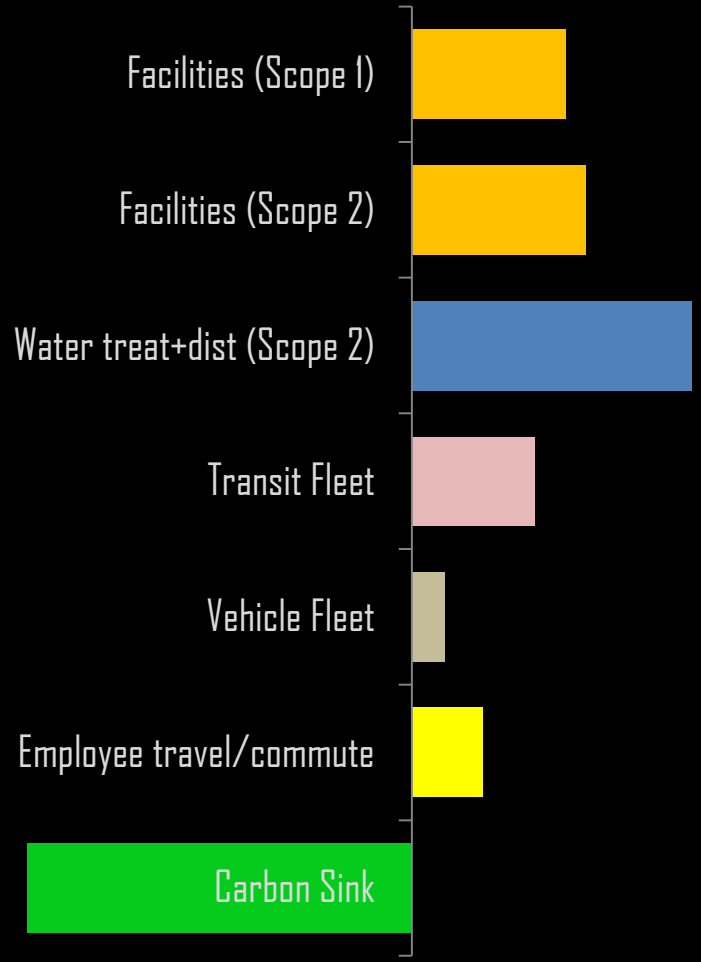
NET-ZERO ENERGY PERFORMANCE

proposed cutting edge city facility resolution

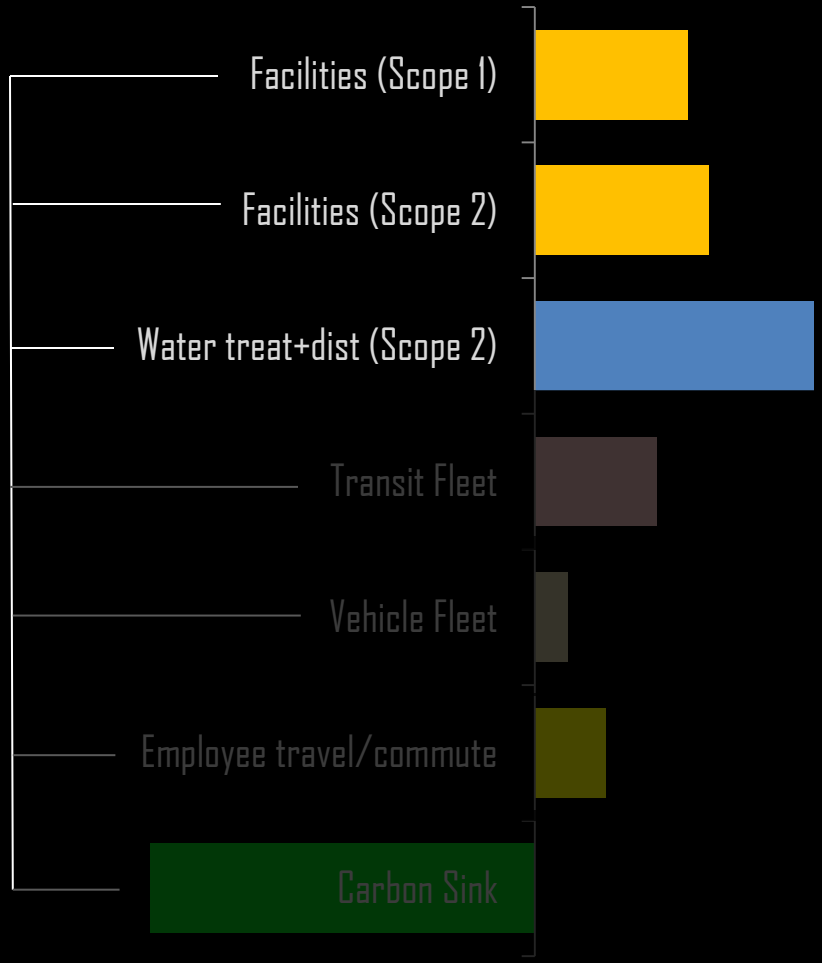
2016 carbon footprint (muni-ops)



