

Electric Vehicle Infrastructure Overview Plan

MCDOT Division of Parking Management

Background

The purpose of this Plan is to summarize the Division's preparations and actions taken for the inclusion of electric vehicle (EV) charging stations in county parking facilities.

With the growing use of electric vehicles in Montgomery County, the Division of Parking Management has begun to integrate EV charging stations into suitable county-owned parking facilities. Bethesda's Garage 31 (opened in January 2015) was selected to host the Division's first generation EV charging stations. The garage holds three dual-ported, Level 2 EV charging stations that are conveniently located near the Bethesda Avenue entrance and available for public use.

Site Selection

An EV facility phasing schedule has been developed and is in the midst of being implemented. Facilities were chosen and prioritized based on their electrical suitability, preparation costs and geographical distribution. One dual-port Level 2 charging station has now been installed in all Phase 1 and Phase 2 facilities for a total of 14 facilities with EV charging station coverage. Evaluation criteria such as the number of charging sessions, length of charging sessions, and electricity consumed will be taken into consideration when analyzing the need for further stations in the Parking Lot Districts.

Phase 1 (Complete)

Bethesda

Garage 11

Garage 31

Garage 47

Silver Spring

Garage 7

Garage 9

Wheaton

Garage 45

Phase 2 (Complete)

Bethesda

Garage 35

Garage 36

Garage 40

Garage 57

Silver Spring

Garage 5
Garage 60
Garage 61
Lot 29

Wheaton

Garage 13

Phase 3

Silver Spring

Garage 3
Garage 58

Additional charging stations may be installed in facilities with existing stations if demonstrated demand warrants. The siting of EV spaces within a facility has been established by selecting a convenient, highly visible area near the facility's power source to minimize costs.

Financial

Costs related to EV charging stations primarily have three components: (1) Capital (including installation); (2) Electricity; and (3) Maintenance. The state of Maryland permits local jurisdictions to directly charge users for electricity drawn from charging stations. Given this pricing flexibility, the Division currently charges users a fair-market electricity rate of \$0.13/kWh. This electricity fee will be in addition to the standard hourly parking fee all customers must pay to park in a division-operated facility during operating hours. However, on balance, the Division doesn't expect to fully recover its capital investment expenses due to the disparity between the high costs of EV charging stations in relation to the nominal fees paid by EV charging station users.

Enforcement

The Division seeks to ensure the greatest possible usage of the charging stations. To this end, a parking limit of four hours has been set on all EV spaces. This limit should provide sufficient charging time to satisfy most daily commutes and is a commonly used standard for charging station spaces. Staff intends to work with EV vendors to explore best practices to enforce such time limits, including potential use of educational and marketing materials.

Maintenance

Staff will engage the vendor providing the charging stations to discuss the equipment's on-going maintenance and operating needs. The Division will then determine the cost effectiveness of performing maintenance in-house versus contracted.

Construction Design Standards

The existing parking design standards will be updated to address the installation of electrical equipment needed to support charging station integration. Specifically, it has been found charging station need to be supplied from a separate circuit necessitating dedicated electrical breakers. Additionally, the updated design standards will consider conduit fitting and specify preferred construction practices to avoid cutting, drilling, and trenching.

Signage

All EV spaces contain hanging or mounted regulatory signage to permit enforcement. Because universal EV sign design standards have not been established, the Division has developed its own regulatory signage and pavement marking design. A sample of each can be found in Appendix B.

