

MEMORANDUM



TO: MEMBERS OF THE PLANNING COMMISSION
FROM: KRISTEN KAPELANSKI, PLANNER *K. Kapelanski*
THRU: BARBARA MCBETH, COMMUNITY DEVELOPMENT DEPUTY DIRECTOR
SUBJECT: PROPOSED ORDINANCE REGARDING WIND ENERGY
DATE: JANUARY 4, 2010

In response to the recent push towards clean energy technology and in an effort to promote "green initiatives" in general, the Community Development Department has proposed a text amendment 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 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.

The proposed ordinance identifies three types of wind turbines: Small Tower-Mounted Wind Energy Turbines (STMWET), Small Structure-Mounted Wind Energy Turbines (SSMWET) and 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

STMWETs 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 (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. A map identifying the parcels in the City that would meet the aforementioned requirements is attached. Turbines on residentially-zoned parcels with institutional uses would be limited to a height of 60 feet.

Small Structure-Mounted Wind Energy Turbines

SSMWETs 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

MWETs are proposed to be a special land use in the I-1 District (Light Industrial), I-2 District (General Industrial) and the OST District (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.

The Implementation Committee met and 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 some of those comments. Draft minutes of that meeting are attached.

The Planning Commission held a public hearing regarding 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. Relevant meeting minutes are attached.

The Implementation Committee met and 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. 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. Draft meeting minutes will be provided with the next packet. Since that meeting, staff has added the aforementioned provisions regarding turbines as a special land use on parcels 25 acres or larger with institutional uses in residential districts.

The Community Development Department has gathered a fair amount of public input through the use of surveys. A booth was set-up and comments collected at the Fall for Novi event held in September, 2009. In addition, a new section on the City's webpage was created to inform the public of the new ordinance and collect survey responses and comments. Generally, residents seem to agree with the ordinance as it is currently proposed. Survey results have been included in this packet.

The Planning Commission is asked to set a public hearing for the February 10th Planning Commission meeting. If any Commissioner has any questions related to this request, do not hesitate to contact Kristen Kapelanski, in the Community Development Department at (248) 347-0586 or kkapelanski@cityofnovi.org.

**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.

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 of 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 _____, 2009.

