ORDINANCE NO.

An ordinance amending the Land Development Code, Article II, Section 20-2.3, "Definitions" and Article III, Section 20-3.6 "Supplemental Regulations" adding subsection (W) "Solar Requirements" and providing definitions relating to and criteria and regulations for solar collectors in the City of South Miami

WHEREAS, the South Miami City Commission expressly declares that the following amendments to the South Miami Land Development Code are reasonable and necessary because of local climatic, topological, and geological conditions as listed below; and

WHEREAS, as a coastal city located on the tip of a peninsula, the Miami region is vulnerable to sea level rise, and human activities releasing greenhouse gases into the atmosphere that increase the worldwide average temperature, contributing to the melting of glaciers, thermal expansion of ocean water, and shifting or slowing of the Gulf Stream, all resulting in rising sea levels; and

WHEREAS, South Florida is already experiencing the repercussions of excessive CO₂ emissions as rising sea levels threaten shorelines and infrastructure, have caused significant erosion, have increased impacts to infrastructure during extreme tides, and have caused the City to expend funds to modify the sewer system; and

WHEREAS, some people in South Miami, such as the elderly, may be particularly vulnerable to higher temperatures resulting from climate changes; and

WHEREAS, installing solar will help South Miami meet its goals under Res. No. 23-09-12832, dated February 9, 2009, stating: "The City of South Miami commits to a Carbon Neutral Initiative to lead the community by example and to implement policies to eliminate net emission of carbon dioxide and other greenhouse gases by the end of 2030"; and

WHEREAS, distributed power, such as rooftop solar, can serve as generator systems for the purposes of hurricane preparedness and thus comports with Sec. 252.371 Fla. Stat., the Emergency Management, Preparedness, and Assistance Trust Fund; and

WHEREAS, distributed photovoltaic generation provides a basis for future microgrids, making the city more resilient as a whole, benefiting the health, welfare, and resiliency of South Miami and its residents; and

WHEREAS, the 2008 Florida legislature enacted Section 163.04, Fla. Stat., with the legislative intent of protecting the public health, safety, and welfare by encouraging the development and use of renewable resources; and

WHEREAS, Section 163.08 (1)(a), Fla. Stat., found that chapter 2008-227, Laws of Florida, amended the energy goal of the state comprehensive plan to provide, in part, that the state shall reduce its energy requirements and reduce atmospheric carbon dioxide by promoting
an increased use of renewable energy resources. That chapter also declared it the public policy of
the state to play a leading role in developing and instituting energy management programs that
promote energy conservation, energy security, and the reduction of greenhouse gases. In chapter
2008-191, Laws of Florida, the Legislature adopted new energy conservation and greenhouse gas
reduction comprehensive planning requirements for local governments. In the 2008 general
election, the voters of this state approved a constitutional amendment authorizing the Legislature,
by general law, to prohibit the increase of assessed value of residential real property due to
change or improvement made for the purpose of improving a property’s resistance to wind
damage or the installation of a renewable energy source device; and

WHEREAS, Section 163.08 (1)(b), Fla. Stat., found that the installation and operation of
improvements not only benefitted the affected properties for which the improvements were
made, but also assisted the state in fulfilling the goals of the state’s energy mitigation policies
and “Qualifying improvement” includes any energy conservation and efficiency improvement,
which is a measure to reduce consumption through conservation of electricity and the installation
of any system in which the electrical or thermal energy is produced from a method that uses solar
energy; and

WHEREAS, Section 193.624, Fla. Stat., provides that “... the term “renewable energy
source device” means ... (a) Solar energy collectors, photovoltaic modules, and inverters and in
subsection (2) it provides that [(i) in determining the assessed value of real property used; (a) For
residential purposes, an increase in the just value of the property attributable to the installation of
a renewable energy source device may not be considered.”; and

WHEREAS, section 212.08 (7)(b)(1), Fla. Stat., provides that the sale at retail, the rental,
the use, the consumption, the distribution, and the storage to be used or consumed in this state of
solar energy systems are exempt from the tax imposed by this chapter 212; and

