

nwmo

NUCLEAR WASTE
MANAGEMENT
ORGANIZATION

SOCIÉTÉ DE GESTION
DES DÉCHETS
NUCLÉAIRES

ENGAGING YOUTH A REPORT ON NWMO YOUTH ENGAGEMENT ACTIVITIES

DECEMBER 2020

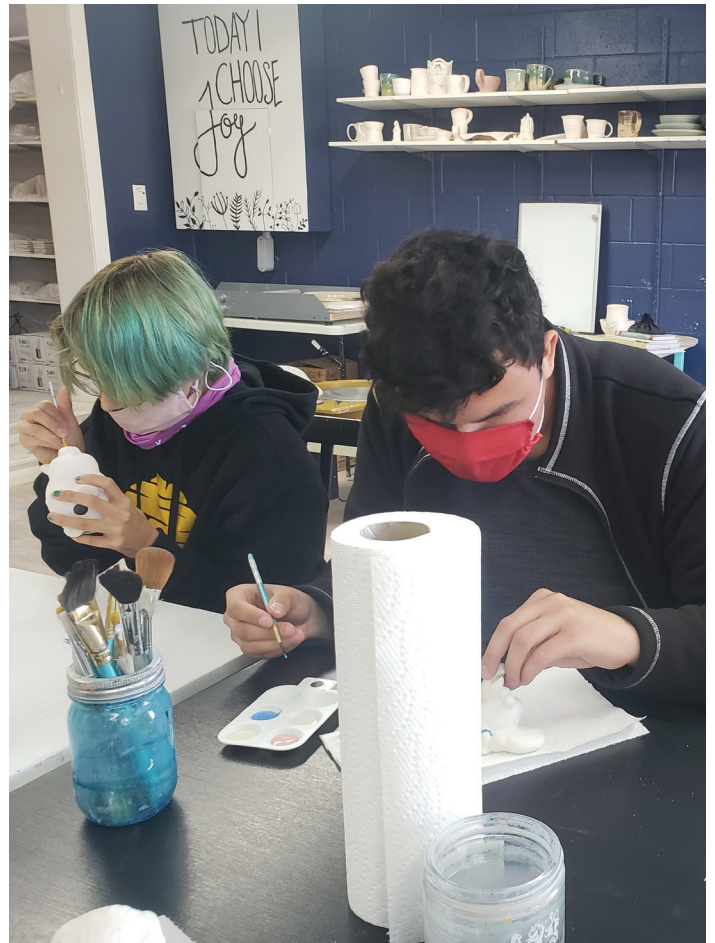


TABLE OF CONTENTS

■	ENGAGING YOUTH : AN OVERVIEW	2
■	COMMUNITY WELL-BEING DURING THE GLOBAL COVID-19 PANDEMIC	4
■	LEARNING AND BUILDING RELATIONSHIPS	5
	Learning activities	5
	Mobile Learn More Centre	6
	Dialogue with youth on Adaptive Phased Management	7
	Draft transportation framework	7
	Environmental baseline monitoring design	9
	Project visioning	10
	Youth engagement strategy	11
	Youth participation in Canada's plan	13
■	INDIGENOUS YOUTH ENGAGEMENT	15
	Council of Elders and Youth	15
	Indigenous relations training	16
	Indigenous Knowledge and Western Science Workshop	16
	Youth members	17
	Reconciliation – Sponsored programs	18
■	EARLY INVESTMENTS IN EDUCATION AND SKILLS PROGRAM	20
	Promoting science, technology, engineering, and mathematics education	20
■	SPONSORSHIPS AND DONATIONS	22
	Local and regional initiatives	22
	Youth science programs	25
	Scientists in School	25
	Science North	25
	Shad Canada	25
■	YOUTH OUTREACH IN COLLABORATION WITH POST-SECONDARY INSTITUTIONS	26
	NWMO research program	26
	University presentations	28
	Post-secondary outreach	28
	Flight 752 Memorial Graduate Scholarship in Engineering and Science at Western University ..	28
	Ontario Tech University's Women for STEM Program	29
■	THE NWMO ON SOCIAL MEDIA	31
■	APPENDIX: 2020 YOUTH ENGAGEMENT SCORECARD	32
■	TABLES	
	Table 1: Communities visited by the Mobile Learn More Centre	6
	Table 2: 2020 Early Investments in Education and Skills	20
	Table 3: 2020 Local youth sponsorships by siting area	24
	Table 4: 2020 University presentations	28

ENGAGING YOUTH : AN OVERVIEW

The Nuclear Waste Management Organization (NWMO) is responsible for implementing Adaptive Phased Management (APM), Canada's plan for the safe, long-term care of used nuclear fuel. The plan has as its end point a deep geological repository to safely contain and isolate Canada's used nuclear fuel essentially indefinitely, and includes a siting process to identify informed and willing host communities and develop supportive partnerships to host the repository and associated facilities.

Canada's plan will only proceed in an area with informed and willing hosts, where the municipality, First Nation and Métis communities, and others in the area are working together to implement it. The NWMO plans to select a site in 2023, and two areas remain in our site selection process: the Ignace area and South Bruce area, both in Ontario.

The APM Project is a multi-generational project spanning many decades. Young people today will be the leaders, workers, small business owners, farmers, and neighbours supporting prosperity and well-being of their communities tomorrow. Given this, the NWMO and siting area communities include youth outreach as a priority in engagement, learning and capacity building. The global COVID-19 pandemic delayed or caused the cancellation of some of our planned youth and community engagement activities in 2020; therefore, adaptability was essential to maintain momentum in the site selection process. Our response included supporting online engagement and adjusting our approaches and programs related to youth.

Each year, the NWMO works collaboratively with siting area communities to plan and implement youth-focused activities to advance three strategic goals:

Young people today will be the leaders, workers, small business owners, farmers and neighbours supporting prosperity and well-being of their communities tomorrow.



Building youth awareness of the NWMO and APM Project in siting area communities;



Building youth understanding and confidence in the project in siting area communities; and



Building youth capacity for future decision-making regarding APM in siting area communities and more broadly.

As the project evolves, so too has our engagement. In recent years, outreach to support learning about the project has been complemented by an increase in the number of workshops and other activities to facilitate public input into project planning. Youth-specific workshops were held this year, and young people continue to participate in community meetings. Through incorporating local input into project planning, future work can reflect the needs and interests of the community.

