

City Council Staff Report



Date:
10/7/20

Applicant:
Steve Painter

Location:
N/A

Prepared By:
Sean Conroy, Community
Development Director

Public Hearing:
Yes

Attachments:
1. Proposed ordinance.
2. CC minutes.
3. Tower examples.
4. Correspondence.

REQUEST

Consideration of an ordinance regulating Wind Energy Systems in Mapleton City (Mapleton City Code Section 18.84.445).

BACKGROUND/DESCRIPTION

Residential wind energy conservation systems (WECS) are windmill-type structures designed to produce renewable energy for residential use. WECS are not currently identified as a permitted or conditional use in any residential zone and are therefore not permitted.

The City Council reviewed an ordinance on August 19, 2020 that would allow WECS in residential zones with certain requirements. The Council discussed the potential pros and cons of such an ordinance and continued the application. The Council expressed interest in visiting some residential sites that have WECS to better understand what impacts may exist. Staff sent the Council a list of sites in the County that they could visit on their own time (see attachment "3").

The proposed ordinance includes the following (see attachment #1 for the full draft ordinance):

- WECS would be considered a permitted use in residential zones.
- The minimum lot size for a free standing WECS would be one acre and ½ an acre for roof mounted WECS.
- The maximum height of any free standing WECS would be the same as the maximum height established in the zone (typically 40'). Roof mounted WECS could not exceed the maximum height allowed in the zone or 6' above the highest point on the roof, whichever results in a lesser height.
- WECS must be setback from the property lines a distance equal to the height of the pole plus one blade. For example, if the pole is 30' tall and the blade is 7' in length, the minimum setback would be 37'. This would ensure that if the tower tipped over that the fall would be contained on the subject property. Staff notes that this strict setback requirement would preclude WECS from many smaller, more narrow lots.
- The maximum sound of the turbine must be limited to 55 decibels as measured at the property line.
- The maximum blade length for a roof mounted WECS would be 4'.

BACKGROUND/DESCRIPTION

Text amendment requests are considered legislative matters. The

City Council generally has broad discretion when acting on legislative matters, provided it can be reasonably debated that the action taken (to approve or deny) will promote or protect the general welfare of the community.

General Plan: While encouraging opportunities for renewable energy is a worthwhile effort, the Land Use Element of the General Plan does not speak specifically about renewable systems. However, the following goals are important to keep in mind as the Council considers this proposed ordinance:

Goal 1: Preserve and enhance Mapleton's rural atmosphere and agricultural history through careful planning and preservation of open spaces.

Goal 3: Ensure land uses are compatible and/or utilize adequate buffers to enhance compatibility.

Goal 7: Improve Mapleton view corridors and viewsheds.

The Council may consider the following options:

- 1) Adopt the ordinance as proposed;
- 2) Adopt the ordinance with modifications;
- 3) Continue the ordinance with a request for information or changes; or
- 4) Deny the application.

RECOMMENDATION

Determine whether the proposed ordinance as proposed, or with modifications, is appropriate for Mapleton City.

Attachment "1" - Proposed Ordinance

18.84.445: WIND ENERGY CONSERVATION SYSTEMS (WECS):

- A. Purpose. The purpose of this section is to allow small renewable wind energy conservation systems (WECS) within the city while protecting residential areas and other land uses from potential adverse impacts of these systems.
- B. Use. WECS are considered a permitted use in all residential zones except for the Critical Environmental (CE-1) zone subject to the standards of this ordinance. Commercial wind power generating facilities are not permitted.
- C. Application process. All applicants shall make application by fulfilling all requirements of the city building permit application. Any cable connected to the wind energy system must be underground except for properties which obtain electric power service from aboveground lines and who are not otherwise required to underground.
- D. Lot size.
 - 1. The minimum lot size for a free standing WECS is one acre (43,560 square feet).
 - 2. The minimum lot size for a roof mounted WECS is twenty thousand (20,000) square feet.
- D. Design Standards. The following standards apply to free standing energy systems:
 - 1. Height:
 - (a) Free standing: The maximum height of a freestanding WECS, including the blade and rotor system, shall not exceed the maximum height allowed in the zone in which the lot or parcel is located for free standing WECS.
 - (b) Roof mounted: The maximum height of a roof mounted WECS, including the blade and rotor system shall not exceed the maximum height allowed in the zone in which the lot or parcel is located or six feet above the highest point on the roof, whichever results in a lesser height.
 - 2. Setback. The following setback standards shall apply to free standing WECS:
 - (a) The base of the tower shall be set back from all property lines and public rights-of-way a distance equal to the tower height plus the length of one blade.
 - (b) The base of the tower shall not be located within any required front, side, rear or corner side setback as defined in the zone in which the property is located. In no case shall the tower be located between the street and the primary dwelling on the property.
 - (c) The base of the tower and turbine blades shall be set back from all structures on the same property a minimum of ten feet (10').

