

July 3rd, 2025

Orange County
Attn: Angel Barnes
RE: Solar Feasibility Study
RFQ No: 367-OC5449

Solar Feasibility Study Services for Orange County and Town of Hillsborough

Scope of Work – Basic Services

The scope of work for basic services is for solar feasibility study services requested in RFQ No. 367-OC5449 and is based on the (19) facilities identified by Orange County staff. The (19) facilities reflect the removal of Central Recreation, Fuel Station and Hillsborough Commons from the studies. This revised proposal also includes the following (4) facilities to be studied for the Town of Hillsborough; Town Hall Annex (rooftop solar only– 1 utility account) , Motor Pool (rooftop solar only – 1 utility account), Water Treatment Plant (ground-mounted solar only – 5 utility accounts), and Wastewater Treatment Plant (ground-mounted solar only – 1 utility account). The Price includes provision of all labor, preliminary design, site assessment equipment, and software tools to complete the services. The system designs provided with the feasibility studies will be based on the 2023 National Electric Code, the 2024 NC Building Code, and current AHJ (Authority Having Jurisdiction) requirements. We anticipate these services will last up to 18 weeks.

- 1) **Kickoff Meeting** –Key team members will be identified and discussions around site/facility accessibility will occur at kickoff. The schedule for feasibility will be reviewed at a high level. Orange County staff members to provide feedback on critical milestone due dates during feasibility for their staff reporting needs. At kickoff, we will discuss and request the deliverables needed from Orange County and Town of Hillsborough to conduct the services. These deliverables include energy usage information for the facilities, construction and/or record drawings (if available), identification of existing roof warranties and roof manufacturer, and identification of the Authority Having Jurisdiction serving each facility.
- 2) **Site Identification/Qualification** – Prior to conducting site visits at these facilities, we will identify any known keep-out or restricted areas for solar panel placement with Orange County and Town of Hillsborough staff. For Orange County, the general location for solar panel placement on rooftops and placement opportunities for solar parking canopies will be identified. For the Town of Hillsborough, the general location for solar panel placement on rooftops and placement opportunities for ground-mounted solar will be identified. The code requirements will be reviewed at a high level to communicate the rooftop and property setback requirements for solar construction and for the owner to provide any additional setback needs.
- 3) **Energy Usage Analysis** – The energy usage analysis will consist of reviewing the most recent 12-month kWh (Energy) and kW (Demand) electricity usage and confirming the rate schedule to qualify the customer's cost per kWh and kW and to understand any potential rate schedule changes. The maximum solar PV capacity, based on the historical energy usage for the given account, will be established after the energy usage analysis. Further definition of the maximum solar capacity will be determined after visiting the site.
- 4) **Site Visit and Electrical Analysis** – Solar site investigation includes: confirming the location for all solar equipment, identifying the physical point of interconnection for behind the meter application, identifying communications equipment location, confirming roof-type, assessment of roof condition, identifying setback requirements for existing rooftop equipment and setbacks for solar panels from roof edge and parapet walls, determining parapet wall heights, verifying parking canopy and ground-mounted compatibility for the site including underground stormwater/ sewer/ utility lines, confirming property lines, recording switchgear and transformer data, determining site-specific system sizing limitations based on available real estate or the facilities' existing electrical distribution system and identifying upgrades to existing electrical system where applicable, and identifying shading concerns from nearby objects. The maximum recommended solar PV installation capacity will be determined after all relevant site data is obtained. The solar site

investigation will require support from County and Town staff members to access the facilities. Access to the rooftops, electrical rooms and IT rooms must be provided. Site visit reports submitted to County and Town staff.

- 5) **Preliminary Solar Design and Helioscope Production Reports** – Helioscope is the solar design and production modeling software that will be used for the preliminary designs. The Helioscope report defines the DC/ AC capacity of the solar project, lists all model numbers/ quantities for the equipment used in the preliminary designs, and displays the estimated annual / monthly energy generation in kilowatt-hours (kWh). A comparison of electricity consumption at the site to the solar PV system output will be provided. The location and layout of the solar project, as well as the shading analysis is shown in the report. The CO2 offset from the solar PV system will be provided.
- 6) **Structural Analysis of Proposed PV Systems** – Solar layouts will be provided to NV5 along with the dead-load weight of the solar PV system, as well as any existing structural drawings that are available. NV5 will conduct a site visit to evaluate the roof framing structure to determine whether the roof has the structural capacity to safely support the proposed solar system. If the assumed system increases the force in the structural supporting elements by more than ten (10) percent, NV5 will provide general strengthening recommendations. Following the visit, NV5 will provide a certified report summarizing the findings, assessing the conditions of the roof structure, and making recommendations for each building.
- 7) **Project Budgeting** - Each project will be estimated via line-item estimate. The budgets will include the estimated costs for continued design-development, interconnection with utility, construction, and construction administration.
- 8) **Financial Analysis** – After completing project estimating and system design details (including annual production and the applicable utility rate schedule), we will complete a financial analysis that includes the applicable incentives for each project and aggregated portfolio. The metrics for financial analysis include Net Present Value (NPV), Internal Rate of Return (IRR) and Levelized Cost of Energy (LCOE). Operation and Maintenance costs, facilities service upgrades (where applicable) and interconnection costs will also be included in the financial analysis. We will work with County and Town staff to prioritize which projects are most beneficial and likely to have the best return on investment.
- 9) **Compiled Feasibility Report** – Once the feasibility studies are complete, we will compile our findings into a comprehensive report and present it to County and Town Staff.
- 10) **Meetings** – Meeting with owner as required at key milestones to present findings. Progress report emails will be sent to staff members every two weeks.
- 11) **Pricing** - Valid for 30 days.
- 12) Any changes in scope are excluded from Basic Services.

