Almonte

Battery Energy Storage System I & II

Emergency Response Plan

Compass Greenfield Development

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If there is a fire or imminent threat to public safety immediately notify municipal emergency services.

Call 9-1-1

If remote from the scene of the emergency report the incident via the identified non-emergency municipal number.

Refer to Appendix E

Nearest Medical Facility

Almonte General Hospital - 75 Spring St, Almonte / Mississippi Mills, ON

Battery Energy Storage Systems Facility Fire

In the event of a thermal runaway event has propagated into a BESS module or unit fire the following should be recommended to the attending fire service;

Allow the affected module / unit to consume itself as it is designed to do. Applying water to the burning unit will have minimal effect and will only slow its eventual combustion.

At the discretion of first responders, apply water (fog pattern) to the exposures.

Monitor the effected unit and allow the unit to cool down.

Document Control

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1 Introduction

This document is the Emergency Response Plan for all facilities, infrastructure and operations associated with the Almonte Battery Energy Storage System (BESS). This plan has been developed to correspond with the elements of the ***CSA Z731 Emergency Preparedness and Response Standard*** and meet the requirements of the ***Hydro One BESS Fire Protection Risk & Assessment Standard***.

1.1 Purpose and Scope of this Plan

This Emergency Response Plan (ERP) has been developed to ensure a state of readiness and facilitate a prompt and orderly response to any emergency resulting from the operations of the Almonte Battery Energy Storage System or any other incident that has the potential to have a consequential impact on its operations. This ERP also details integration with other stakeholders and rights holders, escalation of management response resources beyond facility capabilities, roles and responsibilities and emergency response contacts and resources.

This ERP does not cover detailed specific safe work practices or Compass policies that staff must follow when responding to an emergency. Rather, it lists all potential steps to be considered to ensure that an important step is not missed.

The purpose of this Plan is to outline detailed measures to prepare for an efficient and effective response and to achieve:

- Immediate notification with the company to ensure that an appropriate response is initiated;
- Compliance to the notification requirements to regulatory agencies;
- The earliest possible response to an emergency event using available company or contracted resources;
- The earliest possible liaison with municipal and regulatory authorities at the release site to ensure the protection of the public; and,
- A mechanism to work in a coordinated manner with these groups.
- In all environmental incidents, the key priorities of the response will be to protect the lives of and prevent injuries to the employees, contractors, and the public; to protect the surrounding environment; to protect the property which the facility is located on; and to minimize the disruption of terminal and customer business activities.

1.2 Plan Administration

This document meets the requirements of Compass Greenfield Development's (Compass) document control procedure. All printed copies of the ERP shall be numbered and deemed to be controlled. The Health & Safety Manager shall maintain a master list of all controlled copy holders and proof of receipt by controlled document holder. Any revisions to the plan will be documented on the Revision Log in this Section. The document will reside in Compass's electronic document control system.

1.3 Regulatory Compliance

This Emergency Response Plan may be used in conjunction with other emergency plans. This plan is maintained electronically and is accessible to all personnel.

Compass is responsible for complying with and cooperating with several regulatory agencies, including:

- Ontario Ministry of Environment, Conservation and Parks
- Ontario Ministry of Labour
- Ontario Electrical Safety Authority

1.4 Compliance with Authority Having Jurisdiction

As part of the permit and approval process for the development of this BESS the Municipality of Mississippi Mills has requested that Compass meet specific elements of the ***Hydro One BESS Fire Protection Risk & Assessment Standard*** in addition to other risk assessment measures. While the following elements were specified to be included in a Site-Specific Emergency Response Plan (ERP) some have been captured under the Compass Greenfield Development Emergency Management Plan. The following elements and their location are defined.

Compass Emergency Management Plan

- Procedures for inspection and testing
- Procedures in response to notifications of system alarms or out-of-range conditions.
- Procedures and schedules for conducting drills
- Emergency planning and training of emergency responders
- Hazard Mitigation Analysis & Fire Risk Assessment[1] (Supporting Document)

Site-Specific Emergency Response Plan

- Procedures for safe shutdown.
- Emergency procedures to be followed in case of fire, explosion, release of liquids or vapors, or damage to critical moving parts.
- Response considerations for surrounding public area
- Community Risk Assessment and an Air/Gas Dispersion Study.
- SDS (safety data sheets)
- Procedures for dealing with BESS equipment damaged from an emergency

[1] The Tesla provided Tesla Megapack 2 XL Fire Protection Engineering & UL 9540A Interpretation Report contains literature regarding the potential system/unit failure modes and the preventative and mitigating engineered systems utilized. Additionally, the UL 9540 test results illustrate the anticipated risk associated with a system failure resulting in thermal runaway.

1.5 Emergency Definition

Compass defines an emergency as any event which poses the following:

- An immediate and serious threat to the health or safety of its employees, contractors or to the public;
- Threatens the integrity of a Compass managed operation;
- Threatens to disrupt Compass's continuity of business services; and/or
- Has the potential to impact the community or environment.

The following events shall be considered an emergency:

- Fire or explosion;
- Death or critical injury;
- Evacuation of one or more tenant suites or units;
- An unplanned disruption of a critical service, e.g. water, electricity, etc.;
- A natural event e.g., flood, severe storm, etc. having a potentially adverse impact on a Compass operation or facility;
- Any third-party action or incident that may or has threatened the safety of a Compass employee or contractor or has the potential to disrupt the continuity of Compass's business services.

1.6 Plan Implementation

This plan will be implemented for any emergency or exercise that involves the Almonte BESS. If a different plan is identified as more applicable it may be utilized if the decision to use an alternate plan if approved by the established Unified Command.

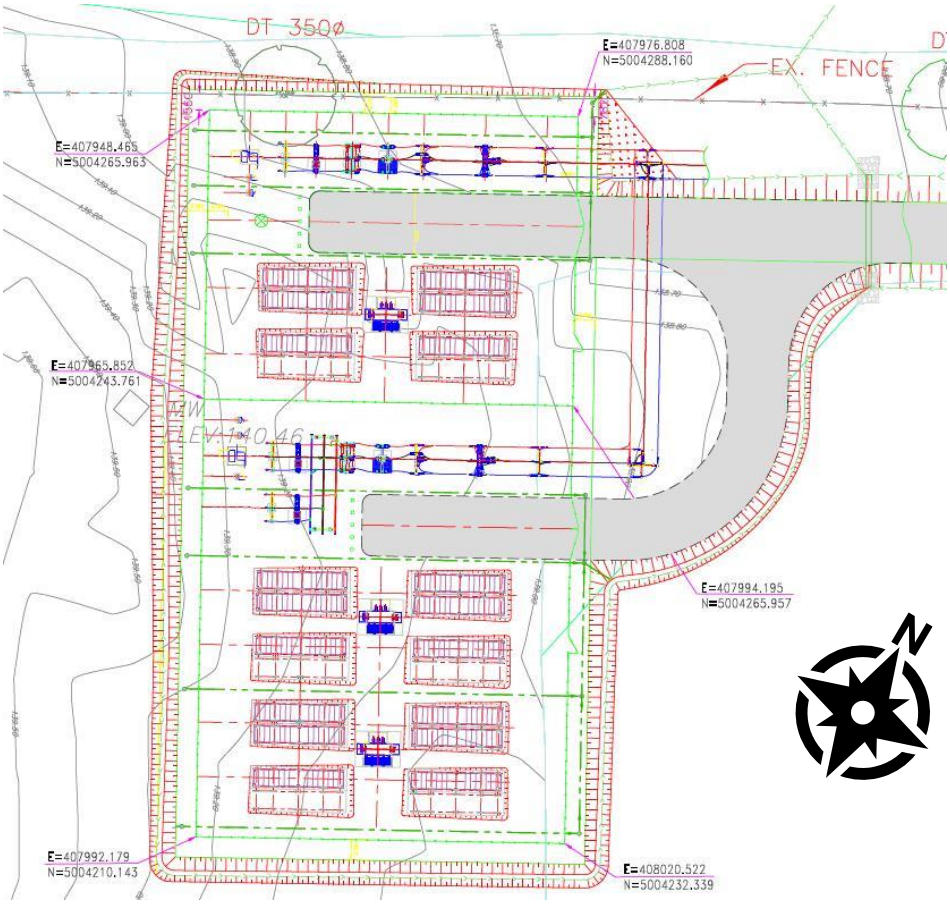
2 Almonte Battery Energy Storage System

The Almonte BESS I and Almonte BESS II are located at 6299 County Road 29 in the Municipality of Mississippi Mills.

The systems have a collective capacity of 14.998 MW (BESS 1 - 4.999 and BESS II – 9.9) or 59.992 MW/h which is interconnected with Hydro One Networks Inc.

2.1 Almonte BESS System Site

The site is located approximately 600 m from County Road 29 and has a site coverage of 5800 $m^{2.}$ A service road connects the BESS site with the County Road and contains a turnaround area. Interconnection with Hydro-One Networks Inc. is located at County Road 29.



2.2 Community Risk Assessment / Adjacent Land Use

South - Adjacent land use South of the BESS site consists of fallow and active farm lands. Beyond 500 m a grouping of low-density single-family dwellings exist with multiple routes of egress.

West - Adjacent land use West of the BESS site consists of a small woodlot and farm lands. Ramsay Concession 8 is located approximately 725 m to the West.

North - Adjacent land use North of the BESS site consists of a small woodlot and farm lands. A small watercourse flows East from the woodlot towards the Mississippi River located East of County Road 29, approximately 900 m to the North.

East -Adjacent land use East of the BESS site consists of farm lands / 2-3 farmsteads with single-family dwellings. County Road 29 is located approximately 750 m to the East.