3. Sound. Sound produced by the turbine under normal operating conditions shall be limited to fifty-five (55) decibels measured at the property line, except during naturally occurring short term events like severe storms.
 4. Signage: Signage is prohibited on the tower, blades, or accessory structures except for appropriate warning signs. Manufacturer identification may be placed on the turbine; however, advertising signs of any kind are prohibited.
 5. Lighting: No illumination of the turbine or tower shall be allowed unless required by the federal aviation administration.
 6. Tower. No climbing apparatus including foot pegs or rungs shall be within twelve feet (12') of the ground on a freestanding tower. No lattice towers are permitted.
 8. Number. Not more than one (1) WECS shall be permitted per lot or parcel.
 9. Distance. The minimum distance between the ground and any part of the rotor blade system shall be fifteen feet (15').
 10. Roof Mounted. The maximum length of any blade on a roof mounted WECS shall not exceed four feet (4').
- E. Accessory Buildings and Support Equipment. Buildings and support equipment associated with towers shall be defined as accessory structures and must comply with section 18.26.020 of this title.
- F. Abandonment. If a WECS is not functional, operational, or maintained for a period of one (1) year, it shall be deemed abandoned. The owner, upon notification, shall immediately dismantle and remove the wind tower and associated appurtenances and restore the site.

Attachment "2" - CC Minutes

MAPLETON CITY CITY COUNCIL MINUTES AUGUST 19, 2020

PRESIDING AND CONDUCTING:	Mayor Dallas Hakes
Members in Attendance:	Reid Carlson Jessica Egbert Therin Garrett Jim Lundberg Leslie Jones
Staff in Attendance:	Cory Branch, City Administrator Camille Brown, City Recorder Sean Conroy, Community Development Director John Jackson, Public Safety Director/Police Chief Steven Lord, Public Works Director/City Engineer Bryce Oyler, Finance Director
Minutes Taken by	Camille Brown, City Recorder

The items may not have been heard in the order below.

Mayor Hakes called the meeting to order at 7:00 p.m. Cl. Garrett gave the invocation and Cl. Egbert led the Pledge of Allegiance.

OPEN FORUM: No comments were made.

CONSENT AGENDA

Item 1. Approval of City Council meeting minutes- August 5, 2020

Motion: Cl. Egbert moved to approve the consent agenda.

Second: Cl. Jones seconded the motion.

Vote: Passed 5:0 unanimously by roll call.

PUBLIC HEARING ITEM:

Item 2. Consideration of an Ordinance regulating Wind Energy Systems in Mapleton City (Mapleton City Code Section 18.84.445).

Sean Conroy, Community Development Director reviewed the staff report for those in attendance. Wind Energy Systems are not a permitted use at this time. There would need to be a height restriction of 40 feet and a 40-foot set back from the side to the rear of the property line and a 65-decibel sound limit. Those setbacks would need to be in place in the event that the pole would fall. The Planning Commission heard this item in May and were not in favor of allowing this in smaller neighborhoods. Cl. Carlson suggested reducing the decibel limit to 45.

Sean stated that these types of uses could be allowed in different zones. The restrictions could be more prescriptive either by zone or lot size.

Cl. Jones inquired if either of those setbacks would work on an acre lot and could work on a 1/3 acre lots depending on the layout of the home.

The public hearing was opened at 6:15 pm.

Gordon Miner stated that the vendor of the Wind Energy System is the applicant. He lives at 698 North 550 West. He believes that this idea is no different than having a flagpole in your yard. When you think of a flagpole, you have no control over what type of flag is flown. You may not like what you see, and it could be in your view. In terms of setback this would be in line with the setbacks of

flagpoles. There is more of a chance of a flagpole falling over than this type of device. The sound at 45 decibels would be quieter than a flag flying. He would urge the council to adopt this ordinance.

