



eCascadia Electric Truck

Models 2022 to Present



Emergency Response Guide





EMERGENCY RESPONSE GUIDE

Freightliner eCascadia: Models 2022 to Present

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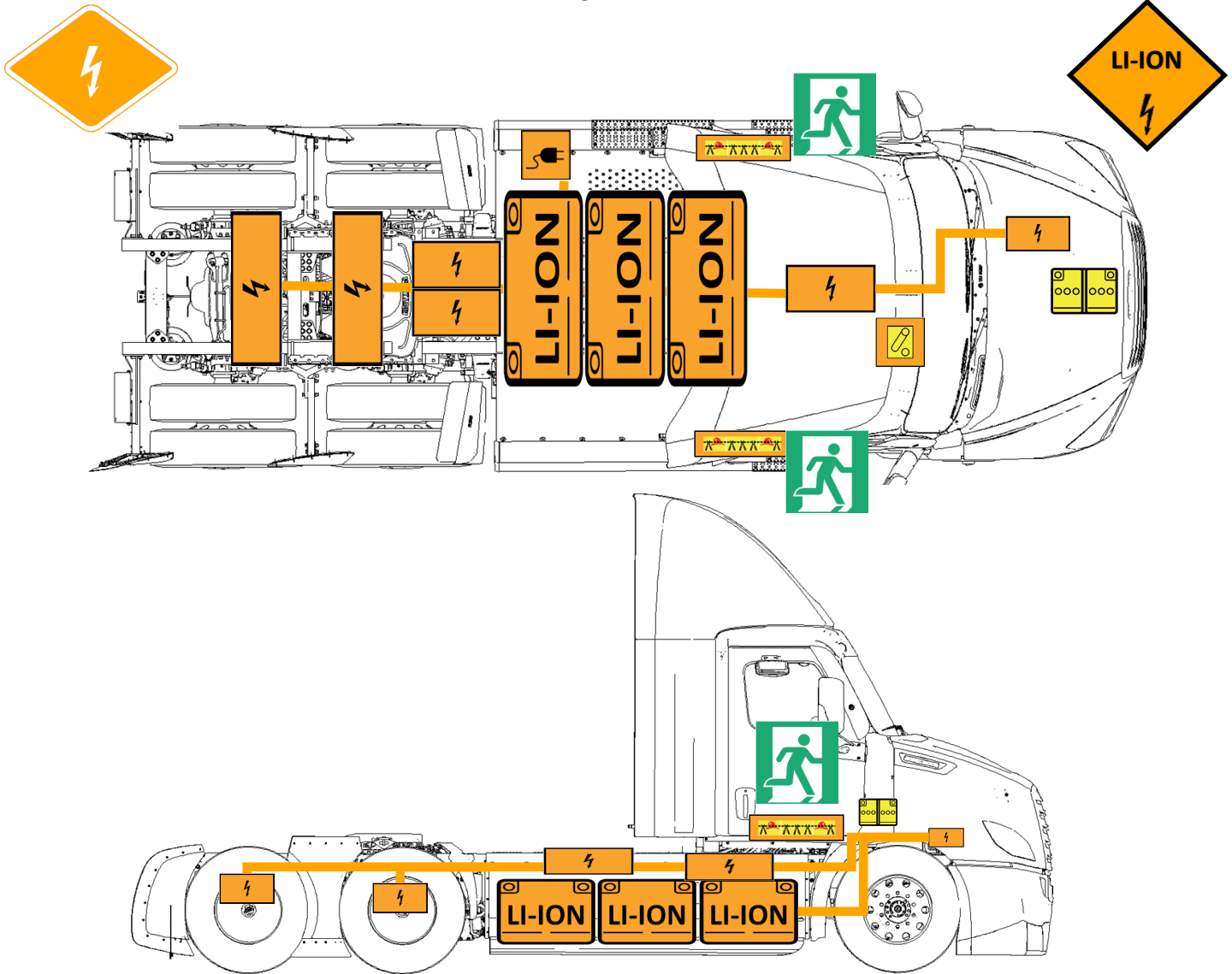
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Electric Propulsion	Charge Port	High-Voltage Li-Ion Battery	High Voltage
Low-Voltage Battery	Exits	High-Voltage Power	Disconnect High Voltage

WARNING

If high-voltage equipment or high-voltage cables (orange sheathing) are damaged due to an accident related to the equipment shown above, there may be a short circuit. Be sure to put on insulated protective gear, such as insulated clothes and gloves, before starting rescue operations.

