



Solar Access & Urban Forestry in Wisconsin Laws, Conflicts and Potential Solutions

2012 Wisconsin Arborist Association Annual Conference and
Trade Show

January 31, 2012

About Energy Law Wisconsin

- **Energy Law Wisconsin is a law practice devoted to the needs of clients involved in renewable energy and energy efficiency projects, including solar, wind and biomass power generation.**
- **Clients Include:**
 - **Municipalities**
 - **Solar & Wind Developers and Installers**
 - **Utilities**
 - **Non-Profits**

About Me

(Experiences that have Shaped My Views)

- Former City Attorney for City of Sun Prairie
- Renewable Energy Development Practice since 1998.
- Attorney for many Solar Developers and Installers, including Developers of Wisconsin's first solar farm.
- Attorney for one of two Towns where Glacier Hills Wind Park (Wisconsin's Largest Wind Farm) is located
- Attorney for Utility that built what was at time the second largest wind farm east of the Mississippi River
- Currently work primarily with private sector clients, but have represented many municipalities.

Solar Access Conflicts Are on the Rise



- Number of calls for help regarding solar access conflicts I received:
 - 1991-2010: 0
 - 2011: 4
- A Google search suggests that this year's WAA Conference is the first time a Wisconsin conference has tackled the tree/solar conflict issue.

What I Will Cover

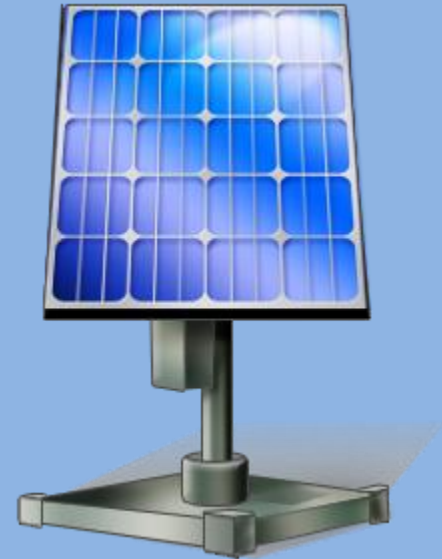
- I. Introduction: Competing Interests of Urban Forestry and Solar Energy Development
- II. Solar Basics
- III. Wisconsin's Solar/Wind Access Laws
- IV. Potential Conflicts between Solar Energy Systems and Urban Forestry Programs
- V. Potential Solutions

I. Introduction

Competing Interests of Urban Forestry and Solar Energy Development



Vs.



Tree Cover Is Good! So Is Solar Energy!

- Makes asphalt last longer
- Shading reduces electric bills.
- Reduces air pollution by absorbing CO2
- Scenic beauty
- Renewable resource
- Healthy trees enhance value of adjacent homes
- Reduces air pollution by replacing fossil fuel use
- Promotes energy Independence
- Improves grid security by distributing generation
- Renewable energy resource
- Minimal operating costs

So Why is There Conflict?

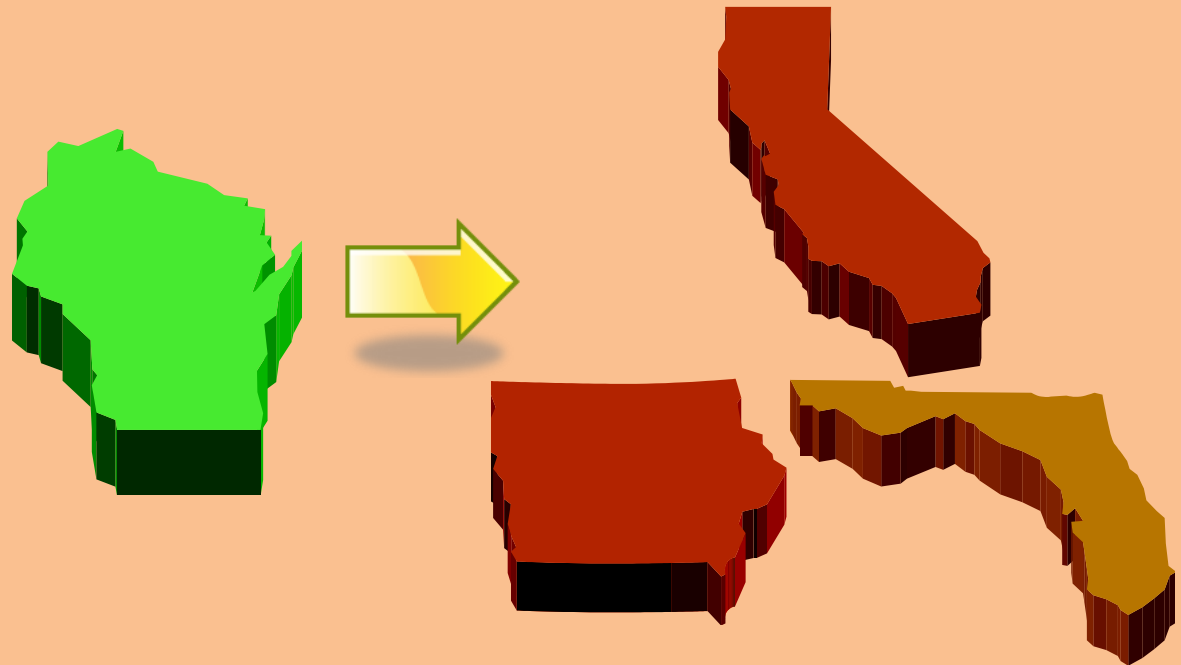
- Trees and solar energy systems compete for access to the same sun.
 - Trees grow into solar access planes.
 - One person's cherished shade tree may be another person's frustrating solar obstruction



