

Kingsgate Condominium Association: On Installing Our First Electric Vehicle Charging Station¹

Is your HOA or condo association considering installing an electric vehicle (EV) charging station in the common area? Perhaps some residents are interested in purchasing electric vehicles, but they can't consider an electric vehicle if there's no place to charge it. If this situation pertains—or might pertain—to you, perhaps you'd like to hear about our experience in Columbia, MD, at the Kingsgate Condominium Association, which is among the first associations—possibly the first—in Columbia to install such a station in the common area.

To put our experience in context, you should know that our community is mixed—45 apartments in a 7-story building and 44 garage townhouses, all under a single association. Each of the apartments (the vast majority of which are owner-occupied) has a single deeded, reserved, outdoor parking place; each townhouse has a garage and driveway; and there are roughly 40 additional unassigned outdoor parking places in the common areas. Our situation may be different from yours, but at least some of our experience might be relevant to any other association. In hopes that others might benefit from our experience, this document discusses why we decided to install a charging station, describes the process of planning for and installing the station, and presents some concluding comments. Also, in hopes that it might be helpful, included as Attachment 1 is a checklist of what we consider to be key actions and points to consider, though, obviously, other situations may be significantly different.

The Why. So why did we decide to install an EV charging station? We first began considering the possibility in May of 2018 when we saw projections for growth in the numbers of EVs and when we learned that many auto makers are moving more and more—or exclusively—to producing EVs.² Though growth in the numbers of EVs has not been as fast as predicted, just observing the types of vehicles seen on local streets makes it clear that more and more people in our area are buying all-electric EVs and plug-in hybrids.

Another factor in our thinking was this change to the Howard County Code, which was approved in October 2018:

Starting January 11, 2019, Howard County, Maryland will require electric vehicle charging infrastructure at all new residential construction. This includes one EV charging station for each 25 units at apartments, condominiums and hotels. Single family homes will have to be pre-wired for future installation of charging equipment.³

Naturally, we want our community to be as appealing as possible and to have appropriate amenities, so an EV charging station looked like a good idea to keep our community, which was built in 1988, competitive with newer developments.

In addition, encouraging our residents to consider EVs fits well with our desire to do our part to limit local pollution and to help improve air quality. A couple of years ago we switched all common area lighting to LEDs in the mid-rise building and in exterior fixtures throughout the community; and we

¹ Many thanks to Paul Verchinsky, who kindly provided assistance with this project, who encouraged us to write up our experience, and who is a member of the Maryland Zero Emissions Electric Vehicle Infrastructure Council.

² See Attachment 2 for a sampling of relevant items that we considered at the time we first began exploring the idea in 2018.

³ “Howard County EV-Ready Ordinance Effective January 11, 2019” from <https://pluginsites.org/howard-county-ev-ready-ordinance-effective-january-11-2019/>, downloaded on 2020-02-26.

have worked closely with the non-profit Howard EcoWorks, the Columbia Association, the County, and the Backyard Buffers Program to address drainage issues with rain gardens and other environmentally friendly landscaping where possible. Installing an EV charging station seemed like a logical next action for us to take.

Another very significant factor in our desire to consider the project at this time was the availability of rebates. When we planned for our station, BGE was offering a 50 percent—yes, 50 percent!—rebate on the costs of installation and equipment (paid only after installation is completed)⁴. The State also had a rebate program, but FY2020 money ran out before we could take advantage, though the State is still taking applications and it is possible that we might eventually get some additional rebate.

The Process. The entire project, from first thoughts to actual completion of the installation of our one dual-port EV charging station, took almost 2 years and can be described as consisting of seven different—but sometimes overlapping—phases. (See page 8 for photos associated with some phases of the actual installation.)

1. Decide Whether to Pursue the Possibility. Having seen projections for growth in the numbers of EVs, the first phase in the process was to make an informed decision about whether even to pursue the possibility of installing a station. Naturally, then, before we did anything else, we asked our attorney to determine whether our association’s documents give our board authority to use non-reserved parking places for this purpose. The answer to that question was a clear “yes.” We also asked our Village Covenant Advisor about any potential issues; she saw none and was very supportive and helpful throughout the process. We then sought community input through open discussion at board meetings, a mass email to all owners asking for their comments and ideas, and informal conversations with community members. Though we did not get much feedback from the community, either positive or negative, we decided to go to the next phase and explore the possibility in detail with the belief that installation of an EV charging station would provide an amenity that would be needed sooner or later and that would enhance the appeal of our community.

2. Conduct a Preliminary Assessment. The next phase in the process involved conducting a preliminary assessment to determine feasibility and costs. We had initial discussions with two electrical contractors, eventually deciding to work with Clinton Electric if we ultimately went ahead and installed a station. We chose that contractor for a variety of reasons. For one thing, the president of the company had written up some documentation about issues involved in these installations for various situations, and we found that document helpful. Also, the company had experience with these types of installations and had a good relationship with ChargePoint, a national brand of charging station (we didn’t want to sign up with a company that might not be around in a year or two). We also considered Semaconnect charging equipment. That Maryland company seems to have equipment and services comparable to ChargePoint, but we did not have a specific recommendation of an electrical contractor that had experience with Semaconnect, so we settled on ChargePoint.

Another significant factor was that the president of Clinton Electric had already been lobbying the County to modify its requirement for a red-line drawing in simple situations such as ours. (He ultimately saved us a significant amount of money by securing a waiver of that requirement for our installation. We understand that a red-line drawing, which must be done by a licensed engineer and can cost \$1,000, is typically needed in commercial installations to ensure that there are no conflicts between new electrical lines and existing lines and structures.)

⁴ See <https://www.bge.com/SmartEnergy/InnovationTechnology/Pages/EV-FAQs.aspx>.

With the contractor, we looked for a good location for a charging station. It is important to emphasize that location is the most critical factor and drives much of what else is required. Ideally, the station would be centrally located, close to an existing source of electricity, and have room for expansion in the future, if needed. We had just such a location, and there appeared to be enough electrical power already available very close by.

