Chilliwack School District 33 - Partners in learning!

Located in the Fraser Valley of British Columbia, we are a learning community of over 14,000 students, served by 1,800 teachers and support staff. There are 20 Elementary schools, 8 Middle/Secondary schools and 3 Alternate sites.

Pictures top to bottom:
Yarrow Elementary School, Chilliwack Secondary.

2019 Carbon Neutral Action Report

Chilliwack School District

CONTENTS

EXECUTIVE SUMMARY

Due to the continued pressures of student population growth our efforts for the 2019-20 school year have been focused on creating classroom space. This included purchasing an additional 5 portables and repurposing multiple instructional spaces within our schools to create additional classroom spaces.

Through partnerships with B.C. Hydro, Fortis, and the Ministry, we have also been able to implement several projects and initiatives to help further reduce our carbon footprint. Through Ministry funding and the School Enhancement program (SEP) we were able to replace two end of serviceable life dust collector systems with state-of-the-art Energy efficient replacement collectors. The system utilizes blast gate technology and the ability to reduce energy usage based on shop and equipment demand. The upgrade not only provided a far superior performing system with a reduction in energy use but also provided explosion proof protection from combustible dust. The system is up to date to all set standards and codes to protect against fire and explosions risks.

Other upgrades included an exterior lighting upgrade to Cultus Lake Elementary and Mechanical insulation upgrades to GW Graham.

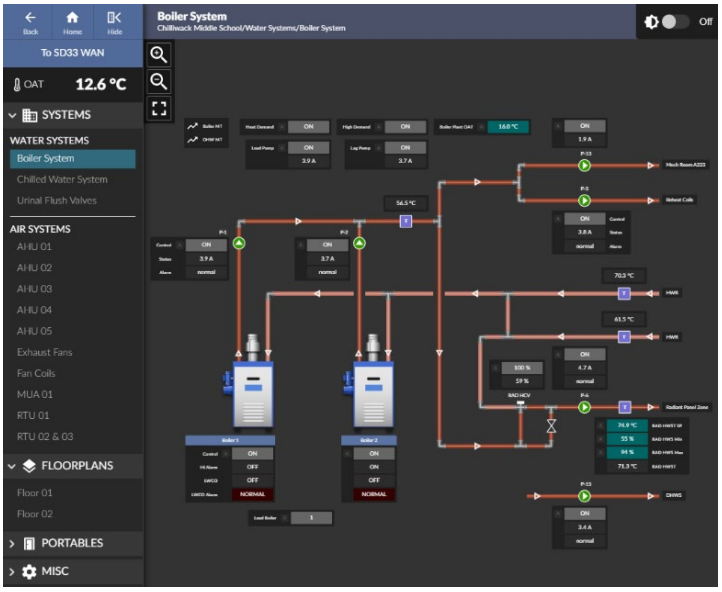
Our staff, students, parents and community partners continue to develop a culture of sustainable thinkers by practicing conservation activities in our buildings daily; turning off the lights and recycling and composting at each site. This also supports our City's mandate. "Green Teams" of students throughout the district continue to share their enthusiasm and knowledge with other students and staff on a variety of green projects including our most recent district wide recycling and composting program. We are also encouraged by our district's initiative to print less paper and shift towards electronic document storage in an effort to reduce paper consumption.

While the Chilliwack School District is continually working on reducing its carbon footprint, it still generates GHG emissions. Through careful planning and strategizing, we hope to further reduce our GHG emissions and meet our reduction goals for future generations.

Declaration statement: This Carbon Neutral Action Report for the period January 1, 2019 to December 31, 2019 summarizes our emissions profile, the total offsets to reach net-zero emissions, the actions we have taken in 2019 to reduce our greenhouse gas emissions and our plans to continue reducing emissions in 2020 and beyond.

