



2022 NWT Water Stewardship Strategy Progress Review Comprehensive Raw Data Spreadsheet

The Department of Environment and Climate Change released the 2021-2025 NWT Water Stewardship Strategy Action Plan (Action Plan) in 2021. The second progress review of the Action Plan for the 2022 implementation period was undertaken in 2023 and assessed 58 action items. This spreadsheet contains data for each Performance Indicator and Action Item that were assessed in the 2022 review.

Data are organized into four sections that represent the four components of water stewardship in the NWT:

- Work Together;
- Know and Plan;
- Use Responsibly; and
- Check Our Progress

Sections of the 2021-2025 Action Plan are listed in the first column under each component. The second column lists the Keys to Success identified in the 2021-2025 Action Plan. The remaining columns provide Performance Indicator and Action Item data from the progress review for each Key to Success.

The Performance Indicator information is limited to a short summary of the Performance Indicator result determined from the progress review. The Action Item information includes the Action Item as identified in the 2021-2025 Action Plan, the lead water partners responsible for the Action Item, the completion status of the Action Item, and a brief description of the work done towards completing the Action Item. The Action Item status and description are based on information provided by the lead water partners during the progress review.

List of Acronyms

Aurora College/ARI	Aurora Research Institute	LWBs/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
CIRNAC	Crown-Indigenous Relations and Northern Affairs Canada	MACA	Department of Municipal and Community Affairs, GNWT
ADFKN	Acho Dene Koe First Nation	MVEIRB	Mackenzie Valley Environmental Impact Review Board
Dehcho AAROM	Dehcho Aboriginal Aquatic Resource and Ocean Management Program	MVLWB	Mackenzie Valley Land and Water Board
DFO	Department of Fisheries and Oceans	NSMA	North Slave Métis Alliance
DUC	Ducks Unlimited Canada	NTGS	Northwest Territories Geological Survey, GNWT
ECC	Department of Environment and Climate Change, GNWT	NWT CIMP	Northwest Territories Cumulative Impact Monitoring Program
ECCC	Environment and Climate Change Canada	NWTCG	Northwest Territories Centre for Geomatics
GTC	Gwich'in Tribal Council	O&MP	Operation and Maintenance Plan
HSS	Department of Health and Social Services, GNWT	SNP	Surveillance Network Program
IEMA	Independent Environmental Monitoring Agency	SSI	Sahtú Secretariat Inc.
IGIOs	Indigenous governments and Indigenous organizations	TG	Tłı̨chǫ Government
IRC	Inuvialuit Regional Corp.	TK	Traditional Knowledge
ISC	Indigenous Steering Committee	WSS Working Group	Water Stewardship Strategy Working Group
KFN	Kátł'odeeche First Nation		

Work Together

	Key to Success	2022 Performance Indicator Results	Action Item	Deliverable Date	Action Item Lead	Action Item Status	2022 Action Item Status Description
1.1 - Partnerships	1.1.A. Indigenous knowledge, perspectives, and values guide Water Strategy activities through strategic oversight provided by an engaged Indigenous Steering Committee	<p>In 2022, there were two in-person Indigenous Steering Committee (ISC) meetings in Yellowknife in May and October, as well as a brief teleconference meeting in February.</p> <p>More than 10 projects received guidance from the ISC in 2022.</p>	1.1.A.1. ISC members actively liaise between their respective Indigenous governments or organizations and the Water Strategy	2021 and Ongoing	ISC	Complete for reporting period, and ongoing	ISC members actively liaise between their respective Indigenous governments and Indigenous organizations and water partners by bringing issues and concerns forward for discussion at ISC meetings and ensuring that relevant decisions and information from these discussions are conveyed to their respective Indigenous leadership. Regional updates are shared in every ISC meeting to facilitate the sharing of relevant information between ISC members and ECC staff.
			1.1.A.2. ISC members provide advice to water partners on how to effectively engage Indigenous governments or organizations, Indigenous knowledge holders and Indigenous communities in implementing activities and sharing information	2021 and Ongoing	ISC	Complete for reporting period, and ongoing	<p>In 2022, ISC members provided advice on the projects and programs listed below;</p> <ol style="list-style-type: none"> 1. Project kick-off for Hay River Indigenous Community-Based Monitoring project 2. Project initiation and development of Terms of Reference for the Alberta-NWT Traditional Knowledge Working Group (TKWG) 3. Promotion of the NWT Youth Water Stewardship and Mentorship Grant Program and review and approval of applications 4. Opportunities to improve water partner online survey questionnaire 5. ISC members provided feedback and points for consideration in setting up the WSS Working groups 6. Learning Plans for the BWMA's 7. Development of a work plan for the AB-NWT Bilateral Management Committee. 8. Creation of the Indigenous Based Community Monitoring (ICBM) 9. ISC members were part of the Advisory Circle involved in establishing a Traditional Knowledge Framework for BWMA's and advising the TKWG. 10. ISC members participated in the review of the 2021 Action Plan Progress Review Summary Report. 11. Negotiations of the agreements with Yukon and Saskatchewan

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1.1 - Partnerships	1.1.A. Indigenous knowledge, perspectives, and values guide Water Strategy activities through strategic oversight provided by an engaged Indigenous Steering Committee	In 2022, there were two in-person Indigenous Steering Committee (ISC) meetings in Yellowknife in May and October, as well as a brief teleconference meeting in February. More than 10 projects received guidance from the ISC in 2022.	1.1.A.3. ISC members report on relevant regional initiatives at ISC meetings	2021 and Ongoing	ISC	Complete for reporting period, and ongoing	ISC meetings include a standing agenda item for members to provide regional updates. In 2022, ISC members shared various updates on programs and projects undertaken by their respective regions. These included, but were not limited to, the following: 1. GTC <ul style="list-style-type: none"> Assessment of slumps (related to water quality, studies on beavers and their impacts, and sediment sampling), Long-term community-based monitoring program in collaboration with Wilfrid Laurier University (WLU). 2. ADKFN <ul style="list-style-type: none"> Traditional knowledge fish study on the NWT portion of the Liard River watershed and surrounding waters, Fish habitat monitoring training to train community members in CABIN1, Traditional Knowledge studies in BC and Yukon portions of the traditional territory and in the small portion at the Nettle River. 3. NSMA <ul style="list-style-type: none"> eDNA project, An inconnu detection project, Community survey about Great Slave Lake (for concerns and research priorities), Microplastics survey and research in Great Slave Lake, Guardianship program. 4. SSI <ul style="list-style-type: none"> Participated in the Mackenzie Valley Highway proposal (looking at its effect on caribou and fish), Research knowledge about caribou habitat and lichen, Guardian program. 5. TG <ul style="list-style-type: none"> Surface water monitoring program in Hislop Lake, Water, sediment, and fish monitoring at Beach Point, Cultural and traditional knowledge programs. 6. IRC <ul style="list-style-type: none"> Monitoring and research on beavers affecting fishing lake and travel on the land, Climate Change Strategy. 7. KFN <ul style="list-style-type: none"> Water sampling of mercury in the summer, Ground truth water sampling, benthic invertebrate sampling, and water quality sampling at sites on Hay River in NWT and Alberta, Guardian program.

