Zoning for Energy

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City of Albany, NY
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§ 375-93. Solar energy equipment.

[Amended 3-15-1999 by Ord. No. 62.121.98; 10-6-2008 by Ord. No. 2.12.08]

A. Definitions. As used in this section, the following terms shall have the meanings indicated:

BUILDING-INTEGRATED PHOTOVOLTAIC (BIPV) SYSTEMS
A solar energy system that consists of integrating photovoltaic modules into the building envelope, such as the roof or the facade.

GROUND-MOUNTED
Directly installed in the ground and not attached or affixed to an existing structure.

PASSIVE SOLAR SYSTEM
A solar energy system that relies upon original or retrofitted design features and building materials of a structure to enhance the use of natural forces to provide heating and cooling within a building.

PHOTOVOLTAIC (PV) SYSTEMS
A solar energy system that produces electricity by the use of semiconductor devices, called photovoltaic cells, that generate electricity whenever light strikes them.

SOLAR COLLECTOR
A solar photovoltaic cell, panel, or array, or solar hot air or water collector device, which relies upon solar radiation as an energy source for the generation of electricity or transfer of stored heat.

SOLAR ENERGY EQUIPMENT
Solar collectors, controls, energy storage devices, heat pumps, heat exchangers, and other materials, hardware or equipment necessary to the process by which solar radiation is collected, converted into another form of energy, stored, protected from unnecessary dissipation and distributed. Solar systems include solar thermal, photovoltaic, and passive solar.

SOLAR-THERMAL SYSTEMS
A solar energy system that generates energy by collecting and focusing solar energy onto a small area to heat a fluid to a high temperature, which in turn drives an electric generator.

B. Solar energy and solar access are recognized as valid public rights, and the use of solar energy equipment for the purpose of providing electricity and energy for heating and/or cooling has been determined to be a priority and is a necessary component of the City of Albany's current and long-term sustainability agenda; therefore, passive and active solar energy equipment are permitted outright as an accessory use to all principal permitted uses within all zoning districts, subject to the restraints imposed by this chapter and Article XII of Chapter **42**. Where there is a conflict between solar energy goals and the goals of this chapter, the applicant may make redress to the Board of

Zoning Appeals for a determination pursuant to § **375-25**, and the Board shall regard solar energy as a factor to be considered, weighed and balanced along with other factors.

C. Installations of solar energy equipment in any residential district or C-1 Neighborhood Commercial District shall comply with the following guidelines:

(1) Placements of solar collectors on a gabled, hipped or mansard roof shall be mounted parallel to and no more than 12 inches from the roof surface.

(2) Placement of solar collectors on flat roofs shall be allowed as of right in nonhistoric districts, provided that panels do not extend past the roofline. While there are aesthetic considerations, the City has determined that the environmental and economic benefits outweigh potential aesthetic impacts. Planning staff shall approve installation designs prior to issuance of permits. If denied by Planning staff, the Director of Buildings shall issue a letter of denial, and the applicant may appeal this decision to the Board of Zoning Appeals.

(3) Installations in C-1 Districts shall be reviewed by Planning staff prior to the issuance of building permits as per § **375-43**. Planning staff shall approve installation designs prior to issuance of permits. If denied by Planning staff, the Director of Buildings shall issue a letter of denial, and the applicant may appeal this decision to the Board of Zoning Appeals.

(4) Installations in designated historic districts as shall require a certificate of appropriateness form the Historic Resources Commission as per §§ **42-90** and **375-57**.

D. Installations of rooftop and building-mounted solar energy equipment in all other districts shall be permitted as an accessory use.

E. Ground-mounted solar collectors are permitted as accessory structures in all zoning districts, subject to the following requirements:

(1) The location of the solar collector meets all applicable setback requirements for accessory structures as identified in § **375-136**.

(2) The height and the total surface area of all ground-mounted and freestanding solar collectors on the lot shall require approval from Planning staff prior to the issuance of building permits and take into account potential impacts on neighboring properties. If denied by Planning staff, the Director of Buildings shall issue a letter of denial, and the applicant may appeal this decision to the Board of Zoning Appeals.

(3) The solar collector is located in a side or rear yard.

(4) The solar collectors do not emit unreasonable glare and negatively impact adjacent properties.

F. Building-integrated photovoltaic (BIPV) systems shall be permitted in all districts subject to all necessary permit and Building Code requirements.

G. Solar energy equipment shall be located in a manner to minimize view blockage for surrounding properties and shading of property to the north, while still providing adequate solar access for collectors.

H. If a solar collector ceases to perform its originally intended function for more than 12 consecutive months, the property owner shall remove the collector, mount and associated equipment by no later than 90 days after the end of the twelve-month period.

Town of Barnstable, MA
Tuesday, November 6, 2012

§ 240-44.2. Ground-Mounted Solar Photovoltaic Overlay District.

[Added 10-7-2010 by Order No. 2011-006 *Editor's Note: Section 3 of this order reads as follows: "A building permit shall be issued by the Building Commissioner within one year from the date an application submitted is deemed complete by the Building Commissioner. Failure to issue a building permit within one year shall not result in a constructive grant."* **]**

A. Purpose.

(1) This section promotes the creation of new large-scale, ground-mounted solar photovoltaic installations by providing standards for the placement, design, construction, operation, monitoring, modification and removal of such installations that address public safety, minimize impacts on scenic, natural and historic resources and for providing adequate financial assurance for the eventual decommissioning of such installations. This section ordinance is adopted pursuant to the Commonwealth of Massachusetts Green Communities Act.

(2) The provisions set forth in this section shall apply to the construction, operation, and/or repair of large-scale, ground-mounted solar photovoltaic installations.

B. Applicability. This section applies to large-scale (250 kW), ground-mounted solar photovoltaic installations proposed to be constructed after the effective date of this section. This section also pertains to physical modifications that materially alter the type, configuration, or size of these installations or related equipment.

C. District established. A Ground-Mounted Solar Photovoltaic Overlay District (GMSPOD) is hereby established, and shall be considered as superimposed over any other districts established by this chapter, and is shown as an overlay on the Official Zoning Map established pursuant to § **240-6**, Zoning Map

D. Definitions. These definitions shall apply to § **240-44.2** exclusively:

AS-OF-RIGHT SITING

The ground-mounted solar photovoltaic installation may proceed without the need for a special permit, variance, amendment, waiver, or other local discretionary approval. As-of-right development is subject to Article IX, Site Plan Review. As-of-right solar photovoltaic installations that are consistent with the Zoning Ordinance and applicable state and federal law can be reasonably regulated and approved by the Building Commissioner.

GROUND-MOUNTED SOLAR PHOTOVOLTAIC INSTALLATION

A large-scale solar photovoltaic (PV) system that is structurally mounted on the ground, not roof-mounted, and has a nameplate capacity of at least 250 kW DC.

OFF-GRID SYSTEM

A solar photovoltaic installation where all energy generated on the installation site is consumed on that site and does not send any energy into the electrical grid for distribution.

RATED NAMEPLATE CAPACITY

The maximum rated output of electric power production of the photovoltaic system in direct current (DC).

E. Application and review.

(1) Ground-mounted, large-scale solar photovoltaic installations with 250 kW or larger of rated nameplate capacity shall undergo site plan review pursuant to Article IX, Site Plan Review, prior to construction, installation or modification as provided in this section. All plans and maps shall be prepared, stamped and signed by a professional engineer licensed to practice in Massachusetts.

(2) Required documents. In addition to the requirements of § **240-102**, Contents of site plan, the project proponent shall provide the following documents:

(a) A site plan showing:

[1] Property lines and physical features, including roads, for the project site;

[2] Proposed changes to the landscape of the site, grading, vegetation clearing and planting, exterior lighting, screening vegetation or structures;

[3] Blueprints or drawings of the solar photovoltaic installation signed by a professional engineer licensed to practice in the Commonwealth of Massachusetts showing the proposed layout of the system and any potential shading from nearby structures;

[4] One- or three-line electrical diagram detailing the solar photovoltaic installation, associated components, and electrical interconnection methods, with all National Electrical Code compliant disconnects and overcurrent devices;

[5] Documentation of the major system components to be used, including the PV panels, mounting system, and inverter;

[6] Name, address, and contact information for proposed system installer;

[7] Name, address, phone number and signature of the project proponent, as well as all co-proponents or property owners, if any;

[8] The name, contact information and signature of any agents representing the project proponent; and

(b) Documentation of actual or prospective access and control of the project site (See also Subsection **G** below.);

(c) An operation and maintenance plan (See also Subsection **H** below.);

(d) Zoning district designation for the parcel(s) of land comprising the project site (submission of a copy of a Zoning Map with the parcel(s) identified is suitable for this purpose);

(e) Description of financial surety that satisfies Subsection **N(3)** below.

F. Site control. The project proponent shall submit documentation of actual or prospective access and control of the project site sufficient to allow for construction and operation of the proposed solar photovoltaic installation.

G. Operation and maintenance plan. The project proponent shall submit a plan for the operation and maintenance of the ground-mounted solar photovoltaic installation, which shall include specific measures for maintaining safe access to the installation, a stormwater management plan, and general procedures for and frequency of operational maintenance of the installation.

H. Utility notification. No ground-mounted solar photovoltaic installation shall receive a building permit until an executed interconnect agreement with Nstar, the utility company operating the electrical grid, has been submitted to the Building Commissioner. Off-grid systems are exempt from this requirement.

I. Dimensional requirements. Ground-mounted solar photovoltaic installations are subject to the front, side and rear yard setbacks as set forth in the underlying zoning district(s).

J. Design standards.

(1) Lighting. Lighting of solar photovoltaic installations shall be consistent with local, state and federal law. Lighting of other parts of the installation, such as accessory structures, shall be limited to that required for safety and operational purposes, and shall be reasonably shielded from abutting properties.

(2) Signage. Signs on large-scale, ground-mounted solar photovoltaic installations shall comply with Article VII, Sign Regulations. A sign shall be required to identify the owner and provide a twenty-four-hour emergency contact phone number. Solar photovoltaic installations shall not be used for displaying any advertising.

(3) Accessory structures. All structures accessory to ground-mounted solar photovoltaic installations shall be subject to reasonable regulations concerning the bulk and height of structures, lot area, setbacks, open space, parking and building coverage requirements. To avoid adverse visual impacts, all such accessory structures, including but not limited to, equipment shelters, storage facilities, transformers, and substations, shall be architecturally compatible with each other, multiple accessory structures shall be clustered to the greatest extent feasible and views of such structures to residential properties and roadways shall be screened with landscaping.

K. Utility connections. Reasonable efforts, as determined by site plan review, shall be made

to place all utility connections from the solar photovoltaic installation underground, depending on appropriate soil conditions, shape, and topography of the site and any requirements of the utility provider. Electrical transformers for utility interconnections may be above ground if required by the utility provider.

L. Safety and environmental standards.

(1) Emergency services. The large-scale solar photovoltaic installation owner or operator shall provide a copy of the project summary, electrical schematic, and site plan to the local Fire Chief. Upon request the owner or operator shall cooperate with local emergency services in developing an emergency response plan. All means of shutting down the solar photovoltaic installation shall be clearly marked. The owner or operator shall identify a responsible person for public inquiries throughout the life of the installation.

(2) Land clearing, soil erosion and habitat impacts. Clearing of natural vegetation shall be limited to what is necessary for the construction, operation and maintenance of the large-scale, ground-mounted solar photovoltaic installation or otherwise prescribed by applicable laws, regulations, and bylaws.

M. Monitoring and maintenance.

(1) Solar photovoltaic installation conditions. The large-scale, ground-mounted solar photovoltaic installation owner or operator shall maintain the facility in good condition. Maintenance shall include, but not be limited to, painting, structural repairs, and integrity of security measures. Site access shall be maintained to a level acceptable to site plan review. The owner or operator shall be responsible for the cost of maintaining the solar photovoltaic installation.

(2) Modifications. All material modifications to a solar photovoltaic installation made after issuance of the required building permit shall require site plan review approval.

N. Abandonment or decommissioning.

(1) Removal requirements. Any large-scale, ground-mounted solar photovoltaic installation which has reached the end of its useful life or has been abandoned consistent with this section shall be removed. The owner or operator shall physically remove the installation no more than 150 days after the date of discontinued operations. The owner or operator shall notify the Building Commissioner by certified mail of the proposed date of discontinued operations and plans for removal. Decommissioning shall consist of:

(a) Physical removal of all large-scale, ground-mounted solar photovoltaic installations, structures, equipment, security barriers and transmission lines from the site.

(b) Disposal of all solid and hazardous waste in accordance with local, state, and federal waste disposal regulations.

(c) Stabilization or revegetation of the site as necessary to minimize erosion. The Building Commissioner may allow the owner or operator to leave landscaping or designated below-grade foundations in order to minimize erosion and disruption to vegetation.

(2) Abandonment. Absent notice of a proposed date of decommissioning or written notice of extenuating circumstances, the solar photovoltaic installation shall be considered abandoned when it fails to operate for more than one year without the written consent of the Planning Board. If the owner or operator of the large-scale, ground-mounted solar photovoltaic installation fails to remove the installation in accordance with the requirements of this section within 150 days of abandonment or the proposed date of decommissioning, the Town may enter the property and physically remove the installation.

(3) Financial surety. Proponents of large-scale, ground-mounted solar photovoltaic projects shall provide a form of surety, either through escrow account, bond or otherwise, to cover the cost of removal and disposal in the event the Town must remove the installation and remediate the landscape, in an amount and in a form acceptable to the Town Attorney but in no event to exceed more than 125% of the cost of removal and compliance with the additional requirements set forth herein, as determined by the project proponent. Such surety will not be required for municipally or state-owned facilities. The project proponent shall submit a fully inclusive estimate of the costs associated with removal, prepared by a qualified engineer. The amount shall include a mechanism for pro rating removal costs as they may be affected by inflation or changes to disposal regulations.

Town of Lewisboro, NY
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§ 220-12. Yards and setbacks.

A. No part of a yard or other open space provided about any building or on any lot for the purpose of complying with the provisions of this chapter shall be included as any part of the yard or open space for any other building or any other lot.

B. Obstructions in yards. No buildings or structures or any projection from buildings or structures shall be permitted in a required yard, except as follows:

[Amended 9-10-2003 by L.L. No. 7-2003]

(1) Architectural features such as windowsills, door frames, chimneys, eaves or cantilevered roofs may project up to three feet into any required yard, provided that such architectural features shall not occupy more than 25% of the area of the wall from which they project.

(2) Paved open terraces shall be considered in the determination of lot coverage for all permitted residential and nonresidential land uses and shall not be permitted to project to a point closer than the minimum required setback distance from any property line for all permitted residential and nonresidential land uses.

(3) No porches or balconies may project into any required yard area.

C. Corner lots. On a corner lot, there shall be provided a side yard on a side street equal in depth to the required front yard.

D. Exception for existing alignment of buildings. If, on one side of the street within 250 feet of any lot, there is pronounced uniformity of alignment of the fronts of existing buildings and of depths of front yards less than the required minimum depths specified in this chapter, the Zoning Board of Appeals may permit a reduction in the front yard setback requirement, provided that the spirit and intent of this chapter is met and that the setback shall conform as nearly as practicable to those existing on neighboring lots.

E. Walls or fences in required yard areas.

[Amended 9-10-2003 by L.L. No. 7-2003]

(1) Walls or fences shall not exceed six feet in height measured from adjacent ground level to the top of such wall, fence or combination thereof, except that in R-1/2A District or less restrictive residential districts, walls or fences shall not exceed four feet in height.

(2) Walls or fences that are between four feet and six feet in height, are located along a street line and are constructed of either chain link or have a surface area that is more than 25% opaque within any five-foot horizontal section shall be subject to the following limitations:

(a) A minimum setback of five feet from any street line for fences under 25 feet in overall length, and a minimum setback of 10 feet for fences 25 feet or over in overall length. In no case shall any fence be located less than 30 feet from the street center line.

(b) Limited in total length along any one street of any one lot to 100 feet.

(c) Located no closer than 15 feet to any side lot line or, on a corner lot, located no closer than 15 feet to the intersecting street line.

(d) All fences 25 feet or over in overall length shall include landscaping between the fence and the street line along the length of the fence. Said landscaping shall include one ornamental tree planting for every 25 feet of fence length. Further landscaping is encouraged.

(3) Barbed-wire fences, razor fences and other fences constructed of sharp materials are prohibited in the Town of Lewisboro.

(4) The finished quality on the side of all walls and/or fences shall face outward from the premises towards the adjacent street or neighboring property.

F. Street sight distance.

(1) No fence, wall or planting shall be erected or placed on a lot so as to obstruct a clear line of sight for traffic on a public street.

(2) On a corner lot, no fence, wall or planting shall be erected, placed or maintained within a corner of a lot so as to obstruct a clear line of sight for traffic within the pavement and a straight line between two points, each 75 feet back from the theoretical intersection of the nearest edges of pavement prolonged. "Line of sight" is defined as observer's eye being four feet above the grade of the pavement edge and the object being one foot above the grade of the pavement edge.

(3) This provision shall not apply to existing trees, provided that no branches are closer than eight feet to the ground.

G. Solar panels.

[Added 9-10-2003 by L.L. No. 7-2003]

(1) Solar panels exceeding two square feet in area are not permitted in any front yard, on any face of a building or structure facing a street unless integrated with the ordinary construction of said building or structure, and/or in view of any adjacent street, except roof-mounted solar panels as set forth below.

(2) Ground-mounted solar panels shall:

(a) Be located in a side or rear yard only.

(b) Not exceed eight feet in height above the ground.

(c) Be fully screened from adjacent properties by fencing or a combination of evergreen and deciduous plantings.

(3) Roof-mounted solar panels:

(a) Permitted roof-mounted solar panels shall include integrated solar panels as the surface layer of the roof structure with no additional apparent change in relief or projection (the preferred installation), or separate flush-mounted solar panels attached to the roof surface.

(b) Separate flush-mounted solar panels shall be located on a rear- or side-facing roof, as viewed from any adjacent street, unless such installation is proven to be ineffective or impossible. The removal of potential obstructions such as interceding vegetation shall not be sufficient cause for permitting a front-facing roof installation.

(c) Separate flush-mounted solar panels installed on a building or structure with a sloped roof surface shall not project vertically above the peak of the roof to which it is attached, or project vertically more than five feet above a flat roof installation.

Town of Rhinebeck, NY
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§ 125-47. Solar and wind energy systems.

It is the policy of the Town to promote and encourage the use of solar and wind energy and to remove obstacles to the use of such systems. Use of solar energy for space heating, water heating or generating electricity reduces dependence upon finite fossil fuel resources, helps to reduce the amount of pollution resulting from the use of fossil fuels and reduces or eliminates carbon dioxide emissions. To the extent practicable, and in accordance with § 263 of New York State Town Law, the accommodation of solar and wind energy systems and equipment, and the protection of access to sunlight and wind for such equipment, shall be required in the application of the various review and approval provisions of this chapter. This means, for example, laying out roads and buildings in an east - west direction so that south-facing windows and solar collectors, whether to be installed immediately or planned for the future, can get direct sunlight. Roads should always be developed in a manner that protects natural resources, but if possible, laid out east - west as long as the environment is protected. The following additional provisions apply:

A. Any covenant, restriction, or condition contained in any deed, contract, security agreement, or other instrument affecting the transfer or sale of, or any interest in, real property that effectively prohibits or unreasonably restricts the installation or use of a solar and/or wind energy system is void and unenforceable.

B. For the purposes of this section, a covenant, restriction or condition effectively prohibits or unreasonably restricts the installation or use of a solar and/or wind energy system if it significantly increases the cost of a solar and/or wind energy system, or significantly decreases the efficiency or expected performance of such energy system.

C. For the purposes of this section, the following terms shall have the meanings indicated:

SIGNIFICANTLY
An amount exceeding 20% of the cost of the system or decreasing the efficiency of the solar and/or wind energy system by an amount exceeding 20%, as originally specified and proposed.

SOLAR ENERGY SYSTEM
A device or structural design feature, a substantial purpose of which is to provide daylight for interior lighting, or to provide for the collection, storage, conversion, and/or distribution of solar energy for space heating or cooling, water heating, or electricity generation and may be referred to as a "solar collector."

WIND ENERGY SYSTEM
Converts mechanical energy to electricity using a machine called a wind generator, wind turbine, wind power unit (WPU) or wind energy converter (WEC) and may be referred to as a "wind generator." Wind power technology has been around for nearly two millennia and

usually involves use of a wind turbine to power a pump or grinding stones, in which case the machine is usually called a "windmill."

D. Whenever approval is required for the installation or use of a solar and/or wind energy system, the application for a building permit shall be processed and approved by Town Code Enforcement Officer in the same manner as an application for approval of an architectural modification to the property, and shall not be willfully avoided or delayed. The following additional provisions apply to solar and/or wind energy systems:

(1) Building permits. Building permits are required.

(2) Building or structure alterations and additions. In general, alterations and additions to existing buildings for solar and wind energy systems must conform to lot coverage, height and setback (yard) requirements as described in the District Schedule of Area and Bulk Regulations. Editor's Note: The Schedules of Area and Bulk Regulations are included at the end of this chapter. Solar collectors and wind generators are permitted outright as an accessory use. This means the collectors are incidental to and support the principal use of the lot, such as a home or business. Solar collectors include any device used to collect direct sunlight for use in the heating or cooling of a structure, domestic hot water, or swimming pool, or the generation of electricity. This may include the use of solar greenhouses. Wind generators are also referred to as wind turbines, wind power units (WPU) or wind energy converters (WEC).

(3) Nonconforming residential uses. A solar collector or wind generator may be added to the existing principal building on a nonconforming residential lot without forcing the entire building to be brought up to current zoning standards.

(4) Lot coverage requirements. Solar collectors do not count as lot coverage if minimum standards are met, including but not limited to height and setback requirements.

(5) Height requirements. In residential zoning districts, solar collectors and wind generators may be mounted to extend up to four feet above the zoning district's height limit, or extend up to four feet above the ridge of a pitched roof. Also, the total height from existing grade to the top of the solar collectors or wind generator may not extend more than nine feet above the zoning district's height limit.

(6) Scenic district and scenic roads. Applications for solar collectors and wind generators within the Mid-Hudson Historic Shorelands Scenic District, a scenic area of statewide significance or on a designated scenic road require site plan approval from the Planning Board, limited to a review of the visual impacts of such collector(s) and/or generator(s). The Planning Board may require an applicant for a solar collector or wind generator to submit a viewshed analysis meeting the procedures identified within the New York State Department of Environmental Conservation's SEQR publication entitled "Assessing and Mitigating Visual Impacts."

(7) Additional height flexibility for solar collectors in the mixed-use and nonresidential zones. Applicable zoning districts include the BP, Cr-B, CB-N, CB-S, Gw-N, Gw-E, Gw-

S, GB, and ORP Districts. Because many rooftops in the mixed-use and nonresidential zoning districts include a variety of mechanical and architectural features, solar collectors are treated just like those features. Solar collectors may extend up to 15 feet above the maximum height limit, so long as the combined total coverage of the rooftop features does not exceed 25% of the roof area when typical features (such as elevator penthouses) are present. If rooftop features exceed roof coverage of 25%, solar collectors may only extend seven feet above maximum height limits.

(8) Protecting solar access to property to the north. In all zoning districts except the Rc-B, and ORP Districts, a solar collector exceeding the zoning district height limit must be placed so that it does not shade the property to the north on January 21 at 12:00 noon any more than a structure built to the maximum permitted bulk for that zone. For assistance in determining solar exposure, please see the Sun Chart brochure available from the Town Clerk. In the Rc-B and ORP Zoning Districts, the applicant shall either locate a solar collector at least 10 feet from the north edge of the roof or provide shadow diagrams to demonstrate the lack of additional shading on January 21 as described above.

(9) Setback (yard) requirements. Solar collectors may be located in yards according to the following conditions:

(a) In a side yard, up to 10 feet from the side property line.

(b) In a rear yard, up to 15 feet from the rear property line. When there is a dedicated alley the solar collector may be located up to 15 feet from the center line of the alley.

(c) Solar collectors are not permitted in a front yard, except for "solar greenhouses" that are integrated into the principal structure.

Village of Briarcliff Manor, NY
ue da , No em er 6, 2012

§ 220-9.1. Regulation of solar energy collectors.

[Added 6-7-2007 by L.L. No. 3-2007]

A. Statement of purpose. The Board of Trustees desires to facilitate the noncommercial use of solar energy collectors to further energy saving and conservation, but the Trustees also recognize that regulation of the construction, placement, and operation of solar energy collectors are matters of public importance which concern issues of aesthetics, lighting, and the possible depreciation of property values by reason of improperly installed, placed, maintained, or operated solar energy collectors. This section shall be read and construed in furtherance of the foregoing purposes and is enacted under the authority granted by New York State Village Law § 7-700.

B. Generally applicable standards. All solar energy collectors shall be subject to the following requirements:

(1) Solar energy collectors shall be permitted only to provide power for use by owners, lessees, tenants, residents, or other occupants of the premises on which they are erected, but nothing contained in this provision shall be construed to prohibit the sale of excess power through a "net billing" or similar program in accordance with New York Public Service Law § 66-j or similar state or federal statute.

(2) Solar energy collectors shall be located in areas and ways which most mitigate their visibility from surrounding properties.

(3) Solar energy collectors shall not be unnecessarily bright, shiny, garish, or reflective.

(4) Solar energy collectors shall be considered to be structures for the purpose of compliance with all Village laws and ordinances, shall require a building permit and certificate of occupancy issued by the Building Inspector, and shall comply in their design, construction, and operation with all other Village laws and ordinances unless inapplicable by their terms or in conflict with this section.

C. Additional standards; single-family residential zones. Solar energy collectors shall be permitted as an accessory use in any single-family residential zoning district, subject to the following requirements:

(1) Solar energy collectors mounted on a building or the roof of a building:

(a) Shall not exceed the lesser of 900 square feet in area or 33% of the entire roof area.

(b) Shall be mounted no more than 12 inches above the surface to which they are affixed.

(c) Shall be installed in a manner that minimizes their visibility from public locations but still maintains their functional integrity and viability, and:

[1] On a pitched roof shall not extend beyond the highest point of the roof.

[2] On a flat roof shall not extend above any roof cornice.

(2) Freestanding solar energy collectors.

(a) Freestanding solar energy collectors located in any:

[1] Rear yard shall comply with all rear and side line setback requirements and be at least 15 feet from every rear and side line at all points.

[2] Front or side yard shall comply with all front and side yard setback requirements and shall be subject to site plan approval under Village Code § **220-14C**. The Building Inspector shall refer any application for a building permit to construct a freestanding solar energy collector in a front or side yard to the Planning Board for site plan approval under Village Code § **220-14C**.

(b) Freestanding solar energy collectors shall be screened when possible and practicable through the use of architectural features, earth berms, landscaping, or other screening which will harmonize with the character of the property and surrounding area.

(c) Freestanding solar energy collectors shall not exceed the lesser of 1,000 square feet in area or 5% of the area of the lot on which it is located.

(d) The plan submitted to the Building Inspector as a requirement for the issuance of a building permit for any such collector shall indicate all existing and proposed grading, excavating, filling, paving, fencing, and screening as it may relate to the proposed collector, shall indicate the location of all property lines and neighboring buildings, and shall comply with the requirements and standards of this section, and the Building Inspector may refer any such application to the Architectural Review Advisory Committee for review and comment, but nothing contained in any such review or comment shall limit or otherwise affect the authority of the Building Inspector for issuance or denial of the permit.

D. Additional standards for multifamily and commercial zones. Solar energy collectors shall be permitted as an accessory use in any multifamily or commercial zoning district, subject to site plan approval under Village Code § **220-14C** and the following requirements:

(1) Solar energy collectors shall not exceed the lesser of 1,000 square feet in area or 33% of the area of the entire on which it is located.

(2) The plan submitted to the Building Inspector as a requirement for the issuance of a building permit shall indicate all existing and proposed grading, excavating, filling, paving, fencing, and screening as it may relate to the proposed collector, shall indicate the location of all property lines and neighboring buildings, and shall comply with the requirements and standards of this section and of Village Code § **220-14**, and the Building Inspector shall refer any such application to the Planning Board for site plan approval under Village Code § **220-14C**.

Town of Barnstable, MA
T esda , o ember 6, 2012

§ 240-44.1. Land-based wind energy conversion facilities (WECFs).

[Added 6-14-2007 by Order No. 2007-082]

A. Purpose and intent. It is the express purpose of this section to accommodate distributed wind energy conversion facilities in appropriate land-based locations, while minimizing any adverse visual, safety and environmental impacts of the facilities. The section enables the review of wind energy conversion facilities by the Town's special permit granting authority, clarifying the criteria for siting such a facility. This section is intended to be used in conjunction with other regulations adopted by the Town, including historic district regulations, site plan review and other local ordinances designed to encourage appropriate land use and environmental protection. Further, it is the express intent of this section that any special permit granted hereunder run with the land and that any subsequent owner of said land be bound by the terms and conditions of said special permit.

B. Definitions. As used in this section, the following terms shall have the meanings indicated:

CLEAR AREA
The distance from the lowest point of the blade tip to the ground.

HEIGHT
Height is measured from the grade at the base of the tower to the top of the fixed tower (moveable blades are not included).

LAND-BASED
Wholly located on upland including any guy wires as may be required.

SPECIAL PERMIT GRANTING AUTHORITY (SPGA)
Shall be the Planning Board, for this section.

WIND ENERGY CONVERSION FACILITY (WECF)
All equipment, machinery and structures utilized in connection with the conversion of wind to electricity. This includes, but is not limited to, all transmission, storage, collection and supply equipment, substations, transformers, site access, service roads and machinery associated with the use. A wind energy conversion facility may consist of one or more wind turbines.

WIND-MONITORING OR METEOROLOGICAL (TEST OR MET) TOWERS
Tower used for supporting anemometer, wind vane and other equipment to assess the wind resource at a predetermined height above the ground.

WIND TURBINE
A device that converts kinetic energy of the wind into rotational energy to turn an electrical generator shaft.

C. District regulations.

(1) Use regulations.

(a) All wind energy conversion facilities or wind-monitoring towers shall require a building permit and may be permitted only as an accessory use to permitted uses in all zoning districts.

(b) Wind energy conversion facility and wind-monitoring or meteorological towers. The construction of any wind energy conversion facility or wind-monitoring/meteorological tower shall be permitted in all zoning districts, subject to issuance of a special permit and provided the proposed use complies with all dimensional and special permit regulations set forth in § **240-125C** (unless waived by the SPGA). Any subsequent change or modification of wind energy equipment shall be subject to review by the Building Commissioner.

(2) Dimensional requirements.

(a) Type. Tilt-up towers, fixed-guyed towers, freestanding towers or other designs may be considered for approval by the SPGA. Towers may not be attached to any residence or habitable structures.

(b) Setback. The base of any WECF shall be set back from any property line or road layout line by not less than 120% of the proposed height of the tower if abutting residentially zoned properties and 80% of the proposed height of the tower, if abutting nonresidentially zoned properties. Guy wires or any WECF related construction not wholly below grade, as may be required by the proposed design, shall be set back at least 20 feet from property lines, and 30 feet from road layout lines if located on, or adjacent to, residentially zoned property. If located on nonresidentially zoned property and not abutting residentially zoned property, guy wire setbacks may be reduced to five feet. Other setbacks shall conform to the yard setbacks of the zone in which the subject property is located. The SPGA may allow the setback to be reduced as part of the special permit process if the project proponent can demonstrate that additional height is needed and that the additional benefits of the higher tower outweigh any increased adverse impacts.

D. Special permit regulations. The SPGA shall grant a special permit only if it finds that the proposal complies with the provisions of this Zoning Ordinance (unless waived) and is consistent with the applicable criteria for granting special permits.

