



Yukon Energy Projects in Mayo

October 2024



Acknowledgements

We acknowledge that we are here on the Traditional Territory of the First Nation of Na-Cho Nyäk Dun.

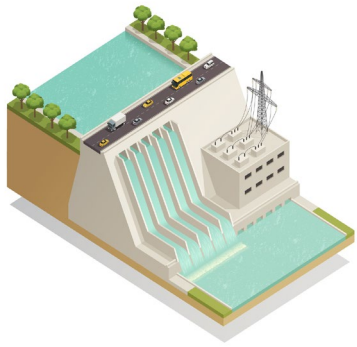
Yukon Energy recognizes that the construction and continued operation of the Mayo Generating Station has impacted the land and water, as well as traditional ways of life.

We are committed to working together in a good way, by building lasting partnerships that serve the community.

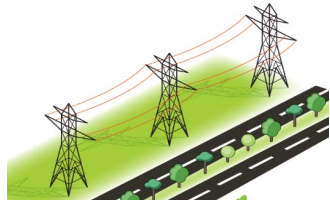
Agenda



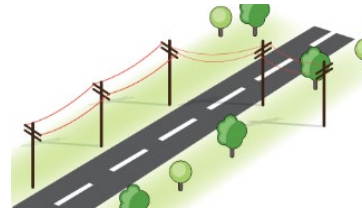
1. Electricity in the Yukon
2. Mayo Generating Station Relicensing Project Update
3. Other MGS Projects
4. Diesel Permitting
5. Emergency Preparedness



Generation



Transmission



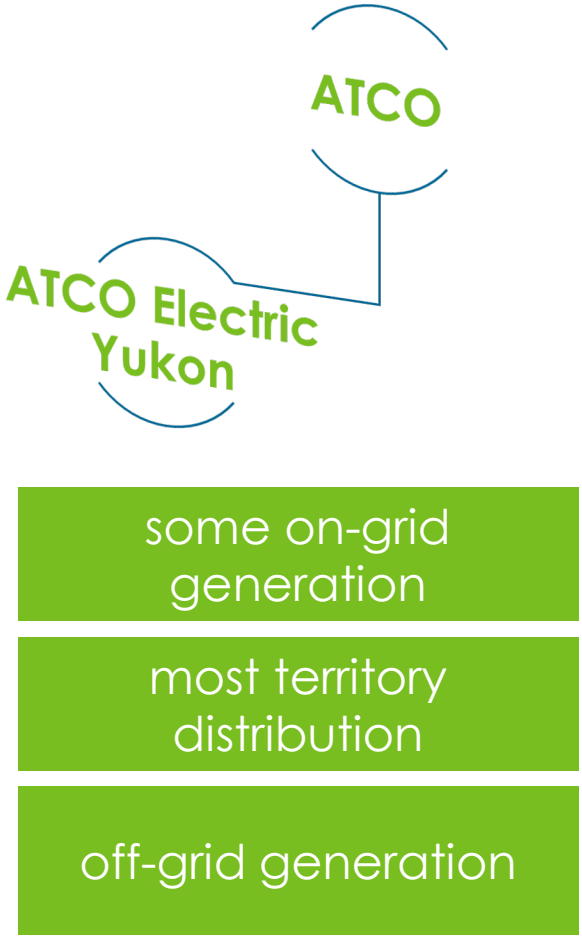
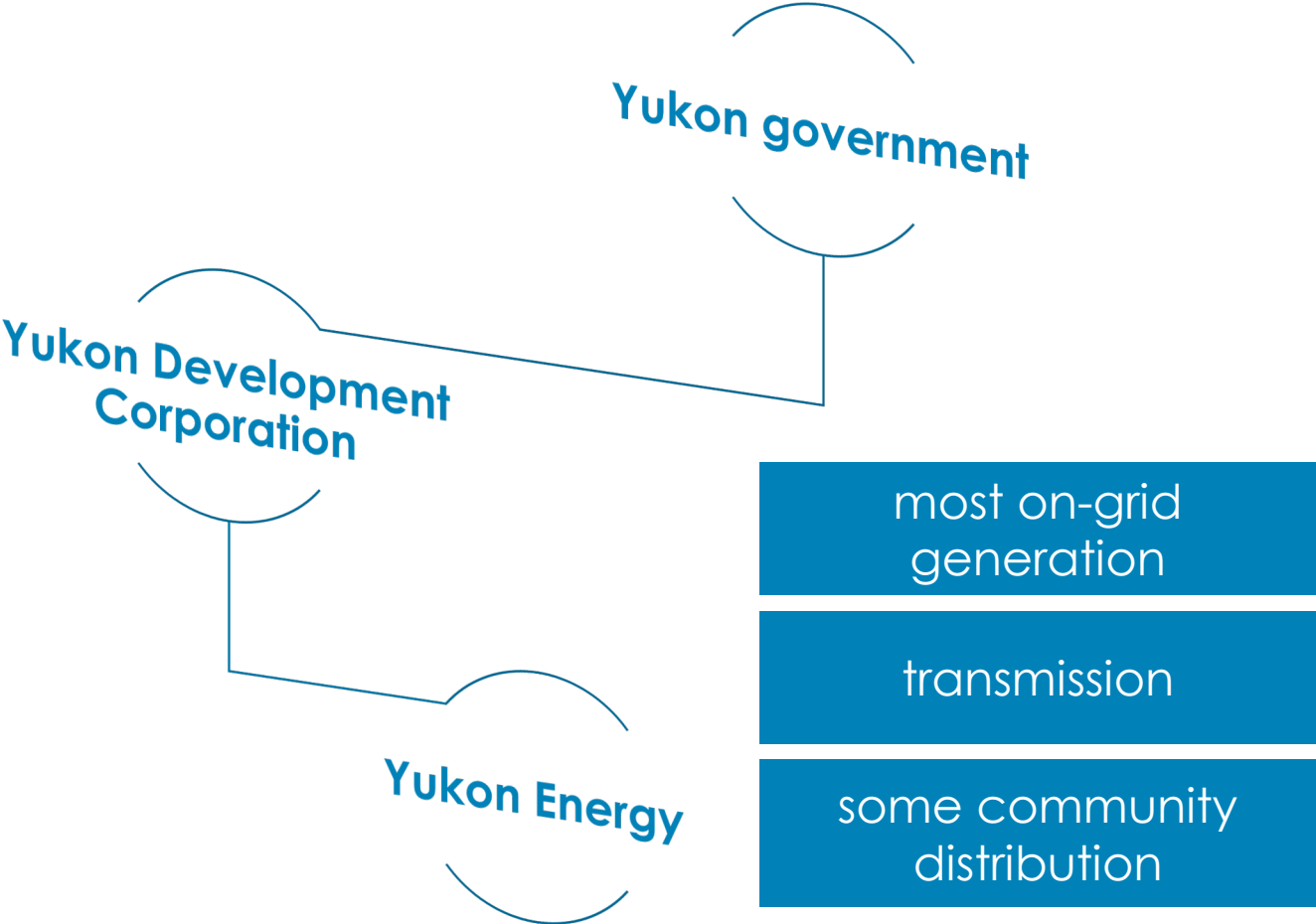
Distribution