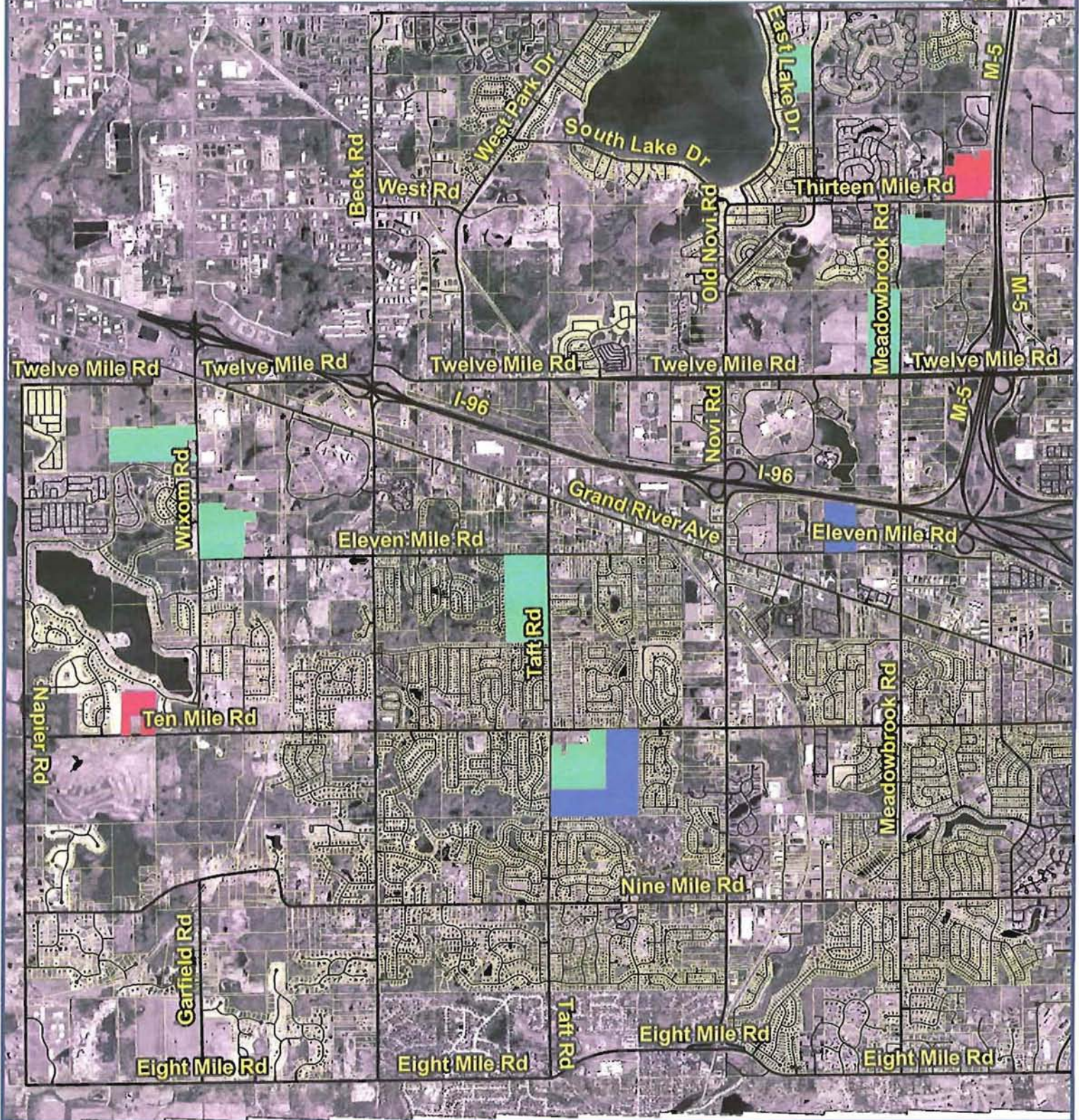
DAVID LANDRY, MAYOR

MARYANNE CORNELIUS, CITY CLERK

Ayes:
Nays:
Abstentions:
Absent:

Text Amendment 18.237 Wind Turbine Ordinance

Institutional Uses on Parcels ≥ 25 Acres



Map Author: Kristen Kapelanski
 Date: January 6, 2010
 Project: Institutional Uses 25 Acres or Larger
 Version #: 1.0

Map Legend

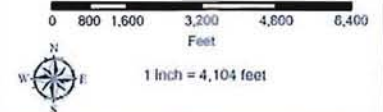
- Civic Uses with Parcels ≥ 25 acres
- Religious Uses with Parcels ≥ 25 acres
- Educational Uses with Parcels ≥ 25 acres

MAP INTERPRETATION NOTICE

Map information depicted is not intended to replace or substitute for any official or primary source. This map was intended to meet National Map Accuracy Standards and use the most recent, accurate sources available to the people of the City of Novi. Boundary measurements and area calculations are approximate and should not be construed as survey measurements performed by a licensed Michigan Surveyor as defined in Michigan Public Act 122 of 1970 as amended. Please contact the City GIS Manager to confirm source and accuracy information related to this map.



City of Novi
 Department Division
 45175 W Ten Mile Rd
 Novi, MI 48375
 cityofnovi.org



**WIND ENERGY
SURVEY RESULTS**

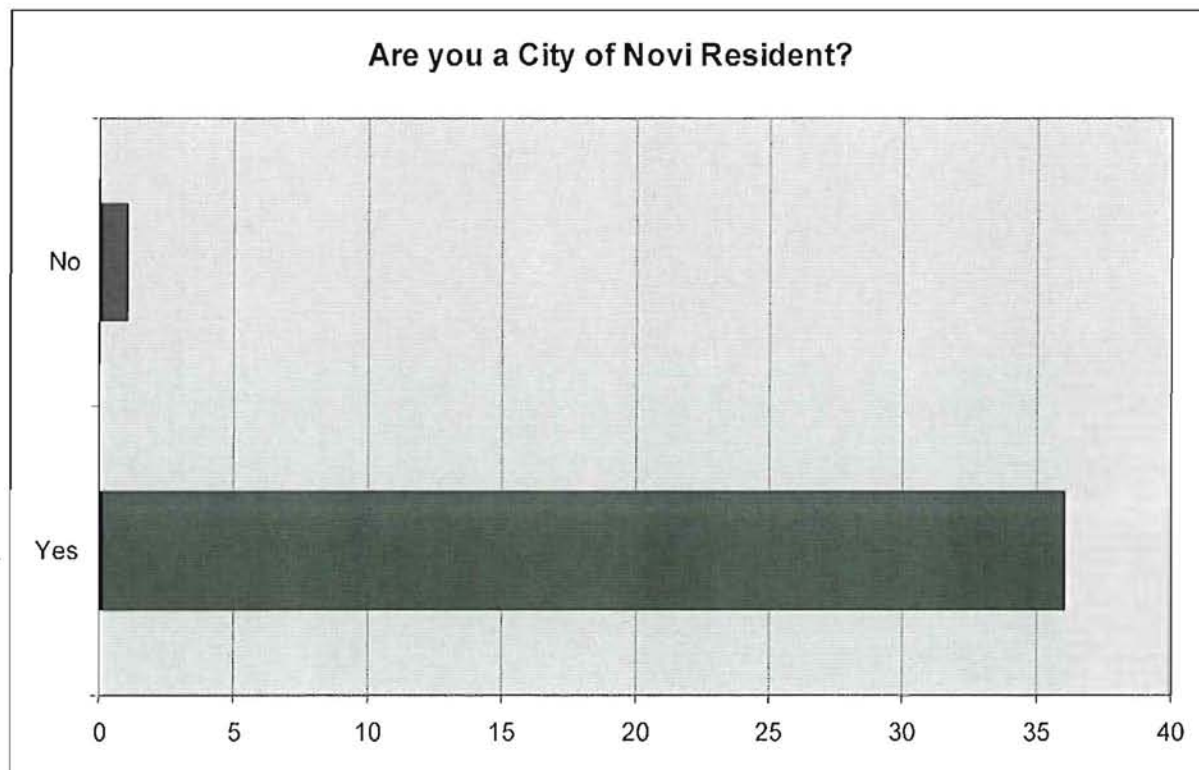
**INSTITUTIONAL USES ON
PARCELS 25 ACRES OR LARGER**