Year-over-year, youth initiatives are realized through a number of NWMO programs summarized here:

- **Learn More Resource Program and Agreements** provide communities with resources to participate in learning about the project and include dedicated youth support;
- **APM student employment and co-op work terms** provide direct involvement in the APM Project, both in Toronto and in potential siting communities;
- Youth participation on the **Council of Elders and Youth** and the **community liaison committees** brings perspective and contributions to APM policies and processes;
- The **Sponsorships and donations** program allocates support for local and regional community youth well-being initiatives and support for science-based education programs;
- The **Early Investments in Education and Skills** program supports training, education and other capacity-building activities for both youth and community members. This year for the first time, potential siting municipalities received applications and directly administered funding to local organizations; and
- **Post-secondary institutional collaboration** fosters joint research, science education and career pathways.

The *2020 Report on NWMO youth engagement activities* provides an overview of municipal and Indigenous youth outreach work undertaken in the two siting communities and areas, as well as through broader NWMO programs and initiatives. Collectively, these initiatives reached over 14,000 youth in 2020. In the appendix of this report is a scorecard that provides further insight into the extent of youth engagement and outreach achieved.

COMMUNITY WELL-BEING

DURING THE GLOBAL COVID-19 PANDEMIC

Food security, mental health and access to various forms of assistance were areas where the NWMO focused our support for families and young people. Over the course of 2020, the organization actively contributed to municipal and Indigenous communities in potential siting regions and beyond. Some of these donations are included below and are part of the NWMO's ongoing response to the global COVID-19 pandemic.

In support of South Bruce and area, the NWMO made donations to Wellness and Emotional Support for Youth Online to assist online counselling for youth in southwestern Ontario.

The NWMO contributed to many Ontario food banks to provide emergency food access for families experiencing food insecurity:

- 14 local and regional food banks in the Ignace, South Bruce and surrounding regions;
- First Nation and Métis communities and five Indigenous Friendship Centres that provide food and support services to community members;
- COVID-19 student emergency support programs at Lakehead University and Confederation College; and
- Women's shelter in Bruce and Grey County to help individuals in need.

Select additional supported programs include:

- Christmas Hamper programs in First Nation communities where we work; and
- Roots to Harvest food programs in northwestern Ontario.

LEARNING AND BUILDING RELATIONSHIPS

The NWMO Learn More Resource Program provides funding for communities in the site selection process to support capacity building and engagement as part of learning about Canada's plan. Youth engagement activities can build understanding and confidence in the safety case and benefit the project by creating a space for a range of voices to contribute to project planning in a way that reflects local needs and interests. These activities in support of learning and two-way dialogue include funded activities and NWMO outreach in communities.

This year, several planned activities were delayed or cancelled, and others moved online to adapt to the effects of the global COVID-19 pandemic. Several in-person activities were undertaken and involved working with communities to deliver engaging information in a difficult context.

LEARNING ACTIVITIES

The NWMO's community-based Learn More Centres are located in Ignace and South Bruce, and they are places where members of the public are welcome to visit, talk to staff and receive information about the project. This year, the Learn More Centres were not available as they normally would be for in-person conversations, class visits and community activities. The Mobile Learn More Centre is another community engagement resource. This mobile trailer, featuring 3D models, interactive technology and hands-on learning opportunities, was able to travel across the province to share information about Canada's plan. The Mobile Learn More Centre visited several communities and was visited by community members.

In addition to engaging the public on the long-term safe storage of Canada's used nuclear fuel, the mobile exhibit's fall tour was the first opportunity for communities to learn about and provide feedback on the draft transportation framework released in 2020 to gather input on the priorities of Canadians related to the transportation of used nuclear fuel.

Throughout 2020, communities, including young people, also participated in in-person and virtual workshops to provide input on other important elements of the project such as environmental baseline monitoring design, project visioning and a youth engagement strategy in both siting area municipalities.

When permitted, and in compliance with COVID-19 safety protocols, we undertook in-person engagement activities.

Ignace Annual Kids Fest

As part of Kids Fest in August, NWMO Developmental Engagement Students developed an age-appropriate activity book, entitled "A matter of time," made up of puzzles, games and mazes related to NWMO project timelines as a fun activity about the project for participants at the event. The NWMO also ran a "Time capsule" activity where participants chose small items for preservation. Now, the countdown is on for the capsule's release in 2023. Let's see what history has in store for us!



Mobile Learn More Centre

The Mobile Learn More Centre is a rolling exhibit designed to travel across the province and country to share Canada's plan and the NWMO's work with local communities. It includes multimedia, interactive and static exhibits to explain Canada's plan for a deep geological repository. The exhibits and trailer have been adapted to ensure safety and physical distancing to prevent the spread of the pandemic.

As a mobile engagement tool, the Mobile Learn More Centre facilitated engagement not only on the Adaptive Phased Management (APM) Project overall, but also on the draft transportation framework specifically in northwestern and southern Ontario. Table 1 provides the names of communities visited.

TABLE 1: COMMUNITIES VISITED BY THE MOBILE LEARN MORE CENTRE

August	<ul style="list-style-type: none">• Aug. 17-20 Learn More Centre, Ignace• Aug. 21 Wabigoon Memorial Hall, Wabigoon Village• Aug. 27-28 Lac Seul First Nation Training Centre, Hudson
September	<ul style="list-style-type: none">• Sept. 2-3 Learn More Centre, Ignace• Sept. 8 Grand Council Treaty #3, Kenora• Sept. 9 Naotkamegwanning First Nation• Sept. 10 Wabigoon Lake Ojibway Nation• Sept. 14-17 Dryden Memorial Arena, Dryden• Sept. 17 Dymont Community Hall, Dymont• Sept. 22-24 Teeswater, South Bruce• Sept. 25-26 Mildmay, South Bruce• Sept. 28 Belmore, South Bruce• Sept. 29 Formosa, South Bruce

DIALOGUE WITH YOUTH ON ADAPTIVE PHASED MANAGEMENT

Young people have distinct viewpoints on issues that affect them, which the NWMO aims to listen to and understand when we engage with them on topics related to project planning. As a result, the implementation of project plans come to reflect youth and community interests on topics such as the community's development, environmental protection and engagement.

