



Project Recommendations Report

Environmental Sustainability Committee

Revision 0

May 22, 2023

1 INTRODUCTION

As outlined in the 2023 Environmental Sustainability Committee strategy, the primary focus for 2023 was to develop benchmarking calculations for resource consumption and environmental emissions, and then present projects aimed at reducing both for the protection of the environment. This document tables a set of recommended projects for both short- and long-term implementation to reduce consumption and emissions related to SLNC.

2 KEY FINDINGS FROM BENCHMARKING REPORT

A review of operations earlier in 2023 provided an estimation of resources consumed to support operations for the first time [1]. The consumption data, along with estimates of related emissions, are reproduced below.

Category	Annual Consumption	Metric Tons CO ₂ e emitted per year	% of Total Operations Emissions
Diesel	38,912 L	105.06	62.2
Firewood	13,500 kg	24.30	14.4
Staff & Suppliers	8,620 L	19.83	11.7
Gasoline	6,500 L	14.95	8.8
Waste	865 kg	2.76	1.6
Electricity	181,600 kWh	2.09	1.2
Total	-	168.99	100.0

Estimated emissions from visitors are summarized below, and account for about five times the emissions from operations.

Category	Annual Consumption	Conversion Factor to CO ₂ e	Metric Tons CO ₂ e emitted per year	% of Total Operations Emissions
Visitors	389,882 L	2.3 kg CO ₂ e/L [6]	896.73	499.1

These data provide a basis for performing upgrades in operations and equipment aimed at reducing consumption (and thereby emissions). Such upgrades are described in the following sections.

3 RECENTLY COMPLETED PROJECTS

Capital upgrades are regularly planned as a normal part of SLNC budgeting. In the last couple of years, several of these projects have led to reductions in consumable resources, as listed below. Energy savings are based on number of fixtures, estimated hours of use, and reduction in wattage per fixture by converting to LED units.

Ref#	Resource	Project	Benefit	Status
W1	Water	Replace all faucets with low flow motion sensor faucets	Estimated reduction of water consumption by ~35%	Completed 2021
W2	Water	Replace all toilets with low flush toilets	Estimated reduction of water consumption by ~35%	Completed 2021
E1	Electricity	Convert shop lights from 65W to LED	Estimated 300 kWh (3.5kg CO ₂ e) reduction per year.	Completed 2022
E2	Electricity	Convert upstairs main lodge indoor lights from Halogen PAR 30 to LED	Estimated 450 kWh (5.2 kg CO ₂ e) reduction per year.	Completed 2022

4 RECOMMENDED SHORT TERM PROJECTS

The following projects are recommended for execution in the near term to achieve emissions gains and also improve estimating and tracking of consumption/emission data. The project categories are listed from highest (diesel) to lowest (electricity) source of CO₂ emissions.

4.1 Projects to Reduce Diesel Consumption

Diesel is consumed by groomers and one snow clearing supplier to support SLNC operation. The two groomers at SLNC are relatively new and are expected to be used for years to come. PistenBully are continually developing emissions friendly models of groomers, though electric groomers have not yet been released. Our supplier uses heavy equipment to clear snow as do most similar suppliers. No feasible alternatives to diesel machinery are viable in the near term.

Members have expressed how important it is to have well groomed trails. On the basis that grooming won't be reduced (either by grooming a subset of trails or grooming on alternate days), the only option to potentially reduce diesel consumption is to look at grooming route and operator time optimization. It is recommended that daily or weekly mileage be recorded for current options and an assessment of route optimization be discussed with operators. Operators should also be consulted for their opinions on what could reduce diesel consumption.

#	Name	Scope	Estimated Cost (\$)	Estimated Annual Savings (\$)	Payback period (years)
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D1	Operator recommendations	Ask operators on how diesel consumption could reasonably be reduced.	0	0	0
D2	Research and implement Route Optimization	Record weekly mileage. Chart out alternate grooming routes and test for reduced mileage (and hours of operation).	0	TBD	TBD

4.2 Projects to Reduce Firewood Consumption

Burning wood for heat is estimated to be the second largest source of emissions at SLNC (accounting for ~14% of all emissions). However, consumption data is very roughly estimated. For the short term it is important to understand more precisely how much wood is burned per year. In the medium term, SLNC will need to evaluate the importance of climate emissions versus operating costs (as firewood is free but emits CO2 compared to the price of electricity to heat which is very clean in BC).