NEVER CUT HIGH-VOLTAGE CABLES (ORANGE SHEATHING)



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1. Identification / Recognition

The eCascadia logo is located in front of the entrance door on the drivers side.



eCASCADIA



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2. Immobilization / Stabilization / Lifting

Raising a Vehicle with Air Suspension

1. Set the parking brakes, and shut down the vehicle. Chock the tires.

⚠ WARNING

Remove the air from the suspension. Failure to remove the air from the suspension may cause the vehicle to move or shift as air pressure drains from the system; this could cause the vehicle to fall, resulting in damage to the vehicle, serious injury, or death.

2. Exhaust all air from the air suspension.

⚠ WARNING

Do not use bottle jacks to raise the vehicle.

Bottle jacks can slip, allowing the vehicle to fall, which could result in damage to the vehicle, serious injury, or death.

----- NOTICE -----

Do not place jack stands under any of the suspension components; doing so could cause suspension component damage. Jack stands can be placed at any point below the axle, including the differential area.

Do not lift the vehicle from the batteries, eCarrier, or frontbox. See [Fig. below](#) for an illustration of no lift areas.



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IMPORTANT: Only lift unloaded vehicles and vehicles disconnected from trailers.

3. Place a floor jack under the axle housing, the clamp group, or the frame rail.
4. Raise the vehicle. Add additional jack stands under the axles as needed to support the vehicle.



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3. Disable Direct Hazards / Safety Regulations

In case of fire, submersion, accident, or other emergency, shut down the high-voltage system.

To shut down the high-voltage system:

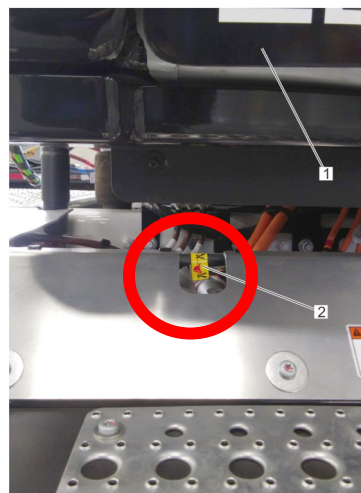
- Press the red Emergency High-Voltage Disconnect, or eStop, button on the dash See [Fig. Below](#).



- Pressing the red button immediately disables the high-voltage system by stopping the flow of power to and from the high-voltage batteries.
- Affixing a lock through the yellow switch guard stops the red button from popping out.
- To release the button and resume the flow of power, remove any attached lock and spin the button to either the left or right.