User



Yukon Energy's role



Our energy grid



Our energy grid

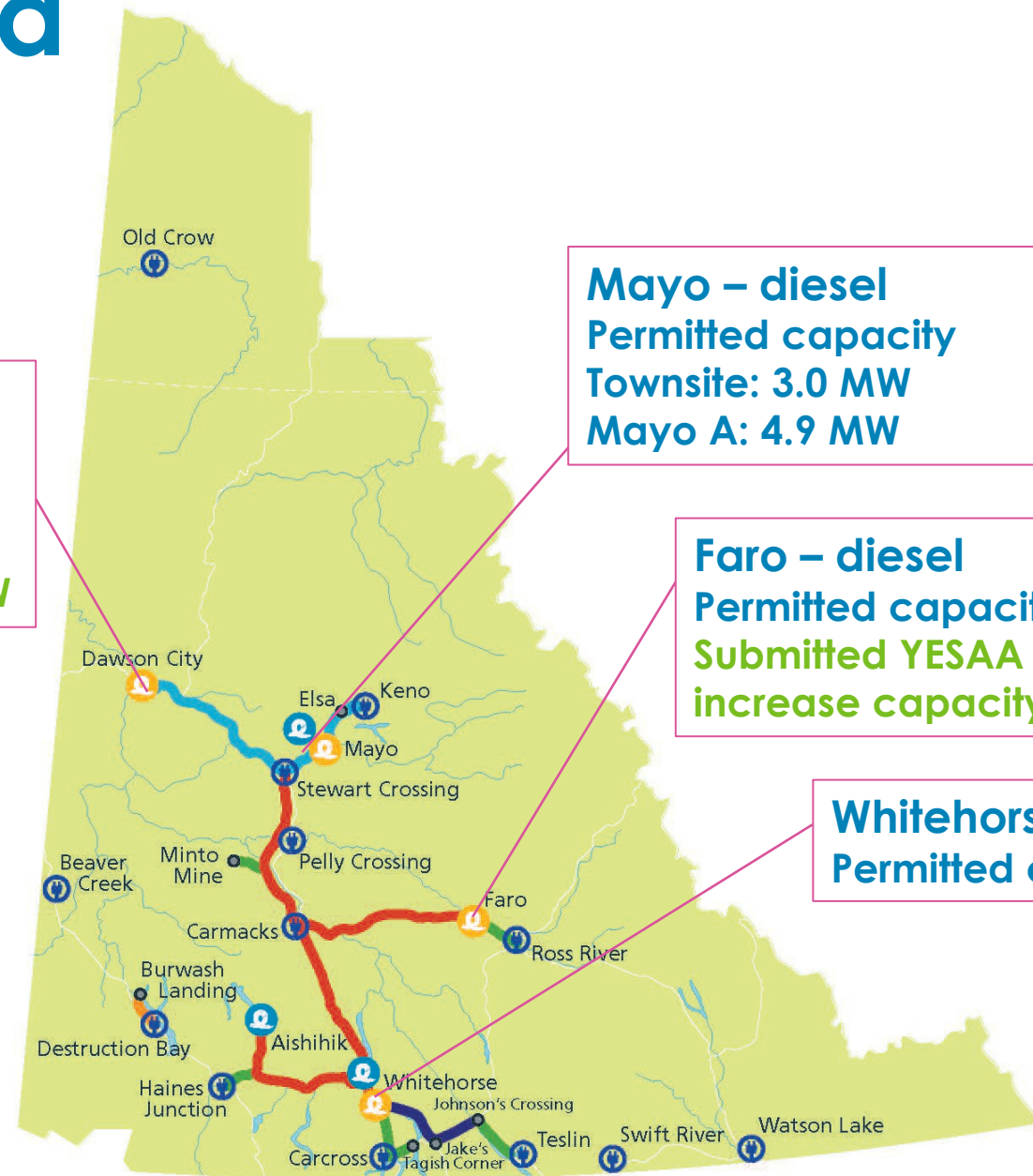


Dawson – diesel
Permitted capacity
Downtown: 7.1 MW
