

# GENERATION MANCHESTER

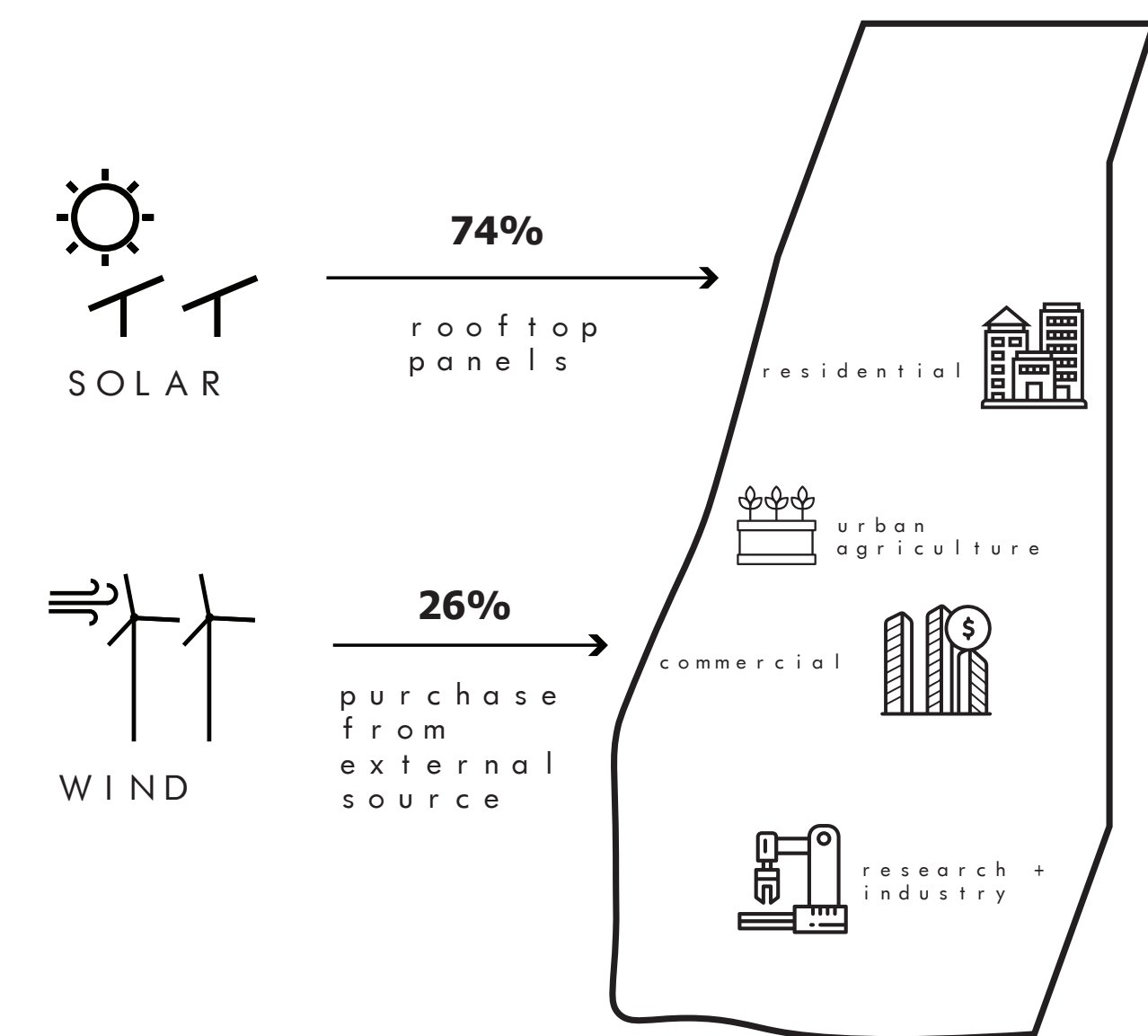
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EVDS 616 Urban Infrastructure and Land Use