In one of the bumps in the road for this project, it turned out, however, that the electrical service at that spot was not sufficient after all. We needed at least 100 amps, and, because we anticipate that we might need to expand in the future, we decided to upgrade the power to 200 amps. That upgrade added \$2,500 (before rebates) to the contractor's cost of the project. The contractor expected that the BGE part of the power upgrade might not cost anything, but might cost as much as \$1,000. As it turned out, the BGE cost was \$1,906 (again, before rebates).

A major part of assessing the feasibility, of course, was to determine whether we could afford this kind of project. Clinton Electric helped us estimate costs for the installation, which included equipment, permits, actual installation, the needed power upgrade, insurance, operating costs, and rebate potential. Though we considered various configurations of equipment, we settled on one ChargePoint CT4000 dual-port bollard mount charging station, which would require installation of only one pedestal but would allow two vehicles to charge at the same time (a third parking spot would also be within reach of the station). This configuration seemed to be the best initial fit for our needs and for our financial situation. Adding the up-front cost for 3 years of insurance and for 3 years of the service charge per port, brought the total for equipment and installation to \$17,820 before rebates; we expect our cost after only the BGE rebate to be \$8,910.00. We are also hopeful that the State will eventually provide a rebate as well, though that is not at all certain.

Because of previous economies—including the switch to LED lighting, changing to a lower cost electricity supplier, lower than expected snow removal expenses—and given the available BGE rebate, we had enough money in our operating fund to pay for that configuration without affecting monthly assessments. If we had not had enough money in our operating fund to pay all upfront costs, of course, we would have had to budget for the expense by adding to future budgets.

In thinking about costs, it's important to consider a couple of things that might not be obvious. One is the monthly service fee, which currently is \$20 per port for us, or \$40 per month. Unless we want the association to pay for all comers to charge their EVs for free, the service provided by ChargePoint is essential: it enables us to control how much it costs to charge at the station, control who can have access when, and have the billing done automatically, among other tasks. Another thing to know is that these stations are not likely to be money makers. Though the electric bill from BGE or other provider will give "Supply Price Comparison Information" of, say, 7.5 cents per kWh, the distribution charge about doubles the price; and by the time the price includes every other item that is charged by the kWh, our current total cost is 18.3332 cents per kWh. ChargePoint adds a 10 percent service fee on the charge for electricity—a fact that we had overlooked—so that increases our cost to 20.17 cents. Because ChargePoint requires the cost to be in whole cents, we currently have to charge 21 cents per kWh just to cover the cost of the electricity—not any part of the service fee. For public use, a rate of 25 cent per kWh, which is apparently a common rate, would require about 14 hours of charging per day at each port just to pay for the service fee.

A final, but very important, factor for us to consider was the impact on general parking if we used two parking places for a charging station. While parking in HOAs is almost always a major issue, we felt

that we had sufficient parking for this change to be workable. To help mitigate any negative impact, we agreed that, until we had enough EVs in the community to warrant a change, we would allow non-EVs to park in those spaces if other spaces were not available.

3. Decide Yes or No. The actual decision to go ahead with the project was made after another full discussion at a board meeting. The decision and the reasons for it were communicated to the entire community in a notice from the management company,⁵ a draft of which had been circulated to the board prior to this decision meeting. Given our situation and the cost estimates, we made a formal decision to take two parking places and install the single dual-port charging station as an amenity for our community.

We should have taken a couple of additional actions at this meeting immediately after approval. First, of course, because our community requires permission to make exterior alterations, we should have designated someone to fill out and submit a request for this exterior alteration. We were a little late in doing that, but the Covenant Advisor for Kings Contrivance Village in Columbia gave us great advice and was able to expedite the consideration of our request, which was approved as submitted.⁶ Also, given the significant amount of coordination and set-up involved, we should have immediately designated someone to be the primary point of contact for project coordination and set-up of the station. We ended up discussing that issue by email and appointing one of our board members to serve that function.

4. Monitor Station Installation. The actual installation process was relatively straightforward, but required a good deal of coordination with Clinton Electric, so it was very helpful to have the POC monitor progress. The project manager for Clinton Electric provided the POC with information on the timing of the separate steps in the installation process: trenching for the electrical lines; installation of the concrete pedestal for charging station and the concrete base for the power upgrade; County inspection of the pedestal installation; the power upgrade by BGE; County inspection of the power upgrade; and “provisioning” the station and turning it on.

Because each of these steps (except the last) required that the two EV parking spaces and sometimes two additional adjacent spaces be vacant while work was being performed, a few days before each day for which work was scheduled, the board POC posted temporary signs notifying the community when the spaces had to be vacated.⁷ Fortunately, the work was performed during normal working hours, so the spaces could still be used during the evening and at night when parking is at a premium. Scheduling uncertainties, weather, and personnel issues caused some short-notice changes, so it was important to be able to quickly make changes in the temporary signage.

On days when work was being performed, the POC also briefly stopped by the site to check on progress and to find out if there were any issues. One unanticipated issue, for example, had to do with access to a source for water, which the contractor needed to mix the modest amount of cement required. Normally at a commercial site, a water spigot is readily available, but there was no operational spigot close to our installation location. In stopping by and learning of the issue, the POC was able to identify a spigot on our mid-rise building that had not yet been shut off for the winter and that could provide the needed water. Another time, at the end of the installation, our POC almost removed cones blocking the EV

⁵ See Attachment 3 for a copy of the announcement letter.

⁶ See Attachment 4 for a copy of our application for exterior alteration.

⁷ There are no doubt many options for making such signs, but we made satisfactory weather-resistant signs using letter-sized paper slipped into plastic sleeves (see page 8), which were then duct-taped to corrugated yard signs of the type available at https://www.amazon.com/gp/product/B07NXW42GB/ref=ppx_yo_dt_b_asin_title_o03_s00?ie=UTF8&psc=1.

charging spots and two other parking places, thinking that they had mistakenly been placed there by the electrical contractor after the final inspection. It turned out that some tree work had been scheduled for that same area, and the spaces had been blocked off by the landscaper to make room for tree removal and trimming. So the POC should also have taken greater care to deconflict with other work being done on the grounds.

