

Title : Solar Access History and Implementation in Portland, OR

Prepared by Jaimes Valdez, Energy Policy Analyst

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Background and Summary :

Laws and regulations pertaining to the utilization and enjoyment of solar energy have a long history, both internationally and in the United States. The first were provisions in the 1700's associated with ensuring access to sunlight for illuminating interior spaces through windows. Since then, regulations preserving solar access for space heating, electrical generation, and meeting hot water needs have been implemented in hundreds of jurisdictions. As technologies for the effective utilization of solar energy have improved, there is increased interest and relevance in the laws and standards that protect users of specific solar technology. This report does not claim to be a comprehensive policy or legal document, but rather an overview of past approaches and potential future solutions. Specifically, it aims to explore and define some of the historical issues pertinent to the regulation and protection of solar access in the State of Oregon and City of Portland, OR starting from the mid-1970s to the present.

Generally solar energy provisions in local codes take the form of one of three tools : solar rights, solar access standards, and solar easements. Solar rights establish that the utilization of solar technology is allowed, and restrict the ability of jurisdictions or homeowner interest groups to prohibit the installation of specific technologies. These rights are typically established at the State level, though local jurisdictions can play a role in enforcement. Solar access standards establish the placement height, and orientation of buildings and vegetation to ensure that adjoining properties receive sunlight, and are typically defined at a local zoning code level. Solar easements are allowances granted to adjoining properties for the continued enjoyment of the benefits of solar energy, and can be established through administrative processes or voluntary bilateral agreement.

Solar access standards and solar access easements have been woven into the City of Portland code at various times over the past 30 years, seeking to protect properties from shading from trees and new building construction. The initial versions of solar access provisions were drafted well before the adoption of cost-effective utilization of photovoltaic technology for electrical generation. They were intended primarily for securing the benefit that passive solar heating provided to homes during the winter months. This "whole building" approach defined solar heating hours related to the winter solstice and times of exposure to the sun. In many ways this approach provided for the broadest possible utilization of solar, regardless of whether there would actually be sun on that solstice day. Taking into account that the solar resource is reduced in the wintertime, this approach is independent of specific technology or the benefit that the solar access protection provides to the impacted properties.

Starting in 1984, comprehensive efforts to define and create solar access protection were developed over a year-long stakeholder process and enacted by Portland City Council in 1985. These policies impacted new neighborhood development, as well as building design, effective February 1986. They were phased in over a period of a few months, with training provided to staff and contractors. In the following years, conflicts in implementation arose, leading to the weakening and exemption of solar access standards. At a high level, some of the solar access standards also conflicted with other urban

form and density goals. Most all of the provisions embodied in the code at one time have been subsequently removed through administrative and regulatory improvement processes.

A rewrite of the Zoning Code in April 1990 included a number of exemptions that limited the applicability of the Solar Access Standards. Later, the first Code Language Improvement Package (CLIP) in 1997 contained a major provision to delete the solar access standard entirely from the code chapter dealing with single-dwelling zones.¹ This removed any building-related standards from the code. Subsequent amendments assigned protection only from vegetation shading, utilizing a unilateral easement called a Solar Access Permit. The last major revision was the removal of the Solar Access Permit from the City Code in 2008. Currently the only local solar access provision in effect in Portland is Chapter 33.639, in the section of the Portland City Code related to Land Divisions. This regulation guides the size and orientation of lots when a property is being subdivided. It has limited current implementation, and a number of exemptions which limits its applicability.²

It is clear in looking back at the implementation of solar access standards and easements in Portland that the initial intent of regulations did not mesh well with the burdens of their application in the marketplace or the advances in technology through the years. For example, solar access provisions were stricter than other zoning and regulatory standards in early versions of Portland's solar access code. This led to expensive submittal documentation, reviews, modeling, and appeals. Later approaches to grant solar easements created a process so complicated to navigate that it was rendered ineffective, and was potentially illegal for the City to enforce. The fact that some past approaches have been eliminated does not reduce the need for future clarity and guidelines for owners of solar technology. As photovoltaic technology becomes widely integrated into buildings, and on-site energy generation is increasingly valuable, this primary question will be increasingly relevant: Who has access to sunlight, and under what terms?

Attempts to craft future solar access provisions should be sensitive to the benefits of solar energy in long-term carbon reduction, the allocation of costs to property owners, and total net value in meeting energy and urban form objectives. There are a few new tools to be explored that may meet these objectives.

- Market-based approaches can provide a methodology for the assessment and valuation of the energy saved or generated with solar would be one solution. A tradable easement that is clear, fair, and impartial would need to be created.
- District-specific solar access protection could be an effective tool, especially when paired with solar or energy efficiency construction standards. These could both require energy generation technology, as well as protect the utilization of solar.
- New models for participation in community-scale solar development can serve to offset the potential for reduced long-term solar opportunities in certain zones.

Developing a framework for future solar access protection should be done in a manner that encourages stakeholder involvement, meaningful dialogue about costs and benefits, and guidance from legal

¹ Code Language Improvement Project – Package #1 Planning Commission Recommended Draft May 7, 1997

² <http://www.portlandonline.com/shared/cfm/image.cfm?id=72542>

experts. Creating truly effective tools for solar access regulation could serve as an illustrative example for other jurisdictions.

Timeline of major changes to solar access policies and protections in Portland, OR:

Note on agency names: The names of the City of Portland departments responsible for implementation of solar access provisions have changed numerous times over the past decades. The following provides a timeline of policies, with notes on continuity of the various administrative departments responsible for implementing the solar access policy.

1975 – Oregon Department of Energy created

1979 – Oregon legislature creates solar easement and regulation options for local jurisdictions. Chapter 105.890 in the Property Rights section defines the requirements for creating and recording a solar easement.

1984 – Portland City Council passes resolution to implement the Solar Access Protection Plan, working with Oregon Department of Energy to research and create solar access ordinances. A one –year process begins, evaluating the value of solar access to Portland homes and seeking public opinion on implementation.

1985 – November - Solar Access Ordinances approved by City Council, creating Chapter 33.525 of the City Code.

1986 – February – Solar Access Ordinances take effect

1987 – Block Brothers Report highlights challenges of solar access implementation

1990 – April - Portland amends solar access code to provide exemptions for certain new developments including those on sloped lots.

1997 – Citing complexity and exemptions, Portland City Council passes resolution eliminating the solar access provisions for residential zoning from the City Code. Land Division code requirements and Solar Access Permit remain.

2000 – Portland Energy Office becomes Portland Office of Sustainable Development, and takes over responsibilities of the Solar Access Permit. It becomes code Chapter 3.111.030.

2008 – January – Portland Planning Bureau and Office of Sustainable Development are merged into Portland Bureau of Planning and Sustainability

2008 - Citing lack of historical use and cleanup of code language, City Council removes Chapter 3.111 and Solar Access Permit

2011 – June : HB 3516 passed, clarifying that solar is an permitted use in all zones where buildings are allowed