



**DEPARTMENT OF COMMUNITY DEVELOPMENT SERVICES**

*Planning Division*

**m e m o r a n d u m**

**TO:** The Urbana Plan Commission

**FROM:** Matt Wempe, Planner II

**DATE:** April 13, 2006

**SUBJECT:** CCZBA-523-AT-2005: Request by the Champaign County Zoning Administrator to amend the Champaign County Zoning Ordinance to add “Ethanol Manufacturing” and authorize by Special Use Permit only in the I-2, Heavy Industry Zoning District

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**Introduction & Background**

In response to a recent inquiry from a large grain storage firm west of the City of Champaign, the Champaign County Zoning Administrator has requested a text amendment to the County Zoning Ordinance to add the use of “ethanol manufacturing” and to permit it by special use in the I-2, Heavy Industry Zoning District subject to certain conditions. Such a use is not currently addressed in the Champaign County Zoning Ordinance. Further information on the request is contained in the Champaign County Preliminary Memorandum, dated March 10, 2006 and in follow-up memorandum to the Environment and Land Use Committee, dated April 5, 2006. (Copies attached).

It should be noted in the initial draft of the text amendment reviewed by the Champaign County Zoning Board of Appeals, “Ethanol Manufacturing” would have been permitted by right. The Zoning Board of Appeals moved that the use be allowed only by special use and only in the I-2, Heavy Industry Zoning District. The Zoning Board of Appeals further added provisions that a study of impacts on adjacent water wells be required when the facility is proposed to utilize a private water well and that adequate drainage outlet be available for discharge of surface waters if the plant is not proposed to be connected to a public sanitary sewer system.

Additional pressure to construct ethanol manufacturing facilities in Champaign County is anticipated due to recent Federal legislation and the fact that two of the major components of ethanol production -- corn and water -- are readily accessible in Champaign County. Ethanol is becoming a more popular alternative/additive to fossil fuels, and has been supported by recent state and federal energy legislation. However, such facilities pose concerns regarding odor and traffic impacts, excessive water consumption, and questions about the energy efficiency of the

product. Environmental impacts, such as waste generation, odor and noise, resulting from ethanol manufacturing are regulated by the Illinois Environmental Protection Agency.

This case was reviewed by the Champaign County Zoning Board of Appeals on Thursday, March 30, 2006, and is now open for public input for one month prior to the Environment and Land Use Committee meeting. Final approval is subject to a vote by the Champaign County Board.

The proposed text amendment is of interest to the City of Urbana as it may affect zoning and land use development decisions within the City's one-and-one-half mile extra-territorial jurisdictional (ETJ) area. The City has subdivision and land development jurisdiction within the ETJ area, while the County holds zoning jurisdiction in this area. It is important that there be consistency between these two jurisdictions to the extent that certain regulations may overlap. Additionally, development within this area may abut development within the corporate limits of the City or may eventually be annexed into the City's corporate limits. By State law, the City has an obligation to review zoning decisions within its ETJ area for consistency with the City's comprehensive plan. A municipal protest of the proposed amendment enforces a three-fourths super majority of affirmative votes for approval of the request at the County Board.

## **Issues and Discussion**

According to *Building an Ethanol Plant in Illinois*, a document published by the Illinois Environmental Protection Agency and the Illinois Department of Commerce and Economic Opportunity, there are a number of factors involved when constructing an ethanol production facility. The most important factors in this case include access to large amounts of water, adequate wastewater disposal options, rail and interstate access, proximity to production inputs, adequate space for rail and truck traffic and storage and loading facilities, and locations further away from residential areas. In addition to these requirements, the City and/or County will have to consider issues such as odor impacts, fire protection (ethanol requires foam to fight fires), road maintenance and/or construction (township roads may be stressed by added freight traffic), and environmental concerns (adequate protection of groundwater, treatment and release of wastewater). All of these factors could significantly impact public and private infrastructure and surrounding areas.

