



T O R C H
R E N E W A B L E E N E R G Y

Mill Pond Facility *Carteret County, NC*

Department of Environment and Natural
Resources: Interagency Meeting
November 5, 2013



CONFIDENTIAL

renewable energy innovation + expertise

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Section 1

Developer Overview

- Torch Renewable Energy LLC (TRE) is a subsidiary of Torch Energy Advisors Incorporated (TEAI)
- TEAi is a private, Houston-based energy company
 - Businesses include upstream oil and gas, midstream, and clean power
 - TEAi has invested or managed over \$10 billion in energy assets since formation in 1981
- Since 2007, TRE has assembled 23 wind, solar, and natural gas projects in 14 states representing over 3,700 megawatts (MW) of generating capacity (150 MW under long-term purchase agreements)

Key Project Highlights

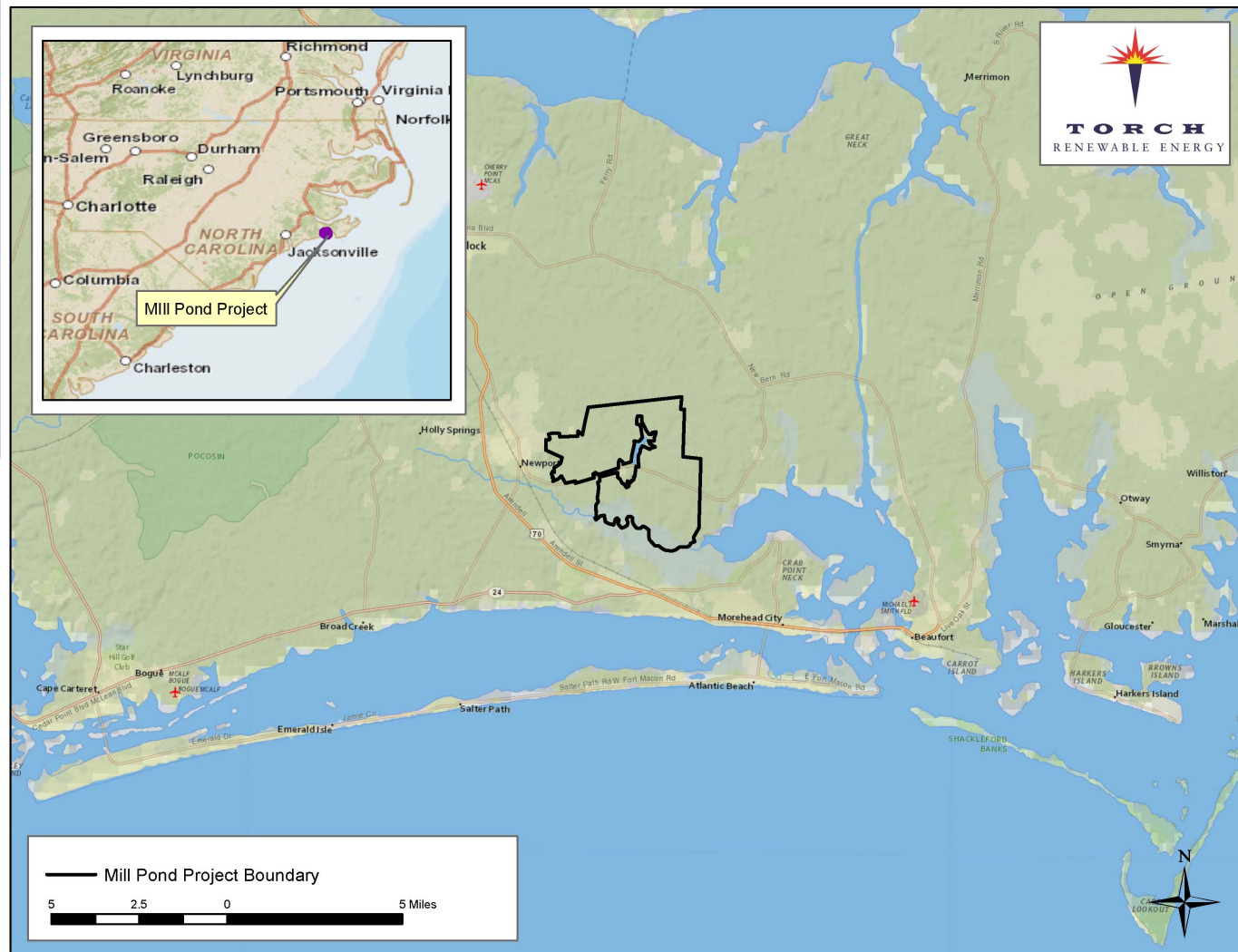
Category	Data
Location	Onshore Carteret County, NC
Sponsor	Torch Renewable Energy, LLC
Site Area (Owner)	7,000 deeded acres (Weyerhaeuser) 150 deeded acres (Private)
Project Capacity	100 MW
<i>Wind Capacity</i>	<i>80 MW</i>
<i>Solar Capacity</i>	<i>20 MW</i>
Measured Wind Speed	6.37 m/s (80-meter hub height) 6.67 m/s (95-meter hub height)
Interconnection	230-kilovolt (kV) tap into existing Havelock-Morehead Wildwood 230 kV owned by Duke Energy Progress; SIS completed October 2013
Capital Investment	\$180MM-\$250MM



