

cityofnovi.org

CITY of NOVI CITY COUNCIL

Agenda Item 7
March 22, 2010

SUBJECT: Consideration of Zoning Ordinance Text Amendment 18.237, to amend Ordinance No. 97-18 as amended, the City of Novi Zoning Ordinance, at Article 25, General Provisions, Section 2508, Uses Not Otherwise Included Within a Specific Use District, in order to provide standards for siting wind energy turbines. **FIRST READING**

SUBMITTING DEPARTMENT: Community Development Department - Planning ^{Bau}

CITY MANAGER APPROVAL: 

BACKGROUND INFORMATION:

At the February 12, 2009 City Council goal setting program, Council identified the following strategy, "Be a community that preserves natural areas, natural features and community character". One action step of that strategy was to "Establish a Green Initiative". Staff teams were formed around this concept. One team focused on identifying ordinance amendments that would support green initiatives. The staff team met and identified wind energy opportunities and the various types of wind turbines associated with these alternative forms of energy.

In review of the Zoning Ordinance, staff found that wind turbines are not adequately addressed, meaning that there is not be a clear path for either allowing or prohibiting wind turbines in Novi. Although southeast Michigan may not be the ideal climate for optimum wind harvesting, staff has received a number of questions from residents and businesses interested in installing these devices in Novi. Staff conducted research on wind turbines, and prepared draft ordinance language to address the siting and design of wind turbines to harness wind energy. Following is a brief summary of the standards proposed in the attached ordinance to address issues associated with wind turbines.

Wind Turbine Ordinance

Wind turbines come in a variety of sizes designed to accommodate both private use in a residential or business setting and wind energy production via utility grade systems. According to the most recent U.S. Department of Energy National Renewable Energy Laboratory maps, the City of Novi does not have sufficient wind power to accommodate a large-scale utility wind farm. Therefore, the attached ordinance proposes regulations related to wind turbines designed for private use by local residents and businesses.

Ordinance Provisions

The proposed ordinance identifies three types of wind turbines:

- Small Tower-Mounted Wind Energy Turbines (STMWET)
- Small Structure-Mounted Wind Energy Turbines (SSMWET)
- Medium Wind Energy Turbines (MWET)

Staff prepared the attached chart summarizing the three types of turbines and the zoning districts where each would be allowed, either as a principal use permitted or a principal use permitted subject to special conditions (a special land use). The draft ordinance language has a number of considerations for siting and design requirements, as well as health and safety issues for all three types of wind turbines.

Small Tower-Mounted Wind Energy Turbines are proposed to be a special land use in all non-residential districts with a height not to exceed 100 feet. One exception is that these turbines would be a principal use permitted in the OST District (Planned Office Service Technology), I-1 District (Light Industrial) and I-2 District (General Industrial) if the property is located at least 300 feet from

residentially zoned property. These wind turbines would be limited to the rear yard with a required setback equal to the height of the tower. In most cases, STMWETs would not be permitted in any residential district. There is one exception: STMWETs would be permitted in single-family residential districts as a special land use requiring City Council approval on sites 25 acres or larger with already developed institutional uses. For the purposes of this ordinance, institutional uses would be defined as religious, educational and civic uses. Turbines on residentially-zoned parcels with institutional uses would be limited to a height of 60 feet. Included in this packet is a letter from Roy Prentice of MSU Tollgate Farms highlighting the important relationship between sustainable energy technologies and educational institutions.

Small Structure-Mounted Wind Energy Turbines are proposed to be a permitted use in all non-residential districts with a height not to exceed 15 feet measured from the highest point of the roof with a required setback of 15 feet. SSMWETs would be a special land use in single-family residential districts on parcels 25 acres or larger containing developed institutional uses and would not otherwise be permitted in any residential district.

Medium Wind Energy Turbines are proposed to be a special land use in the I-1 District (Light Industrial), I-2 District (General Industrial) and the OST District (Planned Office Service Technology). They would be limited to a height of 150 feet with a required setback equal to the total height of the tower. Additional regulations regarding ground clearance, noise, vibration, guy wires, etc. are also provided for in the proposed ordinance. No more than one medium-sized turbine would be allowed for each 2.5 acres of land.

Planning Commission Consideration

The Planning Commission's Implementation Committee discussed this matter at the meeting of May 6, 2009. A number of comments were received at the meeting and amendments were made to the ordinance to address those comments. The Planning Commission held a public hearing on the proposed text amendment on July 15, 2009. At that meeting, the Commission approved a motion to send the amendment back to the Implementation Committee for further review.

The Implementation Committee discussed this matter a second time on August 25, 2009. At that meeting staff presented a revised version of the amendment that did not permit any wind turbines in residential districts. (As noted above, the ordinance was revised once more to allow turbines as a special land use on parcels 25 acres or larger with institutional uses in residential districts.) The Committee discussed the revisions and recommended staff collect some additional public input before the matter was sent back to the Planning Commission for a public hearing and recommendation to City Council. A public input questionnaire was created to seek comments on the draft ordinance, displays and graphics were prepared to illustrate the different types of wind turbines and a booth was set up at Fall for Novi. The information was on the City's webpage for several months to further seek input.

The Planning Commission held a second public hearing for the proposed wind turbine ordinance on February 10, 2010. At that meeting, the Commission forwarded a recommendation for approval to the City Council.

RECOMMENDED ACTION: Approval of Zoning Ordinance Text Amendment 18.237, to amend Ordinance No. 97-18 as amended, the City of Novi Zoning Ordinance, at Article 25, General Provisions, Section 2508, Uses Not Otherwise Included Within a Specific Use District, in order to provide standards for siting wind energy turbines. **FIRST READING**

	1	2	Y	N
Mayor Landry				
Mayor Pro-Tem Gatt				
Council Member Crawford				
Council Member Fischer				

	1	2	Y	N
Council Member Margolis				
Council Member Mutch				
Council Member Staudt				

PROPOSED ORDINANCE AMENDMENTS – STRIKE VERSION

STATE OF MICHIGAN

COUNTY OF OAKLAND

CITY OF NOVI

ORDINANCE NO. 09- 18 – 237

AN ORDINANCE TO AMEND ORDINANCE NO. 97-18, AS AMENDED, THE CITY OF NOVI ZONING ORDINANCE; IN ORDER TO PROVIDE FOR STANDARDS FOR SITING WIND ENERGY TURBINES.

Draft Ordinance 7/29/09

THE CITY OF NOVI ORDAINS:

Part I. That Ordinance No. 97-18, the City of Novi Zoning Ordinance, as amended, hereby amended to read as follows:

Sec. 2508. Uses Not Otherwise Included Within a Specific Use District

1. – 7. [Unchanged]

8. Wind Energy Turbines

a. Intent. The purpose of this Ordinance is to establish guidelines for siting Wind Energy Turbines (WETs). The goals are as follows:

1. To promote the safe, effective and efficient use of a WET in order to reduce the consumption of fossil fuels in producing electricity.
2. Preserve and protect public health, safety, welfare and quality of life by minimizing the potential adverse impacts of a WET.
3. To establish standards and procedures by which the siting, design, engineering, installation, operation and maintenance of a WET shall be governed.

b. Definitions. For purposes of this article, the following items shall be defined as stated:

1. Ambient Sound Level: The amount of background noise at a given location prior to the installation of a WET(s) which may include, but is not limited to, traffic, machinery, lawnmowers, human activity and the interaction of wind with the landscape. The ambient sound level is measured on the dB(A) weighted scale as defined by the American National Standards Institute.

2. Anemometer: Temporary wind speed indicator constructed for the purpose of analyzing the potential for utilizing a wind energy turbine at a given site. This

includes the tower, base plate, anchors, cables and hardware, wind direction vanes, booms to hold equipments, data logger, instrument wiring, and any telemetry devices that are used to monitor or transmit wind speed and wind flow characteristics over a period of time for either instantaneous wind information or to characterize the wind resource at a given location.

3. Decommissioning: The process of terminating operation and completely removing a WET(s) and all related buildings, structures, foundations, access roads and equipment.

4. Medium Wind Energy Turbine (MWET): Tower-mounted wind energy system that converts wind energy into electricity through the use of equipment which includes any base, blade, foundation, generator, nacelle, rotor, tower, transformer, vane, wire, inverter, batteries or other components used in this system. The MWET has a nameplate capacity that does not exceed two hundred fifty (250) kilowatts. The total height exceeds one hundred (100) feet and the total capacity exceeds thirty (30) kilowatts. The total height does not exceed one hundred fifty (150) feet.

5. Nacelle: Refers to the encasement which houses all of the generating components, gear box, drive tram and other equipment.

6. Net-metering: Special metering and billing agreement between utility companies and their customers, which facilitates the connection of renewable energy generating systems to the power grid.

7. Operator: Entity responsible for the day-to-day operation and maintenance of a WET.

8. Rotor Diameter: Cross-sectional dimension of the circle swept by the rotating blades of a WET.

9. Shadow Flicker: The moving shadow, created by the sun shining through the rotating blades of a WET. The amount of shadow flicker created by a WET is calculated by a computer model that takes into consideration turbine location, elevation, tree cover, location of all structures, wind activity and sunlight.

10. Small Tower-Mounted Wind Energy Turbine (STMWET): Tower-mounted wind energy system that converts wind energy into electricity through the use of equipment which includes any base, blade, foundation, generator, nacelle, rotor, tower, transformer, vane, wire, inverter, batteries or other components used in this system. The STMWET has a nameplate capacity that does not exceed thirty (30) kilowatts. The total height does not exceed one hundred (100) feet.

11. Small Structure-Mounted Wind Energy Turbine (SSMWET): Converts wind energy into electricity through the use of equipment which includes any base, blade, foundation, generator, nacelle, rotor, tower, transformer, vane, wire, inverter, batteries or other components used in this system. A SSMWET is attached to a structure's roof, walls or other elevated surface, including accessory structures such as but not limited to cellular phone towers. The SSMWET has a nameplate capacity that does not exceed ten (10) kilowatts. The total height does not exceed fifteen (15) feet as measured from the highest point of the roof, excluding chimneys, antennae and other similar protuberances.

12. Total height: The vertical distance measured from the ground level at the base of the tower to the uppermost vertical extension of any blade, or the maximum height reached by any part of the WET.

