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MEMORANDUM

TO: Board of County Commissioners
Bonnie Hammersley, County Manager

FROM: Craig Benedict, Planning Director
Michael D. Harvey, Current Planning Supervisor

DATE: October 7, 2014

SUBJECT: Information Item – Regulation of Solar Facilities within North Carolina

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Please accept the following memorandum as an assessment of solar regulations currently enforced throughout the State.

This information was requested by BOCC members during the May 27, 2014 Quarterly Public Hearing to ascertain how existing County regulations compared to other local governments.

BACKGROUND: The County adopted solar regulations in the fall of 2012.

The amendments were initiated by staff to address a concern over existing regulations not providing adequate distinction(s) between the erection of a solar array for personal use versus the erection of an array to serve as either an income generator for a property owner or a public utility benefiting multiple properties throughout the region.

Staff also identified existing inconsistencies within the Orange County Unified Development Ordinance (UDO) concerning regulations governing the development of utilities needing correction.

The amendment package, reviewed at the August 27, 2012 Joint Quarterly Public Hearing and adopted on November 8, 2012, addressed the following:

1. New definitions of solar facilities.

2. Allows for solar facilities consistent with all other 'utilities' as denoted within the Utilities land use category of the UDO.[1]
3. Established acceptable levels of power generation for solar panels erected on private property to address on-site power needs, specifically:
    a. For residential land uses:
        i. Having a rated capacity consistent with local utility providers net metering policies not to exceed 20 kilowatts of electricity generated on-site,
        ii. Having a rated storage volume for heated water not to exceed 240 gallons, and
        iii. Having a collector area of more than 1,000 square feet for thermal collection.[2]
    b. For non-residential land uses:
        i. Limits based on the average utility need (i.e. electricity, water, etc.) to support the non-residential land use. [3]
4. Adopted new regulations governing the review and approval of solar facilities intended for commercial/public utility purposes.
5. Facilities generating over 20, but under 100, kilowatts are reviewed through the Class B Special Use Permit process (i.e. acted upon by the Board of Adjustment).[4]
6. Facilities generating over 100 kilowatts are reviewed through the Class A Special Use Permit process (i.e. acted upon by the BOCC with a recommendation from the Planning Board).[5]

The attached table provides a synopsis of solar regulations enforced throughout the State.

In reviewing these regulations staff would note the following:

a. Orange County regulations are comparable with other standards currently being enforced throughout the State.
b. Orange County's standards provide distinctions, with respect to permit review and approval of a solar facility, based on the overall intensity of a given project (i.e. how much power is generated and for what purpose) while others seem to base their development/review processes on the size of property where a solar facility is to be located.

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[1] Section 5.2 Table of Permitted Uses.
[2] Section 5.9.6 (A) (1) (b) of the UDO.
[3] There was lengthy discussion on this provision. Several Planning Board and BOCC members did not want to establish a definitive limit that could hinder non-residential developments from becoming energy self-sufficient.
[4] Standards of evaluation and development are located within Section 5.9.6 (B) of the UDO.
[5] Standards of evaluation and development are located within Section 5.9.6 (C) of the UDO.

c. While most of the identified counties treat solar facilities as a utility, some restrict the general use zoning districts where such projects can be located.

   As previously indicated Orange County allows for solar facilities in most all general use zoning districts consistent with existing allowances for utility operations. The notable exception is that solar facilities over 20 kilowatts are prohibited within the Existing Commercial (EC-5) and Existing Industrial (E1) general use zoning districts.

   There did not seem any compelling rationale to limit their location to a specific land use, whether non-residential or residential/agricultural area since solar facilities follow high power transmission lines and substations, which are located to serve the overall regional electric grid serving both urban and rural areas.

d. Required setbacks for solar facilities range from 50 ft. from property lines/rights-of-way to 150 feet.

   The Orange County does not have a specific setback standard. Current regulations require a 50 land use buffer along the perimeter of the property line. This required land use buffer, in turn, creates a 'setback' requirement in order for the erected panels to avoid shadows created by the required vegetation.

e. Required land use buffers are comparable with existing County standards. Durham and Brunswick counties establish specific regulations governing the actual 'opacity' (i.e. how visible the development will be once a land use buffer is established) of a required land use buffer.

   Orange County's UDO does not have specific opacity requirements.

f. In reviewing this matter with several county planning departments, there appears to be a trend towards local governments initiating amendments to their land use regulations establishing development standards for solar facilities.

Staff looks forward to providing additional detail as necessary.