#	Name	Scope	Estimated Cost (\$)	Estimated Annual Savings (\$)	Payback period (years)
F1	Improve data collection on firewood consumption	Take photos of full wood sheds at each location at beginning and photos at end of season to estimate wood consumed.	0	0	Not applicable.

4.3 Staff and Supplier Commuting

More precise data on staff commuting would provide a better estimate of emissions. The initial benchmark report assumed commuting of a set number of staff from Vernon every day. A better understanding of actual distance travelled, car type used, and staff trips made per day would provide a clear benchmark for tracking future gains.

Supplier visits are seldom, and believed to be immaterial to emissions. Instead, procurement policy should be updated to prefer suppliers with electric vehicles.

#	Name	Scope	Estimated Cost (\$)	Estimated Annual Savings (\$)	Payback period (years)
S1	Improve data collection on staff commuting	Calculate return trip mileage per person based on home address. Ask staff if car is gas, hybrid, electric. Calculate # of daily trips using staff schedule.	0	0	Not applicable

S2	Encourage EV use by suppliers	Update procurement practices to encourage selection of suppliers that utilize electric vehicles over gasoline.	0	0	Not applicable
S3	Increase staff awareness of Environmental Sustainability	Add line item on sustainability at each staff meeting. Add a sustainability module to online training. Invite to participate in committee.			

4.4 Projects to Reduce Gasoline Consumption

There is very little data available regarding volumes and end uses of gasoline attributable to operations. Only dollar values are recorded by finance with some basic descriptions regarding the receipt and expense claim. Some receipts indicated there were purchases to fuel field equipment, but it was not clear whether some purchases were for fleet vehicles or personal vehicles on company business. Better visibility is required to attribute the volumes of gasoline being purchased to the reason it is needed. There are viable options to nearly eliminate gasoline use by SLNC, making this category of resource a promising target for elimination within the short/medium term.

#	Name	Scope	Estimated Cost (\$)	Estimated Annual Savings (\$)	Payback period (years)
G1	Data Recording Improvement	Gasoline volume consumption is not directly recorded (only the dollar value of gasoline expenditures is recorded). It is recommended that a new financial policy be implemented to record the volume of gasoline purchased on what it was used for. Report on team van use and car trips saved, and optimize use of team van.	0	0	Not applicable.
G2	Replace all gas-based field tools with battery-based tools (chainsaws, brush clearers)	Field test for suitable replacements and backup batteries. Estimate annual gasoline consumption for old tools.	TBD	TBD	TBD
G3	Install electric vehicle chargers for public use	Encourage visitors to convert from gasoline to electric vehicles and show	TBD	TBD	TBD

		SLNC commitment to environment.			
G4	Allow free EV charging for staff and fleet vehicles	For use on site for charging fleet vehicles and offer as employment perk for staff.	TBD	TBD	TBD
G8	Install signage to raise awareness of impact if idling in parking lot	Reduce car idling in parking lot	TBD	TBD	TBD

4.5 Projects to Improve Recycling and Reduce Waste

There is an opportunity to improve signage and compliance of waste and recyclable separation by customers, although physical space for this is restricted within the main lodge. It is recommended that at least updated signage be installed at receptacles to clearly show what can be recycled and what is waste. While compostable programs have recently started, past experience has shown that there is minimal volume production by members and regular pickup was not practical. It is recommended that SLNC contact Silver Star Mountain Resort to see if drop-offs can be made at the transfer station. If so, a composting receptacle should be made available in the main lodge and particularly for paper hand towels in bathrooms.

