



INUVALUIT WATER BOARD WATER AND WASTE MANAGEMENT WORKSHOP REPORT



INUVIK, NT
February 21 and 22, 2018

**IWB Water and Waste Management Workshop
Inuvik, NT – February 21 – 22, 2018**

Executive Summary

Acknowledgements

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Executive Summary

The Inuvialuit Water Board (IWB) Annual Water and Waste Management Workshop was held in Inuvik on February 21 and 22, 2018. This workshop was the fourth in the series of workshops hosted by the IWB since 2014. The focus of the 2018 workshop was on emerging municipal water and waste management issues and concerns, including hazardous waste; a new NWT Waste Resource Management Strategy; and the Canadian Standards Association (CSA) standards and an introduction to the northern standards on planning, design, operation and maintenance of northern infrastructure including waste management systems in the context of climate change adaptation. The workshop was attended by Mayors and Hamlet staff from the Inuvialuit Settlement Region (ISR) communities of Aklavik, Sachs Harbour, Ulukhaktok and Paulatuk. Participants from Tuktoyaktuk could not attend due to weather conditions and the temporary closure of the Inuvik to Tuktoyaktuk Highway. Other participants included staff from the Government of the Northwest Territories (GNWT) Departments of Municipal and Community Affairs (MACA) and Environment and Natural Resources (ENR). Representatives from the Gwich'in Land and Water Board (GLWB) and the Northwest Territories Association of Communities (NWTAC) also attended.

The overall objectives of the workshop were to assist municipal governments in providing adequate, safe and reliable water and waste services to their communities while maintaining the environmental quality of waters in the receiving environment. Specific objectives included:

- To increase the collective awareness of current issues and concerns by all parties holding mandated responsibilities related to the provision of municipal water and waste services;
- To identify actions to be undertaken by one or more parties to address or mitigate these concerns;
- To provide a forum for the provision of information on evolving standards, emerging issues, and new initiatives relative to the provision of municipal water and waste services; and
- To promote and support community understanding and compliance with water licensing requirements.

In part, these objectives were advanced through interactive presentations from MACA, ENR and the NWTAC including:

- A study of Paulatuk's hazardous waste cleanup and disposal program to a final disposal facility;
- MACA's response to the Office of the Auditor General (OAG) Report 2016 focusing on municipal waste management;
- A ten-year road map of ENR's proposed Waste Resource Management Strategy;
- ISR Community-based recycling programs and results;
- CSA northern standards focusing on infrastructure and waste management systems in the context of climate change adaptation; and
- An overview of the IWB waste disposal facilities Operation and Maintenance Plan fillable templates.

Each presentation was followed by floor discussions among all workshop participants.

The IWB provided further updates of the action items for the issues table developed during the 2015 workshop and further updated during the 2016 and 2017 workshops. All parties confirmed their continuing commitment to working as a team to address issues regarding water, sewage, hazardous and solid waste management systems in the ISR communities.

Acknowledgements

The success of this workshop would not have been possible without the active participation of all attendees and presenters. A sincere thank you to the Mayors and Hamlet staff from Paulatuk, Ulukhaktok, Sachs Harbour and Aklavik and the representatives from MACA, ENR, NWTAC and GLWB.

1. Opening Prayer

Mayor Ray Ruben of Paulatuk opened the workshop with a prayer.

2. Welcoming Comments from the Chair

The IWB Chairperson, Roger Connelly, welcomed all the participants and highlighted the importance of water and waste management and the ongoing issues and challenges related to health, safety and the environment. He underscored the importance of infrastructure and standards in providing municipal water and waste services efficiently, effectively and in an environmentally friendly manner. The Chair further emphasized the concern about the accumulation over time and ever-increasing volumes and variety of waste placed and managed in municipal solid waste facilities; the segregation of wastes; increasing volumes of hazardous waste requiring temporary management and final disposal; the security of waste facilities; and the ultimate closure of solid waste facilities. These and other issues related to the management of municipal solid waste facilities are bringing additional demands on the financial and human capacity of municipal governments. This workshop provides a venue for all stakeholders to come forward to discuss and address issues and concerns related to municipal water and wastes. Finally, the Chair stressed the importance of the IWB and government departments working together with communities to achieve their common goals.

3. Follow-up Action Items from the IWB February 2017 Workshop

During the February 2015 workshop, community and government participants raised issues and concerns regarding the provision of municipal water and waste management services. Discussions on these topics during and following the 2015, 2016 and 2017 workshops resulted in agreed-upon actions to address the issues raised. Progress achieved up to and including 2017 was presented. Follow-up discussion on the action items during the 2018 workshop resulted in updates of the identified actions.

Following the 2017 workshop, the IWB prepared a Roles and Responsibilities booklet on “Municipal Water and Waste Services, Inuvialuit Settlement Region Communities - "A Collective Responsibility" -and an one-page summary “poster”. The booklet and poster were distributed to all stakeholders.

4. Presentations

The Government of Northwest Territories (GNWT) Departments of Municipal and Community Affairs (MACA) and Environment and Natural Resources (ENR), along with a representative from the Northwest Territories Association of Communities (NWTAC) were invited to present topics related to hazardous waste management in the ISR communities, MACA’s action plan and response to the Office of the Auditor General (OAG) Report 2016, ENR’s proposed Waste Resource Management Strategy and the Canadian Standards Association (CSA) northern standards on planning, design, operation and maintenance of northern infrastructure including waste management systems in the context of climate change adaptation. All presentations were interactive and included opportunities for questions and answers.

Gerald Enns, Senior Technical Officer, MACA: The presentation focused on the project undertaken by MACA and the Hamlet of Paulatuk during September 2017 to ship out hazardous waste from the Hamlet’s

temporary hazardous waste containment facility to a permanent disposal facility in southern Canada. This project was a case study for the Hamlet of Paulatuk, their accomplishments and lessons learned. The 2017 clean up project focused on the temporary hazardous waste containment facility and included approximately 150 drums of waste. All the hazardous wastes were identified, transferred to secure containers, labelled, and an inventory created for transportation. The total weight of the hazardous waste transported by barge was recorded at 40.3 tonnes and represented waste batteries and fuel, used oil, paints, adhesives, oily debris, drilling fluids, drill rod grease, and empty residue drums. The total cost of clean up amounted to \$55,355 excluding the Hamlet of Paulatuk's contribution in-kind. The in-kind resources included:

- Staff: Up to 6 staff working 7 days each;
- Equipment: 3 pieces of heavy equipment (Truck/Loader);
- Tools: Pipe wrench and bung wrench, hammer and chisel, hand pump and siphon pump, funnels and pails, steel banding and banding tool, shrink wrap;
- Personnel Protection Equipment (PPE): Glasses, goggles, eyewash bottles, gloves (disposable), coveralls, absorbent pads; and

Lessons learned from this project:

- Communication is one of the important prerequisites to ensuring health and safety of workers as well as successful project logistics;
- Pre-planning and the availability of local resources and equipment is as critical as ensuring adequate funding; and
- Understanding the scale of what needs to be done is an important element of pre-planning.

