SOLAR RIGHTS

SARA C. BRONIN*

The rights to access and to harness the rays of the sun – solar rights – are extremely valuable. These rights can determine whether and how an individual can take advantage of the sun's light, warmth, or energy, and they can have significant economic consequences. Accordingly, for at least two thousand years, people have attempted to assign solar rights in a fair and efficient manner.

In the United States, attempts to assign solar rights have fallen short. A quarter century ago, numerous American legal scholars debated this deficiency. They agreed that this country lacked a coherent legal framework for the treatment of solar rights, especially given the emergence of solar collector technology that could transform solar energy into thermal, chemical, or electrical energy. These scholars proposed several legal regimes that they believed would clarify solar rights and facilitate increased solar collector use.

Very little has changed since this debate about solar rights began. Although some jurisdictions have experimented with scholars' suggestions, reforms have not been comprehensive, and solar rights are guaranteed in very few places. At least in part because of the muddled legal regime, and despite numerous

* Associate Professor of Law, University of Connecticut School of Law. I would like to thank Professors Jill Anderson, Eric Bluemel, Elizabeth Burleson, Peter Byrne, Nestor Davidson, K.K. DuVivier, Alexandra Klass, Ruth Mason, Jim Salzman, Peter Siegelman, and Kurt Strasser, and the faculties of Arizona State University, University of Connecticut, and University of Denver for their help in shaping this piece.

technological advances that have reduced the cost of solar collectors, only one percent of our nation's energy currently comes from the sun.

In this context, this Article aims to reinvigorate and refocus the scholarly debate about solar rights. The Article first explains why solar rights are valuable to both individuals and to the country as a whole. It then analyzes three methods by which solar rights can be allocated: express agreements between property owners, governmental permit systems or zoning ordinances, and court assignments that result from litigation. Although this Article analyzes the concerns of both solar rights seekers and possible burdened parties with respect to current law, it does not fully address the possible solution to the problem of solar rights. Instead, this Article sets the stage for a second piece, Modern Lights, *simultaneously being published in the* University of Colorado Law Review.

INTRODUCTION

The rights to access and to harness the rays of the sun – solar rights – have significant economic consequences. Solar rights dictate whether a property owner can grow crops, illuminate her space without electricity, dry wet clothes, reap the health benefits of natural light, and, perhaps most significantly in our modern era, operate solar collectors – devices used to transform solar energy into thermal, chemical, or electrical energy.[1]

For at least two thousand years, people have attempted to assign solar rights in a fair and efficient manner.[2] Ancient Romans protected the right to solar heat and light through prescriptive easements, government allocations, and court decrees.[3] Ancient Greeks protected solar rights through rigid land

[1] *See, e.g.*, NEB. REV. STAT. ANN. § 66-904 (West 2003) (defining a solar energy collector to mean "a device, structure, or part of a device or structure which is used primarily to transform solar energy into thermal, chemical, or electrical energy"); John Lungren, *Solar Entitlement: A Proposed Legislative Model*, 4 J. ENERGY L. & POL'Y 171, 186 (1983) (proposing a model statute and defining a "solar energy collector" to be "a structure or portion of a structure which is used to convert solar energy into thermal, chemical, or electrical energy, including any space or structural components specifically designed to retain heat derived from solar energy and any mechanism specifically maintained to produce photosynthetic products"). The term includes such devices as hot water heaters, photovoltaic panels, devices for heating and cooling, domestic hot water systems, pumps, and devices for supplying energy for commercial, industrial, and agriculture processes.

[2] *See* Melvin M. Eisenstadt, *Access to Solar Energy: The Problem and Its Current Status*, 22 NAT. RESOURCES J. 21, 21 (1982) ("For at least the past 2,000 years, man has heated buildings with solar energy and designed such buildings with access to the needed sunshine.").

[3] GAIL BOYER HAYES, SOLAR ACCESS LAW: PROTECTING ACCESS TO SUNLIGHT FOR SOLAR ENERGY SYSTEMS 14 (1979) (describing an inscription on the Temple of Apollo at Pompeii, which states that the local government had to compensate property owners because a temple blocked their sunlight); Borimir Jordan & John Perlin, *Solar Energy Use and Litigation in*

planning schemes that oriented streets and buildings to take advantage of light and passive solar heat.[4] More recent rules – such as the so-called "ancient lights" rule established in medieval England or the permit system currently used by Japan – have continued to refine the concept of solar rights.[5] Each regime has recognized that sunlight, in reaching any one parcel, may travel across multiple parcels, and its route may vary throughout the day and from day to day. By necessity, then, the creation of solar rights implicates the rights of neighbors, both immediate and further afield.

In the United States, solar rights have fallen short, either because they do not exist or because, where they do exist, they provide inadequate protection to the holders of the rights. In the late 1970s and early 1980s, numerous American legal scholars debated these deficiencies. These commentators agreed that the absence of a coherent legal framework for the treatment of solar rights had negative consequences, chief among which was the dampening effect on the use of solar collectors. In their view, solar collectors produced an environmentally-friendly, inexhaustible, and economically secure alternative to carbon-based fuels.[6] The law, they argued, should encourage the proliferation of clean energy by providing rights to solar collector owners. These scholars advanced several proposals to change the law to meet this goal. Their

Ancient Times, 1 SOLAR L. REP. 583, 592-93 (1979) (observing that "Roman sun rooms were common enough to provoke disputes over solar rights and judicial decrees to settle them"); Stephen Christopher Unger, *Ancient Lights in Wrigleyville: An Argument for the Unobstructed View of a National Pastime*, 38 IND. L. REV. 533, 548 (2005) (observing that "Roman law enforced solar rights as an important source of light and heat").

[4] Jordan & Perlin, *supra* note 3, at 585-86 (asserting that Greek planning considered solar energy as early as the fifth century B.C.E. and describing a Greek city whose houses were laid out in a north-south orientation designed to take advantage of passive solar heating). Greeks did not limit their expertise in solar design to buildings; Archimedes used a solar concentrator to burn enemy ships. Donald N. Zillman & Raymond Deeny, *Legal Aspects of Solar Energy Development*, 1976 ARIZ. ST. L.J. 25, 26.

[5] *See* PATRICK J. DALTON, LAND LAW 189 (1972) (describing how English courts applied the "ancient lights" concept of negative easements to light and air rights by the seventeenth century); Gail Feingold Takagi, *Designs on Sunshine: Solar Access in the United States and Japan*, 10 CONN. L. REV. 123, 146 (1977) (describing Japan's motivation for defining solar rights to be "securing sunlight for health, with energy conservation of marginal relevance").

[6] W. Wade Berryhill & William H. Parcell III, *Guaranteeing Solar Access in Virginia*, 13 U. RICH. L. REV. 423, 425 (1979); David L. Bersohn, *Securing Solar Energy Rights: Easements, Nuisance, or Zoning?*, 3 COLUM. J. ENVTL. L. 112, 112 (1976-1977) (observing that solar energy, unlike traditional forms of energy, "does not cause land surface spoliation, black lung and the smog-related respiratory and cardiovascular diseases, oily seas, or thermal or radiological pollution"); *see also* Zillman & Deeny, *supra* note 4, at 25 (describing the effects of the 1973 oil embargo, such as long lines at the filling stations, as well as fears about nuclear power). Bersohn also recognizes some of the drawbacks of solar energy: "Central solar power generation involves extensive land use preemption, and might cause local aquatic thermal pollution and disrupt atmospheric circulation patterns." Bersohn, *supra*, at 113.

proposals ranged from revisions to existing statutes, to the use of nuisance suits to bar neighbors from blocking one another's light, to the creation of permit systems or zoning ordinances which administratively allocate solar rights.

By the mid-1980s, one commentator observed that "[a]lthough these alternatives have been the subject of arguments for years, a clear policy has not yet emerged."[7] To date, despite scholars' efforts, progress with respect to the clarification and efficient allocation of solar rights has been slow. A few jurisdictions have experimented with their suggestions, but reforms have not been comprehensive, and solar rights are guaranteed in very few jurisdictions. At least in part because of the muddled legal regime, and despite numerous technological advances that have reduced the cost of solar collectors, only one percent of our nation's energy currently comes from the sun.[8] Many communities, reeling from record-high oil prices in 2008, have expressed an interest in prioritizing solar energy, but the tension between the legal system and solar collector usage has not been resolved.[9]

In the context of an increasingly urgent debate over global warming and the need to reduce America's dependence on carbon-based fuels, this Article aims to reinvigorate the scholarly debate about solar rights, with a focus on the solar collector as one important use. Part I explains why we should reinvigorate the debate: solar access is valuable not just to individuals, but also to the country as a whole. Part I also argues that we need individual, as opposed to communal, solar rights. The Article goes on to present three primary methods by which solar rights are currently allocated to and among individuals: express agreements between property owners, governmental allocations, and court assignments. In analyzing each method, this Article focuses on two concepts: first, efficiency, defined as the extent to which the rights are in the end allocated to those who value them most and that proper compensation is paid to those who are hurt by such allocation; second, transaction costs, which are the administrative, monitoring, and/or information costs incurred during an exchange of a right, beyond the cost of the right itself. Although these two

[7] Lungren, *supra* note 1, at 172 ("Solar access is not a new legal issue. Minimal access protection has been sought through application of land use controls, nuisance doctrine, prior appropriation, easements, and restrictive covenants.").

[8] Yuliya Chernova, *Shedding Light on Solar*, WALL ST. J., June 30, 2008, at R6 ("[D]espite subsidies that have helped push up demand, solar power still accounts for less than 1% of power generation in the U.S. That's because even with subsidies, solar power remains expensive compared with energy based on traditional fuels like coal and natural gas.").

[9] *See, e.g.*, SCOTT ANDERS, KEVIN GRIGSBY & CAROLYN ADI KUDUK, UNIV. OF SAN DIEGO SCH. OF LAW, CALIFORNIA'S SOLAR SHADE CONTROL ACT: A REVIEW OF THE STATUTES AND RELEVANT CASES 1 (2007) (documenting the goal of the California Solar Initiative to multiply the photovoltaic megawatt production by nearly seventeen times and asserting that "[s]uch a drastic increase in the number of operating photovoltaic systems in addition to the anticipated increase in solar water heaters could multiply solar access questions arising from these installations").

concepts clarify the shortcomings of existing solar rights, increasing efficiency and reducing transaction costs may not be the only goals for an ideal future solar rights regime, a topic that is considered in a companion piece to this Article. Attention is also paid to which party – the benefited party or the burdened party – has the initial entitlement under each regime, as the assignment of the initial entitlement can influence both efficiency and transaction costs.[10]

Express agreements, such as express easements, covenants, and tenancy arrangements, are discussed in Part II. Through an express agreement, two or more property owners can agree to a method of allocating solar rights, provided that the government does not prohibit such methods, or, even better, expressly allows them. The initial entitlement in these cases is, by default, in the hands of the burdened party or, when a solar collector is involved, in the hands of the potential obstructer. From an efficiency standpoint, these arrangements are perhaps the most effective means of allocation. In the ideal case, they involve parties with some knowledge about the rights they have (and choose to relinquish) or receive (and choose to pay for). These parties bargain based on the values they respectively place on the receipt or relinquishment of that right. Unfortunately, express agreements involve very high transaction costs. Individuals may be required to pay for attorneys, conduct title searches, and spend valuable time drafting express agreements. Moreover, the exchange of a solar right using an express agreement may involve multiple parties who take too long to (or never) agree on the appropriate allocation.

Part III of this Article describes how the government can allocate solar rights – an arrangement that may in some ways be more efficient with respect to transaction costs than the express agreements described in Part II. Governmental allocations may occur through the award of solar permits or through zoning decisions. Typically, these rights are awarded through standard procedures that usually include petitioning a public decision-making body. Depending on the regime, the initial entitlement may be in the hands of either the benefited or burdened party: a zoning ordinance, for example, might establish solar rights for all owners of solar collectors within its jurisdiction, whereas a permit system might exist where the default rule is the absence of solar rights for anyone. In one sense, transaction costs may be low because the process is well defined: a public body must typically make a decision in accordance with established rules and schedules. In other respects, however, government awards may be quite costly: the individualized allocation process can be tedious, and may still require that rights seekers hire attorneys and other professionals. More significantly, government allocations are far from predictable or uniform, and do not necessarily result in awards that are truly justified on efficiency grounds.

[10] *See* Sara C. Bronin, *Modern Lights*, 80 U. COLO. L. REV. (forthcoming Nov. 2009) (describing in Part II the consequences of the assignment of the initial entitlement).

Finally, Part IV deals with court-assigned rights – perhaps the least efficient and most costly method of obtaining a solar right. In the rare instance in which a court has considered solar rights – using nuisance, prescriptive easement, or implied easement principles – it usually has failed to award solar rights to the party who could maximize their use. As one commentator observed, "The courts are a weak ally to the contemporary solar energy user."[11] Transaction costs are highest (when compared with the other two methods considered by this Article) for court-assigned rights. Each case may be very complicated, and litigation is expensive relative to the value of the right.

The three current methods of allocating solar rights vary greatly, and although each attempts to balance competing interests, each falls short in certain respects. Throughout Parts II through IV, this Article dissects the inability of the current legal regime to respond to the pressing problem of solar rights. The criticisms contained here are not meant to imply that the current regimes are unsalvageable. Rather, they underscore the need for a new approach to solar rights. A companion piece to this Article will flesh out some elements of the new approach.[12]

I. WHY INDIVIDUAL SOLAR RIGHTS

Except in a few limited circumstances, the American legal system has not recognized the solar right – the ability of a property owner to enjoy or utilize a defined amount of sunlight on her parcel and to defend this right as against other property owners. Yet there are at least two strong reasons for this country to do so, especially as such rights might apply to solar collectors.

First, solar access is extremely valuable to the individuals who have it. The quality and amount of sunlight which reaches a structure's interior, for example, affects three economic measures: the resale price of the structure, as buyers will pay premiums for naturally lit space; the productivity of the structure's occupants, who work better with sunlight than artificial light; and the operating costs of heating, cooling, and lighting systems.[13] Similarly, the use of sunlight in outdoor areas can have financial consequences: a property owner can grow garden vegetables, produce commercial crops for resale, or use sunlight instead of electricity to dry laundry – all of which save or generate income. Perhaps most importantly, solar collectors, for which sunlight is the primary and essential ingredient, almost always save owners more in energy costs than the purchase price, and rapid technological developments have

[11] Kenneth James Potis, *Solar Access Rights in Florida: Is There a Right to Sunlight in the Sunshine State?*, 10 NOVA L.J. 125, 145 (1985).

[12] Bronin, *Modern Lights*, *supra* note 10.

[13] GREGORY H. KATS, THE COSTS AND FINANCIAL BENEFITS OF GREEN BUILDINGS: A REPORT TO CALIFORNIA'S SUSTAINABLE BUILDING TASK FORCE 65 (2003) (summarizing the results of eight studies which indicated that natural light helped to increase worker productivity by a mean of 7.1%); Franklin Gevurtz, *Obstruction of Sunlight as a Private Nuisance*, 65 CAL. L. REV. 94, 106 (1977).

rendered them increasingly more valuable and will continue to do so in years to come.[14] The recognition that solar access has value to individuals must serve as the basis for any solar rights regime.

Second, a solar rights regime also has value to the country as a whole. There is increasing awareness of the dangers of overdependence on fossil fuels, both from an environmental and geopolitical standpoint. However, our failure to consider solar rights appropriately has dampened investment in domestic solar collectors – efficient producers of clean energy – because it is difficult to justify substantial up-front investments in solar collectors without a guarantee of solar access. The reluctance to invest in solar collectors has affirmed our dependence on foreign fossil fuels. The energy conservation and energy security rationales for solar rights go hand in hand and have been discussed for decades.[15] A chorus of commentators writing thirty years ago praised solar energy and solar collectors and called our failure to recognize solar rights "an impediment to widespread conversion to solar energy,"[16] "the single most important legal issue concerning solar energy,"[17] and "the major legal issue associated with solar energy."[18] Although the need for guaranteed property rights in solar access has grown more acute, we have failed to modify the law to provide them.

In light of these two important reasons for a solar rights regime, it is worth emphasizing why this regime must be tailored to provide rights to individual property owners. Some might question the need for complex legal systems that support small-scale individual, as opposed to large-scale communal, solar installations. They might point to the fact that investors have purchased large

[14] *See, e.g.*, U.S. ENVTL. PROTECTION AGENCY, IMPROVE ENERGY EFFICIENCY WITH SOLAR WATER HEATING (2001), *available at* http://www.energystar.gov/ia/new_homes/features/ESSolarWaterHeating.pdf (observing that fifteen to twenty-five percent of energy use in residential buildings is devoted to heating hot water, and a solar water heater can reduce annual operating costs by up to eighty percent); SANDY F. KRAEMER, SOLAR LAW: PRESENT AND FUTURE, WITH PROPOSED FORMS 7 (1978) (observing that "[i]n buildings, the overwhelming bulk of the average building's energy requirement, 70% or more, is for low-grade heat which can be provided by solar systems").

[15] *See, e.g.*, Sophia Douglass Pfeiffer, *Ancient Lights: Legal Protection of Access to Solar Energy*, 68 A.B.A. J. 288, 291 (1982) (asserting that "[i]t would indeed be regrettable if the demonstrated need for utilization of solar energy – a technological reality today – were to be left unmet because of the modern legal system's inability to devise adequate measures to protect solar access"); *cf.* Takagi, *supra* note 5, at 146 (describing Japan's rationale for solar access as being "based upon securing sunlight for health, with energy conservation of marginal relevance").

[16] Dale D. Goble, *Solar Rights: Guaranteeing a Place in the Sun*, 57 OR. L. REV. 94, 134 (1977). Goble also called the access issue "the fundamental legal impediment" to the use of solar collectors. *Id.* at 97-98.