#	Name	Scope	Estimated Cost (\$)	Estimated Annual Savings (\$)	Payback period (years)
R1	Assess whether SLNC can deposit compostables at Silver Star Transfer Station	Phone call to SSMR and assessment of how SLNC staff can collect and transport compost.	0	0	Not applicable.
R2	Update signage near existing waste receptacles and add compost receptacles.	Reconfigure/Rebuild custom waste receptacles in main lodge. Use compostable bags to collect waste hand towels.	TBD	0 ¹	Not applicable.

4.6 Projects to Reduce Electricity Consumption

Certain lighting projects were recommended in the GreenStep Solutions report [2]. The data for these recommendations is reproduced from the report below.

#	Name	Scope	Estimated Cost (\$)	Estimated Annual Savings (\$)	Payback period (years)
E3	Tech Building Upstairs	T8 Fluorescent to LED	252	45	5.7
E4	Tech Building Downstairs	T8 Fluorescent to LED	84	2	38.1

¹ Savings from reducing garbage volume are not expected as garbage pickup costs are not weight based.

E5 ²	Shop & Main Lodge Patio Lights	65W Incandescent to LED	70	15	4.6
E6 ³	Main Lodge Indoor Lights	Halogen PAR 30 Halogen to LED	60	50	1.2
E7	Main Lodge Indoor Lights	T8 Fluorescent to LED	67	22	3.0
E8	Outdoor Parking and Trail Lights	High pressure Sodium to LED	2,903	105	27.7

In discussion with the General Manager, there are several other improvements that can be made to reduce electricity consumption, as described in the table below.

#	Name	Scope	Estimated Cost (\$)	Estimated Annual Savings (\$)	Payback period (years)
E9	Decouple Parking Lot from Trail Lights	Allows parking lights to be on without activating lights throughout trails.	TBD	TBD	TBD
E10	Tech Building exterior lights upgrade	Move switch, replace bulbs, install timer so that these lights are not left on overnight (due to difficulty in accessing switch).	TBD	TBD	TBD
E11	Improve heat control: 1. Main lodge - Upper 2. Main lodge - lower 3. Tech building - upper 4. Tech building – lower 5. Wax Hut 1 st Aid area 6. Biathlon hut 7. Shop 8. Old race office 9. Powerhouse	Install programmable (and lockable where required) thermostat to automatically reduce electricity consumption overnight and in summer.	TBD	12,712 kWh (or \$1,271) (see basis in text below).	TBD
E12	Summer energy audit	Assess source of 4,350 kWh power use in August and methods to reduce summer consumption.	TBD	Findings to be used to recommend additional projects or modified use/settings.	TBD

Reference [1] says that for “each degree Celsius you turn down the thermostat, you could save up to 2% of your energy consumption”. If we program temperatures in all areas (except where plumbing systems are present) to drop from 22°C to 15°C, that is a saving of 7°C and a 14% reduction in energy consumption [1]. Assuming the temperature reduction is applied for 12 hours (or 50% of each day), this

² Adjusted from report [2] to reflect scope remaining after partial completion in 2022.

³ Adjusted from report [2] to reflect scope remaining after partial completion in 2022.

equals 12,712 kWh per year (based on annual use of 181,600 kWh). Pure electricity costs alone would result in \$1,271 of savings per year.

The electrical savings can be used in two ways: (a) they can produce a savings in annual operating costs, or (b) they can be used to offset emission intensive resource consumption. For example, electricity saved from more efficient heating could be used to charge up future electric fleet vehicles, skidoos or chainsaws (in lieu of purchasing and burning gasoline), or used to provide additional electric heating as a replacement to burning firewood.

4.7 Projects to Reduce Water Consumption

While well water consumption doesn't really impact emissions, reduction of its use falls within the mandate of the sustainability committee and as included within the scope of this report. By replacing faucets and toilets over the past few years, water consumption has likely been minimized to the reasonable extent possible. However, there is no data on actual water use. Installation of a water meter is recommended in order to (a) quantify usage rates and water savings since upgrades were made, and (b) establish baselines for future consideration as part of lodge renewal or potential summer operations.