Callison: Submitted YESAA
project proposal for 15.5 MW

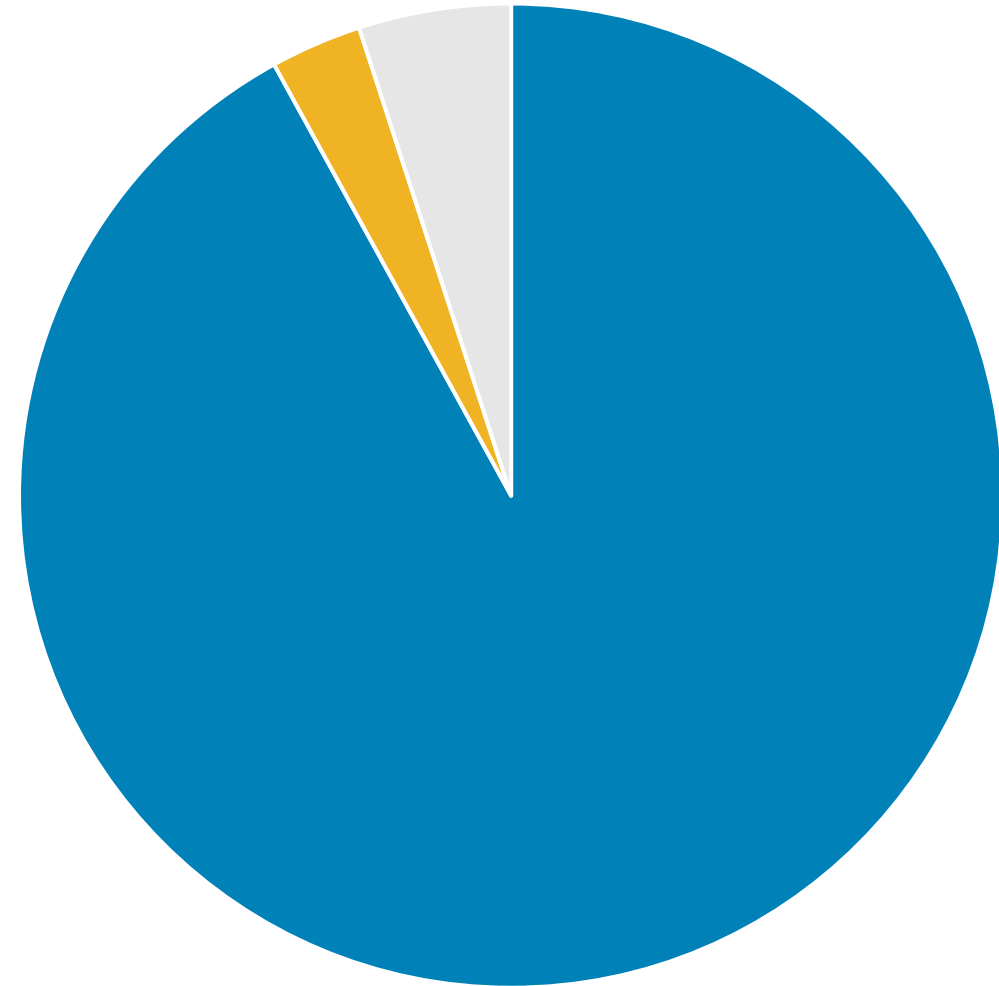
Mayo – diesel
Permitted capacity
Townsite: 3.0 MW
Mayo A: 4.9 MW

