

STRATA SOLAR DEVELOPMENT

CONDITIONAL USE PERMIT APPLICATION Chatham County, NC

Vickers Farm Solar Electric Power Plant

Louis Iannone, Strata Solar

12/5/2013

Strata Solar

Chatham County Vickers Solar Electric Power Plant

Application Submittal List

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 - a.) Typical - standard rack system, engineered to specific soil conditions per site

**APPLICATION FOR
NEW CUP OR A
REVISION TO AN
EXISTING CUP**

Chatham County
Planning Department

P. O. Box 54, 80-A East St, Pittsboro, NC 27312
Telephone: (919) 542-8204 FAX: (919) 542-2698

Section A. APPLICANT INFORMATION

NAME OF APPLICANT: Strata Solar

MAILING ADDRESS OF APPLICANT: 50101 Governors Drive, Suite 280 Chapel Hill, NC 27517

PHONE NUMBER/E-MAIL OF APPLICANT: 919-960-6015 Ext. 305, 919-669-0693 cell

PROPERTY OWNER INFORMATION (If different from the applicant): ***Owner Authorization Signature Required; See end of application.**

Name(s) Hoyt Clifton Collins

Address: 2883 Lystra Church Rd.

Chapel Hill, NC ZIP 27517-9339

Telephone: 919-942-2196 FAX: _____

E-Mail Address: _____

PROPERTY INFORMATION: The following information is required to provide the necessary information to process the rezoning request:

ADDRESS OF SUBJECT SITE: 151 Vickers Rd., Chapel Hill

CHATHAM COUNTY PROPERTY PARCEL NUMBER (AKPAR #): 18869

CURRENT ZONING DISTRICT(S): R-1 PROPOSED ZONING DISTRICT(S): R-1

TOTAL SITE ACRES/SQUARE FEET: 98.54 ac. Total Parcel / 18.02 ac. Project Area

PROPOSED USE(S) AND PROPOSED CONDITIONS FOR THE SITE: Solar Electric Power Plant

It is important that the applicant provide information to explain how the permit request or revision satisfies the following required five findings. **All applications shall contain the following information.** Please use attachments if necessary. If there is a finding that you feel does not apply to this submittal, please mark with "N/A" for not applicable.

1. **The use requested is among those listed as an eligible conditional use in the district in which the subject property is located or is to be located.**

The use is permitted with a CU permit per page 51 and section 17.6 of the Chatham County Zoning Code

2. **The requested conditional use permit or revision to the existing permit is either essential or desirable for the public convenience or welfare.**

Please see addendum.

3. **The requested permit or revision to the existing permit will not impair the integrity or character of the surrounding or adjoining districts, and will not be detrimental to the health, safety or welfare of the community.**

Please see addendum

4. **The requested permit will be or remain consistent with the objectives of the Land Conservation and Development Plan.**

Please see addendum

5. **Adequate utilities, access roads, storm drainage, recreation, open space, and other necessary facilities have been or are being provided consistent with the County's plans, policies and regulations.**

Please see addendum

Section B. SUBMITTAL INFORMATION AND PROCEDURE

- (1) Sixteen (16) completed application packets and all supporting information shall be submitted to the Planning Department at least forty-five (45) days prior to the Public Hearing. **(PLEASE SEE ATTACHED CALENDAR FOR ALL SUBMITTAL AND DEADLINE DATES)** A digital copy of the application packet shall be submitted pursuant to the Planning Department Digital Document Submission Guidelines.

-
- (2) The Planning Department shall, before scheduling the public hearing, ensure that the application contains all the required information as specified in Section 5 of the zoning ordinance.
 - (3) The Planning Department shall have fifteen (15) days from the date of submittal to notify the applicant that the application is complete for scheduling the public hearing.
 - a. If the Planning Department determines the information is not sufficient for review, the Department shall notify the applicant of the specific information that is required for review.
 - b. The Planning Department shall take no further action on the application until the applicant submits the required information.
 - c. Once the applicant corrects the identified deficiencies, the applicant shall resubmit to the Planning Department at least 45 days prior to the next Public Hearing meeting, and the Department shall have 15 days to review the information and notify the applicant that the information is sufficient for review.
 - d. A determination that an application contains sufficient information for review as provided in this subsection (b) does not limit the ability of other county agencies, the Planning Board or the Board of Commissioners to request additional information during the review process.
 - (4) The application is reviewed by the Technical Review Committee prior to the Public Hearing for comments and recommendations from other agencies.
-

Section C. SUPPLEMENTAL INFORMATION REQUIRED WITH THE APPLICATION and REQUIRED INFORMATION TO BE INCLUDED ON THE SITE PLAN

PLEASE INCLUDE ALL OF THE FOLLOWING (CHECK OFF). Please check the list below carefully before you submit:

- (1) The application shall include a **site plan**, drawn to scale, with supporting information and text that specifies the actual use or uses intended for the property and any rules, regulations, and conditions that, in addition to the predetermined ordinance requirements, will govern the development and use of the property. The following information must be provided, if applicable:
 - ☒ a. Information showing the boundaries of the proposed property as follows:
 1. If the entire parcel will be zoned, a GIS or survey map and parcel number of the subject property.
 2. If only a portion of the parcel will be zoned, a boundary survey and vicinity map showing the property's total acreage, parcel number, current zoning classification(s) and the general location in relation to major streets, railroads, and/or waterways,
 - ☐ b. Legal Description of proposed conditional zoning district;
 - ☒ c. All existing and proposed easements, reservations, and rights-of-way;
 - ☒ d. Proposed number and general location of all building sites, their approximate location, and their approximate dimensions;
 - ☒ e. Proposed use of all land and structures, including the number of residential units and the total square footage of any non-residential development;
 - ☒ f. All yards, buffers, screening, and landscaping required by these regulations or proposed by the applicant; **(SECTION 12 LANDSCAPING & BUFFERING REQUIREMENTS)**
 - ☒ g. All existing and proposed points of access to public and/or private streets;

N/A

- ☒ h. Stream buffers required through this or other Chatham County Ordinances or Regulations, and other Local, State, or Federal regulatory agencies. Delineation of areas within the regulatory floodplain as shown on the Official Flood Insurance Rate Maps for Chatham County;

N/A ☐ i. Proposed phasing, if any;

- ☒ j. Generalized traffic, parking, and circulation plans; **(SECTION 14 OFF STREET PARKING)**

- ☒ k. Proposed provision of utilities;

N/A ☐ l. The location of known sites of historic or cultural significance within or adjacent to the project area, including any structure over 50 years old;

N/A ☐ m. The approximate location of any cemetery;

- ☒ n. Proposed number, location, and size of signs; **(SECTION 15 SIGN REGULATIONS)**

- ☒ o. Location and description of any proposed lighting on the project site with a note that any lighting will comply with Section 13; **(SECTION 13 LIGHTING STANDARDS)**

- ☒ p. The location of existing and/or proposed storm drainage patterns and facilities intended to serve the proposed development, and impervious surface calculations; and

- ☒ q. Environmental Impact Assessment pursuant to Section 11.3 of the Zoning Ordinance, if applicable.

The above information is required to be shown on the site plan submitted with this application. If, for some reason, any of the required items above are not included on the site plan, reasons for excluding those requirements must be given.

- (2) In the course of evaluating the proposed use, the Zoning Administrator, Planning Board, Chatham County Appearance Commission, or Board of Commissioners may request additional information from the applicant. This information may include, but not be limited to, the following:

- ☐ a. Proposed screening, buffers, and landscaping over and above that required by these regulations, as well as proposed treatment of any existing natural features;
- ☐ b. Existing and general proposed topography;
- ☐ c. Scale of buildings relative to abutting property;
- ☐ d. Height of structures;
- ☐ e. Exterior features of the proposed development;
- ☐ f. A traffic impact analysis of the proposed development prepared by a qualified professional. The traffic impact analysis shall follow the NCDOT TIA Analysis Guidelines, and shall also include consideration for non-motorized and public transportation;
- ☐ g. Any other information needed to demonstrate compliance with these regulations.

NOTE: The Zoning Administrator has the authority to waive any application requirement where the type of use or scale of the proposal makes providing that information unnecessary or impractical.

SECTION D. SIGNATURE STATEMENTS

OWNER'S SIGNATURE*: In filing this application, I/we as the property owner(s), hereby certify that all of the information presented in this application is accurate to the best of my knowledge, information and belief. I hereby designate Strata Solar to act on my behalf regarding this application, to receive and respond to administrative comments, to resubmit plans on my behalf and to speak for me in any public meeting regarding this application.

Signature: Clyff Collins

Date: 11-27-13

APPLICANT SIGNATURE: I hereby acknowledge that I am making this application on behalf of the above owner's statement or myself as the owner and that all the information presented in this application is accurate to the best of my knowledge, information, and belief. I acknowledge understanding of the requirements set out in this application and in the ordinances and/or guidelines used to determine the completeness of this submittal and to proceed as determined.

Signature: [Signature] for Strata Solar

Date: 11-27-13

OFFICE USE ONLY:

DATE RECD: _____

BY: _____

APPLICATION #: C _____

FEE PAID \$: _____

**REPORT OF COMMUNITY MEETING REQUIRED BY
THE CHATHAM COUNTY ZONING ORDINANCE**

To: ANGELA BIRCHETT, ZONING ADMINISTRATOR

Date: November 26, 2013

Application #: C

Proposed Zoning: R-1 CUP – Solar Electric Power Plant

The undersigned hereby certifies that written notice of a community meeting on the above zoning application was given to the adjacent property owners set forth on the attached list by first class mail on (date) November 14, 2013. A copy of the written notice is also attached.

The meeting was held at the following time and place: 50101 Governors Drive, Suite 280
Chapel Hill, NC

The persons in attendance at the meeting were: Timothy B. Perry, Anne and Gary Stevens, John and Laura McKelvey, Bruce Collins, Cliff Collins, Jim and Fran Holland and Venkai Yendapalli
Please see attached list

The following issues were discussed at the meeting: Planted buffers, Color of fence, Height of planted buffers, Low height shrubs to create a lower level screen, Lighting, Neighbors general agreement with solar farms; a desire to support the proposed project provided their concerns are addressed

As a result of the meeting, the following changes were made to the rezoning petition:
Buffer added to southeast quadrant of plan, full height shrubs to be used to screen entire height of buffer, black vinyl coated fence to be installed in place of galvanized to soften appearance of fence. No lighting is proposed.

Date: 11-27-13

Applicant: Strata Solar

By: Louis Iannone



Please submit this Report to the Chatham County Planning Department located at 80-A East Street, Dunlap Building or mail it to Angela Birchett, Zoning Administrator, PO Box 54, Pittsboro, NC 27312.

Attendance List

11-25-13

Chattan Vickers Farm Community Meeting

<u>Name</u>	<u>Address</u>	<u>Phone</u>	<u>Email</u>
Timothy B. Perry	124 Hidden Oaks Dr	(919) 593-4224	tbrianp@yahoo.com
Anne & Gary Stevens	505 Vickers Rd	919.929.3100	micknjazz@ bellsouth.net
John & Laura McKelvey	155 W. Newman Rd	919-932-6137	jnlmckelvey@ ipass.net
Bruce Collins	876 Lyster Rd	919 933 2185	Bruce Collins @ BellSouth.com
Frank & Jane Hillman	527 Vickers Rd	919 630 0433	jhh1950@gmail.com
VENKAT YENDAPALLI	81A RIVER SHELTER	919-800-7847	LEOVENKAT@GMAIL.com

Below is a SAMPLE of a community meeting notice letter that you may copy and modify as needed.

Date _____

Developer/Applicant Name _____

Developer Address _____

Developer Address _____

Re: Development Input Meeting for _____ (Proposed Project Name) located at _____
_____ (Location of Project) on _____ (date)

Dear Adjacent Property Owner:

This letter is to invite you to a community meeting regarding a _____ (commercial or mixed use) project on _____ acres we are proposing near your property, on Parcel Number _____. An informal community meeting will be held on _____ (date) beginning at _____ (time) at _____ (location of meeting), and lasting approximately _____ hour(s). Detailed directions are attached. The proposed project will be served by _____ (water) and _____ (wastewater). Plans of our proposed development will be shown and you will have the opportunity to voice your concerns and ask questions of people knowledgeable about the details of our project. Our plans may be revised based on your input before we submit to the County.

This meeting is required as part of the County zoning process; however County staff will not participate in the meeting. We are planning to submit our official plans to the County Planning Department in the near future. You will receive a notice from the County about this submittal once the application has been made.

We would appreciate your attendance and input at the community meeting. If you have questions before the meeting you may contact the person noted below. A copy of the map showing our proposed project is attached and can also be viewed on the Chatham County web site at www.chathamnc.org/planning under the Rezoning & Subdivision Cases link.

Respectfully,

For More Information, Please Contact:

Name _____

Phone Number _____

Email Address _____

Adjacent/Adjoining Landowners: These are those properties that share a common property line as well as those that are directly across a public or private road, easement, or waterway.

Legal notices are mailed to these owners so please type or write neatly

- | | |
|--|---|
| (1) 18750 James B. Riggsbee
PO Box 2872
Cashiers, NC 28717 | (2) 70762 Timothy B. & Elizabeth H. Perry
124 Hidden Oaks Dr.
Chapel Hill, NC 27517 |
| (3) 63574 James L. & Elizabeth M. Griffin
58 Running Cedar Rd.
Chapel Hill, NC 27514 | (4) 64432 Hoyt C Collins
2883 Lystra Church Rd.
Chapel Hill, NC 27517-9339 |
| (5) 18870 Hoyt C. Collins
2883 Lystra Church Rd.
Chapel Hill, NC 27517-9339 | (6) 18794 Bruce C. Collins & Carl F. Collins
876 Lystra Rd.
Chapel Hill, NC 27514 |
| (7) 66567 David J. & Jane H. Pendergrast
140 West Newman Rd.
Chapel Hill, NC 27514 | (8) 70516 Donald & Donna Brickman
150 West Newman Rd.
Chapel Hill, NC 27517 |
| (9) 69708 John R. & Laura D. McKelvey
155 West Newman Rd.
Chapel Hill, NC 27514 | (10) 82138 James H. & Frances K. Holland Jr.
608 Martin Luther King Blvd
Chapel Hill, NC 27514-5785 |
| (11) 18980 Anne L. & Gary R. Stevens
525 Vickers Rd.
Chapel Hill, NC 27514 | (12) 70122 Thomas and Mary K. Ward
741 Bishops Park Dr. #306
Raleigh, NC 27605 |
| (13) 18875 Marjorie L. & Hubert G. Oakley
256 Oakley Peak Rd.
Chapel Hill, NC 27516 | (14) 18871 Marjorie L. & Hubert G. Oakley
256 Oakley Peak Rd.
Chapel Hill, NC 27516 |
| (15) 18637 Sandy Pond Enterprises
51 Vickers Rd.
Chapel Hill, NC 27517 | (16) 18897 Lessie Y. Riggsbee Heirs
PO Box 2872
Cashiers, NC 28717 |
| (17) 71691 Amerco Real Estate Co.
2727 North Central Ave.
Pheonix, AZ 85004 | (18) 79289 Eugene Andrews Heirs
PO Box 908
Pittsboro, NC 27312 |
| (19) 89206 Warren D. & Ana F. Mitchell
David S. Durham
253 Tobacco Farm Way
Chapel Hill, NC 27516 | (20) _____

_____ |
| (21) _____

_____ | (22) _____

_____ |
| (23) _____

_____ | (24) _____

_____ |

Strata Solar, LLC
50101 Governors Drive Suite 280
Chapel Hill, NC 27517
Phone: 919.960.6015
Fax: 919.960.7717



November 14, 2013

Re: Development Input Meeting for Vickers Farm Solar Electric Power Plant located at
151 Vickers Rd., NC on November 25th, 2013, 6:00 PM

Dear Adjacent Property Owner:

This letter is to invite you to a community meeting regarding a commercial project on approximately 12.6 acres of an 98 acre parcel we are proposing near your property, on Parcel Number 18869. An informal meeting will be held on November 25, 2013 beginning at 6:00 at 50101 Governors Drive, Suite 280, Chapel Hill, NC 27517. Detailed directions are attached. Plans of our proposed development will be shown and you will have the opportunity to voice your concerns and ask questions of people knowledgeable about the details of the project. Our plans may be revised based on your input before we submit to the County.

