

STAFF REPORT

DOCKET: UDO-CC17
STAFF: [Steve Smotherman](#)

REQUEST

An ordinance amendment proposed by Planning and Development Services staff modifying Chapter 5 and Chapter 11 of the *Unified Development Ordinances* to add use-specific standards for pesticide, fertilizer, and other agricultural chemical manufacturing; explosives and pyrotechnics manufacturing; and battery manufacturing. These use standards pertain to the approval process; compliance with local, state, and federal laws; water supply watershed prohibition; minimum site size; perimeter setbacks; security fencing; and landscaping requirements.

BACKGROUND

The Winston Weaver fertilizer plant fire in early 2022 precipitated the need for assessing Winston-Salem's current zoning requirements for fertilizer manufacturing facilities in comparison to those of our peer cities--Charlotte, Durham, Fayetteville, Greensboro, and Raleigh.

Winston-Salem's *Unified Development Ordinances* (UDO) classifies fertilizer plants as chemical manufacturing based on the North American Industrial Classification System (NAICS). This type of manufacturing is one of 13 uses categorized as "Manufacturing C", which is solely permitted in the General Industrial (GI) District. This district is the most intense industrial district in the UDO. Further, watershed protection regulations prohibit the use, storage, or manufacture of hazardous materials within one mile of Salem Lake.

Like Winston-Salem, our peer communities permit fertilizer plants only in heavy industrial zoning districts (see table on next page). Many of our peer communities have additional use restrictions, such as enhanced setback requirements next to residential uses or requiring a Special Use Permit for these facilities. Other common regulations include security fencing or wall requirements, submission of a hazardous materials management plan, and water supply watershed restrictions.

These findings were presented to City Council's Public Works Committee, charged in March 2022 with undertaking a comprehensive study of the Winston Weaver plant fire, at its April 2022 meeting. Following discussion, the Committee instructed staff to prepare a UDO amendment that would provide enhanced standards for fertilizer manufacturing and other hazardous uses.

At the June Public Works Committee meeting, staff presented draft ordinance language proposing specific standards for chemical and battery manufacturing as a subset of the "Manufacturing C" use. The Public Works Committee directed staff to proceed with the ordinance adoption process.

| Peer Community Ordinance Requirements Affecting Fertilizer Manufacturing | | | | | | |
|--|---|-----------------------------|---|--|-------------------------------------|--------------------------------------|
| City | Allowed Only in Heavy Industrial District | Special Use Permit Approval | Enhanced Setbacks from Residential (feet) | Security Fencing/Wall (minimum height in feet) | Hazardous Materials Management Plan | Water Supply Watershed Restrictions |
| Winston-Salem | Yes | No | No | No | No | Prohibited within 1 mile of source |
| Charlotte | Yes | No | 300 | No | No | Not Found |
| Durham | Yes | Yes | 1,500 | 8 | Yes | Spill Containment Plan Approval |
| Fayetteville | Yes | No | 1,000 | No | Yes | Spill Containment Plan Approval |
| Greensboro | Yes | Yes | 500 | 8 | No | Prohibited within 1/2 mile of source |
| Raleigh | Yes | No | No | No | No | Not Found |

As part of the ordinance review process, the Planning Board reviewed the proposed UDO amendment thoroughly at multiple work sessions, raising valid questions about regulating such facilities. These questions touched upon various topics such as the applicability of the amendment to different types of chemical manufacturing; the relationship between local, state, and federal hazardous chemicals regulations; data on past chemical or battery manufacturing explosions; best management practice guidelines on perimeter setbacks; potential for a sliding-scale of regulations based on the size of the operation; and regulation of storage of materials versus manufacturing of materials.

As a result of these discussions and staff research, the UDO amendment proposes the following major elements:

- Applicability: Applies to pesticide, fertilizer, and other agricultural chemical manufacturing; explosives and pyrotechnics manufacturing; storage battery manufacturing and primary battery manufacturing. The provisions shall only apply to new manufacturing uses in the abovementioned classifications permitted after the effective date of this ordinance.
- Approval Process: Requires approval via a General Industrial Special Use Zoning District (GIS), including approval of a site plan following a public hearing.
- Compliance with all local, state, and federal regulations: A hazardous materials management plan meeting all applicable government regulations shall be submitted for approval prior to the issuance of a building permit.
- Water Supply Watershed Prohibition: These uses shall be prohibited in water supply watersheds.
- Minimum Site Size: 25 acres.
- Perimeter Setbacks: 400 feet for all manufacturing operations; 100 feet for all parking areas.
- Security Fence/Wall: Minimum 6 feet in height that shall enclose all facilities, including parking.
- Landscaping: Shall be installed outside of security fencing adjacent to any public street right-of-way.

