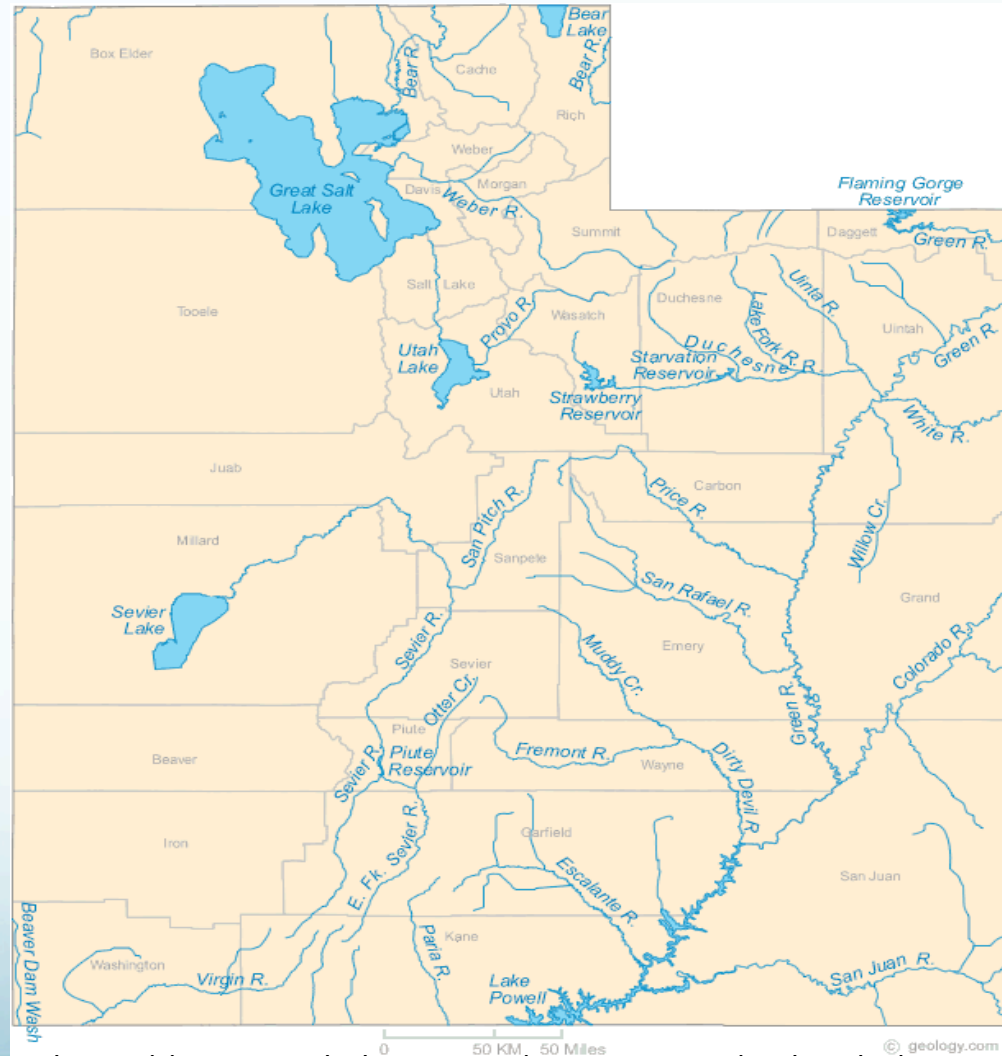


# Swirling and Flushing

Wasting less water with our #1s and #2s

# Introduction

- Utah uses the 2<sup>nd</sup> most amount of water per capita
- Utah receives the 2<sup>nd</sup> least amount of rain out of 50 states
- Since Utah is a riparian system, water conservation is a necessity for sustainable zero carbon emissions



# Why water?

## The Problem:

- As water becomes scarce and dwindles throughout our lifetimes with growing population, the wasting of water has become unnecessary and washing our tracks down the drain should be treated with more knowledge and care in using less water.
- This is a problem because we, and future generations, will need to conserve as much water as possible for the growing poor countries while the richer countries begin to de-grow, using less with more efficiency, or “that ceases to grow.” (27, Magdoff and Foster)

# Why toilets?

Dual flush is a great choice!