WHEREAS, requiring solar photovoltaics at the time of new construction is more cost-
effective for the homeowner than installing the equipment after home construction because (i) it
is less expensive to reinforce a roof to accommodate the extra forces of a solar array, (ii) solar
wiring can be incorporated more efficiently into electrical panels at the time of initial wiring,
and, (iii) a solar system can be financed at a lower rate if included in the initial home financing;
and

WHEREAS, it is reasonably necessary to require builders to take steps to reduce the
energy consumed by inefficient building operations and produce renewable, low-carbon
electricity, or capture solar energy, in order to reduce pollution, benefit biodiversity, improve
resilience to climate change by reducing localized heat islands, and reduce the global warming
effects of energy consumption; and

WHEREAS, a cost-benefit analysis by the U.S. Department of Energy showed that
roof top solar, at today’s costs, would provide FPL customers with a Savings-to-Investment
Ratio (SIR) of 1.55 with using the Federal Renewable Energy Tax credit, and a SIR of 1.08
without the tax credit, both figures being greater than 1.0 which indicates a net financial benefit
of roof-top solar to the household (www.nrel.gov/solar/assets/does_sir.xls); and
WHEREAS, the payback period for photovoltaic solar systems is in the range of one quarter to one half the life expectancy of the photovoltaic panels, meaning the homeowner receives a 50-75% decrease in the overall cost of power; and

WHEREAS, the cost of rooftop solar power continues to fall, while the cost of utility power in South Florida continues to rise, guaranteeing an increasing economic benefit to the homeowner and increasing the value of the property; and

WHEREAS, the Solar Energy Center at the University of Central Florida has shown that, at today’s electricity and solar PV prices and historic inflation rates over the past 20 years, the Internal Rate of Return (IRR) on rooftop photovoltaic systems runs between 9% and 14%, an extraordinary tax-free fixed rate investment return to a property owner; and

WHEREAS, the Low-income Solar Policy Guide, produced by the Center for Social Inclusion in 2016 states: “Because low-income families spend a disproportionate amount of their income on utility bills, they receive a proportionally greater economic benefit from solar power”, (Low Income Solar Policy Guide, http://www.lowincomesolar.org); and

WHEREAS, home buyers across a variety of states pay a premium for properties with PV equal to or greater than the cost of the solar system itself, adding $3.58/watt on new homes and $4.51/watt on existing homes (“Selling into the Sun: Premium Analysis of a Multi-State Dataset of Solar Homes” Lawrence Berkeley National Laboratory, prepared for the Office of Energy Efficiency and Renewable Energy Solar Energy Technologies Office U.S. Department of Energy, January 13, 2015 https://emp.lbl.gov/publications/selling-sun-price-premium-analysis-0); and

WHEREAS, in housing markets similar to South Miami’s, PV systems that were owned (not leased) benefitted home builders and owners by increasing market value and decreasing marketing time (The Impact of Photovoltaic Systems on Market Value and Marketability, Colorado Energy Office, https://www.colorado.gov/pacific/energyoffice/atom/15466); and

WHEREAS, this ordinance is modeled after similar ordinances enacted in the municipalities of Lancaster CA, Sebastopol CA, Santa Monica CA, and San Francisco CA, none of which have been reported to reduce the rate of home construction, home-buying, or to cause hardship or difficulties for homeowners or would-be homeowners; and

WHEREAS, rooftop solar installation benefits the local economy by supporting small businesses, creating well-paying jobs, and directing profits to local business owners rather than exporting them to corporate shareholders; and

WHEREAS, section 193.624, Florida Statute provides that “...the term “renewable energy source device” means ... (a) Solar energy collectors, photovoltaic modules, and inverters and in subsection (2) it provides that “[H]e in determining the assessed value of real property used... (in) for residential purposes, an increase in the just value of the property attributable to the installation of a renewable energy source device may not be considered.”; and
WHEREAS, section 212.08 (1)(h), Florida Statutes, provides that the sale at retail, the rental, the use, the consumption, the distribution, and the storage to be used or consumed in this state of solar energy systems are exempt from the tax imposed by this chapter 212.