Mill Pond Economic Benefits

- Local job creation
 - Up to 100 direct jobs to North Carolinians during construction
 - Up to 8 long-term jobs created in Carteret County
 - Hundreds of indirect jobs and millions of dollars pumped into local economy (hotels, restaurants, trucking, services, etc.)
 - 20-30 NC businesses will most likely contribute
 - Millions paid out to in-state businesses
- Local revenue generation
 - Increased revenue for Carteret County to support schools, public services, and local infrastructure
 - Landowner bonuses and royalty payments over life of project
- Benefits to area ratepayers
 - Interconnection into existing transmission line
 - Clean, long-term energy supply for almost 17,000 NC homes
 - Void of air pollutants and hazardous materials
 - Price to deliver energy to NC ratepayers far less than retail rates
 - Stable pricing for 20+ years

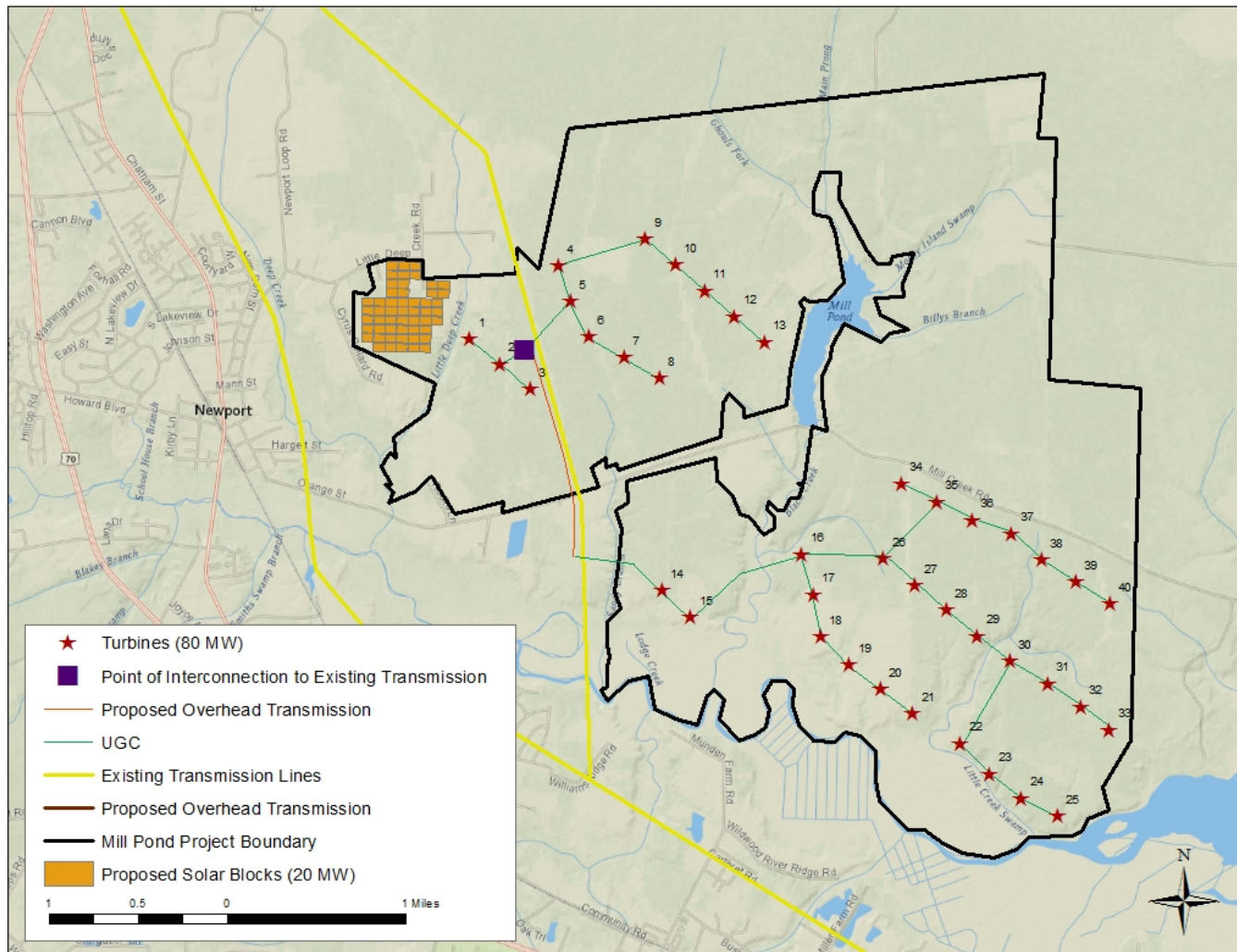
Mill Pond Site Map



Mill Pond - Basis for Supporting Development

- Highly energetic resource for NC @ 6.5 m/s
- Avoids restricted airspaces (R-5306A & R-5306D)
- Duke Energy Progress service territory
- NC RPS of 12.5% by 2021
- Existing transmission with injection potential
- Compliments silviculture and landowner operations
- Port of Morehead City and rail
- No viewshed impacts to scenic byways
- Long history of wind power use

Mill Pond Preliminary Layout



Mill Pond Site Research

- Site Selection
 - Reviewed and visited 9 sites across 4 counties and 8 months
 - NC RPS, Resource, Potential Impacts, Transmission, Permitting, Transportation Plan and Delivery
- MCIEAST '08 and '11 Presentations
- Review of existing regulations: State, County, and City
 - Researched zoning and permitting requirements for each
 - CPCN, Carteret County, Town of Newport and now DENR
- Kimley-Horn and Associates
 - Performed a review of potential environmental conflicts
 - General review on permitting requirements for both Carteret County and the town of Newport
 - General review of aviation concerns for both Military and area airports
- Vertical Constraints (U.S. Military)
 - Commissioned Capitol Airspace to perform an Obstacle Evaluation Study

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FAA Sectional Map



Mill Pond Site Summary

- Compatible land use
 - Project compliments silviculture and continued agricultural use
 - Significant buffer between project and any non-participating residential dwellings
- Wildlife (Kimley-Horn and Associates Fatal Flaw analysis, August 2012)
 - Sensitive environments found in Carteret County, but impacts from project development can be mitigated
- Military (Capitol Airspace Group, 2013)
 - No impact on VFR traffic patterns
 - No impact on departure procedures
 - No impact on minimum vectoring altitudes
 - No impact on enroute airways
 - Military training routes in alert area - A-530
- Developed clarity around permitting path

Section 2

Environmental Due Diligence

- March 2012 contacted Kimley-Horn which performed a desktop analysis and field study
- June 2012 field visit by a Professional Wetland Scientist and an Environmental Scientist
- Evaluation metrics:
 - Federal, State, and Local Lands
 - Avian and Aquatic Resources
 - Wetland and Floodplain Resources
 - Ground and Surface Water Resources
 - Federal Rare, Threatened, and Endangered Species
 - Cultural and Historic Resources
- Report complete August 2012