Gerald underscored a continuing need for municipal engagement in regional waste management opportunities.

Olivia Lee, Manager, Infrastructure and Project Management, MACA presented MACA's response and action plan being implemented in response to the Office of the Auditor General (OAG) Report 2016 within the context of improving financial as well as waste management services to the communities.

OAG Report 2016 highlights:

- MACA, in consultation with ENR, should work with community governments to help identify and provide the necessary support and capacity building, so that communities can better comply with regulatory and other waste management requirements; and
- The necessary support and capacity building should include (a) Support needed by community governments to comply with the water license that regulates the management of solid waste sites and sewage lagoons; and (b) Support needed by community governments to ensure proper management of solid waste sites and proper handling and disposal of hazardous waste.

The response and actions taken by the GNWT include:

- Broaden the Terms of Reference for the Interdepartmental Drinking Water and Wastewater Management Committee to include a subcommittee on waste management;
- From the NWT Study of Waste Management Systems, create an inventory and baseline analysis of solid waste sites and sewage lagoons;

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- Assist communities with water licence compliance by assisting in developing their operations and maintenance manuals for their community sewage lagoons, solid waste sites and spill contingency plans;
 - Incorporate best practices on solid waste management into the Asset Management Project and Capital Planning processes;
 - Work with interested parties to investigate opportunities to share resources for regional waste management;
 - Amend the Water and Sewer Funding (Operations and Maintenance Funding) to include solid waste and change it to Environmental Services Funding; and
 - Amend the Solid Waste Management Course curriculum and deliver annual training.

Additional actions taken:

- Created a new position to support MACA's commitments in response to the OAG Report and work with communities on improving management at landfills;
- Sahtu communities (Norman Wells and Tulita) coordination of scrap metal removal;
- Continue looking for other opportunities to support communities waste removal initiatives; and
- Created the Clean-up/Clean-start Program.

Further information provided during presentation:

- Department of Infrastructure (INF) will begin to work with MACA to look at options for inclusion of terms related to disposal of GNWT-generated waste in municipal facilities;
- Gates are being installed at landfills as part of the GNWT's environmental liabilities initiative;
- Gate installations occurring this summer include: Paulatuk, Sachs Harbour, Ulukhaktok;
- Waste Reduction and Recovery Initiative Funding applications are due April 9, 2018; and
- MACA is willing to work with communities to develop solid waste collection and disposal By-Laws that includes what is and is not accepted at their municipal landfill and supports the inclusion of terms related to waste disposal in GNWT-issued contracts.

Giselle Beaudry, Waste Reduction Specialist, ENR outlined ENR's proposed NWT Waste Resource Management Strategy and the results of the NWT's current waste reduction and diversion programs. The proposed Strategy emphasises the principle of waste reduction and reutilization and focuses on the utilization of waste as a resource. Once adopted, the Strategy will serve as a ten-year road map for improving waste resource management throughout the Territories. The presentation highlighted why the Strategy is important and needed; its guiding principles, goals and priority areas; and the hierarchy of waste management.

Highlights of the presentation included:

- Need for the strategy – to rethink of waste as a resource.
- The strategy focuses on: (1) diversion of waste from landfills, addressing the issue of illegal disposal of waste and managing the current and future stockpiles of hazardous waste at municipal landfills, (2) preventing contaminants from entering the surrounding environment by improving proper containment and disposal at solid waste facilities, and (3) enhancing the potential economic benefits by utilizing waste as a resource.
- Four guiding principles were presented namely protection of environment, economic development and financial liability, environment stewardship, and collaborative approach.

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- The waste management hierarchy – based on highest to lowest priority: source reduction, reuse, recycle, recovery (e.g. waste to energy), and disposal at landfill.
 - The strategy focuses its actions under four goals – (1) prevent and reduce waste generated at the source, (2) divert waste disposed in landfills, (3) improve waste management facilities and practices, and (4) lead by example – greening the Government of the Northwest Territories (GNWT).

Some facts presented:

- Statistics Canada reports that, on average, Canadians dispose 706 kg of waste per capita per year;
- In the NWT, it is estimated that we dispose 946 kg per capita per year (in 2014) – almost 1.4 times the national average and more than 2.5 times that of Nova Scotia;
- If we think of these in terms of volume, NWT residents throw away almost 420,000 m³ of waste a year. This is enough waste to fill almost 11,000 seacans per year.

Results of the NWT's current waste reduction and diversion programs:

- Over 300 million beverage containers have been returned for reuse and recycling since the program was initiated in 2005;
- Average annual recovery rate of 85% since 2005;
- NWT residents return 548 containers per person per year;
- Containers returned per person in the Inuvik Region are slightly above the NWT average;
- 4,119,484 beverage containers were returned from communities in the Inuvik Region in 2016-17;
- Since 2005, NWT residents have reused or recycled approximately 2,400 tonnes of aluminum, 3,000 tonnes of plastic, and 12,300 tonnes of glass. This translates to conservation of energy, water, and raw materials such as trees and bauxite;
- NWT residents have avoided using over 50 million single use retail bags since the program began. This represents an estimated 75% reduction in single use retail bag usage;
- Electronics can now be recycled through community recycling depots or annual collection programs. Over 170 tonnes of electronic waste has been recovered since February 2016; and
- Even with the long distances, the equivalent of 2,755 metric tonnes of carbon dioxide emissions has been avoided through the Beverage Container and Single-use Retail Bag Programs, which is equivalent to taking 540 vehicles off the road.

Sara Brown, Chief Executive Officer, NWTAC introduced standards published and being developed for Northern Regions by the CSA and highlighted the need for future standards for municipal infrastructure including waste management facilities in the context of climate change.