Draft transportation framework

In August 2020, the NWMO released *Moving forward together – An invitation to review a draft planning framework for the transportation of used nuclear fuel* with the purpose of actively seeking feedback and input on the framework. Canada's plan calls for used nuclear fuel to be transported from interim storage facilities to be centrally contained and isolated in a deep geological repository. In the future, transportation will be undertaken safely in a robust Used Fuel Transportation Package. As part of collecting input and building awareness for this program, several activities were organized:

- Oct. 15 – Lunch and Learn presentation, Grades 9 to 12 students at Ignace School, Ignace
- Oct. 15 – Used Fuel Transportation Package and Package Testing presentation (virtual), Grades 7 and 8 students at Ignace School, Ignace
- Oct. 27 – Egg drop competition, Grades 7 and 8 students at Ignace School, Ignace



Ignace volunteer firefighters (left) put the finishing touches on the egg drop scaffold, and Ignace School student (right) with an egg that survived a five-metre drop.

Egg drop test

In late October, after an NWMO presentation on Used Fuel Transportation Package and Package Testing, the Ignace School's Grades 7 and 8 science class were assigned with designing a robust package of their own. Students successfully designed and created packages that used multiple barriers to withstand an "egg drop test" intact without releasing the contents of the package into the environment. On Oct. 27, 2020, with the support of the Ignace Volunteer Fire Department, packages were dropped from a predetermined distance to demonstrate the ability of the package to withstand a severe impact scenario.

Environmental baseline monitoring design

Environmental monitoring is a key component of the NWMO's work as we continue to study siting areas for suitability to host a deep geological repository. With community input, co-designed baseline monitoring programs were created in Ignace and South Bruce to begin identifying the current conditions of a range of precious environmental components such as water, air, soil, and biodiversity. The programs were designed to take into account local knowledge and concerns. The data collected will help form the starting point for the NWMO's ongoing environmental monitoring commitment by creating a complete understanding of the local environment.

- Aug. 12 – Youth workshop to provide input on the development of the environmental baseline monitoring program, South Bruce
- Sept. 28-Oct. 9 – Survey for community members who hunt, fish or gather wild foods asking how they can help the NWMO collect samples to establish an environmental baseline, Ignace

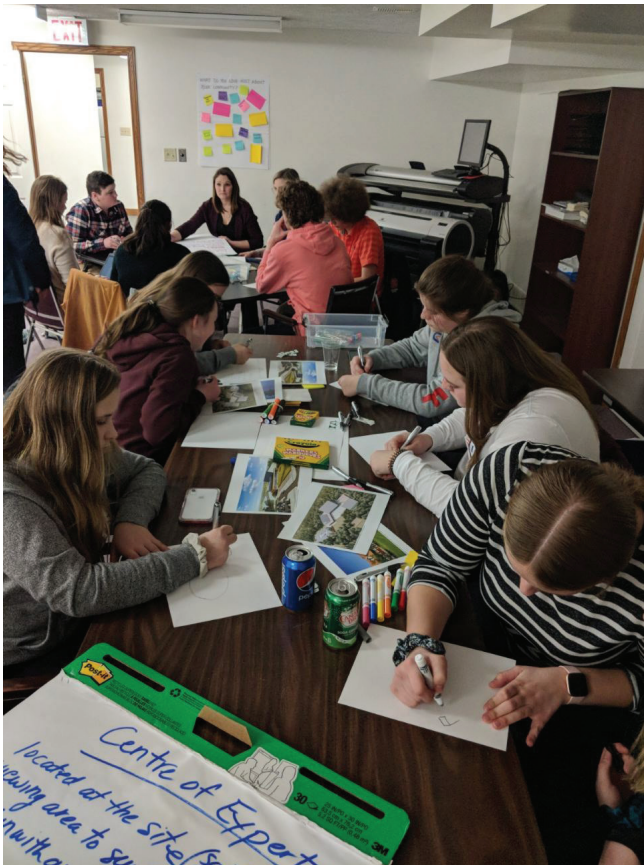
Surface water sampling location for the environmental baseline monitoring program – the NWMO is committed to protecting the environment.



Project visioning

In Ignace and South Bruce, several community workshops were organized to explore the community's expectations for the project if it were to be sited in the area. Area youth aged 15 to 25 were invited to share their thoughts on the project visioning pillars: community and culture, natural environment, infrastructure, economics and finance, people, and the Centre of Expertise. Local workshops included:

- Feb. 18 – South Bruce youth project visioning workshop was held to gather input from local youth on the project vision and Centre of Expertise.
- July 28 – Ignace NWMO summer students participated in the Ignace project visioning workshop.
- Sept. 1 – Youth golf event – Ignace area youth were invited to learn about the project, and discuss careers and project economics, while enjoying a fun recreational activity at a local recreational hub.



Participants providing feedback at a South Bruce project visioning youth workshop in February.

Youth Engagement Workshop



➔ **We want to hear from you!**



WHAT

South Bruce and NWMO are working together to develop a Youth Engagement Strategy that's **"For Youth, By Youth"**. To do this, we need your help!

It's ALL about you!

Tell us:

- what's important to you
- how we can better support you
- how & when you want to be engaged
- what's missing in our plan

*As a thank you for participating, you will receive a \$15.00 gift card of your choice to either Harley's or Hometown Pizza

WHO



Local Youth/Young Adults



Bring a FRIEND (or 2)!

REGISTRATION REQUIRED

Contact Vivian Kennedy
E: sbclc@southbruce.ca
P: 519-392-6623

WHEN



December 16, 2020
6:30 p.m. – 8:00 p.m.

Via Zoom

(link provided upon registration)

Public notice inviting South Bruce area youth to participate in the development of the youth engagement strategy.

Youth engagement strategy

Young people today will be the leaders, workers, small business owners, farmers, and neighbours supporting prosperity and well-being of their communities tomorrow. Contributing positively to the areas where we work includes supporting young people's healthy development, as well as their role in shaping and considering APM. To this end, the NWMO collaborated with the Township of Ignace and the Municipality of South Bruce to develop a youth engagement strategy for each community.

Separate working groups in Ignace and South Bruce were formed to collect input and develop a strategy for each area. These working groups were made up of representatives from the Township of Ignace and the Municipality of South Bruce, youth members of the community liaison committee, and NWMO staff, including developmental students. Through meetings, the scope of the project was identified, and input from local youth was a priority to reflect a "for youth, by youth" approach. Several engagement activities were organized according to COVID-19 safety protocols to facilitate youth input. The result was the creation of two youth engagement strategies that outline a vision for youth engagement and provide a framework for ongoing youth engagement planning by the Township of Ignace and the Municipality of South Bruce.