Testimony regarding the impact of ethanol plants was given by the general manager of the large grain storage firm at the March 16, 2006 Champaign County ZBA. He stated that typically six gallons of water are used to produce one gallon of ethanol, and two-thirds of the water turns into steam and the remaining one-third must be treated or recycled. For a 100 million gallon plant, approximately 600 million gallons of water would be used yearly, or two million gallons per day. By comparison, Illinois-American Water Company draws approximately 22 million gallons per day for all of the areas that the company serves. Based on these figures, a single ethanol plant could consume nearly 10 percent of the current daily water usage of Urbana-Champaign.

Urbana staff has discussed the proposed amendment with City of Champaign planning staff, who have completed a preliminary analysis of a potential ethanol facility location west of Champaign. Although many of the production inputs and final product can be transferred by rail, a significant amount of truck traffic could also be associated with an ethanol facility. Champaign staff estimates that approximately 130 truck trips per day would occur in the area surrounding the ethanol facility and en route to a highway interchange. A 10 to 12 inch natural gas line would also have to be extended to the property. Other concerns expressed by Champaign staff include the need to require the use of a “dry mill” process to minimize odor impacts and safety impacts at rail crossings due to increased freight traffic.

### *Champaign County Issues*

Champaign County Planning and Zoning has received preliminary inquiries about approving an ethanol production facility at a grain storage facility west of the City of Champaign. There are also tentative plans for another facility in the county, as well as up to four facilities in East Central Illinois. Currently, the Champaign County Zoning Ordinance does not permit ethanol manufacturing, but does permit several similar uses. “Beverage (Alcoholic and Non-Alcoholic) Distilling, Manufacturing, Processing, and Bottling” is permitted by right only in the I-2 district. “Petroleum Refining” and most other industrial petroleum product uses are subject to a special use permit. The Champaign County Zoning Administrator has said that he feels beverage distilling is the most similar use to ethanol production, though he acknowledges that ethanol production occurs at a much larger scale.

The Champaign County Zoning Board of Appeals has expressed concerns about the impact of an ethanol facility on surrounding water wells. As outlined in the County staff memorandum, the only way to determine if well water drawdown could occur is to test water levels at a proposed location. Pursuant to these concerns, the Champaign County Zoning Board of Appeals have included the requirement for such a test as a part of the special use requirement. (See the April 5, 2006 memorandum).

### *City of Urbana Issues*

The Urbana Zoning Ordinance requires a special use permit when a proposal is “potentially appropriate in and compatible with other uses in its zoning district, but which, because of the potential major impact of its scale and nature on its district and the City of Urbana as a whole, necessitates close examination...” Since ethanol production is not listed in the table of uses in the Urbana Zoning Ordinance, a special use permit would be required under “All Other Industrial Uses.” As a part of this review, the City would require any studies or information necessary to determine the following:

1. That the proposed use is conducive to the public convenience at that location;
2. That the proposed use is designed, located and proposed to be operated so that it will not be unreasonably injurious or detrimental to the district in which it shall be located, or otherwise injurious or detrimental to the public welfare;

3. That the proposed use conforms to the applicable regulations and standards of, and preserves the essential character of, the district in which it shall be located.

In addition, the City of Urbana currently does not distinguish between heavy and light industrial uses and only has a designation of “Industrial” use. The 2005 Comprehensive Plan recommends that the City adopt different zoning classifications for light and heavy industrial uses.

The majority of property zoned I-2, Heavy Industry in Champaign County is located around Urbana-Champaign. In Urbana, the majority of such property is located north of I-74 along Lincoln Avenue. The 2005 Urbana Comprehensive Plan identifies the future land use of this area as a mixture of Heavy Industrial (uses that are heavily dependant on transportation facilities and are not compatible with residential uses), Light Industry and Residential. The Residential future land use is located east of Lincoln Avenue and north of the Saline Branch to recognize existing residential uses in the area.

It is reasonable to expect that an ethanol production facility could have major impacts on roads, public safety, and surrounding areas in the Urbana extra-territorial jurisdictional area. In addition, there are concerns about the potential for significant water usage of such a facility. The Mahomet Aquifer upon which our community depends is currently under study to determine the amount of drawdown that has occurred and is expected to occur with continued development of the watershed.

