

## **Draft Public Health Concerns and Suggested HCA Conditions – For Discussion**

### Hillman Energy Center BESS Project

Prepared by:

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Status:

Draft discussion document from the Chair – not reviewed or voted by the Board of Health

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### **Purpose and Scope**

This document reflects my individual review, as Chair of the Tewksbury Board of Health, of the current Host Community Agreement (HCA) draft for the Hillman Energy Center battery energy storage system (BESS), together with concerns raised by residents and individual BOH members at public meetings. It is intended to assist the Select Board, Town Manager, and Special Town Counsel in identifying public health and safety conditions that, in my professional judgment, should be addressed in any final HCA.

This is not an adopted position of the Board of Health. Any formal BOH position would require deliberation and a vote at a posted meeting in accordance with Open Meeting Law. References to “Board of Health (BOH) review” in this document are intended to include preliminary review by Health Department staff, with referral to the Board for any matters requiring policy direction, formal conditions, or enforcement decisions.

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### **Background – Site Context and Risk Profile**

The proposed Hillman Energy Center is a 125 MW battery energy storage system (BESS) located:

- Within the Town's Zone II Groundwater Protection District, a wellhead protection area critical to Tewksbury's drinking water supply.
- Directly adjacent to a concentrated senior population:
  - Bayberry at Emerald Court (assisted living/memory care): 94 licensed units, approximately 90–100 residents at high occupancy.
  - Emerald Court Estates (55+ condos): 181 units, estimated 270–360 residents.

- Combined senior population in the immediate vicinity: approximately 360–460 residents, many elderly and medically vulnerable.

Large-scale lithium-ion BESS facilities present documented public health risks, including:

- Toxic gas releases during thermal runaway or fire events, particularly hydrogen fluoride (HF), which can be harmful at low concentrations and can travel significant distances downwind.
- Fire-suppression water contamination that, if not properly contained, can mobilize hazardous materials into groundwater, especially in Zone II recharge areas.
- Air quality impacts from operational emissions and potential incident plumes affecting nearby vulnerable populations.
- Emergency response complexity requiring specialized training, equipment, and coordination beyond typical structure fires.

The Massachusetts Association of Health Boards (MAHB) and MassDEP BESS guidance both emphasize the critical role of local boards of health in protecting public health and groundwater in BESS siting and conditions.

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## **PART 1: GAPS IN CURRENT HCA (AS I SEE THEM)**

### **GAP 1: Emergency Response Plan (ERP) – Timing and BOH Involvement**

Current HCA Language (Section 6.A.iii): ERP to Fire “prior to... operations,” with Hillman incorporating Fire comments “except where... unreasonable.”

Key Issues (from my review):

1. ERP is only required before operations, not before construction, limiting the ability to integrate emergency planning with design.

**This is incorrect, language covering this issue is included in the Appendix, Item 2 as follows:**

**Hillman Energy Center will also submit to Tewksbury an Emergency Response Plan (ERP) for the Project prior to Hillman Energy Center’s commissioning of the Project and shall consider in good faith Tewksbury’s comments on such Emergency Response Plan. An ERP will be needed for the construction, commissioning, operations, and decommissioning phases of the project.**

2. BOH is not mentioned, despite its statutory role in public health and groundwater protection.

**BOH does not have a role in the EFSB process. Nor do they have a role in the zoning aspects of the groundwater protection district. If there is an “incident or event “ the following steps are triggered:**

1. **2-Hour Notification: Immediate release or threat of release (e.g., sudden, uncontained, or posing imminent danger).**
2. **72-Hour Notification: Releases that pose a "substantial hazard".**
3. **120-Day Notification: Releases requiring further assessment to determine if they meet cleanup standards.**
  - **Required Documentation: A Release Notification Form (RNF) must be submitted to MassDEP.**
  - **Role of LSP: A Licensed Site Professional must be hired to oversee the site assessment and remediation process.**
  - **Property Transfers: During real estate transactions, a "21E Assessment" (often a Phase I Environmental Site Assessment) is conducted to identify potential contamination.**
  - **The local BOH and the Town are copied on any 21E Assessment that is done.**
3. Hillman can reject Fire comments it deems “unreasonable,” with no independent check.

