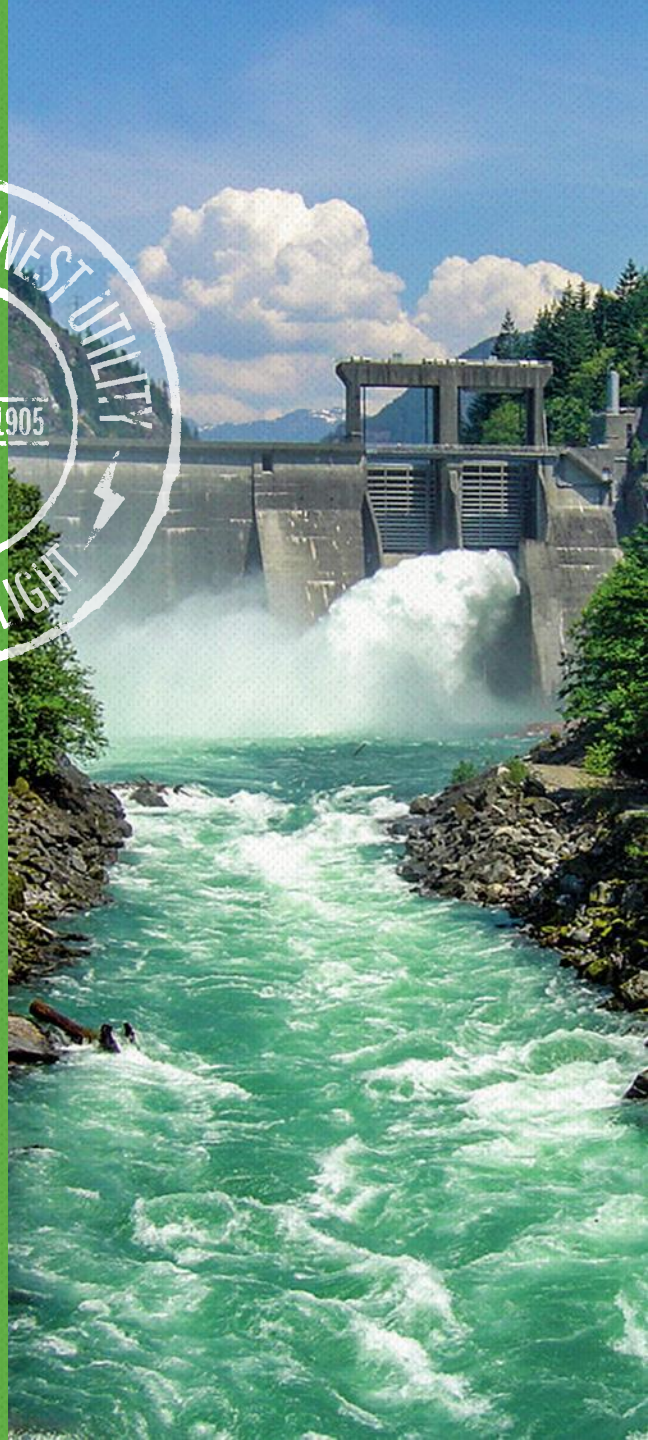
Seattle City Light



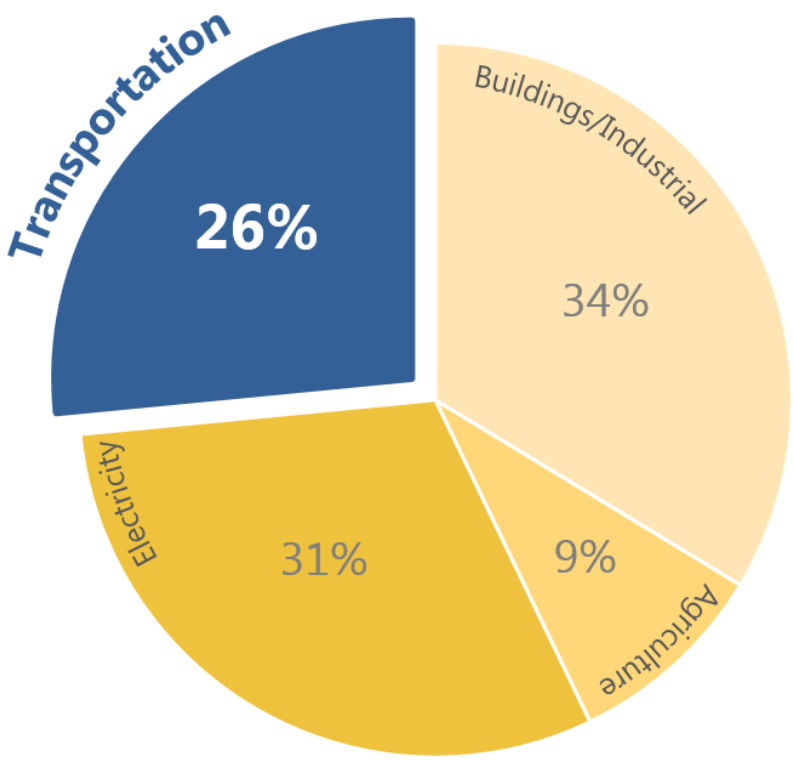
TRANSPORTATION ELECTRIFICATION

Brendan O'Donnell

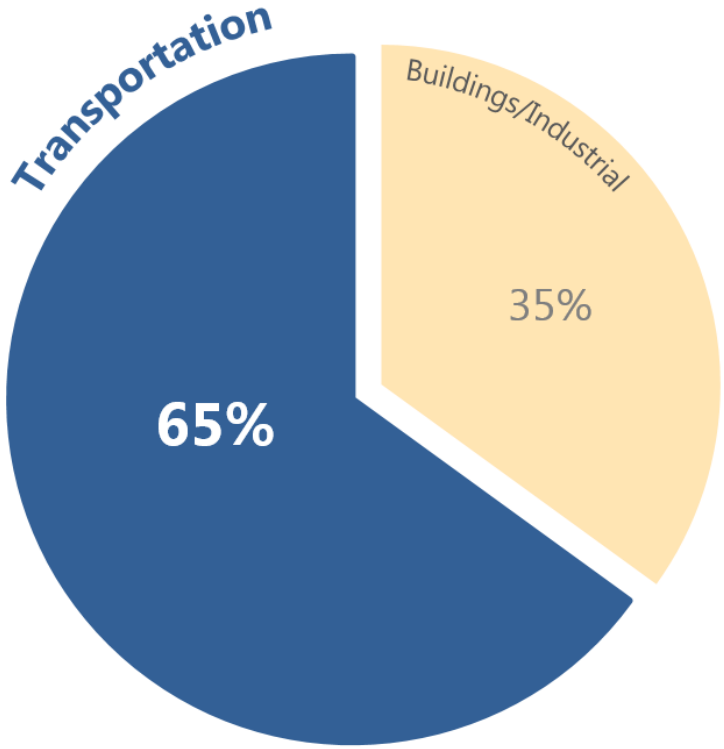