The intention was to identify areas to engage youth holistically in their community, whether or not the APM Project is sited there in the future. There was also a recognition that in a future siting community, young people today will be both the beneficiaries and the managers of impacts of APM as a multi-generational project. At this early stage, youth engagement includes creating awareness and understanding of the project, supporting the capacity building of young people to achieve the future they want for themselves, and seeking their advice and guidance about the implementation of the APM Project.



NWMO staff in Ignace organized a youth activity to invite input into the youth engagement strategy.

Youth workshops

Ignace

The Township of Ignace and the NWMO co-sponsored a week of youth engagement events. These events helped to identify meaningful opportunities for youth to learn, understand and be involved in the community and the APM Project in Ignace.

- Dec. 8 – Youth survey
- Dec. 9 – KidZone game show event
- Dec. 11 – Giving a kahoot about youth engagement
- Dec. 12 – Warming up to youth engagement coffee shop chat
- Dec. 13 – Sticks and stones rec hockey event

South Bruce

Working in collaboration with the Municipality of South Bruce, the NWMO hosted several workshops to collect youth input. Local youth were asked to share their thoughts and recommendations over three virtual workshops. Workshops were held on the following dates:

- Dec. 15 – Post-secondary students
- Dec. 15 – High-school and post-secondary students
- Dec. 16 – High-school and post-secondary students

YOUTH PARTICIPATION IN CANADA'S PLAN

Young people from siting areas and beyond are learning about APM and contributing to project work in different ways.

In 2020, the NWMO filled 15 summer student positions in the Ignace, South Bruce and Toronto offices. Six students were hired to support work in Ignace and South Bruce. This was the first environmental assessment summer position in Ignace and the first year for summer students in South Bruce. Two Developmental Engagement Students each joined the Ignace and South Bruce teams for the summer months, which were extended through the fall. Responsibilities included organizing, supporting and implementing initiatives geared specifically for local, regional, youth, and community engagement, as well as working with team leads in youth engagement to create youth learning programs and materials.

In the Toronto office, two of the 10 corporate positions were engineering interns on 16-month placements. The remaining university students supported several departments, including geoscience, safety and technical research, communications, legal, and others.

“The best part of working with the NWMO was the diverse group of individuals I was able to collaborate with. Though I worked in a small, remote office, I connected with colleagues throughout the entire organization and learned about their unique roles in areas including science, geology, communication, government, and the environment!

As an engagement developmental student, I honed my communication skills and learned to describe and present technical concepts to a diverse audience. I am very thankful for the opportunity to learn and grow with the NWMO.”

South Bruce Developmental Student testimonial



Team NWMO – Youth in 2020.

INDIGENOUS YOUTH ENGAGEMENT

COUNCIL OF ELDERS AND YOUTH

The NWMO Council of Elders and Youth (Council) is an independent advisory body that provides counsel on the application of Indigenous Knowledge in the implementation of Adaptive Phased Management, and more recently, on the NWMO's approach to Reconciliation. Indigenous youth continue to be directly involved in these areas through participation in the Council. The Council plays a crucial role in helping to build and strengthen relations with First Nation and Métis communities in the siting process.

Council of Elders and Youth

In 2020, the Council has been working with an Indigenous-led consulting firm, Reciprocal Consulting, on developing a storytelling narrative about the evolution and growth of the Council, as well as capturing the significance of the guidance received by the NWMO to guide our work. Youth members of the Council have contributed to the narrative by including their stories of personal, spiritual and professional growth as a result of their role on the Council. Additionally, they have provided feedback and photos to be included in the final product. The narrative will culminate into two products: a coffee table book and a virtual storytelling platform that will allow greater reach of the Council's story.

During these uncertain times, we wanted to ensure continuity in our work and continue to receive guidance and advice from the Council as it is vital to the Indigenous Relations annual work plan. We engaged with the Council in the early stages of the global COVID-19 pandemic to ensure members had the space to support one another, and to initiate dialogue on how the Council's work plan needed to be adapted. The Council has been meeting virtually once a month, which will continue into 2021 until it is safe to travel amid COVID-19 restrictions. The Council has demonstrated its leadership in adaptability as it has embraced and accommodated this new virtual world to which we are all adjusting.

Since 2015, youth members serve as a co-chair in each Council meeting. In 2020, Council meetings were held monthly using Microsoft Teams beginning in March. Youth members provided vital support to the Elder members of the Council to ensure they could connect to each meeting and share their thoughts freely. Youth members met bi-monthly on their own to discuss topics such as transportation, youth engagement and ways in which they could help to foster a welcoming virtual environment for the entire Council.

Indigenous relations training

We continue to expand training opportunities for NWMO staff on Indigenous Knowledge and Reconciliation. In 2020, we piloted our Reconciliation Part Two training with a small cohort of learners. The training consists of two learning modules focused on identity and land. In late 2020, we also delivered both training modules for the Executive Committee with support from members of the Council. We plan to roll out the training to NWMO staff in 2021.

Each session will include two members of the Council with considerations of gender balance and to include both Elder and Youth members. We have also revamped our Reconciliation Part One training (now known as ReconciliACTION Learning Sessions), in partnership with the Gord Downie & Chanie Wenjack Fund's Manager of ReconciliACTIONS. This training will roll out to staff who have not completed it in 2021 with the support of Council members.

Indigenous Knowledge and Western Science Workshop

In 2020, we hosted our third annual Indigenous Knowledge and Western Science Workshop. The objective of the workshop was to explore new opportunities for Indigenous Knowledge holders and western scientists to work together and inform research about the long-term performance of the multiple-barrier system in a deep geological repository. The virtual workshop was attended by more than 70 participants. It included a presentation from several technical departments on their work to interweave Indigenous Knowledge, a panel discussion on best practices regarding interweaving Indigenous Knowledge and science in respectful ways, and teachings of the medicine wheel by an Elder advisor. All five youth members of the Council attended this workshop and found it informative.

Youth members

This year, we had one youth member step down from the Council in order to pursue her career in engineering. Youth Council members are working on a recruitment strategy for 2021. Currently, we have five youth members and are seeking to fill the remaining three in 2021.





