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Planning Commission Memorandum

To: Planning Commission
From: Planning and Zoning Staff
Subject: Solar Farm Regulations Update
Date: April 15, 2021

Planning Commissioners

During the March meeting, Staff presented the first draft of the County's solar regulations. Planning Commission provided feedback to Staff, and the second draft is ready to present.

There are several changes to the first draft to note:

1. Added a requirement that any existing natural screening elements be preserved.

2. Added a requirement that a 50-foot vegetative zone be preserved on either side of channelized streams to reduce run-off potential

3. Included a road maintenance plan requirement

4. Added a requirement that the applicant obtain a NPDES permit from KDHE to address run-off. This would required by state law if the project disturbs more than one acre, but including it in our regulations would highlight its importance.

5. Clarified that the decommission should put the land back to pre-development conditions.

6. Prohibited CST farms.

Staff utilized multiple sources for these changes, including Planning Commission feedback. The sources are linked below. However, one source, Staff feels, requires added context.

A Planning Commissioner provided Staff with a source, wiseenergy.org. Staff extensively reviewed the information on the Solar Farms page.

The page covers a range of potential issues and includes a model ordinance for jurisdictions to use. Of the potential issues discussed on the page, only two are relevant to the construction of our solar farm regulations.

1. **Environmental Impacts:** The webpage includes a bevy of information regarding the potential environmental impacts of solar panels on the surrounding landscape. In particular, the chemical group known as PFAS. These chemicals are used in everything from non-stick cooking pans to construction materials to the foam used to fight fires.

   However, there is a significant amount of context that is missing from

WiseEnergy.. While some PFAS have been shown to have negative health impacts on humans, and many, many more PFAS have not been studied enough to conclude their health effects one way or the other, Staff could find no study that showed that solar panels played a direct role in contaminating the soil or water with PFAS.

That being said, the website attempts to make this connection indirectly with the way the articles are presented.

For example, the first three links under the heading "Some *Potential* Solar Environmental Problems" (emphasis added) are headlined: "What are PFAS and why are they a Problem", "PFAS: What are the Health Effects", and "PFAS Chemicals in drinking water pose serious health threat". By reading the headlines only, you would assume that all 5,000+ chemicals in the PFAS family are toxic. However, as each article notes, the truly toxic chemicals, PFOA and PFOS, are no longer manufactured in the US, but their decades-long use has contaminated water sources and the environment generally. Additionally, the article "PFAS: What are Health Effects" provides the following caveat:

> "A large number of studies have examined the possible relationships between levels of per- and polyflouroalkyl substances (PFAS) in blood and harmful health effects in people. However, not all of these studies involved the same groups of people, the same type of exposure, or the same PFAS. These different studies therefore reported a variety of health outcomes. *Research involving humans suggests that high levels of certain PFAS may lead to the following [health problems]*" (emphasis added)

Again, there is no disputing that certain PFAS have contributed to health and environmental hazards. However, the issue that we are concerned with is their connection to solar panels.

From the initial set of articles, the website makes the link between solar panels and PFAS contamination. Two articles in particular are representative of this link: "EPA confirms GenX-related compounds used in solar panels" and "Solar panels could be a source of GenX and other perflourinated contaminants". In each article, the EPA sources are stating that yes, PFAS have been used in solar panels, therefore solar panels **could** be a source of contamination. Crucially, neither one of these articles states that solar panels **are** a source of contamination.

The above is not intended to discredit the potential effects of PFAS chemicals. Instead it is to highlight that there is no known link between solar panels installed in the ground, and those panels leaching PFAS into the groundwater. The potential is there, but the potential is also there for hundreds and hundreds of other products that use PFAS chemicals including within the construction industry, non-stick cooking materials, packaging for food and other products, and many, many more.

2. **Property Values:** The second relevant issue relates to the potential property value reductions as a result of solar farms. Setting aside the tremendous difficulty in determining whether or not a particular use is the sole reason for a depreciation in property values, the website cites only three studies of the impact of solar farms on property values. Conversely there have been hundreds of studies conducted that show no consistent negative impact on property values as a result of a large solar farm. Doubt is often cast on these studies because they are often paid for by the solar companies. However, it is crucial to remember that these studies are often done as part of a permit process, part of which requires the solar company to study the impacts of solar farms.

   Focusing on the studies that the website cites, all three are similar in their findings. Solar farms constructed in suburban areas have a negative impact (the degree varies) on homes adjacent to those farms, and the negative impact is lessened the farther away a home is.

   Our draft regulations already address this potential impact by requiring screening when the facility abuts a residence, or when the solar farm is in an area planned for residential. The latter requirement was added specifically to discourage construction of these facilities in residential areas of the County.

3. **Other Items Listed:** The other concerns listed on WiseEnergy are outside of the purview of the Planning Commission. Just like any business or land use within the County, Planning Commission should not take into consideration whether or not solar farms are economically viable, whether or not they're receiving a subsidy, or whether or not they are more or less effective than any other related power source.

   To illustrate this point, replace solar in the titles of the articles with pizza restaurant. The concerns presented may impact individual property owner's decisions to sign leases with a pizza chain, but it they are not typically concerns when deciding whether or not a pizza chain is an appropriate use for a location.

Sources Used

WiseEnergy.org/solar

Solar's Impact on Rural Property Values

Experimental Study on Flourine Release from PV Backsheet Materials

Facts about solar panels: PFAS Contamination

Homeowners often oppose nearby solar. But do projects really hurt property values?

Planning guidance for the development of large scale ground-mounted solar PV systems

PFAS Usage

Solar Farm Sound Study