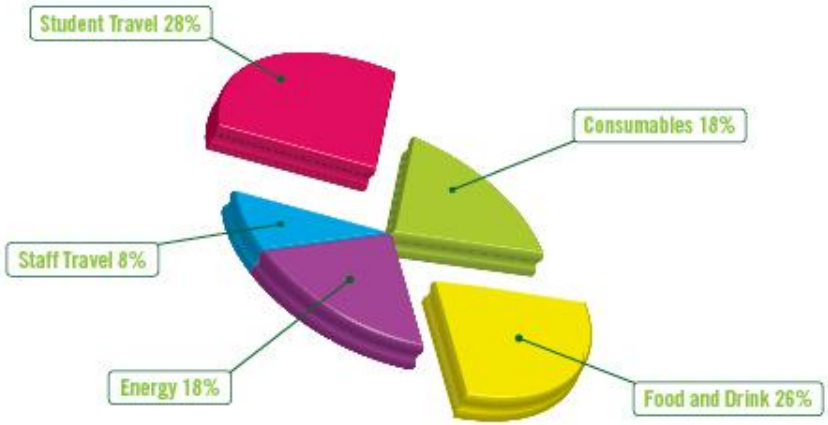
Reduce our ecological footprint

BCIT

Major components of BCIT's ecological footprint:



Did you know?

By taking public transportation, bringing your own mug or water bottle, and recycling, you can have a significant impact in reducing our demand on the planet's resources.




To learn more, visit bcit.ca/green

What's the purpose?

Practical Research for BCIT to reduce it's environmental impact.

To understand our footprint size to then create actions for reduction

1. To inform curriculum for studies related to environment. Ie. Study of Indicators
2. To communicate and engage the BCIT community in steps to reduce footprint.
3. To learn what is being done already at BCIT to move towards sustainability and the gaps

Context of Ecological Footprint Assessment

Results from the Ecological Footprint can inform or report on the progress made on 5 of the 7 goals of BCIT's Greening Campuses Strategic Plan.

i) Greenhouse Gas Neutral

ii) Net Energy Producer

iii) Zero Waste

iv) Water Balanced

v) Ecologically Restored

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v) Equitable and Socially Responsible

vii) Accessible to All Students and Faculty

BCIT's Aspirational Consumption Goals

Is to reduce our energy and material consumption by 75%

From the following areas:

- **Energy**
- **Water**
- **Food & Drink**
- **Consumables**
- **Staff Travel**
- **Student Travel**
- **Built Form**
- **Waste**

All these components can be monitored relative to BCIT's aspirational goals.

What is an Ecological Footprint?

The ecological footprint[1] is an indicator quantifying the amount we demand from the planet/biosphere versus the availability of resources and the ability of the planet/biosphere to assimilate the waste generated from our actions.

[1] Wackernagel M., Rees W. E.,1996, Our Ecological Footprint: Reducing human impact on the earth. New Society Publishers, Gabriola Island, BC, Canada

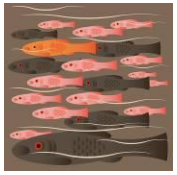
Method of Ecological Footprint Assessment

Calculating the EF, converts all impacts of consumption into hectares of land.