#	Name	Scope	Estimated Cost (\$)	Estimated Annual Savings(\$)	Payback period (years)
W3	Install water meter	Add water meter to main well line and record monthly consumption	TBD	\$0	Not applicable.

4.8 Other Suggested Short-Term Projects

The following general projects are also suggested to improve the environmental sustainability of SLNC and establish an industry leading legacy of climate-friendly operations.

#	Name	Scope	Estimated Cost	Estimated Annual Savings	Payback period (years)
O1	Add environmental consideration to procurement policy.	Update policy to force consideration of environmentally friendly options prior to making purchase.	0	0	Not applicable.
O2	Compare consumption to leading organizations	Reach out to Nordiq Canada (and USA equivalent) to obtain consumption/emissions data from other Nordic ski facilities.	0	0	Not applicable.

O3	Obtain member recommendations and interests	Add questions to member survey to collect preferences and priorities for environmental sustainability topics.	0	0	Not applicable.
O4	Better data on travel mileage	Visitor emissions were estimated at 5x those of annual operations. More precise collection of travel distances should be calculated based on ticket sales/pass scans.	0	0	Not applicable.

5 SAMPLE PROJECTS FOR MEDIUM/LONG TERM IMPLEMENTATION

There is quite a scope of projects to be completed in the near term. In many cases they will likely spur follow up activity. Nevertheless, it is important to have a sense of longer-term projects, particularly as they tie into longer term strategic planning and capital budget planning.

5.1 Eliminate Gasoline Use at SLNC

It is suggested that SLNC target elimination of gasoline use as a practical and highly visible goal.

#	Name	Scope	Estimated Cost (\$)	Estimated Annual Savings (\$)	Payback period (years)
G6	Replace gasoline-fueled quadbikes with electric	When technology exists buy electric quad bike and sell gasoline quad bike.	TBD	TBD	TBD
G7	Replace fleet gasoline vehicles with EVs	Allocate funding to acquire EV version of fleet vehicle when existing vehicle suited for retirement.	TBD	TBD	TBD
G8	Install free EV charging for staff and fleet vehicles	For use on site for charging fleet vehicles and offer as employment perk for staff.	TBD	TBD	TBD

5.2 Significant Infrastructure Upgrades

The Lodge Committee is actively evaluating the path forward for facilities for future member use. Whatever the path forward offers, there is a significant opportunity to improve SLNC efficiency. The Lodge renewal project should integrate with the site as a whole and determine whether the number of buildings used can be reduced, and that buildings for future use are significantly upgraded with respect to insulation and thermal efficiency, and leading energy-efficiency technologies. The layout should also allow for modernized waste, recyclable, and composting facilities and signage.

Once there is a thorough understanding of electric use for operations, electrical needs for building heating, charging needs for snowmobiles, fleet vehicles and staff/member automobiles, consideration should be given to installation of solar power systems. If solar systems can be added on a modular incremental basis, it may be worth early installation to replace firewood heated buildings with electric heating (though this would require financial approval from the organization to replace free firewood with capital costs of a solar system).

#	Name	Scope	Estimated Cost (\$)	Estimated Annual Savings (\$)	Payback period (years)
L1	Optimize facility needs	Include demolition, insulation, elimination of firewood as part of lodge renewal project	TBD	TBD	TBD

5.3 Budget for Next Generation Groomers

Diesel-fueled groomers will be the leading source of operational emissions for the foreseeable future. As with other vehicle manufacturers, PistenBully continue to advance groomer designs with the environment in mind. Operations should consider that environmentally friendly models will likely be more expensive than traditional groomers, and additional budgeting should be allocated to acquire these advanced models at the appropriate time.

#	Name	Scope	Estimated Cost (\$)	Estimated Annual Savings (\$)	Payback period (years)
D1	Replace groomer(s) with zero emissions groomer	Allocate budget to purchase premium groomer.	TBD	TBD	TBD

5.4 Providing Opportunities for Members to Reduce Their Emissions

To present SLNC as an industry-leader for environmental sustainability, it is important to offer members opportunities that support these values and allow them to contribute to the journey. The following suggestions are made, with timeframes flexible.