MEMORANDUM

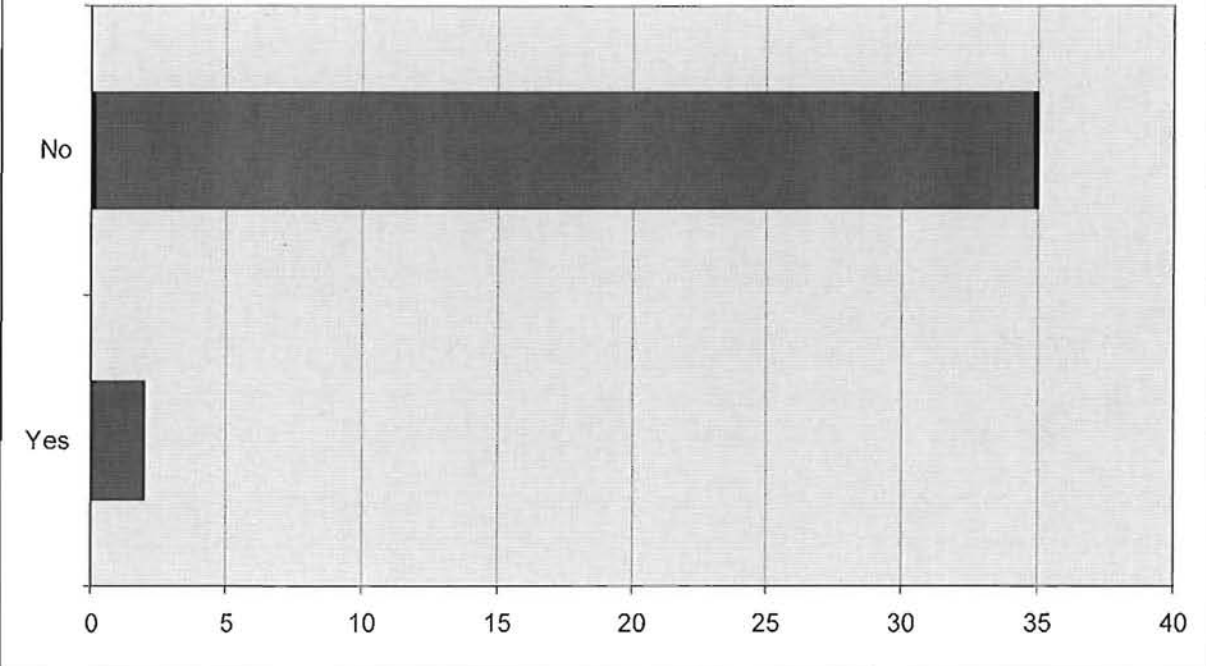


TO: MEMBERS OF THE PLANNING COMMISSION
FROM: KRISTEN KAPELANSKI, PLANNER
THRU: BARBARA MCBETH, COMMUNITY DEVELOPMENT DEPUTY
DIRECTOR
SUBJECT: PROPOSED ORDINANCE REGARDING WIND
ENERGY – SURVEY RESULTS
DATE: JANUARY 4, 2010

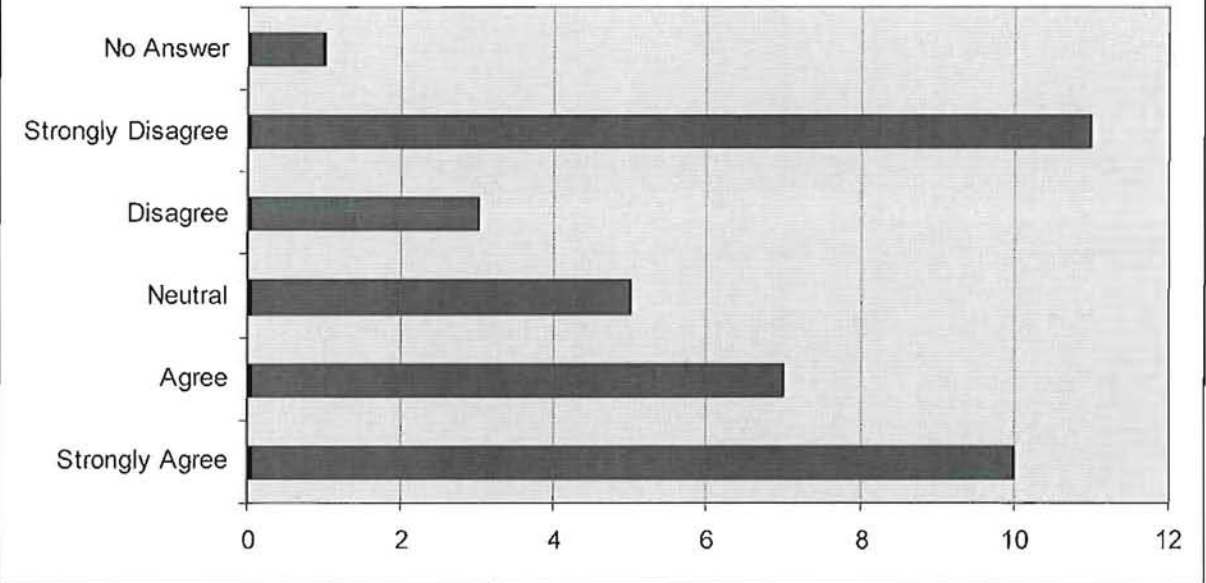
Below you will find the combined results of the attached wind energy survey posted on the City's website and distributed at the Fall for Novi event held in September 2009. These results reflect all of the surveys completed as of December 30, 2008. In total 37 surveys were submitted. If you have any questions related to the survey or the results, please contact me.



