

CHAPTER 125: Article 3. Zoning Regulations

Sections:

§ 3.1 Purpose

§ 3.2 Establishment of Base Zoning Districts

§ 3.3 Residential Single-Family Districts

§ 3.4 Residential Multi-Family Districts

§ 3.5 Commercial and Mixed-Use Districts

§ 3.6 Industrial Districts

§ 3.7 Public and Semi-Public District

§ 3.8 Open Space District

§ 3.9 Olde Towne Districts

§ 3.10 PUD Planned Unit Development Overlay District

§ 3.11 CRC Commercial Revitalization Overlay District

§ 3.12 HCD Historic Overlay District

§ 3.13 Use of Land and/or Buildings

§ 3.14 Standards for Specific Uses

3.14.2 Drive-Through Facilities

3.14.3 Home Occupation

3.14.4 Outdoor Retail Sales and Merchandise Displays

3.14.5 Outdoor Storage

3.14.6 Recreational Vehicle (RV) Parks

3.14.7 Hotels

3.14.8 Oil and Gas Well Drilling

3.14.9 Pipelines

3.14.10 Pump Stations

3.14.11 Group Residential Facilities

3.14.12 Nursery and Landscape Material and Wholesale

3.14.13 Dogs In Outdoor Dining Areas

3.14.14 Accessory Structures and Uses

3.14.15 Temporary Structures and Uses

3.14.16 Nonconforming Uses, Lots and Structures

3.14.17 Mobile Food Vendors

3.14.18 Short Term Rentals (STR)

3.14.19 Battery Energy Storage Systems (BESS)

3.14.19 Battery Energy Storage Systems

- a. **Purpose.** The purpose of this division is to establish regulations for Battery Energy Storage System (BESS) sites with the following objectives:
 1. Ensure the health, safety, and welfare of the community.
 2. Provide a regulatory scheme for the designation of properties suitable for the location, construction, and operation of BESS sites.
 3. Mitigate any negative impacts of BESS sites.
 4. Provide regulations for current and existing BESS sites.

- b. **Use Classification**
 1. BESS facilities shall be operated in accordance with the Land Use Chart (3.13) and classified as a “Private Utility” use.

- c. **Special Use Permit (SUP) Application Requirements.**
 1. *Application Fee:* A \$5,000 fee is due at time of application submittal in addition to the standard Special Use Permit application fees.
 2. *SUP requirements.* An application for a BESS site shall be submitted to the planning department in form of a Special Use Permit. The regulations required for a Special Use Permit are in addition to, and are not in lieu of, permits required by any other provision of this ordinance or other governmental agency.
 - a. The Special Use Permit application shall include the following information:
 1. Site Plan indicating the distance between battery containers and distance from all adjacent property lines and structures.
 2. Landscaping and Screening Plan.
 3. Elevations and Renderings/Illustrations.
 4. Hazard Mitigation Analysis
 5. Plume Study
 6. Fire Management Plan
 7. Such other information as the city deems reasonably necessary to administer this division.

- d. **Site Reviews and Inspections**
 1. The City will contract with a 3rd party expert to review all BESS sites for compliance with applicable life/safety requirements. The 3rd party expert shall provide the following deliverables for each site:
 - a. General Safety Analysis of the proposed site.
 - b. Review to confirm compliance with IFC and NFPA regulations.
 - c. Review of building permit.
 - d. Inspections conducted during construction and a final inspection performed prior to operations commencing.
 - e. Any other matters requested by the City.
 2. The applicant proposing the BESS site will reimburse the City for all costs incurred by the third-party expert.
 3. The League City Fire Marshal’s office will be involved in all plan reviews, construction, and inspections to ensure compliance with Fire Department

requirements.

