PUBLIC ACCESS CHARGING IN COLUMBUS
(DEVELOPED WITH NREL STUDY)
SMART CITY PROJECT GOALS
FOR PUBLIC CHARGERS

5,300 PEVs on the road by 2020

NEW PUBLIC CHARGERS

City of Columbus
Level 2 Chargers 30>60
DC Fast Chargers 25>75
Level 2 Chargers 120>90
Site Hosts 15>18

AEP
PROCESS FOR IDENTIFYING PUBLIC CHARGING LOCATIONS

TRIP ORIGIN (RESIDENCE)

Identify high traffic areas likely to have PEVs because they originate from residential PEV hotspots

Identify likely PEV destinations using INRIX data and local knowledge

Identify existing PEV charging locations and their usage

WHAT'S THE BEST LOCATION FOR CHARGING?

Identify convenient charging locations:

CLOSE TO ORIGIN

MID-TRIP (INCLUDES INTER-CITY TRIPS)

CLOSE TO DESTINATION

Is more charging needed?

YES

NO
WHAT TYPE OF CHARGING?

Identify locations with consumer amenities and ease of access

Is more charging needed?

YES

Is power available?

YES

What does it cost to supply power?
- Vehicle mix (PHEV vs BEV)
- Electric range to be added
- Average dwell time
- Distance from power supply
- 480V for DCFC / 240V for L2
- Demand charge
- Public ROW preferred

Select L2 or DCFC

Rank locations based on usage, cost and committed partners

1

2

3

DO NOT LOCATE A CHARGER HERE
DATA
CONSIDERATIONS

• Question regarding input data, such as:
  o PEV home charging locations
    ▪ BMV derived data anomalies (largest concentration of plug-in vehicles located in South end of Hilliard near I-70 in low-income small manufacturing area – not residences)
    ▪ Home charging and registration discrepancies—Is registered location actual overnight charging location?
  o Workplace charging
    ▪ Personal or employer vehicles? Taxi services?
  o PEV destinations
    ▪ INRIX and MPO destination data
    ▪ Day-to-day differences
  o PEV state of charge
    ▪ Charging habits
  o Consumer charging behavior
    • Expect an iterative process – Collect data and improve charger location selection as charger usage database grows.
    • Continue implementing local knowledge to improve location selection
THANK YOU

Credit: Smart Columbus Charging Working Group