



MONTGOMERY COUNTY PLANNING DEPARTMENT
THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION

MCPB
Item # 9
04/17/08

DATE: April 9, 2008
TO: Montgomery County Planning Board
VIA: Rose Krasnow, Chief, Development Review
Ralph Wilson, Zoning Supervisor *TR*
FROM: Greg Russ, Zoning Coordinator *SR*
REVIEW TYPE: Zoning Text Amendment
PURPOSE: To amend the Zoning Ordinance to allow certain accessory structures (Solar Panels) in the side yard of one-family residential zones under certain circumstances and generally amend provisions concerning accessory structures in one-family residential zones.

TEXT AMENDMENT: No. 08-04
REVIEW BASIS: Advisory to the County Council sitting as the District Council, Chapter 59 of the Zoning Ordinance
INTRODUCED BY: Councilmembers Berliner and Trachtenberg
INTRODUCED DATE: March 18, 2008

PLANNING BOARD REVIEW: April 17, 2008
PUBLIC HEARING: April 22, 2008; 1:30 p.m.

STAFF RECOMMENDATION: APPROVAL

PURPOSE OF THE TEXT AMENDMENT

Councilmembers Berliner and Trachtenberg sponsored Zoning Text Amendment 08-04 to allow accessory structures used to generate electricity from solar energy (Photovoltaic systems-solar panels) to be located in the side yard in any one-family residential zone if the main building is set back no less than 70 feet from the side lot line. The sponsors would require any solar panel located in a side yard to be: (1) located no less than 50 feet from a side lot line; and (2) less than 20 feet in height. Further, a solar panel must satisfy the street line and rear lot line setbacks of the applicable zone.

Current Standards

Accessory buildings or structures in the R-90, R-60 and R-40 zones, currently must maintain a five-foot setback from the rear lot lines and a 60-foot setback from the street line. Accessory

buildings or structures in the R-200 and R-150 zones must maintain a seven-foot setback from the rear lot lines and a 65-foot setback from the street line. For the RE-1, RE-2C and RE-2 zones, the setback from the rear lot line is 10 feet and from the street line is 80 feet.

The ZTA does not propose to change these setback requirements. By maintaining the current setback requirement from the street line, the visual impact of the structure from the street would not be as great since this setback is greater than the street line setback for a main building (Example—front setback for a main building in the RE-2 zone is 50 feet; the setback from the street line for the solar panel structure would be 80 feet). Attachment 2 depicts an example of the layout requirements based on the parameters established in the subject text amendment.

The text amendment also requires that a solar energy accessory structure be located no less than 50 feet from a side lot line (if located in a side yard). Currently, the minimum setback from the side lot line for an accessory structure located in the rear yard ranges from 5 feet (in the R-40, R-60 and R-90 zones) to 15 feet (in the RE-1, RE-2C and RE-2 zones).

Applicability of ZTA 08-04

Currently in one-family residential zones, an accessory building or structure must be located in a rear yard. Under ZTA 08-04, any accessory structure used to generate electricity from solar energy (solar panels) could be located in the side yard in any one-family residential zone if the main building is set back no less than 70 feet from the side lot line and the accessory structure is located no less than 50 feet from a side lot line. A solar panel in a side yard must be less than 20 feet in height and must still adhere to the current setback requirements from the street line and rear lot line.

The proposed minimum side yard setback of 70 feet for a main building limits the applicability of the text amendment in the R-60 zone. Assuming a minimum house width of 40 feet (a modest assumption that includes a 20-foot wide two-car garage), the minimum lot width of 60 feet in a R-60 zone would have to be almost doubled (to 118 feet) in order to accommodate a solar energy structure.

Using the same analysis, to accommodate a solar energy structure in any R-90 zone would require a minimum lot width of 118 feet (the R-90 minimum is 75 feet). A solar energy structure in any R-150 or R-200 zone would require a minimum lot width of 122 feet (the R-150 and R-200 zone minimums are 100 feet). It is reasonable to assume that under the terms of ZTA 08-04, some potential exists for solar panels to be located in these zones.