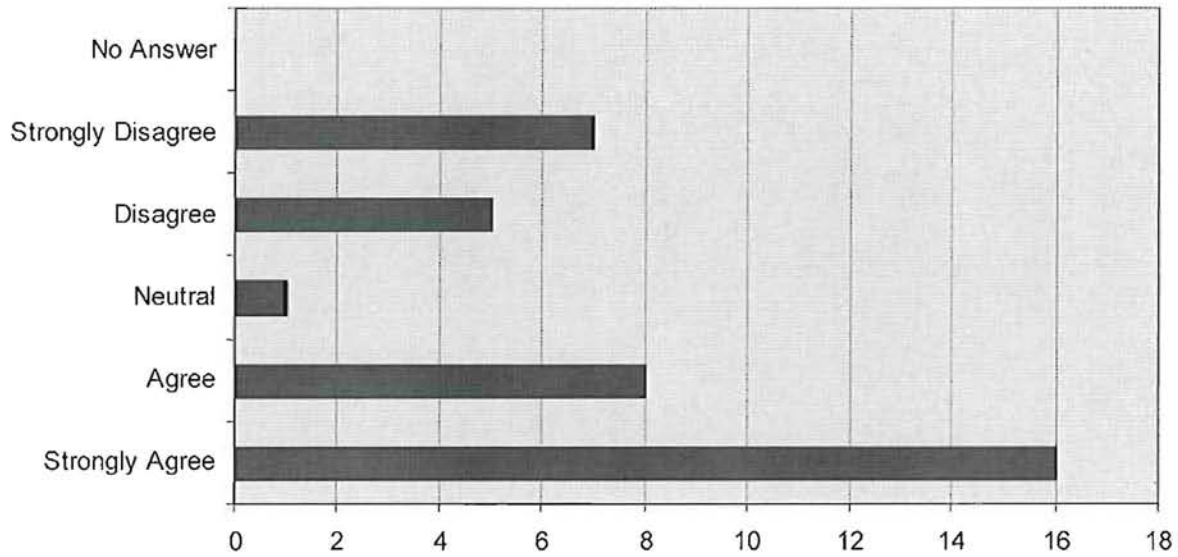
Are you a City of Novi Business Owner?



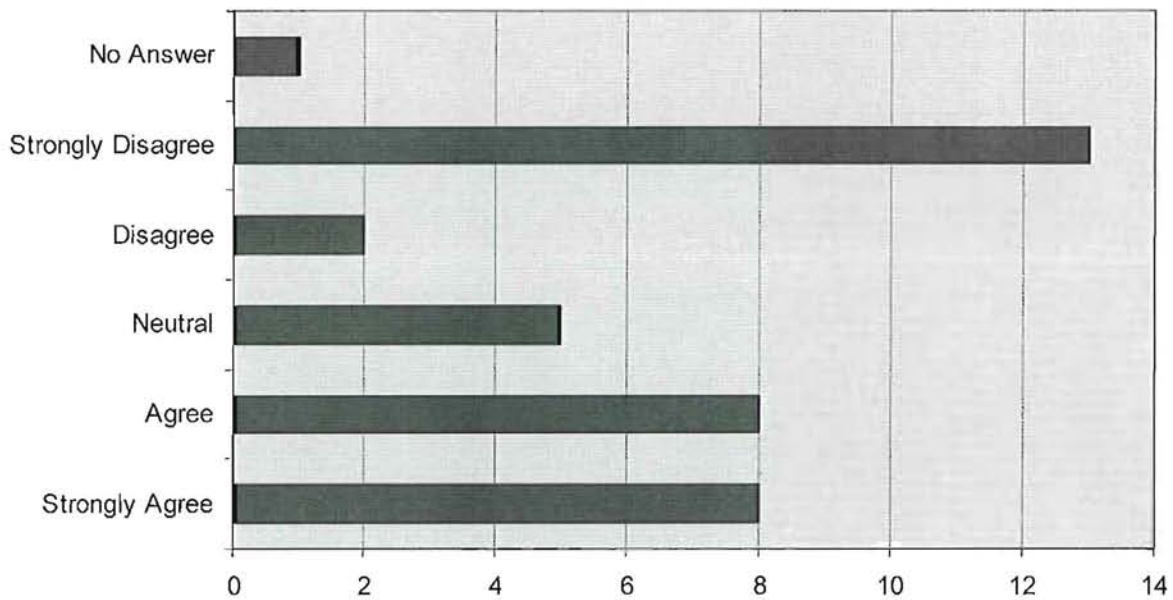
Structure-mounted wind turbines projecting up to fifteen feet above the roofline of a structure should be permitted in residential districts.