- e. **Fire and life safety.** BESS sites are required to meet, but are not limited to, the following fire codes and actions, as amended and updated:
 - 1. 2024 IFC and the listed NFPA references within the IFC.
 - 2. NFPA 855 (2023): Standard for the Installation of Stationary Energy Storage Systems.
 - 3. Provide an environmental site plan that includes a firefighting water containment plan.
 - 4. There shall be an air monitoring system for vapor detection to the satisfaction of the Fire Chief and Fire Marshal.
 - 5. Provide a water fire flow analysis at the permitting phase to ensure the existing water infrastructure can support the firefighting demands.
 - 6. Provide the Fire Department with the equipment needed to monitor and test the air and water for any hazards at these sites during emergencies. All monitoring equipment shall be provided to the Fire Department by the BESS applicant to the satisfaction of the Fire Chief and Fire Marshal.
 - 7. Provide annual training to the fire department and mutual aid agencies for hazards and responses related to BESS systems.
 - 8. Furnish all necessary firefighting equipment, related to the proposed BESS site, to the League City Fire Department, ensuring it meets the approval of the Fire Marshal.
 - 9. The fire command center and water supply should be situated at a safe distance from the closest BESS enclosure, based on deflagration data that indicates how far away is considered safe. The minimum distance should be 100 feet, as per NFPA requirements, unless approved otherwise by the Fire Marshal.
 - 10. The fire service command center shall be sheltered from the weather and have an overhang to reduce glare on the command center and allow emergency personnel to work under and review all emergency response plans and information needed to bring the incident under control.
 - 11. All BESS sites shall adhere to any additional requirements and/or safety items set forth by the most current version of NFPA and IFC, specifically addressing ESS sites if 25% or more batteries are replaced or added to the site/containers.
 - 12. Any incidents that exceed a 12-hour working period shall require a third-party hazardous materials team to respond to help control/monitor them for the duration of the event.
 - 13. City of League City Public Works approved water meters shall be installed on-site to monitor how much water is used during emergency responses to BESS sites.
 - 14. A documented plan if an exhaust fan fails to work during an emergency.

- f. **Emergency Response Plan.** A copy of the approved Emergency Response Plan shall be given to the system owner, the Fire Department, mutual aid agencies, and the Emergency Management Department. The Emergency Response Plan shall be approved by the City prior to the BESS being installed on the site. The Emergency Response Plan shall at a minimum include the following:
 - 1. Procedures for safe shutdown, de-energizing, or isolation of equipment and systems under emergency conditions to reduce the risk of fire, electric shock, and personal injuries, and for safe start-up following cessation of emergency conditions.
 - 2. Procedures for inspection and testing of associated alarms, interlocks, and controls.

3. Procedures to be followed in response to notifications from the Battery Energy Storage Management System, when provided, that could signify potentially dangerous conditions, including shutting down equipment, summoning service and repair personnel, and providing agreed upon notification to fire department personnel for potentially hazardous conditions in the event of a system failure.
4. Emergency procedures to be followed in case of fire, explosion, release of liquids or vapors, damage to critical moving parts, or other potentially dangerous conditions. Procedures can include sounding the alarm, notifying the fire department, evacuating personnel, de-energizing equipment, and controlling and extinguishing the fire.
5. Response considerations similar to a safety data sheet (SDS) that will address response safety concerns and extinguishment.
6. Procedures for dealing with battery energy storage system equipment damaged in a fire or other emergency event, including maintaining contact information for personnel qualified to safely remove damaged battery energy storage system equipment from the facility.
7. Other procedures as determined necessary by the Fire Chief and Fire Marshal to ensure the safety of occupants, neighboring properties, and emergency responders.
8. Procedures and schedules for conducting drills of these procedures and for training local first responders on the contents of the plan and appropriate response procedures.
9. A mitigation plan indicating actions for post-event response and clean-up. Should an event occur, preventative action must be completed (with corrective action report) to prevent reoccurrence.
10. Provide a list of emergency contacts that shall be updated annually or when significant changes are made, whichever is earlier.
11. A documented plan for natural disasters and/or extreme environmental conditions such as high ambient temperatures and/or humidity, including how flooding or brackish water would affect the BESS devices if compromised and emergency procedures for mitigating the negative effects of such scenarios. How does the site ensure in the event of an emergency that the BESS site is not contaminating the ground or source water?

g. *Setbacks and Location.*

1. BESS Systems shall meet the minimum setback requirements established in their respective zoning district.
2. A BESS site shall be no closer than 1,500 feet perpendicular in any direction from another BESS site measured at the perimeter fence.
3. A BESS site perimeter fence shall be a minimum of 200 feet from the nearest property zoned for single-family uses.
4. Greater setback distances may be required based on plume modeling and testing data.
5. Additional setbacks may be considered based on proximity to underground pipelines, railroad tracks, and overhead utilities.
6. Spacing of on-site containers shall be determined by a Hazard Mitigation Analysis relying on data produced by the UL 9540A Fire Testing required in Section 3.14.19.k.2.
7. Preference will be given to sites that are not adjacent to or within 300 feet of a roadway classified as an arterial or higher.