The minimum lot widths for the larger lot single-family zones (RE-1, RE-2C and RE-2) appear sufficient, in almost all cases, to accommodate a solar energy structure in accordance with the text amendment parameters (the exception being that the minimum required width in the RE-1 would be required to be increased by 2 feet to accommodate a 40-foot wide main building).

Solar Power Systems

Below is a brief description of the various types of solar energy structures. Any of these solar systems could be developed under ZTA 08-04.

Photovoltaic (PV) solar cells, which directly convert sunlight into electricity, are made of semiconducting materials. The simplest cells power watches and calculators and the like, while more complex systems can light houses and provide power to the electric grid. There are three primary types of solar electric power systems which can be integrated into your residence or business; 1) a "utility-tie" system, 2) a "utility-interactive" system, and 3) what is commonly called a "stand alone" system. The size of an array of panels depends on several factors, such as the amount of sunlight available in a particular location and the needs of the consumer.

Utility-tie (or Grid-tie)

This system does not have a battery or related battery equipment. It has one function only. It feeds all electric power generated by the solar panels through a synchronous utility-grade inverter and offsets the power you would normally consume from the utility company. It slows, stops or reverses your utility meter depending on the time of day, the loads present and the size of the solar system installed. They are simple in nature, comprised primarily of the solar panels and synchronous utility grade inverter.

Utility-interactive

This system has a battery and additional controls. It can both, (1) feed into the utility meter to slow or reverse it when excess power is present, and (2) it can provide back up power during utility failures. This is basically the same type of system used in homes that are completely off-grid. Depending on the size of this system and the appliances or devices requiring power it can support an entire home or just the items that are considered the most necessary during power failures.

Stand Alone

A stand alone system is typically used when there is no public utility power available. A fueled generator is often used for supplemental short term support or to shave peak loads, but otherwise this system is fully independent of the power grid and thus there is no interaction whatsoever with the public grid. The size of the solar array, other system components and the battery reserve capacity is dictated by the electrical usage of the property, the amount of reserve for periods of little or no sun and the climatology of the area.

Mounting

The first step is to select the location of your PV system. *The ideal location is an area receiving full exposure to sunlight as close as possible to the location that electricity will be used or stored.* There are several options for mounting PV modules. There are two main types: roof and pole mounts.

Roof Mounts

Roof mounts are the most popular choice for small residential systems. The modules are

located above most objects that would cause shading problems and the large roof surface makes it easy to attach the mounting structure. A roof mount also locates the modules out of the way and out of sight, reducing the possibility of vandalism or theft. If your roof is facing in the wrong direction (optimally, roof should be facing south) or the roof pitch causes problems then *modules can be installed on a south facing wall using the same mounting structure*. Roof mounts may also be secured to the ground.

Pole Mounts

Pole mounts are easy to install and *allow the array angle to be adjusted after installation*. The mounting frame fits on a length of pipe set securely in a concrete form in the ground. Whichever mounting structure is chosen air circulation and snow load must be considered.

Policy Basis

Solar electric systems (photovoltaic –“PV”- systems) have very little impact on the environment, making them one of the cleanest power-generating technologies available. While in operation, PV systems produce no air pollution, hazardous waste, or noise, and require no transportable fuels. Because of these benefits, PV can play an important role in mitigating environmental problems. Although staff has some concerns with potential visual impacts of pole (or ground) mounted solar energy structures in residential areas, the setback requirements from the side lot line and from the street line help minimize these concerns. Staff believes that the sustainability benefits associated with this renewable energy source is a key component to protecting the environment.

RECOMMENDATION

Staff supports the proposed text amendment to allow certain accessory structures (solar energy panels) in the side yard of one-family residential zones under certain circumstances.