WHEREAS, on June 13, 2017, the Planning Board reviewed and unanimously approved this ordinance requiring solar energy collectors as part of new construction of certain residential dwellings.

NOW, THEREFORE, BE IT ORDAINED BY THE MAYOR AND CITY COMMISSION OF THE CITY OF SOUTH MIAMI, FLORIDA:

Section 1. South Miami Land Development Code Article II, “Definitions” is hereby amended to read as follows:

20.2.3 Definitions.

* * *

Living Area - shall mean gross floor area.

Nameplate capacity. Also known as the rated capacity, nominal capacity, installed capacity, or maximum effect, nameplate capacity shall mean the intended full-load sustained output of a facility such as a photovoltaic system.

Photovoltaic System (PV) - shall mean a type of solar collector that uses photovoltaic cells to directly convert sunlight into electricity.

Photovoltaic Thermal Collectors - shall mean photovoltaic-thermal hybrid solar collectors, sometimes known as hybrid PV/T systems or PVT, which are systems that convert solar radiation into thermal and electrical energy.

Solar Collectors - shall mean any photovoltaic or solar-thermal collectors or any combination thereof.

Solar Thermal Collectors - shall mean either low-, medium-, or high-temperature collectors. Low temperature collectors are flat plates generally used to heat swimming pools. Medium-temperature collectors are also usually flat plates but are used for creating hot water for residential and commercial use. High temperature collectors concentrate sunlight using mirrors or lenses and are generally used for electric power production. Hybrid photovoltaic-thermal systems are also included.

Solar Zone - shall mean space suitable a place available on a roof for the installation of solar panels, receiving collectors that will receive unshaded sunlight at least (5) hours a day. Exempt are roof sections sloped greater than 30 degrees (17.24 rise-to-run) oriented within 80 degrees of true north as determined in Figure 20.2.3.A.W.1 or on a roof sloping to the equivalent south, east or west. If allowed by the Florida Building Code and free of obstructions and penetrations. Shading from obstructions located on the roof or not with standing any other part
Provision in the subject building shall not be considered a restriction of the Solar Zone. The Solar Zone shall be calculated for roof sections sloped 30 degrees (7/12 rise-to-run) or less, and any steeper-sloped roof sections oriented within 80 degrees of true north. For single-family residences and townhouses, the Solar Zone shall be located on the roof or suitable overhang of the building. For single-family residences and townhouses and for qualifying multi-family buildings, the Solar Zone can be located on any of the following locations: roof of building, overhang of building, roof and/or overhang of another structure located on the same property within 250 feet of the primary building, covered parking installed with the building, other structures including trellises, arbors, patio covers, carports, gazebos, and similar accessory structures as may be sufficiently strong to support a solar array.

Sunlit Area shall mean that portion of a roof section receiving at least 5 hours of sunlight daily on the summer solstice.

![Sunlight Diagram]

**Figure 20-2.3.W.1**—Sun elevations and sun horizontal directions (azimuth angles) across the day at the equinox in South Miami (26° N Lat) to be used for determining areas receiving direct sunlight at least five (5) hours a day. For example, for a section of west-facing roof receiving sunlight when the sun was at least 50° above the eastern horizon and at least 40° above the western horizon, direct sunlight would strike the roof shortly before 10 am and stop around 3:45 pm, a period of just under 6 hours. Adapted from McCluney, R. (1985). Sun Positions in Florida. FSEC DN 483. Florida Solar Energy Center. University of Central Florida.

**Section 2**. South Miami Land Development Code Article III. “Zoning Regulations”. Section 20-3.6. “Supplemental Regulations” is hereby amended to read as follows:

(W) Solar Requirements

(1) Applicability. All new construction of single-family residences that are larger than 1,100 square feet, townhouses, and any multi-story residential...
building where a section of roof can be reasonably allocated, as determined by the Director of
the Building Department or the Planning and Zoning Department, to a separately metered
dwelling unit (hereinafter referred to as “qualifying multi-story residential building”), that apply
for preliminary approval (or final approval if no preliminary approval was obtained) by the
Environmental Review and Preservation Board on or after [insert date 2 months from approval]
shall install solar photovoltaic systems; and/or solar thermal systems; or a combination of both in
the Solar Zone or another space of equivalent capacity; as described above in the Solar Zone
definition. Design and construct the roof so as to withstand the weight of all product approved
roofing material with the weight of solar collectors and shall install at least the minimum amount
of solar collectors required in subsection (2) of this section (W). This requirement shall also
apply to existing residential buildings as described above, if an alteration or addition is made that
either increases the square footage of the principal structure by 75% or greater, or that replaces
75% or more of the existing sub-roof—any portion of the sub-roof that is necessarily replaced
(due to damage from a natural disaster shall not be included in the calculation of this percentage).