- h. **Landscaping and Screening.** The BESS site shall comply with the following landscaping and screening requirements. Additional requirements may be imposed as a result of the SUP.
 - 1. A Type B buffer yard is required around the perimeter of the facility in accordance with Section 4.20.3. of this ordinance.
 - 2. A masonry wall, at least the height of the containers, shall be installed around the perimeter of the facility. Where adjacent to surrounding communities, the screening wall shall match existing walls in style and material to the greatest extent possible.
 - 3. The masonry wall shall be designed to withstand a blast door from a BESS container striking it.
 - 4. A continuous hedge shall be installed adjacent to the masonry wall.

- i. **Noise.** If a BESS site is located within 500 feet of a property zoned for single-family use, a noise study shall be provided indicating that noise level shall not exceed an ambient level measured at the single-family property line.

- j. **Remote Monitoring.** All BESS sites shall have a redundant 24/7 site monitoring system (approved supervising station) to detect and prevent thermal runaway. The system shall be subject to the following requirements:
 - 1. The system shall have detectors for temperature, gases, and smoke installed.
 - 2. System alerts and detection warnings of a potential thermal runaway, smoke detector activation, or gas detector activation shall be sent to local emergency services (Fire and Police Departments), site and remote operators, and owners.
 - 3. Alerts and detections of a potential thermal runaway, smoke detector activation, or gas detector activation shall trigger BESS unit shutdown and exhaust fan initiation at a minimum.
 - 4. All critical safety systems and remote monitoring systems shall have a secondary source of power in the event of a power failure.
 - 5. A plan shall be provided showing the capability of providing battery backup power for as long as it takes for a permanent (generator) power source to be put in place. The company shall send its backup power plan to the Fire Marshal's office at time of permitting for review. The plan shall explain how they will sustain emergency backup power until normal power is restored, especially during a natural disaster.
 - 6. For additional safety and redundancy of a commercial energy storage system (ESS) installation, a Battery Analytics software system shall be required to monitor the data produced by the Battery Management System (BMS). Indications of a potential failure shall be immediately transmitted to the energy storage system operator and to the fire department.

- k. **Listing and Testing of Site.** The following standards are applicable to the listing and full-scale testing of stationary energy storage systems. The City may accept battery systems listed and tested to later editions of these standards when necessary to address evolving standards applicable to a rapidly developing technology.
 - 1. Listing. All stationary energy storage systems shall be tested and listed by a nationally recognized testing laboratory to the following standards:

- a. Underwriters Laboratories (UL) Standard 1741, entitled “Inverters, Converters, Controllers and Interconnection System Equipment for Use with Distributed Energy Resources;”
 - b. Underwriters Laboratories (UL) Standard 1973, entitled “Batteries for Use in Light Electric Rail (LER) Applications and Stationary Applications;” and
 - c. Underwriters Laboratories (UL) Standard 9540, entitled “Energy Storage Systems and Equipment.”
 - d. Underwriters Laboratories (UL) Standard 1642, entitled “Standard for Lithium Batteries.”
2. Full-scale testing. Stationary energy storage systems shall be tested to Underwriters Laboratories (UL) Test Method 9540A, entitled “Safety Test Method for Evaluating Thermal Runaway Fire Propagation in Battery Energy Storage Systems,” or other approved standard or test data; and shall be subjected to a large-scale destructive fire test of a complete BESS.
1. **Supervision of Site.** A stationary energy storage system shall be operated and maintained under the general supervision of a technical expert held to the following standards:
 1. Be trained and knowledgeable in the installation, maintenance, and operation of the battery system, such as a person engaged in the design or installation of such systems;
 2. Possess the manufacturer’s installation and operating specifications for each battery system and any associated fire protection systems;
 3. Immediately report any emergency condition affecting a battery system to the Fire Department; and
 4. Provide technical assistance about the stationary energy storage system installation to the Department and, in coordination with the energy storage management system monitoring facility, identify a subject matter expert (such as a representative of the manufacturer) who can provide technical assistance about the battery’s design and performance in the event of an emergency condition affecting the battery system.
- m. **Event Response.** If City employees respond to an incident at the site, the operator of the BESS site shall adhere to the following requirements:
 1. A technical expert, as described in 3.14.19.1., must be on-site within one hour of any remote monitoring alert.
 2. All City costs associated with the incident must be reimbursed at a rate specified by the City, as detailed in the Fire Mitigation Fee Schedule.
 3. Any third-party response requested by the city or LCFD will be at the cost of the property owner. (Hazardous materials company, Specialized fire equipment, F-500 encapsulating agent, air monitoring, or other city assets)
- n. **Insurance.** The operator of the BESS site shall provide and maintain, as current, a certificate of liability insurance in form and content satisfactory to the HR Director. The City shall be named as an Additional Insured.
- o. **Flood Risks.** Batteries shall be installed subject to the regulations of Chapter 50, Floods.