**This is incorrect any requirements that are consistent with NFPA 855 and UL9540A must be implemented. The Fire Department has broad discretion in this area. That language is directed at the possibility of a material modification of the permit. In Section 12 Fire, health and Safety it states “*in no event shall Hillman Energy Center be obligated to take any action that would give rise to an EFSB Material Modification.*” Following this logic if a change of significance were made it would reopen the permit process.**

4. No requirement for AEGL-based toxic gas planning or explicit procedures for nearby residents and senior facilities.

**This will be covered in the ERP**

Suggested condition (for Town consideration):

Require a comprehensive ERP to be developed, reviewed, and accepted by Fire and BOH before construction, including:

- AEGL-based modeling of HF, CO, and other gases and definition of protective-action zones and timelines.
- Description of toxic gas detection (including HF), alarm setpoints, and automatic notification to Hillman operations, Fire, Police, and BOH.

**This is covered in Appendix Number 11 through reference to NFPA 72.**

*A First Responder's Station or Incident Command Post (ICP) will be required near the main entrance and spaced a minimum of 100' from the nearest BESS enclosure. The ICP should be located upwind of the BESS yard, and the fire access to the site should be upwind as well. The ICP will serve as the muster point and contain a fire alarm annunciator panel to provide necessary incident data to first responders at site. If a fire water tank is included in the site layout, it should be collocated with the fire alarm annunciator at the ICP. The fire alarm will need to be monitored at a UL Listed Central Station per NFPA 72. If there is a secondary entrance to the site then an annunciator shall be placed their for first responder convenience.*

- Clear resident notification, shelter-in-place, and evacuation procedures for nearby homes and senior communities.
- **This will be covered in the ERP**
- Realistic response-time assumptions and fire-suppression water management procedures, including containment and isolation from infiltration systems.

**Water Protection capacity will be provided by either an onsite tank or adequate hydrant capacity consistent with local and NFPA Standards.**

**Appendix, Section 8:**

*Per NFPA 855, via NFPA 1142, available fire water for the BESS project site will be a minimum of 30,000 gallons. This dedicated fire water supply can be augmented with an automatic refill from the municipal water system, such as a hydrant, or monitored via the fire alarm for level indication to ensure a minimum of 75% of tank's capacity.*

**Section 12. G., Fire Health and Safety:**

**Water Collection – Fire Suppression: Runoff resulting from water used in fire suppression activities will be directed into the stormwater management system for the Project site. The stormwater management design will meet the Massachusetts Stormwater Policy recommendations, and the Project will fully comply with MassDEP Stormwater Standards and Town Requirements, unless exempted by the EFSB. Water collected in the stormwater management detention basin, catch basins, vortex units (or similar) and/or other collection facilities will be monitored during firefighting activities. Hillman Energy Center shall have a licensed environmental services company on contract to remove and properly dispose of affected runoff water within the stormwater management system. No more than thirty (30) days following COD, Hillman Energy Center shall provide the Town with documentation demonstrating a valid contract in full force and effect with a licensed environmental services company and shall include such company in its Emergency Response Plan for immediate dispatch to the Project in the event of an active fire and further, shall maintain such a contract for the life of the operation of the Project. Notwithstanding the foregoing, in no event shall Hillman**

- Defined BOH role in advisories, air monitoring, post-incident health follow-up, and community communication.

**As noted above, the BOH role would be that of any 21E incident.**

Any dispute over requested health and safety changes should go to an agreed independent expert or process, not be left solely to Hillman’s judgment.

**The requirements of the EFSB siting permit and NFPA 855 and UL9450 Standards and building code will bolster the Towns ability to include requirements it imposes through the permitting process after site approval.**

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## **GAP 2: Hazard Mitigation Analysis (HMA) – Access and Scope**

Current HCA Language (Section 6.A.i): HMA provided to Fire and Fire’s third-party reviewers.

Key Issues:

1. BOH is not explicitly named as a recipient of the HMA.
2. The required scope does not clearly include AEGL-based off-site health impacts or Zone II groundwater pathways.

Suggested condition:

- Provide the full HMA to both Fire and BOH.

This will be a public document and will be available to the BOH and anyone else that requests it.

- Require explicit analysis of:
  - Off-site HF, CO, and other toxic gases at AEGL-1/2/3 at Bayberry, Emerald Court Estates, and nearby homes.
  - Fire-suppression water, electrolyte, and hazardous-material pathways to Zone II groundwater.
  - Air-quality and deposition impacts on vulnerable populations, with identification of mitigation if thresholds are approached.

These standards are already defined by the NFPA. Plume Analysis is required by the HCA and the UL9450A Standards

One area in which the 2026 edition of NFPA 855 did not impose additional requirements is on toxic gases. While laboratory testing of burning Li-ion batteries produces measurable quantities of some of these compounds, they have not been detected at dangerous levels during actual incidents. Most fires involving plastic materials produce similar gases, and the NFPA 855 Task Group on Toxic Gases debated this issue, determining that ESS should not be singled out for special treatment. (American Clean Power)

Allow BOH to use an annual peer-review allowance (see Part 2) to have independent experts review the HMA.