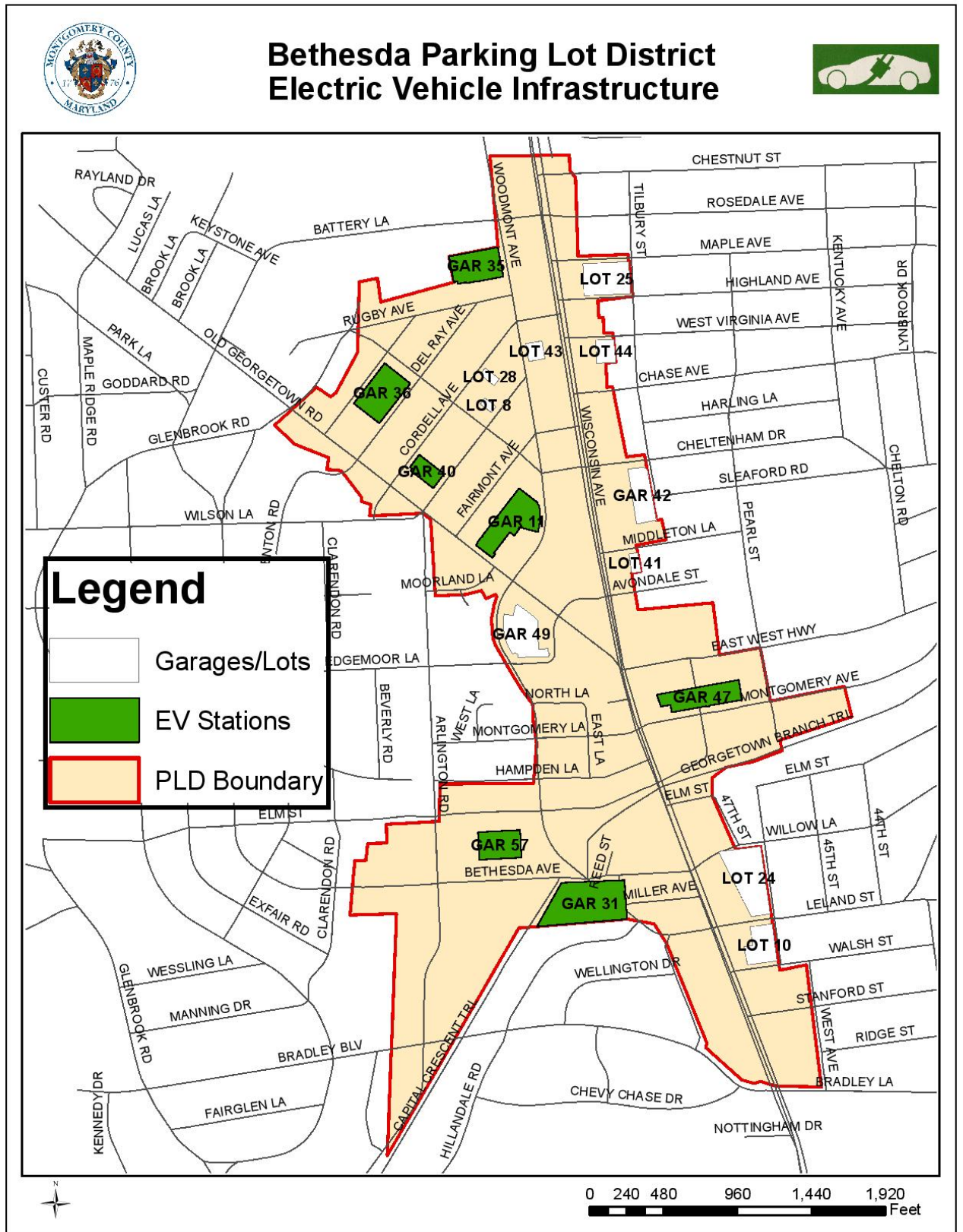
Data Collection

Operational data is collected at each charging station for reporting purposes, usage monitoring, policy development, and strategic planning. This field-gathered data is accessed by division staff through a remote management system.