GR

Attachments

1. Proposed Text Amendment 08-04
2. Example of a Site Layout for a solar energy system (based on the ZTA parameters)
3. Pictures of various solar energy panel locations

ATTACHMENT 1

Zoning Text Amendment No: 08-04
Concerning: Accessory Structures –
Solar Panels
Draft No. & Date: 1 -3/6/08
Introduced: March 18, 2008
Public Hearing: April 22, 2008
Adopted:
Effective:
Ordinance No:

**COUNTY COUNCIL FOR MONTGOMERY COUNTY, MARYLAND
SITTING AS THE DISTRICT COUNCIL FOR THAT PORTION OF
THE MARYLAND-WASHINGTON REGIONAL DISTRICT WITHIN
MONTGOMERY COUNTY, MARYLAND**

By: Councilmembers Berliner and Trachtenberg

AN AMENDMENT to the Montgomery County Zoning Ordinance to:

- allow certain accessory structures in the side yard of one-family residential zones;
and
- generally amend the standards related to accessory structures in one-family residential zones.

By amending the following section of the Montgomery County Zoning Ordinance, Chapter 59 of the Montgomery County Code:

DIVISION 59-C-1. "RESIDENTIAL ZONES, ONE-FAMILY"
Division 59- C-1.32. "Development standards."

EXPLANATION: ***Boldface** indicates a heading or a defined term.*

*Underlining indicates text that is added to existing laws
by the original text amendment.*

*[Single boldface brackets] indicate text that is deleted from
existing law by the original text amendment.*

*Double underlining indicates text that is added to the text
amendment by amendment.*

*[[Double boldface brackets]] indicate text that is deleted
from the text amendment by amendment.*

** * * indicates existing law unaffected by the text amendment.*

ORDINANCE

The County Council for Montgomery County, Maryland, sitting as the District Council for that portion of the Maryland-Washington Regional District in Montgomery County, Maryland, approves the following ordinance:

Sec. 1. DIVISION 59-C-1 Residential Zones- One-family is amended as follows:

Division 59- C-1.32. Development standards.

In addition to the following, the regulations in sections 59-C-1.34, 59-C-1.35 and 59-C-1.36 shall apply:

* * *

	RE-2	RE-2C	RE-1	R-200	R-150 ³	R-90	R-60	R-40 ²	R-4 plex	RMH 200
<p>59-C-1.326. Yard Requirements for an Accessory Building or Structure (in Feet). (a) For all lots. <u>(1) Except as provided for in subsections (2), an [An] accessory building or structure must be located in a rear yard and must not occupy more than 20 percent of the rear yard.</u> <u>(2) If the main building is setback no less than 70 feet from a side lot line, an accessory structure used to generate electricity from solar energy may be located within that 70 foot setback if the structure is:</u> <u>(A) located no less than 50 feet from a side lot line;</u> <u>(B) less than 20 feet in height; and</u> <u>(C) the structure satisfies the street line and rear lot line setbacks under subsection (3).</u></p>										

Zoning Text Amendment 08-04

[(2)] (3) An accessory building or structure must be set back from the lot lines with a minimum setback as follows:										
(A) From the street line:	80	80	80	65	65	60	60	60		65
(B) From a rear lot line:	10	10	10	7	7	5	5	5		7
(C) From a side lot line:	15	15	15	12	12	5	5	5		12
(D) From a national historical park boundary line unless the accessory structure on the lot or tract is exempted under Sec. 59-B-2.1 ¹⁰ .	200	200	200							
[(3)] (4) For any accessory building or structure in the zones indicated thus (*) with a height greater than 15 feet, the side yard and rear yard minimum setback must be increased from the requirements in [(2)] (3) above at a ratio of 2 feet of additional setback for each foot of height in excess of 15 feet.						*	*	*		
[(4)] (5) For any accessory building or structure, except a swimming pool, as defined in 59-A-2.1, in the zones indicated thus (*) with a length along a rear or side						*	*	*		

property line which has a linear dimension greater than 24 feet, the minimum setback from that rear or side property line must be increased from the requirement in [(2)] (3) above at a ratio of one foot for every 2 feet that the dimension exceeds 24 linear feet.										
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7 * * *