Wisconsin is Not Alone in Facing Tree/Solar Conflict Issues

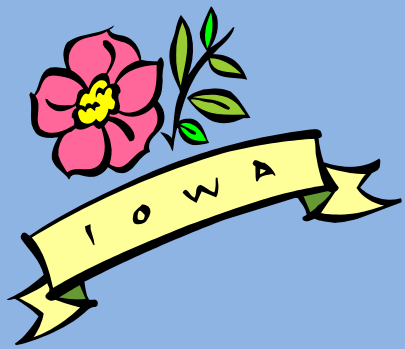
- The Issue of Conflict between Solar Access and Urban Forestry is getting lots of attention these days.
- Places where actual conflicts have arisen include:

- California
- Florida
- Iowa

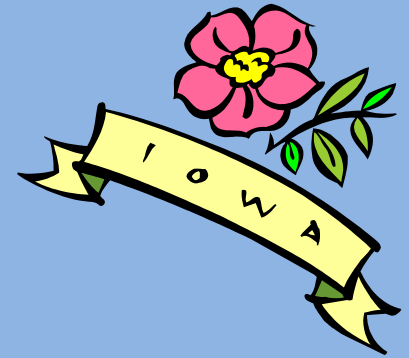


Florida

- Winter Springs, Florida (2010). Resident with trees in yard was prohibited by local tree-preservation ordinance from cutting down trees (or required to pay \$250/tree replacement fee) to permit sunlight access to new solar system that would only operate effectively if trees were removed. Conflict resolved when City permitted the tree removal and waived the fee.



Iowa (Recent News Story)



Proposed Tree Removals at Franklin Library Irk Some...

Proposed tree removals at Franklin library irk some (Des Moines, IA)

Opinions differ on whether 11 mature trees on public property should be removed to accommodate a solar energy system at the soon-to-be renovated Franklin Avenue Library on Des Moines' northwest side. "I'm not sure I'm comfortable with the idea that every time someone's putting up a solar panel we're going to set a precedent that we're going to cut down trees that are in the way of the sun," said Loyd Ogle, a member of the city's Parks and Recreation Board. Ogle last night voted against a proposal to cut down seven pine trees at Glendale Cemetery that are just behind the library at 5000 Franklin Ave. The majority of the board members approved the tree removals on the condition that a restoration plan- at the library's expense- be developed to compensate for the loss of the trees. Engineers working on the design of the library project said the trees would prevent adequate sunlight from reaching solar collectors and panels placed on the roof of the building.

More information at: http://actrees.org/site/news/newsroom/proposed_tree_removals_at_franklin_library_ir.php



California

- *California vs. Bissett*. Prosecution under Solar Shade Control Act (1978). Relevant Facts:
 - 1996 – 2001. Couple planted eight redwood trees.
 - 2001. Neighbor installed solar panels on roof.
 - Neighbor asked Couple to remove or prune trees, but they refused.
 - DA commenced prosecution of redwood owners for failing to remove or prune.