This meeting is required as part of the County zoning process, however County staff will not participate in the meeting. We are planning to submit our official plans to the County Planning Department in the near future. You will receive a notice from the county about this submittal once the application has been made.

We would appreciate your attendance and input at the community meeting. If you have questions before the meeting you may contact the person below. A copy of the map showing our proposed project is attached and can also be viewed on the Chatham County website at www.chathamnc.org/planning under the Rezoning and Subdivision Cases link. Should you have questions, but are unable to attend this meeting, please call me at 919-960-6015 ext. 305 or at 919-669-0693 (cell) to discuss.

Respectfully,

A handwritten signature in blue ink, appearing to read 'Louis A. Iannone', written over a light blue horizontal line.

Louis A. Iannone
Site Development
919-9602-6015 ext. 305
919-669-0693 (cell)
Liannone@stratasolar.com

Directions to Meeting Place:

- US 15 501 North to right on Mt. Carmel Church Road, just before Fordham Blvd
- Go 3.5 miles and turn left on Governors Drive
- Left into parking lot between PNC Bank and 50101 Governors Drive office building
- Strata Solar is at 50101 Governors Drive , Suite 280
- The meeting will be held in the second floor lobby

Addendum to Conditional Use Permit Application

- 1. The use requested is among those listed as an eligible conditional use in the district in which the subject property is located or is to be located.**

Solar farms > 2 acres are listed as permitted with a CU permit on page 51 in Table 1 of the Chatham County Zoning Code, and are directed to follow section 17.6.

- 2. The requested conditional use permit or revision to the existing permit is either essential or desirable for the public convenience or welfare.**

Under North Carolina Senate Bill 3 (G.S. 62-133.8), it is the public policy of the State to promote renewable energy. Under State law electric utilities are required to purchase an increasing amount of renewable energy. Under the law solar energy is defined as a renewable energy resource. The proposed solar farm is being developed under this policy. In December 2012, under rules promulgated by the North Carolina Utilities Commission ("Commission"), Strata Solar filed a Report of Proposed Construction for the proposed solar farm at Vickers Road. This filing is required under State law before construction of an electric generating facility of this size can begin. In January 2013, the Commission issued an Order accepting the registration of the proposed solar farm as a new renewable energy facility. A copy of the Order is attached as Application Exhibit 1.

The proposed solar electric power plant would generate electricity to meet consumer needs in the local area with safe, clean, renewable energy with no fuel consumption, no emissions, no noise, no traffic and no hazardous materials. The power generated is sold to Duke Energy Progress under a long-term power purchase agreement.

There are several examples of this scale of solar plant either built or approved in Chatham and Orange county locations including 2835 Farrington Point Rd near Governors Village, 3800 Corinth Rd., Moncure and 2284 White Cross Rd., White Cross. The projects are desirable for the reasons listed above.

The proposed plant requires no public improvements or services and will result in less traffic than is generated by one single family home. A DOT driveway permit will be obtained to provide access to the site. The proposed solar farm is a truly passive use.

The proposed project would produce approximately \$10,000 in annual property tax payments to the County.

Strata Solar maintains an average of 1,000 jobs across North Carolina including approximately 80 professional engineering, project management, legal and accounting staff in Chatham County and 900 construction jobs across the state.

- 3. The requested permit or revision to the existing permit will not impair the integrity or character of the surrounding or adjoining districts, and will not be detrimental to the health, safety or welfare of the community.**

The proposed project is completely passive with no daily employees. No regular need for fire, sheriff or emergency service is anticipated.

The proposed project requires only monthly maintenance and will generate less traffic than one single-family home. No changes to the speed limit on roads in the area will be required by this proposed use. No road improvements will be necessary to accommodate this proposed use.

A thorough appraisal consulting analysis has been performed by a state-licensed general real estate appraiser to assess the impact of the proposed use on the value of surrounding property. The report indicates that the proposed project will not negatively impact surrounding property values. The report is enclosed with this application

The proposed project is largely surrounded by substantial existing, natural, mature, wooded screening. In addition we will add landscape screening as determined necessary by the Chatham review bodies, boards and community. Fencing may be visible from Vickers Rd. but will be approximately 800 feet from Vickers Rd. The fencing has been revised to black vinyl coated to soften its appearance. The project is adjacent to a large veterinarian hospital and a large self-storage facility.

There is no lighting proposed on this project.

There is very little noise generated by the proposed solar plant. There would be three or four inverter and transformer combinations in the interior of the plant that generate a low hum that declines in volume with distance, so as to be nearly inaudible at the perimeter of the plant.

The plant is constructed to the National Electric Code and all equipment is listed with Underwriters Laboratories. The equipment also meets numerous additional safety and quality certifications (please see typical specification and certification sheet attached as Application Exhibit 2). There are no emissions or polluted runoff. The plant would be surrounded by six-foot chain-link fences with three strands of barbed wire along the top to prevent unauthorized access.

There are minimal small signs attached to the perimeter fence and no large signage proposed.

4. The requested permit will be or remain consistent with the objectives of the Land Conservation and Development Plan.

The proposed solar farm meets several of the defined policies of the Land Conservation and Development Plan:

- The surrounding area is rural and sparsely populated, and the proposed project preserves the rural landscape by occupying approximately 18 acres of a 98 acre parcel.
- The project ensures long-term quality and availability of groundwater and surface water resources due to a small impervious surface percentage and replanted ground cover.
- The project establishes electrical infrastructure that supports economic development.

The proposed solar farm meets the requirements of the Watershed Protection Ordinance by providing all required buffers and by having and built-upon area below the strictest threshold.

The project meets the requirements of the Flood Damage Prevention Ordinance by being located out of a flood hazard area and by being designed to prevent water damage to electrical and structural components.

5. Adequate utilities, access roads, storm drainage, recreation, open space, and other necessary facilities have been or are being provided consistent with the County's plans, policies and regulations.

The proposed solar electric power plant will not use any public utilities or require any water or wastewater service.

The site access will be an approved gravel construction entrance and the permanent access will be built after construction to DOT Driveway Permit specifications.

The project has minimal built-upon area and minimal grading. Current drainage patterns will be maintained.

Strata Solar will obtain a soil and erosion control permit from Chatham County before starting construction on the proposed solar farm.

Application Exhibit 1

STATE OF NORTH CAROLINA
UTILITIES COMMISSION
RALEIGH

DOCKET NO. SP-2370, SUB 0

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

In the Matter of	
Application of Vickers Farm, LLC, for) ORDER ACCEPTING
Registration of a New Renewable Energy) REGISTRATION OF NEW
Facility) RENEWABLE ENERGY FACILITY

BY THE CHAIRMAN: On December 4, 2012, Vickers Farm, LLC (Vickers Farm), filed a registration statement pursuant to Commission Rule R8-66 for a new renewable energy facility to be located in Chapel Hill in Orange County, North Carolina. Vickers Farm stated that its 1.99-MW_{AC} solar photovoltaic (PV) facility would become operational on or around September 30, 2013.

The filing included certified attestations that: 1) the facility will be in substantial compliance with all federal and state laws, regulations, and rules for the protection of the environment and conservation of natural resources; 2) the facility will be operated as a new renewable energy facility; 3) Vickers Farm will not remarket or otherwise resell any RECs sold to an electric power supplier to comply with G.S. 62-133.8; and 4) Vickers Farm will consent to the auditing of its books and records by the Public Staff insofar as those records relate to transactions with North Carolina electric power suppliers.

On December 21, 2012, the Public Staff filed the recommendation required by Commission Rule R8-66(e) stating that Vickers Farm's registration statement as a new renewable energy facility should be considered to be complete. No other party made a filing with respect to these issues.

Based upon the foregoing and the entire record in this proceeding, the Chairman finds good cause to accept registration of Vickers Farm's solar PV facility as a new renewable energy facility. Vickers Farm shall annually file the information required by Commission Rule R8-66 on or before April 1 of each year. Vickers Farm will be required to participate in the NC-RETS REC tracking system (www.ncrets.org) in order to facilitate the issuance of RECs.

IT IS, THEREFORE, ORDERED as follows:

1. That the registration by Vickers Farm for its solar PV facility located in Chapel Hill in Orange County, North Carolina as a new renewable energy facility shall be, and is hereby, accepted.

2. That Vickers Farm shall annually file the information required by Commission Rule R8-66 on or before April 1 of each year.

ISSUED BY ORDER OF THE COMMISSION.

This the 8th day of January, 2013.

NORTH CAROLINA UTILITIES COMMISSION

Gail L. Mount

Gail L. Mount, Chief Clerk

Application Exhibit 2



MaxPower CS6X

280/285/290/295/300P

MaxPower CS6X is a robust solar module with 72 solar cells. These modules can be used for on-grid solar applications. Our meticulous design and production techniques ensure a high-yield, long-term performance for every module produced. Our rigorous quality control and in-house testing facilities guarantee Canadian Solar's modules meet the highest quality standards possible.

Best Quality

- 235 quality control points in module production
- EL screening to eliminate product defects
- Current binning to improve system performance
- Accredited Salt mist resistant

Best Warranty Insurance

- 25 years worldwide coverage
- 100% warranty term coverage
- Providing third party bankruptcy rights
- Non-cancellable
- Immediate coverage
- Insured by 3 world top insurance companies

Comprehensive Certificates

- IEC 61215 / IEC 61730, UL 1703, IEC61701 ED2, KEMCO, CEC Listed, CE, MCS
- ISO9001: 2008: Quality Management System
- ISO/TS16949:2009: The automotive quality management system
- ISO14001:2004: Standards for Environmental management system
- QC080000 HSPM: The Certification for Hazardous Substances Regulations
- OHSAS 18001:2007 International standards for occupational health and safety
- Reach Compliance

Key Features

- High module efficiency up to 15.63%
- Positive power tolerance: 0 ~ +5W
- Robust frame to up to 5400 Pa load
- Anti-reflective and self-cleaning surface
- Outstanding performance at low irradiance
- High energy yield at Low NOCT
- **Backed By Our New 10/25 Linear Power Warranty Plus our added 25 year insurance coverage**



- 10 year product warranty on materials and workmanship
- 25 year linear power output warranty

**Ballentine
Associates, P.A.**

Environmental Impact Assessment

For

**Vickers Farm Solar Electric Power Plant
Chapel Hill, Chatham County, North Carolina**

(Parcel ID: 18869)

Prepared by:

Ballentine Associates, P.A.
Consulting Engineers
221 Providence Road
Chapel Hill, NC 27514
(919) 929-0481

BA Project #: 112006.04

Issue Dates

2 Dec 13

Description

Chatham County Submittal

Proposed Project Description and Need:

1. Describe the overall project in detail, including all proposed phases:

This project proposes the development of a solar electric power plant. The Vickers Solar Farm is located at 151 Vickers Road in Chapel Hill, Chatham County, North Carolina. The property parcel ID is 18869. The property contains 98.54 acres of agricultural fields and wooded land. A single-family residence and associated outbuildings are located along the western property boundary. An overhead Duke Power line easement is located along the northern property boundary. A jurisdictional wetland and a jurisdictional intermittent stream are also located in the northern portion of the site. There are two non-jurisdictional ponds - one is located in the southeastern corner of the site and the second one is a man-made stock pond near the western property boundary.

The proposed solar farm will consist of fixed solar panels, dual inverter/transformer areas and a chain link fence along the perimeter of the array. The project will also include temporary laydown and parking areas, a 16 ft. wide soil access drive, and a permanent driveway apron along Vickers Road. The installation of the solar panels themselves will not generally create significant land disturbance. The panels will be mounted to racks, which are supported by a series of posts. The posts will be driven directly into the existing ground without excavation or land disturbance and the existing ground cover will be allowed to remain to the extent possible. The project area true disturbance caused by rubber tire vehicles accessing the site to distribute and install above grade material, a dozen or so small trenches (2' wide, 36" deep) for wiring the array and rack posts mechanically driven directly into the ground, is typically about a third of the project limits. All areas downslope of disturbed areas will be protected by silt fence. No change in drainage patterns (site drainage remains as sheet flow) or ponding of water will occur as a result of this project. At the completion of construction, the entire site will be seeded to create a good stand of grass.

The typical construction schedule for these standard farms is limited to three months. Energy generated by the farm will be distributed to Progress Energy customers.

2. Provide a project location map showing surrounding areas:

See attached Site Plan and Aerial Map.

3. Provide a project site plan showing existing and proposed facilities:

See attached Site Plan.

4. Describe how this project fits into larger plans or connects with adjacent projects:

The redevelopment of this site will have compatible features with neighboring sites. Most of the surrounding properties are also used for agricultural purposes, and although not directly agricultural, the farming nature of the site will remain. In addition, the existing Duke Power line easement sets precedent for energy systems in this area.

5. List and describe any public facilities or public benefits provided by the project:

This project will provide a much cleaner source of renewable energy with no emissions to Progress Energy customers. It will increase the tax base without much demand on public services. It is also considered a low impact development that will not alter the pre-development stormwater runoff characteristics of the site.

6. Discuss the land acreage to be disturbed during each phase:

The installation of the solar panels themselves will not generally create significant land disturbance. The panels will be mounted to racks, which are supported by a series of posts. The posts will be driven directly into the existing ground without excavation or land disturbance and the existing ground cover will be allowed to remain to the extent possible. The project area true disturbance caused by rubber tire vehicles accessing the site to distribute and install above grade material, a dozen or so small trenches (2' wide, 36" deep) for wiring the array and rack posts mechanically driven directly into the ground, is typically about a third of the project limits. All areas downslope of disturbed areas will be protected by silt fence. No change in drainage patterns (site drainage remains as sheet flow) or ponding of water will occur as a result of this project. At the completion of construction, the entire site will be seeded to create a good stand of grass.

