



# Affordable Climate Action

Cambridge Council June 8, 2021

# Agenda

## Purpose:

- Demonstrate affordable paths to prevent and adapt to climate change

## Process:

- Affordable paths to Climate Neutral & Beyond
- Achilles Heel of Tendering

## Payoff:

- Stewardship of taxes, Action on Climate Change, Adaptation & smaller footprints



# Enviro-Stewards

- We cultivate resilient businesses and
- improve lives in extraordinary ways

2018  
**Clean50**  
*Outstanding Contributors to Clean Capitalism*  
**PROJECT-OF-THE-YEAR**





# Climate Action WR

## Goal 3: Low Carbon Business

- Maple Leaf Foods (MLF) set targets to **reduce water, energy, and waste 50% by 2025**
- Enviro-Stewards completed energy, water, and pollution prevention **assessments at 35 facilities**
- 2019, Maple Leaf became the **World's First Major Carbon Neutral Food Company** (while saving millions/yr in operating costs)



Carbon Zero Superbowl add 2020



Maple Leaf sponsored 35 Biofilters including St. Paul's nursery (above)

# Improving lives: SAFWATER PROJECT

- TEDx “Better than Charity”



Empowering social ventures to sustainably provide safe water in their communities





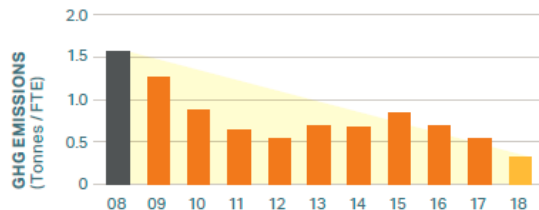
# Existing Rainwater Reuse System:



## Enviro-Stewards Own House:

- 97% less outside air required
- 78% red'n in GHG/employee
- 0 L/yr tap water for living wall for 5 yrs
- With Blue Roof will save:
  - 20% more energy
  - 50% more water
  - Reduce peak flow during storm events