Seema Gosh

CARBON EMISSIONS

US AVERAGE

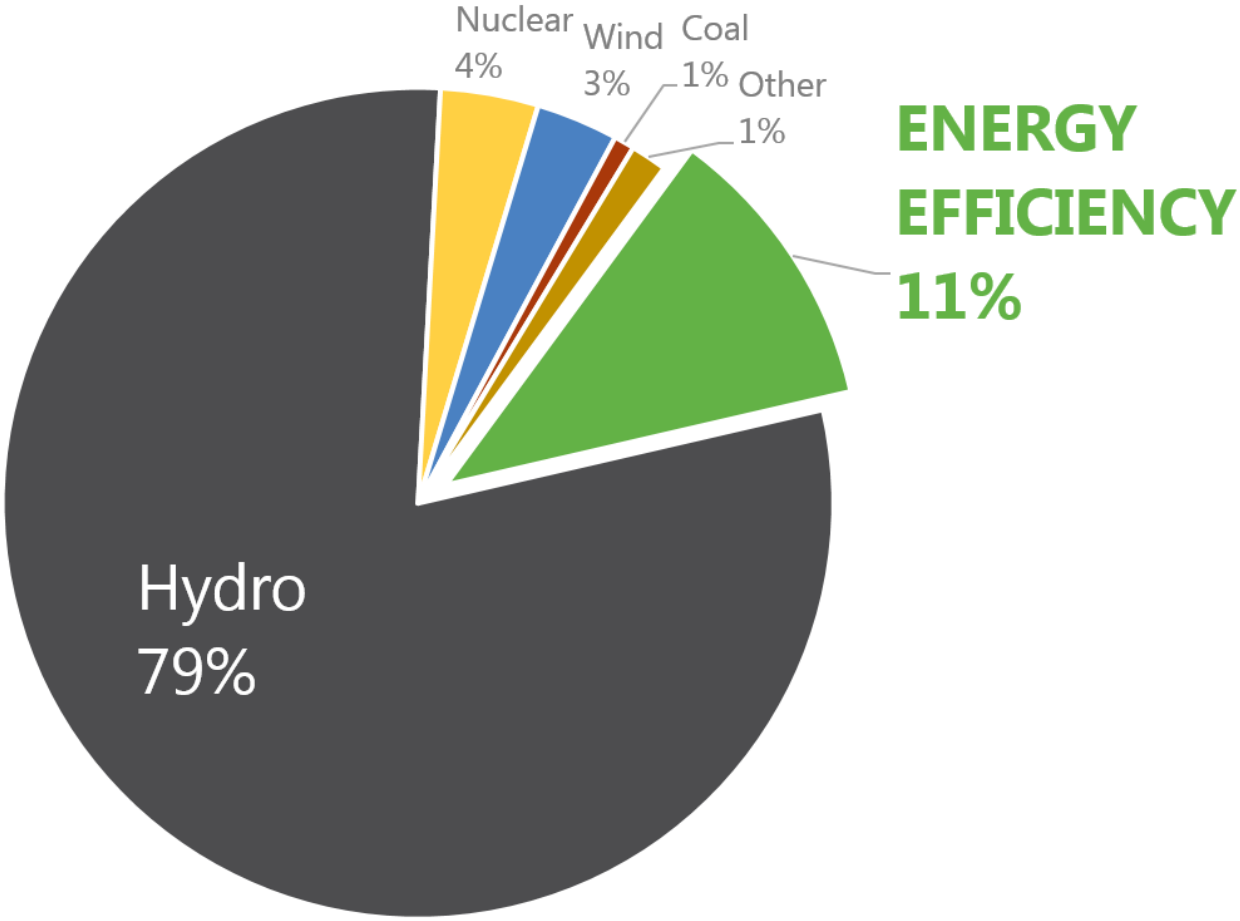


SEATTLE



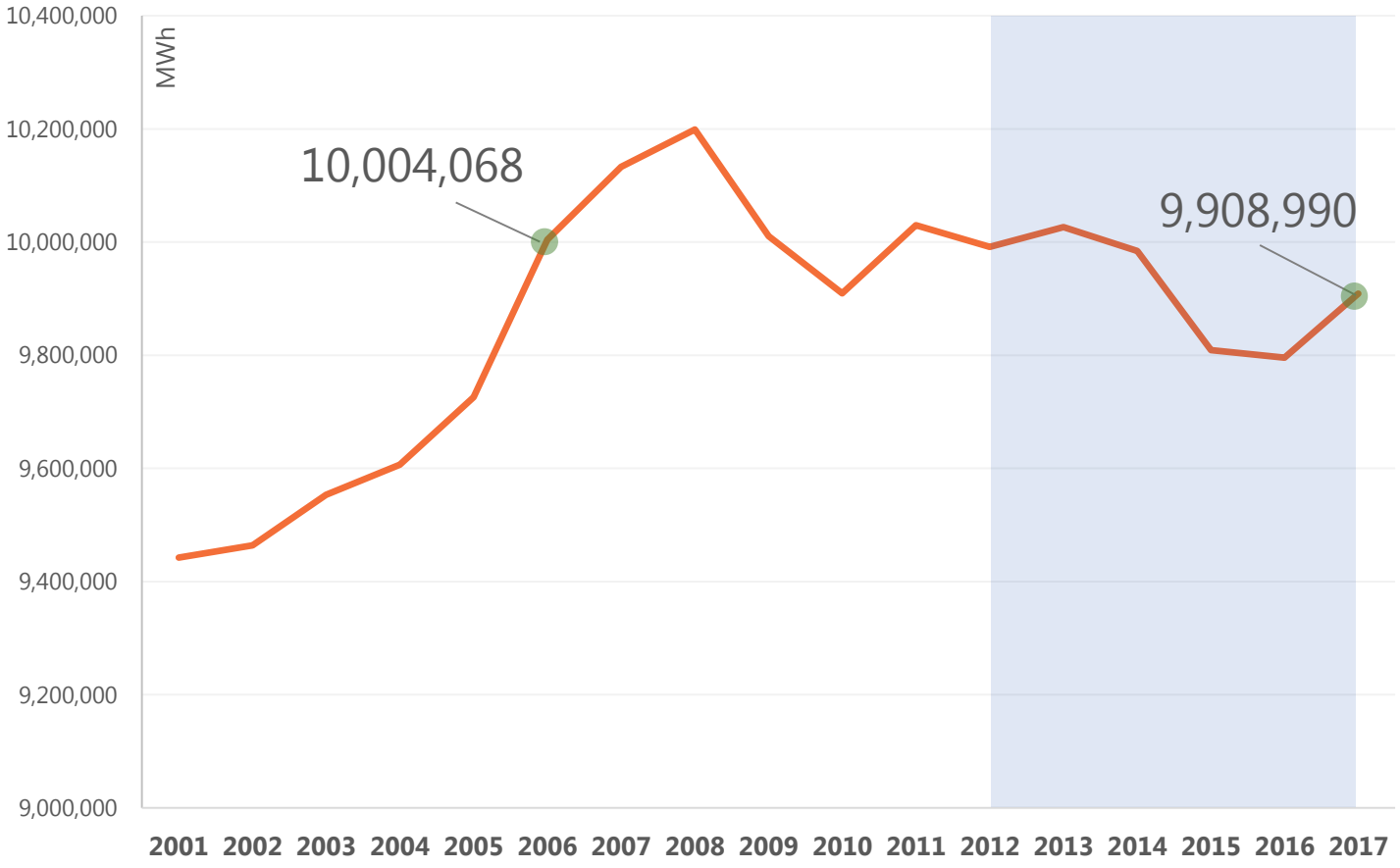

HYDRO

CURRENT CITY LIGHT RESOURCES



ANNUAL LOAD

weather adjusted



Seattle aims to be carbon neutral by **2050**

Carbon neutrality requires a rapid transition from fossil fuels in the **transportation sector**

Building on the legacy of Seattle City Light by leveraging **clean electricity**

CITY LIGHT EV PLANNING

Completed business case in early 2016 with a cross functional team from across utility

