



Photo: Pacific Spirit Regional Park

Climate Action Committee Meeting

FEBRUARY 8, 2024

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Geoscience BC

CURRENT AND PLANNED GEOSCIENCE RESEARCH TO ENABLE NET-ZERO EMISSIONS

Richard Truman, Vice President, External Relations
Geoscience BC

ABOUT GEOSCIENCE BC

- Geoscience BC's independent, public geoscience is a **first link in the supply chain for Canada's net-zero emissions economy**
- Our research:
 - Improves our collective level of geoscience knowledge
 - Informs responsible natural resource development and investment decisions
 - Catalyzes socio-economic opportunities
 - Stimulates innovation and geoscience technologies
- All completed research is public: available online



GEOSCIENCE BC STRUCTURE

- Our minerals, energy and water research is funded by governments, industries, trusts and other partners
- More than **180 Corporate, Individual, Student and Associate members** (since introduction in January 2022)
- Strong governance driven by volunteers:
 - Board of Directors
 - Indigenous Relations and Reconciliation Advisory Council
 - Technical Advisory Committees (Energy Resources, Minerals and Geothermal)



CURRENT RESEARCH FOCUS AREAS

FUNDAMENTAL, PUBLIC, INDEPENDENT RESEARCH SUPPORTING NET-ZERO EMISSIONS TRANSITION



IDENTIFYING CRITICAL MINERALS AND METALS

- Regional geophysics and geochemistry
- Innovative earth science tools to attract new investment
- De-risking exploration and discoveries



ADVANCING CARBON CAPTURE AND STORAGE (CCS)

- Industrial need for CCS geological atlas:
- Identify and assess geological carbon storage targets:
 - Carbon mineralization
 - Sedimentary basins (deep saline aquifers and depleted gas pools) as carbon sinks



CATALYZING CLEAN ENERGY

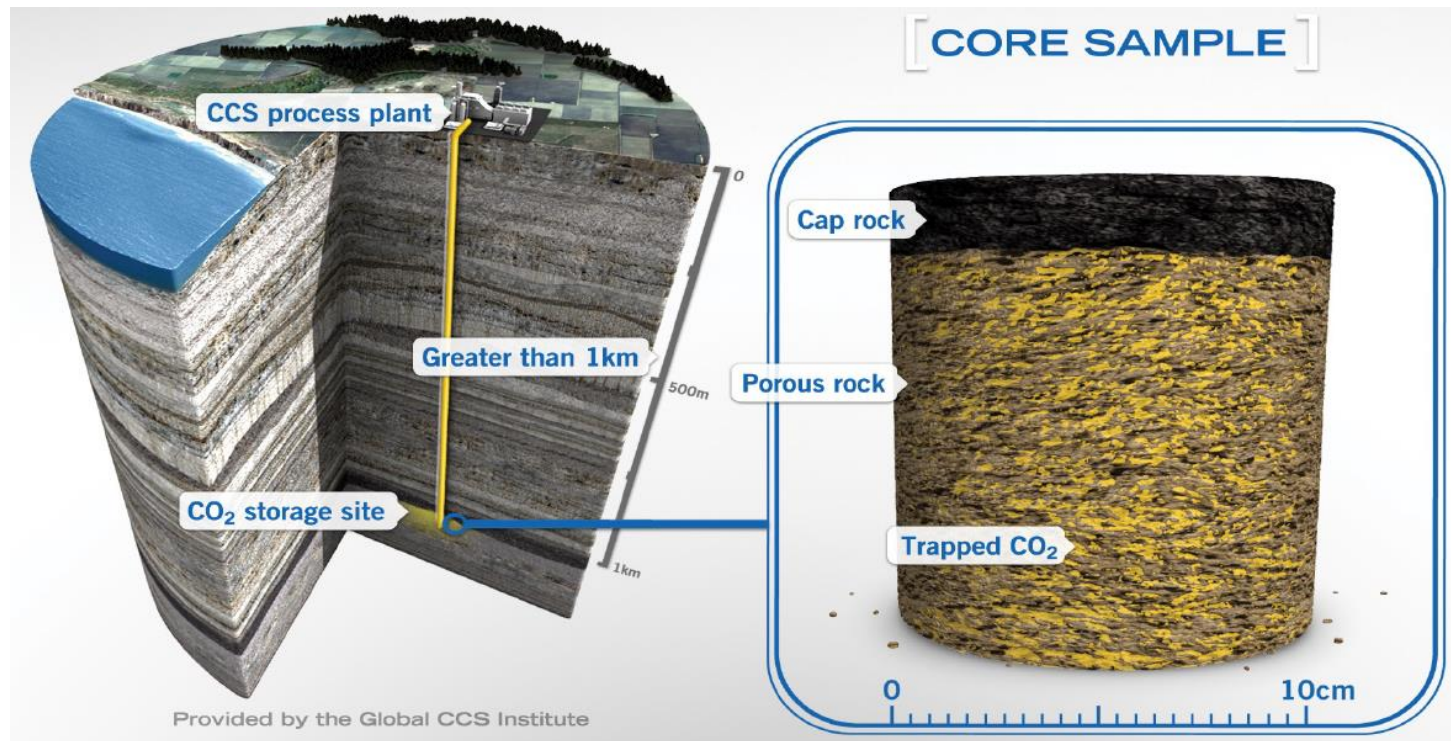
- Regional projects advancing geothermal power generation and direct-use
- Electrification of industrial sites
- Low-carbon hydrogen generation

