

1. POST DISASTER HAZARD SPECIFIC CHECKLIST

1. Floods/ Water logging

Component	Post-Disaster Checklist
Fleet	- Water ingress in batteries, electrical systems, cabin, and storage - Test braking and steering systems for water damage - Rust/corrosion signs in undercarriage and connectors
Depot	- Inspect electrical control rooms, substations, and wiring for short circuits - Drain water, clean oil pits, and disinfect - Damage to stored spare parts, diesel tanks (if hybrid)
Charging Infra	- Test chargers for moisture damage - Ensure earthing, surge protection, and insulation is intact - Clean connectors and recheck voltage output before resuming
Operating Environment	- Assess road subgrade and surface damage - Check water stagnation near bus stops, terminals - Coordinate with drainage departments for future risk mitigation

2. Heatwaves/ Extreme Temperature

Component	Post-Disaster Checklist
Fleet	- Check battery thermal profiles and BMS logs - Inspect HVAC systems and cabin insulation - Monitor for overheating signs on high-temp days
Depot	- Inspect staff working areas for ventilation adequacy - Ensure shaded parking, cool zones, and fans are operational - Verify fire safety and emergency response equipment
Charging Infra	- Monitor heat damage to charging cables, terminals - Review operational logs for charger overheating shutdowns - Confirm air conditioning/cooling systems for chargers are functional
Operating Environment	- Check road surface integrity (melting asphalt, cracks) - Ensure emergency water, first-aid, and heat protection gear at bus stops - Assess traffic delays due to heat-related incidents

3. Earthquake/ Landslides

Component	Post-Disaster Checklist
Fleet	- Inspect vehicle structure, steering alignment, and suspension - Ensure onboard electronics and displays are not shaken loose - Check emergency egress functions and fire suppression systems
Depot	- Check building cracks, slab displacements, wall collapses - Inspect underground storage, tanks, and pit alignment - Test power supply and water pipelines for damage
Charging Infra	- Verify anchoring of chargers and switchboards - Conduct safety test on transformers and power distribution units - Inspect cable trays, junction boxes, and connectors
Operating Environment	- Evaluate road damage, slope stability, and risk of aftershocks - Deploy traffic control if route sections are unusable - Install warning signage and barriers as needed

4. Battery Fire/ Explosion

Component	Post-Disaster Checklist
Fleet	- Isolate affected vehicles immediately - Inspect fire suppression systems - Review battery management system logs and failure points - Perform thermal imaging scan on nearby vehicles
Depot	- Assess fire spread, smoke damage, and ventilation - Review placement of fire extinguishers and hydrants - Check alarm and emergency alert systems functioned correctly
Charging Infra	- Examine charger casing, cooling system, and cable burns - Test power supply stability and short-circuit protection - Review fire origin to isolate systemic issue
Operating Environment	- Notify and reroute buses from affected routes - Clean up smoke-damaged stations or infrastructure - Coordinate with local emergency/fire departments for inspection

5. Grid instability/ Power Outage

Component	Post-Disaster Checklist
Fleet	• Check if any battery malfunctions or communication losses occurred during outage • Ensure power-dependent systems (HVAC, doors, telematics) are functional • Update software logs for power cut response tracking
Depot	• Inspect UPS, backup generators for fuel levels and performance • Test depot lighting, control systems post-outage • Restart systems in phased manner to avoid surge overload
Charging Infra	• Review charger restart logs for incomplete sessions or faults • Calibrate chargers and test voltage stability before resuming • Inspect grid interface, breakers, and fuses for tripping/damage
Operating Environment	• Identify traffic disruptions due to signal blackout or ITS failure • Coordinate with DISCOMs for outage reporting and future backup planning • Assess impact on passenger information systems (PIS, AFC, GPS)

6. Cyber Threat

Component	Post-Disaster Checklist
Fleet	• Scan vehicle software for unauthorized access or code • Reset and patch onboard systems if breached • Check GPS, telematics, and control software for anomalies
Depot	• Audit all access points and login logs • Reset credentials and install patches • Ensure firewall and endpoint protection are updated
Charging Infra	• Validate charger firmware integrity • Reboot and test for secure remote access • Block malicious IPs or access logs identified
Operating Environment	• Check ITS, CCTV, AFC systems for breach indicators • Restore backup data and logs • Inform cybersecurity agency or certifying authority for investigation

7. Technological Obsolescence

Component	Post-Disaster Checklist
Fleet	- Assess onboard systems (BMS, Telematics, Software) for outdated firmware or unsupported versions - Check compatibility of vehicles with current charging standards and depot systems - Plan for software updates, retrofits, or phased replacement of obsolete fleet
Depot	- Review depot management systems (IT systems, SCADA, monitoring tools) for software obsolescence - Assess compatibility with new fleet technologies and charging systems - Identify need for system integration upgrades or replacements - Evaluate vendor support and upgrade pathways for legacy infrastructure
Charging Infra	- Assess chargers for compatibility with latest charging protocols and standards - Evaluate charging efficiency and downtime due to outdated systems - Identify risks of interoperability issues with newer buses
Operating Environment	- Review operational software platforms (fleet management systems, scheduling tools) for outdated technology - Assess integration gaps between old and new systems across fleet and depot - Evaluate vendor ecosystem and transition strategy for new technologies

8. Protest / Vandalism

Component	Post-Disaster Checklist
Fleet	- Inspect vehicles for window, light, or panel damage - Secure missing or stolen components - Review CCTV footage (if available)
Depot	- Assess perimeter fencing, locks, gate access - Reinstall broken equipment or systems - File police complaint and insurance claims
Charging Infra	- Check for severed cables, broken panels, or disabled screens - Secure and test grounding, insulation, and alarms - Document and photograph all damages
Operating Environment	- Replace broken signage, station furniture - Clear debris and make environment safe for public access - Reinforce law enforcement presence if needed

9. Traffic & Operational Accidents/ Human Negligence

Component	Post-Disaster Checklist
Fleet	- Assess structural, suspension, and electrical damage - Inspect safety systems - cameras, indicators, brakes - Conduct accident root-cause analysis
Depot	- Evaluate impact on scheduling, vehicle deployment - Conduct incident report and insurance processing - Review driver training effectiveness
Charging Infra	- Check if crash occurred near charging points - Verify if any pole, signage, or power systems were affected - Test system for short-circuit or surge risk
Operating Environment	- Inspect site of accident for road repair needs - Reassess speed limits and signage - Coordinate with traffic police for improved safety

10. Management Lapse

Component	Post-Disaster Checklist
Fleet	- Review logs for driver errors, misuse of systems, or deviation from SOPs - Inspect for improper battery charging, overloading, or operational misuse - Conduct refresher training if patterns are observed
Depot	- Check shift logs, maintenance records for skipped tasks or errors - Verify inventory handling (spare parts, fuel, chemicals) is proper - Audit operational SOP adherence by staff and contractors
Charging Infra	- Inspect for manual override incidents or improper charging practices - Review logs for skipped maintenance or software tampering - Recalibrate or reset chargers as needed
Operating Environment	- Assess ITS, CCTV, and station safety protocols violated - Verify if SOPs for passenger handling, emergency response were followed - Document lapses and initiate disciplinary or corrective measures