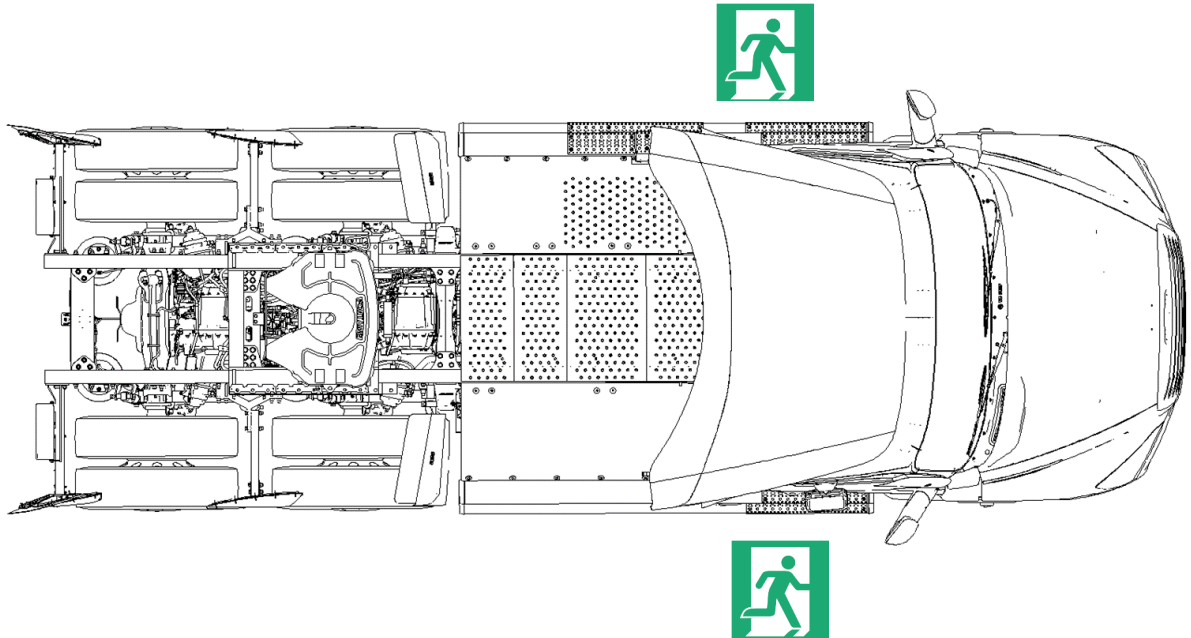
Emergency Responder Cable Cut Point

- If first responders are unable to access the eStop button on the dash, the high-voltage system can be disabled by cutting through one of the two cable cut points.
- A cable cut point is located below and toward the back of each cab door; a right hand cable cut point is shown in [Fig. Below](#).

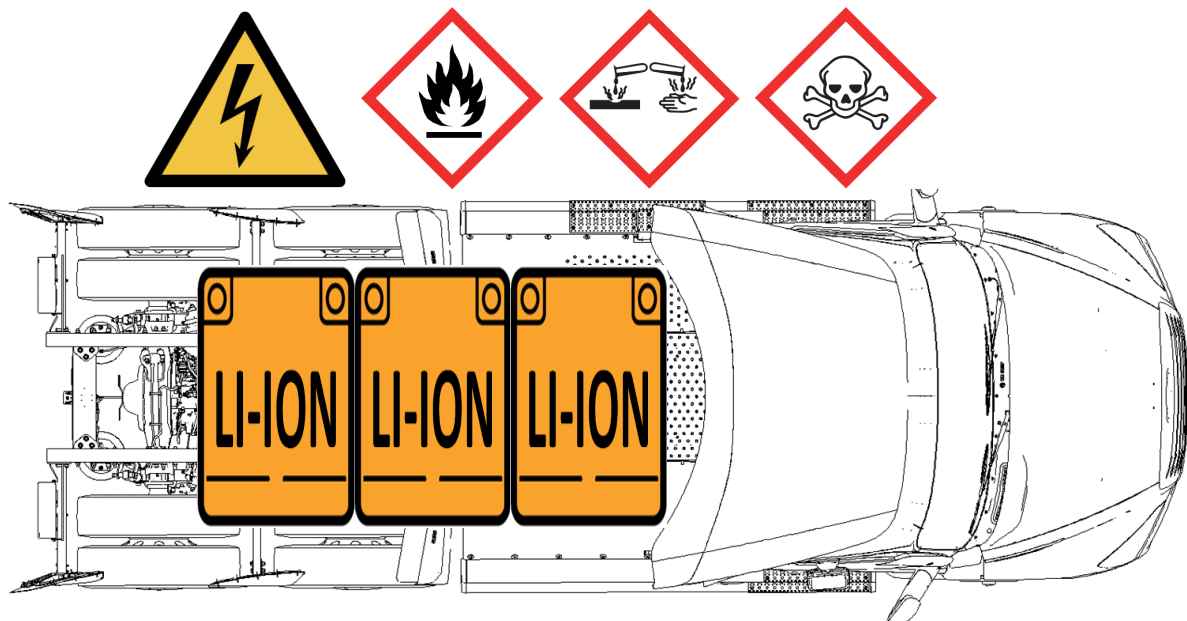


4. Access to the Occupants

- There are two access doors located on the front of the vehicle on either side.