7. List square footage and height (in stories) of new buildings:

No new buildings are proposed.

8. Describe proposed uses of all buildings and proposed facilities:

The new facilities will provide a source of solar generated electric power to be sold to Progress Energy. The power will be transmitted via an existing three-phase power line on the eastern side of the site.

9. Show number of parking spaces in parking lots and decks:

No permanent parking is proposed.

10. Show areas to be cleared, graded, filled, paved, and landscaped:

See attached Site Plan.

11. Show connections to existing utility and sewer lines or new utilities:

No water and sewer will be needed. Interconnection to the electrical grid is shown on the Site Plan on the eastern side of the property tying to the existing three-phase power line.

12. Show wastewater management systems on a map:

N/A

13. Show proposed areas of impervious and semi-pervious surfaces:

The proposed impervious surfaces include the area of rack posts driven directly into the ground, the inverter areas and the proposed driveway apron. The overall proposed impervious on site is very low. Logging mats are used as needed during construction, but removed at the end of the project.

14. Show and describe any proposed stormwater control devices:

This project is considered a low impact development that will not alter the pre-development stormwater runoff characteristics of the site. No stormwater control devices are proposed.

Alternatives Analysis:

1. Discuss and compare all reasonable development alternatives (site selection, facility layout, utilities, stormwater management, construction methods, open space preservation, and any other pertinent alternative considerations).

A detailed site evaluation has been performed to determine design possibilities and limitations. The nature of this type of development requires access to high power utility lines and very clear unobstructed land free of shading for solar panels. This limits possible site selections. The fact that this site was previously used for agricultural purposes where good sunlight and soils are needed, and the close proximity to an existing power line means this site is ideal. Also, the minimal impervious surfaces and disturbance impacts make this type of development well-suited for this site.

2. Discuss how the preferred alternative was selected and its benefits relative to other alternatives (including a no-build alternative, if applicable).

Given the site suitability for the installation of a solar farm and that the environmental benefits of solar power generation are exponential, the proposed development of this site would provide more benefit than if developed for housing, commercial, or no-build alternatives.

Existing Environment and Project Impacts:

For each resource topic below, describe:

A. Existing resources and conditions:

The property contains 98.54 acres of agricultural fields and wooded land. A single-family residence and associated outbuildings are located along the western property boundary. An overhead Duke Power line easement is located along the northern property boundary. A jurisdictional wetland and a jurisdictional intermittent stream are also located in the northern portion of the site. There are two non-jurisdictional ponds - one is located in the southeastern corner of the site and the second one is a man-made stock pond near the western property boundary.

- B. Anticipated impacts (short-term construction) impacts, long-term operation impacts, and indirect or secondary impacts):

The short term impact to the site would be the disturbance of soil to smooth the ground for the installation of the solar panels. There will be no impact to adjacent properties. The long term impact will be a much cleaner energy source for the area.

- C. Discuss how potential impacts to the resource will be avoided and minimized through alternative selection, design strategies, construction methods, and long-term maintenance procedures:

Potential impacts to the resource are minimized by installing the solar panels on an area of the site that is mostly flat and mostly uncovered and by utilizing alternative erosion control measures. Additional disturbance or concentrated flows are also avoided by not working near the perimeter or the lower elevation portions of the site.

- D. For unavoidable impacts, describe whether any compensatory mitigation is planned or required:

There is no compensatory mitigation planned or required.

1. Geography:

- Discuss the geographic setting, geology, and topography of the project area and adjacent areas:

The natural geography of the area is rolling.

- Provide a topographic map of the property and surrounding area, use the county GIS website topography (2' contour interval) data at a scale appropriate for the project size, i.e., 1" = 100', etc.):

See attached Site Plan.

- Identify any 100-year floodplains (FEMA Special Flood Hazard Areas) on or adjacent to the property. If present, provide an appropriate-scale map of these flood-prone areas defined by the NC Flood Mapping Program:

FIRM Panel 3710977500J indicates the project limits do not lie within a special flood hazard area.

- Show areas that will be graded or filled, and provide estimated cut/fill volumes:

Minimal cut/fill is anticipated. No soil will be exported or imported from the site. Grading & Drainage plans will be provided.

- If the project includes pond or dam work, show areas that will be flooded:

This project does not include a pond or dam work.

2. Soils and Prime Farmlands:

- Identify dominant soils in the project area (County GIS or NRCS website) and show on a map.

See attached Soils Map. The existing soils are Helena sandy loam "HeB", and Wedowee sandy loam "WeB/WeC/WeE". Most of the site (99%) is in hydrologic soils group "B", with the remaining being hydrologic soils group "D".

- Discuss any soil constraints (fill, wetland soils, septic suitability, slopes, etc.), and indicate those areas on a map.

No soil constraints are anticipated.

- Describe any soil disturbance or contamination expected as a result of this project:

No contamination is expected.

- If contamination is expected, discuss containment plans and procedures:

No contamination is expected.

- If soil will be relocated, specify the number of square yards/feet to be moved, and its relocation site:

No soil will be removed or added to the site.

- Describe runoff management plans for the project.

The site surface drainage flows generally east to an unnamed tributary of Herndon Creek. All areas downslope of disturbed areas will be protected by silt fence. No change in drainage patterns (site drainage remains as sheet flow) or ponding of water will occur as a result of this project.

- If soil disturbance is proposed, describe the off-site impacts expected from this activity.

There will be no offsite impact from soil disturbance.

- Provide a map of any prime or unique farmland soils in the project or service areas, and include references used to make this determination.

No prime or unique farmlands exist on this site.

- Describe impacts to prime or unique farmland soils, including acreage estimates of lost farmland soils and retained farmland soils.

No prime or unique farmlands exist on this site.

3. Land Use:

- Provide a map showing current use of land on the site and surrounding properties.

See attached Aerial Map.

- Discuss how the current land use fits into the surrounding area (conservation, development, ecological function, etc).

The current land use of the site and neighboring sites are mainly agricultural, with a commercial building on the lower adjacent property west of the site.

- Provide the current zoning of the project site and the surrounding area.

The current site is zoned R-1. The surrounding area is also R-1, with the exception of the lower adjacent property to the west, which is CU-B-1.

- Discuss how the proposed uses fit into the intended land use of the area (conservation, development, ecological function, quality of life).

The proposed use will not alter the spirit of the existing use. This site will remain a farm. It will however be geared towards a green utility alternative instead of for growing crops.

- Indicate whether zoning or local land use plans will need to be changed after project completion.

Land use will not need to be altered at the completion of this site work.

4. Wetlands:

- Indicate whether wetlands are present; describe the basis for this determination and the identity of the person who made the determination.

A jurisdictional wetland and a jurisdictional intermittent stream are also located in the northern portion of the site. Stream and wetland information is based on the wetland delineation report entitled "Wetland Delineation and Jurisdictional Determination Report" by ECS Carolinas, LLP dated September 25th, 2013.

- Show identified wetlands on a map, and describe all relevant details, such as acreage, types, delineation, function, etc.).

See attached Site Plan.

- If wetlands are to be filled, specify the number of acres that will be affected.

Wetland area will not be disturbed.

- List all required permits and permitting agencies.

- Erosion Control Permit from Chatham County
- Stormwater Permit from Chatham County
- Building Permit from Chatham County
- Driveway Permit from NCDOT

- If any diversions/additions/withdrawals of surface water will affect wetlands, describe those activities.

Wetland area will not be disturbed.

5. Public Lands and Scenic, Recreational, and State Natural Areas:

- Provide a map of County or municipal parks, scenic, recreational, or state natural areas (SNHAs, State or Federal Forests, etc.) on or adjacent to the site/project area.

N/A

6. Areas of Archaeological or Historical Value:

- Discuss any archaeological or historical studies of the project location; provide relevant references.

N/A

- Describe and identify on a map any structures (i.e., walls, buildings, etc.) on the site and provide estimated ages of those structures.

A single-family residence and associated outbuildings are located along the western property boundary. The intent is for these structures to remain.

- Describe all impacts to any archaeological or historical resources in the proposed project area.

N/A

- Describe plans for demolishing or rebuilding any structures.

N/A

- Provide photographs of any significant resources, including all structures older than 50-years.

N/A

- Provide relevant correspondence with the Chatham County Historical Association and NC SHPO.

N/A

7. Air Quality:

- Describe the project's impacts on ambient air quality.

N/A

- Describe plans for any open burning during or after construction.

N/A

- Indicate the number of proposed parking spaces, if applicable.

N/A

- Describe whether the project will increase odor levels, or the likelihood of odor complaints.

N/A

- Provide a copy of any required traffic studies.

N/A

8. Noise Levels:

- Discuss current noise levels; use a benchmark, if possible.

Typical noise levels for construction sites. Heavy trucks and equipment are intermittently loud during the workday hours. See Site Plan Note #18.

- Describe any increases in noise levels expected from this project.

No additional noise. Site should have significant reduction in noise levels due to the nature of the solar panel operation. See Site Plan Note #18.

- Specify the distance at which the increased noise will be heard.

N/A. See Site Plan Note #18.

- Discuss whether surrounding properties will be affected by noise levels.

See Site Plan Note #18.

- If commercial uses are proposed, specify the hours of operation.

N/A

9. Light Levels:

- Describe lighting plans for the project, including how lighting will impact adjacent residents and wildlife.

No additional lights for the site are proposed.

10. Surface and Groundwater Resources (discuss separately):

- Identify and provide a map of surface waters in the project area. Describe groundwater (aquifers) in the project area.

Groundwater will not be affected as no proposed drilling or excessive grading will occur.

- Include names, locations, classifications, and use support ratings for surface waters.

There are no surface waters on this site nor any that will be affected by this site.

- Specify and show on a map the river basin in which the project is located.

The site is located in the Cape Fear River basin within the County watershed WS-IV NSW. See attached "Wetland Delineation and Jurisdictional Determination Report", Figure 1, by ECS Carolinas, LLP.

- Discuss any known groundwater quality issues.

N/A

- Discuss drinking water sources.

N/A

11. Fish and Aquatic Habitats:

- Describe fish and aquatic habitats in and adjacent to the site/project area.

N/A

- Discuss impacts to fish and aquatic life and their habitats, including a map showing those habitats.

N/A

12. Wildlife and Natural Vegetation:

- Describe and provide a map of natural community types on and adjacent to the site/project area.

See attached Site Plan & Aerial Map. Mostly wooded land and farmlands are adjacent to the property..

- List the species of dominant plants and animals observed on the site that typify those communities.

N/A

- Evaluate and discuss whether suitable habitat exists for rare, threatened, and/or endangered species, as described by the NC Natural Heritage Program.

N/A

- If wildlife will be displaced, discuss any limitations of adjacent areas to support them.

No wildlife will be displaced.

- Identify, list, and describe the distribution of the invasive species present on the site. Consult the NC Botanical Garden's Web page, "Plants to Avoid in the Southeast US" for a list of invasive species common to the region.

No invasive species have been found on site.

- If forests will be cleared, discuss the extent of planned deforestation and specify the forestry methods to be used, including BMPs.

There will be minimum clearing on site.

13. Hazardous Materials:

- List all hazardous materials to be stored or introduced during construction or operation.

There will be no hazardous materials stored or introduced on site.

- For each hazardous material, other than in de minimis quantities or for routine housekeeping purposes, describe the procedures to be used to ensure their proper management, storage, and disposal.

There will be no hazardous materials stored or introduced on site.

Topographic Map:

A topographic map with contours at vertical intervals of not more than five (5) feet, at the same scale as the First Plat, for all major subdivisions unless not deemed necessary by staff. Staff may require a topographic map for other subdivisions if necessary for adequate review. The date and method of preparing the topographic survey shall be stated.

See attached Site Plan and "Wetland Delineation and Jurisdictional Determination Report", Figure 3: USGS Topographic Map.

Soils Evaluation:

A soils evaluation shall be performed by a certified/licensed soil scientist or persons approved by the Health Department to perform such evaluations or investigations. Such evaluations shall be performed unless a central sewage disposal system is proposed. A soils map showing the location of suitable soils and a letter of explanation shall be submitted to perform such evaluations or investigations.

No wastewater treatment, septic systems or drinking water wells are proposed for this project.

Utility Plans:

Plans of proposed utility layouts for sewer and water where applicable, showing feasible connections to the existing utility system, or any proposed utility system.

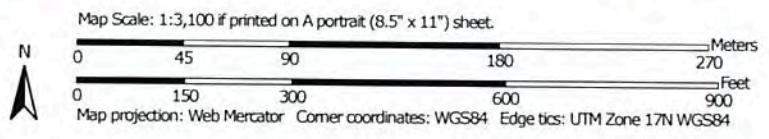
No new sewer or water connections or changes are proposed with this project.

U.S. Army Corps of Engineers and Division of Water Quality Permits or Certifications:

Indicate if US Army Corps of Engineers and/or NC Division of Water Quality permits or certifications will be required. These permits and/or certifications may be required when development improvements may involve the placement of excavated material or fill material into streams, creeks, lakes, or wetlands. If any of these permits or certifications will be required, copies of the approved permits shall be submitted at time of Construction Plan submittal.

No USACE permits are required for this project.

Soil Map—Chatham County, North Carolina



MAP LEGEND

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Chatham County, North Carolina
Survey Area Data: Version 15, Jul 2, 2012

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jul 20, 2010—Apr 2, 2011

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.



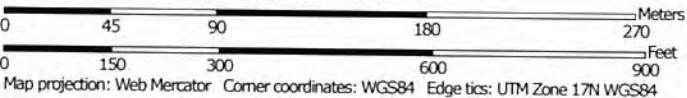
Map Unit Legend

Chatham County, North Carolina (NC037)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
HeB	Helena sandy loam, 2 to 6 percent slopes	0.3	1.1%
W	Water	0.9	3.5%
WeB	Wedowee sandy loam, 2 to 6 percent slopes	3.3	13.0%
WeC	Wedowee sandy loam, 6 to 10 percent slopes	17.1	66.3%
WeE	Wedowee sandy loam, 15 to 25 percent slopes	4.2	16.1%
Totals for Area of Interest		25.8	100.0%

Hydrologic Soil Group—Chatham County, North Carolina



Map Scale: 1:3,100 if printed on A portrait (8.5" x 11") sheet.