GOVERNMENT ENTITY	WHERE PERMITTED	HOW PERMITTED	LAND USE BUFFERS	SETBACKS/HEIGHT	DECOMMISSIONING
ORANGE COUNTY	Allowed in the majority of general use zoning districts. Permit process based on intensity of project.	Based on intensity of power generated: • Accessory use (under 20 kilowatts) – Staff approval. • Between 20 – 100 (anywhere from 10 to 25 individual panels) kilowatts – Class B Special Use Permit (SUP). • Over 100 kilowatts (anywhere from 25 to 40 individual panels) – Class A Special Use Permit.	Class B and Class A Solar Facilities all require a 50 ft. wide land use buffer	None specified. Typical array has to be approximately 50 feet from trees achieving height of 12 feet to avoid shadow from foliage. Resulting setback has been approximately 100 feet for the solar projects we have approved so far. Height limit: • Accessory and Class B SUP – based on district • Class A SUP – 40 ft. limit for arrays and structures.	• Notify Planning within 60 days prior to cessation of activities. • Facility removed within 12 months of cessation. • Required to re-stabilize property and obtain required permits (i.e. Erosion Control) to do so. • Record document rescinding any recorded Special Use Permit.
CHATHAM COUNTY	Permitted (lots under 2 acres in size) in all residential and industrial districts. Use not permitted in commercial districts. Permitted (lots over 2 acres in size) through Conditional Use Permit process in the same residential and industrial districts.	Based on lot size and intended use: • Accessory use (no power limit identified) • On property under 2 acres – staff approval • On property over 2 acres – Conditional Use Permit (i.e. rezoning and Special Use Permit) acted upon by Board of Commissioners.	50 feet landscaped buffer (lots under and over 2 acres).	• 50 ft. minimum setback • 100 ft. setback from roadways (projects on property over 2 acres in area) • Height: 15 ft. measured from grade at base of solar collector.	Removed at owner's expense within one hundred and eighty (180) days of determination by the Planning Department the facility is no longer being maintained in an operable state or no longer supplying solar power.

GOVERNMENT ENTITY	WHERE PERMITTED	HOW PERMITTED	LAND USE BUFFERS	SETBACKS/HEIGHT	DECOMMISSIONING
CATAWBA COUNTY	Permitted by right in Industrial districts. Permitted in 2 residential districts through the Conditional Use Rezoning process.	Where permitted by right staff review/action on site plan. Within residential districts only permitted through processing of a Conditional Use Rezoning application acted upon by the Board of Commissioners.	Minimum height of 10 feet (within 5 years of planting). Landscaped area has to be 75 feet in width.	All structures and fences are required to be setback 100 feet from all rights-of-way and 50 feet from all property lines. No height limit specified within Ordinance. Staff assumes it is based on underlying zoning district where facility is located.	• Application must include decommissioning plan. • Following 6 months of inactivity applicant shall have 6 months to remove facility. • Required to re-stabilize property and obtain required permits (i.e. Erosion Control) to do so. • As part of permit applicant has to have performance bond at a minimum of $500,000.00 to cover decommissioning if necessary. • Landowner/tenant is required to notify County when site is abandoned.
CLAY COUNTY	Permitted everywhere. Clay County does not have local zoning regulations (i.e. general use zoning districts and development standards.)	Approved by Building Inspections Department administratively.	Ordinance requires a vegetative buffer along the perimeter of the property. There is no mandatory width.	All structures and fences are required to be setback 100 feet from all rights-of-way, property lines. No height limit specified.	No standards listed.

GOVERNMENT ENTITY	WHERE PERMITTED	HOW PERMITTED	LAND USE BUFFERS	SETBACKS/HEIGHT	DECOMMISSIONING
DURHAM CITY/COUNTY	Listed within the Major Utility land use category of their Unified Development Ordinance. Permitted in most residential zoning districts subject to action by the Board of Adjustment.	Acted upon by the Board of Adjustment	Variable width buffer ranging from 20 to 30 ft. depending on the district where the facility is located and topography of the site. Buffer may be expanded to address issues of visibility.	Comply with general use district regulations where located. No specified height limit.	No standards listed.
BRUNSWICK COUNTY	Listed within the Utilities land use category of their Unified Development Ordinance. Solar serving as an accessory use is permitted in all zoning districts. Solar serving commercial/utility use only allowed within 'Rural Residential' zoning district with action from Board of Adjustment. Permitted use in commercial and industrial districts.	Acted upon by the Board of Adjustment	Variable depending on district. Ranges from 20 to 40 feet based on surrounding uses.	150 ft. setbacks from all property lines and rights-of-way (both for permitted facilities and facilities acted upon by Board of Adjustment.) Height limit of 20 ft.	No standards listed.