RECONCILIATION – SPONSORED PROGRAMS

Through the corporate sponsorships and donations program, the NWMO supports organizations contributing to Reconciliation. In 2020, we continued our support for the Gord Downie & Chanie Wenjack Fund and Right To Play's Promoting Life-skills in Aboriginal Youth (PLAY) program. We also established the Nuclear Waste Management Organization Indigenous Student Success Award at Ontario Tech University as part of a five-year agreement.

Gord Downie & Chanie Wenjack Fund Legacy Schools and Legacy Spaces program

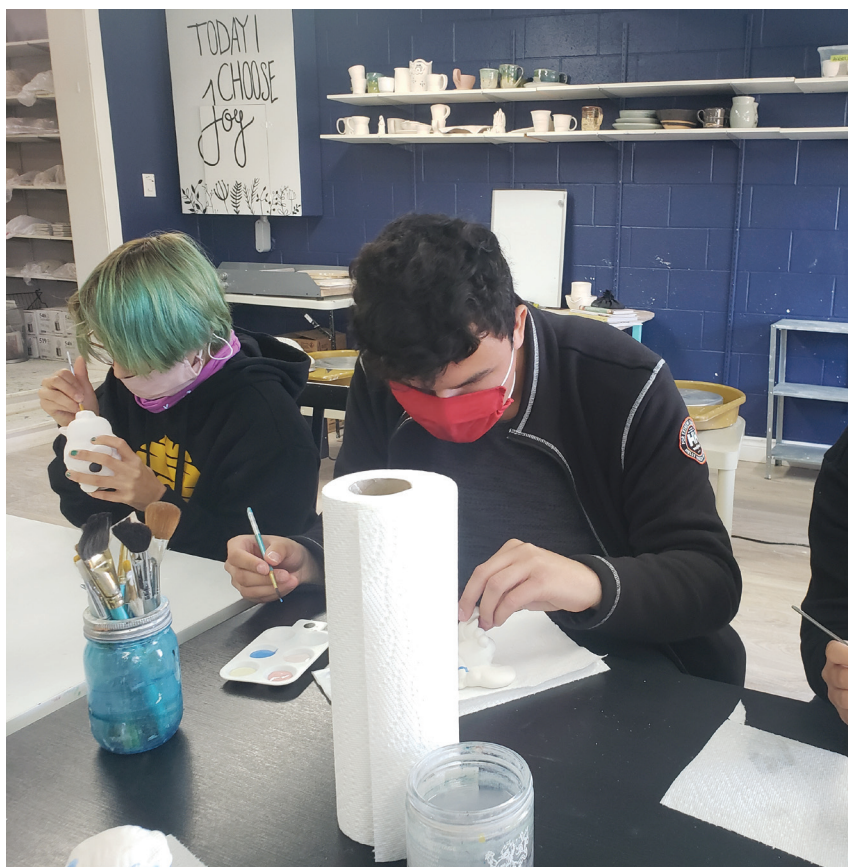
The Gord Downie & Chanie Wenjack Fund's Legacy Schools and Legacy Spaces programs foster awareness and education of the impact of the residential school system on Indigenous peoples. Chanie Wenjack's story is representative of the residential school experience, which inspired Gord Downie's call to build a better Canada.

The Legacy Schools program provides free tool kits to teachers in schools across Canada, including communities in the siting process. The Legacy Spaces program is an opportunity for organizations to provide welcoming places dedicated to education and spreading awareness about Indigenous history and Reconciliation. These initiatives are intended to support participants to undertake reconciliATIONS that amplify awareness and education in their community. In 2020, 2,263 tool kits were distributed, and 393,400 students were reached across Canada.

Right To Play's Promoting Life-skills in Aboriginal Youth program

The NWMO also supports Right To Play's Promoting Life-skills in Aboriginal Youth (PLAY) program that teaches life skills and empowers youth through the power of play. The NWMO's funding contributes to programming in Ontario that promotes healthy life skills development.

Partway through 2020, the PLAY program pivoted to deliver programs online and at a distance. In partnership with 53 First Nations, the PLAY program reached over 2,500 youth across Ontario, including in areas where the NWMO works. Participants reported that PLAY activities helped them learn ways to stop the spread of COVID-19 and to be active at home. Trained Community Mentors deliver programs in the following areas: lifelong learning and educational success, supportive and healthy relationships, employability/leadership and life skills, and healthy, active living and wellness. These programs facilitate access to play-based programming for Indigenous youth.



EARLY INVESTMENTS IN EDUCATION AND SKILLS PROGRAM

The NWMO Early Investments in Education and Skills (EIES) program offers support for community initiatives designed to equip youth with the skills suitable for future Adaptive Phased Management-related work, as well as transferable skills that can be applied to other projects or work. The program is administered through local siting area communities and extends support to neighbouring communities.

PROMOTING SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS EDUCATION

Investments are made to support broad capacity building across various activities, many of which promote science, technology, engineering, and mathematics (STEM), and skilled trades. In 2020, of the 28 initiatives funded, 15 were STEM related. Robotics and coding activities continue to be popular choices for teachers and students in the classroom. Other activities included creating cultural awareness for youth on traditional Indigenous practices, academic awards, safety training, and environmental-related work.

Table 2 provides a range of NWMO EIES funded initiatives, including a focus on STEM resources and activities.

TABLE 2: 2020 EARLY INVESTMENTS IN EDUCATION AND SKILLS

Ignace and area	<ul style="list-style-type: none"> • ASIST (Applied Suicide Intervention Skills Training) – Suicide prevention • Canadian Firearms Safety Courses (CFSC) Hunter Safety and PAL • Ignace School – High-school graduation awards • Local schools and libraries – STEM/STEAM (science, technology, engineering, the arts, and mathematics) resources and activities • Youth Robotics Day • Post-secondary student bursaries • Science North – Summer science at home
South Bruce and area	<ul style="list-style-type: none"> • Aamjiwnaang First Nation – Bursary awards • Brookside Public School – STEM, robotics, coding kits • Bruce Botanical Food Garden – Summer student • Elementary schools – Canadian Mental Health Association mental health programming • Elgin Market Public School – MathUp Program • F. E. Madill Secondary School – 3D printer • F. E. Madill Secondary School – Robotic Club tournament fees • Lucknow Central Public School – Robotics team • Lucknow Central Public School – STEM equipment • Post-secondary students – Student care packages • Ripley Huron Community School – iPads • Ripley Huron Community School – Science lab equipment • Sacred Heart High School – Genesis Program STEM equipment • St. Anne's Catholic Secondary School – Science lab

South Bruce bursary

In 2020, the Municipality of South Bruce invited submissions for bursaries for local students currently enrolled in post-secondary education. Applicants were asked to write an essay about youth engagement in the community and their career aspirations. Through EIES funding, five recipients received \$1,000 each towards their education. Through their chosen fields, these students aim to contribute to South Bruce and area through work as an optometrist, power and geomatics engineers, in mental health, and as a social worker.