WHY CARBON STORAGE RESEARCH?



- Not all CO₂ emissions can be eliminated. Capturing and storing CO₂ is an option for those emissions
- Geological research to assess and understand storage options to inform decisions
- For BC, there are 2 main geological options for storing CO₂:
 - Trapping within sedimentary rock basins, in deep saline aquifers or depleted gas pools
 - Through a mineralization reaction with mafic or ultramafic rocks to form new, stable carbonate minerals

CARBON STORAGE IN SEDIMENTARY BASINS





SOUTHWEST BC GEOLOGICAL CCS ATLAS

Carbon Storage in Sedimentary Basin:

- Assess carbon storage potential in SWBC's Lower Mainland, which is a regional source of significant CO₂ emissions
 - Understand potential of sedimentary Georgia Basin to store CO₂
- Potential to combine with geothermal clean energy source
- Multi-year, ~\$2 million project concept support via technical partner Petrel Robertson:
 - NRCan Energy Innovation Program; Geoscience BC; and FortisBC
 - In-kind support: UBC Clean Energy Research Centre
 - Support letter sent to NRCan from MetroVancouver's Paul Henderson - General Manager, Solid Waste Services.



CARBON STORAGE THROUGH MINERALIZATION



- Naturally occurring mineralization:
 - chemical reaction between CO₂ gas and ultramafic to mafic rocks; occurs at low temperatures and pressure
- Provides long term stable storage of CO₂ as an inert magnesium carbonate mineral within the host rock (mine tailings / bedrock)
- Proven method of carbon storage through mineralization in basalt (mafic rock) in Iceland



