

PPRP Research Projects



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Five Research Studies



- 1. Utility-scale solar surface water study**
- 2. Transmission line compaction study**
- 3. Passive ROW revegetation study**
- 4. Rare plant study**
- 5. Solar facility wildlife study**

EGYPT ROAD SOLAR STORMWATER MONITORING



Solar Surface Water Study Purpose



- Pre- and post-construction sampling
- Assess the performance of DNR rebuilt wetlands in reducing pollutants to Maple Dam Branch and Little Blackwater River
- Assess water quality changes due to the switch from Agriculture to Solar panels

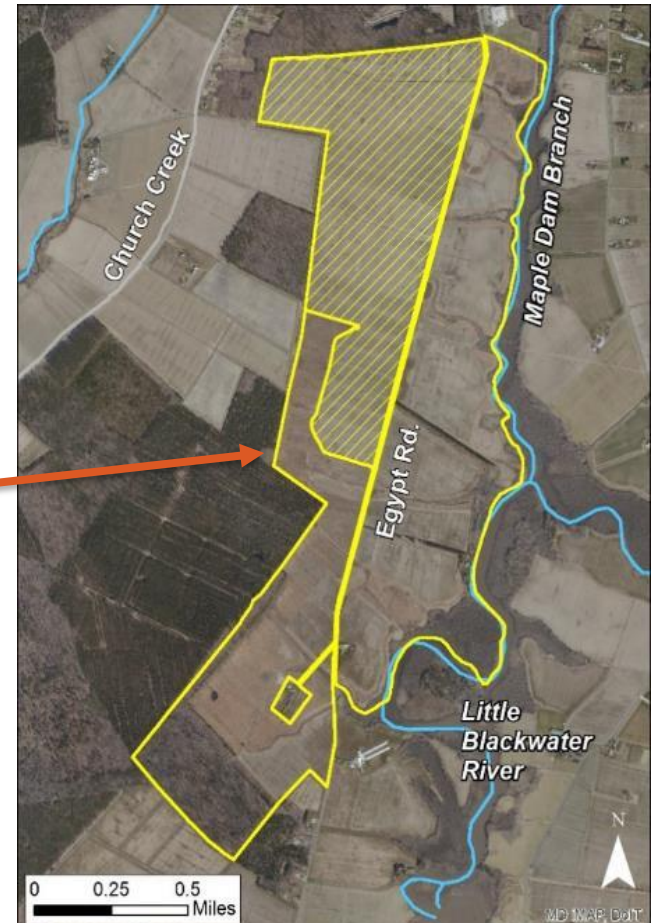
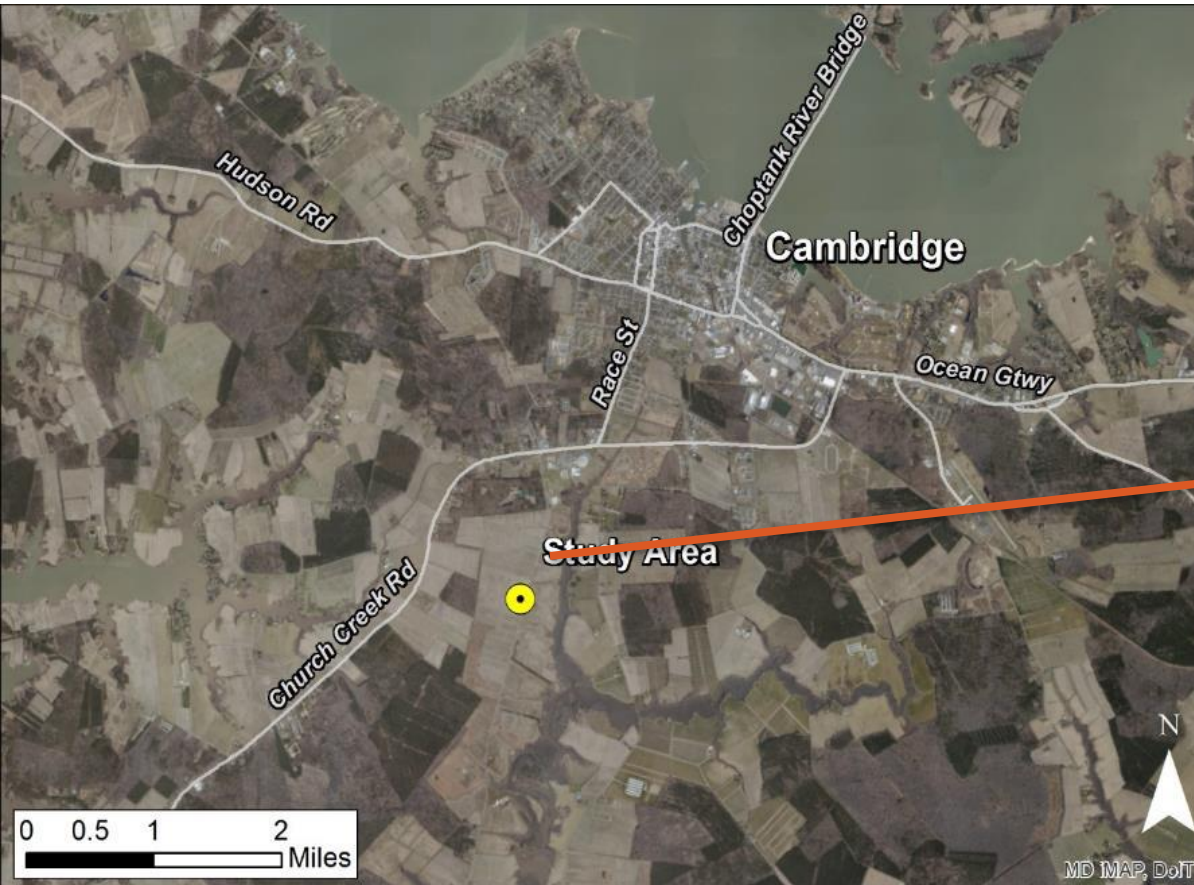