Absolute reduction to date:  
12 TONNES

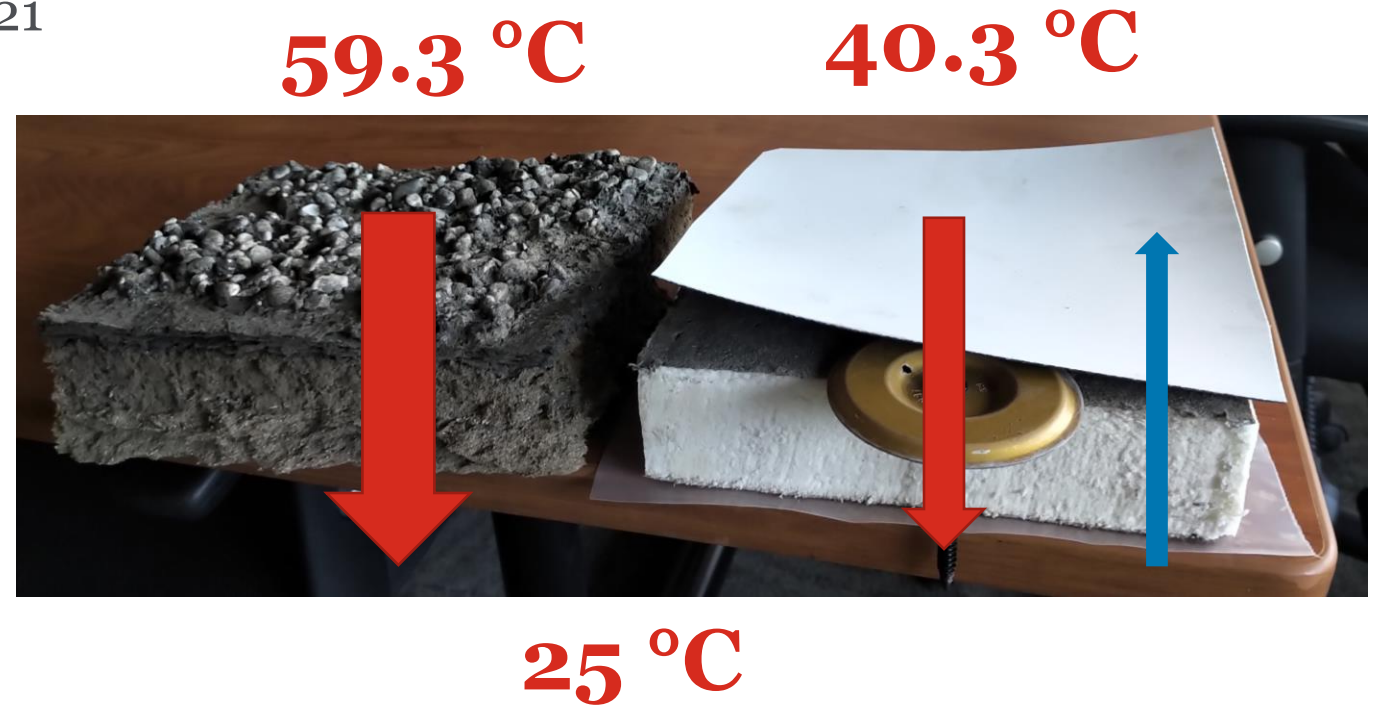


1. 78% reduction/employee (with E2)
2. Offset twice remaining balance



# Enviro-Stewards Demonstration Affordable Smart Blue Roof (ASBR)

- Replaced Roof (May 17 to May 28<sup>th</sup>, 2021):
  - air temperature 30°C on May 21, 2021
- Lighter materials (saves 5lb/ft<sup>2</sup>)
- Thermal Savings
  - R-value: 50% savings
  - Colour: 55% savings
  - Net 78% reduction!



**Note: a bucket of water on the roof May 21<sup>st</sup> measured 20°C (cooler than the indoor temperature) which indicates evaporating water from the roof could potentially reverse the direction of heat flow (provide AC) even on 30°C days!**

# A Practical Lucrative Path to Become Climate Positive



## A Practical Path to Become Climate Positive

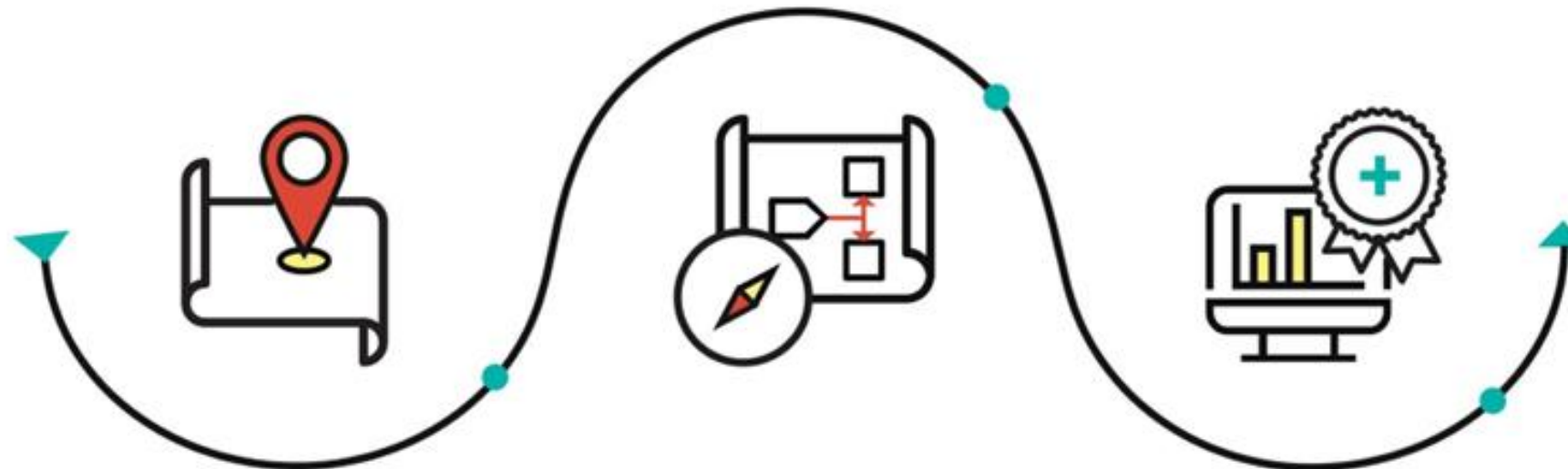
By EnviroStewards Posted March 25, 2020 In Blog, Sustainability

*"Maple Leaf becomes World's First Major Carbon Neutral Food Company,"*

*"Unilever commits to becoming carbon positive by 2030,"*

*"Microsoft will be carbon negative by 2030"*

## PATH TO CLIMATE POSITIVE



### Baseline

Assess supply chain, processing and packaging footprints to select areas of focus and quantify resulting gains

### Identify

Identify & quantify practical footprint reduction measures and their associated business cases