Carbon mineralization reaction

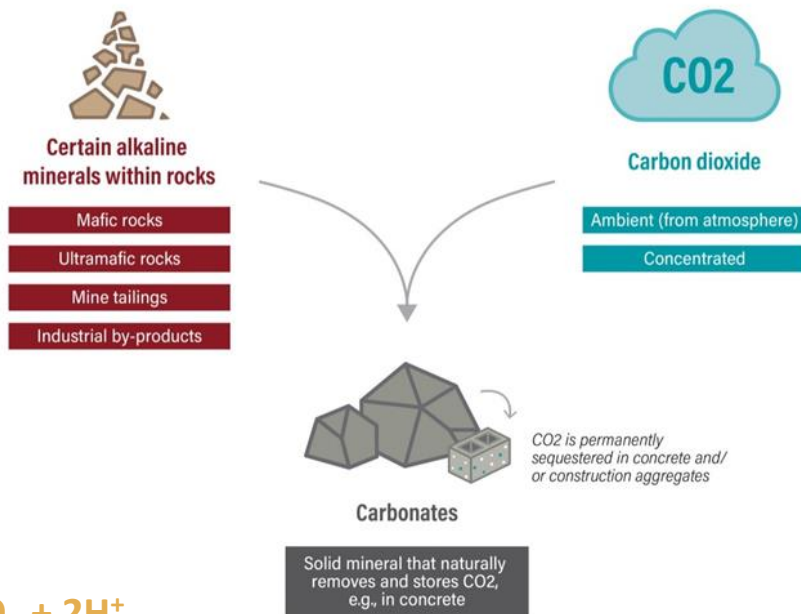


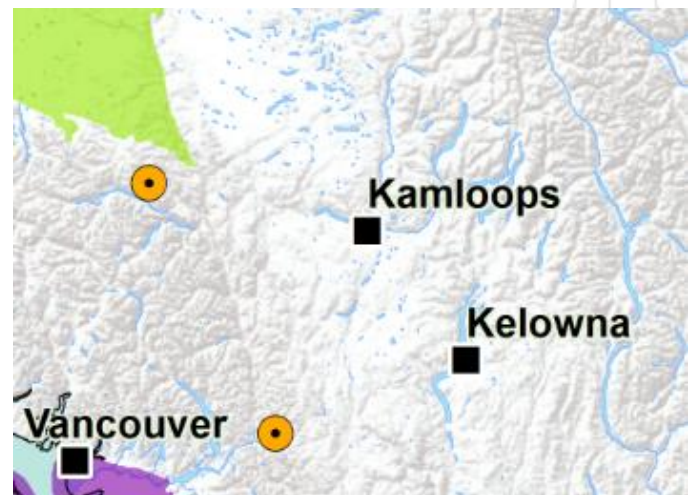
Figure Source: World Resources Institute

PILOT-SCALE CARBON CAPTURE AND STORAGE IN ULTRAMAFIC ROCKS



Carbon Mineralization:

- Shallow injection of CO₂ has been tested in basaltic (mafic) rocks, but has not been assessed in ultramafic rocks
- Goal is to do a pilot-scale injection test of carbon mineralization in ultramafic rocks in BC
- Multi-year, ~\$5.5 million project concept support via:
 - NRCan Energy Innovation Program; Geoscience BC; and FortisBC
 - In-kind support: Iceland-based CarbFix; UBC Carbmin Lab
 - Support letter sent to NRCan from MetroVancouver's Paul Henderson – General Manager, Solid Waste Services.



THANK YOU

Richard Truman, Vice President,
External Relations, Geoscience BC

truman@geosciencebc.com



geosciencebc.com



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CityHive



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SERVICES AND SOLUTIONS FOR A LIVABLE REGION

Building Community Climate Literacy — CityHive x Metro Vancouver Climate Literacy Workshops

Project Summary for Metro Vancouver
Climate Action Committee

February 8, 2024

About Us

Our mission is to transform the way that young people are engaged in shaping their cities.



Youth

have important perspectives to contribute but lack the knowledge, tools & connections



CityHive



Cities

have real problems that need new energy and ideas but don't know how to engage youth



CIVIC LITERACY



Civic Education Programs

Hands-on civic literacy programs for youth to **learn about their cities and how they can make a difference** that also **bridge local institutions and youth** in the process.

SKILLS & AGENCY



Climate Action Programs

Solutions and project-oriented programs for young civic changemakers to **work with cities on issues like the climate emergency and circular economy.**

MEANINGFUL OPPORTUNITIES



Consulting Services

Working with cities and other civic institutions to **build meaningful youth engagement processes and practices.**

We are a proudly youth-led and youth-run organization and a Living Wage employer providing good green jobs.

About the Project

Objectives

- Engage residents on climate issues
- Introduce residents to Metro Vancouver's self-guided online learning program
- Connect with existing organizations
- Expand participation to audiences beyond those already engaged in climate conversations

Approach

- Outreach conducted to a wide range of community partners
- Workshops hosted in person and online by 9 youth facilitators
- Accessibility measures offered to ensure high levels of access (wifi, paper copies)

