



**LEBANON ENERGY ADVISORY COMMITTEE (LEAC)
FEBRUARY 16, 2023 - 4:00 PM
COUNCIL CHAMBERS, CITY HALL OR
REMOTE VIA VIRTUAL PLATFORM
LEBANONNH.GOV/LIVE**

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- 1. Call to Order**
 - 2. Approval of Minutes**
 - A. January 19, 2023
 - 3. Old Business**
 - A. Legislation/PUC Regulations/CPCNH Updates
 - B. Landfill Gas to Energy Project & Solar
 - C. EV charging RFP (Lebanon/Hanover/Hartford)
 - D. Report on Rental Decarbonization Pilot/Weatherization
 - E. Master Plan Updated/Lebanon Strategic Plan
 - 4. New Business**
 - A. LCP -Roles and Responsibilities for Rollout (Nik)
 - B. LCP Promotion
 - C. LCP - Scheduling Public Forum
 - D. EV Subcommittee Report
 - E. Recent and Upcoming Conferences or Webinars of Note
 - F. EFM Report
 - 5. Open to the Public**
 - 6. Future Agenda Items**
 - 7. Adjournment**

Meetings are open for in-person and remote attendance. Members of the public that wish to attend remotely may do so by going to LebanonNH.gov/Live where you will find instructions on how to enter the meeting. Members of the public will be able to participate and ask questions through the City's virtual platform or by phone. Please note: Should technical difficulties occur during the meeting that disrupts virtual or phone connection(s), the meeting will continue without remote access capabilities.

AGENDA
LEBANON ENERGY ADVISORY COMMITTEE
February 16, 2023

AGENDA ITEM 2
APPROVAL OF MINUTES:

January 19, 2023



LEBANON ENERGY ADVISORY COMMITTEE MEETING MINUTES

Council Chambers, City Hall

January 19th, 2023

4:00 PM

-- draft --

MEMBERS PRESENT*: Greg Ames (Chair, remote), Jon Chaffee (Vice-Chair), Clifton Below (Council Representative), Meghan Butts (alternate, remote), Woody Rothe, Sherry Boschert (remote, starting at 4:17 PM)

MEMBERS ABSENT: Gene Homicki (alternate), Devin Wilkie (Council alternate)

STAFF PRESENT: Tad Montgomery

GUESTS PRESENT: none

CALL TO ORDER: Meeting called to order by Greg Ames at 4:07 PM. Greg Ames appointed Meghan Butts to fill the vacant seat of the Lebanon High School student representative.

ACCEPTANCE OF MINUTES

Woody Rothe moved to accept the November 2022 LEAC meeting minutes; Clifton Below seconded. The minutes were approved unanimously without change.

OLD BUSINESS:

COMMUNITY POWER UPDATE

Asst. Mayor Below gave an update on the Community Power Coalition of NH (CPCNH). Seven municipalities have voted to execute the agreements to initiate Community Power programs this spring. CPCNH is working on contracts for energy procurement and hopes to have them in front of the full Board for a vote on 1/26/23. The search for a CEO continues. CPCNH is negotiating with utilities regarding the coordination of start-up and has instigated trainings for new CPCNH Board members who are joining the risk management committee.

Woody Rothe reminded the committee that Tad Montgomery has been designated the staff point person for LCP and CPCNH. He and Jon Chaffee have spoken with Shaun Mulholland and Nik Coates about Tad's roll, especially at the start-up phase. Shaun and Nik have asked Woody and Jon to get them a job description and budget of estimated hours needed.

Publicity & Outreach: Jon Chaffee mentioned that he has gotten an article on LCP accepted for the February issue of *The Lebanon Times*. Woody Roth is working with Sustainable Hanover and

* **QUORUM NOTE:** When LEAC has five members, three need to be physically present to create a quorum.

1 representatives from Plainfield and Enfield on the coordination of a series of op. ed. pieces in the
2 *Valley News*. Sherry Boschert and Tad Montgomery have been working with Junction Arts Media on a
3 short video to introduce LCP. Clifton Below mentioned that there are funds available for each town to
4 do print and social media advertising. There was a discussion of banner design and placement
5 downtown and in West Lebanon. Tad Montgomery and Jon Chaffee will work on this – size, locations,
6 etc.