### Implement

Implement, verify and report on footprint reductions secured. Then sustainably offset the remaining balance



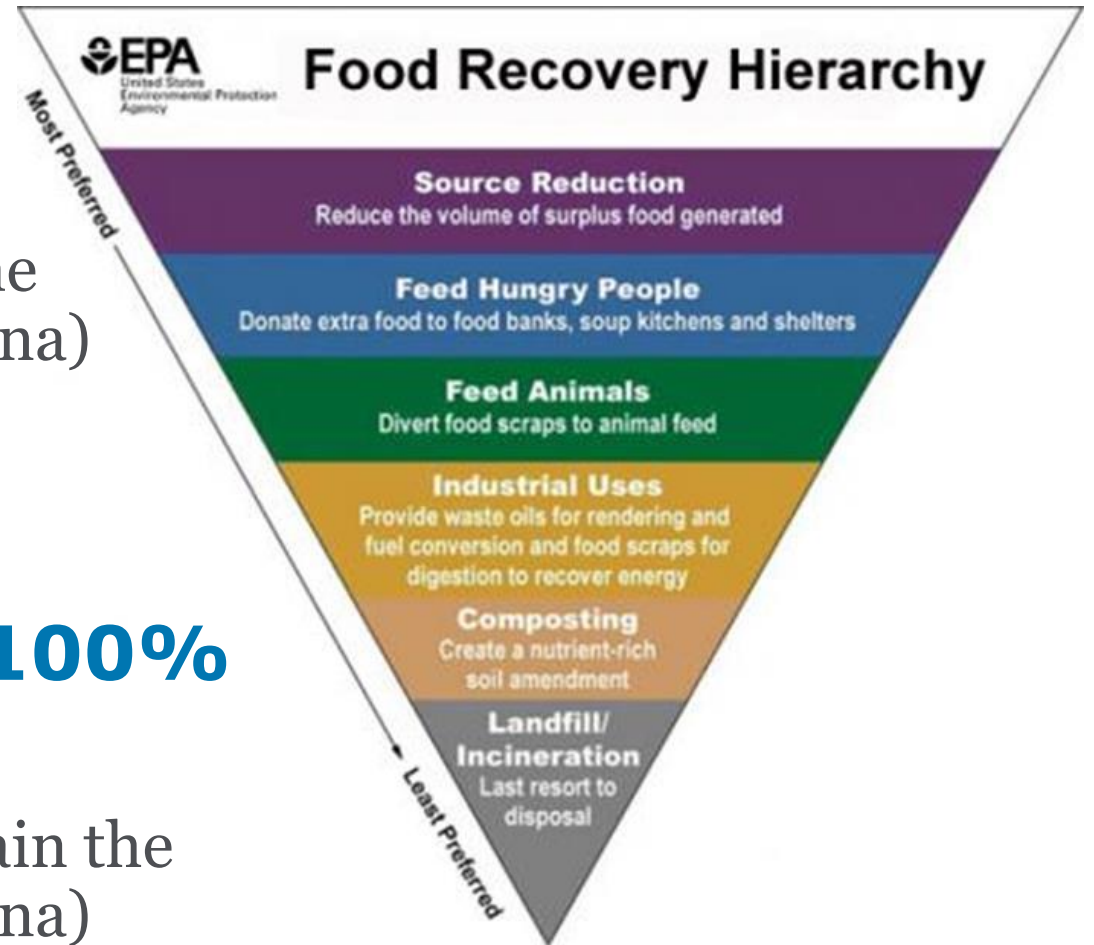
# Climate Action WR

## Goal 4 & 5: Food Waste Prevention

- **1/3** of all food is presently wasted
- If it were a country, food loss would be the **3<sup>rd</sup> largest GHG emitter** (after USA & China)
- **\$49 billion** CDN in lost value

## If Succeed in diverting even 100%

- **1/3** of all food will still be wasted
- If it were a country, food loss would remain the **3<sup>rd</sup> largest GHG emitter** (after USA & China)
- **>90%** of 49 billion CDN in lost value