Energy Efficiency

Water surcharge

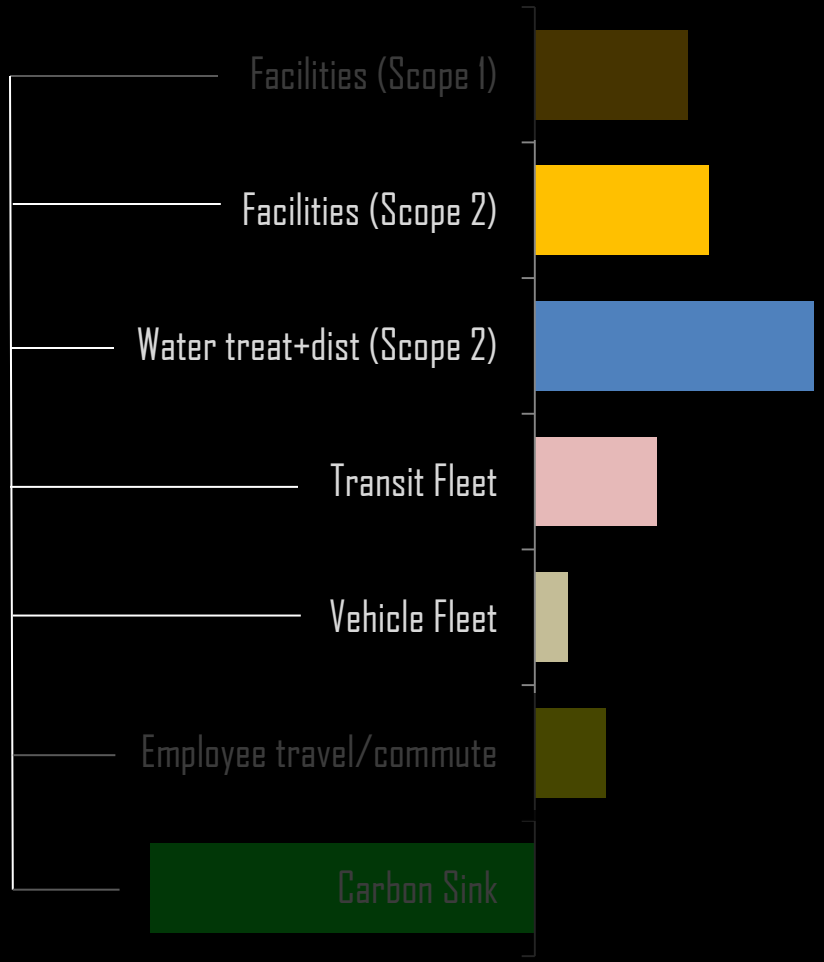
Energy efficiency projects underway



100% Renewable

Electrification/Decarbonization

EPSA proposal (November)