The POC also sent periodic updates to the management company and the board to keep them abreast of progress. We didn't send out frequent updates to the community because we didn't want to bombard people with too many messages, and we thought that the temporary signs would keep people informed well enough.

The total length of time for the actual installation process—from the day the contract was signed until the day that the station was turned on—was about 2-1/2 months. This period included Thanksgiving and the rest of the holiday season, a fact that may have slowed things down a bit.

5. Establish Policies for Operation. Because we wanted to have everything ready to go when the installation was complete, while the installation was in progress we considered what policies we would follow for operation of the station—i.e., who could have access during what hours and what rates to charge. Fortunately, the ChargePoint system is very flexible. We decided to establish two categories of drivers with a schedule that we thought would help minimize any negative impact on normal parking: Residents/Owners can charge any time of day at cost, and the Public can charge only between 6:00 a.m. and 5:00 p.m. seven days a week for \$0.25 per kWh. (As noted above, these rates are not likely to create much income, but the point is not income—it is to provide the community with an amenity.) The management company was tasked with determining how best to implement the policy, i.e., through rule, policy, by-law change, or some other mechanism. (That decision has not yet been made.) The board agreed that we would conduct an annual review of these policies and prices as part of our annual budget process.

6. Configure the Station and Implement Access and Pricing. The final step was to configure the station using the ChargePoint web access and implement our access and pricing policies. These tasks, which we thought would be very simple, involved some surprises.

We knew that the charging station system was quite flexible—but also quite complex—so we tried to get an early start on configuring all the options for our station. Our plan was to have two people able to perform any needed function and thus to avoid the problem of a single point of failure. So the Clinton Electric project manager gave administrative privileges to our board POC, who then gave the needed privileges to the assistant property manager.

It's important to know that, to get started with the ChargePoint system, it is necessary to have the information for the financial account that will be connected to ChargePoint—i.e., exact name of the association and the routing number and account number for the bank account. The assistant property manager got that information ready and then set up an online screen-sharing session so that she and the board POC could see what was involved in the set-up and so that she could enter the account information. Unfortunately, not all set-up options were available until the station was actually turned on, so we could go only so far with the set-up ahead of actual turn-on. ChargePoint has a number of good help documents, and there are a number of good youtube.com tutorials, so it was possible to learn about some of the options, but it was not possible yet to implement much.

According to Clinton Electric’s arrangement with ChargePoint, they (Clinton Electric) had to do the initial provisioning and turn-on, and then our board POC could—finally—implement the policies and pricing we had decided on. Unfortunately, we ran into a significant problem. We are a condominium association (not an individual), so, of course, we had to have a commercial account with ChargePoint. That was not a problem, of course, but the ChargePoint software requires—absolutely requires—that any commercial account have a logo in order to set everything up! Does your association have a logo? If you want to use ChargePoint, you better get one! (The board POC made a point of emphasizing to the ChargePoint support team that such a requirement made the process very unfriendly for our association and no doubt for many other HOAs and condo associations.)

Forty-five minutes on the phone with the very helpful and pleasant ChargePoint support team helped us see how to set up various functions, but also confirmed that, yes, we had to have a logo to actually effect the set-up. The board POC logged out, ginned up a temporary logo, uploaded it, and proceeded with the set-up.

Another surprise concerned visibility of the station on the ChargePoint app. After we turned the station on, set the costs for charging, and set the hours for access, the station still wasn’t showing up on the ChargePoint map of available stations—not a good thing, given that we wanted the public near our community to be able to find the station. It turns out that there is a “visibility” setting in the ChargePoint menus: the station owner has to make the station visible to the public in order for it to show on the map.

We also did not anticipate the need to have a “Terms and Conditions” statement, but it appears that most stations do have such a statement, agreeing to which requires a driver to pay charging costs incurred, promptly move the vehicle after charging is completed, etc. Unfortunately, ChargePoint does not have any boiler-plate statements or examples that might be modified for a given situation. As a result, at the moment we do not have any “Terms and Conditions” statement, but we are working on one.

One aspect of our desired terms and conditions hit another snag. Given that our community does yet have any EVs, we felt that, for the time being, it was reasonable to allow residents to park non-EVs in those two parking spaces when other spaces were not available. We happened to learn, however—thanks to an item in the email newsletter PlugInSites,⁸ such a policy runs afoul of Howard County’s 2014 law that prohibits internal combustion engine (ICE) vehicles from parking in EV charging spaces on both public and private property. According to that article, however, given the complicated and specific enforcement guidelines, we are not likely to have a problem—at least not yet.

One more item that we hadn’t considered was the address of the station. In ChargePoint, an address is required, so the contractor initially entered a nearby address. We thought it was not appropriate to use an individual owner’s address as the location of the station, so what could we do? We used a non-existent address that, if numbering were consistent, would be right next to the townhouse closest to the charging station. ChargePoint accepted that address and shows the station at the right location. The ChargePoint software also has space for a brief verbal description, though it is not clear just where that description shows up. It is also possible to take a picture within the ChargePoint app to help others find the station; we could not find a way to add an existing photo to the description in the app.

We also learned of other options that we hadn’t known anything about: The CT4000 series stations have the capability for a brief message to scroll constantly across part of the screen, and there is also the

⁸ This particular article can be found at <https://pluginsites.org/anti-icing-laws-do-they-really-work/>. The PlugInSites newsletter is a valuable source of information on EV-related matters in the greater Baltimore area and the rest of Maryland.

capability to upload slideshows and videos that can be used for advertising. We composed text for the scrolling message and are exploring the slideshow and video possibilities.