Forest


Pasture

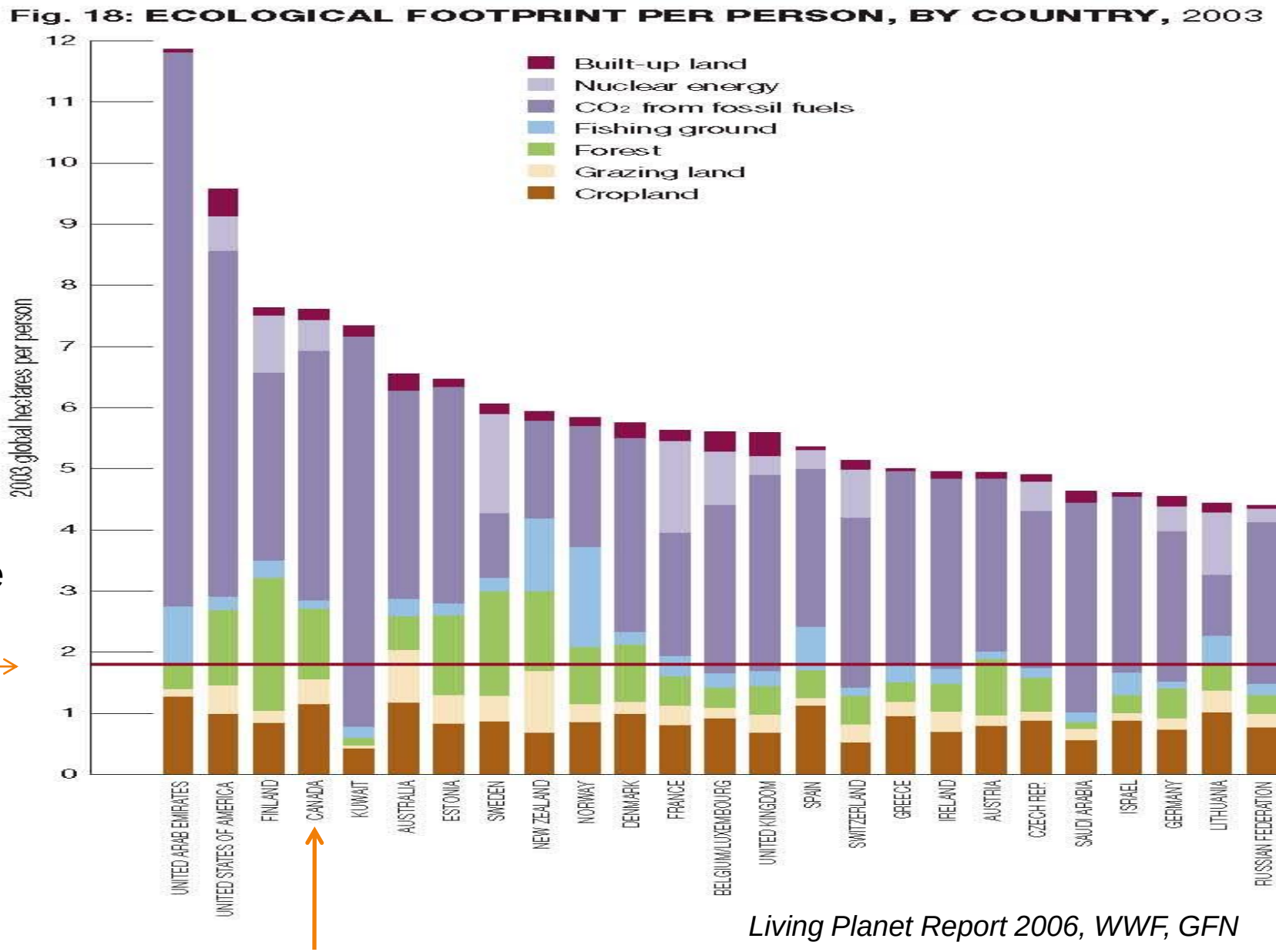

Crop


Sea


Built

To attain data to calculate EF for the Burnaby campus the following methods were used in conjunction to generate a footprint:

- **Mass flow analysis**
- **Life cycle data of products**
- **Economic Input-Ouput method**