ACTIONS TAKEN TO REDUCE GREENHOUSE GAS EMISSIONS IN 2019

MECHANICAL UPGRADES



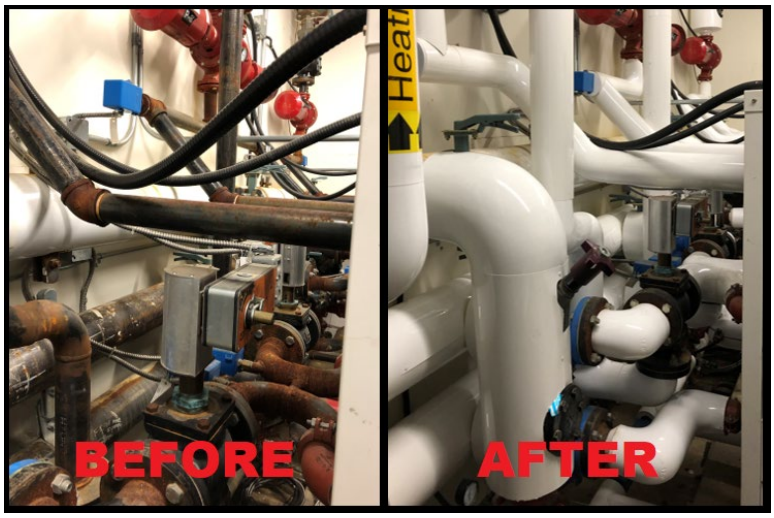
HVAC Control Upgrades (V3 DDC)

- Chilliwack Middle
- Watson Elementary
- East Chilliwack Elementary
- DCU replacement

(Picture: DDC system – Chilliwack Middle)

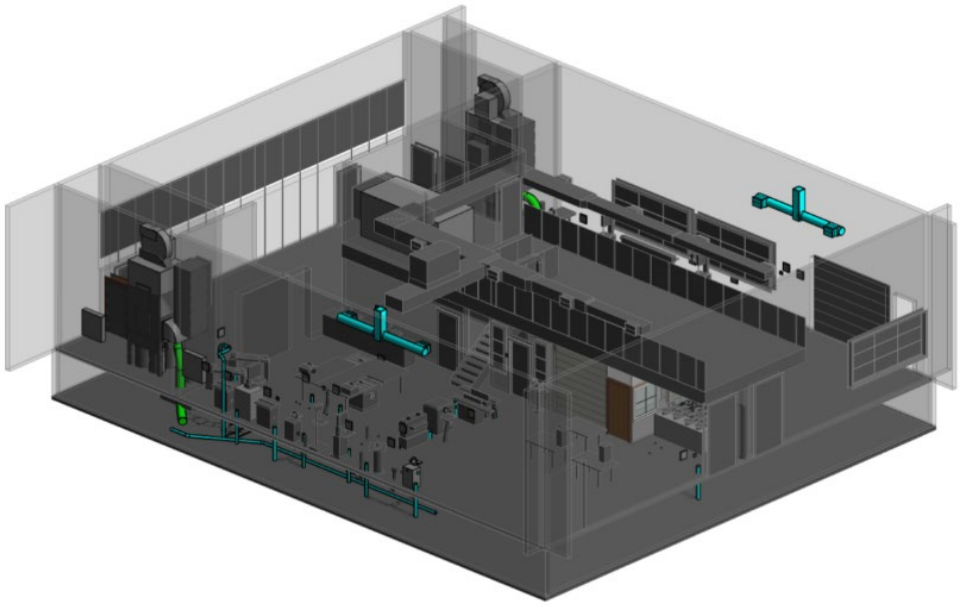
Mechanical Site Upgrade

- Mechanical insulation retro fit on heating and cooling system.



(Picture: GW Graham Secondary Mechanical Insulation Install)

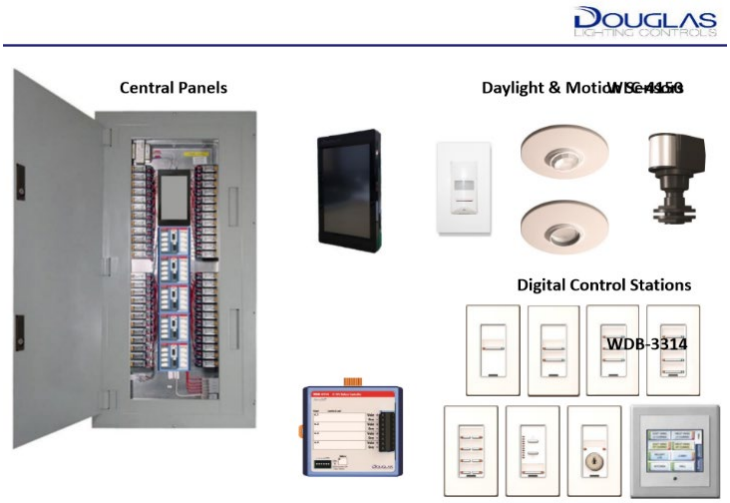
Dust Collector Upgrade



3D VIEW - WOODSHOP DUST COLLECTION SYSTEM

- Upgraded two Dust Collector Systems utilizing energy efficient automated blast gate technology

ELECTRICAL UPGRADES



• Full Douglas lighting control upgrade at Mount Slesse Middle.