(2) Minimum required installation. The area to be occupied by solar collectors shall be no
less than the minimum of solar collectors shall be installed in at least the following amounts,
provided there is a sufficient Solar Zone exists to accommodate them as determined by the
certification of an architect or engineer’s certification who shall also certify the total size of
available Solar Zone in square feet:

i. the Solar Zone area (calculated in subparagraph 2 below); or

ii. one panel with a minimum of 2.75 kW of nameplate photovoltaic capacity per
1,000 square feet of living area provided there is sufficient space within the available roof top
Solar Zone; or

iii. 175 square feet of solar collector-panel collectors per 1,000 square feet of roof
area.

(3) Calculation of required solar collectors to fill the available Solar Zone area size. The
minimum Solar Zone area shall be calculated using one of the following methods:

i. Minimum Solar Zone Area Based on Total Roof Area

This method should be used if shading is not significant, for instance, if trees
to existing and planned) and adjacent buildings do not shade the roof. The Solar Zone area shall
be no less than fifteen (15) percent of the total roof area after subtracting the area of any
skylights, chimneys and other similar structures located on the roof. The Solar Zone may be
composed of multiple sub-areas; however, no dimension of a sub-area can be less than five (5)
feet in length. If the total roof area is equal to or less than 10,000 square feet, each sub-area must
be at least eighty (80) square feet in area (or of sufficient size, to accommodate at least four (4)
regular sized PV panels). If the total roof area is greater than 10,000 square feet, each sub-area
must be at least one-hundred sixty (160) square feet (or of sufficient size to accommodate at least
eight (8) regular sized PV panels). The Solar Zone is the sum of all qualifying sub-areas.

Method 2: Minimum Solar Zone Accounting for Shading

If the building site has significant shading, either from trees or from built
objects, the extent that are not located on the roof or any other part of the same building, the Sunlit
Area, or combination of sunlit sub-areas as in (4) above, shall be used as the Solar Zone subject
to certain reductions. If the Sunlit Area is smaller than 250 square feet or smaller than 15% of
the roof area of the building, excluding any skylights, chimneys and other similar structures, then
the Solar Zone can be reduced to half the Sunlit Area. If the roof is shaded such that it has no
qualified Solar Zone, then no solar power or heating installation is required; construction is
allowed by the Florida Building Code.

(4) Avoiding the Creation of Shade. The designated Solar Zone shall be free from roof
penetrations and shall not have any obstructions such as vents, chimneys, architectural features,
or roof mounted equipment located in the designated Solar Zone. This requirement ensures that
the Solar Zone remains clear and open for the installation of future expansion of a solar energy
system. Obstructions located on the roof or any other part of the building that projects above the
Solar Zone shall be located at a sufficient horizontal distance away from the Solar Zone in order
to reduce the resulting shading of the Solar Zone. For any obstruction where the arc of the sun
during the middle six (6) hours of the day could cast a shadow on the Solar Zone, the horizontal
distance ("D") from the obstruction to the Solar Zone shall be at least twice the height difference
("H") between the highest point of the obstruction and the horizontal projection of the nearest
point of the Solar Zone (Figure 20-2.3.W.2).

(3) Avoiding the Creation of Shade. Structures shall be designed in such a way so as to
maximize the available Solar Zone and for structures which have been designed by an architect
or engineer, the plans submitted shall include a certificate from the architect or engineer of
record certifying that the design of the structure has maximized the available Solar Zone.
Obstructions which are not located on the roof or another part of the building, such as
landscaping or a neighboring building are not subject to these placement requirements.