7
8 Tad Montgomery mentioned that he will be talking with a doctor on the Dartmouth Health
9 sustainability committee on Friday about how they might enroll and opt up to higher levels of
10 renewable power.

11
12 There was a discussion of a proposal to ask City Boards and Committees to read a short statement
13 about the launch of LCP at the beginning of their meetings through the launch period.
14

15 ***MOTION made by Sherry Boschert, seconded by Jon Chaffee:***

16 *That Sherry Boschert and Clifton Below write a brief statement regarding the pending rollout of*
17 *LCP/CPCNH and ask City Boards and Committees to read it at the beginning of their meetings.*

18 *Approved: 6:0.*

19
20 LCP Rates: Clifton Below gave a detailed description of where CPCNH is regarding the setting of
21 electricity rates. LEAC, acting as the Lebanon Aggregation Committee, gave feedback to him on how
22 Lebanon should decide which rate will be the LCP default rate. Mr. Below has been designated the role
23 of setting rates for the City.
24

25 **LEGISLATIVE UPDATE**

26 Clifton Below said that he is working on legislation that would enable remote committee meetings, an
27 expanded and refined net metering statute, and several PUC hearings.
28

29 **CITY SOLAR**

30 Tad Montgomery described a proposal that he has made to Liberty to reinstall the solar array on the
31 Landfill Maintenance Garage and also install a battery bank with the purpose of allowing only 16 kW
32 maximum to be fed into the grid at any one time. He has not heard back from Liberty about this.
33 Clifton Below described another proposal that he has made to City Staff to put the Landfill Garage and
34 reinstalled solar on the same meter as the Landfill Gas generator with the assurance to Liberty that no
35 more than 1,000 kW would be put into the grid at one time. Mr. Below believes that this is easy to
36 guarantee when the building's load, the LFGTE skid, and gas scrubbing equipment are factored in.
37

38 **RENTAL HOUSING DECARBONIZATION/WEATHERIZATION PILOT**

39 Jon Chaffee gave an update on this project. He and Woody Rothe are scheduled to meet with Matt
40 Minghella on Friday to discuss the energy retrofit project and the role that Liberty and NH Saves might
41 play.

1
2 **MASTER PLAN UPDATE, STRATEGIC PLAN**

3 No news to report.

4
5 **ELECTRIC VEHICLES & EV SUBCOMMITTEE**

6 Sherry Boschert briefly mentioned the three-town EV charging location request map has been made
7 public as of 1/17/2023 and is already getting a lot of input. She also relayed that the City Council on
8 Wednesday adopted the proposed zoning amendment that now requires some EV charging
9 infrastructure in new developments.

10
11 **NEW BUSINESS & OTHER NEWS:**

12 None was reported because it was a shortened meeting.

13
14 **ENERGY & FACILITY MANAGER'S REPORT**

15 The EFM report was postponed because it was a shortened LEAC meeting.

16
17 **FUTURE AGENDA ITEMS**

- | | | | |
|----|---|----|-----------------------------------|
| 18 | • Master Plan – continued discussion | 22 | • A new Chair for LEAC |
| 19 | • Strategic Plan – continued discussion | 23 | • April Energy Fair with Hartford |
| 20 | • LEAC work priorities for 2023 | 24 | • Solarize Lebanon/Hartford |
| 21 | • REC discussion continued | | |

25
26 **UPCOMING EVENTS**

27 None were reported.

28
29 **NEXT MEETINGS**

30 The February LEAC EV Subcommittee meeting is Thursday, February 9th, 3 PM, Lebanon Library Damren
31 Room, 9 East Park St. **NOTE: this meeting has been moved from City Hall due to construction in the**
32 **Council Chambers.**

33 The February LEAC meeting is Thursday, February 16th, 4 PM, Kilton Library Community Room, 80 Main
34 St., West Lebanon. **NOTE: this meeting has been moved from City Hall due to construction in the**
35 **Council Chambers.**

36
37 **ADJOURNMENT**

38 A motion was made by Clifton Below to adjourn the meeting at 5:07 PM. The motion was seconded by
39 Sherry Boschert and was unanimously approved.