more than
170
residents
engaged

partnered
12
local
organizations



Who We Reached

>170 residents engaged

Regional Reach



Demographics

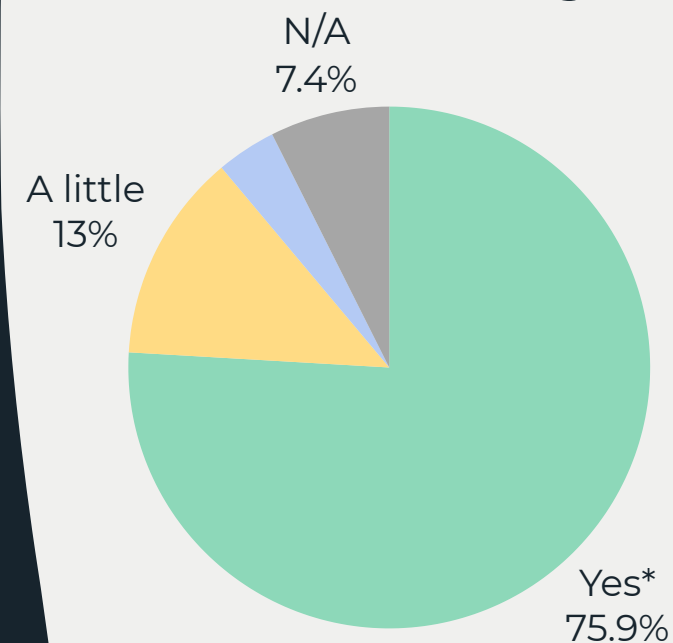
2%
Indigenous

72%
youth ages 13-30 years old

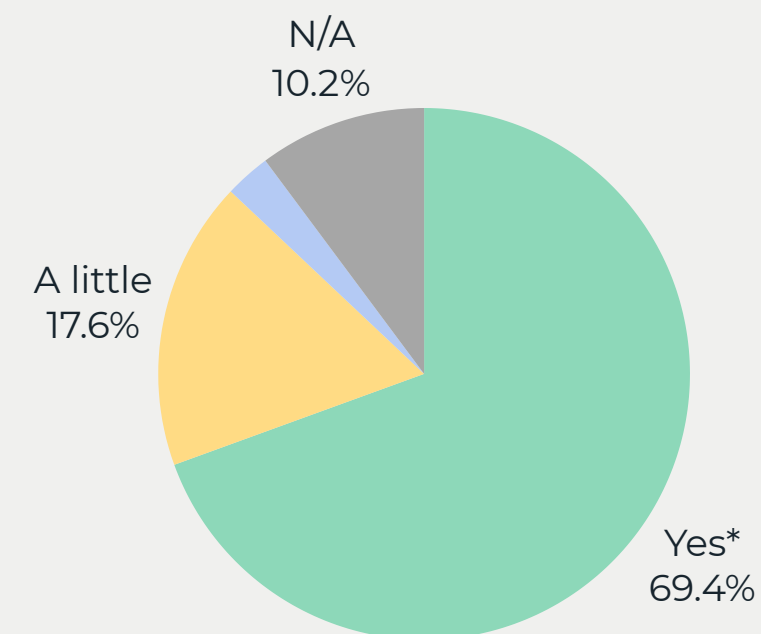
59%
women

What They Said

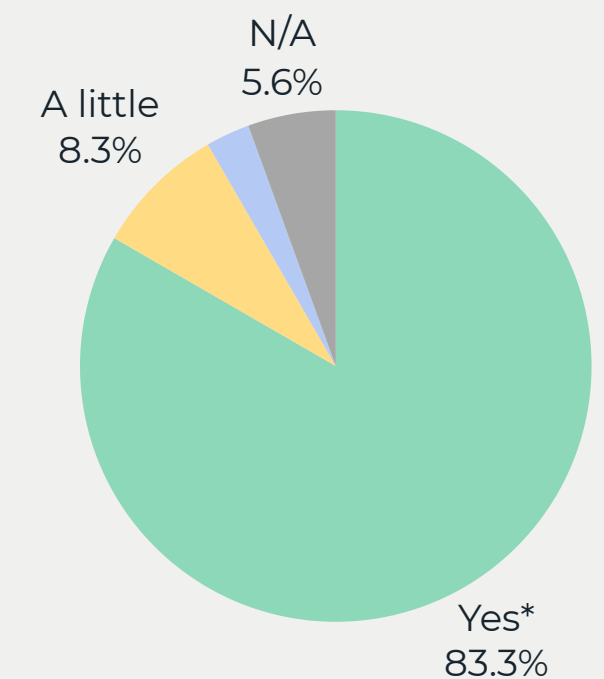
I found the online module valuable and will continue using it