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1.1 - Partnerships	1.1.B. Water partners strengthen strategic areas for cooperation through leveraging related initiatives	<p>The Water Strategy is linked to other strategies and plans, as shown in the 2021-2025 Action Plan.</p> <p>Water Strategy objectives are being promoted in the development of protected area management plans, i.e., in the development of the Thaidene Nënë and Ts'udé Niljné Tuyeta protected area management plans.</p> <p>89% of survey respondents indicated that their organization supported Water Strategy initiatives through collaborative partnerships and available funding opportunities.</p>	1.1.B.1. Establish a multi-stakeholder working group to further support collaborative implementation of the Water Strategy Action Plan and priority Action Items such as an Awareness Building Strategy, and to track progress	2022 and Ongoing	ECC	Not started	The work to establish issue specific, time-bound and results-oriented Water Stewardship Strategy Working Groups has been put on hold until the next annual Water Stewardship Strategy Implementation Workshop, which will provide an opportunity to gather more information from water partners and identify interested water partners who would like to be part of these working groups.
			1.1.B.2. Identify opportunities for water partners to support Water Strategy initiatives through collaborative partnerships and available funding opportunities	2022 and Ongoing	ECC All water partners	Complete for reporting period, and ongoing	<p>ECC, Water Monitoring and Stewardship Division hosts annual Water Stewardship Strategy Implementation Workshops as an opportunity for water partners to come together, share the work being undertaken under the Water Strategy, discuss water-related opportunities and establish collaboration and partnerships with one another.</p> <p>In 2022, more than five opportunities have been identified by water partners that supported Water Strategy initiatives through collaborative partnerships and available funding:</p> <ol style="list-style-type: none"> 1. ARI conducted collaborative watershed; water monitoring research education; training; and STEM outreach related watersheds (ARI). 2. Public participation in LWB processes for water licences (licence issuances, renewals, and plan reviews); development of standards/guidance documents to support LWB processes with other organizations; public review of standards/guidance documents to support LWB processes; participation in MVRMA workshops; and SNP monitoring training in communities (MVLWB). 3. Dehcho AAROM partnered with multiple universities and government agencies (Dehcho AAROM program). 4. The three collaborative partnerships are still ongoing; two are CCPN-CCHAP projects, and one is a CIHR-funded project. All three projects involve First Nation partners controlling a sizeable portion (or all) of the funding (WLU). 5. A workshop was held that included water stewardship partners as well as a mentorship grant program for youth 18-30 years old (ISC member).
			1.1.B.3. Coordinate and share information with water partners on the emerging Canada Water Agency and its relevance to NWT Water Stewardship objectives	2022 and Ongoing	ECCC	In progress	ECCC will be participating at the 14th Annual Water Stewardship Strategy Implementation Workshop to share information with water partners about the emerging Canada Water Agency and its relevance to the NWT Water Stewardship objectives. The Workshop report will be available online in 2024.
			1.1.B.4. Promote Water Strategy objectives in regional land use plans, protected areas management plans, and Conserved Area (IPCA) management plans as they are renewed and developed	2022 and Ongoing	Regional land use planning boards Renewable resource boards NWT protected areas co-management board ECC	In progress	<p>(ECC) The management plans for Thaidene Nënë and Ts'udé Niljné Tuyeta Protected areas are currently being developed. Both plans promote Water Strategy objectives as follows:</p> <p>Thaidene Nënë An early draft of the Management Plan for Thaidene Nënë includes a goal of protecting and conserving water. Strategies being considered to meet this goal are developing a research and monitoring program, identifying knowledge gaps to prioritize research, and developing a water protection strategy specific to Thaidene Nënë that focuses on visitor education and preventing the introduction of aquatic invasive species. This related to the NWT Water Stewardship Strategy Goals of aquatic ecosystems being healthy and diverse, and residents being involved in and knowledgeable about water stewardship. The strategies for the final Thaidene Nënë Management Plan could be different. The draft Management Plan still has several phases of review and community engagement before it's finalized.</p> <p>Ts'udé Niljné Tuyeta Designing and implementing a community-based water monitoring program is a management action in the draft management plan (future action).</p>

	Key to Success	2022 Performance Indicator Results	Action Item	Deliverable Date	Action Item Lead	Action Item Status	2022 Action Item Status Description
1.1 - Partnerships	1.1. C -Indigenous knowledge and ways of knowing and being and local knowledge are valued and respected in water stewardship initiatives	<p>106 communication products were released for NWT CIMP-funded projects in 2022-23.</p> <p>NWT CIMP-funded projects' leads delivered 47 community and northern presentations to share and discuss results, as well as 10 scientific presentations in 2022-23.</p> <p>ECC-CBM program is releasing a 10-year technical report for analysis of results to-date.</p> <p>80% of survey respondents indicated that their organization used Indigenous knowledge to inform water stewardship decision-making.</p> <p>85% of the survey respondents indicated that their organization/ community was leading one or more water stewardship projects.</p> <p>90% of survey respondents reported using plain-language materials and less than 50% used Indigenous language audio or video formats to facilitate understanding within Indigenous communities.</p>	1.1.C.1. Support community and Indigenous governments and organizations' involvement in co-designing research and monitoring initiatives whose research questions respond to community prioritized questions	2021 and Ongoing	ECC All water partners	Complete for reporting period, and ongoing	Seven (7) NWT CIMP-funded projects were led by a community or IGIO. And 24 of the 29 projects NWT CIMP funded in 2022-23 were identified as being developed directly in response to community concerns. 60% of survey respondents agreed that their organization was involved in co-designing research and monitoring initiatives to address community questions in 2022.
			1.1.C.2. Continue to support community-based monitoring programs to enhance shared learning, knowledge, skills, and consistent data collection, analysis, and results communication to communities and decision-makers	2021 and Ongoing	ECC Academic partners Aurora College/ARI"	Complete for reporting period, and ongoing	<p>The ECC-coordinated NWT-Wide Community-Based Water Quality Monitoring Program is producing a 10-year technical report that provides analysis of program results to-date including comparisons to other long-term datasets. All the data collected have been publicly shared on Mackenzie DataStream.</p> <p>(ECC) NWT CIMP supports community capacity building. Successful projects are strongly encouraged to hire and train local community members to develop their community-based monitoring skills in the field. Contributions to northern capacity building are an important part of the proposal evaluation.</p> <p>NWT CIMP continues to require that funding recipients make their results publicly available. How each project releases their results is an important part of the proposal evaluation. NWT CIMP project leads present their findings to the community(ies) in a plain language format, as well as to the relevant decision-maker in a useable format.</p> <p>In 2022-23, 106 communication products were prepared in relation to NWT CIMP-funded projects: 29 plain-language summaries and reports, 9 peer-reviewed publications, 11 videos. Also, NWT CIMP-funded project leads delivered 47 community and northern presentations to share and discuss project results, as well as 10 scientific presentations.</p> <p>AC-ARI participated in various activities: the NWT CIMP proposal review committee, the CCPN proposal review sessions in 2022, and the NWT Regional Contaminants Committee.</p>

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			1.1.C.4. Support the development and implementation of Indigenous knowledge protocols	2022 and Ongoing	ISC	In progress	Indigenous Steering Committee members participate in different meetings organized by ECC and have the opportunity to support and contribute to the implementation of Water Strategy initiatives by sharing their knowledge and experience. In 2022, more than 10 projects received guidance from ISC members.
			1.1.C.5. Promote the use of plain language and Indigenous language audio video formats to help facilitate understanding within Indigenous communities	2021 and Ongoing	All water partners	In progress	<p>90% of survey respondents reported using plain-language materials and/or Indigenous language audio formats to facilitate understanding within Indigenous communities.</p> <p>80% of survey respondents indicated that their organization used Indigenous Knowledge to inform water stewardship decision-making in 2022 through:</p> <ol style="list-style-type: none"> 1. Standard water licence conditions regarding the use of Traditional Knowledge (TK) to develop management plans for projects. Water licence conditions requiring the use of TK based on measures developed during environmental assessment. Engagement plan requirements (MVLWB). 2. Data stream is used to assure communities have clean water and decrease perception of contaminants in the water (Dehcho AAROM program). 3. Indigenous Knowledge is prioritized through qualitative data collection related to project objectives (WLU). 4. Committee members have the ability to communicate with traditional knowledge Holders and bring that information to the committee level (ISC member). 5. Engagement meetings and design of monitoring programs (Local Indigenous Government).
			1.1.C.6. Promote the use of Indigenous place names associated with important water features in research and monitoring programs and model best Indigenization practices, such as producing multilingual maps, publications and websites	2022 and Ongoing	All water partners	In progress	60%, 50% and 40% of survey respondents reported using or promoting the use of Indigenous place names associated with important water features in maps, publications and on websites, respectively.