Sustainable Level

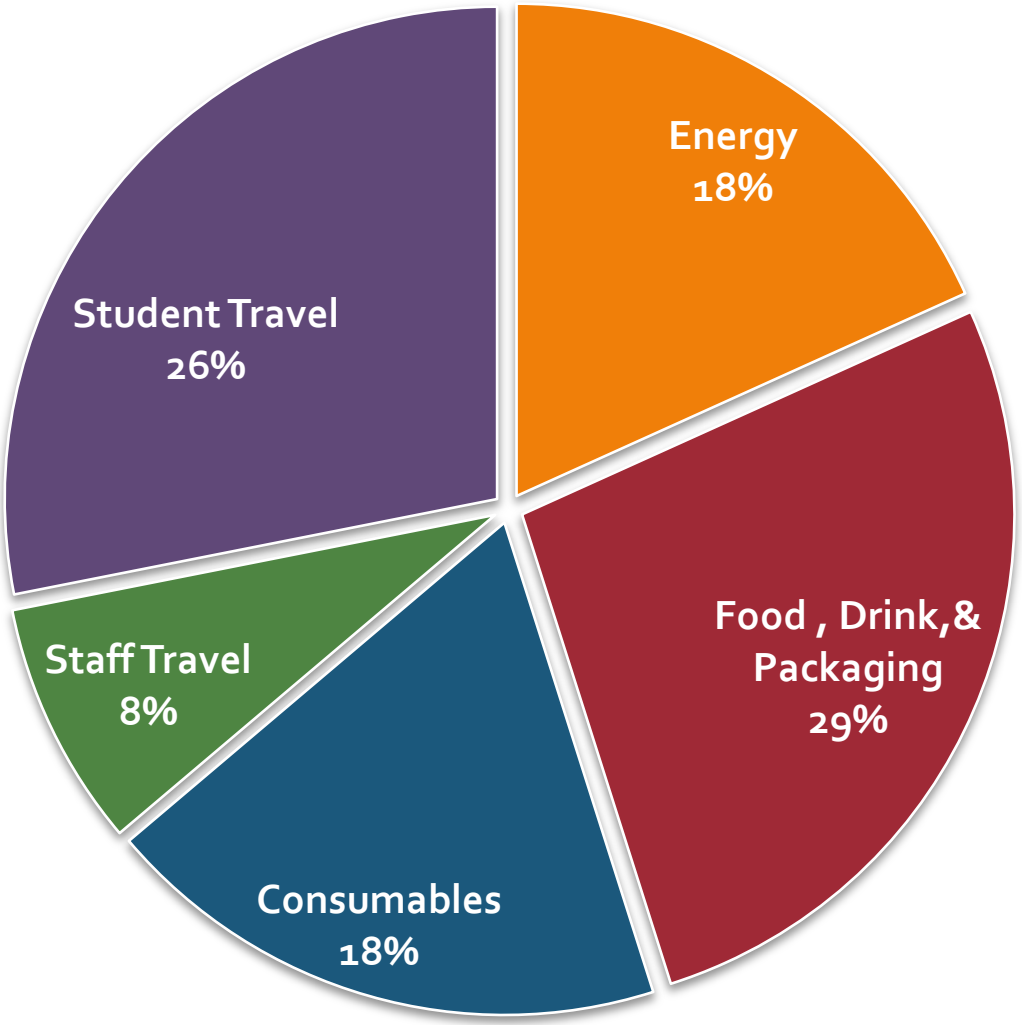
Living Planet Report 2006, WWF, GFN

BCIT's Burnaby Campus Total Ecological Footprint for the fiscal year 2006/2007 was:

16,590 ha

Findings – Major Components

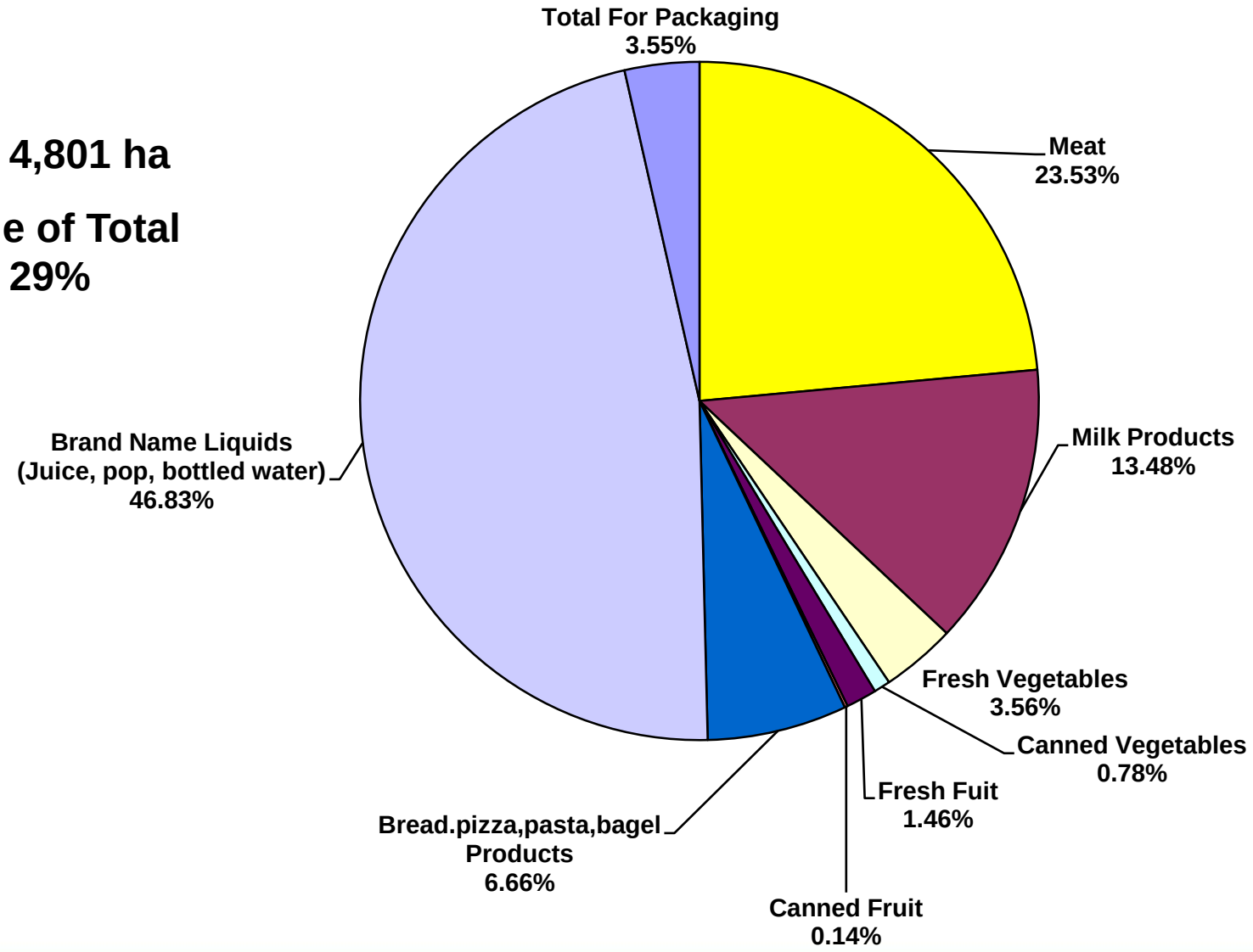
All Inputs to BBY Campus



Findings – Food, Drink, and Packaging

Footprint: 4,801 ha

Percentage of Total Footprint: 29%