13. Tower: Freestanding monopole that supports a WET.

14. Wind Energy Turbine (WET): Any structure-mounted, small, medium or large wind energy conversion system that converts wind energy into electricity through the use of a Wind Generator and includes the nacelle, rotor, tower and pad transformer, if any.

c. Applicability. This ordinance applies to all WETs proposed to be constructed after the effective date of this ordinance. All WETs constructed prior to the effective date of this ordinance shall not be required to meet the requirements of this ordinance; however, any physical modification to an existing WET that materially alters the size, type, equipment or location shall require a permit under this ordinance.

d. Small Structure-Mounted Wind Energy Turbine and Small Tower-Mounted Wind Energy Turbine. Notwithstanding other provisions of this section of the ordinance, a Small Structure-Mounted Wind Energy Turbine (SSMWET) shall be considered a permitted use in all zoning districts except that it shall not be permitted in RA (Residential Acreage), R-1, R-2, R-3, R-4 (One-Family Residential Districts), RT (Two-Family Residential District), RM-1 (Low Density, Low-Rise Multiple Family Residential District) and RM-2 (High Density, Mid-Rise Multiple Family Residential District) except for SSMWETs permitted as a Special Land Use in single-family residential districts with developed institutional uses as provided for in Section 2508.8.d.1 A SSMWET shall not be erected, constructed, installed or modified as provided in this ordinance unless administrative approval from the Planning Division and appropriate building permits have been issued to the owner(s) or operator(s). A Small Tower-Mounted Wind Energy Turbine (STMWET) shall be considered a principal permitted use subject to special conditions in all Zoning Districts except that it shall not be permitted in RA (Residential Acreage), R-1, R-2, R-3, R-4 (One-Family Residential Districts), RT (Two-Family Residential District), RM-1 (Low Density, Low-Rise Multiple Family Residential District) and RM-2 (High

Density, Mid-Rise Multiple Family Residential District) except for STMWETs permitted as a Special Land Use in single-family residential districts with developed institutional uses as provided for in Section 2508.8.d.1 and that in the OST (Planned Office Service Technology), I-1 (Light Industrial), and I-2 (General Industrial) districts, a STMWET is a principal permitted use if the property is greater than 300 feet from any residential zoning district. A STMWET shall not be erected, constructed, installed or modified as provided in this ordinance unless City Council approval has been granted after a recommendation from the Planning Commission and appropriate building permits have been issued to the owner(s) or operator(s). All SSMWETs and STMWETs are subject to the following minimum requirements:

1. A SSMWET and STMWET shall be considered a principal permitted use subject to special conditions on parcels 25 acres or larger where an institutional use exists as the primary use of the site in the following districts: RA (Residential Acreage) and R-1, R-2, R-3, R-4 (One-Family Residential Districts). A SSMWET and/or STMWET on a residentially zoned parcel shall not be erected, constructed, installed or modified as provided in this ordinance unless City Council approval has been granted after a recommendation from the Planning Commission and appropriate building permits have been issued to the owner(s) or operator(s). For purposes of this section, an institutional use is defined as an educational, religious or civic use.
2. Siting and Design Requirements
 - (a.) “Upwind” turbines shall be required for all horizontal WETs.
 - (b.) Visual Appearance
 - (i) A SSMWET or STMWET, including accessory buildings and related structures shall be a non-reflective, non-obtrusive color (e.g. white, gray, black). The appearance of the turbine, tower and any ancillary facility shall be maintained in working condition and free of rust and corrosion by the owner of the SSMWET or STMWET throughout the life of the SSMWET or STMWET.
 - (ii) A SSMWET or STMWET shall not be artificially lighted, except to the extent required by the FAA or other applicable authority, or otherwise necessary for the reasonable safety and security thereof.
 - (iii) A SSMWET or STMWET shall not be used for displaying any advertising (including flags, streamers or decorative items), except for reasonable identification of the turbine manufacture.

(c.) Ground clearance: The lowest extension of any blade or other exposed moving component of the SSMWET or STMWET shall be at least fifteen (15) feet above the ground (at the highest point of the natural grade within thirty (30) feet of the base of the tower) and, in addition, at least fifteen (15) feet above any outdoor surfaces intended for human use, such as balconies or roof gardens, that are located directly below the SSMWET or STMWET.

(d.) Noise: Noise emanating from the operation of a SSMWET(s) shall not exceed, at any time, the lowest ambient sound level that is present between the hours of 9:00 p.m. and 9:00 a.m. at any property line of a residential use parcel or from the property line of parks, schools, hospitals or churches. Noise emanating from the operation of a SSMWET or STMWET shall not exceed, at any time, the lowest ambient noise level plus 5 dBA that is present between the hours of 9:00 p.m. and 9:00 a.m. at any property line of a non-residential use parcel.

(e.) Vibration: Vibrations shall not be produced which are humanly perceptible beyond the property on which a SSMWET or STMWET is located.

(f.) Guy Wires: Guy wires shall not be permitted as part of the SSMWET or STMWET.

(g.) In addition to the Siting and Design Requirements listed previously, the SSMWET shall also be subject to the following:

(i.) Height: The height of the SSMWET shall not exceed 15 feet as measured from the highest point of the roof, excluding chimneys, antennae and other similar protuberances.

(ii.) Setback: The setback of the SSMWET shall be a minimum of fifteen (15) feet from the property line, public right-of-way, public easement or overhead utility lines if mounted directly on a roof or other elevated surface of a structure. If the SSMWET is affixed by extension to the side, roof or other elevated surface, then the setback from the property lines or public right-of-way shall be a minimum of fifteen (15) feet. The setback shall be measured from the furthest outward extension of all moving parts.

(iii.) Location: The SSMWET shall not be affixed to the side of a structure facing a road.

(iv.) Quantity: No more than two (2) SSMWETs shall be installed on any parcel of property.

(v.) Separation: If more than one SSMWET is installed, a distance equal to the height of the highest SSMWET must be maintained between the base of each SSMWET.

(h.) In addition to the Siting and Design Requirements listed previously, the STMWET shall also be subject to the following:

(i.) Height: The total height of a STMWET in any nonresidential district shall not exceed one hundred (100) feet. The total height of a STMWET on a parcel with an institutional use in a residential district shall not exceed sixty (60) feet.

(ii.) Location: The STMWET shall only be located in the rear yard of a property that has an occupied building. In the case of a double-frontage lot, the STMWET may be located in an interior side yard.

(iii.) Occupied Building Setback: The setback from all occupied buildings on the applicant's parcel shall be a minimum of twenty (20) feet measured from the base of the tower.

(iv.) Other Setbacks: The setback shall be equal to the total height of the STMWET as measured from the base of the tower, from the property line, public right-of-way, public easement or overhead utility lines. This setback may be reduced if the applicant provides a registered engineer's certification that the WET is designed to collapse, fall, curl or bend within a distance or zone shorter than the height of the wind turbine.

(v.) Quantity: No more than one (1) STMWET shall be installed on any parcel of property.

(vi.) Electrical System: All electrical controls, control wiring, grounding wires, power lines and system components shall be placed underground within the boundary of each parcel at a depth designed to accommodate the existing land use to the maximum extent practicable. Wires necessary to connect the wind generator to the tower wiring are exempt from this requirement.

3. Application Requirements. The following information should be submitted with the proposed site plan.

(a.) Documented compliance with the noise requirements set forth in this ordinance. Said documentation shall require, at a minimum, data reflecting ambient sound measurements taken over a two (2) week period, which shall include the location on the property where the measurements

were taken. The method of measuring ambient sound levels and the location on the property where the measurements will be taken shall be approved by the City prior to the collection of the data.

(b.) Documented compliance with applicable local, state and national regulations including but not limited to, all applicable safety, construction, environmental, electrical, communications and FAA requirements.

(c.) Proof of applicant's liability insurance.

(d.) Evidence that the utility company has been informed of the customer's intent to install an interconnected, customer-owned generator and that such connection has been approved. Off-grid systems shall be exempt from this requirement.

(e.) The STMWET application shall also include the following: A description of the methods that will be used to perform maintenance on the STMWET and the procedures for lowering or removing the STMWET in order to conduct maintenance.

4. Safety Requirements

(a.) If the SSMWET or STMWET is connected to a public utility system for net metering purposes, it shall meet the requirements for interconnection and operation as set forth in the public utility's then-current service regulations meeting federal, state and industry standards applicable to wind power generation facilities, and the connection shall be inspected by the appropriate public utility.

(b.) The SSMWET or STMWET shall be equipped with an automatic braking, governing or feathering system to prevent uncontrolled rotation, over-speeding and excessive pressure on the tower structure, rotor blades and other wind energy components unless the manufacturer certifies that a braking system is not necessary.

(c.) A clearly visible warning sign regarding voltage shall be placed at the base of the SSMWET or STMWET. The sign shall contain at least the following:

- (i.) Warning high voltage
- (ii.) Manufacturer's and owner(s)/operator(s) name(s)
- (iii.) Emergency contact numbers (list more than one number)

(d.) The structural integrity of the SSMWET or STMWET shall conform to the design standards of the International Electrical Commission, specifically IEC 61400-1, "Wind Turbine Safety and Design" and or IEC 61400-23 "Blade Structural Testing," or any similar successor standards.

5. Signal Interference

(a.) The SSMWET or STMWET shall not interfere with communication systems such as, but not limited to, radio, telephone, television, satellite or emergency communication systems.

6. Decommissioning

(a.) The SSMWET or STMWET owner(s) or operator(s) shall complete decommissioning within six (6) months after the end of the useful life. Upon request of the owner(s) or assigns of the SSMWET or STMWET, and for a good cause, the City Council may grant a reasonable extension of time. The SSMWET or STMWET will presume to be at the end of its useful life if no electricity is generated for a continuous period of twelve (12) months. All decommissioning expenses are the responsibility of the owner(s) or operator(s).

(b.) If the SSMWET or STMWET owner(s) or operator(s) fails to complete decommissioning within the period prescribed above, the City Council may designate a contractor to complete decommissioning with the expense thereof to be charged to the violator and/or to become a lien against the premises. If the SSMWET or STMWET is not owned by the property owner, a bond must be provided to the City for the cost of decommissioning each SSMWET or STMWET.

(c.) In addition to the decommissioning requirements listed above, the STMWET shall also be subject to the following:

(i.) Decommissioning shall include the removal of each STMWET, buildings, electrical components and any other associated facilities. Any foundation shall be removed to a minimum depth of sixty (60) inches below grade, or to the level of the bedrock if less than sixty (60) inches below grade.

(ii.) The site and any disturbed earth shall be stabilized, graded and cleared of any debris by the owner(s) of the facility or its assigns. If the site is not to be used for agricultural practices following removal, the site shall be seeded to prevent soil erosion.

e. Medium Wind Energy Turbine. A Medium Wind Energy Turbine (MWET) shall be considered a principal permitted use subject to special conditions in the following districts: I-1 (Light Industrial), I-2 (General Industrial) and OST (Office Service Technology). A MWET shall not be erected, constructed, installed or modified as provided in this ordinance unless City Council approval has been granted after a recommendation from the Planning Commission and appropriate

building permits have been issued to the owner(s) or operator(s). All MWETs are subject to the following minimum requirements:

1. Siting and Design Requirements

(a.) “Upwind” turbines shall be required for all horizontal WETs.

(b.) The design of a MWET shall conform to all applicable industry standards.

(c.) Visual Appearance

(i) Each MWET, including accessory buildings and related structures shall be mounted on a tubular tower and a non-reflective, non-obtrusive color (e.g. white, gray, black). The appearance of turbines, towers and buildings shall be maintained in working condition and free of rust and corrosion by the owner of the MWET throughout the life of the MWET.

(ii) Each MWET shall not be artificially lighted, except to the extent required by the FAA or other applicable authority, or otherwise necessary for the reasonable safety and security thereof.

(iii) A MWET shall not be used for displaying any advertising (including flags, streamers or decorative items), except for reasonable identification of the turbine manufacture.

