoing communication and engagement are required to keep the public informed and aware of water stewardship activities.</i></p>	<p>S</p>
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Highlights

- The Water Strategy has a well-developed website that contains good information on the upcoming events, annual workshops, and links to water partner activities. There was a high level of appreciation for the transparency of the website and information available by those interviewed. All progress reports were confirmed to be available on the website, while some documentation is lacking (see Section 6-Transparency).
- Most Water Partners interviewed (70% non-ENR interviewees) are made aware of the progress of the WSS-AP through the Annual Implementation Workshop and through the annual progress review summary reports. The simplicity and visual representations in the progress report were viewed very favourably.
- Periodic updates and emails were also noted favourably.
- The Aboriginal Steering Committee convened between 5 and 7 times annually, and provided guidance to between 8 and 11 projects annually. Several were on an ongoing basis, such as the Tracking Changes project.
- The Aboriginal Steering Committee is seen as one of the cornerstones of the Water Strategy by both the Aboriginal Steering Committee and community members, as well as other Water Partners in general. The importance of the Aboriginal Steering Committee should be underscored, both in terms of substantive input and by providing a structure for true input and ownership from communities:
 - Providing guidance to projects on engaging Indigenous governments and organizations. For example, the Northern Waters Future project, development of the CABIN monitoring plan, and the Tracking Changes Project;
 - Ensuring that Traditional Knowledge is incorporated in key activities such as the bilateral transboundary water management agreements with Alberta and BC; and,
 - Ensuring that the direction and activities undertaken in the WSS-AP incorporate and consider the interest of Indigenous governments and organizations and their communities.

Areas to Improve

- The 2020 water partner survey indicated that only 50% of those who responded were satisfied with the implementation of the WSS-AP. This is contradictory to the findings of the interviews, conducted as part of this evaluation, in which almost all of the interviewees indicated that they were generally satisfied with the progress, with the exception of a few specific areas. For example improving accessibility of information for municipal water quality.
- While the website is extensive, it requires updating and maintenance. There are numerous reports which are either missing or outdated (see section 6 –Transparency for details):

1.4 Capacity Building, Leadership, Training, and Education

The continued success of the Water Strategy is linked to increased local capacity, technical skills, knowledge of water stewardship and to actively engaging with youth. Capacity development through education and training is crucial to the successful achievement of the Water Strategy goals.

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Highlights

- Training through the CBM and NWT CIMP programs have helped improve community participation, with some organisations advancing rapidly. Of note, the Dehcho AAROM program coordinates the Dehcho portion of the CBM program and has the capacity to carry out monitoring for DFO, the University of Waterloo, University of Alberta, the Edehzhie Protected Area and Enbridge pipeline. They are planning a Guardians training course in 2020-21 which will include water sampling and other research techniques useful for projects. ARI is intending to develop outreach and virtual field training methods. In light of COVID 19, promoting virtual training and peer to peer local learning is beneficial and cost effective.

Recommendation

Create a taskforce to develop a strategy to encourage/promote peer to peer learning between communities. Such as: explore the option of opening up the Dehcho Guardian training course to other organisations; build local capacity to conduct training, not only in sampling but also in applying guidelines for research; and promote local sustainability and awareness, amongst others.

- Approximately 13 learning camps have occurred through the On the Land Collaborative, Tracking Changes and other programs. Camps have been held that focus on inter-generational learning, such as the Sahtú Water Camp held in 2019. Make Way (formally known as Tides Canada) continues to support training and Guardian initiatives.

- Schools and public education have been targeted through a variety of means including posting training material on the WSS website and notably linking with Ecology North to conduct in-classroom training, as well as three Youth Water Stewardship Gatherings in Yellowknife. The 2019 Youth Water Stewardship Gathering focused on promoting awareness around water treatment and the impacts of bottled water.

Areas for Improvement

- One of the principle complaints across the communities interviewed was the lack of providing monitoring results to communities in plain language, which is clearly outlined in Action 1.4.A.1.
- A 2017 review of the CBM program recommended “identifying capacity-building targets and indicators at regional and community scales, in addition to encouraging monitors to undertake self-assessments so that capacity-building and the impacts of the training can be better monitored and understood”. Action Item 1.4.A.3 has not been fully realized.
- Many local communities interviewed during this evaluation indicated they were not confident that their drinking water was safe. This is clearly an area which requires further education and awareness building.

Recommendation

Make mandatory the presentation (in-person, video, radio or phone) of monitoring results for any research or development related studies using either local guidelines (if available) or templates developed by ARI - a simple “Findings Description” that could be read on the radio or at meetings.

1.5 Transboundary Discussions, Agreements and Obligations

Successful transboundary discussions, agreements and obligations with neighbouring jurisdictions help ensure that the waters of the NWT remain clean, abundant and productive for all time.

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Highlights

- At least 7 meetings have occurred to advance transboundary agreements. These related primarily to align the 2002 Yukon-NWT Transboundary Water Management Agreement with the more recently completed Mackenzie River Basin Agreements (2018), and with Saskatchewan (in 2015 and 2016). Technical level discussions have occurred with Saskatchewan since 2017, and discussions with Nunavut are anticipated once they have developed a Water Strategy.
- GNWT and ECCC are continuing routine monitoring of surface water quality and quantity, and augmented mercury monitoring in the Hay River in support of the Alberta-NWT Agreement. A

biological indicators workshop took place in January 2018 to begin planning biological monitoring for the Hay and Slave Rivers. Benthic macroinvertebrate monitoring began in 2017 and is continuing.

- An agreement was signed with Alberta in 2015. A notification process was recently developed with Alberta. Information and annual reports from the Alberta-NWT Agreement are being published and are available on-line.
- The BC-NWT Agreement was established in 2015 and a Bi-lateral Management Committee established with its first meeting in 2019.

Areas for improvement

- Work to advance the BC-NWT Agreement it is lagging behind in the establishment of a notification mechanism, multi-year work plans, and annual reporting.

It must be acknowledged that when dealing with other jurisdictions there is only limited control in being able to advance their agenda for negotiation. In the case of BC, as an upstream entity, advancing the BC-NWT Agreement may be less of a priority than for the NWT.

2.0-Know and Plan

<p>2.1 Aquatic Ecosystems, Water Quality and Quantity <i>Groundwater and Biological Components: considerable research and monitoring efforts are needed to more fully understand the structure and function of aquatic ecosystems, including water quality, water quantity, groundwater and biological components in the NWT. Knowledge gaps must be identified to set priorities. Development of research and monitoring can assist in monitoring, and mitigating, impacts and cumulative effects on NWT waters.</i></p>	S
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Highlight

- There are some 197 stations/sites (103 hydrometric stations and 94 water quality sites), not including SNP and AEMP sites, being run through ENR, ECCC, communities and Water Partners.
- In 2016, 2 new sites were established at Daring Lake and Hoarfrost River. The Daring Lake site is a hub of scientific research and monitoring in the NWT, and prioritizes monitoring for Climate Change.
- In 2019, ECCC began planning to introduce training for the CABIN monitoring protocol.
- Wetland classification has advanced with Ducks Unlimited Canada (DUC) having completed remote sensing in the Akaitcho and Dehcho traditional territories. They are also piloting a NWT classification in Dinàgà Wek'èhodì, Ts'udé Niljné Tuyeta, and Thaidene Nënë.
- NWT CIMP has blueprints to assist with involving communities in research planning as well as the Pathway Approach. NWT CIMP also promotes research being used in decision-making (each year there were 15-24 projects) and over 25 peer reviewed papers were on the Discovery Portal.

- Partnerships have been developed: the Tracking Change research project; the SRDP (includes academic, community, territorial and federal government and indigenous partners); Bottled Water Use on the Land; Northern Water Futures program; the SRRB also continued to partner with University of Waterloo's Human Biomonitoring project with the communities of Fort Good Hope, Tulít'a and Délı̨nę to support community knowledge about the safety of local water and country foods consumption.

Observation: The partnership arrangements vary in detail. There may be benefit to try and make them more consistent.

- The Arctic digital elevation model (DEM) has been released for the entire circumpolar region, including the NWT, to 5 metre resolution and will be improved to 2 metre resolution as data becomes available.
- Source water protection is advancing: the Bottled Water on the Land project identifies opportunities for source water protection planning, public education and outreach needs. Youth have conducted 20 interviews in several communities.
- AEMP guidelines were finalized in 2019.

Areas for Improvement

- The identification of gaps and priorities for monitoring networks is not completed. ECCC is doing a risk assessment based on national priorities and methods, and is nearing publication. Financial constraints are a barrier to establishing a full network.
- The work being conducted by DUC has not yet been shared. While the information is available, there needs to be agreement set up with the relevant organisations and authorities from the areas where the wetland mapping has occurred to share the results with GNWT and specifically the NWT Centre for Geomatics.
- All water research projects could follow the NWT CIMP example of requiring community engagement.
- AEMPs should be encouraged to follow the standard guidelines (finalized in 2019).
- Project-specific environmental assessments may not be the only tool for a comprehensive assessment of cumulative impacts that relate to many projects across time and space – work with NWT CIMP to develop a better tool that has a longer range focus than what is needed for a project specific environment assessment.
- The Makenzie River hydraulic model forecasting tool to assess climate and industrial impacts has not been developed.
- Comments during interviews (primarily academics) emphasized the need to have clarity on research priorities which would help with funding opportunities both within and outside the NWT. This is somewhat in contrast to the findings of the 2017 survey and discussion at the Annual Workshop²⁵ that concluded that specific research priorities could not be set due to the

²⁵ GNWT (2017) [NWT Water Strategy Research Priorities](#): Summary of Survey Results and 2017 NWT Water Strategy Implementation Workshop Discussion

interconnection within nature. Instead, broad research topics were determined and a recommendation for supporting collaborative research approaches and existing NWT research protocols was made. Using this approach, researchers could start with the identified broad research topics and then determine specific priorities in collaboration with communities and Water Partners.

- It is important to ensure that data generated from projects conducted during the Action Plan continue to be easily accessible following their completion. An example of this is C-Core’s Slave River and Delta and Great Slave Lake Community-Based Water Portal. C-Core is an NGO and the remote sensing monitoring project was completed. The data gathered throughout this project is available on C-Core’s web portal – NWT Water Monitoring Service (looknorthservices.com/watermonitoring/). C-Core’s main project webpage indicates that “The information gathered is easily accessible by the Government of the Northwest Territories and communities through the LOOKNorth Services platform”[1]. However, the project webpage does not explain how to access the data which requires access through a login, and navigational menu. It would be worth considering how to store and make the data more accessible over the long term to NWT Residents.
- More emphasis is needed on source water protection planning with only 4 initiatives being started during the past 5 years.

Recommendation

For the 2021-2025 Action Plan, conduct a review of community concerns for providing direction for research and activities. Areas of concern and research topics should be reviewed annually by the Aboriginal Steering Committee (and new WP Advisory Committee). Maintain a discussion session at the Annual Workshop to ensure continued appropriateness.

2.2 Collaborative Approach to CBM <i>Taking a collaborative approach to community-based monitoring fosters a wide range of innovations and benefits, including increased awareness of water stewardship issues, improved traditional and local knowledge collection and application, and increased direct community involvement in research and monitoring program design.</i>	S
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Highlights

- The NWT-Wide Community-Based Water Quality Monitoring (CBM) Program is highly effective with approximately 40 ENR water quality sites being monitored by 21 communities. This approach is working particularly well for the Dehcho AAROM program, which could be used as a model for other communities. However, follow up and reporting results and information needs improvement both within the CBM and other research projects (see above).

- By 2019, according to the ARI research license database, 52% of research projects actively involved communities, and 16% were led by communities. These represent more than 25% increase over 2016/17 values.
- In 2019, Dechinta delivered four courses accredited by the University of British Columbia and University of Alberta on land and water guardianship.

3.0-Use Responsibly

3.1 Municipal <i>Compliance with municipal water licenses, consideration of Traditional Knowledge in the municipal water licensing process, ongoing sharing of information on municipal drinking water, and improving municipal waste and wastewater systems are essential for ensuring communities have confidence in their drinking water, and municipal waste and wastewater systems</i>	MS
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Activities under the “Use Responsibly” component have generally progressed as envisioned under the WSS-AP in most areas, but are lagging behind in improving sharing information on drinking water, which is of key interest at the community level.

Highlights

- Good progress was made with respect to improved municipal waste and wastewater systems in the NWT through waste management activities and the development of standards and guidelines (3.1 B), municipal licensing and compliance (3.1 C), policy and research (3.1 D), facilitating clarity and understanding for industry of the regulatory process (3.2 A) and water license compliance (3.2 B).
- The CSA Standard W203²⁶ – Planning, design, operation and maintenance of wastewater treatment in northern communities using lagoon and wetland systems - was developed in collaboration with NWT Land and Water Boards and Government agencies from the Northwest Territories and Nunavut, and was published in June 2019.
- The LWBs all have standardized websites and have developed resources for municipalities. For example, templates for guidelines and licenses.²⁷
- The IWB has access on their website to guidelines and waste management plans and licensing.²⁸
- The Waste Resource Management Strategy and Implementation Plan was released in 2019. The Waste Reduction and Recycling Initiative, and Investing in Canada Infrastructure Plan (ICIP) are all being used. The Good Engineering Practice for Northern Water and Sewer Systems, Second Edition was updated and released in 2017; and ECCC Guidelines for Solid Waste

²⁶ <https://climatechange.toolkitnwtac.com/wp-content/uploads/sites/21/2019/08/Planning-Wastewater-CSA.pdf>

²⁷ <https://mvlwb.com/resources/resources-municipalities>

²⁸ <https://www.inuvwb.ca/applications/guidelines>

Management for Northern and Remote Communities has been developed and is available online.²⁹

- The Clean Up Clean Start program is underway; in 2019/2020 ENR worked with Fort Simpson.
- For 2018 and 2019 between 62%-67% of municipal water license holders submitted annual reports, and SNP monitoring.

Areas for Improvement

- Improving information about drinking water is important. The www.nwtdrinkingwater.ca site is not working, and community drinking water data from MACA appears not to be updated (last Drinking Water Report was 2016 and a raw data chemical report is from 2018) or is difficult to access (at least for the public) and refers to the Mackenzie DataStream as a source of information. The drinking water web page³⁰ from MACA has no substantive information other than boil water advisories (from HSS).
- The HSS drinking water web page³¹ contains video of how to clean a water tank, and links to the boil water advisory page. However, the www.nwtdrinkingwater.ca link does not work.
- Neither site mentions the map of drinking water catchment from the NWT Centre for Geomatics³².
- Drinking water is of particular concern for communities and effort should be made to simplify access to that information, particularly for those who are not necessarily familiar with technology.
- Finalize the discussions on NWT Guidelines for Municipal Landfills to improve leachate management practices for landfills in the NWT (3.1 B 4).

Recommendation

*Drinking water is important to communities and information should be centralized at one webpage that is easily accessed from a variety of websites (including WSS). Create a **single page** accessed by HSS and MACA with all relevant information and eventually have updated data, maps, and explanations allowing easy access of “information” for the public.*

²⁹ <https://www.canada.ca/en/environment-climate-change/services/managing-reducing-waste/municipal-solid/environment/northern-remote-communities.html>

³⁰ <https://www.maca.gov.nt.ca/en/services/drinking-water-nwt>

³¹ <https://www.hss.gov.nt.ca/en/services/drinking-water-quality>

³² <http://www.geomatics.gov.nt.ca/maps.aspx?i=8>

3.2 Industrial <i>Improve understanding of water use, waste and wastewater processes and of the role that guidelines and regulations play to ensure Water Partners continue to participate effectively in regulatory and environmental assessment processes.</i>	S
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Highlights

- The Compliance Enforcement Policy was completed in 2019 and over 108 inspections took place since 2016.
- MVLWB and IWB have tools available, and have conducted workshops on building understanding around industrial water licensing. More than 50% of those surveyed acknowledged improved understanding of roles and responsibilities, and the regulatory process.
- Regulatory guidelines were reviewed;³³ The *Waters Act* is under review and set to be completed by 2023; AEMP Guidelines were finalized in March 2019.

Areas for improvement

- The water classification system is still on hold. This would help develop site specific Water Quality Objectives.
- There has been no advance on surface and groundwater monitoring for oil and gas development.