Rob (unknown last name) stated that he has two neighbors that have these on their roofs, and they are not loud. Sean stated that the building official stated that a building permit would not be required, but an approval process would take place. It was inquired if the existing structures would need to go through the approval process and Sean stated that he would look into this.

The public hearing was closed at 6:22 pm.

Cl. Carlson reported that most flagpoles are no higher than 20 feet.

Cl. Egbert emphasized that there is a huge difference between flag poles and the proposed use. She is interested in the current use and it appears that this item is referring to the ordinance itself. She believes that if this is going to be proposed that neighbors should be noticed and have the opportunity to give feedback about his use.

Cl. Carlson asked if flag poles are a permitted use, Sean stated yes.

Cl. Lundberg pointed out that in conjunction with the manufacturer, the problem he sees is trying to delineate what zone these would be appropriate for or where these would even be workable. It would be hard to choose only certain zones for these.

Sean stated that Mapleton in general has sufficient width with the bigger lots. The higher you go the more efficient they would be. Mayor Hakes inquired if a wind study had been done.

Cl. Jones expressed that the viewshed would be blocked in certain zones, but in higher density areas the viewshed would impact those areas. Lot sizes may change, but zones could be consistent.

Sean specified that the city may want to see what areas these would be appropriate in. Based on discussions, it seems that the council is in favor of these, but the zone and lot size has not been decided.

Cl. Egbert suggested going on a field trip and viewing different zones and lot sizes.

It was decided to continue the item until further information can be obtained.

Motion: Cl. Garrett moved to continue the item to gather additional information.

Second: Cl. Egbert seconded the motion.

Cl. Egbert Aye

Cl. Garrett Aye

Cl. Jones Aye

Cl. Lundberg Aye

Cl. Carlson Aye

Vote: Passed 5:0

ACTION ITEM:

Item 3. Consideration of a Resolution to approve a sewer rate increase.

Bryce Oyler, Finance Director, reviewed the staff report for those in attendance. Due to the new Waste Water Treatment Plan, there will be an increase in the sewer rate of \$7.00 per month. Mapleton City's cost for the new sewer will be \$18,000,000. The proposed rate increase will take effect on September 1st.

Cl. Garrett exclaimed that this is a big deal. We have worked hard with Spanish Fork. Speaking as a citizen, this is a big bite and has to be done.

Cl. Carlson clarified that Mapleton's percentage of the plant is 20%.

Motion: Cl. Jones moved to adopt a Resolution approving a sewer rate increase, as shown in exhibit A.

Second: Cl. Garrett seconded the motion.