• Exterior Lighting LED Upgrade at Cultus Elementary and targeted upgrades and renovations throughout the district.

• Dark campus exterior lighting practice along with astronomic time clocks and DDC scheduling to capitalize on energy savings.

BUILDING ENVELOPE UPGRADES

- All new portables ordered to high district standard: high efficiency windows, LED Lighting, high efficiency furnaces, and HVAC controls.

- All New buildings to be Designed to LEED Standard.

(Picture: Conceptional Drawing of New South Side Elementary/Middle School)

TRANSPORTATION

- Encourage carpooling to all district events.

- Smaller more fuel-efficient Vehicles utilized in I.T. departments fleet.

- 10-year Capital plan for fleet vehicle replacement based on vehicle age, fuel consumption, and maintenance costs.

(Picture: Typical I.T. operational Van)

TECHNOLOGY UPGRADES

- Power management settings have been utilized in all computers, copiers, and printers.
- Continual updating of the district's computer inventory.
- Laserfiche software used for electronic document storage to digitize student files.
- Reduced Paper consumption with the use of *PaperCut* software and low use presets like standard double-sided printing and print release functions.

PaperCutMF

Unreleased jobs, environmental impact - summary

Jan 1, 2019 to Jan 1, 2020.

Trees Saved	*By not printing these jobs, the number of trees saved.*
CO2 Saved	*By not printing these jobs, the amount of greenhouse gases not emitted due to reduced paper production.*
Equivalent Bulb Hours	*The manufacturing energy saved from not producing paper, represented as the energy consumed by a standard light bulb in hours.*

Sheets:	328,882
Total Printed Pages:	479,886
Color Pages:	60,431
Grayscale Pages:	419,455
Value Saved:	$12,407.55
Jobs:	34,711
Trees Saved:	4.09 trees
CO2 Saved:	1,480.0 kg
Equivalent Bulb Hours:	93,183.2 hours

CUSTODIAL UPGRADES

- Continued Implementation of recycling and organic management system, "Bin Be Gone".
- Replacement old floor scrubbers with new scrubbers using ionized water instead of chemicals.
- Water conservation with water bottle filling stations.

(Picture: "Bin Be Gone" system at Vedder Elementary School)

CONTINUE REDUCING GREENHOUSE GAS EMISSIONS 2019-2020

- New future 900 occupancy K to 8 School will to be designed to meet current LEED Gold standards.
- All upcoming Expansions to include latest in Energy saving technologies.
- Recently Purchased University of the Fraser Valley site to receive latest Mechanical and Electrical system Upgrades.
- Continue with lighting and distribution upgrades throughout the district.
- Fine-tune and review of current control systems and scheduling to better optimize building performance.
- Continual upgrades to our Building Management Software (BMS) and Direct Digital Controls (DDC).
- HVAC mechanical systems and boiler plants to will be continually upgraded to reduce GHG emissions.
- Further Energy Studies will be performed for future Energy related projects in mechanical and lighting.
- In-depth assessment of current inventory of buildings and assets to establish project list and a timetable using consumption data along with operational costs.
- Building envelope upgrades to aging building infrastructure to improve insulation in regards to heat loss and cooling.
- Create green, sustainability, energy conservation or climate action teams with the support of senior school district staff.
- Continue to encourage carpooling.
- Encourage staff to consider virtual attendance/presentations at events where possible.
- Continue to provide education to staff, student and Green Team initiative's about the conservation of water, energy and raw materials.
- Investigate opportunities into increased recycled paper content as a district standard.