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1.2 - Communication and Engagement	1.2. Water partners and the public are aware of water stewardship issues and activities	Ecology North conducted a water stewardship program for children, youth, land-users, Guardians, adults, and Elders, in collaboration with teachers, Guardians, Elders, and land-users to ensure that the program was culturally relevant and impactful to the audience.	1.2.1. Implement updated awareness-building and communications strategy to raise awareness of the goals of the Water Strategy, including engagement with and input from a broad range of interested parties (Elders, youth, land users, Guardians)	2022 and Ongoing	ECC ISC Ecology North WSS Working Group	In progress	ECC Water Monitoring and Stewardship Division is currently working on ways to move forward with the implementation of an awareness and communications strategy. Ecology North's Water Stewardship programming reached children, youth, land-users, Guardians, adults, and Elders. Moreover, throughout the second year of implementation, their programs collaborated with teachers, Elders, Guardians, and land-users to ensure that programming is culturally relevant and impactful to audiences. Ecology North's programming educated participants on the importance of water stewardship, different strategies and approaches to water stewardship, and the importance of multi-stakeholder collaboration in stewardship decisions.
			1.2.2. Provide clear, concise and current Water Strategy information and data to the public in easy-to-access formats, at the community, regional and watershed level	2021 and Ongoing	ECC	Complete for reporting period, and ongoing	(ECC) Water Monitoring and Stewardship Division released a report describing activities undertaken between April 1, 2018 to March 31, 2020 for the implementation of the Alberta-NWT Bilateral Water Management Agreement in July 2022. Technical water quantity and quality reports and a plain language biomonitoring report were also released in 2022. All reports are available online . A report describing activities undertaken between April 1, 2019 to March 31, 2021 for the implementation of the British Columbia-NWT Bilateral Water Management Agreement was also released in May 2022. Water and sediment quality data are posted on Mackenzie DataStream (https://mackenziedatastream.ca/en/).
			1.2.3. Develop and coordinate activities that raise awareness of water stewardship, such as the #loveNWTwater campaign and celebration of Canada Water Week	2021 and Ongoing	Ecology North	Complete for reporting period, and ongoing	In addition to publicizing the #LoveNWTwater campaign, 2022 initiatives conducted by Ecology North focused on outreach and education. Specifically, they developed new classroom activities that debunked myths around single-use plastic water bottles (such as marketing and greenwashing techniques and a presumed higher quality). Ecology North was also able to collaborate with various events and programs in the Yellowknife area, such as Folk on the Rocks, to publicize the campaign and continue outreach activities.
1.3 - Capacity Building, Leadership Training and Education	1.3.A. Community knowledge and capacity in water management, aquatic research and monitoring increase over time	30% of respondents reported that their organization had provided more than five on-the-land capacity building opportunities in 2022-23. 70% of respondents stated that their organization/or community participated in, or supported, a network of community monitors with similar needs or interests.	1.3.A.1. Explore strategic opportunities to coordinate training across the NWT for community-based monitors, including Guardians	2021 and Ongoing	Dehcho AAROM ECC	Complete for reporting period, and ongoing	Dehcho AAROM Program facilitated the Dehcho Guardians to deploy, maintain and switch out water monitoring equipment at 13 sites in the region. The Guardians collected water quality data from handhelds and water grab samples using the clean hands, dirty hands method. They also have been in the same position for over 10 years in some cases and receive annual on the job training from the AAROM technical advisor and coordinator. In addition to the CBM activities, the Guardians have also gained the capabilities to carry out their own tributary monitoring of local streams. Several meetings were held with ECC staff on ways to improve CBM monitoring and it was determined early Spring training from ECC would refresh more experienced Guardians and help train new Guardians on sampling techniques and methodologies. Dehcho AAROM also attended the annual Water Strategy Workshop in Dettah, sharing updates about the program and communication with other regions. The ECC-coordinated NWT-Wide Community-Based Water Quality Monitoring Program was able to hold an in-person Workshop in June 2022 at B Dene Camp with the theme of "Reconciliation" to celebrate the 10th year anniversary of the program. Over 50 community monitors and partners attended.

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1.3 - Capacity Building, Leadership Training and Education	1.3.A. Community knowledge and capacity in water management, aquatic research and monitoring increase over time	<p>30% of respondents reported that their organization had provided more than five on-the-land capacity building opportunities in 2022-23.</p> <p>70% of respondents stated that their organization/or community participated in, or supported, a network of community monitors with similar needs or interests.</p>	1.3.A.2. Support and promote local and distance learning opportunities for community-based water monitors, Guardians, and future water leaders	2021 and Ongoing	ECC Makeway Aurora College/ ARI DataStream	Complete for reporting period, and ongoing	<p>Aurora College/ARI conducted different activities in 2022:</p> <ul style="list-style-type: none"> Western Research Centre (WARC) staff presented in-person to students at Mangilaluk High School in Tuktoyaktuk, regarding climate change impacts on inland and coastal waters. Training of environmental monitors (ISR) for lake water quality monitoring in ice conditions. E. Hille gave an overview presentation of the monitoring work to the Mackenzie River Basin Board. <p>The ECC-coordinated NWT-Wide Community-Based Water Quality Monitoring Program was able to provide continued support and education to local community monitors through hands-on training during the field season.</p> <p>The Northern Indigenous Stewardship Network was launched by Makeway, and a gathering was hosted in 2022 with participation from guardian program across the three territories. Knowledge was shared about monitoring protocols, data management, training, and youth engagement. Site visit knowledge exchanges were facilitated with Kaska Dena, Kivalliq Inuit, Inuvialuit Munaqsiyit, and others.</p> <p>DataStream hosted a panel discussion with their regional partners at the 13th Annual Water Stewardship Strategy Implementation Workshop in October 2022, celebrating 10 years of collaboration with the GNWT and water partners. Mackenzie DataStream was featured as an educational resource for teachers at the NWT Educator's conference, including both the data portal MackenzieDataStream.ca and A Monitor's Guide to Water Quality.</p> <p>List of community monitors' networks identified by water partners in the survey that their organization or community belongs to:</p> <ol style="list-style-type: none"> Municipal water licences typically include Surveillance Network Programs (SNPs) which monitor water quality downstream of sewage treatment facilities and solid waste management facilities to ensure that community wastewater/waste management operations do not impact the receiving environment (MVLWB). Dehcho Guardians (Dehcho AAROM program). The Caribou Guardians coalition which includes multiple Indigenous organizations (Local Indigenous Government).
			1.3.A.3. Promote and facilitate intergenerational on-the-land education/leadership camps	2021 and Ongoing	Makeway ECC	Complete for reporting period, and ongoing	<p>(ECC) On-The-Land Unit had 2 programs: On The Land Collaborative and Take A Family On The Land. Funding from these programs support people getting out on the land and water. The goals are harvesting, staying healthy and active, sharing knowledge, and outdoor safety. These programs connect community members to their land, culture, language, and traditions; with an emphasis on building or strengthening partnerships and enhancing community capacity. Programming for both programs included "All my relations, land and water", paddle camps and fish camps.</p> <p>Makeway hosted a workshop for various NWT and NU programs who have full-time land-based professionals. And a collaborative project to evaluate the benefits of these roles was launched, with results anticipated in 2024.</p>
			1.3.A.4. Identify opportunities for water partners to support each other's educational initiatives, including sharing of electronic and physical resources	2021 and Ongoing	ECC	In progress	<p>The ECC-coordinated NWT-Wide Community-Based Water Quality Monitoring Program Workshop in 2022 provided information regarding data reporting, sampling protocols, and an opportunity to discuss how to move forward with the program.</p>

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1.3 - Capacity Building, Leadership Training and Education	1.3.B. NWT youth are engaged in water stewardship learning and leadership opportunities and understand Indigenous and local water-related knowledge	<p>Water Monitoring and Stewardship Division supported one NWT youth in the implementation of their water-related project under the NWT Water Stewardship and Mentoring Grant Program in 2022.</p> <p>Ecology North's education and outreach program reached 377 youth and 111 adults in 24 NWT communities in 2022.</p> <p>Ecology North facilitated 22 school education sessions in 14 different communities.</p> <p>Less than 50% of respondents stated that their organization provided one or two youth-focused water stewardship activities in 2022.</p>	1.3.B.1. Create resources that support and are aligned with the units of study found in the NWT science curriculum related to the theme of water to help students make connections between the curriculum, the NWT context, and the relevant teachings of the Dene Kede and Inuuqatigiit curricula	2022 onwards	Ecology North	Complete for reporting period, and ongoing	Ecology North's education and outreach program reached 377 youth and 111 adults in 24 NWT communities. The program taught students about local watersheds, helped teach students monitoring and testing skills, and the importance of water for healthy, vibrant ecosystems. Some of these resources can be found here: https://www.nwtsciencefocus.ca/waterlessonplans.html
			1.3.B.2. Participate in school outreach to promote water stewardship and educate about aquatic ecosystems and their protection	2022 onwards	Ecology North ECC	Complete for reporting period, and ongoing	In 2022-2023, Ecology North facilitated 22 school education sessions in 14 different communities and reached 377 students. The lessons focused on the water cycle, watersheds, identifying pollutants and their sources, monitoring and testing skills development, and transboundary issues. Ecology North was able to offer programs and lessons that complemented different classrooms units and projects to ensure that the programs were consistent with those already being done in schools.
			1.3.B.3. Create an NWT-wide water stewardship youth group to provide a forum for collaborating and learning about water stewardship	2022 onwards	Ecology North	Complete for reporting period, and ongoing	<p>Ecology North's youth-led Water Stewardship Group met five times in various formats. In total, the group reached 51 youth from 6 different NWT communities. This number excludes the program run in partnership with Youth Water Stewardship and Mentorship Program recipients which saw an addition of 49 participants. The group was able to reach and engage participants through diverse programming and mediums, including virtual lectures, a paint night, book club, and water treatment plant tour.</p> <p>In 2022, the Water Stewardship Gathering brought 12 youth participants together with Elders, land-users, community members, and Guardians for a 4-day long gathering to discuss current NWT water stewardship challenges and opportunities. The Water Stewardship Group reached 80 youth from multiple regions across the NWT, and connected them with artists, activists, academics, and policymakers.</p>
			1.3.B.4. Facilitate youth engagement in Water Stewardship activities through ongoing annual programs such as the Youth Multimedia Contest and the NWT Youth Water Stewardship and Mentorship Grant Program	2022 Ongoing	ECC	Complete for reporting period, and ongoing	<p>Each year, ECC's Water Monitoring and Stewardship Division offers opportunities for NWT youth aged 18-30 to realize their water stewardship project ideas through an NWT Water Stewardship and Mentorship Grant Program. Youth engagement and capacity building in water stewardship is important to the continued success of the Water Strategy.</p> <p>List of a few youth-focused activities conducted in 2022 identified by water partners in the survey:</p> <ol style="list-style-type: none"> 1. Outreach and GIS (ARI). 2. Dehcho youth ecology camp (Dehcho AAROM program). 3. Rivers to Oceans; Water Strategy Workshops (ECC). 4. Canoe trip including water sampling and education of other environmental activities (Local Indigenous Government).

