



State of Wisconsin  
Governor Tony Evers

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## Department of Agriculture, Trade and Consumer Protection

April 13, 2020

*By email*

Attorney John Mitby  
Hurley Burish, S.C.  
[jmitby@hurleyburish.com](mailto:jmitby@hurleyburish.com)

RE: Approvals, analysis, costs or requirements that county drainage boards need to consider with respect to solar farm applications in a drainage district, or that impact a drainage district

Dear Attorney Mitby:

Thank you for your February 28 and March 3, 2020 emails to the Public Service Commission, copying the Department of Agriculture, Trade and Consumer Protection (department). You ask what approvals, analysis, costs, or requirements a county drainage board (board) should consider with respect to solar farm applications within a drainage district, or outside a drainage district but with potential to impact the district. As you stated in your email, the department regulates drainage districts under Wis. Stat. ch. 88 and Wis. Admin. Code ATCP ch. 48. The *County Drainage Board Handbook* may also be referred to as a resource.<sup>1</sup>

### Approval of proposed solar farm installations

A solar farm installation could represent a construction project or drainage alteration for which a drainage board must seek departmental approval if it 1) constructs or modifies a district drain; 2) installs or modifies structures in a district drain; 3) connects a private drain to a district drain; or 4) changes formally established alignment, depth, profile, grade, capacity, or water level in a district drain. Wis. Admin. Code ATCP § 48.34. Drains are defined as “any device for the drainage of water from land or the protection of land from water, including open ditches, tiles, pipelines, pumps and levees.” Wis. Stat. § 88.01(8). Construction projects and drainage alterations shall comply with Wis. Admin. Code ATCP §§ 48.34 to 48.38.

### Analysis of proposed solar farm installations

Examples from other Wisconsin and Illinois solar farm installations demonstrate how a solar farm installation may qualify as a construction project under Wis. Admin. Code ATCP § 48.34. A solar farm could potentially modify a district drain or its structures by installing solar panel-supporting steel poles, underground distribution pipe, or underground power and communication wiring that could damage drainage tiles.<sup>2,3,4</sup> A solar farm could install structures in a district

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<sup>1</sup> “County Drainage Board Handbook,” Revised February 2018, Department of Agriculture, Trade and Consumer Protection. Available: <https://datcp.wi.gov/Documents/DrainageHandbook.pdf>.

<sup>2</sup> “Paris Solar Farm faces mammoth hurdles,” Jill Tatge-Rozell, July 9, 2019, *Kenosha News*. Available: [https://www.kenoshanews.com/news/local/paris-solar-farm-faces-mammoth-hurdles/article\\_59f0b6c1-5469-50e1-88c3-75907030ee13.html](https://www.kenoshanews.com/news/local/paris-solar-farm-faces-mammoth-hurdles/article_59f0b6c1-5469-50e1-88c3-75907030ee13.html); and “Solar farm may take root in Paris farmland,” Jill Tatge-Rozell, Dec. 17, 2018,

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drain such as culverts, access roads, and collection systems; or a solar farm may connect private drains to district drains.<sup>5</sup> Solar farm construction erosion could result in changes to formally established depth, profile, capacity or water level in a district drain. A county review of an Illinois solar farm stated, “Construction sites can experience 20 to 200 tons/acre/year of soil loss, which is greater than other land uses like agriculture averaging 4-5 tons/acre/year.”<sup>6</sup>

Landowners are required to notify the board of any proposed activity that may affect a district drain in any way, regardless of whether the land is included in the drainage district. Wis. Admin. Code ATCP § 48.40(2). Notification should be in writing and describe the proposed action. The board may require submittal of detailed plans prior to the proposed activity. The board will review the proposal at a regular board meeting. The board may approve the plans, may require that additional erosion control or sediment reduction measures be made a part of the plan pursuant to Wis. Admin. Code ATCP § 48.30(6), or may require additional information before approval of a proposal. Some proposed activities may also require pre-approval from the department, DNR, or other authorities. Additional information about changing drainage district operations may be found in chapters 4 and 6 of the *County Drainage Board Handbook*.