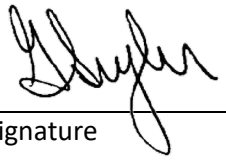
EMISSIONS AND OFFSET SUMMARY TABLE

Chilliwack School District GHG Emissions and Offsets for 2019	
As per the Directive issued March 31, 2020, each PSO will use their 2018 GHG Emissions as a placeholder for the purposes of their 2019 CNAR.	
Total Emissions (tCO_2e)	3,717
Total $BioCO_2$	42.02
Total Offsets (tCO_2e)	2,802
Offset Investment ($25 per tCO_2e)	$70,050

Retirement of Offsets:

In accordance with the requirements of the *Climate Change Accountability Act* and Carbon Neutral Government Regulation, **Chilliwack School District (the Organization)** is responsible for arranging for the retirement of the offsets obligation reported above for the 2019 calendar year, together with any adjustments reported for past calendar years (if applicable). The Organization hereby agrees that, in exchange for the Ministry of Environment and Climate Change Strategy (**the Ministry**) ensuring that these offsets are retired on the Organization's behalf, the Organization will pay within 30 days, the associated invoice to be issued by the Ministry in an amount equal to $25 per tonne of offsets retired on its behalf plus GST.

Executive sign-off:



Signature	Date
	May 19, 2020
Gerry Slykhuis	Secretary Treasurer
Name (please print)	Title

Confirmation number: 00B77C66
Submitted date: 2020-06-29 19:08:21 Pacific Daylight Time

Carbon Neutral Action Report Survey - 2019

Public sector organizations (PSOs) are required to complete this survey, in addition to a Carbon Neutral Action Report (CNAR) as mandated by BC's *Climate Change Accountability Act* and the Carbon Neutral Government Regulation.

Due to the COVID-19 pandemic, the following Directive was issued on March 31, 2020. Certain deadlines were also extended for the 2019 reporting year (see below).

> **March 31, 2020 Directive:**
> *Under my authority as the Director for the purposes of the Act, and under the authority delegated to me in Section 6 of the Carbon Neutral Government Regulation,* ***I hereby direct that all ministries and Public Sector Organizations covered by the Carbon Neutral Government requirement shall use their 2018 GHG emissions as a temporary estimate for their actual 2019 GHG emissions, for the purposes of the 2019 Carbon Neutral Action Reports and 2019 Carbon Neutral Government reporting required under the Climate Change Accountability Act.***
>
> Neil Dobson, Executive Director, Clean BC Implementation
> Climate Action Secretariat

Although 2018 emissions data will be used as a placeholder for 2019, **all other (qualitative) components of the CNAR and CNAR Survey are to be completed with information from 2019 (e.g., actions taken or planned to reduce emissions).** The only change to the survey is that the deadline was extended by one month to June 30, 2020.

This survey is divided into two parts:

Part 1 - Will be made public on the Climate Action Secretariat (CAS) website after June 30, 2020; however, it will not be appended directly to each individual PSO CNAR as was done in previous years. This section collects details about actions taken or planned to reduce emissions and is intended to supplement the legislative requirements in your CNAR.

Part 2 - Will NOT be made public. Information you provide in this section is important and will be used internally to help CAS staff with planning for emissions reduction and climate change adaptation initiatives. Although not required, PSOs are highly encouraged to complete Part 2.

Note: Survey progress can be saved at any time by clicking the "Save and continue later" button at the bottom of each page. A new window will open and you will be asked to provide your name and email. An email will be sent to you from Carbon.Neutral@gov.bc.ca with the subject line: "Questionnaire Link", which will include a hyperlink for the "Project: Carbon Neutral Action Report Survey – Broader Public Sector 2019". You can then continue responding at another time or email the hyperlink to a colleague to complete remaining section(s).

May 29, 2020	• The final, signed version of the **CNAR** (or Small Emitters Form) must be submitted by email to: Carbon.Neutral@gov.bc.ca
June 30, 2020*	• Ministry of Environment and Climate Change Strategy must post a final CNAR for each organization on the BC Government's CNG website and each PSO is encouraged to post the report on their website. • The **CNAR Survey** (optional for Small Emitters) must be completed and submitted online. *Deadline extended from May 29, 2020. • All offset invoice payments must be submitted to CAS.
Sept 30, 2020*	• **Clean Government Reporting Tool (CGRT) Data Entry** must be completed for the 2019 reporting year.

	*Deadline extended from April 30, 2020.
Oct 15, 2020*	• **Self-Certification checklist** must be completed, signed and submitted by email to: Carbon.Neutral@gov.bc.ca. *Deadline extended from May 15, 2020.