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1.4 - Transboundary Discussions, Agreements and Obligations	1.4.A. Bilateral transboundary water management agreements are in place with neighbouring jurisdictions to protect NWT waters	Two Bilateral Water Management Agreements with the Yukon were signed in August 2022. Several meetings took place for the negotiations of a Bilateral Water Management Agreement with Saskatchewan.	1.4.A.1. Advance negotiations and sign bilateral transboundary water management agreements with the remaining jurisdictions	2022 and Ongoing	ECC	Complete for reporting period, and ongoing	(ECC) Two Bilateral Water Management Agreements with the Yukon were signed in August 2022. The agreements apply to the Peel River and Mackenzie Delta sub-basins and the Liard River sub-basin. Several meetings took place with Saskatchewan to advance on the negotiations of a bilateral water management agreement.
			1.4.A.2. Continue to consult and engage Indigenous governments and organizations and engage the public during negotiations processes	2021 and Ongoing	ECC	Complete for reporting period, and ongoing	(ECC) Water Monitoring and Stewardship Division engaged with the public and Indigenous governments and Indigenous organizations and completed consultation with Indigenous governments and Indigenous organizations for the negotiations of two Bilateral Water Management Agreements (BWMAs) with the Yukon. A What We Heard Report was completed. ECC shared regular updates on negotiations of bilateral agreements with the Yukon and with Saskatchewan at Indigenous Steering Committee meetings.
	1.4.B. Bilateral transboundary water management agreements are successfully implemented through Bilateral Management Committees and NWT residents are kept informed of transboundary water management agreements activities	Work is underway to develop a Traditional Knowledge Framework to inform on implementation of Alberta-NWT agreement. Progress is being made to develop an Indigenous Community-Based Monitoring (ICBM) project in Hay River Basin.	1.4.B.1. Establish a Bilateral Management Committee (BMC) for each remaining agreement under negotiation, and develop work plans	2022 and Ongoing	ECC	Complete for reporting period, and ongoing	(ECC) Two Bilateral Water Management Agreements were signed with the Yukon in 2022. Preliminary discussions with the WSS Indigenous Steering Committee took place to discuss process for selecting Indigenous members for the Bilateral Management Committees under those Agreements. No Agreements were signed with Saskatchewan or Nunavut in 2022.
			1.4.B.2. Monitor and learn through Indigenous and western science about aquatic ecosystems, including surface and groundwater quality and quantity, and biology in the transboundary watersheds with consideration of climate change impacts	2021 and Ongoing	ECC	Complete for reporting period, and ongoing	(ECC) Water Monitoring and Stewardship Division released two reports, one describing activities undertaken between April 1, 2018 to March 31, 2020 for the implementation of the Alberta-NWT Bilateral Water Management Agreement in July 2022, and another describing activities undertaken between April 1, 2019 and March 31, 2021 for the implementation of the British Columbia-NWT Bilateral Water Management Agreement in May 2022. As part of the implementation of the Alberta-NWT Agreement, work is underway to develop a Traditional Knowledge Framework to inform implementation of the Agreement. Progress is also being made to develop an Indigenous community-based monitoring project in Hay River Basin. Water quality, water quantity, and biological monitoring continued in transboundary waters. Data assessment and implementation activities under the transboundary agreements are reported in annual reports.
			1.4.B.3. Implement an updated transboundary water management agreement communication strategy to ensure that water partners and the public are kept informed of negotiation and implementation activities	2022 and Ongoing	ECC	In progress	ECC contracted a consulting company to assist with the development of communications products related to bilateral agreements. This work is ongoing.

Know and Plan

	Key to Success	2022 Performance Indicator Results	Action Item	Deliverable Date	Action Item Lead	Action Item Status	2022 Action Item Status Description
2.1 - Building Knowledge	2.1.A. Understanding is improved of NWT'S aquatic ecosystems, including water quality, water quantity, wetlands and biological components and the human dimensions of water management	67% of the survey respondents have collected or used collected data about NWT's aquatic ecosystems, including surface or groundwater quality, quantity, wetlands, or biology. Also, the data collected are easily accessible to the public.	2.1.A.2. Increase biological monitoring across the NWT (e.g. benthic invertebrates, fish) and use biological indicators, where possible, as part of ongoing aquatic monitoring to provide early warnings of change in the aquatic ecosystems	2021 and Ongoing	ECCC ECC	Complete for reporting period and ongoing	<p>ECCC continues to make connections and communicates with communities and organizations interested in biological monitoring. ECCC will offer CABIN training as resources allow.</p> <p>ECC, in collaboration with community partners and the Government of Alberta, monitored benthic invertebrates on the Slave and Hay Rivers in 2022, and small-bodied fish in the Slave River. Data analysis is ongoing, and available results are reported in annual reports.</p> <p>In 2022-23 for NWT CIMP, 21 of the 29 NWT CIMP-funded projects focused on aquatic monitoring and research.</p> <p>Aquatic ecosystem data collected by water partners in 2022:</p> <ol style="list-style-type: none"> 1. Stream ecosystem monitoring; and watershed water chemistry data collection related to climate change (ARI). 2. SNP data (MVLWB). 3. Mercury; contaminants; and permafrost (Dehcho AAROM program). 4. State of Environment Reporting; Status and Trends; and addressing community concerns (ECC). 5. Water quality parameters; eDNA data; ARU data; and game cameras on shorelines (Local Indigenous Government). <p>Types of data currently not being collected that water partners identified as important to collect:</p> <ol style="list-style-type: none"> 1. Changing bio sheen in and around community fishing areas (ISC member). 2. Fish tissue quality (ECC). 3. Dissolved oxygen; and salinity (Local Indigenous Government).
			2.1.A.3. Complete fish studies to assess fish health and change, distribution, contaminants, and populations	2021 and Ongoing	ECC ECCC DFO	Complete for reporting period and ongoing	<p>DFO's NWT-CIMP project continued to work on a comprehensive modeling of GSL biological productivity during April 2022 and March 2023. The spring flooding of Hay River did not significantly influence the limnology and biological productivity in the main basin of GSL in the summer and fall seasons. The stock status of Lake Whitefish is in a healthy state; also, there is a low population of Lake Trout and Inconnu, compared to past populations. Low fishery production was mainly due to socio-economic uncertainty and the pandemic.</p> <p>In 2022-23, for NWT CIMP, 12 of the 29 CIMP-funded projects focused on fish monitoring and research.</p>
			2.1.A.5. Collect Snow Water Equivalent (SWE) information to assess spring water outlook and provide baseline SWE information Data are archived and disseminated, including historic data to support assessment of change	2021 and Ongoing	ECC	Complete for reporting period and ongoing	(ECC) Water Monitoring and Stewardship Division completes snow surveys and shares the data in Spring Outlook reports. ECC is ingesting observational, satellite and reanalysis datasets to produce spatially distributed precipitation estimates across the NWT.
			2.1.A.6. Assess impacts of increasing air temperature on different components of the hydrological cycle	2021 and Ongoing	ECC	In progress	This was not completed. ECC requires improved expertise and tools to properly assess impacts of climate change on water resources. Scientists in the Water Monitoring and Stewardship Division are working on this action item but require additional resources to advance this work.