(1) General. Proposed wind energy conversion facilities shall be consistent with all applicable local, state and federal requirements, including, but not limited to, all applicable electrical, construction, noise, safety, environmental and communications requirements.

(a) Demonstrated utility. The proponent shall demonstrate that the proposed WECF efficiently generates electrical power.

(b) Maintenance. A written maintenance plan shall be submitted with the application for a special permit for review and approval by the SPGA and shall be made a condition of said special permit.

(2) Design standards.

(a) Visual impact. The proponent shall demonstrate through project siting and proposed mitigation that the wind energy conversion facility minimizes any impact on the visual character of surrounding neighborhoods and the community. This may include, but not be limited to, information regarding site selection, turbine design, buffering, lighting. All electrical conduits shall be underground.

(b) Color. Wind energy conversion facilities shall be painted nonreflective muted colors that blend with the sky, without graphics or other decoration.

(c) Equipment shelters. All equipment necessary for monitoring and operation of the wind energy conversion facilities should preferably be contained within the turbine tower. If this is infeasible, ancillary equipment may be located outside the tower, provided it is contained either within an underground vault, or enclosed within a separate structure or behind a year-round landscape or vegetated buffer.

(d) Lighting and signage.

[1] Wind turbines shall be lighted only if required by the Federal Aviation Administration (FAA). The proponent shall provide a copy of the FAA's determination to establish the required markings and/or lights for the structure.

[2] Lighting of equipment structures and any other facilities on site (except lighting required by the FAA) shall be shielded from abutting properties.

[3] No signage allowed.

(e) Guy wires. Guy wires as may be utilized in the construction of the tower shall be left totally unadorned. Nothing shall be hung from or attached to said wires. To prevent unintended contact by persons who may be on-site, landscaping or other approved methods may be implemented. Exception: On nonresidentially zoned properties, not abutting residential property, guy wires may be wrapped with a colored sleeve only, to prevent unintended contact. Such sleeve shall extend to a height not greater than 10 feet above grade.

(3) Environmental standards.

(a) Noise.

[1] The wind energy conversion facility and associated equipment shall conform to the provisions of the Department of Environmental Protection's Division of Air Quality Noise Regulations (310 CMR 7.10). A source of sound will be

considered to be violating these regulations if the source:

[a] Increases the broadband sound level by more than 10 dB(A) above ambient; or

[b] Produces a pure tone condition: when an octave bank center frequency sound pressure level exceeds the two adjacent center frequency sound pressure levels by three decibels or more.

[2] "Ambient" is defined as the background A-weighted sound level that is exceeded 90% of the time measured during equipment hours. The ambient may also be established by other means with consent from DEP. The ambient noise level shall be measured at the property line when the WECF is located on a lot adjacent to residentially zoned property. Otherwise, the special permit granting authority, in consultation with the Department, shall determine whether such violations shall be measured at the property line or at the nearest inhabited residence.

[3] Upon complaint of an abutter, ambient and maximum permitted decibel measurements shall be performed by an agent designated by the SPGA. The report shall be submitted to the SPGA for review. The fee for this service shall be paid by the complainant unless the maximum permitted decibel level has been exceeded in which case the owner of the system shall pay the fee.

[4] If the maximum decibel readings are exceeded, the installation shall be considered a nuisance. The nuisance violation must be corrected within 90 days from notification of the violation, and if the violation cannot be corrected, the wind energy system shall be removed or relocated at the expense of the owner.

(b) Shadowing/flicker. Wind energy conversion facilities shall be sited in a manner that does not result in significant shadowing or flicker impacts. The proponent has the burden of proving that this effect does not have significant adverse impact on neighboring or adjacent uses either through siting or mitigation.

(c) Safety standards.

[1] No hazardous materials or waste shall be discharged on the site of any wind energy conversion facility. If any hazardous materials or wastes are to be used on site, there shall be provisions for full containment of such materials or waste.

[2] Climbing access to tower shall be limited by placing climbing apparatus no lower than 10 feet from the ground.

[3] The clear area shall be no less than 10 feet.

[4] The wind turbine shall conform to FAA safety standards, as amended.

(4) Condemnation.

(a) Upon a finding by the Building Commissioner that the WECF has been abandoned or has been left in disrepair or has not been maintained in accordance with the approved maintenance plan, the owner of said WECF shall be notified in writing by certified mail that the WECF shall be brought up to standard. If required repairs or maintenance are not accomplished within 45 days, the WECF shall be deemed condemned and shall be removed from the site within 90 days thereafter at the expense of the property owner. The aforementioned periods of time may be extended at the request of the owner and at the discretion of the Building Commission. "Removed from site" shall mean:

[1] Removal of the wind turbine and tower, all machinery, equipment, equipment shelters, security barriers and all appurtenant structures from the subject property;

[2] Proper disposal of all solid or hazardous materials and wastes from the site in accordance with local and state solid waste disposal regulations;

[3] Restoration of the location of the wind energy conversion facility to its natural condition, except that any landscaping, grading or below-grade foundation may remain in the after condition.

(b) If an applicant fails to remove a wind energy conversion facility in accordance with this section of this chapter, the Town shall have the authority to enter the subject property and physically remove the facility. The SPGA may require the applicant to provide a form of surety (i.e., post a bond, letter of credit or establish an escrow account or other) at the SPGA's election at the time of construction to cover costs of the removal in the event the Town must remove the facility. The amount of such surety shall be equal to 150% of the cost of compliance with this section. The applicant shall submit a fully inclusive estimate of the costs associated with removal. The amount shall include a mechanism for a cost of living adjustment every five years.

Section 13 – Wind Energy Conversion Facilities

A. Purpose and Intent

The purpose of this Section is to provide for the construction and operation of Wind Energy Conversion Facilities (WECF) in the city of Worcester, and to provide standards for the placement, design, installation, modification, monitoring and decommissioning of these facilities subject to reasonable conditions that will protect the public health, safety and welfare while providing for the production of clean, renewable energy.

B. Administration

Special Permit Granting Authority (SPGA) shall be the Planning Board.

C. Definitions

APPLICANT: the person or entity filing an application under this Section.

AMBIENT SOUND LEVEL: the background A-weighted sound level that is exceeded 90% of the time.

A-WEIGHTED SOUND LEVEL - dB(A): a measurement of sound pressure level, which has been filtered or weighted to progressively de-emphasize the importance of frequency components below 1,000 Hz and above 5,000 Hz. This range corresponds to the human speech band and reflects that human hearing is more sensitive to the mid-range frequencies within this range than the frequencies below and above this range.

DECIBEL (dB): the measurement of a sound pressure relative to the logarithmic conversion of the sound pressure reference level – often set as 0 dB(A). In general, this means the quietest sound humans can hear is near 0 dB(A) and the loudest humans can hear without pain is near 120 dB(A). Most sounds range from 30 to 100 dB(A). Normal speech at 3 feet averages about 65 dB(A).

eCO2: Carbon Dioxide Equivalent: Emissions of greenhouse gases are typically expressed in a common metric, so that their impacts can be directly compared, as some gases are more potent (have a higher global warming potential or GWP) than others. The international standard practice is to express greenhouse gases in carbon dioxide (CO_2) equivalents. Emissions of gases other than CO_2 are translated into CO_2 equivalents using global warming potentials according to the following schedule, as amended by the United States Department of Environmental Protection:

	GWP
Carbon dioxide (CO_2)	1
Methane (CH_4)	21
Nitrous oxide (N_2O)	310
Hydrofluorocarbon (HFC)-134a	1,300
(used in mobile source air conditioning)	

FACILITY OWNER: the entity or entities having an equity interest in the wind energy conversion facility, including their respective successors and assigns.

HUB HEIGHT: the distance measured from the base of the tower foundation at grade to the height of the wind turbine hub, to which the blade is attached.

METEOROLOGICAL TOWER (MET): a facility consisting of a tower and related wind-measuring devices that is solely used to measure the characteristics of winds.

NACELLE: the enclosure located at the top of a wind turbine tower that houses the gearbox, generator and other equipment.

PARTICIPATING LANDOWNER: a landowner on whose property all or a portion of a WECF is located.

OCCUPIED BUILDING: a church, hospital, library, residence, school, or other building used for public gathering that is occupied or in use when the permit application is submitted. Accessory structures and businesses are not considered occupied buildings.

OPERATOR: the entity responsible for the day-to-day operation and maintenance of the wind energy conversion facility.

OVERSPEED CONTROL: the action of a control system, or part of such system, that prevents excessive rotor speed.

ROTOR: the rotating part of a wind turbine, including turbine blades.

ROTOR DIAMETER: for propeller-blade design WECF, the diameter of the circle swept by

the furthest outreaching part of the rotor blades; for vertical-axis WECF, the diameter of the cross sectional circle encompassing the furthest outreaching part of the rotating parts of the WECF.

SHADOW FLICKER: the moving shadows cast by rotating wind turbine blades that cause a flickering effect.

STALL CONTROL: a braking mechanism on wind turbines where the rotor blades are bolted onto the hub at a fixed angle. The rotor blade profile is aerodynamically designed to ensure that the moment wind speed becomes too high it creates turbulence on the side of the rotor blade which is not facing the wind. This "stall" prevents the lifting force of the rotor blade from acting on the rotor.

TOWER: with regard to WECF, the structure on which a wind turbine is mounted.

TURBINE: an electric generator that converts wind energy into electrical power - see wind turbine.

TURBINE HEIGHT: the distance measured from the surface of the tower foundation to the highest point of the turbine rotor plane (tip of blade at highest point).

WECF: see Wind Energy Conversion Facility.

WIND ENERGY CONVERSION FACILITY (WECF), LARGE OR SMALL: an electricity generating facility whose main purpose is to supply electricity, consisting of one or more wind turbines and other accessory structures and buildings, including substations, meteorological towers, electrical infrastructure, transmission lines and other appurtenant structures and facilities.

WIND ENERGY CONVERSION FACILITY (WECF), LARGE: A WECF with a Rotor Diameter greater than twenty (20) feet.

WIND ENERGY CONVERSION FACILITY (WECF), SMALL: A WECF with a Rotor Diameter equal to or less than twenty (20) feet.

WIND ENERGY CONVERSION SYSTEM: see the definition for wind turbine.

WIND TURBINE: a wind energy conversion system, including but not limited to propeller-shaped blade and vertical-axis design facilities, that converts wind energy into electricity through the use of a turbine, and includes the nacelle, rotor, tower, and pad transformer, if any.

D. Use Regulations

Wind Energy Conversion Facilities (WECF) and Meteorological Towers (METs) shall be permitted in accordance with **Article IV-Section 2, Table 4.1** subject to the provisions of this Section 13.

1) No WECF requiring guy wires for support shall be permitted.

2) No WECF with a rotor diameter in excess of one hundred sixty-five (165') feet shall be permitted.

3) Multiple wind turbines are allowed on a single parcel only if the WECF as a whole, and each wind turbine within it, complies with the provisions of subsections E, F, G and H governing sound and shadow flicker respectfully.

4) No WECF shall be erected until evidence has been provided that the electric utility company has been informed of the applicant's intent to install an interconnected customer-owned generator. Off-grid systems shall be exempt from this requirement.

5) An applicant who is not a participating landowner shall submit an executed lease or purchase and sale agreement, or power purchase agreement, documenting the applicant's contingent property interest and legal right to install, operate and maintain the WECF and MET on the affected property(ies).

6) To the extent that the foundation of a WECF affects the dimensions or the number, or both, of required off-street parking spaces, said parking requirement shall be reduced by the number of spaces directly affected for the purposes of calculating minimum parking requirements.

7) Meteorological towers (MET): Provided that it does not exceed the height recommended by the manufacturer of the meteorological tower and equipment:

   a) Guy wires are permitted for temporary METs only.

   b) All special permits related to METs shall be issued pursuant to the criteria set forth in **Article II**.

   c) Term:

      i) METs may be erected for a period not to exceed twenty-seven months. A longer period may be considered by the Director of Code Enforcement or the SPGA, for by-right and specially permitted METs respectively.

      ii) Permanent METs are permitted regardless of height only in association with and accessory to a permitted WECF provided that said MET does not have guy wires.

   d) Setbacks:

      i) METs eighty-five (85) feet or less shall be subject to regulations regarding setbacks for Small WECFs with the exception that guy wires, if any, shall be setback at least (10) ten feet from a property line.

ii) METs more than eighty-five (85) feet in height shall be subject to regulations regarding setbacks for Large WECFs with the exception that guy wires, if any, shall be setback at least twenty (20) feet from a property line.

E. Dimensional Requirements

1. **Large WECFs**. Notwithstanding anything to the contrary in **Article IV-Section 4, Table 4.2**, Large WECFs shall comply with the following requirements:

a) Height

i) Turbine height shall not exceed the height recommended by the manufacturer of the wind turbine and tower, or both, or two hundred and sixty-five (265) feet, whichever is less.

ii) The minimum distance between the ground and any part of a rotor, or turbine blade, shall be thirty (30) feet.

b) Setbacks

i) Wind turbines shall be set back:

(aa) a distance not less than six hundred and fifty (650) feet from the nearest non-participating landowner's occupied building. This setback distance shall be measured from the center of the wind turbine tower at its base to the nearest point on the foundation of a non-participating landowner's occupied building.

(bb) a distance not less than one-hundred and sixty-five (165) feet or 1.25 times the turbine height, whichever is greater, from the nearest participating landowner's occupied building. This setback distance shall be measured from the center of the wind turbine tower foundation to the nearest point on the foundation of a participating landowner's occupied building.

(cc) a distance not less than 1.1 times the turbine height from the nearest wind turbine, right-of-way line of the nearest public way, property line, or existing above ground utility transmission line(s).

2. **Small WECF**. Notwithstanding anything to the contrary in **Article IV-Section 4, Table 4.2**, Small WECFs shall comply with the following requirements:

a) Height

i) Turbine height shall not exceed the height recommended by the

manufacturer of the wind turbine and tower, or both, or ninety-five (95) feet, whichever is less.

ii) The minimum distance between the ground and any part of a rotor, or turbine blade at its lowest position, shall be twenty (20) feet.

b) Setbacks

i) Wind turbines shall be setback a distance not less than one-hundred and sixty-five (165) feet from the nearest non-participating landowner's occupied building. This setback distance shall be measured from the center of the wind turbine tower at its base to the nearest point on the foundation of a non-participating landowner's occupied building.

ii) Wind turbines shall be setback a distance not less than 1.1 times the turbine height from the nearest wind turbine, abutting property owner's property line, or existing above ground utility transmission line(s).

F. Sound

1. All WECFs shall comply with the provisions of the Department of Environmental Protection's Division of Air Quality Noise Regulations (310 CMR 7.10) and associated policies.

2. For all WECFs allowed by Special Permit in Table 4.1: Audible sound generated by a WECF shall not exceed fifty-five (55) dB(A), as measured at the exterior of any non-participating landowner's occupied building except during short-term events such as utility outages and/or uncharacteristically windy periods.

3. Notwithstanding anything to the contrary within this Section, for Small WECFs listed as of right in Table 4.1 and within 650 feet of the nearest non-participating landowner's occupied building located within a residential district: Audible sound generated by a WECF shall not exceed fifty-five (55) dB(A), as measured at the exterior of any non-participating landowner's occupied building, located in a residential district, except during short-term events such as utility outages and/or uncharacteristically windy periods.

G. Shadow Flicker

The facility owner and operator shall make reasonable efforts to minimize shadow flicker to any occupied building on a non-participating landowner's property.

H. Signal Interference

1. The WECF shall be certified by the manufacturer to be in conformance with the regulations of the Federal Communications Commission (47 CFR Part 15 as revised)

relating to harmful interference with radio or television reception.

2. The WECF owner or operator shall make reasonable efforts to avoid any disruption or loss of radio, telephone, television or similar signals, and shall mitigate any harm caused by the WECF.

I. Waiver of Setbacks, Sound, Shadow Flicker, Height, and Rotor Diameter, Provisions

1. Notwithstanding anything to the contrary in **Article IV**, one or more waivers may be granted by the SPGA in accordance with this subsection provided that all such waivers are part of a special permit approval for a WECF and in accordance with this subsection. To the extent that any waiver effects compliance with setback and shadow flicker requirements, those items shall also require a waiver.

2. To the extent these provisions affect a participating property, the SPGA, in its discretion, shall be authorized to waive the setback, sound and shadow flicker provisions of this Section provided that:

    a. The applicant submits the request in writing, and if the applicant is not the property owner, the property owner's written consent to the waiver(s) shall also be submitted.

3. To the extent these provisions affect a non-participating property, the SPGA, in its discretion, shall be authorized to waive the setback, sound and shadow flicker provisions of this Section provided that:

    a. The applicant submits the request in writing, accompanied by an affidavit signed by the affected non-participating property owner(s) in support of the applicant's request for waiver.

    b. The affidavit shall contain the non-participating property owner's acknowledgement of the setback, sound or shadow flicker requirements of this Section and what is proposed in lieu thereof, describe the impact on the non-participating property owner(s), and state the non-participating property owner's support for the applicant's waiver request. A non-participating property owner's affidavit shall be made a part of the special permit decision and shall be separately recorded with the Worcester District Registry of Deeds at the same time that the special permit decision is recorded to provide notice to all subsequent purchasers of the non-participating property of the waiver(s) granted.

4. To the extent these provisions affect a public way, the SPGA, in its discretion, shall be authorized to waive the setback, sound and shadow flicker provisions of this Section provided that:

    a. The applicant submits the request in writing, provided further however, that

no waiver may be granted to the extent it would affect an existing above ground utility transmission line unless the utility company owning such line consents to the waiver in writing.

5. To the extent these provisions affect the turbine height of a WECF, the SPGA, in its discretion, shall be authorized to waive the turbine height provisions of this Section provided that:

    a. For any WECF, the applicant provide a comparison of the proposal with the alternative in terms of energy produced and greenhouse gases prevented, measured in tons of eCO2, that demonstrates that the increased height will significantly increase the energy produced by the WECF; and

    b. For Small WECFs, the applicant demonstrates that obstacles within five-hundred (500) feet of the proposed location of a WECF will significantly reduce the available wind resource, or is likely to cause wind turbulence that would result in unsafe conditions for the operation of the proposed wind turbine. The SPGA shall be limited to a waiver of thirty (30) feet above the highest obstruction identified or one-hundred and twenty-five (125) feet, whichever is less.

6. To the extent these provisions affect the rotor diameter of a Large WECF, the SPGA, in its discretion, shall be authorized to waive the rotor diameter provisions of this Section provided that:

    a. The applicant provide a comparison of the proposal with, and without, the waiver in terms of energy produced and greenhouse gases prevented, measured in tons of eCO2, that demonstrates that the increased rotor diameter will significantly increase the energy produced by the WECF.

J. <u>Design and Installation</u>

1. Compliance and Certifications: Prior to the operation of any WECF, the facility owner and operator must submit a signed affidavit to the director of Code Enforcement's satisfaction verifying that the WECF, and all of its equipment, was designed and installed in accordance with the following standards:

    a) The design and installation of the WECF complies with the most current applicable industry safety standards, including those of the American National Standards Institute, related to all wind turbine subsystems such as control and protection mechanisms, internal electrical systems, mechanical systems and support structures.

    b) To the extent applicable, the WECF complies with Massachusetts State Building Code and International Conference of Building Officials Building Code.

c) All electrical components of the WECF comply with relevant and applicable local, state and national codes, and relevant and applicable international standards.

d) All wind turbines are equipped with the following systems and controls: redundant braking systems, aerodynamic overspeed controls (including variable pitch, tip, and other similar systems), and mechanical brakes. Mechanical brakes shall be operated in a fail-safe mode and stall control regulation shall not be considered a sufficient braking system for overspeed protection. Except for Small WECFs, which shall provide adequate redundant (primary and fail safe) automatic overspeed protection.

e) The design and installation of the WECF complies with applicable Federal Aviation Administration and Federal Communications Commission regulations as applicable.

f) To the extent applicable, WECFs shall be adequately protected from impact by vehicles through use of a physical barrier whether included as part of the foundation design or as separate elements including, but not limited to, bollards or guardrails.

2. Security and Warnings:

a) WECFs and METs shall not be climbable up to fifteen (15) feet above ground surface.

b) All access doors to wind turbines and electrical equipment shall be locked or fenced, as appropriate, to prevent entry by non-authorized persons.

c) Visible, reflective, colored objects, such as flags, reflectors, or tape shall be placed on the anchor points of guy wires and along the guy wires up to a height of ten (10) feet from the ground (pertains to METs only, see subsection D – Use Regulations).

d) A clearly visible warning sign concerning voltage must be placed at the base of all pad-mounted transformers and substations.

3. Visual Appearance:

a) Wind turbines and associated structures shall be a non-obtrusive color such as white, off-white, gray or light-blue.

b) No WECF shall be artificially lit, except to the extent required by the Federal Aviation Administration, or other applicable governmental authority that regulates air safety.

c) Wind turbines shall not be used for the location of accessory or non-accessory signs except for reasonable identification of the turbine manufacturer, host site, or both.

d) On-site transmission and power lines between wind turbines shall, to the maximum extent practicable, be placed underground (not applicable to Small WECFs).

e) Inverters and pendant power cables shall be located inside the wind turbine tower, nacelle or structure.

f) No telecommunication dishes, antennas, cellular telephone repeaters or other similar devices shall be attached to wind turbine towers, except for accessory antenna associated with the operation of the WECF.

g) All appurtenant structures to such WECF shall be subject to reasonable regulations concerning the bulk and height of structures and for determining lot area, setbacks, open space, parking and building coverage requirements. All such appurtenant structures, including but not limited to equipment shelters, storage facilities, transformers, and substations shall be screened from view by vegetation and clustered to minimize visibility.

K. Maintenance

WECF owners and operators shall provide for the ongoing maintenance by appropriately certified professionals in accordance with manufacturer's specifications and all governmental regulations for all structural, electrical and mechanical components of the WECF to ensure the safe operation of the WECF.

L. Emergency Services Plan

Upon request, the applicant shall cooperate with emergency services providers to develop and coordinate implementation of an emergency response plan for the WECF(s).

M. Use Of Public Streets Plan (not applicable to Small WECFs)

1. At least sixty (60), but no greater than ninety (90), days prior to construction, the applicant shall obtain the requisite permit from the Department of Public Works and Parks approving the route and method of transporting the equipment and parts for the construction, operation or maintenance of the WECF. In addition to the permit requirements promulgated by the commissioner of DPWP, the applicant shall submit, with its request for a permit, a report identifying all state and city streets within the city of Worcester to be used as its transport route. A copy of the report shall also be submitted to the Division of Planning and Regulatory Services.

2. An engineer or a qualified third party engineer hired by the City of Worcester and paid for by the applicant, shall document road conditions along the route chosen prior to construction. Said engineer shall document road conditions again thirty (30) days after construction is complete or as weather permits. This documentation shall be provided to the commissioner of Public Works and Parks for review.

3. The applicant shall demonstrate to the satisfaction of the commissioner of Public Works and Parks that the applicant has adequate financial resources to ensure the prompt repair of damaged roads.

4. Any road damage caused by the applicant or its contractors shall be promptly repaired at the applicant's expense.

N. Abandonment, Discontinuation of Use Or Repair

1. Notification:

   a) The WECF owner or operator shall notify the Director of Code Enforcement by certified U.S. Mail thirty (30) days prior to the proposed date of abandonment or discontinuation of use of any WECF or individual wind turbine.

   b) On a yearly basis, from the date of the issuance of a building permit, the WECF owner or operator shall provide the Director of Code Enforcement a report indicating the total electricity generated by each wind turbine by month of service.

   c) The use of a WECF or individual wind turbine will be considered discontinued if no electricity is generated for a continuous period of twelve (12) months.

2. Decommissioning:

   a) Upon abandonment or discontinuation of use of a WECF, the facility owner, operator or landowner shall, at its expense, remove wind turbines, and all above ground structures, buildings, cabling, electrical components, roads, and any other associated facilities within twelve (12) months.

   b) All waste materials from a decommissioning shall be disposed of in accordance with local and state solid waste disposal regulations.

   c) Disturbed earth shall be graded and re-seeded, unless the landowner requests in writing that the access roads or other land surface areas not be restored.

   d) If neither the WECF owner or operator nor the landowner, if different, completes decommissioning within the period prescribed in this subsection, the City of Worcester may take such measures as necessary to complete the decommissioning. The costs incurred by the city shall constitute a debt due the

city upon completion of the decommissioning activities and the rendering of an account to the facility owner, operator and the landowner, if applicable, and shall be recoverable from such party(ies) in an action of contract. For Large WECFs only, the Special Permit Granting Authority may require the applicant to post a bond at the time of construction equal to the estimated costs associated with the removal of the WECF in the event the City of Worcester must remove the WECF.

3. Repair:

   a) Any WECF determined to be unsafe by the Director of Code Enforcement shall be turned off immediately upon notice and repaired as soon as practicable by the WECF owner or operator to meet federal, state and local safety standards. Evidence of such repair shall be reviewed and approved, if deemed satisfactory, by the Director of Code Enforcement prior to resuming use of the WECF. If the Director of Code Enforcement deems the timetable for corrective action as unreasonable or inadequate to ensure proper safety, the WECF owner or operator shall decommission the WECF in accordance with subsection N(2) except that the period of time shall be prescribed by the Director of Code Enforcement.

O. Public Inquiries and Complaints

1. The WECF owner and operator shall maintain a phone number and identify a responsible person for the public to contact with inquiries and complaints throughout the life of the project. The applicant shall notify all abutters within three-hundred (300) feet of this phone number prior to the operation or testing of any WECF.

2. The WECF owner and operator shall post an emergency telephone number so that the appropriate people may be contacted should any wind turbine need immediate attention. This telephone number shall be clearly visible on a permanent structure(s) or post(s) located at a distance at least 1.25 times the turbine height. (Not applicable to Small WECFs, which shall provide a number on tower.)

3. The WECF owner and operator shall make reasonable efforts to respond to the public's inquiries and complaints.

4. Upon receipt of a complaint by the Code Enforcement Division regarding sound from an existing WECF, the division will investigate the complaint. If the director of Code Enforcement determines the complaint to be reasonable, the WECF owner or operator shall be required, at its expense, to have prepared, by an independent professional acoustical engineer approved by the city, an acoustical study that measures sound levels and demonstrates compliance with the sound standards in this Section.

5. Methods for measuring and reporting acoustic emissions from wind turbines and the WECF shall be equal to or exceed the minimum standards for precision described in American Wind Energy Association Standard 2.1 - 1989 titled *Procedures for the Measurement and Reporting of Acoustic Emissions from Wind Turbine Generation*

Systems Volume I: First Tier as revised.

P. Special Permit Approval Criteria

1. After notice and public hearing, and after due consideration of the evidence submitted, including the reports and recommendations of city departments, the SPGA, in addition to the special permit criteria under **Article II**, may grant such a special permit provided that it finds that:

   a) The proposed WECF does not derogate from the purposes and intent of this Section and the Zoning Ordinance.

   b) The application information submitted is adequate for the SPGA to consider approving the special permit request.

   c) The proposed design, installation and operation of the WECF will meet the requirements of this Section.

   d) The acoustical assessment provided adequately predicts resulting sound levels as may be measured in accordance with the provisions of this Section. (Not applicable to Small WECFs)

2. Reasonable efforts have been made to minimize shadow flicker on neighboring or adjacent uses.

3. The maintenance plan proposed adequately provides for the ongoing safe operation of the WECF.

4. There will be no substantial adverse affect on the environment or wildlife. (Not applicable to Small WECFs)

5. The documentation and information for setback, sound and shadow flicker waiver requests, if any, provide sufficient assurance that the affected participating and non-participating property owners are fully informed and consent to the waiver requests.

6. That documentation and information for height and rotor diameter (as applicable) waiver requests, if any, are sufficient to demonstrate the requirements of subsection I.

Q. Term of Special Permit

A special permit issued for any WECF shall be valid for no more than twenty (20) years, but in no event, if the applicant is a lessee of the property owner, shall a special permit be granted for a term greater than the term of the lease. No more than six months prior to the expiration of a special permit granted hereunder, the applicant, or its successor in interest, may apply for an extension of the term through a special permit amendment. The SPGA may grant one or more extensions of the term, of up to five (5) years per extension,

provided it finds that the WECF is operating in accordance with this Section, and that the WECF has been, and will continue to be, properly maintained. The applicant shall provide documentation regarding ongoing maintenance of the WECF in accordance with the maintenance plan proposed, and an inspection report verifying that the WECF can continue to operate safely.

R. Application Requirements

1. All applicants are encouraged to contact the SPGA staff to schedule a pre-application meeting.

2. In addition to all application requirements related to special permits under **Article II**, the applicant shall include the following at the time of application submittal:

   a) Project Overview: A narrative describing the proposed WECF including an overview of the project with the following information: the project location, the number, representative types, generating capacity, cut-in and cut-out wind speed, overspeed controls, materials, dimensions and respective manufacturers of each wind turbine to be constructed, and a detailed description of all ancillary facilities. This overview shall also include a comparison of estimated electric generation vs. on-site electric consumption, a cost-benefit analysis demonstrating that the proposed hub height and turbine height are necessary to achieve economic viability (including the variation of electricity generated at alternative heights), and an estimate of the number of tons of pollution prevented.

   b) Vicinity Plan: A vicinity plan shall be prepared by a registered engineer and must show the scale, a north arrow, legend or annotation (for each symbol used) and identify the sheet number in sequence. Use separate sheets for various layers as appropriate to improve clarity – include overview sheet will all layers. (Not Applicable to Small WECFs)

      i) Vicinity plans shall depict the following information for the subject property and all adjacent properties within 300 feet:

         (aa) Property lines, layout of existing buildings (including their use status - e.g., occupied buildings), accessory structures, location and name of all public, private roads, and railroads.

         (bb) Any significant natural, topographical or physical features of the area including existing contours at two (2) feet in one hundred (100) feet.

         (cc) Lines representing the sight line showing viewpoint and visible point from "sight lines" subsection below.

         (dd) Annotation(s) identifying all parcels and occupied buildings

affected by waivers, if any.