*See the Carbon Neutral Government – Program Requirements website for more information on program requirements, timelines and templates.

PART 1 - Included as part of your public CNAR report.

Reminder that Part 1 will be made public on the CAS website.

Contact Name:

Tom Nichols

Contact Email:

Tom_Nichols@sd33.bc.ca

Organization Name:

Chilliwack School District

Role – Please select the best category for your current role with your organization. If more than one individual completed the survey, multiple categories may be selected:

Facilities/Operations Manager/Coordinator

Please select your sector:

School District (SD)

Stationary Sources (e.g. Buildings, Power Generators): Fuel Combustion, Electricity use, Fugitive Emissions.

Actions taken by your organization in 2019 to support emissions reductions from buildings

Do you have a strategy to reduce emissions from stationary sources?

Yes

Whether you have a strategy or not, briefly describe your organization's plans to continue reducing emissions from stationary sources:

Over the medium-term term (1-5 years)

-Continue to upgrade building infrastructure with more efficient mechanical and electrical equipment to reduce overall energy usage.
-Continue to Improve building management software and automation to optimize building performance.
-Continue building envelope upgrades to improve building insulation.
-Educate staff and students and Provide awareness of energy usage and how it effects GHG emissions.
-Identify areas and opportunities for GHG reductions.
-Target end of serviceable life requirements with energy efficient replacements

Over the long term (6-10 years)

-All new building design to incorporate the latest in energy saving technology Standards.
-Look at energy alternatives like that of solar.

Please describe your strategy's goals (if any) related to energy audits.

-Energy audits based on individual building performance and higher than normal energy use.
-Energy audits performed when replacing or upgrading building infrastructure.

What % on average of your building portfolio has an energy audit completed each year (if any)?

9

Please describe your strategy's goals (if any) related to building retrofits.

-Continuous optimization of the Building Management System done as Mechanical and Control Upgrades are performed.
-re/retro-commissioning done on individual building performance and higher than normal energy use.

What % on average of your building portfolio is retrofitted each year in the following categories (if any) - click here for further information:

see below

Minor retrofits (e.g. low cost, easy to implement measures including caulking, lighting, adding roof insulation, etc.)

4

Major retrofits (e.g. replacing windows and doors, equipment replacement such as boilers, etc.)

8

Deep retrofits (e.g. replacing roof, replacing the heating, ventilation and air-conditioning system with a renewable technology like a ground-source heat pump, etc.)

2

Please describe your strategy's re/retro-commissioning goals (if any)?

Continue to monitor and optimize building efficiency through DDC systems and continues optimization. Any New upgrades to the DDC system are also opportunities we use to recommission building controls and performance.

What % on average of your building portfolio do you recommission each year?

2

Do you keep records of Refrigerant gases1 category and refilling volumes?
[1] Fugitive emissions from stationary cooling equipment are attributed to the leakage and loss of HFC and PFC based coolants from air conditioning and commercial type refrigeration systems. Coolant loss can occur during the manufacturing, operation, and disposal of such equipment. Gases that may be reported via CGRT include HFC R-134, HFC R-134a, HFC R-404a, HFC R-407c, HFC R-410a.

No

What, if any, mitigation approaches have been considered? Please describe.

N/A

How many newly constructed buildings received at least LEED Gold certification in 2019?

0

How many newly constructed buildings did not receive LEED Gold certification?

0

Please explain why LEED Gold certification was not obtained for those new buildings.

N/A no new buildings were constructed in 2019

Other actions? Please describe briefly:

All New Buildings and Expansions are being designed to LEED Gold Standards.

Mobile Sources (Fleet Vehicles, Off-road/portable Equipment): Fuel Combustion:

Actions taken by your organization in 2019 to support emissions reductions from mobile sources?

Do you have a strategy to reduce emissions from mobile sources?

Yes

Whether you have a strategy or not, briefly describe your organization's plans to continue reducing emissions from mobile sources:

Over the medium-term term (1-5 years)

-Increased vehicle maintenance interval to keep district fleet running at optimum efficiency.
-1-5 year capital plan for fleet replacement based on fuel consumption analysis (cost per km) as well as taking into account maintenance costs and manufacture dates.
-Increased maintenance schedule of fleet to better optimize overall vehicle effectiveness and efficiency.