#	Name	Scope	Estimated Cost	Estimated Annual Savings	Payback period (years)
M1	Install additional EV Chargers for member use	To encourage members to use EVs when visiting SLNC, there should be a bank of chargers available to meet customer needs.	TBD	TBD	TBD

M2	Establish shuttle bus service between SLNC and Vernon.	Confirm financial feasibility and run a regularly scheduled shuttle bus from mall to SLNC.	TBD	TBD	TBD
M3	Implement Carpool app	Launch or recommend an app to coordinate carpooling to SLNC. App should measure number of saved car round trips (and ideally distance).	TBD	TBD	TBD

6 SUMMARY

Many actions will have to be undertaken to significantly reduce resource consumption and emissions at SLNC. Appendix A summarizes all the projects identified in this report. In some cases, technology does not exist to replace current equipment with zero-emission options. In other cases, required changes involve very large infrastructure projects that will take time to plan and execute. Further, the decision to replace cheaper operating resources (e.g., free firewood) with more expensive but environmentally clean options (e.g., grid or solar electricity) will need to be evaluated and reconciled against capital costs and available grants and related funding.

The projects outlined in this report illustrate that the path to reducing resource use (and their associated emissions) can start almost immediately and in some cases for low costs. However, the path to zero climate impact from operations will need attention and prudent decision making for many years to come.

7 REFERENCES

[1] “Initial Benchmark Report - 2023”, Environmental Sustainability Committee, Sovereign Lake Nordic Club, Revision 0, February 23, 2023.

[2] “Sovereign Lake Nordic Club Eco Efficiency Report”, GreenStep Solutions Inc., January 26, 2021.

APPENDIX A – LIST OF RECOMMENDED PROJECTS

#	Timeframe Short/ Med/ Long	Name	Scope	Estimated Cost (\$)	Estimated Annual Savings (\$)	Payback period (years)	Notes
D1	S	Operator recommendations	Ask operators on how diesel consumption could reasonably be reduced.	0	0	0	Miles very dependent on amount of snow and weather. Many variables – grooming harder pack freeze thaw and uses way more diesel
D2	S	Research and implement Route Optimization	Ask operators for suggestions on reducing weekly mileage. Consider charting out alternate grooming routes and test for reduced mileage (and hours of operation).	0	TBD	TBD	Routes adjusted this year to reduce retracing need to talk to Eddie. Troy will email Eddie and copy Dave.
F1	S	Improve data collection on firewood consumption	Take photos of full wood sheds at each location (day lodge, next to old lodge, and Black Prince cabin) at beginning of season and photos at end of season to estimate wood consumed. Add taking photo of woodsheds at beginning and end of season to GM deliverables (monthly requirements) spreadsheet.	0	0	Not applicable.	Firewood consumption is very weather dependent, though fuel has (free) endless supply.

			<p>Continue stove maintenance to ensure efficient use.</p> <p>Add training on woodstove use to optimize heat output vs wood volume into staff training manual.</p>				
S1	S	Improve data collection on staff commuting	<p>Calculate return trip mileage per person based on home address. Ask staff if car is gas, hybrid, electric. Calculate # of daily trips using staff schedule.</p> <p>Dave to write overview of objective and explain how data is to be delivered (2-week calendars) and then Troy to send Wendy email and cc Dave. Dave will analyze data from past season and update staff emissions data from benchmarking report.</p>	0	0	Not applicable	Wendy does staff scheduling and can find out car type (gas/ev/phev).
S2	S	Encourage EV use by suppliers	Update procurement practices to encourage selection of suppliers that utilize electric vehicles over gasoline.				<p>Only 2: A&G cleaning 1/week and Valleyfoods 1/week.</p> <p>Occasional plumbers electricians minimal visits septic</p>