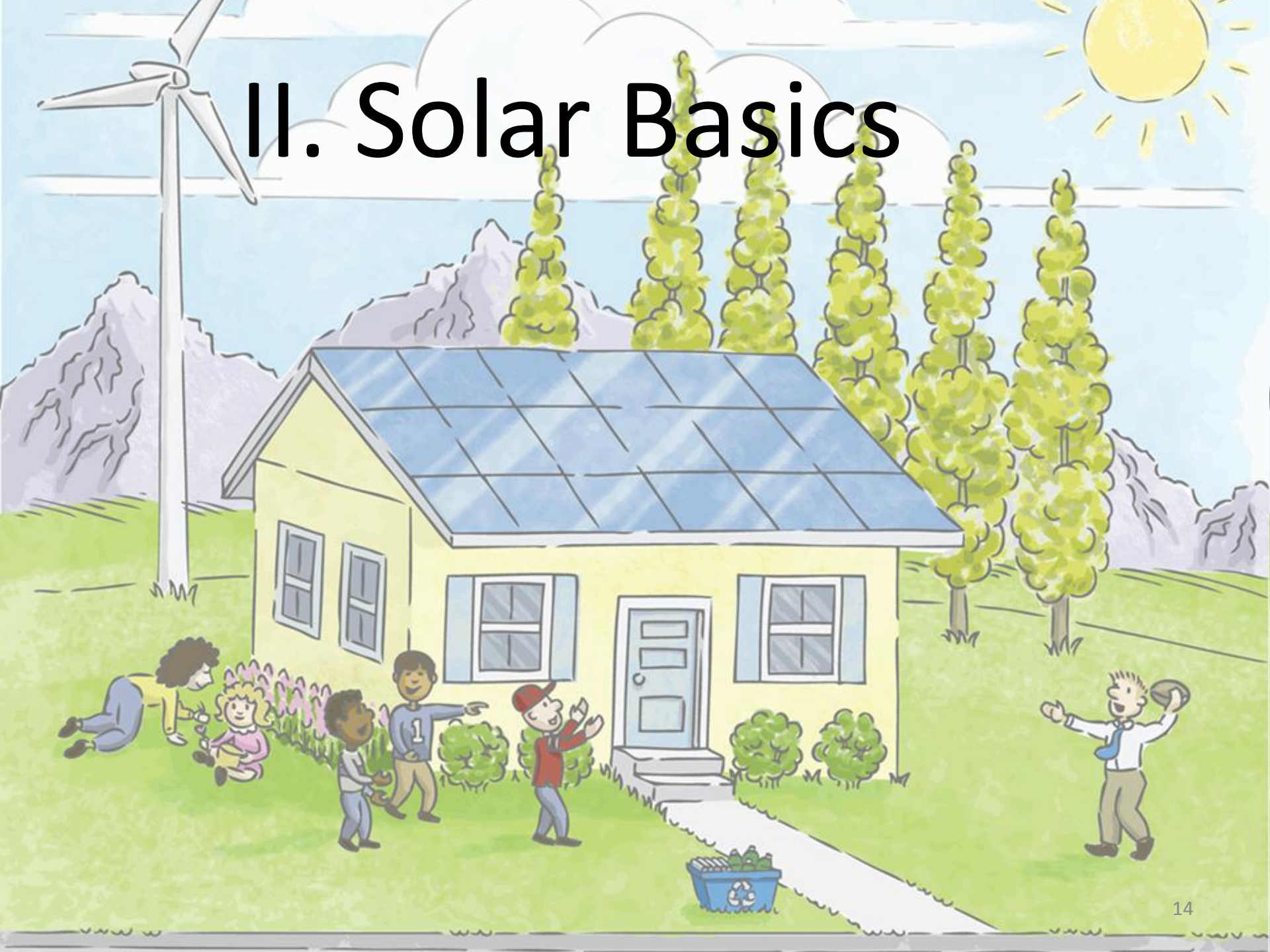


The Federal Government is also Interested in this Issue

- United States Department of Energy is studying best practices for solar in the Solar America Initiative.
- This includes Solar Access laws and local municipal practices.



II. Solar Basics



Basics of Solar Energy Systems

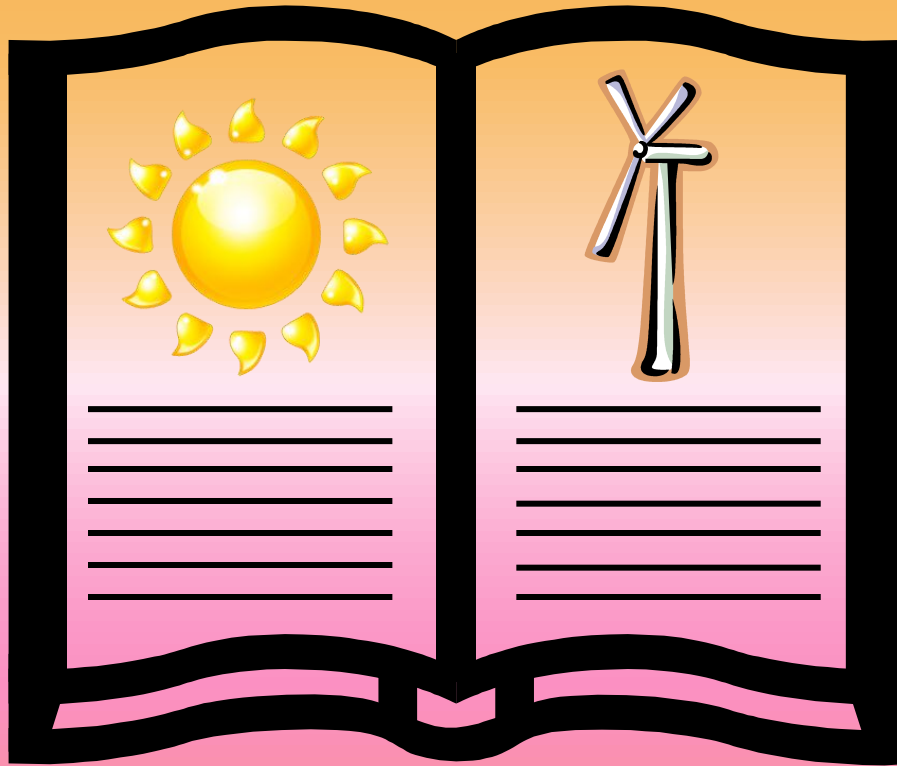
- Solar Electric System, sometimes referred to as a Photovoltaic or PV System
 - Generate electric current by “panels” that convert direct sunlight to electricity.
- Solar Thermal System, sometimes referred to as a Solar Hot Water or SHW System
 - Use sun to heat “collectors” that contain heat transferring medium. The transferred heat is used to heat water or air and replaces natural gas or electricity used for this heating purpose.