The ChargePoint software is reasonably intuitive, but, as we found out, some things are not clear or are not easy to find—especially if you don't know that you need to look for them. The good news is that the ChargePoint support team is easily and quickly accessible by phone, and they provided excellent help when we needed it. Ultimately, we got all necessary items configured, and a few days after the installation was complete, the software was all set up, and charging worked fine.

7. File for the Rebates. The last step was to file for the BGE rebate—under current rules, it has to be filed within 30 days of installation completion—and to complete the paperwork for the State rebate in case more money became available. In some situations, we have since learned, there may be a possibility of a Federal rebate, too. The management company and Clinton Electric have been working on filing the rebates. As of this writing, that process has not been completed, so we do not know how long it takes to receive the rebates or the total amount that we will actually get back..

Concluding Comments. So do we have any additional advice for any other HOA or condo association thinking about installing an EV charging station?

Given our experience, perhaps the most important lesson we learned is the same one from any major project: Be flexible and be ready to adapt. At various points along the way, we were given incorrect or incomplete information—some steps were assumed, or were left out of initial descriptions; or we forgot some details; or different people and organizations had different understandings of who should do what and when; or we made what seemed like reasonable inferences that turned out not to be the case; or we decided to modify some elements of the project as it progressed. As long as we didn't take any of those accidental slip-ups or changes too seriously, and as long as we did our best to adapt to changing circumstances, everything worked out fine.

Throughout this process, we also became increasingly aware that we must continue to consider implications for the future. Though we have not yet come to any conclusions, we need to be thinking about our options in the unlikely event that EVs do not catch on in our community. On the other hand, if EVs become more and more popular, we need to be thinking now about how we might add additional common area charging stations and how we might provide the electrical capacity and wiring infrastructure to enable individual owners to install charging stations at their own expense. For example, we might consider running electrical conduit to strategic locations when roadways and parking lots are resurfaced, and we might plan ahead and establish the ground rules for any external townhouse chargers and related power lines that need to cross common areas.

It will no doubt take some time—perhaps quite a long time—to know the ultimate effect of this project. All in all, though, we feel that providing our community with an EV charging station as an amenity is a good step forward as a part of our continuing effort to maintain and enhance the value and appeal of our community.

Scribner Messenger
March 18, 2020

If you have any questions or comments about this write-up, feel free to send email to:

Paul Verchinski verchinski@yahoo.com

Photos showing some of the installation process and three views of the completed installation.



A sample of our temporary signage



Temporary signage near the concrete pedestal. Note that the "EV only" signs are temporarily covered up.



A view of the station showing the nearby transformer and electrical panel.



Another view of the station showing the other side of the electrical panel.



The station after installation and final inspection.

Attachment 1: Checklist for Electric Vehicle Charging Station Installation Project

There are many ways to approach this kind of project. This checklist, which is based on our experience at Kingsgate, is simply one way to organize various tasks that must be accomplished. We offer this list in hopes that at least some of what is here might be helpful to anyone embarking on a similar project.

Articulate the rationale: How can you justify installing an EV charging station?

- Residents are asking for charging stations.
 - We want to reduce local air pollution and encourage our community to be greener.
 - We want to be competitive with newer developments.
 - We want to take advantage of existing rebates.
 - Other: _____
 - Other: _____
 - Other: _____
-

Decide whether to pursue the possibility:

- Consult your attorney to determine whether you have the authority to use common area parking for this purpose.
 - Consult your local jurisdiction(s) to find out if there are special requirements for external alterations.
 - Seek community input through
 - Discussion at community/board meetings
 - Email appeals
 - Informal conversations
 - Formal surveys
 - Presentations by experts
 - Other: _____
-

Conduct a preliminary assessment

- Identify an electrical contractor to help make an assessment. Choose one that:
 - Is fully licensed and insured
 - Has experience installing EV charging stations
 - Is familiar with and has worked in Howard County
 - Has a good working relationship with a major charging station manufacturer
 - Will offer a competitive price
 - Has a good reputation
 - Other: _____
-

Attachment 1: Checklist for Electric Vehicle Charging Station Installation Project

- Identify a potential location that
 - Is centrally located within your community
 - Is close to a source of electricity
 - Has room for expansion in the future, if desired
 - Will not have a significant adverse impact on community parking
 - Other: _____
- Estimate installation and operating costs, including
 - Charging station (Which brand? How many stations? Single port? Dual port?) \$ _____
 - Site preparation, if needed \$ _____
 - Power upgrade, if needed \$ _____
 - Red-line drawing, if required \$ _____
 - Installation \$ _____
 - Insurance (for how long?) \$ _____
 - Service fee (for how long?) \$ _____
 - Costs for temporary signage \$ _____
 - Other: \$ _____

Total cost (before rebates) \$ _____
- Obtain a firm contract proposal from contractor(s)

-
- Determine how the project could be paid for**
 - Out of operating fund surplus
 - By future budget allocations
 - Other: _____
 - Other: _____

-
- Make go/no-go decision.** If/when the decision is to go ahead:
 - Secure approval for an Exterior Alteration Application, if required
 - Sign the contract proposal
 - Notify the contractor
 - Notify the community of the decision
 - Decide how often to update the community on the progress of the project
 - Create a community logo if needed

Attachment 1: Checklist for Electric Vehicle Charging Station Installation Project

- Identify a point of contact to coordinate with the installer, and authorize that POC to
 - Monitor the progress of the installation
 - Create and put up temporary signage as required throughout the installation process
 - Provide progress updates to the board (and management company, if there is one)
 - Create an account with the equipment manufacturer in order to manage the station on behalf of the community
-

Establish policies for operation:

- Decide on classes of drivers (Community residents only? Public?)
 - Determine hours of access to the public if non-community drivers may access the station
 - Analyze recent electric bill to determine total cost of electricity per kWh
 - Establish rates for charging for each class of driver
 - Determine how to promulgate these policies
-