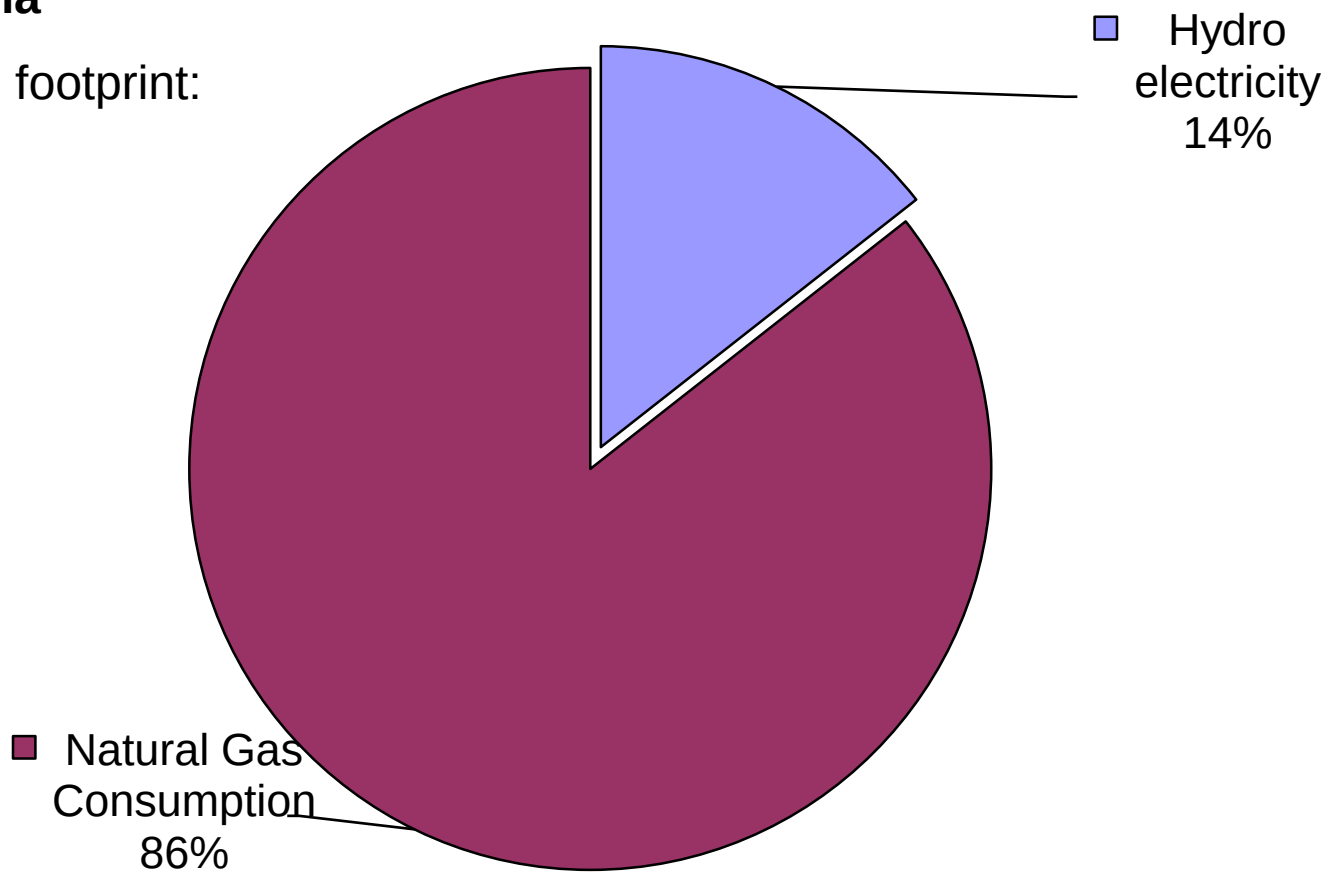


Findings - Energy

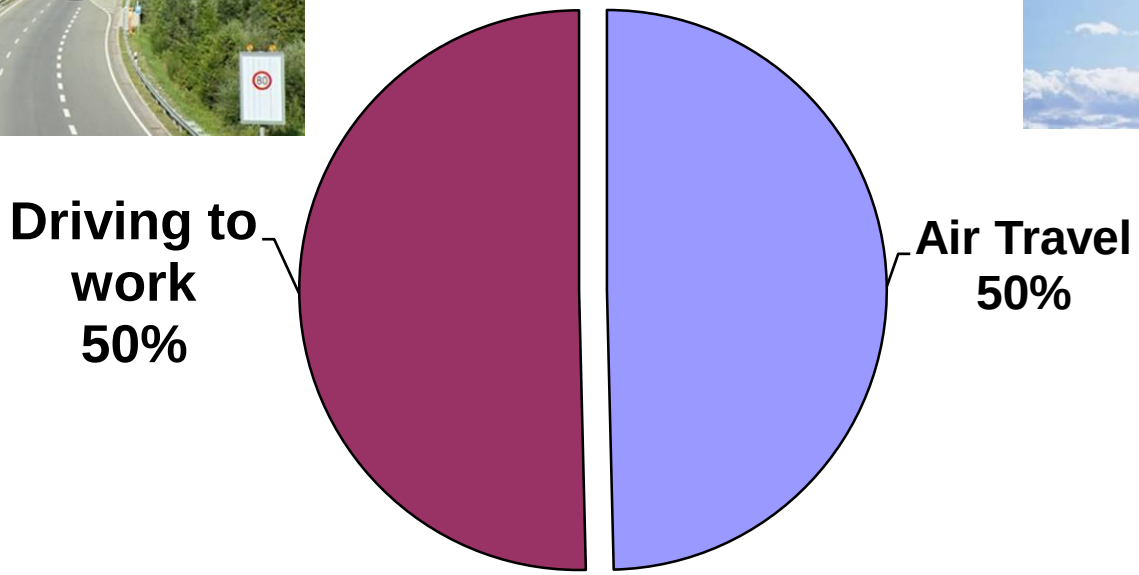
BBY Campus Total Direct Energy
EF: 3,001 ha

Percentage of total footprint:

18%



Findings – Staff Travel



Total Staff Travel:1,284 ha

Percentage of total footprint: 8%

Staff Travel per Capita: 0.7 ha

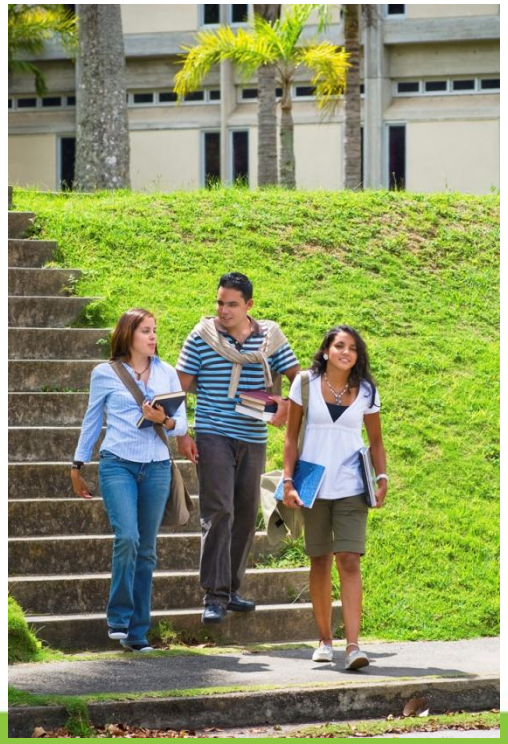
Findings - Student Travel

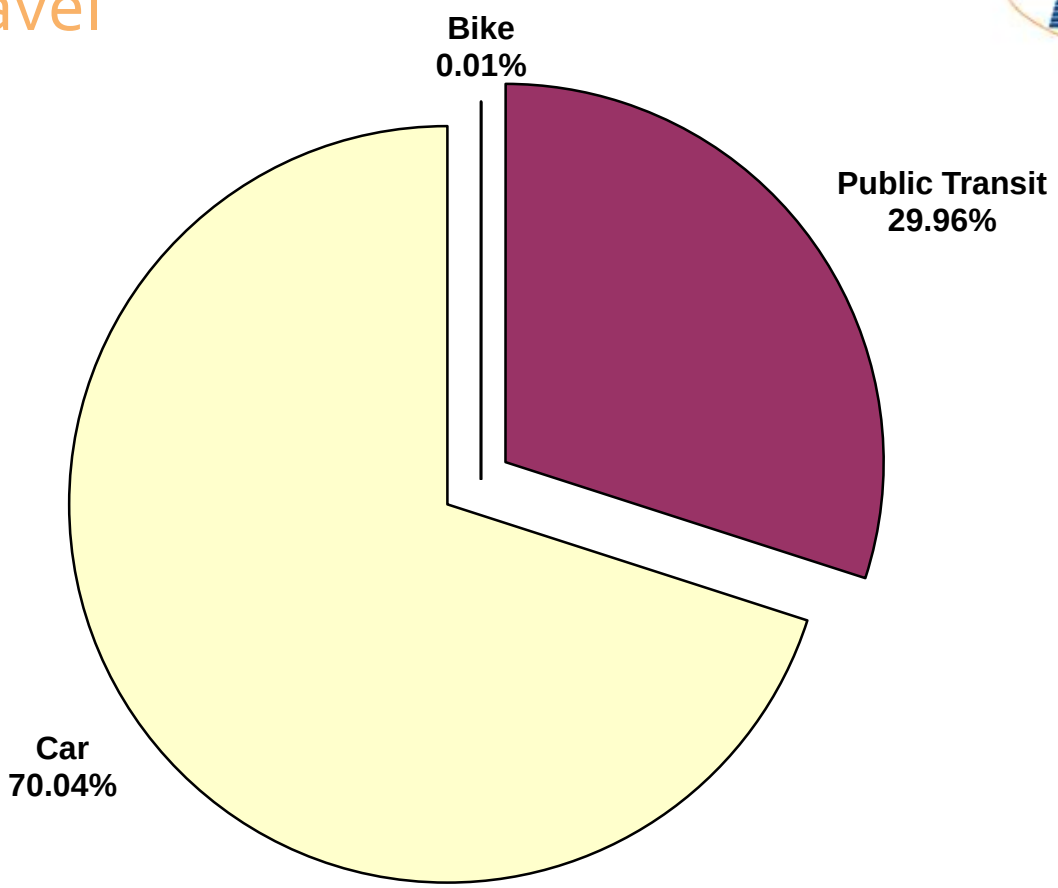
Footprint for travel:

4,446 ha or 0.2 ha/student

Percentage of total footprint:

26%





9.1 % Walk to the Burnaby Campus,

0 ha

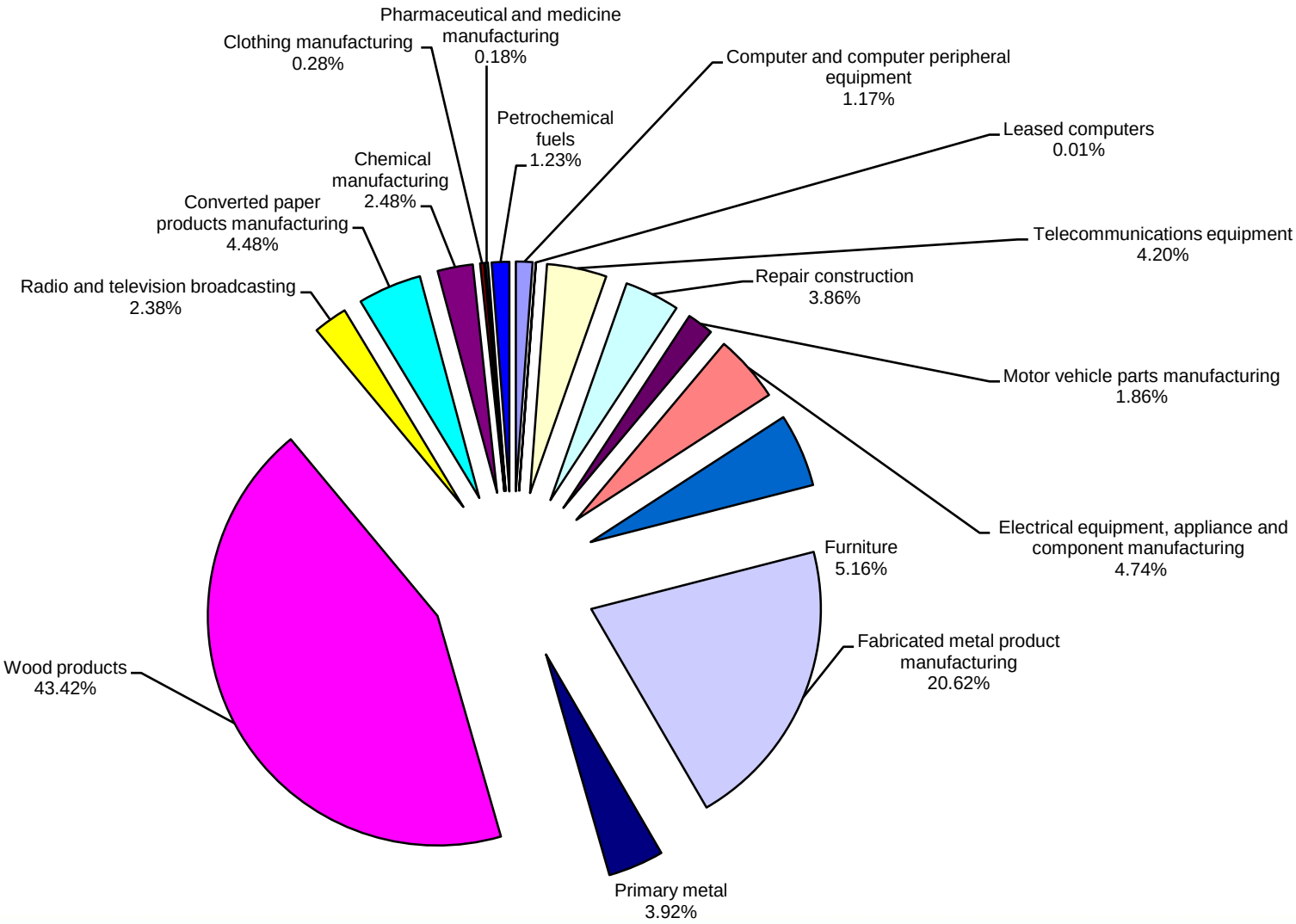
Findings – Consumables

Footprint

2,958 ha

Percentage of total footprint:

18%



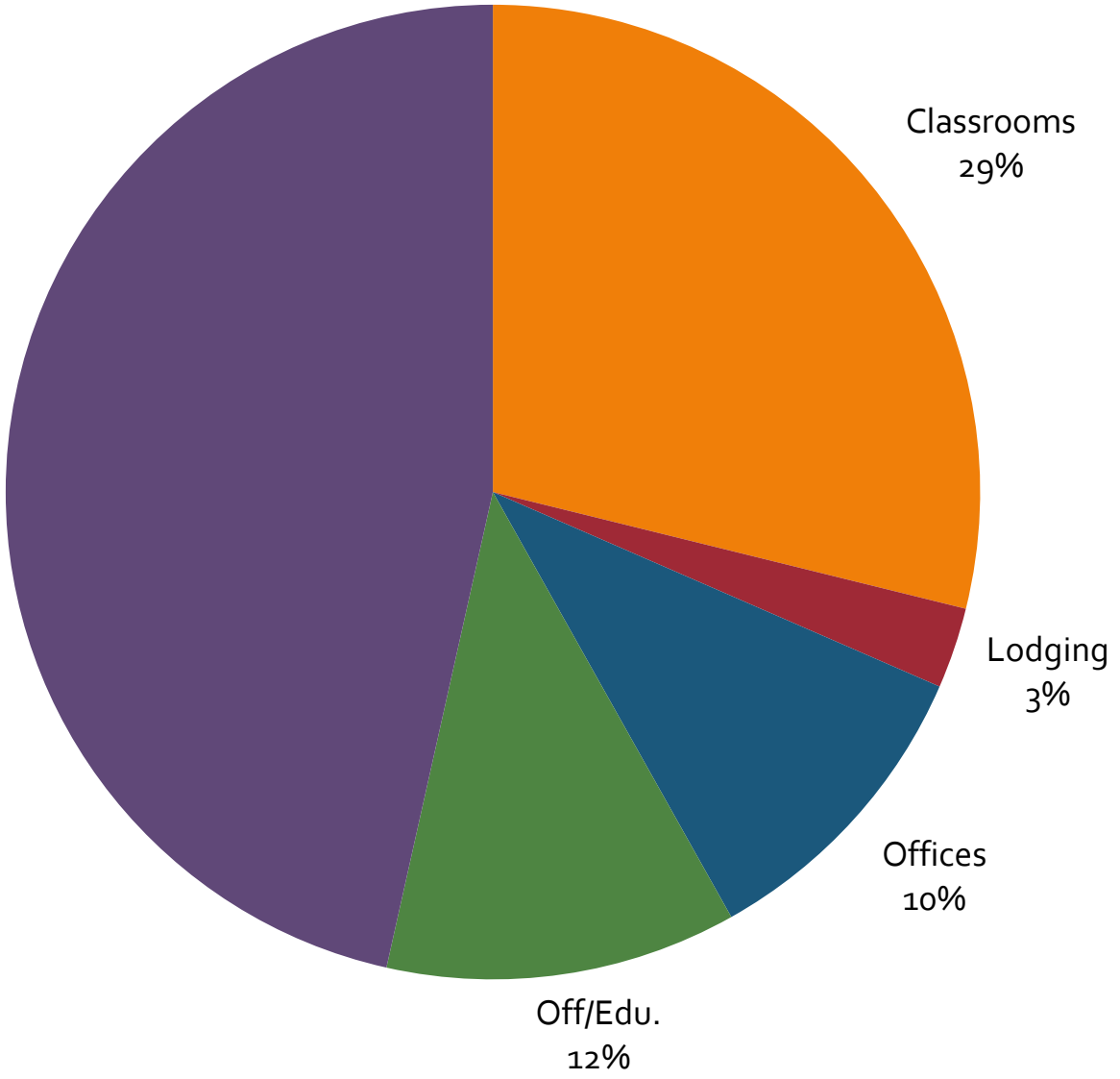
Findings – Built Form

Footprint:

95 gha

Percentage of total footprint:

1%



Findings – Water

Total Water Footprint: 3.6 gha

Percentage of Total Foot print: 0.02%

Footprint based on energy for water delivery from reservoir and removal to water treatment plants

Findings – Waste to the Landfill

Waste going to Landfill:

192 tonnes = Sending 4 Boeing 707 Passenger planes to the landfill

Total Footprint for Transport of waste: 0.34 ha

< 1% of Total Footprint

Other Findings

In the base year :

248,464 cups
170,574 lids
123,182 cup jackets

Went to the landfill!