Cl. Garrett Aye

Cl. Jones Aye

Cl. Lundberg Aye

Cl. Carlson Aye

Cl. Egbert Aye

Vote: Passed 5:0

Resolution No. 2020-39

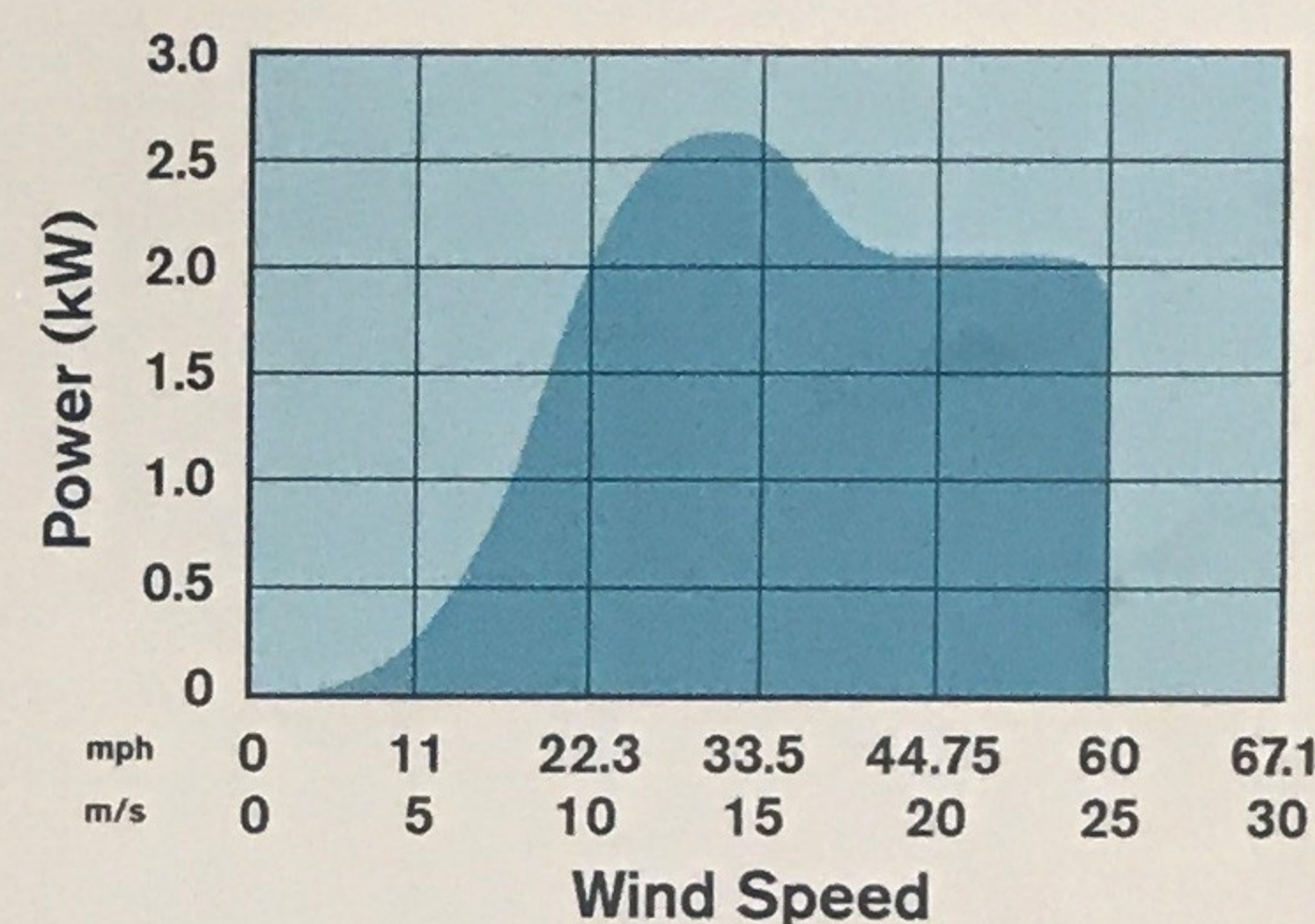
SKYSTREAM 3.7[®]

1.9 KW RESIDENTIAL POWER APPLIANCE

Skystream 3.7 is a breakthrough in a new generation of RPAs (Residential Power Appliances) that is changing the energy landscape of how homes and small businesses receive electricity. Skystream is the first fully integrated system that produces energy for less than the average cost of electricity in the United States and it produces usable energy in exceptionally low winds.¹