Fact or Fiction: One Type of Solar is Harmed by Shading; One Type is Not?

- **Answer:** Partly True.
- PV panels are more sensitive to shading than Solar Thermal collectors. It is not all or nothing, but rather a difference of degree.
- The reason is that Solar PV cells are connected in series. Shading cells in the series may diminish or cancel out production from the remaining cells.
- A Solar Thermal system that is shaded part of the day can sometimes still produce meaningful output. A Solar PV System experiencing similar shading will be severely compromised.

III. Wisconsin's Solar/Wind Access Laws



History of Wisconsin's Solar/Wind Access Laws (Part 1)

- Began with Wisconsin Supreme Court Decision, *Prah v. Maretti* (1982). Summary of Facts:
 - Prah had solar thermal collectors on the roof of his home.
 - He learned that Maretti planned to build home in location that would block sunlight access to his system and warned him that his plans would harm the solar system. Maretti ignored the warning and built anyway.
 - Prah sued.
 - Court held that blocking access to sunlight could create a private nuisance.
 - Case resolved by Maretti paying part of solar panel relocation cost.

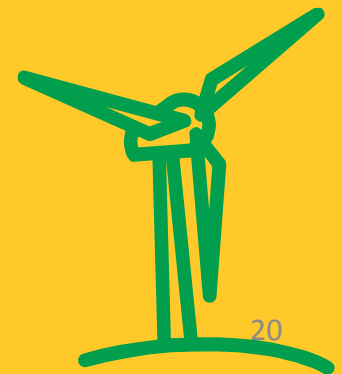


History of Wisconsin's Solar/Wind Access Laws (Part 2)

- Wisconsin Solar Access Statute adopted in 1982, after *Prah v. Maretti* decided.
- Amended in 1993 to add wind.
- Wisconsin's Solar/Wind Access law has been referred to by some commentators as the most protective state solar access law in the United States.

Three Areas Regulated by Wisconsin's Solar/Wind Rights Laws

- **The Laws Limit Local Zoning Restrictions**
 - Wis. Stat. § 66.0401 (Local Regulation of Solar and Wind Energy Systems);
 - Wis. Stat. § 66.0403 (Solar and Wind Access Permits);
- **The Laws Limit Private Land Use Restrictions**
 - Wis. Stat. § 236.292; (Certain Platted Land Restrictions Void); and
- **The Laws Protect the Right to Sun and Wind**
 - Wis. Stat. § 700.41 (Compensation for Building Obstruction of Solar and Wind Access);
 - Wis. Stat. § 844.22. (Obstruction of Solar or Wind Energy Systems = Private Nuisance)



Limitations on Local Zoning Restrictions (Wis. Stat. § 66.0401)

- Local governments (counties, towns, cities and villages) may not place any restriction on the installation or use of solar or wind energy systems unless the restriction:
 - serves to preserve or protect public health or safety
 - does not significantly increase system cost or efficiency
 - allows for an alternative system of comparable cost and efficiency
- This law has gotten most attention in the context of disputes over siting of wind turbines.
- The Wind Siting regulations that were adopted by the Public Service Commission of WI in 2010, then put on hold by the Legislature in 2011 do not apply to Solar Energy Systems.



Municipal Authority to Adopt Vegetation Trimming Ordinance (Wis. Stat. § 66.0401(2))

- A local government may enact an ordinance relating to the trimming of vegetation that blocks solar energy from a collector surface or that blocks wind from a wind energy system.
- The ordinance may include a designation of responsibility for the costs of the trimming.
- The ordinance may **not** require the trimming of vegetation that was planted by the owner or occupant of the property on which the vegetation is located before the installation of the solar or wind energy system

Solar and Wind Access Permits (Wis. Stat. § 66.0403)

- Wisconsin law also allows for a local permitting procedure for guaranteeing unobstructed access to wind or solar resources.
- A permit will not be granted if obstruction already exists or if the construction of such an obstruction is already well into the planning stages.
- Solar energy system owners are **not** required to obtain a permit under this subsection prior to installing a solar or wind energy system.
- If a permit is necessary as the result of a local zoning ordinance, the permitting burden may not deviate from Wis. Stat. § 66.0401.

Note: Village of Prairie du Sac has a solar access permit ordinance.

Limitations on Private Land Use Restrictions (Wis. Stat. § 236.292)

- This law voids all restrictions on platted land that prevent or unduly restrict the construction or operation of solar and wind energy systems.
- This law effectively prohibits private land use controls (e.g., deed restrictions, homeowner association regulations, easements, etc.) from preventing the installation and operation of wind and solar energy systems.