(d.) Vibration: Each MWET shall not produce vibrations humanly perceptible beyond the property on which it is located.

(e.) Shadow Flicker: The MWET owner(s) and/or operator(s) shall conduct an analysis on potential shadow flicker at any occupied building with direct line-of-sight to the MWET. The analysis shall identify the locations of shadow flicker that may be caused by the project and the expected durations of the flicker at these locations from sun-rise to sun-set over the course of a year. The analysis shall identify situations where shadow flicker may affect the occupants of the buildings for more than 30 hours per year and describe measures that shall be taken to eliminate or mitigate the problems. Shadow flicker on a building shall not exceed thirty (30) hours per year.

(f.) Guy Wires: Guy wires shall not be permitted as part of the MWET.

(g.) Electrical System: All electrical controls, control wiring, grounding wires, power lines and all other electrical system components of the MWET shall be placed underground within the boundary of each parcel at

a depth designed to accommodate the existing land use to the maximum extent practicable. Wires necessary to connect the wind generator to the tower wiring are exempt from this requirement.

(h.) Location: If an MWET is located on an agricultural, commercial, industrial or public property that has an occupied building it shall only be located in the rear yard. In the case of a double frontage lot, the MWET may be located in an interior side yard. The MWET shall only be located in a General Common Element in a Condominium Development.

(i.) Height: The total height of an MWET shall not exceed one hundred fifty (150) feet.

(j.) Ground Clearance: The lowest extension of any blade or other exposed moving component of a MWET shall be at least fifteen (15) feet above the ground (at the highest point of the grade level within fifty (50) feet of the base of the tower) and, in addition, at least fifteen (15) feet above any outdoor surfaces intended for human occupancy, such as balconies or roof gardens, that are located directly below the MWET.

(k.) Noise: Noise emanating from the operation of a MWET shall not exceed, at any time, the lowest ambient sound level that is present between the hours of 9:00 p.m. and 9:00 a.m. at any property line of a residential or agricultural use parcel or from the property line of parks, schools, hospitals and churches. Noise emanating from the operation of a MWET(s) shall not exceed, at any time, the lowest ambient noise level plus 5 dBA that is present between the hours of 9:00 p.m. and 9:00 a.m. at any property line of a non-residential or non-agricultural use parcel.

(l.) Quantity: No more than one (1) MWET shall be installed for every two and one-half (2.5) acres of land included in the parcel.

(m.) Setback and Separation:

(i.) Occupied Building Setback: The setback from all occupied buildings on the applicant's parcel shall be a minimum of twenty (20) feet measured from the base of the Tower.

(ii.) Property Line Setbacks: With the exception of the locations of public roads (see below) and parcels with occupied buildings (see above), the internal property line setbacks shall be equal to the total height of the MWET as measured from the base of the tower. This setback may be reduced to a distance agreed upon as part of the special use permit if the applicant provides a registered engineer's certification that the WET is designed to collapse, fall, curl or bend within a distance or zone shorter than the height of the WET.

(iii.) Public Road Setbacks: Each MWET shall be set back from the nearest public road a distance equal to the total height of the MWET, determined at the nearest boundary of the underlying right-of-way for such public road.

(iv.) Communication and Electrical Lines: Each MWET shall be set back from the nearest above-ground public electric power line or telephone line a distance equal to the total height of the MWET, as measured from the base of the tower, determined from the existing power line or telephone line.

(v.) Tower Separation: MWET tower separation shall be based on industry standard and manufacturer recommendations.

2. Safety Requirements

(a.) If the MWET is connected to a public utility system for net metering purposes, it shall meet the requirements for interconnection and operation as set forth in the public utility's then-current service regulations meeting federal, state and industry standards applicable to wind power generation facilities, and the connection shall be inspected by the appropriate public utility.

(b.) The MWET shall be equipped with an automatic braking, governing or feathering system to prevent uncontrolled rotation, over-speeding and excessive pressure on the tower structure, rotor blades and other wind energy components unless the manufacturer certifies that a braking system is not necessary.

(c.) Security measures need to be in place to prevent unauthorized trespass and access. Each MWET shall not be climbable up to fifteen (15) feet above ground surfaces. All access doors to MWETs and electrical equipment shall be locked and/or fenced as appropriate, to prevent entry by non-authorized person(s).

(d.) All spent lubricants, cooling fluids and any other hazardous materials shall be properly and safely removed in a timely manner.

(e.) Each MWET shall have one sign, not to exceed two (2) square feet in area, posted at the base of the tower and on the security fence, if applicable. The sign shall contain at least the following:

(i.) Warning high voltage

(ii.) Manufacturer's and owner(s)/operator(s) name(s)

(iii.) Emergency contact numbers (list more than one number)

(f.) The structural integrity of the MWET shall conform to the design standards of the International Electrical Commission, specifically IEC 61400-1, "Wind Turbine Safety and Design," IEC 61400-22 "Wind Turbine Certification" and or IEC 61400-23 "Blade Structural Testing," or any similar successor standards.

3. Signal Interference

(a.) The MWET shall not interfere with communication systems such as, but not limited to, radio, telephone, television, satellite or emergency communication systems.

4. Decommissioning

(a.) The MWET owner(s) or operator(s) shall complete decommissioning within six (6) months after the end of the useful life. Upon request of the owner(s) or assigns of the MWET and for a good cause, the City Council may grant a reasonable extension of time. The MWET will presume to be at the end of its useful life if no electricity is generated for a continuous period of twelve (12) months. All decommissioning expenses are the responsibility of the owner(s) or operator(s).

(b.) Decommissioning shall include the removal of each MWET, buildings, electrical components and roads to a depth of sixty (60) inches, as well as any other associated facilities. Any foundation shall be removed to a minimum depth of sixty (60) inches below grade, or to the level of the bedrock if less than sixty (60) inches below grade. Following removal, the location of any remaining wind turbine foundation shall be identified on a map as such and recorded with the deed to the property with the County Register of Deeds.

(c.) All access roads to the MWET shall be removed, cleared and graded by the MWET owner(s), unless the property owner(s) requests in writing, a desire to maintain the access road. The City will not be assumed to take ownership of any access road unless through official action of the City Council.

(d.) The site and any disturbed earth shall be stabilized, graded and cleared of any debris by the owner(s) of the MWET or its assigns. If the site is not to be used for agricultural practices following removal, the site shall be seeded to prevent soil erosion.

(e.) If the MWET owner(s) or operator(s) fails to complete decommissioning within the period described above, the City may designate a contractor to complete the decommissioning with the expense thereof to be charged to the violator and/or to become a lien against the

premises. If the MWET is not owned by the property owner, a bond must be provided to the City for the cost of decommissioning each MWET.

5. Application Requirements. The following information should be submitted with the proposed site plan.

(a.) Documented compliance with the noise and shadow flicker requirements set forth in this ordinance. Said documentation shall require, at a minimum, data reflecting ambient sound measurements taken over a two (2) week period, which shall include the location on the property where the measurements were taken. The method of measuring ambient sound levels and the location on the property where the measurements will be taken shall be approved by the City prior to the collection of the data.

(b.) Engineering data concerning construction of the MWET and its base or foundation, which may include, but is not limited to, soil boring data.

(c.) Anticipated construction schedule.

(d.) A copy of the maintenance and operation plan, including anticipated regular and unscheduled maintenance. Additionally, a description of the procedures that will be used for lowering or removing the MWET to conduct maintenance, if applicable.

(e.) Documented compliance with applicable local, state and national regulations including, but not limited to, all applicable safety, construction, environmental, electrical and communications. The MWET shall comply with Federal Aviation Administration (FAA) requirements, Michigan Airport Zoning Act, Michigan Tall Structures Act and any applicable airport overlay zone regulations.

(f.) Proof of applicant's liability insurance.

(g.) Evidence that the utility company has been informed of the customer's intent to install an interconnected, customer-owned generator and that such connection has been approved. Off-grid systems shall be exempt from this requirement.

(h.) A written description of the anticipated life of each MWET; the estimated cost of decommissioning; the method of ensuring that funds will be available for decommissioning and site restoration; and removal and restoration procedures and schedules that will be employed if the MWET(s) become inoperative or non-functional.

(i.) The applicant shall submit a decommissioning plan that will be carried out at the end of the MWET's useful life, and shall describe any

agreement with the landowner(s) regarding equipment removal upon termination of the lease.

(j.) The proposed plan shall conform to the requirements of Section 2516 of the Zoning Ordinance: Site Plan Review (All Districts).

6. Certification and Compliance

(a.) The City must be notified of a change in ownership of a MWET or a change in ownership of the property on which the MWET is located.

f. Temporary Uses Related to Wind Energy Turbines. The following is permitted in all zoning districts as a temporary use, in compliance with the provisions contained herein, and the applicable WET regulations.

1. Anemometers

(a.) The construction, installation or modification of an anemometer tower shall require a building permit and shall conform to all applicable local, state and federal safety, construction, environmental, electrical, communications and FAA requirements.

(b.) An anemometer shall be subject to the minimum requirements for height, setback, separation, location, safety requirements and decommissioning that correspond to the size of the WET that is proposed to be constructed on the site.

(c.) An anemometer shall be permitted for no more than thirteen (13) months for a SSMWET, STMWET or MWET.

PART II.

Severability. Should any section, subdivision, clause, or phrase of this Ordinance be declared by the courts to be invalid, the validity of the Ordinance as a whole, or in part, shall not be affected other than the part invalidated.

PART III.

Savings Clause. The amendment of the Novi Code of Ordinances set forth in this Ordinance does not affect or impair any act done, offense committed, or right accruing, accrued, or acquired or liability, penalty, forfeiture or punishment, pending or incurred prior to the amendment of the Novi Code of Ordinances set forth in this Ordinance.

PART IV.

Repealer. All other Ordinance or parts of Ordinance in conflict herewith are hereby repealed only to the extent necessary to give this Ordinance full force and effect.

PART V.

Effective Date: Publication. Public hearing having been held hereon pursuant to the provisions of Section 103 of Act 110 of the Public Acts of 2006, as amended, the provisions of this Ordinance shall be published within fifteen (15) days of its adoption by publication of a brief notice in a newspaper circulated in the City of Novi stating the date of enactment and effective date, a brief statement as to its regulatory effect and that a complete copy of the Ordinance is available for public purchase, use and inspection at the office of the City Clerk during the hours of 8:00 A.M. to 5:00 P.M., Local Time. The provisions of this Ordinance shall become effective seven (7) days after its publication.

MADE, PASSED, AND ADOPTED BY THE CITY COUNCIL OF THE CITY OF NOVI, OAKLAND COUNTY, MICHIGAN, ON THE ___ DAY OF _____, 2010.