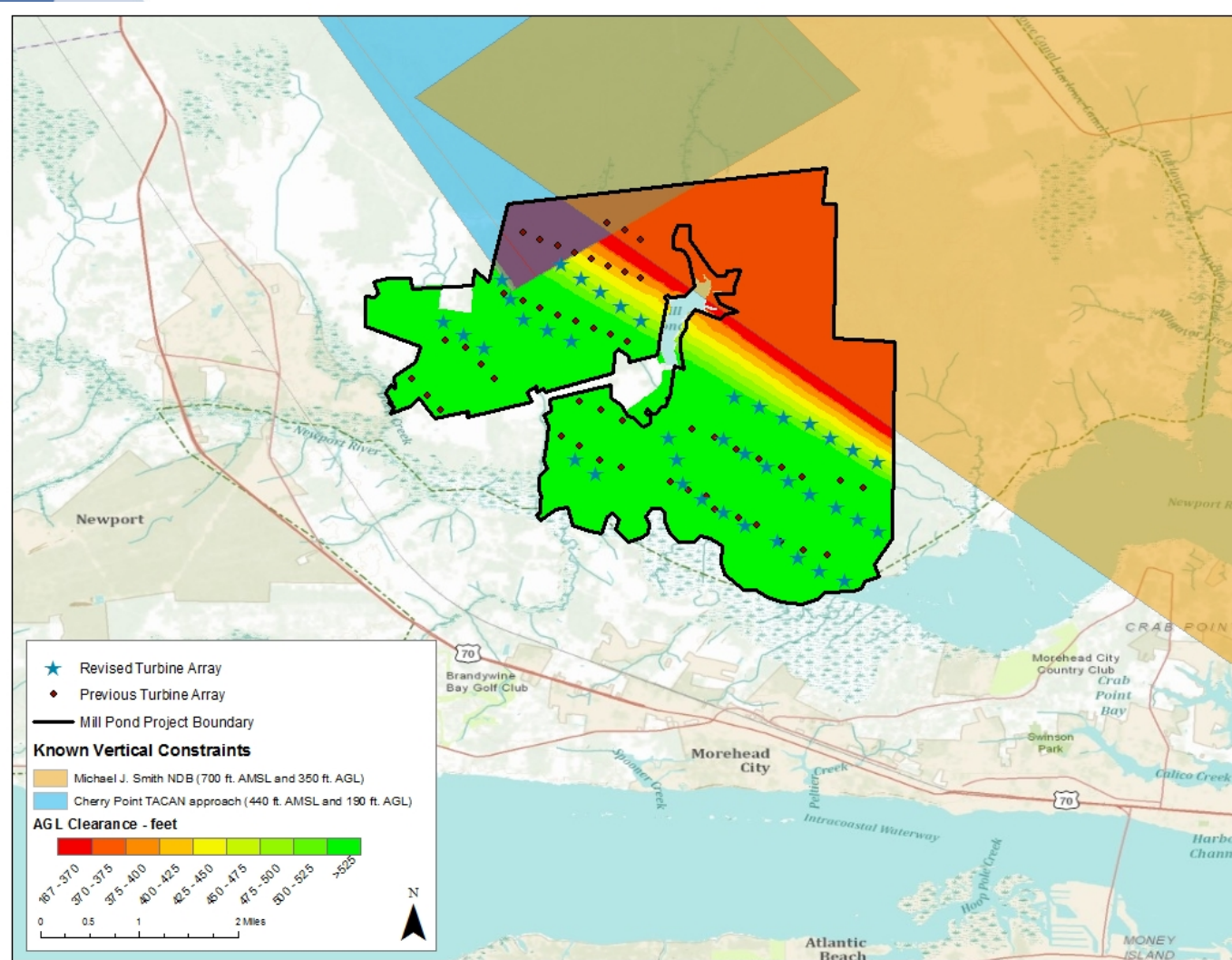
Environmental Summary

- Wetlands, wildlife habitats, critical species habitats are found through Carteret County, and Mill Pond is no exception
- Avoidance of sensitive areas will facilitate and expedite the permitting process
- [Avoidance of sensitive areas will facilitate and expedite the permitting process](#)
- Coordination with the appropriate federal and state agencies will be important to the success of this project
- The site presents some environmental constraints and potential impacts, but with the appropriate steps, the site has good potential to host a commercial wind farm