The presentation included:

- A standard stipulates minimum requirements for the use, safety and/or performance or design of products, processes and services;
- Standards are developed through a consensus-based development process;
- Any new northern standards need participation of Northerners in the standards development process;
- An introduction to the Northern Infrastructure Standardization Initiative (NISI) and its objectives: (1) establish and maintain a Northern Advisory Committee (NAC); (2) focus on priority infrastructure issues affected by climate change; (3) create new standards and a sustainable process to support the incorporation and implementation of these new standards; and (4) northern practitioners to be involved in the development and implementation of standards;

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- The NAC is comprised of senior representatives with direct responsibility for infrastructure lifecycles. The NAC includes two representatives from each of four regions – Yukon, Northwest Territories, Nunavut and Nunavik. The NAC helps to identify and prioritize critical infrastructure issues for standards development and provides strategic advice and guidance to ensure best results for Northerners;
 - Operationalizing the NISI Program - Step 1: Establishing and Maintaining the Foundations; Step 2: Developing the Standards; and Step 3: Building Capacity;
 - NISI Phase 1 published standards: Thermosyphon Foundations for Buildings in Permafrost Regions; Hanging Snow Loads in the North; Moderating the Effects of Permafrost Degradation on Building Foundations; Community Drainage System Planning, Design and Maintenance in Northern Communities; and Geotechnical Site Investigation for Building Foundations in Permafrost; and
 - NISI Phase 2 upcoming standards: Planning, Design, Operation, Maintenance and Decommissioning of Wastewater Treatment in Northern Regions using Lagoon and Wetland Systems; Guidance for the Selection of Foundation Types in Northern Regions; Fire Resilient Community Planning, Building Design and Materials for Northern Regions; Techniques for Dealing with High Winds and Snow Drifting as it Pertains to Northern Infrastructure; and Erosion Protection for Northern Community Infrastructure;

Information provided regarding the upcoming Planning, Design, Operation, Maintenance and Decommissioning of Wastewater Treatment Standard:

- CSA commenced development work in the Fall 2017 (average NISI standard development timeline is ~26 months) and expected date for completion: Summer 2019;
- The Standard will provide guidance that is complementary to existing relevant building codes, regulatory requirements and best management and construction practice guidelines;
- Key aspects to be covered in the Standard include: (1) Focus is not on industrial wastewater; (2) Procedures and methods for collecting information and evaluating the conditions of a potential site; (3) Potential effects of permafrost warming and active layer depth changes on effluent containment and stability of surrounding soil; (4) Impacts from changes in precipitation; (5) Continuous pipe or periodic truck collection inflow of effluent into sewage lagoons; and (6) Detail field test methods, sampling protocols and lab requirements; and
- Purpose of the Standard is to address the objectives of enabling “sustainable design and management of northern wastewater systems, considering all phases of their life-cycles,” and “decisions regarding facility closure and decommissioning versus service life extension.” The overall goal is the safe discharge of wastewater into the environment in terms of protecting the environment and human health.

Bijaya Adhikari, Science and Regulatory Coordinator, IWB demonstrated the fillable pdf versions of the IWB Municipal Waste Disposal Facilities Operation and Maintenance (O&M) Plan templates, which are currently being finalized by MACA for the IWB.

5. Roles and Responsibilities (Community Water, Wastewater and Solid Waste Management)

The draft “roles and responsibilities” document was first presented for discussion during the 2016 IWB workshop. Each party's roles and responsibilities were discussed, and revisions noted. A final version of “roles and responsibilities” was then collectively developed. Following the 2017 IWB Workshop, this information was produced into booklets and summarized on a poster titled “WATER AND WASTE SERVICES, INUVIALUIT SETTLEMENT REGION COMMUNITIES, A COLLECTIVE RESPONSIBILITY”. The booklets and posters were then packaged and distributed to all stakeholders. During the 2018 workshop, the IWB encouraged continued use of the “roles and responsibilities” booklet and summary poster in providing water and waste services information to decision-makers and community residents.

6. Specific Discussions and Commitments

Question (IWB): Segregation is one of the most important components of the waste handling and management process. Do the communities feel any benefits of this?

Response (Communities): Yes, there is a great benefit from waste segregation for the management of municipal solid waste disposal facilities. The ISR communities have allocated different areas at the solid waste disposal facilities for different types of waste including refrigerators, freezers, tires, appliances, wood products, etc.

Question (Facilitator): Have communities encountered operational issues related to providing security at municipal solid waste disposal facilities?

Response (Communities): The gate at the entrance and fences around the facility are still issues at the community's solid waste disposal facilities. Some residents are concerned that the site is not accessible during the times they drop off their wastes. Another issue experienced by the community is the windblown debris such as cardboard, paper and plastics. Separating and recycling of these materials may provide the opportunity to reuse the resources and resolve the environmental issues resulting from the debris being windblown to the surrounding areas.

Response (MACA): As part of the MACA's environmental liabilities initiatives, gates with locks will be installed at all ISR municipal solid waste disposal facilities (**Commitment #1**).

Question (Communities): Has there been any progress for the inclusion of terms under government-issued contract documents for the dumping of construction and demolition waste at the municipal solid waste disposal facilities?

Response (MACA): To date, no such provision has been included on the contract document. MACA will continue to work with the Department of Infrastructure (INF) to look at and include terms related to the disposal of waste in the municipal solid waste disposal facilities in contract documents (**Commitment #2**).

Question (Communities): The Hamlet of Aklavik passed a resolution at the 2017 NWTAC meeting to include terms to not allow GNWT contractors to dump construction and demolition waste generated from their contract activities. So far, we have not received any response from the GNWT.

Response (MACA): Resolution passed by the Hamlet of Aklavik has not been received as of yet, but will be responded to once it is received.

Question (IWB): As an outcome of the 2015, 2016 and 2017 IWB workshops; a poster titled “WATER AND WASTE SERVICES, INUVIALUIT SETTLEMENT REGION COMMUNITIES, A COLLECTIVE RESPONSIBILITY” was developed. This poster was distributed to Hamlet Mayors and Councils and all other stakeholders responsible for water and waste services in the ISR. The IWB hopes that this poster has been helpful and posted at municipal offices and water treatment plants. Was this poster useful to communities and other stakeholders?

Response (GNWT and Communities): This poster is useful and provides clarity on roles and responsibilities in providing water and waste services to the ISR communities.

Question (Communities): Is the School of Community Government training manual available for 2018?

Response (MACA): MACA is developing the 2018 water and waste management training manual. All the ISR communities will be contacted via email and phone regarding training once the manuals are complete (**Commitment # 3**).

Question (Communities): Hands on training is more effective than classroom training for Hamlet staff. Will the 2018 water and waste training be classroom based or hands on?

Response (MACA): Both components (classroom and practical) will be included during 2018 training sessions.

Question (Communities): Will there be heavy equipment and solid waste disposal facilities operations training during 2018 training session?

Response (MACA): Yes, those two components will be included during 2018 training sessions.

Question (Facilitator): Can communities access municipal water licence SNP results on ENR’s website?