40
41 Respectfully submitted,

42 *Tad Montgomery*

AGENDA
LEBANON ENERGY ADVISORY COMMITTEE
February 16, 2023

AGENDA ITEM 4(D)
NEW BUSINESS:

D. EV SUBCOMMITTEE REPORT

Next steps:

- LEAC review
- Ted, City Electrician to review
- Planning Board review (2/27)
- Legal Review
- Planning Board Public Hearing

SITE PLAN REVIEW REGULATION AMENDMENTS*****

A. Purpose

B. Site selection.

- Prior to initiating permitting, proposed EVSE sites should have a mandatory site survey in coordination with utilities to assess physical and financial options of existing electrical power capacity or needs for bringing power to the site, if required. The purpose is to avoid conflicts that might increase project complexity or impact parking configurations. Submission of load requests to utilities for power reviews should use GPS coordinates rather than address locations. Such a strategy will lead to a more accurate assessment of the feasibility of supplying power to the site.
- Where **Level 3** and **Level 2** EV charging station capacity is demonstrated to be unsuitable in conjunction with the compliance review and processes per Zoning Ordinance Section 607.8 prior to site plan application, **Low Power Level 2** or **Level 1** EV charging stations should be considered for alternative provisions.
- Consider the risks of locating chargers in areas subject to 100-year floods.

C. Standards.

- All installations of EVSE shall meet National Electric Code (Article 625) and UL certification is recommended. The applicant should consult with the local code officials to ensure electrical code compliance as well. Level 2, including all auxiliary loads, should be metered in accordance with electric utility requirements
- Property owners should consider equipment that is capable of supporting demand response, time-of-use (TOU), and/or smart charging. For example, evaluation and installation of an **electric vehicle load management system** in conjunction with other EVSE is recommended for larger projects, with the system designed to allocate charging capacity among multiple EV charging stations at a minimum of 8 amps per charger (minimum allocation may vary).
- Battery charging station outlets and connector devices shall be no less than 36 inches and no higher than 48 inches from the ground or pavement surface where mounted.

Commented [TC1]: The rest of the proposed regs (excluding the definitions) are much more appropriate for the site plan regs... Can we live without them in the Zoning Ordinance? We can add the EV regs to the site plan regs once the ZO provisions are added... Idea being that once they're in the ZO ordinance the "cat is out the bag" and I would think the PB would be amenable at that point to adding site plan regulations to complement the ZO regs (even if they weren't necessarily in favor of the ZO regs...)

Commented [RO2R1]: ok

Commented [RO3]: Tad: what is the purpose of this amendment, where does it come from, why, who does it apply to, etc

Commented [RO4R3]: There are not a lot of parts of the SPR that do this already, but we could note which section of the ZO it corresponds to because that would be the why/where does it come from and also addresses the WHO does it apply to

Commented [RO5]: What else can be added to this? See <https://www.utilitydive.com/news/urban-flooding-presents-challenges-for-electric-vehicle-charging-stations/626575/>. Protections can include waterproof connectors that protect the grid from moisture. Some stations can use batteries, Masters said, but they need to be elevated. "The battery box has to have the ability to breathe".

Commented [RO6]: Does this and TOU need to be defined?

- d. EVSE must comply with relevant [ADA](#) guidance including requirements and recommendations for EV Charging Station from the [U.S. Access Board](#).
 - e. Equipment (including components mounted on pedestals, lighting posts, bollards, or other devices) shall be designed and located as to not impede pedestrian travel or create trip hazards, particularly for on-street charging stations and others within the right-of-way. Provide a retraction device or place to mount cords and EV pedestals or protections designed to minimize vandalism, pedestrian conflict, and potential damage by accidents, snow storage/plowing and inclement weather.
 - f. EVSE shall be protected such as by wheel stops or concrete filled bollards or shall be placed a minimum of [24 inches](#) clear from the face of the curb.
 - g. EV infrastructure should be made of low-maintenance durable materials that are vandal-proof to the extent possible and operational in extreme weather conditions (including low and high temperatures).
 - h. EV charging stations that are [available for public use \("publicly accessible"\)](#) must be equipped to enable interoperability, i.e., universal access, as defined by the [New Hampshire Department of Transportation and U.S. Federal Highway Administration](#). Until an industry-wide standard connector is established, all publicly-accessible Level 2 and Level 3/DCFC station sites, installed or operated with the use of public funding, should be required to have at minimum one of each CHAdeMO and CCS connections available on site. Any publicly-funded networked charging station must operate using open source non-proprietary communications protocols
 - i. Future-proofing. ~~As the market penetration of long-range EVs increases, lower-powered DCFC stations will be less likely to meet drivers' needs and become obsolete, creating stranded or underutilized assets. For future proofing and to avoid stranded assets and costly future electric grid upgrades, all new investments in the make-ready portion of electrical infrastructure (all conduit and wiring up to the charger stub) supporting DCFC stations should support chargers with a minimum capacity of 150 kW. The make-ready portion of electrical infrastructure installed at publicly-funded, publicly-accessible locations should be capable of supporting chargers with a minimum 150kW capacity.~~
 - j. [The City's electrical inspector reviews designs in conjunction with the building permit process and should be consulted early in the planning process.](#)
 - k. Multifamily dwellings and non-residential EVSE installations should include a plan for Operations & Maintenance of the chargers and related equipment, such as software.
- D. EVSE siting and parking.**
- a. Dimensions. EV parking spaces shall meet standard dimensional and related requirements of the Site Plan Regulations, Section 6.5E and applicable ADA parameters, and address siting requirements for EVSE (e.g., pedestals).