DAVID LANDRY, MAYOR

MARYANNE CORNELIUS, CITY CLERK

Ayes:
Nayes:
Abstentions:
Absent:

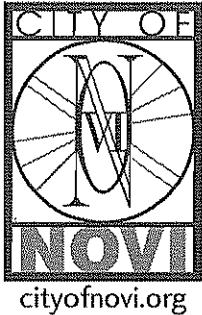
SUMMARY CHART

**Summary Chart
of proposed ordinance regulations for
Three types of Wind Energy Turbines**

	Residential Zoning Districts	OST District	Light Industrial District	General Industrial District	Other Non-Residential Zoning Districts
Structure Mounted (no more than 15 feet above roof)	Not permitted*	Principal Permitted Use	Principal Permitted Use	Principal Permitted Use	Principal Permitted Use
Small Tower Mounted (100 feet maximum height)	Not permitted*	Principal Permitted Use Subject to Special Conditions unless > 300 feet from residential districts, then it is a Principal Permitted Use	Principal Permitted Use Subject to Special Conditions unless > 300 feet from residential districts, then it is a Principal Permitted Use	Principal Permitted Use Subject to Special Conditions unless > 300 feet from residential districts, then it is a Principal Permitted Use	Principal Permitted Use Subject to Special Conditions
Medium Tower Mounted (150 feet maximum height)	Not permitted	Principal Permitted Use Subject to Special Conditions	Principal Permitted Use Subject to Special Conditions	Principal Permitted Use Subject to Special Conditions	Not permitted

* Except single-family residentially-zoned sites 25 acres or larger developed with a civic, religious or educational use.

**PLANNING COMMISSION
DRAFT MEETING MINUTES
FEBRUARY 10, 2010 - EXCERPT**



PLANNING COMMISSION MINUTES

DRAFT

CITY OF NOVI

Regular Meeting

Wednesday, February 10, 2010 | 7 PM

Council Chambers | Novi Civic Center | 45175 W. Ten Mile

(248) 347-0475

CALL TO ORDER

The meeting was called to order at 7:00 PM.

ROLL CALL

Present: Members Victor Cassis, David Greco, Andrew Gutman, Michael Lynch, Michael Meyer, Mark Pehrson, Leland Prince

Absent: Members David Baratta (excused), Brian Larson (excused)

Also Present: Barbara McBeth, Deputy Director of Community Development; Kristen Kapelanski, Planner; Kristin Kolb, City Attorney

1. ZONING ORDINANCE TEXT AMENDMENT 18.237

Public Hearing for Planning Commission's recommendation to City Council for an ordinance to amend Ordinance No. 97-18, as amended, the City of Novi Zoning Ordinance, in order to provide for standards for siting wind energy turbines.

Planner Kapelanski stated the amendment is being proposed so when a business or residence wishes to install a turbine or explore that possibility, the City has some structures and regulations in place to address that installation.

As the Commission recalls from previous meetings, this amendment addresses residential and business turbines and regulates three different types of turbines.

- A small structured mounted wind energy turbine would be a principle permitted use in all non-residential districts and would be restricted to a height not to exceed 15 feet above the roof line of the structure to which it is attached. No more than two structure mounted turbines could be installed on any one parcel. A setback of 15 feet from the property line would need to be provided.
- A small tower mounted wind energy turbine would be a principle permitted use subject to special conditions in all non-residential zoning districts except that in the OST, I-1 and I-2 Districts, it shall be a principle permitted use if the property is greater than 300 feet from any residential zoning. A small tower mounted turbine must be located in the rear yard with a setback equal to the height of the tower from all property lines. One small tower mounted turbine is permitted for each parcel.
- A medium tower mounted wind energy turbine would be a principle permitted use subject to special conditions in the OST, I-1 and I-2 districts only. A medium tower mounted turbine shall be located in the rear yard with a total height not to exceed 150 feet. No more than one medium tower mounted turbine can be installed for each 2 ½ acres of land with the setback equal again to the tower height.

The draft language proposes allowing small tower mounted turbines and structure mounted turbines as Special Land Uses requiring City Council approval in residential districts on parcels containing institutional uses only. Those would be uses such as schools, civic buildings and churches and parcels would need to be 25 acres or larger. The staff believes educational and civic uses and alternative energy education and demonstration are an appropriate combination.

A significant amount of public involvement was done on this proposed amendment. This included soliciting input at the Fall for Novi event held in September, 2009 and collecting responses through a questionnaire posted on the City website.

Other communities in the area have also begun to adopt ordinances to regulate turbines including West Bloomfield, Canton Township and Port Huron. These ordinances are very similar to the amendment before the Commission this evening and most require special land use approval.

Chair Pehrson asked if there was anyone in the audience that would like to participate and address the Commission on this matter. Seeing no one, Chair Pehrson closed the Public Hearing and turned it over to the Planning Commission.

Chair Pehrson stated that per Planner Kapelanski, the questionnaire data that was collected and analyzed focused on the various types, sizes, and scale of the turbines themselves. Participants seemed to be in favor of solar panels and there seemed to be more of a 50-50 split on the use of wind turbines.

Member Lynch stated that it seems this ordinance would make an exception from regular ordinance standards for one particular use, and there is not a place in Novi where a wind turbine benefits would outweigh the cost since there is not a lot of open space and there is a lack of wind in the City. Member Lynch has concerns about allowing wind turbines in residential areas and think the turbine would be more of an ornament in those areas as opposed to actually generating power due to the topography of the land. Member Lynch cannot support turbines in any residential areas whatsoever, regardless if it is a church, civic center or school.

Member Cassis stated as indicated in his previous comments on the record regarding wind turbines, he is opposed to their use in Novi. It has been well documented that Novi does not have the necessary wind to generate enough power from turbines. Michigan is not a suitable state for wind energy production except in areas by the lakes and in the thumb area. With all due respect to Chair Pehrson, there is not a 50-50 split in the answers received from questionnaire respondents. Member Cassis read some of comments of survey respondents into the record: Residents are concerned about noise and vibration and that wind turbines create the most environmentally unfriendly noise; The residents talk about Novi as unsuitable for wind turbines; The wind turbines create the most environmentally unfriendly noise along with pollution, wildlife interference, and safety hazards; Member Cassis has concerns that a neighbor could put a wind turbine in his backyard and he would have to look at it. Member Cassis referenced the correspondence from Michigan State University and their interest in installing a wind turbine at their existing 25 acre MSU extension facility at Twelve Mile Road and Meadowbrook Road and noted the possibility of a special permit for this site since it is a large farm and they would be proposing a demonstration turbine. Member Cassis does not agree with the passage of a wind turbine ordinance in Novi. Even if the turbines were only permitted in certain districts, residents abutting property with an OST zoning, for example, would still see a turbine that is 100 feet tall and would not be able to enjoy their property without hearing the noise from the turbine.

Member Prince stated that he did not agree with Member Cassis and he thanked the staff for putting this proposed ordinance together. Any steps that are taken toward alternative energy have to be positive. The Planning Commission is well aware of the limited resources available and the problems associated with fossil fuel and the reliance on other companies and countries for sources of energy. Member Prince thinks it is good to explore any possible energy sources that may be necessary and make us less dependent on others for power. In regard to concerns with noise from turbines, this is a noisy society and the elimination of wind turbines is not going to create a quiet society. Any concerns that have been expressed have been outweighed by the seriousness of the issue as it relates to alternative sources of energy. Member Prince will support the ordinance as submitted by staff.

Member Meyer appreciated what Member Cassis said with regard to a special permit for Michigan State University Tollgate Farms. Member Meyer read an excerpt of the letter from Michigan State University. "Michigan State University and the governor's office have both identified the development and utilization of alternative energy as one of the prime areas of focus for Michigan. As part of this effort, the Michigan State University Tollgate Educational Center is in the process of developing a solar, wind and other alternative energy teaching and demonstration area located on the property in Novi. As currently planned, this facility would be used primarily by all who are interested in installing, maintaining, and inspecting small to medium scale alternative energy installation. Wind powered generation equipment would be an important component of this teaching project. Wind powered generating equipment can be very efficient and effective but only if it is positioned high enough to be above the wind shading effects of trees and structures on the ground."

Member Meyer has traveled across the country in the last few years and, having driven from Arizona and back has seen wind turbines in Texas, one right after another that are in areas where there are no residents. Member Meyer does not think turbines should be near residential. As part of a learning experience, it should be made available to Tollgate to allow at least one of these turbines. With 25 acres of land, it would be far and high enough away that the noise and sight factor would be minimal. At the Implementation Committee meeting, the members also talked about maintenance, which is a critical factor. The turbines would need to be lubricated, and the owner would have to deal with rusting and possible noise. Member Meyer believes the City should have something on the books regarding these wind turbines, so that when people or businesses come in with questions, staff can give them answers about

what is permitted and how those regulations apply to their situation.

Member Greco stated that after viewing the materials for this hearing and remembering some of the comments, he believes all of the Commissioners are in favor of green technology or energy sources as long as they are not just ornamental. Member Greco agrees with Member Meyer and Member Cassis as far as maintenance and that Novi may not be the appropriate place for wind turbines. Member Greco spoke with City Attorney Schultz at a previous meeting and inquired as to whether it is better to have an ordinance in place prohibiting the use where the City doesn't want it or if even having that ordinance would encourage the use of turbines; If the Commission does nothing, does that open the City to litigation regarding whether turbines can be allowed if not specifically addressed in the Ordinance?

City Attorney Kolb responded it is not necessarily a question of promoting or encouraging the use. If a resident or business comes before the City wanting to install a turbine, the City would be in a position, with no ordinance to simply say it is not regulated and we can't stop you, or, the City would be scrambling around to get an ordinance in place. Member Meyer's comments are well taken that it may be better to have something on the books, whether it be to prohibit turbines or put the regulations in place so that a petitioner or someone wanting to pursue a turbine installation has guidelines to follow. It is probable that there will be someone asking at some point to install a turbine as people are starting to show an interest in alternative energy technologies.

Member Greco stated that the ordinance is essentially then a question for the Commissioners. Is this specific ordinance restrictive enough for what the City wants to accomplish, or is it not? In listening to his fellow Commissioners, Member Greco is not sure that this ordinance is as restrictive as the Commission wants it to be. It may not be appropriate to completely prohibit wind turbines in Novi by passing an ordinance with so many restrictions that it makes it impossible to install a turbine. Member Greco will reserve his judgment until after he hears comments from other Commissioners.

Member Lynch wanted to clarify his previous comments indicating he has no issue with wind energy and he is in agreement with Member Prince that reliance on fossil fuel needs to be eliminated. Member Lynch's main concern is the way the ordinance is written allowing turbines in a residential area. Most churches, schools, and civic uses are in residential areas. Member Lynch thinks it is important to have an ordinance in place and does not want his comments to be misconstrued that he is against wind energy, but that it is the placement of wind turbines in residential areas that he is opposed to.

Member Cassis agrees with Member Greco and Member Lynch that it is important for the City to have an ordinance. Member Cassis proposed issuing some sort of special permit to allow Tollgate Farms to have a wind turbine, but if the only avenue for that is passing the ordinance before the Commission tonight, Member Cassis could not support that. The ordinance is too extensive as far as where turbines could be placed.

Chair Pehrson stated there are limitations to the proposed ordinance relative to residential districts, relative to use in the OST District and Special Land Use permits. Turbines in a residential area must be part of an institution and can only extend up to 60 feet. Most steeples, most spires and most churches are taller than 60 feet, just as a reference point. In a residential district, an institution wishing to install a turbine would have to be on 25 acres or more. The data that was supplied in the Planning Commission packets indicates the minimum investment for the wind turbine itself is over \$50,000. This area doesn't serve to be a financially rewarding venture.