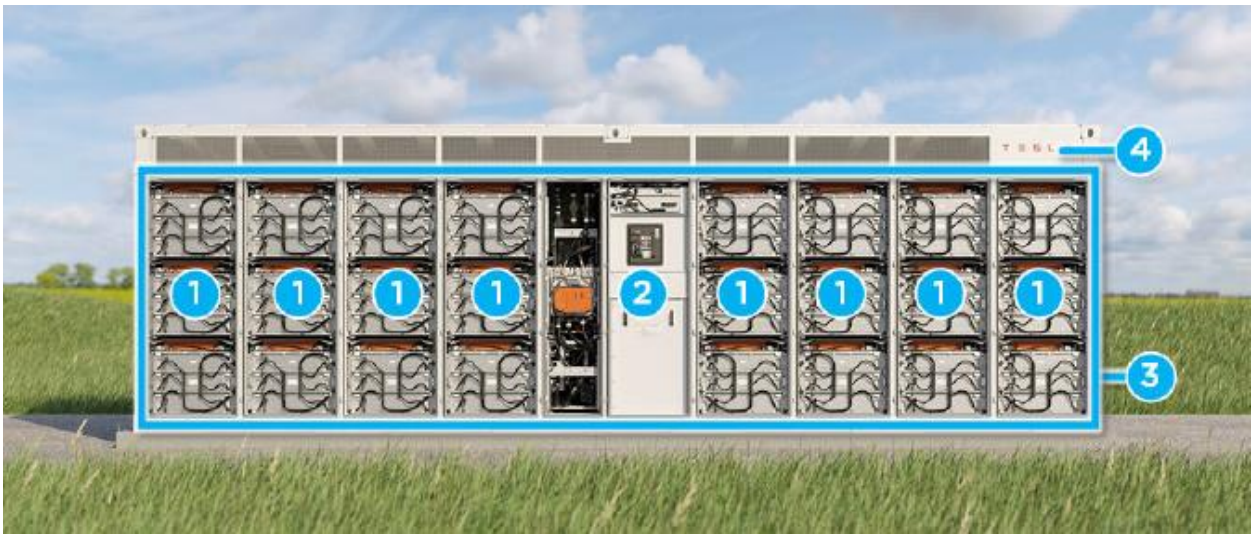
2.3 BESS System

The Almonte BESS is made up of eighteen (18) Tesla constructed Megapack 2XL Units. Each Tesla Megapack 2XL Unit is contains four (4) primary operational and safety elements.

Figure 2-1 Typical Tesla Megapack Unit

Figure 2-2 Typical Tesla Megapack Site Arrangement

Figure 2-3 Tesla Megapack Equipment Features



1. Battery modules with active and passive fuses – externally serviceable
2. Touch-safe Customer Interface Bay
3. Non-walk-in IP66 enclosure and deflagration mitigation
4. Thermal roof with overpressure vents

3 Hazardous Substances

3.1 Hazardous Substances On-site

The following hazardous substances are utilized on-site with the Almonte BESS.

Table 3-1 – Hazardous Substances CAS, UN Numbers and TC ERG Guide Numbers

Products	CAS Number	UN Number	TC ERG Guide Number
Electrolyte (minimal volume)	N/A	N/A	N/A
Battery Module Coolant Low-Solids Diluted Heat Transfer Fluid (*Ethylene Glycol*)	107-21-1	n/a	n/a
Battery Module Refrigerant (*Tetrafluoroethane (HFC 134A)*)	811-97-2	1950	126

3.2 Product Risk Assessment

In the event of an off-normal condition within the Compass operated system or some other external factor resulting in the damage of equipment, initiating a thermal runway condition, fire or other release the following potential consequences have been identified.

- Human health & safety consequences e.g., Inhalation, skin / eye contact damage.
- Environmental consequences
- Facility infrastructure / operational impacts due to thermal impacts

When first approaching a leak or spill site, working personnel should consider wind direction, velocity, surface contour and the effects of heavy vegetation growth. All possible sources of ignition should be eliminated. A hazardous atmosphere detector (% explosive limit, 0_2) should always be used when investigating a leak or spill site

3.3 Product Safety Data Sheets

In the event of a response emergency personnel and response contractors upon arrival at site will be briefed via the incident safety plan on all specific hazards for the product involved.

Product Safety Data Sheet (SDS) for products utilized by Compass infrastructure are available from Compass personnel or via CANUTEC or electronically from Compass product suppliers. Products, their associated suppliers and the applicable web address are noted below.

3.3.1 Battery Module Coolant – Low-Solids Diluted Heat Transfer Fluid

https://sds.valvolineglobal.com/valvoline-sds/sds/materialSearch.faces

3.3.2 Battery Module Refrigerant

https://www.kouraglobal.com/wp-content/uploads/Klea-134a_UK_GHS05-2.pdf

3.4 CANUTEC

CANUTEC is a national advisory service that assists emergency response personnel in handling dangerous goods emergencies on a 24/7 basis. The emergency centre is staffed by bilingual scientists specializing in chemistry or a related field and trained in emergency response. The emergency response advisors are experienced in interpreting technical information from various scientific sources including Safety Data Sheets (SDS) in order to provide pertinent and timely advice.

CANUTEC using their information network as well as their professional experience, judgement and knowledge, CANUTEC 's advisors can provide immediate advice over the phone and recommend actions to be taken, and those to avoid, in dangerous goods emergencies. The following information or services that can be obtained by calling CANUTEC:

- chemical, physical and toxicological properties of dangerous goods;
- possible product incompatibilities and stabilities;
- health hazards and first aid measures;
- fire, explosion, spill or leak mitigation techniques;
- remedial actions for the protection of life, property, and the environment;
- isolation and evacuation distances;
- donning of personal protective clothing and equipment and their decontamination procedures;

CANUTEC may be contacted by calling ***(1-888-CAN-UTEC (226-8832) or 613-996-6666).*** *Additionally, emergency response information* may be retrieved from the Transport Canada Emergency Response Guidebook.

4 Compass Emergency Response Management

4.1 Compass Incident Management System

Compass has adopted the Incident Management System (IMS) and the principles of Unified Command. In the event of an incident where Compass has been identified as a responsible party Compass shall establish a unified command structure with responding authorities and appropriate stakeholders. Further, Compass shall encourage the establishment of a Unified Command approach where Compass is engaged as a third party. This will ensure that the interests of Compass are appropriately expressed and that the response priorities and strategies are effectively aligned with Compass's commitment to social responsibility.

In most cases emergencies Compass will respond and be considered short-term responses that are relatively small in scope and/or duration and require few external resources. These incidents will be generally managed by Compass's Site Operator or delegate and documented using only the Incident Command Briefing (ICS 201 Incident Brief Form). In the event of a more significant incident which might entail greater engagement of Compass management and external resources Compass will follow the IMS model for incident response planning.

The ICS 201 Incident Brief will form the foundation of the briefing when a command transition is to occur, and a Compass Emergency Management team is to establish an expanded command structure.

4.2 Response by Objective

In response to any emergency Compass shall respond in accordance with its operational policies ensuring that all response efforts abide by Compass's core emergency management objectives.

- Life Safety Protection
- Stabilization of the Emergency
- Minimization of the consequences

4.3 Incident Command System – Unified Command

4.3.1 Single Command

Single Command (with a single Compass Incident Commander) will be applied on smaller incidents, where few, if any regulators or outside agencies attend the incident or play any significant role. A Single Command model is usually followed when:

- Only Compass is involved

Compass will utilize the Single Command approach when they are overseeing an incident in its entirety. Additionally, a larger scale incident will commonly transition from Unified to Single Command when an incident completes the Emergency Phase and transitions into a recovery project.

4.3.2 Unified Command

Unified Command is a principle within the Incident Management System that provides for representatives of key stakeholders to be involved with the overall incident management and in the development of response management objectives. It enables decisions to be made jointly by two or more organizations (e.g., Compass and other agencies) that have legal responsibilities regarding an incident. Incident Command does not automatically become *unified* because of the involvement of

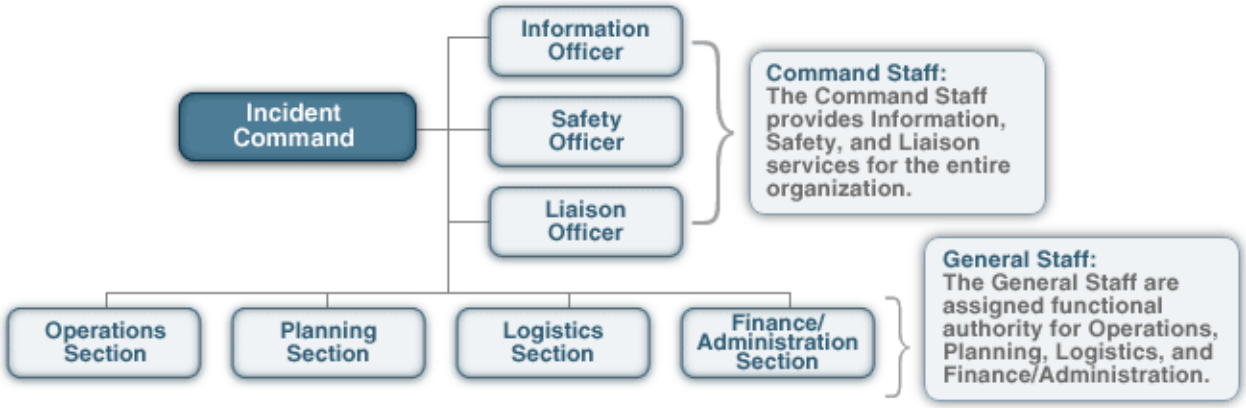
more than one jurisdiction. Rather, Unified Command is required when incident management requires decision-making to come from more than one jurisdiction. Once joint decisions have been made, one member is identified to speak for the Unified Command Team. Compass will work closely with all agencies to ensure a safe and effective response.