Orange County Fees - The lump sum fee for the basic services above, excluding reimbursables expenses is:

Eighty-Eight Thousand Four Hundred Sixty Dollars.....\$88,460

Town of Hillsborough Fees - The lump sum fee for the basic services above, excluding reimbursables expenses is:

Twenty-Three Thousand Two Hundred Sixty Dollars.....\$23,460

Payment Terms – Project will be invoiced monthly for the project's work in progress. Payment is due Net 30 from date of the invoice. Should the project be postponed, put on hold, canceled, or delayed, payment for any services provided will be due. Please be advised that a fee may be incurred if the project is put on hold or reactivated later.

Additional Services – Upon mutual agreement, we may provide services not listed in this proposal or items excluded per the hourly rate schedule provided below, unless a specific fee is proposed and agreed upon before work on the additional service begins. Additional services include, but are not limited to, the following:

- Changes in scope during the feasibility study.
- Revisions, alternates, or changes to the preliminary solar PV system designs.
- Detailed design of any reinforcement to existing structures.
- Eno River Parking Deck – Following completion of the feasibility study, additional design services are available to develop the solar canopy structural design. The structural drawings will contain plan views, elevations with

overall layout and heights, as well as basic information about the solar PV system such as capacity and total area of PV system, and the upward, downward, lateral reaction forces that the canopy will transfer to the parking deck. NV5 will review these details and verify that the garage can or cannot accommodate the structural forces from the solar PV canopy.

- Recommendations and design for battery-based systems for critical back-up power and/or utility savings.
- Continued design-development, production of construction documents, and construction administration services after feasibility.
- Design-Build Construction Services and Commissions Services.
- 3-D Modeling.
- EV Charging station evaluation.

Current standard billing rates are as follows:

Pisgah Energy Position Title

Senior Project Manager	\$196/hr.
Project Manager/ Designer	\$176/hr.
Master Electrician	\$176/hr.
Energy Usage Analyst/ Utility Interconnection Specialist	\$176/hr.
Construction Manager	\$156/hr.

NV5 Position Title

Vice President	\$295/hr.
Group Leader	\$200/hr.
Project Manager	\$150/hr.
Project Engineer	\$140/hr.

Reimbursable Expenses - Reimbursable expenses shall be in addition to the compensation for basic and additional services and will be invoiced according to the line items below and will not exceed these values. These services include actual expenditures incurred by Pisgah Energy and NV5. Reimbursable expenses include:

Orange County Reimbursable Expenses:

- Lodging expenses – Not to Exceed - \$1,080
- Meal expenses – Not to Exceed - \$650
- Travel expenses (Mileage rates per current NCDOR) – Not to Exceed - \$1,700

Town of Hillsborough Reimbursable Expenses:

- Lodging expenses – Not to Exceed - \$540
- Meal expenses – Not to Exceed - \$250
- Travel expenses (Mileage rates per current NCDOR) – Not to Exceed - \$500

We appreciate the opportunity to participate on this project and look forward to working with you. This proposal is valid for 30 days. Please let me know if you have any questions.

Sincerely,

Evan Becka
President
Pisgah Energy Inc.

Locations for Solar Feasibility Study

Orange County Locations				
Location	Address	City	State	Zip Code
Animal Services Center	1601 Eubanks Road	Chapel Hill	NC	27514
Board of Elections (Government Services Annex)	208 S Cameron St	Hillsborough	NC	27278
Cedar Grove Community Ctr	5800 Hwy 86 N	Cedar Grove	NC	27231
Efland-Cheeks Community Center	117 Richmond Rd	Efland	NC	27243
Emergency Services Center	510 Meadowlands Drive	Hillsborough	NC	27278
Jerry M. Passmore Senior Center, Soltys Adult Day, Sportsplex	101, 103, 105 Meadowlands Drive	Hillsborough	NC	27278
Justice Facility	106 E Margaret Lane	Hillsborough	NC	27278
Motor Pool (Fleet Services)	600 Highway 86 N	Hillsborough	NC	27278
Orange County Public Library	137 W. Margaret Lane	Hillsborough	NC	27278
Orange Public Transportation	606 Highway 86 N	Hillsborough	NC	27278
Piedmont Food & Ag Processing Center	500 Valley Forge Rd	Hillsborough	NC	27278
Robert & Pearl Seymour Center	2551 Homestead Rd	Chapel Hill	NC	27514
Rogers Road Community Center	101 Edgar Street	Chapel Hill	NC	27514
Solid Waste Administration Building	1207 Eubanks Road	Chapel Hill	NC	27514
Southern Human Svcs Ctr	2501 Homestead Road	Chapel Hill	NC	27514
West Campus Office Building	131 W Margaret Lane	Hillsborough	NC	27278
Whitted Human Services Center (Bldg A) Health Dept.	300 W Tryon St	Hillsborough	NC	27278
Whitted Human Services Center (Bldg B) Dental Clinic	300 W Tryon St	Hillsborough	NC	27278
ENO River Parking Deck	131 W Margaret Lane	Hillsborough	NC	27278

Combined Passmore Center, Soltys Adult Day & Sportsplex into one building on this list.

Orange Highlighted items are potential Resiliency Hubs

Town of Hillsborough Locations

Location	Duke Energy Acct #	Rate		
Town Hall Annex	910035309490	SGS		
Hwy 86 Fleet (Motor Pool Facility)	910035309713	OPT		
Water Treatment Plant	910035309391	OPT		
Adron F Thompson W/S Facility	910035309812	SGS		
Wastewater Treatment Plant	910035309557	OPT		