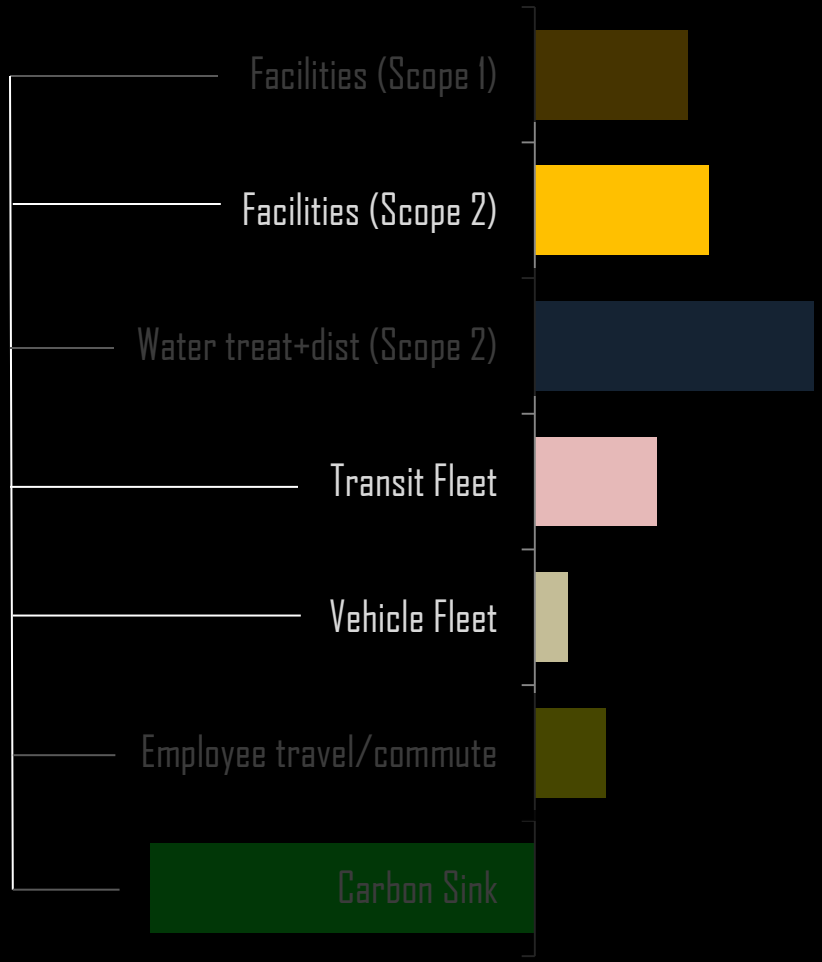
Electric Vehicles

Buses

Passenger Vehicles

Ebikes

Everything else



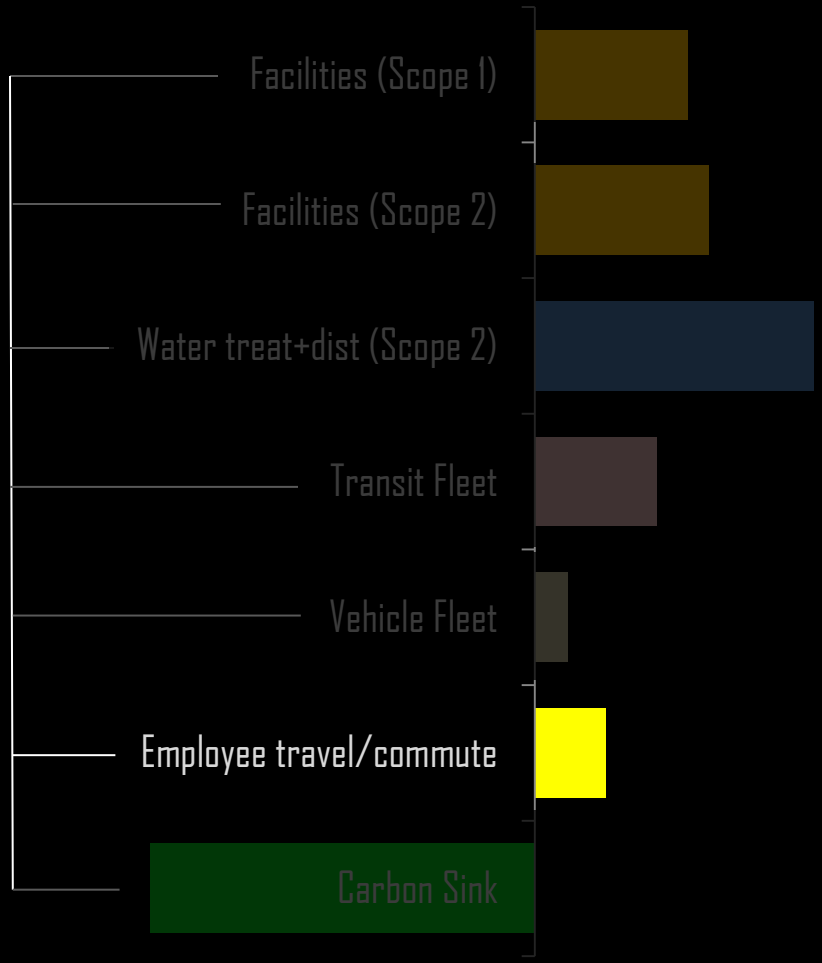
Employee Commute

Health Insurance Incentives

UDOT Van-pool

Increased transit

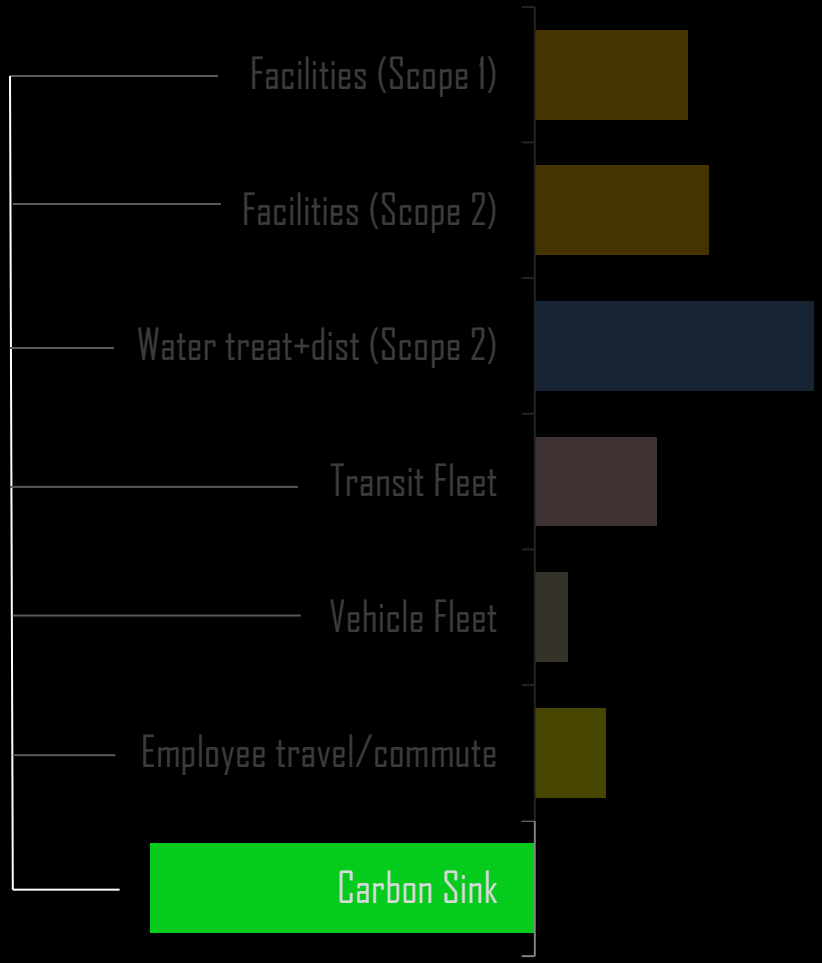
Paid Parking



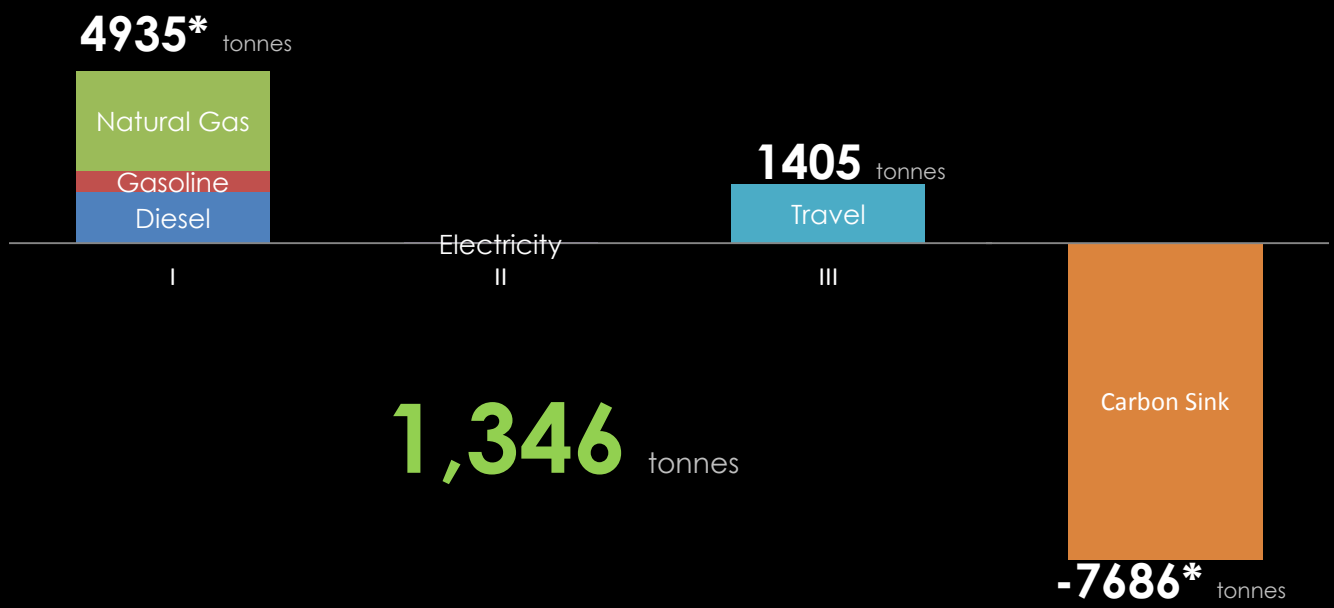
Carbon Sink

Tree Planting

Management Plans



2022 POTENTIAL



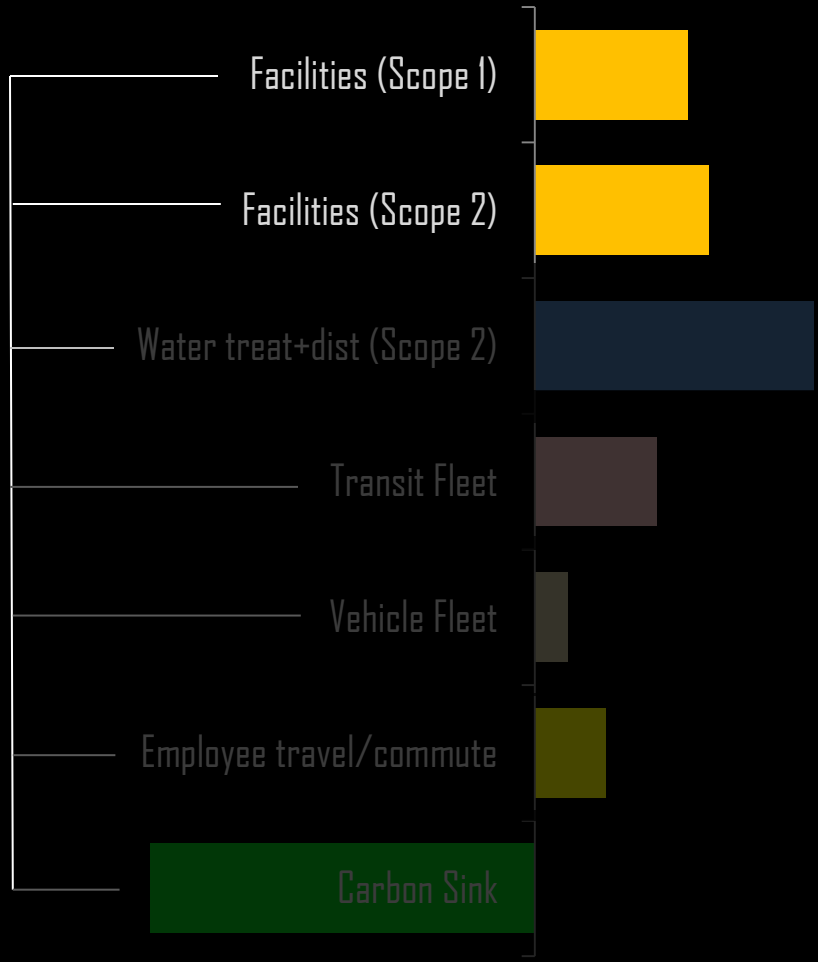
1,346 tonnes

City Operations Energy

$2 million

annual spend

Net-zero energy buildings & facilities




Affected:
New builds or major renovations

What this resolution does

Focuses on **performance**
