



ACCESSIBLE CHARGING STATIONS

Practical advice on designing inclusive charging stations

Version 1.0





DO IT RIGHT FROM THE START

In recent years, we have seen a rapid increase in the number of plug-in vehicles. It is expected that, within a few years, they will make up a very large percentage of cars on our roads. There will be electric car models for everyone's needs, so it is important that everyone has the opportunity to charge.

Today, most charging stations have major shortcomings when it comes to accessibility. It is cumbersome and, in many cases, impossible to charge if you are disabled, short or have reduced hand strength. With fairly minor adjustments, however, many charging stations can be made significantly more inclusive.

With this guide, we want to help installers of charging stations to design them in a more accessible way and to choose equipment that is easy to use. An accessible charging station benefits everyone.



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Region Jämtland Härjedalen and BioFuel Region collaborate within the project

[SiSL Mellersta Norrland](#)

which promotes battery electric cars and the expansion of charging infrastructure. We do not just want the number of charging stations to increase, we also want them to have an inclusive design.

We have produced this guide in collaboration with the associations [DHR](#) och [RTP](#). Through our discussions, we have learned much that we would like to share with others.



ACCESSIBILITY – IT BENEFITS EVERYONE

Designing charging stations to be accessible makes a huge difference for some people while also improving the stations for everyone. When we build with the focus on the user, we ensure that information is clearer, that there is more space for both prams and wheelchairs, and that we avoid unnecessary kerbs that users could trip over. Lack of accessibility can also be a violation of the Discrimination Act, so build smart and build for everyone. Being short, being colour blind or having other functional variations should not prevent a person from choosing an electric vehicle.

Vague ambitions are not enough to make charging stations accessible. The accessibility perspective must be included in the entire process, from the choice of location to selection and ordering of equipment and how the equipment is installed. Part of creating that awareness is setting requirements when ordering equipment and installation. Demand solutions that make charging more accessible. Develop a strategy for making charging stations accessible so that you can clearly list your requirements for your suppliers.





GETTING STARTED – WHAT TO THINK ABOUT

An important factor for success is including accessibility from the very start when planning the charging station. By clearly weighing the choice of location, procurement and installation, we can avoid creating obstacles for users. Lead by example and influence what you can control. Consider how you can make the charging station more accessible and how you can define requirements when ordering (see examples at the end of this guide). There are often several stakeholders involved in procurement and installation. Clarify who is responsible for ensuring that the equipment is installed to allow accessibility.

The most important thing when designing a charging station is making it easy to access the charger when the vehicle is parked. This means that there should be plenty of space both next to and in front of the vehicle. In addition, there may not be any obstacles in the form of kerbs, differences in surface levels or collision barriers. A good place to begin is to design the charging station as if it were a family car parking space that is extra long and with plenty of space marked as a buffer zone on both sides of the vehicle. If a family with a large car, children in car seats and lots of groceries has plenty of space, the charging station is well on its way to being accessible to most people.

Consider suitable locations in the car park. If possible, avoid installing the charging station in the car park's most attractive spaces. This reduces the risk of the space being used by drivers who do not need to charge. However, a location far from the entrance or service point reduces accessibility, so you must balance these conflicting needs.

WHAT TO THINK ABOUT:

- Select a location that is cleared of snow in the winter.
- Choose an illuminated spot that users will consider safe.
- The ground should be flat with very little slope.
- A location with paved surface is preferable to ensure good access in all weather conditions and to enable the marking of buffer zones.
- A parking space with open space beside it is often a good choice since this extra space improves accessibility.
- Include the accessibility aspects in your procurement. See examples of compulsory requirements at the end of this guide.
- Conduct a final inspection that should include both the charger's function and accessibility.



DESIGNING CHARGERS

For charging stations, it is crucial that the charging point and the screen not sit so high that they are above shoulder height of a person in a wheelchair. Make sure the screen and payment information provide clear contrast between text and background. It should be possible to operate the charging handle with one hand.

Choose a charger that can display the status of the charge even for individuals with colour blindness. This information is often only displayed with different colour lights or flashing patterns.