5. Stored Energy / Liquids / Gases / Solids





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6. In Case of Fire

Lithium-ion batteries contain liquid, flammable electrolyte.

Burning batteries can also ignite other batteries in the vicinity.

The extinguishing agent must be applied continuously until fully cooled down; otherwise, there will be a risk of a new ignition.

- A burning lithium-ion battery generally cannot be extinguished directly. Water as the extinguishing agent can be used for cooling lithium-ion batteries.
- A battery fire may continue to burn for several hours or re-ignite, so it is recommended to continue to cool the battery with excessive amounts of water.
- The temperature of the battery can be monitored with a thermal imaging camera to ensure it is not heating up.
- Re-check the temperature of the battery once an hour to ensure the temperature is not increasing. If the temperature is increasing continue to cool the battery with water.

Do not store a vehicle containing a damaged or burning lithium-ion battery within 15 feet of a structure or other vehicles.

WARNING

Always wear appropriate PPE when fighting vehicle fires.

For fighting vehicle fires with lithium-ion batteries, no special protective equipment is required, or any additional protective equipment in addition to the PPE normally required for conventional vehicle fires.





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7. In Case of Submersion

DANGER

Handling a submerged vehicle without appropriate training and personal protective equipment (PPE) can result in serious injury or death.

The removal and de-energizing of a partially or completely submerged vehicle should always be handled by trained emergency responders outfitted with the required PPE.

WARNING

Do not disable the high-voltage system by cutting through an emergency responder cable cut point if the cable is submerged

Submersion in water (especially salt water) can damage low and high-voltage components. Cutting a submerged cable can result in an electrical short and subsequent fire once the vehicle is no longer submerged. This could cause serious injury or death.

WARNING

Damaged high-voltage batteries can produce flammable gas and fire which can lead to serious injury or death.

Vent the passenger compartment once the vehicle is out of the water.

Do not store recovered vehicle indoors.

The high-voltage system of the eCascadia is isolated from the chassis. When undamaged, the system will not energize the surrounding water, even when fully submerged.

If you are in a vehicle when it is submerged, exit the vehicle if you can do so safely. To minimize risk, avoid contact with a submerged high voltage system and batteries. If you have time, hit the eStop button on the dash prior to exiting.

When you are in a safe location, immediately contact emergency services.

Emergency responders will check for damage and, after removing the vehicle from the water, disable the high-voltage system.



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8. Towing / Transportation / Storage

WARNING

Do not tow an unbraked vehicle if the combined weight of both vehicles is more than the sum of the gross axle weight ratings (GAWR) of the towing vehicle. Otherwise brake capacity will be inadequate, which could result in personal injury or death.

Use of Tow Hooks

Tow hooks are not designed for on-road towing; they should be used to recover and move the vehicle to a position where it can be hooked up properly for front towing.

----- NOTICE -----

When using tow loops to move the vehicle, do not pass a sling (for example, a rope or chain) from one loop to another. Known as reeving, this practice is not permissible in most industrial applications of towing and hoisting. Reeving can overload the loops and result in damage to the vehicle. See [Fig. below](#)





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Front Towing Hookup

1. Press the eStop button on the dash and secure it with a lock.

----- **NOTICE** -----

Remove the drive axle shafts when towing the vehicle with the rear wheels on the road. Failure to do so could result in damage to the axle's internal transmission, electric motors, and other parts.

