MANCHESTER

The Manchester District

Water, Food, Waste

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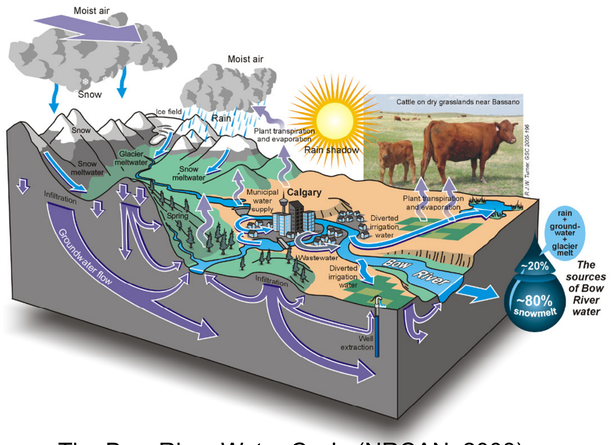
The targeted volume of rainwater that should be directed to recharging the local aquifers and rivers adjacent the Manchester District needs to be determined through a detailed investigation. The goal should be to strike a balance between maximizing the amount of rainwater that Manchester can use against a sustainable rate of recharge back to the natural hydrologic system.



The Bow River Water Cycle (NRCAN, 2008)

Manchester District Water Consumption Scenarios (first three from Sustainable Calgary, 2011)

Scenario	Litres per Capita Per Day	Percentage Supplied by Rainwater
2009 Calgary Water Usage	429	12%
Targeted 2033 Calgary Water Usage	350	15%
Water Usage in Some European Countries	150	35%
Manchester Self-Sufficiency	50	105%

Rain Garden in Saanich, BC (Sitelines, 2009)

Rainwater Capture and Use (and a Greywater System) (EVDS 702, 2009)

Given the extremely important function of bees in pollination and the larger global threat that they are facing, urban beehives should be integrated into as many areas of Manchester as possible and feasible. Locating them near other forms of urban agriculture is a minimum requirement.

Bee in Lufa Farms Rooftop Greenhouse (Lufa Farms, 2012)

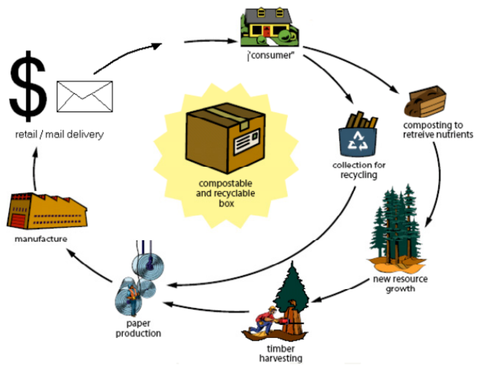
In order to grow all of the vegetables and produce for the targetted 75,000 people living in Manchester, a total rooftop area of 213,750 m^2 would need to be dedicated to rooftop greenhouses. This is only 5% of the total area in Manchester.

Community Garden at Fort Calgary (Third Wave Cycling Blog, 2011)

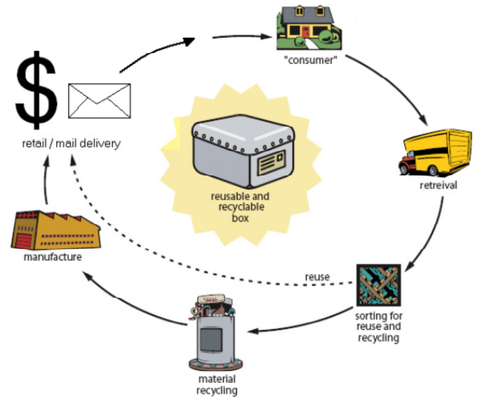
Rooftop Greenhouse in Montreal (Lufa Farms, 2012)

Chickens typically produce about 1 egg per day (Backyard Chickens, 2009), and they need a total of 8 square feet (0.7 m^2) with half of the space in an indoor coop and half in an outdoor chicken run (City Girl Farming, 2010). Using this information, a total area of 52,500 m^2 (i.e. 1.2% of the Manchester District) would be required in order to provide each Manchester resident with 1 egg every day.

Urban Chicken Farmers in Missoula, Montana (LaBadie, 2008)



The Manchester District will evolve into a zero-waste society where products are composed purely of Biological Nutrients (figure shown on the top left) or Technical Nutrients (figure shown on the bottom left) (McDonough & Braungart, 2001)



Living Machines are a technology that provides tertiary water treatment (i.e. the level of treatment provided by conventional wastewater treatment) using a series of tanks that contain robust and diversified micro-ecosystems of plants and aquatic animals (Dort, 2008).

Europe's First Living Machine (in Scotland) (Flickr, 2007)