Chairperson Pehrson agrees with Member Meyer and Member Prince that the City does need an ordinance on the books. Relative to the survey data supplied in the Planning Commission packets, Member Cassis was correct in saying that the results did not show a 50-50 split on support for wind turbines but instead showed more than 50 percent of the respondents supported wind turbines. Per the data and surveys: 13 people voted "disagree" or "strongly disagree" and over 20 voted to "agree" or "strongly agree" with the notion of allowing structurally attached wind turbines. In other questions, respondents agreed with the idea of permitting wind turbines 12-27. Small tower mounted turbines of 100 feet permitted in commercial: disagree 12, agree 25. The questionnaire data does show respondents being in favor of wind turbines by at least a 50-50 split, if not more people suggesting they do want wind turbines in the City.

Chair Pehrson stated that there will not be 100 foot towers: as technology evolves, there will be small roof mounted turbines that feed batteries that sit along side a house like an air conditioning unit to power fuel cells and other devices to provide a secondary source of power. There will not be 300 feet turbines along Ten Mile Road and Novi Road.

Chair Pehrson would support changes to the draft ordinance if that is the request of the Commission but would not support ignoring the issue all together. The City needs something on the books.

Member Gutman stated that this has been a very healthy debate he agrees with the necessity of alternative energy sources as stated by Member Prince. As citizens, the Commission needs to be supportive. Member Greco raised a very good point in wondering if the ordinance meets the intentions of the Commission and does what's best for the community. Member Gutman is somewhat against wind turbines, but the main question is does the Commission agree with the ordinance as drafted. With what the staff has put together with the community's comments and the Commission's previous comments, this gives the Commission the chance to put something meaningful into play so if a resident or business owner comes to the City wanting to put a turbine in, there are regulations in place to address that. The ordinance as proposed does restrict residential use, which seems to be a big concern. Member Gutman asked Deputy Director McBeth and Planner Kapelanski if there were any provisions in the ordinance for maintenance or could something be added to address that.

Planner Kapelanski stated that there is a provision in the ordinance related to maintenance and it reads as follows: "The appearance of the turbine tower and any ancillary facility shall be maintained in working condition and free of rust and corrosion by the owner of the turbine and throughout the life of the turbine." The enforcement of that provision would be something addressed by ordinance enforcement. Much like every other ordinance is enforced in the City, a resident or business owner could call the City and to report a rusted turbine and ordinance enforcement would go out there and address it appropriately.

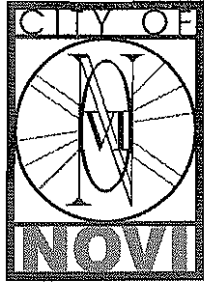
Deputy Director McBeth also added that there is a section on decommissioning of turbines within 6 months after the end of the useful life of the turbine. If the City had a complaint that a wind turbine stopped working, the City could have ordinance enforcement go out and address that, based on the proposed ordinance language.

Motion made by Member Gutman, seconded by Member Prince:

ROLL CALL VOTE ON MOTION TO RECOMMEND APPROVAL MADE BY MEMBER GUTMAN AND SECONDED BY MEMBER PRINCE:

In the matter of Text Amendment 18.237, a motion to recommend approval to City Council. *Motion carried 5-2 (Nay – Member Cassis, Member Lynch).*

**PLANNING COMMISSION
MEETING MINUTES
JULY 15, 2009 - EXCERPT**



cityofnovi.org

PLANNING COMMISSION

CITY OF NOVI

Regular Meeting

Wednesday, July 15, 2009 | 7 PM

Council Chambers | Novi Civic Center | 45175 W. Ten Mile

(248) 347-0475

CALL TO ORDER

The meeting was called to order at or about 7:00 PM.

ROLL CALL

Present: Members David Baratta, Victor Cassis, David Greco, Andy Gutman, Brian Larson, Michael Lynch, Michael Meyer, Mark Pehrson, Leland Prince

Also Present: Barbara McBeth, Deputy Director; Kristen Kapelanski, Planner; Jana Pritchard, Planner; Tom Schultz, City Attorney

PUBLIC HEARINGS

1. ZONING ORDINANCE TEXT AMENDMENT 18.237

Public Hearing for a recommendation to City Council for Zoning Ordinance Text Amendment 18.237, an Ordinance to amend Ordinance No. 97-18, as amended, the City of Novi Zoning Ordinance; In order to provide for standards for siting wind energy turbines.

Planner Kapelanski distributed additional newspaper articles for the Planning Commission to review. Ms. Kapelanski stated that in reaction to the growing interest in clean energy and wind energy in particular, staff has proposed an amendment to the Zoning Ordinance to regulate the use of wind turbines in the City of Novi. This amendment is being proposed so that when a business or resident wishes to install a turbine, or explore that possibility, we have structures and regulations in place to address the concerns of the city, the residents and the individual or company, wishing to install the turbine.

Wind turbines can be used for private use at a home or business or for large scale utility power production. The Michigan Wind Resource Map was included in the Commissioner's packets. Generally, Novi and the Metro Detroit area do not have significant wind resources that would be capable of powering a utility grade type system, so utility grade turbines are not addressed by this Ordinance Amendment. A chart included in the packets summarizes some of the basic tenants proposed for this amendment.

The amendment addresses residential and business turbines and regulates three types of turbines.

1. A small, structured mounted wind energy turbine would be a Principle Permitted Use in all Districts as indicated by the Chart and would be restricted to a height not to exceed fifteen (15) feet above the roof line of the structure to which it is attached. No more than two structure mounted turbines could be installed on any one parcel, and a setback of fifteen (15) feet from the property line must be provided.
2. A small tower mounted wind energy turbine would be a Principle Permitted Use subject to Special Conditions in all Zoning Districts except that in the OST, I-1 and I-2 Districts, it shall be a Principle Permitted Use if the property is greater than three (300) feet from any residential zoning.

Planner Kapelanski stated the Implementation Committee discussed the previous version which allowed small tower mounted turbines as a Principle Permitted Uses in all Districts. Staff has since changed that, based on the Committee's comments and further research and they are now Special Land Uses in most Districts.

The tower mounted turbine would have to be located in the rear yard and set back twenty (20) feet from all buildings on the property and with a setback equal to the height of the tower from all property lines. In any residential district, the total height of a small tower mounted turbine should not exceed sixty (60) feet unless the submission of an approved Wind Resources Study can document a 47% percent increase in the average wind speed at the proposed height. In which case, the height limitation can be increased to one-hundred (100) feet. This is another change from the previously reviewed ordinance at the Implementation Committee. One small tower mounted turbine is permitted for each parcel, and the parcel must be at least two (2) acres in

size in any residential district.

3. Last, the medium tower mounted wind energy turbine would be a Principle Permitted Use Subject to Special Conditions in the OST, I-1 and I-2 Districts only. A medium tower mounted turbine shall be located in the rear yard with a total height not to exceed one-hundred fifty (150) feet. No more than one (1) medium tower mounted turbine can be installed per each two and one-half (2 ½) acres of land in a parcel and the setback from all occupied buildings would again be twenty (20) feet with a setback equal to the tower height from the property line.

All types of turbines would need to be of a non-obtrusive color and maintained to be free of rust and corrosion. No advertising on the turbines would be permitted. Noise could not exceed the lowest decibel level at residential property lines and the lowest decibel level plus five (5) decibels at non-residential property lines. No guy-wires would be permitted and decommissioning would be the responsibility of the owner and would be required within six (6) months of the end of the turbine's useful life. That is another change from the previously proposed ordinance at the Implementation Committee - previously the ordinance allowed twelve (12) months, staff is now recommending six (6) months.

Some other communities in the area have also begun to adopt ordinances to regulate wind turbines including West Bloomfield, Canton Township and Port Huron. These ordinances are very similar to the amendment before the Commission this evening and mostly require Special Land Use approval for the installation of a wind turbine.

Permitted heights in the West Bloomfield Ordinance are up to one-hundred (100) feet in residential districts and one-hundred fifty (150) feet in manufacturing districts with a setback equal to six (6) times the height of the turbine.

The Port Huron Ordinance permits turbines in any district on a two (2) acre parcel as a Special Land Use with a maximum height not to exceed the height permitted in that district and a setback equal to the height of the turbine.

Planning staff would like the Planning Commission to consider adding the language 'for all horizontal axis turbines' following the phrase; 'Upwind turbines shall be required'. This would be added to Section 2508.8.D.1A and Section 2508.8.E.1A to clarify that vertical turbines would be permitted. The question of vertical axis turbines also being permitted was brought up at the Implementation Committee. Staff wants to make it clear that the ordinance does not prohibit vertical axis turbines, just that the horizontal axis turbines would have to be of the upwind variety. Planner Kapelanski was available for questions.

Chair Pehrson opened the public hearing and invited anyone to step forward to address the Commission. Seeing no one, Chair Pehrson asked if there was any correspondence. There was no correspondence. Chair Pehrson closed the public hearing and turned it over to the Planning Commission for review.

Member Lynch asked if the city intended to allow wind turbines in residential areas. Member Lynch stated that although the wording on this was probably wonderful, he has a fundamental problem with putting wind turbines in a residential community. Member Lynch stated he does not see anything but trouble for the cost/benefit, and if asked to vote on the language, Member Lynch does not agree that Novi's residential communities should permit wind turbines.

Chair Pehrson confirmed with Planner Kapelanski that the way this started was a resident came to the city to see what ordinances and regulations were in place for locating a wind turbine on their property. Knowing that the city did not have ordinances in place, the recommendation from the Planning Division was to provide an ordinance to regulate this use.

Chair Pehrson stated that this language establishes regulations for wind energy turbines including standards for special use permits, zoning, setbacks, height restrictions and setbacks from property lines in order to ensure we protect the character of the community.

Deputy Director McBeth stated that staff added a provision for residential districts requiring lots to be a minimum of two acres in size. At the Implementation Committee meeting, the height was limited to one hundred feet. Staff has since lowered that to a maximum of sixty feet for residential districts unless the applicant can demonstrate through a test that there would be a substantial benefit to increase the height to one hundred feet. There are also protections

for small tower-mounted turbines to be reviewed by the Planning Commission as a Special Land Use.

Chair Pehrson confirmed that there would be a public hearing if a resident wanted to install a wind turbine. He is aware that there have been situations where residents erect something in their yard (such as a large satellite dish, flagpole, etc.) because of disagreements with a neighbor. After an examination of the Michigan Wind Resource map, it is clear that Novi is not a prime wind environment, but it would still be prudent to have an ordinance in place for wind turbines for the City and the residents. It would save the City problems in the future. If this ordinance goes forward and gets approved by City Council, it then becomes part of the City Code. There is a need for specific regulations on subjects like this.

Member Lynch stated that if the purpose is to have an ordinance in place, he thinks it is written properly. Member Lynch wants to make sure that by allowing things that have little value, if any, in the City of Novi, that we don't cause other problems. Member Lynch does not agree with wind turbines in the City of Novi in residential areas, but will support putting an ordinance in place.

