Sustainable Manchester

- **Energy Positive Facilities**
- **Reduced Ecological Footprint**
- **Local Food Source**
- **$$ Benefit to Local Business**
- **GHG** GHG Reduction
- **Car Free**
- **Walk Friendly**
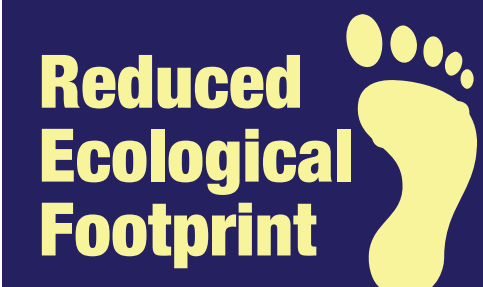
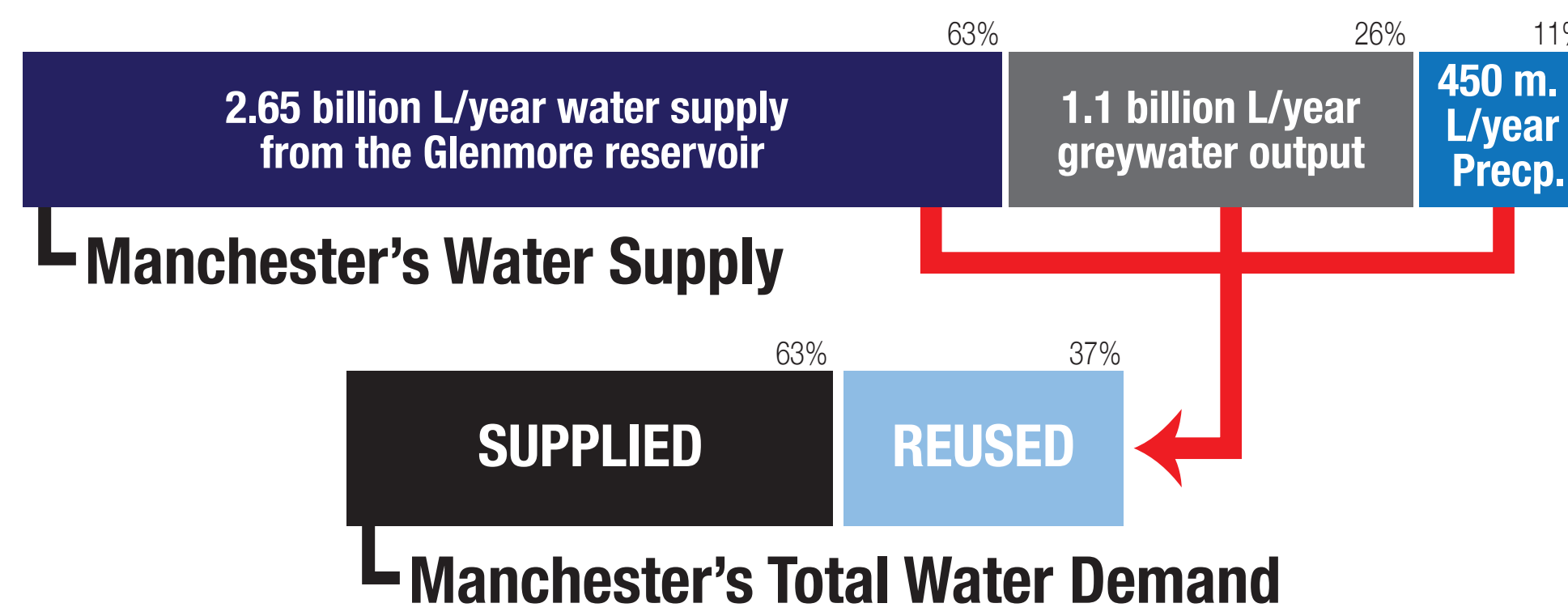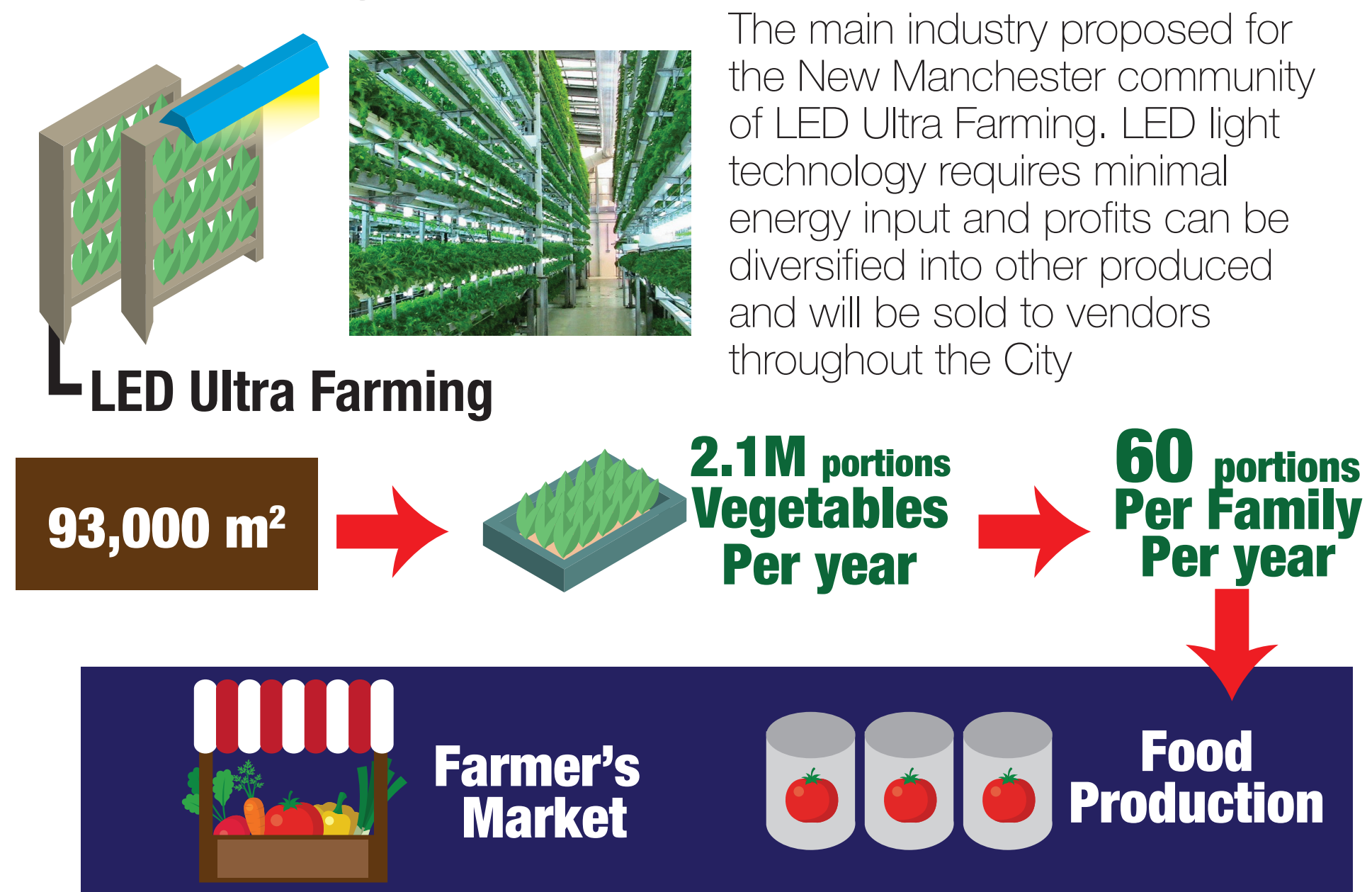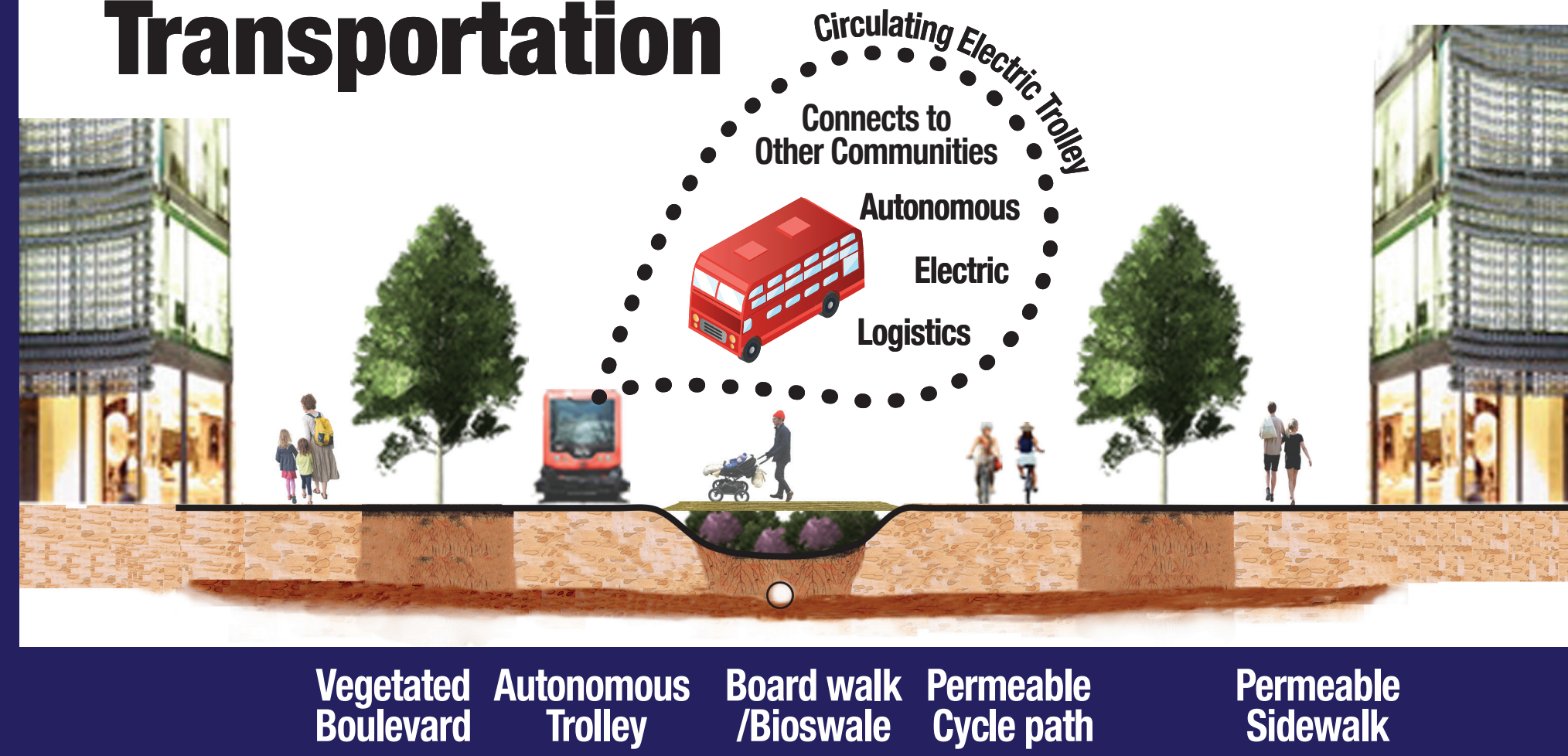## Water Circulation

