# A Report Evaluating Obstacles And Opportunities In The Detroit City Code For Installation Of Solar Power Systems

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# 1. Introduction

Due to concerns regarding energy costs and climate change, there has been sustained interest in alternative energy sources throughout the United States, including solar power systems. While these types of technologies are not new, improvements in efficiency and reductions in costs have made solar power systems more practicable for small-scale applications. There has been increased interest in installing small-scale solar power systems on or near a building with the hope that the solar power system will defray the costs of purchasing energy from traditional, fossil fuel based energy sources. While solar power systems still meet a rather small amount of energy demand in the United States, there is a substantial amount of anticipated growth in the coming years. However, the installation of solar power systems, particularly in cities, does not come without difficulties.

In general, there are two distinct obstacles that typically accompany the installation of a solar power system. First, prior to installation, the installer must ensure that the solar power system complies with municipal ordinances and state laws. Typically, the installation of a solar system will be subject to building codes and zoning ordinances. Second, since solar systems are permanent installations that are difficult to relocate, it also must be ensured that the solar collector has unimpeded access to sunlight. As such, many people that install a solar power system typically require some type of "solar right" that ensures that the solar power system will have continued access to sunlight.

In the context of Detroit's municipal code, this report will address the two obstacles mentioned above that are common issues regarding the installation and operation of solar power systems and will analyze whether they are likely to be obstacles to the installation and operation of solar power systems in Detroit. It will also discuss how other states and cities have addressed these obstacles, as well as how other cities have sought to promote the installation of solar power systems within their boundaries.

## 2. State and Local Regulation of Solar Power Systems

In general, the laws of states and municipalities either have not been updated to address the installation of solar power systems in cities, or they have sought to encourage the development of solar power by amending laws and regulations to promote the installation of solar power systems and passing laws providing for "solar rights." Neither Michigan nor Detroit have taken adequate statutory or regulatory steps to specifically address the practice of installing solar power systems. As such, the obstacles presented by Michigan and Detroit laws and regulations mostly stem from the fact that the installation of solar power systems and the protection of solar rights are not adequately addressed.

### 2.1 Zoning Ordinance

Zoning ordinances are the primary legal means by which a municipality controls the use and development of real property within its jurisdiction. They typically function by dividing the land of a municipality into particular districts and permitting only certain uses in each district. Zoning ordinances also commonly contain restrictions regarding building height and lot coverage, which are particularly relevant for solar power systems. Which zoning ordinance constraints are relevant will partially depend on whether a solar power system is the principal use of the property or if it is an accessory use.

A solar power system installed in Detroit will be regulated either as a principle use or an accessory use. A principal use is defined by the zoning ordinance as "the main use to which a premises is devoted."[1] For example, a solar power system that is not co-located with a structure and is used to generate energy for sale to a third party is likely to be considered the principal use of the property. An accessory use is defined by the Detroit zoning ordinance as a use that "is incidental and subordinate to and devoted exclusively to a principal building or a principal use legally existing

[1] § 61-16-153

on the same zoning lot, is subordinate in area, extent and purpose to the principal building or principal use, and contributes to the comfort, convenience or necessity of the occupants, business or industry of the principal structure or principal use served."[2] The distinction between principal use and accessory use is important because an accessory use is allowed to accompany any by-right use or approved conditional use.[3] As long as the principal use is in compliance with the zoning ordinance and the accessory use is under 100 feet of gross floor area, no additional zoning approvals are needed to install a solar power system as an accessory use.[4] Conversely, if a solar power system is classified as the principal use of the property, then it must comply with the principal use regulations described in the zoning ordinance.[5]

Based on the use category, principal uses are either classified as conditional uses, by-right uses, or prohibited uses.[6] As its name suggests, a by-right land use is "allowed as a matter of right in the respective zoning district, and is subject to compliance with all other applicable regulations in the Zoning Ordinance."[7] A conditional land use "is allowed only where reviewed and approved in accordance with the Conditional Use Permit procedures…"[8] The review procedures for a conditional land use are described in detail in the Detroit zoning ordinance. In order for the conditional land use to be approved, a person must submit an application to the Building Safety Engineering and Environmental Department ("BSEED"), together with tentative plans, including site plans, floor plans, and elevations.[9] Before a conditional land use may be approved, BSEED