Solar and Wind Access (Wis. Stat. § 700.41)

Promotes the use of solar and wind energy by allowing an owner of an active or passive solar energy system or a wind energy system to receive compensation for an obstruction of solar energy by a structure outside a **neighbor's** building envelope as defined by zoning restrictions in effect at the time the solar collector or wind energy system was installed.



Solar and Wind Access (Wis. Stat. § 700.41)

- No reported cases interpreting this law.
- “Neighbor” is not defined.
- “Obstruction” is defined in terms of a “building” or “structure” so trees may not be covered.
- Poles, wires, TV antennas and radio antennas are excluded from definition of Obstruction.

Obstruction of Solar or Wind Energy Systems (Wis. Stat. § 844.22)

- Any structure that is constructed **or vegetative growth that occurs** on adjoining or nearby property after a solar energy system...or a wind energy system...is installed on any property, that interferes with the functioning of the solar or wind energy system, is considered to be a private nuisance.

More on § 844.22

- Added by 1993 Wis. Act 414, a comprehensive bill dealing with energy efficiency and renewable energy.
- Explanatory note in the legislation stated:
“This bill codifies the decision in Prah v. Maretti and expands the result of that case to cover wind energy systems, as well as solar energy systems, and to cover vegetation as well as structures. The effect of this proposal is to provide a remedy to prevent interference with solar collectors and wind energy systems, even if none of the other types of statutory protections are available.”

How a Tree on “Public” Property becomes a “Private” Nuisance

- “Public” and “Private” describe the nature of the property rights being interfered with, not the nature of the property or person causing the interference.
 - A nuisance exists when a condition or activity unduly interferes with the private use and enjoyment of land or a public right.
 - If the interest invaded is the private use and enjoyment of land, then the nuisance is a private nuisance.
 - If the condition or activity interferes with a public right or the use and enjoyment of public space, the nuisance is a public nuisance.

See, for example, Physicians Plus Insurance Corp. v. Midwest Mutual Insurance Co., 2002 WI 80, ¶21, 254 Wis. 2d 77, 646 N.W.2d 777

But Doesn't a Municipality Have Immunity from Nuisance Claims?

- No. Wisconsin law has been to the contrary going all the way back to 1872:

The general rule of law is that a municipal corporation has no more right to erect and maintain a nuisance than a private individual possesses, and an action may be maintained against such corporation for injuries occasioned by a nuisance for which it is responsible, in any case in which, under like circumstances, an action could be maintained against an individual.

Harper v. City of Milwaukee, 30 Wis. 365, 372 (1872).

Remedies for Private Nuisance

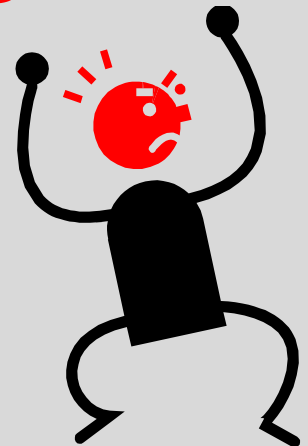
- Abatement. An order to the person causing the private nuisance to stop the offending activity.
- Money Damages (Sometimes).

See, e.g. *Lopardo v. Fleming Companies, Inc* (7th Circuit, 1996)