(ee) Area of estimated wind turbine shadow flicker.

ii) The vicinity plan shall depict the proposed location of each wind turbine(s), street address, property lines, wind turbine setback lines (depicted as a radius from the center of the wind turbine), access road and turnout locations, substation(s), electrical cabling from the WECF to substation(s), ancillary equipment, buildings, and structures, including permanent meteorological towers, associated transmission lines (including whether they are above or below ground), and layout of all structures within the geographical boundaries of any applicable setback.

c) Site Plan: A site plan to a scale of not less than forty (40) feet to the inch, on one or more sheets, prepared by a registered engineer, and indicate the scale used, a north arrow, legend or annotation (for each symbol used), and identify the sheet number in sequence. Use separate sheets for various layers as appropriate to improve clarity – include overview sheet with all layers. The site plan shall also include the following information:

i) Title block information that identifies location, applicant, property owner, WECF owner/operator, and party responsible for preparing the plan.

ii) A table that compares all required dimensional requirements of this Section with those proposed for the WECF when an applicant seeks one of more dimensional waivers.

iii) Annotation(s) identifying all parcels and occupied buildings affected by waivers, if any.

iv) The boundary lines and dimensions of the subject property, existing subdivision lots, available utilities, easements, roadways, railroads, rail lines and public rights-of-way, crossing and adjacent to the subject property.

v) Any proposed re-grading of the subject property and any significant natural, topographical or physical features of the property including, at least, watercourses, marshes, floodplain and wetlands, trees in excess of nine (9) inches in diameter, soil types, and existing contours at two (2) feet in one hundred (100) feet. (Not Applicable to Small WECFs)

vi) Location of each wind turbine, WECF setback lines (measured at grade and depicted as a radius from the center of the wind turbine), access road and turnout locations, substation(s), electrical cabling from the WECF to substation(s), ancillary equipment, buildings, and structures, including permanent meteorological towers, associated transmission lines (including

whether they are above or below ground).

vii) Layout of all existing buildings (including their use status - e.g., occupied buildings), and structures within the geographical boundaries of any applicable setback.

viii) All existing and proposed surface and subsurface drainage facilities, including detention or retention ponds. Drainage circulation with data on predevelopment and post-development condition should be provided. (Not Applicable for Small WECFs)

ix) Location and size of all signs (including emergency phone number signs) and lighting as it pertains to the WECF.

x) Proposed landscaping (noting how the existing vegetation is to be retained and used) including type, location and quantity of all plant materials, location and height of fences or screen plantings and the type or kind of building materials or plantings to be used for fencing and screening of the WECF.

xi) Methods and locations of erosion and sedimentation control devices used during and after construction of the WECF.

d) Wind Map: A map showing the wind characteristics of the general area and the dominant wind direction – the direction from which fifty (50) percent or more of the energy contained in the wind flows. (Not Applicable to Small WECFs)

e) Sightline Analysis: Photographs shall be provided depicting views from a reasonable number of key vantage points as determined by the applicant in consultation with the Division of Planning and Regulatory Services. Sites for the view representations shall be selected from areas within a two (2) mile radius of the site. (Not Applicable to Small WECFs)

i) Existing (before condition) photographs. Each sightline shall be illustrated by one (1) four-inch by six-inch color photograph of what can currently be seen from any public way within 300 feet of the subject property.

ii) Proposed (after condition) photographs. Each of the existing condition photographs shall have the proposed WECF superimposed on it to show what will be seen from public roads if the proposed facility is built.

iii) A sightline map depicting the points from which sightline photographs were taken.

iv) A description of the technical procedures followed in producing the visualization (distances, angles, lens, etc.).

f) Balloon or Crane Test: The applicant will provide a statement proposing a date, time and location of such test. (Not Applicable to Small WECFs)

   i) Within ten (10) days of filing an application, the applicant shall arrange with the Division of Planning and Regulatory Services for a balloon or crane test at the proposed site to illustrate the height of the proposed WECF. The date, time and location of such test shall be advertised by the applicant in a newspaper of general circulation in the City of Worcester at least seven (7) days, but not more than fourteen (14) days prior to the test. Evidence of this advertisement must be provided to the SPGA at the time of public hearing.

g) Compliance Certificates and Statements:

   i) Certificate(s) of design compliance obtained from the equipment manufacturers that the system's wind turbine and other components meet or exceed the standards of one of the following national and international certification programs: American National Standards Institute (ANSI), Det Norske Veritas Germanishcer Lloyd Wind Energies, International Electrotechnical Commission (IEC), National Electrical Code (NEC), Underwriters Laboratories (UL), or other certification program recognized by the American Wind Energy Association.

   ii) Standard drawings and a structural engineering analysis of tower(s) showing compliance with applicable Massachusetts State Building Codes and certification by a Commonwealth of Massachusetts licensed professional engineer.

   iii) A determination from the Federal Aviation Administration of no hazard to air navigation, and that the WECF as proposed complies with all applicable Federal Aviation Administration regulations. (Not Applicable to Small WECFs unless height waiver is requested or, is located within an A-1 District, Airport Environs Overlay District, or both.)

   iv) The applicant shall provide a statement certified and signed by an acoustical engineer stating that the sound estimates and measurements provided meet industry professional standards for accuracy, and that the WECF as proposed will be in conformance with the performance standards of this Section related to sound. (Not Applicable to Small WECF)

   v) Evidence that the proposed hub height and turbine height do not exceed the height recommended by the manufacturer or distributor of the wind energy conversion system.

vi) Evidence, certified by the manufacturer, that the WECF and its accessory equipment is in conformance, as applicable, with the Regulations of the Federal Communication Commission (47 CFR Part 15 as revised) relating to harmful interference with radio or television reception.

h) Maintenance Plan: The applicant shall provide a detailed maintenance plan in accordance with manufacturer's specifications and all governmental regulations to ensure the safe operation of the WECF. Plan shall include but not be limited to: preventative and periodic maintenance, routine checks and testing, and cleaning, associated with all structural, electrical and mechanical components of the WECF.

i) Notifications: The applicant shall provide notification letters and evidence that a notice to construct a WECF has been received by the appropriate electric utility company and the Federal Aviation Administration.

i) Sound Assessment:

i) The applicant shall provide a report estimating current ambient sound at appropriate locations and maximum projected sound from the proposed WECF, measured in dB(A) (decibels A-weighted), including but not limited to the following: (Not Applicable to Small WECF)

(aa) An estimation or measurement of the existing ambient background sound levels.

(bb) Identification of a model for sound propagation (sound modeling software will include a propagation model).

(cc) A prediction or measurement of sound levels from the WECF(s) at the nearest non-participating landowner's occupied building(s), at all participating landowner's occupied building(s), and the nearest property line.

(dd) A comparison of calculated sound pressure levels from the WECF with background sound pressure levels at the locations of concern.

(ee) An estimate of the maximum total sound in the environment after the WECF is operational.

(ff) All sound data and information provided by the wind turbine manufacturer.

ii) For Small WECFs the applicant shall provide a letter or report from the WECF manufacturer indicating compliance with sound standards of this ordinance as they relate to Small WECFs.

j) Shadow Flicker Assessment: The applicant shall provide a report estimating the area of shadow flicker from wind turbine(s). (Not Applicable to Small WECF)

k) Environmental and Wildlife Impact Assessment: The applicant shall provide a report assessing the impact of the proposed project on avian and non-avian wildlife, public safety, quality of life, culturally/historically significant areas, scenic areas, sedimentation, runoff and watershed. As part of these assessments the applicant shall consult the local chapter of the Audubon Society prior to application. (Not Applicable to Small WECF)

l) Waiver Requests and Supporting Documentation: The applicant shall provide all waiver requests along with supporting agreement documentation as required under this Section.

m) Documents related to decommissioning: The applicant, if other than the property owner, shall provide an affidavit signed by the property owner that he/she understands and acknowledges the provisions of subsection N(2)(d), above.

n) Fees: The permit application or amended permit application shall be accompanied with a fee in accordance with the SPGA's fee schedule, as revised.

o) Other Information: Other relevant studies, reports, certifications and approvals as may be reasonably requested by the SPGA to ensure compliance with this Section and the Zoning Ordinance.

p) Application Requirement Waivers: Upon written request, the SPGA may waive one or more of the application requirements listed above if the SPGA determines, in its discretion, that the information is not needed to consider a specific WECF.

S. Building Permit Application Requirements

1. All by-right WECFs shall provide the following information at the time of application for a building permit:

a) Project Overview: A narrative describing the proposed WECF including an overview of the project with the following information: the project location, the number, representative types, generating capacity, cut-in and cut-out wind speed, overspeed controls, materials, dimensions and respective manufacturers of each wind turbine to be constructed, and a detailed description of all ancillary facilities.

b) Site Plan: A site plan to a scale of not less than forty (40) feet to the inch, on one or more sheets, prepared by a registered engineer, and indicate the scale used, a north arrow, legend or annotation (for each symbol used), and identify the sheet number in sequence. Use separate sheets for various layers as appropriate to improve clarity – include overview sheet with all layers. The site plan shall also include the following information:

i) Title block information that identifies location, applicant, property owner, WECF owner/operator, and party responsible for preparing the plan.

ii) The boundary lines and dimensions of the subject property, existing subdivision lots, available utilities, easements, roadways, railroads, rail lines and public rights-of-way, crossing and adjacent to the subject property.

iii) Location of each wind turbine, WECF setback lines (measured at grade and depicted as a radius from the center of the wind turbine), access road and turnout locations, substation(s), electrical cabling from the WECF to substation(s), ancillary equipment, buildings, and structures, including permanent meteorological towers, associated transmission lines (including whether they are above or below ground).

iv) Layout of all existing buildings (including their use status - e.g., occupied buildings), and structures within the geographical boundaries of any applicable setback.

v) Location and size of all signs (including emergency phone number signs) and lighting as it pertains to the WECF.

vi) Proposed landscaping (noting how the existing vegetation is to be retained and used) including type, location and quantity of all plant materials, location and height of fences or screen plantings and the type or kind of building materials or plantings to be used for fencing and screening of the WECF.

vii) Methods and locations of erosion and sedimentation control devices used during and after construction of the WECF.

c) Compliance Certificates and Statements:

i) Certificate(s) of design compliance obtained from the equipment manufacturers that the system`s wind turbine and other components meet or exceed the standards of one of the following national and international certification programs: American National Standards Institute (ANSI), Det Norske Veritas Germanishcer Llloyd Wind Energies, International Electrotechnical Commission (IEC), National Electrical Code (NEC), Underwriters Laboratories (UL), or other certification program recognized by the American Wind Energy Association.

ii) Standard drawings and a structural engineering analysis of tower(s) showing compliance with applicable Massachusetts State Building Codes and certification by a Commonwealth of Massachusetts licensed

professional engineer.

iii) A determination from the Federal Aviation Administration of no hazard to air navigation, and that the WECF as proposed complies with all applicable Federal Aviation Administration regulations. (Not Applicable to Small WECFs unless located within an A-1 District or the Airport Environs Overlay Zone.)

iv) Evidence that the proposed hub height and turbine height do not exceed the height recommended by the manufacturer or distributor of the wind energy conversion system.

v) Evidence, certified by the manufacturer, that the WECF and its accessory equipment is in conformance, as applicable, with the Regulations of the Federal Communication Commission (47 CFR Part 15 as revised) relating to harmful interference with radio or television reception.

d) Maintenance Plan: The applicant shall provide a detailed maintenance plan in accordance with manufacturer's specifications and all governmental regulations to ensure the safe operation of the WECF. Plan shall include but not be limited to: preventative and periodic maintenance, routine checks and testing, and cleaning, associated with all structural, electrical and mechanical components of the WECF.

e) Notifications: The applicant shall provide notification letters and evidence that a notice to construct a WECF has been received by the appropriate electric utility company and the Federal Aviation Administration.

f) Sound Assessment: Adequate evidence that the proposed installation is compliant with the applicable sound standards of this Section.

g) Documents related to decommissioning: The applicant, if other than the property owner, shall provide an affidavit signed by the property owner that he/she understands and acknowledges the provisions of subsection N(2)(d), above.

h) Other Information: Other relevant studies, reports, certifications and approvals as may be reasonably requested by the Director of Code Enforcement to ensure compliance with this Section and the Zoning Ordinance.

ARTICLE V SITE PLAN REVIEW

Section 1 – Purpose

The purpose of this section is to provide for individual detailed review of development proposals which have an impact upon the natural and built environments of the City and upon the nature and provision of public services including but not limited to transportation, utilities, ways, public safety and education, and upon the general and specific character of the City. The review process is intended to promote the purposes listed in **Article I** of this Ordinance.

Section 2 – Uses Requiring Site Plan Review

A. Any structure and/or outdoor use and/or any substantial improvement, as herein defined, which requires a building permit under the State Building Code and which meets one (1) or more of the threshold standards for scale as set forth in **Table 5.1** shall be subject to the site plan review standards and procedures hereinafter specified. This approval must be obtained prior to issuance of the building permit but is not a requirement for the grant of a special permit or variance. Any exterior alterations, exterior additions and exterior changes including fences, walls and driveways, to residential uses which are permitted by right in Residential districts shall be exempt

B. Each lot created on a subdivision plan approved by the planning board under the Subdivision Control Law, shall be subject to the site plan review standards and procedures hereinafter specified, notwithstanding anything in Table 5.1 to the contrary.

C. Notwithstanding the site plan review thresholds set forth in **Table 5.1**, any structure and/or substantial improvement which requires a building permit and will be used and operated as a lodging house shall be subject to the site plan review standards and procedures hereinafter specified. In addition to the threshold standards in **Table 5.1**, any application for a building permit for the erection of a new building, or for any substantial improvements or rehabilitation of an existing building, which is or is intended to be used as a licensed lodging house, shall require site plan review.

D. Improvements related solely to interior work within the structure, façade renovations and the replacement of windows and doors shall be exempt from this Article.

E. In addition to the threshold standards in **Table 5.1**, Site Plan Review must otherwise be obtained when any other provision of this Ordinance expressly requires it.

F. Notwithstanding any provisions of this Article to the contrary, site plan review shall not be required for any project or land use for which a Final Environmental Impact Report, filed with the Massachusetts Executive Office of Environmental Affairs, has been certified by the Secretary of Environmental Affairs prior to April 2, 1991 as complying with the Massachusetts Environmental Policy Act, nor shall site plan review be required for any project or land use which requires a special permit in any Priority Development

LAND USE FOR ENERGY CONSERVATION AND SUSTAINABLE DEVELOPMENT: A NEW PATH TOWARD CLIMATE CHANGE MITIGATION

JOHN R. NOLON*

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I. INTRODUCTION

Land use tools and techniques have impressive potential to reduce energy consumption, improve the economy, and mitigate climate change. This article explores the little understood influence of local land use decision-making on energy conservation and sustainable development and how it can mitigate climate change if properly assisted by the federal and state governments. The construction and use of buildings combined with extensive vehicular travel throughout the nation's human settlements consume large amounts of energy, and much of that consumption is highly inefficient. By enforcing and enhancing energy codes, encouraging the use of combined heat and power and district energy systems, properly orienting and commissioning buildings, incorporating renewable energy resources, facilitating compact, mixed-use development, and promoting transit and other methods of reducing vehicle miles travelled ("VMT"), local land use law's potential to achieve energy conservation and sustainable development can be unlocked. These techniques can be organized at the neighborhood level and aggregated by adopting local Energy Conservation Zoning Districts in neighborhoods where significant energy conservation can be achieved. The article proposes federal and state policies, combining features of both the Coastal Zone Management Act and the Enterprise Zone initiative, that can facilitate local land use initiatives that will shape human settlements and control the built environment as a new path toward energy efficiency and climate change mitigation.[1]

II. THE LAND USE-ENERGY CONSERVATION CONNECTION

A. Land Use, Energy Consumption, and Climate Change

According to the most conservative United States Bureau of Census estimates, our population will increase by over 100 million by mid-century.[2] In order to accommodate this growth, as much as sixty-six percent of the development on the ground in 2050 will be built between now and then.[3] The construction and operation of buildings as well as the VMT for daily work, errands, and pleasure will account for a large percentage of the energy needs by mid-century.

The Intergovernmental Panel on Climate Change (IPCC) released its "Fourth Assessment Report" on climate change in 2007.[4] According to this document, global temperatures

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1. This article is one of four that examine how local land use law can be used as an effective strategy to mitigate climate change. *See* John R. Nolon, *The Land Use Stabilization Wedge Strategy: Shifting Ground to Mitigate Climate Change*, 34 WM. & MARY ENVTL. L. & POL'Y REV. 1 (2009) [hereinafter *Land Use Stabilization Wedge*]; John R. Nolon, *Managing Climate Change through Biological Sequestration: Open Space Law Redux*, 31 STAN. ENVTL. L.J. (forthcoming Spring 2012) (manuscript on file with author) [hereinafter *Open Space Law Redux*]; John R. Nolon, *Regulatory Takings and Property Rights Confront Sea Level Rise: How Do They Roll?*, 21 WIDENER L.J. (forthcoming 2012).

2. The Census Bureau released national population projections, based on four different immigration scenarios. *National Population Projections*, U.S. CENSUS BUREAU, http://www.census.gov/population/www/projections/2009summarytables.html (last visited Mar. 30, 2012). The "Low Net International Migration Series" predicted that the population would be 402,320,000 by 2043 and would be 422,554,000 by 2050. *Summary Tables: Low Net International Migration Series*, U.S. CENSUS BUREAU, http://www.census.gov/population/www/projections/2009lnmsSumTabs.html (follow the "Excel" link under the heading "1. Projections of the Population and Components of Change for the United States: 2010 to 2050") (last visited Mar. 30, 2012). This is roughly a 1/3 increase in the population by the year 2043.

3. REID EWING ET AL., URBAN LAND INST., GROWING COOLER: THE EVIDENCE ON URBAN DEVELOPMENT AND CLIMATE CHANGE 8 (2007).

4. INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE (IPCC), CLIMATE CHANGE 2007: SYNTHESIS REPORT (2007), *available at* http://www.ipcc.ch/pdf/assessment-report/ar4/syr/ar4_syr.pdf [hereinafter IPCC SYNTHESIS REPORT]. *See generally* JOHN R. NOLON & PATRICIA E. SALKIN, CLIMATE CHANGE AND SUSTAINABLE DEVELOPMENT LAW IN A NUTSHELL 22-23 (2011) (indicating the sufficiency of the reports the IPCC report was based on by stating that "[o]ver 40 writing teams and 450 lead authors–selected as lead authors because of their expertise–contributed to the Fourth Assessment Report. The report contains over 18,000 citations to scientific reports, the majority of which were published in peer-reviewed journals. The lead authors

and sea levels have risen dramatically.[5] In the IPCC's words, these changes are "very likely due to the observed increase in anthropogenic [greenhouse gas] (GHG) concentrations," as global GHG emissions have risen "70% between 1970 and 2004."[6] CO_2 specifically composed 77% of total anthropogenic GHG emissions in 2004, resulting in 38 gigatonnes (Gt) of CO_2 being released into the atmosphere.[7] As of 2009, CO_2 represents 83% of the total GHG emissions in the United States.[8] The IPCC's Special Report on Emissions Scenarios projects an increase of global GHG emissions by 25 to 90% (CO_2-eq) between 2000 and 2030.[9] Consistent with such an increase, "[c]ontinued GHG emissions at or above current rates would cause further warming and induce many changes in the global climate system during the 21st century that would very likely be larger than those observed during the 20th century."[10]

In the United States, observable signs of climate change include increased air and water temperatures; degradation of fresh water fish habitat; diminished terrestrial biodiversity; increased bleaching and die-off of coral reefs; increased frequency and intensity of heavy downpours; a rise in sea level; reduced snow cover, glaciers, permafrost, and sea ice; reduced water supply in some regions; a longer ice-free period on lakes and rivers; a longer growing season; and increased water vapor in the atmosphere.[11] These changes will affect human health,[12] water supply,[13] agriculture,[14] coastal areas,[15] and many other aspects of society and the natural environment.[16] This report effectively introduces the broad range of issues that climate change raises, but it presupposes that climate change is happening. This has been carefully documented and is now widely accepted by a growing number of respected institutions and agencies.[17]

No matter how we grow, the energy consumed in construction, building operation, and travel will worsen climate change.[18] This puts great pressure on policy makers, regulators, and the development industry to shape and control new development to minimize energy use and the resultant emissions caused by development. Under our legal system, the legal rules that dictate energy efficiency in new buildings and the frequency and intensity of travel within and between human settlements are often created and routinely enforced by local cities, villages, towns, and counties.[19]

B. Human Settlement Patterns and Building Construction

Residential and commercial buildings use an extraordinary amount of electricity and energy. In 2008, U.S. residential and commercial buildings used 29.29 quadrillion BTUs,

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were assisted by over 800 scientists and analysts who participated as contributing authors on specific topics. These authors contributed their time and were assisted by four Technical Support Units with paid staff.").

5. *See* IPCC SYNTHESIS REPORT, *supra* note 4, at 30.
6. *Id.* at 36, 39.
7. *Id.* at 36.
8. U.S. ENVTL. PROT. AGENCY, INVENTORY OF U.S. GREENHOUSE GAS EMISSIONS AND SINKS: 1990-2009, ES-6 (2011) [hereinafter EPA GREENHOUSE GAS INVENTORY].
9. IPCC SYNTHESIS REPORT, *supra* note 4, at 44.
10. *Id.* at 45.
11. U.S. GLOBAL CHANGE RESEARCH PROGRAM, GLOBAL CLIMATE CHANGE IMPACTS IN THE UNITED STATES 9 (2009) [hereinafter GLOBAL CLIMATE CHANGE IMPACTS IN THE U.S.]. The U.S. Global Change Research Program was charged with the responsibility of preparing this report by the Federal Advisory Committee Act. *Id.* at 7.
12. *Id.* at 89.
13. *Id.* at 41.
14. *Id.* at 71.
15. *Id.* at 12.
16. *Id.* at 99.
17. *See Open Space Law Redux*, *supra* note 1 (manuscript at 5-9).
18. *See infra* text accompanying notes 21-23.
19. *See Land Use Stabilization Wedge*, *supra* note 1, at 21-26; *Open Space Law Redux*, *supra* note 1 (manuscript at 11-19).

which was 73.2% of all electricity produced in the United States.[20] The Department of Energy projects that by 2035, residential and commercial buildings will use 76.5% of the total electricity in the United States.[21] Furthermore, "[r]oughly 41% of total U.S. energy consumption in 2010 was used in [residential and commercial] buildings . . . ."[22] Inherent to the nation's energy system are significant inefficiencies. Two-thirds of the energy used to produce electricity is vented as heat that escapes into the atmosphere during generation,[23] and up to 15-20% of the net energy produced at these plants is lost in transmission: so-called line losses.[24]

Due to the large amount of electricity that residential and commercial buildings require, these buildings are responsible for a significant amount of GHG emissions. In 2009, residential and commercial buildings accounted for thirty-five percent of CO_2e emissions, totaling 2.34 Gt CO_2e.[25] Improvements in the generation of electricity and its transmission to these buildings, and in building construction can significantly lower energy waste and use and greatly lower GHG emissions in the United States.

One of the main drivers of GHG emissions and thus climate change is transportation. Nationally, the EPA found that "[t]ransportation activities . . . accounted for [thirty-three] percent of CO_2 emissions from fossil fuel combustion in 2009 . . . . Nearly [sixty-five] percent of [these] emissions resulted from gasoline consumption for personal vehicle use."[26] For example, passenger cars alone emitted 0.6274 Gt CO_2e in 2009.[27] Although between 2008 and 2009 there was a decrease in national CO_2 emissions, this decrease was temporary and is not indicative of a permanent shift away from carbon emission-trends related to vehicle travel.[28]

A useful measure of transportation levels is a count of the total VMT by Americans. Unfortunately, "[v]ehicle miles traveled (VMT) in the [United States] has grown three times faster than population [since 1980], and almost twice as fast as vehicle registrations . . . . Only 13% was explained by population growth," out of a total 36% increase in VMT.[29] This increase appears to be largely driven by personal auto use, as "vehicle miles traveled by light-duty motor vehicles (passenger cars and light-duty trucks) increased [thirty-nine] percent from 1990 to 2009."[30] "[VMT] may exceed seven trillion . . . miles by 2055," which is much higher than the three trillion traveled in 2006.[31]

One way to combat this projected rise in VMT is to promote urban settlement, as urban residents generally drive less than suburban or rural residents.[32] Residents of compact ur-

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20. *U.S. Residential and Commercial Buildings Total Primary Energy Consumption*, U.S. DEP'T OF ENERGY, http://buildingsdatabook.eren.doe.gov/TableView.aspx?table=1.1.1 (last updated Mar. 2012).

21. *Id.*

22. *How Much Energy is Used in Buildings in the United States?*, U.S. ENERGY INFO. ADMIN., http://www.eia.gov/tools/faqs/faq.cfm?id=86&t=1 (last reviewed Nov. 30, 2011).

23. E-mail from Thomas Bourgeois, Deputy Dir., Pace Energy & Climate Ctr., to author (June 30, 2011, 21:55 EST) (on file with author).

24. E-mail from Thomas Bourgeois, Deputy Dir., Pace Energy & Climate Ctr., to author (June 30, 2011, 17:22 EST) (on file with author).

25. EPA GREENHOUSE GAS INVENTORY, *supra* note 8, at 2-20. This enormous quantity of emissions is understandable, as eighty-three percent of energy consumed in the United States relied on carbon-intensive fossil fuels.*See Renewable Energy Consumption and Electricity Preliminary Statistics 2009*, U.S. ENERGY INFO. ADMIN., http://www.eia.doe.gov/cneaf/alternate/page/renew_energy_consump/rea_prereport.html (last visited May 3, 2012).

26. EPA GREENHOUSE GAS INVENTORY, *supra* note 8, at ES-8.

27. *Id.* at 2-22.

28. *Id.* at 2-1 ("The following factors were primary contributors to this decrease [from 2008 to 2009]: (1) a decrease in economic output resulting in a decrease in energy consumption across all sectors; and (2) a decrease in the carbon intensity of fuels used to generate electricity due to fuel switching as the price of coal increased, and the price of natural gas decreased significantly.").

29. Keith Bartholomew & Reid Ewing, Address at the 87th Transportation Research Board Annual Meeting: Land Use-Transportation Scenario Planning in an Era of Global Climate Change 4 (Nov. 5, 2007).

30. EPA GREENHOUSE GAS INVENTORY, *supra* note 8, at 2-21.

31. AM. ASS'N OF STATE HIGHWAY & TRANSP. OFFICIALS, FUTURE NEEDS OF THE U.S. SURFACE TRANSPORTATION SYSTEM 18 (Feb. 2007).

32. *See* EWING ET AL., *supra* note 3, at 2. In fact, given location efficient transit planning, "a household can reduce its GHG emissions by as much as [seventy-eight] percent." PETER HAAS ET AL., CTR. FOR NEIGHBORHOOD TECH., TRANSIT ORI-

ban neighborhoods drive between twenty to forty percent less than suburban residents.[33] Directly related to this reduction in VMT, research has shown that per capita energy consumption and GHG emissions are two to two and a half times higher in areas of low density development, when compared to high density areas.[34]

C. Demographic Trends and Their Impact

It is estimated that, by 2050, eighty-nine million new and replacement residential units and "190 billion additional square feet of nonresidential space" will be created.[35] Where these buildings are located and how they are built will dictate how much this new construction will increase energy consumption and GHG emissions; this depends on the preferences of the new households that will be added to the population. The demographics of the American population will change in the future, shifting towards more childless and single-person households. By 2030, the percentage of households with children will decrease to twenty-seven percent, while households without children will rise to seventy-three percent.[36] Single individuals, living alone, will account for thirty-four percent of all households.[37]

Because these new households will seek housing and jobs suited to their needs, land use regulation must evolve to promote development in line with these changing market demands.[38] Research has "previously shown that there is enough large lot single-family development on the ground to meet the . . . demand [for such housing through] 2025."[39] As of 2010, there was more demand than supply for both attached residential units and small lot units.[40] In contrast, there was a higher supply of large lot units than demand.[41]The demand for smaller housing units will grow. "[B]etween 2010 and 2050, more single-person households will be added than households with children. Moreover, roughly two-thirds to three-quarters of the net gain in households between 2010 and 2050 will be among households without children."[42] A 2011 National Association of Realtors survey found that if people could choose where to live, forty-seven percent would choose to live in a city or suburban mixed-use community.[43]

D. Changing Land Use Law in a Changing Climate

There are numerous land use strategies available to state and local governments to achieve significant energy conservation as we build and substantially renovate individual buildings and plan neighborhood development to accommodate the nation's growing population. In the aggregate, these strategies can create urban settlements that not only consume less energy but create livable and exciting places for future generations to inhabit.

ENTED DEVELOPMENT AND THE POTENTIAL FOR VMT-RELATED GREENHOUSE GAS EMISSIONS GROWTH REDUCTION 33 (2010), *available at* http://www.cnt.org/repository/TOD-Potential-GHG-Emissions-Growth.FINAL.pdf.

33. *See id.* at 9.

34. PATRICK M. CONDON ET AL., LINCOLN INST. OF LAND POLICY, URBAN PLANNING TOOLS FOR CLIMATE CHANGE MITIGATION 8 (2009).

35. Memorandum from Reid Ewing, Arthur C. Nelson & Keith Bartholomew, Response to Special Report 298 Driving and the Built Environment: The Effects of Compact Development on Motorized Travel, Energy Use, and CO2 Emissions 3 (Sept. 16, 2009), *available at* http://www.smartgrowthamerica.org/documents/ResponsetoTRBSpecialReport.pdf [hereinafter Response to 298].

36. Arthur C. Nelson, Presidential Professor & Dir., Metro. Reserch Ctr., Univ. of Utah, Address at the 2011 Journalists Forum at Lincoln Inst. of Land Policy: Land on the Built Environment: The Next City (Apr. 15-16, 2011), *available at* https://www.lincolninst.edu/docs/771/1282_Nelson - Final.pptx.

37. *Id.*

38. *Id.*

39. Response to 298, *supra* note 35, at 4.

40. Nelson, *supra* note 36.

41. *Id.*

42. Response to 298, *supra* note 35, at 4.

43. Nelson, *supra* note 36.

Part three of this article discusses enforcing and enhancing adopted energy conservation codes and explores a variety of ways that local governments can supplement energy conservation standards in individual buildings. Part four describes the connection between energy conservation and the land use regulatory process and discusses several techniques that can lower consumption and increase efficiency. In Part five, we turn to neighborhood-scale planning and demonstrate how transit oriented development, sustainable neighborhood planning, and district energy systems can be fostered by local land use plans and regulations. These strategies are capable of reducing fossil fuel consumption and tailpipe emissions by facilitating walking and biking, thus lowering the number of vehicle trips and VMT. Part six concludes by arguing that the aggregation of these strategies through the adoption of Energy Conservation Zones can shape human settlements to achieve sustainable development patterns that require less energy to build and occupy, thus contributing to America's quest for energy independence, affordability, and climate change mitigation.

III. ENERGY CODE ADOPTION AND ENHANCEMENT

A. Energy Codes: Coverage and Legal Authority

In the United States' legal system, the principal method of achieving energy efficiency in new building construction and the substantial renovation of buildings is through the energy conservation code.[44] The basic energy code, applicable in most states, contains minimum standards for the design, construction, and installation of the building shell or "envelope," mechanical systems, and lighting.[45] In the evolution of building codes in the United States, the energy code is a relative newcomer, and a much-welcomed addition to the family of codes that has historically regulated building construction, plumbing, fire prevention, and electrical systems.[46] The explicit goal of the energy code is to reduce the energy consumed by new and substantially renovated buildings to which building construction codes apply.[47]

Every few years, energy codes are strengthened to add newly-evolved technologies and to accomplish ever-increasing degrees of energy conservation. Some states and local governments, aware that building technology exists that can make new buildings extraordinarily efficient, add new provisions to their codes more quickly than others; thus, they enhance their codes with new provisions that achieve deeper efficiencies.[48] Some local governments supplement energy codes with land use regulations that govern matters beyond the scope of building codes. Energy codes, for example, do not cover building orientation, layout, or landscaping on sites, which can be used to reduce energy consumption in new buildings.[49] These efficiencies can be accomplished through site plan regulations imposed and enforced

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44. *See* THOMAS W. FLEMING, FRESHWATER DEV. CO., ENERGY CODES—ORIGINS AND CURRENT PRACTICES: A PRIMER (2009), *available at* http://www.freshwaterfl.com/EnergyCodesPrimer.pdf; Jessica A. Bacher & Jennie C. Nolon, *Zoning and Land Use Planning: Energy Codes, Green Building Initiatives, and Beyond*, 38 REAL EST. L.J. 231 (2009). Energy conservation codes are either adopted by state governments—which typically require local enforcement and may allow localities to adopt stricter standards—or by local governments directly. *See* BLDG. CODES ASSISTANCE PROJECT, http://www.bcap-energy.org/who-we-are/history-and-mission/ (last visited Mar. 31, 2012); *see also Building Energy Codes* Program, U.S. DEP'T OF ENERGY, http://www.energycodes.gov (last updated Apr. 30, 2012).

45. *Land Use Stabilization Wedge*, *supra* note 1, at 38 (citing INT'L CODE COUNCIL, INTERNATIONAL ENERGY CONSERVATION CODE iii (2009)).

46. *See, e.g.*, *Building and Construction Codes*, N.Y. STATE LIBRARY, http://www.nysl.nysed.gov/reference/building/#webster (last updated June 9, 2009).