The Unified Command may have representatives from the following:

- Municipal and/or regional emergency services (Fire, police, etc.);
- Regional and/or provincial authorities having jurisdiction e.g., Regional public health unit, Electrical Safety Authority, etc.

Refer to **Figure 4-1** Incident Command Structure as an example of a typical incident management structure.

Figure 4-1 Incident Command Organizational Structure



4.3.3 Interoperability

One of the most important terms to remember during an emergency is interoperability; the ability of responders from different organizations and jurisdictions to interact and work well together. In the case of Compass the primary mechanism to ensure interoperability will be through the utilization of the Incident Management System which ensures standardized terms, structures and procedures are used by all responders to allow people from different organizations and jurisdictions to understand each other's jobs and requirements and to cooperate and work well together.

4.4 Response Planning

Short-term responses that are small in scope and/or duration and require few resources will often be managed using only the Incident Command Briefing (***ICS 201 Incident Brief Form***). Larger more complex responses will initially utilize the ICS 201 and use an Incident Briefing to support the transfer of command in cases commencing a proactive planning cycle.

4.4.1 Incident Briefing

During the transfer of command process, an Incident Briefing provides the incoming Incident Commander with basic information regarding the incident situation and the resources allotted to the incident. The Incident Briefing Form (ICS 201) is the Incident Action Plan for the initial response and

remains in force and continues to develop until the short-term response ends or the Incident Management Team has established an Incident Action Plan for the forthcoming operation period.

The Incident Briefing process may also be used for briefing individuals newly assigned to Command and General Staff while the response remains in the initial response phase or as noted is short-term in nature.

The Incident Briefing should address the following topics of the response:

- Situation (Compass asset and geographic context, exposures, safety concerns);
- Objectives and priorities;
- Strategies and tactics (implemented and planned);
- Current organizational structure including agency and third-party representatives;
- Resource assignments;
- Resources enroute / ordered; and,
- Facilities established or planned.

4.5 Incident Action Planning Process

Once the management of an incident requires a more robust approach to the development of a plan and subsequent strategies and tactics Compass's Incident Management Team will utilize the Simplified Planning Cycle.

The Simplified Planning Cycle defines various steps in the process, executed in sequence, helps ensure a comprehensive Incident Action Plan (IAP) is developed. These steps support the accomplishment of objectives within a specified time. The development of IAPs is a cyclical process, and personnel repeat the planning steps every operational period. The Operational Period Planning Cycle is a graphic depiction of this cycle. Personnel develop the IAP using the information gathered during the Do and Check elements of the planning cycle. The Adjust and Planning elements support the development or revision of the next Incident Action Plan.

Compass will utilize the Simplified Planning Cycle to coordinate operational planning.

Figure 4-2 Incident Management Simplified Planning Cycle

4.6 Province of Ontario – Incident Management System

Adopted by the Province of Ontario in 2006 the Incident Management System (IMS) principles and concepts are consistent with ICS but adapted to suit Ontario's unique governmental structures and emergency legislation/regulations. The Ontario IMS is built on the ICS 'operating platform'. The Ontario IMS incorporates the ICS, and the multi-agency coordination system into one holistic system. Ontario's IMS applies to all levels of incident management with an expanded focus on Emergency Operation Centre application.

In the unlikely event that an authority has exercised command and control of the response to an incident in which Compass is the identified responsible party, Compass would work to support the overall incident management. Compass shall participate in the response, as appropriate, by coordinating Compass response activities, communications activities, and by establishing a claims management system.

4.7 Incident Management System Roles and Responsibilities

Incident Management System Position responsibilities can be referenced in the Ontario Incident Management System Guidance document (Section 6: Site Coordination: Sections and Roles).

Additionally, the handbook provides all necessary guidance on the transition from initial incident management through the planning cycle to implementation of an Incident Action Plan.

The Ontario Incident Management System Guidance 2.0 is available digitally at the following address.

https://www.ontario.ca/document/incident-management-system-ims-guidance-version-2

5 Compass Emergency Management Resources

5.1 Incident Management Team - Regional Resources

5.1.1 Facility Operators

Each Compass managed BESS asset in operation is represented by a Facility Operator (Workbench Energy). Their general responsibilities consist of coordinating and supervising site and system maintenance.

During an incident or an emergency the Facility Operator will receive an alarm via the systems SCADA. The Facility Operator will initiate notifications to Compass; some automatic, via email/text and liaise with municipal emergency services should they be required. The Facility Operator will act as the initial Compass Incident Commander.

5.1.2 Operations Manager

Compass Operations Managers are located in the Head Office(s) and are responsible for supporting the Facility Operator.

As noted, in the event of an incident or emergency the Facility Operator will notify, and initially liaise with municipal emergency services. Should an incident require a protracted response, result, or have the potential to result in significant consequences the Operations Manager may resume command of the incident and mobilize the required physical and human resources.

Identified Compass staff are to be trained up to IMS 100.

5.1.3 Subject Matter Experts

In the event an incident impacts a Batter Energy Storage System Compass shall request support from the Tesla Energy Technical Support and /or the Local Operations Center.

5.2 Compass Emergency Service and Response Contractors

Emergency response and service contractors are an integral part of any emergency response. Compass has a diverse group of infrastructure service contractors that have the resources and capabilities that can support the management of an effective response.

*Contact Information is located in **Appendix D**.*

Presently Compass have service agreements with six (6) service providers for the following emergency response services:

- Incident Management Services
- Crisis Management Team Support Services
- Public Relations / Media Services
- Legal Services
- Claims Adjusting

5.3 Compass Emergency Management Consultants

Emergency management consultants can play an integral part in an emergency response. Compass emergency management consultants have emergency science resources and technical capacity that can support response management and provide areas of expertise and diverse capabilities to assist in an effective response.

5.3.1 Antler Group

Antler Group is an emergency response consultant that provides a myriad of emergency management and disaster mitigation services such as;

- Chemical Response / Incident management
- Crisis Management Team support
- Hazardous Material Technical Services

5.3.2 Shearwater Environmental Emergency Solutions Inc.

Shearwater Environmental Emergency Solutions Inc. is an environmental emergency management consultant that provides a myriad of emergency management services such as;

- Incident management - coaching and training
- Crisis Management Team support
- Regulatory interface / liaison
- Incident management – support

6 Emergency Response

Compass's facility operator (Workbench Energy) monitors Compass sites 24/7. In the event of an actual or potential emergency automatic notification will be sent via SMS/email to the operations and management team

6.1 Incident Response Activation

Emergencies involving a Compass facility, infrastructure or operations can be detected and/or reported by infrastructure monitoring personnel, Compass personnel, members of the public, private property owners or municipal emergency services. An incident may involve any of the previously identified emergencies or threats:

- Fire or explosion;
- Death or critical injury or any serious threat to the health or safety of its employees, contractors or to the public;
- An unplanned disruption of a critical service, e.g. water, electricity, etc. that threatens to disrupt Compass's continuity of business services; and/or
- A natural event e.g., flood, severe storm, etc. having a potentially adverse impact on a Compass operation or facility;
- Any third-party action or incident that may or has threatened the safety of a Compass employee or contractor or has the potential to disrupt the continuity of Compass's business services; or ,
- Any event that has the potential to impact the community or environment.

6.2 Incident Response Process – Emergency Event

An emergency event occurs.

1. A Facility Operator is notified or made aware of an actual or potential emergency via:
    - Infrastructure monitoring service i.e. Tesla Local Operations Control;
    - Contractor notification;
    - Municipal emergency services notification;
    - Observed conditions
    - Weather alert; or
    - Other.
2. Facility Operator directs onsite emergency shut-down (external emergency stop (E-Stop) button) or initiates remote emergency shut-down of the operation;
3. If the Powerpack is serviced upstream by an external AC breaker or disconnect, open the breaker or disconnect.
4. Facility Operator shall refer to the Site-Specific Emergency Response Plan for site-specific response strategies and tactics if applicable.
5. Facility Operator assumes role of Compass Incident Commander;

6. Compass Incident Commander notifies municipal emergency services via **9-1-1** if not already advised;

   Refer to **Appendix E** for municipal emergency service contact information.

7. Compass Incident Commander initiates notification to appropriate Compass Operations Manager;
8. Compass Incident Commander conducts or delegates regulatory notifications, e.g. Ontario Ministry of the Environment, Conservation and Parks, Ontario Ministry of Labour, etc.;

   Refer to **Appendix C** for regulatory agency contact information.

9. Compass Incident Commander liaises with attending municipal emergency services Incident Commander, i.e. Platoon Fire Chief;
10. An Incident Command Post is identified as required;
11. Compass Incident Commander initiates incident management documentation:
    - ICS 201 Incident Brief Form;
    - ICS 205A Communications List;
    - ICS 208 Safety Message / Plan; and,
    - ICS 214 Activity Log;
12. Depending on actual or potential consequences Compass Incident Command role is transferred to appropriate Compass personnel;
13. In event of municipal emergency services directed evacuation a Compass representative (*Liaison Officer*) shall liaise with the municipal social services provider and coordinate and/or support required social services;
14. Compass Incident Commander activates additional emergency service providers;
15. A Compass Incident Management Team is established at an appropriate location;
16. Additional Compass personnel are notified and seconded to positions of the Incident Management Team.
17. Compass Incident Commander shall notify Compass Leadership as required.
    - Managing Director
    - Director of Construction & Operations
    - Manager of Engineering Services
18. The Compass Incident Management structure will remain operational until all emergency objectives have been met or outstanding operations can be managed under pre-established project management regimes.