[17] Berryhill & Parcell, *supra* note 6, at 426.

[18] Adrian J. Bradbrook, *Future Directions in Solar Access Protection*, 19 ENVTL. L. 167, 168 (1988).

tracts of rural land across the country to collect and distribute solar power to multiple end users.[19] Large solar installations on vast rural parcels with few neighbors may not require a full solar rights regime. If this country could depend on large installations, it might be argued, no individual solar rights regime is necessary.

Yet we cannot depend on large installations to satisfy all solar power demand. They do not, and could not, produce enough energy to meet ever-rising demands for green power. The end users of large installations include only those people who live within the area that can be reached by transmission lines. Many large installations are concentrated in the South and the West, and do not serve individuals in other parts of the country. Even those who do receive solar power from large plants might receive less than they should, as capacity is lost during transmission through notoriously inefficient electric lines. Finally, large solar installations have been criticized (and sometimes stalled) by environmental advocates who believe that they disrupt delicately balanced ecological systems.[20]

While the growing number of large installations may signal that the market has begun to embrace the economies of scale, the need for small installations remains. Individual solar collectors can serve the many end users that are not reachable by large solar installations. In addition, individual solar collectors allow individuals to benefit directly from their investment; solar power offered by the owners of large installations is not generally sold to end users at cost, but instead at prices which approach conventional power prices. When it comes to the environment, individual solar collectors have a smaller negative impact than do large installations. And finally, individual solar collectors are more efficient than large installations because they are installed near the end user, meaning that little is lost during transmission.

In theory, there is a middle ground between the individual solar collector and the large solar installation: a mid-sized facility, which might, for example, serve a small urban neighborhood with costs divided equally among neighbors within a few blocks. This Article does not consider the legal complexities that relate to such shared generation because each state's rules differ significantly. Mid-sized facilities generating power to multiple end users might, for example, have to incorporate as an electric utility, file paperwork with the public utility control commission, submit to the governance of an electric cooperative, or

[19] *See, e.g.*, Todd Woody, *The Southwest Desert's Real Estate Boom*, CNNMONEY.COM, July 11, 2008, http://money.cnn.com/2008/07/07/technology/woody_solar.fortune/index.htm (focusing on land banking in the Mojave Desert for solar uses).

[20] *Id.*; *see also* Bersohn, *supra* note 6 at 113 ("Central solar power generation involves extensive land use preemption, and might cause local aquatic thermal pollution and disrupt atmospheric circulation patterns.").

obey other rules. Most states' rules are so onerous that mid-sized solar facilities are rare.[21]

Yet it is worth noting that some issues faced by individual landowners with respect to solar rights would also be faced by those who collectively form a mid-sized solar facility, especially in urban areas. The mid-sized facility, like the individual solar collector owner, would somehow have to obtain rights across other parcels to ensure solar access. Similarly, although large-scale rural installations might not seem to require solar rights initially, the need for solar rights may arise if development patterns around the installation site change. Even though this Article focuses on individual solar rights, any advance in solar rights would also benefit operators of mid-sized and urban solar facilities, or even large-scale or rural installations. This Article will now examine some of the methods for allocating solar rights, whatever the size of the need.

II. EXPRESS AGREEMENTS

The first and perhaps most straightforward method of assigning solar rights is by express agreements between private parties, where these agreements have been implicitly or explicitly authorized by law. Express agreements are the most efficient means of allocating solar rights to the respective parties: each party understands her rights and has received compensation in some form or amount to which she has consented. Usually, the compensated parties are those who would have had the initial entitlement under the law – the burdened parties, and not the solar rights seekers. Used as devices to reassign these initial entitlements, express agreements come with significant transaction costs: bargaining is time-consuming and expensive, especially when attorneys must be hired and formalities must be followed.[22] Transaction costs may be particularly high in bilateral monopoly situations, where the possible parties to an express agreement are limited to a small number of individuals.[23] These costs hinder the creation of express solar agreements.[24]

Despite the costs, the law has allowed at least three types of express agreements to serve as the basis for a solar right. The first type, express easements, typically involves neighbors in established areas and requires individualized negotiation. The second, covenants, which bind current and subsequent owners, function best in new residential subdivisions but are

[21] In a search, the author could not find any examples of shared solar cooperatives of this nature.

[22] Any time bargaining is required, as it is in the case of express agreements, high transaction costs are likely. *See* Robert Cooter, *The Cost of Coase*, 11 J. LEG. STUD. 1, 23 (1982).

[23] *See, e.g.*, ROBERT COOTER & THOMAS ULEN, LAW AND ECONOMICS (2007).

[24] Admittedly, data on this point is limited, and determining the number of express solar agreements in the country is, practically speaking, impossible; however, the infrequency of their appearance in courts and in legal literature reveals that these barriers are significant.

difficult to enact in established or nonresidential areas. Third, and least-used, lessor-lessee arrangements tie the solar right to the term of tenancy – a limitation that hinders up-front investment in solar collectors. Although each of these agreements has a slightly different nature, each might be instructive in considering a better solar rights regime.

A. *Express Easements*

The creation of an easement requires rigorous bargaining by multiple parties, and the resulting high transaction costs prevent large-scale adoption of easements that guarantee solar rights. Easements allow one landowner (the dominant owner) to have certain rights over the real property of another landowner (the servient owner).[25] These rights take one of two forms: affirmative rights that entitle the dominant owner to physical access of the servient parcel; and negative rights that encumber the servient owner's use of her property, usually preventing the servient owner from undertaking particular activities. An easement does not grant the dominant owner ownership rights, but rather allows the dominant owner to enforce the rights contained in the easement. These enforcement powers endure, and remain with the land for subsequent purchasers, until and unless some event or condition renders them unenforceable.

Solar easements, a kind of negative easement, can create solar rights between dominant and servient owners by burdening the servient owner's use of her property.[26] More specifically, a solar easement can prevent a servient owner from improving her property in a way that blocks sunlight from falling on all or part of the dominant estate (in effect, defining a solar skyspace). Although it is possible to argue that the common law contemplates solar easements, legislation allowing landowners to create express solar easements avoids ambiguity and has become popular.[27] At least twenty-eight state statutes allow the creation and recording of express easements for solar access by private landowners.[28] Solar easement statutes do not themselves create

[25] BLACK'S LAW DICTIONARY 585-86 (9th ed. 2009).

[26] *Id.* at 587 (defining a "negative easement" as "[a]n easement that prohibits the servient-estate owner from doing something, such as building an obstruction").

[27] *See* Adrian J. Bradbrook, *Australian and American Perspectives on the Protection of Solar and Wind Access*, 28 NAT. RESOURCES J. 229, 238 (1988) (explaining that "[w]ith respect to solar access, the most widespread form of legislation adopted in the United States is legislation recognizing the validity of an easement for solar access").

[28] ALASKA STAT. § 34.15.145 (2008) (requiring writing and recording of the size of the easement, any terms and conditions, and compensation for "[a]n easement obtained for the purpose of protecting the exposure of property to the direct rays of the sun"); CAL. CIV. CODE § 801.5 (West 2007); COLO. REV. STAT. §§ 38-32.5-100.3 to -103 (2008) (allowing injunctive relief "[i]n addition to other legal remedies"); FLA. STAT. ANN. § 704.07 (West 2000) (requiring six elements in written and recorded easements and protecting solar easements from extinguishment by allowing a solar collector owner to file a notice); GA. CODE ANN. §§ 44-9-20 to -23 (2002) (requiring that solar easements be in writing and

include a description of airspace and any terms and conditions of the granting or termination); IDAHO CODE ANN. § 55-615 (2007) (requiring writing and recording of the size of the easement, any terms and conditions, and compensation for an easement "obtained for the purpose of exposure of a solar energy device to sunlight"); 30 ILL. COMP. STAT. ANN. 725/1.2 (West 2001 & Supp. 2008) (allowing solar skyspace easements for structures, vegetation, or other activity as long as the easement is described in three-dimensional terms and includes "performance criteria for adequate collection of solar energy"); IOWA CODE ANN. § 564A.7 (West 1992) (requiring that solar access easements be in writing and include a "legal description of the dominant and servient estates" and of the space through which the easement extends, in addition to optional provisions such as compensating the burdened owner); KAN. STAT. ANN. §§ 58-3801 to -3802 (2005); KY. REV. STAT. ANN. § 381.200(2) (LexisNexis 2002) ("A solar easement may be obtained for the purpose of ensuring access to direct sunlight."); ME. REV. STAT. ANN. tit. 33, § 1401 (1999) (providing that such easements run with the land and are subject to court-decreed abandonment and other limitations); MD. CODE ANN., REAL PROP. § 2-118 (LexisNexis 2003) (establishing an "incorporeal property interest . . . enforceable in both law and equity" for easements, conditions, or restrictions which relate to the "[p]reservation of exposure of solar energy devices"); MINN. STAT. ANN. § 500.30 (West 2002 & Supp. 2009) (analogizing solar easements to any other conveyance and providing enforcement for solar easements by injunction or other proceedings in equity); MO. ANN. STAT. § 442.012 (West 2000) (calling solar energy a "property right," not subject to eminent domain, for which easements must be expressly negotiated); MONT. CODE ANN. §§ 70-17-301 to -302 (2007) (requiring that size, terms and conditions, and termination provisions of an easement be in writing); NEB. REV. STAT. §§ 66-909 to -911 (2003) (defining a "solar skyspace easement" and requiring a description of the vertical and horizontal angles of the easement); NEV. REV. STAT. §§ 111.370-.380 (2007) (providing detailed definitions of the easement, its vesting, and three methods of termination); N.H. REV. STAT. ANN. §§ 447:49-:50 (2001) (defining a "solar skyspace easement" to include the easement form and requiring certain information to be provided therein); N.J. STAT. ANN. §§ 46:3-24 to -26 (West 2003) (requiring writing and recording of the size of the easement, any terms and conditions, and compensation); N.D. CENT. CODE §§ 47-05-01.1 to .2 (1999); OHIO REV. CODE ANN. § 5301.63 (LexisNexis 2004) (describing five necessary elements for solar access easements and allowing for owners of benefited land to access any equitable remedy and damages for obstruction); OR. REV. STAT. ANN. §§ 105.890, .895 (West 2003 & Supp. 2008); R.I. GEN. LAWS §§ 34-40-1 to -2 (1995) (defining "solar easement" to include restrictions, easements, covenants, or conditions to a deed "for the purpose of ensuring adequate exposure of a solar energy system"); TENN. CODE ANN. §§ 66-9-204 to -206 (2004) (providing the statutory assumption that such easement runs with the land); UTAH CODE ANN. §§ 57-13-1 to -2 (2000) (defining solar easements, setting out writing requirements and allowing enforcement by injunction); VA. CODE ANN. §§ 55-352 to -354 (2007) (requiring writing and recording of the size of the easement, any terms and conditions, and compensation for solar easements); WASH. REV. CODE ANN. §§ 64.04.140-.170 (West 2005) (including the requirement for a "description of the extent of the solar easement which is sufficiently certain to allow the owner of the real property subject to the easement to ascertain the extent of the easement," and providing remedies such as actual damages, reasonable attorney's fees, and injunctions); WIS. STAT. ANN. § 700.35 (West 2001) (defining "renewable energy resource easement" as "an easement which limits the height or location, or both, of permissible development on the

easements, but allow private entities and political subdivisions to create them.[29] The majority of states require such easements to be in writing and contain detailed information about the size of the affected space, the manner of termination, and compensation.[30] In most jurisdictions, the easement must also be recorded on the land records, to provide notice to individuals researching the dominant or servient estates.

Express solar easements have several benefits. Most obviously, each party to an easement has voluntarily bargained to a mutually agreeable result: the dominant owner receives a solar corridor, while the servient owner receives compensation to offset her burden.[31] Another key advantage for dominant owners is the receipt of a property right that is usually permanent and irrevocable.[32] Finally, private parties make and enforce solar easements, therefore obviating the need for unnecessary governmental bureaucracy.[33] As

burdened land in terms of a structure or vegetation, or both, for the purpose of providing access for the benefited land to wind or sunlight passing over the burdened land").

[29] *See* Lungren, *supra* note 1, at 180. *But see* O'Neill v. Brown, 609 N.E.2d 835, 840 (Ill. App. Ct. 1993) (finding that the Illinois Comprehensive Solar Energy Act, 30 ILL. COMP. STAT. 725/1.2(f)(1) (2008), defined a solar skyspace easement but did not allow such easements to be created).

[30] *See* John William Gergacz, *Legal Aspects of Solar Energy: Statutory Approaches for Access to Sunlight*, 10 B.C. ENVTL. AFF. L. REV. 1, 11-12 (1982); Dennis L. Phelps & Richard R. Yoxall, *Solar Energy: An Analysis of the Implementation of Solar Zoning*, 17 WASHBURN L.J. 146, 150-51 (1977-1978); Erik J.A. Swensen et al., *State and Local Policies Affecting the Advancement of Renewable Energy Sources*, ABA ENERGY COMMS. NEWSLETTER, Jan. 2007, at 10, *available at* http://www.abanet.org/environ/committees/energy/newsletter/jan07/energy0107.pdf.

[31] *See, e.g.*, Eisenstadt, *supra* note 2, at 25; Shawn M. Lyden, *An Integrated Approach to Solar Access*, 34 CASE W. RES. L. REV. 367, 395 (1983-1984); Stephen F. Williams, *Solar Access and Property Rights: A Maverick Analysis*, 11 CONN. L. REV. 430, 437 (1979) ("Setting aside occasional lunacies, no one will sell solar rights to a neighbor unless the consideration is at least equal to the value of what he foregoes, in terms of opportunities to enlarge his house, grow trees, or whatever. And since no one will pay more for solar rights than what they are worth to him, all transfers that occur will be beneficial ones."). *But see* Dale D. Goble, *Solar Access and Property Rights: Reply to a "Maverick" Analysis*, 12 CONN. L. REV. 270, 283-84 (1979) (criticizing Williams's assumption that efficiency can determine entitlements, arguing instead that entitlements determine efficiency).

[32] *See, e.g.*, Howard R. Osofsky, *Solar Building Envelopes: A Zoning Approach for Protecting Residential Solar Access*, 15 URB. LAW. 637, 639-40 (1983); Donald N. Zillman, *Common-Law Doctrines and Solar Energy*, *in* LEGAL ASPECTS OF SOLAR ENERGY 25, 31 (John H. Minian & William H. Lawrence eds., 1981) ("The easement is a satisfactory legal device for the solar user. He has no particular desire to own the neighbor's property. He only needs to keep adequate direct sunlight streaming across the neighbor's land to his collectors or passive construction. This limited use can allow the neighbor to retain a wide variety of uses on his property, including the installation of solar equipment of his own.").

[33] Osofsky, *supra* note 32, at 641 ("Solar easements require minimum government involvement and are not affected by zoning changes on adjacent property."). *But see infra*

a result of these benefits, as one scholar put it, solar easement statutes have become a popular and "inexpensive form of legislative cheerleading."[34]

This form of "legislative cheerleading" has not, however, borne much fruit: a search of federal and state cases revealed not a single case dealing with express solar easements.[35] An optimist might suggest that the lack of cases reveals that express easements function well. More likely, it reflects the fact that such easements are rare. Indeed, the primary benefit of the solar easement – its voluntary nature – may also prevent its widespread adoption. Potential obstructers might disagree on the terms of an easement or refuse to negotiate altogether.[36] Even when all parties agree to negotiate, solar easements take time to formulate.[37] Moreover, negotiations cost money – not just for attorneys' fees, recording fees, and other administrative costs, but for the easement itself, as a servient owner will more likely sell a solar easement than donate it.[38] Servient owners may overcharge for easements, either because they overvalue their interests[39] or because their relationships with the dominant owners function as a bilateral monopoly, each side being the only possible party to a transaction.[40] These costs may increase the already-high cost of

text accompanying notes 45-52 (describing Iowa's approach in which state government plays a role in the creation of solar easements).

[34] Zillman, *supra* note 32, at 32.

[35] The author conducted several such searches and found no such cases.

[36] Osofsky, *supra* note 32, at 641. The lone exception to this grant of initial entitlements occurs in Iowa. *See infra* text accompanying notes 45-52.

[37] *See* Goble, *supra* note 31, at 287 (asserting that unequal bargaining positions, the possibility of multiple parties, novelty, inertia, and drafting complexities increase transaction costs); Williams, *supra* note 31, at 437-40 (reasoning that transaction costs may be higher in developed areas than in areas which are not yet developed).

[38] Tamara C. Sampson & R. Alta Charo, *Access to Sunlight: Resolving Legal Issues to Encourage the Use of Solar Energy*, 11 COLUM. J. ENVTL. L. 417, 424 (1986) ("The costs of the easement include both substantive costs for the restrictions on property use, and transaction costs, such as drafting agreements.").

[39] *See* Williams, *supra* note 31, at 443 (identifying landowners' competing claims: for the solar collector, lower energy costs; for the neighbor, the desire to perhaps enjoy full-grown trees, whose shade could lower the neighbor's energy costs); Felicity Barringer, *Trees Block Solar Panels, and a Feud Ends in Court*, N.Y. TIMES, Apr. 7, 2008, at A14 (describing two California neighbors' competing interests in redwood trees and solar access for photovoltaic panels).