Response (ENR): Taiga Environmental Laboratory is working to make SNP results available online. This work is expected to be completed by the end of summer 2018.

Question (Communities): We test the water samples on the spot. Do we have to send water samples for analysis to the Taiga Laboratory?

Response (Facilitator): Communities are responsible for taking two types of water samples: drinking water and wastewater. Drinking water samples are taken and tested at the drinking water treatment facility and these do not have to be submitted to the Taiga Laboratory. As specified in your municipal water licence, communities must also sample effluent from the sewage lagoon and solid waste disposal facilities according to the Licence SNP and send these to ENR’s Taiga Environmental Laboratory in Yellowknife for analysis.

Question (Facilitator): Will the contact list of government and community contacts associated with municipal water and waste management be posted on the IWB website?

Response (IWB): Yes, it will be posted on the IWB website (**Commitment # 4**).

Question (Facilitator): Concern has been expressed in the past over water licence terms and conditions that change when a licence is renewed. Are there standardized municipal water licence terms and conditions?

Response (IWB): Standardized municipal water licence terms and conditions were developed and approved by the IWB approximately three years ago. Paulatuk, Ulukhaktok and Sachs Harbour have standardized terms and conditions. Tuktoyaktuk and Aklavik will get standardized terms and conditions during their licence renewal in 2018 and 2019 respectively.

Question (Facilitator): Is it the responsibility of the Hamlet to update municipal water licence operation and maintenance (O&M) plans?

Response (IWB): Yes. It is the responsibility of the Hamlet to update O & M plans if there are any changes including staff and/or O&M technology and procedures. The water licence requires O & M Plans be reviewed annually and any revisions submitted to the IWB.

Question (Communities): If communities need more money for operation and maintenance of the waste disposal facilities, do we get more money?

Response (MACA): MACA can't commit any extra funding for operation and maintenance of the waste disposal facilities however acknowledges that communities can reallocate monies within their existing budgets.

Question (Facilitator): Can ENR provide an update on the research of northern wastewater treatment systems?

Response (ENR): Dalhousie University has completed their research on wastewater treatment systems in the northern communities. The final report is expected later this year.

Question (Communities and GLWB): Who is responsible to sample groundwater monitoring wells at the municipal solid waste disposal facilities?

Response (MACA): GNWT (i.e. MACA) is responsible for sampling groundwater monitoring wells for all active solid waste sites. The groundwater monitoring wells have been established at the solid waste facilities of Aklavik and Tuktoyaktok and sampling is completed once per year during the summer. The installation of monitoring wells in Paulatuk, Ulukhaktok and Sachs Harbour will be completed this year. MACA has contracted the groundwater monitoring program to a third party consultant due to the technical nature of siting, installing and sampling of groundwater wells. Visiting consultants will contact the community before finalizing well locations and taking samples. Sample results will be provided to the communities (**Commitment #5**).

Question (GLWB): Does MACA provide training to the solid waste disposal facility operator for groundwater monitoring wells sampling?

Response (MACA): Groundwater monitoring well sampling will be conducted by a consultant annually. Consultants are required to contact communities prior to conducting any sampling. In

this case, operators can participate with the consultant to better understand the groundwater monitoring and sampling procedures.

Question (Communities): How frequently are the groundwater monitoring well samples collected from municipal solid waste sites?

Response (MACA): Samples are collected once per year by the consultant.

Question (Facilitator): Is MACA ultimately responsible to remove hazardous waste from community temporary containment facilities?

Response (MACA): Communities are ultimately responsible for the management of their waste disposal sites. However, MACA will assist communities to remove hazardous waste from community temporary containment facilities to an approved final disposal facility, as was undertaken in 2017 in Paulatuk.

Question (Facilitator): Can ENR and MACA provide an update regarding the runoff samples collected from Sachs Harbour's old landfill site?

Response (ENR): The sample from Sachs Harbour's old landfill site was collected by ENR during the IWB community visit on September 14, 2017. The samples were provided to Taiga Laboratory and the results are yet to be obtained from the Lab.

Response (MACA): MACA will monitor groundwater for both the old and active landfill sites in Sachs Harbour.

Question (IWB): How are the locations of the groundwater monitoring wells determined?

Response (MACA): The consultant determines the location of the groundwater monitoring wells based on the baseline study results and the initial site visit.

Question (IWB): Is the community consulted during the determination of location of groundwater monitoring wells?

Response (MACA): Yes, communities are to be consulted for the determination of the location of the groundwater monitoring wells, or at the very least, the municipal maintenance operator should be.

Question (Communities): Is there licensing required for waste oil furnaces and incinerators?

Response (MACA): The Environmental Protection Act provides for air emission regulations for large operations while operators of small waste oil furnaces and incinerators are only required to register with ENR.

Question (Facilitator): Does this mean there is no such air emission regulations that affects the community?

Response (MACA): That is correct, there are no air emission regulations that currently apply in communities. However, operators of waste oil furnaces and incinerators are required to register with ENR and open burning of community landfill sites is prohibited under the Environmental Protection Act and your water licences.

Question (Communities): How can communities dispose of honey bags? Can honey bags be burned or opened and emptied into the sewage waste disposal facilities?

Response (IWB, MACA): Honey bags are to be disposed of at the bagged toilet waste disposal facility as specified by the municipal water licence terms and conditions. Honey bags cannot be burned. In addition, they should not be opened and emptied into the sewage waste disposal facilities because of worker health and safety concerns.

Question (Facilitator): Is there an update on the funding review being undertaken for community water and waste services?

Response (MACA): Internal work is underway to identify funding gaps for all communities.

Question (Communities): Can industry be made to pay to remove hazardous waste from community temporary containment facilities?

Response (MACA): The Hamlet must be able to prove industry deposited the waste at their facility. Without this proof it would be difficult.

Question (Communities): How can communities deal with the cost involved to manage old fuel tanks once new ones are replaced for each house?

Response (IWB): Discussions should take place with the Housing Association before old fuel tanks are removed and disposed of at the municipal landfill site. Alternatively, a community may enact By-Laws regarding the disposal in wastes into their solid waste facility including usage fees. The collected fees may then be used to remove waste from the temporary storage facility to a final disposal facility.

Question (Communities): How should lead acid batteries be stored at the temporary storage area?

Response (MACA): Batteries should carefully be put into a container on a wooden pallet (i.e. 45 gallon drum) or neatly stacked on a pallet and covered. When transported, the container and batteries must be secured to prevent shifting and leakage.

Question (Communities): Is there funding available for hazardous waste removal?

Response (MACA): There is limited funding available through the Waste Reduction and Recycling Initiative Fund which can be utilized for hazardous waste removal.