Commented [R07]: ADA compliance The design and installation of public charging stations, like all public parking facilities, must comply with ADA standards and be accessible to all consumers. In accordance with the ADA, general design considerations include accessibility, ease of use, and safety for disabled drivers; however, federal standards specifying the number or design of EV charging station-equipped parking spaces do not currently exist.

Commented [R08]: Sherry: is this necessary? I will check but have seen referenced in a number of guidelines

Commented [R09]: Sherry: I would suggest changing "available for public use" to "publicly funded..." Otherwise, as it reads now, you're saying that a public Tesla destination charger or Supercharger, for example, would need to be interoperable. And that any non-Tesla EVSE would need to be operable for Teslas, no? If they're not publicly funded, I think that's overreach.

Commented [R010R9]: This should be discussed at committee level

Commented [R011]: Are we able to/do we want to add hyperlinks to any references like these?

Commented [R012]: This requirement will allow for station operators to install 50 kW charging stations to meet the needs of most EVs that are on the road today, but will also provide for future charging station upgrades without modifying the make-ready portion of utility infrastructure as advances in battery technology call for a faster rate of charge.

Commented [R013]: Check with Nate/Tim

Commented [R014]: Maximizing uptime—the amount of time that a charging station is functioning properly and available for use—is important to establishing a reliable EVSE network and building consumer confidence.192Consumer experience declines when a charging station is inoperable due to regular maintenance or because it is broken and needs repair. To maximize uptime, private EVSE providers such as ChargePoint, EVgo, and Greenlots have firmly established operations and

- b. Accessibility. EV parking spaces should be located adjacent to the principal use. All EVSE shall be connected to a barrier-free accessible route of travel. Accessible electric vehicle charging stations should be located in close proximity to the building or facility entrance and connected to a barrier-free accessible route of travel. The owner of the property may designate the accessible electric vehicle charging station exclusively for use by people with disabilities.
- c. Site design. Provide a statement of explanation for where EV spaces are proposed; while EV parking spaces are encouraged to be sited in visible (readily identified by EV users), desirable and convenient locations on-site, installation costs and similar practical factors may influence site design and should be described. Facilities should blend with the surrounding landscape/architecture for compatibility with the character and use of the site.
- d. Public EVSE. The owner or operator must disclose the location and characteristics of each public EV charging station to the U.S. Department of Energy's Alternative Fuels Data Center. Information that must be disclosed includes, but is not limited to, address, voltage, and timing restrictions.
- e. Energy optimization. When selecting a charging station location, site hosts and developers should consider existing and future needs for incorporating on-site distributed energy resources, and prioritize areas that can easily accommodate these assets, which in turn could reduce the cost of future upgrades. It is best practice to identify existing locations with excess load capacity that can support the deployment of curbside EV charging; for example, for consider repurposing of light poles.
- f. Conditions. EV batteries are degraded in hot conditions and not charged fully in cold weather; the applicant may wish to provide shade or other shelter (i.e., enclosed structured parking), noting that 60-70 degrees (F) is the ideal charging temperature.
- g. Enhanced charging infrastructure. Innovative charging strategies are encouraged, such as battery pack storage integration with EVSE for TOU demand management, solar canopy parking, co-location with electric bike storage and charging, and bidirectional EV chargers for vehicle-to-grid, -home, or -building.