![Figure 20-2.3.W.2](image)

Figure 20-2.3.W.2—Structures protruding from the roof that would otherwise shade the
Solar Zone should be offset laterally by twice their height.

(4) Minimum specifications for solar collectors.

i. Solar photovoltaic systems: Photovoltaic collectors satisfying the requirements of
this section shall be rated at no less than ten (10) watts DC faceplate capacity per square foot.

ii. Solar thermal systems: Single-family residential solar domestic water heating
systems shall be OG-300 System Certified by either the Solar Rating and Certification
Corporation (SRCC) or the International Association of Plumbing and Mechanical Officials (IAPMO).

Solar photovoltaic systems and solar thermal systems shall be installed in accord with all applicable State code requirements, including access, pathway, smoke ventilation, and spacing requirements, all applicable local code requirements, and manufacturer’s specifications.

Approval and compliance. All solar installations shall be permitted through the City. The plans shall demonstrate that the requirements of the City code and State code the Florida Building Code are satisfied and the engineer or architect of record shall sign and seal the plans indicating compliance. Subsequent review approval shall be carried out through the standard review processes for residential construction. Inspection shall be performed by the Building Department as per the City’s permit requirements for solar power or water heating installations.

Enforcement of this ordinance shall be carried out by the City including the Code Enforcement Division.

Section 3. Codification. The provisions of this ordinance shall become and be made part of the Land Development Code of the City of South Miami as amended.

Section 4. Severability. If any section, clause, sentence, or phrase of this ordinance is for any reason held invalid or unconstitutional by a court of competent jurisdiction, this holding shall not affect the validity of the remaining portions of this ordinance or the Guidelines adopted hereunder.

Section 5. Ordinances in Conflict. All ordinances or parts of ordinances and all sections and parts of sections of ordinances in direct conflict herewith are hereby repealed.

Section 6. Effective Date. This ordinance shall become effective upon enactment.

PASSED AND ENACTED this ___ day of _____________, 2017.

ATTEST: APPROVED:

CITY CLERK

1st Reading
2nd Reading

READ AND APPROVED AS TO FORM: COMMISSION VOTE:

LANGUAGE, LEGALITY AND EXECUTION THEREOF

Commissioner Edmond:
Commissioner Harris:
Commissioner Liebman:

CITY ATTORNEY
ORDINANCE NO.

An ordinance amending the Land Development Code, Article II, Section 20-2.3, "Definitions" and Article III, Section 20-3.6 "Supplemental Regulations" adding subsection (W) "Solar Requirements" and providing definitions relating to and criteria and regulations for solar collectors in the City of South Miami

WHEREAS, the South Miami City Commission expressly declares that the following amendments to the South Miami Land Development Code are reasonable and necessary because of local climatic, topological, and geological conditions as listed below; and

WHEREAS, as a coastal city located on the tip of a peninsula, the Miami region is vulnerable to sea level rise, and human activities releasing greenhouse gases into the atmosphere that increase the worldwide average temperature, contributing to the melting of glaciers, thermal expansion of ocean water, and shifting or slowing of the Gulf Stream, all resulting in rising sea levels; and

WHEREAS, South Florida is already experiencing the repercussions of excessive CO₂ emissions as rising sea levels threaten shorelines and infrastructure, have caused significant erosion, have increased impacts to infrastructure during extreme tides, and have caused the City to expend funds to modify the sewer system; and

WHEREAS, some people in South Miami, such as the elderly, may be particularly vulnerable to higher temperatures resulting from climate changes; and

WHEREAS, installing solar will help South Miami meet its goals under Res. No. 23-09-12832, dated February 9, 2009, stating: “The City of South Miami commits to a Carbon Neutral Initiative to lead the community by example and to implement policies to eliminate net emission of carbon dioxide and other greenhouse gases by the end of 2030”; and

WHEREAS, distributed power, such as rooftop solar, can serve as generator systems for the purposes of hurricane preparedness and thus comports with Sec. 252.371 Fla. Stat., the Emergency Management, Preparedness, and Assistance Trust Fund; and