4.0-Check Our Progress

4.1 Routine Checks <i>Develop and implement regular reviews of the WSS and the Action Plan to ensure progress is being made and to adjust actions as necessary.</i>	HS
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- Keys to Success and Action Items are reported annually, with a high rate of reporting.³⁴ Progress reports are available for all years, and annual Performance Indicator and Action Item tracking sheets were supplied by ENR for each year. The Annual WSS Implementation Workshop has been held each year.

³³ *Water Quality Baseline Guidelines* (pending final approvals); *Aquatic Effects Monitoring Program Guidelines* (finalized in conjunction with LWBs in March 2019); and, *Guidelines for Hydrocarbon Contaminated Soil Treatment Facilities* (completed in 2020).

³⁴ Raw reporting spreadsheets for 2016/17; 2017/18; 2018/19 and draft 2019/2020.

4.2 Independent Evaluation <i>Undertake an independent evaluation to determine progress and to identify emerging challenges and actions required to deal with new challenges.</i>	S
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- This evaluation has followed all the agreed procedures.

3. Efficiency

Highly efficient (HE)	The benefits and advantages of participating in the Water Strategy far outweighed the level of effort and resources spent by the Water Partners.
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The efficiency was determined by “the extent to which results have been delivered in relation to the resources expended relative to an institution or organisation.” To put in another way, “was it worth the effort and time to be involved with the WSS-AP”?

- There was an overwhelmingly positive response, whereby 95% of interviewees agreed it was beneficial to participate in the WSS-AP. The top reasons were:
 - The WSS-AP has evolved to provide a communication and network platform between the different Water Partners. This has stimulated new relationships resulting in either:
 - enhanced outcomes (for example, the MRBB is working on a *State of the Aquatic Ecosystem Report* with input from people connected through the Water Strategy);
 - new activities through collaboration (for example, ECCC is now working to develop a CABIN monitoring plan in the NWT); or,
 - peer to peer learning (for example, communities and Renewable Resource Boards mentioned that they have met other communities doing similar work and can share experiences and knowledge at a more profound level).
- 3 interviewees felt that reporting for the WSS-AP could be greatly simplified as they already had similar reporting requirements at different times of the year and there was duplication.
- 2 participants felt that the effort was not really worth it – as they did not see the overall point in the WSS-AP.

Recommendation

Conduct a review of annual reporting requirements of Water Partners (data, timing, etc.) and assess how to streamline reporting for the 2021-2025 Action Plan.

4. Sustainability

Likely (L). There is little or no risk to sustainability,	Less than 5% of Action Items are at risk of not being continued or not having benefits post 2020.
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- Interviewees felt one of the biggest challenges to sustaining the Water Strategy was ensuring financial resources, particularly as the WSS is made up of different groups and organizations and there is no specific funding umbrella. For example, many interviewees would like to expand the CBM Program, but are not sure how to achieve this without additional financing. It should be noted that the mandated water related activities of the LWBs and GNWT will continue. The diverse funding mechanisms for the Water Strategy has its advantages and disadvantages:

Diverse Funding Mechanism	
Advantages	Disadvantages
<p>Not dependent on a few sources of funding.</p> <p>Flexibility to engage in new areas of activities quickly.</p> <p>Helps to build partnerships and synergistic activities with potentially large impact from finite resources.</p> <p>Core seed funding can have a multiplier effect beyond its resources (for example the Annual Workshop), and be used to leverage additional funding.</p>	<p>Priorities of funding agencies can shift. It is hard to obtain long term commitment from organisations particularly if it involves the private sector (as is often the case with new technologies).</p> <p>No guarantee of continued funding, particularly for research.</p> <p>Difficult to plan long term activities and impacts.</p>

- Fortunately, the Gordon Foundation is committed to long term support for the Mackenzie DataStream, and has obtained a Core Trust Seal rating indicating that it is stable. Also, the Mackenzie DataStream is very high profile and is being replicated in other areas and is becoming a well-established component of the Foundation's activities.
- Based on an assessment of all the 147 Action Items, less than 5% were estimated to be at risk of not being continued or not having benefits post 2020. These included:
- 3.2 C 7 - Develop Guidelines for Surface and Groundwater Monitoring for oil and gas development, as there has been no activity reported on this to date and there is nothing to indicate it will begin (It could be simply a lack of reporting).

- 2.1 E 10 - The technical transfer for the Climate Impacts Tracking Analysis System application was completed during the 2016/17 fiscal year. The full development of the application has been paused pending funding. There has been no further development since the initial pilot was developed due to resource restraints.
- 2.1 I 2 - In 2019/20, ENR continued to work in partnership with C-Core, who is leading the Slave River and Delta and Great Slave Lake Community-Based Water Portal project. This was the final year of funding for the program. The program monitored key environmental indicators using both satellite imagery and community-based sampling data. Indicators included: temperature, ice build-up, suspended sediment, and chlorophyll. All data are currently available through free and accessible online services on C-Core's web portal – NWT Water Monitoring Service (looknorthservices.com/watermonitoring/). Long-term housing for the data needs to be addressed. The web portal was launched in 2017 with water quality, temperature, and sediment data for the Slave River and Delta region. It is an NGO, and perhaps the activity was used as a pilot to see if more long term funding would be of interest.
- Some of those interviewed indicated that there needs to be more focus on 'achievements' vs simple 'reporting' to maintain interest and momentum among some Water partners.

Recommendation

Assess the commitments of partner organizations in terms of their projected activities and timelines for inclusion in the 2021-2025 Action Plan.

5. Building awareness

Unsatisfactory (U)	The WSS is not commonly known among the general public or communities.
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- Most interviewees felt that there was not a good awareness from the general public or communities regarding the WSS and water issues.
- Increasing public and student awareness of the WSS and water issues is important and is specifically addressed in 1.3 as well as 1.4B and 1.5A. Its importance is evidenced as one of the main discussion topics at the 10th Annual NWT Water Strategy Implementation Workshop October 22-23, 2019, Dettah, NT.
 - "Increase awareness of Water Partners' implementation initiatives towards water stewardship in the NWT, emphasizing those that link with climate change".

- This was also noted in the 2015 evaluation report: “key informants credit the roll out of the Water Strategy with helping to raise awareness about water issues and the importance of water stewardship”.³⁵
- The WSS has a functioning website but needs to do more to draw attention to itself and water issues. The Annual WSS Implementation Workshop in November and Water Week in March are a couple of anchor points around which news and media can be leveraged. Consider creating another anchor point in June/July. Anchor points will allow the media to “get ready” and expect some editorial or news item.
- Consider creating a student art competition at the end of the school year. The winner has their piece as one of the logos for the Annual Workshop.
- Also, transboundary issues appear of interest and any time development issues in Alberta or BC are in the media, there could be a note indicating the WSS is working to keep the water safe etc. There are important issues to galvanize the public interest such as the changes to the Slave Delta due to activities in upstream provinces.
- Ecology North has conducted events during Water Week, as well as in schools, and has targeted education through a variety means, including posting training materials and working with teachers.³⁶ They also have a web page on their site discussing and linking to the WSS. One suggestion was to have government staff and academics participate in a student awareness event, possibly in May before exams.
- Only 6 of the 24 websites reviewed had links to the WSS (Annex E).

Recommendation

Create a taskforce to produce a simple “awareness building strategy” for WSS and water issues to the public which considers, for example:

-Creating anchor points for media reporting each year (Water Week – March, Annual Conference –November, and develop one for the summer);

-Encouraging Water Partners to put links to the WSS on their sites;

-Providing simple “Findings Descriptions” that are ready to be broadcast on the community radio or read at meetings.

-Approaching partners to write a short article each month for newspapers or for CBC or Cabin radio (contact media agencies to discuss the possibility).

- Using the transboundary work to galvanize public interest.

³⁵ *Independent Evaluation of the NWT Water Stewardship Strategy Implementation: Evaluation Report*, Harry Cummings and Associates and Shared Value Solutions Ltd. 22 September 2015

³⁶ <https://ecologynorth.ca/resources/environmental-education-resources/>

It was emphasised during the Aboriginal Steering Committee meeting on the 5th August that, if possible, some funding should be considered to determine community perspectives on and opinion of the Water Strategy Action Plan.

Recommendation

Ensure that during the last year of the 2021-2025 Action Plan community members (public) are consulted regarding their perspectives on and the opinion of the Water Strategy Action Plan.

6. Transparency and Ownership

Satisfactory (S)	The WSS-AP is transparent, with minor shortcomings: the website is fully operational with access to all the data and reports, and is updated on a quarterly basis; Aboriginal Steering Committee meetings are held when they are planned; information is sent out on a scheduled basis; annual reporting is conducted; decision-making is open and transparent. The WSS transparency of the WSS-AP is delivered as expected.
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- The Water Strategy website (www.nwtwaterstewardship.ca) is extensive and contains access to databases, maps, and resources (including publications, Annual Workshop and progress reports, updates and ad hoc updates on various programs such as CBM, source water protection, and transboundary water). However, the website requires updating and maintenance. For example:
 - There is no search engine which is needed for the public to access information.
 - Only Annual Workshop reports are available for 2016 and 2017.
 - The CBM program,³⁷ Source Water Protection,³⁸ Drinking Water, program pages appear not have been updated since 2015.
 - Transboundary Waters has been updated as recently as 2017. There is more information on the ENR website –however, links should be made to provide easy access from the Water Strategy site.
 - There is no link to download the 2019-2020 Calendar³⁹ – despite there being a calendar placed on the web.⁴⁰
- The Aboriginal Steering Committee was viewed by those interviewed as helping to provide credibility and guidance to the WSS-AP activities. A similar Water Partner Advisory Committee (which could meet less frequently or through tele-communications) could help provide a similar role for access to other Water Partners on an ongoing basis.

³⁷ <https://www.nwtwaterstewardship.ca/en/community-based-monitoring>

³⁸ <https://www.nwtwaterstewardship.ca/en/source-water-protection>

³⁹ <https://www.nwtwaterstewardship.ca/en/calendars-0>

⁴⁰ https://www.nwtwaterstewardship.ca/sites/water/files/resources/3479_nwt-water-stewardship-calendar-layout-eng-final-web.pdf

Recommendation

Create a Water Partner Advisory Committee (with TORs) alongside the Aboriginal Steering Committee to provide ongoing guidance during the course of the implementation of the 2021-2025 Action Plan. Revise deliverables and priorities, and create taskforces as needed.

Recommendation

Use the structure of creating taskforce groups (ad-hoc or as needed) to tackle certain issues, based on the technical Inter Departmental Committee on Drinking Water.

- The WSS-AP is still viewed as “Made in Yellowknife” – basically a government led initiative. Some community members view it with scepticism. There is an interest to promote greater ownership of the WSS-AP by other Water Partners. This was also noted in the 2015 independent review.⁴¹

Recommendation

Improve the web site to reflect the variety of the partners and perspectives to give it a more collective feel and less of a government feel. For example, while improving the content, also the colours and font should be changed.

Recommendation

Consider moving some of the meetings of the Aboriginal Steering Committee around the NWT to provide exposure in smaller communities, based on logistics and financing.

- Interviews with community and renewable resource boards indicated that information is not readily available from research projects, or is often confusing, and consequently is not passed on. There is a previous recommendation associated with presenting findings.

7. Traditional Knowledge and Decision Making

The inclusion of traditional and local knowledge underlies much of the WSS-AP. It is promoted in a variety of ways, including:

- By the Aboriginal Steering Committee by providing guidance to the WSS-AP as well as researchers and communities, and by providing opportunities for knowledge holders to give guidance and input at regulatory workshops, meetings and hearings;
- Integrating technologies for information collection and sharing on the land and water;

⁴¹ Recommendation 4 (see [Annex D](#))

- Including traditional and local water-related knowledge in existing school curriculums and science fairs;
- Supporting intergenerational on-the-land camps;
- Developing Traditional Knowledge Research Guidelines (Templates are available at ARI, and from specific region such as the Sahtú Region, and some Indigenous governments such as the NWT Métis Nation);
- Providing opportunities for researchers and Traditional Knowledge holders to interact and exchange experiences and knowledge;
- Supporting community-led water related Traditional Knowledge projects;
- Defining and implementing Traditional Knowledge monitoring priorities related to cumulative impacts;
- Working to ensure opportunities to include traditional and local knowledge in municipal water licensing are clearly communicated;
- Working to ensure that Traditional Knowledge and community concerns are included in projects or monitoring programs such as AEMPS for industrial activities in the NWT.

Specific activities include:

- A review of Traditional Knowledge frameworks for bilateral water management agreement decision-making and their applicability in implementing the Alberta-NWT Bilateral Water Management Agreement;
- Storytelling panels and presentations at the Water Strategy Implementation Workshop in October 2019;
- Supporting community-led water-related Traditional Knowledge projects (e.g. Tracking Change through which 37 representatives of Indigenous groups from across the Mackenzie Basin attended the Global Knowledge Symposium in March 2019).

Despite the advances in promoting Traditional Knowledge, community members emphasized that more work is needed, not only with regard to inclusion in research and decision-making, but also in enhancing governance aspects of communities over their water resources. In this regard, the idea of developing local and/or regional WSS was seen as an initial step.

Recommendation

Encourage local and/or regional water stewardship strategies that help inform the territory wide strategy to help advance awareness and input at the local and regional level.

Communities expressed concern about simply being given data or a report. There needs to be more ‘communication’ to relay ‘information’. In this regard, they indicated that all research should have to produce a plain language summary as well as a simple “findings description” on the implications of the research and findings. Ideally something that could be read on the radio or

read at a meeting (See Awareness Raising). Moreover, it is important to involve communities in the planning and implementation whenever possible.

8. Future Challenges and Priorities

- The two key issues which were seen as priorities by those interviewed were water quality and climate change. As previously discussed 95% felt climate change was a pressing issue.

Recommendation

The introduction to the 2021-2025 Action Plan should emphasize the importance of climate change concerns which should be an underlying thread weaved throughout the Action Plan.

- Of those interviewed, approximately 70% felt water quality was a leading priority in the NWT, and 60-70% of those interviewed brought up climate change as one of the major priorities for the 2021-2025 Action Plan. These numbers were higher when talking to the communities and local resource boards. It was noted that many of the issues are interlinked. For example, climate change may be having negative effects on water quality and thus impacting fish. Research should acknowledge that interlinkage. Specific topics were identified by community members such as:
 - Water quality concerns due to upstream activities (principally in BC and Alberta). Communities are very concerned with what is in their water and are focused on upstream activities (mining, oil and gas, dams in BC, Hg in fish etc.).
 - Water quality concerns due to localized activities like leachate from landfills and the impact of climate change and changes to permafrost.
 - Changes in water quantity and timing of flows, ice melting, erosion and slumping, loss of habitat.

These findings are supported by the research priorities initially identified in the 2017 survey and discussion at the Annual WSS Implementation Workshop.⁴²

- The community monitoring work is very popular as it is a positive step towards greater involvement of communities with resource monitoring. In particular, the CBM program is appreciated. Interviews indicate that there is a desire to expand the scope of the ENR CBM program, such as expanding CABIN to the community level, as well as expanding community monitoring to other communities. This will require additional financing. See previous recommendation on expanding CBM and other community monitoring activities.

⁴² [NWT Water Strategy Research Priorities: Summary of Survey Results and 2017 NWT Water Strategy Implementation Workshop Discussion](#), GNWT (2017).

- Priorities expressed by communities:
 - Incorporating Traditional Knowledge into decision-making in a meaningful way was identified as an ongoing challenge (see discussion under Traditional Knowledge).
 - Promoting Traditional Knowledge along with western science continues to be a challenge, and is a priority.
 - Taking data and making it into information. Communities expressed concern about simply being given data or a report. There needs to be more 'communication' to relay 'information'.
- Traditional/Indigenous governance of water is a priority for communities.
- Building awareness of the Water Strategy.
- COVID 19 will bring some challenges and opportunities:
 - *Challenge:* COVID-19 had hindered many on the ground activities. For example, ENR and Acho Dene Koe First Nation initiated discussions to begin gathering Traditional Knowledge on groundwater in the Liard Basin; however, the project was put on hold due to COVID-19.
 - *Opportunity:* develop distance learning and peer to peer training programs where possible.