Study Area

- Dorchester County, within the City of Cambridge
- 320 acres of solar
- 728 acres of DNR land that were restored in 2008-09 to improve stormwater quality and improve wildlife habitat
 - Restored 200 acres of wetlands
 - Reforested 253 acres
 - Establish 40 acres of grassy meadow

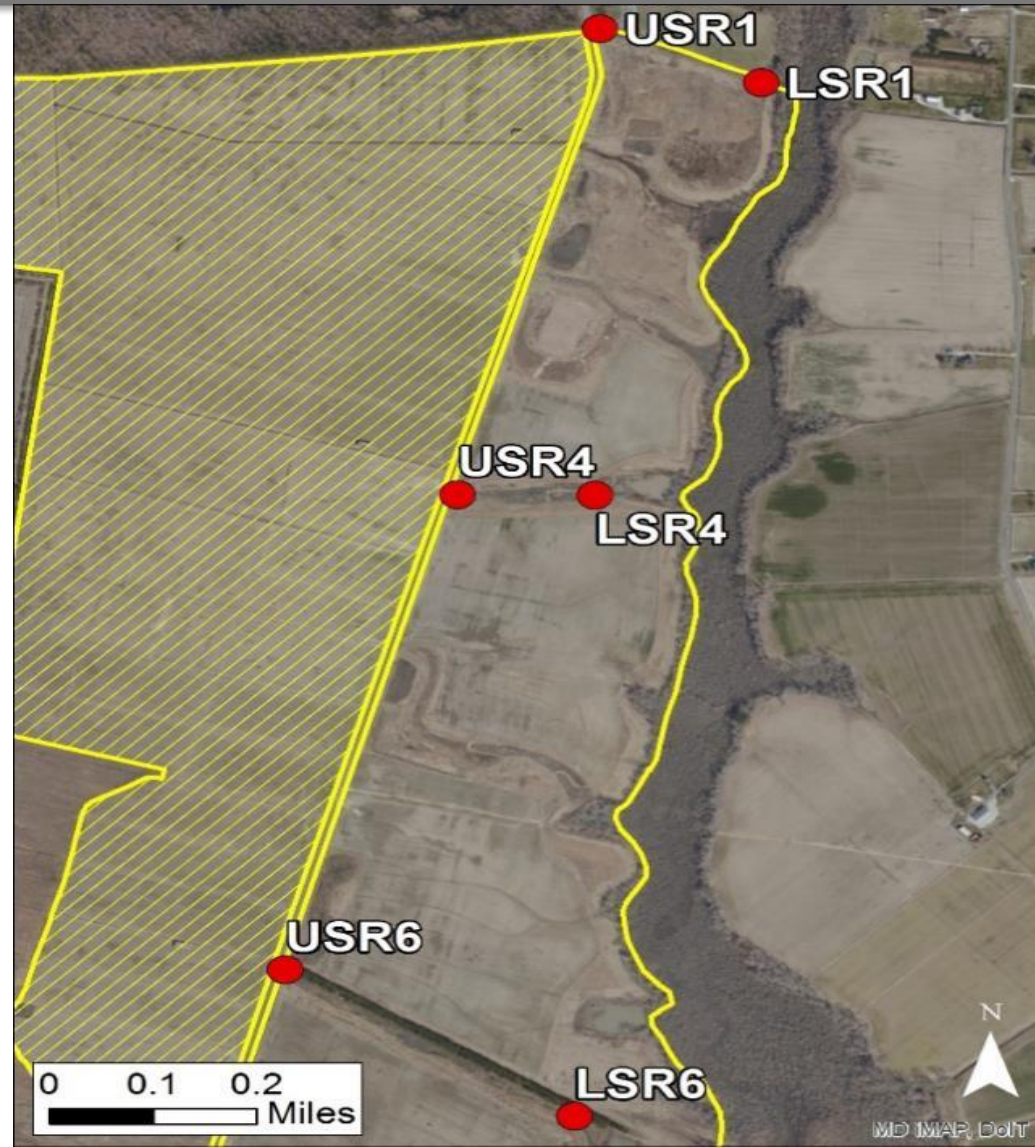


Study Area



Sample Locations

- Three ditches drain proposed solar facility
- One control – drains forested land
- Sample stations at the road and below wetlands



Monitoring Elements



- Continuous rainfall data and flow rate
- Wetland habitat survey
- Stormwater monitoring

Ammonia	Total Dissolved Phosphorus
Total Dissolved Nitrogen	Particulate Phosphorus
Particulate Nitrogen	Total Suspended Solids
Nitrite	Nitrite/Nitrate
Orthophosphate	Turbidity
Suspended Solids	

Schedule

- Solar project is currently awaiting City site plan approval
- Project is under review by Maryland Forest Service
- Pre-construction monitoring may begin late summer/early fall 2019
 - Number of pre-construction events will depend on construction timeline and weather
 - Will also monitor during and after construction