population: **100,000**

jobs: **35,000**

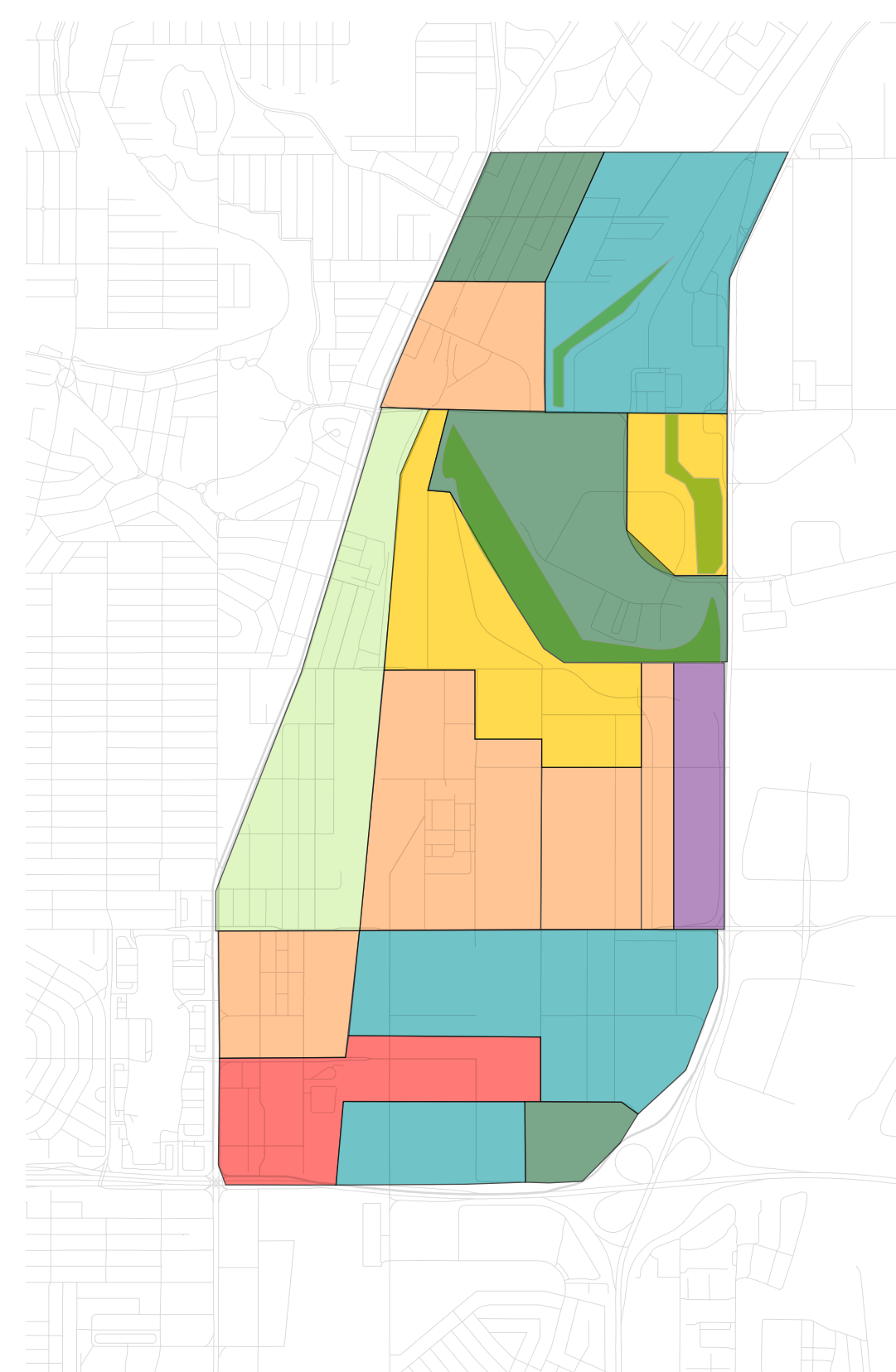
## ENERGY FLOW



## POPULATION BREAKDOWN



## PROPOSED LAND-USE



## SCANDINAVIAN LEVELS OF EQUITY

- Access to Public Infrastructure
- Access to Green Space
- Access to Medical Services