Recommendations and Conclusions

The Water Strategy has been a keystone initiative strategy in helping to solidify and coalesce water initiatives in the NWT. As such it has provided a strong platform for communication, networking, and synergy building between the various Water Partners, agencies and communities. The underlying approach to integrate and promote traditional and local knowledge is impressive and worthy of recognition. It should be continued and emphasized in the 2021-2025 Action Plan. With some managerial and structural adjustments, the 2021-2025 Action Plan could be even more successful at advancing the goals of the Water Strategy than its predecessor.

The following recommendations are summarized for consideration when developing the 2021-2025 Action Plan.

Recommendation 1	<i>Develop the 2021-2025 Action Plan to be a forward-looking plan that emphasizes direction to agencies, LWBs, RRBs, and academics.</i>
Recommendation 2	<i>Improve linkages with the NWT CIMP (which is currently developing its 2021-2025 Action Plan) and consider including a NWT CIMP person in the development of the WSS 2021-2025 Action Plan and vice versa. Also</i>

	<i>improve linkages with the 2030 NWT Climate Change Strategic Framework and its 2019-2023 Action Plan, and GNWT Land Use Sustainability Framework, amongst others.</i>
Recommendation 3	<i>Create a Water Partner Advisory Committee (with TORs) alongside the Aboriginal Steering Committee to provide ongoing guidance during the course of the implementation of the 2021-2025 Action Plan. Revise deliverables and priorities, and create taskforces as needed.</i>
Recommendation 4	<i>Use the structure of creating taskforce groups (ad-hoc or as needed) to tackle certain issues, based on the technical Inter Departmental Committee on Drinking Water.</i>
Recommendation 5	<i>The 2021-2025 Action Plan should be simplified to reflect ongoing activities, such as regulatory activities, outlining how they link to the goals of the WSS. Meta performance measures should be reported on, such as “% of communities in compliance with licenses”. Detailed and specific Keys to Success and Action Items should be elaborated that are only addressed under the WSS-AP.</i>
Recommendation 6	<i>Conduct a review of annual reporting requirements of Water Partners (data, timing, etc.) and assess how to streamline reporting for the 2021-2025 Action Plan. .</i>
Recommendation 7	<i>A thorough review of Performance Indicators should be done to ensure they are more meaningful, and targets should be developed. Action Items should be reviewed to have specified deliverables associated with them.</i>
Recommendation 8	<i>Create a taskforce to produce a White Paper by 2021 on improving the use of Traditional Knowledge in decision-making and research by 2021. Examine, if are people using the tools, is there a lack of communication and reporting, or what other issues can be advanced?</i>
Recommendation 9	<i>Make mandatory the presentation (in-person, radio, video or phone) of monitoring results for any research or development related studies using either local guidelines (if available) or templates developed by ARI - a simple “Findings Description” that could be read on the radio or at meetings.</i>
Recommendation 10	<i>Create a taskforce to develop a strategy to encourage/promote peer to peer learning between communities. Such as: explore the option of opening up the Dehcho Guardian training course to other organisations; build local capacity to conduct training, not only in sampling but also in applying guidelines for research; promote local sustainability and awareness,</i>

	<i>amongst others.</i>
Recommendation 11	<i>Encourage local and/or regional water stewardship strategies that help inform the territory wide strategy to help advance awareness and input at the local and regional level.</i>
Recommendation 12	<i>Improve the web site to reflect the variety of the partners and perspectives to give it a more collective feel and less of a government feel. For example while improving the content, also the colours and font should be changed.</i>
Recommendation 13	<i>Consider moving some of the meetings of the Aboriginal Steering Committee around the NWT to provide exposure in smaller communities, based on logistics and financing.</i>
Recommendation 14	<p><i>Create a taskforce to produce a simple “awareness building strategy” for WSS and water issues to the public which considers, for example:</i></p> <ul style="list-style-type: none"> <i>-Create anchor points for media reporting each year (Water Week – March, Annual Conference –November, and develop one for the summer);</i> <i>-Encourage Water Partners to put links to the WSS website on their sites;</i> <i>-Provide simple “Findings Descriptions” that are ready to be broadcast on the community radio or read at meetings.</i> <i>-Approach Water Partners to write a short article each month for newspapers or for CBC or Cabin radio (contact media agencies to discuss the possibility).</i> <i>- Use the transboundary work to galvanize public interest.</i>
Recommendation 15	<i>Ensure that during the last year of the 2021-2025 Action Plan community members (public) are consulted regarding their perspectives on and the opinion of the Water Strategy Action Plan.</i>
Recommendation 16	<i>The introduction to the 2021-2025 Action Plan should emphasize the importance of climate change concerns which should be an underlying thread weaved throughout the Action Plan.</i>
Recommendation 17	<i>Drinking water is important to communities and information should be centralized in one location that is easily accessed from a variety of websites (including WSS). Create a single page accessed by HSS and MACA with all relevant information and eventually have updated data, maps, and explanations allowing easy access of “information” for the public.</i>
Recommendation 18	<i>For the 2021-2025 Action Plan, conduct a review of community concerns for providing direction for research and activities. Areas of concern and research topics should be reviewed annually by the Aboriginal Steering</i>

	<i>Committee (and new WP Advisory Committee). Maintain a discussion session at the Annual Workshop to ensure continued appropriateness.</i>
<i>Recommendation 19</i>	<i>Assess the commitments of partner organizations in terms of their projected activities and timelines for inclusion in the 2021-2025 Action Plan.</i>

Annex A – List of Interviewees

Group or Organization	Name	Date
Aboriginal Steering Committee (ASC) - Kátl'odeeche First Nation	Patrick Riley,	28th April
ASC - Acho Dene Koe FN	Meghan Buckham	28th May
ASC – Salt River First Nation	Donny Beaulieu	23rd April
ASC – North Slave Métis Alliance	Jessica Hurtubise & Catherine Fauvelle	12 th May
ASC – Gwich'in Tribal Council.	Kanda Gnama	15 th May
ASC - Sahtù Secretariat Inc.	Leon Andrew, SRRB Research Director/ASC	22 nd May & 3 June
ASC - NWT Métis Nation	Tim Heron,	19 th May
ASC - Inuvialuit Regional Corporation – (Aklavik Hunters & Trappers Committee)	Michelle Gruben	15th May
ASC - Gwich'in Tribal Council	Godlove Ngeh,	not interviewed (attended ASC meeting Aug 5)
Aurora College	Mike Palmer	27th April
Aurora Research Institute		
Dehcho Aboriginal Aquatic Resource and Oceans Management Program (Dehcho AAROM)	Mike Low	22nd May
Ducks Unlimited Canada (DUC)	Barrett (Sonny) Lenoir	1 St May
Ecology North	Katherine Thomas	5th June
Environment Canada and Climate Change	Pippy, Kerry (EC)	30th April
	Kirsty Gurney,	3rd June
	Brittany Armstrong	4 th June
Environment and Natural Resources, Government of the Northwest Territories (ENR)	Tyler Farrow	20th & 23rd April
	Meghan Beveridge	8th May
	Rick Walbourne	11th May
	Robin Staples	13th May
	Wendy Bidwell	22nd May
	Jeanne Arsenault	20th May
	Lorraine Brekke	27th May
	Bruce Hanna	3 June
	Shawne Kokelj	27th May
Health and Social Services, Government of the Northwest Territories (HSS)	Allen Torng	8th May
Mackenzie Valley Land and Water Board	Heather Scott (+ Kimberly Murray)	6th May

Mackenzie River Basin Board (MRBB)	Paula Siwik	22nd May
Mackenzie Valley Environmental Impact Review Board (MVEIRB)	Mark Cliffe-Phillips, Executive Director	14th May
Municipal and Community Affairs, Government of the Northwest Territories (MACA) + IDWC	Justin Hazenberg	15th May
NWT Centre for Geomatics, Government of the Northwest Territories	Melanie Desjardins	24th April, 2020
Sahtù Renewable Resource Board (SRRB)	Deborah Simmons, Executive Director	22nd May, 3 rd June
	Kirsten Jensen, Community Conservation Planner	22nd May
	Catarina Owen, Communications and Policy Analyst	3rd June
	Jessie Yakeleya, Research Intern	3rd June
MakeWay (formerly Tides Canada)	Steve Ellis	5 th June
Wilfrid Laurier University	Mike English	6th May
Community Member - Wek'èezhì	Joseph Judas	12th May
Northwest Territory Métis Nation	Allen Heron	26th May
Gordon Foundation	Lindsey Day (DataStream Manager)	26th May
Inuvik Hunters & Trappers Committee	Jimmy Kalinek	26th May
Ehdiitat Gwich'in Renewable Resources Council	Jessi Pascal	11th May
President Tulít'a Renewable Resources Council	Gordon Yakeleya, President SRRB	3rd June
Norman Wells - Tulít'a Renewable Resources Council	Doug Yallee	3rd June
Fort Good Hope Renewable Resource Council	Daniel Jackson,	3rd June
Fort Good Hope Community & Yamoga Land Corporation	Anne Marie Jackson,	3rd June
U of A, Tracking Change project	Tracey Howlett,	3rd June
Sahtù Renewable Resource Board (SRRB)	Jessie Yakeleya, Research Intern	3rd June
University of Waterloo	Mylène Ratelle,	3rd June
	Kelly Skinner,	3rd June
	Candice Dimock,	3rd June
Advisor to Sahtú - Northern Environmental Consulting	Colin MacDonald,	3rd June
Norman Wells Land	Rhea McDonald	3rd June
Déḻṉę members of the Ṉę K'ə Dene Ts'ı̱ Forum	Walter Bezha	12 th June
	Michael Neyelle	12 th June

Annex B - Summary Tables of Keys to Success and Activity Item Reporting

1.1 Work Together – Partnerships	
1.1 A - Ensure the Water Strategy is integrated with watershed and natural resource planning and management frameworks in the NWT (e.g. land-use planning framework, recreational land management framework, energy priorities framework, conservation planning and climate change strategy).	
<i>The Water Strategy is integrated with other frameworks, strategies and plans (# of documents referencing the Water Strategy)</i>	7 documents refer to WSS
1.1.A.1. Establish partnerships with organizations to ensure the Water Strategy vision and goals are considered in watershed and natural resource planning and management frameworks.	
1.1 B - Ensure Water Partners understand their roles and responsibilities for implementing the Water Strategy.	
<ul style="list-style-type: none"> • <i>Water partners feel a sense of shared ownership in the implementation of the Water Strategy (low-medium-high, survey Water Partners).</i> • <i>Lead and supporting partners are actively engaged in specific Keys to Success (low-medium-high, survey Water Partners).</i> 	35 of 50 aware and 30 of 47 actively engaged
1.1.B.1. Create and routinely update a plain language document outlining Water Partners' roles and responsibilities for the Water Strategy and Action Plan.	Plain doc developed 2018, with audio version
1.1.B.2. Identify challenges for lead and supporting Water Partners for each Key to Success through routine dialogue and formal or informal reviews	Annual workshop held each year

1.1 B.3. Identify opportunities for Water Partners to support Water Strategy initiatives by developing and implementing initiatives through collaborative partnerships and available funding opportunities	Opportunities are identified ad hoc through partnerships
1.2 Information Management	
1.2 A - Improve data collection and data and information management for water and water-related monitoring programs.	
<ul style="list-style-type: none"> • <i>Data from historical and current water quality programs coordinated by ENR are uploaded and managed under Lodestar2 (# of data sets uploaded).</i> • <i>Mackenzie DataStream is utilized (# of user accounts in the NWT).</i> • <i>Protocols for water quality monitoring are in place to help ensure that when similar data are collected, it is collected in ways to ensure comparability across programs (# of monitoring programs using consistent protocols).</i> • <i>Data from Surveillance Network Program (SNP) sites are reported consistently and appropriately stored and managed (% of the data that is electronically accessible).</i> • <i>The ENR website provides current and historical snow data (# of data sets).</i> 	12 projects monitored in Loadstar in 2019 alone; 22 of 43 organisations had standard protocols in place.
1.2.A 1. Establish standardized water quality sampling protocols (e.g. sample and data collection protocols) to ensure data are comparable across programs (e.g. Surveillance Network Program (SNP) and CBM Program, and Aquatic Effects Monitoring Programs (AEMPs)	NWT CIMP projects, ECCC projects, and all 21 CBM communities using standardized protocols
1.2.A 2. Standardize quality assurance and quality control protocols across programs (e.g. SNP and NWT-wide Community-based Water Quality Monitoring Program).	WPs are using quality control protocols, but not standardized across the programs.
1.2.A 3. Develop and implement guidelines on metadata to determine if water quality data sets are comparable and regional assessments can take place.	NWT CIMP and LWBs are finalizing water quality reporting guidelines.

1.2 A 4. Develop guidelines to establish water quality baseline to help ensure that similar data are collected, and collected in ways that are comparable across programs.	Guidelines are under final review
1.2 A 5. Establish protocol to store, manage and report data from SNP sites.	MVLWB adopted Guidelines and awaiting approval from GNWT
1.2 A 6. Coordinate snow surveys, including collection, data management, archiving and dissemination.	Surveys are available for 8 regions on line
1.2 A 7. Coordinate weather monitoring needs within the GNWT (supplementary to those filled by Environment Canada), along with the development of a robust system to guide the collection, reporting, management, archiving and dissemination of GNWT data.	Discussions have started but no system of reporting etc developed.
1.2 A 8. Establish and maintain a licensed water use inventory (i.e. use and location)	Established only in MVLWB.
1.2 B - Improve the sharing of monitoring and research data and findings among Water Partners and with the public.	
<ul style="list-style-type: none"> • <i>The NWT Discovery Portal and Mackenzie DataStream are utilized (# of users per month and # of downloads/uploads).</i> • <i>Site users can easily access data from NWT Discovery Portal and Mackenzie DataStream (low-medium-high level of accessibility, survey).</i> • <i>Water partners know where to access water-related data (% of Water Partners, survey Water Partners).</i> 	<i>63 snow monitoring sites; Discovery Portal has approx. 140 users/month; Mackenzie data stream over 200 users/month</i>
1.2 B 1. Water partners continue to use and populate the NWT Discovery Portal with monitoring and research findings.	On average 60% of users are from the NWT
1.2 B 2. Data collected through the NWT-wide Community-based Water Quality Monitoring program are shared publicly (e.g. through the Mackenzie DataStream).	Good data portal, but only raw data. Plain Language Summaries are not always sent

1.2 B 3. Long-term monitoring results that are compiled in existing databases are made available to Water Partners on request.	Data is available on request online
1.2 B 4. Update the NWT water monitoring inventory on a regular basis and include a research section in the inventory.	Monitoring Inventory Updated in 2019.
1.2 C - Ensure the effective use of traditional, local and western scientific knowledge in water stewardship initiatives, decision-making processes and implementation of water-related programs.	
<ul style="list-style-type: none"> • <i>Components of the Action Plan have an underlying approach to using traditional, local and western scientific knowledge (# of approaches under each component).</i> • <i>Water partners use traditional, local and western scientific knowledge to inform decision-making (% of Water Partners, survey water partners).</i> • <i>Water partners have access to western science that is up-to-date and peer-reviewed (% of Water Partners, survey Water Partners).</i> 	60-70% use western science and just under 50% use Traditional Knowledge to inform decision making
1.2 C 1. With collaborative input from traditional, local and western scientific knowledge holders, continue working together to develop effective approaches towards implementing the different components of the Action Plan to inform water stewardship decisions.	About 60% surveyed agree - should expect more like 80%
1.2 C 2. Integrate technology (e.g. tablets) for information collection and sharing on the land with elders, youth and other land users.	Testing of tablet program scheduled for 2020 - COVID delay
1.2 C 3. Promote the use of plain language formats to help facilitate understanding and translation of materials into Aboriginal languages.	Video to be released in summer 2020 - is delayed
1.2 C 4. Communicate with and support technical experts/researchers to present information tailored to NWT communities (e.g. by using the existing template, Communicating Results with Communities).	ARI has templates for making plain language summaries etc.
1.2 C 5. Continue to explore the development of a water classification system that supports the inclusion of traditional and local knowledge and spiritual and cultural aspects of water in decision-making (also see Key to Success 3.2 C).	On hold due to <i>Waters Act</i> amendments