Question (Communities): Who do communities contact regarding issues related to hazardous waste?

Response (MACA): MACA Contact for issues related to hazardous waste: Gerald Enns, Senior Technical Officer, MACA, Tel: 867-767-9164 ext: 21080 or Email: Gerald_Enns@gov.nt.ca, OR MACA Inuvik Regional Office Tel: 867-777-7121.

Question (Community): Who is responsible for managing and final disposal of fuel tanks?

Response (MACA & Facilitator): It is the responsibility of the Housing Corporation or home owner to temporarily store and dispose of their fuel tanks. Where a waste is disposed of at the community solid waste facility without prior arrangements being made, the waste becomes the responsibility of the Hamlet.

Question (Communities): Who is the MACA contact person regarding issues related to community infrastructure including water and waste facilities?

Response (MACA): MACA Contact person related to municipal asset management including water and waste facilities: Kim Herle, Manager Community Infrastructure, MACA, Inuvik Regional Office, Tel: 867-777-7213 and email: Kim_Herle@gov.nt.ca.

Question (Communities): If anybody dumps solid waste outside the entrance gate of municipal solid waste disposal facilities, how can communities best address this behavior?

Response (MACA): This issue is related to the level of public awareness and behavioral change. Gradual change in public awareness and behavioral change is the best way to resolve these types of issues.

Question (Communities): Can MACA support the communities and send an engineer to evaluate the quantity of granular material required for landfill cover?

Response (MACA): MACA will work with communities to assess quantity of granular material required for landfill cover.

Question (Communities): Can communities burn cardboard, paper, wood and plastics at the municipal solid waste facilities?

Response (Facilitator): Yes, if done safely and the fire is not allowed to spread to other waste. The ENR guideline for the material suitable for open burning “Municipal Solid Wastes Suitable for Open Burning” is available at:
http://www.enr.gov.nt.ca/sites/enr/files/guidelines/solid_wastes_suitable_open_burning.pdf.

Question (Communities): How can communities deter bears and birds from municipal solid waste disposal facilities?

Response (ENR): Installation of electric fences and regular covering of waste with granular material are considered options to deter bears and birds. Communities should contact ENR’s regional office or Wildlife Division for further information.

Question (Communities): Plastic is one of the major types of municipal solid waste. Can plastics be transported to the south for recycling?

Response (ENR): Yes, plastics can be transported to the south for recycling however, there are different types of plastics (identified by different numbers) and recyclers may require that the types be segregated before being transported. Any plastic beverage container can be returned to ENR's community recycling depots for the return of the deposit and transport south.

Question (Communities): Does ENR support converting cardboard into briquette and use as fuel for heating?

Response (ENR): Applications can be submitted to ENR under the Waste Reduction and Recycling Initiatives Fund, then ENR will assess and evaluate the application.

Question (Facilitator): Does the GNWT plan to not use bottled water?

Response (ENR): Bottled water is no longer being used within ENR offices and this 'greening the government' initiative is spreading to other GNWT departments.

Question (Communities): How does ENR recycle collected electronic waste?

Response (ENR): All electronic waste collected through the E-waste program is transported to an electronic waste recycling facility in Alberta where it is separated into each of the component parts and then recycled as new electronic and other goods.

Question (Communities): Is thermosyphon the only method used as a passive heat exchange method to keep permafrost intact for maintaining the stability of infrastructures?

Response (NWTAC): Presently "thermosyphon" is the only practical passive heat exchange method to maintain frozen ground under buildings and other structures. Other active "refrigeration" methods are available but remain expensive, complicated and not practical to use. The advancement of research and technology is a continuous process and more efficient and cost-effective methods can be expected in the future.

Question (MACA): What is the working model of the CSA standards technical committee?

Response (NWTAC): Technical committee is divided into topic based sub-groups such as wastewater, housing etc. Each sub-group then works on its specific subject matter.

Question (Communities): Are Northern experts involved in the development of CSA northern standards?

Response (NWTAC): Yes. Standards are being developed for the North and experts from the north are involved. Those experts from the south have a long work history in the north.

Question (ENR): Can we get free web access to all standards developed by the CSA?

Response (NWTAC): Yes, all the published standards can be accessed free on Standards Council of Canada (SCC) website except the "Technical Guide, Infrastructure in Permafrost: A Guideline for Climate Change Adaptation": www.scc.ca/en/nisi or contact Christie Moore (Program Manager, SCC) at christie.moore@scc.ca. For copies of the Infrastructure in Permafrost Guide, contact Sara Brown at the NWT Association of Communities.

Question (Communities): Are use of these Standards mandatory for northern infrastructure development?

Response (NWTAC): No, these Standards are not mandatory on their own however, if included within contract documents, they must be followed by the contractors.

Question (Facilitator): Is there any linkage between the CSA standards development work and the GNWT Climate Change Adaptation Program?

Response (NWTAC): Yes, the NWTAC and CSA are working collaboratively with the GNWT Climate Change Adaptation Program.

Question (Facilitator): How can communities address climate change impacts beyond the current 50 or 100 year planning horizon?

Response (NWTAC): It is a challenge to incorporate climate change impacts beyond the 50 year time horizon into community planning. Currently available models use the 50 year time horizon to predict climate change impacts.

7. Workshop Commitments

Commitment #1: As part of the GNWT's Environmental Liabilities Initiatives, gates with locks will be installed by MACA at all ISR municipal solid waste disposal facilities.

Commitment #2: MACA will work for the inclusion of terms related to disposal of waste in municipal solid waste disposal facilities under GNWT contract documents.

Commitment #3: MACA is developing water and waste management training manuals for 2018. All the ISR communities will be contacted via email and phone regarding the training once the training manuals are complete.

Commitment #4: IWB will post the municipal water and waste management roles and responsibilities contact list on the IWB website.

Commitment #5: MACA's groundwater consultants will contact the community before finalizing well locations and taking samples. Sample results will be provided to the communities.

8. Conclusion

The 2018 Water and Waste Management Workshop focused on emerging municipal waste and waste management issues including hazardous waste management, ENR's proposed Waste Resource Management Strategy and northern standards published and/or being developed by CSA in the context of climate change adaptation and included presentations from MACA, ENR and NWTAC. There was an interactive discussion on issues and commitments identified during the IWB workshop in 2015 with

updates from 2016 and 2017. The interaction and discussions resulted in possible topics to be presented during the next IWB workshop:

- Opportunities and challenges of reuse and recycling of cardboard, paper, plastic, organic waste, scrap metal in the context of ISR communities;
- Issues and solutions related to security of municipal solid waste disposal facilities; and
- Funding availability and other challenges for water and waste services of ISR communities.