In its analysis of a proposed solar farm installation, the board could consider the example of an analysis of surface drainage impacts from a proposed solar farm in Champaign County, Illinois. The petitioner prepared a report titled, “Agricultural drainage considerations including modifications and maintenance recommendations for ground mounted solar projects within existing agricultural land use areas.”<sup>7</sup> The report recommended the following actions:

- 1) Onsite drainage investigations and evaluations are critical to comprehend onsite conditions and significance to other tracts. Drainage investigation map reports should include field reconnaissance and record research work in effort to identify existing drainage features including slit trenching to verify existence of drain tile. All drain tile encountered during investigation should be logged on field mapping and repaired to their original state following NRCS practices. Drain tile routes should be located by surface probing or electronic detection and field staked at <20 feet intervals. It is critical that mutual drainage tiles and surface flow systems that benefit the lands of others be carefully identified and protected. The final drain tile base map should locate all existing drain tile routes and include an attached field report containing the size, flow, system

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*Kenosha News*. Available: [https://www.kenoshanews.com/news/local/solar-farm-may-take-root-in-paris-farmland/article\\_26196035-6180-51b5-8ac1-a1bf9e354f53.html](https://www.kenoshanews.com/news/local/solar-farm-may-take-root-in-paris-farmland/article_26196035-6180-51b5-8ac1-a1bf9e354f53.html).

<sup>3</sup> “Application for Certificate of Public Convenience and Necessity Badger Hollow Solar Farm Docket #9697-CE-100,” PSC Ref#:349485. Available: [http://apps.psc.wi.gov/vs2015/ERF\\_view/viewdoc.aspx?docid=349485](http://apps.psc.wi.gov/vs2015/ERF_view/viewdoc.aspx?docid=349485).

<sup>4</sup> “Application for Certificate of Public Convenience and Necessity Badger State Solar LLC Solar Project Docket #9800-CE-100,” PSC Ref#366644. Available: [http://apps.psc.wi.gov/vs2015/ERF\\_view/viewdoc.aspx?docid=366644](http://apps.psc.wi.gov/vs2015/ERF_view/viewdoc.aspx?docid=366644).

<sup>5</sup> “Case No. 898-S-18 Supplemental Memorandum #2,” Champaign County Department of Planning & Zoning. Available: [http://www.co.champaign.il.us/CountyBoard/ZBA/2018/181115\\_Meeting/181115\\_898-S-18%20Supplemental%20Memo%202.pdf](http://www.co.champaign.il.us/CountyBoard/ZBA/2018/181115_Meeting/181115_898-S-18%20Supplemental%20Memo%202.pdf).

<sup>6</sup> “Case No. 898-S-18 Supplemental Memorandum #2,” Champaign County Department of Planning & Zoning, Attachment E, page 13 of 93. Available: [http://www.co.champaign.il.us/CountyBoard/ZBA/2018/181115\\_Meeting/181115\\_898-S-18%20Supplemental%20Memo%202.pdf](http://www.co.champaign.il.us/CountyBoard/ZBA/2018/181115_Meeting/181115_898-S-18%20Supplemental%20Memo%202.pdf).

<sup>7</sup> “Case No. 898-S-18 Supplemental Memorandum #2,” Champaign County Department of Planning & Zoning, Attachment E, page 53 of 93.

effectiveness, restriction siltation, pipe invert to ground surface depth, pipe type/quality, system classification and specific field notes.

- 2) Depending on the project site and existing drainage conditions, it will be mandatory to maintain the existing agricultural mutual drainage system which is necessary to maintain the drainage rights of the lands of others. It will be recommended to maintain local (onsite) drainage systems which will assure a stable water table and preserve the ability for continued farming after the duration of the project. It shall also be noted that poorly maintained local drainage systems during the solar project existence may cause jurisdictional wetland conditions which will alter future farm practices and the ability for correction or improvement.” The two basic methods of preserving farm drainage within the solar project are “complete avoidance and protection” and “replacement by like kind procedures.”
  - a. The “complete avoidance and protection” method of preserving farm drainage would require that all existing drainage systems be carefully evaluated for obvious failures and repair splices be implemented. Existing drain tiles which conflict with specific solar support column locations will need to be rerouted by “warp section” repair and “lined out” by surface chalk marking and protected from heavy intense surface traffic. Wide track low compaction construction equipment is mandatory. It will also be necessary to create contingency plans for access and drain tile repair during operation of the solar facility.
  - b. The “replacement by like kind procedures” method of preserving farm drainage are more intensive than avoidance and protection and requires existing clay drain tile systems to be removed and replaced with polyethylene perforated or solid dual wall pipe of same size at same depth grade and location. “Like kind” replacement drain tile which conflict with specific solar support column locations will need to be rerouted by “warp section” repair and maintain a separation at least four-feet from the support columns. All drain tiles that egress or ingress the project site shall include a six-inch online riser pipe within two-feet of the project boundary, to be used for flow verification, system identification, and pipe ventilation. All additional existing drain tile feeder laterals encountered during the “like kind” replacement process shall be evaluated and considered for replacement by the same “like kind” procedure. All replacement tile systems shall be located by GPS at state plan coordinates and included on record maps.