[40] *Cf.* Lyden, *supra* note 31, at 395 (stating that "even a cooperative landowner may charge the solar user an exhorbitant [sic] price for the easement" and "easements are only capable of protecting access for sited solar systems"); Carol Polis, Note, *Obtaining Access to Solar Energy: Nuisance, Water Rights, and Zoning Administration*, 45 BROOK. L. REV. 357, 364 (1978-1979) (stating that such agreements "possibly curtail[] the use of this alternative energy source because the owner of the airspace could demand an exorbitant price").

solar energy systems and make them less attractive than cheaper forms of energy.[41]

At least some of these costs stem from the assignment of initial entitlements: in the vast majority of jurisdictions, the initial entitlement rests with the potential obstructer, or the potential servient owner.[42] The potential obstructer may never agree to an easement; even if she does, she has the power to set a high price on the easement.[43] Because express easements often involve bilateral monopolies, an individual party can hold out or demand exorbitant compensation if she does not want to give up her entitlement. The assignment of the entitlement thus inhibits greater use of solar collectors.[44]

One state, Iowa, assigns the initial entitlement in solar easements in a way that avoids at least some transaction costs.[45] Like other states, Iowa allows users to create solar easements voluntarily.[46] When a potential obstructer holds out, however, Iowa authorizes local regulatory boards to create easements without the burdened landowner's consent, provided that the burdened landowner receives just compensation.[47] Local legislative bodies may establish "solar access regulatory boards" which govern applications for solar easements.[48] An applicant must submit a statement of need, the legal description of the estates, a description of the solar collector, an explanation of the application's reasonableness, and a statement that the applicant has attempted to negotiate an easement.[49] The law requires the review board to grant compensation for burdened property owners "based on the difference between the fair market value of the property prior to and after granting the solar access easement."[50] Anecdotally, the statute has encouraged voluntary

[41] Eisenstadt, *supra* note 2, at 25; Gevurtz, *supra* note 13, at 115.

[42] *See, e.g.*, Polis, *supra* note 40, at 364 ("The Colorado statute, by requiring that the right be bought, in effect grants the entitlement of solar access to the potential obstructor, who is allowed to establish the cost.").

[43] *See* ALAN S. MILLER ET AL., SOLAR ACCESS AND LAND USE: STATE OF THE LAW 4 (1977) (describing the windfall received by an owner of burdened property as unjustified).

[44] Goble, *supra* note 16, at 103 ("[T]he current assignment of the right is not conducive to the use of solar energy. While economic theory suggests that the initial assignment of a property interest will have no effect on resource allocation if the right is freely transferable, the theory assumes that transactions are costless. In fact, transaction costs are often substantial.").

[45] *See* IOWA CODE ANN. § 564A.7.1 (West 1992) ("Persons, including public bodies, may voluntarily agree to create a solar access easement.").

[46] *See id.* § 564A.7.

[47] *Id.* §§ 564A.1-.9 (summarizing the procedures to obtain access to solar energy). The "just compensation" requirement attempts to avoid challenges under the Takings Clause of the Constitution.

[48] *Id.* §§ 564A.2(7), .3.

[49] *Id.* § 564A.4 (describing these and other requirements of the application).

[50] *Id.* § 564A.5(3).

agreements.[51] The Iowa approach reflects a sensible statutory solution to the holdout problem.[52]

B. *Covenants*

In certain circumstances, covenants, a second type of express agreement, avoid the difficulties of express easements in promoting solar rights. Like express easements, covenants include conditions that run with the land and endure indefinitely.[53] Covenant conditions range widely in substance and may involve usage, characteristics of future purchasers, building configuration, site planning, aesthetic regulations, noise rules, and financial assessments, among other things. A covenant must be recorded on the land records in sufficient detail to provide notice of the existence and substance of the covenant. The recording and notice requirement allows the cost or benefit of the covenant to be incorporated into the purchase price of a parcel.[54] In this sense, covenants are efficient; purchasers with knowledge implicitly agree to incorporate the terms of the covenant in their purchase. Covenants also appear to be fair, because they often burden or benefit the owners of multiple parcels in the same way, with the same provisions applied to parcels in a geographically contiguous area, and because purchasers take land with notice of the covenant. The right to enforce (or the standing to overturn) covenants is shared between the owner of a covenanted property, other property owners burdened or benefited by the same covenant, and subsequent purchasers.[55] Covenants appear most often, and function best, in residential neighborhoods with relatively homogenous lot sizes and structure types.[56]

[51] Potis, *supra* note 11, at 142 n.130.

[52] Gergacz, *supra* note 30, at 30 (calling the Iowa statute a "grant of eminent domain to individual solar energy users . . . [which nonetheless] seems to be . . . equitable and workable").

[53] BLACK'S LAW DICTIONARY, *supra* note 25, at 421.

[54] *See* John William Gergacz, *Solar Energy Law: Easements of Access to Sunlight*, 10 N.M. L. REV. 121, 136 (1979-1980) (highlighting the importance of the legal description of the parcel by saying that "[c]areful drafting would be required if the solar access rights were created either by express covenant or by express easement").

[55] Berryhill & Parcell, *supra* note 6, at 438; Debra L. Stangl, Comment, *Assuring Legal Access to Solar Energy: An Overview with Proposed Legislation for the State of Nebraska*, 12 CREIGHTON L. REV. 567, 609 (1978-1979). Note that easement rights, by contrast, vest in only the servient and dominant owners.

[56] Berryhill & Parcell, *supra* note 6, at 439 (commenting on covenants' "limited applicability to established neighborhoods and commercially and industrially developed land where structures are not of uniform size and height"); Jesse L. Matuson, *A Legislative Approach to Solar Access: Transferable Development Rights*, 13 NEW ENG. L. REV. 835, 846 (1978) (criticizing restrictive covenants as being unhelpful in established neighborhoods and commercial and industrial areas).

Some critics have called covenants a "two-edged sword because they can be used to either inhibit or enhance the use of solar systems."[57] Covenants may limit building and tree heights, govern the use of certain technologies, and mandate aesthetic guidelines. Depending on the specific requirement, each condition could either facilitate or hinder the use of solar collectors.[58] A developer may inadvertently thwart the installation of solar collectors by creating a covenant with financial gain, not solar access, in mind.[59] For example, she may ask her attorney to draft a covenant that prohibits the installation of "equipment" on rooftops. In the developer's mind, this covenant would ensure a uniform aesthetic and thereby preserve or enhance property values. For the potential solar user, however, the covenant precludes (or at least renders ambiguous) the possibility of locating a solar collector on the roof – often the most practical location for a collector. Litigation to clarify the covenant would be costly and inconvenient, and a property owner may simply avoid the installation of the solar collector altogether.[60]

To avoid such scenarios, some states have begun to legislate for covenants that promote, rather than hinder, solar collector use. Although courts will enforce covenants for solar access even if legislatures do not specifically authorize them,[61] several states have made their authorization explicit.[62] At least a dozen states go further, voiding restrictive covenants or deed conditions if they unreasonably restrict or increase the cost of a solar system.[63] Three

[57] Eisenstadt, *supra* note 2, at 26 (mentioning that many developments with architectural review boards reject solar access because of aesthetic concerns). *See also* Matuson, *supra* note 56, at 846 ("Restrictive covenants are excellent tools to secure access in new developments.").

[58] *See* Berryhill & Parcell, *supra* note 6, at 438 (describing covenants which facilitate solar use as "restrict[ing] the height and placement of structures and trees so as to avoid blocking of solar collectors of users within the subdivision"); Eisenstadt, *supra* note 2, at 26.

[59] Eisenstadt, *supra* note 2, at 27 ("[T]he developer exercises his own discretion in deciding whether to impose such covenants.").

[60] *See* Kraye v. Old Orchard Ass'n, No. C 209 453 (Cal. Super. Ct., Feb. 28, 1979) (reported in *Current Developments*, 1 SOLAR L. REP. 3, 8 (1979)) (considering this question and relying on a state statute to find in favor of the solar user).

[61] Gergacz, *supra* note 54, at 133-34.

[62] *See, e.g.*, MD. CODE ANN., REAL PROP. § 2-118(7) (LexisNexis 2003) (authorizing the creation of covenants which relate to the "[p]reservation of exposure of solar energy devices"); NEB. REV. STAT. § 66-909 (2003) (defining "solar skyspace easement" to include covenants); N.H. REV. STAT. ANN. §§ 477:49-:50 (2001); R.I. GEN. LAWS §§ 34-40-1 to -2 (1995); UTAH CODE ANN. §§ 57-13-1 to -2 (2000); WASH. REV. CODE ANN. § 64.04.150(1)(b) (West 2005).

[63] ARIZ. REV. STAT. ANN. § 33-439A (2007); CAL. CIV. CODE § 714(a)-(b) (West 2007 & Supp. 2009) (voiding "[a]ny covenant, restriction, or condition contained in any deed, contract, security instrument, or other instrument affecting the transfer or sale of, or any interest in, real property that effectively prohibits or restricts the installation or use of a solar energy system" unless such restrictions "do not significantly increase the cost of the system

states have created special rules for condominiums or homeowners' associations, prohibiting certain restrictions on solar collectors.[64] One state, Iowa, does not itself ban, but instead empowers localities to ban, covenants with unreasonable restrictions on solar collectors.[65] Although one

or significantly decrease its efficiency or specified performance, or . . . allow for an alternative system of comparable cost, efficiency, and energy conservation benefits"); COLO. REV. STAT. § 38-30-168(1) to -(2) (2008) (excepting restrictions that constitute "[a]esthetic provisions that impose reasonable restrictions on the dimensions, placement, or external appearance of a renewable energy generation device and that do not (I) Significantly increase the cost of the device; or (II) Significantly decrease its performance or efficiency"); FLA. STAT. ANN. § 163.04(2) (West 2006 & Supp. 2009); HAW. REV. STAT. ANN. § 196-7(a) (LexisNexis 2008) (stating that "no person shall be prevented by any covenant, declaration, bylaws, restriction, deed, lease, term, provision, condition, codicil, contract, or similar binding agreement . . . from installing a solar energy device" on a "residential dwelling or townhouse" owned by the person); MD. CODE ANN., REAL PROP. § 2-119 (LexisNexis 2003); MASS. GEN. LAWS ANN. ch. 184, § 23C (West 2003); NEV. REV. STAT. § 111.239 (2007) (calling any prohibition or unreasonable restriction on solar collectors "void and unenforceable"); *id.* § 278.0208; N.M. STAT. ANN. § 3-18-32(B) (West, Westlaw through laws effective Apr. 10, 2009); N.C. GEN. STAT. § 22B-20(b), (d) (2007) (calling "any deed restriction, covenant, or similar binding agreement that runs with the land that would prohibit, or have the effect of prohibiting, the installation of a solar collector . . . void and unenforceable," except those which restrict solar collectors from public view); OR. REV. STAT. ANN. § 105.880(1) (West 2003) ("No person conveying or contracting to convey fee title to real property shall include in an instrument for such purpose a provision prohibiting the use of solar energy systems by any person on that property."); WIS. STAT. ANN. § 236.292(2) (West 2009) ("All restrictions on platted land that prevent or unduly restrict the construction and operation of solar energy systems . . . are void."); *see also Kraye*, No. C 209 453 (reported in *Current Developments*, 1 SOLAR L. REP. 3, 8 (1979)) (relying on the policy goals of California Solar Rights Act to find that a covenant which prohibited appliances on rooftops that would be visible from neighboring streets could not prevent a property owner burdened by such covenant from installing solar panels).

[64] HAW. REV. STAT. ANN. § 196-7(b) (LexisNexis 2008) (providing that condo or homeowners associations "shall facilitate the placement of solar energy devices and shall not unduly or unreasonably restrict that placement so as to render the device more than twenty-five per cent less efficient or to increase the cost of the device by more than fifteen per cent" and prohibiting such associations from charging home owners any fees for such devices); N.J. STAT. ANN. § 45:22A-48.2(a) (West Supp. 2008) (stating that "[a]n association formed for the management of commonly-owned elements and facilities . . . shall not adopt or enforce a restriction, covenant, bylaw, rule or regulation prohibiting the installation of solar collectors on certain roofs of dwelling units"); VA. CODE ANN. § 67-701.A. to .B. (2007 & Supp. 2008) (stating that "no community association shall prohibit an owner from installing or using a solar energy collection device on that owner's property" except in common areas of the community, under certain conditions).

[65] IOWA CODE ANN. § 564A.8 (West 1992) (allowing localities to "include in ordinances relating to subdivisions a provision prohibiting deeds for property located in new subdivisions from containing restrictive covenants that include unreasonable restrictions on the use of solar collectors").

commentator has raised the issue of constitutional challenges to statutes voiding covenants that hinder solar collectors, no court has found, nor is one likely to find, such statutes unconstitutional.[66]

The biggest barrier to covenants that promote solar collectors is not legality, but practicality. Covenants are extremely difficult to impose retroactively on parcels in established neighborhoods, and therefore may only be practically useful in creating solar rights in new subdivisions.[67] To impose a covenant on a new subdivision, a developer simply appends the covenant to the deed of each new parcel.[68] Each buyer must incorporate the financial impact of the covenants into her purchase decision but need not do more. Covenants in new subdivisions therefore usually have low transaction costs. It is important to note that, although in theory the enactment of covenants in new subdivisions is easy, developers do not typically protect solar access voluntarily.[69] Accordingly, several states have either allowed or required localities to consider solar access concerns when adopting subdivision regulations or approving subdivision requests from developers.[70] When evaluated as a legal

[66] Joel S. Goldman, *Constitutionality of Section 714 of the California Solar Rights Act*, 9 ECOLOGY L.Q. 379, 391-404 (1981) (focusing on CAL. CIV. CODE § 714 (West Supp. 1980) and arguing that a takings challenge would fail because the public benefit of the law is substantial and the potential harm to the individual property owner is slight, but questioning the constitutionality of the law under the contract clause, which prohibits states from impairing contracts).

[67] *See* Berryhill & Parcell, *supra* note 6, at 439 ("Obviously, the use of covenants shows most promise in new developments where potential buyers would be attracted to the homogeneity of a solar neighborhood."); Bradbrook, *supra* note 27, at 238 (commenting that "as a practical matter, with the sole exception of restrictive covenants in new land subdivisions, the common law does not provide any effective safeguards for solar . . . access"); Eisenstadt, *supra* note 2, at 28.

[68] *See* MILLER ET AL., *supra* note 43, at 12 ("[T]hey should be routinely used in subdivision, mall, or industrial park situations. They cost nothing, and do not require unsophisticated individual property owners to draw up legal documents. The developer's lawyer has only to add a clause or two to the deeds.").

[69] Likely, developers fail to do so because either they do not know that solar access covenants exist, or they believe that solar access covenants may decrease the value of the property being sold.

[70] *See, e.g.*, COLO. REV. STAT. §§ 30-28-133(4.5), 31-23-214(2.5) (2008) (allowing subdivision regulations adopted by a board of county commissioners or by planning commissions or cities and towns, respectively, to provide for the protection and assurance of "access to sunlight for solar energy devices by considering in subdivision development plans the use of restrictive covenants or solar easements, height restrictions, side yard and setback requirements, street orientation and width requirements, or other permissible forms of land use controls"); CONN. GEN. STAT. ANN. § 8-25(b) (West 2001 & Supp. 2009) (stating that subdivision regulations "shall also encourage energy-efficient patterns of development and land use, the use of solar and other renewable forms of energy, and energy conservation"); ME. REV. STAT. ANN. tit. 30-A, § 4405 (1996) ("The municipal reviewing authority may, to protect and ensure access to direct sunlight for solar energy systems,

tool with the potential to create solar rights, such statutes have the same flaw as covenants – they apply prospectively only to those large-scale transactions which require subdivision review.[71]

While enacting covenants in new subdivisions is relatively easy, enacting covenants in established neighborhoods requires significant involvement by individual parcel owners, some of whom may not want to permanently burden their properties for the sake of solar rights. Like an express easement, which requires a legal document separate from the deed that a property owner obtains upon transfer, a retroactive covenant requires an entirely new agreement. That agreement must address existing conditions (such as irregular lot sizes or unusually shaped structures), duration and termination issues, the substantive nature of the covenant, and any required financial exchanges. Special provisions may be made for parcels on the fringes of the geographic area that the proposed covenant may burden, because fringe parcels will abut

prohibit, restrict or control development through subdivision regulations. The regulations may call for subdivision development plans containing restrictive covenants, height restrictions, side yard and set-back requirements or other permissible forms of land use controls."); MASS. GEN. LAWS ANN. ch. 41, § 81M (West 2004) (indicating that local boards' "powers may also be exercised with due regard for the policy of the commonwealth to encourage the use of solar energy and protect the access to direct sunlight of solar energy systems"); MINN. STAT. ANN. § 462.358(2a) (West 2008 & Supp. 2008) (allowing municipal subdivision authorities to consider solar access and adding that subdivision "regulations may prohibit, restrict or control development for the purpose of protecting and assuring access to direct sunlight for solar energy systems"); OR. REV. STAT. ANN. § 92.044(1)(a)(C) (West 2003 & Supp. 2008) (providing that localities establish standards for subdivision plats which provide "adequate light and air including protection and assurance of access to incident solar radiation for potential future use"); UTAH CODE ANN. § 10-9a-610 (2008); *id.* § 17-27a-610 (2005) (allowing municipalities and counties, respectively, to refuse to renew or approve subdivision plans or street dedications "if deed restrictions, covenants, or similar binding agreements running with the land for the lots or parcels covered by the plat or subdivision prohibit or have the effect of prohibiting reasonably sited and designed solar collectors"); VA. CODE ANN. § 15.2-2242.6 (2008) ("Provisions for establishing and maintaining access to solar energy to encourage the use of solar heating and cooling devices in new subdivisions. The provisions shall be applicable to a new subdivision only when so requested by the subdivider."); WIS. STAT. ANN. § 236.13(2)(d) (West 2009) ("As a further condition of approval, any county, town, city or village may require the dedication of easements by the subdivider for the purpose of assuring the unobstructed flow of solar or wind energy across adjacent lots in the subdivision."). Localities, too, have enacted subdivision rules which prioritize solar design. *See, e.g.*, BREA CITY, CAL., CODE § 18.84.010, *available at* http://www.amlegal.com/nxt/gateway.dll?f=templates&fn=default.htm&vid=amlegal:ca; ALBUQUERQUE, N.M., ORDINANCES § 14-14-4-2(B), *available at* http:www.amlegal.com/nxt/gateway.dll/New%20Mexico/albuqwin/cityofalbuquerquenewmexicocodeofordinance?f=templates$fn=default.htm$3.0$vid=amlegal:Albuquerque_nm_mc (requiring that streets be oriented to facilitate solar access).