[2] § 61-16-31

[3] § 61-12-361

[4] § 61-12-365

[5] § 61-12-1

[6] § 61-12-3 – 61-12-5

[7] § 61-12-4

[8] § 61-12-3

[9] § 61-3-212

must hold a public hearing.[10] Conditional land uses are also subject to the site plan review process described in the zoning ordinance.[11] In general, the Planning and Development Department has the power to review and approve site plans[12] while BSEED has the power to review and approve, approve with conditions, or deny any application for a conditional land use grant.[13] The review and approval procedures for by-right land uses are much simpler than those for conditional land uses. Any change in the use of a property, from one existing use to another or from a vacant property to any use, requires the owner to obtain a building permit from the BSEED.[14] However, as long as the use complies with the zoning ordinance it will be approved. Further, by-right land uses are not subject to the site plan review process. Instead, they are reviewed by BSEED through a simpler permitting process.[15]

### 2.1.1 Solar Power Systems Co-Located With A Structure

In instances in which a solar power system is co-located with and is being used solely to supplement the electricity used by a home or business, it is possible that the solar power system would be considered an accessory use under the Detroit zoning ordinance. According to the definition of an "accessory use" provided in the Detroit zoning ordinance, the solar power system must meet the following requirements to be classified as an "accessory use":

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[10] § 61-3-214; The fee associated with a public hearing is $1,000. City of Detroit, Buildings and Safety Engineering Department, Fee Schedule Effective July 1, 2009, available at http://www.detroitmi.gov/Portals/0/docs/Permits/BSEED/SpecialLand/Special%20Land%20Use%20and%20Zoning%20Fees.pdf

[11] § 61-3-113(1)(5)

[12] § 61-3-141

[13] § 61-3-218

[14] § 61-4-32

[15] § 61-3-113

- Must be incidental and subordinate to and devoted exclusively to a principal building or principal use legally existing on the same zoning lot
- Must be subordinate in area, extent, and purpose to the principal building or principal use
- Must contribute to the comfort, convenience or necessity of the occupants, business or industry of the principal structure or principal use served.[16]

Michigan courts have considered whether a given use may be considered an accessory use pursuant to a variety of zoning ordinances in different municipalities across the state. While zoning ordinances vary from municipality to municipality, many define "accessory use" in a similar manner as the Detroit zoning ordinance. The "incidental and subordinate" requirement has been interpreted by Michigan courts to require an accessory use to be a use that enhances the principal use of the property and is dependent on or pertinent to the principal use of the property.[17] For example, the Michigan court of appeals found that a motocross track was not a valid accessory use to a farm because the use of the property for motocross was not, in any way, dependent on or pertinent to the principal use of the property for farming.[18] The "subordinate" requirement has also been interpreted by Michigan courts. Relevant factors for determining whether a claimed accessory use is subordinate to a principal use is the area utilized for both the principal and accessory use, the number of people engaged in the accessory use, and the frequency of utilization for both the principal and accessory use.[19]

While Michigan courts have not directly addressed the issue of whether a solar power system is an accessory use, the issue has been addressed in

[16] See note 2.

[17] Lerner v. Bloomfield Twp., 106 Mich. App. 809 (1981); Ida Twp. v. Southeast Mich. Motorsports Mich. App. LEXIS 1561 (2013)

[18] Ida Twp. V Southeast Mich. Motorsports, 2013 Mich. App. LEXIS 1561 (2013)

[19] Id.

other states. In Northampton Area School District v. Zoning Hearing Board of Leigh, the state appellate court of Pennsylvania reviewed the decision of a local zoning hearing board to deny an application to install a solar power system as an accessory use. The dispute arose when Leigh Elementary School sought approval to install a solar power system on four acres of land located on the school's property for the purposes of generating electric power for the school.[20] A local zoning officer denied the application and opined that the solar power system was a second principal use.[21] The zoning officer also concluded that since the local zoning ordinance did not provide for the proposed use, the solar power system was a conditional land use and required a conditional land use hearing pursuant to the local zoning ordinance.[22] On appeal to the local zoning hearing board, it was determined that the solar power system was not a second principal use, but that the solar power system could not be considered an accessory use based on the evidence provided.[23] The zoning hearing board held that the school presented no evidence of other instances in which a solar power system was used to generate energy for a school and thus it could not be determined that the solar power system was "customarily incidental" to the primary use of the property as a school.[24] In Northampton Area School District, the court overturned the decision of the local zoning hearings board and held that the solar power system was a valid accessory use pursuant to the Leigh Township zoning ordinance. The court relied on section 180-25(A) of the Leigh zoning ordinance, which expressly states that solar energy units are permitted as an accessory use in any zone subject only to the requirements of that zone.[25] As such, it was unnecessary for the zoning hearing board to inquire into whether the solar power system was "customarily incidental" to the

[20] 64 A.3d 1152 (Pa. Commw. Ct. 2013)

[21] Id.