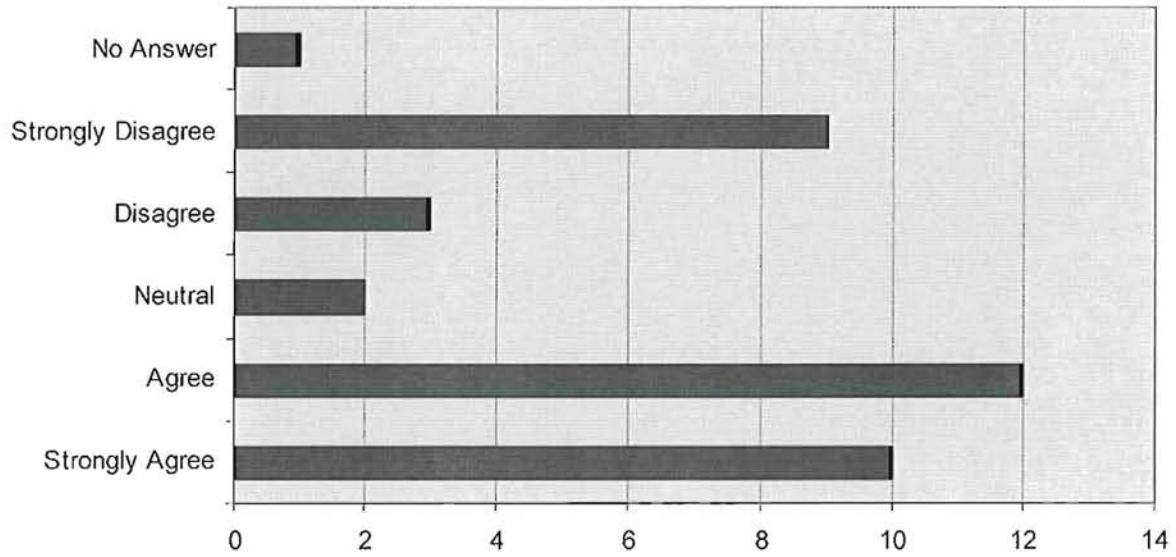
Structure-mounted wind turbines projecting up to fifteen feet above the roofline of a structure should be permitted in commercial, office and industrial districts.



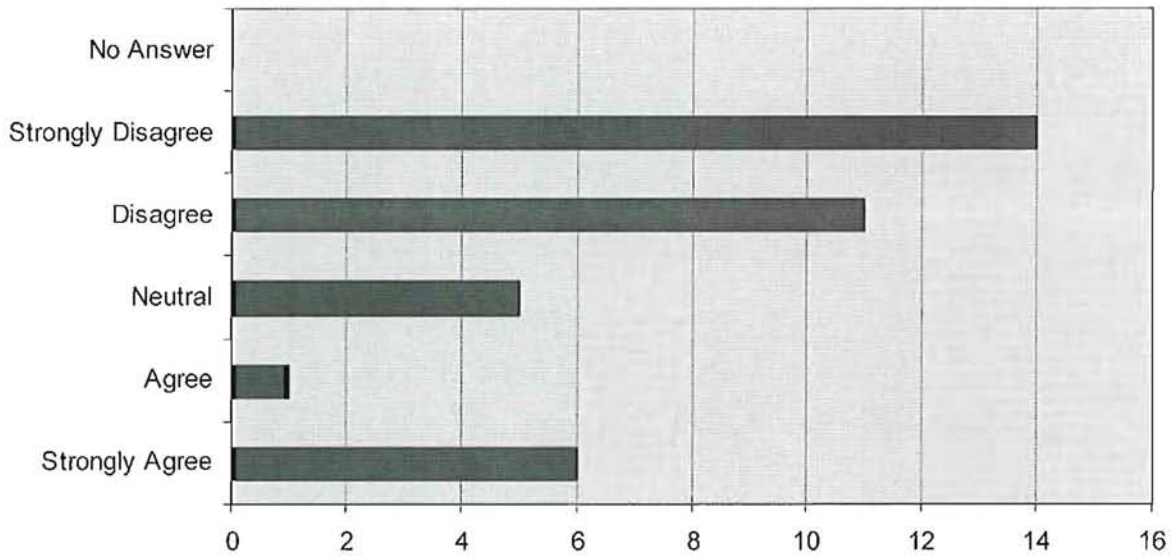
Small-scale tower-mounted wind turbines up to a height of sixty feet should be permitted in residential districts.