Activate the station: After initial set-up by the electrical contractor,

- Authorize a back-up user and give that user the appropriate credentials in the system.
 - Have the following items ready if needed:
 - Official organization name
 - Financial account number and routing number.
 - Logo, if needed (for ChargePoint 60x30 pixels in jpg, png, or tiff format)
 - Establish the classes of drivers decided upon
 - Make sure that the organization name on the account is correct
 - Make sure that the address of the charging station is correct
 - Make sure that the station is visible to the classes of drivers chosen
 - Notify the community that the station is active and inform the community of the policies
-

File for rebates: Work with the electrical contractor and property manager (if applicable) to file for all available rebates

- Utility company, if applicable
 - State, if applicable
 - Federal, if applicable
 - Other, if applicable _____
-

Ford plans \$11 billion investment in electric vehicles by 2022

<https://www.zdnet.com/article/ford-plans-11-billion-investment-in-electric-vehicles-by-2022/>

- The company also intends to offer at least 40 hybrid and all-electric vehicles in the future.
- Ford plans to ramp up investment in the electric vehicle industry to \$11 billion by 2022.

General Motors is going all electric

<https://www.wired.com/story/general-motors-electric-cars-plan-gm/>

- “General Motors believes the future is all-electric,” says Mark Reuss, the company’s head of product.
- GM “is working toward an all-electric, zero-emissions future. That starts with two new, fully electric models next year—then at least 18 more by 2023.”

Toyota announces major expansion of its electric car plans: 10 new BEVs, all models to have electric motors

<https://electrek.co/2017/12/18/toyota-electric-car-plans/>

- The Japanese automaker is aiming to launch 10 new BEVs worldwide by “the early 2020s” and it wants to have electric options throughout its entire lineup of cars by 2025.

Honda to halve electric cars' charging time to 15 minutes

<http://www.electric-vehiclenews.com/2017/11/honda-to-halve-electric-cars-charging.html>

- Honda Motor plans to release in 2022 a selection of fully electric cars that can run 240km on a single 15-minute charge.

Nissan wants to sell 1 million electrified vehicles a year by 2022

<http://www.thedrive.com/news/19558/nissan-wants-to-sell-1-million-electrified-vehicles-a-year-by-2022>

- The Japanese automaker wants to sell a million electrified vehicles—including battery-electric cars and hybrids—by 2022. Nissan expects electrified vehicles to make up 20 to 30 percent of its U.S. sales by 2025.

VW to build electric versions of all 300 models by 2030

<https://www.bloomberg.com/news/articles/2017-09-11/vw-ceo-vows-to-offer-electric-version-of-all-300-models-by-2030>

- CEO “announced sweeping plans to build electric versions of all 300 models in the 12-brand group’s lineup. The German auto giant laid out the enormity of the task ahead, vowing to spend 20 billion euros (\$24 billion) by 2030 to roll out the cars and earmarked another 50 billion euros to buy the batteries needed to power the vehicles.”

Volvo says all its cars will be electric or hybrid in 3 years

<http://fortune.com/2017/07/05/volvo-electric-cars-hybrid-2019/>

- All Volvo car models launched after 2019 will be electric or hybrids.

The future of electric vehicles in the U.S., part 1: 65%-75% new light-duty vehicle sales by 2050

<https://www.forbes.com/sites/energyinnovation/2017/09/14/the-future-of-electric-vehicles-in-the-u-s-part-1-65-75-new-light-duty-vehicle-sales-by-2050/#57222b32e289>

- EVs will make up 65% of new light-duty vehicle sales by 2050.
- A typical electric vehicle can travel 43 miles for \$1 worth of electricity.

November 25, 2019

To: The Kingsgate Community
From: The Kingsgate Board

We are pleased to announce a new amenity for Kingsgate: an electric vehicle (EV) charging station. Please see the details below.

- WHAT:** One ChargePoint CT4000 level 2 dual-port commercial charging station will be installed in the non-reserved parking area next to the townhouse at 7321. (See the equipment brochure at: <https://www.chargepoint.com/files/brochures/br-ct4000.pdf>.)
- ChargePoint has the nation's and the world's largest EV charging network.
 - Clinton Electric of Timonium, which will perform the installation, has a great deal of experience with EV charging stations.
 - Placement of the dual charging station will make it possible for charging from up to four adjacent parking spaces.
 - The parking spaces with access to the charging station will still be available for use by non-EVs. As residents begin to use EVs, we anticipate that residents will accommodate EV owners' needs for access to the charging station.

WHEN: Installation of the charging station, which should take a single day, is scheduled to take place on Monday, December 2, weather permitting.^[9]

PLEASE NOTE: Beginning at 7:30 a.m. on the day of installation, no vehicles may be parked in the four parking spaces closest to the electrical box next to the townhouse at 7321. Notices will be posted at the parking spaces.

- WHY:** Electric vehicles are expected to be a big part of the future. Access to EV charging is thus important in order to maintain Kingsgate property values and to ensure that Kingsgate remains attractive compared to newer communities.
- Virtually all major automakers are greatly expanding their EV offerings (see references, attached).
 - The BloombergNEF *Electric Vehicle Outlook 2019* states, "By 2040, we expect 57% of all passenger vehicle sales, and over 30% of the global passenger fleet, will be electric." (<https://about.bnef.com/electric-vehicle-outlook/#toc-viewreport>)
 - Howard County code now requires every new home to have a dedicated electrical circuit for EV charging, and every new multifamily residence must have 2 EV charging stations for every 25 parking places.
 - Enabling the charging of electric vehicles can help reduce local air pollution and is in keeping with other Kingsgate efforts to continue working toward a more eco-friendly community.

- COSTS:** By acting now, we expect to get a 50 percent rebate from BGE on both equipment and installation costs, and we may also be able to get an additional rebate from the State.
- Total initial cost, after the expected 50 percent BGE rebate, will be about \$6,400¹⁰—significantly less if we also get a State rebate. (We can apply for these rebates only after installation is complete. BGE currently has plenty of funding; State funds are currently much more limited.)
 - Costs not covered by the rebates will be paid out of the surplus currently in the shared account, so these costs will not affect the monthly assessment.
 - The Association will provide at cost the electricity for charging Kingsgate residents' EVs.