[22] Id.

[23] Id.

[24] Id.

[25] Leigh Township, PA., § 180-25(A)

use of the property as a school.[26] While the zoning officials and zoning hearing board in Leigh Township were not supportive of the installation of a solar power system as an accessory use, this is not always the case.

In Tink-Wig Mt. Lake Forest Prop Owner's Association v. Lackawaxen Township Hearing Board, the state appellate court of Pennsylvania considered whether the issuance of a zoning permit for the construction of a 55-foot wind turbine as an accessory use to a residential structure was valid.[27] The decision was challenged by the property owners association for the planned community in which the wind turbine was to be located.[28] In upholding the decision of the zoning hearing board to allow the construction of the wind turbine as an accessory use, the court noted that some new uses "such as solar panels…and wind turbines…take the place of other uses that were at one time in fashion" and that "those uses become known as customarily incidental to the principal use."[29] In short, the Pennsylvania cases discussed above illustrate that it can be difficult to predict how a local zoning official will apply the definition of "accessory use" to a solar power system co-located with a structure.

An additional point of concern regarding solar power systems that are co-located with another structure, specifically solar power systems installed on the roof of a principal structure, are maximum height restrictions. Maximum height restrictions apply to all principal structures in residential, business, and industrial districts and vary based on the specific principal use and the zoning district.[30] For example, the maximum height allowed by the Detroit zoning ordinance for a single-family dwelling in an R1 district is 35 feet.[31] There are certain parts of the structure that are exempted from height restrictions, including but not limited to roof structures that are used for mechanical purposes so long as it does not exceed 30% of the gross area

[26] Id.

[27] 986 A.2d 935 (Pa. Commw. Ct. 2009)

[28] Id.

[29] Id.

[30] § 61-13-1

[31] § 61-13-2

of the roof area.[32] This may provide an exemption rooftop solar power systems from being considered in the calculation of the height of a building. However, whether this exemption applies to solar power systems is unclear. If the exemption does not apply, then the solar power system would be subject to applicable maximum height restrictions, which would restrict the height of rooftop solar power systems.

The Detroit zoning ordinance also restricts the percentage of a lot that may be covered by principal and accessory structures.[33] This is particularly relevant for solar power systems located in the yard adjacent to a principal structure, as they may be subject to the lot coverage restriction. Once again, the specific restrictions vary based on the use and the zoning district. For example, in an R1 district, the maximum allowable lot coverage for a lot that is primarily used for a single-family dwelling is 35%.[34] This includes all principal and accessory structures.[35] However, certain types of structures are exempted from being included in the calculation of floor area that is covered, including any floor area on or above the first or ground floor that is devoted exclusively and permanently to the housing of building service equipment, including heating, mechanical, electrical, or similar equipment.[36] It is unclear whether this would apply solar power systems that are installed as an accessory use to a principal structure. If the exemption does not apply, then the solar power system would be subject to the lot coverage restrictions described in the Detroit zoning ordinance.

### 2.1.2 Solar Power System as Principal Use

A solar power system that is not co-located with a functional building will be regarded as a principal use. The Detroit zoning ordinance expressly permits "basic utilities" and "major utilities" in certain zoning districts. Basic utilities are defined as "infrastructure services that need to be located

[32] § 61-13-153

[33] § 61-13-156

[34] § 61-13-2

[35] Id.

[36] § 61-13-157

in or near the area where the service is provided."[37] They "generally do not regularly have employees at the site."[38] Examples include public, residential-area utility facilities.[39] Major utilities are defined as "[m]ajor, areawide infrastructure services that typically have employees at the site" that are either "public or privately provided."[40] Examples include power and heating plants with fuel storage on site and steam generating plants.[41]

It's important to note that the Detroit zoning ordinance does not mention solar power systems in any context. It is possible that a solar power system would be categorized as either a basic utility or a major utility. A solar power system classified as a major utility would generally only be allowed as a conditional land use in M4 and M5 zoning districts.[42] A solar power system classified as a basic utility would likely be regarded as a "residential-area public utility facility," which is a sub-category of a basic utility. Such a use is allowed as a conditional land use in R1, R2, R3, and R4 districts.[43] As described above, the approval procedures for a conditional land use are much more burdensome than the approval procedures for a by-right land use.[44]

Alternatively, a solar power system that is a principal use may be regarded as a new or unlisted use. Upon the request of the applicant or upon a determination by BSEED that the proposed use does not fit any of the use category descriptions contained in Article XVI of the Detroit zoning ordinance, the use is regarded as a conditional land use in M4 and M5 districts.[45] Alternatively, BSEED may make a "similar use determination"

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[37] § 61-16-192

[38] Id.