47. *See generally* Craig DiLouie, *States Incorporate Energy Standard in Lighting Design Requirements,* ELECTRICAL CONSTRUCTION & MAINTENANCE MAG. Jan. 2005, *available at* http://ecmweb.com/mag/electric_states_incorporate_energy/ (explaining the motivation behind the new code and its widespread adoption across the United States).

48. *See Land Use Stabilization Wedge*, *supra* note 1, at 39 (citing CITY OF ARCATA, CAL., COMMUNITY GREENHOUSE GAS REDUCTION PLAN (2006), *available at* http://www.cityofarcata.org/sites/default/files/files/document_center/EnvironmentalServices/Energy/Greenhouse Gas Reduction Plan.pdf).

49. *Id.* (citing INT'L CODE COUNCIL, INTERNATIONAL ENERGY CONSERVATION CODE (2006)).

by local land use boards. As a result, for local energy codes to achieve the maximum energy and climate efficiency, they must be enhanced through stricter provisions or supplemented by local land use regulations and project approval practices that can reach beyond the coverage of the basic energy code.

The power of local governments to amend energy codes varies from state to state. A few states have not adopted a statewide energy code, thereby leaving it to their local governments to decide whether to do so.[50] Some states have adopted a state energy code and have preempted local governments from adopting and enforcing stricter standards.[51] Other states have adopted a basic energy code, along with a separate set of stricter standards, which localities are permitted to adopt in their discretion.[52] A final group of states has adopted a statewide mandatory code and allows local governments to enact stricter standards as a matter of local prerogative.[53]

B. The International Energy Conservation Code

Most states and municipalities that adopt energy codes use the International Energy Conservation Code (IECC) promulgated by the International Codes Council (ICC).[54] Over eighty percent of the states in the United States have adopted the IECC as their standard.[55] The ICC was established in 1994 as a non-profit organization with the purpose of developing a single set of model construction codes, including building construction, plumbing, electrical, and energy conservation, among other topics.[56] The ICC was founded by Building Officials and Code Administrators International, Inc., the International Conference of Building Officials, and Southern Building Code Congress International, Inc.[57] These predecessor organizations developed three separate sets of model codes that were adopted or adapted by many of the states within their regions.[58]

By forming the ICC, these three professional organizations paved the way for the development of one national energy conservation code. The resulting IECC is divided into two primary parts. One regulates the construction of smaller residential buildings (one- and two-family homes and multifamily buildings three stories in height or less); the other regulates all other buildings, generally denominated "commercial" buildings, including larger residential buildings.[59]

C. ASHRAE Standard 90.1

Most commercial buildings built today are designed to conform to "Standard 90.1, promulgated by the American Society of Heating, Refrigerating, and Air Conditioning En-

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50. *Id.* (citing Steven Bodzin, *State Energy Codes: An Uphill Battle,* HOME ENERGY Mar.-Apr. 1997, *available at* http://www.homeenergy.org/show/article/magazine/102/id/1288.

51. *Id.* (citing BCAP, *Home Rule and Energy Codes: An Introductory Outline*, ONLINE CODE ENV'T & ADVOCACY NETWORK (Mar. 2009), http://energycodesocean.org/sites/default/files/resources/Home_Rule_outline_FINAL.pdf).

52. *Id.* at 39-40.

53. *Id.* at 39.

54. *See* Bacher & Nolon, *supra* note 44, at 234 (citing *see Code Status: Commercial*, ONLINE CODE ENV'T & ADVOCACY NETWORK, http://www.energycodesocean.org/code-status-commercial (last visited May 9, 2012); *see also Code Status: Residential*, ONLINE CODE ENV'T & ADVOCACY NETWORK, http://www.energycodesocean.org/code-status-residential (last visited May 9, 2012)).

55. *International Codes – Adoption by State*, INT'L CODE COUNCIL, http://www.iccsafe.org/gr/Documents/stateadoptions.pdf (last updated Apr. 26, 2012) (forty-two out of the fifty states have adopted the IECC).

56. *About ICC*, INT'L CODE COUNCIL, http://www.iccsafe.org/AboutICC/Pages/default.aspx (last visited Mar. 31, 2012).

57. *Id.*

58. *Id.*

59. Bacher & Nolon, *supra* note 44, at 234; *see also Land Use Stabilization Wedge*, *supra* note 1, at 38 (citing INT'L CODE COUNCIL, INT'L ENERGY CONSERVATION CODE § 202, ch. 6 (2006));*What is the International Energy Conservation Code®?*, RESPONSIBLE ENERGY CODES ALLIANCE, http://www.reca-codes.org/about-iecc.php (last visited May 21, 2012).

gineers (ASHRAE)," which is incorporated by reference into the IECC.[60] ASHRAE, an international member organization founded in 1894,[61] issued its first set of energy standards for commercial buildings, Standard 90, in 1975.[62] Standard 90.1 is the most frequently used benchmark for commercial building energy construction, and it is constantly updated to keep pace with changing technology.[63] Today, this ASHRAE standard addresses the building envelope; heating, ventilation, and air-conditioning (HVAC) systems; water heating; power; lighting; other equipment; and boiler efficiency improvements.[64]

D. Code Enforcement and the Building Approval Process

Compliance with building, plumbing, electrical, fire, and energy codes is a prerequisite for obtaining a building permit and a certificate of occupancy (CO) from local governmental agencies empowered to regulate development.[65] The CO is the end point in the local land use regulatory process. It signifies compliance with all land use regulations, with all conditions imposed on a project's approval, and with applicable building codes. Architects and engineers are engaged to draw plans for new buildings. Once a development proposal is determined to comply with zoning and site plan standards, these professionals draw plans for the construction of the buildings themselves, and these plans must incorporate and comply with every standard contained in applicable codes.[66] If they do not, the local code enforcement department will reject the drawings and refuse to issue the developer a building permit.[67]

Once a building permit is issued, construction begins and local code enforcement personnel monitor and inspect the building to ensure that its construction complies with the permit.[68] If inspections indicate that code standards are being violated, a stop work order can be issued to the developer and, if work is not halted and the violations cured, the local government can go to court for an injunction and for imposition of civil, and sometimes criminal, penalties. Upon completion, the building is certified as code compliant and a CO is issued. It is only then that the building's owner is allowed to occupy the premises. If the building is a single-family home, the CO allows the homeowner to enter and begin residence. If it is a large commercial building, its owner can occupy or lease the premises following the issuance of the CO.

Energy code enforcement at the local level consists principally of having one or more code inspectors who are trained in the code, know its standards, ensure that they are met by the drawings and during construction, and then sign off on the CO, which certifies that the building has met all local standards, including zoning, site plan, building, plumbing, fire, electricity, and energy requirements.[69] Because local governments are often fiscally constrained, and because energy code enforcement is regarded in some local building departments as less critical to life and safety than compliance with building, fire, and other

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60. *Land Use Stabilization Wedge*, *supra* note 1, at 38 (citing Thomas E. Glavinich, *Energy Codes*, ELECTRICAL CONTRACTOR MAG. (Sept. 2005), http://www.ecmag.com/index.cfm?fa=article&articleID=6430); *see also 2009 Commercial Energy Efficiency*, RESPONSIBLE ENERGY CODES ALLIANCE, http://www.reca-codes.org/2009-commercial.php (last visited May 09, 2012).

61. *About ASHRAE*, ASHRAE.ORG, http://www.ashrae.org/about-ashrae/ (last visited May. 09, 2012).

62. ASHRAE, ASHRAE STANDARD: ENERGY STANDARD FOR BUILDINGS EXCEPT LOW-RISE RESIDENTIAL BUILDINGS 4 (2010), *available at* http://openpub.realread.com/rrserver/browser?title=/ASHRAE_1/ashrae_90_1_2010_IP_1024.

63. *See* Bacher & Nolon, *supra* note 44, at 234-35.

64. ASHRAE, *supra* note 62, at 4.

65. *Land Use Stabilization Wedge*, *supra* note 1, at 37-38 (citing INT'L CODE COUNCIL, INTERNATIONAL ENERGY CONSERVATION CODE § 105.1 (2003) (commentary)).

66. *See* Brian W. Blaesser & Thomas P. Cody, *Entitlement Processes in Redevelopment*, *in* REDEVELOPMENT: PLANNING, LAW, AND PROJECT IMPLEMENTATION 213, 221 (Brian W. Blaesser & Thomas P. Cody eds., 2008).

67. *See id.* at 219-21.

68. U.S. DEP'T OF ENERGY, BUILDING ENERGY CODES 101: AN INTRODUCTION 17-18 (2010), *available at* http://bcap-ocean.org/sites/default/files/resources/20100301_std901_codes_101.pdf (describing the permitting and enforcement process).

69. *See id.*

codes, many localities and states have less than adequate track records in enforcing energy code standards.[70]

States typically require training of local code inspectors and make training programs available to be sure that local inspectors are familiar with the energy code provisions.[71] States, too, are fiscally challenged and fail in some instances to provide adequate training accessible to current and newly employed code inspectors.[72] In the constellation of energy conservation and carbon emission reduction strategies, one of the most important actions is for state and local governments to properly enforce the energy code.[73] Federal initiatives that make funding or other incentives available for energy code enforcement help with this essential function of the legal system.[74] Strengthening energy code compliance through training of local code enforcers and through better enforcement and monitoring procedures are relatively inexpensive strategies that will pay off significantly in energy conservation and the reduction of future carbon emissions.

E. Energy Code Enhancement

1. Legal Authority to Require or Incentivize Enhancements

States that either allow local governments to enhance statewide codes or that adopt their own statewide enhancement provisions understand that buildings can be made more energy efficient than by what is achieved through the provisions of the base energy code.[75] Adopting stricter standards, of course, increases the capital costs of new and substantially renovated buildings. There is natural tension between accomplishing more efficiency and increasing costs beyond the point of reason. When codes require capital improvements that do not offer short-term paybacks, they may simply discourage development or generate lawsuits.

This financial and political reality divides the attention of policymakers between regulation and the provision of incentives. The base energy code achieves important, but limited, conservation because the additional costs its provisions impose on builders are relatively modest. Certain stricter code provisions involve, in the opinion of their advocates, higher costs, but costs that are recouped within a reasonable period by the savings achieved. Achieving even greater efficiencies requires that governmental agencies or utility companies provide incentives to induce owners to expend the greater capital outlays involved. The recent history of energy code enhancement and energy efficiency incentives involves a range of reactions to the tensions between capital costs, energy savings, and the need for incentives versus regulations.

In Marin County, California, where state energy conservation code provisions are enforced, the County adopted a straightforward method of enhancing energy performance of new single-family homes.[76] Homes under 4000 square feet are required to exceed the energy conservation performance required by the state code by fifteen percent.[77] If the home is over 4000 but fewer than 5500 square feet, it must exceed the state code in efficiency by twenty

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70. *Id.* at 18.
71. *See* Bacher & Nolon, *supra* note 44, at 233.
72. *See* U.S. DEP'T OF ENERGY, *supra* note 68, at 3.
73. *Id.* at 17.
74. One example being the International Code Council's collaboration with the Department of Energy to get federal funding to provide free copies of the IECC 2009. *Free 2009 IECC Download Instructions*, INT'L CODE COUNCIL, http://www.iccsafe.org/store/pages/doeregistration.aspx?r=FreeIECC (last visited May. 10, 2012). While the offer has expired, this program illustrates that collaboration between the federal government and private organizations can be used to improve energy code enforcement.
75. *Land Use Stabilization Wedge*, *supra* note 1, at 37-39.
76. *See* CNTY. OF MARIN, CAL., ORDINANCE § 19.04.100 (2011).
77. *Id.* § 19.04.100(E).

percent.[78] For homes between 5500 and 6500 square feet the requirement is thirty percent, and large homes, over 7000 square feet must be "net zero energy" users.[79] Similar standards with different thresholds and energy reduction requirements apply to multi-family and commercial buildings.[80] This approach to base energy code enhancement discourages the construction of larger, more energy consumptive buildings, or forces the purchasers of large, expensive homes to invest more in energy efficiency.

The process of energy code enhancement at the state level is illustrated in the Massachusetts Green Communities Act of 2008, which includes a supplemental set of standards that localities may adopt.[81] While the state's energy code is the same as those adopted in most states, a state-adopted "stretch code" gives local governments the option of adopting a package of more restrictive provisions if the local political and economic climate permit them to do so. The stretch code enhancements for smaller residential buildings are based on the Home Energy Rating System (HERS) standards and the Residential Energy Services Network (RESNET) rating approach.[82] For commercial buildings, enhancements are based on the latest version of the IECC, which is more restrictive than the version adopted by Massachusetts as its base code, and the New Buildings Institute's Core Performance Guide for commercial buildings, discussed further below.[83] Third party standards such as Energy Star for Homes or the Core Performance Guide are created for the discrete purpose of enhancing the energy performance of buildings over and above that achieved by the base code. By adopting such third party standards as state or local law, an additional level of efficiency is achieved that is within the realm of economic reasonableness.

The State of New York allows local governments to adopt standards more restrictive than the New York State Energy Conservation Construction Code. The Town of Greenburgh amended its local code to require that all new homes (small residential buildings) constructed in the town achieve a certain HERS index value.[84]

2. Energy Star Standards

The Greenburgh, New York example above illustrates how the Energy Star program can be used to enhance the requirements of the base energy conservation code.[85] The Energy Star rating system is a joint venture of the Environmental Protection Agency (EPA) and the U.S. Department of Energy (DOE).[86] Initially developed in 1992 as a program for labeling energy efficient computers and monitors, Energy Star has expanded, now covering a full range of appliances, heating and cooling systems, and even newly constructed residential and commercial buildings.[87] A number of municipalities have incorporated Energy Star construction and appliance requirements into their codes, requiring thermal envelope efficiency, electrical savings, superior ventilation, and equipment efficiency requirements.[88]

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78. *Id.*
79. *Id.*
80. *Id.*
81. S.2768, 2008 Leg., 2d Ann. Sess. (Mass. 2008).
82. Stretch Energy Code, 780 MASS. CODE REGS. CH. 120.AA (2011).
83. *Id.*
84. TOWN OF GREENBURGH, NY, CODE § 100-20 (2011), *available at* http://www.ecode360.com/?custId=GR0237.
85. *Id.*
86. Bacher & Nolon, *supra* note 44, at 236; *History of ENERGY STAR*, ENERGY STAR, http://www.energystar.gov/index.cfm?c=about.ab_history (last visited Mar. 31, 2012).
87. Bacher & Nolon, *supra* note 44, at 236; *History of ENERGY STAR*, ENERGY STAR, http://www.energystar.gov/index.cfm?c=about.ab_history (last visited Mar. 31, 2012).
88. *See, e.g.*, BLOOMING GROVE, N.Y., TOWN CODE § 235-14.1(A)(3) (2011); RED HOOK, N.Y., TOWN CODE § 74-20 (2011); Exec. Order No. 123 from John W. Hickenlooper, Mayor, City of Denver (Oct. 24, 2007), *available at* http://www.greenprintdenver.org/docs/CCDXO123.pdf; ARLINGTON DEP'T OF ENVTL. SERVS., POLICY FOR INTEGRATED FACILITY SUSTAINABILITY (2008), *available at* http://freshaireva.us/wp-content/uploads/2012/01/file699501.pdf ; Bacher & Nolon, *supra* note 44, at 236-237. Seattle also offers assistance to those who are looking to implement Green technology in their buildings. *Seattle Climate Action Now*, SEATTLE DEP'T OF PLANNING & DEV., http://www.seattle.gov/dpd/seattleclimateactionnow/ (last visited Apr. 20, 2011) "Rather than mandating compliance, Seattle promotes use of these standards by providing homeowners

Energy Star provides several methods of making buildings more energy efficient than most state energy code requirements. For homes, "[t]hese methods include more effective insulation, higher performance windows, more efficient heating and cooling equipment, tighter building envelopes to reduce air infiltration, and use of various energy efficiency products. The Home Energy Rating System (HERS) Index is used as the reference tool for ENERGY STAR-labeled residential buildings."[89] The HERS index uses a scale ranging from zero to 150, with zero being a building that uses no net energy.[90] The standard building constructed today in the United States typically ranks around 100 on the Index.[91] "To receive an Energy Star label, a home must achieve a minimum HERS rating that varies by climate zone, with 80 required in some zones and 85 required in others."[92]

Like many other third party standards and rating systems, "[Energy Star] guidelines for residential buildings may be adopted at the local level either as mandatory standards for new or renovated buildings" or as standards to be achieved through the provision of incentives.[93] The Town of Blooming Grove, New York, uses a density bonus technique to encourage developers of homes to adopt Energy Star, rather than requiring compliance like the Greenburgh approach.[94] The Town of Blooming Grove awards a ten percent increase in the number of homes that can be constructed under local zoning in exchange for making them all Energy Star compliant.[95] This is an illustration of using a municipality's delegated zoning authority to supplement energy code requirements.

A similar approach is followed by Seattle, Washington, which promotes green residential development through the use of Energy Star, among other third party standards.

> Rather than mandating compliance, Seattle promotes use of these [enhanced] standards by providing homeowners with information and links to each of these programs on its Climate Action Now website—a central clearinghouse for information and activities related to climate change mitigation. The [c]ity also promotes [Energy Star through] its City Green Building Program, [under] which the Department of Planning and Development . . . [assists] homeowners and builders [interested in using] green building technology for construction and remodeling projects.[96]

To set "an example for the private sector, Denver, [Colorado] requires Energy Star compliance for [buildings]" that are subsidized by the city. "Under Executive Order 123, city-funded new buildings and major renovations must be built in compliance with [Energy Star]."[97] In Arlington, Virginia, "county buildings must be built and designed to meet [Energy Star] performance [standards]."[98] The Arlington Initiative to Reduce Emissions recommends that small businesses adopt Energy Star standards to reduce energy use and emissions.[99] To move them along, the county offers several types of free energy audits.[100]

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with information and links to each of these programs on its Climate Action Now website - a central clearinghouse for information and activities related to climate change mitigation." Bacher & Nolon, *supra* note 44, at 237.

89. Bacher & Nolon, *supra* note 44, at 236; *see also_What is a Home Energy Rating?*, RESIDENTIAL ENERGY SERVS. NETWORK ("RESNET"), http://www.resnet.us/home-energy-ratings (last visited Mar. 31, 2012).

90. Bacher & Nolon, *supra* note 44, at 236.

91. *Id.*

92. *Id.*

93. Bacher & Nolon, *supra* note 44, at 236-37.

94. *See* BLOOMING GROVE, N.Y., TOWN CODE § 235-14.1(A)(3) (2011).

95. *Id.*

96. Bacher & Nolon, *supra* note 44, at 237; *See also Making Green Building Standard Practice*, SEATTLE OFFICE OF SUSTAINABILITY & ENV'T, http://www.seattle.gov/dpd/greenbuilding/ (last visited Mar. 31, 2012); *Seattle Climate Action Now*, *supra* note 88.

97. Bacher & Nolon, *supra* note 44, at 237; Exec. Order No. 123 from John W. Hickenlooper, Mayor, City of Denver (Oct. 24, 2007), *available at* http://www.greenprintdenver.org/docs/CCDXO123.pdf.

98. Bacher & Nolon, *supra* note 44, at 237. .

99. *Id.*; *see also AIRE: Arlington Initiative to Reduce Emissions*, ARLINGTON CNTY. GOV'T, http://freshaireva.us (last visited Apr. 1, 2012).

100. Bacher & Nolon, *supra* note 44, at 237.

3. ASHRAE Standard 189.1

> ASHRAE, in conjunction with the United States Green Building Council (USGBC) and the Illuminating Engineering Society of North America (IESNA), developed Standard [189.1] . . . for the design and construction of high-performance green buildings. The intent behind its creation is for both public and private entities to use Standard [189.1] as a performance baseline. The Standard, which does not apply to low-rise residential buildings, is designed to achieve 30% greater energy efficiency than ASHRAE 90.1-2007. . . .[101]

Standard 189.1 goes beyond energy conservation. It includes aspects of site and building development such as site sustainability, water use efficiency, impact on the atmosphere, materials and resources, indoor environmental quality and construction and operation, as well as energy efficiency.[102] Among the energy conservation enhancement features of Standard 189.1 are standards for appliances and lighting, and a requirement that on-site renewable energy systems provide at least one percent of the electricity needed.[103] By implementing on-site generation, and requiring remote or automatic measuring devices for energy sources and key systems, Standard 189.1 can achieve its goal of thirty percent less energy use than buildings that comply with Standard 90.1.

4. Core Performance

The New Buildings Institute (NBI) is a non-profit organization whose primary goal is to improve energy efficiency in buildings.[104] It has established a set of energy code enhancements that is available to state and local governments as a mechanism for enhancing their codes. Its Core Performance program is a prescriptive approach that can yield almost thirty percent energy savings above the IECC for commercial buildings smaller than 100,000 square feet.[105] Core Performance is incorporated by reference in the State of Massachusetts's supplemental code that is available for local governments to adopt.[106]

5. Combined Heat and Power

Local land use laws such as zoning, subdivision, and site plan regulations can achieve extraordinary energy efficiency by permitting and encouraging the use of combined heat and power (CHP) systems in individual buildings and interconnected energy systems in certain mixed use districts. By employing CHP, a mechanical system that can be used to produce electricity, heat or both, in higher density, mixed use neighborhoods, the potential for energy efficiency, and therefore energy conservation and climate change mitigation, is exponentially greater than if used on an individual parcel of land.

6. Requiring Energy Efficient Appliances

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101. Bacher & Nolon, *supra* note 44, at 236. See also ASHRAE & U.S. GREEN BLDG. COUNCIL, STANDARD FOR THE DESIGN OF HIGH-PERFORMANCE GREEN BUILDINGS: EXCEPT LOW-RISE RESIDENTAIL BUILDINGS 2-3 (2011), *available at* http://openpub.realread.com/rrserver/browser?title=/ASHRAE_1/ashrae_189.1_113009M [hereinafter STANDARD FOR HIGH-PERFORMANCE GREEN BUILDINGS].

102. STANDARD FOR HIGH-PERFORMANCE GREEN BUILDINGS, *supra* note101, at 14-37.

103. *Id.* at 16, 27.

104. *About Us*, NEW BLDGS. INST., http://www.newbuildings.org/about-us (last visited Apr. 1, 2012).

105. *See Core Performance*, ADVANCED BLDGS., http://www.advancedbuildings.net/core-performance (last visited Apr. 1, 2012).

106. *See* 780 MASS. CODE REGS. CH. 120.AA (2011).

Appliances include refrigerators, freezers, computers, televisions, and clothes dryers in residences, and a host of larger appliances and equipment in commercial buildings, including printers, faxes, and other office equipment. In commercial and residential buildings, the use of appliances and equipment account for a significant percentage of electricity use.[107] In some places, equipment and appliances account for up to half of all energy used in both types of buildings. For this reason, some local governments have attempted to require developers to install energy efficient appliances and equipment in their buildings.

In *Air Conditioning, Heating & Refrigeration Institute v. City of Albuquerque*, a federal district court issued a preliminary injunction barring enforcement of certain provisions of the City of Albuquerque's green building code pending the outcome of a lawsuit, brought by appliance and equipment trade organizations, contractors, and distributors, on the ground that those code provisions were preempted by federal law.[108] The city's green building code called for a thirty percent increase in energy efficiency for new commercial and residential buildings as well as for those undergoing substantial renovations.[109] To achieve this goal, the code contained prescriptive standards for individual building components including HVAC and water heaters that were in excess of federal standards for those products.[110] The court found:

> The [c]ity's goals in enacting [the disputed Code] are laudable. Unfortunately, the drafters of the Code were unaware of the long-standing federal statutes governing the energy efficiency of certain HVAC and water heating products and expressly preempting state regulation of these products when the Code was drafted and, as a result, the Code, as enacted, infringes on an area preempted by federal law.[111]

The court was unconcerned by other provisions of the Albuquerque code that required, for example, single-family homes to have more insulation and more efficient heating, cooling and ventilating, water heating, and lighting; and that some commercial and residential structures would have to undergo thermal bypass inspections.[112] These are helpful examples of the kinds of provisions that state and local governments can adopt to enhance base energy codes while avoiding federal preemption.

IV. LAND USE REGULATIONS AND ENERGY EFFICIENCY IN BUILDINGS

A. Land Use Objectives Include Energy Conservation

There are certain aspects of building and site development not governed by the energy code that can be regulated through the land use system that relate directly to how much energy a building will consume and how carbon intensive it will be. Building owners, for example, can be encouraged or required to accommodate hybrid cars by providing plug in facilities in the building's parking areas. Anti-idling policies can be adopted by building managers and signs can be posted discouraging idling in parking and waiting zones immediately outside buildings. For example, San Francisco is committed to becoming America's

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107. *See About ENERGY STAR*, ENERGY STAR, http://www.energystar.gov/index.cfm?c=about.ab_index (last visited Apr. 1, 2012).

108. Air Conditioning, Heating & Refrigeration Inst. v. City of Albuquerque, No. 08-633 MV/RLP, 2008 WL 5586316, at *1 (D.N.M. Oct. 3, 2008).

109. *Id.* at *2.

110. *Id.* at *3.

111. *Id.* at *12.

112. *Id.* at *11.

environmental car capital.[113] Among other initiatives, the city council adopted building code provisions that require new homes and office buildings to be wired for electric car chargers.[114] The city also provides loans to single-family homeowners to encourage them to install charging stations.[115] Less aggressive but similar initiatives are being undertaken in Houston,[116] San Diego,[117] and Portland.[118]

Where cities identify trails for pedestrians and bikers, site planning for new buildings can be required to connect to them, thereby reducing VMT, energy consumption, and emissions. New buildings can be required to have bike stalls on the outside or to provide indoor bike storage for workers or residents who are thereby encouraged to bike to and from work, on errands, and on outings. A new emphasis in city and regional planning has emerged concerning bicycle transportation, with some communities adopting bicycle master plans that call for street and sidewalk design standards, the location of bicycle parking facilities, incentives, and education—all to increase the use of this transportation alternative.[119] Using a variety of these techniques, New York City reported a thirty-five percent increase in commuter biking between 2007 and 2008.[120] According to the 1990 Census, only 1.2% of Portland commuters reported biking to work.[121] After investing $3.50 per resident in bicycling infrastructure and programs, "[six] percent of commuters chose to bicycle to work; and as many as [twelve] percent did so in the downtown area" in 2007.[122] "In Minneapolis, [Minnesota], [twenty] percent of all trips are taken by bicycling or walking . . . ."[123]

Site plan regulations can dictate building orientation or require tree planting that can reduce energy consumption. In addition, active solar and wind generation facilities can be frustrated or facilitated by local land use law. Additional techniques within the ambit of land use regulation include space cooling systems that dissipate heat into natural heat "sinks" such as geothermal piping systems. Other conservation techniques can be facilitated as well including district energy systems and evaporative cooling and nighttime radiative cooling systems. Depending on the structure of land use law in any given state, it may be possible for local governments—under their delegated land use regulatory authority—to require or encourage these energy-conserving features of land development as part of their land use regulatory system.

State legislatures delegate land use authority to local governments as part of their police power, that is, their legal authority to legislate to protect the health, safety, and welfare

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113. *See* Todd Woody & Clifford Krauss, *Cities Prepare for Life With the Electric Car*, N.Y. TIMES, Feb. 15, 2010, at B1, *available at* http://www.nytimes.com/2010/02/15/business/15electric.html; *see also* Suzanne Goldenberg, *San Francisco Gears up for the Age of Eletric Car,* THE GUARDIAN, Feb. 17, 2010, *available at* http://www.guardian.co.uk/environment/2010/feb/17/san-francisco-electric-cars.

114. *See* Woody & Krauss, *supra* note 113.

115. *See* Nick Allen, *San Francisco Prepares for Electric Car Revolution*, THE TELEGRAPH, Feb. 18, 2010, http://www.telegraph.co.uk/news/worldnews/northamerica/usa/7260958/San-Francisco-prepares-for-electric-car-revolution.html.

116. U.S. Dep't of Energy, *Houston's Plug-In Vehicle Activities and Processes*, ALTERNATIVE FUELS & ADVANCED VEHICLES DATA CTR., http://www.afdc.energy.gov/afdc/vehicles/electric_deployment_case_study_houston.html (last updated June 6, 2011).

117. Josie Garthwaite, *Car2go, Daimler-Backed Sharing Program, to Go Electric in San Diego*, N.Y. TIMES BLOGS (July 13, 2011, 2:49 PM), http://wheels.blogs.nytimes.com/2011/07/13/car2go-daimler-backed-sharing-program-to-go-electric-in-san-diego/.

118. *See generally* CITY OF PORTLAND, ELECTRIC VEHICLES: THE PORTLAND WAY (2010), *available at* http://www.portlandonline.com/shared/cfm/image.cfm?id=309915.

119. PETER LAGERWEY, THE NAT'L CTR. FOR BICYCLING & WALKING, CREATING A ROADMAP FOR PRODUCING & IMPLEMENTING A BICYCLE MASTER PLAN 3 (2009), *available at* http://www.bikewalk.org/pdfs/BMP_RoadMap.pdf.

120. Press Release, N.Y. Dep't of Transp., DOT Announces 35% Increase In Commuter Cycling From 2007 to 2008 and Calls on Cyclists to Use Lights to be Seen and Safe (Oct. 30, 2008), *available at* http://www.nyc.gov/html/dot//html/pr2008/pr08_047.shtml.

121. THOMAS GOTSCHI & KEVIN MILLS, RAILS-TO-TRAILS CONSERVANCY, ACTIVE TRANSPORTATION FOR AMERICA 17 (2008), *available at* http://www.railstotrails.org/resources/documents/whatwedo/atfa/ATFA_20081020.pdf (citing CITY OF PORTLAND OFFICE OF THE AUDITOR, SERVICE EFFORTS & ACCOMPLISHMENT REPORT 2006-7 (2007)).

122. *Id.*

123. *Id.* (citing FED. HIGHWAY ADMIN., INTERIM REPORT TO THE U.S. CONGRESS ON THE NONMOTORIZED TRANSPORTATION PILOT PROGRAM (2007)).

of the people. Zoning enabling acts adopted by state legislatures routinely state that local land use regulations may be adopted to achieve the "appropriate use of the land."[124] Local land use regulations that govern land development to reduce energy use and mitigate climate change are consistent with these key precepts of the enabling acts. Quite often, enabling acts state that they are to be broadly construed and, increasingly, courts interpret them expansively if the challenged law is clearly designed to protect the public interest.[125] Challenges brought against local land use laws that are designed to conserve energy and mitigate climate change might be based on *ultra vires* claims (that the law exceeds the authority of the locality) or on the claim that the matter is preempted by federal or state law. Given our heighted awareness of the need to conserve energy and reduce carbon emissions, it is now clear that local regulations that do so, achieve multiple public interests and advance the health, safety, and welfare of the people.

B. Passive Solar, Building Form, and Orientation

Developers of new or substantially renovated buildings must present an application to the local government in which their property is located and seek approval to build what they propose.[126] This requires an administrative review by the Zoning Enforcement Officer of the community who determines, in the first instance, whether the zoning ordinance allows the use and construction details proposed and whether subdivision, site plan, or special permit approval is required or whether a variance from the zoning provisions is necessary.[127] During the early stages of this review process, construction drawings have not been completed. Developers, architects, and engineers have not done detailed design work and, most certainly, lighting, electrical, and interior design professionals have not done much work, if they have even been engaged.

This early stage in the land use review process is an ideal time to require or encourage the developer to think through the most cost effective methods of reducing energy consumption and carbon emissions. It is at this stage that decisions can be made about building orientation, form, self-shading, window size and location, rooflines and extensions, height-to-floor ratios, and building features that relate to passive ventilation and cooling.[128] Land use laws can require buildings to be placed appropriately on the site, for multiple buildings to be clustered, and for designs to be changed to conserve energy.[129] Zoning can allow for a mix of uses, which can, in turn, enable developers to adopt more efficient district heating and cooling systems that greatly reduce energy consumption.[130] It is at this stage that on-site energy generation systems in larger projects can be considered. The significant loss of energy in transmission lines from remote plants is prevented by placing generation systems on site.