1.2 D - Promote the use of traditional and local knowledge in ways that help ensure water stewardship activities respect community values.	
<p><i>Traditional knowledge is reflected in research presentations at the annual Water Strategy implementation workshop (# of presentations).</i></p> <ul style="list-style-type: none"> • <i>Communities are satisfied with how traditional and local knowledge are included in research taking place in the NWT (low-med-high, survey community partners).</i> • <i>Traditional knowledge and community concerns are incorporated in the Aquatic Effects Monitoring Programs (AEMPs) for major industrial undertakings in the NWT (low-med-high, survey community partners).</i> 	50% respondents were satisfied with how TK was being included in research and about 30% about being incorporated into AEMP
1.2 D 1. Support the implementation of Traditional Knowledge protocols.	ASC supported and protocols in place on some websites.
1.2 D 2. Establish Traditional Knowledge research guidelines for the Sahtù region.	Web site refers to ARI Guidelines
1.2 D 3. For research supporting Water Strategy implementation, researchers, regional organizations and community members discuss and communicate about how data will be stored, used and shared.	A promotional video was developed and will be released July 2020
1.2 D 4. Work to ensure that Traditional Knowledge and community concerns are included in projects or monitoring programs such as AEMPs.	Developer TOR require TK input, LWBs host community meeting
1.3 Communication and Engagement	
1.3 A. Effectively maintain communications among Water Partners and the public on Water Strategy implementation progress	
<ul style="list-style-type: none"> • <i>Water partners are aware of Water Strategy implementation progress (low-medium-high, survey Water Partners).</i> • <i>The NWT Water Stewardship website is utilized (amount of web traffic per month).</i> 	<50% satisfaction with the implementation of WSS

1.3 A 1. Water partners provide updates on their implementation activities, including reports, videos, workshops and webinars, and these are posted on the NWT Water Stewardship website.	The WSS is updated, but could be more recent
1.3 A 2. Use plain language tools and products to make progress reporting available to water partners.	Progress reports are very appreciated
1.3 B. Maintain the roles and responsibilities of the Aboriginal Steering Committee (ASC).	
<ul style="list-style-type: none"> • The ASC meets on a regular basis (# of meetings held per year). • <i>The ASC provides guidance on implementation of the Action Plan (# of projects where guidance was provided).</i> 	5-7 ASC meetings held annually; 8-11 projects get guidance
1.3 B 1. Serve as the liaison between their respective Aboriginal governments or organizations and the Water Strategy	ASC works well with communities
1.3 B 2. Report regularly on the Water Strategy to their communities and leadership on ASC activities and Water Strategy implementation initiatives.	ASC reports using letters, meetings etc.
1.3 B 3. Provide advice to Water Partners on how to effectively engage Aboriginal governments or organizations and NWT communities with respect to implementation activities and information sharing.	Between 8-11 WP/ annum received guidance
1.3 B 4. Provide advice to Water Partners, where appropriate, on work and activities related to Traditional Knowledge.	TK input into transboundary agreements, Tracking Change, and WSS
1. 4 B 5. Report on relevant regional initiatives at ASC meetings.	Reporting done at meetings
1.4 Work Together – Capacity Building, Leadership Training and Education	
1.4 A - Increase community capacity in water management, and aquatic research and monitoring.	

<ul style="list-style-type: none"> • <i>Communities are involved in water research and monitoring programs, e.g. in the NWT-wide Community-based Water Quality Monitoring Program (# of involved communities, #of programs in which communities are involved).</i> • <i>On-the-land capacity-building opportunities are provided by Water Partners (# of programs and availability).</i> • <i>Community members are involved in project management and logistics (# of projects led by communities and # of projects where communities are involved in logistics).</i> • <i>Sampling protocols are used in community-based monitoring programs to ensure data comparability (survey community partners).</i> 	84% of the communities involved in CBM; 14 organisations provide on-the-land training
1.4 A 1. Provide monitoring results to communities in the appropriate context and in plain language formats.	NWT CIMP required to provide presentations, More is needed
1.4 A 2. Develop or promote existing culturally appropriate tools and processes when involving communities in research and monitoring activities	A training video for grab samples for CBM. However, simple tools are needed
1.4 A 3. Establish measurable indicators for capacity-building within community-based monitoring programs. Monitor and report on indicators over time	Measurable indicators have been recommended but not made
1.4 A 4. Support ways to tie traditional and local water-related knowledge into the existing school curriculums and science fairs.	Bi-annual Youth Fairs, Tracking Changes and Ecology North
1.4 A 5. Promote local and distance learning opportunities for community-based water monitors and future water leaders (also see Keys 2.2 A and 2.2 B).	NWT CIMP and Dehcho AAROM have conducted training.
1.4 A 6. Promote intergenerational on-the-land water education/leadership camps as a way of involving communities in monitoring and research, and to interact with scientists.	Approx 13 on the ground camps held.
1.4 A 7. Post relevant information on the NWT Water Stewardship website.	Water Stewardship Website developed in 2019.
1.4 B - Promote the importance of water and water stewardship through educational and public outreach activities and communication products.	

<ul style="list-style-type: none"> • <i>Students and public increase their water stewardship awareness as a result of Canada Water Week and other initiatives (change in awareness, e.g. exit surveys, community surveys).</i> 	68 Outreach activities conducted - mostly around Water Week
1.4 B 1. Deliver water educational programs and participate at science fairs to discuss protection of aquatic ecosystems.	in classroom training with Ecology North
1.4 B 2. Identify opportunities for Water Partners to support each other's educational initiatives (including sharing of electronic and physical resources).	Training materials are on the WSS web site
1.4 B 3. Coordinate and develop activities to celebrate Canada Water Week.	Approx 60 events
1.4 B 4. Provide educational programs and workshops about water treatment in the NWT.	Youth Gatherings and plant visits
1.4 B 5. Conduct research and educate residents on the costs (environmental and economic) of imported bottled water versus tap water.	new organizations signed up to serve local water
1.5 Transboundary Discussions, Agreements and Obligations Successful transboundary discussions, agreements and obligations with neighbouring jurisdictions help ensure the waters of the NWT remain clean, abundant and productive for all time.	
1.5 A - Successfully negotiate bilateral transboundary water management agreements with neighbouring jurisdictions.	
<ul style="list-style-type: none"> • <i>Agreements are completed or updated (# of completed or updated agreements).</i> • <i>Provide opportunities for input to the Aboriginal Steering Committee and to Aboriginal government representatives, where appropriate (# of opportunities to provide input).</i> • <i>Provide opportunities for input from the public, where appropriate, in different plain language formats (e.g. website) (# of opportunities to provide input).</i> 	no new agreements developed, but ASC has provided input, and limited opportunities for public input
1.5 A 1. Continue to develop NWT interests, mandates and options to inform transboundary negotiations in partnership with Aboriginal governments.	Intention documents are being developed
1.5 A 2. Advance negotiations and sign bilateral transboundary water management agreements with the remaining respective jurisdictions.	at least 7 meetings have been convened with Yukon and Saskatchewan
1.5 A 3. Continue public engagement and consultation with Aboriginal governments during negotiation processes	linked to 1.5 A 1

1.5 A 4. Communicate with Water Partners, Aboriginal governments and the public about the progress of negotiations, through plain language materials and the NWT Water Stewardship website.	conducted in ASC meetings and Progress Review Reports,
1.5 B - Successfully implement bilateral transboundary water management agreements	
<ul style="list-style-type: none"> • <i>Progress on activities in the implementation work plan for each agreement has been made within established timelines</i> (# of activities where progress has been made and # of activities completed). • <i>An annual report on the implementation of each agreement is completed (# of reports completed).</i> • <i>Provide opportunities for input from the public, where appropriate, in different plain language formats (e.g. website)</i> (# of opportunities to provide input). 	9 opportunities for public input at meetings; 18 activities completed and 13 underway for Alberta-NWT; 3 activities completed for BC-NWT
1.5 B 1. Establish a Bilateral Management Committee for each completed agreement.	Alberta established Bi-lateral commission, BC is advancing
1.5 B 2. Create and implement a multi-year work plan for each completed agreement	Work plan established with Alberta, BC is continuing to discuss.
1.5 B 3. Monitor and learn about aquatic ecosystems, including surface and groundwater quality and quantity, biology and traditional use, in the transboundary watersheds.	GNWT and ECCC continue to monitor
1.5 B 4. Establish information sharing and prior notification mechanisms with neighbouring jurisdictions.	Established with Alberta but not BC
1.5 B 5. Communicate with Water Partners, Aboriginal governments and the public about the progress of implementation, through plain language materials, the NWT Water Stewardship website and other formats as appropriate.	reports and website

2.1 Know and Plan – Aquatic Ecosystems, including Water Quality, Water Quantity,	
2.1 A - Continuously review and prioritize implementation of water monitoring networks (long-term water quality and quantity programs) and develop plans to address monitoring gaps.	
<ul style="list-style-type: none"> • <i>Monitoring gaps are identified and prioritized (# of gaps identified and prioritized).</i> • <i>Plans are in place to address gaps and implemented as resources permit (# of gaps addressed).</i> 	Monitoring gaps not yet prioritized. Financial constraints a barrier
2.1.A.1. Long-term data sets are prioritized when reviewing current water monitoring networks to allow for trend and climate change analyses.	2 sites established and CC monitoring prioritized
2.1 A 2. Identify and prioritize monitoring gaps and identify options to address gaps in a holistic manner.	Priorities not yet identified, ECCC has a risk based approach, but financial constraints
2.1 A 3. Make information on reviews and revisions to monitoring programs available to Water Partners.	Water Office, Canada Open Portal and Makenzie DataStream
2.1 B - Increase understanding of the aquatic ecosystem and establish common approaches to monitor key aspects of aquatic ecosystem health in the NWT.	

<ul style="list-style-type: none"> • Agencies that conduct monitoring identify common approaches to gather water-related data (# of common approaches). • Findings from aquatic ecosystem monitoring and research are communicated to Water Partners (# of communications and # of presentations at the annual workshop). • Advance on establishing a wetland inventory for the NWT (# of pilot sites tested, # of wetlands inventoried). 	PIs not adequately reported on - presentations etc?
2.1 B 1. Develop consistent approaches to monitor aquatic ecosystem health required under transboundary water management agreements.	NWT and Alberta advanced
2.1 B 2. Work with organizations that conduct monitoring to communicate their protocols and identify common approaches to gather information about aquatic ecosystem health.	NWT CIMP asks for standardized protocols, CABIN is being introduced
2.1 B 3. Advance the establishment of a wetland inventory approach using remote sensing imagery.	DUC conducted field work, but needs agreement with ENR to share info
2.1 B 4. Test wetland inventory approach at pilot sites.	NWT wetland mapping classifications of three key areas: Dinàgà Wek'èhodì, Ts'udé Niljné Tuyeta, and Thaidene Nene.
2.1 B 5. Follow guidance documents, like the Working Together Towards Relevant Monitoring and Research in the NWT4, to ensure community engagement and existing information is identified and considered when developing a research project	NWT CIMP requires community engagement, and Pathway Approach.
2.1 B 6. Communicate aquatic ecosystem monitoring and research findings to Water Partners.	Posted on WSS web, Makenzie DataStream and Discovery Portal
2.1 B 7. Publish monitoring trends analysis reports and plain language documents for the long term river monitoring programs.	reports developed for Great Slave Lake, Hay river,

	Coppermine and Peel river etc.
2.1 B 8. Carry out the research project Tracking Changes5 to determine social and ecological changes based on local and Traditional Knowledge in watersheds in the Mackenzie River Basin.	Tracking Changes has continued and on track
2.1 C - Maintain and enhance, where feasible, the existing water quality and quantity monitoring networks in the NWT.	
<ul style="list-style-type: none"> <i>The current water quality and quantity monitoring networks are maintained and/or expanded by involved partners (# of stations and location of stations).</i> 	197 stations/sites (103 hydrometric stations and 94 water quality sites). Note: excludes SNP and AEMP sites
2.1 C 1. Establish and maintain monitoring agreements and partnerships with interested third parties (academic institutions, industry or different levels of governments) to maintain and/or enhance existing water quality monitoring networks.	ENR has 34 site and an additional 40 sites in collaboration with 21 communities, ECCC manages 38 sites
2.1 C 2. Establish and maintain monitoring agreements and partnerships with interested third parties (academic institutions, industry or different levels of governments) to maintain and/or enhance existing water quantity monitoring networks.	42 stations funded by ECCC, 20 by GNWT, 23 jointly by ECCC and GNWT, and 18 by third parties.
2.1 C 3. Implement monitoring agreements and partnerships as necessary.	Agreements are in place
2.1 D - Implement a groundwater monitoring network in the NWT.	
<ul style="list-style-type: none"> <i>Priorities for groundwater monitoring are identified for the NWT and transboundary areas (# of priorities identified).</i> 	3 basins/sites have been ID as priorities
2.1 C 1. Establish a hydrogeologist position at ENR.	Filled in 2016
2.1 C 2. Determine the existing state of the knowledge of NWT groundwater resources.	A Best Practices Report conducted, being reviewed prior to publication

2.1 C 3. Explore how Traditional Knowledge can inform the state of the knowledge of NWT groundwater resources and monitoring priorities.	ENR and Acho Dene Koe First Nation discussions in the Liard Basin,
2.1 C 4. Identify priorities for future groundwater monitoring for the NWT and transboundary areas.	Liard and Hay river basins identified.
2.1 E - Improve the assessment of cumulative effects on water from climate change and industrial development.	
<ul style="list-style-type: none"> • <i>Monitoring and research information generated by NWT CIMP can be used to support environmental decision-making and the wise use of resources (# of NWT CIMP funded projects that can contribute to an environmental decision).</i> • <i>NWT CIMP generates credible and unbiased environmental monitoring and research data informed by western science and Traditional Knowledge, including information about environmental trends, cumulative impacts and baseline conditions (# of final reports posted on the NWT Discovery Portal, # of peer-reviewed papers published, # of partners or partner organizations with whom NWT CIMP is working).</i> • <i>Water use and water quality data collected through Surveillance Network Programs (SNPs) and Aquatic Effects Monitoring Programs (AEMPs) are comparable and compiled in accessible data sets that can be used for analysis of regional water quality variability (# of AEMPs and SNPs that are comparable and follow standard monitoring framework/protocols).</i> 	15-24 projects /annum support decision making; final reports are on Discovery Portal, approx 25 peer reviewed papers, NWT CIMP works with 32 partners, 4 AEMPs - partially comparable
2.1 E 1. Analyse existing information to identify cumulative effects on water and aquatic ecosystems in prioritized or specific areas.	MVEIRB considers cumulative effects in environmental assessment -no clear priority
2.1 E 2. NWT CIMP results are made available to regulatory decision-makers, technical reviewers, Aboriginal organizations, industry and the public.	NWT CIMP results made available
2.1 E 3. Use available information on cumulative effects in regulatory decision-making.	MVEIRB to consider cumulative effects in every environmental assessment
2.1 E 4. Communicate the methods and approaches undertaken by regulatory boards to assess cumulative effects to Water Partners.	TOR examples are available, workshops held annually

2.1 E 5. Address high priority cumulative impact monitoring questions by key regulators for water and fish.	NWT CIMP Blueprints on Fish and Water available
2.1 E 6. Define Traditional Knowledge monitoring priorities that support cumulative impact assessment.	NWT CIMP promotes TK, and communities determine the focus
2.1 E 7. Implement Traditional Knowledge monitoring priorities that support cumulative impact assessment.	As Above
2.1 E 8. Determine trends in environmental quality, potential contributing factors to changes in the environment and the significance of those trends.	State of the Environment Report was completed in 2016, next 2022
2.1 E 9. Support cumulative effects research taking place in the NWT and communicate research findings to Water Partners.	NWT CIMP makes available all info on Discovery Portal
2.1 E 10. Complete technical transfer of Climate Impacts Tracking Analysis System to the NWT Centre for Geomatics and create web map tool for this information.	The project is on hold due to funding.
2.1 E 11. Update the Mackenzie River Basin Hydrological Model to investigate hydrological trends and quantify the effects of climate change and industrial development on water quantity in the Slave River watershed.	The hydrological forecasting model has not been developed.
2.1 E 12. Explore approaches to assess the vulnerability of watersheds to climate change.	waiting on 2.1 E 11
2.1 F - Increase the use of biological indicators in aquatic monitoring to assess ecosystem health.	
<ul style="list-style-type: none"> • Increase the capacity of Water Partners to monitor biological indicators (# of people trained in biological monitoring per year). • Water partners increase the use of biological indicators to assess ecosystem health (# of programs/projects with a biological component). 	more than 200 trained in monitoring; at least 58 projects with biological component
2.1 F 1. Further identify how more biological indicators can be part of ongoing aquatic monitoring, with a focus on lower trophic levels to provide early warnings about changes in the aquatic ecosystem.	studies have been done to collect benthic invertebrates