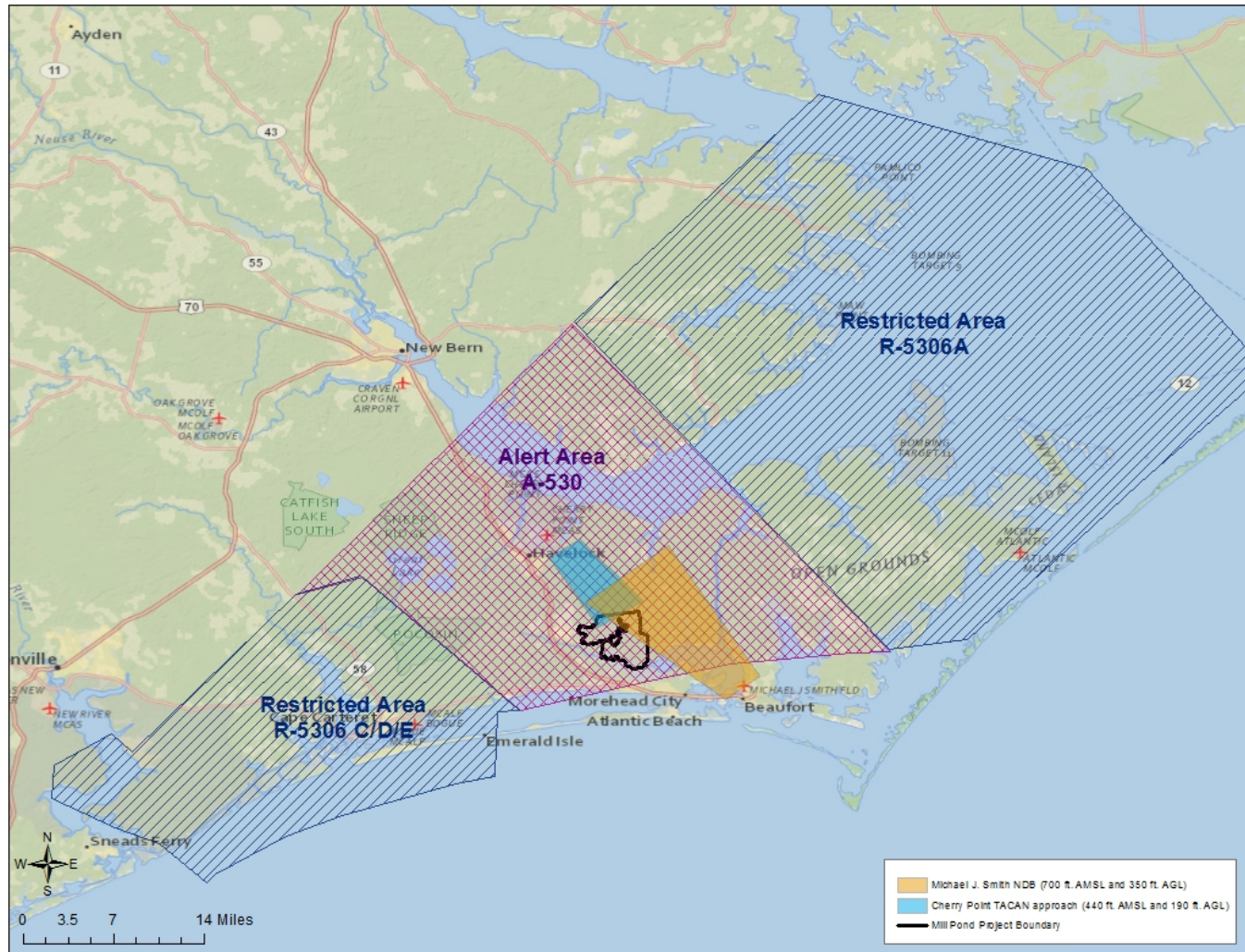
Aviation Due Diligence

- Capitol Airspace Group Completed an Obstacle Evaluation Study in August 2013
- Vertical constraints analysis performed
- Summary of Results:
 - Two approach patterns used by MCAS Cherry Point and Beaufort airport
 - Alert Area A-530 – rotary wind training routes and transitioning unmanned aerial systems
- Resolutions:
 - Moved 11 turbines away from approach patterns
 - Engage the Department of Defense Clearinghouse re: potential mitigation strategies

