



## **D & M Plan**

**LSE Coma Berenices Project  
NORCAP South  
84 Wapping Road, East Windsor, CT**

**Lodestar Energy  
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## **1.0 Facility Description**

The LSE Coma Berenices Project is an approximately 2MW AC solar farm proposed at 84 Wapping Road in East Windsor, CT. The Solar array is to be constructed on an approximately 11.2 acre site, of which 10 acres will be covered in panels. The purpose of the facility is the generation of electricity. The facility will be interconnected to the existing 23 kV overhead distribution circuit that runs along Wapping Road, which is part of Eversource's distribution system.

The project is a ground mounted solar array. The solar panels are mounted on simple fixed tilt steel structures consisting of posts, beams, rails and bracing. Vertical steel posts will be driven into the ground to a depth of approximately 8 feet to anchor the structures. The solar panels will be connected to inverters mounted on the racking structure via copper wire. The inverters will connect to electric panels, transformers, and then switchgear at the array location via underground wire. Output from the switchgear will be connected overhead, along the facility access road to the utility owned poles and metering structure at the entrance of the facility access road.

The estimated useful project life time is 20 years or more. The following list is a summary of the site features:

- 2MW AC solar array consisting of over 9,000 silicon based solar panels (modules)
- Driven post steel and aluminum racking system
- Chain link security fence surrounding the array perimeter.
- Approximately 34 string inverters
- Copper and aluminum wire
- Underground conduit at the array location
- Concrete equipment pad areas
- Gravel access road
- Metal security gates at array location.

## **2.0 Requirements for a D&M Plan**

In approving the NORCAP South Petition, the Siting Council required the preparation of a Development and Management (D&M) Plan for the project. The D&M Plan was to contain the following elements:

- Final site plans for the development of the facility;



- A phasing plan for construction activities to avoid disturbance of no more than five acres at any one time;
- An Erosion and Sedimentation Control Plan consistent with the *2002 Connecticut Guidelines for Erosion and Sedimentation Control*, as amended; and
- A Stormwater Management Plan consistent with the *2004 Connecticut Stormwater Quality Manual*, as amended.

These items are discussed in turn.

### **2.1 Final Site Plans**

Final site plans, consisting of five detailed drawings, along with a cover sheet, are included as part of this D&M Plan. Many of the drawings include information related to stormwater and sedimentation controls, and such information should be incorporated into this D&M Plan by reference.

### **2.2 Phasing Plan for construction activities**

Sheet five has been added to the final site plans. This sheet provides a more elaborate narrative description of the proposed stabilization and erosion control measures that the Project will undertake. In addition, this sheet contains a modification of the construction sequence, so that the Council may better ascertain the phasing that will be used by the Project.

In addition, modifications have been made to other construction drawings in order to better demonstrate compliance with stormwater and erosion concerns. For example, modifications to the drawings have been made to specifically delineate where additional topsoil will be needed and what the topsoil and seeding requirements will be.

In addition, drawings have been modified to provide for siltation fencing downgradient of the work area and downgradient of the proposed earthen berm that will be constructed as part of Phase 2 of the construction.

As noted above, the current condition at the site consists of bare soil that had previously been disturbed before any construction activity was to be commenced in connection with the development of this project. Therefore, the Siting Council's condition 1.b. in its approval of the Project (concerning the phasing of the project construction) presents difficulties. The exposed bare soils that exist at the project site currently are in excess of five acres in size. More importantly, all of the disturbed areas need to be regraded before they can be stabilized. In short, the work that will be done for project construction will have a beneficial effect on stormwater issues and soil erosion, but such activities cannot physically be undertaken in less than five acres plots.

### **2.3 Erosion and Sedimentation Control**

Fortunately, the site in question possesses unique features which will limit the potential for erosion and sedimentation issues as a result of disturbance. The



underlying soil at this site consists of sand and gravel, which are good for infiltration and limit runoff. In addition, the topography of the Project site works in the site's favor. The Project site is isolated within a depression that results in no discharge to surrounding wetlands or properties. All runoff from the site sheet flows to the lowest point in the depression. From there, the flow infiltrates back into the sandy soils as it has and will continue to do. There is no anticipated runoff from the Project to any sensitive receptors or to adjacent properties.

As noted in the site drawings, upon establishment of final grades, disturbed areas will receive topsoil and be seeded and mulched as soon as possible to stabilize the soils. The totality of these activities will limit sedimentation as much as feasible given the current characteristics of the site and the fact that the disturbance at the site exceeds five acres prior to the commencement of any construction activities.

In short, by pursuing these activities, and as outlined in greater detail in the attached site plans, the Project will remain in compliance with the *2002 Connecticut Guidelines for Erosion and Sedimentation Control*. In addition, it should be noted that the Project will be registered under the DEEP's General Permit for the Discharge of Stormwater and Dewatering Wastewaters Associated with Construction Activities prior to the commencement of construction. The Project will also submit a Stormwater Pollution Control Plan to DEEP as part of this process.

#### **2.4 Stormwater Management**

As stated above, the Project will register for the DEEP's General Permit for the Discharge of Stormwater and Dewatering Wastewaters Associated with Construction Activities prior to the commencement of construction and submit a Stormwater Pollution Control Plan to DEEP.

In addition, the revised site plans provide the necessary information to demonstrate the Project's compliance with the *2004 Connecticut Stormwater Quality Manual*, with a few limited exceptions. The site plans admittedly do not contain the calculations typically used to calculate peak flow reduction, groundwater recharge and pollutant reduction. However, there is a reason why such calculations are not included.

As referenced in the Petition for this project (Petition No. 1295), this site has been previously used as a gravel mine. As a result of these mining operations, the majority of the site currently consists of bare soils with little to no vegetation. The construction of the Project will actually result in an improvement of stormwater concerns.

Because the Project will establish vegetation over formerly bare soils, there will be an increase in groundwater recharge and a decrease in runoff.



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Moreover, for what runoff that will exist at the Project, that runoff will be cleaner than it has been previously due to the filtering and stabilizing characteristics associated with such vegetative cover. Given these qualitative improvements, the Project's engineering team does not believe that quantitative calculations are warranted. Thus the attached site plans, along with this explanation are sufficient to demonstrate that stormwater will be controlled at the site.