I feel more confident participating in conversations about climate science and climate action

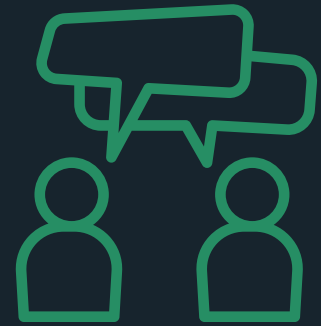


I would recommend this program to a friend



*Note: "Yes" responses includes respondents' who selected "Somewhat" and "Very Much"

Key Takeaways



**INTERACTIVE AND DISCUSSION
BASED LEARNING**



**ACCOMMODATING VARIOUS
LEVELS OF CLIMATE LITERACY**



INCENTIVES ARE VALUED



ACCESSIBILITY

**“Please keep educating
and conducting climate
actions in other
communities and coops,
as well as First Nations
communities”**

**“It was great to learn about all of
this as we don’t hear enough
about this [in] our everyday lives.”**

Looking Ahead

- Climate Literacy Online Content:
 - See a lot of potential to explore using the online modules in other learning settings
- Public & Youth Engagement:
 - Based on feedback, there is a strong appetite for more spaces for active, engaged conversations about climate that are tailored to the knowledge levels of participants
 - Residents want to be invited into conversations about climate action in their communities

We look forward to future collaborations!

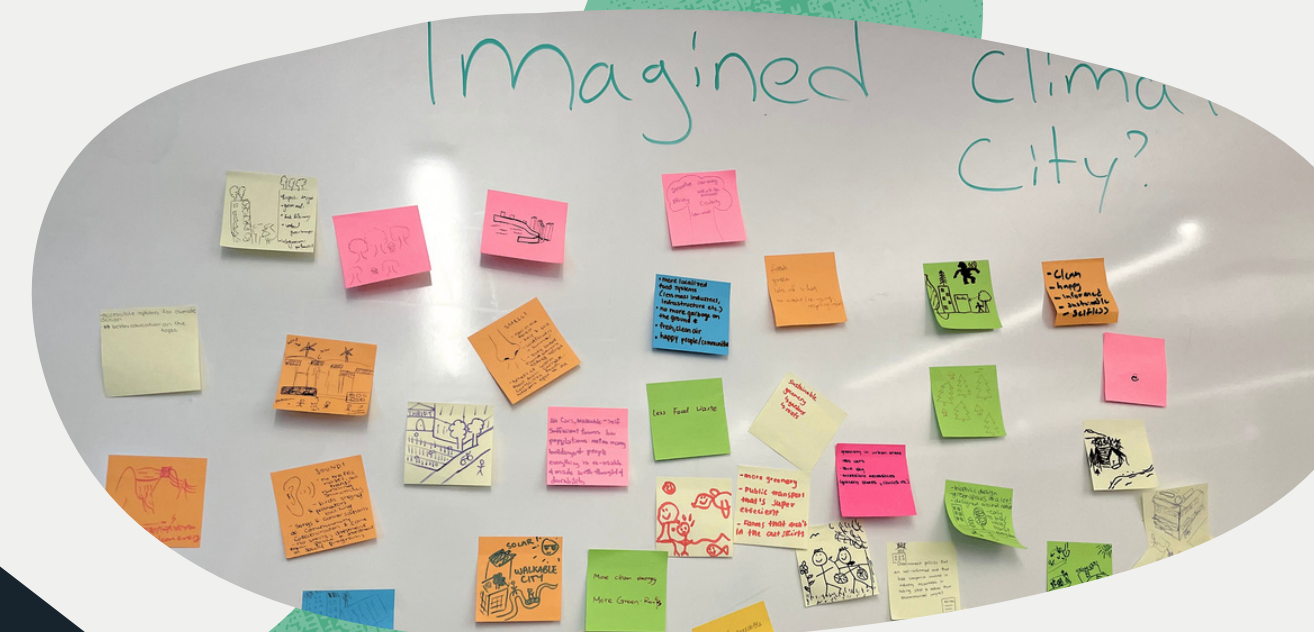




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UBCM Resolutions Supporting Climate 2050 Priority Advocacy Actions

Jason Emmert

Program Manager Regional Climate Action Policy,
Air Quality and Climate Action Services

Johann Zerbe

Policy Analyst, Air Quality and Climate Action Services

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65548994

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UBCM RESOLUTIONS AND LMLGA

- Resolutions are typically submitted to LMLGA for endorsement before submission to UBCM
- Resolutions must be received by LMLGA February 28, 2024, for consideration at 2024 annual conference, May 1-3.