21% of Waste going to Landfill is from food packaging.

Findings – Recycling and Composting

Burnaby recycles:

34% of Pop Cans & Plastic Bottles
38% of Glass bottles
11% of Paper*
2,040 yards of Wood
10,190 Kg Gyproc

2923 textbooks are resold

And at least **195** books are recycled

2.5 tonnes of Compost dirt was generated in 1 year

Reduce our footprint by…

Some actions to move BCIT towards Green Plan Goals:

>Retrofit buildings to be restorative

>Increase renewable energy use

>Increase public transit rider-ship

>Increase composting

>Allow for local garden/herbs

>Retention ponds

>Grey water recycling

>Bring your own mug, bottle, utensils

Source: http://www.gvrd.bc.ca/sewerage/source_control_poster/rain_garden.pdf

Energy | Travel | Food | Water | Recycling

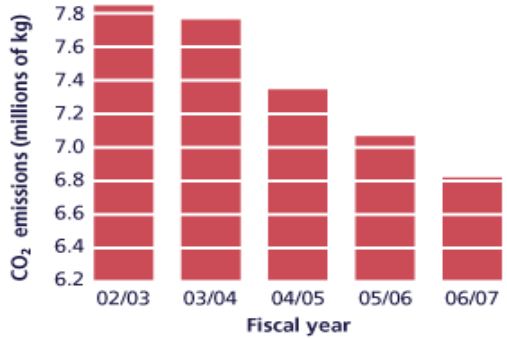
Ecological **Footprint**

Energy

How are we doing?

86% of BCIT's energy footprint comes from natural gas while only 14% comes from hydroelectricity.

Burnaby campus greenhouse gas total emissions



Why the dramatic drop? Each year since 2002, BCIT has been able to reduce its emissions over the previous year by:

- installing lower-watt fluorescent bulbs
- installing more energy-efficient components in the campus central heating system

What's the big picture?

Natural gas costs BCIT 19¢ per Kilowatt hour.

Electricity costs BCIT only 17¢ per Kilowatt hour.

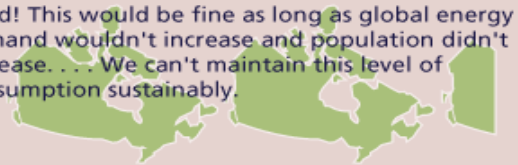
Natural gas produces a **2726** ha footprint.

Electricity produces a mere **205** ha footprint

Not only is electricity *cheaper* than natural gas, the footprint of electricity is a mere **1/13th** that of natural gas!

The energy footprint for the Burnaby campus alone is 55 times the size of the campus itself – or one-third the size of the city of Burnaby!

Our overall energy footprint is 2886 ha. That's 0.105 ha per each student and faculty at the Burnaby campus. If the rest of the world consumed energy at this rate, we'd need 2.2 forested areas the size of Canada to meet this need! This would be fine as long as global energy demand wouldn't increase and population didn't increase. . . . We can't maintain this level of consumption sustainably.



What can you do to reduce your energy footprint?

- unplug unused appliances
- unplug chargers when not charging
- set computers to sleep or hibernate automatically after 30 minutes of inactivity
- turn down your thermostat to 68°F in the winter (and turn it off overnight)
- turn off lights in unused rooms

Online Footprint Tool

BCIT

Ecological Footprint

As you go about your work — commuting, heating and lighting your office, eating, disposing of waste — you make surprising demands on the Earth's ecosystems. The measure of your demand on these systems is called your ecological footprint. Calculating your ecological footprint takes only five minutes but it could change the way you live. . . .

enter

Online Tool Continued

Energy | **Travel** | Food | Water | Recycling

Ecological **Footprint**

Travel

How many km do you travel by train (or Skytrain) to BCIT each week?	250
How many km do you travel by train (or Skytrain) on BCIT-related business each month?	95
How many km do you travel by bus to BCIT each week?	22
How many km do you travel by bus on BCIT-related business each month?	37
How many km do you travel by car to BCIT each week?	44
How many km do you travel by car on BCIT-related business?	20
How many long-haul flights do you take each year on BCIT-related business?	4
How many short-haul flights do you take each year on BCIT-related business?	12

Your travel footprint: **27** hectares