[39] Id.; The term public, residential-area utility facilities is undefined by the Detroit Zoning Ordinance.

[40] Id.

[41] Id.

[42] § 61-12-31

[43] § 61-12-30

[44] See notes 6-15.

[45] § 61-12-7

and classify the new or unlisted use within an existing use category listed in Article XVI.[46]

## 2.2 Building Code

In general, building codes are a creature of state law. While some states have adopted statewide building codes that apply to all buildings throughout the state, other states allow local governments to adopt their own building codes. In Michigan, the Stille-Derossett-Hale Single State Construction Code Act applies throughout the state.[47] Therefore, local governments cannot adopt and enforce a building code other than those adopted at the state level.

The Single State Construction Code Act requires a person to apply for and obtain a building permit prior to construction of a building or structure.[48] Local enforcing agencies are empowered by the Act to examine applications for building permits and to issue building permits if the application conforms to the Act and the construction code.[49] The Act calls on the director of the Department of Licensing and Regulatory Affairs to prepare and promulgate the state construction code consisting of rules governing the construction, use, and occupation of buildings and structures.[50] The Act also expressly adopts a number of codes developed by the International Code Council ("ICC"), which is an association of non-governmental organizations dedicated to developing model codes and standards used in the design, build, and compliance process to construct safe, sustainable, affordable, and resilient structures.[51] Specifically, the Act incorporates the following ICC codes:

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[46] Id.

[47] MCL § 125.1508a

[48] MCL § 125.1510

[49] MCL § 125.1511

[50] MCL § 125.1504

[51] International Code Council, ICC Family of Companies, https://www.iccsafe.org/about-icc/organizational-structure/ (last visited Apr. 4, 2017)

- International Residential Code
- International Building Code
- International Mechanical Code
- International Plumbing Code
- International Existing Building Code
- International Energy Conservation Code[52]

Chapter 14 of the International Mechanical Code governs the "design, construction, installation, alteration and repair of systems, equipment and appliances intended to utilize solar energy for space heating or cooling, domestic water heating, swimming pool heating, or process heating."[53] It specifies that roof-mounted solar collectors must meet the requirements for "roof coverings" in accordance with the International Building Code.[54]

Notably, the State of Michigan has not adopted the International Green Construction Code, which contains a requirement that a building be equipped with one or more renewable energy systems, which could include solar photovoltaic systems.[55] Since this code has not been adopted by the State, no city in Michigan can require a building to install a solar power system as a condition for obtaining a building permit. While a bill was introduced in the Michigan legislature in 2009 to amend the Act to permit local municipalities to adopt the local green building codes at their discretion, the bill was not passed.[56]

[52] MCL § 125.1504(2)

[53] International Code Council, 2012 International Mechanical Code, § 1401.1, Ch. 14

[54] International Code Council, 2012 International Mechanical Code, § 1402.4, Ch. 14

[55] International Code Council, 2015 International Green Construction Code, § 610.1, Ch. 6

[56] House Bill 4575 (2009)

# 3. Facilitating the Installation and Viability of Solar Power Systems in Detroit

As described above, there is very little detail in either the Detroit code of ordinances or Michigan statutes that speak specifically to the installation of solar power systems. There are also no Detroit ordinances or Michigan statutes or regulations that meaningfully address access to sunlight for solar power systems.[57] However, many cities and states have become active in promoting the installation of solar power systems through a variety of ways and provide examples regarding how to promote the installation of solar power systems.

## 3.1 Zoning Ordinance

One of the simplest things that the City of Detroit could do to facilitate the growth of solar power systems in Detroit is amend the zoning ordinance to expressly permit solar power systems as a principal use in all or a limited number of zoning districts.[58] Currently, it's unclear if a solar power system would be regarded as a "basic utility" or a "major utility" pursuant to the Detroit zoning ordinance or if it would be regarded as an unlisted use.[59] Regardless of the classification, solar power systems would only be allowed as conditional land uses in a limited number of zoning districts. If the City of Detroit amended its zoning ordinance to make solar power systems a by-right use in all or a limited number of districts, it would remove one of

[57] It should be noted that the Detroit zoning ordinance does contain a cursory mention of solar access, but it is not likely to have any meaningful, widespread impact regarding the development of solar power systems. The zoning ordinance states that the City Planning Commission and Planning and Development Department shall give careful consideration to the orientation of a development in PC, PCA, and PD districts in regards to solar access for both the proposed project and surrounding development. § 61-11-15, 61-11-77, 61-11-97.