Member Cassis expressed reservations previously, and now agrees with his colleague completely. Member Cassis did not think it was lawful to erect a wind turbine without an ordinance.

Attorney Schultz stated that right now, the ordinance does not address wind turbines. The position of the attorney's office would be that it is not a permitted use, as the ordinance does not allow it. If someone wanted to install a turbine right now, they would probably go through the Zoning Board of Appeals and argue that this is a land use that we need to be providing for. There are many communities that do not have an ordinance. This is a policy decision and there is nothing that says a wind turbine has to be permitted in one place and not another. The Planning Commission is making recommendations on what the legislation should be. This is the staff's contribution for discussion by the Planning Commission, to recommend if this use is appropriate and where it is appropriate.

Member Cassis stated that anyone erecting anything like that right now would be violating the law. Member Cassis has great reservations in having wind turbines in our residential communities. He does not think they are needed or practical in Novi. Allowing all kinds of objects in your backyard, and especially as monumental an object as this, means a neighbor could easily see another person's turbine.

Member Baratta agrees with his colleagues. From the standpoint of being in a residential district, Member Baratta does not think that is appropriate. From what he has heard today, the height and other limitations will make it uneconomical. There are aesthetic issues, placement of mechanical equipment and potential lack of maintenance. Member Baratta foresees a problem if something is not properly maintained, becomes a hazard and is dangerous. The sound issue is also a concern. Member Baratta indicated that he doesn't have a particular issue if a turbine is in a light industrial or general industrial district, but he does have a problem in a residential area.

Member Greco agrees with his fellow Commissioner's concerns. The presentation of the materials was great and the articles were great, however the issue for the Planning Commission to examine is why we are recommending this ordinance and for what purpose. Is it to regulate potential turbines coming into the community, or is it to promote the idea of wind turbines as something that is positively green? The other communities with ordinances in place seem to think this is a good idea; the articles are very positive and it doesn't seem that the purpose of the ordinance is prohibitive. Member Greco wondered if the City is opening itself up to a proliferation of wind turbines by having an ordinance that sounds like we're promoting turbines, rather than not. Member Greco asked Mr. Schultz if, clearly at least from the Commissioners that have spoken so far, the Commission's primary concern is whether regulating turbines in residential areas or prohibiting turbines in residential areas creates problems. Is it more beneficial for the City to have an ordinance like this or have an absence of an ordinance?

Attorney Schultz said that is a fair question. Do you adopt the ordinance and prohibit this use in residential areas or do you just not adopt an ordinance at all? Mr. Schultz asked if essentially, this was the question.

Member Greco confirmed that is the concern.

Attorney Schultz said that the initial question is, what are you trying to do with the ordinance? You may be trying to do one thing in some districts and just want to leave the residential districts alone. In which case, the question answers

itself. You can do it either way. There is nothing that says it has to be permitted in every district, and there is nothing that makes the ordinance more dangerous if you permit it in some districts, but not in residential districts. If you do not have any ordinance, then you expose yourself to someone arguing under the State Zoning Enabling Act that says we cannot prohibit land uses. Mr. Schultz is not prepared to say that a turbine is a land use. That argument generally applies to uses like mobile home parks, as an example, but there is nothing to say that someone will not make the argument. There is nothing wrong with not having an ordinance and dealing with it on a variance basis in a residential district, but on the other hand, you may have policy reasons to want turbines somewhere else.

Member Greco stated that based upon what he had heard so far and what he had read in the materials, the Commission is not ready to make a recommendation. The question is whether we want to be positive and in step with what is going on in all of Michigan and have something in place if these things are coming. The Commission may not want turbines in residential areas, but it may make sense to have them in certain other places. Whether or not we pass this ordinance, the City may have battles in the future because everyone is talking about wind turbines and reading articles and regardless of the cost, people are thinking they would like to have one of these on the roof or in the backyard. People may think this is a good idea. Member Greco stated, with all the questions that have been raised, he is not ready to make a recommendation.

Member Gutman said that the one thing that's kind of an undercurrent and is unspoken and I think we all agree on is that everyone here is in favor of renewable energy sources and we're not saying no to that tonight. What we are saying is that we would like to study the proposed ordinance further and understand it better. We all believe in the importance of renewable energy sources, but as far as the ordinance goes, we have our concerns. Specifically, turbines in residential areas sound like they are a major concern for everyone on the Commission.

Moved by Member Gutman, seconded by Member Cassis:

To send the proposed Wind Turbine ordinance back to the Implementation Committee for further review noting the Planning Commission's concerns and to see if there are modifications that should be made.

Member Meyer stated that based on the Michigan Wind Resource Map that they had been provided with, Novi falls in the poor wind power class and that certainly should be a factor. The other piece is in light of what our attorney indicated, it would seem that an ordinance would provide some guidelines if someone, like Member Greco said, decides as either part of a green initiative and / or a resident would just like to have a turbine in his or her backyard. At least the Commission would have looked at the issue and would not be caught trying to address the issue with no protection of the law. The law is supposed to be for the common good and Member Meyer thinks it would be very important for the Implementation Committee to consider better wording of the proposed ordinance prior presenting it to the City Council.

ROLL CALL VOTE ON MOTION TO SEND TEXT AMENDMENT 18.237 BACK TO THE IMPLEMENTATION COMMITTEE MADE BY MEMBER GUTMAN AND SECONDED BY MEMBER CASSIS:

In the matter of Text Amendment 18.237, motion to send the proposed Wind Turbine ordinance back to the Implementation Committee for further review noting the Planning Commission's concerns to see if there are modifications that should be made. *Motion carried 9-0.*

**CORRESPONDENCE FROM
MSU TOLLGATE**

**MICHIGAN STATE
UNIVERSITY**

January 11, 2010

Community Development Department
City of Novi

Greetings,

We live in a time of many challenges. Among the challenges that we face as a society is to develop clean, abundant sources of energy that are sustainable now and in the future. Michigan State University and the Governor's office have both identified the development and utilization of alternative energy as one of the prime areas of focus for Michigan. As part of this effort, the Michigan State University Tollgate Education Center is in the process of developing a solar, wind and other alternative energy teaching and demonstration area on the property located in Novi. As currently planned, this facility would be used primarily by all who are interested in installing, maintaining and inspecting small to medium scale alternative energy installations. Wind powered generation equipment would be an important component of this teaching project. Wind powered generating equipment can be very efficient and effective, but only if it is positioned high enough to be above the wind shading effects of trees and structures on the ground. Although there are noise disturbance, aesthetic and other concerns involved in placing wind driven power generation devices in urban environments, currently available quieter turbines and the placement of turbines at an appropriate distance from homes should mitigate these concerns.

S

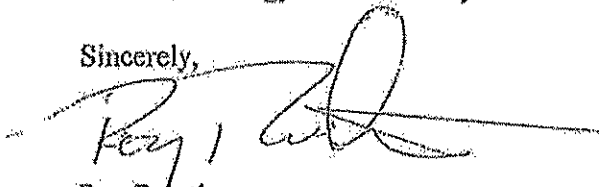
**TOLLGATE
EDUCATION
CENTER**

Michigan State University
20115 Meadowbrook Road
Novi, MI
48377-3128
248/347-3860
Fax: 248/380-9193
Web: www.tollgate.msu.edu

In addition to the planned educational installation at MSU Tollgate, I believe that alternative energy generation systems are appropriate at schools and other similar facilities. Placing alternative energy generating equipment in a school environment has two primary advantages in addition to offsetting electrical use. Having the equipment sited at schools allows youth to become familiarized with this technology. I believe that alternative power generation is going to be a future growth industry in Michigan. Today's students will be tomorrow's workers in green energy jobs. Generation equipment on school grounds is also a great match for the community. Air conditioning use dictates that electrical need in the summer is at its peak while electrical use by schools is at its lowest. School based power generation equipment maximizes its power supply to the grid when it is most needed.

As our community and our state move into the future, I believe that it is up to our educational institutions to provide leadership. Teaching about and demonstrating alternative energy use is one way that we can do this.