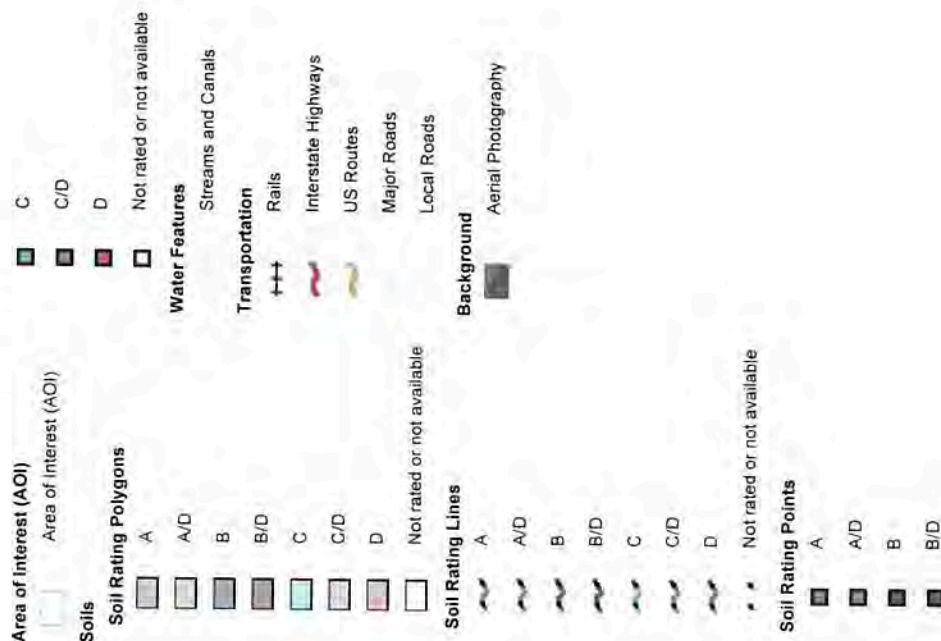


Natural Resources
Conservation Service

Web Soil Survey
National Cooperative Soil Survey

11/26/2013
Page 1 of 4

MAP LEGEND



MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

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The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Hydrologic Soil Group— Summary by Map Unit — Chatham County, North Carolina (NC037)				
Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
HeB	Helena sandy loam, 2 to 6 percent slopes	D	0.3	1.1%
W	Water		0.9	3.5%
WeB	Wedowee sandy loam, 2 to 6 percent slopes	B	3.3	13.0%
WeC	Wedowee sandy loam, 6 to 10 percent slopes	B	17.1	66.3%
WeE	Wedowee sandy loam, 15 to 25 percent slopes	B	4.2	16.1%
Totals for Area of Interest			25.8	100.0%

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

The projection used in the generation of the map was the North Carolina State Plane PROJCR2 2005. The horizontal datum was the North American Datum of 1983 (NAD83) ellipsoid. Differences in datum, ellipsoid, projection, or Universal Transverse Mercator zones used in the production of FIMAs for different jurisdictions may result in slight positional differences in map features across jurisdictional boundaries. These differences do not affect the accuracy of the FIMA data contained in the map nor any U.S. Survey Feet, were

[illegible]

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All animals listed in the Phase II and Beta Table below were studied by terminal necropsy using field notes. Other Phase II and Beta animals in this case may have been studied using either a control analysis or limited terminal necropsy. More information on the funding sources studied by Phase II and Beta animals is contained in the Phase II and Beta report.

[illegible][illegible]

Zone	Zone 1	Zone 2	Zone 3	Zone 4
Zone 1				
Zone 2	<p>PLUCKING AREAS IN ZONE 1</p> <p>The numbers in the above 4 columns add up to different totals since the data in the 4 columns are not comparable. The last 14, 4 and 14 have been left in to show without changing the relative proportions of the data.</p>			
Zone 3	<p>OTHER PLUCKED AREAS</p> <p>Area of 32% of total plucked forest, zone of 1% of total plucked forest. 1% of total plucked forest, zone of 1% of total plucked forest. 1% of total plucked forest, zone of 1% of total plucked forest.</p>			
Zone 4	<p>OTHER AREAS</p>			

Area reserved to be made for U.S. naval base expansion.
Area in which land features are unfavorable for aviation.
COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS
OUTER BOWSE PROTECTED AREAS (OBPA)

18. annual chance floodplain boundary
 0.2% annual chance floodplain boundary
 floodway boundary
 zone 1 boundary

[illegible]

Submitted to the North American Technical College of 1999

Copyright ownership retained to the North American

47	1978	1981	1984	1987	1990	1993	1996	1999	2002	2005	2008	2011	2014	2017	2020	2023	2026	2029	2032	2035	2038	2041	2044	2047	2050	2053	2056	2059	2062	2065	2068	2071	2074	2077	2080	2083	2086	2089	2092	2095	2098	2101	2104	2107	2110	2113	2116	2119	2122	2125	2128	2131	2134	2137	2140	2143	2146	2149	2152	2155	2158	2161	2164	2167	2170	2173	2176	2179	2182	2185	2188	2191	2194	2197	2200	2203	2206	2209	2212	2215	2218	2221	2224	2227	2230	2233	2236	2239	2242	2245	2248	2251	2254	2257	2260	2263	2266	2269	2272	2275	2278	2281	2284	2287	2290	2293	2296	2299	2302	2305	2308	2311	2314	2317	2320	2323	2326	2329	2332	2335	2338	2341	2344	2347	2350	2353	2356	2359	2362	2365	2368	2371	2374	2377	2380	2383	2386	2389	2392	2395	2398	2401	2404	2407	2410	2413	2416	2419	2422	2425	2428	2431	2434	2437	2440	2443	2446	2449	2452	2455	2458	2461	2464	2467	2470	2473	2476	2479	2482	2485	2488	2491	2494	2497	2500	2503	2506	2509	2512	2515	2518	2521	2524	2527	2530	2533	2536	2539	2542	2545	2548	2551	2554	2557	2560	2563	2566	2569	2572	2575	2578	2581	2584	2587	2590	2593	2596	2599	2602	2605	2608	2611	2614	2617	2620	2623	2626	2629	2632	2635	2638	2641	2644	2647	2650	2653	2656	2659	2662	2665	2668	2671	2674	2677	2680	2683	2686	2689	2692	2695	2698	2701	2704	2707	2710	2713	2716	2719	2722	2725	2728	2731	2734	2737	2740	2743	2746	2749	2752	2755	2758	2761	2764	2767	2770	2773	2776	2779	2782	2785	2788	2791	2794	2797	2800	2803	2806	2809	2812	2815	2818	2821	2824	2827	2830	2833	2836	2839	2842	2845	2848	2851	2854	2857	2860	2863	2866	2869	2872	2875	2878	2881	2884	2887	2890	2893	2896	2899	2902	2905	2908	2911	2914	2917	2920	2923	2926	2929	2932	2935	2938	2941	2944	2947	2950	2953	2956	2959	2962	2965	2968	2971	2974	2977	2980	2983	2986	2989	2992	2995	2998	3001	3004	3007	3010	3013	3016	3019	3022	3025	3028	3031	3034	3037	3040	3043	3046	3049	3052	3055	3058	3061	3064	3067	3070	3073	3076	3079	3082	3085	3088	3091	3094	3097	3100	3103	3106	3109	3112	3115	3118	3121	3124	3127	3130	3133	3136	3139	3142	3145	3148	3151	3154	3157	3160	3163	3166	3169	3172	3175	3178	3181	3184	3187	3190	3193	3196	3199
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the Editors: Information on the 1998 awards.
 Readable

GRID NORTH

MAP SCALE 1" = 500 (1 : 8,000)

0 100 200 300 400 500 600 700 800 900 1000 MILES

0 160 320 480 640 800 960 1120 1280 1440 1600 KILOMETERS

NFP PANEL 9776J **FIRM**

FIRM
FLOOD INSURANCE RATE MAP
NORTH CAROLINA

PANEL 9775
SEE LOCATOR DIAGRAM ON MAP INDEX FOR PANEL
PLANS, JACOBI

UPRAN

DATE	NO.	REV.	DATE
02.06.2005	0001	0001	04.05.2005

COMMENTS

UNITED STATES OF AMERICA

INSI 0

FL001

EFFECTIVE DATE
FEBRUARY 2, 2007

MAP NUMBER
3710577500

NATIONAL
Dept of North Carolina
Federal Emergency Management Agency



Kirkland Appraisals

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November 23, 2013

Mr. Louis Iannone
Strata Solar
Suite 101
1119 US 15-501 Hwy South
Chapel Hill, North Carolina 27517

Dear Mr. Iannone;

At your request, I have considered the likely impact of a solar farm to be located on 12.6 acres of land out of a larger 98.54-acre tract located at 151 Vickers Road, Chapel Hill, North Carolina.

The scope of this assignment is to address the likely impact this may have on adjoining properties. To this end I have researched and visited existing and proposed solar farms, researched articles through the Appraisal Institute and other studies, as well as discussed the likely impact with other real estate professionals. I have not been asked to assign any value to any specific property.

This letter is a limited report of a real property appraisal consulting assignment and subject to the limiting conditions attached to this letter. My client is Strata Solar represented to me by Mr. Louis Iannone. The intended use is to assist in the Special Use Permit application. The effective date of this consultation is November 21, 2013, the date of my inspection of the property and surrounding area.

Proposed Use Description

The property is located on the north side of Vickers Road just east of US 15-501 in Chapel Hill, North Carolina. The property is currently used for agriculture and residential use. There is a 325-foot wide power line easement running through this tract and just north of the proposed solar farm portion of this property.

Adjoining land to the south is currently improved with a ministorage facility fronting on US 15-501 and also has a new metal warehouse. The two adjoining homes on Vickers Road that were originally part of this parent tract face the new warehouse.

The solar farm will consist of fixed solar panels that will generate no noise, no odor, and less traffic than a residential subdivision. The appearance will all be panels less than 10 feet in height that will be located behind a chain link fence.

The property has 19 parcels that adjoin the parent tract of the subject property. I have numbered the parcels as shown on the following map. The adjoining uses are predominately agricultural and residential in nature with some industrial use. I note that Parcels 11 through 17 have greater proximity to the 325-foot wide power line easement with related transmission towers than the proposed location of the solar farm.



Surrounding Uses

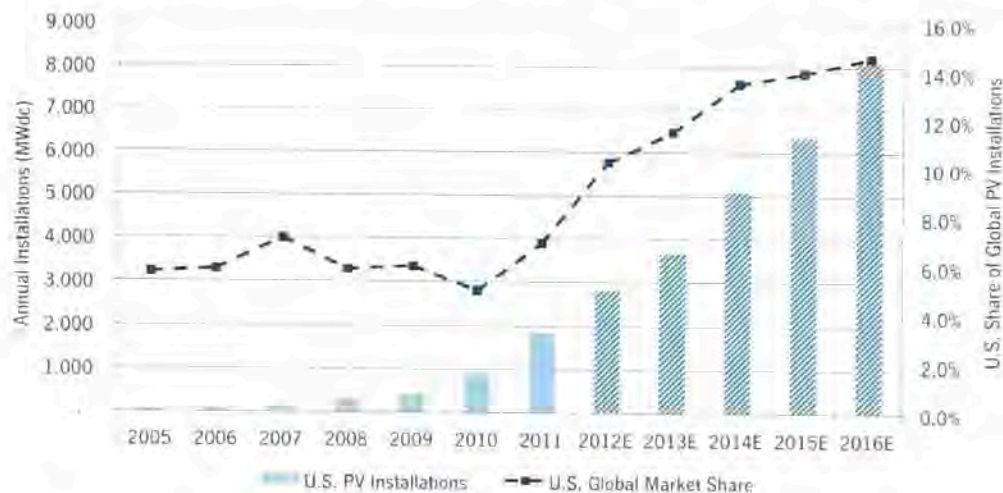
#	PIN	Owner	GIS Data		% Adjoining	
			Acres	Present Use	Acres	Parcels
1	9775-53-7475	Oakley	0.45	Residential	0.24%	5.26%
2	9775-53-8466	Oakley	0.47	Residential	0.25%	5.26%
3	9775-53-2125	Amerco	10.03	Industrial	5.24%	5.26%
4	9775-62-0226	Midtchell	26.49	Agricultural	13.85%	5.26%
5	9775-63-2797	Ward	9.31	Agricultural	4.87%	5.26%
6	9775-64-8260	Stevens	9.31	Residential	4.87%	5.26%
7	9775-74-3633	Holland	8.14	Residential	4.25%	5.26%
8	9775-75-5049	McKelvey	4.43	Residential	2.32%	5.26%
9	9775-75-6364	Brickman	5.69	Residential	2.97%	5.26%
10	9775-852335	Pendergrast	4.17	Residential	2.18%	5.26%
11	9775-85-2904	Collins	10.9	Agricultural	5.70%	5.26%
12	9775-66-5322	Collins	38.85	Agricultural	20.31%	5.26%
13	9775-56-4656	Collins	6.24	Agricultural	3.26%	5.26%
14	9775-56-1730	Griffin	6.24	Residential	3.26%	5.26%
15	9775-46-8248	Perry	2.04	Residential	1.07%	5.26%
16	9775-45-5619	Riggsbee	18.35	Agricultural	9.59%	5.26%
17	9775-54-2463	Riggsbee	25.47	Res/Ag	13.31%	5.26%
18	9775-43-8456	Sandy	4.1	Commercial	2.14%	5.26%
19	9775-53-5295	Andrews	0.63	Industrial	0.33%	5.26%
Total			191.31		100.00%	100.00%

Adjoining Use Breakdown

	Acreage	Parcels
Agricultural	57.57%	31.58%
Residential	21.40%	47.37%
Residential/Agricultural	13.31%	5.26%
Industrial	5.57%	10.53%
Commercial	2.14%	5.26%
Total	100.00%	100.00%

Analysis Summary

Across the nation the number of solar installations has dramatically increased over the last few years as the change in the technology and economy made these solar farms more feasible. The chart below shows how this market has grown and is expected to continue to grow from 2007 through 2009, with a significant leap in 2010 and 2011. The newness of this product is illustrated by the data presented by the U.S. Solar Market Insight Reports for 2010 and 2011 which is put out by the Solar Energy Industries Association. These reports point out that 2010 was a “breakout” year for solar energy and 2011 continued the boom of solar power. North Carolina was ranked as the 9th most active photovoltaic installations in 2010 and 8th in 2011. A total of 31 MW were installed in 2010 and 55 MW in 2011 in North Carolina.



I have researched a number of solar farms in North Carolina to assess the impact of these facilities on the value of adjoining property. I have provided a breakdown of the adjoining uses to show what adjoining uses are typical for solar farms and what uses would likely be considered consistent with a solar farm use. This breakdown is included in the Harmony of Use section of this report.

I also conducted a matched pair analysis using data from the AM Best Solar Farm in Goldsboro. A matched pair analysis is where you consider two similar properties with only one difference of note so that you can determine whether or not that difference has any impact on value. In this case, I have considered residential properties adjoining a solar farm versus similar residential properties that do not adjoin a solar farm. I consider the lack of any impact on residential use to also support the conclusion that there is no impact on adjoining agricultural uses.

The analysis shows two sales of homes that adjoin what was solar farm that was under construction at AM Best Solar Farm. Those two sales show prices similar to those that came before and after it in the same

Spring Gardens Subdivision. Current listing information shows that the homes that back up to the solar farm as well as those that do not are being listed at the same prices. This price point is similar in total dollars for similar sized homes, but also in the overall price per square foot. This data does not indicate that there is any relationship between the proximity of the solar farm and the price paid for homes.