[58] Martin Jaffe & Duncan Early, Protecting Solar Access for Residential Development: A Guidebook for Planning Officials, The American Planning Association, at 48.

[59] See section 2.1.2.

the key legal obstacles to installing solar power systems as a principal land use in Detroit.

Additionally, the City of Detroit could amend its zoning ordinance to expressly permit solar power systems as an accessory use in all districts. Based on the Detroit zoning ordinance, Michigan court of appeals decisions, and the court decisions from other states, it is possible that a solar power system co-located with a structure for the purpose of supplementing the energy supply for the principal use would qualify as an accessory use. However, it's also important to note that solar power systems are not expressly permitted as an accessory use in the Detroit zoning ordinance. As such, the determination of whether a given solar power system qualifies as an accessory use pursuant to the Detroit zoning ordinance will rest on the decision of a zoning official regarding whether a solar power system meets the requirements of the definition of an accessory use. While an unfavorable decision could be appealed, such a decision would undoubtedly have a chilling effect on the installation of solar power systems. Municipalities have proactively addressed this uncertainty by amending zoning ordinances to expressly allow for solar power systems as an accessory use in all zoning districts.[60]

For solar power systems that are regarded as an accessory use and installed on a rooftop, Detroit could amend its zoning ordinance to provide an exemption for solar power systems from maximum height restrictions. A number of common building features are already exempt from maximum height restrictions.[61] While the exemption for roof structures that are used for mechanical purposes may provide an exemption for solar power systems, its applicability is unclear and is limited to 30% of the gross roof area. To provide clarity, the Detroit zoning ordinance could expressly exempt solar power systems from maximum height restrictions.

[60] See, e.g., Leigh Township, PA., § 180-25(A)

[61] Detroit, MI Code § 61-13-153 exempts a number of building features from maximum height restrictions, including flag poles, steeples, domes, chimneys, and stacks.

For solar power systems that are regarded as an accessory use and installed on the ground adjacent to a principal structure, Detroit could amend its zoning ordinance to provide an exemption for solar power systems from lot coverage restrictions. Currently, an exemption is provided for any floor area on or above the first or ground floor that is devoted exclusively and permanently to the housing of building service equipment, including heating, air conditioning, mechanical, electrical, or similar equipment.[62] It is unclear whether this applies to solar power systems. To provide clarity, the Detroit zoning ordinance could expressly exempt solar power systems from lot coverage restrictions.

## 3.2 Building Code

Some cities require the installation of solar power systems for certain developments pursuant to their building code.[63] However, the Stille-Derossett-Hale Single State Construction Code Act and the corresponding construction code does not include such a requirement and local governments are preempted from enacting their own regulations.[64] Despite this, cities across Michigan have still founds ways to encourage green building practices. These policy developments are detailed in section 3.4 below.[65]

## 3.3 Ensuring Access to Sunlight

Even if the installation of a solar energy system is fully legal, there remains the issue of ensuring that the solar energy system has unimpeded access to sunlight. Particularly in cities, this issue can be a difficult one as neighboring development must be adequately restricted so that people that invest in solar power systems have some assurance that the value of their investment will not be limited by reduced access to sunlight.

[62] Detroit, MI Code § 61-13-157(5)

[63] San Francisco, CA., Code § 4.201.2

[64] See note 47.

[65] See section 3.4.

Currently, neither the City of Detroit nor the State of Michigan have created a "solar right" in any statute, ordinance, or regulation.

There are two common ways that an owner of solar power system may establish a solar right: an easement between the owner of the solar power system and the owner(s) of a neighboring parcel of property or government regulation.

### 3.3.1 Solar Easement

An easement is a nonpossessory interest in real estate that gives one person the right to use or restrict the use of another person's property for their benefit. As such, an easement does not involve a transfer of ownership rights. Instead, an easement involves rights of use. An easement commonly grants one landowner, commonly referred to as the dominant owner, certain rights concerning the real property of another landowner, commonly referred to as the servient owner.[66] There are two basic types of easements that are commonly used. One type involves the granting of affirmative rights that entitle a person to use the property of another for a specific purpose. This type of easement is commonly referred to as an "affirmative easement." Another type of easement involves a property owner agreeing to restrict the use of their property for the benefit of another. This type of easement is commonly referred to as a "negative easement." One way that the owner of a solar power system could establish a solar right is by entering into a negative easement with a neighboring property owner. Such an easement would limit a neighboring property owner from developing their property in a manner that would block the solar power system's access to sunlight.