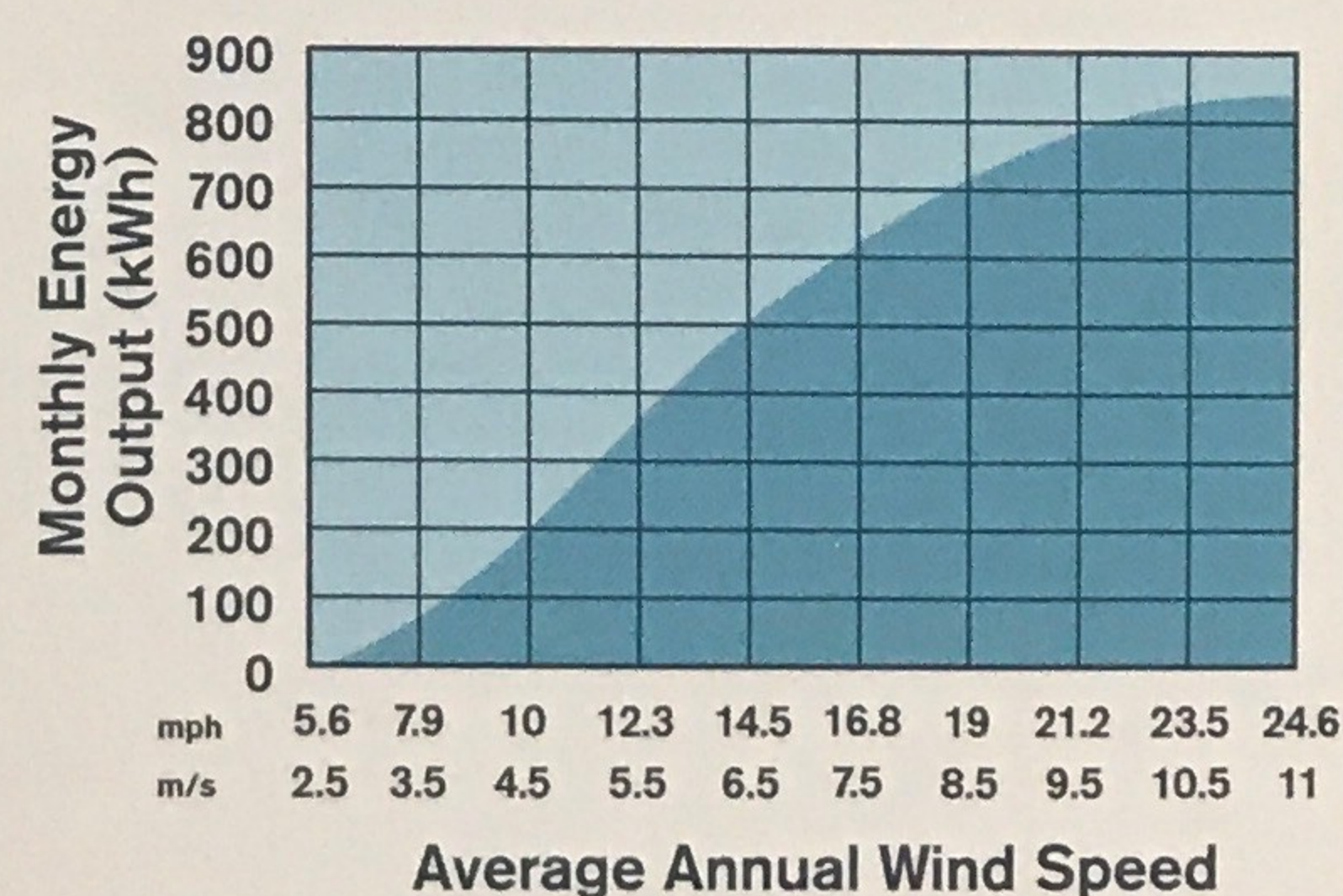
Skystream is available on towers ranging from 33 feet (10.2 m) to 110 feet (33.5 m)² tall. Its universal inverter delivers power compatible with any utility grid from 110-240 VAC. Skystream efficiently and quietly provides 40-90% of the energy needs for a home or small business. Any extra energy is fed into the grid spinning the meter backward.³

POWER

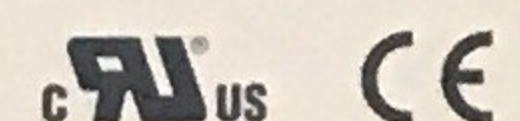


Data measured and compiled by USDA-ARS Research Lab, Bushland, TX

MONTHLY ENERGY



FIVE YEAR WARRANTY



Technical Specifications

Model	Skystream 3.7
Rated Capacity	1.9 kW continuous output, 2.6 kW peak
Weight	170 lb (77 kg)
Rotor Diameter	12 ft (3.72 m)
Swept Area	115.7 ft ² (10.87 m ²)
Type	Downwind rotor with stall regulation control
Direction of Rotation	Clockwise looking upwind
Blades	3-Fiberglass reinforced composite
Rated Speed	50 - 325 rpm
Maximum Tip Speed	216.5 ft/s (66 m/s)
Alternator	Slotless permanent magnet brushless
Yaw Control	Passive
Grid Feeding	Southwest Windpower inverter 120-240 VAC 50-60 Hz
Battery Charging	Battery sensor available for battery charging systems
Braking System	Electronic stall regulation with redundant relay switch control
Cut-in Wind Speed	8 mph (3.5 m/s)
Rated Wind Speed	21 mph (9.4 m/s)
User Control	Wireless 2 way interface remote system
Survival Wind Speed	140 mph (63 m/s)
Warranty	5 year limited warranty

Southwest Windpower

1801 W. Route 66
Flagstaff, AZ 86001 USA

928.779.9463

www.skystreamenergy.com

Makers of Skystream 3.7[®] / AIR / Whisper

1. Based on a 12 mph (5.4 m/s) wind and utility energy cost of \$.09/kWh
2. Taller towers are available
3. Assuming the Skystream 3.7 is producing more energy than the load is consuming

Printed on recycled paper using vegetable inks.