S3	S/M	Increase staff awareness of ES Committee work and determine interest	<p>Short-term: Add line item on sustainability at each staff meeting.</p> <p>Medium-term: Add a sustainability module to online training.</p>				
G1	S	Data Recording Improvement	<p>Gasoline volume consumption is not directly recorded (only the dollar value of gasoline expenditures is recorded). It is recommended that a new financial policy be implemented to record the volume of gasoline purchased on what it was used for.</p> <p>Dave to send proposed data needs to Hugh to see if can be added to expense claim process.</p>	0	0	Not applicable.	We pay travel expenses for events only. Team 12-seat van arrived last summer saves lots of cars driving. Shared between biathlon and xc academies. Aiming to use for summer training camp car pooling.
G2	S	Replace all gas-based field tools with battery-based tools (chainsaws, brush clearers)	<p>Field test for suitable replacements and backup batteries. Estimate annual gasoline consumption for old tools.</p> <p>Troy to add complete replacement estimate to 2023-24 budget.</p>	TBD	TBD	TBD	4*\$1,150 for e-chainsaw, batteries and charger. 1*Brush saw about same price.
G3	S	Install electric vehicle chargers for public use	Encourage visitors to convert from gasoline to electric vehicles and show SLNC commitment to environment.	TBD	TBD	TBD	Use Molly's plan.

			Dave develop plan in connection with Molly, Troy, and Malcolm.				
G4	S	Allow free EV charging for staff and fleet vehicles.	For use on site for charging fleet vehicles and offer as employment perk for staff				Electricity cost will be about \$1/hour.
G5	M	Replace skidoo with electric snow machine	Field test for suitable replacement and charging system. Estimate annual gasoline consumption for old skidoo.	TBD	TBD	TBD	\$17.5kUS each. Likely only going into 2024-25 budget. Current ski doo OK. Could pursue grants. Keep in capital budget plan.
G6	M/L	Replace fleet gasoline vehicles with EVs	Allocate funding to acquire EV version of fleet vehicle when existing vehicle suited for retirement.	TBD	TBD	TBD	
G7	M	Install free ev charging for staff and fleet vehicles	For use on site for charging fleet vehicles and offer as employment perk for staff.	TBD	TBD	TBD	
G8	S	Install signage to raise awareness of impact of idling in parking lot	Reduce car idling in parking lot	TBD	TBD	TBD	
R1	S	Assess whether SLNC can deposit compostables at Silver Star Transfer Station	Phone call to SSMR and assessment of how SLNC staff can collect and transport compost.	0	0	N/A	
R2	S	Update signage near existing waste receptacles	Reconfigure/Rebuild custom waste receptacles in main lodge. Use compostable bags	TBD	0	Not applicable.	See above

		and add compost receptacles.	to collect waste hand towels. Create new signage.				
E3	S	Tech Building Upstairs	T8 Fluorescent to LED	252	45	5.7	Will add to ops budget and complete in summer and new budget.
E4	S	Tech Building Downstairs	T8 Fluorescent to LED	84	2	38.1	"
E5 ⁴	S	Shop & Main Lodge Patio Lights	65W Incandescent to LED	70	15	4.6	"
E6 ⁵	S	Main Lodge Indoor Lights	Halogen PAR 30 Halogen to LED	60	50	1.2	"
E7	S	Main Lodge Indoor Lights	T8 Fluorescent to LED	67	22	3.0	"
E8	M	Outdoor Parking and Trail Lights	High pressure Sodium to LED	2,903	105	27.7	Plan is to use for night races. And add missing lights on 800 m of Passmore trail. Would need grants. Medium term. Light pollution grants possible
E9	S	Decouple Parking Lot from Trail Lights	Allows parking lights to be on without activating lights throughout trails.	TBD	30	TBD	5 hours saved per week for 20 weeks (100 hours) of trail lights (turns off 101 30W lights) (3.03 kWh) (uses

⁴ Adjusted from report [2] to reflect scope remaining after partial completion in 2022.

⁵ Adjusted from report [2] to reflect scope remaining after partial completion in 2022.