2.1 F 2. Integrate biological indicators into aquatic monitoring by building on current biomonitoring initiatives, relevant research in the NWT and transboundary water management agreement implementation.	Contract completed to explore integration of data sets.
2.1 G - Integrate social science into water-related research to improve understanding of the human dimensions of water management (e.g. governance, adaptation, food and water security, sustainable livelihoods, and linking different knowledge systems).	
<ul style="list-style-type: none"> Increased number of projects that integrate or draw on social science (e.g. governance, adaptation, food and water security, sustainable livelihoods, and linking different knowledge systems) in water-related research (# of research projects with social science focus issued by Aurora Research Institute). Relevant research projects are communicated to Water Partners and discussed at annual implementation workshops (# of presentations). 	Approximately 20 research projects with social focus (26 indirect) issued by ARI
2.1 G 1. Explore partnerships to undertake collaborative social science research that builds on identified research priorities for the Water Strategy.	at least 5 partnerships developed
2.1 G 2. Water partners support research exploring NWT residents' and communities' interactions and relationships with the aquatic environment.	MRBB's Traditional Knowledge and Strengthening Partnerships (TKSP) Committee & SOAER
2.1 G 3. Explore the ways social science research and partnerships can inform water management in the NWT	Water partners conducting research - not clear what
2.1 H - Identify research priorities to strengthen and inform the goals of the Water Strategy.	
<ul style="list-style-type: none"> A collaborative approach among Water Partners is used to identify research priorities that are linked to the goals of the Water Strategy (# of Water Partners participating in the process). The priorities represent an interdisciplinary approach to water management (# of disciplines identified in the research priorities). 	This is not clear how well this is being achieved
2.1 H 1. Water partners identify research priorities for each goal of the Water Strategy.	Consensus in 2017, but needs

	local input.
2.1 H 2. Communicate research priorities to academic institutions.	ARI supports inclusion of community interests through POLAR licensing.
2.1 H 3. Report and review research priorities at annual implementation workshops.	
2.1 I - Build upon existing geomatics capacity and capabilities in the NWT to collect and analyse water-related information to fill identified monitoring gaps.	
<ul style="list-style-type: none"> • <i>Geomatics capacity and capabilities are used to address existing monitoring gaps (# of monitoring programs using geomatics capabilities).</i> • <i>The digital elevation model for the NWT is updated (% of the area of the NWT that is updated).</i> 	12 WPs currently using geomatics tools
2.1 I 1. Share information about existing water-related geomatics and/or remote sensing uses to interested Water Partners.	Inventory of Landscape Change human disturbance data set, which now displays water license information
2.1 I 2. Water-related indicators using remote sensing imagery are monitored and information is publically accessible	Yes for some areas - data no longer readily available
2.1 I 3. When new data are acquired, improvements are made to the existing digital elevation model, which in turn can improve the hydrological model for the NWT	The Arctic digital elevation model (DEM) has been released for the entire circumpolar region, including the NWT.
2.1 J - Continue to support source water protection planning in NWT communities.	

<ul style="list-style-type: none"> • <i>Source water protection planning is integrated into existing initiatives (# of initiatives).</i> • <i>Communities find value in source water protection planning tools to protect their local source water (low-medium-high, survey to community partners).</i> 	4 projects are integrating source water protection planning. No survey conducted
2.1 J 1. Engage with NWT residents to identify key concerns about their source water.	the Source Water Assessment and Protection guidance document done / residents not engaged
2.1 J 2. Link source water protection planning to land and water management, including supporting communities to develop source water protection plans where requested	20 interviews carried out in Délı̨nę, Fort Good Hope, and Tulita.
2.1 J 3. Use source water protection planning to support and communicate about the importance of municipal water licensing	The LWBs/IWB undertake indirect initiatives to promote source water protection planning
2.2 Know and Plan – A Collaborative Approach to Community-based Monitoring	
2.2 A - Ensure continued support of aquatic community-based monitoring programs.	
<ul style="list-style-type: none"> • <i>Community members are involved in aquatic research activities (low-medium-high, survey to community partners).</i> • <i>Communities have a sense of leadership in projects (low-medium-high, survey to community partners).</i> 	21 communities trained and 19 active in 2019 in CBM - communities standardizing methods
2.2 A 1. Continue to support community-based monitoring programs to build capacity, ensure proper data collection and analysis, and communicate results to communities and decision-makers.	21 communities trained and 19 active in 2019 in CBM - communities standardizing methods
2.2 A 2. Ensure community-based monitoring collects data relevant to local decision-making and helps to address community concerns	Within the Dehcho this is well developed, but not with other communities

2.2 A 3. Conduct a five-year review of the NWT-wide Community-based Water Quality Monitoring Program.	CBM comparison report being developed, science explainers will be available on Makenzie DataStream by 2020
2.2 B - Improve community participation and leadership in aquatic research projects.	
<ul style="list-style-type: none"> • <i>Community members are involved in aquatic research activities (low-medium-high, survey to community partners).</i> • <i>Communities have a sense of leadership in projects (low-medium-high, survey to community partners).</i> 	community participation in and leading of research projects has increase 25% since 2016
2.2 B 1. Work with community monitors and others to build capacity to participate in and undertake research projects.	Dechinta delivering accredited courses
2.2 B 2. Provide information about research activities via newspaper and radio.	no indication radio or local newspaper being used
2.2 B 3. Create and implement a plan to hand over responsibility and leadership of applicable research projects to communities.	no specific plan but as capacity increases more responsibility is taken up by communities

3.1. Use Responsibly – Municipal	
3.1 A - Improve the sharing of information on municipal drinking water in the NWT.	
<ul style="list-style-type: none"> • <i>NWT communities understand the roles and responsibilities related to municipal drinking water (low-medium-high, survey NWT community governments).</i> • <i>Members of the public access the drinking water website (# of visits).</i> 	no survey and no website

3.1 A 1. Provide information to NWT residents on treatment and distribution of municipal drinking water by maintaining the new drinking water website and producing annual reports.	The new website www.NWTdrinkingwater.ca is not running. Recent data is not available in MACA site
3.1 A 2. Continue to promote water tank maintenance and provide educational information.	Health and Social Services (HSS) and MACA continue to encourage annual water tank cleaning when possible. Instructional videos providing directions on how to clean your water tank are available on the HSS website.
3.1 A 3. Maintain or enhance the current public drinking water database containing chemical sampling results and weekly bacteriological samples.	Not accessible from MACA site
3.1 A 4. Maintain the Circuit Rider Program training for water treatment plant operators, including routine maintenance, record keeping, course delivery for certification and drinking water sampling.	MACA maintains circuit rider program with 19 communities involved.
3.1 A 5. Upgrade remote monitoring of drinking water parameters at specific water treatment plants.	Currently 13 systems installed 3 more scheduled for 2020
3.1 A 6. Complete upgrades of water treatment plants to meet the Canadian Guidelines for Drinking Water Quality.	Final water treatment plant to be installed 2020 (COVID dependant)
3.1 B - Improve municipal waste and wastewater systems in the NWT through waste management activities and the development of standards and guidelines.	
• <i>There are supporting guidelines identifying how Northern Performance Standards can be met (# of standards with supporting guidelines).</i>	<i>3 guideline documents were released in 2019/20, 1 of which is currently out for public</i>

	<i>review</i>
3.1 B 1. Create and update guidelines to improve wastewater treatment systems in the NWT.	the CSA W203 was developed; MVLWB and IWB have templates and on line resources;
3.1 B 2. Work towards Northern Performance Standards that align with the national Wastewater and Sewage Effluent Regulations for northern wastewater treatment systems.	Northern Working Group Established for Wastewater; ECCC working on performance standards
3.1 B 3. Develop visual communication material with clear descriptions of the various processes for municipal water licenses and the respective roles and responsibilities.	Both IWB and MVLWB have guidelines and templates
3.1 B 4. Finalize NWT Guidelines for Municipal Landfills to improve leachate management practices for landfills in the NWT.	ECCC developed Guidelines for Northern Communities in 2017, specific ones for NWT are still being discussed
3.1 B 5. Implement NWT Guidelines for Municipal Landfills.	Developing, CSA Solid Waste Sites in Northern Communities, some municipalities use ECCC Solid Waste
3.1 B 6. Identify opportunities to enhance community waste infrastructure through ongoing initiatives (e.g. Waste Reduction and Recycling Initiative and the Household Hazardous Waste Collection, and review of funding structure for solid waste management activities).	The Waste Resource Management Strategy ; the Waste Reduction and Recycling Initiative; Investing in Canada Infrastructure Plan (ICIP) is being used
3.1 B 7. Update the Good Engineering Practices for Northern Water and Sewage Systems.	Updated and released in 2017
3.1 C - Improve municipal water license compliance by addressing challenges and	

providing support and training.	
<ul style="list-style-type: none"> • <i>Support to maintain and improve compliance is offered in communities (# of communities and # of meetings, survey Land and Water Boards).</i> • <i>Identified challenges and community questions are successfully addressed (low-medium-high, survey Land and Water Boards and Senior Administrative Officers).</i> 	62%-67% of municipal water license holders submitted annual reports, and SNP monitoring.
3.1 C 1. Clarify the approach to measure municipal water license compliance in a meaningful and comprehensive manner.	Not completed, but viewed as a priority
3.1 C 2. Track and report on number of inspections of municipal water licenses.	Done annually, 13 in 2016 and 26 in 2018.
3.1 C 3. Develop and implement a plan to enhance municipal water license compliance and address community issues and concerns.	Plan to enhance municipal compliance still being developed by LWB & IWB
3.1 C 4. Identify items, such as training, support and outreach activities, that would enable communities to apply for, or comply with, their municipal water license.	MACA developing Source Water protection course, IWB annual workshop, tools and templates
3.1 C 5. Work with municipalities to ensure unauthorized waste is not accepted at the landfills.	Addressed through water license process
3.1 C 6. Support communities by providing technical support and training for monitoring of Surveillance Network Program (SNP) sites.	Developing customized SNP sampling manuals; IWB hosts annual workshop
3.1 C 7. Continue to promote the standardized application, renewal, compliance and reporting templates for municipal water licensing	Templates created on MVWLB and IWB
3.1 D - Policy and Research Improve the understanding of waste and wastewater systems in NWT communities and consider Traditional Knowledge in municipal water licensing processes.	
<i>Research on environmental impacts of waste and wastewater in NWT communities is advancing (# of research projects).</i>	1 research project

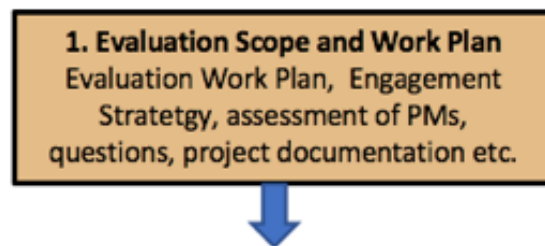
3.1 D 1. Work with Water Partners and prioritize and support research areas to improve the understanding of the environmental impacts of waste and wastewater in NWT communities.	NWT CIMP has prioritized research in Blueprints for Fish and Water for long term climate impacts
3.1 D 2. Ensure opportunities to include traditional and local knowledge in municipal water licensing are clearly communicated.	Included the regulatory process for license applications as TORs require engagement
3.2 - Use Responsibly – Industrial Development -	
3.2 A - Ensure clarity and facilitate understanding of water use, waste and wastewater regulatory processes.	
<ul style="list-style-type: none"> • <i>Increased understanding of roles and responsibilities within the regulatory processes (low-medium-high, survey Water Partners).</i> • <i>Rate of participation in water license application and review processes (low-medium-high, survey Water Partners).</i> • <i>Increased awareness of industrial activities in the NWT and their associated monitoring and reporting requirements (low-medium-high, survey Water Partners).</i> 	approx 50% understand roles and responsibilities and 30% noted significant increase in understanding
3.2 A 1. Ensure plain language information on regulatory processes for environmental assessments and water licensing is available to Water Partners.	MVIERB provides plain language EA info on line; IWB developed simplified process
3.2 A 2. Provide information on how to participate in the regulatory process at community meetings and other events.	Done through notices, public meetings, part of process
3.2 A 3. Describe in plain language and communicate how traditional and local knowledge can be included in water licenses and environmental assessments.	Done through regulatory process (TORs of developers) and hearings -No specific TK
3.2 B - Improve clarity and understanding of industrial water license compliance	
<ul style="list-style-type: none"> • <i>Increased understanding of water license requirements and management plans (low-medium-high, survey Water Partners)</i> 	over 50% of respondents noted improved clarity

3.2 B 1. Clarify roles and responsibilities for industrial compliance and identify areas for policy improvements.	The Compliance and Enforcement Policy was completed in 2019
3.2 B 2. Track and report on number of inspections of industrial water licenses.	108 inspections took place
3.2 C - Review and develop guidelines and regulations to clarify existing regulatory and environmental assessment processes.	
<ul style="list-style-type: none"> • <i>Water legislation and regulation are periodically reviewed and revised as necessary (# reviewed, # updated).</i> • <i>Regulatory guidelines are reviewed periodically and updated and, where necessary, policy is adopted or revised (# reviewed and # updated, adopted or revised).</i> 	<i>1 Water Legislation is being reviewed; 5 regulations have been reviewed or updated</i>
3.2 C 1. Identify the components of an integrated water management system (e.g. water classification system, site-specific water quality objective derivation process, baseline data collection, mixing zone, environmental assessment initiation) to support the Water and Effluent Quality Management policy and decision-making in environmental assessments.	Mixing zone guidelines developed; water quality baseline developed; Environmental Assessment Guidelines are close to public review.
3.2 C 2. Once a water classification system is established, develop and implement a Site-specific Water Quality Objective derivation approach to determine water quality objectives.	Water Classification on hold
3.2 C 3. Provide a short description of water license requirements and management plans.	Documents are publically available - need to improve communication
3.2 C 4. Review territorial legislation relevant to water management and identify areas for improvement.	<i>Waters Act</i> is being reviewed
3.2 C 5. Review existing regulatory guidelines and policies relevant to water management post devolution and revise as necessary	3 guidelines were reviewed
3.2 C 6. Review and revise existing Aquatic Effects Monitoring Program (AEMP) Guidelines.	Finalized in March 2019

3.2 C 7. Develop Guidelines for Surface and Groundwater Monitoring for oil and gas development.	No Advancement
3.2 C 8. Develop guidelines for project descriptions in environmental assessments to support decision-making.	MVEIRB draft guidelines and under review

Evaluation of the NWT Water Stewardship Strategy

Evaluation Plan



Northern Voices, Northern Waters

Glen Hearn

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9 April 2020

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Summary

An independent evaluation is “Key to Success” 4.2 in the “Checking our Progress” component of the strategy as outlined in the *Action Plan 2016-2020*. This Draft Evaluation Plan has been developed to ensure a comprehensive, adequate, and timely evaluation is conducted of the *Action Plan 2016-2020* for the *Northern Voices, Northern Waters: NWT Water Stewardship Strategy*. The Evaluation Plan includes a Workplan and Timeline, Engagement Plan, and Evaluation Criteria for the overall evaluation.