ADVOCACY ACTIONS SUPPORTING CLIMATE 2050

Roadmap actions include:

- Lead or work with others (~180 actions)
- **Advocate** to other orders of government (68 actions)
- Prioritized Actions for advocacy: 3
- Advocacy work by Metro Vancouver and member jurisdictions has already contributed to provincial climate policy changes

Climate 2050 Issue Areas



PRIORITY CLIMATE ACTIONS FOR ADVOCACY TO UBCM

Priority actions were selected based on ability of provincial policy change to:

- Maintain affordability while taking climate action
- Support significant GHG reduction
- Achieve climate targets of MV and member jurisdictions
- Support climate action across BC



PROVINCIAL FUNDING FOR ENERGY EFFICIENT AND ZERO EMISSIONS EQUIPMENT FOR EXISTING BUILDINGS

- Calls for increased provincial funding for incentive and support programs for energy efficiency and zero emissions retrofits
- Leverages near-term replacement cycles for residential and commercial building equipment
- Supports affordability, equity and fairness



PROVINCIAL FUNDING FOR ACTIVE TRANSPORTATION INFRASTRUCTURE

- Calls for \$300 million/year over ten years for active transportation infrastructure
- Supports demand for low-cost active transportation options across BC
- Supports local and provincial mode shift goals
- Leverages provincial investments such as e-bike rebate



PROVINCIAL FUNDING FOR ELECTRIC VEHICLE CHARGER DEPLOYMENT

- Calls for increased funding to support EV charger deployment for apartments, condos and public chargers
- Addresses a gap of up to 2,900 fast chargers and 47,000 level 2 chargers needed in MV region alone by 2035
- Supports BC residents living in MURBs and residents who currently do not have access to at-home charging



RECOMMENDATION AND NEXT STEPS

- It is recommended that the Climate Action Committee forward all draft resolutions as written; could choose to forward one, two or all three
- Any resolutions passed by Climate Action Committee will be considered by the Board at its Feb. 23, 2024 meeting
- Resolutions passed by the MVRD board will be submitted to LMLGA before Feb. 28 for consideration.





Questions or Comments

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Climate Action Dialogues, May 2023

Climate 2050 Engagement and Public Education Priorities

Lucy Duso


Division Manager, Collaboration & Engagement,
External Relations

Climate Action Committee, February 8, 2024
64978572

Sandy Young

Senior Engagement Specialist, Collaboration & Engagement,
External Relations

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The *Climate 2050 Engagement and Public Education Strategy* provides a clear approach for robust engagement, alignment with others, and stronger public support for climate action to significantly reduce regional emissions, and prepare our region for change.



Climate Action Dialogue, New Westminster

APPROACH

- Research-informed communications
- Engagement best practices
- Collaboration and alignment with others
- Innovative delivery methods

ENGAGEMENT SPHERES

Engagement to
support the
**ongoing
development of
the *Climate
2050* Roadmaps**

Engagement to
support
**implementation
of distinct
climate actions**

Engagement to
**continue and
expand public
support** for
climate actions

ENGAGEMENT ON CLIMATE 2050 ROADMAPS

- Engage to develop remaining roadmaps
- Integrate Indigenous perspective
- Promote and unpack adopted roadmaps for public



Climate Literacy workshop, UBC



ENGAGEMENT ON DISTINCT ACTIONS

- Support priority big moves: buildings, transportation, industry, energy
- Shift from policy to practice
- Consider equity in engagement design

BUILDING SUPPORT FOR CLIMATE ACTION

- Climate Literacy
- Climate Action Dialogues
- Communities of Practice
- Climate Leadership Collaborative
- Community Outreach



ADVANCING 2024 PRIORITIES

- Continue role of convener
- Collaborate and align with others
- Message climate priorities
- Broaden public reach



Climate Literacy learning program



Climate Literacy learning program

Thank You

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