Transmission Line Compaction Study



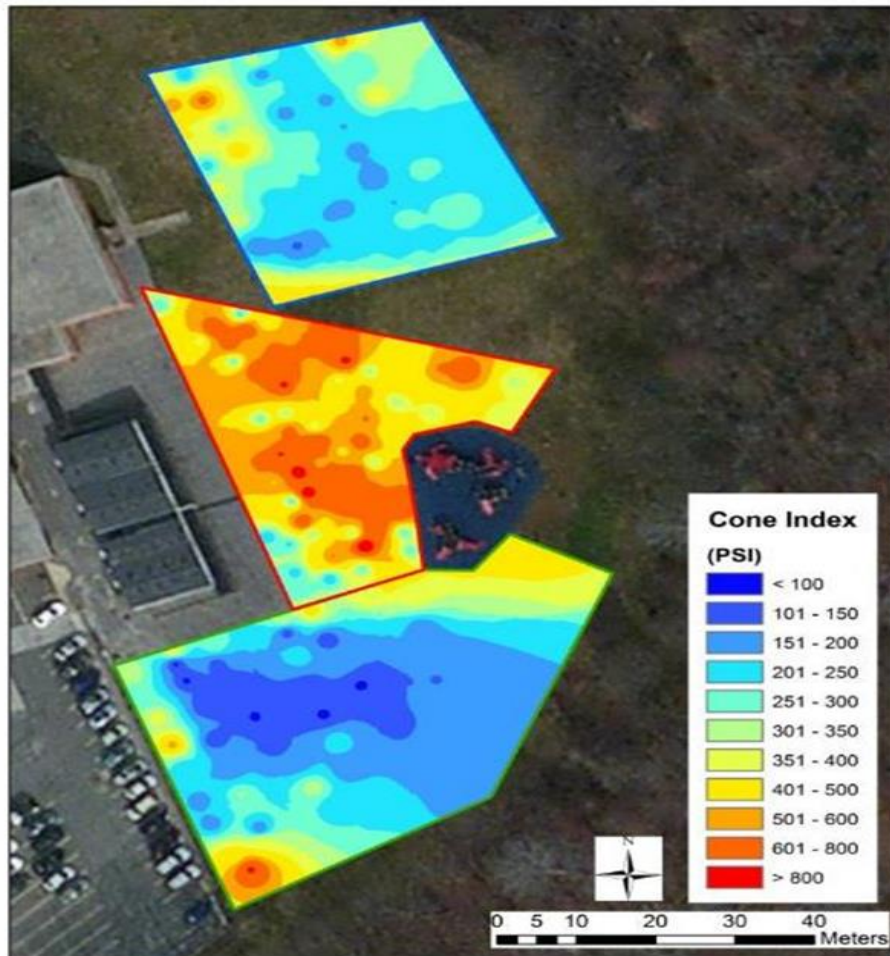
Church to Steele Transmission Line

- Investigate the efficiency of geotextile matting in reducing soil compaction in wetland areas, as well post-construction recovery times.
 - Cone index (force needed to move through soil) is a surrogate for compaction.
 - Plant roots can't grow at high cone indices (very compact soils).
 - May be able to identify artifacts of matting and heavy machinery.



Output Example

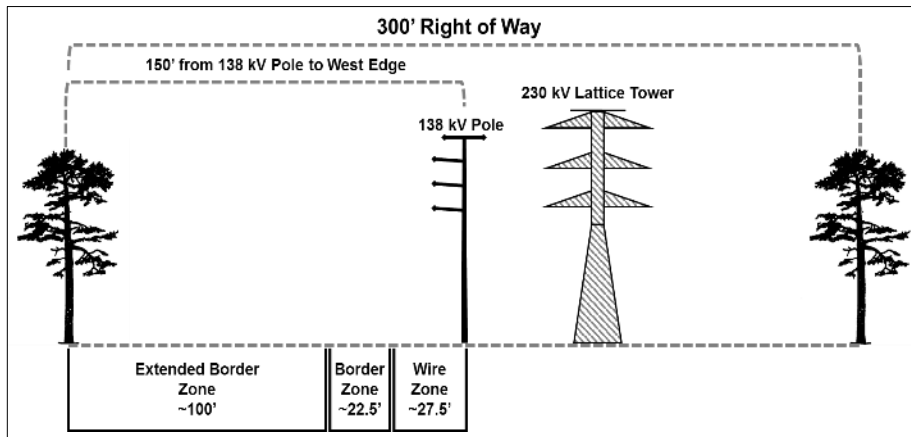
Yorkwood Penetrometer Survey- Aug. 31, 2011



- Red areas = higher compaction.
- May be able to identify matting and heavy machinery compaction

Passive ROW Revegetation

- *Church to Steele line*
- DPL has not mowed ~100 feet wide ROW
- PPRP has monitored revegetation at select portions to investigate the recovery of forested area in previously managed ROW



Rare Plant Study




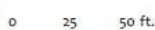

Piney Grove to Wattsville Transmission Line

- Existing rare plants on the ROW
- Will be unavoidably impacted by construction
- Coordinate a study to monitor plant diversity and composition over several years



Output from a similar Study



<ul style="list-style-type: none"> ● Proposed Structures ● Existing Structures ● Individual RTE 	<ul style="list-style-type: none"> Delmarva Power and Light Right of Way Invasive Species Area RTE Area Matting 	<ul style="list-style-type: none"> Access Road Work Area 	  1 inch = 50 feet	 An Exelon Company Piney Grove to Wattsville Vegetative Assessment and Invasive Species Survey Mapping October 2016 Page 66 of 83
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*Please note that any use of the term "observed" indicates McCormick Taylor did not officially delineate anything, but new areas/expansions were observed.

Solar Facility Wildlife Study



- Investigate the impact of utility-scale solar on wildlife presence.



- Perform bird counts, small mammal counts, pollinator counts, etc. before and after construction as well as nearby “control” sites

Cooperative Studies



Thanks:

- Solar Developers and their consultants
- DPL
- County and City staff

