



# Connecticut Department of Energy and Environmental Protection



# CT STORMWATER PROGRAM

## Construction Stormwater Permitting



**1992 – CT Authorized by EPA to develop CGP**



**Most recent reissuance 2013**



**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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## 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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**Sprague - 200 acre clear cut**



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## Lebanon – no stabilization



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## East Lyme – erosion/stabilization failures

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**Sprague - “Finished” basin**



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## Fusion Solar - Sprague



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## Fusion Solar - Sprague

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## East Lyme – Basin failure



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**East Lyme – sediment deposits**



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**East Lyme – stream bank high flow undercutting**



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## East Lyme – Post-construction erosion

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## 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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## Solar Construction



### How to Address Problems?



Review other large projects



Review other states' procedures

- MN, MD, PA, NH

- Minnesota solar calculator?



NEIWPC Stormwater Workgroup



Discussions with consultants



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## CGP Solar Appendix I



### Design & Construction Measures



**>15% considered all impervious**



**Increase stabilization as slopes increase**



**Provide adequate spacing between rows**



**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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## 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 Hydrologic Soil Group one level

- Ex. HSG A → B, HSG B → C, etc.



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## Helpful Links



[www.ct.gov/deep/stormwater](http://www.ct.gov/deep/stormwater)



<https://nemo.uconn.edu/ms4/>



# CT STORMWATER PROGRAM

## Helpful Links

UConn MS4 Stormwater | <https://nemo.uconn.edu/ms4/>

EPA Staff | ACWA Website | Member365 Admin | Member365 | Paychex Flex-ne | CoinTracking | Phones | GoToWebinar | Frontier Dog | CitiBusiness Online | Tide

CENTER FOR LAND USE EDUCATION AND RESEARCH & CT NEMO



### Connecticut MS4 Guide

Home Basics Tasks Tools

About MS4 News NEMO CLEAR



**Public Education & Outreach**



**Public Involvement**



**Illicit Discharge Detection & Elimination**



**Construction Site Stormwater Runoff Control**



**Post-construction Stormwater Management**



**Pollution Prevention & Good Housekeeping**

This guide was developed by NEMO program staff within the UConn Center for Land Use Education and Research with funding from the Connecticut Department of Energy and Environmental Protection (DEEP). It is part of a broad outreach effort to provide guidance, training, tools and other support to help Connecticut MS4 communities and institutions comply with the revised MS4 general permit. This website is frequently updated and materials will be added throughout the 5-year project period (Fall 2016 – Fall 2021) based on deadlines for various requirements and community needs or requests.

Monitoring

Mapping

Legal Authorities

<https://nemo.uconn.edu/ms4/tasks/idde.htm>



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