Faro – diesel
Permitted capacity: 15.5 MW
Submitted YESAA project proposal to
increase capacity to 20.4 MW

Whitehorse – diesel & LNG
Permitted capacity: 29.3 MW



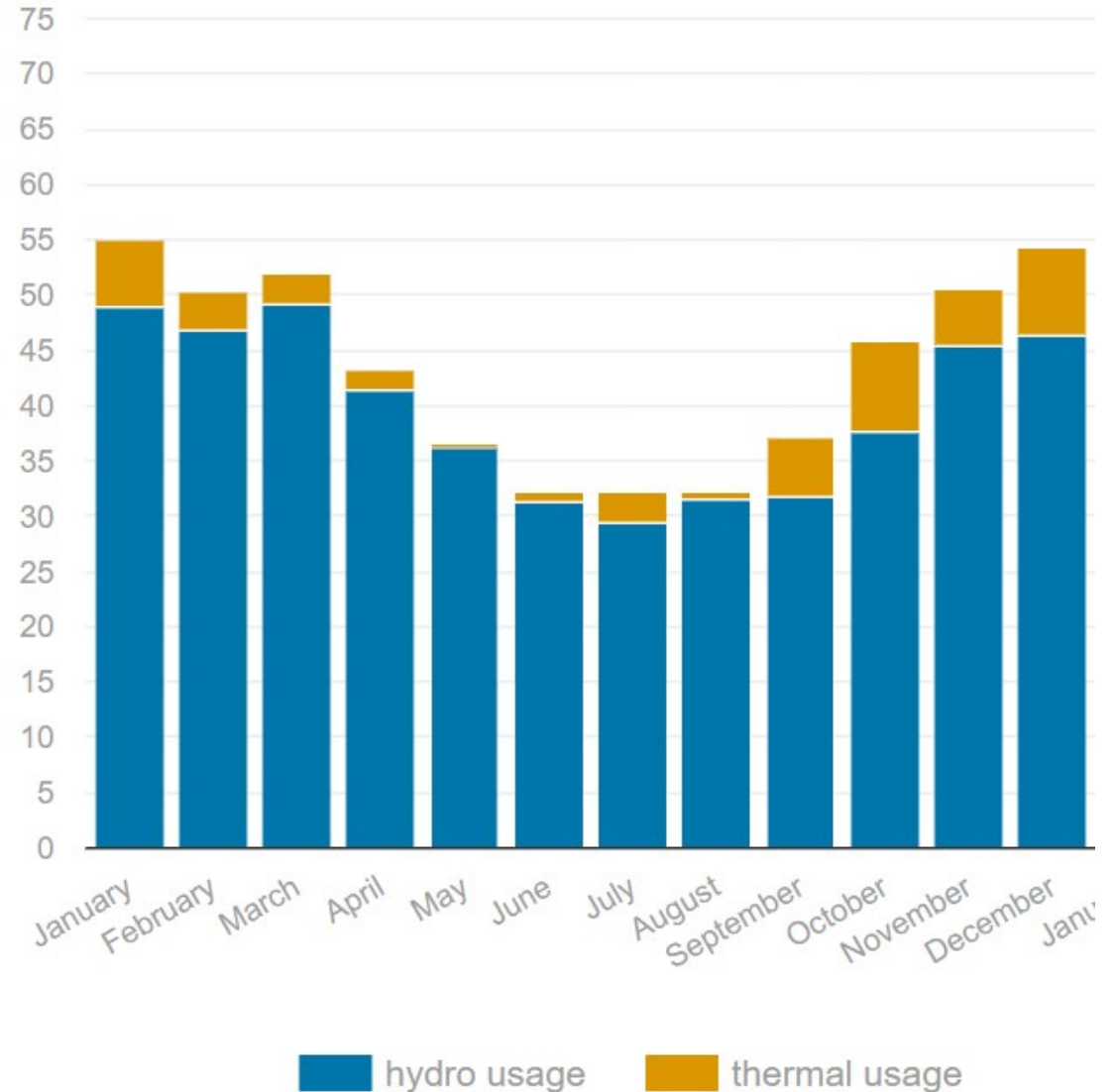
Over 90%
of all Yukon electricity
is produced by
existing hydro
facilities.