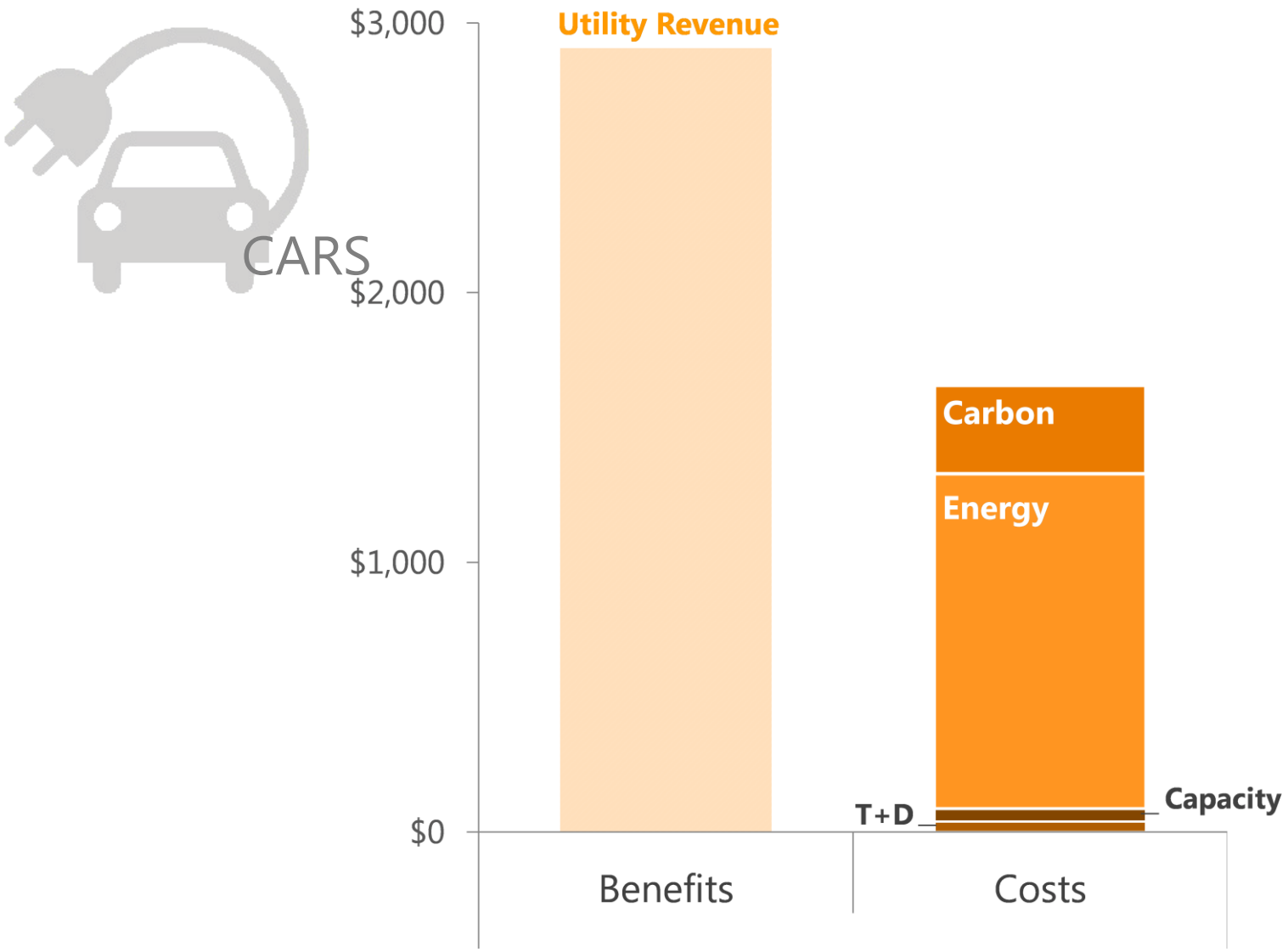
1 What is the value of transportation electrification to our customers?

2 How will our infrastructure be affected by the change in load?

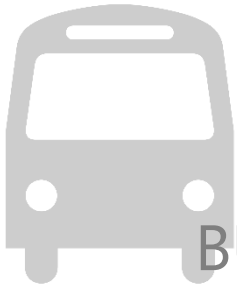
3 What is the best role for City Light in the electric transportation market?

CITY LIGHT EV PLANNING

- Findings:
  - There is a net benefit for vehicle charging
  - The distribution system can largely handle the increase in transportation load
  - Very strong customer demand, particularly electrification of the shared transportation sector

