

A close-up photograph of a black electric vehicle charging cable plugged into a charging port on a silver car. The charging port is illuminated with a bright blue light. The background is dark and out of focus.

Electric Vehicle Update

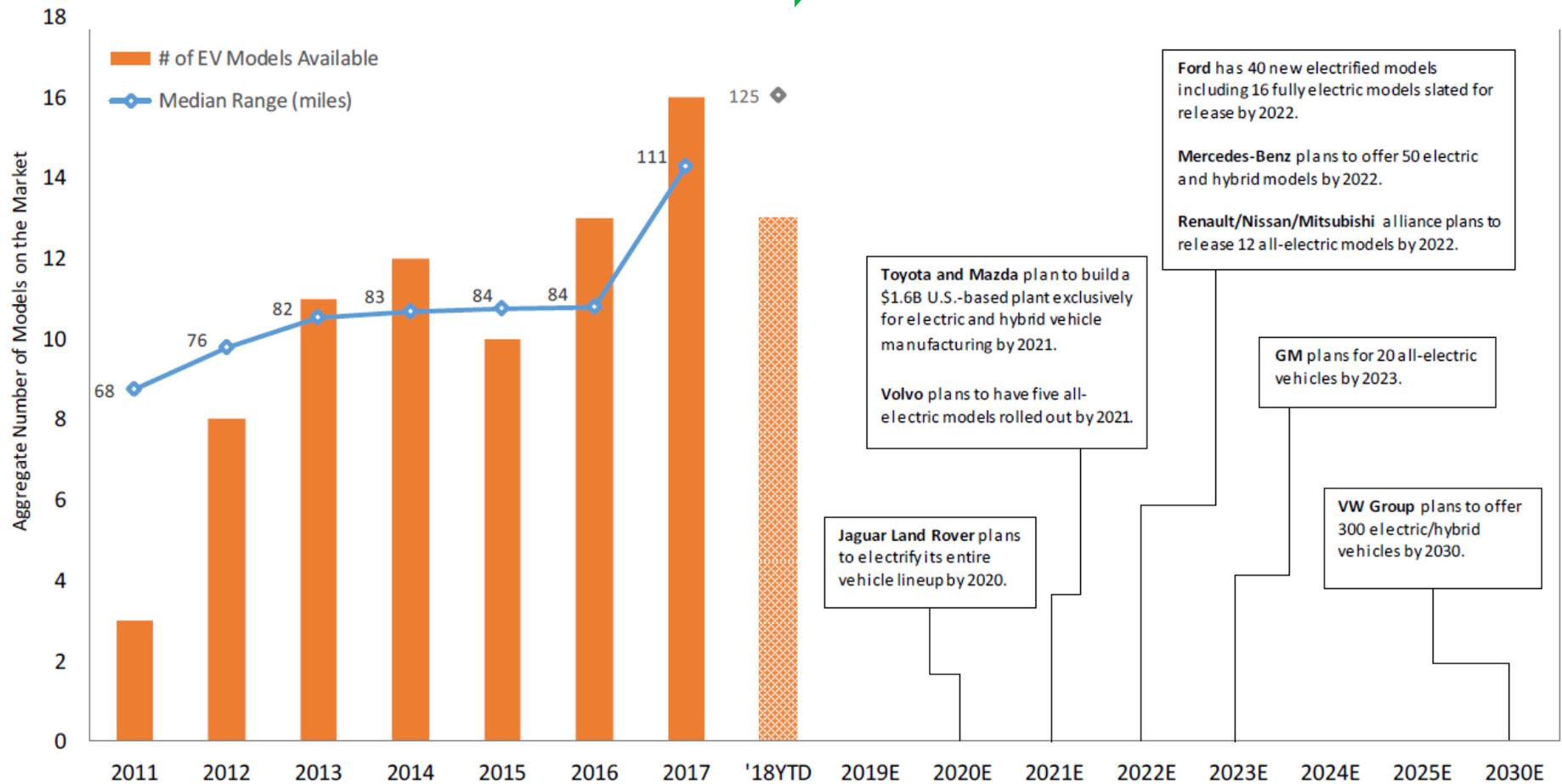
September 28, 2018