Since the average person uses a toilet about three to five times a day, one of those usually for solid waste, thus dual flush systems make a lot of sense, and can save the school a lot of dollars in the long-term

A composting toilet requires a lot of attention, upkeep, and patience to operate correctly. To start, a composting toilet takes up around 3 to 6 months to get rid of human waste. Composting toilets require someone to lay down layers of peat moss or lime over the waste, and to stir the mess beneath the toilet occasionally to speed up composting

An incinerating toilet only requires you to step on the pedal and push a button. However for \$1400-\$4000 a pop, the school should look for cheaper more energy efficient methods

# The standard around campus



- The Kohler Toilet
- Stalls use 1.6 gallons per flush
- Urinals use 1 gallon
- Are located in Shaw, Giovale, Gore, and Converse

# The awesome in Meldrum

- Sloan ECOS™ Electronic Dual-Choice Flushometer
- Reduces water usage from 1.6 gpf toilets
- Monitors how much water is needed per flush
- Energy efficient and great riparian savings



# The difference

## Kohler (3x daily)

- Stalls:
- 9 months = 1,320 gpf
- 12 months = 1,752 gpf
- Urinals:
- 9 months = 810 gpf
- 12 months = 1,095 gpf

## Sloan dual flush (3x daily)

- Stalls (Solid Waste):
- 1,320 gpf
- 1,752 gpf
- Stalls (Liquid Waste):
- 891 gpf
- 1204.5 gpf
- Urinals:
- 105.3
- 142.35



# Proposal



- Install Sloan water flushometers throughout a 5 year period
- By installing these flushometers less water will be used and the school will be pushing its agenda for energy efficiency products and zero CO2 emission
- Our notion is that these flushometers will reduce carbon for Westminster as well as raising awareness to not waste water when presented with a choice between solid or liquid waste.



# The results

## Costs: Sloan ECOS RES/C

- \$318.69 for each
- x 63 toilets = \$20,077.47
- Over the period of 5 years (at installing one stall/urinal per month) there would be about 60 toilets total
- Maintenance costs go for \$70-\$150 an hour so the monthly installation cost would be around \$400 to \$550

## Costs: Caroma Sydney 305

- \$ 202.78 for each
- x 63 (stalls only) = \$12,775.14
- During this 5 year installation process there would more labor cost to install these
- Maintenance costs (per monthly installments) would be between \$272-\$550

# The sustainable method

“The underlying concepts of this Master Plan are based on sustainable growth and operations of Westminster College.” (Master Plan, Guiding Principles, 11)

“As teaching paradigms shift, varied and flexible learning spaces become a necessity. As population and programs grow the existing learning spaces, both formal and informal, will face more demand.” (Master Plan, Guiding Principles, 11)

- Our sustainable approach should be aimed at development of low flow toilets and how our use of water impacts our local environment
- With a 5 year plan these installations wouldn't become a huge up front cost and could be very flexible with the college's budget
- Though there is no instant demand for toilets, achieving the President's Climate Commitment should be the focus for future campus operations

# The conclusion

## Green Market

- As the movement for sustainability increases in the market place, institutions are required to set an example for communities to learn and experience our impact on the environment
- These toilets are one small way for Westminster to become even more of a “green” campus than before
- In 5 years time, these toilets and devices may cost even cheaper; being patient is not all that bad

## Long-term effects

- Westminster will be saving a large sum of water.
- Provide the community with information about the savings in water consumption
- Lowering the college’s “real cost” on the environment, though it is already a leading example in the Sugarhouse community

# The citations

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