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124. *See, e.g.*, John R. Nolon, *Historical Overview of the American Land Use System: A Diagnostic Approach to Evaluating Governmental Land Use Control*, 23 PACE ENVTL. L. REV. 821, 844 n.77 (2006) [hereinafter Nolon, *Overview of Land Use System*] ("In Rodgers v. Village of Tarrytown, 96 N.E.2d 731 (1951), municipalities in New York learned that they have the authority to create novel zoning devices such as the floating zone to achieve the most appropriate use of the land."); *See also* N.Y. TOWN LAW § 263 (McKinney 2011); N.Y. VILLAGE LAW § 7-704 (McKinney 2011).

125. *See* Nolon, *Overview of the Land Use System, supra* note124, at 848.

126. JOHN R. NOLON, WELL GROUNDED: USING LOCAL LAND USE AUTHORITY TO ACHIEVE SMART GROWTH 21 (2001).

127. *See id.*

128. *See* INT'L CODE COUNCIL, INT'L ENERGY CONSERVATION CODE, tbl. 506.5.1(1) (2009), *available at* http://publicecodes.citation.com/icod/iecc/2009/icod_iecc_2009_5_sec006_par007.htm. Even though this table is from an older version of the IECC, the table serves to illustrate the elements that can be manipulated at this early stage to achieve energy conservation.

129. *See generally Land Use Stabilization Wedge*, *supra* note 1; John R. Nolon, *Shifting Ground to Address Climate Change: The Land Use Law Solution*, 10 GOV'T L. & POL'Y J. 23, 23-24 (2008).

130. *See* Linda Baker, *Heating the 'Hood*, AM. PLANNING ASS'N (Dec. 2009), http://vancouver.ca/sustainability/documents/HeatingtheHood.pdf (discussing benefits of district heating and cooling systems).

C. Building Commissioning

It is also at this early stage in the development review process that local land use officials can discuss the possible commissioning of the building with the developer and the design team. Local land use and building standards usually do not govern the actual quality of construction, and the tightness and functional integrity of a building have a great deal to do with energy conservation. In a pre-application workshop, the developer can be encouraged to draw up and follow a building commissioning process that creates ground rules for the design and construction of the building that go beyond the traditional reach of the land use approval process. Commissioning can include higher quality and frequency functional testing of energy consuming systems and components, and even an occupancy plan where the owner states how the post-occupancy management of the building will ensure energy conservation.[131]

D. Systems Approaches to Building Design

Integral to the success of this early building proposal review process is the ability of the developer and the design team to work with local officials to review the proposed building as an entire system and to change construction elements and design standards as this system-wide review occurs. This is referred to as an "integrated design process" involving all members of the design team in an iterative approach during the stage of the approval process where normally only the building's architect is at work.[132] By integrating the consideration of all design issues at the earliest stage, additional energy efficiencies of up to 35-40% can be achieved, greatly lowering the capital cost of construction and reducing post-occupancy costs of operations.

E. Land Use Approval Protocols

These approaches can be integrated into mandatory provisions of local land use laws or they can be employed as recommended protocols of the building review and approval process itself. By departmental practices, mayoral executive order, or a resolution of the city council or town board, a locality can make a commitment to energy conservation and the reduction of carbon emissions. A component of the comprehensive plan can be added by amendment outlining energy conservation goals, objectives, strategies, and implementation measures.

This clear articulation of local policy may be enough to empower the local administrative staff and planning commission to require developers of proposed projects to submit an energy conservation plan for their building that goes far beyond the standards of the energy code and moves into the building design, orientation, and commissioning initiatives discussed here.

V. INTEGRATED NEIGHBORHOOD PLANNING

A. Densities, Sustainability, and Energy Conservation at the Neighborhood Level

To achieve maximum energy efficiency and sustainability, planning and regulation must concentrate on scales larger than the individual building and site. In this part, we

131. *See* WASH. STATE UNIV., ENERGY EFFICIENCY FACTSHEET: BUILDING COMMISSIONING FOR NEW BUILDINGS (2005), *available at* http://www.energy.wsu.edu/Documents/BuildingCommissioning.pdf.

132. Whole Bldg. Design Guide Aesthetics Subcomm., *Engage the Integrated Design Process*, WORLD BLDG. DESIGN GUIDE, http://www.wbdg.org/design/engage_process.php (last updated Oct. 30, 2010).

look at three strategies that focus at the neighborhood level: Transit Oriented Development, the LEED-ND rating system of the USGBC and District Energy Systems. These constitute neighborhood planning strategies that achieve high levels of energy conservation and sustainability. It is at this level in appropriate neighborhoods that density must be increased, that compact and mixed uses must be provided, and that walkability must be promoted to achieve feasible transit systems, multiple sustainability objectives, and greatly reduced energy consumption.

B. Transit Oriented Development

There has been much written about transportation choices and land use, most of it under the rubric of "transit oriented development."[133] But the terminology is varied, revealing a certain amount of ambiguity about the subject matter. Some authors write about "transit supportive" development, others use the term "transit ready," and some discuss "transportation efficient" land use patterns.[134] Others appearing in the literature include "transit friendly,"[135] "station area planning,"[136] "transportation demand management" (TDM), "traditional neighborhood development" (TND),[137] "planned unit development,"[138] "development-oriented transit,"[139] "transit supportive urban design,"[140] "transit station communities,"[141] "transit focused development,"[142] and "transit villages."[143]

This is a highly interdisciplinary field involving many different geographical contexts, populations, densities, and transportation modalities. Much of what is written about the subject is imprecise about how land use planning and regulation can serve the cause of cost-effective transit oriented or transportation efficient development.[144] Any attempt to describe a single approach is subject to a host of exceptions in particular places, but some template for discussing the legal underpinnings of this important subject is needed.[145]

When density is increased for both residential and commercial uses, the distance between origin and destination is shorter and walking, bicycling, and mass transit services are more feasible. In order for increased densities to be tolerated, attractive building,

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133. ROBERT T. DUNPHY ET AL., URBAN LAND INST., DEVELOPING AROUND TRANSIT: STRATEGIES AND SOLUTIONS THAT WORK 4 (2004). This is the most widely used term, coined by urban designer Peter Calthorpe in the 1990s.

134. *Id.*

135. *Transit Village Update*, TRANSIT-FRIENDLY DEV. NEWSL. (Alan M. Voorhees Transp. Ctr., New Brunswick, N.J.), May 2006, *available at* http://policy.rutgers.edu/vtc/tod/newsletter/vol2-num1/article_village_update.html#belmar (phrase used by New Jersey Transit).

136. *Transit-Oriented Development*, REAL ESTATE COUNCIL OF AUSTIN, INC., http://www.recaonline.com/docs/arc/arc2006/transit_oriented.html (last visited May 10, 2012) (phrase used in Austin, TX, referring specifically to overlay zoning around transit stations).

137. Refers to the kind of development popular before post-WWII sprawl, and is essentially TOD before it got that name.

138. DUNPHY ET AL., *supra* note 133, at 4 (describing a planned unit development).

139. This term actually is when transit planners are asked to accommodate existing developments, but the goal is the same.

140. CAROL J. SWENSON & FREDERICK C. DOCK, CTR. FOR TRANSP. STUDIES, UNIV. OF MINN., REPORT NO. 11, URBAN DESIGN, TRANSPORTATION, ENVIRONMENT AND URBAN GROWTH: TRANSIT-SUPPORTIVE URBAN DESIGN IMPACTS ON SUBURBAN LAND USE AND TRANSPORTATION PLANNING (2003) (used by the Minnesota Department of Transportation).

141. PUGET SOUND REG'L COUNCIL, CREATING TRANSIT STATION COMMUNITIES IN THE CENTRAL PUGET SOUND REGION (1999) (phrase used by the Puget Sound Regional Council).

142. Douglas R. Porter, *Transit-Focused Development: A Progress Report*, 64 J. AM. PLAN. ASS'N. 475 (1998) (phrase used by the Transportation Research Board).

143. DUNPHY ET AL., *supra* note 133, at 4 ("popularized by Michael Bernick and Robert Cervero in their 1966 book, *Transit Villages for the 21st Century*"). The term is also used by the California and New Jersey legislatures. *California Transit-Orientated Development (TOD) Searchable Database*, CAL. DEP'T OF TRANSP., http://transitorienteddevelopment.dot.ca.gov/ (last visited Apr. 1, 2012); *Transit Village Initiative: Overview*, STATE OF N.J. DEP'T OF TRANSP., http://www.state.nj.us/transportation/community/village/ (last updated Feb. 25, 2009).

144. *See* ITE SMART GROWTH TASK FORCE, INST. OF TRANSP. ENG'RS, SMART GROWTH TRANSPORTATION GUIDELINES: AN ITE PROPOSED RECOMMENDED PRACTICE 23-27, 41-72 (2003) [hereinafter SMART GROWTH TRANSPORTATION GUIDELINES] (many recommendations are proposed concerning how to improve road usage and encourage public transportation, but hardly any space is given to describe how land use regulations can affect these changes).

145. *See, e.g.*, Greg Yager, *Taking Transit*, URB. LAND, July 2006, at 103; Alden S. Raine, *Waterfront TOD*, URB. LAND,May 2003, at 79.

landscape, and streetscape design must be employed. Studies have shown that increased population density decreases automobile ownership and the number of VMT. "[D]oubling the population density of a community could reduce per-family driving by as much as 20 to 30 percent."[146] "[O]ne study found that at high density, levels of 10,000 to 50,000 people per square mile, half of all trips were not by automobile, and walking and bicycling increased significantly."[147]

Climate change mitigation requires that we create a less car-dependent society. According to the Presidential Climate Action Project, "[t]he greatest potential for reducing greenhouse gas emissions and imported petroleum is to reduce vehicle miles traveled—the miles Americans drive each year."[148]

TOD land use plans and zoning encourage mixed use, compact development in transit station areas, or transit neighborhoods. They locate housing and jobs near transit stops and significantly reduce the number and distance of vehicle trips.[149] Encouraging land use patterns that house and employ more Americans in urban areas will cause a significant reduction in VMT while placing households in smaller, more energy efficient homes and offices, further reducing fossil fuel consumption and CO_2 emissions.

C. Transportation and Land Use Planning

To make transit systems feasible, land use planning among localities in a transportation region must be coordinated with transportation infrastructure planning and development, which occurs at the metropolitan-area scale. Under federal law, Metropolitan Planning Organizations (MPOs) are created as consortia of state and local agencies and are charged with creating capital plans for roads, highways, and transit services in designated regions.[150] Coordination between local land use planning and MPO transportation planning is critical to the success of efforts to connect higher density urban developments and compact metropolitan developments to transit services.

Such coordination is called for under federal law, which directs MPOs to implement planning processes that "provide for consideration of projects and strategies that will . . . protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and State and local planned growth and economic development patterns."[151] Federal transportation law also requires each state to carry out a statewide transportation planning process that achieves these same objectives.[152]

The development of transit stations and rail and bus lines is dependent upon land use densities.[153] There must be a large enough number of commuters in a relevant region to provide a base level of ridership within the area served by the transit system. In addition, ridership must be sufficiently diverse to ensure that people are traveling to work, to shop, to seek entertainment, and to go home at various times during the day, thereby increasing the cost efficiency of the transit service. Local land use plans and zoning, which regulate density and the uses to which buildings may be put, determine how much population will

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146. SMART GROWTH TRANSPORTATION GUIDELINES, *supra* note 144, at 30.

147. *Id.*

148. PRESIDENTIAL CLIMATE ACTION PROJECT, PRESIDENTIAL CLIMATE ACTION PRO-JECT PLAN § 7:6 (2007), *available at* http://www.climateactionproject.com/docs/PCAP_12_4_ 2007.pdf.

149. *Land Use Stabilization Wedge*, *supra* note 1, at 27-28.

150. *See, e.g.*, John R. Nolon & Jessica A. Bacher, *Climate Change, Zoning and Transportation Planning*, 36 REAL EST. L. J. 211, 220 (2007); SAN ANTONIO-BEXAR CNTY. METROPOLITAN PLANNING ORG., http://www.sametroplan.org (last visited Apr. 1, 2012) (providing an overview of MPOs).

151. 49 U.S.C. § 5303(h)(1)(E) (2006).

152. 23 U.S.C. § 135 (2006).

153. For a discussion on transit-oriented development, see Robert Cervero, *Transit-Oriented Development*, *in* LOCAL PLANNING: CONTEMPORARY PRINCIPLES AND PRACTICE 374, 374-77 (Gary Hack et al. eds., 2009).

increase over time in a certain area, and what transportation needs new people will have. This, in turn, dictates the demand for various types of transportation services. Locally, this planning is done at the neighborhood level with an eye on the city's comprehensive plan. TOD zoning most frequently operates over an area defined by a quarter-mile radius from the transit stop.[154]

Many state enabling statutes require or encourage local governments to include a transportation element in their comprehensive plans.[155] Increasingly, these transportation elements have incorporated planning strategies intended to encourage people to drive less and to walk, bicycle, and use mass transportation more frequently. Arizona's statute, for example, requires cities with more than 50,000 people to prepare a bike transportation element as part of of their comprehensive plan.[156] Nevada's enabling legislation supports planning for mass transit, bicycle, and pedestrian infrastructure.[157] This statute encourages local planning to include a transit element that "[s]how[s] a proposed multimodal system of transit lines, including mass transit, streetcar, motorcoach and trolley coach lines, paths for bicycles and pedestrians, satellite parking and related facilities."[158]

In 2008, Florida amended its zoning enabling act that requires local comprehensive plans to consider methods of discouraging urban sprawl, supporting energy efficient development patterns, and reducing GHGs.[159] The law also mandated local governments to address "transportation strategies to address reduction in greenhouse gas emissions from the transportation sector," and to consider energy conservation under its natural resources element.[160]

D. Local TOD Case Studies

The City of Yonkers, New York adopted a highly detailed master plan for its central commuter rail station area that contained certain specifications regarding the types of development the city wanted on available vacant land in the area.[161] The zoning for the area was amended to provide an " 'as-of-right' status for developments that conform to the design standards contained in the [station area] master plan."[162] Compliance with New York State's extensive environmental review requirements is waived for these projects, since the impacts of development contemplated by the master plan had already been studied in detail and mitigation of adverse environmental impacts provided.[163]

"Early in this process, a developer was selected through a request for proposals process to plan the redevelopment of two centrally-located sites, immediately adjacent to the train station.[164] As the city developed its plan and conducted its environmental impact review, the

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[154] *Transit-Oriented Development (TOD): Overview*, SUSTAINABLE CITIES INST. OF THE NAT'L LEAGUE OF CITIES, http://www.sustainablecitiesinstitute.org/view/page.basic/class/feature.class/Lesson_TOD_Overview (last visited May 21, 2012) ("The rule of thumb is that TOD occurs within one-quarter mile, or a five to seven minute walk, of a transit station.").

[155] *Land Use Stabilization Wedge*, *supra* note 1, at 30.

156. ARIZ. REV. STAT. ANN. § 9-461.05(E)(9) (2011) (West).

157. NEV. REV. STAT. ANN. § 278.160(1)(r) (West 2011).

158. *Id.*

159. FLA. STAT. ANN. § 163.3177(6)(b) (West 2008) While this language was later stricken by the Community Planning Act, 2011 Fla. Sess. Law Serv. 2011-139 (West), the current version of § 163.3177 still discourages urban sprawl and promotes "walkable and connected communities" and the "conservation of water and energy." FLA. STAT. ANN. § 163.3177(6)(b).

160. *Id.*

161. *See* A PLAN FOR REDEVELOPMENT ON THE YONKERS WATERFRONT, *available at* http://www.ldeo.columbia.edu/edu/plus/Westchester/A PLAN FOR REDEVELOPMENT ON THE YONKERS WATERFRONT.pdf.

162. Nolon & Bacher, *supra* note 150, at 216.

163. *Id.*

164. *Id.* at 216.

private [developer] began site planning" and provided information to the city planners regarding economic and market realities.[165]

> Information provided by citizens, environmental consultants, other professionals, and the developer were integrated as the process progressed and the master plan and designs for the two sites were adjusted.
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> The result is the development of Hudson Park, a [two-phase] project that contains nearly 500 middle-income rental residential units, public pedestrian access to a [revitalized] waterfront, restaurants, office and retail space, and immediate access to the [renovated] train station through carefully designed walkways and entrances that provide security to riders. Hudson Park is a dramatic [TOD] where parking provided is approximately 50% less than the amount required by traditional urban zoning. This is possible because the buildings and area [appeal to] commuters who travel to work by train [and the developer's marketing was designed to attract them]. The developer saved $25,000 in development costs for each parking space not constructed, and residents save $6,000 annually for owning one car instead of two. Three high quality restaurants and a number of retail stores catering to the middle income population[s] of these buildings have appeared [in the neighborhood]. This project and the public amenities provided by the government [to support it] are credited with sparking considerable [additional] private sector interest in the area[,]" bringing in additional riders for the transit system and reducing demand for residential development on greenfields in outlying areas.[166]

Zoning regulations for developments usually require standard numbers of off-street parking spaces depending on the number of dwelling units permitted or the square feet of office or retail space. These standard numbers were created to apply to developments that are not transit oriented or are not compact, mixed use developments where there will be fewer cars and car trips. Reducing parking requirements, like Yonkers did in the example above, both recognizes that fewer cars will need to be accommodated in TOD developments and discourages occupants from driving.

"The suburban Bloomington, Minnesota city code provides for an " 'HX-R' " zoning district (high intensity mixed-use with residential) that is aimed at getting people out of their cars."[167] Bloomington is located toward the end of a light rail system serving the metropolitan Minneapolis area. The zoning provision aims to [r]educe vehicle trips and vehicle miles traveled . . . by allowing intense development in close proximity to high frequency transit service, and by encouraging multi-purpose trips, walking trips, carpool trips and transit trips."[168] The ordinance prohibits drive-through uses that obstruct sidewalks and discourage walking.[169] It provides a minimum density of thirty dwelling units per acre for residential development.[170] It also provides a minimum floor area ratio of 1.5 and a maximum of 2.0.[171] This maximum may be increased through density bonuses to encourage retail and service businesses, below grade parking, development of plazas or parks, affordable housing, public art, and sustainable design.[172]

Parking is restricted in the ordinance in order to "promote[] walking, biking, and transit use."[173] "[P]arking must be located below grade, within structured ramps, or in individual

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165. *Id.* at 217.
166. *Id.*
167. *Land Use Stabilization Wedge*, *supra* note 1, at 35.
168. CITY OF BLOOMINGTON, MINN., CODE ch. 19, § 19.29(a)(4) (2011).
169. *See id.* § 19.29(k).
170. *Id.* § 19.29(f)(1).
171. *Id.* § 19.29(g)(1), (4).
172. *Id.* § 19.29(g)(4)(A)-(F).
173. *Id.* § 19.29(i)(2).

on-street spaces parallel with and adjacent to low volume streets."[174] Bicycle parking must be provided near building entrances.[175] Development directly adjacent to transit stations must provide sidewalk and bikeway connections to the transit station, as well as to adjacent sites.[176] The Bloomington zoning strategy evinces a commitment to development that is truly transit oriented by restricting parking, connecting to nearby transit, and locating retail and service uses within short walks of residences, thereby reducing vehicle trips and VMT.

E. Transportation Efficient Development

Even where communities are not currently served by transit systems, they can create compact, mixed use neighborhoods that reduce car trips and miles traveled. The country cousin of TOD is Transportation Efficient Development (TED), where the emphasis is on reducing car trips within TED zoning districts. Zoning controls can limit the size of housing units and combine retail, office, and residential land uses, putting services, shops, and jobs in proximity to homes. Zoning controls may also be used to require new construction to meet energy standards and further reduce GHG emissions. Communities not yet served by transit can design one or more priority growth districts of this type and create overlay zones for them that allow greater densities and more land uses than permitted in the underlying zoning districts. By clustering development strategically, these growing localities position themselves for future service by commuter rail or bus rapid transit, thereby becoming "transit ready."

The Town of Malta, located outside of Albany, New York, adopted a TED approach to rezoning its central business district by using an overlay zone to prepare for future transit services.[177] The Malta zoning law provides for compact, mixed use development emphasizing pedestrian amenities. Malta is not currently served by transit, but the regional Capital District Transportation Plan calls for bus rapid transit service to downtown Malta in the future. In anticipation, the overlay zone states that "[t]o promote pedestrian activity and multimodal transportation, developments should be located within 1,320 feet of an existing or future transit stop as approved by the Planning Board."[178]

Suburban areas that adopt higher density, mixed use zoning will find it easier politically to adopt strong environmental protection ordinances applicable to the land outside high-density zones. Where state law permits, density bonuses may be allotted in the transportation efficient overlay area, and cash contributions may be secured from developers in exchange. This money can be used to purchase development rights from landowners in valuable open space areas outside the higher density zone, areas that mitigate climate change through sequestration.

F. LEED for Neighborhood Development

1. Overview of the LEED-ND Rating System

LEED-ND advances the USGB rating system by focusing on developments and their relationship to their adjacent neighborhoods.[179] The Congress for the New Urbanism (CNU) and the Natural Resources Defense Council (NRDC) collaborated with the USGBC to create

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174. *Id.* § 19.29(i)(2)(A).
175. *Id.* § 19.29(i)(3).
176. *Id.* § 19.29(k)(6).
177. *See* TOWN OF MALTA, N.Y., CODE ch. 167, § 167-61(F) (2011).
178. *Id.*.
179. *See LEED for Neighborhood Development*, U.S. GREEN BLDG. COUNCIL, http://www.usgbc.org/DisplayPage.aspx?CMSPageID=148 (last visited Apr. 2, 2012).

LEED-ND, which began its pilot phase in 2007.[180] According to the USGBC, the LEED-ND rating system "encourages smart growth and New Urbanist best practices by promoting the location and design of neighborhoods that reduce vehicle miles traveled (VMT) and creating developments where jobs and services are accessible by foot or public transit."[181] It also promotes more efficient energy systems and water use, which are "especially important in urban areas [where these services are expensive or] where the infrastructure is often over-taxed."[182] Though most applicable on the neighborhood scale, there are no size thresholds for projects seeking ND certification. According to the Green Building Certification Institute of the USGBC "[p]rojects may constitute whole neighborhoods, portions of neighborhoods, or multiple neighborhoods."[183] GBCI does recommend, however, that projects not be smaller than two habitable buildings or larger than about half a square mile.[184]

Like the other LEED rating systems, LEED-ND is divided into categories.[185] In each category, there are prerequisites that must be met and a variety of points that may be earned.[186] Developers must meet all prerequisites and earn a specified number of points for basic certification or to achieve certification at higher levels: silver, gold, or platinum.[187]

LEED-ND points and prerequisites are divided into five categories: Smart Location and Linkage (SLL), Neighborhood Pattern and Design (NPD), Green Infrastructure and Buildings (GIB), Innovation and Design Process (IDP), and Regional Priority Credits (RPC).[188] Within the first three categories, (SLL, NPD, and GIB) prerequisites are identified that embody the principles of sustainable development.

The Smart Location and Linkage prerequisites, for example, encourage development within established communities and near public transit.[189] Developments seeking LEED-ND status as new neighborhoods must protect prime farmland, wetlands, and water bodies from development, and avoid floodplains, imperiled species, and ecological communities.[190]

Zoning standards and local laws that foster development in existing neighborhoods or encourage the use of distressed or underutilized older buildings or brownfields will help projects seeking certification to satisfy LEED-ND smart location requirements.[191] Zoning provisions that permit transfer of development rights from farmlands, or other ecologically important areas, to existing neighborhoods further ND principles. Such provisions also manage climate change by preserving the sequestering environment and by promoting more energy efficient human settlements.[192]

The Neighborhood Pattern and Design prerequisites of LEED-ND promote livability, walkability and transportation efficiency, as well as communities that are physically well-connected with the neighborhood beyond the buildings seeking certification.[193] NPD points can be earned by increasing the density permitted by zoning to accommodate a transit agency's need for riders.[194] LEED-ND, for example, requires that projects have a minimum floor-area-ratio of .80 for commercial buildings or a minimum of seven dwelling units per

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180. *Id.*

181. *ND-Specific Guidance*, LEED ONLINE, https://www.leedonline.com/irj/servlet/prt/portal/prtroot/docs/guid/30a0a343-df18-2d10-5a85-fe6a8528385b (last visited Apr. 2, 2012).

182. *Id.*

183. *About: LEED for Neighborhood Development*, GREEN BLDG. CERTIFICATION INST., http://www.gbci.org/leednd (last visited Apr. 2, 2012).

184. U.S. GREEN BLDG. COUNCIL, LEED 2009 FOR NEIGHBORHOOD DEVELOPMENT, xiv (2011), *available at* http://www.usgbc.org/ShowFile.aspx?DocumentID=9449 [hereinafter USGBC, LEED FOR NEIGHBORHOOD DEVELOPMENT].

185. *Id.* at vii-viii.

186. *Id.*

187. *Id.*

188. *Id.* at xii.

189. *See id.* at 1-39.

190. *Id.* at 10-21.

191. *Id.* at 26.

192. *See id.* at 15-18.

193. *Id.* at 41-76.

194. *Id.* at 53-54.

acre for residential structures.[195] These standards are at the lower range of density needed to provide sufficient riders to support transit services.

A prerequisite in the Green Infrastructure and Buildings category offers an example of how LEED-ND standards exceed the provisions of base energy codes. GIB Prerequisite 2 requires "the design and construction of energy-efficient buildings that reduce air, water, and land pollution and [that mitigate] adverse environmental [impacts] from energy production and consumption."[196] This requirement forces developers to engage designers and consultants who understand how to minimize environmental impacts, including CO_2 emissions. LEED-ND encourages developers to exceed the standards imposed by most local energy code regulations. For example, any newly constructed buildings that are four stories or higher must be ten percent more energy efficient than required by ASHRAE 90.1-2007, which is the base energy code requirement for commercial buildings in many states.[197] In addition, buildings undergoing major renovations must be five percent more efficient than this standard.[198] Within a LEED-ND project, ninety percent of all new residential buildings that are three stories or less must meet Energy Star criteria or the equivalent; this too exceeds local energy code standards.[199]

Beyond prerequisites, the credits that may be earned under LEED-ND provide numerous options for developers to make their ND projects sustainable. At the site level, for example, they can choose to design for habitat and wetland conservation or to restore damaged natural resources and earn points for doing so.[200] Regarding VMT, they can adopt transportation demand management for the occupants of their buildings[201] or reduce the footprint of their parking surfaces and buildings.[202] Regarding water efficiency, they can elect to use low-flow plumbing fixtures or to adopt wastewater management protocols.[203] They can earn points by electing to orient buildings for maximum solar exposure,[204] to reduce light pollution,[205] or to install district heating and cooling facilities.[206]

2. Municipal Use of LEED-ND to Guide Land Development

The LEED-ND prerequisites and elective credits serve as an impressive menu of options to achieve sustainability. In the neighborhood context, there are many opportunities for coordinating private sector and public planning, short of adopting LEED-ND standards as mandatory regulations. In some settings, it may be difficult for developers to achieve ND certification without such coordination. Unless they are building a large new neighborhood, for example, it is hard for developers to meet prerequisites such as "walkable streets"[207] or a "connected and open community"[208] without compatible local planning and zoning. Points may be earned under LEED-ND for reduced parking footprints, but projects must meet the parking requirements of the zoning code, which might make it impossible to earn those parking credits. Points available for stormwater management are easier to earn if the building fits into a local floodplain management plan and stormwater system. Local capital

195. *Id.* at 42.
196. *Id.* at 78.
197. *Id.*
198. *Id.*
199. *Id.* at 79.
200. *Id.* at 36-37.
201. *Id.* at 65-66.
202. *Id.* at 60-61.
203. *Id.* at 86-87.
204. *Id.* at 96-97.
205. *Id.* at 104-06.
206. *Id.* at 99.
207. *Id.* at 41.
208. *Id.* at 44.

budgets can help developers earn points for a variety of sustainable features, such as access to recreational facilities, transit stops, and street and bicycle networks.

Where the local government wants to help particular developers earn points or, more ambitiously, to encourage all developers to contribute to more sustainable neighborhoods, LEED-ND standards provide strategic guidance for the reform of local land use law. The principles followed by the USGBC, CNU, and the NRDC in creating LEED-ND apply equally well to the creation of local land use regulations as they do to guiding developers in seeking certification.

Local governments may use ND standards as a checklist to evaluate their comprehensive plans, zoning and other land use regulations, capital budgets, and other activities to determine whether and to what extent they achieve neighborhood sustainability and how they can be improved without imposing undue costs on the development community. To the extent that local governments do this, they make it easier for developers to win ND certification and they promote the development of sustainable neighborhoods at the same time. Points can be earned for projects located in neighborhoods with proper street networks, for example, and for those that provide for district heating systems. Engineering streets to ensure greater connectivity, minimizing building uses that require vehicle drive-through activity on sidewalks (banks and fast food establishments), providing more pedestrian use and amenities, building paths for bikes and scooters, and planning energy systems at the district level are more easily accomplished if fostered by local comprehensive planning, capital spending, and land use regulations.

Zoning can allow for district heating and cooling plants, as well as solar and wind systems, to be installed in certain buildings or their sites; land use review protocols can be used to encourage owners to provide them, and density bonuses can be granted to provide a financial incentive for them. Green Infrastructure and Buildings credit 11 "encourage[s] on-site renewable energy production to reduce the adverse environmental and economic effects associated with fossil fuel energy production and use."[209] Solar, wind, geothermal, small-scale/micro hydroelectric, and biomass facilities that reduce a project's annual energy costs by five percent or more earn points in the GIB category.[210] Greater energy cost savings earn additional points.[211] San Francisco made renewable energy more feasible by amending its zoning regulations to add a special permit system for mounting wind towers to individual buildings in a certain district.[212] With that simple land use change, all developers in the designated zone were then able to provide wind turbines and earn these GIB credits under the LEED-ND system.

One of the historic inefficiencies in our zoning system is the lack of respected standard-setting agencies to guide the drafting of local regulations. Some states have provided, from time to time, technical assistance to localities regarding these matters. In most cases, however, localities are not guided by carefully considered standards. This is due, in part, to the fact that local circumstances differ, and consequently, mandatory standards worked out at the state or federal level may be inappropriate. Since the advent of zoning in the 1920s, there has been a constant need for guidance as localities regulate and make choices to fit their local needs. This need is exacerbated by the complex demands of sustainable development and climate change mitigation. To a degree, the LEED-ND system responds to this need by providing intelligent practices that can be used to guide sustainable neighborhood planning and regulation.

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209. *Id.* at 98.
210. *Id.*
211. *Id.*
212. SAN FRANCISCO, CAL., MUN. PLANNING CODE § 933 (2011).