Electric vehicles have reached an inflection point

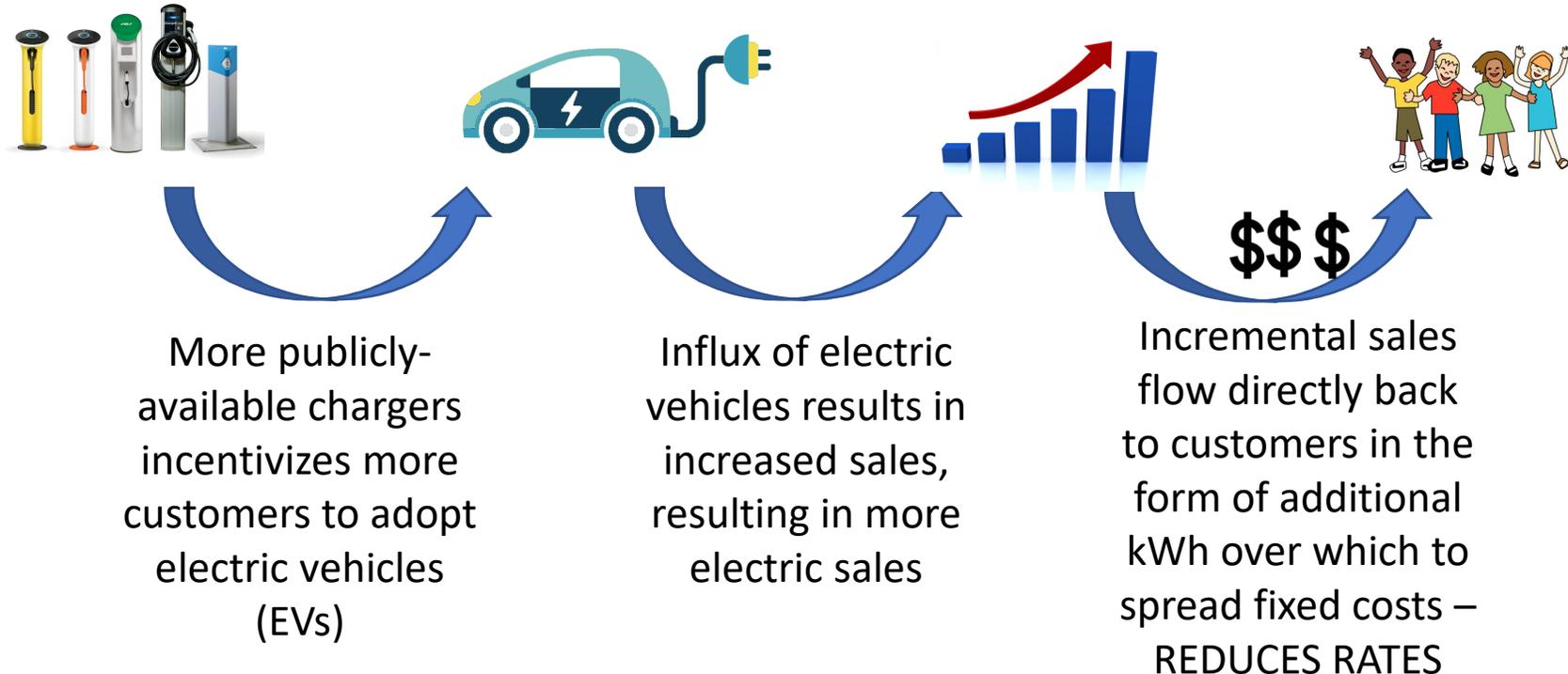
Meaningful Ramp-Up



Ambitious Future



Vehicle electrification reduces rates



We have modeled the benefit/cost ratio of a early electric vehicle charging infrastructure pilot programs and found a BCR > 1.0.