In general, easements can be created in one of two ways: through a written agreement signed by both parties (commonly referred to as an "expressed easement") or, in the absence of an expressed easement, through an implied easement. While English common law recognized implied

[66] Sara Bronin, Solar Rights, 89 B.U.L. Rev. 1217 (2009)

easements regarding sunlight in certain situations,[67] this doctrine has not been extensively applied in the United States and it has not been adopted by Michigan courts.[68] Therefore, the only way to create a negative easement to ensure solar access is by an expressed easement. The creation of an expressed easement is similar to the creation of any type of legally-binding contract in that it involves two or more parties negotiating the specific terms of the easement and then memorializing their agreement in a document signed by both parties.[69] Expressed easements regarding solar access should specify the affected space, the manner of termination, and compensation and, once executed, should be recorded with the Register of Deeds.[70]

### 3.3.2 Government Regulation

A key limitation of privately negotiated easements is that they can be highly inefficient as it requires individuals to negotiate the terms of the easement. Many cities and states that desire to promote solar power systems more broadly have created a solar right by statute or ordinance to obviate the need for residents to negotiate an easement with their neighbors. In general, states and cities provide for a solar right in one of two ways: a permit system or a zoning ordinance.

New Mexico, Wyoming, and Wisconsin have all adopted statues that establish a right to sunlight. New Mexico's Solar Rights Act of 1978 established that the right to use solar energy was a natural resource and a property right.[71] The Act specifies that a solar right may be claimed by an

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[67] Kevin McCarthy, Protection of Solar Access, 2007, available at https://www.cga.ct.gov/2007/rpt/2007-R-0498.htm

[68] Burke v. Smith, 69 Mich. 380 (1888) (stating that "a man has a right to build a window in his house overlooking his neighbors land" but that he gets or gains no easement in his neighbor's property by doing so)

[69] See, Forge v. Smith, 458 Mich. 198 (1998)

[70] Sara Bronin, Solar Rights, 89 B.U.L. Rev. 1217 (2009)

[71] NMSA § 47-3-4

owner of real property upon which a solar power system has been placed.[72] In order for the solar right to become effective, a person must record their right by filing a declaration with the county clerk and give notice to affected property owners.[73] So long as the filing is not contested, the solar right vests and the right is enforceable against any person who constructs or plans to construct any structure that interferes with a vested solar right.[74] If the filing is contested, New Mexico will still recognize the applicant's solar right if the owner used the solar power system before other uses that may block out such light, and if that use is beneficial.[75] If a solar right is established, it is considered an easement.[76] Wyoming's Solar Rights Act is very similar to the New Mexico statute detailed above.[77] Wisconsin's statute is slightly different. According to the statute, the agency administering a solar permit may only grant the 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 will exceed the burdens of the grant.[78]

In addition to the state laws described above, some cities have also created permitting regimes for solar access as well. Ashland, Oregon has adopted a local ordinance to provide protection of a reasonable amount of sunlight from the shade of structures and vegetation to all parcels to preserve the economic value of solar radiation, promote investments in solar energy systems, and preserve the option for the future development of solar power systems.[79]

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[72] NMSA § 47-3-8

[73] NMSA § 47-3-9

[74] NMSA § 47-3-8

[75] NMSA § 47-3-4.

[76] NMSA § 47-3-8

[77] Wyo. Stat. § 34-22-101

[78] Wisc. Stat. § 66.0403

[79] Ashland, Or., Mun. Code § 18.4.8.010

In addition to permitting ordinances, some cities have sought to ensure solar access through local zoning ordinances. Specifically, zoning ordinances could be amended to limit the heights of certain buildings, restrict lot sizes, establish setback requirements, and create other rules that would facilitate solar access.[80] Additionally, it has been theorized that a zoning ordinance could create an overlay zone to the local zoning map to designate specific areas as "solar areas" in which solar access rights would be mandated for all parcels.[81] Local governments have been slow to address solar access in zoning ordinances.[82] One city that has addressed solar access in its zoning ordinance is Boulder, Colorado, which requires construction over certain heights to submit a solar analysis with an application for a building permit and contains expressed limitations as to how much a new development can limit a neighbors' access to sunlight.[83]

## 3.4 Promotion of Solar Power Systems By City Policy

In addition to amending state and local laws to facilitate the installation of solar power systems, many cities have also created policies and programs that promote the development of solar power systems. In general, these policies either focus on promoting the installation of municipally-owned solar power systems or promoting the installation of privately-owned solar power systems.