	Key to Success	2022 Performance Indicator Results	Action Item	Deliverable Date	Action Item Lead	Action Item Status	2022 Action Item Status Description
2.1 - Building Knowledge	2.1.B. Groundwater is better understood as part of the structure and function of aquatic ecosystems in the NWT	<p>A formal partnership between ECC and the Alberta Geological Survey was put in place in July 2022.</p> <p>Geological cross sections were developed through the Alberta-NWT transboundary region.</p> <p>NTGS released a paper on the distribution of large icings across NW Canada in 2020.</p>	2.1.B.1. Create a groundwater interdepartmental working group	2022	ECC	Not started	The establishment of the interdepartmental working group has been postponed to after the ENR-Lands merger.
			2.1.B.3. Identify priority NWT regions for aquifers and groundwater assessments, including in transboundary areas	2022	ECC	In progress	The work is ongoing. The list is evolving and available upon request.
			2.1.B.4. Undertake an information assessment for each priority aquifer in the NWT	2021 and Ongoing	ECC NTGS Academic partners	In progress	<p>(ECC) Water Monitoring and Stewardship Division conducted a few activities under this action item:</p> <ul style="list-style-type: none"> A formal partnership between ECC and the Alberta Geological Survey was established in July 2022. Updated bedrock topography and sediment thickness models of the Kakisa, Hay, Wood Buffalo and Slave River Basins were published. Geological cross sections were developed through the Alberta-NWT transboundary region, with the goal of identifying potential transboundary aquifers. <p>NTGS released a paper on the distribution of large icings across NW Canada in 2020. Icings are sheet-like masses of ice that form on the ground surface or in fluvial channels from groundwater seepage.</p> <p>A study on icings (sheet-like masses of ice that form on the ground surface or in fluvial channels from groundwater seepage) and groundwater conditions in permafrost catchments of northwestern Canada published in 2020, revealed that, although the presence of icings in the landscape is known, few studies investigated their regional distribution and explored relations with terrain factors including permafrost and winter baseflow conditions. This study mapped the distribution of icings in a 618,430km² area of northern Canada from a stack of 573 Landsat imageries (1985-2017) and determined, using hydrometric data, the winter baseflow contribution to the total annual discharge of 17 rivers in the study area. The 1402 mapped icings occur preferentially at the foothills of heavily faulted karstic mountainous regions in the continuous permafrost. Winter baseflow and its contribution to annual discharge was lower in continuous permafrost catchments than in discontinuous permafrost but showed a general increase over the 1970-2016 period. As such, the distribution of icings appears to be sensitive to winter air temperatures and winter baseflow conditions, and icings located at the southern boundary of continuous permafrost would be more sensitive to degrading permafrost and the predicted increase in winter baseflow.</p> <p>https://www.nature.com/articles/s41598-020-60322-w</p>
	2.1.C. Remote sensing imagery and geomatics tools assist in understanding water quality and quantity in the NWT	<p>NWTCG continued to make available the Planet Labs satellite imagery data to GNWT for situational awareness. Also, the Long-Term Change data continues to be available for discovery on the NWT Centre for Geomatics website.</p> <p>ECC developed new geomatics tools to evaluate observational, satellite, and reanalysis climate products.</p>	2.1.C.1. Share information about existing water-related geomatics and/or remote sensing uses to interested water partners	2021 and Ongoing	ECC NWT Centre for Geomatics (NWTCG)	In progress	The NWTCG has continued to make available the Planet Labs satellite imagery data to GNWT for situational awareness. LiDAR data acquired has been shared with NRCAN and has been incorporated in the High-Resolution Arctic Digital Elevation Model (HRDEM) which is publicly available for download on NRCAN's website. The NWTCG continues to work toward an internal GNWT tool to make satellite and air photography data discoverable.
			2.1.C.2. Monitoring programs include geomatics and remote sensing tools, where appropriate	2021 and Ongoing	ECC NWTCG	Complete for reporting period and ongoing	<p>The Long-Term Change data continues to be available for discovery on the NWT Centre for Geomatics website. The NWTCG captured more oblique air photography which can be used to help validate remote sensing and GIS analysis. These data are anticipated to be made public in 2023.</p> <p>(ECC) Water Monitoring and Stewardship Division has developed new geomatics tools to evaluate observational, satellite, and reanalysis climate products. The Division has integrated a radar river ice classification algorithm into their monitoring platform and uses these tools to produce regular public reports that provide updates on current hydrometric conditions.</p>

	Key to Success	2022 Performance Indicator Results	Action Item	Deliverable Date	Action Item Lead	Action Item Status	2022 Action Item Status Description
2.1 - Building Knowledge	2.1.D. Impacts and cumulative impacts of human activities and climate change on NWT waters are mitigated	In 2022-23, NWT CIMP successfully completed the third year of a pilot project to monitor cumulative impacts to water quality of lakes in the Yamba Basin in the upper Coppermine.	2.1.D.1. Work with key decision-makers and the NWT CIMP Steering Committee to develop detailed cumulative impact monitoring priorities for 2021-2025, for water and fish Identify opportunities to include Indigenous and local knowledge relevant to cumulative impact monitoring	2022 and Ongoing	ECC	Complete for reporting period and ongoing	In 2021-22, NWT CIMP's monitoring Blueprints (priorities) were significantly revised, with input from subject matter experts and the NWT CIMP Steering Committee, prior to NWT CIMP's call for proposals in September 2021. The Blueprints better align with NWT CIMP's 2021-25 Action Plan and form the basis of the 2023-24 funding process.
			2.1.D.2. Continue to fund water partners to undertake cumulative impact monitoring and research projects, with a requirement to report on results	2021 and Ongoing	ECC	Complete for reporting period and ongoing	In 2022-23, NWT CIMP successfully completed the third year of a pilot project to monitor cumulative impacts to water quality of lakes in the Yamba Basin in the Upper Coppermine. The final year of data collection will take place this summer. Analyses of first year results took place in May 2021. These results were shared with the NWT CIMP Steering Committee in Q3 of 2021-22. Analyses of second year and third year results are currently underway.
2.2 - Applying Knowledge for the Long Term	2.2.B. Water monitoring networks are proactively and collaboratively managed through partnerships and agreements to maintain and improve long-term water quality and quantity knowledge, address gaps, and meet changing needs	ECCC continued to maintain its long-term water quality and quantity monitoring network across the NWT. ECC's State of the Environment reporting has been conducted for NWT water quality monitoring sites. More than 50% of the survey respondents did not know if the NWT monitoring networks were sufficient or effective but provided some ideas on how the networks can be improved.	2.2.B.1. Identify knowledge gaps across monitoring programs and networks (including transboundary water systems and NWT-wide water systems), prioritize long-term data collection, establish research priorities to address the priority gaps, and identify monitoring sites to fill gaps in accordance with available resources	2021 and Ongoing	ECC ECCC Academic partners IGIOs	In progress	ECCC continues to maintain its long-term water quality and quantity monitoring network across the NWT. The network is reviewed cyclically using ECCC's Risk Based Adaptive Management Framework. (ECC) Water Monitoring and Stewardship Division conducted water quality monitoring across the NWT through multiple partnerships. State of the Environment reporting was conducted for NWT water quality monitoring sites. Data analysis, program evaluation and reporting are ongoing.
			2.2.B.2. Water partners meet to discuss approaches and emerging science/tools, including Indigenous and local knowledge	2021 and Ongoing	All water partners.	In progress	(ECC) Water Monitoring and Stewardship Division provides annual opportunities for water partners to meet and discuss approaches and emerging science/tools, including Indigenous and local knowledge, at the Water Stewardship Strategy Implementation workshops. 80% of survey respondents indicated that their organization used Indigenous knowledge to inform water stewardship decision-making.