			Troy to get quote and should be completed in summer out of operating costs.				12 lights vs 113 lights) saves 303 kWh. At \$0.10/kWh save \$30/season.
E10	S	Tech Building exterior lights upgrade	Move switch, replace bulbs, install timer so that these lights are not left on overnight (due to difficulty in accessing switch). Troy to obtain quote for operating budget upgrade in summer. Add furnace inspection to summer work.	TBD	kWh	TBD	
E11	S	Improve heat control with programmable thermostats	Main lodge – Upper, Main lodge – lower, Tech building – upper, Tech building – lower, Wax Hut 1 st Aid area, Biathlon hut, Shop, Old race office, Powerhouse. Dave to send scope description to Troy and Troy to obtain quote.	TBD	12,712 kWh (or \$1,271) (see basis in text below).	TBD	Consider wifi-connected baseboards as alternate (may be easier to control if wifi available and can provide usage data).
E12	S	Summer energy audit	Assess source of 4,350 kWh power use in August and methods to reduce summer consumption. Findings to be used to recommend additional projects or modified use/settings GM to do a walk down – Add to deliverables list May and	0	TBD	TBD	

			August and revise settings and add to GM calendar. Shut off breakers as required.				
E13		Upgrade SLNC signage lighting at Silver Star Road	Replace with LED bulbs, and install photo cell so lights only operate at night time.				
E14		Race team electrical supply	Provide power to race team tents and eliminate need for a generator				
W3	M	Install water meter	<p>Add water meter to main well line and record monthly consumption.</p> <p>Needs a water specialist to quote. Troy to find someone and get quote.</p>	TBD	\$0	Not applicable.	Will provide baseline on water use, permit estimation of water saved from new toilets, and provided baseline to lodge committee. Useful if summer ops started.
O1	S	Add environmental consideration to procurement policy.	<p>Update policy to force consideration of environmentally friendly options prior to making purchase.</p> <p>Dave to talk to Hugh.</p>	0	0	Not applicable.	All cleaning supplies are no biodegradable as are cups plates and bowls.
O2	S/M	Compare consumption to leading organizations	Reach out to Nordiq Canada (and USA equivalent) to obtain consumption and emissions data from other Nordic ski facilities.	0	0	Not applicable.	National Ski Areas Association provide annual report of climate challenge improvements made at 31 alpine

			Dave prepare email for Troy (and include alpine resort example). Troy to reach out to Stephan (CEO of Nordiq Canada) and others and copy Dave.				reports. May need to pioneer this for Nordic industry.
O3	S	Obtain member recommendations and interests	Add questions to member survey to collect preferences and priorities for environmental sustainability topics.	0	0	Not applicable.	Dave to make sure this is in survey.
O4	S	Better data on travel mileage	<p>Visitor emissions were estimated at 5x those of annual operations. More precise collection of travel distances should be calculated based on ticket sales/pass scans.</p> <p>Troy to send Dave end of season geographical data (for those that scan day and passes). Downtown breakdowns of Vernon, central OK, and greater OK will also help improve calculations.</p>	0	0	Not applicable.	Data usually becomes available at end of April.
L1	L	Optimize facility needs	Include demolition, insulation, elimination of firewood as part of lodge renewal project	TBD	TBD	TBD	
D1	L	Replace groomer(s) with	Allocate budget to purchase premium groomer.	TBD	TBD	TBD	Electric snowcats do exist (only 2 in north America).

		zero emissions groomer					3.5 hours charge life (would require 4 charges do our trails!). Likely 35% more expensive than diesel.
M1	M	Install additional EV Chargers for member use	To encourage members to use EVs when visiting SLNC, there should be a bank of chargers available to meet customer needs.	TBD	TBD	TBD	
M2	M/L	Establish shuttle bus service between SLNC and Vernon.	Confirm financial feasibility and run a regularly scheduled shuttle bus from mall to SLNC.	TBD	TBD	TBD	Never done financial assessment. Been asked for years. Discuss with SS who do staff commuting to get sense of costs. May be cheaper if electric shuttle – fuel costs prohibitive likely right now.
M3	M/L	Implement Carpool app	Launch or recommend an app to coordinate carpooling to SLNC.	TBD	TBD	TBD	App should measure number of saved car round trips (and ideally distance).