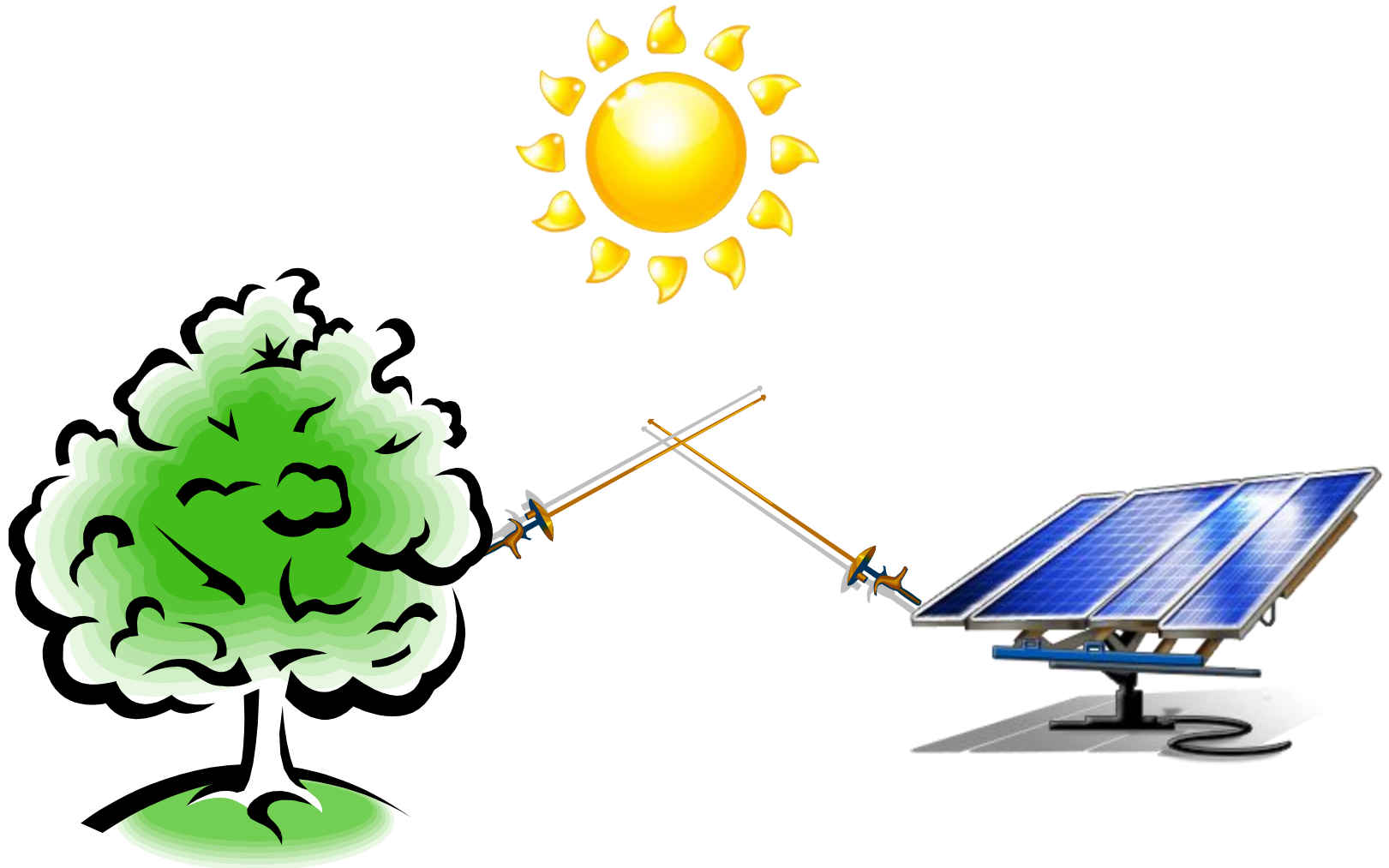
You're telling me that if I plant my city tree first and if many years later, it grows to block a solar energy system that wasn't even installed until years after I planted my tree, **that I'm the one causing a nuisance!**



ARE YOU SERIOUS???

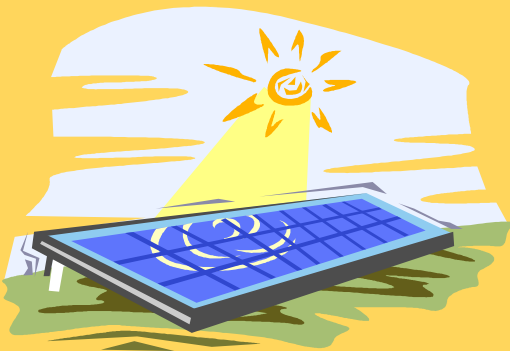


IV. Potential Conflicts between Solar Energy Systems and Urban Forestry Programs



Solar Energy System Owner Concerns

- Get Best Return on Very Significant Investment.
- Maximize Production and Efficiency of Solar Energy System by Avoiding Shading of System that interferes with system performance.



Urban Forestry Concerns

- Encourage Tree Planting and Canopy Cover
- Use trees to make livable communities
- Get Most Out of Precious Midwestern Resource.



Practical Problems for Urban Foresters

- **Problem #1:** My municipality is sending out mixed policy messages – Promote Energy Efficiency Gained from Tree Shading and Promote Renewable Energy Generation from Solar Energy Systems. A proposed new development claims to want to encourage both. **Which message should I listen to?**
- **Problem #2:** I can't do my job without making somebody mad. Typical Complaints:
 - **PV System Owner:** How come the Local Utility can prune City trees to protect its energy system, but I can't prune City trees to protect my solar panels?
 - **PV System Neighbor:** Don't prune that tree. I love/need the shade it provides!

More Problems for Urban Foresters

- **Problem #3:** My job is to look out for the whole Community and my City even assesses developers for the cost of putting in street trees for everyone's benefit. Isn't giving solar favored treatment over trees contrary to that goal?
- **Problem #4:** My municipality wants me to plant optimal trees on street medians near south-facing roofs. What do I do -- plant limited growth trees or plant tall growing trees and take risk that I will have to have to keep topping them, if area building owners install solar?

What if I have to replace a fully grown tree that was already in the solar access plane?

- Does my tree lose its prior growth rights because it was a victim of Dutch Elm Disease or the Emerald Ash Borer and had to be removed?
- Can I maintain my tree's prior growth rights by replacing it with a same size tree (if even possible)?

