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## Construction Permitting for Solar in CT

SWCS Southern New England Chapter  
December 3, 2020  
Chris Stone, P.E.  
DEEP Stormwater Section

Connecticut Department of Energy and Environmental Protection

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Slide 2

## CT STORMWATER PROGRAM Construction Stormwater Permitting

1992 – CT Authorized by EPA to develop CGP

- Reissuance coming January 2021
- Regulates construction >1 acre
- DEEP Stormwater staff inspects & enforces
- Locally approvable – Mostly private construction
  - Reviewed by Qualified Professional Engineer
- Locally exempt – Mostly state/federal
  - Reviewed by DEEP Stormwater staff
- Solar bypasses local approval – Siting Council Considered Locally exempt

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Slide 3

## CT STORMWATER PROGRAM Solar Array Construction

2013 CGP did not consider Solar Arrays

- Extremely large (>100 ac) disturbed area
- Design makes phasing difficult/impractical
- Frequently on hillsides (slopes)
- Contract timelines too short (< 1 year)
- Designs not adequate to protect large areas
- Contractors not following plans
- Lack of independence = unreliable inspections
- Soil compaction increases runoff
- Ineffective/untimely corrective actions
- Inadequate post-construction controls

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Slide 5



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Slide 6



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Slide 7

**CT STORMWATER PROGRAM**



**Solar - Sprague**



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Slide 8

**CT STORMWATER PROGRAM**



**Solar - Sprague**



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Slide 9

**CT STORMWATER PROGRAM**



**East Lyme - Basin failure**



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Slide 11



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Slide 12



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**CT STORMWATER PROGRAM**  
**Enforcement**

**Enforcement Actions Taken**

- Three major enforcement cases
- Cease and desist orders
- Consent orders
- Penalties from \$200,000 - \$575,000
- Letters of credit – \$15,000 per acre
- Two year closeout process

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**CT STORMWATER PROGRAM**  
**Solar Construction**

**How to Address Problems?**

- Review other large projects
- Review other states' procedures
  - MN, MD, VT, PA, NH
  - Minnesota solar calculator?
- NEIWPC Stormwater Workgroup
- Discussions with consultants

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**CT STORMWATER PROGRAM**  
**CGP Solar Appendix I**

**Design & Construction Measures**

- >15% considered all impervious
- Increase stabilization as slopes increase
- Wetland setbacks/buffers
- Qualified PE for routine inspections
- Inspection reports submitted to DEEP
- District conducts periodic inspections
- District conducts Post-Const/Final Inspections
- Registrant provides letter of credit

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**CT STORMWATER PROGRAM**  
**CGP Solar Appendix I**  
Post-Construction Design Measures

- Consider panel orientation for drainage pattern
- Conduct pre- & post- runoff calculations
- Maintain non-erosive velocity & volume at property line
- Site specific soil mapping
- Conduct complete hydrologic analysis
- Downgrade HSG one level in cut/fill  
- Ex. HSG A → B, HSG B → C, etc.

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**CT STORMWATER PROGRAM**  
**Helpful Links**

-  [www.ct.gov/deep/stormwater](http://www.ct.gov/deep/stormwater)
-  <https://nemo.uconn.edu/ms4/index.htm>

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