At the conclusion of the workshop, all participants, including the Hamlets, MACA, ENR, NWTAC, GLWB and the IWB, expressed their enthusiasm for continuing to work as a "team" for the safe, efficient and effective management of community water and waste services. Hamlet representatives and all participants appreciated the workshop theme.

9. Closing Prayer

Mayor Ray Ruben of Paulatuk closed the workshop with a prayer.

Annex 1: Invitation Letter and Workshop Agenda

January 19, 2018

Distribution List
Workshop Participants

**Re: Municipal Water and Waste Management Workshop
Inuvik, February 21 – 22, 2018**

The Inuvialuit Water Board (IWB) is pleased to attach the final agenda for the Municipal Water and Waste Management Workshop to be held in Inuvik on February 21 and 22, 2018 in the Inuvik Community Corporation boardroom (opposite the Inuvialuit Corporate Centre). Specific agenda item information will be provided at the workshop. The agenda includes all items suggested by communities and participating government departments and will focus on the following topics:

1. Follow-up action items from the February 2017 workshop.

During the 2017 workshop an update on the issues and concerns from prior workshops regarding the provision of municipal water and waste services was provided to community and government participants. Discussion on these topics resulted in agreement on further action items and commitments that would be undertaken by one or more of the participating organizations. Following some additional interaction after the workshop, this list was finalized and provided to all participants. The IWB looks forward to discussing the progress that has been made to address the collective list of action items and how this progress will improve the provision of municipal water and waste services in our communities.

2. Hazardous Waste Management and Removal

The management and disposal of hazardous waste is an issue of increasing concern and cost in most communities. Representatives from MACA will present an update on projects completed during the 2017 summer barging season, other future projects within the ISR, and information on how communities can effectively manage and dispose of hazardous wastes.

3. Waste Resource Management Strategy – ENR

The Department of Environment and Natural Resources will present the new GNWT initiative on the management and reduction of waste in the NWT.

4. MACA – Action Plan

The Department of Municipal and Community Affairs will provide a presentation on the department's response to the 2016 Auditor General's Report.

5. Canadian Standards Association (CSA) - Standards for the Planning, Design, Operation and Maintenance of Wastewater Treatment in Northern Communities using Lagoon and Wetland Systems

Canada's North is on the front line of climate change. In addition to the rapidly changing physical environment, Canada's north presents unique environmental, socio-economic, cultural, and geographic

circumstances compared to other regions of Canada. As such, new policies and mechanisms are needed to help Northern communities adapt and reduce the vulnerability of their infrastructure to the impacts of climate change. CSA commenced development work in the Fall 2017 with an expected date for completion for Summer 2019. The scope of the standard was determined after consultations with the Northern Advisory Committee (NAC), subject matter experts, northern stakeholders and federal government stakeholders. Key aspects to be covered in the standard include: lagoon and wetland systems; procedures and methods for collecting information and evaluating the conditions of a potential site; potential effects of permafrost warming and active layer depth changes on effluent containment and stability of surrounding soil impacts from changes in precipitation; detail field test methods, sampling protocols and lab requirements.

Thank you, in advance, for your participation at this upcoming workshop. The IWB looks forward to our collective discussions and deliberations on these issues of significant importance to the wellbeing of our communities and surrounding environment.

Sincerely,

Roger Connelly
Chairperson

Attachments

Distribution List

Participants – Community Representatives

Hamlet of Paulatuk

Mayor Ray Ruben
SAO John Holland
Municipal Operations Keith Dodge

Hamlet of Ulukhaktok

Mayor Laverna Klengenberg
SAO Susan Kaodloak
Water Plant Operator William Joss

Hamlet of Tuktoyaktuk

Mayor Mervin Gruben
SAO Duncan Walker
Municipal Works Manager Davy Krengnektak

Hamlet of Sachs Harbour

Mayor Betty Hoagoak
SAO Stephen Wylie
Municipal Operations Darren Nasogaluak

Hamlet of Aklavik

Mayor Andrew Charlie
SAO Fred Behrens
Municipal Operations

Participants – GNWT

ENR – Norman Snowshoe, Regional Superintendent – Inuvik Region
ENR – Lloyd Gruben, Water Resources Officer – Inuvik Region
ENR – Alicia McRae, Regional Environment Assessment Coordinator – Inuvik Region
ENR – Jeanne Arsenault, Pollution Control Specialist – Yellowknife
ENR – Bruce Stuart, Manager – Taiga Environmental Laboratory – Yellowknife
MACA – Olivia Lee, Manager of Infrastructure and Project Management - Yellowknife
MACA – Gerald Enns, Senior Technical Officer – Yellowknife
MACA – Kim Herle, Community Works Advisor – Inuvik Region
MACA – Chrystal Lennie, Water and Waste Management Training Coordinator – Inuvik
H & SS – Shawn Hardy, Environmental Health Officer – Inuvik Region
GLWB – Leonard DeBastien, Executive Director – GLWB
GLWB – AlecSandra MacDonald, Regulatory Specialist – GLWB
Facilitator – Emery Paquin

Inuvialuit Water Board
Water and Waste Management Workshop
Inuvik, NT
February 21 - 22, 2018

Day 1 – February 21, 2018

- 8:30 – 9:00 am *Arrival, Registration and Coffee*
- 9:00 – 9:30 am Welcome and Introductions – Chairperson Roger Connelly /
Facilitator Emery Paquin
- Opening Prayer
 - Round Table Introductions
 - Welcoming Remarks
 - Objectives of Workshop and Agenda Review
- 9:30 – 10:15 am 2017 IWB Workshop Issues Table – Action Items Update
- 10:15 – 10:30 am *Refreshments*
- 10:30 – 11:00 am MACA – ISR Hazardous Waste Management – Gerald Enns
- 11:00 – 11:50 ENR - Diep Duong
- Waste Resource Management Strategy
- 11:50 – 1:00 pm *Lunch – on own*
- 1:00 – 2:00 pm ENR - Diep Duong
- Waste Resource Management Strategy – continued
 - Recycling Programs results – community based
- 2:00 – 3:00 pm MACA - TBD
- MACA Action Plan – response to Auditor General Report
- 3:00 – 3:15 pm *Refreshments*
- 3:15 – 5:00 pm MACA - TBD
MACA Action Plan – response to Auditor General Report - continued