WHEREAS, distributed photovoltaic generation provides a basis for future microgrids, making the city more resilient as a whole, benefiting the health, welfare, and resiliency of South Miami and its residents; and

WHEREAS, the 2008 Florida legislature enacted Section 163.04, Fla. Stat., with the legislative intent of protecting the public health, safety, and welfare by encouraging the development and use of renewable resources; and

WHEREAS, Section 163.08 (1)(a), Fla. Stat., found that chapter 2008-227, Laws of Florida, amended the energy goal of the state comprehensive plan to provide, in part, that the state shall reduce its energy requirements and reduce atmospheric carbon dioxide by promoting
an increased use of renewable energy resources. That chapter also declared it the public policy of
the state to play a leading role in developing and instituting energy management programs that
promote energy conservation, energy security, and the reduction of greenhouse gases. In chapter
2008-191, Laws of Florida, the Legislature adopted new energy conservation and greenhouse gas
reduction comprehensive planning requirements for local governments. In the 2008 general
election, the voters of this state approved a constitutional amendment authorizing the Legislature,
by general law, to prohibit the increase of assessed value of residential real property due to
change or improvement made for the purpose of improving a property’s resistance to wind
damage or the installation of a renewable energy source device; and

WHEREAS, Section 163.08 (1)(b), Fla. Stat., found that the installation and operation of
improvements not only benefitted the affected properties for which the improvements were
made, but also assisted the state in fulfilling the goals of the state’s energy mitigation policies
and “Qualifying improvement” includes any energy conservation and efficiency improvement,
which is a measure to reduce consumption through conservation of electricity and the installation
of any system in which the electrical or thermal energy is produced from a method that uses solar
energy; and

WHEREAS, section 193.624, Fla. Stat., provides that “… the term “renewable energy
source device” means …. (a) Solar energy collectors, photovoltaic modules, and inverters and in
subsection (2) it provides that [i]n determining the assessed value of real property used: (a) For
residential purposes, an increase in the just value of the property attributable to the installation of
a renewable energy source device may not be considered.”; and

WHEREAS, section 212.08 (7) (hh), Fla. Stat., provides that the sale at retail, the rental,
the use, the consumption, the distribution, and the storage to be used or consumed in this state of
solar energy systems are exempt from the tax imposed by this chapter 212; and

WHEREAS, requiring solar photovoltaics at the time of new construction is more cost-
effective for the homeowner than installing the equipment after home construction because (i) it
is less expensive to reinforce a roof to accommodate the extra forces of a solar array, (ii) solar
wiring can be incorporated more efficiently into electrical panels at the time of initial wiring,
and, (iii) a solar system can be financed at a lower rate if included in the initial home financing;
and

WHEREAS, it is reasonably necessary to require builders to take steps to reduce the
energy consumed by inefficient building operations and produce renewable, low-carbon
electricity, or capture solar energy, in order to reduce pollution, benefit biodiversity, improve
resilience to climate change by reducing localized heat islands, and reduce the global warming
effects of energy consumption; and

WHEREAS, a cost-benefit analysis by the U.S. Department of Energy shows that
rooftop solar, at today’s costs, provides FPL customers with a Savings-to-Investment Ratio (SIR)
of 1.55 using the Federal Renewable Energy Tax credit, and a SIR of 1.08 without the tax credit,
both figures being greater than 1.0 which indicates a net financial benefit of roof-top solar to the
household (www.nrel.gov/solar/assets/docs/sir.xlsx); and
WHEREAS, the payback period for photovoltaic solar systems is in the range of one quarter to one half the life expectancy of the photovoltaic panels, meaning the homeowner receives a 50-75% decrease in the overall cost of power; and

WHEREAS, the cost of rooftop solar power continues to fall, while the cost of utility power in South Florida continues to rise, guaranteeing an increasing economic benefit to the home owner and increasing the value of the property; and

WHEREAS, the Solar Energy Center at the University of Central Florida has shown that, at today's electricity and solar PV prices and historic inflation rates over the past 20 years, the Internal Rate of Return (IRR) on rooftop photovoltaic systems runs between 9% and 14%, an extraordinary tax-free fixed rate investment return to a property owner; and