Every \$1.00 of investment leverages \$1.20 of rate reducing benefit

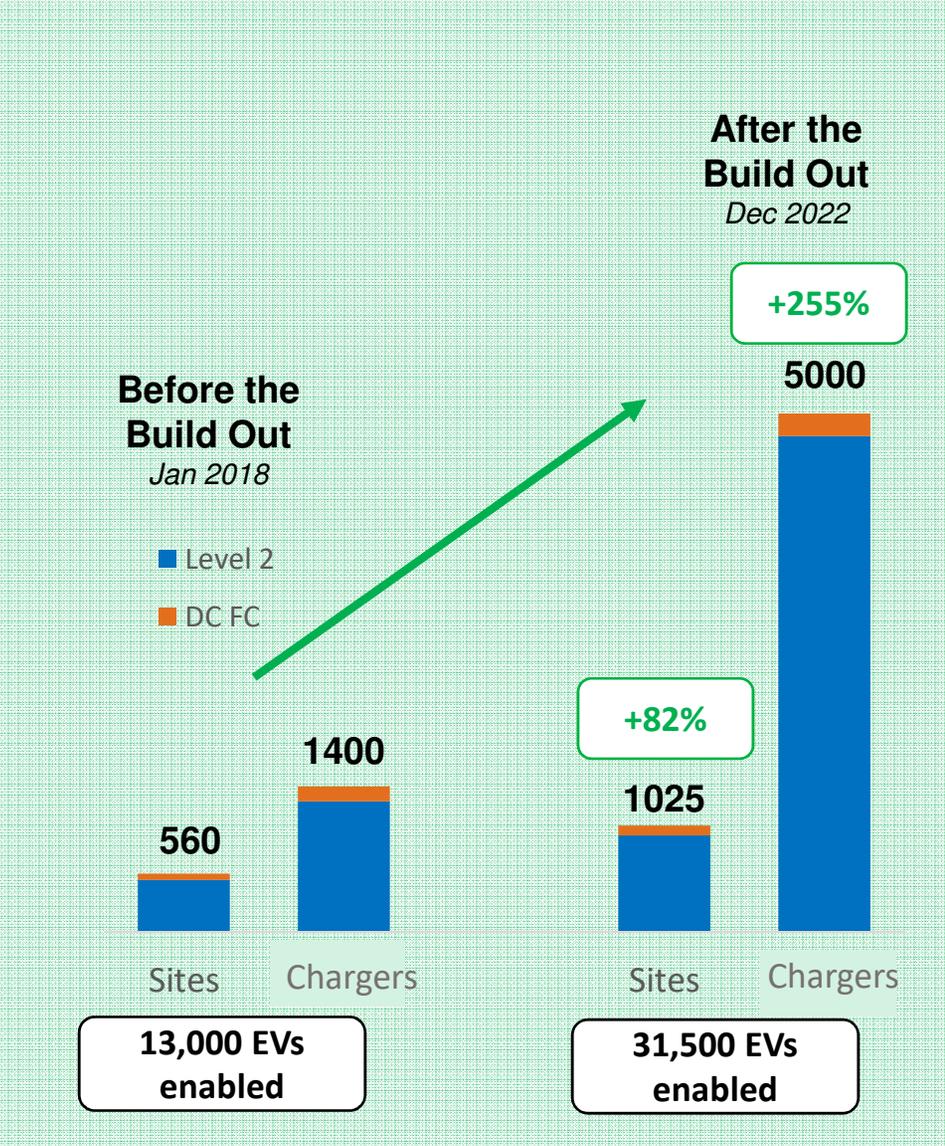
- With base assumptions, benefit/cost ratio is >1.0, indicating savings for customers:

Summary of Benefit/Cost Analysis

Net Present Benefits	(\$)	(\$64,694,578)
Net Present Cost	(\$)	\$53,758,194
Net Cust. Impact/(Benefit)	(\$)	(\$10,936,384)
Benefit/Cost Ratio	(Ratio)	1.20

- EV incentive programs, especially during early phases of deployment, can increase sales and result in net rate reducing benefits for customers.