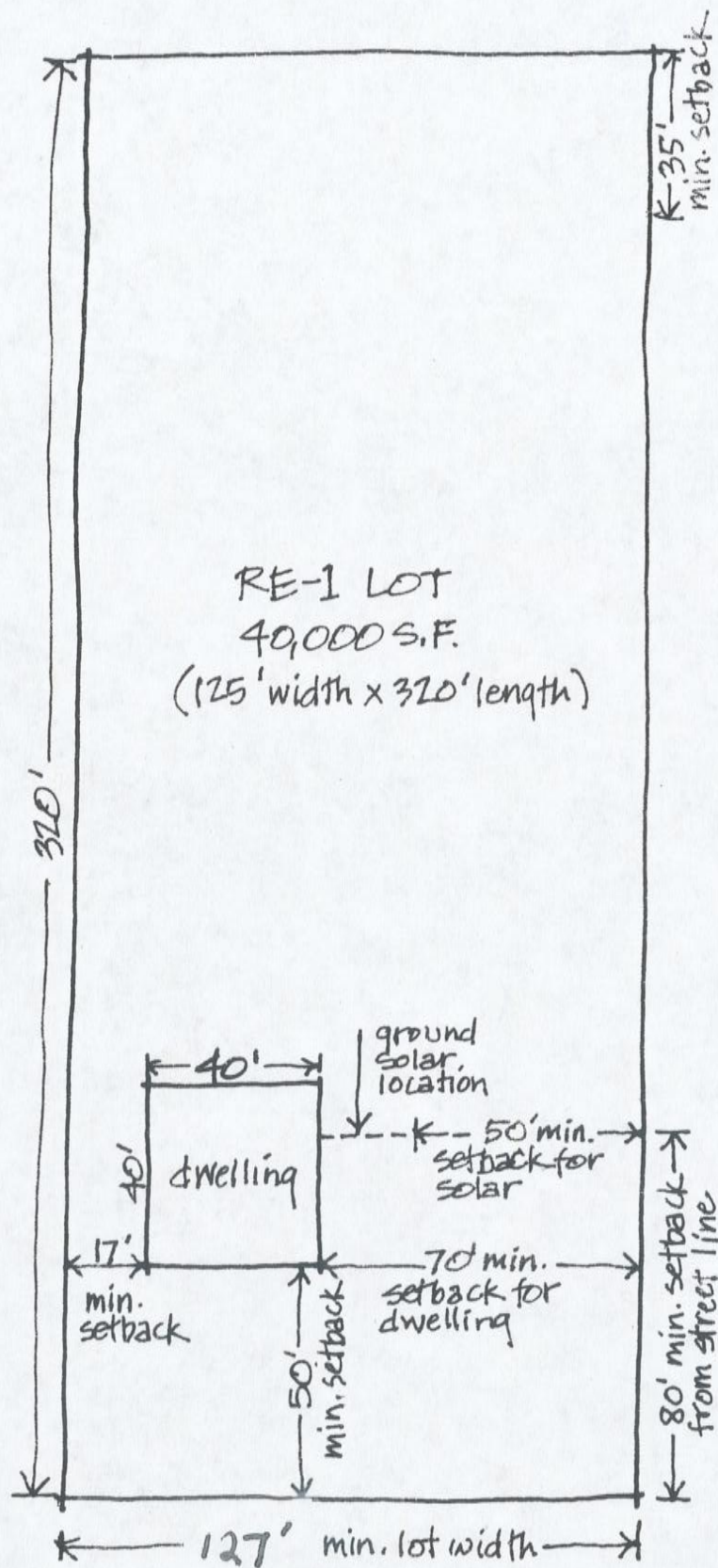
8 **Sec. 2. Effective date.** This ordinance takes effect 20 days after the date of
9 Council adoption.