This evaluation will assess implementation of the Water Stewardship Strategy between 2016-2021, and draw lessons learned that can both improve the sustainability of the benefits from the strategy and aid in the formulation of future actions. In particular, it will:

- Ensure activities undertaken under the Action Plan are effective in achieving the goals and vision of the Water Strategy;
- Review implementation progress of the Water Strategy and Action Plan against Performance Indicators;
- Assess the relevance and effectiveness of Performance Indicators for measuring implementation progress;
- Identify and recommend how to address emerging challenges and build upon successes to inform the development of the 2021-2025 Action Plan;
- Ensure transparency and accountability in the delivery of water stewardship actions and decisions; and
- Inform Water Partners and the public about the implementation progress of the Water Strategy and Action Plan.

The evaluation does not assess the vision or the objectives of the Water Stewardship Strategy. The Draft Evaluation Plan contains a workplan, process, engagement plan, and questionnaire to help ensure the completion of the evaluation.

The evaluation will be coordinated through the Advisor, Water Stewardship from the Water Management and Monitoring Division of the Department of Environment and Natural Resources of the Government of the Northwest Territories (ENR). The Evaluation Committee (EC) will provide input and review of this Evaluation Plan, assist in identifying interviewees, review the progress of the evaluation, and comment on the evaluation report (and drafts). The Aboriginal Steering Committee (ASC) and Water Partners also play key roles in providing information and supporting this evaluation.

The period for the evaluation is from 15 March to 31 July 2020.

Evaluation Methodology

The approach proposed for this evaluation is informed by the TOR and the proposal submitted by Eco-Logical Resolutions.

Key aspects:

1. Information gathering

The evaluation is designed to provide information that is credible, reliable, and useful. It will incorporate all sources of information considered relevant by the Evaluation Committee and

Aboriginal Steering Committee, Water Partners, and other key experts. The evaluation includes, but is not limited to, a desk review focusing on:

- i) Documents and monitoring reports.
- ii) Websites or web-based information relevant to the project.

The desk review is complemented by personal and group interviews to allow for direct learning and input.

The evaluation uses a mixed methods approach combining qualitative and quantitative data collection simultaneously. It employs triangulation to compare information on Keys to Success and Action Items, Performance Indicators, impacts and other indicators from different independent sources. The evaluation is based on data from documents and websites, and complemented with data from interviews to i) support the literature results and ii) fill in gaps (see engagement plan). Whenever possible information is to be referenced through the use of footnotes and, where applicable, annexes to ensure the text of the report is kept succinct, including the Plain Language Summary (1000 words as per TOR).

In gathering information, consideration will be given to scientific knowledge, local knowledge and Traditional Knowledge (which includes historical knowledge and the knowledge of current users on the land), as available and appropriate, and will follow GNWT's Traditional Knowledge Policy. Moreover, information gathering is to comply with any applicable protocols and guidelines and legal requirements that may exist regarding the confidentiality, ownership, crediting of sources, and dissemination of all knowledge (traditional or scientific) reported in the evaluation. Guidance will be sought from the Evaluation Committee and Aboriginal Steering Committee during the course of the evaluation to determine if there are any specific protocols or legal requirements that must be abided by.

Information will be gathered in a manner that respects the cultural diversity of the NWT, including seeking advice from the Evaluation Committee and Aboriginal Steering Committee regarding specific methods of outreach and engagement.

All comments and information gathered during the evaluation will be considered for inclusion as part of the evaluation.

2. Collaborative and Participatory

The review will be undertaken collaboratively to support existing partnerships and enhance cooperation. Consequently, to ensure a collaborative outcome to the evaluation and recommendations, the evaluation will be developed and conducted in close coordination with those implementing and executing the stewardship strategy, including the Evaluation Committee, Aboriginal Steering Committee, and Water Partners.

3. Information management

As per the TORs, the following guidelines are to be applied during the course of the evaluation:

- The evaluation is to be considered confidential, until such time as it is accessible on a public website. Copies of the evaluation report, or any of its parts, are to be treated as confidential. Any sharing of the evaluation report will be done with the consent of the Evaluation Committee;
- Comments received on drafts of all or part of the evaluation report shall be treated as confidential;

- If an identified Water Partner is not available for an interview, they will be asked to suggest an alternative, or the consultant will seek advice from the EC and ASC for an alternative interviewee;
- Any material which is prepared by, collected by, or submitted to ELR (the Contractor) during the evaluation, shall be kept secured and confidential during the evaluation process; and,
- Draft Summaries of the interviews will be sent to the interviewee to ensure accuracy;
- After the completion of the evaluation report all materials will be made available to the GNWT, and will be anonymous (not linked to any specific group or individual). The interviewee will be able to opt out of sending their “interview summary” as part of the materials.

The Evaluation Process

The evaluation of the NWT Water Stewardship Strategy will be conducted in three phases consisting of six key steps (figure 1).

Step 1 involves close coordination with ENR, Evaluation Committee, and Aboriginal Steering Committee to determine the scope and Evaluation Plan (Workplan, Engagement Plan, Evaluation Criteria)

Step 1 also includes initial information gathering and appraisal to identify possible information gaps, and develop mitigation measures to fill the gaps.

Step 2 contains the core of the information gathering, and involves a detailed desk review of relevant documents, as well as engagement with the Evaluation Committee, Aboriginal Steering Committee, Water Partners, and other relevant experts. The engagement plan is discussed further below and contains a questionnaire/survey.

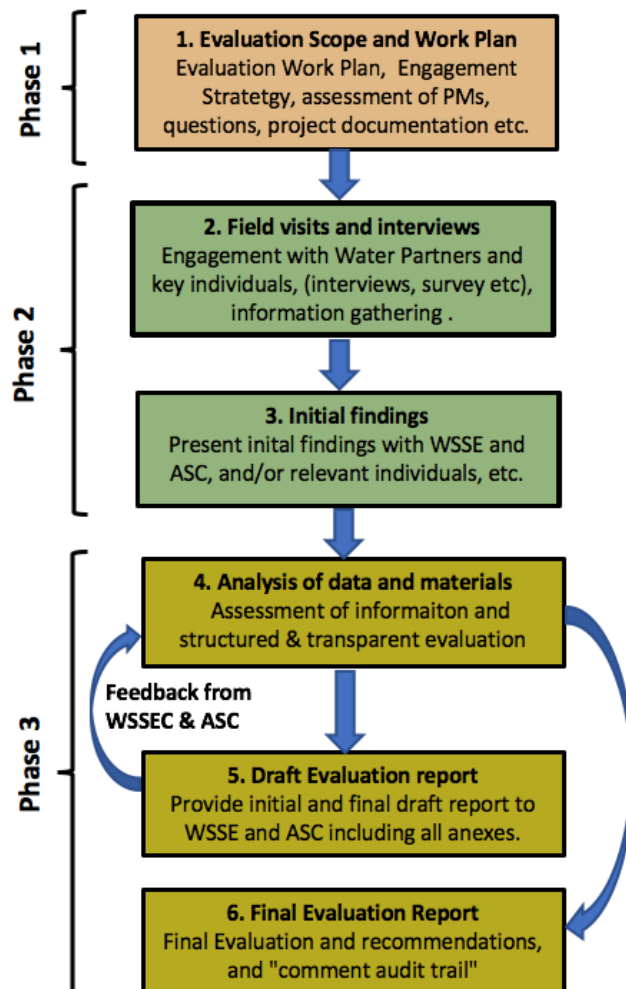
Step 3 focuses on providing initial findings to the Evaluation Committee immediately following the 1st round of information gathering. This early assessment allows for input and provides an opportunity to gain direction from the Evaluation Committee, identify gaps, and ensure the final report represents the progress of the strategy adequately. An initial “findings presentation” will be given to the Evaluation Committee.

Step 4 involves analysis for assessing the evaluation criteria and ensuring a transparent and credible evaluation. It will include a review of existing materials, and an opportunity to conduct a 2nd round of information gathering, including conducting any new or follow up interviews as determined following the “findings presentation.”

Step 5 involves writing and submitting an *initial* draft report for consideration by the Evaluation Committee, and based on comments provide a *final* draft which will be shared with the Aboriginal Steering Committee. Comments from the Evaluation Committee and the Aboriginal Steering Committee will be reviewed and analysed to inform the *final report*.

Step 6 involves the final analysis of the evaluation, clarification of any outstanding issues, writing, and presentation of the report. As an associated document to the report, a “Comment Audit Trail” will be provided showing the comments to the drafts and how they are addressed in the *final report*.

Figure 1: Key steps in the evaluation process



Proposed Workplan

The proposed workplan for completing all the steps of the evaluation and the key deliverables are shown in Figure 2.

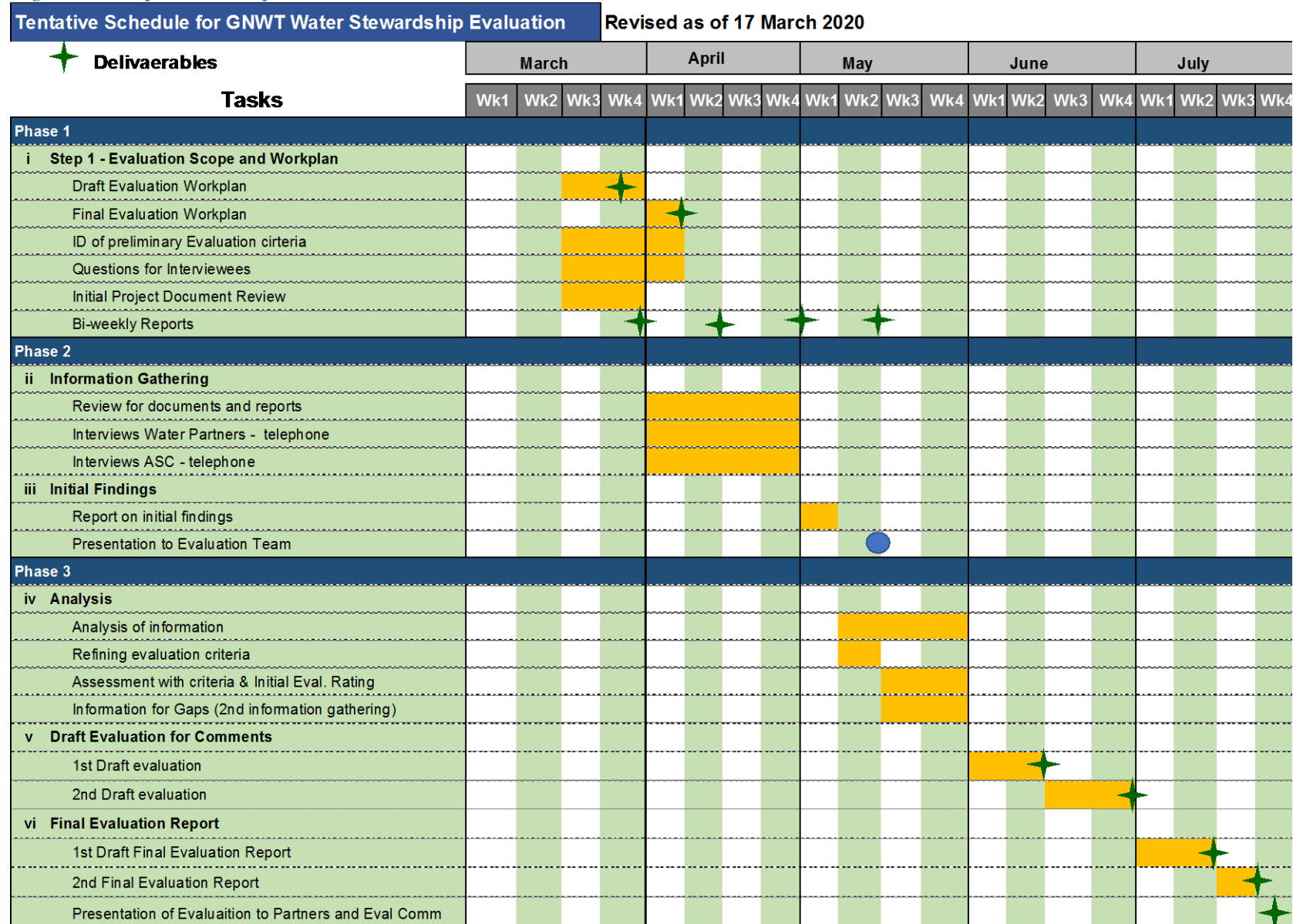
The evaluation of the Water Stewardship Strategy is from 15 March to 31 July 2020 and will include the following deliverables:

- #1: draft evaluation plan;
- #2: final evaluation plan;
- #3: bi-weekly progress reports throughout Phases 1 and 2 (*estimated 4-5 reports*);
- #4: first draft evaluation report;
- #5: second draft evaluation report, if necessary;
- #6: final draft evaluation report;
- #7: final evaluation report and plain language summary (1,000 words); and
- #8: participation in a teleconference to provide results to Water Partners. The Evaluation Committee will be responsible for facilitating and coordinating the teleconference.

The workplan is based upon the following assumptions:

1. That a sufficient number of interviewees are available during Phase 2 (April and early May).
2. That sufficient documentation and information is available to reference and adequately conduct assessments.
3. That all communication is conducted in a timely fashion.
4. The progress of the evaluation will be reviewed, periodically, with the Evaluation Committee as per the terms of reference. Calls with the Evaluation Committee and ASC as necessary will be convened by the ENR Department.

Figure 2: Proposed Workplan



Proposed Engagement Plan

Engagement with Water Partners, Evaluation Committee, Aboriginal Steering Committee, and other relevant experts will be as follows:

- a. **Interviews:** Interviews will be conducted with specific individuals or groups approved of by the Evaluation Committee. While the core of the interviews will be conducted during Phase 2 (step *ii- information gathering*), and it is anticipated that some follow up or even new interviews will occur throughout the evaluation process.
 - Interviews will be conducted in an ethical manner in accordance with the Canadian Evaluation Society Ethics for Evaluations.⁴³
 - Interviews will be conducted either in person or through calls depending on the most appropriate method available.
 - Interviews will be conducted either individually or in groups depending on the interviewees and information needed.
 - A field trip of 10-14 days will be included in this evaluation to provide for face to face meetings. If possible, the field trip will coincide with other planned meetings to ensure the maximum number of interviews can be conducted.
- b. **Comment and Input:** When information is used in the evaluation resulting from interviews, the interviewee providing the information will have the opportunity to comment on the wording and ensure accuracy. During the development of the report, interviewees will be given the opportunity to comment on findings as they relate to them or their organization. While the ultimate decision regarding the content of the report rests with the evaluator, the goal will be to arrive at consensus regarding the evaluation and recommendations.
 No information of comments will be attributed to specific individuals without prior consent.
 The workplan provides for sufficient input from the Evaluation Committee and Aboriginal Steering Committee.

Key actions under the Engagement Plan are as follows:

Action	Responsible	Timing
Bi-weekly progress report for Evaluation Committee, including an update on those interviewed.	ELR	Phase 1 & 2
Conference calls with the Evaluation Committee	Advisor (ENR)	As necessary
Conference call with the Aboriginal Steering Committee	Advisor (ENR)	As necessary (at least 1)
Interviewees identified and invited to participate in the evaluation.	ELR, ENR & Eval Comm.	Phase 1 and 2
ELR conducts interviews once interviewees have been approved of by the Evaluation Committee.	ELR to submit names.	Phase 1 and 2
ELR is accessible for interviews outside normal working hours (within reason) to ensure as many	ELR	Throughout evaluation

⁴³ https://evaluationcanada.ca/sites/default/files/ces_ethics_ethique_sce.pdf

people as possible can participate.		
Presentation of initial findings.	ELR (ENR to convene)	End of Phase 2
Submission of drafts.	ELR	Phase 3
Presentation of final report.	ELR (ENR to convene)	Phase 3

Key engagement principles will be addressed as follows:

- **Credible**
The evaluation provides information that is credible, reliable, and useful:
 - All experts considered relevant by the ENR Department, Evaluation Committee, Aboriginal Steering Committee, and Water Partners are invited to participate;
 - An overview questionnaire has been developed, and will be approved by the Evaluation Committee, to guide interviews;
 - The questionnaire will be sent in advance to interviewees to help them prepare for the interview; and,
 - Key points / interview summaries are sent out to interviewees for comment prior to including information in the report (*these summaries will not be cc to any other person – see #5*). They are made anonymous prior to being submitted to GNWT following the final report.
- **Transparent**
Transparency is ensured through developing a highly structured approach. Measures are taken to ensure that experts have an adequate opportunity to provide input in a collaborative manner and have access to all the relevant data:
 - A secure evaluation project website is established where experts and participants can access all documents and materials collected and review the progress of the evaluation. The website provides an ongoing repository of the information being collected. It will not contain the summaries of interviews conducted.
- **Culturally Relevant**
Attention will be given to ensure the engagement process and input has cultural relevance and respects local, traditional and western scientific knowledge:
 - A questionnaire is developed and approved of in advance by the Evaluation Committee.
 - Guidance is sought from the Evaluation Committee and Aboriginal Steering Committee to address any culturally sensitive issues.