Day 2 – February 22, 2018

- 8:30 – 9:00 am *Arrival and Coffee*
- 9:00 – 10:30 am CSA Standards - Planning, Design, Operation and Maintenance of
Wastewater Treatment in Northern Communities using Lagoon and
Wetland Systems – Sara Brown - NWTAC
- 10:30 – 11:30 am SNP Location Maps / IWB Templates
- 11:30 – 12:00 am *Closing Remarks and Closing Prayer*

Annex 2: Workshop Participants

Municipalities	Community	Phone	Email
Ray Ruben, Mayor	Paulatuk	867-788-0002	ray.francis.07@live.ca
John Holland, SAO	Paulatuk	867-580-3531	sao@paulatuk.ca
Margaret Kanayok, Deputy Mayor	Ulukhatok	867-396-8013	sao_ulu@northwestel.net
Susan Kaodloak, A/SAO	Ulukhaktok	867-396-8013	sao_ulu@northwestel.net
William Joss (Bummer), Hamlet Staff	Ulukhaktok	867-787-1535	reception@northwestel.net
Betty Haogak, Mayor	Sachs Harbour	867-690-4351	Bette.banks2016@gmail.com
Stephen Wylie, SAO	Sachs Harbour	867-690-4351	hamlet_ceo@northwestel.net
Darren Nasogaluak, Hamlet Staff	Sachs Harbour	867-690-4351	drnasogaluak@gmail.com
Andrew Charlie, Mayor	Aklavik	867-678-0361	Andrew34Charlie@hotmail.com
Fred Behrens, SAO	Aklavik	867-445-4394	saoaklavik@permafrost.com
Brian Kudlak, Hamlet Staff	Aklavik	587-338-2505	Aklavik2017@hotmail.com
Government of the NWT	Department		
Lloyd Gruben, Water Resources Officer – Inuvik Region	Environment and Natural Resources	867-678-6676	lloyd_gruben@gov.nt.ca
Alicia McRae, Regional Environmental Assessment Coordinator	Environment and Natural Resources	867-678-6696	alicia_mcrae@gov.nt.ca
Jeanne Arsenault, Pollution Control Specialist – Yellowknife	Environment and Natural Resources	867-767-9234 Ext 53116	Jeanne_arsenault@gov.nt.ca
Giselle Beaudry, Waste Reduction Specialist - Yellowknife	Environment and Natural Resources	867-767-9236 Ext 53194	Giselle_Beaudry@gov.nt.ca
Gerald Enns, Senior Technical Officer – Yellowknife	Municipal and Community Affairs	867-767-9169 Ext 21080	gerald_enns@gov.nt.ca
Olivia Lee, Manager – Yellowknife	Municipal and Community Affairs	867-767-9164 Ext 21074	olivia_lee@gov.nt.ca
Kim Herle, Manager Community Infrastructure – Inuvik Region	Municipal and Community Affairs	867-777-7213	Kim_herle@gov.nt.ca
Crystal Lennie, Water and Waste Management Training Coordinator – Inuvik Region	Municipal and Community Affairs	867-777-7415	Crystal_Lennie@gov.nt.ca
Northwest Territories Association of Communities			
Sara Brown, Chief Executive Officer - Yellowknife	Northwest Territories Association of Communities	867- 873-8359 Ext 1	sara@nwtac.com
Gwich'in Land and Water Board			
AlecSandra MacDonald, Regulatory Specialist	Gwich'in Land and Water Board)	867-777-4954	amacdonald@glwb.com
Inuvialuit Water Board			
Roger Connelly, Chairperson	Inuvialuit Water Board	867-620-0751	rconnelly@northwestel.net
Richard Binder, Member	Inuvialuit Water Board	867-777-2828	richardbindersr@gmail.com
Louis Covello, Member	Inuvialuit Water Board	867-8735373	Louis.covello@gmail.com
Mardy Semmler, Executive Director	Inuvialuit Water Board	867-678-8609	semmlerm@inuvwb.ca
Bijaya Adhikari, Science and Regulatory Coordinator	Inuvialuit Water Board	867-678-8610	adhikarib@inuvwb.ca
Facilitator			
Emery Paquin	Facilitator	867-873-4314	emerypaquin@outlook.com

Annex 3: Municipal Water and Waste Management Roles and Responsibilities Contact List – Municipal and GNWT Departments

Municipal	
<p>Hamlet of Paulatuk Mayor Ray Ruben P.O. Box 98 Paulatuk, NT X0E 1N0 SAO: John Holland Ph: 867-580-3531</p>	<p>Hamlet of Aklavik Mayor Andrew Charlie P.O. Box 88 Aklavik, NT X0E 0A0 SAO: Fred Behrens Ph: 867-978-2351</p>
<p>Hamlet of Ulukhaktok Mayor Laverna Klengenber P.O. Box 157 Ulukhaktok, NT X0E 0S0 SAO: Susan Kaodloak (Acting) Ph: 867-396-8000</p>	<p>Hamlet of Tuktoyaktuk Mayor Mervin Gruben P.O. Box 120 Tuktoyaktuk, NT X0E 1C0 SAO: Duncan Walker Ph: 867-977-2286</p>
<p>Hamlet of Sachs Harbour Mayor Betty Haogak P.O. Box 90 Sachs Harbour, NT X0E 0Z0 SAO: Stephen Wylie Ph: 867-690-4351</p>	
GNWT - Department of Health and Social Services	
<p>Shawn Hardy Environmental Health Officer Department of Health and Social Services P.O. Box 1980 Inuvik, NT X0E 0T0 Ph: 867-777-4840 Email: Shawn_Hardy@gov.nt.ca</p>	
GNWT - Environment and Natural Resources	
<p>Lloyd Gruben Water Resources Officer Environment and Natural Resources Government of the NWT P.O. Box 2749 Inuvik, NT X0E 0T0 Ph: 867-678-6676 Email: Lloyd_Gruben@gov.nt.ca</p>	<p>Bruce Stuart Laboratory Manager Taiga Environmental Laboratory Environment and Natural Resources Government of the NWT P.O. Box 1320 Yellowknife, NT X1A 2L9 Ph: 867-767-9235 Ext: 53150 Email: Bruce_Stuart@gov.nt.ca</p>
<p>Jeanne Arsenaault Pollution Control Specialist Water Resources Division Environment and Natural Resources Government of the NWT P.O. Box 1320 Yellowknife, NT X1A 2L9 Ph: 867-767-9234 Ext: 53116 Email: Jeanne_Arsenaault@gov.nt.ca</p>	