[71] Some commentators are optimistic about the ability of subdivision regulations to create solar rights. *See, e.g.*, HAYES, *supra* note 3, at 125 ("It may be easier, politically, to change subdivision regulations rather than to change zoning.").

unburdened properties.[72] Even if the property owners involved in a potential solar covenant could agree on all of the variables, the costs of bargaining for a covenant may equal or even exceed the transaction costs of express easements.[73] Requirements for covenants may actually raise the cost of construction while simultaneously dampening property values. For these reasons, covenants – like express easements – show little promise in protecting solar rights, with the minor possible exception of the new residential subdivision.[74]

C. *Tenancy*

Lessor-lessee arrangements, a third kind of express agreement that could create solar rights, suffer from some of the same deficiencies as express easements and covenants. Leases provide the barest of property interests. They merely allow a lessee the temporary right to occupy a parcel.[75] To give rise to a solar right, a lease must govern some unit of property through which the sun's rays must travel.[76] Typically, solar leases involve airspace, known sometimes in the solar context as solar skyspaces.[77] Airspace has long been recognized at common law as real property and may be legally distinct from ground or mineral estates.[78] An individual who owns a piece of property in fee simple may sever the airspace from the ground parcel or craft a legal description which enables her to lease or burden just the airspace, without severance. A lease would give a solar user the ability to "occupy" the airspace without obstruction. Some states have tolerated leases that aim to provide

[72] *See* Bradbrook, *supra* note 27, at 237.

[73] *See* Gergacz, *supra* note 54, at 135.

[74] Bradbrook, *supra* note 27, at 261 (asserting that "[l]egislation permitting and encouraging the use of solar . . . easements or covenants are not by themselves an adequate form of solar . . . access protection").

[75] BLACK'S LAW DICTIONARY, *supra* note 25, at 970.

[76] Of course, many kinds of leases may implicate solar rights. For example, some leases may prohibit the installation of solar collectors – an issue at least one state has tried to address. *See* HAW. REV. STAT. ANN. § 196-7(a) (LexisNexis 2008) (rendering void and unenforceable leases which prohibit a person from installing a solar energy device on a residential dwelling or townhouse he or she owns). In another example, some interesting legal wrinkles may arise when individuals lease space on which to place solar collectors or attendant equipment. For the purposes of this Article, however, the key question is whether the lease as a form can create solar rights which would stimulate the use of solar collectors, and this question is best addressed by discussing only those leases which involve solar skyspace required for solar access.

[77] A solar skyspace is the space between a solar collector and the sun, which must remain unobstructed for the solar collector to function properly. *See, e.g.*, NEB. REV. STAT. § 66-907 (2003); R.I. GEN. LAWS § 34-40-1(2) (1995).

[78] *See* Janice Yeary, *Energy: Encouraging the Use of Solar Energy – A Needs Assessment for Oklahoma*, 36 OKLA. L. REV. 136, 141 (1983).

solar access within existing landlord-tenant law.[79] Only one state, Nebraska, explicitly recognizes leases for solar skyspaces and requires that such leases be in writing and recorded on the land records.[80]

Most states, however, do not require such formalities for leases. People enter into leases far more frequently than they create easements and covenants. In non-complex transactions, leases involve only two parties, attorneys rarely participate, and negotiation may be minimal. Accordingly, of the three types of express agreements considered in Part II, leases may have, on average, the lowest transaction costs. Many leases, however, are ultimately inefficient with respect to solar rights, because the duration of a tenancy limits the duration of the right. A lease of solar skyspace for utilizing a solar collector is most efficient if the tenancy endures beyond the payback period of the collector and if the lessee has some assurance that the lessor will not revoke the lease. If a proposed lease term is too short, or the lessor's termination provisions too liberal, a potential lessee may not want to invest in a solar collector. Despite their low transaction costs, leases may be an impractical means of truly protecting solar rights.

III. GOVERNMENTAL ALLOCATIONS

Governmental allocations – public decisions, whether administrative or legislative, made in accordance with established procedures – provide alternatives to the express agreements between private parties described in Part II. This Part analyzes the implications existing state and local decision-making has on solar rights via the legal mechanisms of permit systems and zoning ordinances. Several states and localities have experimented with permit systems that allocate solar rights based on criteria analogous to the prior appropriation regime or reasonable use requirements in water law. Where permit systems exist, the initial entitlement, by default, rests with parties who may be burdened by a solar right; solar rights seekers must apply to change the default. While permit systems assume a baseline without solar rights, solar zoning ordinances set solar rights as the baseline. A few localities have crafted zoning ordinances – some influenced by state legislation – which respond to solar concerns. In these jurisdictions, depending on the ordinance, the initial entitlement may belong to property owners who could use and benefit from solar rights, not potential obstructers. In jurisdictions with traditional zoning codes (that is, codes that do not account for solar rights), the opposite is true.

Each of the two systems considered in Part III provides individuals petitioning for solar rights with different procedural opportunities to obtain such rights. Public decisions have few transaction costs in some senses, for the rules as written are uniform; decisions are made within time limits established

[79] In California, for example, investors have been entering (in alarming numbers) into leases for desert land that is intended to be used as solar energy sites, although these are leases of land and not leases of solar rights. Woody, *supra* note 19.

[80] NEB. REV. STAT. § 66-911.01.

by law; and one public body oversees each petition. However, when the rules are applied, transaction costs rise because each petitioner must go through an individualized review process, and the outcome is often uncertain. In addition, sometimes public decision-makers may not always get it right: that is, the governmental allocation does not necessarily allocate the costs of a decision to those who benefit or properly compensate those who lose, rendering the allocation inefficient.

A. *Permits*

Permits exemplify the benefits and flaws of governmental allocation of solar rights. To issue a permit, a state or local government agency must evaluate applications on a case-by-case basis while at the same time striving for consistency across decisions. A permit system might require several steps: a potential solar user must submit an application; neighbors must be notified and be given time to object and be heard; the relevant level of government must rule to grant or reject the permit; and, if issued, the permit must be registered.[81] Applications must generally include descriptions of the real property on which the solar collector was located, dimensions needed for solar access over real property which would be affected by the right, and present and future growth or structures which might interfere with the solar right.[82]

In the three states – New Mexico, Wyoming, Wisconsin – and the handful of cities where solar permit systems have been most fully realized, permit applications generally follow this pattern.[83] New Mexico and Wyoming use a prior appropriation (first in time, first in right) approach similar to the approach sometimes used in water law.[84] Both states allow the applicant-owner of a solar collector to attain rights to solar access if the owner used the collector

[81] Bradbrook, *supra* note 18, at 186; Eisenstadt, *supra* note 2, at 31. In Wisconsin, for example, a locality can "provide by ordinance that a fee be charged to cover the costs of processing applications." WIS. STAT. ANN. § 66.0403(2) (West 2003 & Supp. 2008). Notice must be provided to property owners who may be affected by the granting of the permit, and such property owners can request a hearing within thirty days of receiving the notice. *Id.* § 66.0403(3)-(4).

[82] Lungren, *supra* note 1, at 195 (proposing a model statute for solar permits whose basic tenets are reflected in existing state and local statutes). The model statute also requires that landowners who might be affected by the creation of the right be notified and provided with the opportunity to schedule a hearing if they object to the granting of a permit. *Id.* at 195-96.

[83] Note that Wisconsin and Wyoming delegate the permitting function to local governments. WIS. STAT. ANN. § 66.0403; WYO. STAT. ANN. § 34-22-105(b) (2007).

[84] The New Mexico statute differs from traditional prior appropriation rules with respect to the substantive meanings of beneficial use, prior appropriation, and transferability. *See* Karin Hillhouse & William Hillhouse, *New Mexico's Solar Rights Act: A Cloud over Solar Rights*, 1 SOLAR L. REP. 751, 754 (1979) (lamenting that New Mexico's attempt to apply water law doctrine to solar energy confuses rather than clarifies solar rights issues).

before other uses that may block out such light, and if that use is beneficial.[85] Successful applicants do not "own" the sunlight, but have a right to divert it for a beneficial use.[86] According to the Wyoming statute, solar collectors are protected only between nine a.m. and three p.m., because outside of those times the benefit to the solar collector owner "is de minimis and may be infringed without compensation," and no protection is given to collectors "which would be shaded by a ten (10) foot wall located on the property line on a winter solstice day."[87] Once obtained, solar permits in both states, like water permits received through prior appropriation regimes, are freely transferable.[88]

Wisconsin takes a different approach; it incorporates the reasonable use rule on private nuisance from the Restatement (Second) of Torts into the solar permit statute.[89] The municipal agency which administers solar permits can only grant a permit if doing so would not unreasonably interfere with development plans, if no person has made substantial progress toward building a structure which would create an impermissible interference, and if the benefits to the public (including the applicant) will exceed the burdens of the grant.[90] This weighing of the benefits and burdens on parties with competing interests reflects an approach grounded in nuisance law. The law allows permit holders to sue neighbors who interfere with the solar access granted by

[85] N.M. STAT. ANN. §§ 47-3-1 to -5 (West, Westlaw through laws effective Apr. 10, 2009); WYO. STAT. ANN. § 34-22-103.

[86] Deborah S. Grout, *Access to Sunlight: New Mexico's Solar Rights Act*, 19 NAT. RESOURCES J. 957, 958 (1979) ("Just as the owner of a water right does not 'own' water but rather has a right to divert it and put it to a beneficial use, so the owner of a solar right does not own sunlight but has the right to [use it, provided that it is] put to a beneficial use." (footnote omitted)). Neither statute ranks uses to indicate which use would be most beneficial. *See* Hillhouse & Hillhouse, *supra* note 84, at 756 (identifying this problem with respect to the New Mexico law).

[87] WYO. STAT. ANN. § 34-22-104.

[88] N.M. STAT. ANN. § 47-3-4.B(3) (calling such rights "freely transferable within the bounds of [the law]"); WYO. STAT. ANN. § 34-22-103. The transferability concept differs here from that concept in water law, as water rights can be transferred from person to person, while solar rights can only be transferred to subsequent owners of the parcel which is the subject of the right.

[89] Laurie Bennett, *Recent Developments:* Prah v. Maretti, *108 Wis. 2d 223, 321 N.W.2d 182 (1982)*, 14 ENVTL. L. 223, 226 (1983) (describing the Restatement (Second) of Torts's analysis of private nuisance, which would find unreasonable any intentional invasion in which the gravity of the harm outweighs the utility of the defendant's conduct). *Cf.* Lungren, *supra* note 1, at 196-97 (proposing a model statute rooted in nuisance law, which would grant a permit if doing so would not unreasonably interfere with orderly development plans and if the benefit to the public outweighs the burdens placed on individual landowners).

[90] WIS. STAT. ANN. § 66.0403(5) (West 2003 & Supp. 2008). *See also id.* § 66.0403(6)(b) (requiring the applicant to record the permit with the register of deeds).

the permit, whether through vegetation or through construction, with remedies ranging from an injunction, to trimming vegetation, to damages.[91]

Cities have created unique permitting regimes as well. Portland, Oregon has a solar collector permit system that exempts existing vegetation and solar friendly trees.[92] The city of Ashland, Oregon, uses a system of solar access permits to protect solar collectors from shading by vegetation, but not from shading by buildings.[93] Boulder, Colorado has established a permit system that protects existing or proposed solar collectors from being shaded by new construction or by vegetation.[94] All of these municipal permits, like their state counterparts, create novel property rights for solar access.[95]

The public creation of such property rights through permits has several significant flaws. As with other governmental allocations, permit systems require costly new bureaucracies, sometimes at both the state and municipal levels.[96] In addition, they require individualized applications, the submission and review of which impose high costs on government, the applicant, and any affected third parties.[97] Despite creating a time-consuming review process, the outcomes in permit decisions may not satisfy all of the affected parties, leading to claims that the permitting system is unfair. Moreover, because outcomes are unpredictable, benefited and burdened landowners may decline to enter into express agreements, such as the ones described in Part I, which would obviate

[91] *Id.* § 66.0403(7).

[92] PORTLAND, OR., CITY CODE & CHARTER § 3.111.050 (2009), *available at* http://www.portlandonline.com/Auditor/index.cfm?c=28472#cid_15192.

[93] ASHLAND, OR., MUN. CODE § 18.70.070 (2008), *available at* http://www.ashland.or.us/Code.asp?CodeID=3338 (follow "18.70.070" hyperlink) (indicating that shading by buildings is addressed separately by the setback provisions of the ordinance); *see also* Swensen et al., *supra* note 30, at 9 (stating that in Ashland, "while property owners do not need to be proactive to obtain protection from shade caused by structures [because of zoning setback and height rules], they do need to take action to protect their solar collecting devices from shade produced by vegetation").

[94] CITY OF BOULDER, SOLAR ACCESS GUIDE OR SOLAR SHADOW ANALYSIS 1 (2006), *available at* http://www.bouldercolorado.gov/files/PDS/codes/solrshad.pdf (requiring that building permit applicants submit a shadow analysis showing that their proposed construction will shade adjacent lots no more than a hypothetical solar fence). Solar access permits are available for owners of properties not in Solar Access Areas (where certain per se protections already exist). *Id.* (clarifying that solar access permits are available to homeowners whose planned solar systems "need more protection than is provided automatically in Solar Access Areas I and II").

[95] *See, e.g.*, N.M. STAT. ANN. § 47-3-4(A) (West, Westlaw through laws effective Apr. 10, 2009) (declaring "that the right to use the natural resource of solar energy is a property right"); WYO. STAT. ANN. § 34-22-103 (2007) ("The beneficial use of solar energy is a property right."); Bradbrook, *supra* note 18, at 170 ("[S]ome legislatures [like Wyoming and New Mexico] established the right of solar access as a separate, novel interest in property.").

[96] *See* Bradbrook, *supra* note 18, at 189.

[97] Eisenstadt, *supra* note 2, at 33.

the need for a permit.[98] In the long term, property rights granted by permit might not be recorded on the land records, which could prevent subsequent purchasers (both benefited and burdened) from understanding their rights and duties.[99]

In addition to the administrative challenges created by a permit program, many commentators have expressed concern that solar collector permits over-protect energy uses and thwart real estate development.[100] Historically, American courts and legislatures resisted creating solar rights to avoid impeding development.[101] While any solar rights regime might impede development, government-issued permits are more likely to impede development on a wide scale than, say, express agreements between neighbors. In an urban setting, a solar permit owned by one landowner might prevent another landowner several blocks away from building a skyscraper that would shade the permit holder's property. In such a situation, the builder of the proposed skyscraper might petition the permitting agency for an exemption from the obligations of the permit. The denial of the petition would effectively prevent a skyscraper from being built; on the other hand, a grant of the exemption would erode the value of the permit system as a whole by introducing uncertainty into the entitlement process.

The would-be builder of the skyscraper, and others in similar situations, may have grounds for a takings claim against the permitting agency. Indeed, several scholars have argued that permit statutes, either as written or as applied, unconstitutionally take the property of burdened landowners.[102] A

[98] Bradbrook, *supra* note 18, at 189 (observing that a permit system "vests substantial discretion in the local council, which means that difficulty arises in predicting the likely outcome of disputes. This discourages neighbors from reaching compromise settlements and leads to protracted hearings.").

[99] *Cf.* Eisenstadt, *supra* note 2, at 33 (identifying as a separate problem that "[t]he volume of easements contained in property records might hinder title searches by title insurance companies").

[100] Bradbrook, *supra* note 27, at 262-63 ("Under New Mexico law, the installation of a small solar hot water system could by itself prevent a large commercial or industrial development from occurring on neighboring land. In this way, the proper development of towns and cities can be impeded." (footnote omitted)); Bradbrook, *supra* note 18, at 176; Lungren, *supra* note 1, at 182; Polis, *supra* note 40, at 372 ("The statute appears, however, to assume a preference of use for energy purposes [over other uses] . . . .").

[101] Bradbrook, *supra* note 27, at 263. The *New York Times* offered this explanation for the American rejection of solar rights back in 1878. *See Ancient Lights*, N.Y. TIMES, July 7, 1878, at 6 ("[C]ourts have rendered decisions that the law of ancient lights is inappropriate and inapplicable in America . . . . Our sparsely-settled country, they say, has not required such a law; encouragement of building is more needed than restrictions upon it.").

[102] *See, e.g.*, Gergacz, *supra* note 30, at 17 ("The New Mexico statute probably crosses the line into the unconstitutional arena. Since no limitation is placed upon the size or location of the solar collector, the broad sweep of the protection given to the solar energy user could well render useless the property of the adjoining landowner."); Grout, *supra* note

takings challenge might succeed if a burdened property owner could prove that the permit reduced her property's value in violation of established takings precedent and that the government did not compensate her for this reduction.[103] None of the permit schemes described here provide compensation for burdened neighbors, at least in part because questions relating to compensation – how an agency could determine the impact of a solar permit, which neighbors would merit compensation, and who should disburse the compensation – are inherently difficult to resolve.[104] Nonetheless, the possibility of takings claims presents a real challenge to the wide-scale enactment of solar permitting systems.

