



Memorandum

DATE: October 24, 2024
TO: County Council
FROM: Mark Personius, Director
Cliff Strong, Senior Planner
RE: Additional Information on PLN2024-00007 (Heavy Impact Industrial Uses within UGAs)

At your 10/22/24 Planning & Development Committee meeting, Council asked for clarification on and other options for certain uses identified as potentially prohibited in the HII district, as shown in the draft amendments under WCC 20.68.216. These included:

(h) Bulk commodity storage facilities, and truck and vessel transshipment terminals and facilities applied for after [effective date of this ordinance], except for those using only fully-enclosed containers;

PDS Response: The questions from Council on this item seemed to center on whether such uses ought to be prohibited or not, given the existing infrastructure in the area (roads, rail, and port). However, that is a policy question for Council.

Additionally, Council received a letter dated 10/18/24 from Toyer Strategic Advisors, representing Heidelberg Materials and its cement plant off of Marine Drive. In it they make two claims that should be addressed:

1. In their 2nd paragraph they make the claim that “the manufacture of hydraulic cement; concrete gypsum and plaster” would no longer be a permitted use in the HII, and that “the only permitted uses allowed in the HII zone are those permitted in the Light Impact Industrial zone.” This is not true, as no changes to 20.68.050 (Permitted uses) are proposed other than to move 20.68.064 to 20.68.212. The rest of the section remains unchanged.
2. They state that prohibiting bulk commodity storage facilities would negatively affect Heidelberg’s ability to operate on this site and make it a nonconforming use. This latter is true: Were the Council to prohibit bulk commodity storage facilities in this area, the cement plant would become nonconforming. However, that status would not cause it to cease operations nor would it prevent it “from expanding or altering the site when new technology is developed.” Pursuant to WCC 20.83.010 (Continuation), “the lawful use of any building, land or premises, existing on the effective date of adoption or amendment of this chapter, may be continued although such use does not conform to the provisions hereof” (unless the use is discontinued for a period of 12 months or more). Furthermore, WCC 20.83.020 allows for the expansion of nonconforming uses, without a land use permit if expanding within an existing building, or with a Conditional Use Permit if by addition or enlargement.

In a second letter, dated 10/22/24, they repeated the above issues, and described how were they to expand as a nonconforming use by obtaining a CUP it would be more difficult and expensive, and would subject them to a public hearing and public comment. And yes, this is true. However, PDS would like to point out that if Council does want the character of this

neighborhood to change, this is traditionally the tool jurisdictions use to transition neighborhoods.

(I) Battery Energy Storage System (BESS) of greater than 20 megawatts that run for a duration of four hours or greater;

The questions on this item seemed to be:

- *Should BESS ought to be prohibited or not, given that we're moving toward more electrification of our energy systems?*

PDS Response: Again, this is a policy question best answered by Council.

- *What does a 20-megawatt BESS system look like? How big is one?*

PDS Response: See photos below. Also, a lot of information on BESS was provided in the staff report, Exhibit E. For scale comparison, a 1 MW system is estimated to store enough electricity to power 750 homes for four hours.

Figure 1. 3 Examples of 20-MW BESS systems



- *Does the Fire Marshall have any advice?*

PDS Response: The Building Supervisor, acting on behalf of the Fire Marshall, is not an expert in BESS and cannot provide an informed opinion. He would need to consult with a consultant. Nonetheless, the International Fire Code (IFC) does have rules pertaining to their installation, summarized as follows:

2021 International Fire Code & State Amendments. Section 1207 of the 2021 International Fire Code (IFC) contains provisions relating to energy storage systems.¹ The provisions only apply to energy storage systems over a certain capacity. For lithium-ion systems, the threshold is 20-kilowatt hours (kWh). These are summarized very broadly below:²

- Construction and operational permits required.
- A failure modes and effects analysis or other approved hazard mitigation analysis is required. It must evaluate:
 - Thermal runaway;
 - Failure of battery management, ventilation, or exhaust system;
 - Failure of smoke detection, fire detection, fire suppression, or gas detection system;
 - Other listed technical failures.
- The analysis described above must conclude that fires, flammable gases, and toxic gases will be contained below certain thresholds and allow time for evacuation if necessary, and that flammable gases during a fire will be controlled through the use of ventilation, prevention of accumulation, or by deflagration venting.
- System testing prior to commissioning is required.
- Identification, documentation, and training of personnel is required.
- Ongoing inspection and testing are required.
- Noncombustible enclosures are required.
- A management system that disconnects electrical connections if potentially hazardous conditions are detected is required.
- Fire-resistant separations required.
- Vehicle impact protection required.
- Size and separation requirements.
- Fire detection and suppression required.
- Vegetation control surrounding a BESS required.
- Exhaust ventilation, explosion control, spill control, and thermal runaway protections required.

The State has also adopted amendments, effective October 29, 2023, to IFC Section 322, regarding storage of lithium-ion batteries in particular. In addition to the requirements listed above, lithium-ion battery storage would be required to have a fire safety plan, and indoor storage and storage in a container would be subject to a technical opinion and report to evaluate the fire and explosion risks associated with the indoor storage area and to make recommendations for fire and explosion protection. Outdoor battery storage would be subject to size limits and a requirement for separation from buildings, lot lines, public streets, and each other.

¹ The majority of these provisions are also in the 2018 IFC, which is in effect until October 29, 2023.

² The full text of the provisions can be found at <https://codes.iccsafe.org/content/IFC2021P1/chapter-12-energy-systems#text-id-19095843>. The requirements are more nuanced than described in this staff report and include multiple caveats and exceptions based on size and type of the specific system in question.

King County's Approach

King County recently adopted BESS regulations, which became effective 1/1/24. They consider BESS as an accessory use, allowed without a land use permit (though certain conditions and standards apply), when:

- (1) the total system capacity is 2 megawatts or less and the system provides electricity for on-site use only, with "on-site use" including net metering as well as charging of vehicles on-site or in the right-of-way immediately adjacent to the site; or
- (2) the system has an energy rating of 50 kilowatt-hours or less and is intended primarily for on-site use, but also participates in load sharing or another grid-connected electricity-sharing arrangement.

In their residential districts anything above these thresholds requires a Conditional Use Permit, and have additional conditions and standards. However, larger ones are a permitted use in their commercial and industrial districts, though still have conditions and standards they must meet.