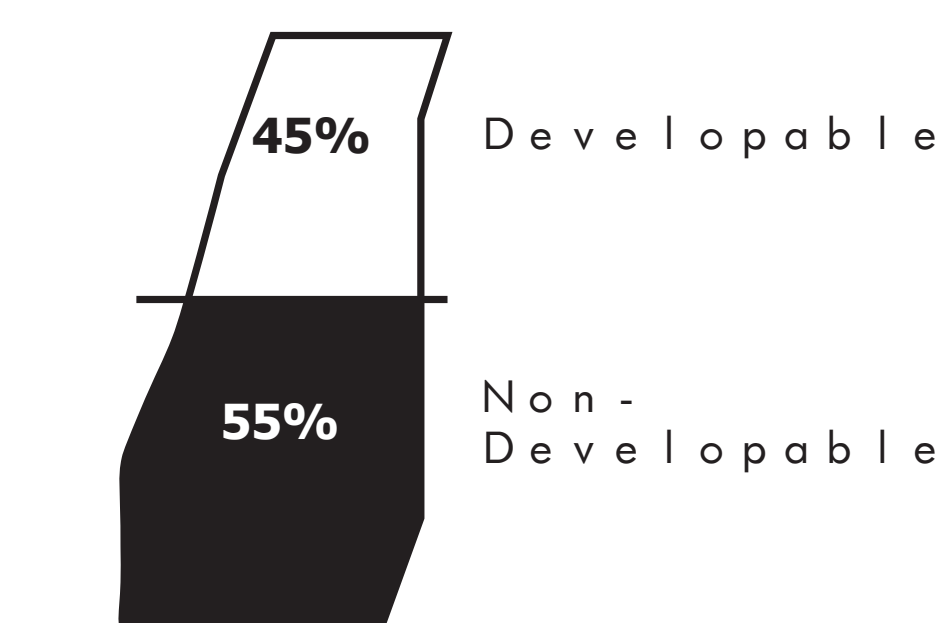
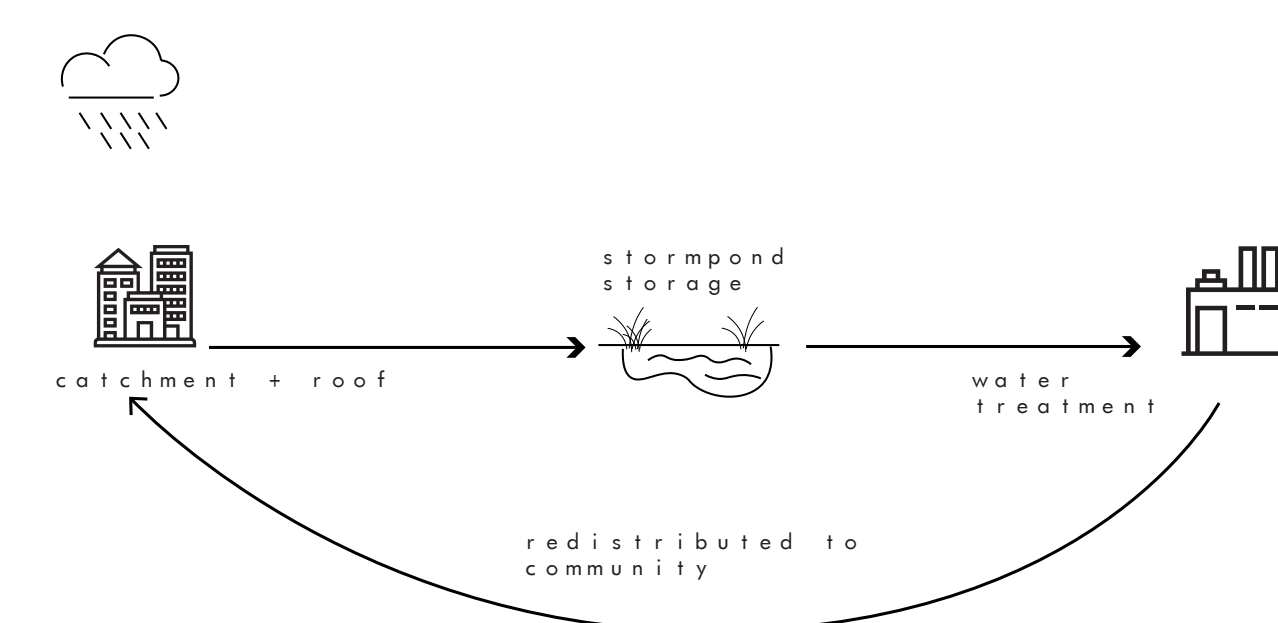
## JOB CREATION