Some chargers combine 3–4 charging points in the same unit. This limits the room that is available for each parking space since the charging cable has a limited length. These types of charging solutions can be experienced as cramped and difficult or impossible to use for wheelchair users. Using equipment with a maximum of 2 charging points per unit is preferable from an accessibility perspective.

On some chargers, equipment like charging handle, screens, buttons and card readers are located on different sides of the charger. In some cases, it may be difficult to position collision barriers and weather protection around these types of chargers without reducing accessibility. This is important to remember when choosing a charger.



WHAT TO THINK ABOUT:

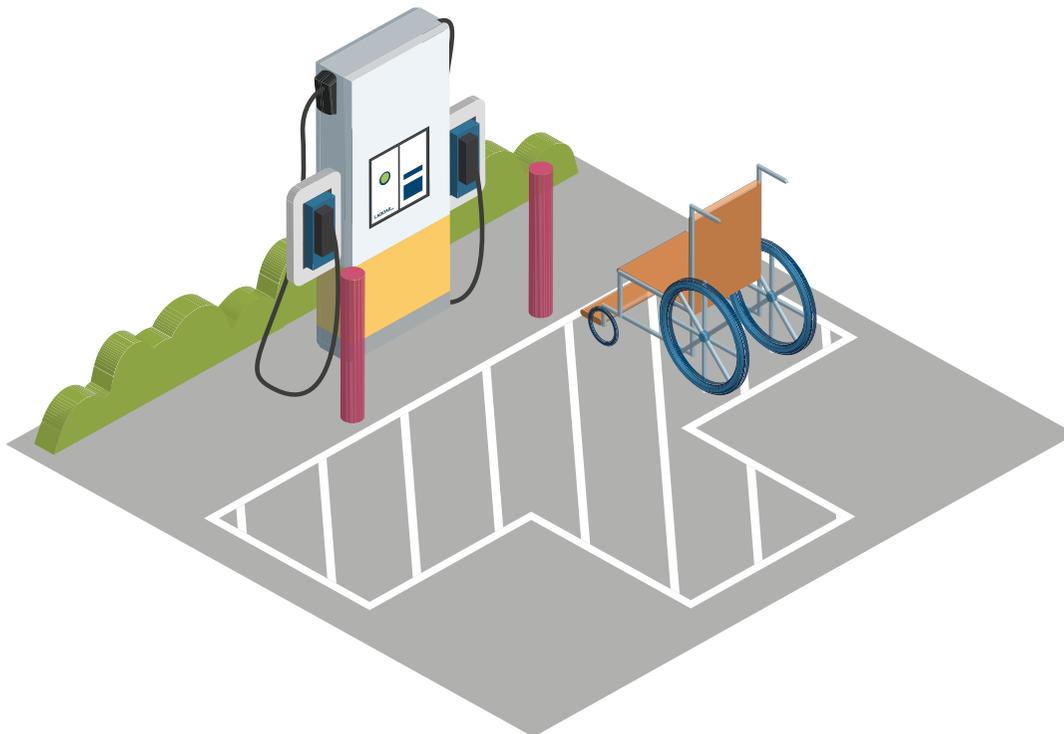
- Charging points, payment and other information must be available at a height of no more than 120 cm above the parking surface but preferably at a height of 80–100 cm.
- Make sure the screen and payment information have high contrast between text and background. Avoid red/green combinations.
- Choose a charger that can display the status of the charge even for individuals with colour blindness.



DESIGNING CHARGING STATIONS

Collision barriers must keep cars away from the charging station in case of an accident, but they may not impede accessibility and stop wheelchairs users. Collision barriers are sometimes placed too close together or consist of an arch in front of the charger, which reduces accessibility.

Sometimes charging handles and outlets, screens, buttons and card/RFID readers are placed on different sides of the charger. This makes it particularly important that the charger purchaser be aware of how weather protection and collision barriers will be positioned.