MASS EV Program Overview



EV Charging Stations



Site Host Cost to Purchase
\$3k to \$6k per charger

Charge Time Per Vehicle
2+ hours



Site Host Cost to Purchase
\$25k to \$50k per charger

Charge Time Per Vehicle
~30 minutes

\$45MM
Supporting ~3,500 chargers

MASS DC Fast Charger Deployment Summary

24



Travel /
Destination
Corridor

Deployment Schedule Target

2018	2019	2020	2021	2022	Total
4	8	8	8	8	36

Deployment Stretch Goal

2018	2019	2020	Total
8	14	14	36

6



Partnerships:
MAVEN / EVgo

6



High Density /
Community Hub /
Other

MASSTargeted Sites – DC Fast Chargers

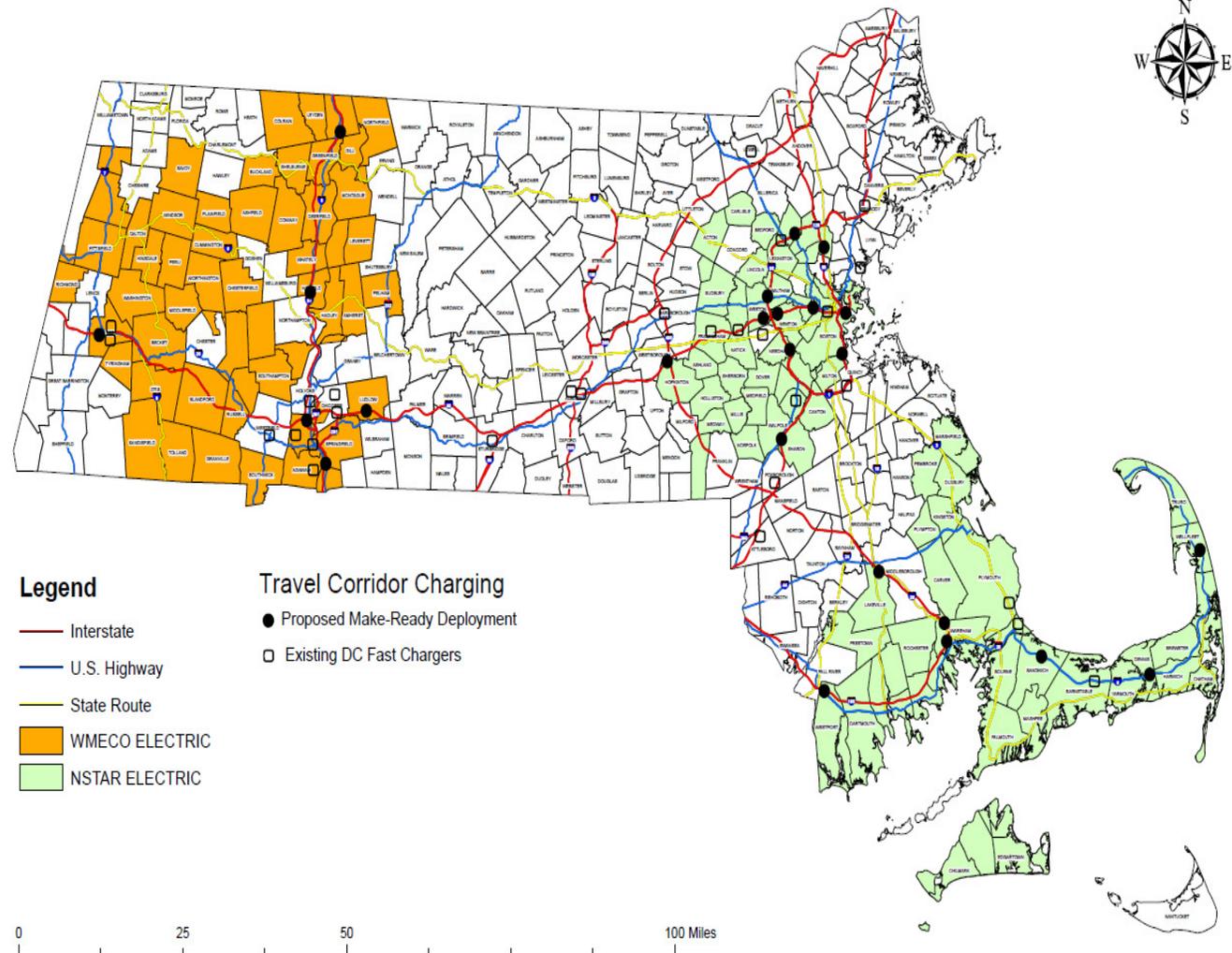
Selection Metrics

- Target peak traffic areas
 - 



 - 


- Ensure gap coverage between service territories
- 40 mile max distance to next station
- More stations in higher traffic areas
- Off-exit deployment to enable easy access