Mill Pond Vertical Constraint Map



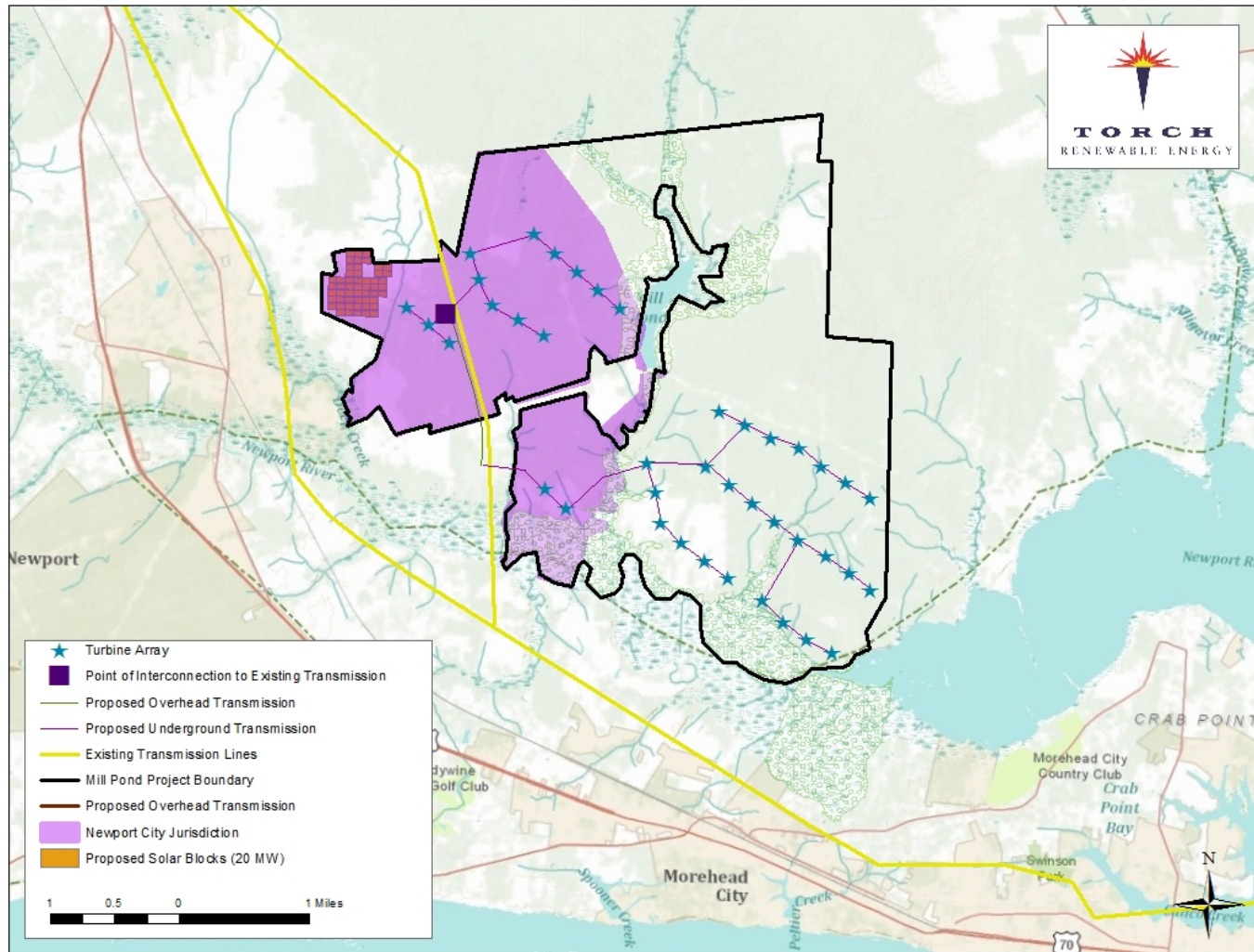
Mill Pond Military Overview Map



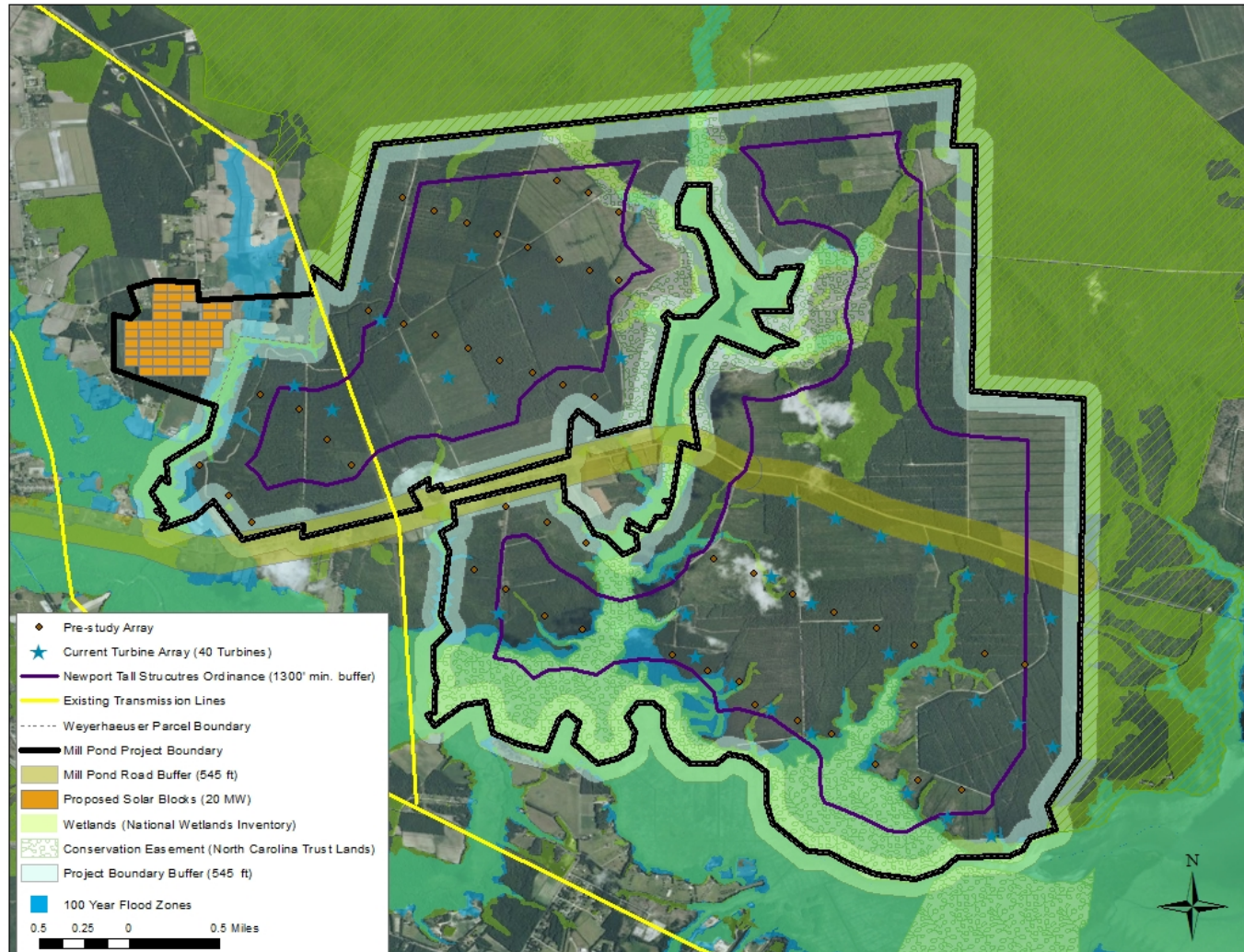
City, County, and State Review

- Department of Environment and Natural Resources
 - North Carolina HB 484 signed into law by Governor McCrory
 - Establishes procedural framework for siting and building wind farms
 - Multi-step process to identify impacts to landowners, natural resources, environment, wildlife, cultural and recreational sites, and military operations or training
- NCUC Certificate of Public Convenience and Necessity
 - Certificate obtained from the Commission that demonstrates public convenience and necessity requires construction
- Carteret County
 - Existing tall structures ordinance
 - Wind energy permit application and building permit
- Town of Newport
 - Draft Ordinance (11/17/13)
 - Conditional Use Permit