WHAT TO THINK ABOUT:

- Avoid differences in surface levels and kerbs between vehicles and the charging station.
- If possible, ensure that the car park's paved area continues up to the charging station.
- Lower the charger's concrete foundation to ground level to avoid surface level differences and so the screen, buttons and controls are at the appropriate height.
- Mark the recommended position of the vehicle.
- Clearly mark 90-cm wide buffer zones between and in front of chargers to ensure good access and room to manoeuvre both in front of and next to the car.
- Collision barriers should not limit wheelchair access. Place them at least 90 cm, preferably 120 cm, apart to provide good accessibility.
- Weather protection should also be designed so that it does not inhibit access to charging contacts, screens, buttons and card readers. Note that in some cases, this equipment is placed on multiple sides of the charger.



USE SIGNS TO CLARIFY INFORMATION

It is important that information about the charging is clear and easy for everyone to understand. Position the information so that it can be read by both seated and standing users of different heights. If the user needs to scan a QR code or a tag to pay, have these in easily accessible positions.

Ensure signage and information have large text and good contrast. Avoid coloured tiles or images as background for text. Choose decals with a matt finish to avoid glossy surfaces that are hard to read.



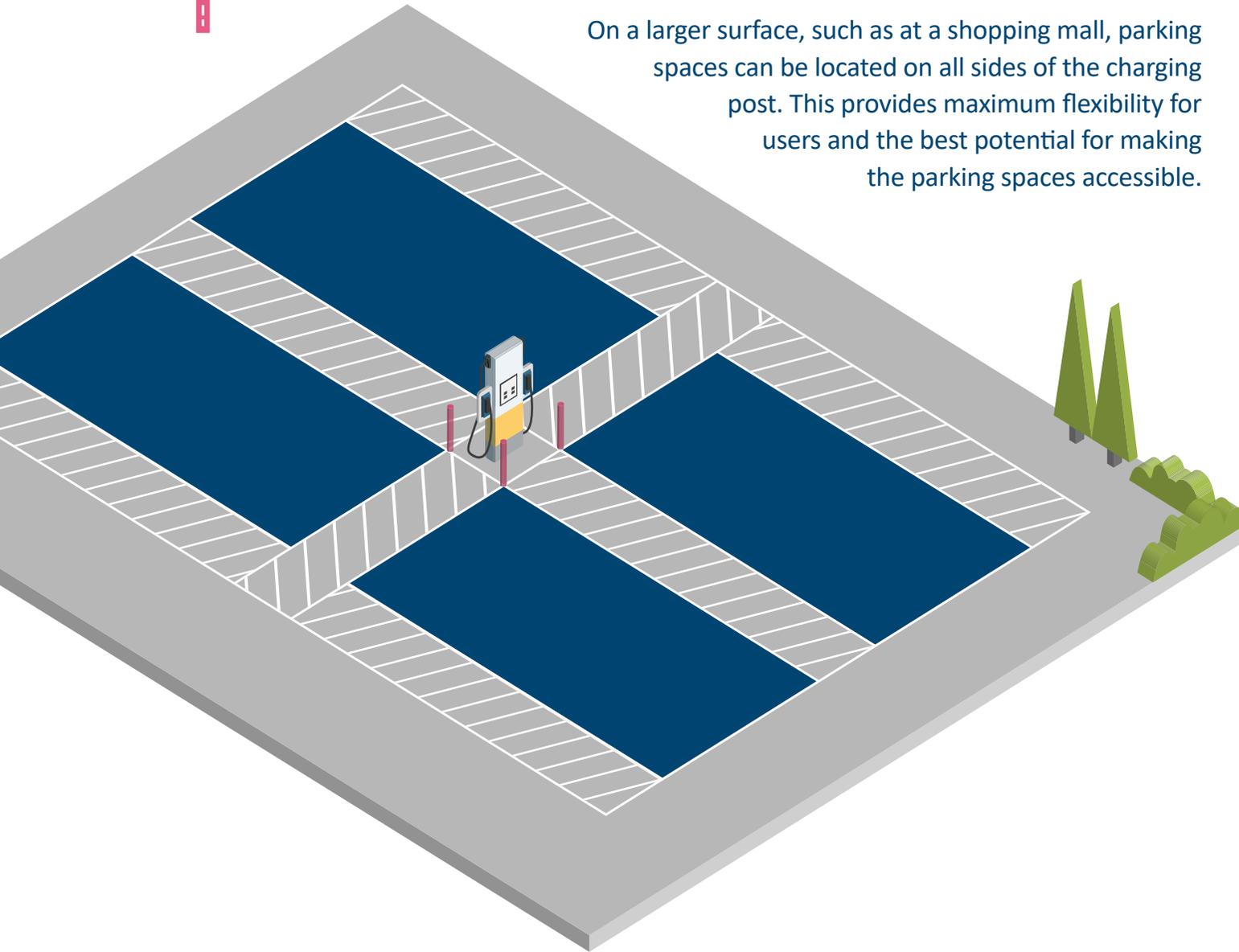
WHAT TO THINK ABOUT:

- Write all information clearly and concisely.
- Signs and information need to be readable by both standing and sitting users.
- Codes and tag readers must be positioned to be easily accessible.
- Consider also providing information or guidance in other languages.



CENTRALLY LOCATED CHARGER

On a larger surface, such as at a shopping mall, parking spaces can be located on all sides of the charging post. This provides maximum flexibility for users and the best potential for making the parking spaces accessible.



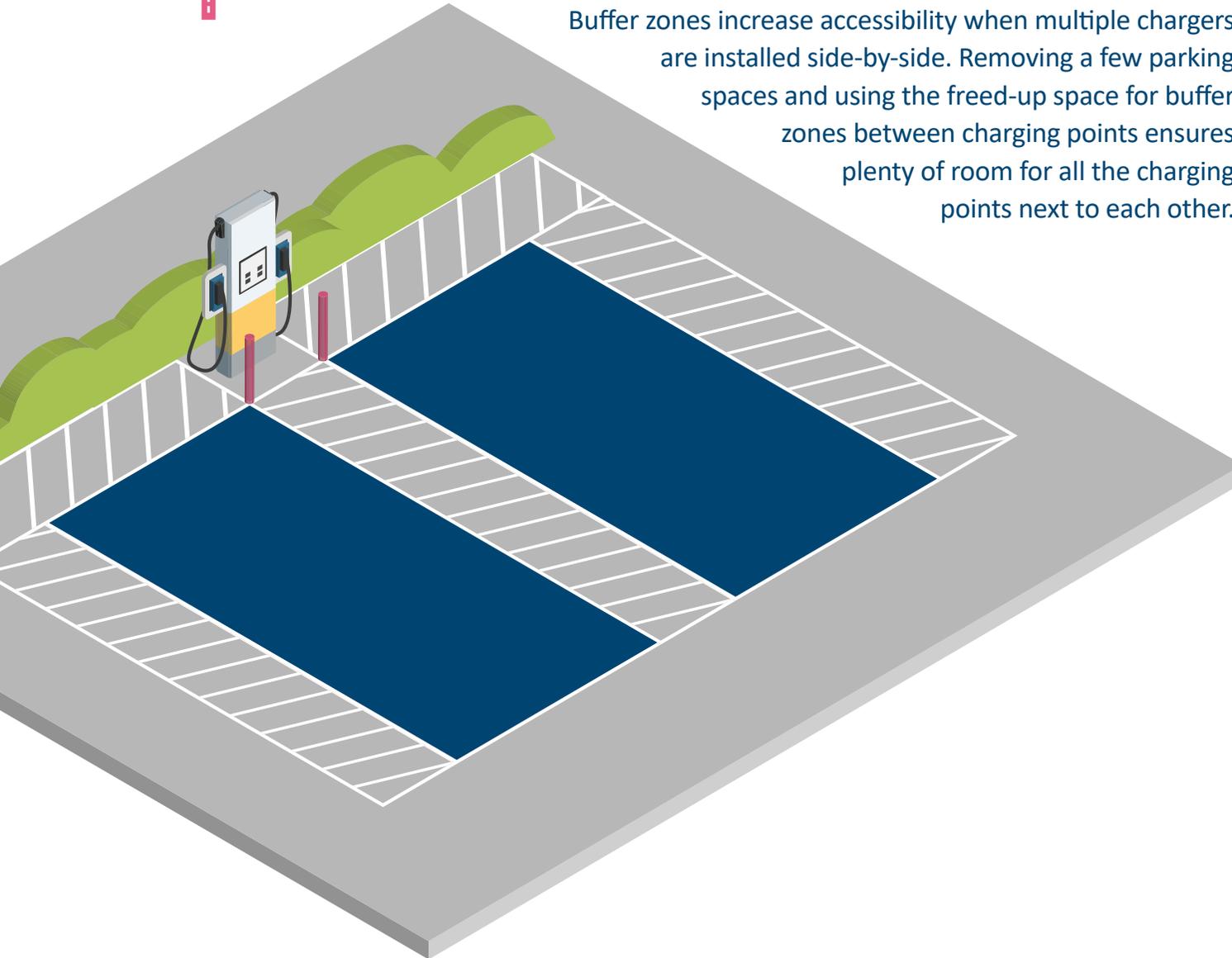
WHAT TO THINK ABOUT:

- The buffer zones between and in front of chargers provide good accessibility around the entire vehicle and reduce the risk of a user being blocked in by other vehicles.
- Note that if charging is to be available from all sides simultaneously, a charger with four sockets is required. Either a charger with four sockets or two chargers with two sockets each.
- There are chargers that have more than two charging points, but the cable length often limits accessibility and reduces manoeuvrability between the charging spaces.



RAPID CHARGERS NEXT TO EACH OTHER

Buffer zones increase accessibility when multiple chargers are installed side-by-side. Removing a few parking spaces and using the freed-up space for buffer zones between charging points ensures plenty of room for all the charging points next to each other.



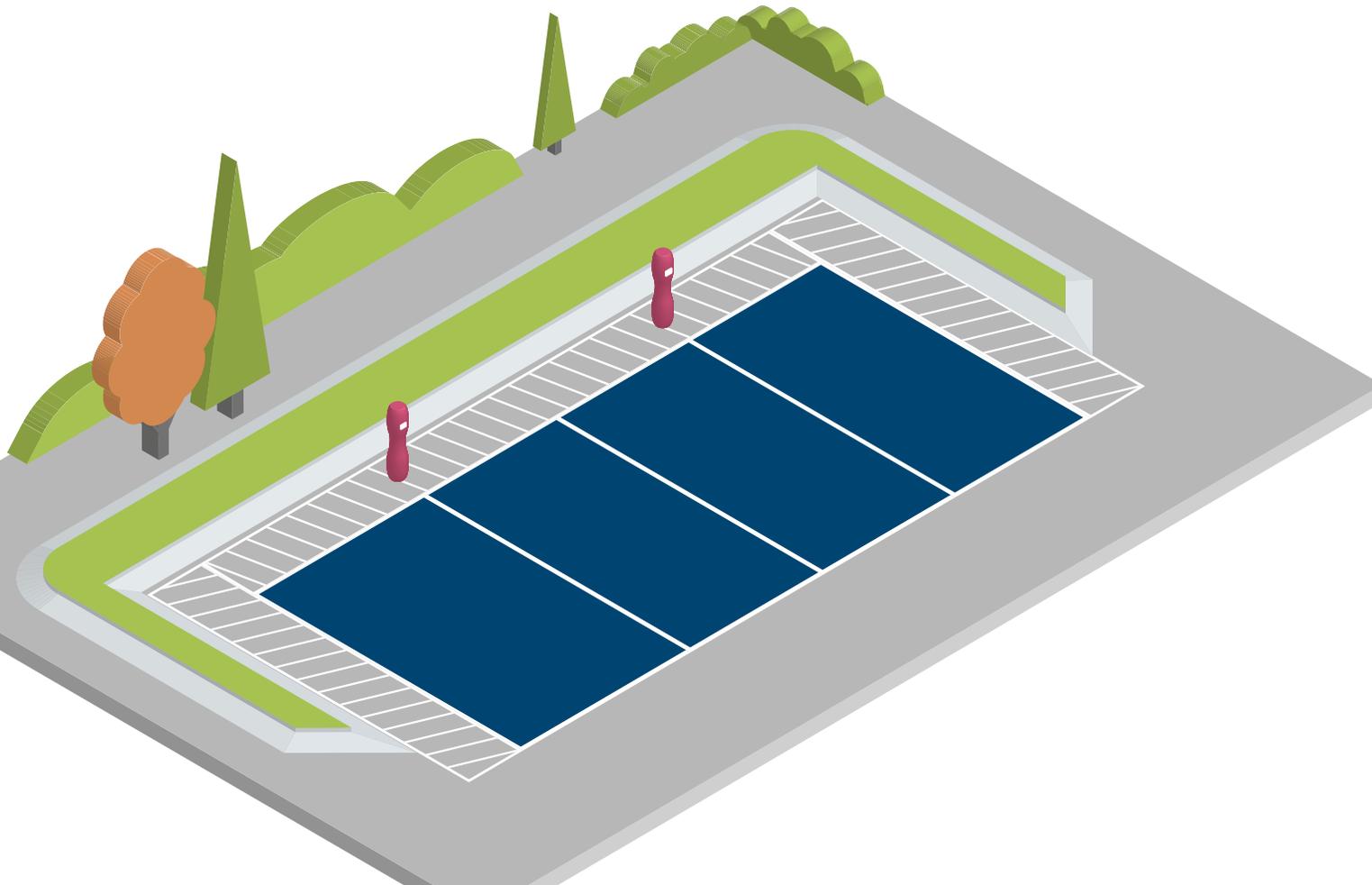
WHAT TO THINK ABOUT:

- Have well-sized buffer zones between and in front of charging spaces.
- Position the charging space facing an open area. This makes it more accessible.



SLOW AND FAST CHARGERS

When installing slow and fast chargers, it is common to install many chargers in the same location. Options for creating extra wide spaces are often limited. But perhaps the outer parking spaces can be widened? It is important to remove as many obstacles as possible, such as different surface levels.



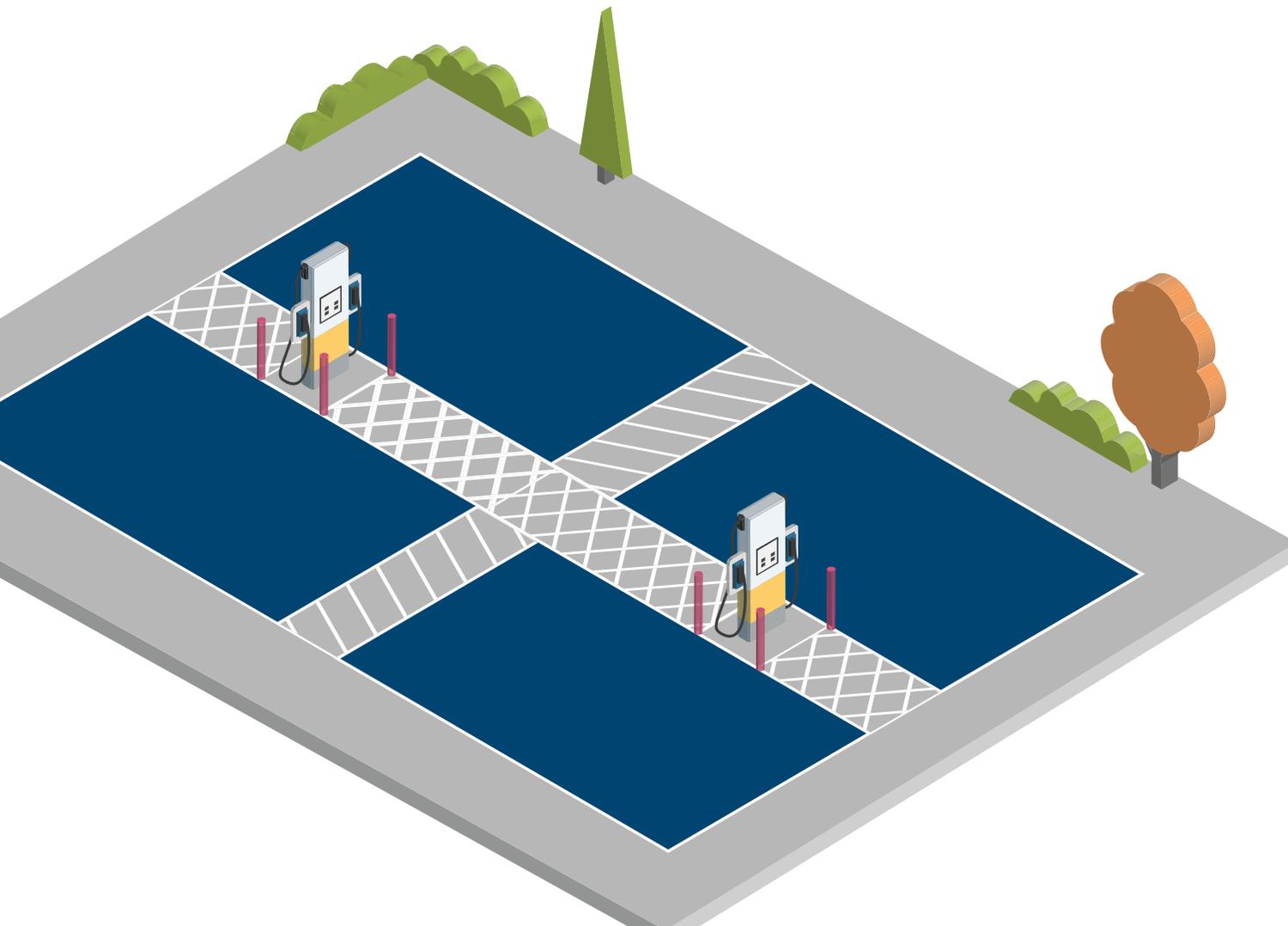
WHAT TO THINK ABOUT:

- Accessibility is improved by widening one of the outer car spaces somewhat. This is a good way to improve accessibility if there is no room for buffer zones between each parking space.
- A zone has been created in front of the parking spaces to make it easier to get around the car and access the charger.
- A parking space with open space beside it is often a good way of improving accessibility.



ENERGY STATIONS – LIKE PETROL STATIONS BUT FOR ELECTRICITY

Positioning the chargers like a traditional petrol station makes it easy to exit after charging. This also makes it easier for longer vehicles and vehicles with trailers.



WHAT TO THINK ABOUT:

- Mark the recommended position of the vehicle.
- Create buffer zones between the charging points. This ensures good access and room to manoeuvre both in front of and next to the car.
- Positioning the collision barriers between the chargers protects them without reducing access to the chargers.



COMPULSORY REQUIREMENTS

ORDERING CHARGING POINTS

Here are some examples of compulsory requirements that can be included when ordering installation of charging points.

Equipment

- Ensure signs and other information consider users with impaired vision and who are colour blind by having a clear contrast between text and background and avoiding red/green colour combinations.

Installation

- Ensure installation avoids surface level differences and kerbs between the vehicle and the charging station.
- Lower the charger's concrete foundation to ground level to avoid surface level differences and so the screen, buttons and controls are at the appropriate height.
- Have the car park's paved area continue all the way to the charging station/concrete foundation.
- Have at least 90 cm of free space around the vehicle, both between parked vehicles and between vehicles and chargers. Do this by painting a buffer zone around the charging points.

- Place any signs with payment information so they are no more than 120 cm, but preferably 80–100 cm, above the surface of the parking space.
- Place collision barriers at a distance of at least 90 cm (preferably 120 cm) from each other so that the charging point can be accessed from a wheelchair.
- Placement of the collision barrier may not reduce access to charging outlets, screens, buttons and card/RFID readers.
- Maintain at least 90 cm of open area between any weather protection and the charger on the sides of the charger with this equipment.





SiSL Mellersta Norrland
is a project aimed at improving electric vehicle charging infrastructure
in the counties of Jämtland and Västernorrland.

For more information about this project, visit:

biofuelregion.se/projekt/sisl-mellersta



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