G. District Energy Systems

Buildings can be made up to eighty percent more energy efficient through distributed-generation systems, which capture waste heat and use it for water and space heating and cooling.[213] Such systems operate at a scale larger than the individual building, optimally among a large number of buildings in close proximity to one another where maximum efficiency is possible. Energy efficiencies of this sort should be a part of the neighborhood planning process and integrated into local efforts that encourage sustainability through compact, mixed/use development. Energy efficient neighborhoods can be planned that encourage green building development, on-site generation, the use of renewable sources of power, efficient distribution systems, and combined heat and power systems shared by multiple buildings. LEED-ND awards a credit for "District Heating and Cooling," which a developer can earn by designing a system to meet eighty percent of a project's heating or cooling consumption or both through district heating and cooling.[214]

In higher density, mixed use neighborhoods there is great potential for energy efficiency through the creation of a District Energy System (DES). A DES produces energy in the form of steam, hot water, or chilled water, which are transported through an underground closed-loop piping system to buildings connected to the district's network.[215] A DES can mitigate climate change even further by deriving its energy from renewable fuels such as biomass, municipal waste, and lower carbon alternatives such as natural gas or, in some areas, wind turbines or solar arrays.[216]

To operate most efficiently, districts should contain buildings with different energy needs, such as multi-family buildings, offices, municipal buildings, warehouses, hospitals, nursing homes, mills, and factories. When they are located in reasonable proximity, the energy loads of each can complement one another (because their energy needs are varied at different times of day) and the costs of heating and cooling can be reduced. In those buildings, heat exchangers can draw the energy needed to meet their space and water heating needs, returning the water to the plant for recirculation within a closed loop system.[217] This eliminates the need to install individual boilers in each building, which reduces capital costs.[218] In older areas where existing furnaces, chillers, water heaters, and other cooling and water facilities are obsolete, the DES approach can cost-effectively address the need for system modernization. There are inherent fuel efficiencies in this system.

A dramatic example of this technology that transcends the neighborhood scale is occurring in Sydney, Australia. The cornerstone of Sydney's new system is trigeneration that employs gas burning engines for electricity generation.[219] The engines burn either natural gas or renewable gas, thereby reducing or eliminating the amount of GHG emissions associated with providing electricity to the city.[220] Through its "Trigeneration Master Plan," the city hopes to meet seventy percent of its energy needs by combining this electrical genera-

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213. Shankar Karki & Michael D. Mann, *Efficiency Improvements through Combined Heat and Power for On-Site Distributed Generation Technologies*, 22 COGENERATION & DISTRIBUTED GENERATION J. 19, 21 (2007), *available at* http://www.localpower.org/documents/reporto_sk_efficiencydg.pdf; *How Gas Turbine Power Plants Work*, U.S. DEP'T OF ENERGY, http://fossil.energy.gov/programs/powersystems/turbines/turbines_howitworks.html (last updated Jan. 26, 2011); *Cogeneration/Combined Heat and Power*, CTR. FOR CLIMATE & ENERGY SOLUTIONS, http://www.pewclimate.org/technology/factsheet/CogenerationCHP (last visited Apr. 2, 2012).

214. USGBC, LEED FOR NEIGHBORHOOD DEVELOPMENT, *supra* note 184, at 99.

215. Baker, *supra* note 130; *see also* R. NEAL ELLIOTT & MARK SPURR, COMBINED HEAT AND POWER: CAPTURING WASTED ENERGY, at V (May 1999).

216. *See* Baker, *supra* note 130.

217. *See* ELLIOTT & SPURR, *supra* note 215, at 25.

218. *Id.*; *see also* Baker, *supra* note 130.

219. Kinesis Consortium, *City of Sydney Decentralised Energy Master Plan – Trigeneration*, CITY OF SYDNEY 22 (2010), http://www.cityofsydney.nsw.gov.au/Council/OnExhibition/documents/CityofSydney-DEMPTrigeneration-Report20101129-LowRes.pdf [hereinafter *Sydney's Master Plan*].

220. *Id.*

tion with distributed heating and cooling.[221] Currently eighty percent of Sydney's energy is provided by coal-fired plants, where two-thirds of the energy is lost as heat or in transmission.[222] By reducing Sydney's dependence on coal, trigeneration will reduce Sydney's GHG emissions between 1.1 to 1.7 million metric tons a year.[223] The goal of seventy percent energy through trigeneration is paired with the estimates that the city could bridge the remaining thirty percent through a small amount of grid electricity, renewable sources, and energy efficiency measures.[224] The capital cost of developing this plan would total $950 million and projected annual energy savings are $200 million.[225]

To increase the use of district energy systems, the local land use regulatory system will need to adjust to allow, or even to incentivize, them.[226] They must be allowable uses and practices under local zoning and site plan regulations, as well as local building and energy codes. They may be encouraged through bonus zoning provisions that waive zoning requirements or provide additional development densities for developers who adopt DES technologies.

The City of Burlington, Vermont revised its comprehensive plan to include a commitment to transitioning to renewable sources of energy as well as to cogeneration and district heating, including biomass-fueled district heating technologies.[227] Subsequent to that revision, Burlington residents voted in favor of a smart-grid bond to provide $13.5 million in upgrades, including net metering.[228] Planners in Washington, D.C. have recognized that the absence of permissive language pertaining to DES in its local zoning law discourages the use of district energy systems.[229] They recommend amending the zoning to expressly permit the use of district energy systems in all zoning districts.[230]

Another example can be found in St. Paul, Minnesota. The cogeneration system used in this city is the result of a partnership between Ever-Green Energy and Duke Energy Generation Services.[231] In 2003, Duke Energy opened a wood-fired combined heat and power facility in downtown St. Paul.[232] Before the plant was built, Duke Energy agreed to a twenty-year power agreement with Ever-Green, thereby ensuring a market for the plant's output.[233] The wood is burned to heat water, which then creates steam.[234] This steam then turns a turbine, which creates electricity.[235] Instead of letting the steam evaporate, the steam is then used to heat out-flowing water, thereby providing hot water to the connected buildings.[236] In addition, the wood burned is "clean wood waste generated in the Twin Cities metro area,"[237] which "reduce[s] greenhouse gas emissions by more than 280,000 tons

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221. *Powering Sydney*, CITY OF SYDNEY, http://www.cityofsydney.nsw.gov.au/2030/makingithappen/AllanJones.asp (last visited Apr. 2, 2012) [hereinafter *Powering Sydney*].

222. *Id.*

223. *Id.*

224. *See id.*; *Sydney's Master Plan*, *supra* note 219, at 4;

225. *Sydney's Master Plan*, *supra* note 219, at 32.

226. *See* John R. Nolon, *Climate Change and Sustainable Development: The Quest for Green Communities–Part II*, 61 PLANNING & ENVTL. L. 3, 3-12 (2009).

227. *See* Annalisa Parent, *South Burlington Comprehensive Plan Nearly Complete*, THE OTHER PAPER (Mar. 31, 2011), http://www.otherpapersbvt.com/south-burlington-comprehensive-plan-nearly-complete.html.

228. Joel Banner Baird, *Burlington Approves Smart Grid in Citywide Vote*, BURLINGTON FREE PRESS (June 28, 2011, 8:24 PM), http://www.burlingtonfreepress.com/article/20110628/NEWS02/110628031/Burlington-approves-smart-grid-citywide-vote.

229. CLARION ASSOCS. & FARR ASSOCS., SUSTAINABILITY DIAGNOSIS FOR THE WASHINGTON, D.C. ZONING REVIEW 14-15 (2008), *available at* https://www.communicationsmgr.com/projects/1355/docs/Diagnosis Draft 17.pdf.

230. *See id.* at 15.

231. *St. Paul Cogeneration*, EVER-GREEN ENERGY, http://www.ever-greenenergy.com/clients/cogeneration.html (last visited Apr. 2, 2012) [hereinafter *St. Paul Cogeneration*].

232. *Id.*

233. *Id.*

234. *Id.*

235. *Id.*

236. *Id.*

237. *Id.*

per year."[238] This single plant is capable of producing "25 megawatts of electricity and 65 megawatts of thermal energy."[239] The thermal energy reaches over 31 million square feet of St. Paul building space.[240] This system replaces about sixty percent of the district's use of coal and oil by providing heat and cooling to the majority of the buildings in the downtown St. Paul neighborhood.[241]

One of the most compelling examples of CHP is found on the campus of the University of Texas at Austin. The UT-Austin CHP system provides "100% [of the] power, heating and cooling requirements for 16 million [square feet] and 150+ buildings."[242] The CHP system has a capacity of 137 megawatts,[243] and is capable of operating at 90% efficiency.[244] In addition, the system has 46,000 tons of chilled water capacity.[245] This system has produced heat and power with 99.9998% reliability over the last thirty-five years.[246]

VI. CONCLUSION: ENERGY CONSERVATION DISTRICTS

Planning to promote District Energy Systems is a nascent notion that is only beginning to influence local land use decision-makers. So too is the insinuation of the standards contained in the LEED-ND rating system into local plans and regulations. While TOD is a more familiar technique, it is rapidly evolving to incorporate design standards, amenities, and objectives that embrace a variety of sustainability objectives. These innovative neighborhood planning techniques can be integrated into a single program that, in turn, can organize and guide federal and state energy conservation and climate change policies.

At first blush these three strategies may seem incompatible. Each one involves a different type of neighborhood with various shapes and features. District Energy Systems organize around a cluster of diverse types of buildings with varying energy needs; TOD focuses on a transit station and a tight radius of land around it. LEED-ND encompasses district energy and transit orientation in its certification system and provides a broad strategic framework for local governments to follow in improving their land use plans and regulations to achieve sustainable development.[247]

Federal and state policies and programs should encourage localities with the potential for creating district energy systems and transit oriented neighborhoods to rezone them as Energy Conservation Zoning Districts calibrated to achieve multiple objectives of sustainable development. In the orchard of energy conservation and climate change mitigation techniques, this strategy may be the lowest hanging fruit. Over seventy percent of electricity produced in the United States is consumed by buildings, which also account for over forty percent of total domestic energy consumption; the construction of buildings is regulated at the local level through energy codes and land use standards. As much as eighty percent of the energy used to produce electricity is wasted at the point of generation or in line transmission, waste largely eliminated by on-site generation in district energy systems, which land use regulation can facilitate. Energy use in buildings correlates with climate change;

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238. Press Release, Trigen-Cinergy Solutions, Combined Heat and Power Plant Begins Operations (May 6, 2003), *available at* http://www.ever-greenenergy.com/pdf/2003_05_06_CHPStartup.pdf.

239. *St. Paul Cogeneration*, *supra* note 231.

240. *Id.*

241. *St. Paul Cogeneration*, *supra* note 231.

242. Juan Ontiveros, Exec. Dir. Util. & Energy Mgmt., Presentation Regarding the University of Texas-Austin's CHP and District Energy System (Nov. 2010), (presentation available at http://www.epa.gov/chp/documents/meeting_110110_Ontiveros.pdf).

243. *Id.*

244. *Id.*

245. *Id.*

246. *Id.*

247. The Land Use Law Center has published a guidebook on this subject through the United States Green Building Council. Land Use Law Ctr., Pace Univ. Sch. of Law, Technical Guidance Manual for Sustainable Neighborhoods: How to Use the LEED for Neighborhood Development Rating System to Audit Local Plans, Codes, and Policies (2011) (unpublished manuscript) (on file with author).

over thirty-five percent of CO2e emissions, nearly 2.5 gigatons, are attributable to energy consumed in buildings. Transportation accounts for a third of domestic GHG emissions and well over half of that is traceable to personal vehicles that are used to traverse the sprawling settlement pattern that is the result of prevailing land use policies. Per capita energy consumption and GHG emissions are over double in low density developments when compared to the higher density neighborhoods that Energy Conservation Zoning Districts create.[248]

Local officials must learn how to determine what types of buildings and energy uses should be incorporated into such a zoning district and how to change land use regulations to facilitate district energy systems, more energy efficient construction, renewable energy facilities, transit-oriented development, and other sustainability techniques. Localities need assistance in providing incentives to cover the capital costs of green buildings and district-wide systems. State and federal support for this Energy Conservation Zoning District initiative can unlock the potential these strategies have for energy conservation and climate change mitigation.

One model for such a program is the federal Enterprise Zone initiative and the New York Empire Zone program. In 1988, the Federal government passed the Enterprise Zone Development statute[249] and enhanced it with more effective benefits in 1993.[250] The criteria for identifying qualifying zones were contained in the 1988 legislation.[251] In selecting enterprise zones, the objectives were poverty reduction and urban job development and so the standards for qualifying zones were the area's unemployment rate,[252] poverty rate,[253] and the median income,[254] among other factors.

A similar program was adopted two years earlier in New York, known as the New York State Economic Development Zones, or Empire Zone program.[255] To designate qualifying Empire Zones eligible for state financial and technical assistance and tax incentives, the State Commissioner of Economic Development looked at the area's poverty rate,[256] unemployment rate,[257] and rate of public assistance.[258] Both the Enterprise Zone program and the Empire Zone program used census-based metrics to identify eligible areas within which local governments and employers adding new jobs could receive government benefits. A similar approach could be taken to identify Energy Conservation Zoning Districts (EZ Districts) in which local governments, developers, and building owners could qualify for a range of benefits if they further the strategies for energy conservation, climate change mitigation, and sustainability discussed in this article.

There are a number of available indices that could be considered to determine where maximum energy conservation can be achieved and which neighborhoods should qualify under the EZ District program. Released in March 2011, the *American Housing Survey for the United States: 2009* contains a wide range of information, including residential square footage per person, lot size, and rooms per person.[259] The U.S. Energy Information Administration ("the EIA") reports electricity consumption statistics for various types of residential and commercial buildings on a per household and per employee basis.[260] These EIA re-

248. *See supra* notes 32-34 and accompanying text.
249. Housing and Community Development Act of 1987, Pub. L. No. 100-242, § 701, 101 Stat. 1957 (1988).
250. Omnibus Budget Reconciliation Act of 1993, Pub. L. No. 103-66, § 13301(a), 107 Stat. 543 (1993).
251. Housing and Community Development Act § 701.
252. 42 U.S.C. § 11501(c)(3)(C) (2006).
253. *Id.* § 11501(c)(3)(D).
254. *Id.* § 11501 (c)(3)(E).
255. N.Y. GEN. MUN. LAW §§ 955-69 (McKinney 2011).
256. *Id.* § 958(a)(i)(A).
257. *Id.* § 958(a)(i)(B).
258. *Id.* § 958(d)(iii).
259. U.S. CENSUS BUREAU, AMERICAN HOUSING SURVEY FOR THE UNITED STATES: 2009 (2009), *available at* http://www.census.gov/prod/2011pubs/h150-09.pdf.
260. *2005 RECS Survey Data*, U.S. ENERGY INFO. ADMIN., http://www.eia.gov/consumption/residential/data/2005/index.cfm#summary (last visited Apr. 2, 2012); *2003 Commercial Build-*

ports are instructive. Single-family homes, for example, use 108.4 million Btu per household per year, 2-4 unit apartment buildings use 85.0 million Btu per household per year, while apartment buildings with five or more units consume 54.4 million Btu per household per year.[261] This type of data can be used to target neighborhoods and development patterns where energy efficiency can result. Federally-established Metropolitan Planning Organizations and state departments of transportation conduct regional transit planning and can identify qualifying transit station areas where significant new ridership will further transit development. State tax departments maintain codes for land and building use and can identify tax districts with clusters of building types that are needed in an EZ District.

The federal EZ District program could provide planning grants for local governments, mapping services, statistical data packages, best practices, infrastructure subsidies, technical assistance grants, and tax credits to property owners and developers. This federal initiative could be dependent on the participation of the state government in the EZ Program, patterning itself after the cooperative federalist approach of the Coastal Zone Management Act.[262] States could be told that federal benefits depend on states matching the grant and tax credit allocations and upon programs for helping local governments with best practices, technical assistance, and neighborhood selection. Local governments with qualifying neighborhoods that agree to adopt the EZ District program including enhanced energy code adoption, effective code enforcement, TOD, District Energy System facilities, and neighborhood sustainability standards, would be eligible to participate. With state and federal support, localities willing to adopt an EZ District program could apply for planning grants, secure assistance in adopting best practices, qualify for infrastructure subsidies and, in turn, make property owners and developers in EZ Program neighborhoods available for tax credits.

The EZ District program has the potential to succeed because it lines up with and furthers policy objectives that are bipartisan and ascendant. It lowers the cost of living for middle- and moderate-income Americans, reduces the nation's dependence on energy imports, furthers the development of renewable energy facilities, rests on the initiative of local governments that voluntarily choose to participate, and is flexible enough to fit local circumstances in the fifty states. It is a devolved and democratic approach. Coincidentally, it mitigates climate change and captures the support of those who understand the clear threat it poses to our economy and environment.

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ings Energy Consumption Survey: Consumption and Expenditures Tables, U.S. ENERGY INFO. ADMIN., http://www.eia.gov/emeu/cbecs/cbecs2003/detailed_tables_2003/detailed_tables_2003.html (last visited Apr. 2, 2012).

261. U.S. ENERGY INFO. ADMIN., TABLE US1: TOTAL ENERGY CONSUMPTION, EXPENDITURES, AND INTENSITIES, 2005, at 2 (2009), *available at* http://www.eia.gov/consumption/residential/data/2005/c&e/summary/pdf/tableus1part1.pdf.

262. *See* 16 U.S.C. §§ 1451-64 (2006).

At a Motion Term of the New York State Supreme Court, Broome County, held in the City of Binghamton, New York, on July 27, 2012.

PRESENT: HON. FERRIS D. LEBOUS
Justice Presiding

STATE OF NEW YORK
SUPREME COURT COUNTY OF BROOME

ELVIN JEFFREY, VESTAL GAS COALITION, ARENA HOTEL CORPORATION, NELSON HOLDINGS LTD., and BINGHAMTON-CONKLIN GAS COALITION STEERING COMMITTEE,

Petitioners,

-vs-

MATTHEW T. RYAN, in his official Capacity as Mayor, City of Binghamton, and The CITY COUNCIL, CITY OF BINGHAMTON,

Respondents.

DECISION, ORDER & JUDGMENT

Index No.: CA2012-001254
RJI No.: 2012-0695-M

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FERRIS D. LEBOUS, J.S.C.

Procedural Background

Petitioners filed this combined Article 78 and Declaratory Judgment (CPLR §3001) action seeking to invalidate Chapter 250 of the City of Binghamton Code of Ordinances, entitled "Prohibition of Gas and Petroleum Exploration and Extraction Activities, Underground Storage of Natural Gas, and Disposal of Natural Gas or Petroleum Extraction, Exploration, and Production Wastes," which was adopted as Local Law 11-006 on December 21, 2011 by the Binghamton City Council and signed by Mayor Ryan on December 22, 2011. On June 19, 2012, Petitioners moved for summary judgment. Petitioners argue that this local law is a zoning law that was required to be referred to the Broome County Planning Board prior to enactment, that it is superseded by Environmental Conservation Law §23-0303, or alternatively, that it is a moratorium and that the requirements for a moratorium have not been met and thus the law is invalid.

Respondents have opposed Petitioners' motion for summary judgment, and have cross-moved to dismiss the petition. Respondents claim that the law was enacted pursuant to their police powers, and not as a zoning law. Respondents maintain that because it was enacted pursuant to the City's police powers, GML §239-m is not applicable, and the City was not required to refer the local law to the Planning Board prior to enactment; that Local Law 11-006 is not a moratorium; and that it is not superseded by ECL §23-0303. Respondents also make procedural arguments that the summary judgment motion was premature as they have not had an opportunity to file an answer to the petition. Respondents have also cross-moved to dismiss the petition on the grounds that the Petitioners do not have standing, and that the statute of

limitations has expired.

Discussion

The basic facts of this case are not contested, rather it is the legal conclusions to be drawn from the facts that are contested.

According to the Petition, Petitioner Elvin Jeffrey, a property owner in the City of Binghamton, "wished to preserve the opportunity to lease some or all of his land for natural gas exploration and extraction" and opposed Local Law 11-006. (See, Petition, paragraph 1). Petitioner Vestal Gas Coalition is an unincorporated group of landowners from Vestal, a town adjoining the City of Binghamton. Their goal is to foster natural gas exploration. They claim that Local Law 11-006 adversely affects their ability to obtain a natural gas lease for their members. (See, Petitioner, paragraph 2).

Petitioner Arena Hotel Corporation owns the Holiday Inn Binghamton. This Petitioner claims that the passage of Local Law 11-006 will have a detrimental effect on their business as they have had a significant amount of business as a result of the natural gas exploration and extraction activities that are occurring in neighboring Pennsylvania. (See, Petition, paragraph 3). Petitioner Nelson Holdings Ltd. owns an 11 acre parcel in the City of Binghamton which is zoned I-3 Heavy Industrial pursuant to the City of Binghamton zoning regulations. (See, Petition, paragraph 4). The Nelson Petitioners have argued that due to this property being zoned heavy industrial, gas extraction, exploration, and storage would be a permitted use by special permit assuming DEC's issuance of regulations permitting gas exploration and extraction in New York State. While the zoning law provisions for "heavy industrial" do not by definition permit

property owners to automatically engage in gas exploration, drilling or storage, Petitioner Nelson would be able to apply to the zoning board of appeals for a special permit authorizing such use on this property.

All of the Petitioners opposed this local law.

To determine the exact nature of this local law it is necessary to review its enactment by the City Council. At a Work Session of the Binghamton City Council held on November 21, 2011, David F. Slottje, Esq., counsel for Respondents, made a presentation to the City Council requesting that they pass a law, drafted by Attorney Slottje, banning activities associated with the drilling for natural gas, and gas exploration. (See, "Transcript of City Council Work Session November 21, 2011 Part 3" which is part of Exhibit "O" to the Memorandum of Law in Support of Petitioner's Verified Article 78 Petition, dated May 30, 2012). In this transcript Mr. Slottje explains to the City Council why he believes a law banning gas drilling and exploration would survive a legal challenge. On page 5 of that transcript Mr. Slottje stated,

> It's [the local law being proposed] a moratorium in the sense of having a finite period. It's like a sunset clause. 24 months. It is not literally a moratorium because this is not literally a zoning ordinance. This is a police power ordinance. But it quacks like a duck and walks like a duck. So, you can absolutely think of it in terms of being a moratorium.

On December 5, 2011 the City Council held another work session where the proposed law banning gas drilling and exploration was discussed. Mr. Slottje addressed the council, as did Mr. Kenneth Frank, Esq., Corporation Counsel for the City of Binghamton. Mr. Frank stated his concerns with regard to the local law, and advised the City Council that the time limit in the proposed local law made it a moratorium. In Mr. Frank's opinion the Council was not seeking to

stop gas drilling and exploration so that the Council could investigate the impacts of it on the community, or so that DEC could issue regulations and the City review them to determine the impact on the community, and therefore it would not be appropriate for the Council to enact a moratorium. Mr. Frank was adamant that the Council should pass a law not a moratorium.

Despite Respondents' protestations to this Court to the contrary, it is quite clear that even they thought this would be a moratorium. At the December 5, 2011 Working Session of the Binghamton City Council Mr. Slottje stated,

> This is for a two-year period, if you decide to pass this, there will be a de facto moratorium within the City on essentially gas drilling, both extraction activities, disposal of waste activities, and so on . . . It's a temporary two-year law . . . (See, Memorandum of Law in Support of Petitioner's Verified Article 78 Petition, dated May 30, 2012, Exhibit "P,""Transcript of December 5, 2011 City Council Worksession" page 1).

At this same meeting Helen H. Slottje, Esq. stated about the proposed law, " . . . the idea here is to give the City some time to figure out exactly what it wants to do about this industry. But in the meantime, put a halt on it . . ." *Id.*

Mr. Slottje also stated that the two year limitation in the law was so it would be, politically, more acceptable and easier for the members of the Council to pass. *Id.* at page 6. In fact this transcript shows that there may not have been support on the Council for a ban on gas drilling and exploration without a time limit placed on the duration of the ban. *Id.*

The law passed with the provision that it expires within 24 months after enactment (on December 31, 2013) unless sooner repealed.

Analysis

Procedural Issue

Respondents argue that Petitioners' motion for summary judgment is premature, as they have not had an opportunity to file an answer to the petition, and that pursuant to CPLR §3212(a) a motion for summary judgment can only be made after issue has been joined.

However, under certain circumstances it is appropriate for the court to grant a motion for summary judgment prior to Respondents formally answering the petition (*Matter of Thomas Giorgio v. Bucci*, 246 A.D.2d 711, 713 (3rd Dept., 1998), *lv to appeal denied* 91 N.Y.2d 814 (1998) held that in an Article 78 proceeding where the parties had apprised the court of all relevant arguments there was no requirement that the court grant leave to serve an answer). In *Matter of Davila v. New York City Housing Authority*, 190 A.D.2d 511, 512 (1st Dept. 1993), *lv. to appeal denied* 87 N.Y.2d 801 (1995) the court stated the following:

> As for respondents' contention that the trial court improperly ruled on the merits of the petition without allowing respondents to serve an answer, respondents clearly informed the trial court of their relevant arguments to dismiss the petition. Thus, it was not necessary under CPLR 7804(f) to grant respondents leave to serve an answer to the petition following denial of the motion to dismiss. (citations and quotations omitted).

Here, Petitioners moved for summary judgment, and Respondents have moved to dismiss the petition. Both Petitioners and Respondents have fully briefed and argued their positions on the issues in this case. The facts of this case are straightforward, and not at issue. The questions presented are all legal in nature. Since the parties have had a full opportunity to present their arguments there is no need to delay this case to permit Respondents to file an answer.

Standing

To have standing to sue, a party must show that it will or has suffered actual harm as a result of the enactment of the law in question. The harm must be real, it cannot be remote or speculative, and in land use cases, the petitioner's harm must be different than the harm to the general public. (See, *Matter of Brunswick Smart Growth, Inc., et al. v. Town of Brunswick*, 73 A.D.3d 1267, 1268, (3rd Dept., 2010); see also, *Association for a Better Long Island, Inc, et al. v. New York State Department of Environmental Conservation, et al.*, 97 A.D.3d 1085 (3rd Dept., 2012)).

Moreover, there is not ". . . any requirement that the harm necessary to confer standing be actual and in the present rather than potential and in the future as long as it is reasonably certain that the harm will occur if the challenged action is permitted to continue." (*Police Benevolent Assn. of N.Y. State Troopers, Inc. v. Division of N.Y. State Police*, 29 A.D.3d 68, 70, (3rd Dept., 2006) [citations and quotations omitted]).

"[Standing] is a threshold issue. If standing is denied, the pathway to the courthouse is blocked . . . The rules governing standing help courts separate the tangible from the abstract or speculative injury, and the genuinely aggrieved from the judicial dilettante or amorphous claimant. . . Were we to deny standing to all plaintiffs in this action, an important constitutional issue would be effectively insulated from judicial review."*(Saratoga County Chamber of Commerce v. Pataki*, 100 N.Y.2d 801, 812, 814, (2003) [citations omitted]).

Prior to the enactment of Local Law 11-006, owners of real property zoned for industrial use in the City of Binghamton could have applied for a special use permit to engage in gas

drilling, exploration or storage. Local Law 11-006 has eliminated the opportunity for these property owners to even apply for a special permit for such use; therefore, these property owners are unquestionably adversely affected by the enactment of Local Law 11-006.

Here, Petitioner Nelson Holdings Ltd. owns real property in the City of Binghamton that is zoned heavy industrial. Given the nature of the activities that are permitted in a heavy industrial zone, assuming DEC approval of gas exploration and extraction, Petitioner clearly would be eligible to apply to the zoning board of appeals for a special use permit to use its property for gas storage, exploration or extraction activities since these activities are similar to the already permitted uses under the zoning code. (See, Affidavit of Kenneth S. Kamlet, Esq., sworn to on July 26, 2012, and Petitioners' Opposition to Respondents' Memorandum of Law In Support of Motion to Dismiss, pages 13-15, which contains a chart showing the permitted uses that exist under the City of Binghamton's zoning regulations which are similar to the activities prohibited by Local Law 11-006). Petitioner Nelson Holdings Ltd. has stated that it had intended to pursue this activity on its property, but due to the enactment of Local Law 11-006, it can no longer do so. Thus, on the facts as presented here, this Petitioner is being prevented from using its property for an activity that, in all likelihood, would have been a permitted use by special permit prior to the enactment of Local Law 11-006. This is real harm to this landowner. Thus, the Court finds that, at the very least, Nelson Holdings Ltd. has standing in this case.

Given that the Court has determined that Nelson Holdings Ltd. has standing, it is not necessary for the Court to reach the issue of whether any of the remaining Petitioners have standing.

Statute of Limitations

Challenges to the actions of agencies and officers of state and local government are brought through an Article 78 proceeding. (*Matter of Luczaj v. Bortnik*, 91 A.D.3d 872, 873 (2nd Dept., 2012). An Article 78 must be commenced within 4 months of the action being challenged (CPLR 217(1)). When commenced in relation to the enactment of a law, it must be commenced within 4 months of when the law was enacted. *Id.*

Local Law 11-006 became effective when signed by the Mayor on December 22, 2011. Contrary to Petitioners' claims, their demand that the City Council and the Mayor refer the local law to the Broome County Planning Commission in accordance with GML §239-m does not extend the statute of limitations beyond April 22, 2012 (four months after the statute became effective). (*Matter of Stankavich v. Town of Duanesburg Planning Bd.*, 246 A.D.2d 891(3rd Dept., 1998), where petitioner did not contest the constitutionality or validity of the statute, the action had to be commenced as an Article 78 and, in that particular case, the statute of limitations was 30 days.). Since Petitioners did not file the Article 78 action within the four month time frame, it is barred by the statute of limitations.

That being said, however, the same limitation of time does not apply to the declaratory judgment part of the petition. As stated in *Bunis v. Conway*, 17 A.D.2d 207, 208 (4th Dept., 1962), *app. denied*, 17 A.D.2d 1036(1962), *app. dismissed*, 12 N.Y.2d 882 (1963), and *app. dismissed*, 12 N.Y.2d 645 (1963), "[i]t is the settled law that an action for a declaratory judgment will lie where a constitutional question is involved or the legality or meaning of a statute is in question and no question of fact is involved" (citations and quotations omitted). Generally, unless a different statute of limitations is specified, the statute of limitations for a declaratory

judgment action is six years, (*Saratoga County Chamber of Commerce v. Pataki* at 815 *supra*). Thus, while it is true that a party cannot get the benefit of the longer statute of limitations by couching an Article 78 in terms of a declaratory judgment action (see, *Long Island Power Auth. Ratepayer Litig.*, 47 A.D.3d 850 (2nd Dept., 2008), *lv. to appeal denied* 10 N.Y.3d 871 (2008)), that is not what happened here.

Petitioners' request for a declaration that the statute is invalid because it is a moratorium that does not meet the legal requirements for a moratorium, is a proper question for a declaratory judgment action. Consequently, the declaratory judgment portion of Petitioners' petition falls within the statute of limitations.

Pre-Emption

Recently two cases have been decided regarding the pre-emption of local laws pertaining to gas explorations, storage and extraction. In those cases, the Honorable Phillip R. Rumsey in *Anschutz Exploration Corp. v. Town of Dryden*, 35 Misc.3d 450, and the Honorable Donald F. Cerio, Jr. in *Cooperstown Holstein Corp. v. Town of Middlefield*, 35 Misc.3d 767, in well reasoned, well founded decisions, determined that ECL 23-0303(2) does not supersede local government's rights to regulate the use of the lands within their jurisdictions. This court adopts the reasoning of those cases and holds that Local Law 11-006 is not superseded by ECL 23-0303(2).

Moratorium

Whether or not Local Law 11-006 is a moratorium is the crux of this case. It is clear that a municipality can enact laws pursuant to its police powers to protect the health, safety and

welfare of its citizens, and it does not have to do so through a zoning law. (*Matter of Pete Drown, Inc. v. Town of Ellenburg*, 188 A.D.2d 850 (3rd Dept., 1992), where town enacted a local law prohibiting the operation of a commercial incinerator in the town, the court held that this local law was not a zoning law, rather, it had been enacted pursuant to the town's police powers. Further the town had no obligation to refer the local law to the planning board pursuant to GML 239-m; see also, *Gernatt Asphalt Prods. v. Town of Sardinia*, 87 N.Y.2d 668, 684 (1996), "[a] municipality is not obliged to permit the exploitation of any and all natural resources within the town as a permitted use if limiting that use is a reasonable exercise of its police powers to prevent damage to the rights of others and to promote the interests of the community as a whole" [citations and quotations omitted]).