	Key to Success	2022 Performance Indicator Results	Action Item	Deliverable Date	Action Item Lead	Action Item Status	2022 Action Item Status Description
2.2 - Applying Knowledge for the Long Term	2.2.B. Water monitoring networks are proactively and collaboratively managed through partnerships and agreements to maintain and improve long-term water quality and quantity knowledge, address gaps, and meet changing needs	<p>ECCC continued to maintain its long-term water quality and quantity monitoring network across the NWT.</p> <p>ECC's State of the Environment reporting has been conducted for NWT water quality monitoring sites.</p> <p>More than 50% of the survey respondents did not know if the NWT monitoring networks were sufficient or effective but provided some ideas on how the networks can be improved.</p>	2.2.B.3. Existing water quality and quantity monitoring programs are maintained and optimized, where possible, through collaboration with water partners	2021 and Ongoing	All water partners	In progress	<p>(ECC) Existing hydrometric (water quantity), snow, and climate research monitoring networks have been maintained. A proper network review is needed for all networks but has been delayed due to limited capacity.</p> <p>Ways to make monitoring networks more sufficient and improved, identified by the water partners who took the online survey:</p> <ol style="list-style-type: none"> 1. Groundwater data are lacking: lack of understanding of risk associated with natural attenuation landfills and sewage treatment facilities; there could be collaboration/coordination between SNP and other community/regional monitoring programs (MVLWB). 2. Increasing reach across the territory and providing more proactive opportunities to become more involved (Community organization, e.g., town, hamlet, First Nation, band, and councils). 3. More funding for community interests, which can get an updated understanding of changing water habits as it impacts harvesting (ISC member). 4. Private industry should submit their collected data to a shared database that allows data requests from local governments (Local Indigenous Government). 5. Water monitoring could be reduced at certain locations throughout the North to reduce some of the redundancies and use the resources saved to go towards more intensive localized research-based questions (ECC). 6. If monitoring networks were more transparent, this would eliminate duplication (Local Indigenous Government). <p>How water partners' organizations share water-related monitoring results and how often they are shared:</p> <ol style="list-style-type: none"> 1. Disseminated to communities via workshops/ community engagement and web-based access (ARI). 2. On the LWBs public registries, through SNP records, Annual Water Licence Reports and through specific Management Plans (MVLWB). 3. Community presentations (Dehcho AAROM program). 4. Community presentations, results-based workshops, brochures, website, and annual reporting (ECC). 5. Annually for mandatory reporting, which is sent in a template to responding authorities (Local Indigenous Government).
	2.2.C. Results of monitoring and research activities by researchers and water partners are provided to water partners in an understandable way	50% of the survey respondents reported being somewhat satisfied with their organization's level of involvement in setting water-related research priorities in their region and shared ways to increase their level of satisfaction.	2.2.C.1. Researchers working in the NWT ensure that they understand and have adopted community research protocols	2021 and Ongoing	ECC Aurora College/ ARI	Complete for reporting period and ongoing	<p>(Aurora College/ARI) E. Hille presented to the Tuktoyaktuk community to share Coastal Restoration Project findings and results in collaboration with NRCan Mar 2023.</p> <p>(ECC) Water Monitoring and Stewardship Division hosted an in-person meeting of the Slave River and Delta Partnership in November 2022 in Fort Smith, NT to report on the progress of the Slave River Transboundary Fish Monitoring Program, Great Slave Lake Program, and the NWT-Wide Community-Based Water Quality Monitoring Program.</p> <p>(ECC) Through the NWT-Wide Community-Based Water Quality Monitoring Program, grab samples, polyethylene membrane passive samplers and continual sonde data were collected in 21 communities in 2022. The data collected are available to the public on Mackenzie DataStream.</p> <p>Data analysis and reporting of the 10 Year Review of the GNWT Community Based Monitoring Program & Plain Language report is underway, and the report will be available in 2023 to the public.</p> <p>NWT CIMP requires project funding recipients to engage and have the support of communities, through the proposal process. In 2022-23, 18 projects proposed for 2023-24 were received, with 31 letters of support from communities or IGIOs received in total.</p>

	Key to Success	2022 Performance Indicator Results	Action Item	Deliverable Date	Action Item Lead	Action Item Status	2022 Action Item Status Description
2.2 - Applying Knowledge for the Long Term	2.2.C. Results of monitoring and research activities by researchers and water partners are provided to water partners in an understandable way	50% of the survey respondents reported being somewhat satisfied with their organization's level of involvement in setting water-related research priorities in their region and shared ways to increase their level of satisfaction.	2.2.C.2. Water partners work collaboratively with community representatives to establish research study goals that build on past and ongoing work in communities and community capacity	2021 and Ongoing	All water partners	In progress	<p>Improvements that could increase water partners' satisfaction with their organization's level of involvement in setting water-related research priorities in their region:</p> <ol style="list-style-type: none"> 1. Collaboration between regional monitoring needs/concerns and management/monitoring of local waste management facilities; further understanding/direct guidance for communities on the management of community waste streams: sewage, solid waste, water treatment plant residuals (MVLWB). 2. Increase funding to create more community engagement and investigatory work (ISC member). 3. Focus research on the questions being asked (ECC).
			2.2.C.3. Ensure community-based monitoring data are relevant to local decision-making and help to address community concerns	2021 and Ongoing	ECC Academic partners Research funding agents	Complete for reporting period and ongoing	The ECC-coordinated NWT-Wide Community-Based Water Quality Monitoring Program developed an online version of the field sheets through the ARC GIS Survey 123 app. This should assist community monitors with collection of accurate and detailed information in an intuitive manner. The online field sheet will be available in the 2023 field season.
			2.2.C.4. Technical experts and researchers communicate with communities during projects and present monitoring and research findings tailored to communities (in the appropriate context and plain language) upon completion of a project	2021 and Ongoing	Aurora College/ARI ECC Academic partners Research funding agents DataStream	Complete for reporting period and ongoing	<p>Aurora College/ARI made presentations to Yellowknife Farmers Market, Yellowknives Dene First Nation, and Yellowknife Legacy Arsenic Committee (GNWT) regarding the Yellowknife Garden Metals Study.</p> <ol style="list-style-type: none"> 1. Results from year 2 of the Yellowknife Garden Metals Study were shared with participants, including through a plain language summary. 2. Western Arctic Research Centre (WARC) continued to host regular online presentations, as part of our 2022 Virtual Speaker Series presentations related to freshwater: and freshwater systems. 3. The Aurora Research Institute issued 50 scientific research licenses related to freshwater resources in the NWT. <p>(DataStream) Mackenzie DataStream (https://mackenziedatastream.ca) contains over 1.6 million unique data points, collected by 58 different monitoring organizations, including the territorial and federal government, Indigenous governments and Guardian programs, researchers and the NWT-wide Community-Based Water Quality Monitoring Program.</p>

Use Responsibly

	Key to Success	2022 Performance Indicator Results	Action Item	Deliverable Date	Action Item Lead	Action Item Status	2022 Action Item Status Description
3.1 - Municipal Water Use	3.1.C. Drinking water in communities is protected through a multi-barrier approach to source water protection	25% of survey respondents reported using source water protection planning tools within their organization and shared the types of tools used by their organization in 2022.	3.1.C.1. Support communities to develop source water protection plans where necessary and if required	2021 and Ongoing	ECC	In progress	<p>(ECC) Water Monitoring and Stewardship Division continues to be available to support communities to develop source water protection plans if requested.</p> <p>Source water protection planning tools mentioned by water partners in the survey:</p> <ol style="list-style-type: none"> Standard water licence conditions, standard water licence templates for developing Operation & Maintenance (O&M) Plans for community waste management (water treatment plant O&M, sewage disposal facilities O&M, solid waste management facilities O&M), guidelines for the management of specific waste streams (sewage, solid waste, contaminated soil), SNP manuals, annual reporting templates. All resources are found here: https://mvlwb.com/resources/lwb-policies-and-guidelines (MVLWB). Testing of source water quality, participation in coordinated watershed decision-making (Local Indigenous Government).
			3.1.C.4. Seek to better understand the prevalence and effects of non-household wastes on municipal wastewater systems, such as landfill leachate, compost facility runoff, and water purification plan by-product	2021 and Ongoing	ECC LWBs/IWB	Complete for reporting period and ongoing	<p>(LWBs) recently renewed municipal water use licences require that the quantity and quality of waste streams (i.e., backwash and/ sludge) discharged from the water treatment plans to be monitored so that regulators can better understand any potential impacts on the receiving environment.</p> <p>Dalhousie University, in conjunction with ECC, MACA, and the LWBs, completed an initial set of “Recommendations for Municipal Water Treatment Plant Waste Residuals in the Northwest Territories” in March 2021.</p> <p>A working group has been established with LWBs, ECC, MACA and Dalhousie’s Centre for Water Resource Studies to commence a 2-year study on water treatment residuals in the NWT, with hopes to develop some guidance or parameters around the management of these wastes.</p> <p>(IWB) Beginning in 2015, the IWB hosted an annual Municipal Water and Waste Management Workshop to enhance the capacity of municipal governments roles and responsibilities regarding municipal water licenses and to disseminate information regarding efficient water use and waste management systems. The workshops were cancelled during the COVID-19 pandemic. IWB held the 7th Municipal Water and Waste Management Workshop on March 1 and 2, 2023 in Inuvik.</p>
	3.1.D. Consistency, standardization, and guidance for managing community public works facilities are improved		3.1.D.2. Identify, prioritize, and implement waste diversion programs	2021 and Ongoing	ECC	Complete for reporting period and ongoing	<p>(ECC) Environmental Protection and Waste Management Division:</p> <p>One of the priority actions in the NWT Waste Resource Management Strategy and Implementation Plan (Strategy) is to implement or expand 3-5 waste reduction/diversion programs by 2031. Input from the Waste Reduction and Recovery Advisory Committee was used to prioritize the following three materials: used oil, waste tires, and an expanded suite of electronic and electrical products.</p> <p>In 2022-2023, recycling deposits in 10 targeted communities continued to collect an expanded list of electronics and electrical products, as part of the Electronic and Electrical Products Recycling Pilot Project (the E-Pilot) that began in October 2021. Information collected through this E-Pilot continues to help ECC plan future expansion of this program.</p> <p>ECC is amending the Waste Reduction and Recovery Act (WRRRA) so the GNWT can use the most current and comprehensive tools to effectively manage waste reduction and recovery in the NWT. If passed in August 2023, Bill 78 will enable new tools, such as extended producer responsibility and waste disposal bans, which will be considered during the development of new or expanded waste diversion and reduction programs. Amending the WRRRA is a priority action in the Strategy.</p> <p>The NWT Compost Facility Standard and NWT Composting Best Practices are currently being reviewed by senior management and are expected to be ready for public engagement tentatively by the end of 2023.</p>