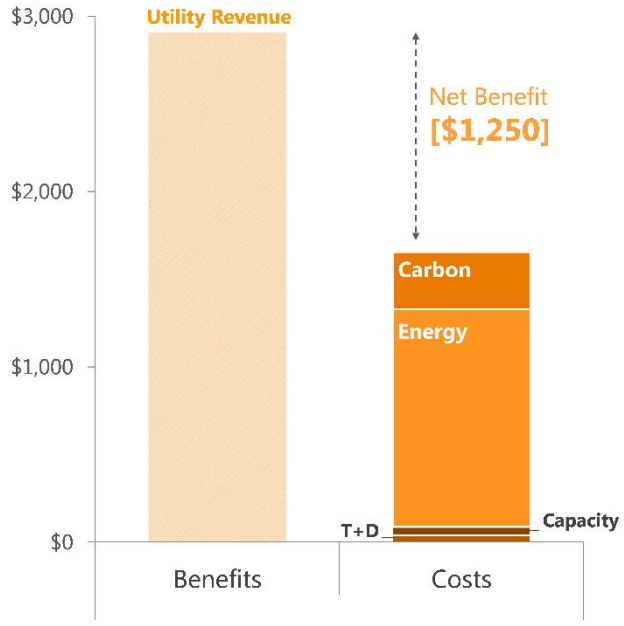

CARS
$3,000
$2,000
$1,000
$0
Utility Revenue
Carbon
Energy
T+D
Capacity
Benefits
Costs