### 3.4.1 Municipally-Owned Solar Power Systems

While much of this report has focused on the installation of privately-owned solar power systems, many cities are seeking to install more municipally-owned solar power systems. For example, Denver has set a goal of

[80] Sara Bronin, Solar Rights, 89 B.U.L. Rev. 1217 (2009)

[81] Id.

[82] Id.

[83] Boulder, CO., Code § 9-9-17

doubling the renewable energy produced from city facilities by 2020.[84] Minneapolis-St. Paul has also made the integration of solar into city infrastructure a priority.[85] Pittsburgh has adopted a policy calling for the installation of solar power systems on all municipal buildings.[86] Notably, all of these cities were recognized as Solar America Cities by the U.S. Department of Energy for being highly committed to solar technology adoption at the local level.[87] Cleveland's Climate Action Plan also contains a number of goals pertaining to renewable energy, including increasing the number of on-site renewable energy installations at residences and businesses as well as increasing the number of renewable energy projects on vacant land.[88]

If a city wants to install a solar power system on a municipal building, it is typically funded through a power purchase agreement (PPA).[89] In general, PPAs entail a private developer bearing the upfront costs for the

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[84] Denver Office of Sustainability, 2020 Sustainability Goals, available at https://www.denvergov.org/content/dam/denvergov/Portals/779/documents/2020%20Sustainability%20Goals_Handout_02_2017_Final.pdf

[85]Minneapolis-St. Paul Solar in the Cities Initiative (2010), available at http://www.ci.minneapolis.mn.us/www/groups/public/@citycoordinator/documents/webcontent/convert_286306.pdf

[86] Pittsburgh Climate Action Plan, Version 2.0 (2012), available at http://pittsburghclimate.org/wp-content/uploads/2011/12/Pittsburgh-Climate-Action-Plan-Version-2-FINAL-Web.pdf

[87] Solar America Initiative, Fact Sheet: The Solar America Cities Awards, (Mar. 2008), available at http://www.nrel.gov/docs/fy08osti/43008.pdf; All Solar America cities received a combined $4.9 million in federal financial assistance as well as on-site technical and policy expert assistance to help cities accelerate solar adoption. Id.

[88] Cleveland Climate Action Plan: Building Thriving and Healthy Neighborhoods (2013), available at https://d3n8a8pro7vhmx.cloudfront.net/sustainablecleveland/pages/149/attachments/original/1461798511/Cleveland_Climate_Action_Plan.pdf?1461798511

[89] Randy Rogers, Financing Solar Energy Projects for Municipalities, Sustainable City Network, (Dec. 22, 2010), available at http://www.sustainablecitynetwork.com/topic_channels/finance/article_6cde887a-0def-11e0-9fa7-0017a4a78c22.html

production and installation of a solar panel facility.[90] Commonly, the private developer will obtain federal tax credits to defray the startup costs associated with the solar power system.[91] Pursuant to the PPA, the municipality will lease the property where the solar power system is to be developed to the private company.[92] Under this arrangement, the municipality technically owns the solar power system.[93] However, the PPA generally gives the private developer the right to sell the electricity generated by the solar power system to the municipality at discounted rates for an extended period of time.[94] Once the PPA expires, the municipality becomes the owner of the rights to the electricity.[95] These types of agreements are particularly important for municipalities since private entities can accept tax credits for solar that public, tax-exempt entities cannot.[96] PPAs were used to facilitate the development of municipally-owned solar arrays at the Denver International Airport and the Minneapolis Convention Center.[97]

Based on a survey of other cities, Detroit has a number of options to promote the development of municipally-owned solar power systems. It

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[90] The most common tax credit sought by developers of solar power systems is the Investment Tax Credit (ITC). It provides a 30% federal tax credit claimed against the tax liability of residential, commercial, and utility investors in solar energy property. The tax credit functions as a dollar-for-dollar reduction in the income taxes that the person or company claiming the credit would otherwise pay to the federal government. Solar Energy Industries Association, The Solar Investment Tax Credit (ITC) (Apr. 19, 2016), available at http://www.seia.org/sites/default/files/ITC%20101%20Fact%20Sheet%20-%2004-19-2016.pdf

[91] Id.