	Key to Success	2022 Performance Indicator Results	Action Item	Deliverable Date	Action Item Lead	Action Item Status	2022 Action Item Status Description
3.2 - Industrial Water Use	3.2.A. Strengthen opportunities and clarify expectations for community involvement in environmental assessment, regulatory and post-regulatory processes, to improve understanding of the relationship of Indigenous people to the land and water and the importance of this relationship to community wellbeing	<p>25% of survey respondents stated being completely satisfied with their organization's level of involvement in the water licence application and review processes in 2022.</p> <p>33% and 45% of survey respondents reported completely agreeing and somewhat agreeing, respectively, that their organization/community's awareness of Indigenous peoples' relationship to the land and water has increased through their participation in environmental assessment, regulatory and post-regulatory processes.</p>	3.2.A.1. Provide information to Indigenous governments and organizations and communities on how to participate in regulatory and environmental impact assessment processes	2021 and Ongoing	CIRNAC LWB/IWB MVEIRB ECC	Complete for reporting period and ongoing	<p>(LWBs) The Land and Water Boards of the Mackenzie Valley, the Mackenzie Valley Environmental Impact Review Board, the Government of Canada hosted the annual <i>Mackenzie Valley Resource Management Act</i> (MVRMA) Resource Co-management workshop, and the report is available at this link: https://wlb.ca/outreach/mvrma-workshop</p> <p>There is a process underway to update the LWB Engagement Guidelines for Applicants and Holders of Water Licences and Land Use Permits in 2023. A public workshop is being held on May 17 and it is anticipated that a draft will be available for public review in summer 2023.</p> <p>(IWB) information regarding the water licencing issuance and renewal processes and water licence Terms and Conditions are provided to the ISR communities through the IWB annual workshops and community tours. Community Tours are held annually within the community whose water licence is up for renewal.</p> <p>IWB members and staff, along with ECC WRO, visited the community of Ulukhaktok in August 2021 and in August 2022.; the IWB Board visited the Hamlet of Sachs Harbour. During the community visits, the IWB toured the Hamlet's water use and waste disposal facilities and to discuss issues and concerns the Hamlet may have. The Board then met with the Hamlet Mayor, council and operation staff and discussed the Hamlet's water licence Terms and Conditions.</p> <p>In accordance with the Inuvialuit Final Agreement (IFA), the environmental screening of any project in the ISR is conducted by the Environmental Impact Screening Committee (EISC).</p> <p>(MVEIRB) The Review Board has continued to develop its suite of outreach and education materials to help inform Indigenous Governments, Indigenous Organizations, communities, and members of the public about how participate in EA processes. This suite of tools includes:</p> <ul style="list-style-type: none"> • Introductory videos about the Review Board and the Environmental assessment processes, which have been translated into Indigenous languages; plain language booklet about different EA process steps; • Narrated PowerPoint presentations geared towards developers, governments, and communities; and • Dedicated staff focused on engagement and communication, and work on an updated website that will house this suite of tools in an accessible way.

	Key to Success	2022 Performance Indicator Results	Action Item	Deliverable Date	Action Item Lead	Action Item Status	2022 Action Item Status Description
3.2 - Industrial Water Use	3.2.A. Strengthen opportunities and clarify expectations for community involvement in environmental assessment, regulatory and post-regulatory processes, to improve understanding of the relationship of Indigenous people to the land and water and the importance of this relationship to community wellbeing	<p>25% of survey respondents stated being completely satisfied with their organization's level of involvement in the water licence application and review processes in 2022.</p> <p>33% and 45% of survey respondents reported completely agreeing and somewhat agreeing, respectively, that their organization/community's awareness of Indigenous peoples' relationship to the land and water has increased through their participation in environmental assessment, regulatory and post-regulatory processes.</p>	3.2.A.2. Produce decisions statements, policies, and guidelines using plain language to communicate how Indigenous knowledge has been or will be considered in water licenses and environmental assessments	2021 and Ongoing	MVEIRB LWB/IWB	Complete for reporting period and ongoing	<p>(LWBs) A process is underway to update the LWB Engagement Guidelines for Applicants and Holders of Water Licences and Land Use Permits in 2023. A public workshop is being held in May 2023 and it is anticipated that a draft will be available for public review in summer 2023.</p> <p>The LWBs issue Reason for Decisions (RFD) with all major decisions, water licence renewals, and water licence issuances. The RFDs explain how traditional knowledge has been or will be considered in water licences.</p> <p>Licence conditions may directly address traditional knowledge collection and consideration. These conditions require the proponent to consider and incorporate traditional knowledge into required submissions; identify traditional knowledge-related recommendations and describe how they were incorporated; and operate in accordance with a traditional knowledge management framework.</p> <p>Traditional knowledge may also be addressed through the review process, providing direction to proponents to design criteria and parameters for closure and monitoring that involve local and traditional knowledge.</p> <p>The IWB may consider traditional knowledge relevant to water use and waste disposal in their decision making if concerns are identified during the application review process and consultation report submitted by the applicant. In accordance with the Inuvialuit Final Agreement (IFA), the environmental screening of any project in the Inuvialuit Settlement Region (ISR) is conducted by the Environmental Impact Screening Committee (EISC).</p> <p>(MVEIRB) The Review Board is committed to communicating in plain language and improving the ways in which Indigenous language is encouraged in, incorporated into, and informs Review Board processes and decisions. Part of this effort includes the plain language and multimedia tools that help people understand Review Board processes and how to participate in those processes. The Review Board has continued to work on its draft Environmental Assessment Initiation Guidelines, which includes guidance on how developers should work to include Indigenous traditional knowledge in project planning and preliminary assessment activities.</p> <p>What would increase water partners' level of satisfaction with the degree to which their organizations participate in the water licence application and review processes:</p> <ol style="list-style-type: none"> 1. Increased resources to support dissemination of information better, coordination between researchers and monitoring programs on data collected (ARI). 2. More direct early engagement by proponents and regulators (Community organization; e.g., town, hamlet, First Nation, band and councils). 3. More professional and technical capacity; more funding to hire more staff (Local Indigenous Government).
			3.2.A.3. Update or develop guidelines to encourage the use of community monitors, such as local Guardians, in baseline data collection	2022	MVEIRB LWB/IWB	Complete for reporting period and ongoing	<p>LWBs' community visits take place to work with staff on water licence compliance including the collection of SNP samples.</p> <p>The Inuvialuit Water Board (IWB) issues water licences within the Inuvialuit Settlement Region (ISR) of the NWT and sets conditions which include the Surveillance Network Program (SNP) locations and parameters based on the water licence application, supporting documents, comments received during the licence review process and relevant existing water quality guidelines. In order to maintain the quality of SNP monitoring data, the submission of quality assurance/quality control (QA/QC) plans are required. These plans are to be approved by the Analyst (i.e., ECC Taiga Lab).</p> <p>(MVEIRB) The Review Board has continued to work on its draft <i>Environmental Assessment Initiation Guidelines</i>, which encourages the use of community monitors and local Indigenous traditional knowledge and knowledge holders in both the design and execution of baseline data collection programs.</p>

	Key to Success	2022 Performance Indicator Results	Action Item	Deliverable Date	Action Item Lead	Action Item Status	2022 Action Item Status Description
3.2 - Industrial Water Use	3.2.B: Management processes for water stewardship continuously improve in efficiency and effectiveness		3.2.B.3. Develop guidelines for assessing impacts of development on people to inform water partners on how the relationship between healthy water and healthy people is considered in environmental assessment processes and decisions	2022	MVERIB	Complete for reporting period and ongoing	(MVERIB) The Review Board prioritized work on the EA Initiation Guideline in 2022 which includes a description about the importance of considering impacts on people during project planning and early assessment phases. The Review Board looks forward to re-engaging with the public, Indigenous governments, industry, and the federal and territorial governments to advance the <i>Guidelines for Assessing Impacts on People</i> in 2023. The Review Board has also created measures in recent EAs for the inclusion of Indigenous traditional knowledge in follow-up and monitoring programs and will build on this wherever appropriate and necessary in future EAs.