ANSWER: UNCLEAR

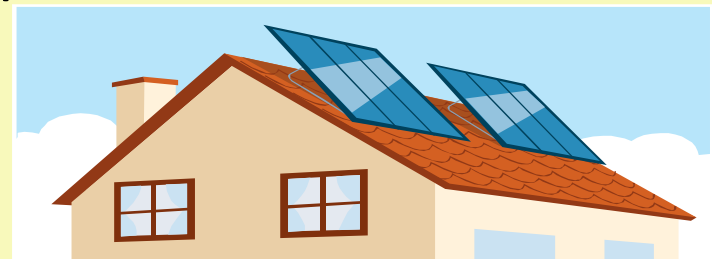


How Broad is the Phrase “Vegetative Growth that Occurs”?

- Does it cover:
 - Only trees below the roof line that grow into the solar access plane?
 - Trees already in the solar access plane that grow thicker?
 - Winter trees that grow leaves by Summer?

The California Experience: Conflict followed by Legislative Change

- California has a “Solar Shade Control Act”
 - Adopted in 1978
- Act was little noticed for roughly 20 years.
- Then Conflicts Came to a Head with a case.
 - Prosecution of Homeowner who planted redwoods that grew to block access to solar PV system next door.
 - There have been subsequent similar prosecutions
- Changes to Law (Effective January 1, 2009)
 - Trees and Shrubs planted prior to installation of solar panels are now exempt.



The California Experience:

Conflict followed by Legislative Change

Other Exemptions:

- Future growth of the tree, as well as its replacement if the tree dies or is removed.
- Publicly-owned trees
- Trees protected by municipal tree ordinance.

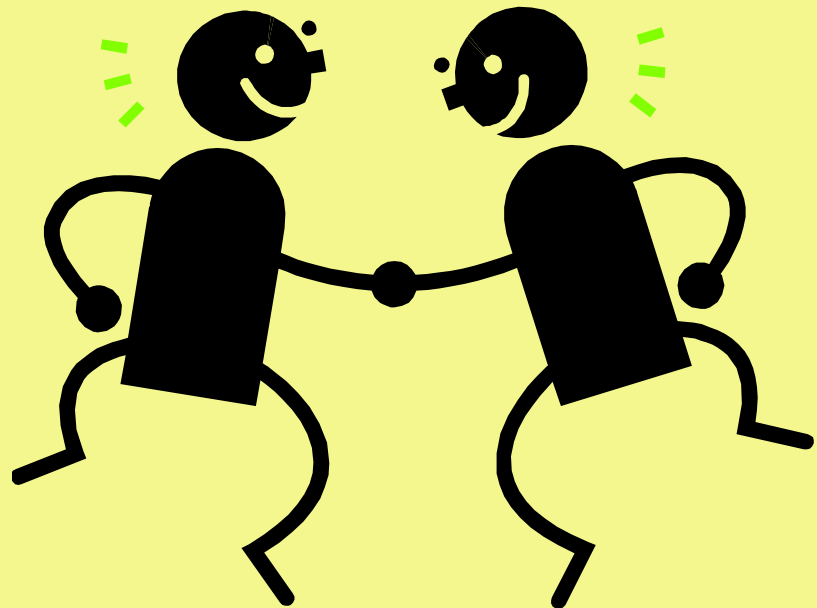
Other Changes Made to California Law:

- Changed the remedy of a violation from a public nuisance to a private nuisance. State no longer prosecutes, civil matter not adjudicated by local government
- Definition of solar collector was changed to include PV devices on the ground.
- No protection for solar energy system if it was designed to produce more than the host building's electricity demand.

V. Potential Solutions to Conflicts

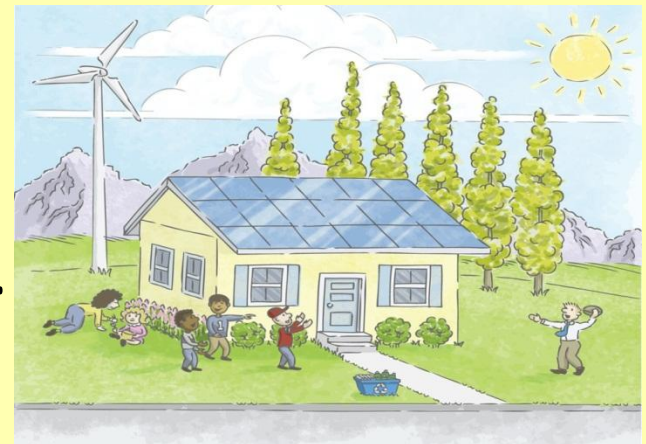
“Our tree canopy is too important to sacrifice for renewable, distributed energy—trees and solar energy can work together.”

Dan Staley



Potential Solution #1: Better Coordinated Urban Planning

- Develop a coordinated planning process that minimizes potential conflicts between renewable energy and sensible urban forestry practices.
 - Lay out neighborhoods and developments to minimize conflict.
 - Get input from both solar and urban foresters as part of Neighborhood and Development planning process.
- Focus on Long Term
 - Home may be standing in 2100.
 - Less fossil fuel, more solar then.