South Bruce students receiving bursary towards their studies.

SPONSORSHIPS AND DONATIONS

In addition to sponsorships focused on Reconciliation, the NWMO also supports organizations that advance youth education in science, technology, engineering, and mathematics (STEM) and local initiatives that focus on community well-being. Additionally, in response to the global COVID-19 pandemic, the NWMO sponsored one-time initiatives that supported communities as they managed through the pandemic.

In 2020, we supported over 40 youth initiatives across two potential siting communities and areas. We also supported:

- **Science North**, which delivered programs in three northern Ontario communities reaching 1,049 elementary students;
- **Shad Canada**, which reached 600 high-school students through ShadOnline programming;
- **Scientists in School**, which delivered 45 workshops to 1,200 students in southwestern Ontario;
- **Gord Downie & Chanie Wenjack Fund Legacy Schools program**, which reached 1,711 participating schools across all provinces and territories, including over 900 students in NWMO siting areas; and
- **Right To Play's Promoting Life-skills in Aboriginal Youth Program**, which reached over 2,500 youth in Ontario.

LOCAL AND REGIONAL INITIATIVES

Through sponsorships and donations, the NWMO supports local well-being initiatives in siting areas. Youth-related initiatives typically focused on well-being, culture and sports. However, due to the impact of the pandemic, events like hockey and baseball tournaments, powwows and other community events were cancelled. The NWMO pivoted to supporting more local initiatives tied to mental health and well-being, food insecurity, and virtual youth events/programs.

Support for Wellness and Emotional Support

In response to the effects of the pandemic in communities, the NWMO provided funding to support Wellness and Emotional Support (Wes) for Youth Online. WES for Youth Online provides a vital free online counselling service to youth, ages 13 to 24. The organization reported that since the start of the pandemic, several hundred new youth have registered.



EXPLORE

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Nuclear Innovation Institute's Best Ever Summer Camp

With the cancellation of all in-person summer camps, the Nuclear Innovation Institute's online "Best Ever Summer Camp" was a welcomed opportunity for fun and engaging activities in light of COVID-19 restrictions. Free for youth from the region, the camp ran seven one-week sessions. Each day included STEM, arts and crafts activities focused on individual skill development and interactive small groups to encourage teamwork and friendships. Evening activities supported offline activities at home and with family. The Municipality of South Bruce and the NWMO joined other sponsors to fund the program.

Table 3 provides an illustrative list of funded activities.

TABLE 3: 2020 LOCAL YOUTH SPONSORSHIPS BY SITING AREA

Ignace and area	<ul style="list-style-type: none"> • Aboriginal People of Wabigoon – Christmas hampers • Blessings in a Backpack – Food security program • City of Dryden Red Lake Fire Evacuation – Provision of food and grocery vouchers • Dryden Fall Fest – Free family events • Dryden Native Friendship Centre – Christmas hampers • Little Bands Native Youth Hockey Tournament • NorWOSSA – Travel costs related to teams/individuals to qualify or participate in Northwestern Ontario Secondary Schools Athletic Association competitions • Seine River First Nation – Christmas hampers • The Métis Nation of Ontario Atikokan Métis Council – Canoe training • The Métis Nation of Ontario Atikokan Métis Council – Harvest Feast • The Métis Nation of Ontario Kenora Métis Council – Métis Fall Harvest • Wabigoon Lake Ojibway Nation – Christmas hampers • Wabigoon Village – Wabigoon Fireworks Committee
South Bruce and area	<ul style="list-style-type: none"> • Big Brothers Big Sisters of Kincardine & District (BBBSKD) – Mentoring • Bruce County Library System – 3D printer • Community Living Kincardine and District – Baby and Me • County of Bruce – Dorrell Young Christmas Program • Formosa Immaculate Conception School Parent Committee – Playground • Grey Bruce Mental Health and Addiction Services Centre – Programming • Mildmay Junior Broomball – Annual tournament • Mildmay Optimist Club – New playground • Nuclear Innovation Institute – Best Ever Summer Camp • South Bruce Minor Hockey Association – New boards • WES for Youth Online – Counselling • Women’s House Serving Bruce & Grey – Services



NWMO staff packing food for the “Blessings in a Backpack” program that delivers food to children at home to avoid hunger. The program, which is normally operated through schools, provides nutritious, non-perishable, easy-to-prepare food.

YOUTH SCIENCE PROGRAMS

The NWMO continued our funding of educational science and technology programs in siting areas and beyond. Science North and Scientists in School implement programming in schools in Ignace and region and South Bruce and region respectively. Due to the pandemic, these programs moved online in the latter part of 2020, finding new ways to connect with students to educate and inspire interest in STEM. Across Canada, Shad engages high-school students with an interest in STEM and pivoted to a fully virtual program in summer 2020.

Scientists in School

For the first six years, Scientists in School workshops for children and youth in Grey, Bruce, Huron, and Perth Counties were conducted in person in the classroom. Adjusting to COVID-19 requirements, Scientists in School had to develop entirely new online workshops that could be delivered during remote learning. In total, 45 NWMO-funded workshops were presented.

Science North

From its headquarters in Sudbury, Science North implements school outreach programs in northern Ontario. The NWMO has sponsored Science North since 2012 to support STEM education in northern siting area communities. In the 2019-20 school year, Science North delivered in-person workshops in Wabigoon Lake Ojibway Nation, Dryden and Ignace schools.

Shad Canada

In response to the pandemic, Shad pivoted to offering an entirely online session for students in July 2020. Moving online allowed Shad to reach 600 participating students across Canada. The NWMO has supported the program for over 10 years and continued to support students in attending the 20-day summer education program for high-school students with a focus on science, technology, engineering, the arts, and mathematics (STEAM). ShadOnline provided real-time sessions, interdisciplinary design teams competing in a spaceflight design challenge, hands-on learning, and keynote speakers.