[92] Id.

[93] Id.

[94] Id.

[95] Id.

[96] Randy Rogers, Financing Solar Energy Projects for Municipalities, Sustainable City Network, (Dec. 22, 2010), available at http://www.sustainablecitynetwork.com/topic_channels/finance/article_6cde887a-0def-11e0-9fa7-0017a4a78c22.html

[97] Id.

could follow the example of the cities described above and create quantifiable goal of developing solar power systems on municipally-owned property. Many cities have adopted solar development goals and have integrated them into a sustainability plan or a climate action plan. Alternatively, Detroit could follow the example of many cities in Michigan and develop a policy that requires solar power systems to be installed on all or some municipally-owned buildings or property. East Lansing's Green Building Policy requires all new municipal construction over 5,000 square feet to attain Leadership in Energy and Environmental Design ("LEED") silver certification and all renovations of municipal facilities to incorporate LEED building and/or low impact design practices to the greatest extent practicable.[98] Grand Rapids' Green Building Policy requires that all construction and renovation projects involving municipal buildings larger than 10,000 square feet and at a cost of $1 million or more must attain LEED certification.[99] While the Michigan building code restricts what cities may require from private developers in regards to solar power systems, they are free to develop a policy that requires the installation of solar power systems regarding municipal developments.

### 3.4.2 Privately-Owned Solar Power Systems

In addition to promoting the installation of solar power systems on municipally-owned property, many cities have also adopted policies and plans that seek to promote the installation of solar power systems on privately-owned property. For example, Pittsburgh's Climate Action Plan set goal of facilitating the installation of 10 megawatts of renewable energy sources in Pittsburgh by 2020.[100] To facilitate the development of privately-

[98] City of East Lansing, Policy Resolution 2009-01, Resolution to Adopt "Green" Building Policy, (2009), available at https://www.cityofeastlansing.com/DocumentCenter/Home/View/466

[99] City of Grand Rapids, Commission Resolution No. 74599, (2006), available at http://programs.dsireusa.org/system/program/detail/2830

[100] Pittsburgh Climate Action Plan, Version 2.0 (2012), available at http://pittsburghclimate.org/wp-content/uploads/2011/12/Pittsburgh-Climate-Action-Plan-Version-2-FINAL-Web.pdf

owned solar power systems, cities have taken a number of different approaches. Many cities seek to promote the development of privately-owned solar systems by amending local laws to address the issues discussed above.[101] San Francisco has gone a step further. In 2016, San Francisco adopted an ordinance that requires all newly constructed residential buildings of 10 occupied floors or less and all newly constructed buildings of nonresidential occupancy which are 2,000 square feet or greater in gross floor area and are of 10 or fewer floors to install photovoltaic systems and/or solar thermal systems as a condition for obtaining a building permit.[102] As mentioned above, Michigan law preempts Detroit from adopting a requirement similar to what exists in San Francisco.[103] However, many cities in Michigan have adopted ordinances and resolutions expressing a preference for the inclusion of solar power systems with new developments.[104] Additionally, Detroit could adopt a local policy requiring developments that receive local tax credits to install solar power systems. Mayor Duggan has adopted a similar policy to promote affordable housing and Council Member Mary Sheffield has proposed an ordinance to turn that policy into law.[105] Such a policy has already been adopted in East Lansing, which requires new private construction for any single building that receives municipal incentives to obtain a specified green building certification based on the level of

[101] See section 2.

[102] San Francisco, CA., Code § 4.201.2

[103] See note 47.

[104] Clawson, MI., Code § 34-1194(b)(3) (stating a preference for the use of LEED or environmentally friendly building design with the use of sustainable materials and energy); Sterling Heights, MI., Code § 22.04 (stating that, as part of their review, the plan review committee shall encourage construction that adheres to the principles of LEED)

[105] Joe Guillen, Duggan: I'll add jobs program, making housing affordable, (Feb. 21, 2017), available at http://www.freep.com/story/news/local/michigan/detroit/2017/02/21/detroit-mayor-mike-duggan-state-of-city/98209996/

municipal incentives received.[106] Similar measures could be taken in Detroit to promote the private development of solar power systems.

[106] City of East Lansing, Green Building Policy, (Apr. 2009), available at http://www.warmtraining.org/gov/pdf/Green%20Building%20Policy_EastLansing.pdf