WHEREAS, the Low-income Solar Policy Guide, produced by the Center for Social Inclusion in 2016 states: “Because low-income families spend a disproportionate amount of their income on utility bills, they receive a proportionally greater economic benefit from solar power”, (Low Income Solar Policy Guide, http://www.lowincomesolar.org); and

WHEREAS, home buyers across a variety of states pay a premium for properties with PV equal to or greater than the cost of the solar system itself, adding $3.58/watt on new homes and $4.51/watt on existing homes (“Selling into the Sun: Premium Analysis of a Multi-State Dataset of Solar Homes” Lawrence Berkeley National Laboratory, prepared for the Office of Energy Efficiency and Renewable Energy Solar Energy Technologies Office U.S. Department of Energy, January 13, 2015 https://emp.lbl.gov/publications/selling-sun-price-premium-analysis-0); and

WHEREAS, in housing markets similar to South Miami’s, PV systems that were owned (not leased) benefitted home builders and owners by increasing market value and decreasing marketing time (The Impact of Photovoltaic Systems on Market Value and Marketability, Colorado Energy Office, https://www.colorado.gov/pacific/energyoffice/atom/35466); and

WHEREAS, this ordinance is modeled after similar ordinances enacted in the municipalities of Lancaster CA, Sebastopol CA, Santa Monica CA, and San Francisco CA, none of which have been reported to reduce the rate of home construction, home-buying, or to cause hardship or difficulties for homeowners or would-be homeowners; and

WHEREAS, rooftop solar installation benefits the local economy by supporting small businesses, creating well-paying jobs, and directing profits to local business owners rather than exporting them to corporate shareholders; and

WHEREAS, on June 13, 2017, the Planning Board reviewed and unanimously approved this ordinance requiring solar energy collectors as part of new construction of certain residential dwellings.
NOW, THEREFORE, BE IT ORDAINED BY THE MAYOR AND CITY
COMMISSION OF THE CITY OF SOUTH MIAMI, FLORIDA:

Section 1. South Miami Land Development Code Article II, “Definitions” is hereby
amended to read as follows:

20-2.3 Definitions.

Living Area - shall mean gross floor area.

Nameplate capacity. Also known as the rated capacity, nominal capacity, installed capacity, or
maximum effect, nameplate capacity shall mean the intended full-load sustained output of a
facility such as a photovoltaic system.

Photovoltaic System (PV) - shall mean a type of solar collector that uses photovoltaic cells to
directly convert sunlight into electricity.

Photovoltaic Thermal Collectors - shall mean photovoltaic, thermal hybrid solar collectors,
sometimes known as hybrid PV/T systems or PVT, which are systems that convert solar
radiation into thermal and electrical energy.

Solar Collectors - shall mean any photovoltaic or solar-thermal collectors or any combination
thereof.

Solar Thermal Collectors - shall mean either, low-, medium-, or high-temperature collectors.
Low temperature collectors are flat plates generally used to heat swimming pools. Medium­
temperature collectors are also usually flat plates but are used for creating hot water for
residential and commercial use. High temperature collectors concentrate sunlight using mirrors
or lenses and are generally used for electric power production. Hybrid photovoltaic-thermal
systems are also included.

Solar Zone - shall mean a place available on a roof for the installation of solar collectors that will
receive unshaded sunlight at least five (5) hours a day. Exempt are roof sections sloped greater
than 30 degrees (7/12 rise-to-run) oriented within 80 degrees of true north. If allowed by the
Florida Building Code and notwithstanding any other provision in the City’s Land Development
Code, the Solar Zone shall be located on the roof or suitable overhang of the building of single­
family residences and townhouses and for qualifying multi-family buildings, the Solar Zone can
be located on any of the following locations: roof of building, overhang of building, roof and/or
overhang of another structure located on the same property within 250 feet of the primary
building, covered parking installed with the building, other structures including trellises, arbors,
patio covers, carports, gazebos, and similar accessory structures as may be sufficiently strong to
support a solar array.