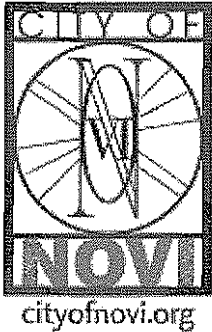
Sincerely,



Roy Prentice
MSU Tollgate Farm Manager

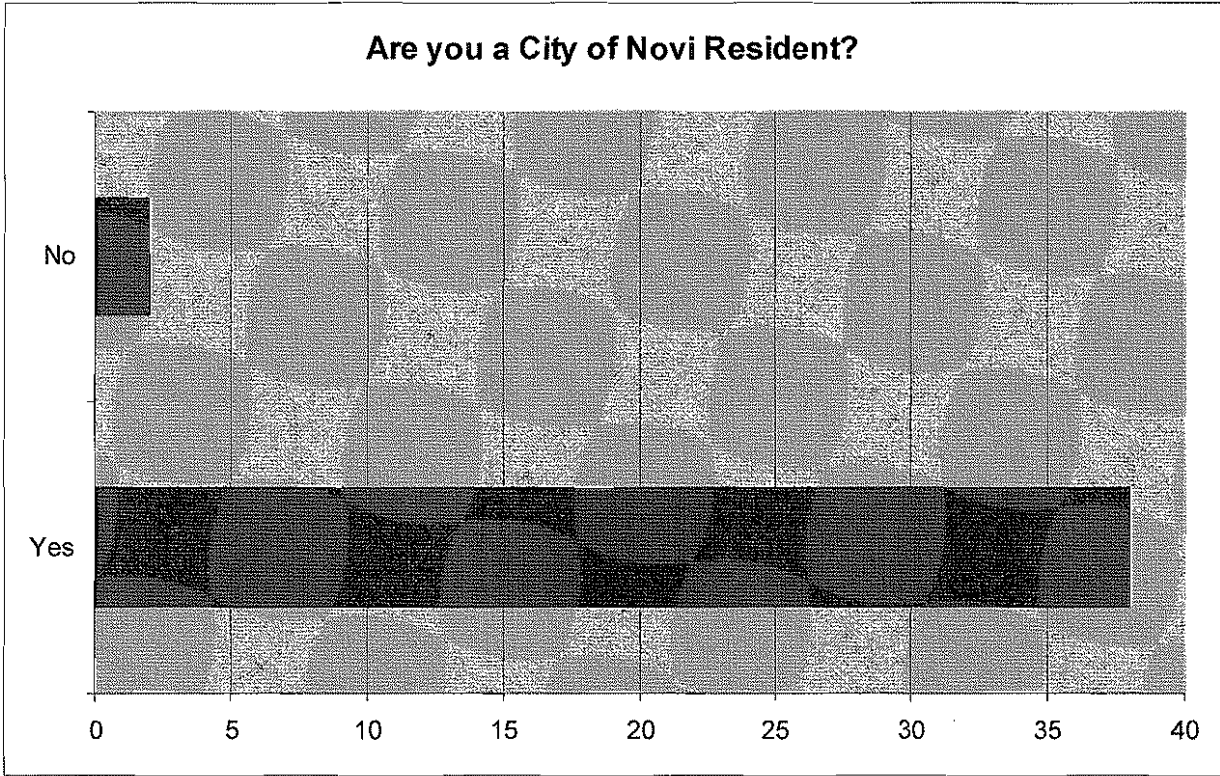
SURVEY RESULTS

MEMORANDUM

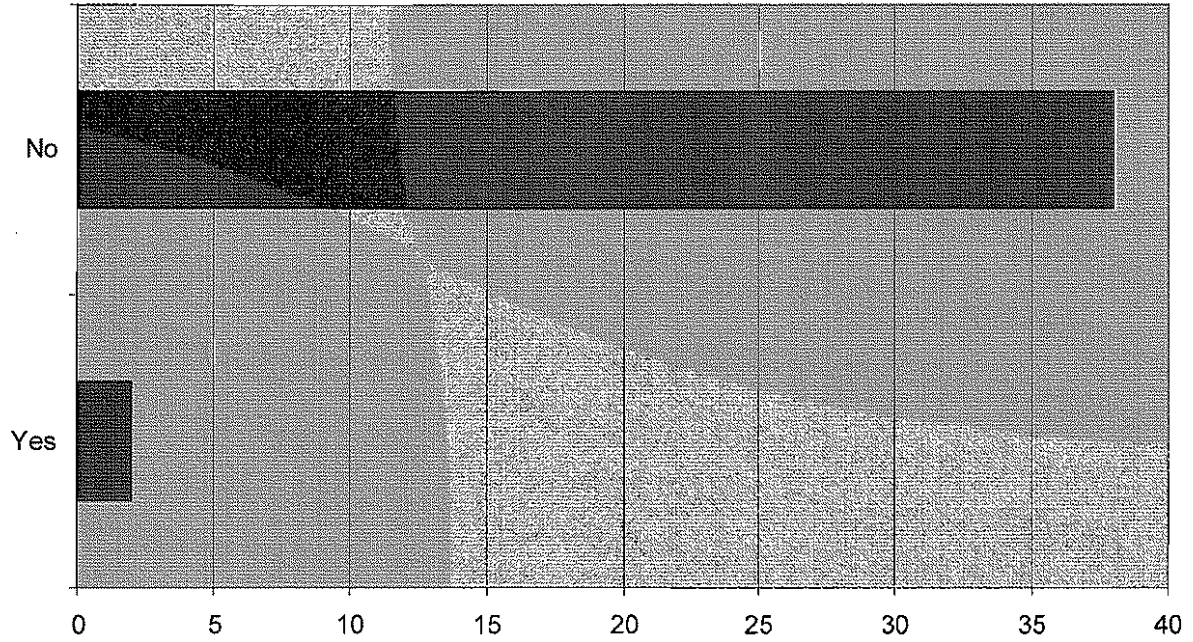


TO: MEMBERS OF THE PLANNING COMMISSION
FROM: KRISTEN KAPELANSKI, PLANNER
THRU: BARBARA MCBETH, COMMUNITY DEVELOPMENT DEPUTY DIRECTOR
SUBJECT: PROPOSED ORDINANCE REGARDING WIND ENERGY – SURVEY RESULTS
DATE: FEBRUARY 1, 2010

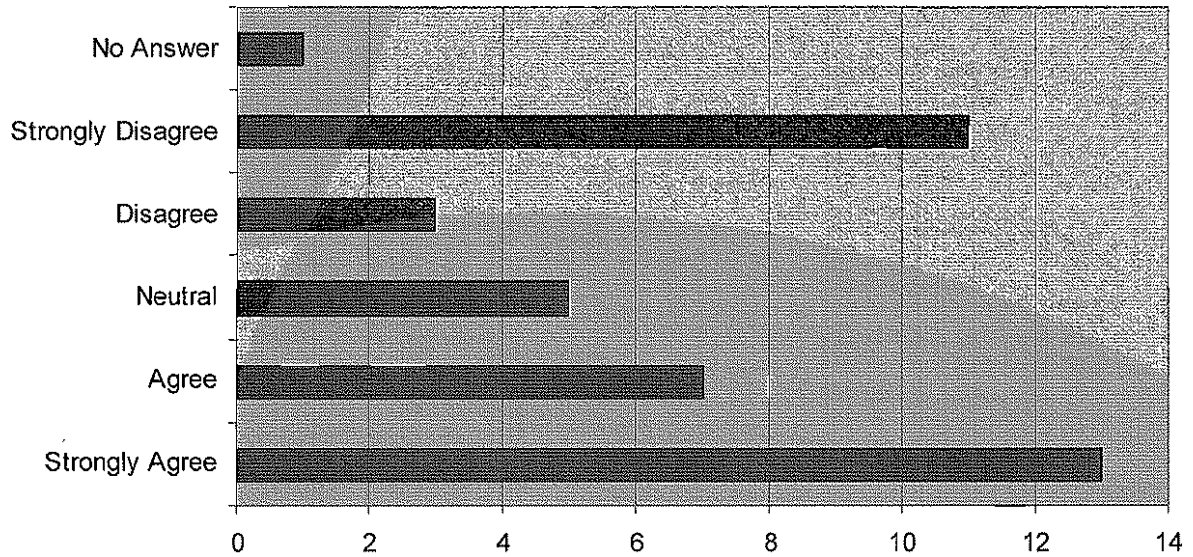
Below you will find the combined results of the attached wind energy survey posted on the City's website and distributed at the Fall for Novi event held in September 2009. These results reflect all of the surveys completed as of January 31, 2010. In total 40 surveys were submitted. If you have any questions related to the survey or the results, please contact me.



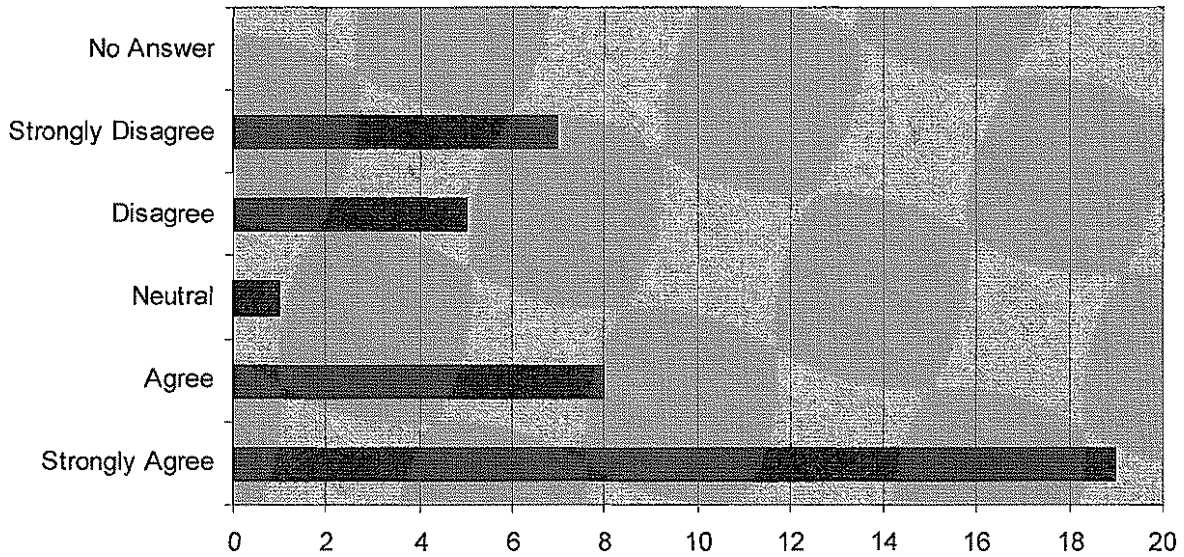
Are you a City of Novi Business Owner?



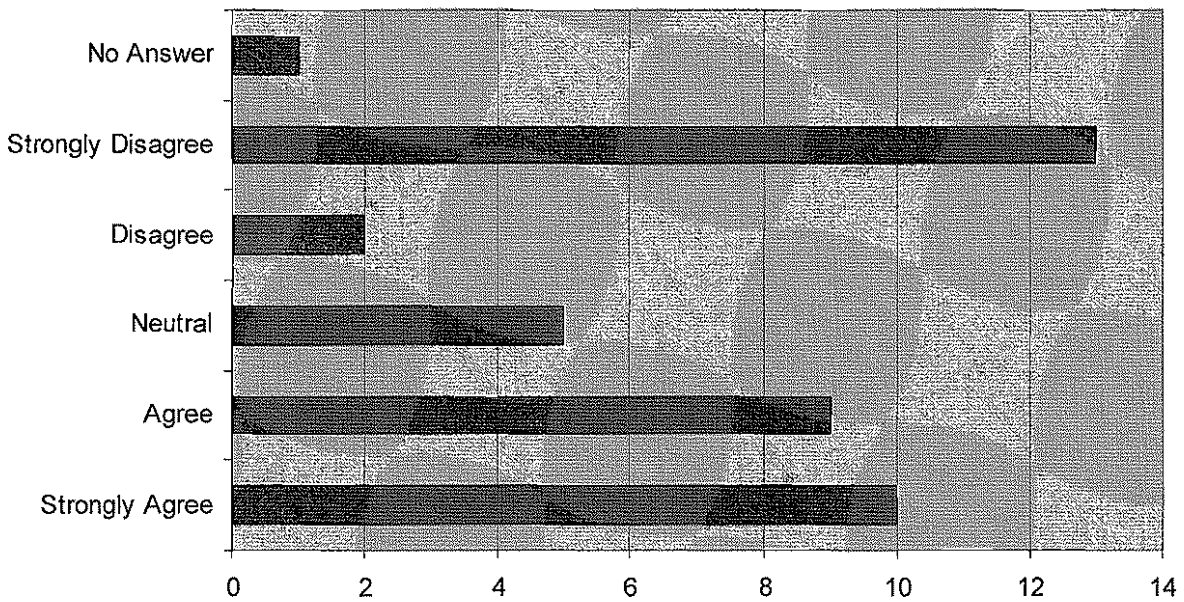
Structure-mounted wind turbines projecting up to fifteen feet above the roofline of a structure should be permitted in residential districts.