If you have questions or comments about this new amenity, please send email to ev@kingsgatecolumbia.com so that your messages will be directed to the appropriate people.

We look forward to continuing to work with all of you to engage in this and other efforts to help Kingsgate remain a premier community in Columbia!

⁹ This estimate of the time involved was one of the pieces of information that turned out not to be correct. The various stages of installation—not counting the one day for the power upgrade—took most of the day on four separate days, so the spaces had to be vacated on those days, and notices had to be posted.

¹⁰ This total is less than what is given on page 3 because, after this notice was written, we decided to pay in advance for a longer period of insurance and service fees, and because of the unanticipated power upgrade that turned out to be necessary.



Kings Contrivance Community Association

Exterior Alteration Application

Please return to:

Kings Contrivance Community Association
7251 Eden Brook Drive
Columbia, MD 21046
410-381-9600
kccovenants@columbiavillages.org

FOR OFFICE USE
DATE REC'D _____
KCRAC NO. _____
SPEEDY PROCESS: YES _____ NO _____

NAME: (Please print) Scribner Messenger on behalf of Kingsgate Condominium Association

ADDRESS: (of the condominium) 7317 Eden Brook Drive, Columbia, MD 21046

PHONE: 410-262-0942 EMAIL: dir1@kingsgatecolumbia.com

NEIGHBORHOOD: Dickinson Huntington _____ Macgill's Common _____

PROPERTY: Single-family _____ Townhouse – End _____ Townhouse – Mid _____ Condominium

COLOR: House _____ Trim _____ Shutters _____ Roof _____ Front door _____

TYPE OF ALTERATION:

- () Addition () Color change () Fence () Lighting () Roof () Siding () Tree removal
- () Chimney () Deck/Patio () Landscaping () Porch () Shed () Sun room () Window/Door
- () Other

Please include a plot plan, drawings/pictures of the proposed alteration, color/material samples (photos or brochures), and any other supporting documents.

Description of proposed changes: (Attach another page if additional space is needed)

Installation of one ChargePoint CT4000 level 2 dual-port commercial charging station at non-
reserved common area parking spaces. Clinton Electric will install the station and will take
care of all necessary permitting and other County documentation.

IT MAY BE NECESSARY TO OBTAIN APPROVAL FROM YOUR TOWNHOUSE/CONDO ASSOCIATION. THEY MAY HAVE MORE RESTRICTIVE REQUIREMENTS AND THEIR OWN ARCHITECTURAL REVIEW PROCESS. IT IS THE APPLICANT'S RESPONSIBILITY TO ENSURE COMPLIANCE WITH ALL GUIDELINES AND/OR RESTRICTIONS.

This application is in accordance and does not violate the Covenants and Guidelines of the Village of Kings Contrivance or the building and zoning codes of Howard County. Applicant assumes full liability for the entire project. A Howard County Building Permit should be obtained if needed (410-313-2455). Applicant runs the risk of incurring cost of removal, modification and litigation if project is started without written approval from the Architectural Committee. Easement restrictions must be met and are the responsibility of the resident. Work must be completed within 120 days of start date. Exceptions must be brought to the attention of the Resident Architectural Committee. Miss Utility (1-800-257-7777) should be called prior to digging around gas, power, cable and telephone lines.

ACKNOWLEDGEMENT OF AFFECTED AND/OR ADJACENT PROPERTY OWNERS

While not a requirement, we encourage neighbor notification. Door hangers (available at Amherst House) may be used instead of obtaining signatures. **This awareness does not constitute approval or disapproval.** If you have any questions or concerns regarding this application, contact the Covenant Advisor at 410-381-9600.

NAME _____ ADDRESS _____

NAME _____ ADDRESS _____

NAME _____ ADDRESS _____

STATEMENT FROM THE COLUMBIA ASSOCIATION:

If this application involves the placement of a structure on a portion of the applicant's property adjacent to Columbia Association (CA) property and any portion of the structure is placed on CA property, applicant disclaims for himself/herself and his/her successors any interest in CA's property, agrees to indemnify CA against any costs it incurs to protect its property rights, and agrees to remove the structure from CA's property.

Signature, Homeowner Date _____

RAC RECOMMENDATION

____ Approved as submitted ____ Approved as an exception ____ Approved with provision ____ Denied

Explanation: _____

Signature, Resident Architectural Committee Member Date _____

AC ACTION

____ Approved as submitted ____ Approved as an exception ____ Approved with provision ____ Denied

Explanation: _____

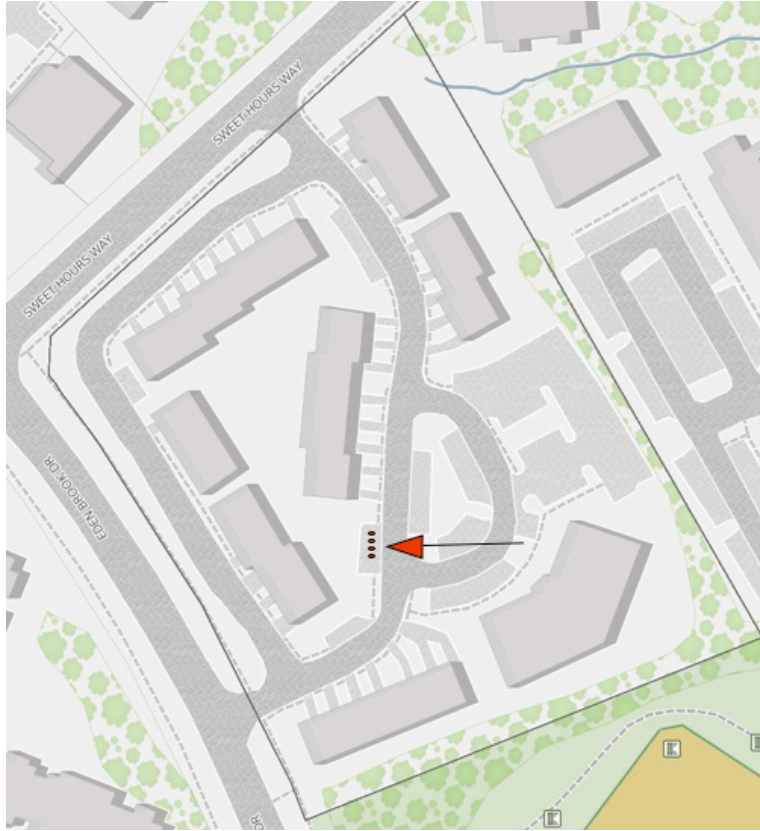
Signature, Architectural Committee Member Date _____