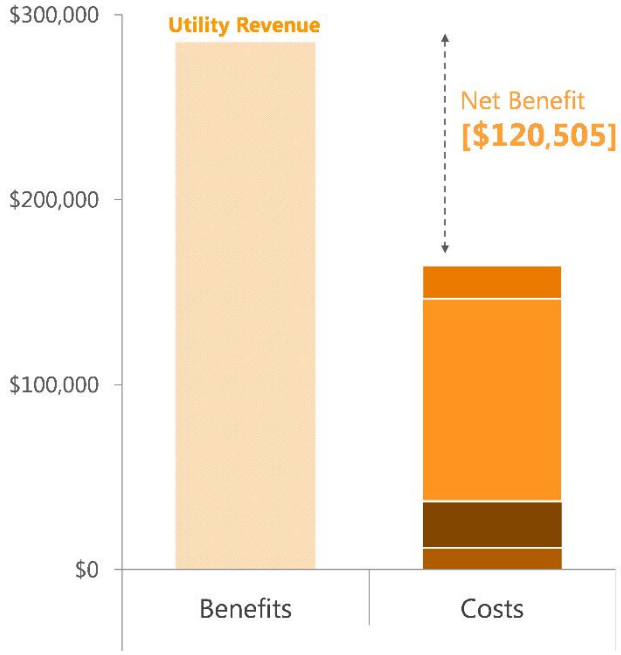
CARS

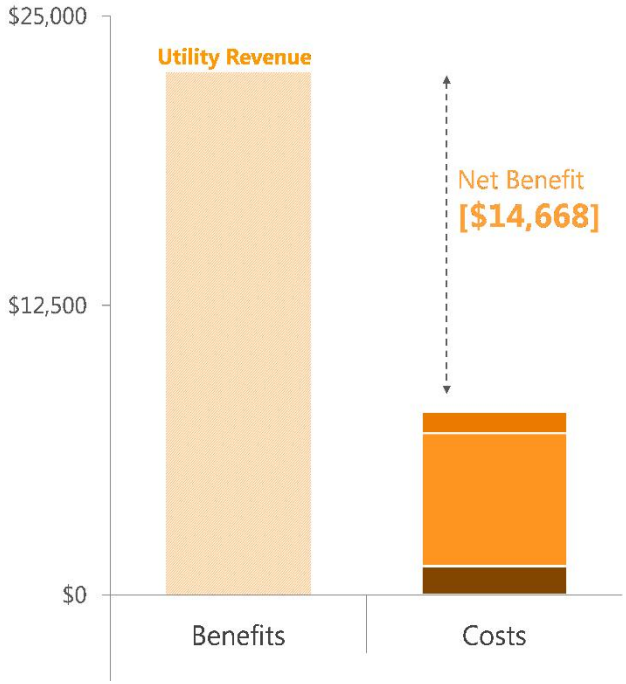


BUSES

FORKLIFTS







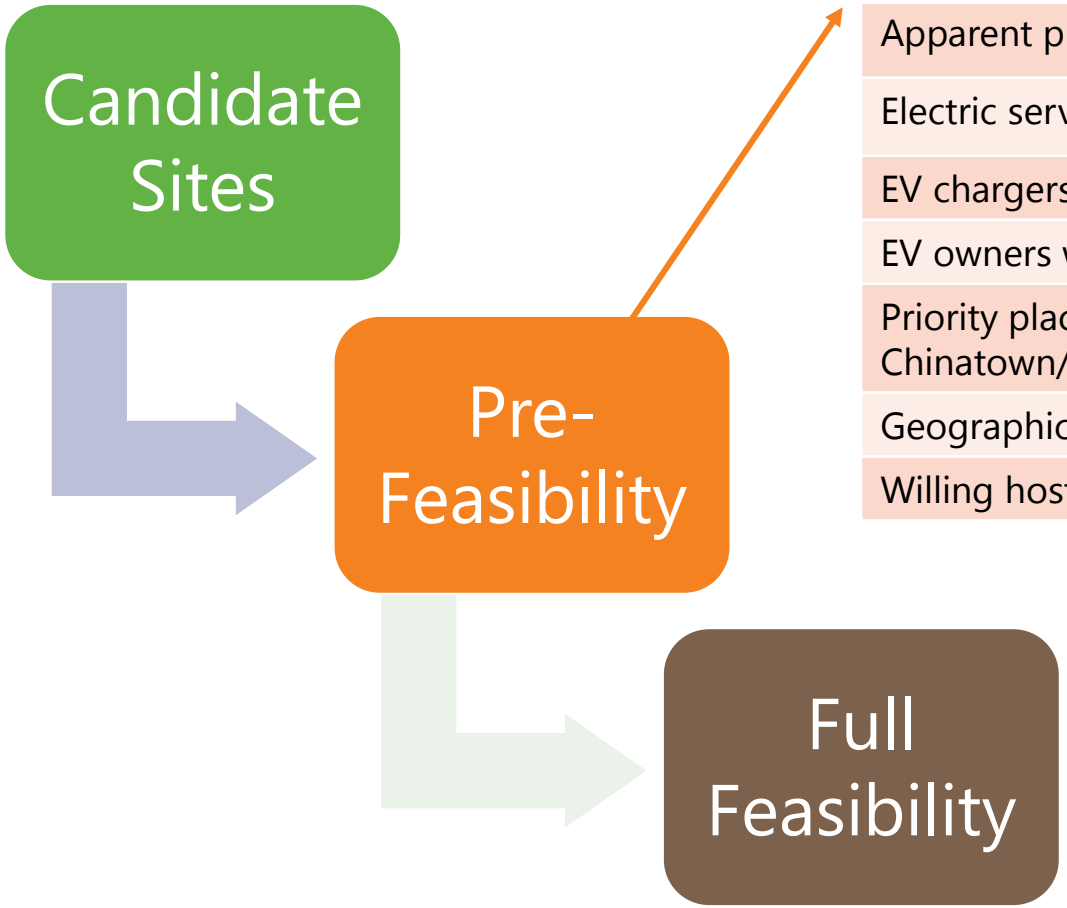
PUBLIC CHARGING PILOT

- Public Fast Charging Program
  - 20 stations starting at 10-15 sites
  - Charge most of a vehicles battery in less than 30min
  - At least initially, City Light will own stations and contract O&M
  - Both right-of-way and off street installations

PUBLIC CHARGING PILOT

- Technology
  - DC Fast Chargers
    - 50-70 mile range for 20-minute charge
    - High power requirements
  - Other Technologies
    - Level 2 – 10-20 miles for 1-hour charge
    - Level 1 – 2-5 miles for 1-hour charge (typically home charging)
- Fee
  - Will be developed to recover both fixed and energy costs