E. EVSE signage.

- a. Parking space access. Identify EVSE as EV-parking only. Except when located in conjunction with single- or two-family dwellings or with assigned/permitted spaces, electric vehicle charging station spaces must be individually signed or otherwise marked for the dedicated parking and charging of electric vehicles only. Provide painted marking of spaces and posted signage according to the Federal Highways Administration/Manual on Uniform Traffic Control Devices (MUTCD) Interim Approval (IA-13) for Electric Vehicle Charging, current edition. Electric vehicles may be parked in any space designated for public parking, subject to the restrictions that apply to any other vehicle. When a sign provides notice that a parking spaces is a designated EV charging station, no non-electric vehicles may occupy or otherwise obstruct the space (NH RSA 236:134). Except when located in conjunction with single- or two-family dwellings, with

Commented [R015]: See Ubitricity

Commented [R016]: See CT DEEP ref

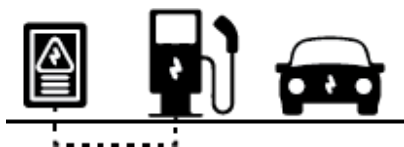
Commented [R017R16]: See https://afdc.energy.gov/fuels/electricity_charging_station_signage.html

assigned/permitted spaces, or where no policy is otherwise provided and posted, no EV user may occupy the space when not actively charging or beyond the hours designated on any posted signs or policies.

- b. Required information. At each location (EVSE parking space) or cluster of EV charging stations, except when located in conjunction with single- or two-family dwellings or with assigned/permitted spaces, and only if to be enforced, signage must be posted and include: time limits for charging, safety information (e.g., voltage and amperage levels), contact information for service problems (including phone number), hours of operation (e.g. MUTCD R7-5), charging pricing, and penalty warnings (e.g., idling/maximum duration of charging sessions, non-EV parking).
- c. Price signals. Usage fees must be transparent. Related considerations for programming include time of use rates and demand charges. Charging stations should display on their face the rate of charge, unit price (in whole cents or tenths of one cent), kWh at which the EVSE dispenses electricity during a transaction, and total kWh delivered per charging session, and demand charge signals prior to payment (where applicable).
- d. Payment. Multiple payment operations should be enabled. Each newly installed publicly-funded, publicly-accessible charging station must accept payments, with appropriate consumer data protection safeguards, via credit card reader and at least one other accessible form of payment. Publicly accessible EVSE should not require use of cell phone-based payment approaches. ~~Currently, the more common payment methods for EV charging include debit/credit cards, radio-frequency identification (RFID) cards, and mobile payment apps. Other less common forms of payment include mobile wallets or contactless credit/debit cards. Drivers who are subscribers or members of charging networks are additionally able to pay via their Internet-based subscriptions and memberships.~~
- e. Format. As an alternative to posting all information, details subject to change (e.g. rates) may be provided via a digital screen, website or similar. All published physical and digital content must be kept up-to-date. Signage must be included in the specifications package for Site Plan approval.
- f. Visibility. EV charging station wayfinding signage and markings are highly encouraged to effectively guide motorists. Refer to MUTCD for standard design.
- g. Adequate lighting (may be on timers or motion sensors) must be provided where EV charging stations are installed unless charging is for daytime purposes only.
- h. Other labels. Plans and associated equipment must be clearly and permanently labeled as follows: 1) service panels must identify full circuits available for EV charging as “EV Ready”, 2) service panels designated for future additional EV charging must be identified as “EV Capable”, and 3) Conduit endpoints must be marked as “EV Ready” for full circuits and “EV Capable” for inaccessible conduit installed. ~~The electric service panels for EVSE ready circuits should be positioned near EV parking and shall provide sufficient capacity and space to accommodate the circuit and over-current protective device. A permanent and visible label stating “EV-READY” shall be posted in a conspicuous place at both the service panel and the circuit termination point.~~

Commented [R018]: https://www.energycodes.gov/sites/default/files/2021-10/EV_Charging.pdf

Definitions

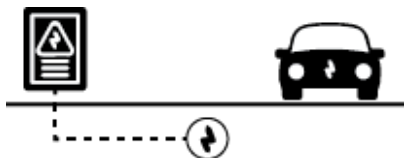


Electric vehicle supply equipment (EVSE)/ EV charging station: The apparatus installed specifically for the purpose of transferring energy between the site or building wiring and the Electric Vehicle. EVSE does not include any equipment affixed to the electric vehicle.