IF AN APPLICATION IS DENIED, A WRITTEN APPEAL REQUEST MUST BE RECEIVED AT AMHERST HOUSE WITHIN TEN (10) DAYS OF RECEIPT OF THE COMMITTEE'S DECISION.

Kings Contrivance Community Association
Amherst House
7251 Eden Brook Drive
Columbia, MD 21046

Location of Kingsgate EV Charging Station

(Access will be available from up to 4 parking spaces.)



A concrete barrier of this type will be placed in one or both of the two parking spaces directly in front of the charging station to ensure that vehicles do not inadvertently hit it:





CT4000 Level 2 Commercial Charging Station

Specifications and Ordering Information

Ordering Information

Specify model number followed by the applicable code(s).
The order code sequence is: **Model-Options. Software, Services**
and **Misc** are ordered as separate line items.

Hardware

Description	Order Code	
Model	1830 mm (6') Single Port Bollard Mount 1830 mm (6') Dual Port Bollard Mount 1830 mm (6') Single Port Wall Mount 1830 mm (6') Dual Port Wall Mount 2440 mm (8') Dual Port Bollard Mount 2440 mm (8') Dual Port Wall Mount	CT4011 CT4021 CT4013 CT4023 CT4025 CT4027
Options	Integral Gateway Modem - USA Integral Gateway Modem - Canada	-GW1 -GW2
Misc	Power Management Kit Bollard Concrete Mounting Kit	CT4000-PMGMT CT4001-CCM

Software & Services

Description	Order Code
ChargePoint Commercial Service Plan	CTSW-SAS-COMM- <i>n</i> ¹
ChargePoint Service Provider Plan	CTSW-SAS-SP- <i>n</i> ¹
ChargePoint Assure	CT4000-ASSURE ²
Station Activation and Configuration	CPSUPPORT-ACTIVE
ChargePoint Station Installation and Validation	CT4000-INSTALLVALID

Note: All CT4000 stations require a network service plan.

¹ Substitute *n* for desired years of service (1, 2, 3, 4, or 5 years).

² Substitute *n* for the duration of the coverage (1, 2, 3, 4, or 5 years).

Order Code Examples

If ordering this	the order code is
1830 mm (6') Dual Port Bollard USA Gateway Station with Concrete Mounting Kit	CT4021-GW1 CT4001-CCM
ChargePoint Commercial Service Plan, 3 Year Subscription	CTSW-SAS-COMM-3
ChargePoint Station Installation and Validation	CT4000-INSTALLVALID
2 Years of Assure Coverage	CT4000-ASSURE2
1830 mm (6') Single Port Wall Mount Station	CT4013
ChargePoint Commercial Service Plan, 5 Year Subscription	CTSW-SAS-COMM-5
4 Years of Assure Coverage	CT4000-ASSURE4
Station Activation and Configuration	CPSUPPORT-ACTIVE



CT4021



The First
ENERGY STAR[®]
Certified EV Charger

Attachment 4: Application for Exterior Alteration

ChargePoint CT4000 Family

CT4021 1830 mm (6')

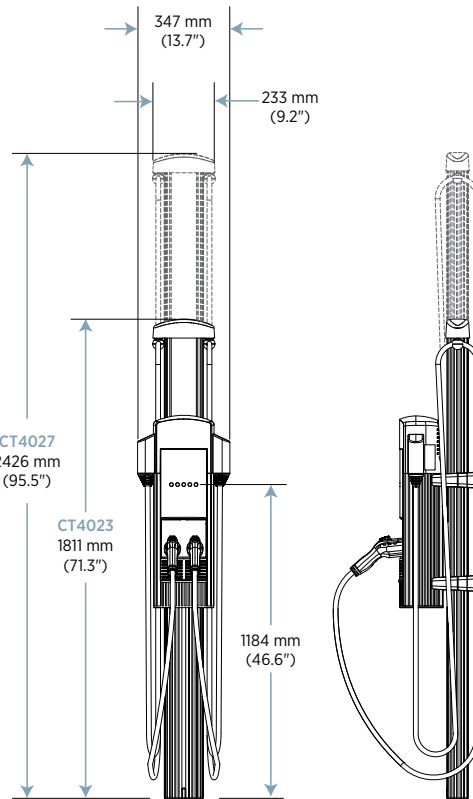
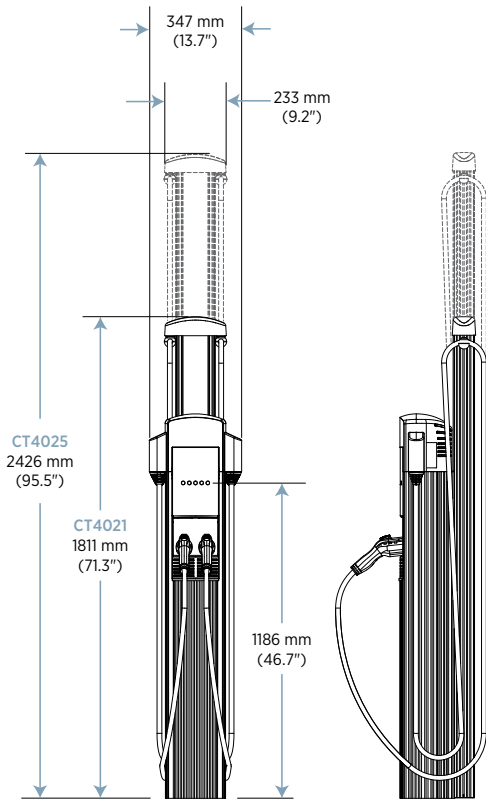
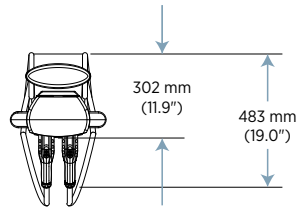
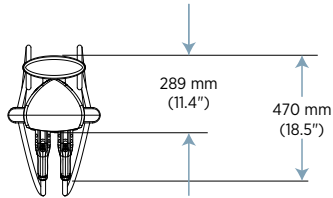
CT4025 2440 mm (8')