Supporting data on the Goldsboro solar farm as well as a few notable others are shown below.

Solar Farm Comparables Near Residential Subdivisions

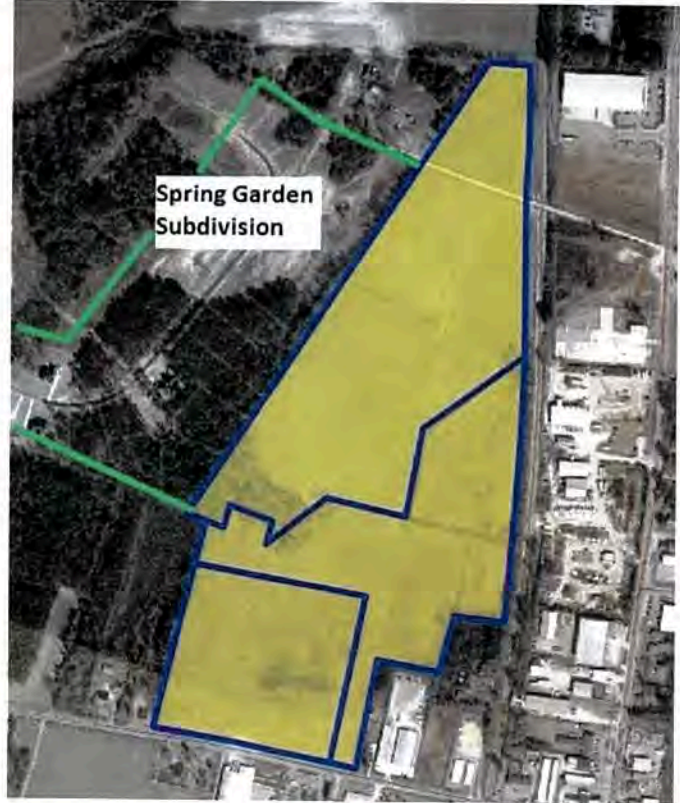
I have provided more detailed information on a few of the solar farms attached to the addendum of this report to focus on those that adjoin residential subdivisions.

1 – AM Best Solar Farm, Goldsboro, NC

This proposed solar farm adjoins Spring Garden Subdivision that has new homes and lots still available for new construction. The recent home sales have ranged from \$200,000 to \$250,000. Currently homes are being listed for \$240,000 to \$260,000.

Homes backing up to the solar farm are selling at the same price for the same floorplan as the homes that do not back up to the solar farm in this subdivision. According to the builder the solar farm has proven to be a complete non-factor. This is a similar sized farm as the subject property.

Specific sales are shown on the following page and the current listing information is shown below.



Floor Plans in Spring Garden



Americana
SqFt: 3,194
Bed / Bath:
3 / 3.5

Price: \$237,900

[View Now »](#)



Washington
SqFt: 3,292
Bed / Bath:
4 / 3.5

Price: \$244,900

[View Now »](#)



Presidential
SqFt: 3,400
Bed / Bath:
5 / 3.5

Price: \$247,900

[View Now »](#)



Kennedy
SqFt: 3,494
Bed / Bath:
5 / 3

Price: \$249,900

[View Now »](#)



Virginia
SqFt: 3,449
Bed / Bath:
5 / 3

Price: \$259,900

[View Now »](#)

Matched Pairs

As of Date: 11/23/2013

Adjoining Sales After Solar Farm Announced

#	TAX ID	Owner	Acres	Date Sold	Sales Price	Built	GBA	\$/GBA	Style
20	3600169964	Feddersen	1.56	Feb-13	\$247,000	2012	3,571	\$69.17	Ranch
21	3600169964	Gentry	1.42	Apr-13	\$245,000	N/A	N/A	N/A	N/A
	3600195570	Helm	0.76	Sep-13	\$250,000	2013	3292	\$75.94	2 Story
	3600195361	Leak	1.49	Sep-13	\$260,000	2013	3652	\$71.19	N/A
		Average	1.31		\$250,500	2013	3,505	\$72.10	
		Median	1.46		\$248,500	2013	3,571	\$71.19	

Nearby Sales After Solar Farm Completed

#	TAX ID	Owner	Acres	Date Sold	Sales Price	Built	GBA	\$/GBA	Style
	3600193710	Barnes	1.12	Oct-13	\$248,000	2013	3,400	\$72.94	2 Story
		Average	1.12		\$248,000	2013	3,400	\$72.94	
		Median	1.12		\$248,000	2013	3,400	\$72.94	

Adjoining Sales Before Solar Farm Announced

#	TAX ID	Owner	Acres	Date Sold	Sales Price	Built	GBA	\$/GBA	Style
22	3600183905	Carter	1.57	Dec-12	\$240,000	2012	3,347	\$71.71	1.5 Stories
23	3600193097	Kelly	1.61	Sep-12	\$198,000	2012	2,532	\$78.20	2 Story
24	3600194189	Hadwan	1.55	Nov-12	\$240,000	2012	3,433	\$69.91	1.5 Stories
		Average	1.59		\$219,000	2012	2,940	\$74.95	
		Median	1.59		\$219,000	2012	2,940	\$74.95	

Nearby Sales Before Solar Farm Announced

#	TAX ID	Owner	Acres	Date Sold	Sales Price	Built	GBA	\$/GBA	Style
	3600191437	Thomas	1.12	Sep-12	\$225,000	2012	3,276	\$68.68	2 Story
	3600087968	Lilley	1.15	Jan-13	\$238,000	2012	3,421	\$69.57	1.5 Stories
	3600087654	Burke	1.26	Sep-12	\$240,000	2012	3,543	\$67.74	2 Story
	3600088796	Hobbs	0.73	Sep-12	\$228,000	2012	3,254	\$70.07	2 Story
		Average	1.07		\$232,750	2012	3,374	\$69.01	
		Median	1.14		\$233,000	2012	3,349	\$69.13	

2 – Pickards Mountain Eco Institute, Chapel Hill, NC

Pickards Mountain Eco Institute is an educational farm located just outside of Chapel Hill, NC. They recently completed a small solar farm that is clearly visible from Pickards Meadows Road. This is a smaller solar farm on roughly one-acre

This solar farm is not screened and is clearly visible as you drive in to Pickards Meadows. Pickards Meadows is a large lot subdivision with lots on the market for \$200,000 to \$250,000 for homes starting at \$800,000.



I spoke with Lynn Hayes a broker with Berkshire Hathaway who is handling lots leading up to Pickards Mountain Eco Institute who noted that she did not see any reason it would be a detriment to home values and could be an enhancement given the green nature of the energy. The solar farm is an enlightened enhancement for the environmental savvy.

The owner of this farm lives in an adjoining home and shown in the aerial photo southeast of the solar array.

There is currently a home for sale located right at the entrance to the Eco Institute on adjoining land and shown in the aerial photo to the west of the solar array. This older home is on the market for \$750,000. I spoke with Linda Carol Davis with Berkshire Hathaway regarding this listing and she indicated the solar farm was considered a huge plus for the buyers of this property. The home is currently under contract to close in January 2014 after a reasonable marketing period.



3 - Zebulon Solar Farm, Zebulon, NC

A new solar farm was approved near Zebulon off Pearces Road. This is not a Strata Solar project.

I have considered a residential sale located at 9333 Dukes Lake Road that sold on September 17, 2012 for \$165,000. This property was purchased prior to knowledge of the proposed solar farm and was therefore not impacted by that farm in the purchase price. I spoke with the broker who listed this property, but she had no opinion on what impact the solar farm would have had. She noted that the buyers were interested in buying this lot because they could see trees from the property, but that there were certainly no guarantees that trees on adjoining land would remain.

The owner of this land, George Ray, also owns two adjoining lots that back up to this property and he intends to build spec homes on those lots in the future.

Lots adjoining this property to the north are owned by Dukes Lake Properties, LLC and are part of the Meadows of Dukes Lake. This subdivision was developed in 2007/2008 and not a single lot has been sold or single home sold in this subdivision since that time due to the recession. Initially, the developer intended to build \$350,000 homes.

Across the street to the south of the solar farm entrance is North Manor Subdivision that was developed in 1985 with homes in the \$150,000 to \$300,000 range.



4 - Lenoir Solar Farm, Kinston, NC

I have also considered two residential home sales in close proximity to a new solar farm located at 3200 Wheat Swamp Road in Kinston, NC. Carolyn Craig, a Realtor with C21 Harry H. Cummings listed a home located at 3136 Wheat Swamp Road and sold it on January 23, 2013 for \$132,500. I spoke with her regarding the impact of the solar farm and she said that they were unaware of that project at the time of the listing or the time of the sale. She further noted that if she had been it would not have had any impact on this sale. This property was 148 feet from the solar farm property line. Ms. Craig noted that the property is one lot off the property, but very close and in sight. She also noted that there was another sale on Country Trail that happened nearby. She was not involved with that sale, but it was listed prior to knowledge of the solar farm and sold prior to awareness of the solar farm. It sold on March 15, 2013 for \$105,000.



and was 608 feet from the solar farm. Both of these sales were close in time to the awareness of the solar farm, but closed prior to awareness according to the broker's comments. The broker's comments were however all positive. She noted that a solar farm in the area would be positive. "A solar farm is color coordinated and looks nice." "A solar farm is better than a turkey farm," which is allowed in that area. She would not expect a solar farm will have any impact on adjoining home prices in the area.

The adjoining subdivision to the west is Dogwood Creek which was developed in the aftermath of Hurricane Floyd by an investor from outside this area to help with overflow of displaced housing for the area. This was one of the last developed such subdivisions and the homes were all being built on slabs, which was not well received by the victims of flooding and therefore this subdivision has languished over the last 8 years.

Harmony of Use/Compatibility of Use

I have visited a number of existing and proposed solar farms to determine what uses are compatible with a solar farm. The data strongly supports adjoining agricultural and residential uses. While I have focused on adjoining uses, I note that there are many examples of solar farms being located within a quarter mile of residential developments, including such notable developments as Governor's Club in Chapel Hill, which has a nearby Strata Solar Farm. Governor's Club is a gated golf community with homes selling for \$300,000 to over \$2 million.

The matched pair subdivisions noted above also show an acceptance of residential uses adjoining solar farms as a compatible or harmonious use.

Beyond these anecdotal references, I have quantified the adjoining uses for a number of solar farm comparables that are included in the addendum to this report to derive a breakdown of the adjoining uses for each solar farm. The chart below shows the breakdown of adjoining uses by total acreage.

Percentage By Adjoining Acreage									
	Res	Ag	Res/AG	Park	Sub	Comm	Ind	All Res Uses	All Comm Uses
1 Goldsboro	35%	23%	0%	0%	3%	2%	37%	61%	39%
2 Willow Springs	8%	26%	66%	0%	0%	0%	0%	100%	0%
3 Kings Mtn	3%	12%	4%	0%	0%	0%	82%	18%	82%
4 White Cross	5%	51%	44%	0%	0%	0%	0%	100%	0%
5 Two Lines	3%	87%	8%	0%	3%	0%	0%	100%	0%
6 Strata	0%	0%	0%	100%	0%	0%	0%	100%	0%
7 Avery	13%	40%	47%	0%	0%	0%	0%	100%	0%
8 Mayberry	24%	51%	0%	0%	0%	4%	20%	76%	24%
9 Progress I	0%	45%	4%	0%	0%	0%	50%	50%	50%
10 Progress II	1%	99%	0%	0%	0%	0%	0%	100%	0%
11 Sandy Cross	0%	0%	100%	0%	0%	0%	0%	100%	0%
12 Zebulon	47%	0%	53%	0%	0%	0%	0%	100%	0%
13 Baldenboro	18%	59%	22%	0%	0%	0%	0%	100%	0%
14 Dement	33%	40%	27%	0%	0%	0%	0%	100%	0%
15 Vale Farm	1%	13%	86%	0%	0%	0%	0%	100%	0%
16 Eastover	0%	0%	0%	0%	0%	0%	0%	0%	0%
17 Wagstaff	7%	89%	4%	0%	0%	0%	0%	100%	0%
18 Roxboro	1%	93%	5%	0%	0%	0%	1%	99%	1%
19 McCallum	5%	93%	1%	0%	0%	0%	0%	100%	0%
Average	11%	43%	25%	5%	0%	0%	10%	84%	10%
Median	5%	40%	5%	0%	0%	0%	0%	100%	0%
High	47%	99%	100%	100%	3%	4%	82%	100%	82%
Low	0%	0%	0%	0%	0%	0%	0%	0%	0%

Res = Residential, Ag = Agriculture, Sub = Substation, Com = Commercial, Ind = Industrial.

I have also included a breakdown of each solar farm by number of adjoining parcels by parcel instead of acreage. Using both factors provides a better concept of what the neighboring properties consist.

Percentage By Number of Parcels Adjoining								All Res	All Comm
	Res	Ag	Res/AG	Park	Sub	Comm	Ind	Uses	Uses
1 Goldsboro	0%	0%	0%	0%	0%	0%	0%	0%	0%
2 Willow Springs	42%	37%	21%	0%	0%	0%	0%	100%	0%
3 Kings Mtn	40%	30%	10%	0%	0%	0%	20%	80%	20%
4 White Cross	33%	20%	40%	0%	7%	0%	0%	100%	0%
5 Two Lines	38%	46%	8%	0%	8%	0%	0%	100%	0%
6 Strata	71%	0%	14%	14%	0%	0%	0%	100%	0%
7 Avery	50%	38%	13%	0%	0%	0%	0%	100%	0%
8 Mayberry	42%	8%	0%	0%	0%	25%	25%	50%	50%
9 Progress I	0%	50%	25%	0%	0%	0%	25%	75%	25%
10 Progress II	20%	80%	0%	0%	0%	0%	0%	100%	0%
11 Sandy Cross	17%	0%	83%	0%	0%	0%	0%	100%	0%
12 Zebulon	90%	0%	10%	0%	0%	0%	0%	100%	0%
13 Bladenboro	62%	28%	7%	0%	3%	0%	0%	100%	0%
14 Dement	83%	6%	11%	0%	0%	0%	0%	100%	0%
15 Vale Farm	10%	20%	70%	0%	0%	0%	0%	100%	0%
16 Eastover	0%	0%	0%	0%	0%	0%	0%	0%	0%
17 Wagstaff	65%	30%	3%	0%	0%	0%	3%	98%	3%
18 Roxboro	33%	50%	8%	0%	0%	0%	8%	92%	8%
19 McCallum	77%	15%	4%	0%	0%	0%	4%	96%	4%
Average	41%	24%	17%	1%	1%	1%	4%	84%	6%
Median	40%	20%	10%	0%	0%	0%	0%	100%	0%
High	90%	80%	83%	14%	8%	25%	25%	100%	50%
Low	0%	0%	0%	0%	0%	0%	0%	0%	0%

Res = Residential, Ag = Agriculture, Sub = Substation, Com = Commercial, Ind = Industrial.