1377 N Main - Mapleton
Roof mounted
3/4 acre lot



3152 E Canyon Rd - Springville
4 acre lot



3189 E Canyon Rd - Springville
4 acre lot



238 Cherry Lane - Santaquin

1/3 acre lot



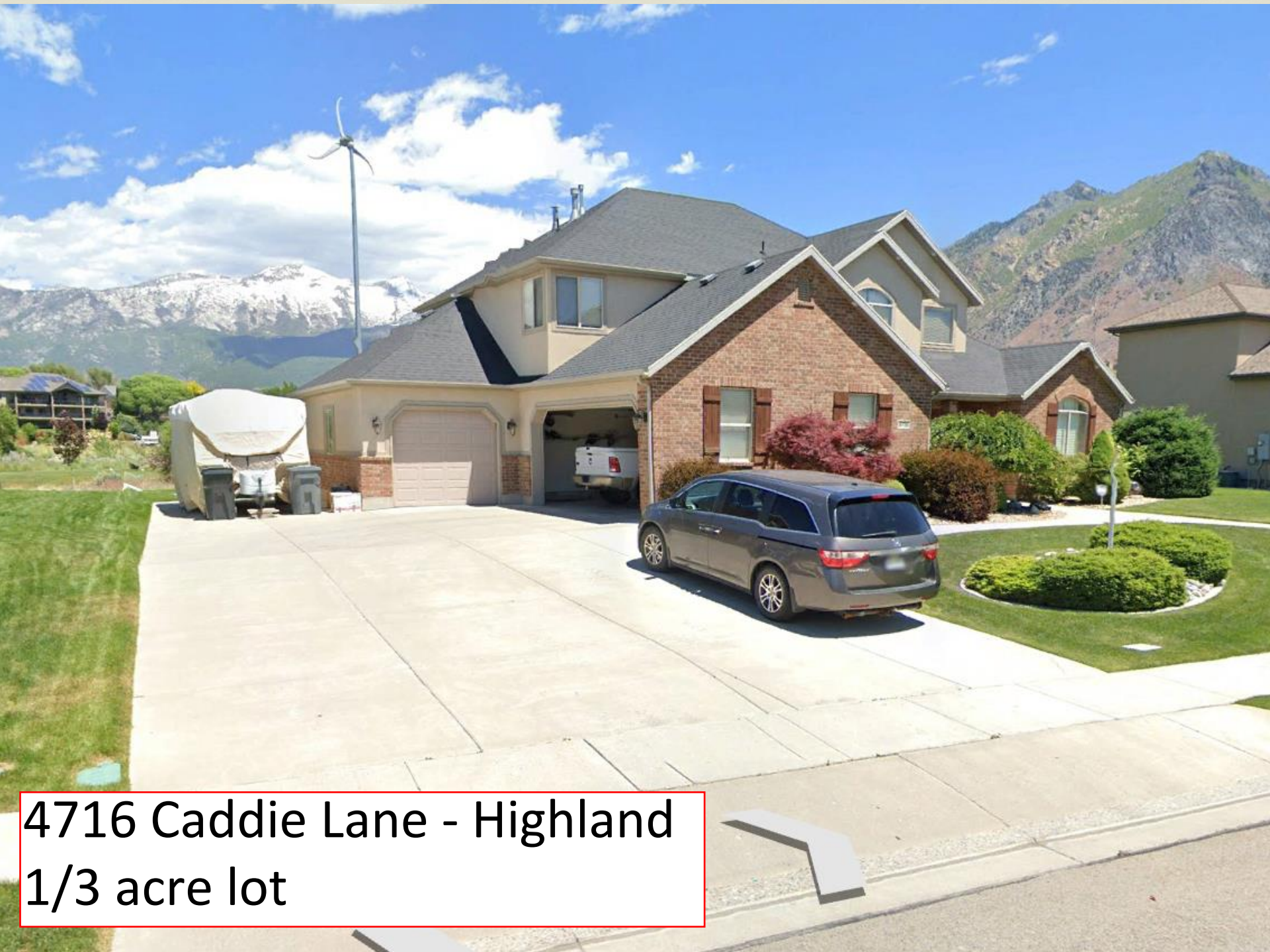


1098 Green Ridge Ave - Payson
1/3 acre lot









4716 Caddie Lane - Highland
1/3 acre lot

820 N 1200 E - Lehi
1.6 acres



Michael E. Graves
1377 North Main St,
Mapleton, UT 84664

August 27, 2020

Dear Mayor and City Council,

I am writing in regards to the recent meeting Mapleton City Council held regarding Green Energy Solutions or the "Wind Energy Solutions in Mapleton City".