■ Hydro ■ Diesel ■ LNG

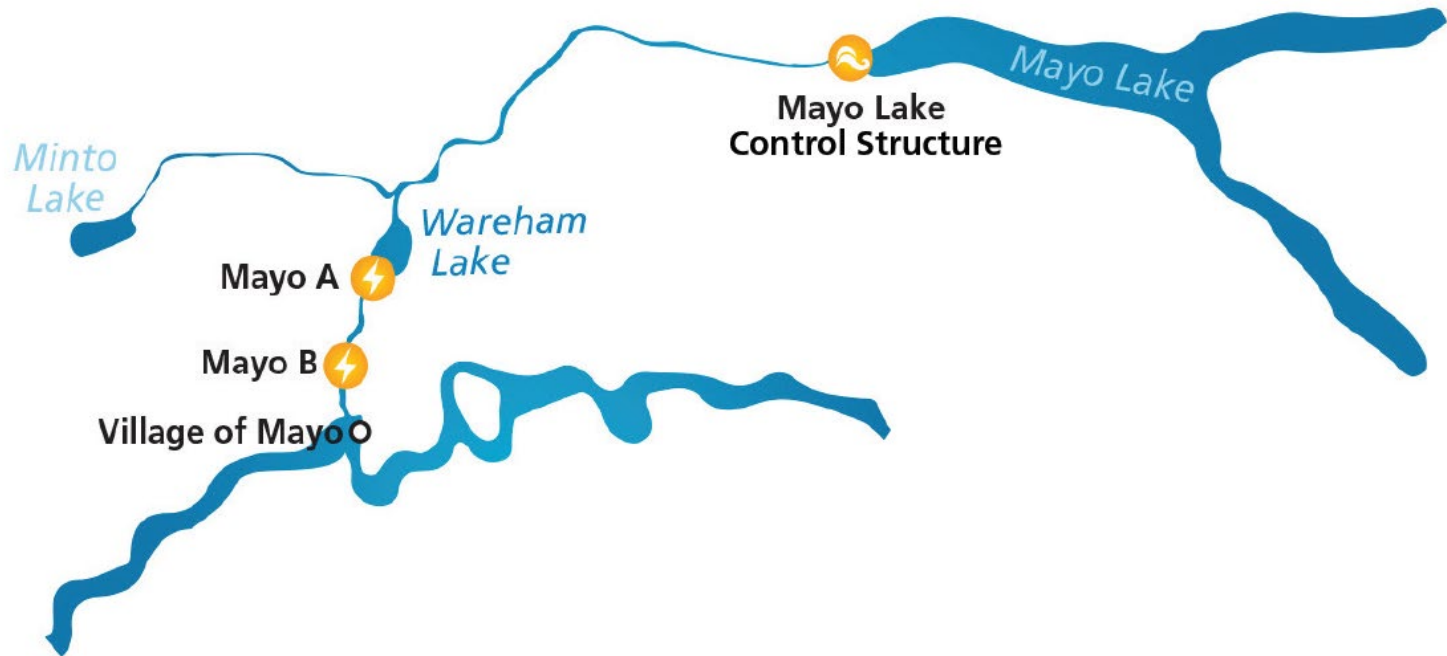
Monthly electricity loads

January 2023 to December 2023
(in gigawatt hours)



Mayo Generating Station Relicensing Update





Licence expires December 31, 2025

YESAA Project Proposal submitted July 2024, assessment ongoing

15 MW – installed capacity

Mayo A - 2 x 2.5 MW Francis Turbines
 Mayo B - 2 x 5 MW Francis Turbines

Yukon Energy's water use licence/FAA renewal

Current licence
conditions (flows,
water levels)