Feedback

“We were very pleased with our workshop on energy! The students were extremely engaged the whole time and so excited about every station. I really liked how each station was so hands-on, as it made the learning clearer and more enjoyable. It was also great to receive followup lesson activities to complete with the students. I would definitely book another workshop with Scientists in School.”

Grade 1/2 Teacher, Avon-Maitland District School Board, after an *Energy Makes it Happen!* workshop

YOUTH OUTREACH IN COLLABORATION WITH POST-SECONDARY INSTITUTIONS

The NWMO continues to work with university and international partners to advance research and practice in engineering, geoscience and safety assessment. Research initiatives supported through university-based partnerships harness the best of Canadian academic expertise, together with NWMO professionals, in testing and modelling key features such as the engineered- and natural-barrier systems associated with the repository.

Research initiatives further support graduate and postgraduate students to pursue studies in nuclear waste management fields. In 2020, due to COVID-19 restrictions, there was less opportunity for in-person meetings, and a general shifting of university work to data analysis rather than laboratory work.

NWMO RESEARCH PROGRAM

In 2020, the NWMO supported work at 19 universities, involving 30 Canadian research groups. This included initiation of the following new projects:

- Previously, field tests at the Mont Terri Underground Research Laboratory (URL) in Switzerland showed that deformations measured in the Opalinus clay rock formation around underground openings differs from those predicted with conventional approaches and that they are coupled with changes in pore pressure within the rocks. Together with Nagra (Switzerland), the NWMO initiated a new PhD student research program at the University of Alberta to understand this phenomenon. The research program includes studying the geomechanical behaviour of the Opalinus clay in the laboratory, while developing new ways of measuring pore pressure, interpreting field test data from the Mont Terri URL, and conducting numerical simulations.
- The NWMO teamed up with SKB in Sweden to support a new PhD student research program at the University of Toronto that uses statistical approaches to develop new protocols for assessing the variability of in-situ stress for the design of nuclear waste repositories.
- The NWMO also initiated a new research initiative with McGill University to support PhD student research on the hydrology of permafrost terrains. This work is part of the international CatchNET initiative.

Students involved in research projects are encouraged to present their work at relevant conferences. The NWMO has organized our own annual series of technical seminars on our Geoscience program. This year's Geoscience Seminar was held virtually due to the global COVID-19 pandemic. One advantage of this approach was that we were able to accommodate a larger number of attendees than the in-person version, including a larger number of students. Also, for the past couple of years, the NWMO has hosted academic tours at our Oakville facility, showcasing NWMO and university research on the engineered barriers that will be used to safely contain and isolate used nuclear fuel in a deep geological repository. The third academic tour was held in February 2020, attended by about 30 students.

Ontario Research Fund project

The Ontario Research Fund (ORF) project brings together nine research groups from four Canadian universities (Western University, University of Toronto, York University, and University of Waterloo) to conduct research on the long-term integrity of the engineered-barrier system. Approximately halfway through this five-year project, 63 graduate and undergraduate students have or are currently working on the project. The academic disciplines are diverse and include chemistry, electrochemistry, corrosion science, materials engineering, hydrogeological engineering, numerical modelling, synthetic chemistry, and microbiology. The collection of such a diverse group of researchers under one project allows for efficient and meaningful collaboration between related research groups under the NWMO mandate and provides a unique learning environment for students.

Beyond advancing their respective research projects, students presented at various online international research conferences, including meetings of the International Society for Microbial Ecology, the Electrochemical Society, National Association of Corrosion Engineers International, and the Canadian Society of Chemistry. Due to COVID-19 restrictions, the 2020 Annual ORF Meeting was postponed until early 2021.

A unique element of the ORF project is the requirement to allocate some of the funds towards youth outreach initiatives. The original goal of the ORF team was to host high-school students from NWMO siting areas at the universities involved in the project. The goal was to show students what STEM (science, technology, engineering, and mathematics) opportunities are available for them at Canadian universities and to encourage them to pursue higher education. However, pandemic restrictions made achieving this goal impossible in 2020 and likely beyond. The ORF Steering Committee is exploring other possible options, including virtual “visits” to high schools in NWMO siting regions by professors and graduate students in the ORF project and producing curriculum specifically related to the STEM fields of study around nuclear waste management.

UNIVERSITY PRESENTATIONS

NWMO scientists regularly present to university classes and departments to provide an introduction to the project and to address specific technical areas. This activity was reduced in 2020 compared to previous years due to the pandemic. A list of presentations is found in Table 4.

TABLE 4: 2020 UNIVERSITY PRESENTATIONS

University	Event	Date
Queen's University	Invited virtual presentation – Department of Mechanical and Materials Engineering Seminar	Jan. 19
University of Guelph	Presentation to Natural Sciences and Engineering Research Council's Industrial Research Chair Technical Advisory Committee meeting, including students and postdocs	May 27
McMaster University	10th Annual NACE Southern Ontario Student Section Meeting	July 23-24
University of Alberta	Invited virtual presentation – Geotechnical Graduate Weekly Seminar series	Nov. 25

POST-SECONDARY OUTREACH

Flight 752 Memorial Graduate Scholarship in Engineering and Science at Western University

Along with gifts from members of the Western University community, the NWMO supported an endowed memorial scholarship: Flight 752 Memorial Graduate Scholarship in Engineering and Science. All 176 passengers on the Ukraine International Airlines flight travelling from Tehran to Kyiv were killed when the plane was brought down by an Iranian surface-to-air missile in January 2020. The scholarship is a way to honour the Western University graduate students on the flight, including Hadis Hayatdavoudi who was working on a research project with the NWMO.

Ontario Tech University's Women for STEM program

The NWMO began supporting the newly created Women for STEM program at Ontario Tech University in 2019. This included a scholarship for the 2019-20 school year and participation in the program's mentorship program. In summer 2020, the NWMO committed to a five-year sponsorship for the Nuclear Waste Management Organization Women for STEM Scholarship and newly created Nuclear Waste Management Organization Indigenous Student Success Award.

NWMO staff are also contributing personally to the development of women STEM students.



NWMO staff and Ontario Tech University mentees kicking off the STEM mentorship program in January 2020.