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### **GAP 3: Fire-Suppression Water Containment in Zone II**

Current HCA Language (Section 6.A.ii): Suppression water “directed to” the stormwater detention system and “monitored during” firefighting, with compliance “unless specifically exempted by the EFSB.”

Key Issues:

1. “Directed to” the stormwater system does not guarantee physical containment or isolation from infiltration and Zone II recharge.
2. Monitoring alone is reactive; containment needs to be engineered in advance.
3. “Unless exempted by the EFSB” language could weaken Zone II protections.

Suggested condition:

- Require engineered physical containment (berms, lined basins, valves) sized for a reasonable worst-case BESS fire, with the ability to isolate contaminated water from infiltration until properly managed.
- Require independent P.E. verification and review by BOH and DPW before construction.
- Clarify that containment and groundwater protection standards will meet or exceed Zone II and MassDEP expectations regardless of any zoning exemptions.

The Town Engineer provided an analysis of their stormwater retention plan (that I forwarded to you). This will be the primary document the Town relies should this project reach the permitting phase.

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#### **GAP 4: Hydrogen Fluoride (HF) Detection and Monitoring**

Current HCA Language: No mention of HF or toxic gas detection.

Key Issues:

HF is a key toxic gas in lithium-ion battery fires, hazardous at low concentrations and difficult to detect without specific equipment. Without HF monitoring, it is difficult for Fire and BOH to define safe distances, advise residents, or confirm when air is safe.

Suggested condition:

- Install fixed HF detectors at BESS enclosures and selected fence-line/downwind points, plus maintain portable HF detection equipment for Fire (and, as needed, BOH) use.
- Integrate HF alarms with facility and Town notification systems and tie alarm thresholds to AEGL levels used in ERP/HMA.
- Require routine calibration and annual reporting of maintenance and calibration to BOH.

**Fire Suppression: Hillman Energy Center shall install (at Hillman Energy Center's sole cost and expense), to the reasonable satisfaction of the Fire Chief and Water & Sewer Superintendent, sufficient fire protection materials and equipment that provide for maximum fire protection on the property and at the facility; provided, however, that the foregoing shall not require Hillman Energy Center to take any action that would, in Hillman Energy Center's determination, in its sole discretion,**

**give rise to a material modification of the Project. I believe this language is covered by the NFPA 855 Standards but I will review this language specifically regarding testing for AEGL for possible future revisions.**

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#### **GAP 5: “Material Modification” / “Sole Discretion” Clauses**

Several sections allow Hillman, in its “sole discretion,” to treat requested changes as “material modifications” requiring EFSB action and to decline them.

Key issues:

This structure could allow unilateral rejection of public health measures recommended by Fire or BOH.

Suggested condition:

- Require any “material modification” claim affecting health/safety to be supported by written independent legal or technical analysis and shared with the Town.
- Establish a dispute-resolution mechanism (independent expert or mediator) when the Town and Hillman disagree, rather than leaving the decision solely to Hillman.
- Make clear that core health and safety provisions (ERP, HMA scope, containment, HF monitoring, groundwater monitoring) cannot be unilaterally refused on this basis.

**The most likely dispute between the town and Hillman in this matter would be from the perspective of the Town imposing a requirement it believes to be consistent with NFPA 855 standards and Hillman deeming that to be a material change. Resolution of these disputes depending on their context would be legal disputes or appeals to the EFSB.**

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#### **GAP 6: Explicit Board of Health Role**

Fire is named throughout the HCA; BOH is often absent from planning, notification, and reporting provisions.

Suggested condition:

Where the HCA references submission of plans, reports, or notices to Fire, revise to “Fire Department and Board of Health,” including:

- Construction Management Plan (dust, noise, groundwater issues).
- ERP and HMA.
- Emergency notifications.
- Annual monitoring and incident reports.
- This will be a public document and will be available to the BOH and anyone else that requests it.

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## **PART 2: MONITORING AND OVERSIGHT**

### **Condition 1: On-Site Operations Staff (Weekday Presence)**

Remote monitoring alone is not ideal for a high-risk facility next to vulnerable residents.

Suggested condition:

Maintain at least one trained operations employee on-site Monday–Friday, 8 a.m.–5 p.m., with authority to:

- Monitor safety systems.
- Liaise with Fire, BOH, and other Town departments.
- Provide site access and initial actions during incidents.
- Respond to community concerns.