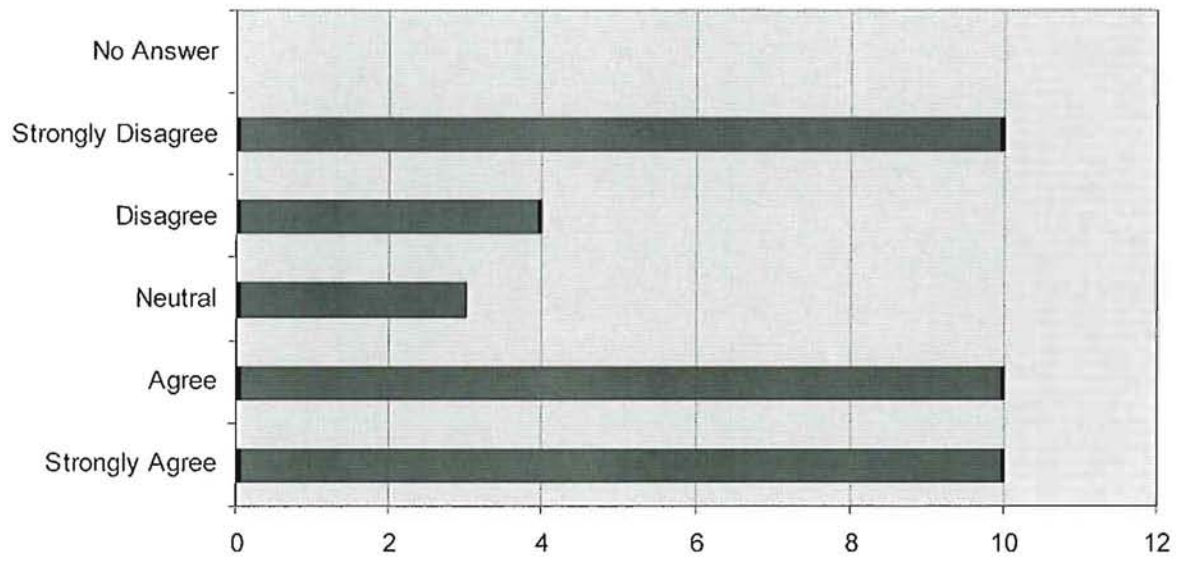
Small-scale tower-mounted wind turbines up to a height of one-hundred feet should be permitted in commercial, office and industrial districts.



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.





cityofnovi.org

Wind Energy Survey

Novi is going green and the Community Development Department is conducting a survey to aid in the development of regulations to address the siting and design of wind turbines to harness wind energy.

Please feel free to review the proposed draft ordinance language for additional information. Following the compilation of the survey results, staff will present the findings of the survey along with draft ordinance language for consideration by the Planning Commission and the City Council.

Please take about five minutes to complete the survey. Questions can be directed to the Community Development Department at 248-347-0475. Thank you for your input.

1.) Are you a City of Novi Resident?

- Yes No

2.) Are you a City of Novi business owner?

- Yes No

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

- Strongly Agree Agree Neutral Disagree Strongly Disagree

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

- Strongly Agree Agree Neutral Disagree Strongly Disagree

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

- Strongly Agree Agree Neutral Disagree Strongly Disagree

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

- Strongly Agree Agree Neutral Disagree Strongly Disagree

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

- Strongly Agree Agree Neutral Disagree Strongly Disagree

8.) 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.

- Strongly Agree Agree Neutral Disagree Strongly Disagree

9.) Please note any additional comments you may have on the back.

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: JANUARY 4, 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.

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



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

PLEDGE OF ALLEGIANCE

Chair Pehrson led the meeting attendees in the recitation of the Pledge of Allegiance.

APPROVAL OF AGENDA

Moved by Member Baratta and seconded by Member Larson.

VOICE VOTE ON THE AGENDA APPROVAL MOTION MADE BY MEMBER BARATTA AND SECONDED BY MEMBER LARSON:

A motion to approve the July 15, 2009 Planning Commission Agenda. *Motion carried 9-0.*

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.

**IMPLEMENTATION COMMITTEE
DRAFT MEETING MINUTES
MAY 6, 2009 - EXCERPT**

EXCERPT FROM DRAFT MINUTES



IMPLEMENTATION COMMITTEE
City of Novi Planning Commission
MAY 6, 2009 at 6:00 p.m.
Novi Civic Center – Mayor’s Conference Room
45175 W. Ten Mile, Novi, MI 48375
(248) 347-0475

Roll Call

Attending: Victor Cassis, Michael Meyer, Mark Pehrson and Leland Prince

Staff Support: Kristen Kapelanski

Also attending: Barbara McBeth

Discussion Items

Discussion of Possible Wind Energy Ordinance

Discussion of wind energy ordinance proposed by staff regarding regulations for wind turbine location, installation and operation.

Chair Meyer stated the Wind Energy Ordinance is the next item for consideration. Chair Meyer stated that his reading of the materials indicated that there may not be sufficient wind in this part of Michigan and inquired about the person in the news promoting this technology.

Member Cassis said the person is T. Boone Pickens who is spending hundreds of millions of dollars in advertising and lobbying in wind energy and gas technology. Member Cassis said Mr. Pickens has gas wells across Texas.

Deputy Director Community Development Barbara McBeth stated we also have this interest in Novi too, including a company that wanted move to Novi to manufacture wind turbines.