10 This is a correct copy of Council action.

11

12

13 _____
Linda M. Lauer, Clerk of the Council



Scale: 1" = 40'

Capital region, NY



Capital region, NY



**Hillsdale, NY
2.8kW system**



Hillsdale, NY #2



**East Greenbush, NY
Pole mounted 5.04kW system**

Commercial Installation Gallery



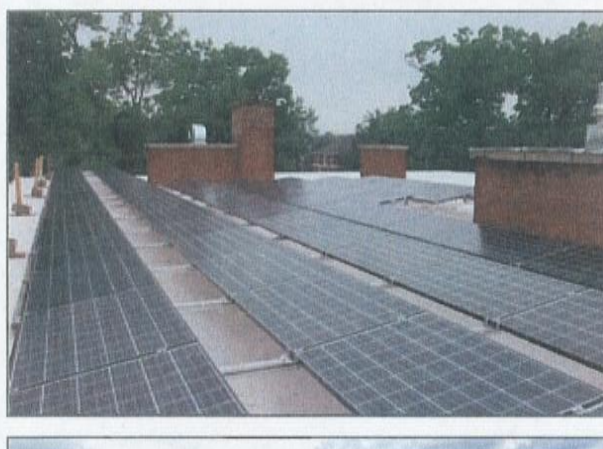
East Greenbush, NY
2kW system



Colonie High School
2kW system



Colonie High School
Note how the awning mount provides shade, perfect for South-facing windows in the summertime.



Saratoga Springs, NY

**Vorheesville High School
2kW system**



Vorheesville High School

Note the use of pan mounting on the flat roof, a very common style of mount for commercial and government buildings.



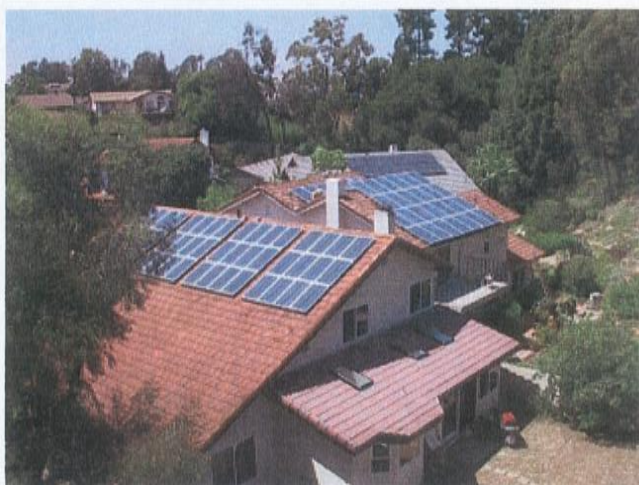
**Pole mounted solar array in upstate
NY**

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Trellis mounted, awning mounted and covered parking photovoltaic systems have become popular because they perform multiple functions and can be integrated into buildings materials. Protect yourself from rain and provide shade while producing energy from the sun!



Residential PV Systems

Modern solar systems available today are lightweight, strong and durable even in heavy hail conditions, and actually add to the value of your home.

Solar electric system can generate part or all of a typical family's daily electrical needs or even eliminate the electric bill entirely while providing pollution-free power. Systems can be easily mounted above roof tiles, asphalt shingles, concrete tiles and now even integrated into new and existing buildings. Additionally ground mounted systems can be affordable and are easy to install.

YOUR WORLD

America's demand for electricity has risen more than 60% in the past 27 years. Our dependence on coal, oil, and nuclear plants affect the future of us all, including our children, our grandchildren, and our world.

Installing a solar electric system can reduce carbon dioxide emissions by more than two tons annually and provide years of FREE electricity!

State Rebates & Federal Tax Credits

The California Solar Initiative offers cash incentives on solar systems - currently, \$2.50 a watt for existing homes. California Solar Initiative incentives, combined with federal tax incentives helps to further shorten return on your investment.

(518) 674-5808

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Renewable Power Systems Solar Installation Gallery

Renewable Power Systems has installed more than 75 solar power systems since 2002 in the upstate New York region. Take a look at a sample of our work in the pictures below.

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Residential Installation Gallery



New construction solar panels



Solar panels in upstate New York



**Valatie, NY
2.7kW system**