- Solar Panel Production
- Food Production Industry
- Service / Retail Industry
- Maker Industry

## ACTIVE TRANSPORTATION



## WATER CIRCULATION



## URBAN DENSITY



Developable Area: **124 ha**

RESIDENTIAL: **33%** coverage

Land-Use Coverage

- low-density: **123,750 m<sup>2</sup>**
- med-density: **299,600 m<sup>2</sup>**
- high-density: **540,000 m<sup>2</sup>**



COMMERCIAL + INDUSTRIAL: **36%** coverage

Area per FTE: **1,435,000 m<sup>2</sup>\***

\* Meeting 35,000 jobs required

## RENEWABLE ENERGY



Energy Demand: **620,000 MWh / capita/ year\***

\* Based on 100,000 residents

SOLAR: **74%\***

**456,151 MWh / capita/ year**

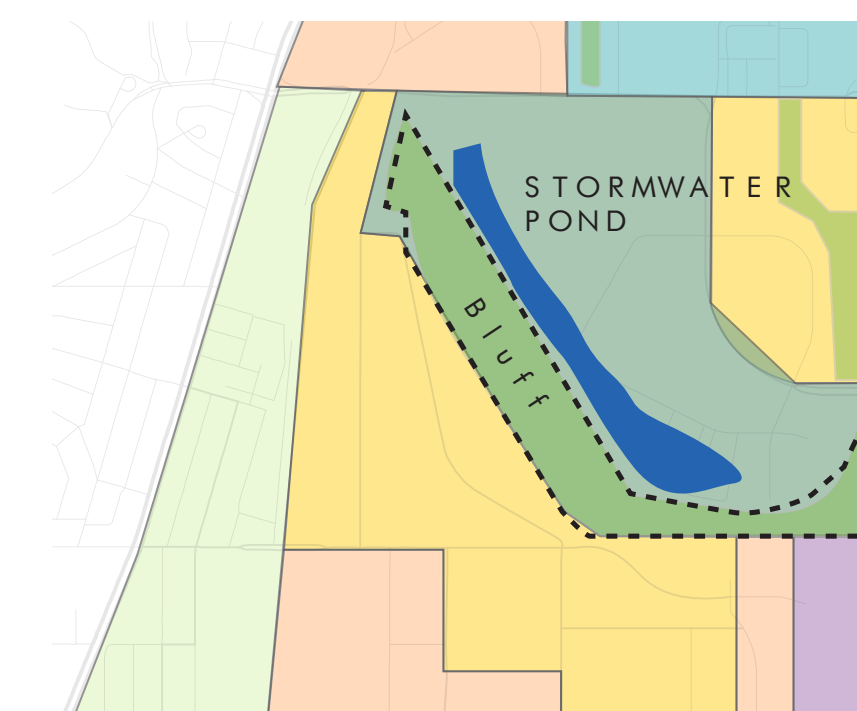
\* Projected 40.7% Solar Efficiency

WIND: **26%**

**163,849 MWh / capita/ year**

Power-generating infrastructure is a priority for Manchester. The combination of solar and wind power will generate all the energy required in Manchester. If every building is fitted with solar panels, operating at a predicted 40.7% efficiency, solar alone will generate 74% of the estimated demand. The small shortage of energy demand (68 MW) will be purchased from TransAlta's Corporation's 207 MW Windrise project near Fort Macleod.

## STORMWATER MANAGEMENT



Storage: **120,000 m<sup>3</sup>\***

\* Rule of thumb 350 m<sup>3</sup>/sec/ha

STORMPOND AREA REQ.: **240,000 m<sup>2</sup>\***

\* 6% area for Stormpond (24 ha)

POTABLE DEMAND (Basin + Roof): **22 million L/day**

Meeting **67%** of expected demand

By capturing all the stormwater within the Manchester's catchment basin, which includes areas beyond the site boundaries, we can treat 22 million L/day to meet 67% of the expected demand for potable water. By reusing stormwater on site the design reduces stress on Calgary's existing stormwater infrastructure.