p. **Decommissioning.**

1. Upon the ceasing of operations or the end of life of the facility, whichever comes first, the site shall be decommissioned based on the following criteria:
 - a. The owner shall notify the city, the Fire Chief, and the Fire Marshal before any work is started.
 - b. All above and below ground features (i.e. containers, underground utilities, foundations, gravel, etc.) shall be removed from the site with the exception of the drainage improvements and access road. The site shall be returned to its natural pre-construction ground state.
 - c. All material removed from the site shall be disposed, reused, and recycled in accordance with state and federal requirements.
 - d. Any adverse substances that may have entered the ground during the course of operations shall be removed from the property and properly disposed of.
2. Prior to the City's authorization to operate the facility, the Applicant shall:
 - a. Provide a Decommissioning Bond, with the Applicant as the Principal and the instrument shall run to the City, as obligee, and shall become effective on or before the beginning of operations at the site and shall remain in force until the property is fully decommissioned. The amount shall be based on a Professional Engineer's signed and sealed estimate of current costs to decommission the site, at build-out, with an adjusted inflation rate based on the average CPI over the last 10 years from the U.S. Bureau of Labor Statistics.

q. **On-site Signage.** The operator of the BESS site shall post in a conspicuous location at the entrance to the facility a sign subject to the following regulations:

1. The sign shall be reflective and weatherproof and shall be placed at all entrance gates to the facility, as well as on the entrance to any buildings that may house any components of the BESS.
2. Lettering shall be a minimum letter height of 3/8" permanently affixed.
3. The sign shall display the following information:
 - a. 24/7 Contact Information.
 - b. Types of technology associated with the BESS.
 - c. Any special hazards associated with the BESS.
 - d. Type of suppression system installed.
 - e. Disconnect and other emergency shutoff information.
 - f. Command Center location.
4. The sign shall be inspected annually to ensure its structural integrity and to determine if any additional information is required.

k. **Plume Modeling.** To determine the potential toxic risk to those in proximity to the BESS, including responding firefighters, a plume analysis shall be performed. The plume analysis shall utilize appropriate modeling to evaluate worst-case scenarios with varying weather conditions and toxic gas release rates. The plume study shall address toxicity hazards based on toxic gases expected to be released based on gas composition measurements from the cell and module level testing pursuant to UL9540A or other testing. The plume analysis shall

include battery failures with both flaming and non-flaming scenarios. These scenarios should be based on results from relevant tests such as UL 9540A tests and include modeling of a full propagation event involving an entire BESS enclosure. The modeling of multiple BESS enclosure failures shall not be required except where testing or analysis indicates that this is to be reasonably expected. Model assumptions, techniques, results, and a summary document shall be provided in a report. The plume study shall be conducted by a qualified firm with experience in plume modeling for battery energy storage systems. The city shall commission the plume model and all costs incurred by the City shall be fully reimbursed by the BESS applicant.

1. ***Property Tax Agreement.*** The applicant shall enter into a Payment in Lieu of Taxes Agreement with the City of League City to compensate the local taxing authorities for the loss in tax revenue attributable to depreciation and other factors.

- m. ***Transfer of Ownership.*** The Applicant shall provide written notification to the Planning Department at least thirty (30) days prior to any change in ownership of a BESS. A change in ownership includes any kind of assignment, sale, lease, transfer, or other conveyance of ownership or operating control of the applicant, the BESS, or any portion thereof. The Applicant or successors-in-interest or assignees of the Special Use Permit, as applicable, shall remain liable for compliance with all conditions, restrictions and obligations contained in the Special Use Permit, the provisions of this Ordinance, and applicable City, state, and federal laws.

APPENDIX A – DEFINITIONS

Battery Energy Storage System (B.E.S.S.) means one or more devices (i.e. group of batteries), assembled together capable of storing energy in order to supply electrical energy at a future time. B.E.S.S. facilities receive electricity from the electrical grid when there is excess electrical power, store it in a series of batteries and then return it to the grid when additional electricity is needed during high demand.

Battery Analytics Software means a cloud-based software solution using energy storage system (ESS) raw data collected by the Battery Management System (BMS) and applies physics-based algorithms to offer immediate and predictive detection, (on the order of weeks and months), of thermal runaway and its associated root causes.”