GNWT - Municipal and Community Affairs

<p>Olivia Lee Manager of Infrastructure and Project Management Municipal and Community Affairs Government of the NWT P.O. Box 1320 Yellowknife, NT X1A 2L9 Ph: 867-767-9164 Ext: 21074 Email: Olivia_Lee@gov.nt.ca</p>	<p>Kim Herle Manager – Community Infrastructure and Planning Municipal and Community Affairs – Inuvik Region Government of the NWT P.O. Box 1740 Inuvik, NT X0E 0T0 Ph: 867-777-7213 Email: Kim_Herle@gov.nt.ca</p>
<p>Gerald Enns Senior Technical Officer – Water & Sanitation Municipal and Community Affairs Government of the NWT P.O. Box 1320 Yellowknife, NT X1A 2L9 Ph: 867-767-9164 Ext: 21080 Email: Gerald_Enns@gov.nt.ca</p>	<p>Justin Hazenberg Engineering Team Lead – Water and Sanitation Municipal and Community Affairs Government of the NWT P.O. Box 1320 Yellowknife, NT X1A 2L9 Ph: 867-767-9164 Ext: 21078 Email: Justin_Hazenberg@gov.nt.ca</p>
<p>Jaime Goddard Senior Technical Officer – Water and Sanitation Municipal and Community Affairs Government of the NWT P.O. Box 1320 Yellowknife, NT X1A 2L9 Ph: 867-767-9164 Ext: 21079 Email: Jaime_Goddard@gov.nt.ca</p>	

Annex 4: February 2018 Workshop - Evaluation Summary

An evaluation form was distributed to participants during the workshop.

62% of the total participants responded to the evaluation. Overall, respondents expressed their satisfaction with the materials, time provided for questions and discussions, and objective achieved. The workshop was rated very good and excellent by 69% and 31% of the total respondents respectively. Comments and suggestions provided by the respondents can be summarized as:

- Overall, all the topics were interesting and useful;
- Great content, relevant to the communities need; and
- How can we “green” the workshops? Nice to see no bottled water. Can we reduce the paper used (e.g. double-sided printing)? Can we not use disposable cups and dishes?

Table 1: Summary of responses provided by the participants on evaluation questionnaire

SN	Evaluation Questionnaire	Responses		
		Yes (% of respondents)	No (% of respondents)	Comments (% of respondents)
1	Were the materials provided adequate to prepare you for the discussions?	100%	0%	Avoid printing copies of the workshop package - may help to keep the environment green (7%)
2	Within the time available, was the meeting run effectively?	100%	0%	Very good but at the beginning, issues table discussion took to long (15%)
3	Could the agenda have been improved? If so, how?	15%	38%	Need more time, include all day 2 nd day (15%)
				It was good (38%)
				More time required to discuss training and funding availability (15%)
				Response not provided (47%)
4	Were the presentations/discussions relative and useful to your responsibilities?	85%	0%	Great content, relevant to the communities needs (85%)
				Response not provided (15%)
5	Was there adequate time provided for participants' questions and responses?	85%	7%	Some topics had time issues and went over the allotted time; some questions straying off topic, could try to stay focused (7%)
				Questions were answered or redirected if questions got off track, it was reasonable time (7%)
				Response not provided (8%)
6	Were questions from the floor answered satisfactorily?	100%	0%	More time could have been allocated to discuss connection between solid waste sites and possible impact of climate change (7%)
7	What topics or aspects of the workshop did you find most interesting or useful?	-	-	CSA Standards discussion (38%)
				MACA and Action Plan to OAG Report (7%)
				Hazardous waste and Paulatuk case study (15%)
				Solid waste sites and community concerns (15%)
				Climate change – impact/Planning (7%)
				Response not provided (18%)
8	Were the objectives of the workshop achieved?	86%	0%	Little bit of the questions answered (7%)
				Hard to say (7%)

9	Were you clear on future actions and commitments from the workshop?	54%	7%	No specific comments but might be helpful to review these at the end of the meeting if there are some (7%) Response not provided (39%)
10	Any suggestions on how the workshop might have been improved?	-	-	<p>"Hands on" SNP sampling procedure including location maps; and support and understand terms and conditions of WL: suggest look at WL inspection report feedback – what each community is doing and what can be done to address difficulties and non-compliance (7%)</p> <p>Too crowded and hot (7%)</p> <p>Hold discussions (7%)</p> <p>Have communities address issues/concerns at the beginning of workshop – sounds like they have a lot (7%)</p> <p>Too much time to GPS coordinates regarding templates. Template introduction is good (7%)</p> <p>One more extra day for more Q&A (7%)</p> <p>Include all sorts of representative contact information (7%)</p> <p>Response not provided (51%)</p>
11	Were the physical arrangements of the workshop adequate (meeting facility, sound system, transportation, accommodation, support, etc.)?	77%	0%	<p>Comments provided by the responders: Overall great, nice venue and good food, too crowded and hot in room, "wi-fi" not available, one small suggestion – how can we "green" these meetings? Nice to see no bottled water. Can we reduce the paper used (eg double sided printing)? Can we not use disposable cups and dishes? Not always easy to coordinate, but food for thought!</p> <p>Response not provided (23%)</p>
12	Would you attend another Inuvialuit Water Board workshop on community water and waste management?	100%	0%	
Overall rating				
13	On a scale of 1 to 10, how would you rate this workshop (1 being poor and 10 being excellent)	% of total respondents		
	1-2 (Poor)	0%		
	3-6 (Good)	0%		
	7-8 (Very Good)	69%		
	9-10 (Excellent)	31%		

Annex 5: Evaluation Form

EVALUATION FORM MUNICIPAL WATER AND WASTE MANAGEMENT WORKSHOP FEBRUARY 21 AND 22, 2018 INUUVIK, NWT

Please take a few minutes to fill out and return this form **by March 1, 2018**.

1. Were the materials provided adequate to prepare you for the discussions?
2. Within the time available, was the meeting run effectively?
3. Could the agenda have been improved? If so, how?
4. Were the presentations/discussions relative and useful to your responsibilities?
5. Was there adequate time provided for participants' questions and responses?
6. Were questions from the floor answered satisfactorily?
7. What topics or aspects of the workshop did you find most interesting or useful?
8. Were the objectives of the workshop achieved?
9. Were you clear on future actions and commitments from the workshop?
10. Any suggestions on how the workshop might have been improved?
11. Were the physical arrangements of the workshop adequate (meeting facility, sound system, transportation, accommodation, support, etc.)?
12. Would you attend another Inuvialuit Water Board workshop on community water and waste management?
13. On a scale of 1 to 10, how would you rate this workshop (1 being poor and 10 being excellent)?

Thank you.

Completed evaluation forms may be returned to:

Mardy Semmler
Executive Director, Inuvialuit Water Board
Email: semmlerm@inuvwb.ca
Fax: (867) 678-2943