City/County Jurisdiction Map



Horizontal Constraints Map



Permitting Review

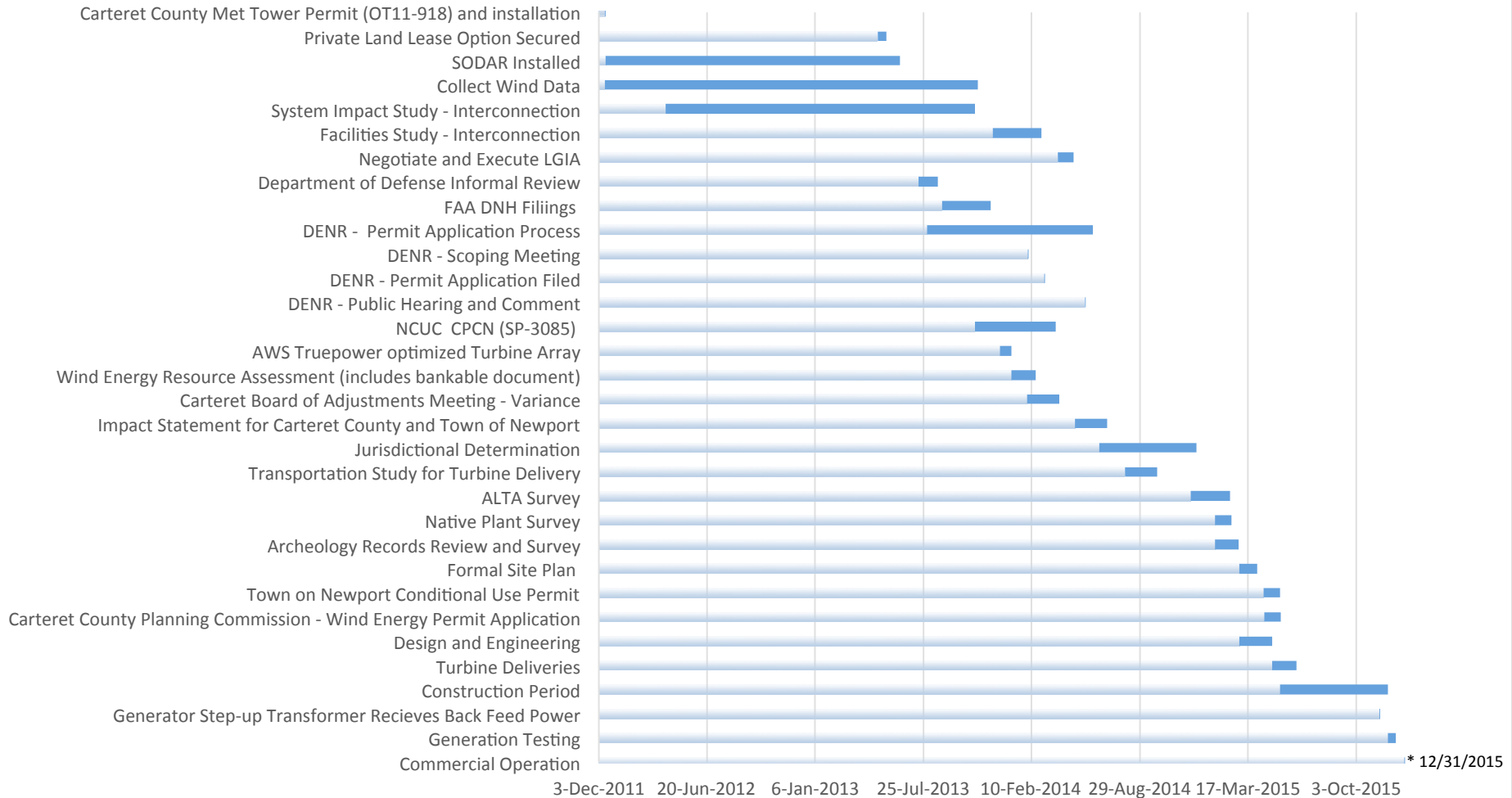
- FAA Determination of No Hazard (DNH)
 - Form 7460-1, Notice of Proposed Construction, submitted to FAA on August 28, 2013
- HB 484 Siting Permit
 - Scoping Meeting Pre-Application package submitted to N.C. DENR on August 4, 2013
- Newport City Conditional Use and Building Permits
- Carteret County Wind Energy Permit Application
- Carteret County Building Permit Section
- 404 (USACE) / Section 401 (NCDWQ)
- Coastal Area Management Act (CAMA) Permit
- NCDENR Erosion Control Permit
- Stormwater Permits (pre- and post-construction)