#### **12 B of the HCA**

**Hillman Energy Center and any successor or other owner of the Project shall provide and maintain a company employee or employees as a point of contact for the Town (“Hillman Energy Center Representative(s)"). The Hillman Energy Center Representative(s) shall be knowledgeable of the Project and be in a position of authority to assist the Town with construction, operation, emergency and decommissioning questions. Upon the Effective Date, Hillman Energy Center shall provide Tewksbury the contact information (name, address, telephone and email address) of the Hillman Energy Center Representative(s) and promptly update the Town in the event of a change in the Hillman Energy Center Representative(s). In the event of any assignment or sale of the Project pursuant to Section 20, Hillman Energy Center shall promptly notify the successor owner of this requirement to provide and maintain an owner company contact with the Town.**

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## **Condition 2: Groundwater and Well Monitoring (Zone II)**

Given the Zone II location, baseline and ongoing groundwater monitoring are important.

Suggested condition:

- Install up- and down-gradient monitoring wells at locations agreed by BOH and DPW.
- Conduct baseline sampling pre-construction and semi-annual sampling thereafter for agreed parameters (metals, fluoride, VOCs, general water-quality indicators).
- Share data with BOH and DPW within 30 days; allow BOH to use peer-review funding to interpret results.
- Define response actions if contaminant levels attributable to the facility increase.

**This seems to be a moot point since there will be no active groundwater wells in this district if the project moves forward. The State Hospital is abandoning these wells due to quality and quantity issues. In short, they are not good sources for water anymore.**

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## **Condition 3: Annual BOH Peer-Review Funding**

BOH needs technical support to interpret environmental and incident data.

Suggested condition:

- Hillman reimburses BOH for reasonable costs of independent experts to review groundwater, air, noise, and incident data, and to advise on public health implications, up to \$25,000 per year absent further agreement.

**I answered this question in the meeting of January 28<sup>th</sup>.**

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## **Condition 4: Health Department Vehicle Support**

Rationale: Effective inspection, incident response, and community outreach for a high-risk facility require reliable transportation for Health Department staff.

In addition, as part of the overall HCA financial package, I recommend a one-time allocation of \$50,000 to support a dedicated Health Department vehicle for inspections, incident response, and public health outreach associated with this and any other public health responsibilities in town.

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### **PART 3: HIGH-RISK FACILITY DESIGNATION AND COMMUNITY TRAINING**

With a 125 MW BESS in Zone II adjacent to several hundred seniors, enhanced training and communication are warranted.

Suggested condition:

- Annual multi-agency BESS training (Fire, BOH, Police, Emergency Management, DPW, and mutual aid towns).
- Community information sessions at least every two years for Bayberry, Emerald Court Estates, and nearby neighborhoods on risks and what residents should do during an event.

#### **Community Updates 16C:**

**Hillman Energy Center shall periodically (but at least once every six months or upon reasonable request of the Tewksbury Select Board) during pre-construction and construction activities provide public reports to Tewksbury at meetings of the Select Board, describing its progress in obtaining necessary permits and the status of construction of the Project, and, matters that may reasonably be expected to affect the Town's interests, describing major issues which may have arisen and responding to questions from Town officials and/or the public.**

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- Hillman reimburses reasonable Town costs up to a defined annual cap for training and outreach.

**The Town focused its efforts on training for First Responders. \$50,000 annually for Fire Training \$10,000 annually for supporting supplies and \$80,000 one-time purchase of technical fire equipment**

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### **PART 4: RESIDENT HEALTH IMPACT SUPPORT FUND**

*(Allocation from Overall Hillman HCA Payments)*

#### **Rationale**

The facility is next to an estimated 360–460 senior residents at Bayberry and Emerald Court Estates, many medically vulnerable. A serious incident (HF release, smoke event, shelter-in-place failure) could require temporary relocation, medical screening, air filtration, transport, and follow-up services.

**Structure (as I recommend framing it)**

- The Town and Hillman could agree that a defined portion of Hillman’s overall HCA financial commitments is reserved as a Resident Health Impact Support Fund, rather than as an additional payment beyond the overall package.
- The Fund would be held in a separate, interest-bearing Town account and administered by BOH under clear use restrictions for incident-related health and relocation needs.
- A fund on the order of \$1,000,000 is, in my view, proportionate to the potential costs of a single multi-day incident affecting several hundred seniors, but the exact figure is a policy decision for the Town.