“The mentorship program at Ontario Tech University was a fantastic initiative. The committee was dedicated, and mentees were all bright and talented. The program was clearly built through thoughtful planning to encourage success for our women students in science, technology, engineering, and mathematics, with the ultimate goal of increasing gender parity in STEM careers. As a mentor, I was committed to share my career experiences to help my mentee achieve her professional goals, while I enjoyed a rewarding volunteer experience and built relationships within the university community.”

An Associate Scientist in Corrosion/Microbiology at the NWMO mentored a student from Ontario Tech University in 2019-20

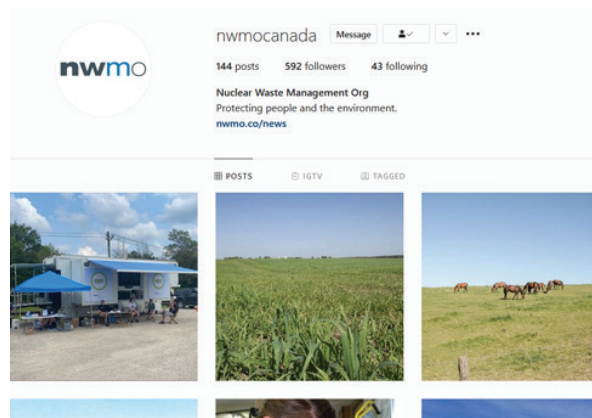
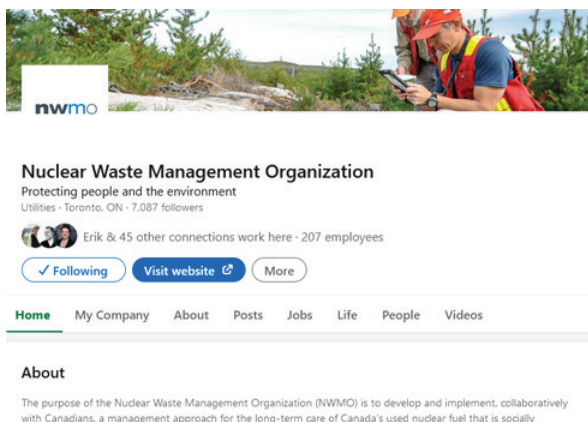
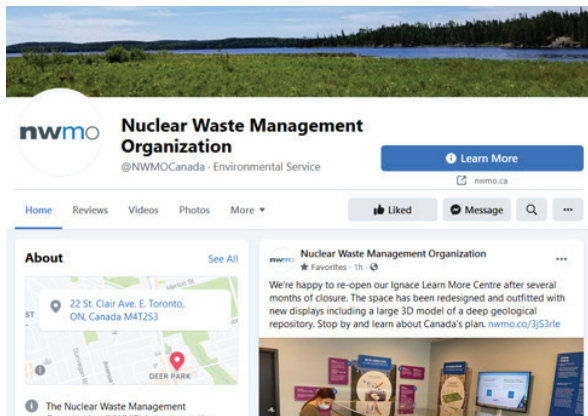
Student networking

In January 2020, NWMO staff participated in the Water Industry Networking Night at the University of Toronto. The event was organized by student clubs, which invited young academics to attend for the opportunity to meet professionals in their fields during speed networking sessions. As one of 20 companies with 80 students in attendance, NWMO staff held one-on-one conversations with more than 10 graduate students from the Civil and Environmental Engineering departments sharing professional experiences and information about the NWMO.

THE NWMO ON SOCIAL MEDIA

In 2020, the NWMO heard from more citizens through social media than any prior year, despite news about the global COVID-19 pandemic taking priority over NWMO content. News about NWMO milestones drove increased interest, with more citizens reaching out to the NWMO on Facebook, Twitter, LinkedIn, and Instagram to ask questions and provide comments on Canada's plan. As a result, the NWMO directly conversed with more users online than in any previous year.

The NWMO also published more multimedia to our social channels than in any other year in an effort to reach a broader audience. Multimedia content included animations describing Canada's plan in plain language, Instagram-tailored videos describing the multiple-barrier system, as well as a livestreamed YouTube presentation with the Toronto Zoo. The widening breadth of content better allowed the NWMO's social accounts to act as a content library for online users looking to learn about Canada's plan on social media. To this end, the NWMO continues to take a community-centric focus to our social media presence.



APPENDIX:

2020 YOUTH ENGAGEMENT SCORECARD

BUILD YOUTH AWARENESS OF THE NWMO AND APM PROJECT

STRATEGIC OBJECTIVE

The NWMO works with siting communities to **implement local youth initiatives in the siting area.**

INDICATORS

- # of dollars allocated on youth initiatives:
 - » EIES and Sponsorships and donations programs **\$925,000**
 - » Learn More Resource funding for youth engagement **\$3,800,000**
- # of youth engagement activities (EIES, Sponsorships and donations, Learn More activities, and post-secondary presentations) **172**
- # of youth involved in initiatives/events:
 - » Participating in sponsored sport, cultural, community activities, and non-funded community-based outreach **8,855**
 - » Participants in Scientists in School and Science North sponsored programs **3,512**
 - » Participants in Shad APM presentations **800**

BUILD YOUTH UNDERSTANDING AND CONFIDENCE IN THE PROJECT

STRATEGIC OBJECTIVE

The NWMO works with siting communities to **implement opportunities to engage siting area youth in gaining an understanding of the APM Project.**

INDICATORS

- # of youth participating in Learn More tours, open houses and/or learning and sharing events, and NWMO classroom presentations **242**
- # of youth participating in technical training, career learning, and/or on-the-job experience that could help position them for future APM job opportunities:
 - » Career and technology fairs **150**
 - » Robotics/STEM programs and activities **1,562**
 - » Skills training programs and academic awards **33**
- # of youth involved in continuing and life skills education, traditional knowledge sharing, and summer internships **18**

BUILD YOUTH CAPACITY FOR FUTURE DECISION-MAKING REGARDING APM

STRATEGIC OBJECTIVE

The NWMO works with siting communities to **create opportunities for siting area youth participation in dialogue on decisions affecting the potential project implementation in their area.**

INDICATORS

- # of youth on community liaison committees and APM community groups providing input into decisions **200**

STRATEGIC OBJECTIVE





The NWMO works more broadly to **build the capacity of Canadian youth (post-secondary) to support the implementation of the project through building interest, awareness and skills in disciplines required by the APM Project.**

INDICATORS

- # of post-secondary youth exposed to briefings and seminars about the NWMO and APM – delivered to university audience **192**

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