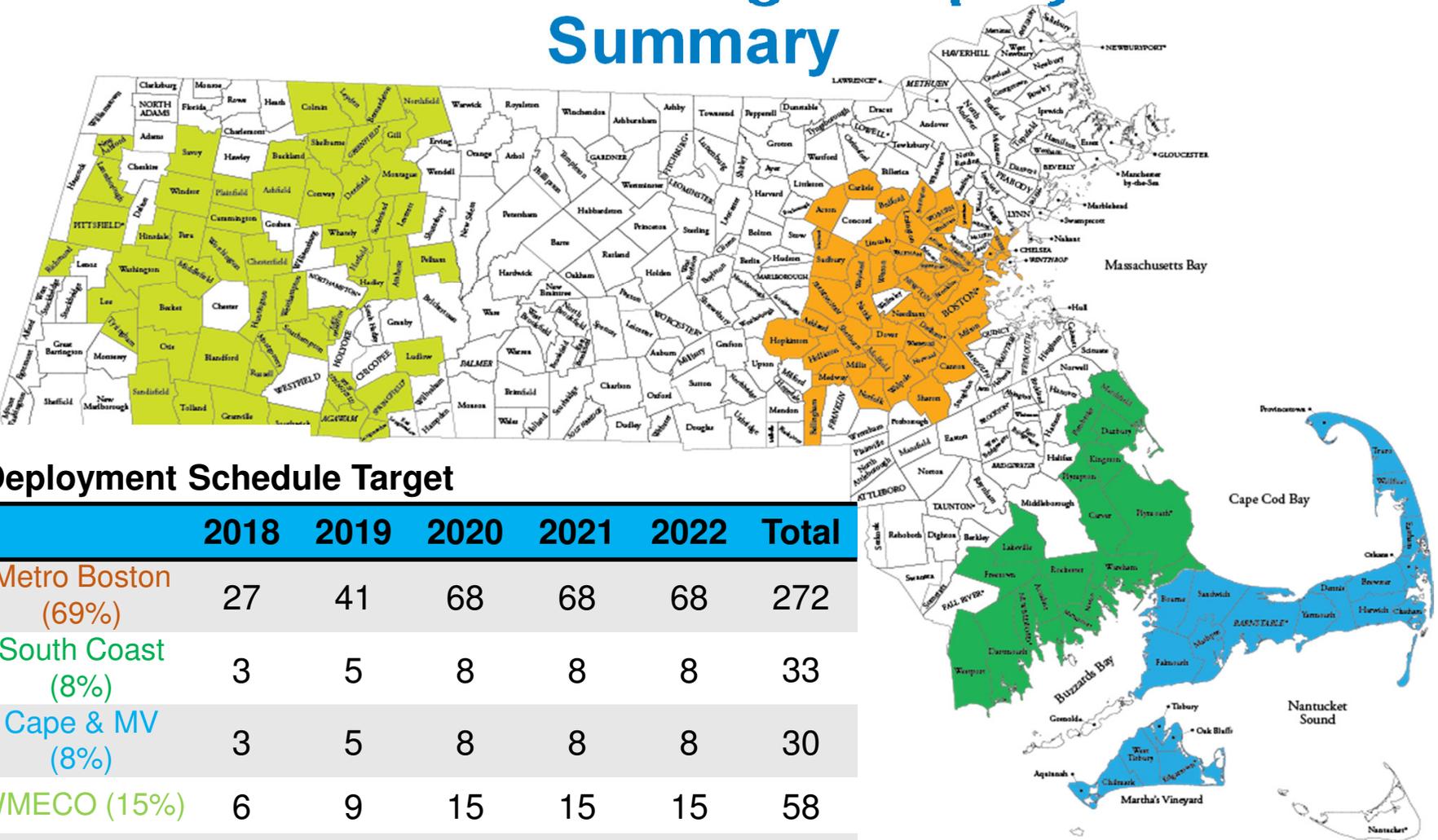
Criteria consistent with guidance from Mass DOER