Bollard

CT4023 1830 mm (6')

CT4027 2440 mm (8')

Wall Mount





CT4000 Family Specifications

Electrical Input	Single Port (AC Voltage 208/240V AC)			Dual Port (AC Voltage 208/240V AC)		
	Input Current	Input Power Connection	Required Service Panel Breaker	input Current	Input Power Connection	Required Service Panel Breaker
Standard	30A	One 40A branch circuit	40A dual pole (non-GFCI type)	30A x 2	Two independent 40A branch circuits	40A dual pole (non-GFCI type) x 2
Standard Power Share	n/a	n/a	n/a	32A	One 40A branch circuit	40A dual pole (non-GFCI type)
Power Select 24A	24A	One 30A branch circuit	30A dual pole (non-GFCI type)	24A x 2	Two independent 30A branch circuits	30A dual pole (non-GFCI type) x 2
Power Select 24A Power Share	n/a	n/a	n/a	24A	One 30A branch circuit	30A dual pole (non-GFCI type)
Power Select 16A	16A	One 20A branch circuit	20A dual pole (non-GFCI type)	16A x 2	Two independent 20A branch circuits	20A dual pole (non-GFCI type) x 2
Power Select 16A Power Share	n/a	n/a	n/a	16A	One 20A branch circuit	20A dual pole (non-GFCI type)
Service Panel GFCI	Do not provide external GFCI as it may conflict with internal GFCI (CCID)					
Wiring - Standard	3-wire (L1, L2, Earth)			5-wire (L1, L1, L2, L2, Earth)		
Wiring - Power Share	n/a			3-wire (L1, L2, Earth)		
Station Power	8W typical (standby), 15W maximum (operation)					

Electrical Output

Standard	7.2kW (240V AC @ 30A)	7.2kW (240V AC@30A) x 2
Standard Power Share	n/a	7.2kW (240V AC@30A) x 1 or 3.8kW (240V AC@16A) x 2
Power Select 24A	5.8kW (240V AC@24A)	5.8kW (240V AC@24A) x 2
Power Select 24A Power Share	n/a	5.8kW (240V AC@24A) x 1 or 2.9kW (240V AC@12A) x 2
Power Select 16A	3.8kW (240V AC@16A)	3.8kW (240V AC@16A) x 2
Power Select 24A Power Share	n/a	3.8kW (240V AC@16A) x 1 or 1.9kW (240V AC@8A) x 2

Functional Interfaces

Connector(s) Type	SAE J1772™	SAE J1772™ x 2
Cable Length - 1830 mm (6') Cable Management	5.5 m (18')	5.5 m (18') x 2
Cable Length - 2440 mm (8') Cable Management	n/a	7 m (23')
Overhead Cable Management System	Yes	
LCD Display	145 mm (5.7") full color, 640x480, 30fps full motion video, active matrix, UV protected	
Card Reader	ISO 15693, ISO 14443, NFC	
Locking Holster	Yes	Yes x 2

Attachment 4: Application for Exterior Alteration

ChargePoint CT4000 Family

Safety and Connectivity Features




Ground Fault Detection	20mA CCID with auto retry
Open Safety Ground Detection	Continuously monitors presence of safety (green wire) ground connection
Plug-Out Detection	Power terminated per SAE J1772™ specifications
Power Measurement Accuracy	+/- 2% from 2% to full scale (30A)
Power Report/Store Interval	15 minute, aligned to hour
Local Area Network	2.4 GHz Wi-Fi (802.11 b/g/n)
Wide Area Network	3G GSM, 3G CDMA

Safety and Operational Ratings

Enclosure Rating	Type 3R per UL 50E
Safety Compliance	UL listed for USA and cUL certified for Canada; complies with UL 2594, UL 2231-1, UL 2231-2, and NEC Article 625
Surge Protection	6kV @ 3000A. In geographic areas subject to frequent thunder storms, supplemental surge protection at the service panel is recommended.
EMC Compliance	FCC Part 15 Class A
Operating Temperature	-30°C to +50°C (-22°F to 122°F)
Storage Temperature	-30°C to +60°C (-22°F to 140°F)
Non-Operating Temperature	-40°C to +60°C (-40°F to 140°F)
Operating Humidity	Up to 85% @ +50°C (122°F) non-condensing
Non-Operating Humidity	Up to 95% @ +50°C (122°F) non-condensing
Terminal Block Temperature Rating	105°C (221°F)
Charging Stations per 802.11 Radio Group	Maximum of 10. Each station must be located within 45m (150') "line of sight" of a gateway station.

ChargePoint, Inc. reserves the right to alter product offerings and specifications at any time without notice, and is not responsible for typographical or graphical errors that may appear in this document.

Contact Us

-  Visit chargepoint.com
-  Call +1.408.705.1992
-  Email sales@chargepoint.com



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Listed by Underwriters
Laboratories Inc.  