B. *Zoning*

Like permit regimes, zoning ordinances require government decisions on individual applications – decisions that may be criticized on several grounds. Zoning refers to the regulation of uses, lot sizes, building characteristics, and other site features through a local body that has been publicly elected or appointed to uphold the map and text of the zoning ordinance.[105] Localities that choose to address solar access through the enactment and application of their zoning ordinances must find grounds in state law. As a starting point, they may rely on the authority granted by enabling statutes in every state, which authorize them to provide for "safety, morals or general welfare" and "adequate light and air."[106] To make localities' authority more explicit, at least

86, at 959 (criticizing the New Mexico law as unconstitutional in certain cases where the grant of the right could so diminish the value of the burdened neighboring property that the grant would constitute a taking without just compensation); Stephen B. Johnson, *State Approaches to Solar Legislation: A Survey*, 1 SOLAR L. REP. 55, 121 (1979) ("The scheme could be construed as a taking without compensation instead of a regulation if the diminution in value is great enough, and if alternative uses are nonexistent."); Lungren, *supra* note 1, at 182 (arguing that the absolute property right granted by New Mexico's Solar Rights Act "diminishes the value of the neighbor's property without providing just compensation").

[103] The case most likely to be used to measure the skyscraper builder's takings allegations is *Penn Central Transportation Co. v. New York City*, 438 U.S. 104 (1978), which established a three-factor balancing test to weigh takings cases.

[104] *But see* Bronin, *supra* note 10, at Part III.B (proposing some guidelines for compensating losing parties).

[105] *See* BLACK'S LAW DICTIONARY, *supra* note 25, at 1757.

[106] *See* HAYES, *supra* note 3, at 74 ("The right of governments to impose zoning controls has been widely upheld by courts for more than fifty years."); Eisenstadt, *supra* note 2, at 40 (explaining that rules which involve solar access likely rely on "adequate light and air" provisions in state enabling statutes); Osofsky, *supra* note 32, at 647 ("Solar zoning ordinances likely will be upheld by the courts if they demonstrate some tendency to serve the public health, safety, morals or general welfare."); Phelps & Yoxall, *supra* note 30, at 153 ("Arguably, promotion of solar energy is a justifiable use of a municipality's judicially recognized police power to zone for the 'health, safety or general welfare of the

thirteen states authorize localities to zone for solar access.[107] In addition, a few states require that solar access be taken into account when designing zoning

community.'" (citing Nectow v. City of Cambridge, 277 U.S. 183 (1928) and Village of Euclid v. Ambler Realty Co., 272 U.S. 365 (1926) for the proposition)).

[107] ARIZ. REV. STAT. ANN. § 9-462.01(A)(3) (2008 & Supp. 2008) (allowing localities to regulate "access to incident solar energy"); COLO. REV. STAT. § 31-23-301 (2008) (allowing localities to establish height, setback, and density requirements for many purposes, "including energy conservation and the promotion of solar energy utilization"); CONN. GEN. STAT. ANN. § 8-2(a) (West 2001) (allowing cities and towns to enact zoning regulations which "encourage energy-efficient patterns of development, the use of solar and other renewable forms of energy, and energy conservation" and "provide for incentives for developers who use passive solar energy techniques"); IND. CODE ANN. §§ 36-7-2-2, -8 (West 2006) (allowing localities to "regulate access to incident solar energy for all categories of land use" and prohibiting the adoption of ordinances "prohibiting or . . . unreasonably restricting the use of solar energy systems other than for the preservation or protection of the public health and safety"); IOWA CODE ANN. § 335.5 (West 2001) (requiring that county governments' zoning regulations "be made in accordance with a comprehensive plan and designed . . . to promote reasonable access to solar energy"); *id.* § 414.3 (West 2008) (requiring the same of city governments' zoning regulations); MINN. STAT. ANN. § 394.25(2) (West 1997 & Supp. 2008) (stating that localities could include in zoning ordinances the "protection and encouragement of access to direct sunlight for solar energy systems"); *id.* § 462.357(1) (West 2008 & Supp. 2008) (allowing localities to zone for "access to direct sunlight for solar energy systems"); NEB. REV. STAT. § 66-913 (2003) ("All counties or municipalities having zoning or subdivision jurisdiction are hereby authorized to include considerations for the encouragement of solar energy and wind energy use and the protection of access to solar energy and wind energy in all applicable zoning regulations or ordinances and comprehensive development plans"); N.Y. GEN. CITY LAW § 20(24) (McKinney 2003); N.Y. TOWN LAW § 263 (McKinney 2004); N.Y. VILLAGE LAW § 7-704 (McKinney 1996) (allowing cities, towns, and villages, respectively to regulate for "the accommodation of solar energy systems and equipment and access to sunlight necessary therefor"); OR. REV. STAT. ANN. §§ 215.044, 227.190 (West 2009) (allowing city councils and county governing bodies to adopt and implement solar access ordinances which take into account "topography, microclimate, existing development," and other factors, provided that such ordinances do not conflict with comprehensive plans and land use regulations); *id.* § 227.290(2) ("The council may consider, in enacting ordinances governing building setback lines, the site slope and tree cover of the land with regard to solar exposure."); TENN. CODE ANN. § 13-7-101 (1999 & Supp. 2007) (allowing counties to consider "[p]rotection and encouragement of access to sunlight for solar energy systems . . . in promulgating zoning regulations"); WASH. REV. CODE ANN. § 36.70.560 (West 2003 & Supp. 2009) (authorizing local planning bodies to enact "[s]pecific regulations and controls pertaining to . . . the encouragement and protection of access to direct sunlight for solar energy systems"); WIS. STAT. ANN. § 62.23(7)(c) (West 2000 & Supp. 2008) (granting town councils the ability to draft zoning regulations which, among other things, "provide adequate light and air, including access to sunlight for solar collectors"); WYO. STAT. ANN. § 34-22-105(a) (2007) (allowing localities to regulate height, location, setback, and energy efficiency of structures, height and location of vegetation, the platting and orientation of land developments, and the type and location of energy systems).

ordinances or comprehensive city plans,[108] and various related initiatives have become law.[109] Several other states explicitly prohibit localities from passing ordinances (zoning or otherwise) that would inhibit the operation of solar collectors.[110] These measures are a start. However, as has been argued

[108] *See, e.g.*, ARIZ. REV. STAT. ANN. § 9-461.05(C)(1)(d) (2008 & Supp. 2008) (requiring localities to consider "air quality and access to incident solar energy for all general categories of land use"); CONN. GEN. STAT. ANN. § 8-23(c) (West 2001 & Supp. 2009) (requiring that a planning and zoning commission develop a plan of conservation and development which considers "the use of solar and other renewable forms of energy"); IOWA CODE ANN. § 335.5 (West 2001) (requiring that county governments' zoning regulations "be made in accordance with a comprehensive plan and designed . . . to promote reasonable access to solar energy"); *id.* § 414.3 (requiring the same of city governments' zoning regulations); 53 PA. CONS. STAT. ANN. § 10604 (West Supp. 2008) (requiring municipalities to design zoning ordinances which "promote, protect, and facilitate . . . access to incident solar energy").

[109] *See, e.g.*, CAL. PUB. RES. CODE § 25982 (West 2007 & Supp. 2009) (requiring that solar collectors "be set back not less than five feet from the property line, and no less than 10 feet above the ground," irrespective of any applicable zoning ordinance); 65 ILL. COMP. STAT. ANN. 5/11-12-5(5), 11-13-1 (West 2005 & Supp. 2008) (giving city plan commissions the authority to recommend to municipalities "schemes for regulating or forbidding structures or activities which may hinder access to solar energy" and allowing municipal authorities "to regulate or forbid any structure or activity which may hinder access to solar energy"); NEB. REV. STAT. § 66-914 (2003) (authorizing zoning boards to grant variances if the strict application of the zoning ordinance would restrict the use of solar energy systems, as long as the variance was "without substantial detriment to the public good and without substantially impairing the intent and purpose of such regulation or ordinance"); UTAH CODE ANN. §§ 10-9a-401(2)(d) (2007), 17-27a-401 (2005) (allowing municipalities and counties, respectively, to account for "the use of energy conservation and solar and renewable energy resources" in their comprehensive plans); WIS. STAT. ANN. § 66.0401(2) (West 2003) (providing that localities "may provide by ordinance for the trimming of vegetation [which existed prior to the installation of a solar collector] that blocks solar energy" and may include "a designation of responsibility for the costs of the trimming"); *id.* § 700.41(2)-(3) (West 2001) (defining solar envelopes and providing that "the owner of a solar energy system or a wind energy system is entitled to receive damages, court costs and reasonable attorney fees" from anyone who builds beyond the solar envelope); *see also id.* § 700.41(2)(a) (defining "building envelope" to mean "the 3-dimensional area on a lot on which building is permitted, as defined by the existing ground level and by any applicable height restriction, setback requirement, side yard requirement or rear yard requirement"); *id.* § 700.41(2)(c)(1) (defining "obstruction" to mean "[t]he portion of a building or other structure which blocks solar energy from a collector surface between the hours of 9 a.m. to 3 p.m. standard time if the portion of the building or structure *is outside a building envelope* in effect on the date of the installation of the solar collector" (emphasis added)).

[110] CAL. GOV'T CODE § 65850.5(a) (West Supp. 2009) (prohibiting localities from creating "unreasonable barriers to the installation of solar energy systems, including, but not limited to, design review for aesthetic purposes, and not unreasonably restrict[ing] the ability of homeowners and agricultural and business concerns to install solar energy systems"); IND. CODE ANN. § 36-7-2-8 (West 2006) (prohibiting local governments from

elsewhere, states should be more active in adopting regulations that advance sustainable technologies, such as solar collectors, without infringing on local autonomy.[111] The paucity of state laws relating to solar zoning confirms that more could be done at the state level to encourage this method, however flawed, of providing solar rights.

Whether solar zoning is specifically authorized, a zoning ordinance establishes a baseline from which property owners may request a deviation. Where authorized to do so, localities might zone to protect solar access in two ways – one that builds on the existing baseline, and one that resets the baseline. First, localities may allow solar rights seekers to obtain solar rights through existing processes for variances, special exceptions, and other flexibility rules common to zoning schemes across the United States. Alternatively, in the map and text of the zoning ordinance, or in a special solar zoning ordinance, localities may specify new "solar zones" which define how property owners in such zones may establish solar rights, either as of right or by individual petition.[112]

"adopt[ing] any ordinance which has the effect of prohibiting or of unreasonably restricting the use of solar energy systems other than for the preservation or protection of the public health and safety"); N.M. STAT. ANN. § 3-18-32(A) (West, Westlaw through laws effective Apr. 10, 2009) ("A county or municipality shall not restrict the installation of a solar collector as defined pursuant to the Solar Rights Act, except that placement of solar collectors in historic districts may be regulated or restricted by a county or municipality."); WIS. STAT. ANN. § 66.0401(1) (West 2003) ("No county, city, town, or village may place any restriction, either directly or in effect, on the installation or use of a solar energy system unless the restriction . . . (a) Serves to preserve or protect the public health or safety. (b) Does not significantly increase the cost of the system or significantly decrease its efficiency. (c) Allows for an alternative system of comparable cost and efficiency."); WYO. STAT. ANN. § 34-22-105(c) (2007) (prohibiting localities from prohibiting the construction of solar panels except for reasons of public health or safety).

[111] *See* HAYES, *supra* note 3, at 220 (suggesting that states "could require localities to adopt such [solar access] ordinances and could specify standards the ordinances must meet; [they] might also provide for state review of proposed ordinances and regulations"); Sara C. Bronin, *The Quiet Revolution Revived: Sustainable Design, Land Use Regulation, and the States*, 93 MINN. L. REV. 231, 235, 250-55 (2008) (arguing for states to play a greater role in land use regulations affecting sustainable development, including solar access issues). Zoning is, for now, an inherently local activity, and zoning decisions cannot be made at the state level. *See* Stangl, *supra* note 55, at 622 ("[I]t would arguably be an unworkable solution for a state legislature to devise an access scheme that would be applicable on a state-wide basis.").

[112] Several people have argued that a separate, specific solar ordinance is preferable to incorporating solar access into the existing zoning code. *See* Osofsky, *supra* note 32, at 641 ("Though conventional building height limitations, lot size restrictions, and set-back requirements unintentionally aid the solar energy user, specific solar ordinances are still preferable."); Zillman & Deeny, *supra* note 4, at 42-43 ("[B]uilding height limitations, lot size restrictions, and set-back requirements . . . may be the functional equivalent of a solar ordinance, but a specific ordinance is preferable.").

The first method for establishing solar rights in a zoning scheme requires that a solar rights seeker follow established procedures to request specific relief from the zoning ordinance.[113] To receive a favorable ruling for a variance, special exception, or other flexibility device from the zoning board, an applicant must submit plans for proposed construction and indicate how such plans comport with the zoning ordinance and, if applicable, the comprehensive plan. Consider, for example, a situation in which a property owner seeks to install a solar collector on her roof, but the zoning ordinance prohibits the installation of "equipment" on roofs in the zone in which her property is located. She may submit an application for a variance for her property, which states that her property is exempt from the prohibition on equipment. The review process may be lengthy and expensive, and the board's ultimate decision may be at odds with either prior decisions or the ordinance itself. Moreover, any right that she might receive through her petition would be among the weakest of the solar rights described in this Article. If the zoning board granted her the variance, she would not receive a right to solar access, which is enforceable against others, but merely a right to establish access without the ability to change others' behavior. In other words, her variance would not allow her to prohibit a neighbor from erecting a skyscraper that shades her solar collector. Nonetheless, the possibility of working within existing rules to deviate from the baseline set by the zoning ordinance should be noted as one path toward solar rights.[114]

The second possible means of protecting solar rights – drafting new, comprehensive solar zoning provisions, or in other words, resetting the baseline – better serves solar rights seekers because such provisions may govern all properties within a neighborhood or neighborhoods, a situation which renders solar rights enforceable (at least in part) against others.[115] At their most basic, such solar zoning ordinances could limit heights, restrict lot sizes, establish setback requirements (perhaps expanding setbacks for southern exposures – the preferred orientation for solar collectors in this country), and

[113] Another zoning alternative, not mentioned in this Article, is contract zoning, in which the landowner and local government agree to special zoning rules in exchange for landowner promises. At least two commentators have suggested that contract zoning could "stimulate solar energy utilization." Phelps & Yoxall, *supra* note 30, at 151.

[114] Zoning ordinances often ban solar collectors. Berryhill & Parcell, *supra* note 6, at 441 (commenting that "[z]oning laws providing for aesthetic controls and structure orientation may discourage or prohibit installation of solar equipment"); Bronin, *supra* note 111, at 249-55 (describing the ways in which local laws, including zoning ordinances, thwart green building technologies such as solar collectors).

[115] As a practical matter, retroactive imposition of zoning presents challenges: "A zoning ordinance typically would utilize height limitations and set back requirements to assure unobstructed sunlight. This is impractical in areas already developed since structures cannot be moved to meet new requirements for southerly set backs." Matuson, *supra* note 56, at 852.

create other rules that would facilitate solar access.[116] A more detailed ordinance might create an overlay zone to the zoning map or otherwise designate particular blocks as "solar blocks" and mandate solar access rights for parcels within that block.[117] Perhaps the most sophisticated solar zoning ordinance in this country governs construction in Boulder, Colorado, which has created a system of "solar envelopes" and "solar fences," each of which function differently in different neighborhoods.[118] The solar envelope, similar in concept to the solar skyspace,[119] delineates a three-dimensional space over a parcel beyond which no construction or vegetation can occur without illegally interfering with the solar rights of neighbors.[120] The solar fence represents a vertical plane along a property line that casts an imaginary shadow that cannot be exceeded in length by the shadows cast by any building or tree on the neighboring property.[121] The Boulder solar ordinance divides the city into three zones, governed by area-wide rules establishing various solar envelope, solar fence, and other requirements.[122] Commentators have lauded the envelope and fence elements of the Boulder system.[123]

Boulder notwithstanding, local government experiments with solar zoning ordinances remain few and far between. Local governments may resist

[116] *See* Osofsky, *supra* note 32, at 641.

[117] *See* Polis, *supra* note 40, at 378, 385-87 (indicating that solar ordinances might "designate a particular block or particular blocks for solar use" or might create mandatory solar zones where the zoning board would disapprove construction "when the proposed project would impede solar access rights").

[118] *See* CITY OF BOULDER, *supra* note 94, at 1.

[119] *See supra* note 77 and accompanying text.

[120] *See* OR. REV. STAT. ANN. § 105.885 (West 2003); Bradbrook, *supra* note 18, at 187; Sampson & Charo, *supra* note 38, at 430 (contrasting traditional zoning, which limits construction to within a rectangular volume, to solar zoning, which creates a limiting volume topped by multiple planes at angles defined by sun location).

[121] *See* Bradbrook, *supra* note 18, at 187-88 (explaining that "[u]nder this system, no building or tree may be erected or planted on one block of land if it would cast a shadow on neighboring land longer than the shadow that would be cast by an imaginary fence of a designated height on the property boundary" at certain times of the year).

[122] *See, e.g.*, BOULDER, COLO., REV. CODE § 9-9-17(d)(1) (1981) (barring persons from erecting structures which would shade a protected area to a degree greater than the lot would be shaded by a solar fence twelve feet in height for Solar Access Area I and twenty-five feet in height for Area II, and requiring solar access permits for any protection in Area III); *see also* CITY OF BOULDER, *supra* note 94, at 1 (indicating the height of the solar fence in Solar Access Areas I and II and describing the use of the fences for shadow analysis); Luke J. Danielson, *Drafting a Solar Access Ordinance: One City's Experience*, 3 SOLAR L. REP. 911, 936-37 (1982) (describing in detail the solar fence concept in Boulder).