Electric vehicle infrastructure: Structures, machinery, and equipment necessary and integral to support an *electric vehicle*, including *EV charging stations* and electrical outlets.

Electric vehicle (EV): An automotive-type vehicle for on-road use primarily powered by an electric motor, including any battery electric vehicle, fuel cell electric vehicle, or plug-in hybrid electric vehicle, that draws current from an onboard battery charged through a building or site electrical service, *EVSE*, or other source of electric current.

EV-capable space: An *off-street parking space* with electrical panel capacity and space for a branch circuit dedicated to the parking space that is not less than 40-ampere and 208/240-volt and equipped with raceways, both underground and surface mounted, to enable the future installation of *EVSE*. For two adjacent EV-capable spaces, a single branch circuit is permitted.



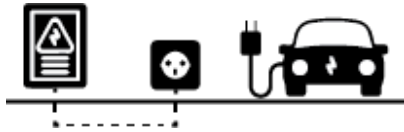
EV-ready space: An *off-street parking space* provided with a full dedicated branch circuit that includes not less than 40-ampere and 208/240-volt panel capacity, conduit, wiring, receptacle, and overprotection devices terminating in an outlet, receptacle or junction box that will support an installed EVSE and which is located in close proximity to the location of the parking space. For two adjacent EV-ready spaces, a single branch circuit is permitted. These spaces are “ready to go” with the addition of an EV charging station (EVSE).

Commented [RO19]: [review current SPR and ZO definitions to avoid conflict; based on [IECC 2021](#)]

Commented [TC20R19]: Yes, I need to take a closer look at that...

Commented [RO21]: SPR has a definition that should be updated

Commented [TC22]: ?



EVSE-installed space: An *off-street parking space* with a dedicated branch circuit and *EVSE* for *Level 2 EV* or *Low Power Level 2 charging stations*, at minimum.

Level 1: “Trickle” charging level for *EVs* that operates on a 15- to 20-amp breaker on a 120-volt AC circuit (wall outlet) while drawing 1.4 to 2.4 kW to add 2-6 miles of range per hour of charging.

Low Power Level 2: Charging level for *EVs* that operates on a 208 or 240 volt, 20-amp circuit while drawing around 3.8 kW to add approximately 13 miles of range gained per hour of charging.

Level 2: Charging level for *EVs* that operates on a dedicated 40-100 amp breaker (same kind used by a clothes dryer or stove) on a 208 or 240 volt AC circuit while drawing 6.2+ kW to supply 19+ miles of range gained per hour of charging.

Level 3: Fast or rapid charging level for *EVs* that operates on a 60 amp or higher breaker on a 480 volt AC electric circuit or higher three phase circuit with special grounding equipment and mounting on an equipment pad.

Electric Vehicle Load Management System: An automatic load management system designed to distribute load across one, or to locate charging capacity among multiple, EV charging stations. The system should distribute a minimum of 8 amps per charger (though allocations may vary) and is intended to increase cost-effectiveness by allowing the system to “share” the load across multiple EVs in the parking facility depending on aggregate and individual charging needs.

Commented [TC23]: Need to add definition

Commented [RO24R23]: see <https://www.chargedfuture.com/ev-capable-ev-ready-and-ev-installed/>

Commented [RO25]: Insertion suggested by Sherry: however this definition would not match what is in ZO?

Commented [RO26]: Sherry can you please redline for Level 1-3 definitions applying hyphens as you see fit?

Commented [RO27]: Tad: you have it defined rather precisely at 6.2 kW. It’s actually more of a range, something like 3-19 kW. Greg or Sherry might have a better range.

Commented [RO28]: This should say DC?

Commented [TC29]: Where is this term used in the regs?

Commented [RO30R29]: E.b.

Commented [RO31]: Load Management Technology: Hardware or software used to efficiently allocate electric current drawn by multiple electric vehicle charging stations by either directing current to each EVCS in use (i.e. 40 amps/vehicle) or when more vehicles than the maximum than can be served at 40 amps each are charging simultaneously, reducing current drawn by each vehicle