6.3 Initial Incident Response Objectives

At the onset of an emergency Compass Incident Command shall immediately take emergency response measures reflecting Compass's core emergency management objectives.

Life Safety

Immediately initiate emergency medical services to support those injured.

Protect Compass staff, contractors, and the public.

Protect the safety of all incident responders and those affected by the incident

Stabilize the Emergency

Implement initial control measures to mitigate the emergency i.e. infrastructure shutdown.

Minimize the impacts

Protect property and the environment

Prevent and/or reduce economic and social losses.

Ensure the continuity of Compass critical services

6.4 Initial Response Strategies

Incident specific objectives should guide Compass in the development of response strategies; however, the Site-Specific Emergency Response Plan offer guidance regarding immediate response strategies and procedures. The following sections outline primary response strategies that should be considered during all responses:

- Safety and Scene Control
- Incident Mitigation
- Incident Response Safety Zones
- Response Safety Management

6.5 Safety and Scene Control

The protection of Life, Environment and Property are the prime Objectives of the Plan.

Safety and scene control will be established by the Compass Incident Commander or delegate if not yet established by municipal emergency services. Scene control will ensure that access is restricted to the public and access for responders is through a controlled access corridor set up during site staging.

Additional warnings / controls shall be considered in the form of roadblocks and warning signs to communicate the hazard.

Occupational safety is of paramount importance in the conduct of company business. Every effort will be made to provide a safe work environment, identify, and control health and safety hazards, and promote the health and safety of all company employees and contractor personnel.

6.6 Incident Mitigation

Initial incident mitigation will reduce or eliminate the threat to people, the environment and property and can reduce the overall impact of an emergency or spill. Response actions and mitigation procedures undertaken at the time of an incident can ultimately influence the duration, magnitude and extent of consequences.

While it is important to initiate the following measure as soon as possible they should be commenced only if it is safe to do so.

The safety of the public and Compass personnel shall be the primary response objective.

- Immediately extinguish all incipient fires if trained to do so.
- Isolate or Initiate emergency shut down procedures on all equipment and remove all potential sources of ignition when there has been a potential release of natural gas or other flammable material.
- Isolate all site drainage in effort to contain any pollutant from discharging into municipal sewers or surface waters.
- Where site drainage is facilitated via ditches / culverts utilize available materials and/or equipment to establish berms or containment structures.
- Utilize sorbent pads / booms to contain petroleum product where appropriate.
- Coordinate a staging area for activated response resources.
- Notify immediate stakeholders e.g. neighbouring properties; if safe to do so, of any potential hazard.

6.7 Incident Response Safety Zones

In the event of an incident that poses a potential life safety risk e.g. venting BESS Unit, fire, etc. the Compass Incident Commander should attempt to establish a safety checkpoint, identify the Warm Zone perimeter (approx. 100 M upwind from the incident) and additional safety zones as required. **Figure 7-1** illustrates approximate safety zones.

6.7.1 Hot Zone -Emergency Responder Isolation Zone (25 M)

This zone may expand or contract based on the hazards present but often will consist of atmospheric hazards requiring respiratory protection, flammable atmospheres and may be contaminated.

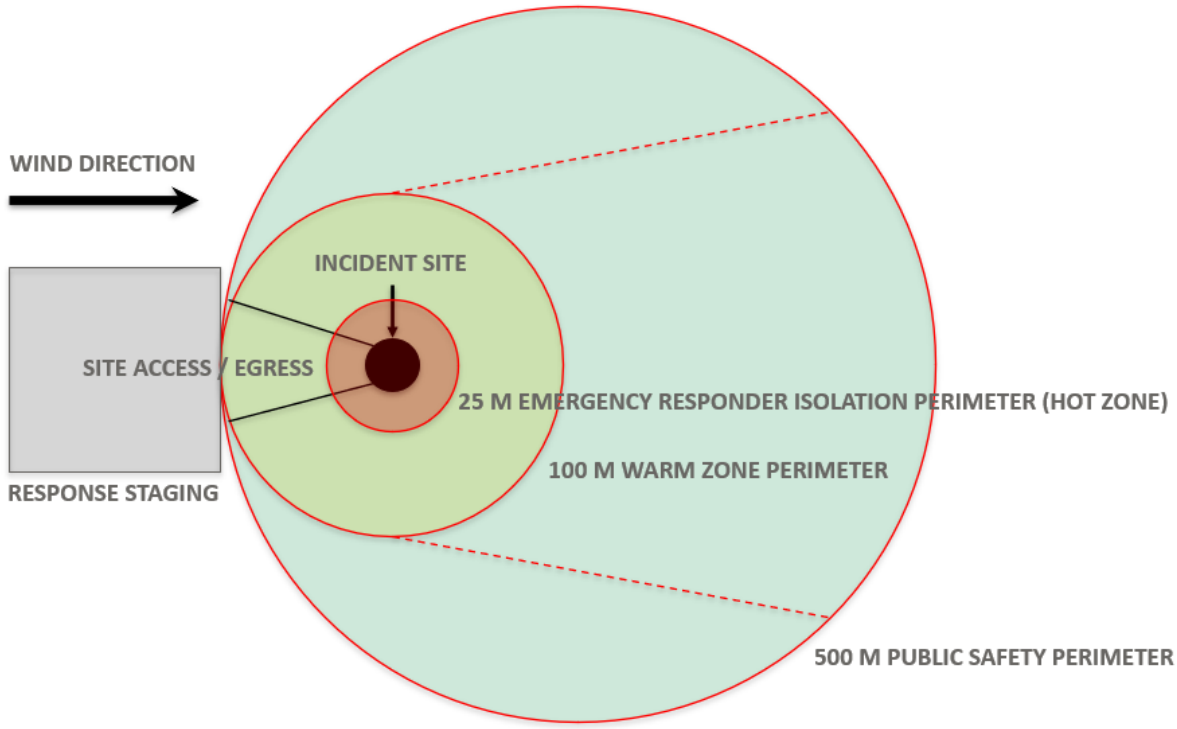
6.7.2 Warm Zone (100 M)

This zone provides a buffer between the hot and cold zone. An access and egress route up-wind of the incident site will limit the over all impact to the site and provide a safe route to a staging area or a location to conduct decontamination of personnel and equipment.

6.7.3 Cold Zone - Public Safety Perimeter (500 M)

This zone establishes a protective safety zone ensuring the protection of the public from any hazards associated with the incident and a safe zone where staging and command of an incident can occur.

Figure 6-1 Incident Response Safety Zones



6.8 Response Operations

In the event that the incident escalates Compass personnel shall respond, conduct and/or delegate the following upon completion of emergency shutdown and isolation and following the initial assessment. Compass response resources, response contractors, municipal responders and supporting services will be activated and mobilizing to the scene. The following tasks will ensure a safe activation of the response:

- Assume or identify an Initial Incident Commander**;**
- Order the evacuation of non-essential personnel to the designated muster point.
- Establish an Incident Command Post and staging area as needed in an appropriate and safe location;
- Establish and communicate safe directions to the command post and staging areas;
- Activate emergency response resources (contractors, consultants, etc.) as required;
- Liaise with municipal emergency services in accordance with unified command practices;
- Ensure all necessary notifications have been completed e.g., Municipality, Ontario Ministry of Environment, Conservation and Parks – Spills Action Centre, municipality, etc.**;**
- Establish a personnel accountability system to track response resources and personnel.

- Incident Commander or delegate shall conduct a consequence analysis and assist in the development of operational strategies and identify initial response tactics.
- Communicate potential response tactics to activated emergency response contractors for implementation.

Additionally; the Incident Commander or delegate shall;

- Establish and maintain initial incident details & action plans, and/or ICS 201 Incident Brief;
- Establish and Implement an Initial Incident Specific Safety Plan;
- Establish and maintain a Personal / Unit Log;
- Other documentation will be used as required:
- Refer to and communicate the directions from the incident site to the nearest emergency medical facility; and
- Continue to document implemented response and recovery tactics as they are implemented.

6.9 Shelter and Evacuation Management

6.9.1 Almonte BESS Assembly / Muster Point

If conditions require the evacuation of any personnel on site, the following location shall be used:

- County Road 29 / Almonte BESS Driveway

6.10 Fire Suppression

In the event of a fire or medical emergency activate municipal emergency services.

Call 9-1-1

Compass coordinates with the appropriate municipal fire service and where appropriate shares information regarding the on-site systems, hazardous material and appropriate suppression tactics.

6.10.1 Incipient Fires

In the event that an incipient fire at the Almonte BESS site staff and/or contractors shall initiate a site emergency shut down and trigger a station alarm. If trained to do so incipient fires can be extinguished with onsite emergency equipment otherwise evacuate to the designated muster point and notify the Operation Control Center and local municipal emergency services.

6.10.2 Electrical Fires

Generally, Compass will have strategically placed Type C (electrical fire) extinguishers at the site. If trained to do so, electrical incipient fires can be extinguished with onsite emergency equipment otherwise emergency shutdown of the station and/or isolation of the equipment shall be attempted followed by evacuation to the designated muster point, and notification to the Operations Control Center and the local municipal emergency services.