[123] *See, e.g.*, KRAEMER, *supra* note 14, at 104 (indicating that the solar fence "takes into account topography, existing improvements and trees, and requires no complex or arbitrary procedures"); Osofsky, *supra* note 32, at 637, 642 (defining solar or building envelopes and calling "[s]olar envelope zoning . . . a promising comprehensive and innovative approach that local governments can use to guarantee solar access in residential areas").

changing zoning ordinances because change requires money, time, expertise, and political capital which local officials may be unwilling to spend.[124] Despite slow progress, many scholars have argued that zoning represents a critical part of the solution to the solar access dilemma. Because zoning occurs at the local level, zoning officials can enable solar access in a manner that responds to extant topography, vegetation, land uses, density, and building types.[125] Moreover, unlike a statewide solar permit system, which would have to be created afresh, the boards, staff, and other administrative structures for a solar zoning ordinance already exist.[126] Decision-makers, whether elected or appointed, must account for their actions to the public, which some believe results in a proper balance between solar access and development.[127] Unlike some express agreements, all zoning decisions are public documents and, especially if recorded on the land records, provide notice of solar access rights to third parties.[128] Finally, zoning, if properly crafted, will likely avoid

[124] *See, e.g.*, Lyden, *supra* note 31, at 397-98; Phelps & Yoxall, *supra* note 30, at 161; Comment, *The Allocation of Sunlight: Solar Rights and the Prior Appropriation Doctrine*, 47 U. COLO. L. REV. 421, 433-34 (1975-1976). *But see* Bersohn, *supra* note 6, at 141 ("[R]ecent enactments on the state and municipal levels have set promising examples for recognition of the open space and urban design requirements of solar energy use.").

[125] *See, e.g.*, Bradbrook, *supra* note 27, at 266 (concluding that based upon the Australian experience, "too little emphasis has been given to the use of building, planning and zoning laws as a suitable mechanism for achieving the desired goal"); Bradbrook, *supra* note 18, at 185 (arguing for greater reliance on planning law in solar access regimes, because "planning law vests the majority of legal controls over land development in the hands of local councils" and "solar access considerations are closely interrelated with important planning issues concerning building height and setback requirements, block sizes and orientation, and the orientation of streets"); Eisenstadt, *supra* note 2, at 47 (indicating that zoning provides flexibility and localization on a block-by-block basis and is a common and well understood mechanism for land use planning); Lyden, *supra* note 31, at 397 (indicating local governments' expertise in "important considerations such as prevailing land use patterns, the needs of the community, topography, and the height and bulk of buildings"); Dwight C. Seeley, Comment, *Comparative Aspects of Access to Sunlight: The United States, Great Britain, and Japan*, 21 HARV. INT'L L.J. 687, 705 (1980) ("Comprehensive solar zoning would be relatively cheap to administer because the machinery already exists for zoning decision-making."); Stangl, *supra* note 55, at 622 ("[I]t is precisely this kind of area-by-area analysis that is imperative to widespread solar energy use and which makes zoning particularly applicable to the solar access problem.").

[126] *See, e.g.*, Stangl, *supra* note 55, at 622.

[127] *See, e.g.*, Lyden, *supra* note 31, at 397.

[128] Melvin A. Bedree, Recent Case, Prah v. Maretti, *108 Wis. 2d 223, 321 N.W.2d 182 (1982)*, 52 U. CIN. L. REV. 208, 221 (1983) ("[A]s the *Prah* dissent stated, control over solar access through zoning would have the benefit of placing landowners on notice that a particular neighbor has a solar access right.").

takings, equal protection, and due process challenges to which other systems (such as permits) may be subject.[129]

Nonetheless, zoning presents concerns that cannot be overlooked. With respect to transaction costs, zoning applications and submissions consume time – with months required for appeals and public hearings, where applicable. Applicants with difficult cases may find themselves mired in bureaucracy, the navigation of which requires them to hire costly experts and attorneys. Comprehensive ordinances that create building envelopes that enable the passage of light by segregating structures on individual large lots may, in effect, mandate sprawl. While individual property owners who receive a solar right through a zoning ordinance benefit, other property owners must bear the diffuse costs of sprawl – a far worse problem, arguably, than the low rate of solar collector utilization.[130] Solar zoning should not rely on a large-lot solution.

In addition to these problems, solar zoning may raise fairness concerns. The text of a solar zoning ordinance may not account for variations in site conditions across the properties under its jurisdiction. Solar envelopes, for example, may be difficult to define on irregularly shaped parcels or in hilly areas, a situation that may lead to unequal application of the rules.[131] Enforcement may also be arbitrary when zoning boards modify their interpretations of the zoning ordinance from case to case. In addition, the failure to compensate burdened parties may create severe inequities among landowners, and could also subject solar zoning ordinances to takings clause challenges. No comprehensive solar ordinance provides compensation to property owners who suffer from the ordinance's restrictions.[132]

Finally, zoning does not create a true vested property right.[133] Even if zoning ordinances change relatively infrequently, changes to the scope of solar

[129] Eisenstadt, *supra* note 2, at 42 (concluding "that the 'taking' problem does not hinder the validity of solar access zoning ordinances"). *But see id.* at 42-43 (discussing due process concerns arising from solar zoning); Matuson, *supra* note 56, at 852 (contemplating the potential for unconstitutional takings when solar zoning fails to "equitably balance the competing interests of solar energy use and private property rights"); Phelps & Yoxall, *supra* note 30, at 153-57 (identifying takings, equal protection, and due process issues).

[130] Matuson, *supra* note 56, at 852 ("Blanket zoning for solar access may conflict with other energy conserving techniques such as compact and contiguous development . . . which decreases the amount of fossil fuels needed to heat and cool structures for transportation."); Phelps & Yoxall, *supra* note 30, at 151-52 (commenting that "large lot requirements inherently lessen the possibility of shading conditions resulting from a neighbor's action").

[131] *See* Bradbrook, *supra* note 18, at 189 (writing that with respect to solar envelopes, "[d]rafting a suitable ordinance intelligible to the average person is extremely difficult").

[132] A suggested means of compensation, transferable development rights and has been used by some cities as compensation for zoning or other land use restrictions. *See* Bronin, *supra* note 10, at Part III.B.

[133] Goble, *supra* note 16, at 122-23 ("While the landowner has the limited right that no changes in the zoning regulations affecting his land be made unless required by the public

rights in the ordinance which are not accompanied by an exemption for nonconforming uses may mean that a property owner who used a solar collector under a previous ordinance must dismantle or otherwise modify her solar installation.[134] Because it does not provide an enduring, secure property right, zoning is among the least effective means of securing solar access.

IV. COURT ASSIGNMENTS OF RIGHTS

Because the governmental allocations described in Part III are deficient, some solar rights seekers may turn to the courts. In theory, court decisions result from careful analysis of law and balancing of equities, and courts apply precedent to adapt to new realities. Indeed, American courts have on numerous occasions created legal rights to advance innovations with broad social impacts.[135] In 1946, for example, the Supreme Court accommodated the advent of the airplane era by limiting property owners' rights to only the airspace such owners could utilize.[136] To have ruled otherwise, as Justice Douglas pointed out, would have exposed airline companies to so many private claims that travel by air would have been impossible.[137] The Supreme Court's creation of a travelway for airplanes facilitated economic growth and transformed the way we live. Similarly, the scarcity of land and the proliferation of dense, high-rise condominium buildings gave rise to horizontal airspace as a unit of real property – a concept in property law, which had not existed before the advent of skyscrapers.[138] The property right in airspace allowed property owners to maximize use of their land – much as a solar right

interest, this right falls far short of the vested property interest necessary to create a solar right."); Lungren, *supra* note 1, at 180 (explaining that "[z]oning provisions do not vest rights in the property owner and are subject to change, often for political reasons"); Daniel P. Moskowitz, *Legal Access to Light: The Solar Energy Imperative*, 9 NAT. RESOURCES LAW. 177, 208 (1976) (concluding that solar "access pursuant to a zoning ordinance will not ripen into a prescriptive right"); Sampson & Charo, *supra* note 38, at 430 ("One troublesome aspect of traditional zoning and the solar envelope is that the solar user acquires no vested property right.").

[134] *But see* HAYES, *supra* note 3, at 78 ("Municipalities frequently make substantial revisions in their zoning laws. . . . It may be that if citizens perceive the changes to be in their own interest, they will accept them even more readily.").

[135] *See* John Edward Cribbet, *Concepts in Transition: The Search for a New Definition of Property*, 1986 U. ILL. L. REV. 1, 5 ("[O]ne would expect property law to change as social and economic conditions change. . . . [P]roperty concepts have not changed, but have only adjusted 'to the new condition of things.'"); Unger, *supra* note 3, at 548 ("In terms of rights in light, air, and views, the change has always hinged on society's growing needs.").

[136] U.S. v. Causby, 328 U.S. 256, 264 (1946).

[137] *Id.* at 261.

[138] Moskowitz, *supra* note 133, at 184 ("The evolution of the condominium-horizontal-airspace ownership theory provides an appropriate illustration. The scarcity of land and the desire for individual land ownership motivated the development of the theory. Revolutionary construction methods made the theory a reality.").

would help to maximize the energy-saving technologies of the solar collector.[139]

One might assume that ever-improving solar collector technology has inspired the clarification and codification of solar rights. In fact, the vast majority of courts appear to be hostile to the creation of solar rights, despite the theoretical applicability of several strands of common law. Solar rights might be created, for example, under nuisance rules, whether private or public. They might also be created via court-assigned prescriptive easements, which have been used in England and other places to protect solar access, which property owners have enjoyed for some period of time, or under an implied easement theory, which would apply to certain property subdivisions. None of these theories has taken hold on a wide scale. To the contrary, they have been almost unanimously rejected.

This Part analyzes these legal possibilities, but it is important to note at the outset that even if courts were receptive to solar rights theories, litigation will remain perhaps the least efficient and most expensive method of resolving solar rights. Court allocations can only assist with the protection of *existing* solar collectors, meaning that they are not useful in helping an individual decide whether to install a solar collector in the first place. More directly, the costs of litigation, borne by each party, exceed the costs of both express agreements and governmental allocations, and can be disproportionate to any anticipated benefit. Time also imposes a burden on solar rights seekers, as litigation can take months, and sometimes years. Uncertain outcomes and the existence of an adversary result in a stressful and complicated process, which at least one party will find unfair. Tracing each of these deficiencies through the judicial system demonstrates how courts' unwillingness to adapt to solar technology has severely limited solar rights and suggests that solar rights seekers should abandon the idea that courts will be willing allies in their cause.

A. *Nuisance*

Of the three possible court-made solar rights which this Part considers, nuisance law seems the most capable of providing solar rights: well-developed and flexible, its balancing test methodology lends itself to the weighing of interests at stake in solar rights disputes.[140] Despite this promise, however, nuisance law has not effectively been engaged to create solar rights. An analysis of the two key types of nuisance actions – private and public, the difference being that private nuisance claims allege harms against one discrete

[139] Yeary, *supra* note 78, at 141 (arguing that the "[p]otential use and enjoyment of sunlight makes it legally as important as the airspace right").

[140] *See* Gevurtz, *supra* note 13, at 113 ("Nuisance law, with its inherent flexibility, is a useful supplement to zoning laws. . . . Zoning commissions must make all-or-nothing decisions either to prohibit or allow a given use, but a court considering a nuisance action can permit a use and at the same time require the user to compensate those injured by it.").

party or parties, while public nuisance claims allege harms affecting the public as a whole – underscores this point.

Solar rights seekers have found only limited success in protecting access through private nuisance claims. The Restatement (Second) of Torts defines a private nuisance as "a nontrespassory invasion of another's interest in the private use and enjoyment of land"[141] and requires that the invasion be intentional and unreasonable.[142] The Restatement's rules instruct courts to weigh the harm and the utility of the activity; a private nuisance occurs if, on balance, the harm caused by the activity exceeds its benefit. Obstruction of a solar collector's access to light could therefore be considered a nuisance under Restatement principles if, on balance, the harm caused by the obstruction (say, rendering the solar collector defunct) is greater than benefits caused by the activity (say, erecting a tall structure that would shade the collector).[143] Before 1982, in the few cases that reached the courts, the judiciary declined to find that obstruction of sunlight from reaching solar collectors was a private nuisance.[144] In 1982, however, the Wisconsin Supreme Court decided *Prah v. Maretti*, which recognized a private nuisance claim for malicious obstruction of a solar collector under Restatement balancing principles.[145] In recognizing the malicious motivation behind the obstruction, the *Prah* court attempted to follow the longstanding judicial principle that so-called "spite fences" were actionable as nuisances.[146] The rationale for the spite fence rule is twofold: as

[141] RESTATEMENT (SECOND) OF TORTS § 821D (1979).

[142] *Id.* § 822(a).

[143] *See* Lyden, *supra* note 31, at 386 (stating that solar access is protectable under nuisance principles and offering "discomfort, annoyance, or disturbance of a landowner's peace of mind" and "junked automobiles, houses of prostitution, funeral homes, and stored explosives" as possible nuisances).

[144] *See, e.g.*, Siu v. McCully-Citron Co., No. 56405 (Haw. Dist. Ct., Jan. 9, 1979) (reported in *Solar Access Right Denied by Hawaii Court*, 1 SOLAR L. REP. 542, 543 (1979-1980)) (rejecting a plaintiff's request for an injunction on the construction of a high-rise building which obstructed sunlight to the plaintiff's solar collector, because zoning on the parcel on which the building was to be located allowed high-rises).

[145] Prah v. Maretti, 321 N.W.2d 182, 185-88 (Wis. 1982) (considering the defendant's choice to block the plaintiff's solar access a choice made out of spite and recognizing a private nuisance in which the defendant "unreasonably impair[ed] the uses or enjoyment of the other").

[146] *See, e.g.*, Hornsby v. Smith, 13 S.E.2d 20, 25 (Ga. 1941) (reasoning that a fence which "is done solely from malice, is an invasion of the right to light and air, and will authorize a court to grant relief"); Sundowner, Inc. v. King, 509 P.2d 785, 785, 787 (Idaho 1973) (holding that "no property owner has the right to erect and maintain an otherwise useless structure for the sole purpose of injuring his neighbor" and identifying as a spite fence an eighteen-foot-high sign which was placed sixteen inches away from a property line); *see also* Gevurtz, *supra* note 13, at 100 n.42, 101 nn.46 & 48. *But see* Fontainebleau Hotel Corp. v. Forty-Five Twenty-Five Inc., 114 So. 2d 357, 359 (Fla. Dist. Ct. App. 1959) (arguing that spite should not give rise to any legal protections where one "causes injury to another by cutting off the light and air . . . that would otherwise be available over adjoining

a public policy matter, actions motivated by malice or spite should be discouraged, and as a legal matter, balancing the interests (in solar collector cases) favors the solar rights seeker.[147] The court insisted that its recognition of this right did not unduly hinder land development,[148] but merely recognized a natural right inherent in property.[149] Interestingly, the United States Department of Justice filed an amicus brief arguing that finding for the plaintiff would advance the national policy of encouraging greater use of solar energy.[150]

Although solar collector proponents immediately lauded *Prah* as a sign that courts were finally beginning to recognize solar rights, the decision has attracted criticism. The dissent, cognizant that extreme hypersensitivity may defeat nuisance claims,[151] decried the majority's failure to characterize solar collectors as hypersensitive uses.[152] The dissent also argued that solar collectors themselves may be nuisances: "[S]olar panel glare may temporarily blind automobile drivers, reflect into adjacent buildings causing excessive heat,

land in its natural state, regardless of the fact that the structure may have been erected partly for spite"). At least one state, Maine, has passed a statute relating to spite fences. ME. REV. STAT. ANN. tit. 17, § 2801 (1964) (allowing a property owner to access an injunction remedy against a neighbor who maliciously blocks the owner's access to sunlight). *See also* Martha Freeman, *Securing Solar Access in Maine*, 32 ME. L. REV. 439, 451 (1980) (describing the mechanics of this statute).

[147] *See* Gevurtz, *supra* note 13, at 100-01 ("Two bases support this willingness to provide limited protection for light and air. First, courts acknowledge that society morally condemns actions motivated solely by malice and spite. Second . . . the judiciary applies a nuisance law approach by balancing conflicting interests.").

[148] *Prah*, 321 N.W.2d at 191 ("Recognition of a nuisance claim for unreasonable obstruction of access to sunlight will not prevent land development or unduly hinder the use of adjoining land. It will promote the reasonable use and enjoyment of land in a manner suitable to the 1980's.").

[149] J.B. Ruhl, *The "Background Principles" of Natural Capital and Ecosystem Services – Did* Lucas *Open Pandora's Box?*, 22 J. LAND USE & ENVTL. L. 525, 535 (2007) (calling *Prah* one of a few "rare exceptions" to the general rejection of an American property law canon which has been hostile to natural rights).

[150] Amicus Brief for the Justice Department at 15, Prah v. Maretti, 108 Wis. 2d 223 (1982).

[151] *See, e.g.*, Amphitheaters, Inc. v. Portland Meadows, 198 P.2d 847, 858 (1948) (holding that a drive-in theater is a sensitive land use with respect to shadows, so its owner was not entitled to relief from the floodlights at a neighboring racetrack). *But see* Lyden, *supra* note 31, at 388 ("[S]everal cases support the proposition that sensitive use does not bar nuisance protection, but rather is only a factor in the balancing equation." (citations omitted)).

[152] *Prah*, 321 N.W.2d at 197 (Callow, J., dissenting) (calling solar collectors "an unusually sensitive use").

and otherwise irritate neighbors."[153] Most damagingly, the dissent characterized *Prah* as an anomaly and a departure from other nuisance decisions, a conclusion with which several commentators have agreed.[154] Carol Rose, the eminent property scholar, has also criticized the majority for muddying law by turning a crystal rule ("that your neighbor has no right to the sunlight that crosses your lot unless your neighbor has gotten an easement from you") into a mud rule (a possible nuisance action, the result of which must be determined by a court).[155] Another commentator complained that *Prah* should have limited its holding to cases involving sunlight as an energy source.[156] Whatever the criticisms, and despite the publicity, *Prah* has not had a significant impact on solar access law. Wisconsin courts have cited it only for its unrelated holding on summary judgment,[157] and only two or three courts outside of Wisconsin have cited *Prah* favorably for its findings on nuisance.[158]

To consider a public nuisance claim, a court must rely on statutory definitions of nuisances that affect the public generally. Public nuisance statutes tell courts how to weigh different interests and specify the requirements for a nuisance finding. For solar collector owners, the only significant public nuisance statute is the California Solar Shade Control Act, which names as a public nuisance any tree or shrub which, during the hours of ten a.m. and two p.m., shades more than ten percent of the area around a previously installed solar collector.[159] Each day that the nuisance is not abated

[153] *Id.* at 195 n.3 (noting that the first automobiles were considered nuisances to travelers by horse, but when travel by automobile became dominant, "the horse became the nuisance").