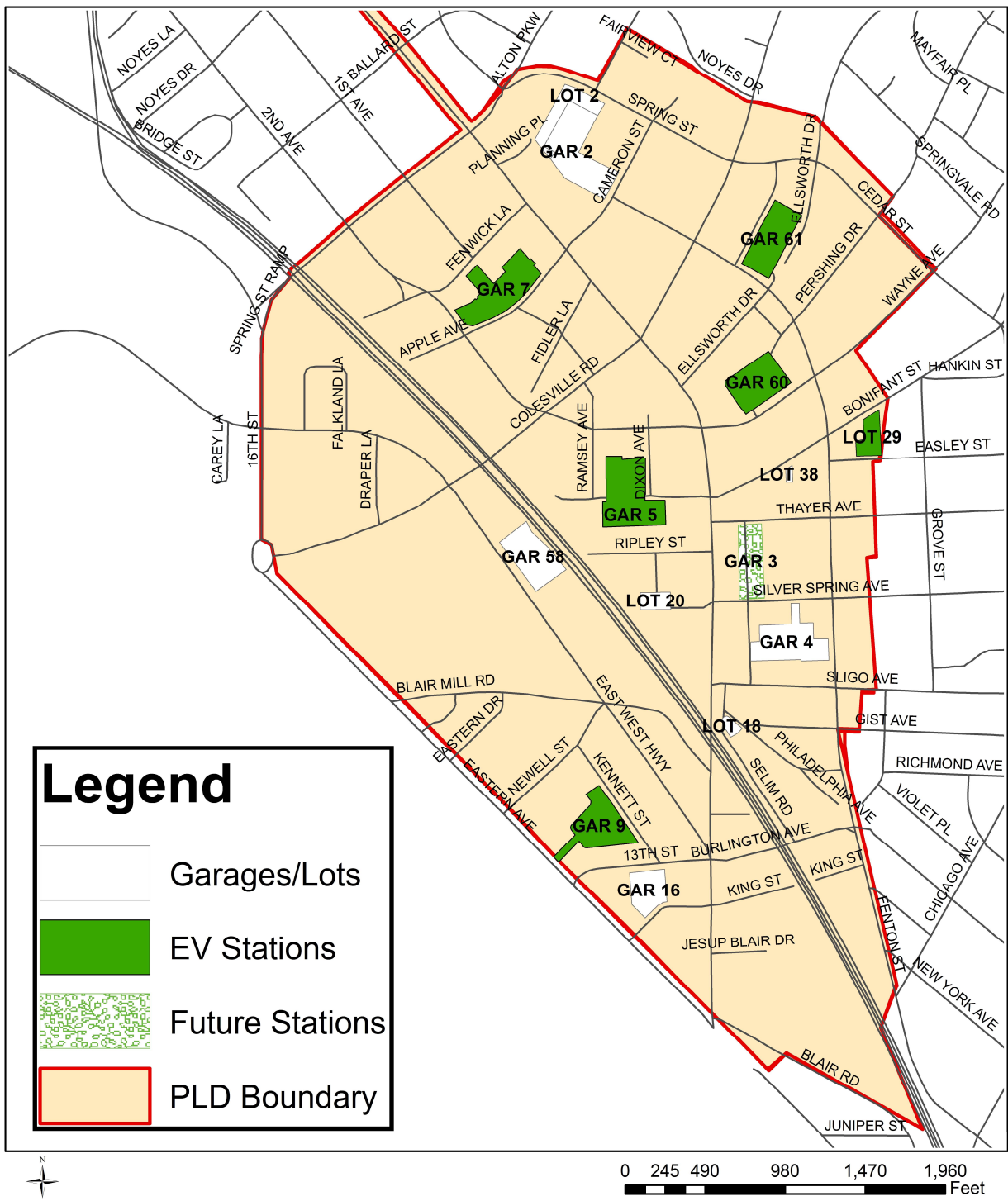
ADA

In removing barriers to access electric vehicle parking, each space is 11' with a 5' aisle. Attention is also given to space location, wherein spaces on the most level ground closest to an accessible entrance are prioritized.