6.10.3 Battery Energy Storage Systems Facility Fire

In the event of a thermal runaway event has propagated into a BESS module or unit fire the following should be recommended to the attending fire service;

- Allow the affected module / unit to consume itself as it is designed to do. Applying water to the burning unit will have minimal effect and will only slow its eventual combustion.
- At the discretion of first responders, apply water (fog pattern) to the exposures.
- Monitor the effected unit and allow the unit to cool down.

6.10.4 Municipal Fire Protection

The Almonte BESS is located in the Municipality of Mississippi Mills. The Mississippi Mills Fire Department maintains two (2) fire stations located in Almonte and Pakenham. The Service is staffed with 45+ volunteer fire fighters and full-time command and training staff.

No fire hydrants are in proximity to the Almonte BESS site; however, the Fire Service does maintain a water accreditation.

6.11 Incident Stand Down

The decision to end an emergency response or transition the incident to a recovery, long-term remedial or environmental monitoring operation is made by the person having authority over the incident in consultation with the other Unified Command members. The decision is based on an assessment of clean-up operations and incident status to determine if there is any probability of the escalation of the incident.

Remedial efforts may continue for some time, until the point is reached where there is no longer a net environmental benefit in continuing. This decision shall be facilitated in collaboration with the authorities having jurisdiction.

7 Product Discharge Analysis and Consequence Assessment

7.1 Megapack 2XL Electrolyte Vapour – Fate and Behaviour

Tesla Megapack 2XL unit construction, control and fault mitigation systems are defined in detail in Compass's Emergency Management Plan and supporting Tesla literature (Attached in **Appendix F**). While a thermal runaway event is unlikely the following information provides understanding of the fate and behaviour of the decomposition of a battery energy storage system.

Lithium cells are sealed units, and thus under normal usage conditions, venting of electrolyte should not occur. If subjected to abnormal heating or other abuse conditions, electrolyte and electrolyte decomposition products can vaporize and be vented from cells. Vented gases are a common early indicator of a thermal runaway reaction; an abnormal and hazardous condition.

Regulatory testing has shown that the products of combustion of lithium batteries can include flammable and non-flammable gases. Based on this testing, the flammable gases are found to be below their lower flammable limit (LFL) and do not pose a deflagration or explosion risk to first responders or the general public. The non-flammable gases were found to be comparable to smoke encountered in a typical structure fire and do not produce any unique, or atypical gases beyond what you would find in the combustion of modern combustible materials.

In close proximity, vented gases may irritate the eyes, skin, and throat. Cell vent gases are typically hot; upon exit from a cell, vent gas temperatures can exceed 600°C (1,110°F). Vented electrolyte is flammable and may ignite on contact with a competent ignition source such as an open flame, spark, or a sufficiently heated surface. Vented electrolyte may also ignite on contact with cells undergoing a thermal runaway reaction.

Tesla system literature indicates that during thermal runaway testing hydrogen fluoride was not detected in off gases or combustion products. That said; in many cases, industry literature describes the release of hydrogen fluoride as being commonly released in concentrations between 20-200 mg/Wh.[2] For the purpose of this plan an assumption of 20 mg/Wh will be considered as a worst-case scenario.

Refer to Appendix D for Worst-Case Scenario Consequence Assessment

The following breakdown of gases were measured in Tesla's UL9540A testing of its cells, modules and units.

[2] Larsson, F.; Lithium-ion Battery Safety – Assessment by Abuse Testing, Fluoride gas Emissions and Fire Propagation, **2017, pg. 56**. ISBN: 978-91-7597-612-9

Table 7-1 Tesla Megapack 2 XL UL 9540A Test Results

Thermal Runaway / Combustion Products	Measurement Peak (ppm)
Carbon Monoxide	205
Carbon Dioxide	6721
Methane	68.8
Acetylene	17.1
Benzene	9.0
Hydrogen	446
Total Hydrocarbons (Propane Equivalent)	247

Ethene, Ethane, Propane, Butane, Pentane, and Hexane were not detected in the UL9540A testing.

The cell vent gases were predominantly (approximately 95%) Carbon Monoxide (CO), Carbon Dioxide (CO2), Hydrogen (H2), and Methane (CH4).

Toxic gases sometimes associated with lithium-ion batteries, such as Hydrogen Fluoride (HF), Hydrogen Chloride (HCL), and Hydrogen Cyanide (HCN) were not vented from the cell.

7.2 Protective Action Guidelines

The following guidelines will assist in determining protective actions for public and Compass employee exposures.

7.2.1 Emergency Response Planning Guidelines

Emergency Response Planning Guideline (ERPGs) estimate the concentrations at which most people will begin to experience health effects if they are exposed to a hazardous airborne chemical for 1 hour. A chemical may have up to three ERPG values, each of which corresponds to a specific tier of health effects. The three ERPG tiers are defined as follows:

ERPG-3 is the maximum airborne concentration below which nearly all individuals could be exposed for up to 1 hour without experiencing or developing life-threatening health effects.

ERPG-2 is the maximum airborne concentration below which nearly all individuals could be exposed for up to 1 hour without experiencing or developing irreversible or other serious health effects or symptoms which could impair an individual's ability to take protective action.

ERPG-1 is the maximum airborne concentration below which nearly all individuals could be exposed for up to 1 hour without experiencing more than mild, transient adverse health effects or without perceiving a clearly defined objectionable odor.

Table 7-2 Emergency Response Planning Guidelines

Substance	ERPG 1	ERPG 2	ERPG 3
Hydrogen Fluoride	2 ppm*	20 ppm	50 ppm

* Indicates that odor should be detectable near ERPG-1

7.2.2 Occupational Exposure Limits

Occupational Exposure Limits (OELs) are set out for employers that are required under section 4 of Regulation 833, Control of Exposure to Biological or Chemical Agents (the "Regulation"), to limit the exposure of workers to specified hazardous biological or chemical agents in accordance with the values set out in the "Ontario Table" (which is Table 1 in the Regulation) or, if the agent is not listed in the Ontario Table, the 2017 ACGIH Table that is incorporated by reference in the Regulation.

OELs are defined as the following Time-Weighted Average Limit (TWA) and Short-Term Exposure Limit (STEL) / Ceiling Limit (C).

Table 7-3 Occupation Exposure Limits (Ontario)

Substance	**TWA**	**STEL**	**IDLH**
Hydrogen Fluoride	0.5 ppm*	2 ppm (Ceiling Limit)	30 ppm

Table 7-4 Response Guidance

Petroleum Products	CAS Number	UN Number	TC ERG Guide Number
Lithium-Ion Batteries / Lithium Ion Salt	n/a	3480	147
Hydrogen Fluoride / Hydrofluoric Acid, Anhydrous	7664-39-3	1052	125

8 Response Safety Management

At the onset of an emergency the Compass Incident Commander will identify whether there are significant risks associated with the incident or with the response effort to the incident. Should there be significant safety risks associated with the response the Incident Commander should identify a Safety Officer to provide support. The following ICS forms will support the identification of potential safety risks and the development of protective measures. Particular care and attention shall be given to:

- Working in hazardous environments (heights, confined spaces, etc.);
- Potential hazardous material exposures (combustion byproducts, motor fuels, etc.)
- Personal Protective Equipment to be worn;

ICS Forms

- Incident Action Plan Safety Analysis (ICS 215A)
- Safety Message / Health & Safety Plan (ICS 208)

8.1 Personal Protective Equipment

Person Protective Equipment (PPE) selection will be determined by the Incident Command. The correct level of PPE will ensure that responders are protected from any potential hazard. Protective clothing is designed to reduce or eliminate the exposure of responders to chemical and physical hazards. In the event an incident involves hazardous material refer to its product Safety Data Sheet (SDS) for recommended PPE when handling the material.

The minimum level of PPE for Compass personnel responding to an incident should include but limited to:

- A durable protective outerwear;
- Activity specific hand-protection;
- Safety glasses or equivalent personal eyewear; and,
- CSA-approved steel-toed shoes or boots.

8.2 Decontamination

Decontamination is the process of removing or neutralizing contaminants or substances that have accumulated on personnel and equipment. Decontamination protects workers, the public and the environment from hazardous substances that may contaminate protective clothing, tools, vehicles, and other equipment used.

8.2.1 Decontamination Methods

All personnel, clothing and equipment leaving the incident site must be decontaminated to remove any harmful substances or physically remove contaminants; and/or isolate contaminants by removing protective equipment and appropriately managing it as an appropriate waste.

8.3 Emergency Medical Care

In the event of contact with or exposure to electrolyte or electrolyte vapour / seek immediate medical attention and refer to emergency decontamination procedures.

8.3.1 Inhalation

If inhalation of electrolyte vapors occurs, move person to a safe area as soon as possible and into fresh air. Loosen tight clothing such as a collar, tie, belt or waistband. If throat irritation is present, seek immediate medical assistance.

8.3.2 Skin Contact

In case of skin contact, proceed to emergency shower and immediately wash affected area with soap and water while removing contaminated clothing and shoes. Cold water may be used. Discard contaminated clothing.

If a chemical burn occurs or if irritation persists, seek medical assistance.

8.3.3 Eye Contact

In case of eye contact check for and remove any contact lenses. Proceed to eye wash station and immediately flush eyes with plenty of water for at least 15 minutes without rubbing. Cold water may be used.

8.4 Emergency Medical Facilities

The nearest medical facilities to the Almonte BESS are:

Almonte General Hospital

75 Spring St, Almonte / Mississippi Mills, ON

8.5 Workforce Health / Fatigue Management

The Incident Management Team should be conscious of the potential for fatigue among its response team members; particularly during protracted responses and identifying management of fatigue as a health & safety objective. Coordination with the Crisis Management Team to secure the necessary human resources will be imperative to combating fatigue among responders. Consider the development of a fatigue management plan to assist in the management of human resources.