Planner Kapelanski stated that we had a resident call the other day to ask what kind of regulations we have in place for wind turbines.

Planner Kapelanski stated that she would give us a quick overview of the proposed ordinance. Staff is proposing this ordinance because we expect to get more and continued interest for people proposing wind turbines for private residential homes and businesses. As Chair Meyer mentioned, there is not adequate wind currently in Novi for utility-grade wind turbines. The ordinance addresses three types of turbines, with different standards for each type. The small tower-mounted wind energy turbine would be a permitted use in all districts, with a height not to exceed 100 feet, would be required to be in the rear yard with the setback equal to the height of the tower. The small structure-mounted wind energy turbine would be mounted on the roof or side of a business or residence. The structure-mounted turbine could not exceed 15 feet above the roof line, be required to be setback at least 15 feet from all property lines. This is proposed to be a permitted use in all districts.

The medium wind energy turbines would be larger and would probably look like what the commission members have seen in the western US. These turbines would have a height not to exceed 150 feet and would be limited to one turbine for every 2.5 acres. A rear yard location is

required, with a setback equal to the height of the tower and additional setbacks adjacent to occupied buildings. These medium-size turbines would be Special Land Uses in the I-1, I-2 and OST Districts only.

Ms. Kapelanski stated that staff put together this ordinance based on ordinances that have been passed in Ottawa County and Huron County. The State of Michigan Department of Labor of Economic Growth also has a sample ordinance. Staff expects that the Michigan Association of Planning would be coming out with a sample ordinance soon and we may incorporate additional regulations as further review takes place. Staff will seek out wind energy industry representatives to see if there is anything we might be missing in that regard.

Member Pehrson stated that another type of turbine for consideration is a cylindrical, rotating type, the kind that rotates on the axis of the pole. It is probably more relevant for residential uses than the radial/spherical type. The ordinance does propose a measurement standard pursuant to shadow flicker and Member Pehrson would like to see what the pluses and minuses are for that rating. Like an LED light, shadow flicker can trigger epileptic seizure.

Member Pehrson suggested that staff speak with people in the industry. The types of materials used in the tower structure should be regulated, as to the permanency of the paint or the coating on the outside of the metal surface to prevent rust from forming. Member Pehrson's experience is that there is a quality difference in the manufacturing process and suggests adding a paragraph to the ordinance requiring maintenance by the homeowner or property owner.

Member Pehrson stated that, based on the arguments he heard a few years ago regarding location and height of cell towers, this ordinance may also generate controversy. Member Pehrson asked if the ground clearance standard proposed in the ordinance is to the lowest point of the rotational blade itself.

Ms Kapelanski answered, that is the correct standard.

Member Pehrson mentioned a type of turbine with a guard around the blades, similar to an oscillating fan with a cage around it, which can be provided to protect birds. Typically, birds are smart enough to avoid nesting on the turbine, but in this area devoid of wind, Member Pehrson questioned how many people are going to spend \$20,000 to \$30,000 to put it in. Member Pehrson asked about the number of turbines permitted: In the small turbine category, one is permitted per parcel, but for the larger turbines, does the ordinance allow two per parcel.

Planner Kapelanski stated one medium size turbine is permitted for 2.5 acres. For structure mounted turbines, two would be permitted per building.

Member Pehrson confirmed that for the small tower mounted turbine, one is permitted per parcel.

Member Kapelanski answered, that was correct.

Member Pehrson said he presumed that would be more for residential than the industrial use. Member Pehrson asked if the ordinance would allow turbines to be mounted to a building structure.

Member Kapelanski answered yes, up to a height of 15 feet above the roof line. The Building Division will review for structural concerns.

Member Pehrson asked about the electrical equipment use, and considered adding some standards or size limitations for a control enclosure box, the generator source, or the transmitter than is set to the grid. These units can be large in size. Member Pehrson suggested adding standards for a voltage warning to be placed on all devices. Member Pehrson reviewed the drawings and saw guy wires, and inquired if all structures will not be permitted to use guy wires.

Ms. Kapelanski answered that guy wires would not be permitted.

Member Pehrson said that one of his last comments is on the decommissioning. Member Pehrson would like to see a requirement for the wind generator to be removed much sooner than 12 months after the end of the useful life. A better definition for how and what constitutes useful life is needed. On page 5, sub-paragraph F, the very last sentence, Member Pehrson confirmed that "wires necessary to connect the wind generator to the tower wiring are exempt from this requirement", means the wiring will be placed underground.

Ms. Kapelanski answered that Member Pehrson is correct.

Chair Meyer stated that safety seems to be a key issue.

Member Cassis inquired if we are only proposing wind turbines would be permitted in the I-1 and I-2 districts.

Ms. Kapelanski answered Member Cassis by saying that the I-1 and I-2 districts would allow turbines taller than 100 feet; other districts would allow shorter wind turbines.

Member Cassis said that this discussion was negated at the beginning by saying we do not have wind in Novi. It is really not practical and the person that called should be asked if they every investigated the expense to putting in a wind turbine as to what utility they can get out of it and what saving are they going to get out of it. Member Cassis said we might even suggest solar to the person.