Over the long term (6-10 years)

6-10 year capital plan to explore alternate energy sources like that of E.V. and Natural gas technology towards fleet replacement
-Exploring Charging infrastructure requirements and costs

How many fleet vehicles did you purchase from the following categories:

Electric Vehicle – EV - (e.g., Nissan Leaf, Chevy Bolt)

0

"Plug In" Electric Vehicle – PHEV (e.g., plug-in Prius, Chevy Volt)

0

Hybrid vehicle – HEV – non "Plug In"- (e.g., Toyota Highlander Hybrid)

0

Hydrogen fuel cell vehicle

0

Natural gas/propane

0

Gas/diesel vehicle

5

If you purchased new gas/diesel vehicles, can you briefly explain why vehicles from the other categories were not chosen?

-Gas/Diesel vehicles were purchased due to operational needs (Cargo, Size, use)
-Higher cost for equivalent vehicle replacement along with the added infrastructure costs associated with the alternative fuel types
-Lack of funding.

Actions taken by your organization in 2019 to support emissions reductions from mobile sources? (Continued)

How many existing EV charging stations does your organization have in each category:

Level 2?

0

Level 3?

0

How many level 2 stations (if any) are specifically for your fleet vehicles?
As defined as Level 2 stations only your organization's fleet vehicles may use

0

How many level 3 stations (if any) are specifically for your fleet vehicles?
As defined as Level 3 stations only your organization's fleet vehicles may use

0

How many EV charging station(s) did you install in 2019 in each category:

Level 2?

0

Level 3?

0

How many level 2 stations (if any) were installed specifically for your fleet vehicles?
As defined in the previous section

0

How many level 3 stations (if any) were installed specifically for your fleet vehicles?
As defined in the previous section

0

Please briefly describe any other related actions, (e.g. charging station feasibility studies, electrical panel upgrades, etc.)

Vehicle charging stations included in future new building infrastructure.

Please indicate the total number of the vehicles in the following vehicle classes that are in your current fleet

Definitions:

- Light duty vehicles (LDVs) are designated primarily for transport of passengers <13 and GVWR<3900kg

- Light duty trucks (LDTs) are designated primarily for transport of light-weight cargo or that are equipped with special features such as four-wheel drive for off-road operation (include SUVs, vans, trucks with a GVWR<3,900kg)
- Heavy duty vehicles (HDV) includes vehicles with a GVWR>3,900 kg (e.g. ¾ tonne pick-up truck, transport trucks)

Light duty vehicles (LDVs)

Electric Vehicles – EV - (e.g., Nissan Leaf, Chevy Bolt)
0

“Plug In” Electric Vehicle – PHEV -- (e.g., plug-in Prius, Chevy Volt)
0

Hybrid vehicles – HEV – (e.g., non “Plug In”- older Toyota Prius, Toyota Camry hybrid)
0

Hydrogen fuel cell vehicles
0

Natural gas/propane
0

Gas/diesel
0

Light duty trucks (LDTs)

Electric Vehicles – EV
0

“Plug In” Electric Vehicle – PHEV
0

Hybrid vehicles – HEV – (e.g., non “Plug In”- older Ford Escape Hybrid, older Chevrolet Silverado pickup hybrid, etc)
0

Hydrogen fuel cell vehicles
0

Natural Gas/propane
0

Gas/diesel
11

Heavy duty vehicles (HDV)

Electric Vehicles – EV

0

“Plug In” Electric Vehicle – PHEV

0

Hybrid vehicles – HEV – (e.g., non “Plug In”)

0

Hydrogen fuel cell vehicles

0

Natural Gas/propane

0

Gas/diesel

40

Actions taken by your organization in 2019 to support emissions reductions from paper supplies.

Briefly describe your organization’s plans to continue reducing emissions from paper use:

Over the medium-term (1-5 years)

-Continued use of PaperCut software that uses presets like standard double-sided printing and print release functions.
-Laserfiche software used for electronic document storage to digitize student files.
-Looking into policy regarding mandatory recycle content in paper usage.

Over the long term (6-10 years)

Look into further Paper less software offered in the future for district wide use.

Do you have an awareness campaign focused on reducing office paper use?

Yes

Purchased alternate source paper (bamboo, hemp, wheat, etc.)

No

Other 2019 actions, please specify

N/A