Appendix A

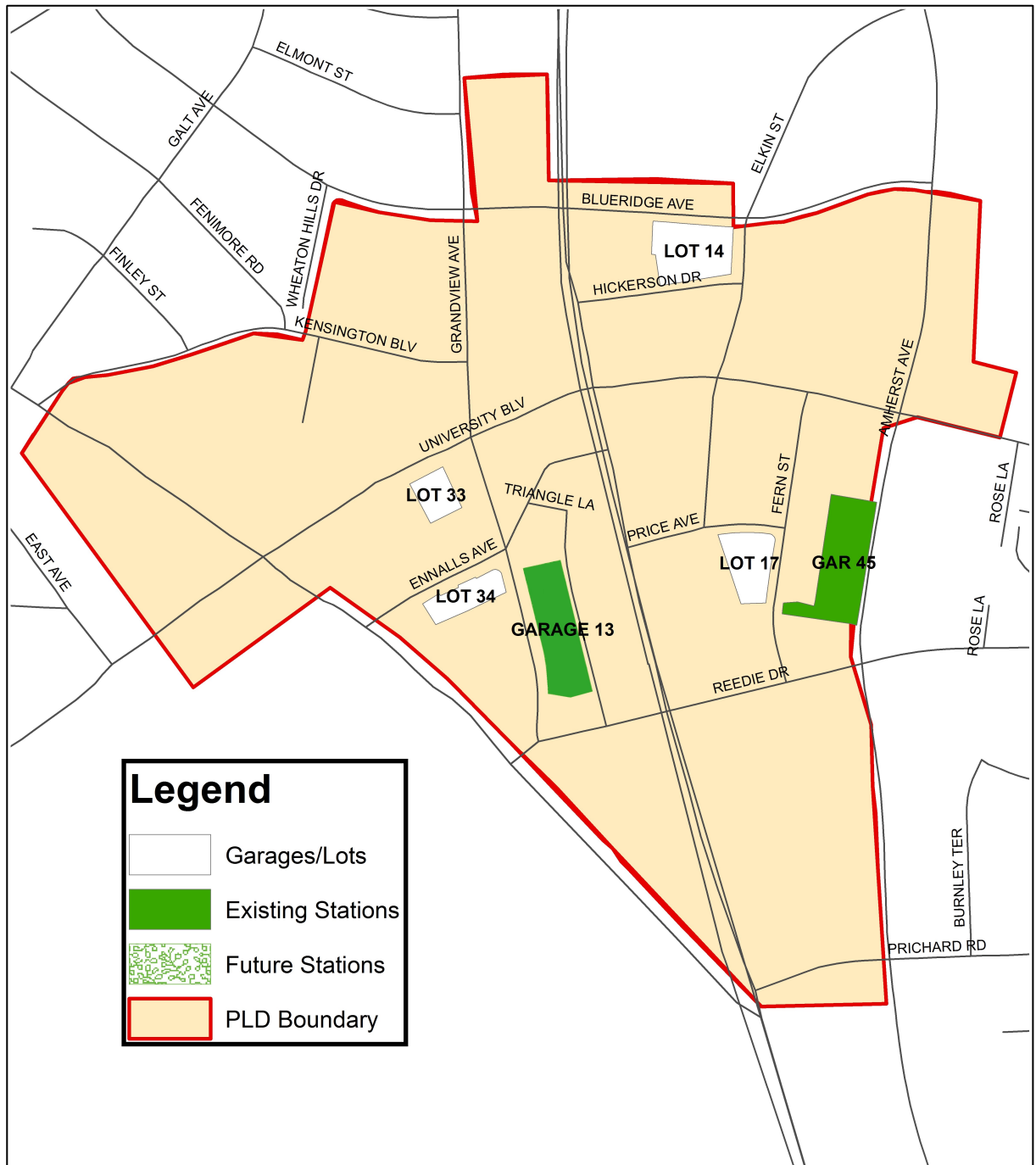


Silver Spring Parking Lot District Electric Vehicle Infrastructure



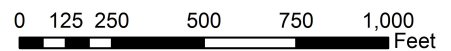


Wheaton Parking Lot District Electric Vehicle Infrastructure



Legend

- Garages/Lots
- Existing Stations
- Future Stations
- PLD Boundary



Appendix B



Regulatory signage



Pavement marking design