[154] Dean N. Alterman, *Reflected Sunlight Is a Nuisance*, 18 ENVTL. L. 321, 337 (1988) (viewing *Prah* as a departure from court decisions that prohibited a private nuisance claim with respect to conduct, which was legal, reasonable, and without malice); J. Michael Banas, *Return to Ancient Lights?* Prah v. Maretti, 1984 DET. C. L. REV. 101, 106 (describing the case as "a substantial departure from previously unyielding property law concepts precluding a prescriptive right to light and air").

[155] Carol M. Rose, *Crystals and Mud in Property Law*, 40 STAN. L. REV. 577, 579 (1988).

[156] Michael G. McQuillen, Prah v. Maretti*: Solar Rights and Private Nuisance Law*, 16 J. MARSHALL L. REV. 435, 443 (1983) (explaining that doing so "would have left the well-settled law governing spite fences undisturbed").

[157] Potis, *supra* note 11, at 134.

[158] *See, e.g.*, Mohr v. Midas Realty Corp., 431 N.W.2d 380, 383 (Iowa 1988) (calling *Prah* and *Tenn v. 899 Assoc.* "persuasive" but finding them inapplicable to the case before it, which dealt with views, and not light); Tenn v. 889 Assoc., Ltd., 500 A.2d 366, 370 (N.H. 1985) (considering the rationale of *Prah* and finding that "the law of private nuisance . . . provides the appropriate standard for passing on a property owner's claims of interference with interests in light and air"). *But see, e.g.*, Sher v. Leiderman, 226 Cal. Rptr. 698, 702-04 (Cal. Ct. App. 1986) (rejecting nuisance claim for light and air and urging legislative involvement).

[159] CAL. PUB. RES. CODE §§ 25980-25986 (West 2007 & Supp. 2009).

is a separate offense, and the district attorney can prosecute offenders for up to one thousand dollars per offense.[160] The law does not apply to vegetation that began growing prior to the installation of a solar collector, vegetation grown on timberland, or agricultural crops.[161] Any city or county can, with a majority vote of the governing body, exempt itself from the Solar Shade Control Act.[162]

Critics of the Act complain that it should also apply to structures that block access, that it should not grandfather existing vegetation, that it should not allow municipalities to opt out, that it may raise takings claims, and that it gives too much power to solar collector owners because they are required to do nothing more than report a violation to a public prosecutor.[163] The Act has also been criticized for operating as a public nuisance statute, despite the fact that its definition of nuisance appears to include only nuisances of a private nature.[164] The Act's broad penalties and enforcement mechanisms, such as prosecution by a local district attorney, would not be available to individuals seeking to bring a private nuisance claim. As a result, it might be said that the Act may do too much to broaden the remedies available to those with private nuisance claims, under the guise of a public nuisance statute. The Act brings the whole body of public nuisance law into solar collector disputes, where

[160] *Id.* § 25983.

[161] *Id.* §§ 25982, 25984.

[162] *Id.* § 25985. *See also, e.g.*, SANTA CRUZ, CAL., COUNTY CODE § 12.28.040 (2007), *available at* http://ordlink.com/codes/santacruzco/_DATA/TITLE12/Chapter_12_28_SOLAR_ACCESS_PROTECT/12_28_040_Protection_of_solar_.html (covering new construction); DEL MAR, CAL., MUN. CODE § 23.20.100 (1997), *available at* http://www.delmar.ca.us/Government/Municipal%20Code/Chapter_2320.pdf ("In the event adjacent landscaping deprives a site of reasonable solar access, and/or shades an existing solar collection device, the owner of a site so affected may petition the City Council for abatement of the foliage as a public nuisance.").

[163] *See* Bradbrook, *supra* note 18, at 184 ("The most obvious weakness is that the statute applies solely to shading from trees and shrubs and does not encompass shading caused by buildings or other structures."); Eisenstadt, *supra* note 2, at 34-35 (identifying the existing vegetation and opt-out issues as significant weaknesses of the statute); Gergacz, *supra* note 30, at 21 ("[T]he Act may involve a 'taking' of a neighbor's airspace without just compensation."); Potis, *supra* note 11, at 138 (identifying as a criticism of the Act that it "may lead to frivolous complaints and harassment of neighboring landowners since solar energy users must merely submit a complaint to the prosecutor"); Swenson et al., *supra* note 30, at 7-8 ("The Solar Shade Control Act fails to offer comprehensive protection to the right to make use of potential solar insulation in that: (1) the Act does not cover shade caused by structures (though set back requirements and height limitations in zoning ordinances may offer effective protection), (2) existing vegetation trumps new solar collectors (an important consideration in light of the recent solar power renaissance), and (3) the Act allows cities and counties to opt out of the Act by enacting an ordinance exempting themselves from its jurisdiction.").

[164] *See* Gergacz, *supra* note 30, at 24 ("Clearly, conduct prohibited by the Solar Shade Control Act does not inconvenience or annoy the general public. The annoyance is between adjoining landowners.").

other language might have sufficed.[165] Perhaps because of the limited circumstances in which it applies, few cases involving the Act have come to court.[166] However, the law gained national attention when it was invoked in a dispute that pitted one environmental good (the growth of endangered redwood trees) against another (solar collector use).[167]

Given the paucity of relevant judicial activity, it seems unlikely that nuisance actions – whether private or public – will provide the solution to the challenge of allocating solar access rights.[168] The unpredictability of outcomes may be the most significant deterrent: no matter how many cases courts decide, nuisance law always involves a highly individualized analysis of the applicable facts.[169] Solar collector owners may be unwilling to bear the high costs of litigation for uncertain results.[170] Nuisance litigation imposes not only private costs, but also the public cost on the courts, costs related to prosecution of public nuisances, and the consequences of erroneous judgments.[171] The remedy granted may not necessarily mitigate these costs. On the one hand, a solar collector owner bringing a nuisance claim may want to receive damages and attorneys' fees to recoup out-of-pocket expenses and other losses. On the other, she may want an injunction to stop the nuisance itself – the only path to

[165] *See* Bradbrook, *supra* note 27, at 262 ("One may validly ask why it is necessary to declare the shading of solar collector panels to be a nuisance and so import all the complexities of that body of law into the resolution of any dispute when it would be possible to create legislation providing a simple remedy without resorting to the law of nuisance at all.").

[166] *See, e.g.*, Zipperer v. County of Santa Clara, 35 Cal. Rptr. 3d 487, 492-95 (Cal. Ct. App. 2005) (finding that a homeowner's claims that local government had not used the Act to protect his solar collector from shade caused by vegetation legally insufficient because the local government had passed an ordinance exempting itself from the Act).

[167] *See* Barringer, *supra* note 39 (concluding that in the end, one property owner was forced to prune redwoods that shaded a neighbor's solar panels).

[168] *See* Kyle Graham, *Why Torts Die*, 35 FLA. ST. U. L. REV. 359, 389 (2008) (observing that solar nuisance actions have joined dead torts such as heartbalm torts, the tort of mishandling of dead bodies, and the tort for insults).

[169] *See* Vernon N. Kerr, *New Mexico's Solar Rights Act: The Meaning of the Statute*, 1 SOLAR L. REP. 737, 741 (1980); Sampson & Charo, *supra* note 38, at 418 ("[T]he development of nuisance law as a means by which to protect access to sunlight is likely to be a slow, piecemeal effort of plaintiffs establishing . . . the facts of individual cases.").

[170] Eisenstadt, *supra* note 2, at 30 (recognizing the costs and unpredictability of nuisance law as a means of guaranteeing solar rights); Pfeiffer, *supra* note 15, at 290 (hypothesizing that "it might take years to reach a final resolution . . . and the ensuing expense and delay certainly would not be conducive to widespread installation of solar energy systems").

[171] Williams, *supra* note 31, at 444 (defining the costs of erroneous judgments to include the cost of creating rights when it would have been efficient to deny them (and vice versa) and the cost of defining solar access either too generously or too narrowly).

a secure right in solar access. Conflicting goals with respect to the remedy may further deter potential litigants.[172]

B. *Prescriptive Easements*

Like nuisance law, the law of prescriptive easements provides a possible, but imperfect, means of securing solar rights through the courts. A prescriptive easement refers to a right of access "created from an open, adverse, and continuous use over a statutory period," which may be established without the consent of the property owner against whom the easement is claimed.[173] Solar prescriptive easements date back to at least the reign of the Roman emperor Justinian, under whom codified laws prevented neighbors from blocking sunlight, which had previously been enjoyed by a property owner for light, heat, or sundial operation.[174] A judge would decide the reasonableness of the expectation of sunlight one party could enjoy and the reasonableness of the amount of sunlight a neighbor might block.[175] Similarly, in England, the common law included an "ancient lights" rule that granted a property owner the right to prevent a neighbor from blocking light that reached the interior of her building and that she had enjoyed continuously for twenty

[172] *See* MILLER ET AL., *supra* note 43, at 7 ("Another limitation of nuisance suits is that only damages, and not injunctive relief, may be available in about half the jurisdictions (those using a 'balance of conveniences' approach)."); Ralph E. Becker, Jr., *Common Law Sun Rights: An Obstacle to Solar Heating and Cooling?*, 3 J. CONTEMP. L. 19, 30 (1976) (predicting damages as a remedy in about half of the jurisdictions, despite the fact that "[i]njunctive relief would seem almost imperative in a solar energy nuisance action"); Bradbrook, *supra* note 18, at 183 (predicting that a "remedy applied (if any) is likely to be money damages rather than an injunction"); Polis, *supra* note 40, at 365-67 (analyzing the Calabresi & Melamed approach to nuisance actions as it may be applied to solar access cases, finding that social utility can play some role in determining whether injunctive relief or damages are appropriate); Williams, *supra* note 31, at 445 (considering a conditional nuisance right in which "the plaintiff [solar collector owner] would not be entitled to injunctive relief, only to damages").

[173] BLACK'S LAW DICTIONARY, *supra* note 25, at 587.

[174] 3 THE CIVIL LAW INCLUDING THE TWELVE TABLES, THE INSTITUTES OF GAIUS, THE RULES OF ULPIAN, THE OPINIONS OF PAULUS, THE ENACTMENTS OF JUSTINIAN, AND THE CONSTITUTIONS OF LEO 283 (S. P. Scott, trans., 1932) (circa 450 B.C.E) (Paulus, Institutes, Book II) (stating that where a servitude applied, "a neighbor shall not raise his building any higher against our will, so as to lessen the amount of light in our house"); *id.* at 285-86 (Ulpianus, On Sabinus, Book XXIX) (stating that if a tree is planted "so as to cut off the sunshine from a room, or from a sundial, it must be said that, by producing shade in a place where sunshine was necessary, he acts in violation of the servitude imposed").

[175] *See* Jordan & Perlin, *supra* note 3, at 593 ("To build without leaving a neighboring house a minimum of light, a builder had to have a servitude (*altius tollendi*) over the neighboring land. . . . On the other hand, to have the right to more light than the bare minimum, a neighbor had to have a servitude (*altius non tollendi*) against the builder to prevent him from building higher. The decision as to what constituted a reasonable amount of light was left to the judge or arbiter.").

years.[176] The amount of light protected was measured by the amount of indirect sunlight required to illuminate half of a room beyond the "grumble line" – the point beyond which a normal person might complain about lack of light.[177] As one English commentator put it:

> [The rule was justified] on the one hand, [because] if persons were so indifferent as to allow their neighbours to use lights for twenty years without objection, the continuance of the windows could hardly be prejudicial; and, on the other hand, [because] it was inconsistent with justice to compel people to forego an employment which they had used without hindrance.[178]

The modern version of this rule has now been codified.[179]

---

[176] *See* BLACK'S LAW DICTIONARY, *supra* note 25, at 101 (defining "ancient-lights doctrine" as "[t]he common-law principle by which a landowner acquired, after 20 years of uninterrupted use, an easement preventing a neighbor from building an obstruction that blocks light from passing through the landowner's window"); KENELM EDWARD DIGBY, AN INTRODUCTION TO THE HISTORY OF THE LAW OF REAL PROPERTY 182 (1897) (defining ancient lights as a prescriptive negative easement of light and air over property of adjoining neighbor). Note that sixteenth-century English common law did not recognize an action for obstruction of access to light and air. *See, e.g.*, Bury v. Pope, (1586) 78 Eng. Rep. 375, 375 (holding that Bury did not have a right to a nuisance for Pope's "stopping of [Bury's] light" by Pope's building a house close to Bury's property line). Note also that ancient lights violations could be enforced in England through a nuisance action. Blackstone called a nuisance the act of "erect[ing] a house or other building so near to mine that it obstructs my ancient lights and windows." 3 WILLIAM BLACKSTONE, COMMENTARIES ON THE LAWS OF ENGLAND 216-17; *see also* 2 FRANCIS HILLIARD, THE LAW OF TORTS ON PRIVATE WRONGS 2-3 (1866) (indicating that a landowner invoking ancient lights could enforce the right to light through a nuisance action).

[177] *See, e.g.*, Charles Semon & Co. v. Bradford Corp., 2 Ch. 737, 747-48 (1922) (defining the "grumble line" as "the point whereat ordinary common sense people would begin to grumble at the quantum of light[, or as] the point in the room at which the percentage of illumination fell to 0.4 of the sill light"); Osofsky, *supra* note 32, at 638 (explaining that "[t]he light guaranteed by the doctrine is not direct sunlight – only enough indirect sunlight to go about your life indoors without grumbling"); Pfeiffer, *supra* note 15, at 289 (observing that "[a]t least half a room had to remain beyond the 'grumble line' – the point at which a normal person would start to complain about the lack of light – in order to preclude legal action to enforce the easement").

[178] HUMPHRY W. WOOLRYCH, A PRACTICAL TREATISE OF THE LAW OF ANCIENT AND MODERN WINDOW LIGHTS 3 (1864).

[179] *See* Prescription Act, 1832, 2 & 3 Will. 4, c. 71, § 3 (Eng.) ("When the [a]ccess and [u]se of [l]ight to and for any [d]welling [h]ouse, [w]orkshop, or other [b]uilding shall have been actually enjoyed therewith for the full [p]eriod of [t]wenty [y]ears without [i]nterruption, the [r]ight thereto shall be deemed absolute and indefeasible, any local [u]sage or [c]ustom to the contrary notwithstanding, unless it shall appear that the same was enjoyed by some [c]onsent or [a]greement expressly made or given for that [p]urpose by [d]eed or [w]riting."); Act for a Limitation of Actions and for Avoiding Suits in Law, 1623, 21 Jac., c. 16 (Eng.) (establishing the "twenty years" rule for the first time).

According to reported cases and historical accounts, American courts at first embraced the ancient lights doctrine and its allowance of prescriptive easements in light.[180] Treatises[181] and courts[182] confirmed, however, that by the late nineteenth century, the ancient lights rule had been rejected everywhere in this country, except in Louisiana.[183] Courts justified this rejection on the grounds that settlement patterns differed in seventeenth-century England and nineteenth-century America, and that applying the rule in

[180] *See, e.g.*, Clawson v. Primrose, 4 Del. Ch. 643, 672 (1873) (stating that courts' adoption of ancient lights was necessary and "can be altered only by the Legislature"); Gerber v. Grabel, 16 Ill. 217, 219 (1854) (finding "no reason for the inapplicability of rules in relation to air and light in houses, and that air should be as wholesome and agreeable here as [in England]"); Story v. Odin, 12 Mass. (7 Tyng) 157, 160 (1815) (describing the applicability of a rule to two adjacent houses in Boston); Robeson v. Pittenger, 2 N.J. Eq. 57, 64 (N.J. Ch. 1838) (stating that "the same [ancient lights] rules which have been established in the English courts . . . apply with the same force to us"); Berkeley v. Smith, 68 Va. (27 Gratt.) 892, 898 (1876) ("Where ancient lights have existed for upward of twenty years undisturbed, the owner of an adjoining lot has no right to obstruct them."); 2 HILLIARD, *supra* note 176, at 2, 8 (recognizing that "the modern rule is, that, although it is not alleged that the house is an ancient one, or that the plaintiff is entitled by prescription to the easement, he may prove an ancient right, if necessary to his case" and that an action may be maintained only if property values diminish); H. G. WOOD, A PRACTICAL TREATISE ON THE LAW OF NUISANCES IN THEIR VARIOUS FORMS § 152 (1875) ("There are a few early cases in which this right was recognized.").

[181] *See* WILLIAM WAIT, A TREATISE UPON SOME OF THE GENERAL PRINCIPLES OF THE LAW, WHETHER OF A LEGAL OR OF AN EQUITABLE NATURE 295 (1877) ("[T]he English doctrine of ancient lights has not been adopted in this country."); WOOD, *supra* note 180, § 153 (asserting that "in this country, no prescriptive right to have the light and air enter the windows of a building laterally over the land of another can be acquired, and in the absence of an express or implied grant to that end, an adjoining owner may build upon his own land so as to completely shut out the light of his neighbor's windows opening upon his land, and no action can be maintained therefor"); *see also* 46 A.C. FREEMAN, THE AMERICAN DECISIONS CONTAINING THE CASES OF GENERAL VALUE AND AUTHORITY DECIDED IN THE COURTS OF THE SEVERAL STATES 581-82 (1886) (asserting eleven years after the Wood and Wait treatises that the ancient lights rule "forms no part of the law of this country").

