

A photograph of a modern building with a wooden facade and large glass windows. In the foreground, there are large, 3D, red letters spelling out the word "Seneca". The letters are mounted on a concrete base. The building has several white columns and some text on them, including "ZIBIAKDOKE", "NATIVE", and "WAYWAKUM". There are some small trees and plants in front of the building.

# Seneca Salt Management

PARCON Conference 2023

# Agenda

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- Seneca's salt management plan
- Lessons learned
- Future plans
- Discussion



# SENECA'S SALT MANAGEMENT PLAN | HISTORY

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2019

Introduced Updated  
Snow Clearing and  
Ice Management  
Service Agreement

2019

Adjusted practices  
as a response to  
operational issues

2020 - 2022

Evolving practices to  
reduce salt volume  
and increase use of  
ecologically safe brine

Current

Addressing salt  
management within  
landscape design and  
maintenance standards



# SENECA'S SALT MANAGEMENT PLAN | SUMMARY

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## Who is Involved

- **Grounds team** is responsible for managing areas adjacent to buildings
- **External contractors** manage parking lots and further areas from buildings
- Both groups are managed by **campus facilities**
- **Seneca Office of Sustainability** enacts the use of ecologically safe grounds maintenance through standards/policy development and supports operational teams

## What are the practices

- Grounds team are encouraged to use less salt and monitor external contractors' usage rates etc.
- External contractors must adhere to the **snow clearing and ice management standards** and are responsible for clearing excessive salt/brine

## What are the priorities

- Demonstrate commitment to sustainability
- **Health and safety** of campus visitors
- Operational efficiency and costs



# SENECA'S SALT MANAGEMENT PLAN | CONTRACT INTEGRATION

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- 1 Environmental criteria for contractor
- 2 Sustainability as a key performance indicator
- 3 Prescribed use of brine and reasoning in work plan



# SENECA'S SALT MANAGEMENT PLAN | STANDARDS

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## Environmental criteria for contractor

### 3.11 Environmental Issues

Where relevant, the Supplier must provide environmentally friendly Services and related goods, which may include but not be limited to:

- (a) Ensuring any goods supplied or used in providing the Services are reusable, where possible;
- (b) Minimizing the amount and weight of packaging used for any goods and/or services supplied or used;
- (c) Ensuring that any recyclable packaging and Goods supplied or used are duly recycled.
- (d) Allowing Purchaser to return part or all items and packaging used in shipping or use during the delivery of Services at no charge to the Purchaser.
- (e) Utilising certified goods under Canada's Environmental Choice Program, Energy Star Program, or any other eco-labelling program; or
- (f) ISO 14001 certification.
- (g) All requirements per Schedule E, Section 18 (Sustainability).



# SENECA'S SALT MANAGEMENT PLAN | CONTRACT INTEGRATION

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2

## Sustainability as a key performance indicator

- Demonstrated Environmental Stewardship - environmental friendliness of the product or service
- Demonstrated ability to support Seneca of its sustainability goals and objectives as it relates to overall reduction of salt usage in all Campus locations.

Future iterations of the RFP process will include sustainable alternatives and practices as a scoring factor

# SENECA'S SALT MANAGEMENT PLAN | CONTRACT WORK PLAN

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## 3 Prescribed use of pre-brine and reasoning in work plan

- Liquid Brine all campus prior to starts 3.00 am or start of precipitation
- Security calls supervisor who then calls snow Personnel
- The brine use per campus will monitored and logged per event 24 Hr weather monitoring
- Nightly site monitoring

Estimated amount of Salt used at Newnham Campus was approximately 11 to 13 Tonne per event

We can save approx. 30 to 35% of rock salt per events with Liquid brine





# SENECA'S SALT MANAGEMENT PLAN | LESSONS LEARNED

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## Outcomes

- Brine was not effective in extreme cold temperatures (-10 to -15 degrees)
- Facilities team had to use salt to minimize risk during cold temperatures
- If temperatures drop, the team would deposit salt on top of existing brine, which is not operationally efficient
- Limited ability to further reduce volume of salt as it is beholden to snowfall, and there is a minimum volume that will always be needed



# SENECA'S SALT MANAGEMENT PLAN | LESSONS LEARNED

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## Resolutions

- Closed non-essential sidewalks, entrances, and parking lots (rely on parking garages) to limit need for salt
- Snow must be deposited in hydro corridor to reduce size of snow piles around accessible areas
- Salt would damage the concrete in parking garage, so they use an environmentally friendly option in those spaces



# SENECA'S SALT MANAGEMENT PLAN | LESSONS LEARNED

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## Going Forward

### 1 Reduction

- Limiting entrances
- Closure of courtyard and parking lots
- Proactive snow removal

### 2 Alternatives

- Calcium Magnesium Acetate, which is used in parking garages but 10x the price
- Consultations with Office of Sustainability

### 3 Policy Integration

- Procurement policy
- Landscape standards

### 4 Management

- Grounds manager
- KPI's and tracking

If existing environmentally friendly alternatives are chosen, it must be done in conjunction with reduction methods that reduce volume equating to difference in cost

# SENECA'S SALT MANAGEMENT PLAN | GOING FORWARD

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## Principles of Sustainability

The guidelines for embedding sustainability into our decisions and actions



**Innovation & Leadership**



**Community**



**Energy & Emissions**



**Water**



**Waste**



**Ecology**

# SENECA'S SALT MANAGEMENT PLAN | GOING FORWARD

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- 1 Biodiversity
- 2 Habitat Connectivity
- 3 Conservation and restoration
- 4 Soil health and integrity
- 5 Low Impact Development



Ecology

# SENECA'S SALT MANAGEMENT PLAN | STANDARDS & POLICIES

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## Standards for Landscape Design & Maintenance

Standards that mirror the principles of sustainability but are specific to landscape assessment, design, and maintenance. Ensure maintenance is embedded into the design stage.

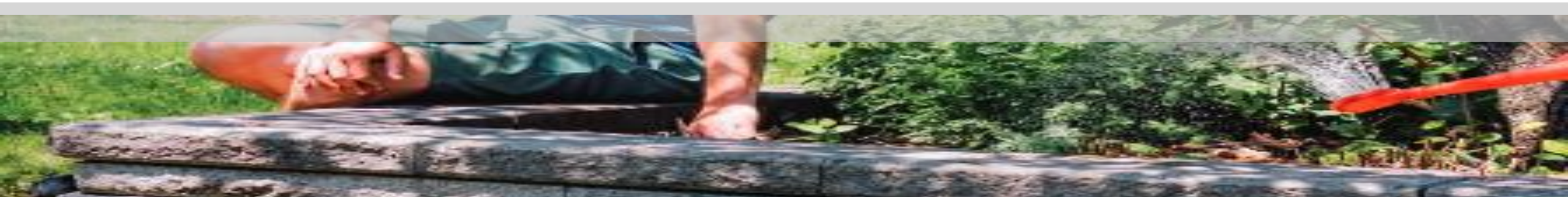
### 1 Components that must be included in design

- Landscape assessments
- Description of the 5 maintenance zones
- Example species inventory delineated by zone

### 2 Description of how the principles apply to how Seneca manages it's landscapes

### 4 Standards and policies

- Biodiversity and species selection
- Location specific requirements
- Snow removal and disposition
- Salt management
- Invasive/pest management



# SENECA'S SALT MANAGEMENT PLAN | LANDSCAPE MAPPING

## Campus Ecological Inventory



# Discussion

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Ideas for KPI's for salt management programs?

Do you have any processes or best practices for data collection of salt management?

How do you best operationalize your program?

Any questions for the Seneca team?





Thank-You