ANALYSIS

Chemical manufacturing has numerous industry subgroups within the North American Industrial Classification System (NAICS). Several chemical manufacturing uses currently exist in our region in most of the industry subgroups and have not posed significant concerns to surrounding properties or neighborhoods. These industry subgroups include:

- Pharmaceutical and Medicine Manufacturing: Banner Pharmacaps, located in north High Point, manufactures pharmaceuticals in the Piedmont Centre Business Park. Banner Pharmacaps maintains a very clean operation to avoid contaminating its products. Vicks VapoRub has been manufactured in west Greensboro since the early 1900s.
- Paint, Coating, and Adhesive Manufacturing: Axalta Coating Systems operates its North American industrial wood coatings headquarters in south High Point. Akzo Nobel, a Dutch stains and wood coatings company and competitor to Axalta, is also located in south High Point.
- Soap, Cleaning Compound, and Toilet(ry) Preparation Manufacturing: Proctor and Gamble operates a large plant just north of Greensboro that manufactures many toiletry products such as *Crest* toothpaste, *Secret* deodorant, and *Olay* skin care products. Bison 300 (industrial degreaser-Kernersville), Handi-Clean Products (industrial degreaser-Greensboro), and Horizon Tool, Inc. (hand sanitizer, Greensboro) are also classified in this NAICS industry group according to the *Manufacturing in North Carolina* website.

After staff research and discussion, a narrower range of chemical manufacturing uses were included in this amendment than proposed originally. This approach seeks to include only the NAICS chemical manufacturing industry groups that have known documented explosive potential with significant off-site impacts:

- Pesticides, Fertilizers, and Other Agricultural Chemical Manufacturing, and
- Explosives and Pyrotechnics Manufacturing.

Plastics manufacturing was not included even though explosions have been documented at facilities across the nation as there has been no indication of off-site fatalities or major injuries due to such events. Additional NAICS chemical manufacturing industry groups or individual uses could be added to the applicability section of these “Manufacturing C” use standards at a subsequent time if documented examples of major off-site impacts become known.

Storage battery and primary battery manufacturing uses are included due to the potential for groundwater contamination and the frequent use of lithium in battery production. Lithium is a hazardous substance that is toxic, carcinogenic, potentially explosive, and could undergo chemical reactions that produce hazardous heat or gases.

As noted previously, this amendment requires that applicants apply for rezoning to a Special Use General Industrial (GI-S) zoning district. This regulation will mandate public hearings before the City-County Planning Board and the elected body, providing a forum for neighbors and nearby

property owners to engage in careful, deliberate consideration of the rezoning request. Additionally, applicants will be required to submit and be bound to an accompanying site plan showing that the location of all facilities will meet all use-specific standards.

The 400-foot perimeter setback is 10 times greater than the current 40-foot setback for GI zoned properties when adjacent to residentially zoned properties. This setback is also close to the length of an average downtown block. With the 400-foot perimeter setback, the minimum site size of 25 acres would leave approximately 10 acres for building and operations areas if the property was square or rectangular in shape. To allow for more flexibility in site design, parking areas (excluding loading and unloading areas for manufacturing materials/supplies by truck, train, or other means) are only subject to a 100-foot perimeter setback. There are approximately 60 parcels currently zoned General Industrial (GI) of 25 acres or greater in Forsyth County, with another 60 parcels recommended for industrial use in area plans, some of which may be suitable for rezoning to a General Industrial district.

Staff considered the inclusion of a sliding-scale setback provision based on the weight of ammonium nitrate stored on-site. However, it was determined that such a provision would be unfeasible on two grounds: the significant difficulty, if not impossibility, of weighing the material, and the potential for the amount of stored material to change over time.

This amendment does not propose a use separation standard from residential districts for two reasons. The first reason is that a newly established chemical/battery manufacturing use meeting all these proposed standards could be rendered nonconforming if a new residential rezoning district is approved at a distance less than the specified use separation. The second reason is that if the chemical/battery manufacturing use becomes nonconforming, then future expansion is limited to 25% of the existing facilities, through no fault of the established chemical/battery manufacturing use. It is critical that any new chemical/battery manufacturing use that complies with all of these standards not be rendered nonconforming due to a future residential rezoning.

SUMMARY:

This UDO amendment addresses manufacturing uses that frequently involve significant quantities of two extremely hazardous substances (Ammonium Nitrate and Lithium), which have the potential for explosive events that could impact surrounding neighborhoods. This UDO amendment addresses manufacturing uses that frequently involve significant quantities of two extremely hazardous substances (Ammonium Nitrate and Lithium), which have the potential for explosive events that could impact surrounding neighborhoods. Staff believes the proposed use standards will minimize the potential negative impacts of the aforementioned manufacturing processes, while recognizing the economic value such facilities provide to the community.

RECOMMENDATION: APPROVAL

**CITY-COUNTY PLANNING BOARD
PUBLIC HEARING
MINUTES FOR UDO-CC17
OCTOBER 13, 2022**

Steve Smotherman presented the staff report.

Chris Leak commended and thanked staff for the work accomplished on this amendment. George Bryan expressed his concerns regarding the ordinance process and draft text amendment language. Jason Grubbs provided commentary on the overall process for preparing this item and had a few questions, which Chris Murphy and Steve Smotherman responded to.

MOTION: Clarence Lambe recommended approval of the ordinance amendment.

SECOND: Jason Grubbs

VOTE:

FOR: Walter Farabee, Jason Grubbs, Clarence Lambe, Chris Leak, Salvador Patiño, Jack Steelman

AGAINST: George Bryan, Brenda Smith

EXCUSED: None

Chris Murphy, AICP/CZO
Director of Planning and Development Services