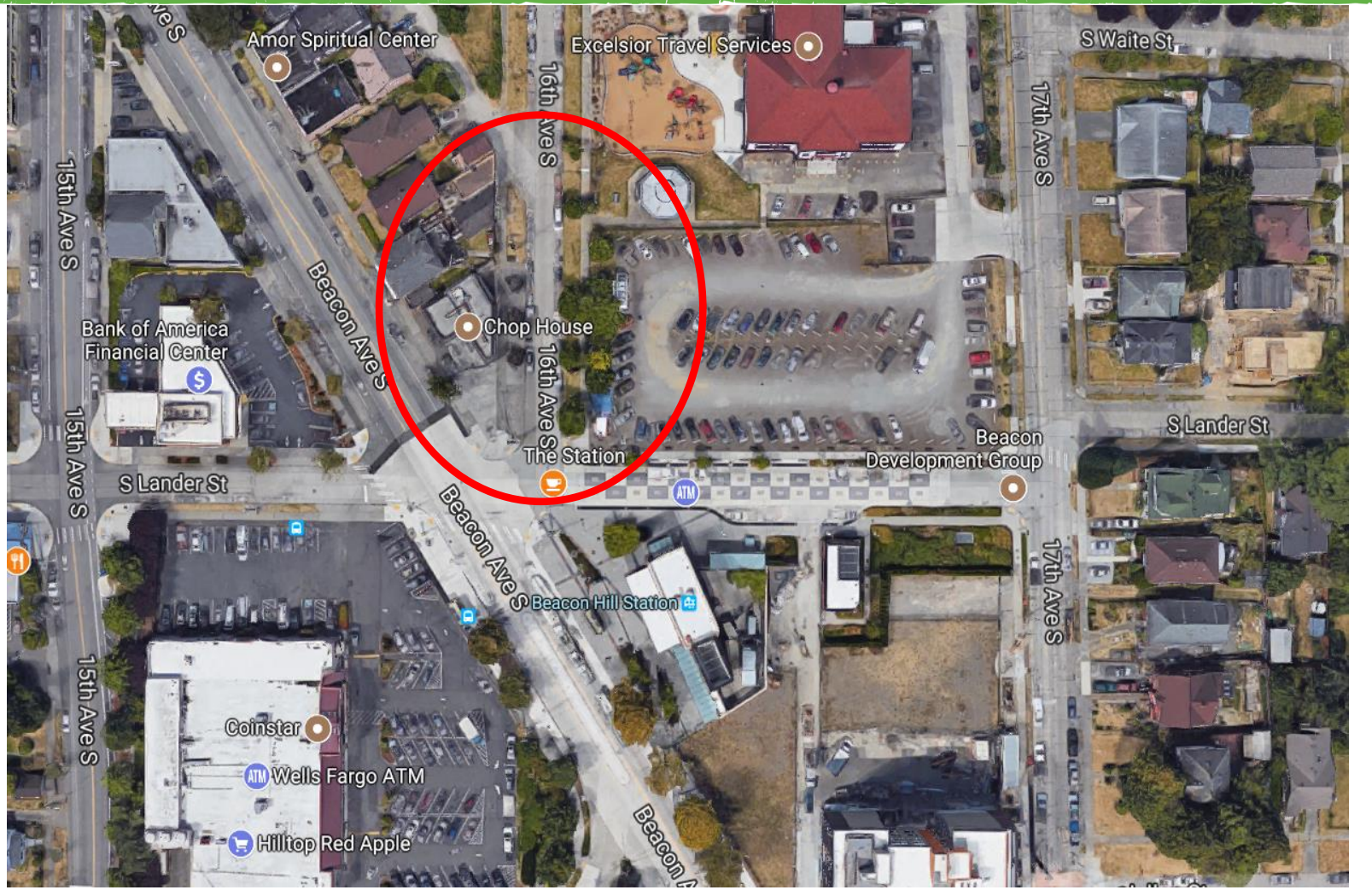
SITING



Evaluation Attributes
Apparent physical space
Electric service availability
EV chargers within vicinity
EV owners within the vicinity
Priority placed on Greater Duwamish and Chinatown/ID
Geographically distributed
Willing host

SITE 1: BEACON HILL LIGHT RAIL

SITE 1 – BEACON HILL (16TH & LANDER)



SITE 1 – BEACON HILL (16TH & LANDER)

Two Charging Stations

New Service Drop