Evaluation Criteria

The evaluation will be conducted using the following criteria:

1. Relevance.

This evaluation criteria determines the relevance of the Water Stewardship Strategy in terms of its design in 2015. The key assessment relates to the appropriateness of the design of the Water Stewardship Strategy for meeting the overall vision and goals (including an assessment of the Key to Success and associated Action Items, Performance Indicators being SMART, amongst others).

	Overall Design of the Action Plan
Highly Satisfactory (HS)	The overall implementation and monitoring design of the WSS clearly meets the goals and vision. Almost all (96%-100%) the Action Items and Keys to Success are very clear, reasonable and achievable. Performance Indicators are all SMART.
Satisfactory (S)	The overall implementation and monitoring design of the WSS meets the goals and vision, with minor shortcomings. A high portion (86%-75%) of the Action Items and Keys to Success are clear, reasonable and achievable, and Performance Indicators are SMART.
Moderately Satisfactory (MS)	The overall implementation and monitoring design of the WSS more or less meets the goals and vision, with moderate shortcomings. For the most part (76-85%), the Action Items and Keys to Success are clear, reasonable and achievable, and Performance Indicators are SMART.
Moderately Unsatisfactory (MU)	The overall implementation and monitoring design of the WSS is less than expected in meeting the goals and vision, with significant shortcomings. Only 70%-75% of the Action Items and Keys to Success are clear, reasonable and achievable, and Performance Indicators are SMART.
Unsatisfactory (U)	The overall implementation and monitoring design of the WSS does not adequately meet the goals and vision, with significant shortcomings. Only about 60%-69% of the Action Items and Keys to Success are clear, reasonable and achievable, and Performance Indicators are SMART.
Highly Unsatisfactory (HU)	The overall implementation and monitoring design of the WSS does not meet the goals and vision, and there are severe shortcomings. Less than 60%, the Action Items and Keys to Success are clear, reasonable and achievable, and Performance Indicators are SMART.
Unable to Assess (UA)	The available information does not allow an assessment of the level of outcome achievements

2. Effectiveness.

This evaluation criteria provides an assessment of the extent to which the Water Stewardship Strategy has advanced towards its goals and vision in the time planned (2015-2020). This is done primarily through an assessment of the level of having conducted the Action Items and achieved Keys to Success.

Highly satisfactory (HS)	Level of Keys to Success and Action Items were clearly achieved (95-100), exceeds expectations and/or there were no short comings.
Satisfactory (S)	Level of Keys to Success and Action Items achieved was as expected (90-95%) and/or there were no or minor short comings.

Moderately Satisfactory (MS)	Level of Keys to Success and Action Items achieved more or less as expected (80-90%) and/or there were moderate short comings.
Moderately Unsatisfactory (MU)	Level of Keys to Success and Action Items achieved somewhat lower than expected (75-80%) and/or there were significant shortcomings.
Unsatisfactory (U)	Level of Keys to Success and Action Items achieved substantially lower than expected (70-75%) and/or there were major short comings.
Highly Unsatisfactory (HU)	A low level of Keys to Success / Action Items were achieved (below 70%) and/or there were severe short comings.
Unable to Assess (UA)	The available information does not allow an assessment of the level of outcome achievements

3. Efficiency.

The criteria will be addressed in a qualitative manner with respect the extent to which results have been delivered in relation to the resources expended. It helps determine the basic question “where the results obtained from the Action Plan worth the financial and human resources needed to implement it”. It is assessed by cost effectiveness and human resource efficacy (the level of effort which Water Partners spent in implementing the Action Items). The efficiency will be addressed primarily through interviews. It has a “rating scale” associated with it to be used to inform the development of the Action Plan 2021-2025.

Highly efficient (HE)	The benefits and advantages of participating in the Water Stewardship Strategy far outweighed the level of effort and resources spent by the Water Partners.
Sufficiently Efficient (SE)	The benefits and advantages of participating in the Water Stewardship Strategy were worth the level of effort and resources spent by the Water Partners.
Somewhat inefficient (SI)	The level of effort and resources spent by the Water Partners in participating in the Water Stewardship Strategy outweighed the benefits and advantages.
Highly Inefficient (HE)	The level of effort and resources spent by the Water Partners in participating in the Water Stewardship Strategy far outweighed the benefits and advantages.
Unable to Assess (UA)	The available information does not allow an assessment of the level of outcome achievements

4. Sustainability.

The sustainability will be assessed taking into account the risks to achieving the goals of the Water Stewardship Strategy related to i) maintaining Action Items post 2020 based on financial, socio-political, and institutional; and ii) environmental sustainability related to changes in development, land-use or climate impacts that would undermine the Strategies overall goals. During the course of

the evaluation, other risks may come to light and that may affect sustainability. The overall sustainability will be assessed using a four-point scale.

Assessment Level	Action Items at risk of not being continued to achieve Benefits post 2020.	Environmental change: land-use, development, climate impacts.
Likely (L). There is little or no risks to sustainability,	Less than 5%	Pose little to no risk to the goals of the WSS
Moderately Likely (ML). There are moderate risks to sustainability,	5%-15%	Pose a moderate risk to the goals of the WSS
Moderately Unlikely (MU). There are significant risks to sustainability	15-30%	Pose a significant risk to the goals of the WSS
Unlikely (U). There are severe risks to sustainability,	More than 30%	Pose a severe risk to the goals of the WSS
Unable to Assess (UA).	Unable to assess the expected incidence and magnitude of risks to sustainability.	Unable to assess the expected incidence and magnitude of risks to sustainability.

5. Transparency.

This is an assessment of whether the Water Stewardship Strategy is being implemented in a transparent and open way. This includes access to information, reporting, and transparency in decision making.

Highly satisfactory (HS)	The WSS is highly transparent: a website is fully operational with access to all the data and reports, and is updated when new information becomes available; steering committee meetings are held when they are planned; information is sent out to Water Partners on an ongoing-manner; annual reporting is conducted in a timely fashion, and decision-making is open and transparent. The transparency of the WSS has exceeded expectations.
Satisfactory (S)	The WSS is transparent, with minor shortcomings: a website is fully operational with access to all the data and reports, and is updated on a quarterly basis; steering committee meetings are held when they are planned; information is sent out on a scheduled basis, annual reporting is conducted, decision-making is open and transparent. The transparency of the WSS is delivered as expected.
Moderately Satisfactory (MS)	The WSS is mostly transparent, with shortcomings: a website is operational with access to the majority of data and reports, but is slow to update; steering committee meetings are behind schedule; information is sent out but not on a scheduled basis, annual reporting is conducted –but is 6 months behind, decision-making is mostly open and transparent. The

	transparency of the WSS is could definitely be improved in a couple of areas.
Moderately Unsatisfactory (MU)	The WSS is not entirely transparent, and has some significant shortcomings: a website is only partially operational and/or lacks access to much data and reports and/or does not update in a timely way; steering committee meetings are behind schedule; information is not sent out as anticipated, annual reporting is late (more than 6 months), decision-making is not as open and transparent as it should be. The transparency of the WSS needs improvement in a few areas.
Unsatisfactory (U)	The WSS is not transparent, and has some major shortcomings: a website exists but is not adequately operational and/or lacks access to most data and reports and/or does not update in a timely way; steering committee meetings are behind schedule; information is not sent out as anticipated, annual reporting is late (more than 8 months), decision-making is not as open and transparent as it should be. The transparency of the WSS needs improvement in significant areas.
Highly Unsatisfactory (HU)	The WSS is not transparent, and has major shortcomings: a website exists but is not adequately operational and/or lacks access to most data and reports and/or does not update in a timely way; steering committee meetings are behind schedule; information is not sent out as anticipated, annual reporting is late (more than 8 months), decision-making is not as open and transparent as it should be. The transparency of the WSS needs improvement in significant areas.
Unable to Assess (UA)	The available information does not allow an assessment of the level of outcome achievements

6. Public Awareness of the Strategy

This criterion assesses the level of awareness and understanding of the strategy from the standpoint of the general public.

Highly satisfactory (HS)	The WSS is highly known and understood by the general public and communities. Communities are familiar with objectives and goals and have read the information produced. They understand the role of Water Partners.
Satisfactory (S)	The WSS is known and understood by the general public and communities. Communities are mostly familiar with the objectives and goals of the WSS. They are aware of Water Partners.
Moderately Satisfactory (MS)	The WSS is somewhat known by the general public and communities. Communities have heard about the WSS but are not familiar with the specific goals and objectives, or how it functions. They are aware of Water Partners.
Moderately Unsatisfactory (MU)	The general public and communities have heard of the WSS but do not know any details.
Unsatisfactory (U)	The WSS is not commonly known amongst the general public or

	communities.
Highly Unsatisfactory (HU)	The WSS is not known to the communities and general public.
Unable to Assess (UA)	The available information does not allow an assessment of the level of outcome achievements

Key Questions for Water Partners and Communities

This evaluation is being conducted to assess progress towards the Water Stewardship Strategy goals and activities from 2016 to 2020, and draw lessons learned that can both improve the sustainability of the benefits from the Water Strategy and aid in the formulation of future actions (2021-2025). Participation in this evaluation, providing commentary, and participating in interviews, in no way affects past, present or future land claims. Likewise, and recommendations associated with the final evaluation report will in no way affect present or future land claims. Participating in this evaluation is not considered as “consultation” either by legislation or by common law.

Draft summaries of the information collected during the course of interviews will be shared with interviewees to ensure accuracy of the information collected. To ensure accuracy of the written report against the gathered information it is requested that the “interview summaries” be made anonymous and submitted along with the final evaluation report. Once the summary is finalized, interviewees will have the option to share, or not share it, with ENR at the end of the evaluation.

Note only question 8 is specifically for community members.

1. *General questions*
 - a. What was the specific role of your organization in implementing the Water Strategy?
 - b. How long and how closely have you been involved? (depth of knowledge assessment)
2. *Ensure activities undertaken under the Action Plan are effective in achieving the goals and vision of the Water Strategy;*
 - a. Overall, is the Water Strategy achieving its goals and vision through the Keys to Success and associated Action Items? How could the goals and vision be better achieved?
 - b. Are the goals and vision of the Strategy still relevant, or do they need to be updated?

In looking at areas that your organization has participated in:

 - c. Are Action Items clear, reasonable and achievable?
 - d. Is there duplication or redundancy in the Action Items within the Action Plan?
 - e. In participating and reporting on the Action Plan are there Action Items which your organization would report on, regardless of the Action Plan?
3. *Review implementation progress of the Water Strategy and Action Plan against Performance Indicators*
 - a. Are the Keys to Success adequate to cover the needs of the Water Stewardship Strategy? Are there more needed, should there be fewer, how would you change them?

In looking at areas that your organization has participated in:

 - b. Do you feel the Performance Indicators adequately reflect a “measure” of the Key to Success? How could they be improved upon?
 - c. Do the Action Items under the specific Key to Success sufficiently support achieving the Key to Success? Could they be improved upon?
 - d. What are the main achievements within the implementation of the Action Items?

- e. Were Action Items delivered on time? If not, why not?
- f. Were Action Items delivered within the estimated costs, and with the anticipated level of effort from your organization?
- 4. *Identify and recommend how to address emerging challenges and build upon successes to inform the development of the 2021-2025 Action Plan;*
 - a. What are the challenges for Water Partners to implement the Keys to Success under the Action Plan?
 - b. How can Water Partners more effectively participate in implementing the Action Plan?
 - c. What Keys to Success and associated Action Items are still priorities to work on and what are new areas recommended for inclusion in the next Action Plan?
 - d. What changes to the structure of the Action Plan could be made to better plan, monitor and evaluate future progress?
- 5. *Ensure transparency and accountability in the delivery of water stewardship actions and decisions;*
 - a. How aware are you of the progress of the Water Strategy overall? (not aware, moderately aware, highly aware).
 - b. How do you obtain information on the progress of the Water Strategy?
 - c. Do you feel that the Water Strategy is sufficiently transparent? How could it be improved?
 - d. Do you feel that decisions are made in an open and transparent way?
- 6. *Inform Water Partners and the public about the implementation progress of the Water Strategy and Action Plan;*
 - a. Does your organization promote or build awareness about the Water Stewardship Strategy, and if so how? If not, why not?
 - b. How has the Water Strategy been communicated to the public? Has this been effective?
- 7. *Concluding Questions;*
 - a. What are the key impacts that you feel the Water Strategy has achieved? (On-the-ground impacts, as well as institutional, and partnership building).
 - b. How has participation in the WSS influenced how your organization conducts its work?
 - c. Do you feel the Water Strategy continues to be relevant and reflects the values of people in the region? How would you make it more relevant?
 - d. What is the value of the Water Strategy to your organization (or other Water Partners) and how could it be improved upon?
 - e.
 - f. Has the level of effort required from your organization to implement the Water Stewardship Strategy been less or more than anticipated? Has it been worth the results?
 - g. Do you feel the Water Stewardship Strategy is sustainable? What challenges does it face?
- 8. *Specific Questions for community members*
 - a. How aware are you of the NWT Water Stewardship Strategy “Northern Voices, Northern Waters”?
 - b. What benefits do you think it may have brought to your community so far and what would you hope for in the future?
 - c. How can the importance and awareness of the Water Stewardship Strategy be improved in your community?
 - d. How could community members be more involved in the Water Stewardship Strategy?