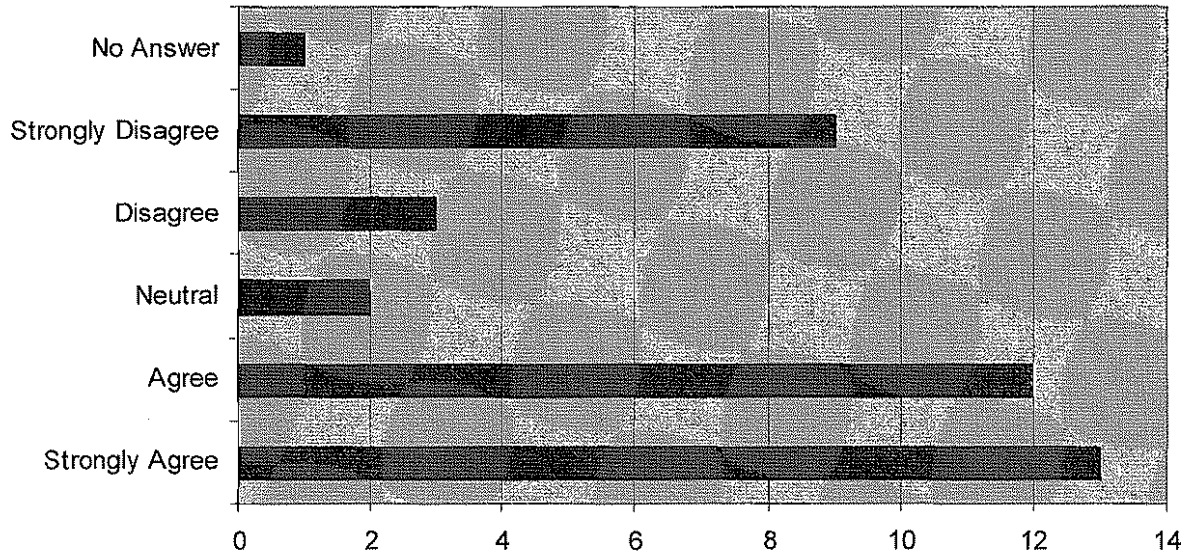
Structure-mounted wind turbines projecting up to fifteen feet above the roofline of a structure should be permitted in commercial, office and industrial districts.



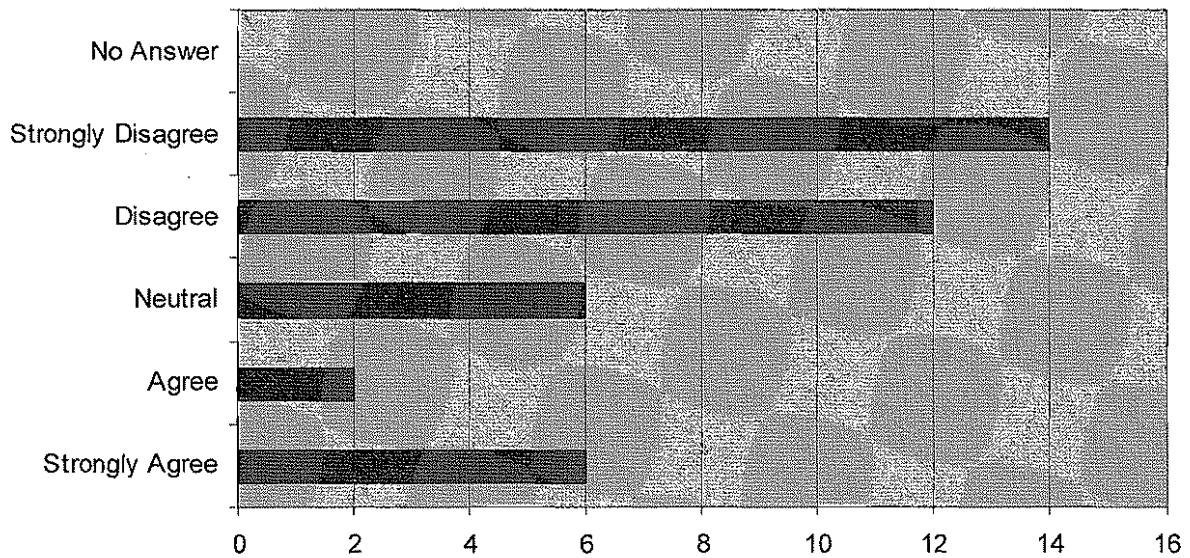
Small-scale tower-mounted wind turbines up to a height of sixty feet should be permitted in residential districts.



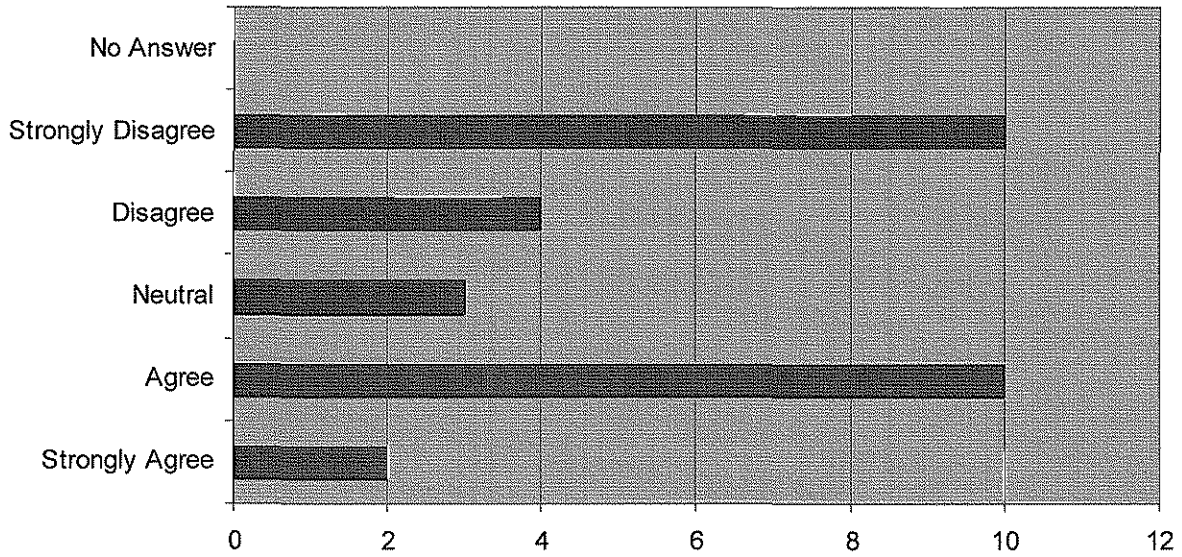
Small-scale tower-mounted wind turbines up to a height of one-hundred feet should be permitted in commercial, office and industrial districts.



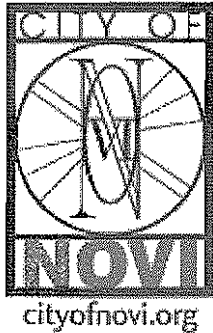
Medium-scale tower-mounted wind turbines up to a height of one-hundred and fifty feet should be permitted in residential districts.



Medium-scale tower-mounted wind turbines up to a height of one-hundred and fifty feet should be permitted in commercial, office and industrial districts.



MEMORANDUM



TO: MEMBERS OF THE PLANNING COMMISSION
FROM: KRISTEN KAPELANSKI, PLANNER
THRU: BARBARA MCBETH, COMMUNITY DEVELOPMENT DEPUTY
DIRECTOR
SUBJECT: PROPOSED ORDINANCE REGARDING WIND ENERGY –
SURVEY RESPONSES
DATE: FEBRUARY 1, 2010

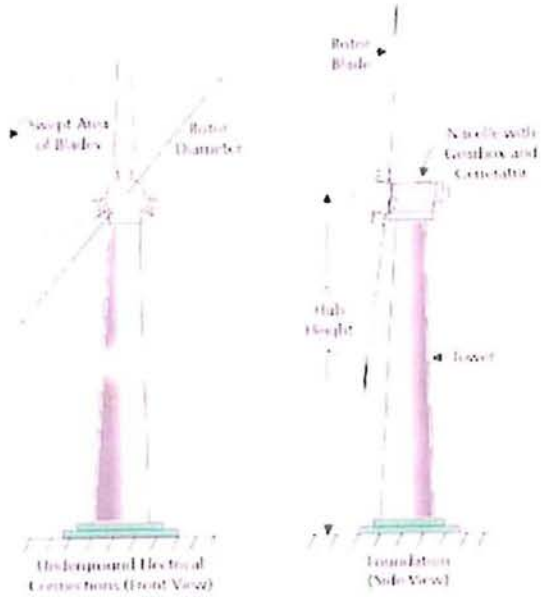
Below are the written responses gathered as part of the wind energy survey posted on the City's website and distributed at the Fall for Novi event held in September 2009. If you have any questions related to the survey or the responses, please contact me.

- Safety regard is too long!
- To prevent frivolous installation of wind turbines on sites that will not have sufficient quantity/quality of wind, each project should have a comprehensive performance analysis conducted based on realistic wind values at appropriate durations. This will cut down on wind turbines that are abandoned due to perceived poor performance.
- Schools and athletic parks should be considered for these wind turbines.
- Height of the turbine is important but noise limits must be part of the ordinance.
- Wind turbines create noise and vibration. They should be located in a central remote area tied to the power grid. All effects of wind turbines should be taken into consideration.
- This technology will enhance our cities reputation, and can have long term benefit as the state embraces alternative energy.
- Noisy.
- I work in the utility scale wind industry as a design engineer. You will have noise and flicker issues with turbines installed near people. Note that the units only get louder with age. Solar is much more appropriate and peak output coincides with air conditioning load - just when wind dies out!
- Novi is not a suitable area for any wind turbines.
- There are other viable sources of renewable energy...Solar, Biomass, Geothermal, etc. Wind is the most environmentally unfriendly...noise pollution, wildlife interference, safety hazards. I agree with having a sustainable, renewable energy plan for the city, but wind is not necessary and the least desirable for residential areas. Let's keep wind farms in remote areas or offshore in the great lakes.
- The possibility that my neighbor could put any wind turbine in his backyard greatly concerns me. The sound and the pulsating shadow would drive me crazy. We spend a lot of time in our screen porch on the back of our house and leave the windows of the house open when the weather permits. PLEASE DO NOT CONSIDER THESE FOR USE IN RESIDENTIAL DISTRICTS!

- I am totally opposed to wind turbines of any size in the city. Not only are they a visual blight, they potentially can create unpleasant noise and have the potential to cause the death of birds and bats.
- Wind turbines have not proven to be safe and have proven to be harmful to wildlife and residents enjoyment of their property and life. The birds and animals are harmed by the wind movement and flickering. People are adversely affected by the sound and flickering. There seems to be a lot of thought put into this proposal with much careful attention to restrictions. If I thought that this form of energy was harmless I would support this proposal, but I fear we are going to find out in the future that this method does even more harm than we currently know. I would like to see a complete ban for 10 years while the effects are studied more. I don't think this is a bandwagon that the city should jump on. Citizens of Novi do not need to be test subjects. Speak with residents of Michigan up north who now live with these turbines. They have many regrets.
- I have read quite a few articles about wind turbines and complaints people have about them. Some complain about the noise - even a mile away. Some even complain of a vibration charge (?) in the air strong enough to interfere with sleep, etc. I am very sensitive to vibration - even when others around me don't feel it - and definitely would not want this in Novi. There are too many open lands outside of Novi for these wind turbines.
- There should be no interference, review or anything associated with any installation that produces free energy. Keep the city out of this.
- Turbines in residential locations should take into account setbacks and lot sizes. Larger turbines should be permitted on larger parcels where adequate setback can be provided.
- Thank you for conducting this survey on such an important matter. I look forward to seeing your results, and hopefully watching Novi become a leader in implementing distributed energy generation.

EXAMPLES OF WIND TURBINES

Examples of Wind Turbines



Drawing of the rotor and blades of a wind turbine, courtesy of ESH