Reusing greywater and harvesting rain water and snowmelt will supply 1.55 billion litres of water per year, which Manchester can use for agriculture.

63%	26%	11%
2.65 billion L/year water supply from the Glenmore reservoir	1.1 billion L/year greywater output	450 m. L/year Precp.

Manchester's Water Supply

63%	37%
SUPPLIED	REUSED

Manchester's Total Water Demand

Urban Agriculture

The main industry proposed for the New Manchester community of LED Ultra Farming. LED light technology requires minimal energy input and profits can be diversified into other produced and will be sold to vendors throughout the City

LED Ultra Farming

93,000 m² → **2.1M portions Vegetables Per year** → **60 portions Per Family Per year**

Farmer's Market → **Food Production**

Transportation

Circulating Electric Trolley
- Connects to Other Communities
- Autonomous
- Electric
- Logistics

Vegetated Boulevard · Autonomous Trolley · Board walk/Bioswale · Permeable Cycle path · Permeable Sidewalk
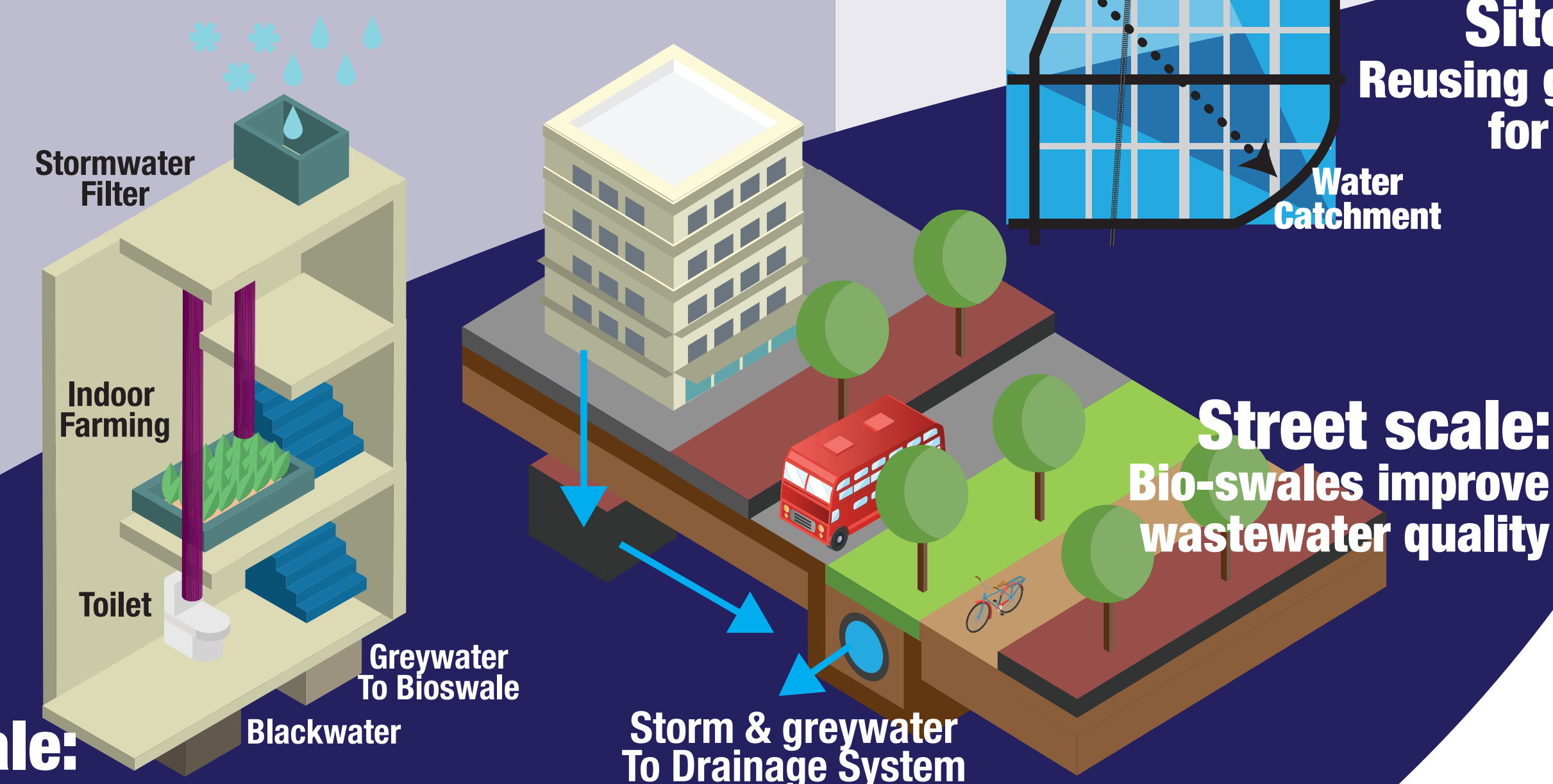