Prioritizes **energy efficiency**
Outlines an **integrated design process**
Specifies **verification** options
Act of **municipal leadership**

Who reviewed this resolution

City departments
Public meeting (9/12/17)
Utah Clean Energy
Utah Division of Facilities Construction and Management
New Buildings Institute
International Living Futures Institute
Passive House certified experts
Other US and International Cities
Urban Sustainability Directors Network

The goal: Net-zero energy

Balance the annual energy use of all buildings and facilities with on-site renewables, or as close to the site as possible.

1.
Net-zero
Energy

2.
Reduce Energy
Consumption

2.
High
Performance
Envelope

3.
Appropriately
Designed
Systems

4.
On Site
Energy
Production

4.
Monitoring &
Verification

The process: Integrated design

Simulated	**Energy Modeler**	
Actual performance	**Building Envelope Commissioning Agent**	**Mechanical Engineer Commissioning Agent**

Verification options

1. The Living Building Challenge's Energy Petal Certification, or
2. A zEPI score of 0, or
3. Passive House Certification, with on-site renewables

Verification option 1-
Living Building Challenge Energy Petal

Pros-
Most holistic approach (guidance on integration to surroundings, "biophilia", health, equity, etc.)
Added benefits beyond NZE, focus is on health and comfort of occupants
Assistance from ILFI
Lots of training available
Showcase potential

Cons-
No on site combustion allowed
On-site storage required
105% annual use

Verification option 2-
Zero Energy Performance Index (zEPI)

Pros-
Most straightforward

Cons-
Misses some other wins, e.g. site planning and focus on occupants

Verification option 3-
Passive House (+ onsite renewables)

Pros-
Most well-known
Strongest focus on building envelope and energy efficiency (super insulated, super tight and well ventialted)

Cons-
Highest initial cost

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