Because of these potential land use and environmental concerns and the unique concerns posed by ethanol manufacturing, staff recommends that the City conditionally protest the proposed text amendment subject to the incorporation of additional studies to adequately address the issues of water usage, odor control, traffic impact, railroad safety, fire protection, setbacks from surrounding uses, land use compatibility, etc.

### **Summary of Staff Findings**

1. In reviewing any proposal for ethanol manufacturing, the County should consider potentially significant issues related to ethanol production, including fire protection, road maintenance and/or construction, odors, diminishment of water supplies, water quality, and other environmental concerns. All of these factors could significantly impact public and private infrastructure and surrounding areas.
2. The Urbana Zoning Ordinance does not distinguish between light industrial and heavy industrial uses.
3. Under the Urbana Zoning Ordinance, an ethanol production facility in the City would require a special use permit under “All Other Industrial Uses” because of the potential major impact on the area and the City as a whole. As a Special Use, the City would require that the proposed facility be designed, located and operated so that it will not be unreasonably injurious or detrimental to the district in which it shall be located, or otherwise injurious or detrimental to the public welfare.

4. The Champaign County text amendment should require specific studies sufficient to address issues such as traffic impact, fire protection, railroad safety, water usage, odor control, land use compatibility. As currently drafted, the proposed text amendment only addresses the issues of adjacent private well impact and stormwater discharge.
5. The proposed text amendment could pose a detriment to the City of Urbana or to the extra-territorial jurisdiction of the City of Urbana.

## Options

In CCZBA Case No. 523-AT-2005, the Plan Commission has the following options for recommendations to the City Council:

- a. Forward the plan case to the City Council with a recommendation to defeat a resolution of protest for the proposed text amendments.
- b. Forward the plan case to the City Council with a recommendation to defeat a resolution of protest contingent upon some specific revision(s) to the proposed text amendments.
- c. Forward the plan case to the City Council with a recommendation to adopt a resolution of protest for the proposed text amendments.

## Staff Recommendation

In Champaign County ZBA Case No. 523-AT-2005, Urbana City staff recommends that the Plan Commission recommend that the City Council **ADOPT a resolution of protest** for the proposed text amendment due to the potential for environmental impacts within the ETJ and due to the lack of consistency with the City's planning and zoning regulations. This resolution of protest would be contingent upon inclusion of the following concerns:

1. Require adequate setbacks around such facilities (e.g., 100 feet) as none are currently required.
2. Require a study of water usage impact to protect community water resources. The study should address how much water will be utilized and identify the impact upon public infrastructure and water sources.
3. Require a traffic impact study, including the potential for increased car and truck traffic, increased rail traffic, and safety of nearby crossings, and identifying necessary improvements to road conditions and strength. Measures to protect access to other existing uses in the area should be addressed. Road improvements necessary as a result of the proposal shall be funded by the project.
4. Require an emergency access and fire protection plan with review and approval by responding service providers.

5. Address impact of any connection to a municipal sanitary sewer. A sewer use permit from the Urbana-Champaign Sanitary District and connection permit from the IEPA shall be required, along with approval of the county or municipal engineer.
6. Require an odor control plan to protect receptors in the area. A “dry mill” process shall be used to minimize odors.
7. Require a water pollution control plan to demonstrate compliance with Clean Water Act, IEPA, and local regulations.
8. Require a dust and erosion control plan to demonstrate compliance with federal, state and local environmental laws.
9. Study and address noise impacts to protect receptors in the area. Mitigation measures shall be adopted to protect receptors.

It is important that public input be provided throughout the process and that impacted parties have an opportunity to voice their concerns and receive adequate protections. Such a process is mandated for landfill and waste facilities in Illinois and a similar level of review and protection is appropriate for a use such as ethanol manufacturing which has a potential to create environmental impacts at a level not normally anticipated by ordinary special use review. By adding these provisions to the Champaign County Zoning Ordinance, the County will be in a better position to ensure that all of the potential impacts are adequately studied and resolved by the appropriate party.

Prepared by:

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Attachments: Champaign County ZBA Preliminary Memorandum, March 10, 2006  
Champaign County ELUC Memorandum, April 5, 2006

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