2. Remove all rear axle shafts

For any axle shaft that has been removed, cover the ends of the hubs with metal plates or plywood cut to fit the axle opening, and drilled to fit the axle shaft studs. This prevents lubricant from leaking out and will keep contaminants from getting into and damaging the wheel bearings and axle lubricant.

----- **NOTICE** -----

Failure to protect the frame rails from the towing chains could cause damage, leading to eventual frame failure.

⚠ WARNING

Failure to protect high-voltage (HV) cables from towing chains could cause property damage, severe personal injury, or death.

3. On dual drive axles, if the vehicle is to be lifted and towed, chain the forward rear-axle assembly to the vehicle frame. Use protection to keep the chains from damaging the frame.

----- **NOTICE** -----

Failure to remove the air dam equipped aerodynamic bumper prior to towing could result in damage to the air dam. A damaged air dam will negatively impact a vehicle's aerodynamic performance.

4. Remove the aerodynamic bumper.
5. Attach the towing device.

NOTE: Due to the many variables that exist in towing, positioning the lifting and towing device is the sole responsibility of the towing-vehicle operator.

6. Lift the vehicle and secure the safety chains. If extra towing clearance is needed, remove the front wheels.



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7. Connect the clearance lights, tail lights, and signal lights. Connect any special towing lights required by local regulations.

⚠️ WARNING

Failure to chock the tires or connect the tow truck's air brake system before releasing the spring parking brakes could allow the disabled vehicle to suddenly roll. This could cause property damage or personal injury.

8. Chock the tires on the disabled vehicle and connect the towing vehicle's air brake system to the vehicle being towed. Then, release the spring parking brakes on the disabled vehicle and remove the chocks.

Front Towing Hookup With Removable Tow Loops

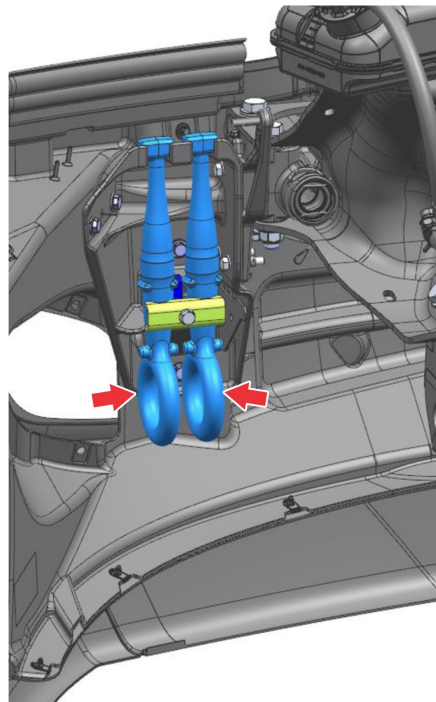
1. Press the eStop button on the dash and secure it with a lock.

⚠️ DANGER

When working on the vehicle, engage the parking brake, shut down the electrical system, and chock the tires.

Before working under the vehicle, always place jack stands under the frame rails to ensure the vehicle can not drop. Failure to follow these steps could result in serious personal injury or death.

2. Open the hood. Remove the tow hooks, located behind the driver's-side bumper. See [Fig. below](#). Close and latch the hood.





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NOTICE

New or ungreased tow loops may be hard to install. Tow loops that are not properly installed may be damaged or break.

3. Install the tow loops onto the tow loop receivers through the tow loop holes in the bumper. Pull the tow loops to ensure they are securely engaged in the tow loop receivers.
4. Lower the stinger assembly so that it is level and approximately 1 inch (0.3 cm) off the ground. Back the tow truck so that the crossbar with lift adaptors is within 6 inches (15 cm) of the Aero bumper. See [Fig. below](#).



NOTICE

When using tow loops to move the vehicle, do not pass a sling (for example, a rope or chain) from one loop to another. Known as reeving, this practice is *not* permissible in most industrial applications of towing and hoisting. Reeving can overload the loops and result in damage to the vehicle.