DC Fast Charger Prioritization Strategy:

Target High Traffic Corridors & Off Exit Deployment



MASS Level 2 Charger Deployment Summary



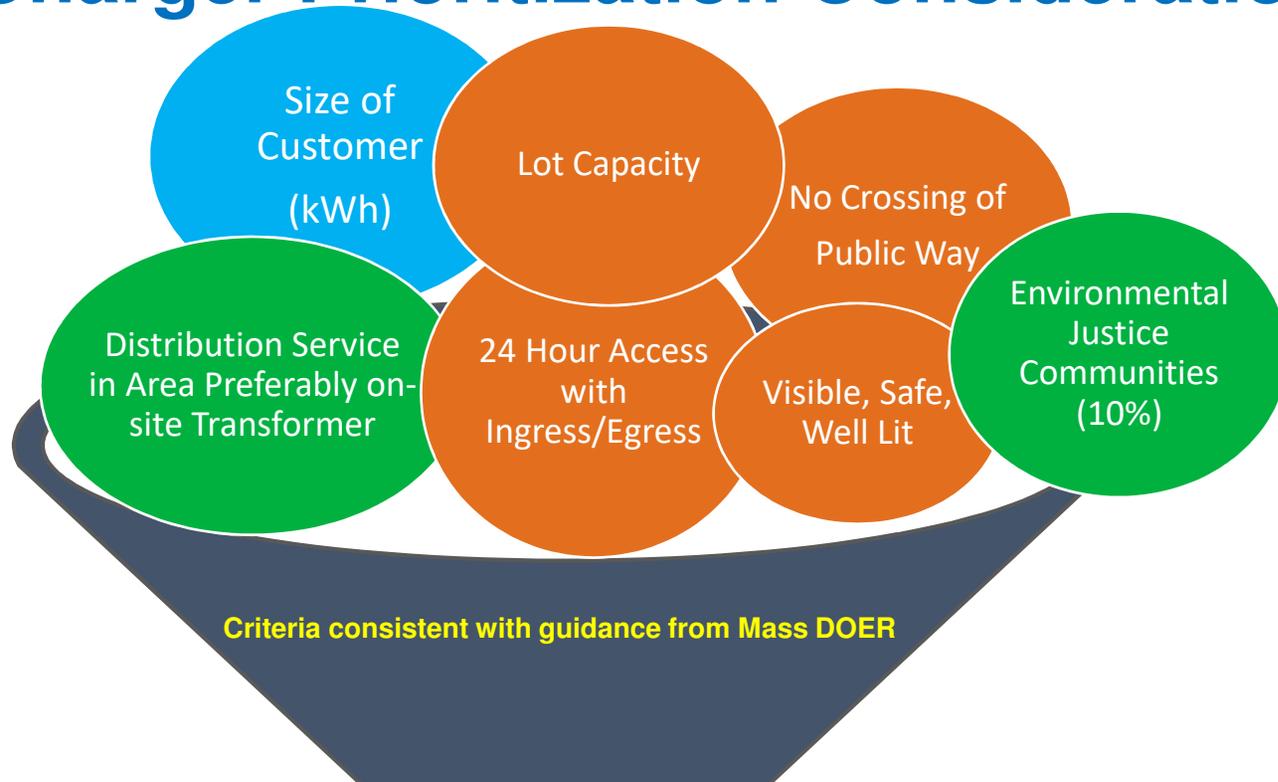
Deployment Schedule Target

	2018	2019	2020	2021	2022	Total
Metro Boston (69%)	27	41	68	68	68	272
South Coast (8%)	3	5	8	8	8	33
Cape & MV (8%)	3	5	8	8	8	30
WMECO (15%)	6	9	15	15	15	58
Total	39	60	98	98	98	393

Targets represent proportional allocation of sites based on electric load.