Check Our Progress

	Key to Success	2022 Performance Indicator Results	Action Item	Deliverable Date	Action Item Lead	Action Item Status	2022 Action Item Status Description
4.1 - Check Our Progress- Routine Checks	4.1.A. Water Partners maintain steady progress on Action Plan Implementation	<p>Progress was assessed for 63 action items in the 2021-2025 Action Plan, with timelines of “2021, 2022 and ongoing”. A total of 86 action items in the Action Plan are to be completed by the end of 2025.</p> <p>The 2021 Water Strategy Action Plan Progress report was published mid-2023, and we expect the 2022 Action Plan Progress Report to be released early 2024.</p>	4.1.A.1. Hold an annual Implementation Workshop to report on successes, improvements, and remaining challenges	2021 and Ongoing	ECC ISC WSS Working Group	Complete for reporting period and ongoing	<p>In October 2022, the 13th Annual Water Stewardship Strategy Implementation Workshop was held at the Chief Drygeese Centre, in Dettah. It brought together water and climate change partners for the second time under the theme “<i>Adapting to Change and Building a Resilient Northwest Territories</i>”, to recognize the challenges the NWT has faced in recent years in having to respond to changes occurring on the land, water, and in our communities.</p> <p>The climate crisis is one of the most important issues of our time, and parts of Canada’s North are warming four times faster than the global average. As a result, climate change is challenging the Northern resilience, causing changes in the natural environment, including water. The workshop was therefore an opportunity for water and climate change partners to come together, share their knowledge through panel discussions, presentations and networking, and strive for a collaborative approach, so that the actions taken foster a strong and resilient territory.</p> <p>Key objectives of the workshop included, but were not limited to the following:</p> <ul style="list-style-type: none"> • Share progress on the importance of the NWT Water Stewardship Strategy (Water Strategy) and 2021-2025 Action Plan. • Highlight successes, opportunities and challenges, and needs to advance water management and climate adaptation in the NWT. • Provide a venue for NWT water partners to share, network and build partnerships with each other to advance collective resilience. <p>Some of the key takeaways from the Water Stewardship Strategy Workshop presentations and panel discussions include:</p> <ul style="list-style-type: none"> • Implementation of the 2021-2025 NWT Water Strategy Action Plan is well underway by water partners through a number of ongoing projects and initiatives. • Successful transboundary discussions, agreements and obligations with neighbouring jurisdictions help ensure the waters of the NWT remain clean, abundant, and productive for all time. • The Indigenous Steering Committee reminded participants of our connection to the land and water and the importance of water in our lives, and how the Water Strategy is a vital tool to collectively preserve our NWT waters for the future. • Indigenous governments, Indigenous organizations and communities, and youth shared different ongoing projects and initiatives contributing to the vision and goals of the Water Strategy. Emphasis was placed on the need to work together, side by side, because changes are happening, and everyone is affected. • Through questions and discussions, participants expressed the need for greater linkages between Indigenous knowledge and western science in research and regulatory programs, and involvement of youth in future workshops. <p>For more information on the workshop, please refer to the workshop report.</p>

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4.1 - Check Our Progress- Routine Checks	4.1.A. Water Partners maintain steady progress on Action Plan Implementation	<p>Progress was assessed for 63 action items in the 2021-2025 Action Plan, with timelines of “2021, 2022 and ongoing”. A total of 86 action items in the Action Plan are to be completed by the end of 2025.</p> <p>The 2021 Water Strategy Action Plan Progress report was published mid-2023, and we expect the 2022 Action Plan Progress Report to be released early 2024.</p>	4.1.A.2. Survey appropriate water partners to assess progress on Keys to Success using performance indicators, and to identify challenges and solutions	2021 and Ongoing	ECC ISC WSS Working Group	Complete for reporting period and ongoing	<p>For 2022 Water Strategy Action Plan implementation year, ECC launched an online survey that was distributed to water partners in May 2023. ECC also directly reached out to different lead partners to gather input and progress on the 2021-2025 Water Stewardship Strategy Action Plan. A total of 63 action items were evaluated, identified as: 2 for the year 2021 and ongoing, 36 ongoing, 3 annually, 6 for the year 2022, and 16 for the year 2022 and ongoing/onwards, action items in the 2021-2025 Action Plan.</p> <p>Information collected from water partners about the Action Plan’s Keys to Success and related Performance Indicators and Action Items help assess the progress done and highlight actions that require attention. This process helps ensure that progress on the Action Plan is occurring as intended.</p> <p>Water partners who took the online survey reported successes that their organization/community experienced when implementing water stewardship activities, practices or protocols in 2022, including:</p> <ol style="list-style-type: none"> 1. A new Strategic Plan for the Mackenzie Valley Land and Water Boards 2022-2026 was developed and released in January 2022, outlining objectives relevant to NWT Water Strategy Action Item 3.2 A 1&2 (MVLWB). 2. A new Standard Water Licence Conditions list was updated to include standard conditions around traditional knowledge, describing how recommendations were incorporated into submissions, and providing justification for any recommendations not adopted (Standard WL conditions list) (MVLWB). 3. Land Use Permit and Water Licence applications have been updated to require applicants to include traditional place names (MVLWB). 4. Generally, the Land and Water Boards now include the requirements to monitor the quantity of water treatment plant residuals as part of the Surveillance Network Program (SNP) of newly issued or renewed municipal water licences; this information will allow for a greater understanding of the quality of these wastes and help inform best practices for their discharge (MVLWB). 5. LWBs and GNWT developed guidelines for Municipal Sludge Management in the NWT (MVLWB). 6. Increased perception of water quality and harvesting of fish (Dehcho AAROM program). 7. In one community, we’ve seen community-led construction of harvester infrastructure that also supports water and climate change monitoring. In another community, we’ve held two community workshops on climate change adaptation, including a collaborative workshop with fish and toxicology researchers to support their ongoing communication about mercury and other contaminants in fish (WLU). 8. Continuing discussions and updates of regional activities is a key process and helps facilitate transfer of knowledge (ISC member). 9. A local Indigenous government completed: the first phase of water sampling process with Memorial University; a third season of eDNA sampling; participation in the CBM program with ECC; micro-plastic sampling process with Carlton University; and participation in NCP and CIMP committee reviews (Local Indigenous Government). <p>Water partners who took the online survey reported challenges that their organization/community experienced when implementing water stewardship activities, practices, or protocols in 2022, including:</p> <ol style="list-style-type: none"> 1. Community capacity and resources (MVLWB). 2. Continuous individual training, i.e., one on one training (Dehcho AAROM program). 3. Communities are overwhelmed with demands on their time and energy. This, along with strains associated with post-COVID social readjustments, ongoing impacts of climate change (e.g., flooding, fire), and the loss of remaining Elders from the generation that holds the strongest land-based knowledge, is making it challenging for communities to start or continue the kind of stewardship work that they would like to do (WLU). 4. Getting youth involved and ensuring they have access to sufficient funding for any proposed activities (ISC member). 5. Lack of proper equipment, e.g., shallow water requires a jet boat. Difficulties in accurate data collection (Local Indigenous Government).

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4.1 - Check Our Progress- Routine Checks	4.1.A. Water Partners maintain steady progress on Action Plan Implementation	<p>Progress was assessed for 63 action items in the 2021-2025 Action Plan, with timelines of “2021, 2022 and ongoing”. A total of 86 action items in the Action Plan are to be completed by the end of 2025.</p> <p>The 2021 Water Strategy Action Plan Progress report was published mid-2023, and we expect the 2022 Action Plan Progress Report to be released early 2024.</p>	4.1.A.3. Routinely update water partners in implementation activities by providing information using plain language and using appropriate tactics	2021 and Ongoing	ECC ISC WSS Working Group	In progress	The 2022 Water Strategy Action Plan Progress Report is expected to be released early 2024.
			4.1.A.4. Update water partners’ roles and responsibilities for the WSS and the Action Plan using plain language.	2022	ECC	Not started	This work has not started yet.