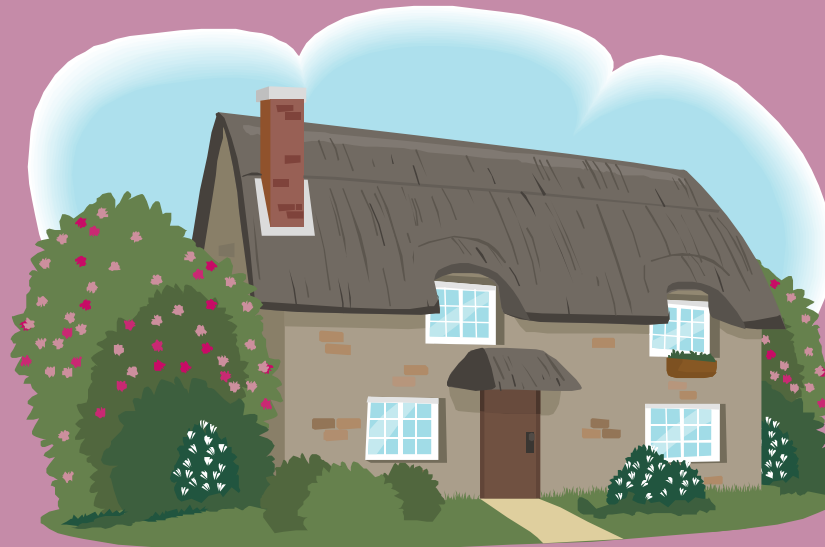


City of Madison Subdivision Ordinance (§ 16.23(8) (g))

- Example of municipal ordinance that makes attempt to plan to minimize potential conflict.
“The installation of street trees shall take into account solar access objectives in the selection of tree species and planting location so as to minimize future shading of the most southerly side of contemplated building locations.”

Potential Solution #2: Planning Software that Minimizes Solar/Tree Conflict

- Software applications are becoming available emerge that enables planners, developers and homeowners to model growth and future shading of trees upon adjacent homes.



Potential Solution #3

Create Local Solar Advisory Committee

- Examples:
 - Milwaukee Shines (Multi-Stakeholder Committee in Milwaukee, Wisconsin organized by City of Milwaukee to address barriers to Solar Development). Activities include:
 - Created solar installation baseline
 - City staff working with WE Energies, MREA and Focus on Energy, among other groups
 - Solar Houston Initiative (Houston, Texas)

Potential Solution #4

Community Education

- Example: Madison, Wisconsin's MADISUN Program offers a Publication titled *"Solar PV Decision-making Guide for Madison property owners (April, 2011)"*
 - Discusses problems shading causes for Solar PV Systems.
 - Also stresses benefits of mature trees and advises homeowners to undertake sensible planning to avoid shading.

Potential Solution #5

Creative Local Ordinances

- Solar Access Permit Systems (Ashland, Oregon & Boulder, Colorado).
- Create Solar Energy System Registry (County of Santa Cruz, California).
- Set Standards for New Construction (Sacramento, California).
- Solar Zoning or Solar Overlay Districts, to encourage solar development in areas that are well suited for it (Recommended in Seattle, WA)
- Requiring Solar Access analysis as part of Building Review (Santa Barbara, California)

Potential Solution #6: Make California-Like Changes to Wisconsin Solar Access Law

- Allowing a Solar Energy System owner to claim private nuisance for trees that were planted many years before the solar energy system was installed invites conflict.
- The California Statute was amended in 2008 to add the following exemptions that might promote better cooperative planning:
 - trees or shrubs growing prior to the installation of the solar energy system;
 - replacement of existing trees when they die or are removed for health and safety reasons.

Potential Solution #7: Adopt Federal Law like Proposed Energy Conservation through Trees Act (H.R. 2095)

Energy Conservation through Trees Act

ACT staff and board members worked closely with Congresswoman Doris Matsui to develop the Energy Conservation through Trees Act, which would encourage utility companies to partner with local nonprofit tree planting organizations to plant trees to reduce residential energy demand. The purpose of the legislation is to help homeowners lower their electric bills (and help utilities lower their peak load demand) by reducing residential energy demand caused by the need to run air conditioners and heaters at a high level. The legislation requires the use of science-based tree-siting guidelines to ensure that trees are not planted in locations that will disrupt pre-existing infrastructure, block solar panels and wind turbines, or damage power lines. Utilities that receive assistance would be required to partner with nonprofit tree-planting organizations or other municipal infrastructure groups to run the technical side of the program. These nonprofit groups are meant to serve as tree-planting experts to complement utilities' financial interest in lowering peak energy demand and reducing consumption. More information at:

http://actrees.org/site/what_we_do/public_policy/energy_climate_water/american_clean_energy_and_security_act_of_200.php

Bottom Line

Features of Workable Solution

- Protects Investments: Solar Energy Systems and Trees
- Offers Predictability and Certainty in Planning Process
- Easy to Understand
- Simple to Administer



Questions:

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