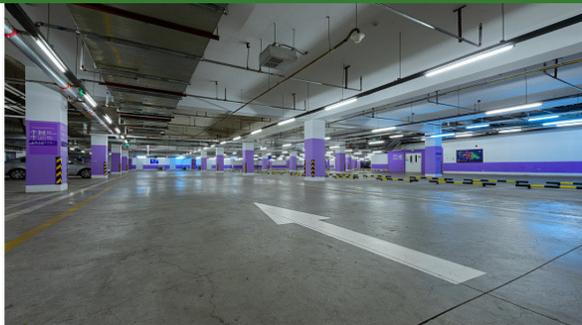
Criteria consistent with guidance from Mass DOER

Level 2 Charger Prioritization Considerations



Prioritization:

#1 Public Access Lots



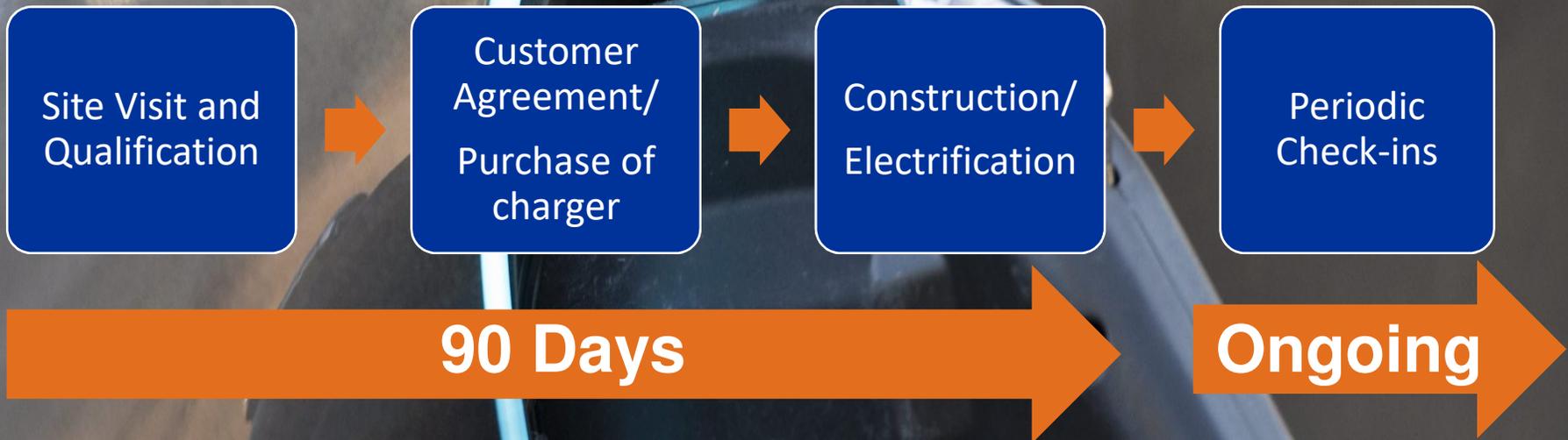
#2 Workplace Charging



#3 Private Multi-User Dwellings



Host Customer Path



Time interval for initial visit to electrification depends on our ability to timely construct sites. This is impacted by individual site locations, workforce issues, etc.

Fleet-Ready Pilots

Public Fleet (e.g. CT DOT)

Electrify portion of transit bus fleet (5 each in Stamford and Hartford), providing make-ready infrastructure on pilot basis as first phase of electric fleet deployments

EVERSOURCE

Charging Infrastructure



Transit Fleet

Schneider Electric

Managed Charging interface



PROTERRA

Electric Bus provider

Private Fleet (e.g. UPS)

Electrify portion of private fleet of medium/heavy duty vehicles, providing make-ready infrastructure on pilot basis as first phase of electric fleet deployments

EVERSOURCE

Charging Infrastructure

Schneider Electric

Managed Charging interface



Delivery Fleet

WORKHORSE

Electric Truck provider

Partners shown illustrative, no definitive commitments