The Trolley network will be composed of the trolley, bioswale and active transportation. All surfaces will be permeable to obtain maximum runoff capture. Secondary streets will be composed of permeable surfaces for mixed use active transportation (pedestrian and cycle). Bioswale gardens will run parallel to the permeable pavers and will be composed of edible plantings to increase equitable distribution of food.
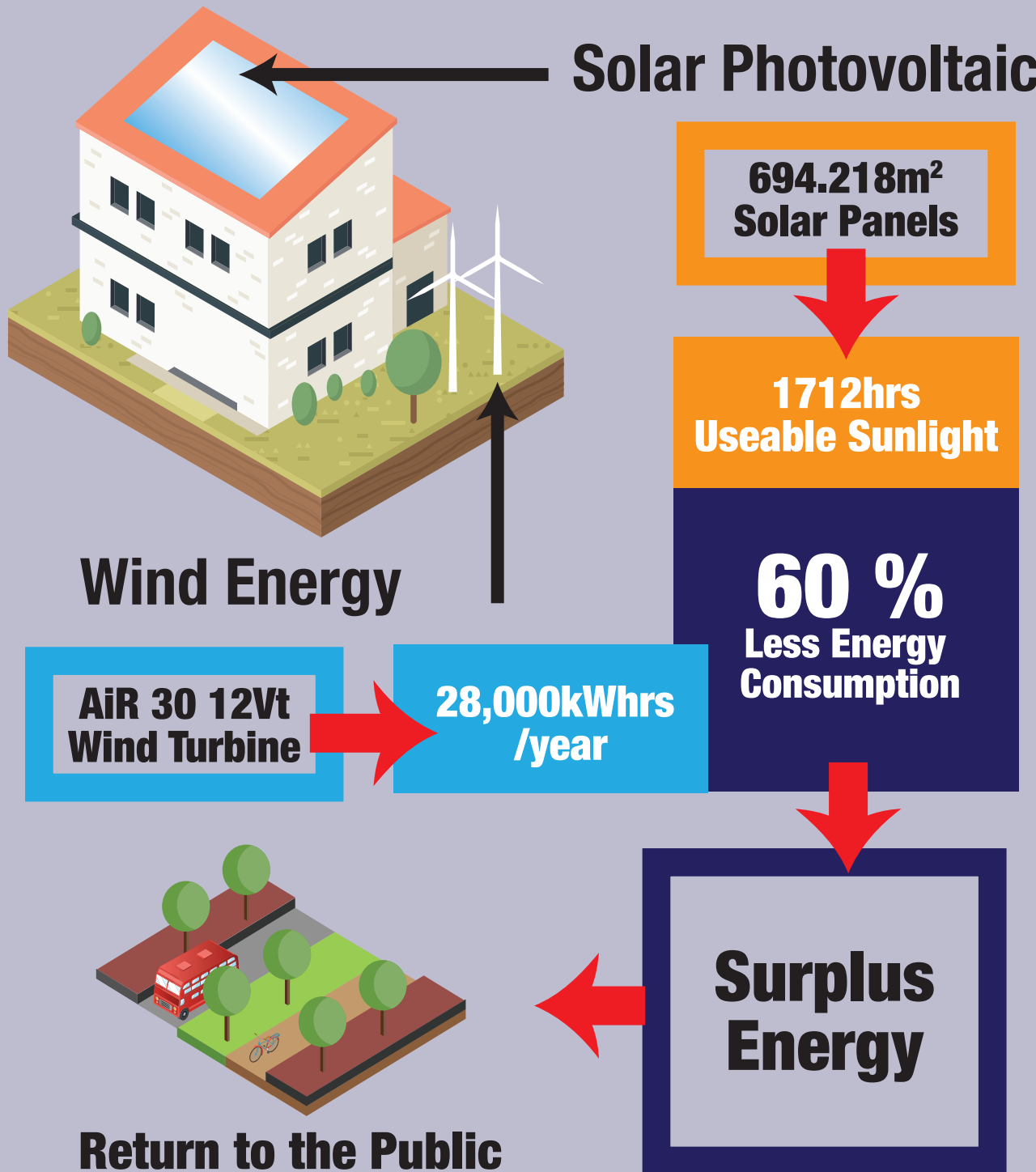
Transforming an industrial labyrinth into the ultimate local food source of Calgary | Manchester
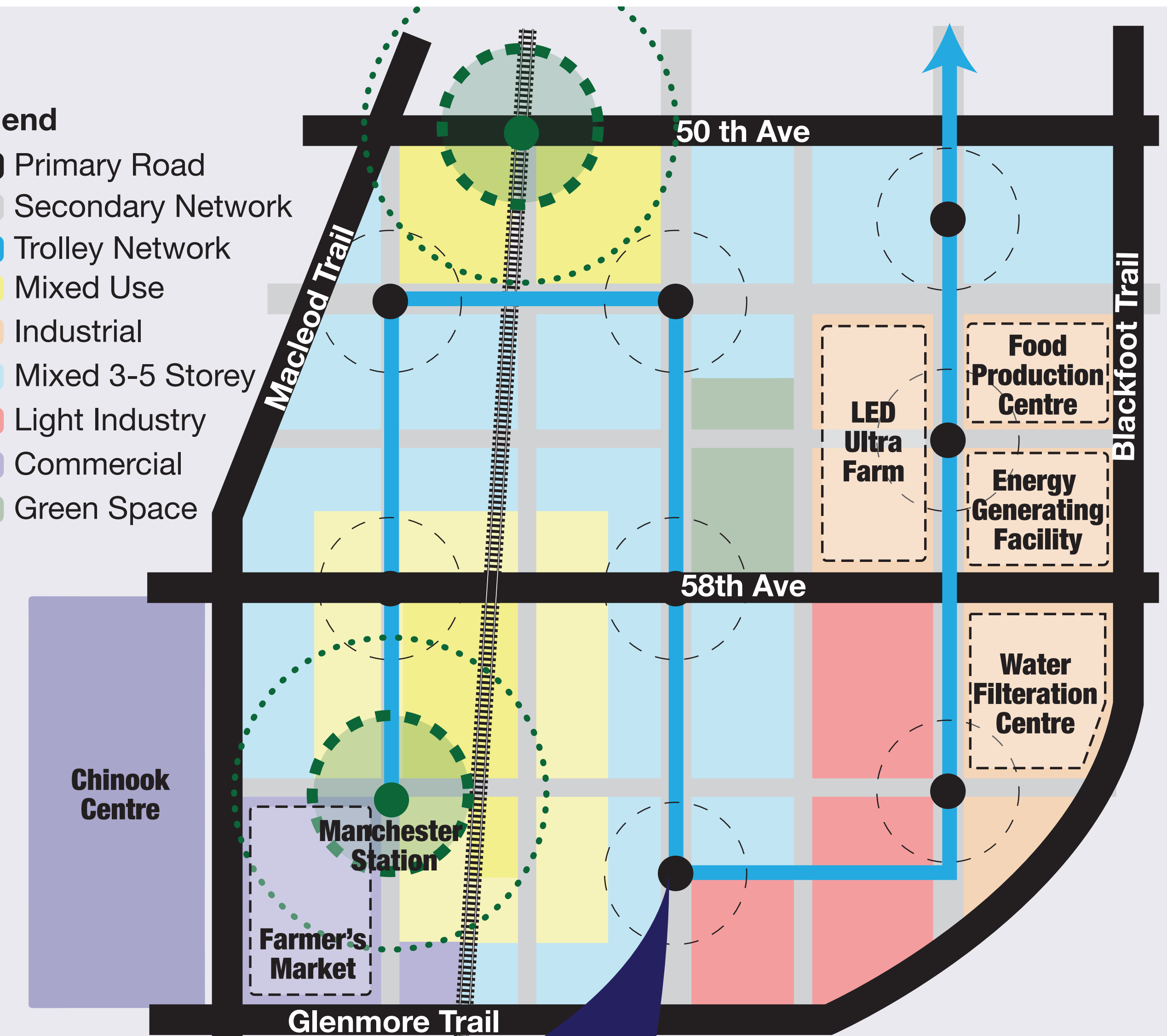
Net Positive Community