A municipality is allowed to enact a temporary "stop-gap" measure to ban a particular land use while the municipality is reviewing a comprehensive zoning law (*Matter of Lakeview Apts. Of Hunns Lake v. Town of Stanford*, 108 A.D.2d 914 [2nd Dept., 1985], *appeal discontinued* 65 N.Y.2d 925; *Matter of Mitchell v. Kemp*, 176 A.D. 859 [2nd Dept., 1991]), or where there are new circumstances that need to be addressed by the municipality (*Land Use Moratoria*, James A Coon Local Government Technical Series, New York State Department of State, at pg. 1). Temporarily banning development or certain land uses is the hallmark of a moratorium. For the enactment of the moratorium to be upheld, the municipality must show that it's actions were:

1. in response to a dire necessity;
2. reasonably calculated to alleviate or prevent a crisis condition; and
3. that the municipality is presently taking steps to rectify the problem.

(See, *Matter of Belle Harbor Realty Corp. v. Kerr*, 35 N.Y.2d 507, 512, (1974) ". . . a municipality may not invoke its police powers solely as a pretext to assuage strident community

opposition [it must meet the three requirements set forth above] . . . When the general police power is invoked under such circumstances it must be considered an emergency measure and is circumscribed by the exigencies of that emergency," see also, *Charles v. Diamond*, 41 N.Y.2d 318 (1977); and *Land Use Moratoria*, pg. 3).

In the matter before this Court, Respondents have failed to provide any evidentiary proof that would provide a justification, based upon the health and safety of the community, for the banning of gas exploration, storage and extraction. Instead of proof, Respondents have produced only conclusions. Respondents have not explained how, if the activities that are banned by the law are such a grave threat, that threat will suddenly no longer exist on December 31, 2013 when the law expires. Respondents clearly are not relying on the anticipated regulations from the New York Stated Department of Environmental Conservation to alleviate any health and safety threats that may be posed by this activity, as this local law clearly states in its findings that regulations that relate to gas exploration and extraction are incapable of protecting the health and safety of the residents. The two year "sunset" renders Respondents' claims that the law is solely an exercise of their police powers illusory. This activity cannot be so detrimental that it must be banned, but only for two years, particularly when it is clear that the City is not engaging in any investigation, studies or other activities in the interim in order to determine if there is a way to alleviate any harm to the people of the city from this future activity.

Local Law 11-006's inclusion of a "sunset" provision leads to no other rational conclusion except that this law is a moratorium. The City Council's bare conclusion in its Findings of Fact that this law was enacted pursuant to the police power cannot change the true

character of this law. The comments made at the Binghamton City Council worksessions clearly show that even the drafters of the law believed it was a moratorium, as well as Corporation Council and some of the members of the council.

The Court recognizes that the issue of gas exploration, extraction and storage is a controversial issue currently being debated throughout the state, and that there may be fierce opposition to gas exploration, extraction and storage by some members of the community. However, the City cannot just invoke its police power solely as a means to satisfy certain segments of the community. Rather, the city must satisfy the well established legal requirements that show a dire emergency; that the moratorium is reasonably calculated to alleviate a crisis; and that they are taking steps to solve the problem. (*Matter of Belle Harbor Realty Corp. v. Kerr*, 35 N.Y.2d *supra).*

In this case, there is no other conclusion that the Court can reach, however, than that Local Law 11-006, fails to meet the criteria for a properly enacted moratorium. First, there has been no showing of a dire need. There can be no showing of dire need since the New York State Department of Environmental Conservation has not yet published the new regulations that are required before any natural gas exploration or drilling can occur in this state. Since there are no regulations, no permits are being granted. Second, since the DEC is not yet issuing permits, there is also no crisis nor a crisis condition that could possibly be shown by the City at this time. Finally, the City clearly did not enact this law so that it could take steps to study or alleviate any problems that may be caused by gas drilling, exploration or storage. Consequently, the Court is constrained to hold that Local Law 11-006 is invalid.

Now, therefore, it is hereby

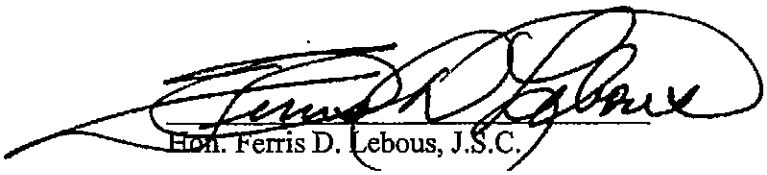
ORDERED AND ADJUDGED, that Respondents' motion to dismiss is granted to the extent that Petitioners' Article 78 cause of action is dismissed, and the motion is otherwise denied, and it is further

ORDERED AND ADJUDGED, that the petition and motion for summary judgment are granted to the extent that the court declares Local Law 11-006 invalid for the reasons stated herein.

This constitutes the order and judgment of the Court.

ENTER

Dated: October 2, 2012
At Binghamton, New York



Hon. Ferris D. Lebous, J.S.C.

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PHILLIP R. RUMSEY
JUSTICE

MARK G. MASLER, LAW CLERK
SHERYL A. HOLBROOK, SECRETARY

February 21, 2012

Paula M. Nichols
Chief Court Clerk
Tompkins County Supreme Courts
P.O. Box 70
Ithaca, New York 14850

RE: **ANSCHUTZ EXPLORATION CORPORATION v. TOWN OF DRYDEN and TOWN OF DRYDEN TOWN BOARD**
Tompkins County Index No. 2011-0902; RJI No. 2011-0499-M

Dear Ms. Nichols:

Enclosed herewith please find, for filing and entry, the Court's Decision, Order, and Judgment in regard to the above-referenced matter.

Very truly yours,

HON. PHILLIP R. RUMSEY
Supreme Court Justice

PRR:sh

cc: Thomas S. West, Esq. (Sent via email: twest@westfirmlaw.com)
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At a Motion Term of the Supreme Court of the State of New York, held in and for the Sixth Judicial District, at the Tompkins County Courthouse, in the City of Ithaca, New York, on the 4th day of November, 2011.

PRESENT: HONORABLE PHILLIP R. RUMSEY
JUSTICE PRESIDING.

STATE OF NEW YORK
SUPREME COURT COUNTY OF TOMPKINS

ANSCHUTZ EXPLORATION CORPORATION,

Petitioner-Plaintiff,

For a Judgment Pursuant to Articles 78 and 3001 of the Civil Practice Law and Rules,

-against-

TOWN OF DRYDEN and TOWN OF DRYDEN TOWN BOARD,

Respondents-Defendants

DECISION, ORDER AND JUDGMENT
Index No. 2011-0902
RJI No. 2011-0499-M

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PHILLIP R. RUMSEY, J. S. C.

In this case of first impression, the court is asked to determine whether a local municipality may use its power to regulate land use to prohibit exploration for, and production of, oil and natural gas. The controversy arises from the proposed use of high-volume hydraulic fracturing (hydrofracking) to obtain natural gas from the Marcellus black shale formation which underlies the southern portion of New York State. The Town of Dryden is located in the Marcellus shale region.[1] In effect to prohibit hydrofracking, the Dryden Zoning Ordinance was amended on August 2, 2011 to ban all activities related to the exploration for, and production or storage of, natural gas and petroleum (the Zoning Amendment). Petitioner-plaintiff (Anschutz) owns gas leases covering approximately 22,200 acres in the Town – representing over one-third of its total area – that were obtained prior to enactment of the Zoning Amendment and has invested approximately $5.1 million in activities within the Town.[2] It commenced this hybrid CPLR article 78 proceeding / declaratory judgment action against the Town of Dryden and the Town of Dryden Town Board (collectively the Town) on September 16, 2011 seeking invalidation of the Zoning Amendment on the basis that it is preempted by the Oil, Gas and Solution Mining Law (OGSML). The Town timely answered and moved for dismissal of the

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[1] While the focus is currently on the Marcellus shale formation, hydrofracking may also be used to recover natural gas from the Utica shale formation, which underlies much of southern and western New York – including the Town of Dryden – at depths below the Marcellus shale.

[2] The facts regarding Anschutz's activity within the Town were taken from the document entitled, "Affidavit of Pamela S. Kalstrom," dated September 15, 2011, which was not executed in the manner required of an affidavit because it contains an acknowledgment rather than the required jurat. However, it has been considered, inasmuch as the error in execution does not affect a substantial right of a party (see CPLR 2001; Matter of Smith v Board of Stds. & Appeals of City of N.Y., 2 AD2d 67 [1956]; Federal Natl. Mtge. Assoc. v Graham, 67 Misc 2d 735 [1971]; see also Krug v Offerman, Fallon, Mahoney & Cassano, 245 AD2d 603 [1997]).

article 78 proceeding and for summary judgment declaring the Zoning Amendment valid.

In light of the high degree of public interest in hydrofracking, the court received several inquiries about the procedure for filing amicus curiae briefs. All who contacted chambers were referred to Kruger v Bloomberg, 1 Misc3d 192 (2003) and were advised that, absent consent from the parties, a motion would be necessary. Motions seeking leave to file an amicus curiae brief were timely filed by George A. Mathewson, Esq. and Assemblywoman Barbara Lifton.[3] In addition, a motion for leave to intervene was timely filed by Dryden Resources Awareness Coalition (DRAC). Prior to the return date, the court notified the parties and the non-party movants that the motions for leave to file amicus briefs and to intervene would be considered on submission. Inasmuch as the proposed intervenor would be entitled to participate in all aspects of the case as a party if the motion to intervene were ultimately to be granted, counsel for DRAC was permitted to participate in oral argument on the merits of the petition and the Town's motions.

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[3] Two additional untimely attempts were made – only days prior to the scheduled return date of November 4, 2011 – to file motions for leave to submit amicus briefs. By two separate letter decisions dated November 2, 2011, the court declined to sign the proposed orders to show cause submitted (1) on November 1, 2011 by Earthjustice, on behalf of Natural Resources Defense Council, Inc., Beverly Ommegang, Theodore Gordon Flyfishers, Inc., Riverkeeper, Inc. and Catskill Mountainkeeper, and (2) on November 2, 2011 by the Town of Ulysses (see generally Hurrell-Harring v State of New York, 14 NY3d 833 [2010], citing Rules of Ct of Appeals [22 NYCRR] § 500.23[a][1][iii] [illustrating that the Court of Appeals denies untimely filed motions for leave to file amicus briefs]). The Town thereafter attempted to place the brief by the Town of Ulysses before the court, notwithstanding the court's rejection of the Town of Ulysses's untimely motion, by filing a Supplemental Memorandum of Law that is substantially identical to the amicus curiae brief proposed by the Town of Ulysses. It has not been considered by the court.

MOTIONS FOR LEAVE TO FILE AMICUS CURIAE BRIEFS

The court has considered the following criteria in deciding whether to permit the filing of amicus curiae briefs: (1) whether the applications were timely; (2) whether each application states the movant's interest in the matter and includes the proposed brief; (3) whether the parties are capable of a full and adequate presentation of the relevant issues and, if not, whether the proposed amici could remedy this deficiency; (4) whether the proposed briefs identify law or arguments that might otherwise escape the court's consideration or would otherwise be of assistance to the court; (5) whether consideration of the proposed amicus briefs would substantially prejudice the parties; and (6) whether the case involves questions of important public interest (see Kruger, 1 Misc 3d at 198; see also Rules of Ct of Appeals [22 NYCRR] § 500.23[a][4]). No one factor is dispositive. Mathewson and Lifton both filed timely motions which indicated their interest in this proceeding/action and included their respective proposed briefs. Although the parties have very capably advanced their respective positions, there is no prejudice to them in permitting the proposed amici to be heard on this case of first impression involving a matter of important public interest (see Kruger, 1 Misc 3d at 196, citing Colmes v Fisher, 151 Misc 222, 223 [1934]; Matter of Alfred Condominium v City of New York, 2010 WL 7762750 [2010]). Accordingly, the motions should be granted to the extent that the movants present arguments related to the issues in controversy. On that basis, Lifton's motion for leave to file an amicus curiae brief is granted. With respect to the arguments advanced by Mathewson, both parties correctly note that Points II – IV in his proposed brief are wholly unrelated to the

matters at issue in this proceeding/action;[4] therefore, his motion for leave to file an amicus curiae brief is granted only to the extent that the court will consider the argument raised in Point I of his brief.

THE MOTION TO INTERVENE

DRAC identifies itself as an unincorporated association which has approximately 71 individual members who are residents or landowners in the Town of Dryden. It timely moved to intervene and submitted a proposed answer, affidavits from its president and five additional members, and a memorandum of law. Its motion is opposed by the parties. Inasmuch, as noted below, the court has granted the Town's motion to dismiss the article 78 proceeding, DRAC must show that it is entitled to intervene in the action under the more demanding standards applicable to actions set forth in CPLR article 10.

A party is entitled to intervene as of right only upon a showing that the representation of its interests by the parties is inadequate and that it may be bound by the judgment; both elements must be present (see CPLR 1012[a][2]; St. Joseph's Hosp. Health Ctr. v Department of Health of State of N.Y., 224 AD2d 1008 [1996]; Alexander, Practice Commentaries, McKinney's Cons Laws of NY, Book 7B, CPLR C1012:3, pp. 156 – 157). Here, DRAC members have shown no substantial interest in the outcome of the action unique from those of any other resident or landowner in the Town of Dryden. As noted by the Town, it is the proper party to defend the Zoning Amendments which it enacted (see St. Joseph's Hosp. Health Ctr.). The Town has met

[4] Points II and III allege that various practices associated with hydofracking that might be allowed by the OGSML render it unconstitutional, while Point IV argues that the draft Supplemental Generic Environmental Impact Statement related to hydrofracking currently under consideration by the DEC violates the equal protection clauses of the New York and United States Constitutions.

that duty by capably advancing its position (see Matter of Spangenberg, 41 Misc 2d 584, 588 [1963]). Moreover, DRAC's submissions do not materially add to the defense advanced by the Town (see Matter of Mayer, 110 Misc 2d 346 [1981]). Accordingly, DRAC is not entitled to intervene as of right.

With respect to permissive intervention pursuant to CPLR 1013, "[w]hile the only requirement for obtaining an order permitting intervention under this section is the existence of a common question of law or fact, the resolution of such a motion is nevertheless a matter of discretion" (Matter of Pier v Board of Assessment Review of the Town of Niskayuna, 209 AD2d 788, 789 [1994]). The factors noted above also weigh in favor of exercising the court's discretion to deny permissive intervention. Accordingly, DRAC's motion to intervene is denied.[5] The court will, however, grant DRAC amicus curiae status for the purpose of considering the arguments presented in its brief (see Matter of Pace-O-Matic, Inc. v New York State Liq. Auth., 72 AD3d 1144 [2010]; Kruger, 1 Misc 3d at 196).

THE ARTICLE 78 PROCEEDING

Enactment of the Zoning Amendment was a legislative act (see Long Island Pine Barrens Soc., Inc. v Suffolk County Legislature, 31 Misc 3d 1208[A], 2011 NY Slip Op 50534[U] [2011]; see also Matter of Durante v Town of New Paltz Zoning Bd. of Appeals, 90 AD2d 866 [1982]). Unlike challenges directed to the procedures followed in the enactment of an ordinance, challenges to the substantive validity of a legislative act may not be maintained in an article 78 proceeding (see Matter of Save the Pine Bush v City of Albany, 70 NY2d 193, 202 [1987];

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[5] In light of the determination that DRAC should not be permitted to intervene, the court need not consider the parties' arguments that it lacks standing.

Matter of Frontier Ins. Co. v Town Bd. of Town of Thompson, 252 AD2d 928 [1998]; Long Island Pine Barrens Soc., Inc.). Inasmuch as Anschutz challenges only the substantive validity of the Zoning Amendment – and not the procedures utilized in its enactment – the Town's motion seeking judgment dismissing that part of the petition and complaint which seeks relief under CPLR article 78 must be, and hereby is, granted.

THE TOWN'S MOTION FOR SUMMARY JUDGMENT (PREEMPTION ANALYSIS)

The Marcellus shale formation extends northeast from Ohio and West Virginia, through Pennsylvania, into southern and central New York.[6] Geologists have long known that the entire formation contains vast quantities of natural gas – as much as 489 trillion cubic feet, or over 400 years supply for New York at its current level of use – however, the depth of the formation and the tightness of the shale made extraction difficult and expensive. Recent enhancements to the techniques of horizontal drilling and hydrofracking have made recovery of natural gas from the Marcellus shale formation economically viable. As a result, interest in gas production through the use of hydrofracking has, in recent years, increased dramatically throughout the Marcellus region.

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[6] The following information regarding hydrofracking in the Marcellus Shale formation was summarized from the "Marcellus Shale" webpage obtained from the New York State Department of Environmental Conservation (DEC) website at **http://www.dec.ny.gov/energy/46288.html** (site last accessed February 21, 2012), from the U.S. Energy Information Administration website at **http://www.eia.gov/energy_in_brief/about_shale_gas.cfm** (last accessed February 21, 2012), and from the United States Environmental Protection Agency website at **http://www.epa.gov/hydraulicfracturing/process.html** (last accessed February 21, 2012), of which the court takes judicial notice (see generally Matter of Albano v Kirby, 36 NY2d 526, 532 – 533 [1975]; Kingsbrook Jewish Med. Ctr. v Allstate Ins. Co., 61 AD3d 13, 16, 19 – 20 [2009]; Grunberger v S & Z Serv. Sta. Inc., 28 Misc 3d 1206[A] [2010], 2010 NY Slip Op 51163[U], at * 3). See also Coastal Oil & Gas Corp. v Garza Energy Trust, 268 SW3d 1, 6 – 7 [2008] [hydrofracking in non-porous gas-bearing formations explained]).

To access natural gas using these techniques, a vertical well bore is drilled to a depth just above the target gas-bearing formation. The well bore is then extended horizontally within the gas-bearing rock for up to several thousand feet. Multiple horizontal wells may be drilled laterally from the same vertical bore. After drilling, the horizontal wells are subjected to hydrofracking by pumping fluid into the rock formation at high pressure to create fractures in the rock, thereby increasing the quantity of gas that will flow into the well. The hydrofracking fluid consists of water to which various compounds are added to make the process more effective, such as a propping material, or "proppant," – like sand – which consists of particles that will remain after the hydrofracking process is complete to hold the fractures open; a gel to carry the proppant into the fractures; a biocide to prevent the growth of bacteria that could damage well piping or plug the fractures; and various other agents intended to ensure that the proppant remains in place or to prevent corrosion of the pipes in the well. Many of the compounds used are toxic. Hydrofracking requires large volumes of water – as much as one million or more gallons for each well – most of which is recovered as waste that must be handled, transported and disposed of properly. Tanker trucks transport water to the well sites and thereafter remove waste fluid. As many as 200 truck loads may be required to supply the water necessary to hydrofrack a single well.

Because hydrofracking may involve the risk of contaminating ground and surface water supplies, it has become extremely controversial. Beginning in 2009, many Town residents requested that the Town Board take action to ban hydrofracking within its jurisdiction and a petition containing 1,594 signatures was presented to the Town Board on April 20, 2011

requesting such a ban (see Affidavit of Mary Ann Sumner, sworn to October 13, 2011, ¶ 2).[7] The Zoning Amendment was enacted in response to those requests (see id., ¶¶ 2, 3, 15; Affidavit of Mahlon R. Perkins, sworn to October , 2011, ¶ 13) to, in relevant part, add the following new section to Article XXI of the Town's Zoning Ordinance:

"Section 2104. Prohibited Uses.

(1) Prohibition against the Exploration for or Extraction of Natural Gas and/or Petroleum.

No land in the Town shall be used: to conduct any exploration for natural gas and/or petroleum; to drill any well for natural gas and/or petroleum; to transfer, store, process or treat natural gas and/or petroleum; or to dispose of natural gas and/or petroleum exploration or production wastes; or to erect any derrick, building or other structure; or to place any machinery or equipment for any such purposes.

(2) Prohibition against the Storage, Treatment and Disposal of Natural Gas and/or Petroleum Exploration and Production Materials.

No land in the Town shall be used for: the storage, transfer, treatment and/or disposal of natural gas and/or petroleum exploration and production materials.

(3) Prohibition against the Storage, Treatment and Disposal of Natural Gas and/or Petroleum Exploration and Production Wastes.

No land in the Town shall be used for: the storage, transfer, treatment and/or disposal of natural gas and/or petroleum exploration and production wastes.

(4) Prohibition against Natural Gas and/or Petroleum Support Activities.

No land in the Town shall be used for natural gas and/or petroleum support activities.

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[7] According to the 2010 Census, the population of the Town of Dryden was 14,435 on April 1, 2010 (see **http://2010.census.gov/2010census/popmap/index.php** (site last accessed February 21, 2012).

(5) Invalidity of Permits.

> No permit issued by any local, state or federal agency, commission or board for a use which would violate the prohibitions of this section or of this Ordinance shall be deemed valid within the Town."

(See Minutes of Special Town Board Meeting August 2, 2010, p. 14; see also petition and complaint, ¶ 17; answer, ¶ 17).[8]

Anschutz asserts two separate causes of action seeking declaratory judgment that the Zoning Amendment is invalid – first, that it is expressly preempted by the supersedure clause of the OGSML set forth in ECL 23-0303 and, second, that it is preempted because it impermissibly conflicts with the substantive provisions of the OGSML that directly regulate gas production.

The OGSML contains the following express supersedure clause:

> "The provisions of this article shall supersede all local laws or ordinances **relating to the regulation of the oil, gas and solution mining industries**; but shall not supersede local government jurisdiction over local roads or the rights of local governments under the real property tax law."

(ECL 23-0303[2] [emphasis supplied]). This provision was last amended more than thirty years ago, long before the potential use of hydrofracking to recover natural gas from the Marcellus shale in New York could have been anticipated. Determining whether it preempts enactment of zoning ordinances that regulate where – or whether – operations related to gas production may occur is a matter of first impression, requiring statutory interpretation without consideration of the disparate public opinions about hydrofracking. The Court of Appeals has held that a similar

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[8] The Zoning Amendment also amended Appendix A (Definitions) of the Zoning Ordinance by adding definitions for Natural Gas, Natural Gas and/or Petroleum Exploration, Natural Gas and/or Petroleum Exploration and Production Materials, Natural Gas and/or Petroleum Production Wastes, Natural Gas and/or Petroleum Extraction, and Natural Gas and/or Petroleum Support Activities (see Minutes of Special Town Board Meeting August 2, 2010, pp. 13 – 14).

supersession clause contained in the Mined Land Reclamation Law (Environmental Conservation Law article 23, title 27; herein MLRL) did not preempt local zoning ordinances (see Matter of Frew Run Gravel Prods. v Town of Carroll, 71 NY2d 126 [1987]). In light of the similarities between the OGSML and the MLRL as it existed at the time of Matter of Frew Run, the court is constrained to follow that precedent in this case.

In Matter of Frew Run, the Court of Appeals considered the following supersedure provision of the MLRL:

> "For the purposes stated herein, this title shall supersede all other state and local laws **relating to the extractive mining industry**; provided, however, that nothing in this title shall be construed to prevent any local government from enacting local zoning ordinances or other local laws which impose stricter mined land reclamation standards or requirements than those found herein."

(ECL 23-2703[2], as enacted by the Laws of New York, 1976, Chapter 477 [emphasis supplied]). It began its analysis by noting that where, as here, a statute contains an express supersession clause, resolution of the issue turns on proper construction of the clause by interpreting the plain meaning of the text in light of the relevant legislative history and the underlying purposes of the statute. It held that the zoning ordinance did not relate to the extractive mining industry but to an entirely different subject, i.e., land use. The Court itself later concisely summarized its holding in Matter of Frew Run as follows:

> "In *Frew Run*, we distinguished between zoning ordinances and local ordinances that directly regulate mining activities. Zoning ordinances, we noted, have the purpose of regulating land use generally. Notwithstanding the incidental effect of local land use laws upon the extractive mining industry, zoning ordinances are not the *type* of regulatory provision the Legislature foresaw as preempted by Mined Land Reclamation Law; the distinction is between ordinances that regulate property uses and ordinances that regulate mining activities. In *Frew Run*, we concluded that nothing in the plain language, statutory scheme, or legislative purpose of the Mined Land Reclamation Law suggested that its reach 'was

> intended to be broader than necessary to preempt *conflicting regulations dealing with mining operations and reclamation of mined lands*' (*id.*, at 133 [emphasis added]), and that in the absence of a clear expression of legislative intent to preempt local control over land use, the statute could not be read as preempting local zoning authority."

(Matter of Gernatt Asphalt Prods. v Town of Sardinia, 87 NY2d 668 , 681 – 682 [1996] [citations omitted; emphasis in original]; see also Matter of Hunt Bros. v Glennon, 81 NY2d 906, 908 – 909 [1993]; Preble Aggregate v Town of Preble, 263 AD2d 849, 850 [1999], lv denied 94 NY2d 760 [2000]; Matter of Sour Mtn. Realty v New York State Dept. of Envtl. Conservation, 260 AD2d 920, 923 – 924 [1999], lv denied 93 NY2d 815 [1999]).[9]

The primary language of the two supersedure clauses is nearly identical. The MLRL provides that "[f]or the purposes stated herein, this title shall supersede all other state and local laws **relating to the extractive mining industry**"(emphasis supplied), while the OGSML provides that "[t]he provisions of this article shall supersede all local laws or ordinances **relating to the regulation of the oil, gas and solution mining industries** (emphasis supplied). Inasmuch as both statutes preempt only local regulations "relating" to the applicable industry, they must be afforded the same plain meaning – that they do not expressly preempt local regulation of land use, but only regulations dealing with operations (see Matter of Frew Run, 71 NY2d at 131, 133). Neither supersedure clause contains a clear expression of legislative intent to preempt local control over land use and zoning. Notably, the MLRL law was amended in 1991 to codify the holding of Matter of Frew Run and, in 1996, the amended supersession clause was

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[9] Cf. Matter of Envirogas v Town of Kiantone, 112 Misc 2d 432 (1982), affd 89 AD2d 1056 (1982), lv denied 58 NY2d 602 (1982) (zoning ordinance providing that no oil or gas well could be constructed without prior payment of a $2,500 compliance bond and $25 permit fee did not relate to land us and was preempted by the OGSML because it directly conflicted with the permit procedure administered by the DEC).

construed by the Court of Appeals in Matter of Gernatt to permit a complete ban on mining activities within a municipality. Yet, even in light of this legislative and judicial activity regarding the preemptive scope of the MLRL, there remains an absence from the OGSML – as enacted in 1976 and amended in 1981 to add the supersedure clause – of a clear expression of legislative intent to preempt local zoning control over land use concerning oil and gas production.

Anschutz's attempts to distinguish the language of the two supersession clauses are unavailing. It argues that the two clauses are different because the MLRL only preempts "local laws," while the OGSML provides for preemption of "local laws and ordinances," and that by use of the additional term "ordinances," the OGSML necessarily preempts zoning ordinances, such as the Zoning Amendment, where the MLRL does not. Its argument exalts form over substance. Towns are empowered to enact zoning regulations through two different procedures – by ordinance, pursuant to Town Law §§ 261, 264 and 265, and by local law, pursuant to the Statute of Local Governments § 10(6) and the Municipal Home Rule Law (see Matter of Pete Drown, Inc. v Town Bd. of Town of Ellenburg, 229 AD2d 877 [1996], lv denied 89 NY2d 802 [1996]; Yoga Socy. of N.Y. v Incorporated Town of Monroe, 56 AD2d 842 [1977], appeal dismissed 42 NY2d 910 [1977]; Rice, 2012 Supp Practice Commentaries, McKinney's Cons Laws of NY, Book 61, Town Law § 264, 2012 Supp Pamph, at pp. 63 – 64). Whether a substantive zoning provision is a law or an ordinance is determined solely by the procedure utilized in its enactment. The distinction between laws and ordinances in the area of land use regulations is not significant; indeed, the terms are often used interchangeably (see e.g. Matter of Gernatt, 87 NY2d at 681 – 682 [refers to zoning **ordinances** as land use **laws** having an

incidental effect on the extractive mining industry]). Thus, it would be illogical to conclude that the matter of preemption turns on whether a zoning regulation is enacted as a local law or as an ordinance.

Anschutz also argues that the OGSML is not susceptible to the distinction made by the Court of Appeals when it determined that the MLRL preempts only local laws relating to operations, i.e. laws governing "how" are preempted, but not those governing "where." In that regard, it notes that the supersedure provisions of the MLRL and the OGSML contain different specific exceptions. The OGSML excepts only local government jurisdiction over local roads and rights regarding real property taxation. Anschutz contends that if the supersedure clause preempted only regulation of operations – the "how" – then the exception for local government jurisdiction over local roads would be unnecessary because regulation of roads does not affect operations.[10] Its argument overlooks the fact that hydrofracking depends upon transport of equipment, supplies and large volumes of hydrofracking fluid and waste by truck. Regulation of local roads to restrict or regulate heavy truck traffic, or to require repair of damage caused by such traffic, would plainly relate to operation of gas wells by directly affecting access to well sites or other areas of operation and by imposing additional burdens or costs. Accordingly, because regulation of local roads affects operations, the fact that the supersedure clause contains the exception for jurisdiction over local roads does not support the conclusion that the Legislature intended to preempt local zoning power not directly concerned with regulation of

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[10] Taxation of oil and gas economic units is governed exclusively by Real Property Tax Law article 5, title 5 (RPTL 590 et seq.), enacted concurrently with the 1981 amendment of the OGSML (see RPTL 594).

operations.[11]

Nor is the court able to discern any meaningful difference in the purposes of the two laws – both provide for statewide regulation of operations with the primary goal of encouraging efficient use of a natural resource, and the supersedure provisions of both were enacted to eliminate inconsistent local regulation which had impeded that goal. The legislative history and purpose of the MLRL were summarized by the Court of Appeals as follows:

> "The purposes of the statute are 'to foster a healthy, growing mining industry' and 'aid in assuring that land damaged by mining operations is restored to a reasonably useful and attractive condition' (Mem of Governor Wilson, June 15, 1974, filed with Assembly Bill 10463-A, Governor's Bill Jacket, L 1974, ch 1043). The policy of the State, the Legislature has declared, is 'to foster and encourage the development of an economically sound and stable mining and minerals industry' (ECL 23-2703 [1]). To further this policy, the Mined Land Reclamation Law was enacted to 'establish the badly needed guidelines which would allow for the utilization of the state's vast mineral resource based in a manner compatible with wise resource management' and to eliminate '[r]egulation on a town by town basis [which] creates confusion for industry and results in additional and unfair costs to the consumer' (Mem of Department of Environmental Conservation in support of Assembly Bill 10463-A, May 31, 1974, Governor's Bill Jacket, L 1974, ch 1043). Thus, one of the statute's aims is to encourage the mining industry by the adoption of standard and uniform restrictions and regulations to replace the existing 'patchwork system of [local] ordinances' (*id.*)."

(Matter of Frew Run, 71 NY2d at 132).

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[11] The Court of Appeals explained that the MLRL was intended to achieve two different legislative aims – providing statewide standards regulating mining operations and separately permitting stricter local regulation of reclamation to address legitimate local concerns – and that the exception contained in the MLRL for local zoning ordinances imposing stricter standards for reclamation was related only to the second purpose (see Matter of Frew Run, 71 NY2d at 132 – 134). It did not consider the exception when it decided that the plain meaning of the main clause of the supersedure provision of the MLRL did not preempt local regulation of land use, but only after it turned to consideration of the purpose and history of the statute (see id. at 131 – 132). Accordingly, that the two supersedure provisions contain different exceptions to preemption is not a basis for ascribing different meanings to the nearly identical language of their respective primary clauses.