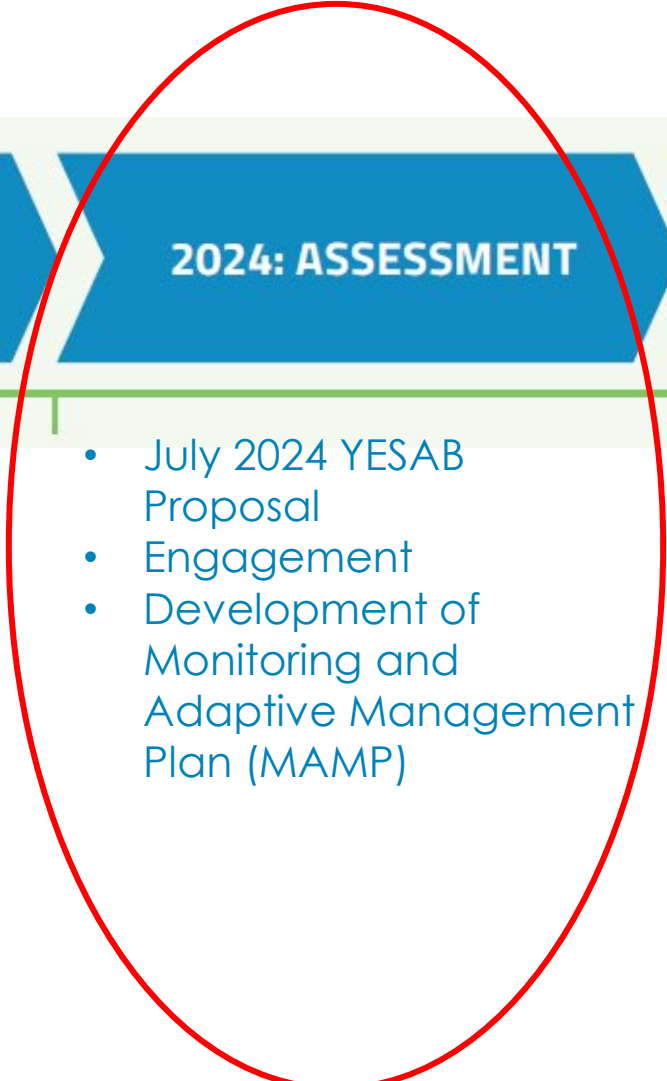
Mayo Lake Control Structure
upgrades, including
upstream fish passage

Historic
cofferdam
removal

Process requirements & timeline



- Engagement with the community and key interest groups
- Studies, including fish passage discussions



- July 2024 YESAB Proposal
- Engagement
- Development of Monitoring and Adaptive Management Plan (MAMP)

- Water Use Licence (WUL) and Fisheries Act Authorization (FAA) applications
- Engagement
- Water Board hearing
- WUL and FAA issued

- MAMP Implementation
- Engagement
- Ongoing working group

Responding to Traditional Knowledge and community feedback



Concern	Proposed mitigation
Socio-Economic/ Communications	<ul style="list-style-type: none"> • Agreed to pursue 5-year licence term • Communications protocol, check-ins with community • Procurement/employment communication and job/contractor fairs • Support for culture camps
Fish & Fish Habitat	<ul style="list-style-type: none"> • Trial Mitigations related to minimizing potential impacts of water level variations <ul style="list-style-type: none"> • Spring target 20 cm above the low supply level (Whitefish) • Winter target drawdown to 1m range between Sept-Feb (Trout) • Fish passage discussions/analysis at Wareham dam • MLCS upgrade activities include fish passage, start between 2027-2029
Wetlands/Wildlife	<ul style="list-style-type: none"> • Trial Mitigation to ramp up Ts'agro Män/Mayo Lake water levels from late April (water levels lowest) to September 15 <ul style="list-style-type: none"> • Target 20 cm below full supply level until Sept 15
Safe Access	<ul style="list-style-type: none"> • Develop publicly-available ice conditions/water level portal on YEC website. • Mayo Lake Boat launch enhancement/alternate location during construction

Ongoing partnership and collaboration

- Monitoring and Adaptive Management Plan (MAMP)
 - Focused on collecting and providing data to address any uncertainties and to confirm success of measures to mitigate any potential adverse effects of the Project.
 - Ongoing working group to continue to monitor facility.
- Various agreements being negotiated with the FNNND