DENR Schedule

Milestone Stages for DENR Permit	Timeline	Date
Request Pre-application Site Evaluation Meeting	180 days prior to filing application	8/1/2013
Pre-Application Package	45 days prior to Pre-Application Site Evaluation Meeting	8/1/2013
Notice/Invitation Pre-Application Site Evaluation Meeting	21 days prior to Pre-Application Site Evaluation Meeting	9/5/2013
Pre-Application Site Evaluation Meeting	120 days prior to filing Application	11/5/2013
Scoping Meeting Request	60 days prior to filing Application	1/4/2014
Notice of Scoping Meeting	21 days prior to Scoping Meeting	1/13/2014
Scoping Meeting	30 days prior to filing Application	2/3/2014
FAA Review	Prior to filing Application	8/28/2013
DoD Informal Review	Prior to filing Application	8/21/2013
Application filed	Application	3/5/2014
Notice of Receipt of Complete Application	10 days after filing complete Application	3/15/2014
Notice of Public Hearing	45 days prior to Public Hearing	4/4/2014
Additional Notice of Public Hearing	30 days prior to Public Hearing	4/19/2014
Public Hearing and Comment	Within 75 days after filing complete Application	5/19/2014
Decision	Later of 90 days after Application (or 30 days after receipt of additional, requested information) or FAA issuance of DNH	6/3/2014

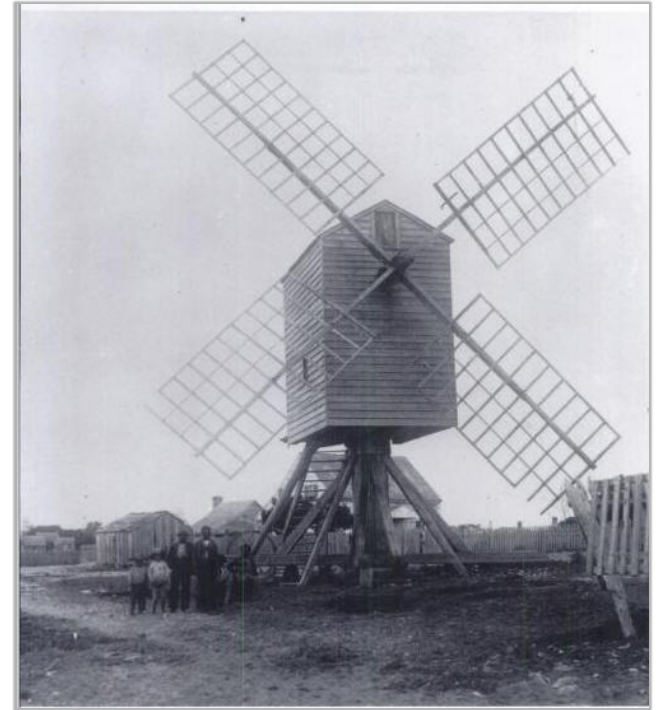
Development Schedule

Mill Pond- Gantt Chart:



Carteret County History: Tucker Littleton

- Wind power is nothing new to Carolina's Coast
- 150 windmills along the NC Coast with bulk of them located in Carteret County (65)
- Windmills used
 - wind driven power to grind corn or pump water
- Windmills replaced by gas-powered engines and electricity



Windmill at Beaufort, circa 1890, corner of present-day
Live Oak and Front
Photo from NC Division of Archives and History

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Questions?

Beaufort on the Wind

An article on coastal North Carolina windmills was published by Swansboro historian, Tucker R. Littleton, in the State Magazine in the early 1980s. He documented over 150 windmill sites and uncovered numerous, stunning windmill photographs made along North Carolina's coast. Surprisingly, most of the windmills existed in Carteret County. Northern Civil War artists were the first to document these striking landmarks. Photographers in the late 1800s and early 1900s were captivated by them. It was a dramatic sight to see the mammoth vanes slowly turning, powered by a gentle breeze. Most of the windmills were grist mills for grinding corn, placed along the shoreline for maximum wind exposure. They were built on posts so that they could be rotated to face the wind. Sail cloth draped the wind vanes, and when not in use, were furled up. A "tail pole" on the back or leeward side of the house kept the mill balanced on the post. It was also an arm to rotate the millhouse toward the wind. A ladder was also affixed to the leeward side.