I want to thank each of you for your dedication and countless hours of service in monitoring our city's growth and in responsibly representing each citizen. I know that your service can be stressful and thankless. I was born and raised in Mapleton. While my father was a council member and the mayor of this great city, many appreciated his wisdom and leadership. However, because of his position, my family, at times, was subjected to ridicule and criticism.

For several years, I have been involved with the Mapleton Ready Program and with the Emergency Communications group. An emphasis has been placed on preparedness, self-reliance, community coordination, and safety. Due to the direction of Mapleton Ready and Emergency Preparedness, I became HAM radio certified and purchased emergency radio equipment. In addition, over 15 years ago, I purchased and installed a roof-top wind device for emergency power. This device was not and is not Grid attached, and thus, no permit was required at that time. In the event of disasters or power outages I have sufficient power to run emergency communication equipment, charge several batteries, or power low amperage devices. Other back-up power solutions are available, provided traditional power sources are available to replenish fuel for these devices for extended operation. Wind and Solar – although mediocre power solutions—can constantly provide back-up power without sun or wind.

I understand some of the concerns associated with these devices include visual appeal the possibility of loud and irritating sounds, and human health hazards. These are some of the topics supposedly discussed in the council meeting of August 19, 2020.

An aesthetically pleasing neighborhood and community should be the goal of all citizens. What is not aesthetically pleasing however, is a matter of opinion. Perhaps some feel a yard with eccentric landscaping, a flagpole with a flag or symbol that offends someone, a yard with broken-down vehicles or unsightly collectibles, or even a private lake is not aesthetically pleasing. However honorable, a dictated ordinance to appease the opinion of one citizen or a group of citizens, may in fact not reflect the opinion of the majority of citizens.

Another concern regarding "Wind Energy Solutions" is the danger associated them. As with any technology or mechanical device, accidents may occur. For this reason, reasonable, non-oppressive means to mitigate injury or death should be sought. No doubt, Wind Turbines can be dangerous. Data is sparse but by extrapolating data from a 2013 and a 2017 study, 160 people are killed per one trillion kilowatt-hours of wind-generated power. The United States currently produces around 600 billion kilowatt-hours annually of wind energy. According to OSHA, in 2019 less than 20 people died in association with wind power. A person has a 0.00000029% of death occurring by a wind-generated device in the United States. Eighty-eight percent of wind-generated deaths occur during transportation, construction, installation, and maintenance, lowering the possibility closer to 0.000000035%. (Forbes, 2013 and Wind Turbine Accidents: A Data Mining Study, 2017)

Most troubling is the "supposed" statement by the City Attorney that "we will just make an ordinance that forces citizens to take down their current "Wind Energy Solutions", effectively controlling the citizens from legally owning or doing something that someone else opposes. This is a very slippery slope. Actions such as this approach fascism and totalitarianism.

Moving forward, I would like to propose two possible solutions:

1. Have new developments list restrictive covenants on Wind Energy Device and / or have devices reviewed on a case by case basis. All future Wind Energy Device could be limited to lower density neighborhoods and require design, noise, aesthetic, or inconspicuous location approval.
2. Equipment wind-generated accidents could be minimized by having an inspection or certification for safety and / or noise conducted on a regular basis.

Regardless of what decision is made, I hope that as leaders in the community, you will use equity and wisdom before passing any ordinance that affects public safety, diminishes property rights, or restricts individual liberties.

Thank you for your consideration in this matter,

A handwritten signature in black ink, appearing to read "Michael E. Graves", written over a horizontal line.

Michael E. Graves
(801) 489-3352

CC Reid Carlson
Jessica Egbert
Therin Garrett
Leslie Jones
Jim Lundberg