Both of the above charts show a marked residential and agricultural adjoining use for most solar farms. In fact every single solar farm considered included an adjoining residential use except for Progress I, which included an adjoining residential/agricultural use. These comparable solar farms clearly support a compatibility with adjoining residential uses along with agricultural uses.

Specific Factors on Harmony and Compatibility of Use

Appearance

Solar farm panels have no associated stigma at this time and in smaller collections are found in yards and roofs in many residential communities. Larger solar farms using fixed panels are a passive use of the land that is considered in keeping with a rural/residential area. Comparing a solar farm to a larger greenhouse as shown below is a very reasonable comparison given that a greenhouse is essentially another method for collecting passive solar energy. The greenhouse use is well received in residential/rural areas and has a similar visual impact as a solar farm.



I note that the fixed solar panels are all less than 10 feet high, which means that the visual impact of the solar panels will be less high than a typical greenhouse or even a single story residential dwelling. This property could be developed with single family housing that would have a much greater visual impact on the surrounding area given that a two-story home with attic could be four times as high as these proposed panels. The panels will be located behind a chain link fence.

The comparable solar farms that I have considered are presented in the addenda and include a variety of photos of solar farms. The photos show that these sites are generally well-maintained and there is no significant negative view.

For the reasons stated above, I conclude that the appearance of the proposed solar farm will maintain or enhance adjoining property values.

Noise

The proposed solar panels will be fixed and will not move to follow the sun. As these are passive, fixed solar panels there is no noise associated with these panels. The transformer reportedly has a hum that can only be heard in close proximity to this transformer and the buffers on the property are sufficient to make this hum inaudible from the adjoining properties.

There will be minimal onsite traffic generating additional noise.

The various solar farms that I have inspected and identified in the addenda were inaudible from the roadways. I heard nothing on any of these sites associated with the solar farm.

For the reasons stated above, I conclude that the lack of any noise associated with the proposed solar farm indicates that this use will maintain or enhance adjoining property values.

Odor

The solar panels give off no odor of which I am aware.

The various solar farms that I have inspected and identified in the addenda produced no noticeable odor off site.

I therefore conclude that odor from the proposed project is not a factor and the project as designed will maintain or enhance the value of contiguous properties.

Traffic

The solar farm will have no onsite employee's or staff. Maintenance of the site is minimal and relative to other potential uses of the site, such as a residential subdivision, the additional traffic on this site is insignificant.

For the reasons stated above, I conclude that the lack of any significant traffic associated with the proposed solar farm indicates that this use will maintain or enhance adjoining property values.

Hazardous material

The solar farm presents no potential hazardous waste byproduct as part of normal operation. Any fertilizer, weed control, vehicular traffic, or construction will be significantly less than typically applied in a residential development or even most agricultural uses.

The various solar farms that I have inspected and identified in the addenda have no known pending environmental impacts associated with the development and operation of those farms.

I therefore conclude that there is no hazardous material concerns associated with the proposed project and therefore the project as designed will maintain or enhance the value of contiguous properties.

Market Commentary

I have surveyed a number of builders, developers and investors regarding solar farms over the last year. I have received favorable feedback from a variety of sources with some examples provided below.

Rex Vick with Windjam Developers has a subdivision in Chatham County off Mt. Gilead Church Road known as The Hamptons. Home prices in The Hamptons start at \$600,000 with homes over \$1,000,000. Mr. Vick expressed interest in the possibility of including a solar farm section to the development as a possible additional marketing tool for the project.

Mr. Eddie Bacon, out of Apex North Carolina, has inherited a lot of family and agricultural land and he has expressed interest in using a solar farm as a method of preserving the land for his children and grandchildren while still deriving a useful income off of the property. He indicated that he believed that solar panels would not in any way diminish the value for this adjoining land.

I spoke with Carolyn Craig, a Realtor in Kinston, North Carolina who is familiar with the Strata Solar Farms in the area. She noted that a solar farm in the area would be positive. "A solar farm is color coordinated and looks nice." "A solar farm is better than a turkey farm," which is allowed in that area. She would not expect a solar farm will have any impact on adjoining home prices in the area.

Mr. Michael Edwards, a broker and developer in Raleigh, indicated that a passive solar farm would be a great enhancement to adjoining property. "You never know what might be put on that land next door. There is no noise with a solar farm like there is with a new subdivision."

I spoke with Lynn Hayes, a broker with Berkshire Hathaway who is selling lots on Pickards Meadow Road near the solar farm at the Eco Institute who noted no reason it would be a detriment and could be an enhancement.

These are just excerpts I've noted in my conversations with different clients or other real estate participants that provided other thoughts on the subject that seemed applicable.

Conclusion

The matched pair analysis on the AM Best Solar Farm in Goldsboro shows no impact in home values due to the adjacency to the solar farm. The solar farm at Pickards Mountain Eco Institute shows no impact on lot and home marketing nearby. The criteria for making downward adjustments on property values such as appearance, noise, odor and traffic all indicate that a solar farm is a compatible use for a rural/residential area.

Similar solar farms have been approved adjoining agricultural uses and residential developments. The adjoining residential uses have included single family homes up to \$260,000 on lots as small as 0.74 acres, mobile homes, and apartments. The solar farm at the Pickards Mountain Eco Institute adjoins a home that is selling for around \$750,000 and in proximity to lots being sold for \$200,000 to \$250,000 for homes over a million dollars. Clearly, adjoining agricultural uses are consistent with a solar farm.

Based on the presented information and my experience in appraising land and residential subdivision developments, I conclude that the proposed solar farm will have no negative impact on the adjoining properties and that this is a compatible and harmonious use with the area.

If you have any further questions please call me any time.

Sincerely,



Richard C. Kirkland, Jr., MAI
State Certified General Appraiser



Limiting Conditions and Assumptions

Acceptance of and/or use of this report constitutes acceptance of the following limiting conditions and assumptions; these can only be modified by written documents executed by both parties.

- ❖ The basic limitation of this and any appraisal is that the appraisal is an opinion of value, and is, therefore, not a guarantee that the property would sell at exactly the appraised value. The market price may differ from the market value, depending upon the motivation and knowledge of the buyer and/or seller, and may, therefore, be higher or lower than the market value. The market value, as defined herein, is an opinion of the probable price that is obtainable in a market free of abnormal influences.
- ❖ I do not assume any responsibility for the legal description provided or for matters pertaining to legal or title considerations. I assume that the title to the property is good and marketable unless otherwise stated.
- ❖ I am appraising the property as though free and clear of any and all liens or encumbrances unless otherwise stated.
- ❖ I assume that the property is under responsible ownership and competent property management.
- ❖ I believe the information furnished by others is reliable, but I give no warranty for its accuracy.
- ❖ I have made no survey or engineering study of the property and assume no responsibility for such matters. All engineering studies prepared by others are assumed to be correct. The plot plans, surveys, sketches and any other illustrative material in this report are included only to help the reader visualize the property. The illustrative material should not be considered to be scaled accurately for size.
- ❖ I assume that there are no hidden or unapparent conditions of the property, subsoil, or structures that render it more or less valuable. I take no responsibility for such conditions or for obtaining the engineering studies that may be required to discover them.
- ❖ I assume that the property is in full compliance with all applicable federal, state, and local laws, including environmental regulations, unless the lack of compliance is stated, described, and considered in this appraisal report.
- ❖ I assume that the property conforms to all applicable zoning and use regulations and restrictions unless nonconformity has been identified, described and considered in this appraisal report.
- ❖ I assume that all required licenses, certificates of occupancy, consents, and other legislative or administrative authority from any local, state, or national government or private entity or organization have been or can be obtained or renewed for any use on which the value estimate contained in this report is based.
- ❖ I assume that the use of the land and improvements is confined within the boundaries or property lines of the property described and that there is no encroachment or trespass unless noted in this report.
- ❖ I am not qualified to detect the presence of floodplain or wetlands. Any information presented in this report related to these characteristics is for this analysis only. The presence of floodplain or wetlands may affect the value of the property. If the presence of floodplain or wetlands is suspected the property owner would be advised to seek professional engineering assistance.
- ❖ For this appraisal, I assume that no hazardous substances or conditions are present in or on the property. Such substances or conditions could include but are not limited to asbestos, urea-formaldehyde foam insulation, polychlorinated biphenyls (PCBs), petroleum leakage or underground storage tanks, electromagnetic fields, or agricultural chemicals. I have no knowledge of any such materials or conditions unless otherwise stated. I make no claim of technical knowledge with regard to testing for or identifying such hazardous materials or conditions. The presence of such materials, substances or conditions could affect the value of the property. However, the values estimated in this report are predicated on the assumption that there are no such materials or conditions in, on or in close enough proximity to the property to cause a loss in value. The client is urged to retain an expert in this field, if desired.

- ❖ Unless otherwise stated in this report the subject property is appraised without a specific compliance survey having been conducted to determine if the property is or is not in conformance with the requirements of the Americans with Disabilities Act (effective 1/26/92). The presence of architectural and/or communications barriers that are structural in nature that would restrict access by disabled individuals may adversely affect the property's value, marketability, or utility.
- ❖ Any allocation of the total value estimated in this report between the land and the improvements applies only under the stated program of utilization. The separate values allocated to the land and buildings must not be used in conjunction with any other appraisal and are invalid if so used.
- ❖ Possession of this report, or a copy thereof, does not carry with it the right of publication.
- ❖ I have no obligation, by reason of this appraisal, to give further consultation or testimony or to be in attendance in court with reference to the property in question unless further arrangements have been made regarding compensation to Kirkland Appraisals, LLC.
- ❖ Neither all nor any part of the contents of this report (especially any conclusions as to value, the identity of the appraiser, or the firm with which the appraiser is connected) shall be disseminated to the public through advertising, public relations, news, sales, or other media without the prior written consent and approval of Kirkland Appraisals, LLC, and then only with proper qualifications.
- ❖ Any value estimates provided in this report apply to the entire property, and any proration or division of the total into fractional interests will invalidate the value estimate, unless such proration or division of interests has been set forth in the report.
- ❖ Any income and expenses estimated in this report are for the purposes of this analysis only and should not be considered predictions of future operating results.
- ❖ This report is not intended to include an estimate of any personal property contained in or on the property, unless otherwise state.
- ❖ This report is subject to the Code of Professional Ethics of the Appraisal Institute and complies with the requirements of the State of North Carolina for State Certified General Appraisers. This report is subject to the certification, definitions, and assumptions and limiting conditions set forth herein.
- ❖ The analyses, opinions and conclusions were developed based on, and this report has been prepared in conformance with, our interpretation of the guidelines and recommendations set forth in the Financial Institutions Reform, Recovery, and Enforcement Act of 1989 (FIRREA).
- ❖ This is a Real Property Appraisal Consulting Assignment as identified in Standard 4 of USPAP and reported following Standard 5 of USPAP.

Certification – Richard C. Kirkland, Jr., MAI

I certify that, to the best of my knowledge and belief:

1. The statements of fact contained in this report are true and correct;
2. The reported analyses, opinions, and conclusions are limited only by the reported assumptions and limiting conditions, and are my personal, unbiased professional analyses, opinions, and conclusions;
3. I have no present or prospective interest in the property that is the subject of this report and no personal interest with respect to the parties involved;
4. I have no bias with respect to the property that is the subject of this report or to the parties involved with this assignment;
5. My engagement in this assignment was not contingent upon developing or reporting predetermined results;
6. My compensation for completing this assignment is not contingent upon the development or reporting of a predetermined value or direction in value that favors the cause of the client, the amount of the value opinion, the attainment of a stipulated result, or the occurrence of a subsequent event directly related to the intended use of the appraisal;
7. The reported analyses, opinions, and conclusions were developed, and this report has been prepared, in conformity with the requirements of the Code of Professional Ethics and Standards of Professional Appraisal Practice of the Appraisal Institute;
8. The reported analyses, opinions and conclusions were developed, and this report has been prepared, in conformity with the Uniform Standards of Professional Appraisal Practice.
9. The use of this report is subject to the requirements of the Appraisal Institute relating to review by its duly authorized representatives;
10. I have made a personal inspection of the property that is the subject of this report, and;
11. No one provided significant real property appraisal assistance to the person signing this certification.
12. As of the date of this report I have completed the requirements of the continuing education program of the Appraisal Institute;
13. I have not appraised this property within the last three years.

Disclosure of the contents of this appraisal report is governed by the bylaws and regulations of the Appraisal Institute and the National Association of Realtors.

Neither all nor any part of the contents of this appraisal report shall be disseminated to the public through advertising media, public relations media, news media, or any other public means of communications without the prior written consent and approval of the undersigned.



Richard C. Kirkland, Jr., MAI
State Certified General Appraiser



Addendum

Solar Farm Comparable 1

Name AM Best Farm
Address 2815 N William St
City Goldsboro
County Wayne

Tract Acres 38
Effective Acres 38
Output (MW) 6.65

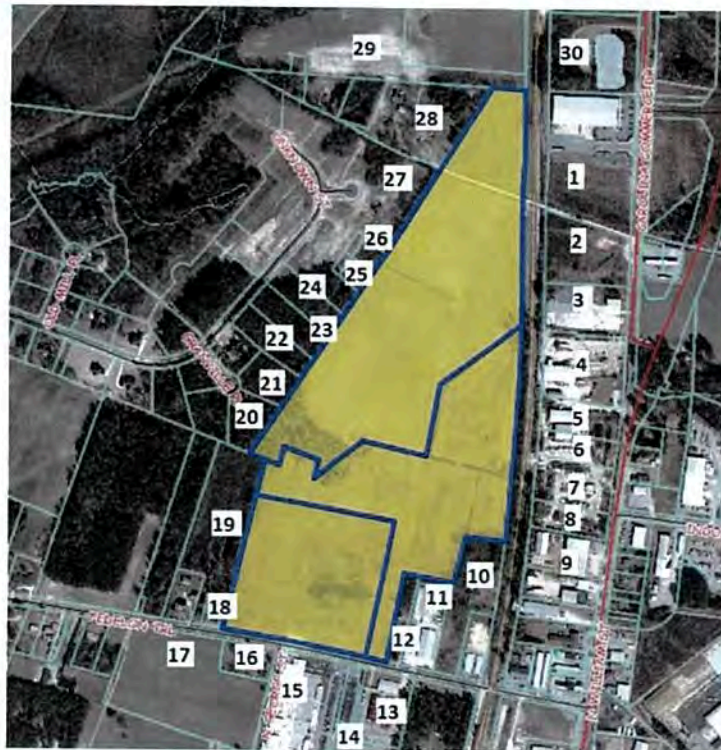
Remarks:

Year Built 2013
SUP Approved Feb-13
Inspection Dat Feb-13



Adjoining Use Breakdown

	Acreage	Parcels
Industrial	37.41%	43.33%
Commercial	1.92%	3.33%
Agriculture	22.69%	3.33%
Substation	2.58%	3.33%
Residential	35.40%	46.67%
Total	100.00%	100.00%



Addendum

Solar Farm Comparable 2

Name Fuquay Farm
Address 9205 Old Store Road
City Willow Springs
County Wake

Tract Acres 111.75
Effective Acres 45
Output (MW) 6.4

Remarks: Proposed to be built on Phase III Subdivision Land. Phases I and II still proposed.