8.6 Incident Stand Down

The decision to end the response to an incident and shift to a recovery, long-term remediation or monitoring operation is made by the person having authority over the incident in consultation with the other Unified Command members. The decision is based on an assessment of response operations and incident status to determine if there is any probability of the escalation of the incident. This decision shall be facilitated in collaboration with the authority having jurisdiction.

9 Emergency Notifications & Reporting

If there is an imminent threat of fire, explosion or to the safety of tenants or the public immediately notify municipal emergency services.

Call 9-1-1

If remote from the scene of the emergency report the incident via the identified non-emergency number (bold / Italic). Identified in ***Appendix C – Emergency Notifications***

9.1 Reportable Events

Upon an event that meets any of the following definitions notification shall be conducted forthwith / immediately upon implementation of life safety protection efforts.

- An unintended or uncontrolled spill of any substance that is abnormal in quality or quantity that causes or may cause an adverse effect, in light of all circumstances of the discharge.
- Any serious electrical incident that causes a critical injury or death, results in a fire or explosion, any condition suspected of being electrical in origin or any electrical contact with electrical equipment operating at over 750 volts.

9.2 Regulatory Notifications

Upon implementation of life safety protection efforts the Compass Incident Commander or delegate shall conduct the required notifications in accordance with the authority having jurisdiction and its applicable legislation.

Contact Information is located in ***Appendix C****.*

The following authorities and/or stakeholders shall be advised of the incident and the current state of response.

- Ministry of the Environment, Conservation and Parks (MECP)
- Technical Standards and Safety Authority (TSSA).
- Ontario Electrical Safety Authority (ESA)
- The municipality within the boundaries of the emergency incident.

This notification may be conducted locally via 9-1-1 for emergency services or remotely via non-emergency contact number(s) for municipal, regional municipal or county emergency and public-work services.

9.3 Advisory Notifications

In the event of an emergency that has the potential for off-site impacts Compass shall take all measures to notify and/or advise stakeholders of emergency actions, e.g. Notify tenants of adjacent buildings, adjacent landowners, or business owners that an incident has occurred and may result in impact to their safety and/or operations.

9.4 Labour Accidents & Notifications

In the event of a critical injury or death a Compass employee or contractor during an emergency or other event Compass shall immediately implement life safety protection measures before conducting the applicable notification(s). Following which efforts to secure the scene and/or any equipment involved in the accident should be completed. The Compass Incident Commander or delegate shall conduct the required notifications in accordance with the authority having jurisdiction and its applicable legislation.

*Contact Information is located in **Appendix C**.*

The following authorities and/or stakeholders shall be advised of the incident and the current state of response.

- Ontario Ministry of Labour Ministry of Labour, Training and Skills Development

9.5 Emergency Notification Information

The following is a list of information that should be provided to the respective Officer receiving the emergency notification. Keep in mind not all information will be known, and additional notifications may be required as the response progresses.

- A description of the location where the incident occurred and, if known, the municipal address of the location.
- The date and time that the incident occurred or was discovered.
- The names and telephone numbers of everyone who was contacted to respond to the incident, including any fire department, police department or other public authority.
- The duration of the incident and whether the incident is ongoing.
- If the incident involves the release of a pollutant, describe the release, the quantity released and known hazards associated with the pollutants.
- Any relevant information regarding the cause of the incident, if known, and the circumstances surrounding the incident.
- A description of any adverse effects that occurred or may occur.
- Any actions that were taken or will be taken to prevent, eliminate and amend the adverse effect and recover from the incident or if a release of a pollutant; to restore the natural environment.
- Any impact of the incident on other properties?
- If the incident has impacted other properties has the responsible party been provided access to those properties to prevent, eliminate and amend the adverse effect or to restore the natural environment; in the event of a release of pollutant.

10 Response Management

In most cases, emergencies that Compass will respond to will be considered short-term responses that are relatively small in scope and/or duration and require few external resources. These incidents will be generally managed by the Compass workforce and/or maintenance staff. In the event of a more significant incident which might entail greater engagement of Compass and external resources Compass will; as noted, activate its Incident Management Team and follow IMS principles for incident management.

As noted in **Section 4.7** Incident Management System position responsibilities can be referenced in the **Ontario Incident Management System Guidance** document (*Section 6: Site Coordination: Sections and Roles*).

Additionally, the handbook provides all necessary guidance on the transition from initial incident management through the planning cycle to implementation of an Incident Action Plan.

The Ontario Incident Management System Guidance 2.0 is available digitally at the following address.

https://www.ontario.ca/document/incident-management-system-ims-guidance-version-2

10.1 Consequence Management

Potential consequences will be incident specific and should be identified as early into a response as possible. Ideally, potentially high consequences areas will have been pre-identified by Compass through various emergency preparedness efforts. These should be addressed immediately upon response to an incident with offsite impacts.

10.2 Public Information Management

Information management during an emergency is a crucial part of incident management. Compass recognizes the value of gathering reliable data regarding the incident and of the mitigation and response activities being conducted by Compass and its contractors and regarding the consequences associated with the incident. Compass should tailor information products to meet the needs of the impacted stakeholders, which will also assist impacted parties make appropriate decision-making at all levels. The Compass Information Officer shall be responsible for overseeing information management during an emergency management incident. All Compass personnel shall be familiar with the Information Officer roles and responsibilities.

11 Response Management Plans

11.1 Incident Action Plan

In the unified command, decisions with regard to the response will be made by consensus and documented through a single Incident Action Plan for each operational period. An IAP formally documents incident objectives in addition to the response strategies defined by the incident command during response planning. The IAP may contain general tactics to achieve objectives within the overall strategy, while providing vital information on response status.

Because incident parameters evolve, the incident action plan must be revised on a regular basis; generally once per operational period, to ensure a consistent, up-to-date message and response direction.

The following should be considered for inclusion in an Incident Action Plan:

- Incident goals (where the response system wants to be at the end of response)
- Operational period objectives (major areas that must be addressed in the specified operational period to achieve the goals or control objectives)
- Response strategies (priorities and the general approach to accomplish the objectives)
- Response tactics (methods developed by Operations to achieve the objectives)
- Organization list with ICS chart showing primary roles and relationships
- Assignment list with specific tasks
- Critical situation updates and assessments
- Health and safety plan (to prevent responder injury or illness)
- Communications plan (how functional areas can exchange information)
- Incident map / Site plan
- Additional component plans, as indicated by the incident.

11.2 Supplemental Plans

11.2.1 Public Health Assessment and Response Plan

In the event of an environmental emergency a Public Health Assessment and Response Plan for airborne risks i.e. Air Monitoring Plan may be required. The responsibility for coordinating the development of an Air Monitoring Plan lies with the Planning Section and may require a technical specialist (consultant) to support its development.

An Air Monitoring Plan should consider the following:

Anticipate and identify potential chemicals of concern from product releases and/or fires that have the potential to impact the health and safety of the public / tenants;

Coordinate development and implementation of incident-specific air monitoring and response strategies to protect the public.

11.2.2 Waste Management Plan

The management of waste from an emergency involving Compass shall be considered a priority. The handling, storage, transport, disposal and tracking of waste associated with a spill shall be coordinated in accordance with all applicable provincial legislation. Responsibility for coordinating with the provincial authorities to develop an incident specific waste management plan lies with the Planning Section. A Technical Specialist may be used to support its development.

In most cases, the Tesla product can be recycled. Contact Tesla to return the product for disassembly and further processing. If disposing of the product without returning it to Tesla, consult with the appropriate legislation on the appropriate methods for disposal and recycling of lithium batteries. Note that the products do not contain heavy metals such as lead, cadmium, or mercury.

11.2.3 Environmental Response Plan

To ensure the protection of the environment, the public, as well as the health and safety of personnel involved in a response involving hazardous products and Environmental Response Plan may be required. The responsibility for coordinating the development of an Environmental Response Plan lies with the Planning Section and may require a technical specialist (consultant) to support its development.

12 Damage Claim Management & Documentation

12.1 Informal Claims Process

A Compass representative coordinating with Incident Command will deploy to the field and immediately begins identifying and communicating with parties that are either directly affected by the incident or close enough to justify being briefed on the incident. This representative shall have the authority; in coordination with the Compass Compensation / Claims Specialist, to immediately compensate or make arrangements with affected parties to mitigate the consequential impact of the event has had on their lives or businesses e.g., establish short term accommodations, provision of water, groceries or other essential services. Alternatively, this may include payment for some immediate services e.g., boarding of household pets, travel costs to stay with relatives, etc.

12.2 Formal Claims Process

In the event that the informal process cannot settle a claim a formal process shall be activated.

With support from its Claims Adjuster Compass will advertise for damage claims through an acceptable method. Claims information and documentation will be made available through a claim centre, the incident command post or via the internet. Compass claims approach shall be defined by the magnitude of the incident and the anticipated number of claims related to the incident.

12.3 Incident Documentation

As part of Compass's utilization of the Incident Management System when responding to any real and/or potential emergency Compass will use U.S. FEMA recognized ICS forms.

https://training.fema.gov/icsresource/icsforms.aspx

An extended incident response will result in the activation of the Compass Incident Management Team and the establishment of a response planning cycle guiding the development of an Incident Action Plan. All incident management documentation associated with the response shall be submitted to the established Documentation Unit and secured in an accordance with Compass's document retention policies, ensuring their availability to support the generation of after-action reports or as evidence in any discipline action or assessment.