Other work at the Mayo Generating Station



our planned projects in Mayo: a timeline



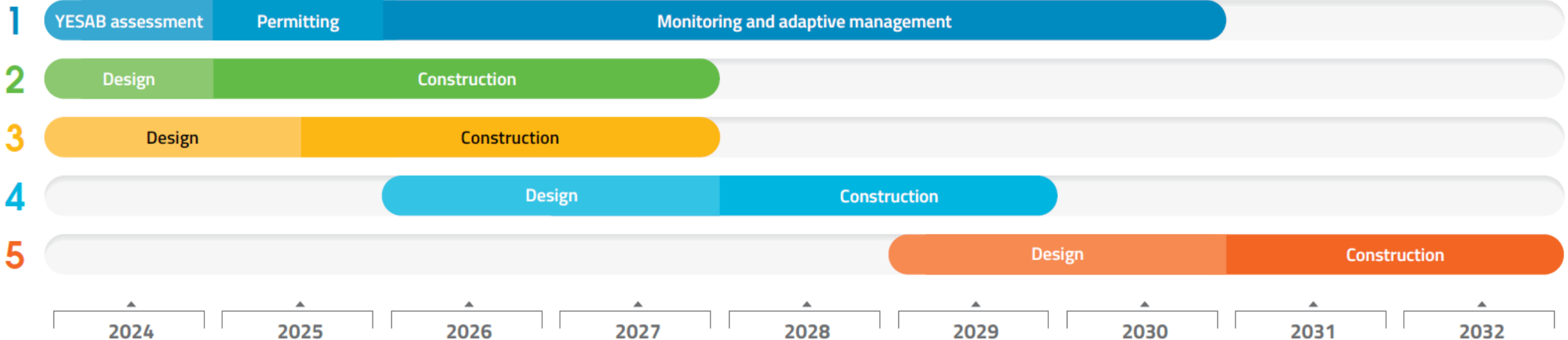
Mayo Generating Station Relicensing Project

Mayo A Hydro (MH0) Rockslide and Surge Tank

Wareham Dam Spillway Project

Mayo A Plant Renewal

Mayo Lake Control Structure (MLCS) Replacement



*Timelines are estimates; schedules for planned work can change based on varying factors.

Mayo A Slope & Surge Tank

- Rockslide occurred behind Mayo A Plant in 2022
- Slope needs to be stabilized for worker safety and ongoing operation of plant
- Surge tanks absorb sudden pressure changes in the penstock to protect generating station equipment.
- Surge tank has reached end-of-life and needs to be replaced
- Planned completion: 2026



Wareham Dam Spillway

- Built in 1951
- Water not used for generation flows down spillway into Mayo River
- Temporary repairs completed in spring 2024, permanent repairs still needed
- 2 of 8 options for replacement undergoing further engineering work
- Planned completion: 2027



Mayo A Plant Renewal

- Built in 1951
- Nearing the end of life
- Upgrade is needed for continued safe operations into the future
- Options for the plant, including the building and its equipment, will be considered.
- Planned completion: 2029



Mayo Lake Control Structure

- Built in 1951
- 35 km upstream from Wareham Lake
- Poor-to-fair condition
- Proposed mitigation:
 - Replace structure (substructure, outlet, overflow and abutments) with one concrete structure
 - Include fish passage
 - Improvements to boat launch
- Design to start in 2029



Safety considerations

- Recognition there will be lots of people working at Mayo hydro plant over next five years.
- As with the Mayo B Project, YEC will develop and enforce a code of conduct for temporary workforce, including prohibiting resource use during work rotation and zero tolerance for substance use during rotation.



Procurement opportunities

- Specialized work including engineering services and specialized construction/manufacturing services.
- Opportunities in supporting the rockslide/surge tank reclamation, the spillway overhaul and the Mayo B plant overhaul.
- Criteria within RFPs that rewards Na-Cho Nyäk Dun business participation.
- YEC actively seeks out First Nation quotes for work that can be completed by Na-Cho Nyäk Dun businesses. For example, brushing, clearing, and local support services.

Diesel permitting



Diesel permitting



Diesel helps during:



Outages



Peak demand



Low water



Maintenance

Current permit at
Mayo townsite:

3

megawatts

Future:

3

megawatts

Current permit at
Mayo hydro plant:

4.9

megawatts

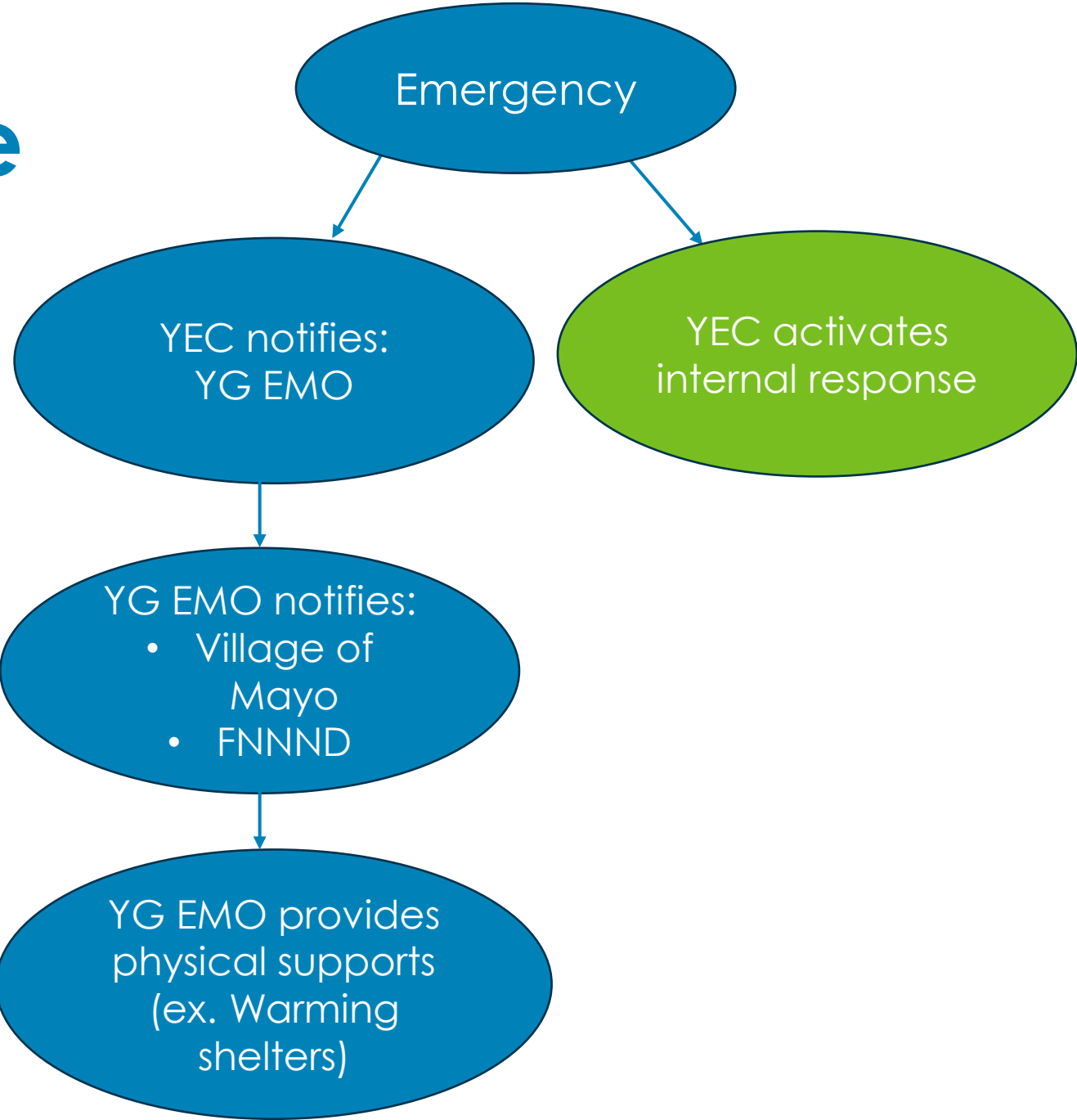
Future:

Permit
remaining rental
diesel
generators

Emergency preparedness



Response





POWER OUTAGES:

Top tips to remember

During an outage:

- Never leave lit candles unattended and use proper candle holders.
- Avoid using charcoal or gas barbecues, camp stoves or home generators indoors. They produce carbon monoxide that can injure or kill you.
- Be careful where you place portable heaters and do not leave them unattended.
- Unplug appliances and electronic equipment and turn the thermostat(s) down by a degree or two. Power outages can be restored faster when there are fewer items drawing power from the system.
- Leave one light switch on, so you know when power is restored.
- Don't open your freezer or refrigerator unless absolutely necessary. A full freezer should keep food frozen for 24 to 36 hours if the door remains closed.
- If you have to leave your home for a long period of time, turn off your main breaker.
- If you're concerned about your pipes freezing, turn on the tap so that there is a small but steady drip.



Portable generator safety essentials:

- Always follow the manufacturer's instructions.
- Operate the generator outdoors in well-ventilated conditions, well away from doors or windows, to prevent exhaust gases from entering the house.
- Install a surge protector in the electrical panel. The power quality from a portable generator can be unpredictable. This will help to protect sensitive equipment against serious damage.
- Use CSA-approved and Government of Yukon-inspected transfer switches.



POWER LINES:

Keep your distance

- Stay clear of low or sagging power lines. Travelling under or near these lines can be dangerous.
- If you come across a downed power line, pole or other equipment, stay at least 10 metres back and report it to Yukon Energy at 1-800-676-2843 or call 911.
- Never try to repair damaged power lines or remove tree limbs from power lines. If you notice a tree touching a power line, call Yukon Energy at 1-800-676-2843.

Questions?