Ms. Kapelanski stated that we have had calls investigating the use of solar panels in Novi. Right now, if someone wants to put up a solar panel, the Building Division will review building permits, but we do not have any zoning ordinance standards.

Member Cassis said that solar is more practical in Novi and more efficient. It is also less costly because it generates more electricity. Mr. Cassis is familiar with solar because he has studied this technology. Solar panels are found throughout Michigan. There are differences in solar technology; one is called thin film, which is not made of thick glass. Two or three companies supply this technology. It is less costly and it transmits electricity more efficiently. It can be installed on the roof of the residence does not cause structural problems.

Member Cassis believes solar is better than wind is because of the resident complaints regarding basketball hoops and cell phone towers. Noise is another thing. Mr. Cassis mentioned how many items we put outside of our homes: air compressors, filters for pools, generators for power and satellite dishes. Member Cassis asked if we should introduce this ordinance for a few people that want a wind turbine, without considering a practical application, cluttering our neighborhoods, and noise considerations.

Ms. Kapelanski said that the research found that the expected noise generated is about 5 decibels above everyday, neighborhood-type noise.

Member Cassis is thinking about maintenance, looks, noise and the fact that it is not really that practical in our area.

Member Pehrson stated that there are always going to be the people that want to be the first to have the technology. New technologies will come along and efficiencies will go up in wind, solar and geo-thermo to eventually be comparable to what is paid per kilowatt. This ordinance will put a framework around the idea, and as we learn more we can tighten up the requirements.

Member Cassis used recycling as an example - it is costly to recycle and uses our resources. Member Cassis said we have to be very careful when we introduce a new ordinance with regard to the practicality of the technologies and the cost.

Ms. Kapelanski said that our main goal in introducing this ordinance is to have standards and regulations in place when someone comes in to put up a wind energy turbine. The ordinance will put a process in place, specify setback and height standards, as well as maintenance standards so staff can assist the public with these expected requests, and so we do not miss something in the process of review.

Chair Meyer said that he thinks the stated intent is just excellent: to promote the safe, effective and efficient use of the wind energy turbine, to preserve and protect public health, safety, welfare and quality of life; and realizing the potential adverse impact of it and establishing standards and procedures by which the design, engineering, installation, operation and maintenance will be governed. Chair Meyer said the intent of the ordinance is clear for anyone curious to know. Chair Meyer asked for clarification regarding the statement "an up-wind turbine should shall be required"; what is a down-wind turbine.

Ms. Kapelanski said she has been researching various types of wind turbines. Most of the ordinances she reviewed recommended an up-wind turbine and she has not yet found out the difference, but will continue her research.

Chair Meyer stated that he had to leave at 7:15 p.m. and wished everyone a good evening.

Deputy Director Community Development, Ms. McBeth stated that some of these ordinance provisions might be open for debate. Perhaps the committee likes the idea of wind turbines in the light industrial, the general industrial and the OST districts, but thinks the residential district standards may allow a structure that is too tall. Ms. McBeth asked Ms. Kapelanski to find out if there could be a lower height limit in residential, but still able to capture the wind. Additional provisions may be added to allow uses permitted subject to Special Land Use approval.

Member Cassis said that he would think I-1 and I-2 would be possibilities that he would consider. But to set a standard, we can always say they are not allowed in residential. For light or heavy industrial, we can make standards. We can always tell the residents that we do not allow wind energy turbines.

Ms. Kapelanski said there would be that option: we could allow wind turbines subject to Special Land Use approval, or we could not allow them in residential districts or other districts.

Member Cassis said maybe the Planning Commission or the City Council will say, yes we want them. But in his view, there are too many things that residents put outside of their homes.

Member Pehrson mentioned that a wind farm was proposed along Martha's Vineyard, out in the sea 75 miles, where you couldn't even see it. People objected to that, and people in Novi may object to 100 foot tall wind turbines in the residential district.

Member Cassis said if we propose this ordinance to the people of Novi, we will have 300-400 people here.

Ms. Kapelanski said those are all considerations in trying to develop a new ordinance.

Ms. McBeth said that Ms. Kapelanski will look into this ordinance some more and consider if it may be appropriate to install a wind turbine if the parcel size is at least an acre, or as a part of a farm, or is located a certain distance to the neighbor.

Member Cassis said that farmers up north to the west have windmills.

Ms. McBeth said that she was thinking about the ITC building and, while they have not proposed it, maybe would want to put a wind turbine on their building. That building is already 100 feet tall and another 15 feet would be permitted under the ordinance standards.

Member Cassis that there are areas that he would go along with.

Ms. Kapelanski said that the next regularly scheduled meeting is November 4, 2009 and we will send out a reminder. Planner Mark Spencer is also working on some updates to the residential zoning or use options, and we may schedule an additional meeting of the Implementation Committee before November.

Ms. McBeth asked if the committee found this meeting useful for discussion of text amendments, or is it preferable to present amendments to the Commission as a whole?

Member Pehrson stated that is was useful to have the discussion in this setting so the committee is able to throw in some ideas. Member Pehrson suggested that another meeting can be scheduled by staff, as needed.