12.4 Post-Incident Reporting and Debrief

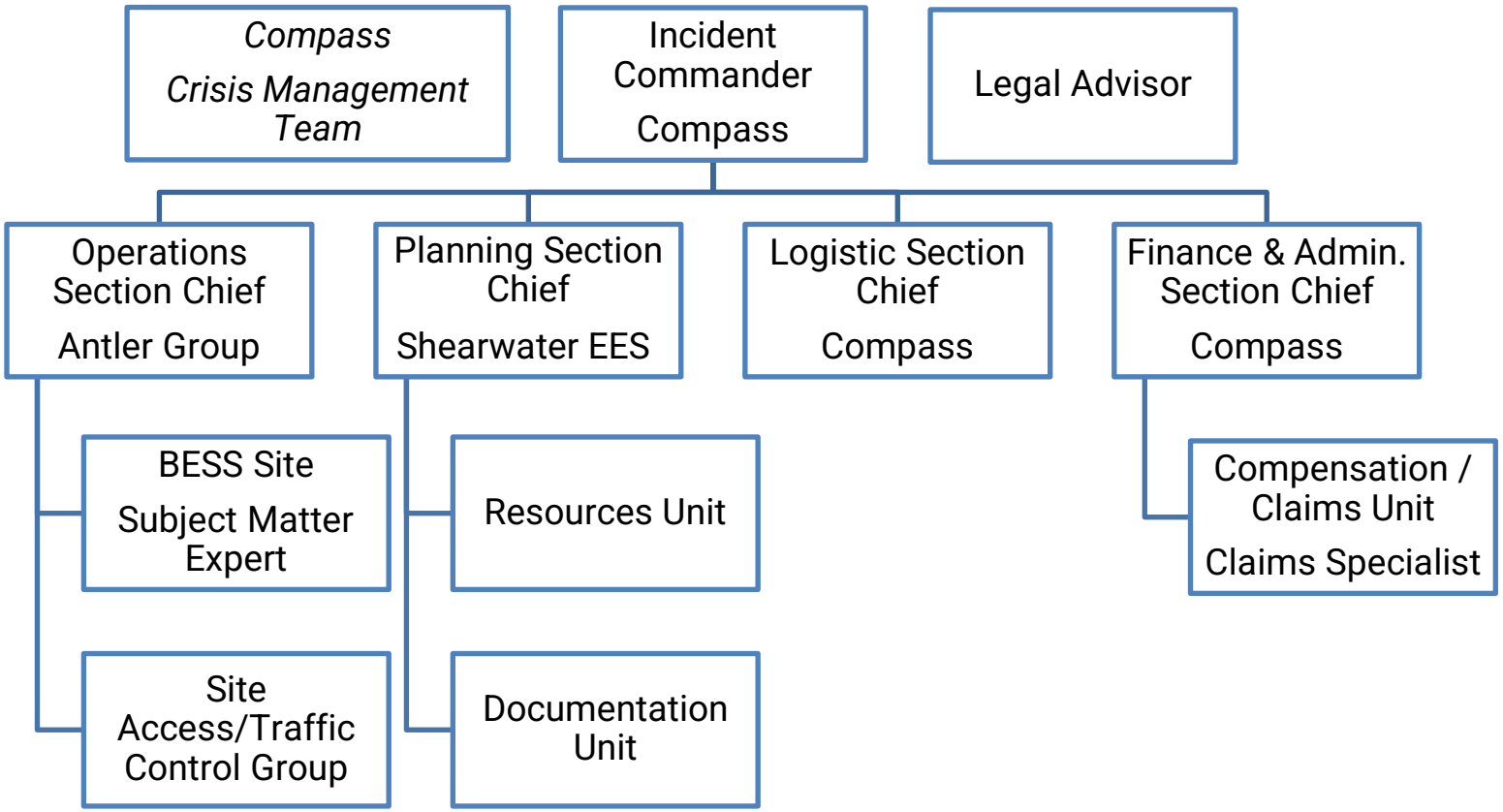
Compass will assess all responses to incidents, hazards and near misses. Where consequences are deemed significant an After-Action Report which focuses on the effectiveness of the response of Compass and any involved contractor utilized emergency procedures and supporting documents. Additionally, with the support of subject matter experts, Compass may investigate the cause of the incident and establish corrective actions.

Appendix A – Compass Offices and Personnel

Property Offices & Services	Contact Number
Compass Greenfield Development Suite #506, 192 Spadina Ave., Toronto	416-937-2821
Compass Energy Consulting Suite #506, 192 Spadina Ave., Toronto	905-940-1718 (Office)
Workbench Energy Suite #301, 4A Hazelton Ave., Toronto	888-523-5620 // 647-293-1890

Personnel / Incident Management Team	Contact Number
Scott Gerylo *Compass Greenfield Development*	416-937-2821 scott@compassenergyconsulting.ca
Elijah Gerrett *Compass Energy Consulting*	905-751-9753 elijah@compassenergyconsulting.ca
Jon Cheszes *Compass Energy Consulting & Greenfield Development*	647-812-7320 jon@compassenergyconsulting.ca
Cody McNeil *Workbench Energy*	888-523-5620 // 647-293-1890 cody.macneil@workbenchenergy.com
Pamela Drappel *Compass Energy Consulting*	647-812-7320 pamela@compassenergyconsulting.ca

Appendix B – Compass Incident Management Team


Compass
Crisis Management Team
Incident Commander
Compass
Legal Advisor
Operations Section Chief
Antler Group
Planning Section Chief
Shearwater EES
Logistic Section Chief
Compass
Finance & Admin. Section Chief
Compass
BESS Site
Subject Matter Expert
Resources Unit
Compensation / Claims Unit
Claims Specialist
Site Access/Traffic Control Group
Documentation Unit

Appendix C – Agency / Municipal Contact Information

Agency Contact Information

Organization	Contact Number
Ontario Ministry of the Environment, Conservation and Parks Spills Action Centre	Environmental Spill Reporting: 416-325-3000 / 800-268-6060
Technical Standards & Safety Authority	Via MECP Spills Action Centre 416-325-3000 / 800-268-6060
Ontario Ministry of Labour, Training and Skills Development – Health & Safety Contact Centre	877-202-0008
CANUTEC [Dangerous goods technical support]	888-226-6666 *666 from a cell phone
Ontario One Call (Utility Locates)	800-400-2255

Municipal Contact Information

Municipality of Mississippi Mills (Almonte BESS)	Contact Numbers
Almonte Fire Department	613-256-2064 #7
Ontario Provincial Police – Carlton Place Detachment	613-257-5610
Mississippi Mills Roads and Public Works	613-256-2064 #401
Hydro One Networks Inc.	800-434-1235
Ottawa River Power Corporation – Almonte Office (Electrical Utility)	613-256-3722 (M-F) 877-332-3316 (Emerg.)

Appendix D – Emergency Response Contractors & Consultants

Emergency Response Contractors / Consultants

Contractors	Contact Numbers
Compass Greenfield Development	416-937-2821
Workbench Energy	888-523-5620
Black & McDonald – Ottawa *(Electrical Services Contractor)*	613-526-1226
Black & McDonald – London *(Electrical Services Contractor)*	519-681-4801
Tesla Energy Technical Support Contacts *(BESS Equipment SME)*	650-681-6060
Antler Group *(Emergency Response Contractor)*	647-707-0497
Shearwater Environmental Emergency Solutions Inc. *(Emergency Management Consultant)*	416-525-4600

Appendix E –Consequence Assessment / Hazard Modeling

Consequence Assessment – Hydrogen Fluoride

For the purpose of determining potential consequence zones following an emergency incident involving a Tesla Megapack 2XL Unit Compass has used the ALOHA model. Developed by the U.S. Environmental Protection Agency and U.S. National Oceanic & Atmospheric Administration it is a hazard model used to plan for and respond to chemical emergencies. Modeled consequence zones utilize Emergency Response Preparedness Guidelines (ERPGs) to illustrate potential chemical hazard consequences.

Refer to **Section 7.2** for more information regarding ERPGs.

Figure Tesla Megapack 2XL

Two (2) sequences; Summer and Winter, were considered for the scenario to account for fluctuations in the seasonal conditions common to Almonte (Ottawa Region), Ontario.

Worst Case Scenario - Summer Sequence

Meteorological Data Station Name: Ottawa Macdonald-Cartier International Airport (YUL)

Average Temperature: 15.8° C (Ref: Weatherspark.com)

Average Wind: 7.02 km/h or 1.95 m/s (April – September) (Ref: Weatherspark.com)

Scenario: A Tesla Megapacks 2XL Unit has suffered and off-normal event and degraded into thermal runaway. The resulting thermal output has caused the adjacent unit to also begin to overheat and vent decomposition gases.

Notes: As referenced the Hydrogen Fluoride (HF) production rate of 20 mg/Wh will be used to establish a potential total volume of HF to be release to the atmosphere. The release time will be assumed to be 60 minutes.

Almonte BESS (I & II) – 59.596 MWh Capacity

20 mg/Wh = 20 Kg / MWh

18 Tesla Megapack 2Xl Units / 59.596 MWh = 3.31 MWh per Tesla Megapack 2Xl Unit

20 Kg / MWh x 3.31 MWh / Unit = 66.2 Kg (HF)

Direct release – 66.2 Kg (HF) / 60 mins

Worst Case Scenario – Winter Sequence

Meteorological Data Station Name: Ottawa Macdonald-Cartier International Airport (YUL)

Average Temperature: -2.7° C (Ref: Weatherspark.com)

Average Wind: 9.75 km/h or 2.71 m/s (October – March) (Ref: Weatherspark.com)

Scenario: A Tesla Megapacks 2XL Unit has suffered and off-normal event and degraded into thermal runaway. The resulting output has caused the adjacent unit to also begin to overheat and vent decomposition gases.