Water Partners

The following are the Water Partners as identified in the 2015-2020 Action Plan, and will be the focus of interviews:

- Aboriginal Steering Committee (ASC)
- Aurora College
- Aurora Research Institute
- Dechinta Centre for Research and Learning (Dechinta)
- Dehcho Aboriginal Aquatic Resource and Oceans Management Program (Dehcho AAROM)
- Ducks Unlimited Canada (DUC)
- Ecology North
- Environment Canada
- Environment and Natural Resources, Government of the Northwest Territories (ENR)
- Health and Social Services, Government of the Northwest Territories (HSS)
- Interdepartmental Drinking Water Management Committee (Environment and Natural Resources, Health and Social Services, Municipal and Community Affairs, and Public Works and Services)
- Inuvialuit Water Board (IWB)
- Land and Water Boards of the Mackenzie Valley (Gwich'in Land and Water Board, Mackenzie Valley Land and Water Board, Sahtù Land and Water Board, and Wek'èezhìi Land and Water Board) (LWBs)
- Lands, Government of the Northwest Territories (Lands)
- Mackenzie River Basin Board (MRBB)
- Mackenzie Valley Environmental Impact Review Board (MVEIRB)
- Municipal and Community Affairs, Government of the Northwest Territories (MACA)
- NWT Centre for Geomatics, Government of the Northwest Territories
- Public Works and Services, Government of the Northwest Territories (PWS)
- Sahtù Renewable Resource Board (SRRB)
- Tides Canada
- University of Alberta
- Wilfred Laurier University

Additionally, there are supporting partners in each of the four components:

1. Working Together
 - a. Indigenous Governments
 - b. Canadian Parks and Wilderness Society (CPAWS)
 - c. The Gordon Foundation
 - d. Wek'èezhìi Renewable Resource Board (WRRB)
2. Know and Plan
 - a. Academic Partners
 - b. Indigenous Governments

- c. Community Organizations
 - d. Department of Fisheries and Oceans (DFO)
 - e. Industry
- 3. Use Responsibly
 - a. Academic Partners
 - b. Indigenous Governments
 - c. Community Governments
 - d. Environmental Monitoring Advisory Board (EMAB)
 - e. Independent Environmental Monitoring Agency (IEMA)
 - f. Industry
 - g. NWT Housing Corporation
 - h. Snap Lake Environmental Monitoring Agency (SLEMA)

Key Water Partners linked to Key to Success as outlined in the Action Plan 2016-2020

Water Partners		Key To Success																																
		1.1		1.2				1.3		1.4		1.5		2.1										2.2		3.1				3.2			4.1	4.2
		A	B	A	B	C	D	A	B	A	B	A	B	A	B	C	D	E	F	G	H	I	J	A	B	A	B	C	D	A	B	C	A	A
1	ASC																																	
2	Aurora College																																	
3	Aurora Research Institute																																	
4	Dechinta																																	
5	Dehcho AAROM																																	
6	DUC																																	
7	Ecology North																																	
8	ECCC																																	
9	ENR																																	
10	HSS																																	
11	IDWMC																																	
12	IWB																																	
13	LWB																																	
14	Lands																																	
15	MRBB																																	
16	MVEIRB																																	
17	MACA																																	
18	NWT Centre for Geomatics,																																	
19	PWS																																	
20	SRRB																																	
21	Tides Canada																																	
22	University of Alberta																																	

Annex D – Recommendations and Status from 2015 Evaluation

The following are the recommendations from the Evaluation of the WSS conducted in September 2015 of the 2010-2015 Action Plan.⁴⁴

The following recommendations should be considered to continue to build on the achievements made to date:

<i>Recommendation from 2015</i>	<i>Status - 2020</i>
<i>Transboundary Water Management Agreements</i>	
1. Continue to work toward finalizing the transboundary agreements with British Columbia, Saskatchewan and Nunavut and update the existing agreement with Yukon.	Being done
2. Begin to focus on implementation of the transboundary agreement with Alberta and the other jurisdictions as those agreements are finalized.	Being done
3. Explore ways to support ASC members in sharing information and updates on transboundary negotiations at the community level.	Being done through community updates by ASC members
<i>Partnerships and Water Stewardship Information Sharing</i>	
4. Promote greater ownership of the Water Strategy among the Water Partners. Given that the Water Strategy was intended to be a shared initiative, other Water Partners should be encouraged and supported in taking on or sharing leadership roles and responsibilities in the next version of the Action Plan.	Not entirely successful - WPs mostly see the WSS as a government initiative.
a. Related to this issue is the need for the Action Plan to better define whom a water partner is (e.g., their defined linkage to water) and what that entails (e.g., their roles, responsibilities as a water partner and the benefits of being a water partner). Encourage the involvement of Water Partners that have not been very engaged to date (e.g., industry partners, other GNWT departments) and formally recognize the efforts and contributions of the different Water Partners.	This has been done at the end of the 2016-2020 Action Plan
5. Continue to communicate the importance of the Water Strategy, the research and monitoring initiatives that are underway and the results that are coming out of these initiatives. ENR could potentially take the lead on several initiatives to help Water Partners stay informed and promote participation.	This has been mostly achieved through the Annual Implementation Workshop and Progress Reports
a. Develop a monthly electronic newsletter that provides updates on Water Strategy initiatives. Invite Water Partners to provide brief descriptions of ongoing or new research initiatives, policy development initiatives, etc. for the newsletter. The newsletter should be sent directly to Water Partners by email rather than	There is no monthly newsletter – but there are periodic updates besides the progress reports.

⁴⁴ HCA and Shared Value Solutions (2015) Independent Evaluation of the NWT Water Stewardship Strategy Implementation: Evaluation Report, Harry Cummings and Associates and Shared Value Solutions Ltd. 22 September 2015.

relying on Water Partners to visit the Water Strategy website to access the newsletter.	
b. Explore ways to make the annual workshop in Yellowknife more accessible to a wider group of delegates from the different regions / communities (sponsor more delegates from northern NWT and/or conduct a comparable workshop in the north).	The Annual Implementation Workshop in Yellowknife is well attended. No additional northern workshop.
c. Work with ASC members to identify and recruit other key people in communities who can assist with receiving and communicating information at the community level.	This is an ongoing issue
6. Continue to explore ways to use more plain language in Water Strategy communications and research results and continue to explore different communication approaches for different audience groups (e.g., youth, elders).	This has been done through Plain Language publications, and different Languages.
7. During the annual Water Strategy workshop include more personal stories on how water related research is being conducted and the importance of this research at the community level and include an earlier discussion on the agenda on what the priorities will be for the coming year.	Not able to assess
8. Conduct a roundtable discussion with Traditional Knowledge holders and western science researchers on ways to facilitate the presentation of Traditional Knowledge alongside western scientific knowledge.	
9. Continue to encourage Water Partners to upload their research / monitoring data to the Discovery Portal in a consistent data format and provide linkages to other web portals where relevant data is available.	NWT CIMP requires researchers to publish on the Portal. WSS could do similar things.
a. Continue to expand the amount of Traditional Knowledge on the Discovery Portal.	
b. Continue to educate Water Partners and communities about the utility of the Discovery Portal.	
<i>Community-based Monitoring and Research</i>	
10. Continue to expand the NWT-wide CBM program into other communities and encourage all Water Partners to promote and support community-based monitoring approaches.	
11. Encourage partnerships across government agencies to promote / support community capacity building.	
12. Community-based monitoring projects need to routinely assess that best practices and research procedures are being followed and that the quality of the data (e.g., completeness, consistency) is not compromised.	
13. Continue to encourage Water Partners to make their research results available to communities and encourage and support communities in using this research to inform decision making.	
14. Explore opportunities for expanding monitor training and	

employment opportunities.	
a. Pilot test a modular training package (e.g., air, water, soil, wildlife, forestry) to enable community monitors to expand their credentials and their research and monitoring related activities. ³⁹	Training is being done
b. Strengthen linkages with southern research institutions or other organizations to promote hiring opportunities for community monitors with expanded credentials.	They have improved, ie Wilfrid Laurier establishing centre
39 Environmental monitor training programs are currently offered through Aurora College (Environmental Monitor Training Program – 5-week certificate program; Environment and Natural Resources Technology Program – 2-year diploma program). The modular program could be a similar short-term format as the 5-week certificate program at Aurora College with expanded training on wildlife and forestry monitoring practices.	
15. In light of the capacity issues faced by many communities, it might be beneficial to include a leadership training and development component in the next version of the Water Strategy.	
<i>Source Water Protection</i>	
16. Continue to promote the importance of source water protection and make a stronger linkage between source water protection and municipal water licensing in the Water Strategy.	
17. Continue to support source water protection training and capacity building.	
18. Share the results (successes, challenges, opportunities) of the pilot study of the Partnership Approach to Source Water Protection in Trout Lake with other communities and promote the approach in other communities.	
<i>Long-term Aquatic Monitoring</i>	
19. Follow through on the recommendations from the WQM network evaluation (June 2014) for responding to water quality monitoring gaps (e.g., monitoring locations, schedules, parameters).	
20. Continue to consult with Water Partners engaged in long-term monitoring activities (e.g., Environment Canada, DFO) to understand the gaps in their water quality monitoring programs and identify areas for potential collaboration.	
21. Continue to ensure that research results are uploaded to data sharing platforms (e.g., NWT Discovery Portal, Lodestar) in a timely manner. Ensure that Lodestar is adequately resourced with sufficient human resources to provide oversight for ongoing data compatibility.	
22. Explore opportunities for collecting advance baseline data in locations where development is likely to occur.	
23. Develop a biological monitoring component for the Water	

Strategy. This component would need to identify / confirm stressors and identify indicators to measure.	
<i>Regulatory Processes</i>	
24. Develop a clear description of how the Water Strategy can be incorporated into the licensing and the review of the plans of various development projects. Use case studies to illustrate how the intent of the Water Strategy can be incorporated in the review process.	
25. Provide support for Aboriginal governments / organizations to bring Traditional Knowledge to the regulatory boards.	
<i>Municipal Water License Compliance</i>	
26. Continue to promote the importance of water sampling and monitoring in relation to water license requirements.	
27. Identify the current status of human resource planning and training in water license compliance.	
28. Continue to promote and support training where resource gaps are identified.	
29. Follow-up with communities to assess the utility of the report templates for Operation and Maintenance Plans for Municipal Water Licenses and adjust the templates as needed.	
30. Consider expanding the community-based monitoring section of the Water Strategy to include a water licensing component.	

Traditional and Local Knowledge

Understanding the current state of the implementation of the Action Plan assists in identifying the opportunities and paths forward that can be forged in enhancing the inclusion of traditional and local knowledge in the work of the Water Strategy. A number of opportunities and potential next steps were identified in section 3.9 of this report and should be considered to continue to build on the achievements made to date.

Annex E - References

- Aurora Research Institute (2018) Plain Language Research Findings
- ECCC guidelines [Solid waste management for northern and remote communities](#)
- CSA W203 Planning, design, operation and maintenance of wastewater treatment in northern communities using lagoon and wetland systems
- GNWT (2010) NWT Water Stewardship Strategy (May 2010)
- GNWT (2011) A Plan for Action - NWT Water Stewardship Strategy (May 2011)
- GNWT (2018) NWT Water Stewardship Strategy (January 2018)
- HCA and SVS (2015) Independent Evaluation of the NWT Water Stewardship Strategy Implementation: Evaluation Report, Harry Cummings and Associates and Shared Value Solutions Ltd. 22 September 2015.
- GNWT Reporting
 - • [2018/2019 NWT Water Stewardship Strategy Progress Review Summary](#)
 - [2017/2018 NWT Water Stewardship Strategy Progress Review Summary](#)
 - [2016/2017 NWT Water Stewardship Strategy Progress Review Summary](#)
 - [NWT Water Strategy Roles and Responsibilities: Summary of Water Partners' Responsibilities in the Action Plan 2016-2020](#)
 - [November 3-4, 2015 NWT Water Stewardship Strategy Implementation Workshop \(Final Summary Report\)](#)
 - [November 8-9, 2016 NWT Water Stewardship Strategy Implementation Workshop \(Final Summary Report\)](#)
 - [November 22-23, 2017 NWT Water Stewardship Strategy Implementation Workshop \(Final Summary Report\)](#)
 - [NWT Water Strategy Research Priorities: Summary of Survey Results and 2017 Workshop Discussion](#)
 - [NWT Cumulative Impact Monitoring Program 2015/16 Annual Report](#)
 - [NWT Cumulative Impact Monitoring Program 2016/17 Annual Report](#)
 - [NWT Cumulative Impact Monitoring Program 2017/18 Annual Report](#)
 - [NWT Cumulative Impact Monitoring Program 2018/19 Annual Report](#)
 - [Working Together to Manage Our Shared Waters: Alberta-Northwest Territories Bilateral Management Committee Annual Report to Ministers, 2015-16](#)
 - [Working Together to Manage Our Shared Waters: Alberta-Northwest Territories Bilateral Management Committee Annual Report to Ministers, 2016-17](#)
 - BC-NWT Implementation Highlights 2015-2018
- GNWT (?) [GNWT Land Use and Sustainability Framework](#).
- GNWT (2015) [NWT CIMP Action Program 2016-2020](#)
- GNWT (2018) 2030 NWT Climate Change Strategic Framework
- GNWT (2018) [2030 NWT Climate Change Strategic Framework 2019-2023 Action PlanG](#)
- GNWT (2018) [NWT CIMP Water Blue Print 2018-2019](#)

- GNWT (2016) [Report on Drinking Water 2016](#)
- GNWT (2017) [NWT Water Strategy Research Priorities](#): Summary of Survey Results and 2017 NWT Water Strategy Implementation Workshop Discussion
- Northwest Territories Métis Nation: [Consultation Guide](#) ; [Engagement Policy](#); & [TK Policy](#)
- [Source Water Assessment and Protection \(SWAP\) Guidance document](#) (2012).
- Sambaa K'e Dene Band/Ecology North (2015) [Community of Sambaa K'e Source Water Protection Plan](#)
- Raw Spreadsheets
[2018/2019 NWT Water Stewardship Strategy Progress Review Comprehensive Raw Data Spreadsheet](#)
[2017/2018 NWT Water Stewardship Strategy Progress Review Comprehensive Raw Data Spreadsheet](#)
[2016/2017 NWT Water Stewardship Strategy Progress Review Comprehensive Raw Data Spreadsheet](#)

Websites Reviewed

GNWT Water Stewardship Strategy https://www.nwtwaterstewardship.ca/	Website for WSS. It has a government feel, with colour and standardized fonts etc. Needs a search engine on first page (it is under resources only for publications)
Mackenzie Valley Land and Water Board (MVLWB) Mvlwb.com	Web page on WSS with links to 2011-2015 Action Plan. But not the 2016-2020 Act Plan. Not clear access to the results of the SNP. Access to guidelines etc.
Gwich'in Land and Water Board Glwb.com	
Wek'èezhìl Land and Water Board Wlwb.com	
Sahtu land and water Board Slwb.com	
NWT Discovery Portal https://nwt.discoveryportal.enr.gov.nt.ca/geoport/catalog/main/home.page	Contains information across wide geographic area. Snow data accessible for some areas. Open platform for info exchange with information beyond NWT.
MACA https://www.maca.gov.nt.ca/en/services	Drinking water report from 2016 latest available. No data base on DW easily accessible
Mackenzie DataStream https://mackenziedatastream.ca	Explanatory, data downloads are not entirely user-friendly – for example for time periods. Supported by the Gordon Foundation. How sustainable is this. Good links to Open Government Portal
Mackenzie Valley Environmental Impact Review Board	Webpage describes function and links to products such as guidelines. No specific

http://reviewboard.ca/about	reference to WSS.
Dehcho AAROM https://dehcho.org/resource-management/dehcho-aarom/	Discusses the community based Monitoring programs. No specific mention of WSS.
Sahtú Renewable Resources Board https://www.srrb.nt.ca/	On the Land Program, works with Species At Risk, no specific reference or link to the WSS. Website refers to ARI guidelines for research.
Northwest Territories Métis Nation Nwtmetisnation.ca	Has good access to policies and information on projects. No specific reference to WSS, but has links with AAROM, NWT CIMP, and others.
Gwich'in Renewable Resources Board (GRRB) http://grrb.nt.ca/index.html	Outlines the programs and activities, partners. Has info on community water monitoring in minutes and reports. No specific mention of WSS.
Canadian Council of Ministers of the Environment www.ccme.ca	All the related Standards (mostly chemical related) and guidelines developed and available.
Northern Waters Futures https://northernwaterfutures.wordpress.com	Website discussing the different project. Mentions NWT CIMP and monitoring at community level but no mention of WSS.
Fort Smith Métis Council http://fortsmithmetis council.ca/	
Cumulative Impacts Monitoring Program www.enr.gov.nt.ca/en/services/nwt-cumulative-impact-monitoring-program-nwt-NWT-CIMP	Detailed site with all relevant material posted. No specific mention of WSS other than inside the Water Blue Print
Drinking Water page under MACA www.NWTDinkingwater.ca now at https://www.maca.gov.nt.ca/en/services/drinking-water-nwt	General data and information on Drinking water, forms and templates. No community water data. No mention of WSS.
2030 NWT Climate Change Strategic Framework (https://www.enr.gov.nt.ca/sites/enr/files/resources/128-climate_change_strategic_framework_web.pdf) & Action Plan https://www.enr.gov.nt.ca/sites/enr/files/resources/128-climate_change_ap_proof.pdf	Only the Framework mentions the WSS.
Ecology North ecologynorth.ca	Has an active website link to WSS.
Ducks Unlimited Canada www.ducks.ca/places/yukon-northwest-territories/	Mentions WSS but has no link.

Centre for Cold Regions and Water Science https://www.wlu.ca/academics/research/partnerships/gnwt/infrastructure-and-equipment/centre-for-cold-regions-and-water-science.html	Notes Partnership with GNWT - but no mention of WSS. The WSS is mentioned elsewhere in research issues. It is mentioned 10 times on the Laurier Website.
Inuvialuit Water Board https://www.inuvwb.ca/about/iwb	Good information on water licensing and applications. Has a page with an active link https://www.inuvwb.ca/nwt-water-stewardship
University of Alberta	No mention of the WSS.
ARI Research Institute nwtresearch.com	College – school web page with courses listed etc. ARI has templates available.
LookNorth https://www.looknorthservices.com/watermonitoring	The data on Slave Lake etc. is available but not easily accessible as it is accessed through a login and navigation bar.