#### Allocation of costs related to a solar farm installation

A board may follow procedures for reassessment of benefits received by the lands where the solar farm is located, and allocating costs. Owners of land in the district may petition the board for a reassessment of benefits. Wis. Stat. § 88.46. Such a petition may be made at any time after the expiration of five years from the order of the board assessing benefits in a drainage district. Wis. Stat. § 88.46(1). Benefits include “all pecuniary advantages accruing to lands from the construction of the drain or proposed drain.” Wis. Stat. § 88.01(1). A board may assess against lands located in another drainage district. Wis. Stat. § 88.49. Reassessments shall comply with Wis. Admin. Code ATCP §§ 48.02 to 48.10. Also see chapter 6 of the *County Drainage Board Handbook*.

The board may levy assessments on drainage district members for costs of construction, repairs, and maintenance of district drains. It may also levy assessments for costs for other lawful

expenditures, such as, legal fees, court costs, or expenses of board members conducting district business. Wis. Stat. § 88.23(1).

The board may also annex land into a district. The board will assess benefits and award damages either to lands already benefited or to lands that will benefit from district operations. Wis. Stat. §§ 88.77, 88.78.

Additional potential requirements related to a solar farm installation

If a solar farm will include underground utility installation, the owner of the utility installation is required to consult with the drainage district under Wis. Stat. § 88.67.

If installation of a solar farm involves the actual or potential exercise of the powers of eminent domain, the department may require an agricultural impact statement under Wis. Stat. § 32.035.<sup>8</sup>

Installation of a solar farm in a farmland preservation zoning district imposes additional requirements. The department farmland preservation program certifies county ordinances for consistency with Wis. Stat. ch. 91.<sup>9</sup> Electric transmission or utility use may be considered as compatible use in a farmland preservation zoning district under a conditional use permit. Wis. Stat. § 91.46(4). If a solar farm is a permitted use under Wis. Stat. § 91.44(1)(f), it may also be located in a farmland preservation zoning district. In this case, the department has certified the Dane County ordinance as consistent with Wis. Stat. ch. 91 and Vienna has adopted county zoning.

The drainage board may bring all necessary actions for the collection of moneys and forfeitures belonging to a district under its jurisdiction and for the protection and preservation of all works and property thereof. Wis. Stat. § 88.21(4).

As state drainage engineer, I am available as a resource to assist the Dane County Drainage Board in reviewing any reports, plans or assessments developed for projects that have the potential to impact district operations. Please let me know if you have questions, or if you would like to set up a meeting with department staff and Public Service Commission staff to further discuss this issue. You can reach me by phone at (608) 224-4608 or you can email me at [Barton.Chapman@Wisconsin.gov](mailto:Barton.Chapman@Wisconsin.gov).

Sincerely,

Barton T. Chapman, P.E.  
State Drainage Engineer

Cc: Sheri Walz, Legal Counsel (via email)  
Matt Woodrow, P.E., Conservation Engineering Section Chief (via email)

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<sup>8</sup> *Agricultural Impact Statements: Resources*, Department of Agriculture, Trade and Consumer Protection. Available: [https://datcp.wi.gov/Pages/Programs\\_Services/AISResources.aspx](https://datcp.wi.gov/Pages/Programs_Services/AISResources.aspx).

<sup>9</sup> *Farmland Preservation Program*, Department of Agriculture, Trade and Consumer Protection. Available: [https://datcp.wi.gov/Pages/Programs\\_Services/FarmlandPreservation.aspx](https://datcp.wi.gov/Pages/Programs_Services/FarmlandPreservation.aspx).