## Energy Reuse & Food Loss Prevention:

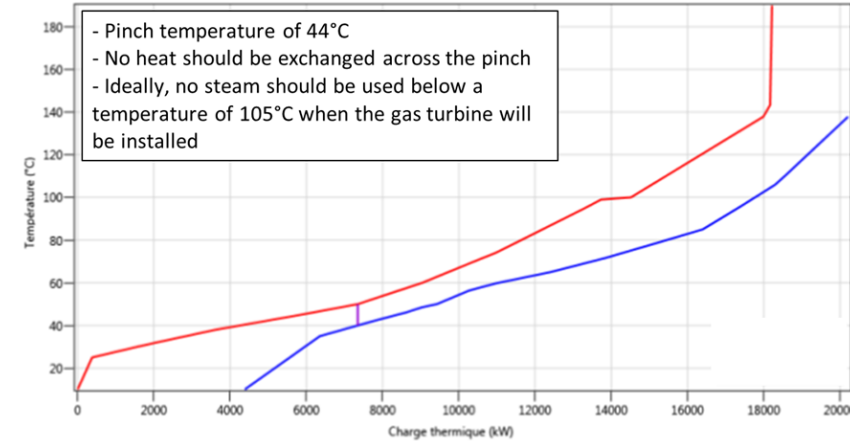
### Process Integration (PI) Study:

- 3,233,000 kWh/yr
- 4,570,000 m<sup>3</sup>/yr of gas
- 123,000 m<sup>3</sup> of water

**\$1,645,000/yr** with 2-year payback

### Food Loss Prevention Study

- **\$706,000/year** food savings with 6-month payback (938 tonnes/yr of food) and 4,000 tonnes/yr of GHG





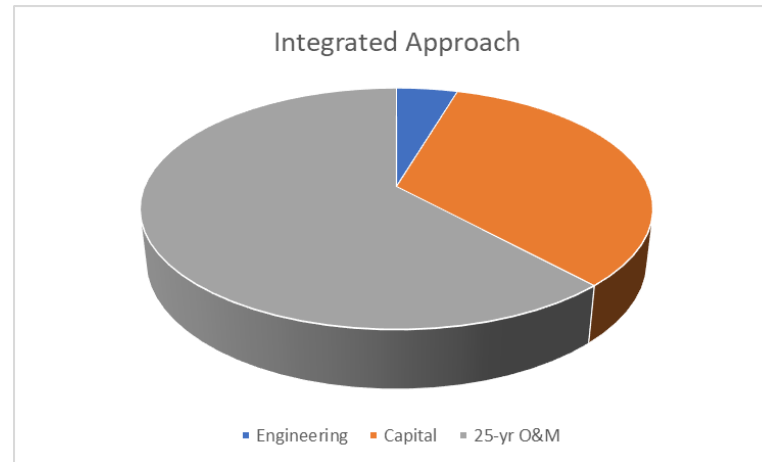
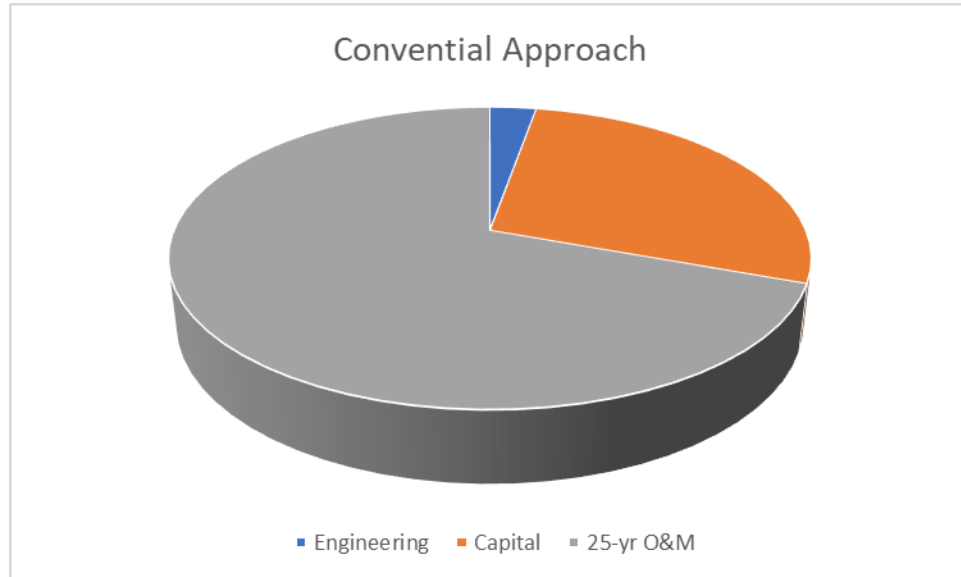
## Achilles Heel of Tendering:

Lowest price = low quality, zero innovation & higher life cycle costs



# Life Cycle Cost Comparison:

Investing in design up front reduces capital & operating costs.





# Q&A:



*engineering*  
*change*

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