Date Built 2013
SUP Approved 2012
Inspection Date 3/26/2012



Adjoining Use Breakdown

	Acreage	Parcels
Agricultural	25.58%	36.84%
Res/Ag	66.08%	21.05%
Residential	6.20%	21.05%
Mobile Home	2.13%	21.05%
Total	100.00%	100.00%



Addendum

Solar Farm Comparable 3

Name Kings Mountain
Address 1633 Battleground Ave
City Shelby
County Cleveland

Tract Acres 690.26
Effective Acres 30
Output (MW) 5

Remarks: Parent tract is also shown as Surrounding Use 1 below.



Date Built 2011
SUP Approved 2011
Inspection Date 7/31/2012

Adjoining Use Breakdown

	Acreage	Parcels
Res/Ag	3.63%	10.00%
Agricultural	12.01%	30.00%
Residential	2.53%	40.00%
Industrial	81.83%	20.00%
Total	100.00%	100.00%



Addendum

Solar Farm Comparable 4

Name White Cross
Address 2159 White Cross Rd
City Chapel Hill
County Orange

Tract Acres 121.21
Effective Acres 45
Output (MW) 5

Remarks: Built on
land adjoining a mobile home park with the
same ownership of the solar farm. Owner also
adjoining agricultural land.

Date Built 2013
SUP Approved 2012
Inspection Date 3/26/2012



Adjoining Use Breakdown

	Acreage	Parcels
Agricultural	50.98%	20.00%
Res/Ag	44.16%	40.00%
Residential	4.58%	33.33%
Substation	0.28%	6.67%
Total	100.00%	100.00%



Addendum

Solar Farm Comparable 5

Name Two Lines Farm
Address Zion Church Road
City Hickory
County Catawba

Tract Acres 100.56
Effective Acres 100.56
Output (MW) 6.4

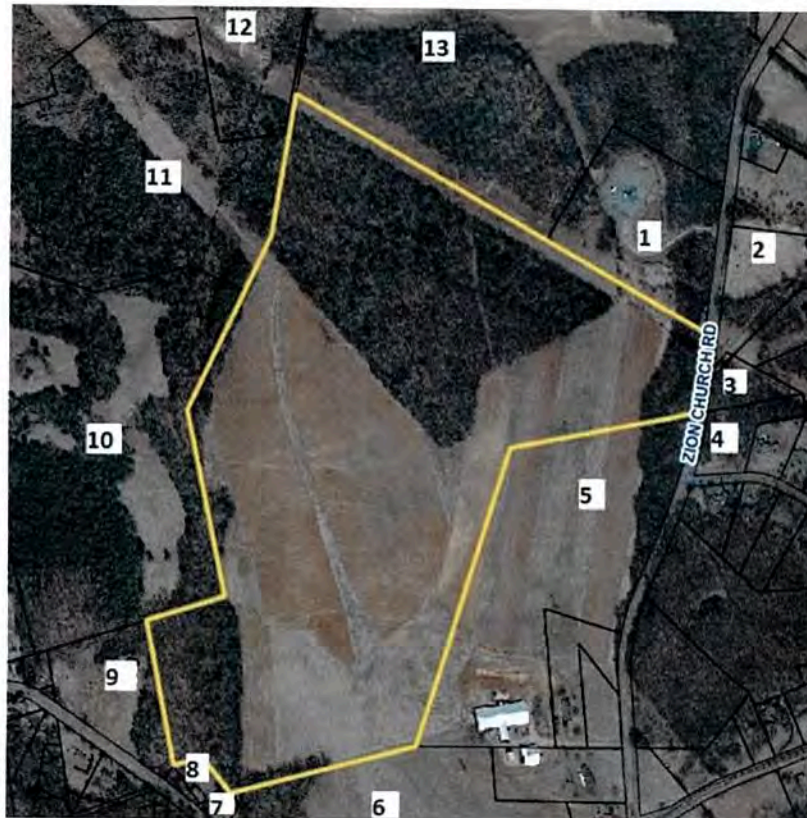
Remarks: Owner of solar farm also owns 87% of adjoining acreage and 46% of adjoining parcels. Two large powerline easements cross this property.

Date Built 2013
SUP Approved 2012
Inspection Date 6/4/2012



Adjoining Use Breakdown

	Acreage	Parcels
Agricultural	86.64%	46.15%
Res/Ag	7.71%	7.69%
Residential	2.84%	38.46%
Substation	2.81%	7.69%
Total	100.00%	100.00%



Addendum

Solar Farm Comparable 6

Name	Strata Warehouse Project
Address	2835 Farrington Point Rd
City	Chapel Hill
County	Chatham

Tract Acres	14.154
Effective Acres	14.154
Output (MW)	1.57

Remarks: Warehouse for Strata Solar with solar panels installed in yard.
Governor's Club within quarter mile.

Date Built	2012
SUP Approved	2011
Inspection Date	3/26/2012



Adjoining Use Breakdown

	Acreage	Parcels
Res/Ag	0.13%	14.29%
Residential	0.02%	71.43%
Park	99.85%	14.29%
Total	100.00%	100.00%



Addendum

Solar Farm Comparable 7

Name Avery Solar, LLC
Address Trim Branch Road
Town Newland
County Avery

Tract Acres 6.08
Effective Acres 6.08
Output (MW) 0.9



Remarks: Located at the corner of Trim Branch Road and Mount Pleasant Road property was a part of a Christmas tree farm that was difficult to grow on

Date Built 2011
Deed Date 5/12/2011

Adjoining Use Breakdown

Agricultural	40.25%	37.50%
Res/Ag	47.05%	12.50%
Residential	12.70%	50.00%
Mobile Home	0.00%	0.00%
Total	100.00%	100.00%



Addendum

Solar Farm Comparable 8

Name Mayberry Solar LLC
Address Wastewater Treatment Road
City Mount Airy
County Surry

Tract Acres 48.24
Effective Acres 6
Output (MW) 1

Remarks: 2 separate parcels
The smaller parcel is inside of the bigger parcel and is covered completely covered by solar panels
The larger parcel contains solar panels, a waste water treatment plant, and vacant land



Date Built 2011

Adjoining Use Breakdown

Agricultural	51.49%	8.33%
Religious	14.94%	8.33%
Residential	9.13%	33.33%
Industrial	20.29%	25.00%
Commercial	4.14%	25.00%
Total	100.00%	100.00%



Addendum

Solar Farm Comparable 9

Name Progress Solar I LLC
Address 5814 NC 39 Hwy S
Town Bunn
County Franklin

Tract Acres 46.59
Effective Acres 46.59
Output (MW) 4.5



Remarks: Owned by O2 Energies DBA Progress Solar I LLC

Date Built 2012
Deed Date 6/5/2012
Inspection Date 1/20/2013

Adjoining Use Breakdown

Agricultural	45.39%	50.00%
Res/Ag	4.42%	25.00%
Prison	50.19%	25.00%
Total	100.00%	100.00%



Addendum

Solar Farm Comparable 10

Name Progress Solar II LLC
Address 5719 Old Stage Road
Town Fairmont
County Robeson

Tract Acres unknown, GIS unavailable
Effective Acres 25
Output (MW) 4.5



Remarks: located close by Fairmont High School

Date Built 2012

Use Breakdown

Agricultural	98.53%	80.00%
Residential	1.47%	20.00%
Total	100.00%	100.00%



Addendum

Solar Farm Comparable 11

Name Sandy Cross Solar LLC
Address 2999 Lewis Road
Town Elm City
County Nash

Tract Acres 21.66
Effective Acres 11
Output (MW) 1.5



Remarks: Located on a farm that was split due to I-95 construction
On the other side of I-95 is Sandy Cross Vineyards
Cemetery lot is inside the solar parcel

Date Built 2012

Adjoining Use Breakdown

Res/Ag	99.58%	83.33%
Residential	0.42%	16.67%
Total	100.00%	100.00%



Addendum

Solar Farm Comparable 12

Name Zebulon Solar Farm
Address 2129 Pearces Road
City Zebulon
County Wake

Tract Acres 15.5
Effective Acre 15.5
Output (MW)

Remarks: Owner plans to build homes on adjoining lots.

Date Built Proposed
SUP Approved
Inspection Da 1/20/2013

Adjoining Use Breakdown

	Acreage	Parcels
Res/Ag	53.41%	10.00%
Residential	46.59%	90.00%
Total	100.00%	100.00%



Addendum

Solar Farm Comparable 13

Name Bladenboro Farm
Address Forrest Street
City Bladenboro
County Bladen

Tract Acres 245.56
Effective Acre 30
Output (MW) 6.35

Remarks: Owner also owns adjoining land



Date Built Proposed
SUP Approved
Inspection Da 2/4/2013

Adjoining Use Breakdown

	Acreage	Parcels
Res/Ag	22.44%	6.90%
Agriculture	59.06%	27.59%
Substation	0.30%	3.45%
Residential	18.20%	62.07%
Total	100.00%	100.00%

Surrounding Use Map



Addendum

Solar Farm Comparable 14

Name Dement Farm
Address 5393 US 39
City Henderson
County Vance

Tract Acres 75
Effective Acres 45.3
Output (MW) 5

Remarks:



Date Built 2013
SUP Approved 2013
Inspection Date 2013

Adjoining Use Breakdown

	Acreage	Parcels
Mobile home	2.03%	38.89%
Residential	31.45%	44.44%
Agriculture	39.96%	5.56%
Res/Ag	26.56%	11.11%
Total	100.00%	100.00%

Surrounding Use Map



Addendum

Solar Farm Comparable 15

Name Vale Farm
Address NC Highway 27
City Vale
County Lincoln

Tract Acres 48.999
Effective Acres 48.999
Output (MW) 5

Remarks: Owner of solar farm also owns two of the adjoining residential/agricultural tracts.



Date Built
SUP Approved 2012
Inspection Date 6/4/2012

Adjoining Use Breakdown

	Acreage	Parcels
Agricultural	12.96%	20.00%
Res/Ag	85.83%	70.00%
Residential	1.21%	10.00%
Total	100.00%	100.00%

Surrounding Use Map



Addendum

Solar Farm Comparable 16

Name Eastover Farm Solar
Address Johns Road
Town Laurinburg
County Scotland

Tract Acres 27.84
GIS Data Acres 189.77
Tax Data Land Units (Acres) 181.29
Output 6.4MW

Remarks: Owned by Elizabeth Turner, Legal Description John W Jones Estate

Date Built
Deed Date 2/18/2012
SUP Approved
Inspection Date

Adjoining Use Breakdown

	Acreage	Parcels
Agricultural	62.73%	57.14%
Res/Ag	37.27%	42.86%
Total	100.00%	100.00%

Surrounding Use Map



Addendum

Solar Farm Comparable 17

Name Wagstaff Farm
Address 945 Woodsdale Road
City Roxboro
County Person

Tract Acres 594.22
Effective Acres ~30
Output 5.5MW

Remarks:
The farm is ~5% of a large 594.22 acre parcel.
It is surrounded on 3 sides by that parcel. The majority of surrounding use properties do not touch the actual solar farm area.

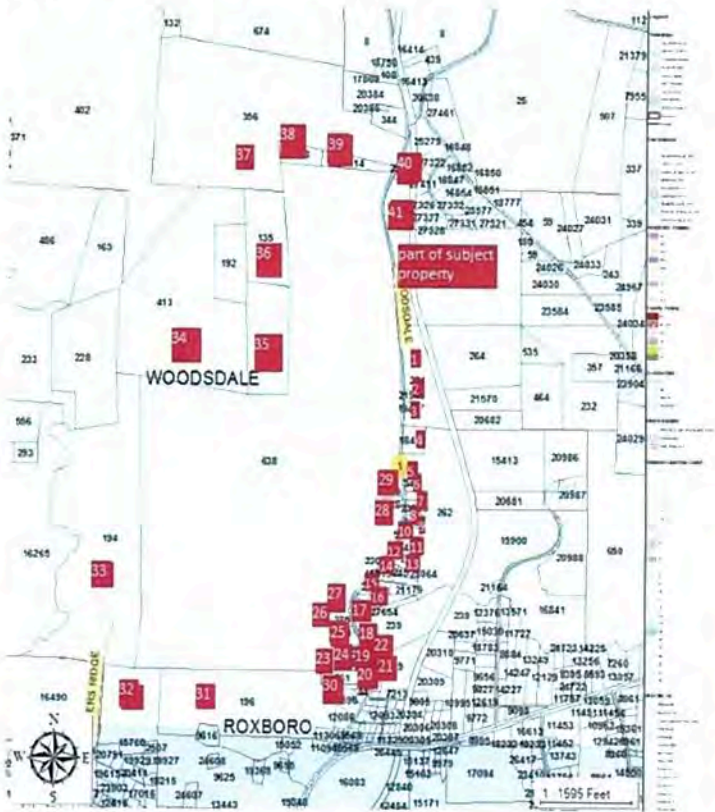


Date Built 2013
SUP Approved 2013
Inspection Date 2013

Adjoining Use Breakdown

	Acreage	Parcels
Agricultural	88.58%	30.00%
Residential	7.44%	65.00%
Res/Agri	3.51%	2.50%
Industrial	0.47%	2.50%
Total	100.00%	100.00%

Surrounding Use Map



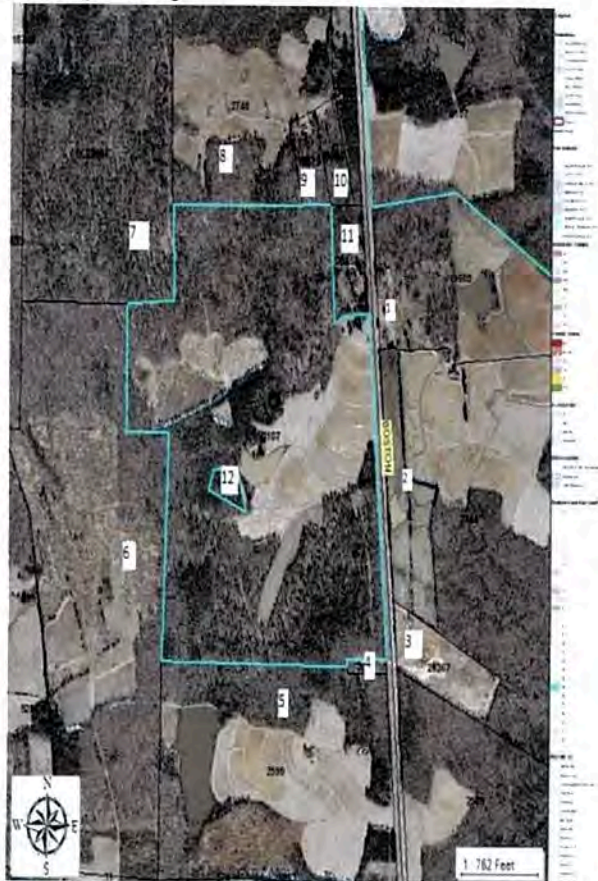
Addendum

Solar Farm Comparable 18

Name	Roxboro Farm
Address	7891 Boston Road
City	Roxboro
County	Person
Tract Acres	478.71
Effective Acres	34.83
Output	6MW
Remarks:	
Date Built	Proposed
SUP Approved	2013
Inspection Date	2013