Notes: As referenced the Hydrogen Fluoride (HF) production rate of 20 mg/Wh will be used to establish a potential total volume of HF to be release to the atmosphere. The release time will be assumed to be 60 minutes.

Almonte BESS (I & II) – 59.596 MWh Capacity

20 mg/Wh = 20 Kg / MWh

18 Tesla Megapack 2Xl Units / 59.596 MWh = 3.31 MWh per Tesla Megapack 2Xl Unit

20 Kg / MWh x 3.31 MWh / Unit = 66.2 Kg (HF)

Direct release – 66.2 Kg (HF) / 60 mins

Table Hydrogen Fluoride Scenarios Projected Consequence Zones

Scenario	ERPG 1 (2 ppm)	ERPG 2 (20 ppm)	ERPG 3 (50 ppm)
Summer	307 m	96 m	60 m
Winter	379 m	117 m	73 m

ALOHA outputs alongside the respective consequence zones overlain a satellite image of the site can be found on the following pages.

Alternate Scenario

Scenario: A Tesla Megapacks 2XL Unit has suffered an off-normal event and degraded into thermal runaway. The resulting output has caused the adjacent unit to also begin to overheat and vent decomposition gases.

Based on the Tesla completed UL 9540A testing a mix of decomposition gases will be emitted to the atmosphere. This plume will predominately consist of Carbon Dioxide, Carbon Monoxide, Methane, and Hydrogen. Given this scenario first responders may also refer to the Transport Canada Emergency Response Guidebook – Guide # 147 [Lithium Ion & Lithium-Ion Salt Batteries] which recommends an isolation buffer of 500 m for all public and emergency responders in the event of a fire.

Figure – Worst Case – Summer Sequence – Hydrogen Fluoride Consequence Zones

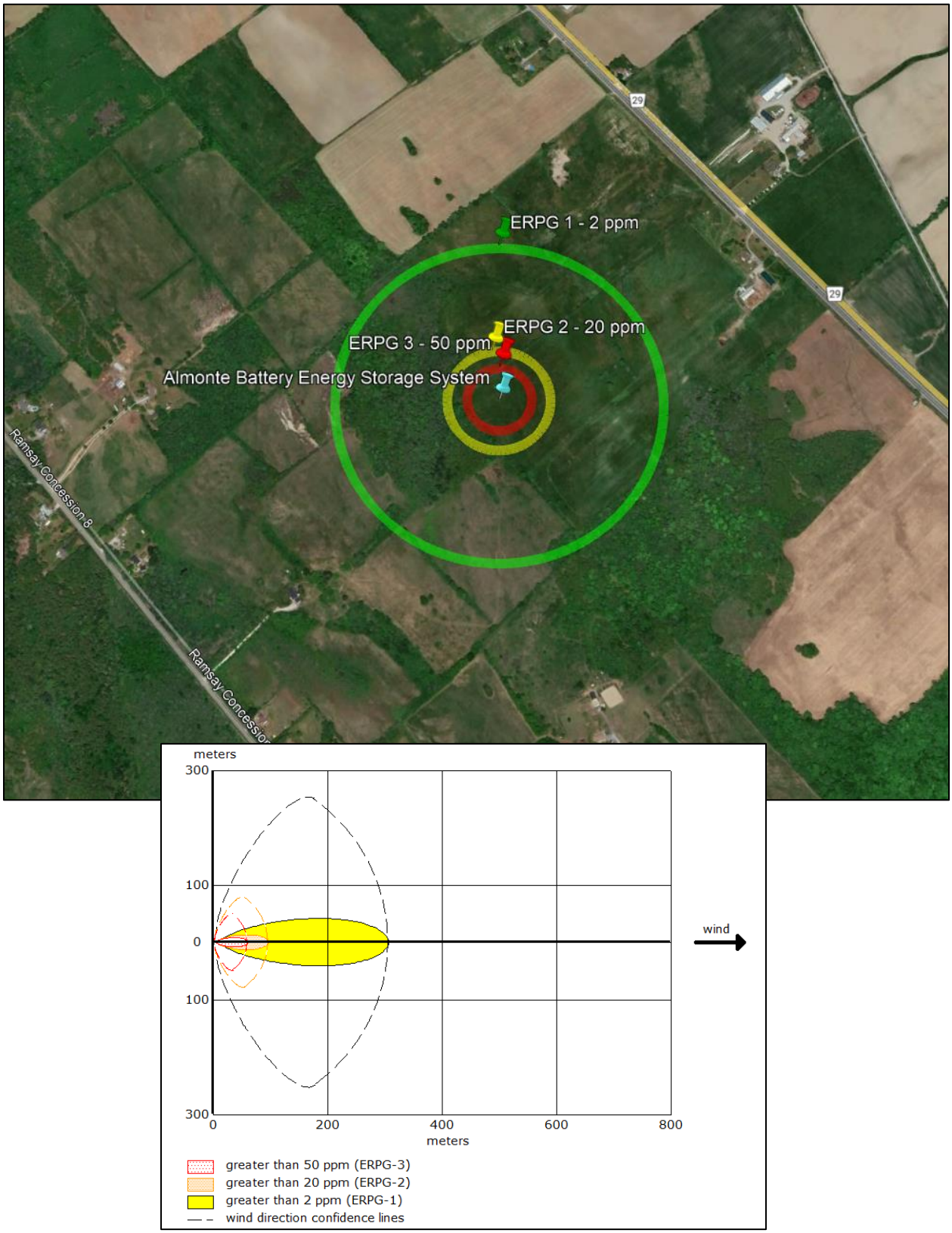


Figure – Worst Case – Winter Sequence – Hydrogen Fluoride Consequence Zones

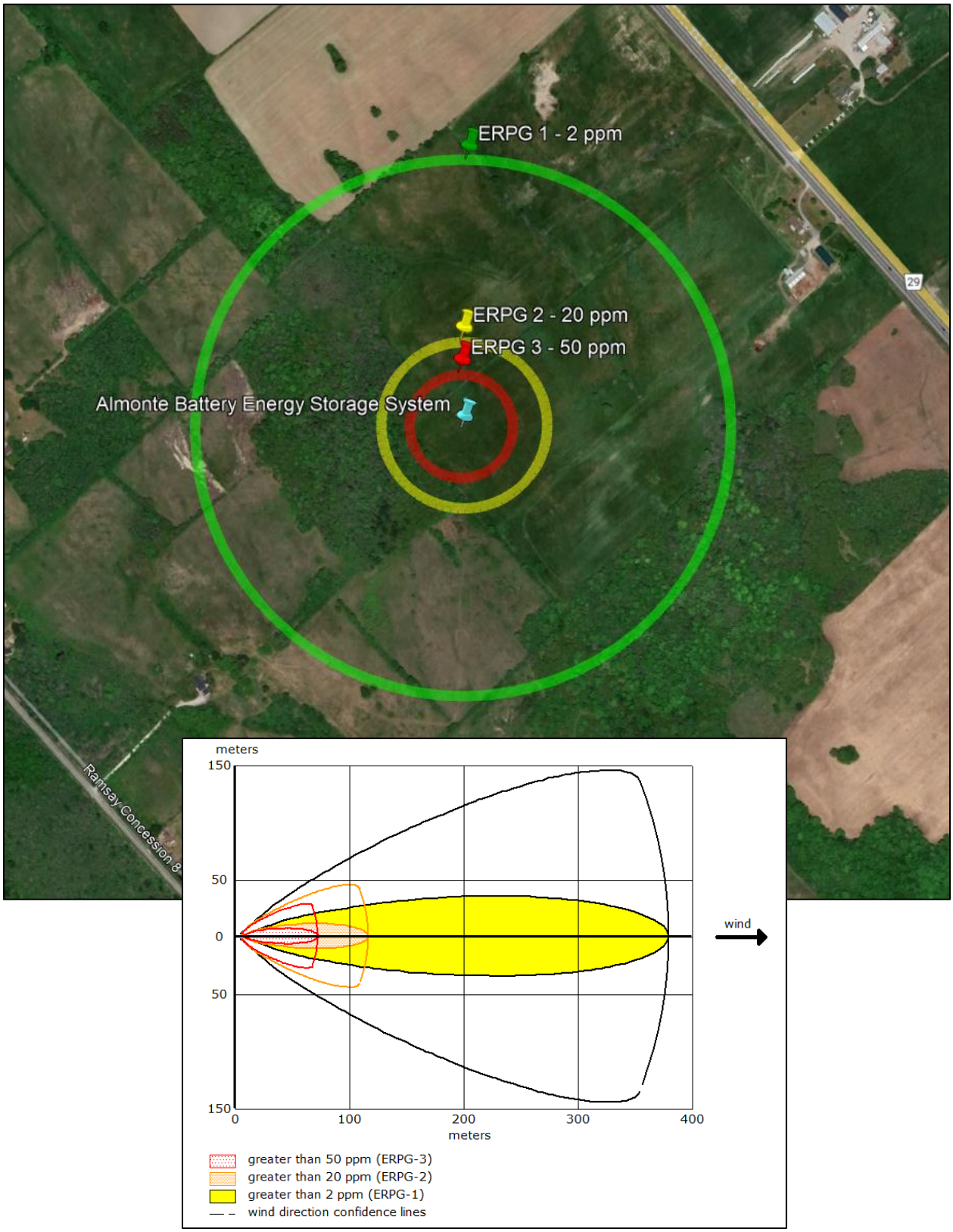


Figure – Alternate Case – Lithium Ion Battery Decomposition Plume Consequence Zones