**It is unlikely that they would agree to set up a fund of that nature when they have provided insurance that provides the same protection.**

**Section 17 of the HCA covers Insurance Requirements:**

**17. Insurance and Indemnification**

**Subject to the minimum coverages set forth in Exhibit B, Hillman Energy Center shall at all times maintain insurance coverage as required and appropriate for the Project in accordance with any applicable Tewksbury bylaws, including, without limitation, insurance for claims arising out of injury to persons or property, relative to either sudden and accidental occurrences or non-sudden and accidental occurrences, resulting from construction or operation of the Project. Hillman Energy Center shall maintain or cause to be maintained insurance against such risks and for such amounts as are customarily insured against by projects of similar size and scope and shall provide insurance coverage information to the Select Board annually and promptly following any material changes to such coverage.**

**Hillman Energy Center shall indemnify, defend and hold harmless the Town and its officers, employees, agents and representatives (“Tewksbury Indemnified Parties”) from and against any and all costs, claims, liabilities, damages, expenses (including reasonable attorneys’ fees), causes of action or suits or judgments by third parties, incurred by, on behalf of or involving any one of the**

foregoing parties to the extent arising, directly or indirectly, from or in connection with: (i) any material breach by Hillman Energy Center of its obligations, covenants, representations or warranties contained in this Agreement; or (ii) Hillman Energy Center's material act or omission that constitutes a violation of Applicable Laws; provided that: (a) the Town has not materially breached any obligation, covenant, representation or warranty contained in this Agreement or taken any act or omission that constitutes a violation of Applicable Laws; and (b) the defenses available to Hillman Energy Center against such claims are similar to those available to Tewksbury. In addition, notwithstanding the foregoing, in no event shall Hillman Energy Center be obligated to indemnify, defend or hold harmless the Town or any other Tewksbury Indemnified Party for any matter to the extent it is proximately caused by any Tewksbury Indemnified Party.

If a Tewksbury Indemnified Party seeks indemnification pursuant to this Section, the Town shall notify Hillman Energy Center of the existence of a claim, or potential claim as soon as practicable after learning of such claim, or potential claim, describing with reasonable particularity the circumstances giving rise to such claim. Hillman Energy Center shall be required to reimburse the Town for any documented reasonable costs associated with a claim for indemnification by a Tewksbury Indemnified Party within sixty days of the Town's submission of its documented costs to Hillman Energy Center. Upon written acknowledgment by Hillman Energy Center that it will assume the defense and indemnification of a claim from a Tewksbury Indemnified Party, Hillman Energy Center may assert any defenses which are or would otherwise be available to the Tewksbury Indemnified Party. Hillman Energy Center shall have full control of such defense and proceedings, including the selection of counsel and any settlement of the proceedings.

#### **EXHIBIT B: INSURANCE MINIMUM COVERAGES**

Subject to commercial availability on reasonable terms and conditions, Hillman Energy Center shall obtain and maintain insurance policies in compliance with the following requirements:

Commercial General Liability Insurance, for the duration of this Agreement, written on an ISO CG 00 01 occurrence form or the equivalent with limits of \$1,000,000 per occurrence, \$2,000,000 aggregate and \$2,000,000 products-completed operations, which can be met through a combination of primary and excess liability coverage.

**Umbrella or Excess Liability Insurance, as of Construction Commencement and thereafter for the remaining duration of this Agreement, following the form and at least as broad as the underlying Commercial General Liability policy, in an amount not less than \$20,000,000 per occurrence, \$20,000,000 aggregate, and \$20,000,000 completed operations aggregate.**

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## **PART 5: ADDITIONAL DOCUMENTATION REQUESTS**

For transparency and sound public-health evaluation, I recommend the Town obtain and share with BOH, before finalizing the HCA:

1. UL 9540A large-scale fire test data for the specific batteries to be used (including HF/CO production and suppression needs).

**They have not reached that point in the approval process to it is part of receiving fire permits as required by NFPA 855**

2. Final Zone II stormwater/recharge design documentation (plans, calculations, pollutant loading, mounding/separation analyses).

**This is on file with the EFSB and I believe you have copies of that as well as the Town's response. It is likely it will be further revised as they move through the permit process.**

3. Any existing 21E/Phase I/Phase II environmental assessments for 73–75 Hillman Street and how design avoids mobilizing existing contaminants.

**They will not move forward on this until they get permits in-hand and they are reasonably certain that they will control the property.**

4. Clarification of heights and locations of major structures and how these affect dispersion, noise, and emergency operations.

**More information on these issues are required by the HCA and The NFPA 855 and will be available as they move through the process.**

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