Use Breakdown			
Agricultural	92.55%	50.00%	
Industrial	1.14%	8.33%	
Residential	1.40%	33.33%	
Res/Agri	4.91%	8.33%	
Total	100.00%	100.00%	

Surrounding Use Map



Addendum

Solar Farm Comparable 19

Name	McCallum Farm
Address	2058 Main Street
Town	Rowland
County	Robeson
Tract Acres	64.08
GIS Data Acres	64.08
Output	6.4MW
Date Built	2013
SUP Approved	2013
Inspection Date	2013

Adjoining Use Breakdown

	Acrage	Parcels
Agricultural	93.40%	15.38%
Residential	5.03%	76.92%
Residential/Agricultural	1.40%	3.85%
Commercial	0.18%	3.85%
Total	100.00%	100.00%

Surrounding Use Map



STATE OF NORTH CAROLINA
COUNTY OF CHATHAM

BEFORE THE CHATHAM COUNTY
BOARD OF COMMISSIONERS

CONDITIONAL USE PERMIT
APPLICATION FOR A SOLAR
FARM

)
)
)

AFFIDAVIT LOUIS IANONNE

NOW COMES the undersigned Affiant, who, being first duly sworn deposes and says:

1. I am over eighteen (18) years of age and competent to testify to the matters set forth in this Affidavit.
2. I am a site developer for Strata Solar. In this capacity I identify sites for solar facilities and support land use permitting for Strata's solar farms across North Carolina.
3. Strata Solar is the largest solar developer in North Carolina and the 6th largest solar developer in the United States. Strata Solar is headquartered in Chatham County. Strata Solar operates over 40 5 megawatt farms in North Carolina and expects to complete construction of 25 new farms by the end of 2013.
4. I am familiar with the proposed solar farm use, including the conditional use permit request. I have personally toured the property and specifically inspected the location of the proposed project. I assisted in preparation of the application and related documents for the permit.
5. Strata Solar proposes to construct a solar farm on approximately 18 acres owned by Hoyt C. Collins. The property is located off Vickers Road in Chatham County. Photographs of a typical 5 megawatt solar farm were attached to the application and are also attached as Hearing Exhibit 1.
6. The solar farm will be interconnected to Duke Energy Progress for delivery of the power generated to the electric grid.
7. The proposed use is among those listed as an eligible conditional use in the R-1 district where the property is located.
8. Under North Carolina Senate Bill 3 (G.S. 62-133.8), it is the public policy of the State to promote renewable energy. Under State law electric utilities are required to purchase an increasing amount of renewable energy. Under the law solar energy is defined as a renewable energy resource. The proposed solar farm is being developed under this policy. In December 2012, under rules promulgated by the North Carolina Utilities Commission ("Commission"), Strata Solar filed a Report of Proposed Construction for the proposed solar farm at Vickers Road. This filing is required under State law before construction of an electric generating facility of this size can begin. In January 2013, the Commission issued an Order accepting the registration of the proposed solar farm as a new renewable energy facility. A copy of the Order was attached to the Application.

9. There are other instances of solar farms in Chatham and surrounding counties. Strata has another operating solar farm in Chatham County and surrounding county locations including 2835 Farrington Point Rd. near Governors Village, 3800 Corinth Rd., Moncure and 2284 White Cross Rd., White Cross.
10. The proposed project will produce approximately \$10,000 in annual property tax payments to the County.
11. The proposed solar electric power plant will generate electricity to meet consumer needs in the local area with safe, clean, renewable energy with no fuel consumption or emissions.
12. The proposed plant requires no public improvements or services.
13. Construction of the solar farm will create approximately 150 temporary construction jobs over a two month period. Also, Strata Solar maintains an average of 1,000 jobs across North Carolina including approximately 80 professional engineering, project management, and legal and accounting staff in Chatham County and 900 construction jobs across the state.
14. For the reasons stated above, granting this conditional use permit application is desirable for the public convenience and welfare.
15. The proposed solar farm complies with the Chatham Land Use Plan in form and spirit. Specifically, the land use plan calls for "benefits and burdens" of growth to be shared. As I have already noted the tax receipts from this solar farm to the county will be in the neighborhood of \$10,000. Also, the use has been identified as appropriate for "agriculturally" zoned lands by means of the specific solar text change approved in 2012.
16. This low impervious use ensures the long-term quality of surface water resources. This particular use likely will provide less nitrogen and other run-off effects than farms, which frequently need fertilizer, tilling, etc. Finally, the solar farm can be removed at completion and returned to farming which "preserves opportunities to farm".
17. The proposed solar farm is consistent with the residential and agricultural land uses that exist in the area. The area surrounding the site is rural and sparsely developed. There is a significant tree buffer surrounding almost all of the site. Hearing Exhibit 2 is an approximate outline of the site plan overlaid on an aerial photograph of the site. This exhibit illustrates the extensive buffer around this site. The visual impact of the site is expected to be minimal.
18. The proposed solar farm meets several of the defined policies of the Land Conservation and Development Plan:
 - The surrounding area is rural and sparsely populated, and the

proposed project preserves the rural landscape by occupying approximately 18 acres of a 98 acre parcel.

- The project ensures long-term quality and availability of groundwater and surface water resources due to a small impervious surface percentage and replanted ground cover.
 - The project establishes electrical infrastructure that supports economic development.
19. The proposed solar farm meets the requirements of the Watershed Protection Ordinance by providing all required buffers and by having built-upon area below the strictest threshold.
20. The project meets the requirements of the Flood Damage Prevention Ordinance by being located out of a flood hazard area and by being designed to prevent water damage to electrical and structural components.
21. For these reasons, it is my professional opinion that the proposed solar farm will be consistent with the objectives of the Land Conservation and Development Plan.

Further the Affiant Sayeth Not.

This the 21st day of December, 2013.



LOUIS IANNONE

ACKNOWLEDGMENT

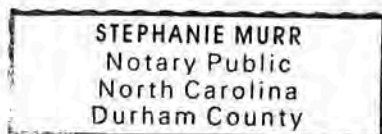
STATE OF NORTH CAROLINA

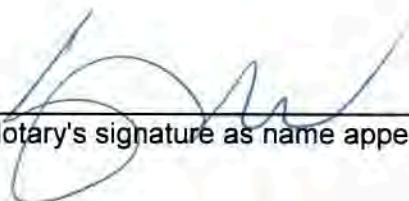
COUNTY OF Chatham

I certify that the following person(s) personally appeared before me this day, each acknowledging to me that he signed the foregoing document: Louis Iannone

Date:

December 21st, 2013





[Notary's signature as name appears on seal]

Stephanie Murr, Notary Public
[Notary's printed name as name appears on seal]

(SEAL)

My commission expires: 7/11/19

Exhibit 1



Exhibit 2



STATE OF NORTH CAROLINA
COUNTY OF CHATHAM

BEFORE THE CHATHAM COUNTY
BOARD OF COMMISSIONERS

CONDITIONAL USE PERMIT
APPLICATION FOR A SOLAR
FARM

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)
)

**AFFIDAVIT OF
BRENT NIEMANN, PE**

NOW COMES the undersigned Affiant, who, being first duly sworn, deposes and says:

1. I am over eighteen (18) years of age and competent to testify to the matters set forth in this Affidavit.
2. I am a licensed North Carolina professional engineer employed by Strata Solar.
3. Strata Solar proposes to construct a solar farm on approximately 18 acres owned by Hoyt C. Collins. The property is located off Vickers Road in Chatham County.
4. I am familiar with the proposed solar farm, including the conditional use permit request. I have personally toured the property and specifically inspected the location of the proposed project. I assisted in preparation of the application and related documentation for submittal to the county, and it is my professional opinion that the application package is complete.
5. The solar farm will contain rows of photovoltaic cell solar panels mounted to steel and aluminum racking that is mechanically driven in the ground. The site will be constructed in one phase. The solar cell configuration contains no moving parts. The electric components will have an Underwriters Laboratories (UL) listing and the facility will comply with the edition of the National Electrical Code adopted at the time of construction.
6. The creation of solar energy is virtually silent. The only sound is the quiet hum of equipment converting and conveying electricity to the power grid during daylight hours. Similar facilities are already located in residential neighborhoods to deliver power to homes. Solar panels are designed to absorb rather than reflect light. The solar farm will not have any lighting and no chemicals or hazardous substances will be utilized on the site.
7. The solar panels will be less than ten feet (10') in height as measured from the grade to their highest point, much lower than the typical house.
8. The site is appropriately located to be served by fire, police and emergency services, if needed.
9. The area beneath the solar panels will be planted with grass or other vegetation to stabilize the soil. The active area of the solar farm will be enclosed by a six foot (6') high chain link fence with 3 strands of barbed wire along the top of the fence to prevent unauthorized access to the site.

10. The solar farm will not be staffed daily. Employees will visit the site weekly, or less frequently, to maintain the equipment. Therefore, traffic will be minimal and will not negatively impact the surrounding area.
11. For these reasons stated above, it is my professional opinion that the proposed solar farm will not impair the integrity or character of the surrounding or adjoining districts or materially endanger the public health or safety.
12. The site will not require water or sewer.
13. Access to the site will be from a new driveway onto Vickers Road. A Driveway Permit application will be submitted to the North Carolina Department of Transportation for the driveway shown on the submitted site plan. I do not anticipate that any changes to the speed limit or any modifications to the road system will be required to serve the solar farm.
14. The proposed solar farm will generate almost no traffic. I am familiar with the principles of traffic engineering. The Institute of Transportation Engineers Trip Generation manual 8th Edition reports that the average single-family housing unit will produce an average of 9.57 trips on a weekday. The proposed solar farm will generate far fewer daily trips than one average single-family detached home. For these reasons, it is my professional opinion that the proposed solar farm has adequate utilities, access roads and other necessary facilities consistent with the county's plans and policies.
15. The site plan reflects the setbacks required by the County Zoning Ordinance.
16. A Modified Type 'B' Landscape Buffer, as indicated on the submitted site plan, will be provided around the perimeter of the solar farm where existing landscaping does not provide adequate screening from adjacent properties. Existing landscaping may be augmented using the same Modified Type 'B' Landscaping Buffer design included on the Conditional Use Site Plan.
17. Strata Solar will obtain an erosion control permit from Chatham County before starting construction on the proposed solar farm.

Further the Affiant Sayeth Not.

This the 2 day of December, 2013.


BRENT NIEMANN

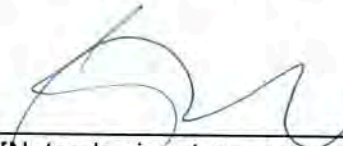
ACKNOWLEDGMENT

STATE OF NORTH CAROLINA

COUNTY OF Chatham

I certify that the following person(s) personally appeared before me this day, each acknowledging to me that he or she signed the foregoing document: Brent Niemann.

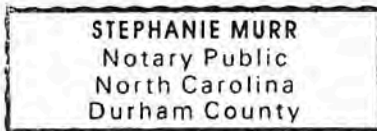
Date: December 2nd, 2013


[Notary's signature as name appears on seal]

Stephanie Murr, Notary Public
[Notary's printed name as name appears on seal]

(SEAL)

My commission expires: 7/11/14



STATE OF NORTH CAROLINA
COUNTY OF CHATHAM

BEFORE THE CHATHAM COUNTY
BOARD OF COUNTY COMMISSIONERS

CONDITIONAL USE PERMIT
APPLICATION FOR A SOLAR
FARM

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**AFFIDAVIT OF
RICHARD C. KIRKLAND, MAI**

NOW COMES the undersigned Affiant, who, being first duly sworn deposes and says:

1. I am over eighteen (18) years of age and competent to testify to the matters set forth in this Affidavit.
2. I am a licensed North Carolina real estate appraiser with an MAI Designation, actively practicing in North Carolina for 14 years.
3. I was engaged by Strata Solar to conduct an analysis to determine the impact of Strata's proposed solar farm at 151 Vickers Road on the integrity and character of the surrounding area.
4. A copy of my report, including my and qualifications, is attached to this affidavit as Exhibit A.
5. Strata Solar proposes to construct a solar farm on approximately 12 acres owned by Hoyt C. Collins. The property is located off Vickers Road in Chatham County.
6. The solar farm will consist of fixed solar panels that generate no noise, no smell and less traffic than one typical residential dwelling. The solar panels will be approximately ten feet (10') in height, much lower than the typical house.
7. I inspected the property and the immediate neighborhood as a part of my evaluation. The area surrounding the site of the proposed solar farm is rural and sparsely developed. There is a significant tree buffer around most of the site.
8. The solar farm will not generate noise or odor. The facility will not be staffed daily, and employees will visit the site weekly or less frequently, and, therefore, the solar farm will not generate traffic.
9. For the reasons cited above, it is my professional opinion that the proposed solar farm will be in harmony and in character with the surrounding area.
10. I also conducted a detailed study of the impact of solar farms on the value of surrounding property. In my study I considered 19 solar farms across North Carolina.
11. Among the farms I considered was the AM Best solar farm in Goldsboro that is comparable to the one proposed for the Wooten property in Yadkin County. I conducted a matched pair analysis of sales adjoining a solar farm in Goldsboro. A matched pair analysis considers sales of two similar properties where there is

- only one difference between the properties, in this case the presence of the adjoining solar farm. Matched pair analysis is considered best practice in the appraisal profession for assessing impact on property value.
12. The Goldsboro solar farm adjoined the Spring Garden subdivision. The analysis shows two sales of homes that adjoin the solar farm are comparable to sales of comparable homes that sold before and after construction of the solar farm.
 13. My analysis of 19 solar farms across North Carolina showed that in the majority of instances the adjoining land was used for residential and/or agricultural uses. The data and analysis supporting my opinion is contained in my report attached to this affidavit.
 14. Based on the data and analysis included in my report, it is my professional opinion, the proposed solar farm will not substantially injure the value of adjoining or abutting property.

Further the Affiant Sayeth Not.

This the 2 day of December, 2013.


RICHARD C. KIRKLAND

ACKNOWLEDGMENT

STATE OF NORTH CAROLINA

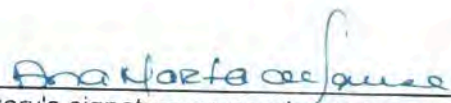
COUNTY OF Wake

I certify that the following person(s) personally appeared before me this day, each acknowledging to me that he signed the foregoing document: Richard C. Kirkland.

Date: December 2, 2013



(SEAL)


[Notary's signature as name appears on seal]

ANA MARTA DE SOUSA, Notary Public
[Notary's printed name as name appears on seal]

My commission expires: 11.04.2017