[182] *See, e.g.*, Turner v. Thompson, 58 Ga. 268, 271 (1877); Parker v. Foote, 19 Wend. 309, 318 (N.Y. Sup. Ct. 1838) ("There is . . . no principle upon which the modern English doctrine on the subject of lights can be supported. It is an anomaly in the law."); Powell v. Sims, 5 W. Va. 1, 5 (1871) (finding that because English common law does not apply, the court is "free to adopt and apply . . . such principles consistent with the rights of the parties . . . as will in our judgment best comport with the public good and the existing condition of things in this country"). Later commentators have noted that the West Virginia court failed to cite to statutory language that specifically mentioned English common law as a reference for the state's developing legal system. *See* James Audley McLaughlin, *The Idea of the Common Law in West Virginia Jurisprudential History:* Morningstar v. Black & Decker *Revisited*, 103 W. VA. L. REV. 125, 132 (2000).

[183] *See* Palomeque v. Prudhomme, 664 So. 2d 88, 91 (La. 1995) (indicating that Louisiana common law allows prescriptive easements in light to be established).

rapidly-growing cities and towns would impede development.[184] By prioritizing land development over access to light, American courts boosted not only urban growth, but also individuals' rights to develop their properties without undue hindrance, as such individuals might have otherwise found it difficult to discover (and thereafter extinguish) their neighbors' continuing use of light.[185] When deciding ancient lights rule cases, courts have often invited legislatures to set forth clear rules regarding prescriptive easements in light.[186] Several legislatures have responded by prohibiting such prescriptive easements altogether.[187]

Despite such an infertile judicial and legislative environment, the idea lingers that prescriptive easements may be an effective method of establishing lasting solar rights. Proponents of this view might believe that courts will

[184] *See, e.g.*, Lynch v. Hill, 6 A.2d 614, 618 (Del. Ch. 1939) (overruling *Clawson*, 4 Del. Ch. 643, by stating that the ancient lights rule was "wholly unsuited to our conditions . . . and would necessarily cause mischievous consequences in our growing cities, towns, and villages"); *Parker*, 19 Wend. at 317-18 (rejecting the rule in dicta, stating that "mischievous consequences" would occur if the rule were applied to the rapidly growing developments in the United States); *see also* Fontainebleau Hotel Corp. v. Forty-Five Twenty-Five Inc., 114 So. 2d 357, 358-59 (Fla. Dist. Ct. App. 1959) (stating that a property owner's rights may only be curtailed by a "right of enjoyment of . . . property *which is recognized and protected by law*," and excluding from this protection prescriptive easements in light and air).

[185] *See* Gergacz, *supra* note 54, at 146 (arguing that "[u]nlike a roadway or a drain across property, use of light and air by a dominant tenant is not discoverable through observation by a servient tenant"); Gevurtz, *supra* note 13, at 109-10 ("Two policy arguments are normally made in favor of land development [as a priority against sunlight access]. The first equates land development with progress and economic growth and thus favors it for its own sake. The second emphasizes the landowners' interest in developing property as they wish.").

[186] *See, e.g.*, *Fontainebleau*, 114 So. 2d at 360 (asserting that "to change the universal rule [by providing a right to light and air] . . . amounts . . . to judicial legislation").

[187] *See, e.g.*, COLO. REV. STAT. § 38-32.5-101 (2008) ("[A] solar easement shall not be acquired by prescription."); CONN. GEN. STAT. ANN. § 47-25 (West 2004) ("No occupant of real estate may acquire, by adverse occupation, the right to keep, sustain or enjoy any window or light, so as to prevent the owner of adjoining premises from erecting and maintaining any building thereon."); GA. CODE ANN. § 44-9-2 (2002) ("A right to an easement of light and air passing over another's land through existing lights or windows may not be acquired by prescription . . . ."); KY. REV. STAT. ANN. § 381.220(2) (LexisNexis 2002) ("[A] solar easement shall not be acquired by prescription."); MASS. GEN. LAWS ANN. ch. 187, § 1 (West 2003) ("Whoever erects a house or other building with windows overlooking the land of another shall not, by the mere continuance of such windows, acquire an easement of light or air so as to prevent the erection of a building on such land."); R.I. GEN. LAWS § 34-7-3 (1995) ("Whoever has erected or may erect any house or other building near the land of another person, with windows overlooking the land, shall not, by mere continuance of the windows, acquire any easement . . . ."); WASH. REV. CODE ANN. § 64.04.160 (West 2005) (prohibiting "the creation of an implied easement or a prescriptive easement"); W. VA. CODE ANN. § 2-1-2 (LexisNexis 2006) (enshrining, in 1868, the state's rejection of the ancient lights rule).

begin to recognize and respond to the increasing importance of sunlight as a valuable economic commodity.[188] In recognition of the value of these collectors, courts could be willing to establish a limited application of the ancient lights rule, modeled after the English doctrine, to protect solar collectors. A prescriptive easement created by courts could, for example, provide a permanent right in the solar skyspace over adjoining lands, if previously enjoyed for a certain number of years by the solar collector owner. Such an easement could prevent the servient tenant from obstructing sunlight flowing through that solar skyspace.[189] As is the case in England, property owners could register prospective prescriptive easements with local authorities.[190] Such property owners could be required to identify the servient and dominant estates and the solar envelope beyond which the solar skyspace required by the solar collector would be obstructed.[191] Notice could be given to affected parties.[192]

Although the possibility of granting prescriptive easements for solar collectors seems appealing, courts are unlikely to make such leaps. England's ancient lights rule, which requires a twenty-year occupancy period and which protects only a minimum amount of indirect light that reaches enclosed interior spaces, would hardly address the practical requirements of a solar collector

[188] *See* Prah v. Maretti, 321 N.W.2d 182, 190 (Wis. 1982) (criticizing other courts' rationale for rejecting ancient lights by saying that "[t]he need for easy and rapid development is not as great today as it once was, while our perception of the value of sunlight as a source of energy has increased significantly"); Bennett, *supra* note 89, at 231 (observing that to the extent *Prah* recognized "the increasing importance of sunlight as an energy source . . . the court may have [also recognized that] society now values sunlight so there is a right to light, at least insofar as the balance of the equities lies in favor of the solar energy consumer"); Bersohn, *supra* note 6, at 126 (arguing that "[a]mple building lot sizes and abundant fossil fuels, conditions which supported the rule against prescriptive acquisition of light and air rights, are rapidly fading into history"); Cribbet, *supra* note 135, at 22 (commending the *Prah* court for responding "to a new social climate").

[189] Gergacz, *supra* note 30, at 5 ("A solar access easement is a negative easement which prohibits the servient tenant from obstructing the sunlight flowing through a defined section of airspace above his property.").

[190] Right of Light Act, 1959 7 & 8 Eliz. 2, c. 56, § 2(1) (Eng.) (allowing landowners to register with local authorities "[f]or the purpose of preventing the access and use of Registration light from being taken to be enjoyed without interruption"). Note that English rules do not apply specifically to solar collectors. *See id.*

[191] *See id.* § 2(2)(a)-(b) (applying similar rules to prospective prescriptive easement recipients, but with respect to structures, as the English ancient lights rule protects only light accessible within a structure).

[192] *See id.* § 2(3)(a) (requiring that adequate notice be given to those "who, in the circumstances existing at the time when the certificate is issued, appear to the Lands Tribunal to be persons likely to be affected by the registration of a notice in pursuance of an application"). The Act also allows for temporary notice to be given in cases of "exceptional urgency." *Id.* § 2(3)(b).

owner.[193] A potential solar collector user could not depend on a right vesting twenty years into the future, and might therefore decline to invest in expensive solar technology.[194] Moreover, potential users might not want to gamble on courts' application of precedent meant to protect indirect lighting of building interiors to direct lighting required by solar collectors.[195]

Irrespective of judges' attitudes towards prescriptive easements for the protection of solar rights, practical reasons militate against reliance on court-created prescriptive easements. Prescriptive easements may misallocate incentives, causing landowners to rush to develop their properties and file notices to extinguish possible claims by neighbors wishing to build solar collectors.[196] If a good recording system is not in place, title searches may become extremely difficult and may reduce certainty in land purchases.[197] And as described above, the inefficiencies of court actions will deter many solar rights seekers, and the outcomes will not satisfy all parties, leading to claims of unfairness.

[193] *See* Stangl, *supra* note 55, at 583 ("[T]he essential shortcoming to using the doctrine of ancient lights as a solution to the solar access problem is the familiar one that comes from trying to adapt an existing legal theory to a problem it was not intended to solve."); *The Allocation of Sunlight*, *supra* note 124, at 430 ("The prescriptive period is far too long to offer any protection to the purchaser presently considering whether to convert his home to solar heating. That the doctrine of ancient lights generally relates only to reading light, not to uninterrupted sunlight, makes it unsuitable, without drastic judicial expansion, to sunlight collectors, most of which require entirely unshaded conditions.").

[194] *See* Gergacz, *supra* note 54, at 152 ("The homeowner or businessman who installs a solar energy system wants immediate protection, because his fuel supply is otherwise at the mercy of his neighbor."); Matuson, *supra* note 56, at 841 ("[T]he prescriptive period is too long to offer any protection to a purchaser considering solar energy in a residential or urban area.").

[195] *See* KRAEMER, *supra* note 14, at 132 (observing that "a solar collector requires a great deal more light than that required to make a man refrain from a 'grumble'"); MILLER ET AL., *supra* note 43, at 5 (arguing that even if the ancient lights doctrine is exhumed, "it would require such great modification that even a willing judiciary may refuse to make the leap without a legislative assist"); Lyden, *supra* note 31, at 373 (arguing that that "the ancient lights doctrine is a legal anachronism having no bearing on the viability of a nuisance action for sunlight obstruction"); Potis, *supra* note 11, at 130 (calling it "unlikely that this doctrine will ever assist a contemporary solar energy user").

[196] Berryhill & Parcell, *supra* note 6, at 432-33 (characterizing this race as "[a] neighbor contiguous to the tract of a solar energy system user would be forced to develop his land perhaps well in advance of the time necessary or desired in order to avoid the acquisition of an easement by the solar user"); Williams, *supra* note 31, at 452.

[197] *See* Bersohn, *supra* note 6, at 119 ("[T]he cost of title searches may have been increased considerably, for a cautious solicitor representing a client purchasing a site for development now must search not only for clouds on the title of the lot itself, but also for light obstruction notices registered against potential dominant tenements.").

C. *Implied Easements*

Less ink has been spilled over implied easements than prescriptive easements, perhaps because easements by implication occur only in very limited circumstances. A court may create an implied easement only if "an owner of two parcels of land uses one parcel to benefit the other to such a degree that, upon the sale of the benefited parcel, the purchaser could reasonably expect the use to be included in the sale."[198] The court must therefore find unity of ownership prior to the conveyance of the new parcel, intent among the parties to create an easement, and a need for the easement.[199] The rationale for implied easements rests in the notion that, given the facts, the parties did intend, or would have intended, to include the easement in the conveyance.[200] Perhaps the most common example of an implied easement is a roadway on land conveyed to another, over which roadway the conveyor still requires access.

In the solar context, a solar collector owner who has sold a portion of her property might later seek an implied easement to prevent the buyer from doing something on the buyer's property (building a tall structure, for example) which would prevent sunlight from reaching the solar collector she used to meet her energy needs for years preceding the sale.[201] After establishing unity of ownership, she would then have to argue that the parties intended to create an easement in light, but merely failed to do so in express terms. She would have to prove the intent of a party who – by virtue of being in court – firmly opposes her claim and would not admit to having such an intent. Finally, she would have to convince a court that she depends so heavily on the energy produced by a solar collector that it is rendered a "necessity" under common law precedent. With so much to prove, a solar rights seeker has a burden, which, in most cases, is extremely difficult to overcome. Indeed, no reported cases, either at the state or federal level, have created implied easements for solar collector access. Most courts reject the possibility outright.[202] The greatest barrier to implying an easement in solar collector cases appears to be the showing of necessity. A West Virginia court, for example, required a "clear showing of necessity," stating that implied easements for light should

[198] BLACK'S LAW DICTIONARY, *supra* note 25, at 587.

[199] Matuson, *supra* note 56, at 842 (listing these three requirements and adding, "believing that implied easements unduly burden land and its alienation and proper improvement, courts continue to be reluctant to find that these elements are present").

[200] Berryhill & Parcell, *supra* note 6, at 435.

[201] For another example, see Matuson, *supra* note 56, at 843, describing a scenario "where property has a building located upon it equipped with a solar collector and an adjacent parking lot[, and where i]f the lot is later sold or transferred, the new owner may be unable to block access to the collector."

[202] *See* JON W. BRUCE & JAMES W. ELY, JR., THE LAW OF EASEMENTS AND LICENSES IN LAND § 4:29 n.2 (2008) (citing cases from California, New York, Nevada, and Washington which call the rejection of implied easements in light "well-settled").

not "impede progress by prohibiting improvements to property necessary to keep in line with the development of the community."[203] Other barriers, such as proving intent, also endure.

Courts should no doubt do more to weigh competing values, including public policy, when considering such cases.[204] But even in the unlikely circumstance that courts begin to embrace the implied solar access easement, the limited circumstances in which such easements may occur would severely limit its utility. Implied easements in light have only been granted in three circumstances. First, they have been granted where the "light was so necessary to the trade use of a business premises that without it the property would be valueless."[205] Under this standard, courts may be reluctant to find that access to solar collectors is necessary, so long as alternative forms of energy remain viable.[206] Second, the easement seeker may have a claim if her access to light somehow related to a right of passage (the more common basis for an implied easement).[207] It is difficult to see how this exception could be applied with respect to solar collectors. Third, other successful cases involve implied easements claimed by owners of private property that abuts public streets.[208] Unless a solar collector owner asserts an implied easement over a public street, this exception is as unhelpful as the others. Only a few courts (and one state legislature) have allowed property owners to overcome the presumption against implied easements for light.[209] This state of affairs seems unlikely to change in the immediate future.

---

[203] Nomar v. Ballard, 60 S.E.2d 710, 719 (W. Va. 1950).

[204] *See* Unger, *supra* note 3, at 549 ("[R]ather than presuming the American common law regarding light, air, or view rights to be a general rejection, courts would be better served by a standard evaluating the competing considerations to determine whether public policy weighs in favor of such a right, and rule accordingly.").

[205] Polis, *supra* note 40, at 362.

[206] *See* Becker, *supra* note 172, at 26.

[207] Polis, *supra* note 40, at 362 (mentioning rights of ingress and egress).

[208] *See* BRUCE & ELY, *supra* note 202, § 4:29, n.10 (noting United States Supreme Court, Iowa, Mississippi, and Utah cases, which allowed implied easements over public streets); Moskowitz, *supra* note 133, at 197-98 ("An easement to light beaming across a street will be implied in favor of a parcel of property abutting on such a street, regardless of the history of the devolution of title held by the abutting landowner and the manner in which the street was established."). The Supreme Court wrote, "It is impossible for us to conceive of a city without streets, or any benefit in streets, if the property abutting on them has not attached to it as an essential and inviolable part, easements of light and air as well as of access." Muhlker v. New York & Harlem R.R. Co., 197 U.S. 544, 563 (1905).

[209] *See* GA. CODE ANN. § 44-9-2 (2002) (providing that "when a person sells a house and the light necessary for the reasonable enjoyment thereof is derived from and across adjoining land belonging to such person, the easement of light and air over such vacant lot shall pass as an incident to the house sold as being necessary to the enjoyment thereof"); BRUCE & ELY, *supra* note 202, § 4:29, n.3 (citing Minnesota, New Jersey, Pennsylvania, and Washington, D.C. cases that appear to allow implied easements in light and/or views);

After a review of the judicial developments with respect to nuisance, prescriptive easements, and implied easements, it is difficult to imagine that courts could ever become fully engaged with the development of a solar rights regime. Even if courts suddenly became receptive to solar rights, litigation would be a poor strategy for solar rights seekers for many reasons, including the uncertainty of the outcome and the related transaction costs. Rather than repeating "ancient" debates about ancient lights and other topics, modern scholars should shift their focus away from the courts. Instead, as the conclusion of this Article suggests, they should join a new debate about how jurisdictions might adopt an integrated approach, which addresses the concerns of both solar rights seekers and possible burdened parties.

CONCLUSION

Some of the "greatest minds in American law," including Oliver Wendell Holmes, Joseph Story, and Benjamin Cardozo, have considered the question of solar access.[210] Despite their efforts, and the concentrated efforts of legal scholars in the late 1970s and early 1980s, little progress has been made in ensuring solar rights. This Article urges a revival of their debate, in light of some lessons learned since.

Advocates may have three broad avenues toward solar rights: express agreements, governmental allocations, and court assignments. When viewed through the dual lenses of efficiency and transaction costs, court assignments – over which perhaps the most scholarly ink has been spilled – appear to be the least desirable method for obtaining solar rights. Accordingly, the courts should play only the smallest of roles in the reinvigorated debate. Instead (absent the creation of a new property right outside of the *numerus clausus*), advocates should focus on developing integrated schemes that combine express agreements and governmental allocations. Each scheme should meet jurisdiction-specific needs and should be adapted to consider many factors. The articulation of this integrated scheme is considered in a companion piece to this Article.[211]

Gergacz, *supra* note 30, at 7 (finding that because some "state courts have upheld implied easements . . . the creation of an implied solar-access easement is still possible").

[210] Gergacz, *supra* note 30, at 123 (indicating that "Oliver Wendell Holmes struggled with [the access issue] both as an attorney and as a judge, as did Story and Cardozo").

[211] Bronin, *supra* note 10.