Manchester will be comprised of mixed residential, commercial and industrial buildings all connected to a main energy grid. The buildings will be comprised of smart technologies drawing on solar and wind energy.

Solar Photovoltaic

694.218m² Solar Panels → 1712hrs Useable Sunlight

Wind Energy

AiR 30 12Vt Wind Turbine → 28,000kWhrs/year

60% Less Energy Consumption
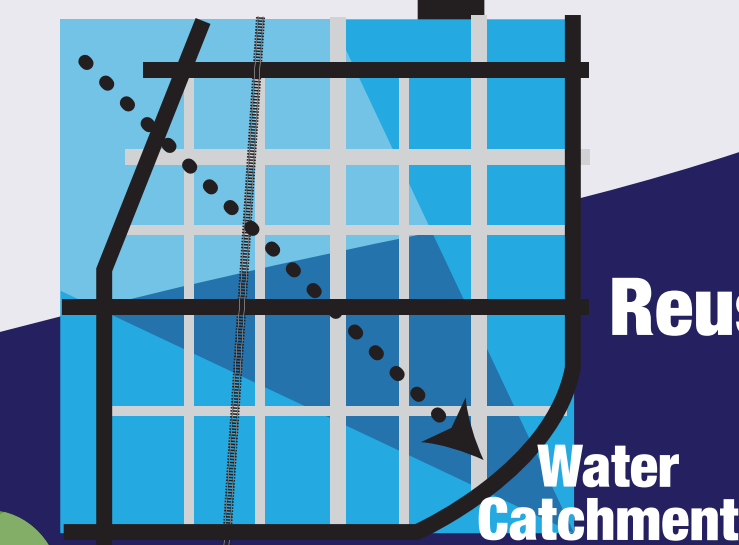
Surplus Energy → **Return to the Public**

All energy will be diverted to a main energy district facility and stored in batteries and disbursed from the main grid. Smart buildings will use 60% less energy than traditional buildings through vernacular technologies and efficient appliances. Excess energy will be used for the trolley and public street lighting.

Legend
- **Primary Road**
- **Secondary Network**
- **Trolley Network**
- **Mixed Use**
- **Industrial**
- **Mixed 3-5 Storey**
- **Light Industry**
- **Commercial**
- **Green Space**

50 th Ave
Macleod Trail
Blackfoot Trail
58th Ave
Glenmore Trail

Food Production Centre
LED Ultra Farm
Energy Generating Facility
Water Filteration Centre
Chinook Centre
Manchester Station
Farmer's Market

Site scale: Reusing greywater for irrigation
Water Catchment

Stormwater Filter
Indoor Farming
Toilet
Greywater To Bioswale
Blackwater

Street scale: Bio-swales improve wastewater quality
Storm & greywater To Drainage System

Building scale: Vertical garden and Water efficient usage

Manchester is an ideal location for a nexus of food, water, and transportation infrastructure because of its industrial identity and proximity to downtown (avg. 6 km).

Incorporating a self-sustaining water and transportation infrastructure network will help to boost sustainable local food production and fulfill our vision of Manchester as an agricultural hub that responds to 21st century issues of sustainability such as climate change and social inequity.

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