5. Pull the tow cables out of the tow truck and connect the tow cable lifting hooks onto the tow hooks, then extend the recovery boom within 4 to 6 inches (10 to 15 cm) of being vertical of the tow hooks. See [Fig. below](#).





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6. Lift the front of the truck until there is enough clearance for the stinger and crossbar to pass under the bumper. See [Fig. below](#).

If enough clearance can not be gained with a single lift, jack stands or other means capable of supporting the weight on the front axle must be used while the cables are shortened to allow a second lift.



7. Chock the rear tires.

⚠ WARNING

Failure to chock the tires or connect the tow truck's air brake system before releasing the spring parking brakes could allow the disabled vehicle to suddenly roll. This could cause property damage or personal injury.

IMPORTANT: Before towing an eCascadia all rear axle shafts must be removed.

8. Remove all rear axle shafts.

For any axle shaft that has been removed, cover the ends of the hubs with metal plates or plywood cut to fit the axle opening and drilled to fit the axle shaft studs. This prevents lubricant from leaking out and will keep contaminants from getting into and damaging the wheel bearings and axle lubricant.

9. Use mid-rise or high-rise forks, or lift adaptors (part number 0200020) on the crossbar to provide clearance for the aerodynamic bumper. See [fig below](#).

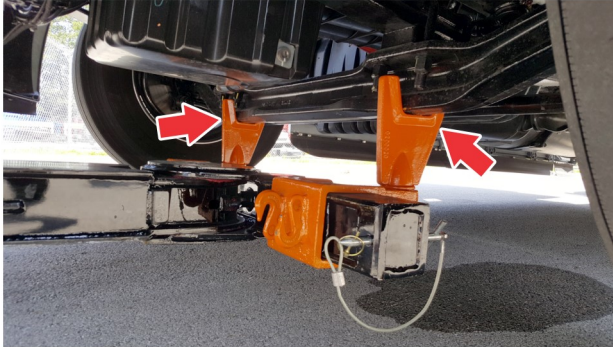




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10. Extend the stinger and place the lift adaptors under the axle. Make certain the lift adaptors are under the front suspension springs between the U-bolts. See [Fig. below](#).



11. Secure the vehicle axle to the tow truck crossbar with a chain or ratchet strap.

WARNING

Failure to protect high-voltage (HV) cables from towing chains could cause property damage, severe personal injury, or death.

12. Remove the tow cables from the tow loops and retract the recovery boom. See [Fig. below](#).



13. Remove the tow loops from the bumper.

14. Connect the air and electrical supply lines from the tow truck to the truck being towed.

IMPORTANT: On trucks equipped with a front air suspension, either air pressure must be supplied to the secondary air system or the front suspension must be blocked to operating height with wooden spacers and the axle chained to the frame to prevent damage to the truck.

15. Release the park brake and remove the chocks from the rear tires.



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16. Use the stinger to pull the truck close to the back of the tow truck for final towing position. See [Fig. below](#).



17. Connect the safety chains. See [Fig. below](#).



Rear towing

Rear towing is not an option for the eCascadia

The deck plates which protect the batteries interfere with tying down the cab; windlifting the cab during rear towing will damage the air springs and other components.

In addition, eCascadia vehicles are equipped with an aerodynamic bumper which can be damaged during rear towing.



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Storage of Damaged Battery

1. If the lithium-ion battery has been damaged, it is possible that the battery can increase in temperature and lead to a fire. Use a thermal imaging camera to ensure that battery is not increasing in temperature or above 60° C. Take a measurement once an hour to verify if the temperature has stabilized or is increasing. If needed initiate cooling with water.
2. Before handling the damaged battery ensure there is no smoke or signs of heat. If after observing the battery pack with no signs of heat and the high voltage system has been disabled, the battery may be moved to a safe location.
3. Ensure the damaged battery or vehicle with damaged battery has a 15 foot buffer area around it from buildings or materials.