Sunlit Area - shall mean that portion of a roof section receiving at least 5 hours of sunlight on the
equinox.
Section 2. South Miami Land Development Code Article III, “Zoning Regulations”, Section 20-3.6, “Supplemental Regulations” is hereby amended to read as follows:

(W) Solar Requirements
1. Applicability. All new construction of single-family residences with living area greater than 1,100 square feet, townhouses, and any multi-story residential building where a section of roof can be reasonably allocated, as determined by the Director of the Building Department or the Planning and Zoning Department, to a separately metered dwelling unit (hereinafter referred to as “qualifying multi-story residential building”), that apply for preliminary approval (or final approval if no preliminary approval was obtained) by the Environmental Review and Preservation Board on or after [insert date 2 months from approval] shall design and construct the roof so as to withstand the weight of all product approved roofing material with the weight of solar collectors and shall install at least the minimum amount of solar collectors required in subsection (2) of this section (W). This requirement shall also apply to existing residential buildings as described above, if an alteration or addition is made that either increases the square footage of the principal structure by 75% or greater, or that replaces 75% or more of the existing sub-roof (any portion of the sub-roof that is necessarily replaced due to damage from a natural disaster shall not be included in the calculation of this percentage).

2. Minimum required installation. Solar collectors shall be installed in at least the following amounts, provided a sufficient Solar Zone exists to accommodate them as determined by the certification of an architect or engineer who shall also certify the total size of available Solar Zone in square feet:

   i. one panel with a minimum of 2.75 kW nameplate photovoltaic capacity per 1,000 square feet of living area provided there is sufficient space within the available roof top Solar Zone; or
   ii. 175 square feet of solar collectors per 1,000 square feet of roof area.
   iii. sufficient solar collectors to fill the available Solar Zone, to the extent that such construction is allowed by the Florida Building Code.

3. Avoiding the Creation of Shade. Structures shall be designed in such a way so as to maximize the available Solar Zone and for structures which have been designed by an architect or engineer, the plans submitted shall include a certificate from the architect or engineer of record certifying that the design of the structure has maximized the available Solar Zone. Obstructions which are not located on the roof or another part of the building, such as landscaping or a neighboring building are not subject to these placement requirements.

   i. Solar photovoltaic systems: Photovoltaic collectors satisfying the requirements of this section shall be at rated at no less than ten (10) watts DC faceplate capacity per square foot.
   ii. Solar thermal systems: Single-family residential solar domestic water heating systems shall be OG-300 System Certified by either the Solar Rating and Certification Corporation (SRCC) or the International Association of Plumbing and Mechanical Officials (IAPMO).
iii. Solar photovoltaic systems and solar thermal systems shall be installed in accord
with all applicable State code requirements, including access, pathway, smoke ventilation, and
spacing requirements, all applicable local code requirements, and manufacturer’s specifications.

(5) Approval and compliance. All solar installations shall be permitted through the City.
The plans shall demonstrate that the requirements of the City code and the Florida Building Code
are satisfied and the engineer or architect of record shall sign and seal the plans indicating
compliance. Subsequent review approval shall be carried out through the standard review
processes for residential construction. Inspection shall be performed by the Building Department
as per the City's permit requirements for solar power or water heating installations. Enforcement
of this ordinance shall be carried out by the City including the Code Enforcement Division.

Section 3. Codification. The provisions of this ordinance shall become and be made
part of the Land Development Code of the City of South Miami as amended.

Section 4. Severability. If any section, clause, sentence, or phrase of this ordinance
is for any reason held invalid or unconstitutional by a court of competent jurisdiction, this
holding shall not affect the validity of the remaining portions of this ordinance or the Guidelines
adopted hereunder.

Section 5. Ordinances in Conflict. All ordinances or parts of ordinances and all
sections and parts of sections of ordinances in direct conflict herewith are hereby repealed.

Section 6. Effective Date. This ordinance shall become effective upon enactment.

PASSED AND ENACTED this ___ day of ____________, 2017.

ATTEST:

APPROVED:

CITY CLERK
1st Reading
2nd Reading

READ AND APPROVED AS TO FORM: COMMISSION VOTE:
LANGUAGE, LEGALITY AND
EXECUTION THEREOF

CITY ATTORNEY