The legislative history of the 1981 amendments to the OGSML – when the supersedure clause was enacted – similarly states that the purpose is to "promote the development of . . . NYS's resources of oil and natural gas" (Mem dated July 9, 1981, filed with Senate Bill 6455-B) and "to provide for the efficient, equitable and environmentally safe development of the State's oil and gas resources" (Mem of Governor Carey dated July 27, 1981, filed with Senate Bill 6455-B).[12] Nowhere in the legislative history provided to the court is there any suggestion that the Legislature intended – as argued by Anschutz – to encourage the maximum ultimate recovery of oil and gas regardless of other considerations, or to preempt local zoning authority.

The OGSML contains the following express statement of its purpose:

> "It is hereby declared to be in the public interest to regulate the development, production and utilization of natural resources of oil and gas in this state in such a manner as will prevent waste; to authorize and to provide for the operation and development of oil and gas properties in such a manner that a greater ultimate recovery of oil and gas may be had, and that the correlative rights of all owners and the rights of all persons including landowners and the general public may be fully protected, and to provide in similar fashion for the underground storage of gas, the solution mining of salt and geothermal, stratigraphic and brine disposal wells."

ECL 23-0301. The foregoing provision does not state that it is in the public interest to require –

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[12] Anschutz submitted an affidavit by Gregory Sovas, who was employed by DEC and its predecessor agency from 1968 until January 2001, in which he provides his opinion regarding the legislative history and purposes of the OGSML and the 1981 amendments thereto and to DEC's interpretation, implementation and enforcement thereof. It may not be considered, because it is not part of the recognized legislative history (see Matter of Lorie C., 49 NY2d 161, 169 [1980]; McKechnie v Ortiz, 132 AD2d 472, 475 [1987], affd 72 NY2d 969 [1988]; Matter of Morabito v Hagerman Fire Dist., 128 Misc 2d 340, 341 [1985], citing Matter of Lori C.). In addition, even if it is assumed that his affidavit accurately represents DEC's interpretation of the supersedure clause, it is not relevant because the issue in the present case involves one of pure statutory interpretation that does not require reliance upon DEC's knowledge or understanding of underlying operational practices (see Kurcsics v Merchants Mut. Ins. Co., 49 NY2d 451, 459 [1980]; cf. Cortland Regional Med. Ctr., Inc. v Novello, 33 Misc 3d 777, 782 – 783 [2011, Rumsey, J.], quoting Kurcsics).

or maximize – development of the oil and gas resources of New York State. Rather, it states that the purpose of the OGSML is to regulate any development or production of such resources which may occur in a manner that prevents waste, permits greater ultimate recovery of oil and gas, and protects the correlative rights of all persons. By interpreting the foregoing provision as pertaining to regulation of development and production only in locations where such activities may be conducted in compliance with applicable zoning ordinances governing land use, the OGSML may be construed in a fashion which avoids any "abridgement of a town's powers to regulate land use through zoning powers expressly delegated in the Statute of Local Governments § 10(6) and Town Law § 261"(Matter of Frew Run, 71 NY2d at 134).

Nor is any significant difference in the purpose of the two statutes apparent from their respective regulatory schemes. While the OGSML – unlike the MLRL – contains provisions which directly affect where operations may be conducted, such as those governing delineation of pools, well spacing, and integration of units (see ECL 23-0305[8][c]; ECL 23-0501; ECL 23-0503, ECL 23-0701, 23-0901), they address technical operational concerns and are intended to further the stated statutory purposes of avoiding waste, providing for greater ultimate recovery of oil and gas and protecting correlative rights. For example, wells must be spaced to comport with the geological features of the underlying pool or formation – taking into consideration the type and depth of the formation and whether there are any field-bounding faults – to allow efficient recovery of the entire field (see ECL 23-0501[1][b], [2][a]; ECL 23-0503[2], [3][a], [4]). None of the provisions of the OGSML address traditional land use concerns, such as traffic, noise or industry suitability for a particular community or neighborhood (see Town Law § 261; Louhal Props. v Strada, 191 Misc 2d 746, 751 [2002], affd on the opinion below 307 AD2d 1029

[2003]). Thus, zoning regulations do not directly conflict with the provisions of the OGSML that relate to well location.[13]

That the OGSML does not contain a clear expression of legislative intent to preempt local zoning authority (see Matter of Gernatt, 87 NY2d at 682) is further apparent when it is compared to state statutes that indisputably preempt the local zoning power (see e.g. ECL, article 27, title 11 [siting industrial hazardous waste facilities]; Mental Hygiene Law § 41.34 [siting community residential facilities]). The OGSML differs from such statutes in two significant respects. First, unlike the OGSML, the intent to preempt local zoning ordinances is clearly expressed in the text of the other statutes. ECL 27-1107 states that local municipalities may not require "conformity with **local zoning or land use laws and ordinances**" (emphasis supplied).[14] Mental Hygiene Law § 41.34(e) provides that "a community residence established pursuant to this section and family care homes shall be deemed a family unit, **for the purposes of local laws and ordinances**" (emphasis supplied), to preclude local governments from excluding group homes from areas zoned for single-family residences (see also Incorporated Vil. of Nyack v Daytop Vil.,

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[13] As the Court of Appeals noted, where, as here, there is an express supersedure clause, there is no need to consider implied preemption; resolution of such cases turns on proper construction of the supersedure clause at issue (Matter of Frew Run, 71 NY2d at 130 – 131). Whether there is conflict between the local ordinance and the state statute is considered as part of the process of statutory interpretation, specifically by measuring the effect of the local ordinance against the purpose of the state statute (id. at 133 – 134). Here, no impermissible conflict has been found.

[14] It bears noting that although ECL 27-1105(2)(f) originally required denial of an application to construct or operate a hazardous waste facility if it "would be contrary to local zoning or land use regulations in force on the date of the application" (Matter of Washington County Cease v Persico, 99 AD2d 321, 324 – 325 [1984], affd on opinion below 64 NY2d 923 [1985] [emphasis in original]), ECL article 27, title 11 was thereafter amended to expressly preempt local zoning authority (see ECL 27-1105[3][f]; ECL 27-1107;Weinberg, Practice Commentaries, McKinney's Cons Laws of NY, Book 17 ½, ECL 27-1105).

78 NY2d 500, 506 – 507 [1991] [Mental Hygiene Law § 41.34 expressly withdraws the zoning authority of local governments]; Salkin, 1 NY Zoning Law & Prac § 7:25 [Mental Hygiene Law § 41.34 was designed to preempt local control over planning and zoning decision making]).

Second, these other statutes contain provisions by which the traditional concerns of zoning are required to be considered by the agency charged with deciding whether to issue a permit under state law (see ECL 27-1103[2][b], [c], [g], [h]; Mental Hygiene Law § 41.34[c][5]). As previously noted, the OGSML does not require consideration of such factors prior to issuance of well permits. To ensure that local concerns are considered, these other statutes require advance notice to, and allow participation by, a municipality in which a proposed facility is to be located (see ECL 27-1105[3][[c]; ECL 27-1113; Mental Hygiene Law § 41.34[c]). By contrast, the OGSML only requires that notice be provided to a municipality before drilling commences – after a well permit has been granted (see ECL 23-0305[13]). A clear legislative intent to preempt local zoning authority is not apparent from the fact that the OGSML does not specifically provide a mechanism for consideration of local concerns. Rather, by construing the OGSML in accordance with its plain meaning – i.e., as superseding only local regulation of operations – it may be harmonized with those statutes that grant the zoning power to local municipalities (see Matter of Frew Run, 71 NY2d at 134). Under this construction, local governments may exercise their powers to regulate land use to determine where within their borders gas drilling may or may not take place, while DEC regulates all technical operational matters on a consistent statewide basis in locations where operations are permitted by local law.

The fact that the Zoning Amendment bans all operations related to oil and gas exploration and production anywhere within the Town of Dryden does not compel a different result. In

Matter of Gernatt, the Court of Appeals rejected the argument that if the land within a municipality contains extractable minerals, then the municipality is required to permit them to be mined somewhere. It held that, inasmuch as the MLRL does not restrict the power to zone, a municipality may exercise its zoning authority to completely ban mining within its jurisdiction. In proceeding to determine that the doctrine of exclusionary zoning does not prohibit use of the zoning power to exclude industrial uses – a point not raised in this case – the Court specifically noted that the zoning power may properly be used to limit the use of natural resources, stating that:

> "A municipality is not obliged to permit the exploitation of any and all natural resources within the town as a permitted use if limiting that use is a reasonable exercise of its police powers to prevent damage to the rights of others and to promote the interests of the community as a whole."

(Matter of Gernatt, 87 NY2d at 684 [citations omitted]). In light of the determination that the OGSML – like the MLRL – does not preempt local zoning power to regulate uses of land, there is no rational basis for distinguishing Matter of Gernatt; accordingly, the OGSML does not preempt a municipality's authority – through the exercise of its zoning power – to completely ban operations related to oil and gas production within its borders.[15]

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[15] Although the court recognizes that natural gas extraction – unlike gravel mining – does not necessarily affect the surface of the ground directly over the area from where the natural resource is removed, the fact that the boundaries of formations containing gas may not conform to municipal boundaries is not a logical basis for distinguishing Matter of Gernatt. The same considerations about well location and spacing exist wherever there is a boundary between areas where drilling is permitted and where it is not; therefore, it would be illogical to conclude that a municipality may lawfully exclude gas drilling from certain areas of the municipality, but not the entire municipality (cf. Voss v Lundvall Brothers, 830 P2d 1061 [1992]). Moreover, because the location of any boundaries between areas where drilling is a permitted use and where it is prohibited by a local zoning ordinance – whether between different districts within a municipality or between different municipalities – will be known when a well permit application is under consideration, DEC may account for such boundaries to efficiently site wells in any

Finally, while this is a case of first impression in New York State, the issue of the use of the local zoning power to regulate location of natural gas drilling operations has been considered in several decisions by the highest courts of Pennsylvania and Colorado. While they are not binding precedents in this case, it is instructive that both courts reached the same conclusion as this court did by applying New York precedent – that their respective state's statute governing oil and gas production does not preempt the power of a local government to exercise its zoning power to regulate the districts where gas wells are a permitted use.

Pennsylvania's Oil and Gas Act specifically empowers local governments to enact zoning regulations, provided that they do not impose "conditions, requirements or limitations on the same features of oil and gas well operations regulated by this act or that accomplish the same purposes as set forth in this act" (Huntley & Huntley, Inc. v Borough Council of the Borough of Oakmont, 600 Pa 207, 212, 964 A2d 855, 858 [2009] [emphasis and quotation omitted]). This language is similar to the supersedure provisions of the OGSML and the MLRL, which both preempt only those local laws which regulate operations. In an analysis remarkably similar to that conducted by the Court of Appeals in Matter of Frew Run, the Pennsylvania Supreme Court concluded that the zoning laws serve a different purpose than statutes aimed at efficient production and utilization of a natural resource, i.e., regulation of land use and development (see Huntley, 600 Pa. at 225, 964 A2d at 865). It then adopted the same how-versus-where distinction in concluding that a zoning ordinance prohibiting gas wells in a residential district was not preempted by the Oil and Gas Act. In a case decided the same day, it held that a local ordinance that regulated well operations by the imposition of permitting and bonding

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areas where drilling is allowed.

requirements and by regulation of operations – similar to the one at issue in Matter of Envirogas, 112 Misc 2d 432 – was preempted by the Oil and Gas Act (see Range Resources v Salem Township, 600 Pa. 231, 964 A2d 869 [2009]). Citing Huntley and Range Resources, Pennsylvania's intermediate appellate court held that zoning regulations prohibiting gas drilling within the flight path of an airport runway and imposing setback and screening requirements were not preempted by the Oil and Gas Act because they "reflect traditional zoning regulations that identify which uses are permitted in different areas of the locality" (Penneco Oil Co., Inc. v County of Fayette, 4 A3d 722, 733 [2010]).

In a pair of cases that it also decided the same day, the Colorado Supreme Court held that Colorado's Oil and Gas Conservation Act – which does not contain an express supersedure clause, but contains a purposes clause similar to the OGSML – does not preclude local municipalities from regulating the districts within which gas drilling may occur (see Bowen/Edwards Assoc., Inc. v Board of County Commissioners of La Plata County, 830 P2d 1045 [1992]; Voss, 830 P2d 1061 [1992]). It further held that, inasmuch as gas pools do not conform to municipal boundaries, a zoning ordinance that totally banned all drilling within a local government's borders would be preempted because it would conflict with the state's interest in fostering efficient development and production of oil and gas reserves. In New York, however, as previously noted, the Court of Appeals has held otherwise – that a total ban on the extraction of natural resources is permissible where the Legislature has not restricted municipal authority to regulate permissible uses of land (see Matter of Gernatt, 87 NY2d at 682 – 683).[16]

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[16] The court does not find Newbury Twp. Bd. of Trustees v Lomak Petroleum (Ohio), Inc., 62 Ohio St. 387, 583 NE2d 302 (1992) instructive in this case. There, the statute at issue was notably different than the OGSML because it permitted a local municipality to prohibit oil or

THE ZONING AMENDMENT'S PROVISION INVALIDATING PERMITS

The Zoning Amendment provides that "[n]o permit issued by any local, state or federal agency, commission or board for a use which would violate the prohibitions of this section or of this Ordinance shall be deemed valid within the Town" (Dryden Zoning Ordinance, Section 2104[5]). While the Town may regulate the use of land within its borders – even to the extent of banning operations related to production of oil or gas – it has no authority to invalidate a permit lawfully issued by another governmental entity. Rather, enforcement of the provisions of its Zoning Ordinance relating to the use of land is restricted to those remedies authorized by Town Law § 268 and Municipal Home Rule Law § 10(4)(a), (b). Moreover, by purporting to invalidate permits that may be issued by any state agency – including DEC – this provision relates directly to regulation of the oil and gas industries and, accordingly, is expressly preempted by the OGSML. Thus, it is invalid.

However, the presence of the invalid provision does not require that the entire Zoning Amendment be invalidated because it may be severed without impairing the underlying purpose of the Zoning Amendment (see CWM Chem. Servs., L.L.C. v Roth, 6 NY3d 410, 422 – 425 [2006]; Wiggins v Town of Somers, 4 NY2d 215, 222 [1958], rearg denied 4 NY2d 1045, 1046 [1958]; St. Joseph Hosp. of Cheektowaga v Novello, 43 AD3d 139, 146 [2007], appeal dismissed 9 NY3d 988 [2007], lv denied 10 NY3d 702 [2008]; see also Dryden Zoning

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gas well drilling in areas traditionally considered appropriate for such activity based only on health and safety considerations. While acknowledging that municipalities could properly enact zoning regulations based on health and safety concerns, the Court invalidated a local zoning ordinance prohibiting gas wells in all residential districts by substituting its own judgment for that of the town in finding that drilling was appropriate in areas used for agricultural production and zoned residential.

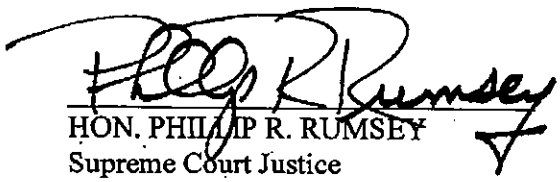
Ordinance § 2101 ["The invalidity of any section or provision of this Ordinance shall not invalidate any other section or provision thereof"]). Accordingly, Section 2104(5) is hereby severed and stricken from the Zoning Amendment and the Dryden Zoning Ordinance.

CONCLUSION

Inasmuch as the court is unable to discern any meaningful difference between the language of the supersedure clauses of the MLRL – as it existed when Matter of Frew Run was decided – and the OGSML, or in the respective legislative histories, purposes or regulatory schemes of the two statutes, it is constrained to apply Matter of Frew Run and Matter of Gernatt in determining that the Zoning Amendment is not preempted by the OGSML. Accordingly, the Town's motion for summary judgment is granted, and it is adjudged and declared that the Zoning Amendment – as herein modified by severing and striking Section 2104(5) – is not preempted by the OGSML.

This decision constitutes the order and judgment of the court. The transmittal of copies of this decision, order and judgment by the court shall not constitute notice of entry.

Dated: February 21, 2012
Cortland, New York



HON. PHILIP R. RUMSEY
Supreme Court Justice

The following documents were filed with the Clerk of the County of Tompkins:

- Summons dated September 16, 2011.
- Notice of petition dated September 16, 2011.
- Verified petition and complaint dated September 16, 2011.
- Unsworn "Affidavit" of Pamela S. Kalstrom dated September 15, 2011, with Exhibits A – C.
- Affidavit of Gregory H. Sovas, sworn to September 12, 2011, with Exhibit A.
- Acknowledgment of Service dated September 16, 2011.
- Stipulation dated October 5, 2011.
- Verified answer of respondents-defendants dated October 21, 2011.
- Three volume record filed by respondents-defendants on October 21, 2011.
- Notice of motion by respondents-defendants dated October 21, 2011.
- Affidavit of Mary Ann Sumner, sworn to October 21, 2011.
- Affidavit of Bambi L. Avery, sworn to October 13, 2011.
- Affidavit of Henry M. Slater, sworn to October 12, 2011.
- Affidavit of Sibley Stewart, sworn to October 19, 2011.
- Affidavit of Mahlon R. Perkins, sworn to October 21, 2011, with attached exhibits.
- Affirmation of Yvonne E. Hennessey dated October 28, 2011, with Exhibits A – X.
- Reply Affirmation of Yvonne E. Hennessey dated November 3, 2011, with Exhibits A – B.
- Notice of motion by George A. Mathewson dated October 26, 2011.
- Application for Permission to File Amicus-Curie [sic] Brief dated October 23,

2011.

- Affidavit of George A. Mathewson, sworn to October 24, 2011, with Exhibits 1 – 2.

- Order to show cause dated October 28, 2011.

- Affidavit of Barbara S. Lifton, sworn to October 27, 2011.

- Affidavit of Jordan A. Lesser, sworn to October 27, 2011.

- Brief for Assemblywoman Barbara S. Lifton as amicus curiae dated October 27, 2011.

- Notice of motion by Dryden Resources Awareness Coalition (DRAC) dated October 26, 2011.

- Verified answer of DRAC dated October 26, 2011.

- Affirmation of Alan J. Knauf dated October 26, 2011.

- Affidavit of Marie McRae, sworn to October 26, 2011, with Exhibit A.

- Affidavit of Joseph Wilson, sworn to October 26, 2011.

- Affidavit of Judith Pierpont, sworn to October 26, 2011, with Exhibit A.

- Affidavit of Carlene S. Cortright, sworn to October 26, 2011.

- Affidavit of Deborah Cipolla-Dennis, sworn to October 26, 2011.

- Affidavit of Mitchell Lavine, sworn to October 26, 2011.

- Proposed order to show cause filed by Natural Resources Defense Council, Inc., Beverly Ommegang, Theodore Gordon Flyfishers, Inc., Riverkeeper, Inc. and Catskill Mountainkeeper filed on November 1, 2011.

- Affirmation of Deborah Goldberg dated October 31, 2011, with Exhibit A.

- Memorandum of Law *Amici Curiae* of Natural Resources Defense Council, Inc., Beverly Ommegang, Theodore Gordon Flyfishers, Inc., Riverkeeper, Inc. and Catskill Mountainkeeper.

- Proposed order to show cause filed by the Town of Ulysses on November 2, 2011.

- Memorandum of Law of Proposed Amicus Curiae Town of Ulysses.

- Affidavit of John J. Henry, Esq., sworn to November 1, 2011.

- Affidavit of Roxanne Marino, sworn to November 1, 2011.

- Affidavit of Mahlon R. Perkins, sworn to November 2, 2011.

- Affirmation of Yvonne E. Hennessey in Opposition to Amicus and Intervention Filings dated November 2, 2011, with Exhibit A.

- Letter Decision dated November 2, 2011, declining to sign the proposed order to show cause filed on November 1, 2011.

- Letter Decision dated November 2, 2011, declining to sign the proposed order to show cause filed on November 2, 2011.

- Email memorandum from the court to counsel for petitioner-plaintiff, respondents-defendants, and proposed intervenor dated November 7, 2011 (filed by the court).

- Marcellus Shale webpage published by the New York State Department of Environmental Conservation (DEC), obtained from the DEC website at **http://www.dec.ny.gov/energy/46288.html** (site last accessed February 21, 2012) (filed by the court).

- Webpage from the U.S. Energy Information Administration website at **http://www.eia.gov/energy_in_brief/about_shale_gas.cfm** (last accessed February 21, 2012) (filed by the court).

- Webpage from the United States Environmental Protection Agency website at **http://www.epa.gov/hydraulicfracturing/process.html** (last accessed February 21, 2012) (filed by the court).

- Original Decision, Order and Judgment dated February 21, 2012.

STATE OF NEW YORK
COUNTY OF OTSEGO SUPREME COURT

Present: Hon. Donald F. Cerio, Jr.
Acting Supreme Court Justice

COOPERSTOWN HOLSTEIN CORPORATION,
Plaintiff,

v.

TOWN OF MIDDLEFIELD,
Defendant.

DECISION AND ORDER

Index No. 2011-0930

This matter comes on before the Court upon Plaintiff's Notice of Motion for summary judgment dated October 28, 2011, seeking a declaration of this court that Defendant Town of Middlefield's Zoning Law pertaining to Gas, Oil, or Solution Drilling or Mining and the ban on Gas, Oil or Solution Drilling or Mining within the Town of Middlefield is void as being preempted by New York State Environmental Conservation Law §23-0303. Defendant submitted a Notice of Cross-Motion dated December 5, 2011, opposing the relief requested by Plaintiff and seeking dismissal of Plaintiff's complaint.

On December 13, 2011, the parties, including counsel on behalf of *Amici*, appeared in Madison County Supreme Court and were heard.

By Decision and Order of this court dated January 11, 2012, *Amici Curiae* application of EARTHJUSTICE, on behalf of Brewery Ommegang; Village of Cooperstown; Otsego 2000, Inc.; Natural Resources Defense Council, Inc.; Theodore Gordon Flyfishers, Inc.; Riverkeeper, Inc., and; Catskill Mountainkeeper, and that of the Town of Ulysses, were granted.

Supplemental submissions by and on behalf of Plaintiff, Defendant and EARTHJUSTICE were subsequently received by this court on or about January 20, 2012, in conformity with this Court's earlier directive with respect thereto.

The following reflects the Decision and Order of this Court:

Brief History

The Town of Middlefield, Otsego County, New York, enacted a zoning law on June 14, 2011, which became effective on June 28, 2011, entitled "A Local Law Repealing the Town of Middlefield Zoning Ordinance and Adopting the Town of Middlefield Zoning Law."

(Defendant's Notice of Cross-Motion, Exhibit 1). Article V of the Zoning Law entitled "General Regulations Applying to All Districts" and in particular, Subsection A entitled "Prohibited Uses," as is relevant here, specifically states that, "Heavy industry and all oil, gas or solution mining and drilling are prohibited uses..." Zoning Law Article II, Subsections B(7) and B(8) define the terms "Heavy Industry" and "Gas, Oil, or Solution Drilling or Mining," as are relevant here, as follows:

> Gas, Oil, or Solution Drilling or Mining: The process of exploration and drilling through wells or subsurface excavations for oil or gas, and extraction, production, transportation, purchase, processing, and storage of oil or gas, including, but not limited to the following:
>
> I. A new well and the surrounding well site, built and operated to produce oil or gas, including auxiliary equipment required for production (separators, dehydrators, pumping units, tank batteries, tanks, metering stations, and other related equipment;
>
> ii. Any equipment involved in the re-working of an existing well;
>
> iii. A water or fluid injection station(s) including associated facilities;
>
> iv. A storage or construction staging yard associated with an oil or gas facility;
>
> v. Gas pipes, water lines, or other gathering systems and components including but not limited to drip station, vent station, chemical injection station, valve boxes.
>
> Heavy Industry: a use characteristically employing some of, but not limited to the following: smokestacks, tanks, distillation or reaction columns, chemical processing or storage equipment, scrubbing towers, waste-treatment or storage lagoons, reserve pits, derricks or rigs, whether temporary or permanent. Heaving industry has the potential for large-scale environmental pollution when equipment malfunction or human error occurs. Examples of heavy industry include, but are not limited to: chemical manufacturing, drilling of oil and gas wells, oil coal mining, steel manufacturing...

Therefore, it is evident that defendant has, by the enactment of the June 2011 zoning law, effectively banned oil and gas drilling within the geographical borders of the township.

Plaintiff had previously executed two (2) oil and gas leases with Elexco Land Services, Inc., on February 22, 2007, and March 8, 2007, with respect to property owned by plaintiff situate in the Town of Middlefield, Otsego County, New York. Plaintiff has asserted that the purpose of such leases will be frustrated by the enforcement of the above-referenced zoning law as enacted in June 2011 by the defendant and seeks to declare such law void. (Huntington Affidavit dated October 26, 2011, ¶¶ 6-11).

Plaintiff seeks relief upon the ground that New York State Environmental Conservation Law

§23-0303(2) (ECL) preempts any regulations emanating from local authorities with respect to the regulation of gas, oil and solution drilling or mining, and that defendant's zoning law is thereby preempted by exclusive state jurisdiction. The defendant, on the other hand, asserts that no preemption has occurred by operation of ECL §23-0303(2), that the Town of Middlefield's zoning law is valid and that oil and gas drilling is prohibited within the township pursuant to law.

Plaintiff's reliance upon New York State ECL §23-0303(2) is premised upon the supersession language contained within the statute, itself. This particular statute, as enacted in 1981 (L.1981, c. 846), reads as follows:

> The provisions of this article shall supercede all local laws or ordinances relating to the regulation of the oil, gas and solution mining industries; but shall not supercede local government jurisdiction over local roads or the rights of local governments under the real property law. (Emphasis added).

Thus, the plain language of the zoning law as enacted by defendant and the above-referenced provision of the Environmental Conservation Law frame the question of law to be addressed by this court. Specifically, did the State of New York, by the enactment of ECL §23-0303(2), prohibit local municipalities from enacting legislation which may impact upon the oil, gas and solution drilling or mining industries other than that pertaining to local roads and the municipalities' rights under the real property law? This Court finds the answer to this question to be in the negative.

Legal Analysis

In assessing the interplay between local regulation and the extent of state preemption as contained within ECL §23-0303(2) this court must look to the legislative intent and the legislative history of the particular enactment to discern the scope of such preemption. With respect to preemption the first issue to be addressed is the identification of the manner by which preemption is manifested, if at all, by the statutory language employed by the enabling legislation. More precisely, is preemption manifested by expressed or implied statutory language or, rather, by operation of conflict preemption. Here, it is clear to this court that the legislature chose to expressly address preemption within the body of the statute itself. The question which next arises, then, is to what extent does preemption apply.

In considering this question this court has examined the legislative history of, first, Article 3-A of the Conservation Law and, second, the successor provisions of Article 23 of the Environmental Conservation Law. Such an examination of the legislative history is both appropriate and necessary in determining what the intent of the legislation was at the time of the enactment of ECL §23-0303(2), nearly twenty years after the enactment of the original legislation in 1963, as well as what the "natural and obvious sense" of the language means. (See McKinney's Cons Laws of NY, Book 1, Statutes §91-94).

1963 Legislation

The policy of the state, at the time of original enactment of Article 3-A of the Conservation Law in 1963, was set forth in the enacted legislation as follows:

> §70. Declaration of policy. It is hereby declared to be in the public interest to foster, encourage and promote the development, production and utilization of natural resources of oil and gas in this state in such a manner as will prevent waste; to authorize and to provide for the operation and development of oil and gas properties in such a manner that a greater ultimate recovery of oil and gas may be had, and that the correlative rights of all owners and the rights of all persons including landowners and the general public may be fully protected, and to provide in similar fashion for the underground storage of gas. (L.1963, Ch. 959).

The term "waste" as set forth in §70 was defined in §71(1) as follows:

> "Waste" means (a) physical waste, as that term is generally understood in the oil and gas industry, (b) the inefficient, excessive or improper use of, or the unnecessary dissipation of reservoir energy, (c) the locating, spacing, drilling, equipping, operating, or producing of any oil or gas well or wells in a manner which causes or tends to cause reduction in the quality of oil or gas ultimately recoverable from a pool under prudent and proper operations, or which causes or tends to cause unnecessary or excessive surface loss or destruction of oil or gas, (d) the inefficient storing of oil or gas, and (e) the flaring of gas produced from an oil or condensate well after the conservation department has found that the utilization thereof, on terms that are just and reasonable, is, or will be within a reasonable time, economically feasible.

The thrust of the above provisions of Article 3-A of the Conservation Law of 1963 have remained, in effect, unchanged throughout the years and are presently found at ECL §23-0301 and §23-0101(20), respectively.

The ensuing provisions of Article 3-A, as enacted in 1963, fail to specifically address therein any land use issues which would otherwise be the subject of a local municipality's zoning authority as an exercise of its police powers. This court's review of this legislation finds that the various provisions of Article 3-A focused the conservation department's efforts on matters such as spacing units, integration of oil and gas pools and fields, oil and gas leases as well as the plugging of old wells, which are all regulatory in nature.

Of the various documents comprising the legislative history of the 1963 enactments, as submitted to this court by counsel, is the April 15, 1963, memorandum from the Conservation Commissioner in support of this legislation. This legislation would make the Conservation Department "responsible for the administration of oil and gas operations in the state" and, in particular, the "regulation thereof on public and private lands." The April 23, 1963, "REPORT

TO THE GOVERNOR ON LEGISLATION" from the Department of Audit and Control, while taking no position with respect to passage of the legislation, noted in the "summary" that the legislation would pertain to "the conservation of oil and gas with the regulation of oil and gas on both public and private lands." The "summary" further noted that "[t]he bill prohibits waste of oil or gas, very broadly defining the term 'waste.' Notice to the department is required prior to commencing drilling or storage at existing fields" and, under certain circumstances, the need for a permit. The "summary" also addressed the department's powers pertaining to "regulation, investigation and supervision. Additional regulatory provisions are granted with respect to new oil or natural gas pools or field..." This correspondence identifies both the state's declared policy and the permitting process and regulations pertaining to extraction of gas and oil.

Of further importance to this court's interpretation is the "Memorandum in Support" of the original 1963 legislation, authored by Edgar S. Nelson, Executive Director, New York State Petroleum Council, dated April 24, 1963. Mr. Nelson, while addressing the industry's efforts to prepare a "comprehensive geological and geophysical study of [New York State] lands, particularly the deeper horizons" with respect to oil and gas drilling, expressed his support for the legislation as such would provide the Conservation Department "regulatory powers pertaining to the determination and establishment of proper well spacing units and well locations, regulation of the drilling and plugging of wells, furnishing of well drilling information to the department, approval of voluntary and/or compulsory integration and utilization in new oil and gas pools and fields, under prescribed conditions...The Department is empowered to make an early determination as to all the lands believed underlaid by a pool and shall fix the proper size drilling units and well locations. This uniform distribution of wells will permit a sooner definition of the limits and characteristics of the pool or field. It will also permit the Department to determine earlier the proper method of operation. In addition, the earlier widespread development of an entire pool permits all owners to share in the production from the pool at an earlier date and will bring about a more equitable distribution of oil and gas." Mr. Nelson's support of the legislation was premised upon the state's oversight of the industry's activities based upon geologic and geophysical assessments of the subsurface existence of oil and gas pools and fields so as to maximize utilization of these natural resources and to prevent waste from the inefficient and ineffective installation of wells impacting such pools or fields. The thrust was to establish a state-wide management system for the utilization of these resources so as to encourage oil and gas drilling in the state in a uniform and productive fashion.

The posture of Mr. Nelson was consistent with that of H. Ames Richards, Jr., Vice President of Fremont Oil Corporation, evidenced in his letter dated January 18, 1963, to Senator Elisha T. Barrett. The attached draft "Legislative Brief" recognized that much of the proposed New York State legislation was similar to the recommendations made by the Interstate Oil Compact Commission, of which New York State was a member. Of significance to this court was Mr. Richards' recognition that such proposed legislation would "authorize the Conservation Department to provide for orderly drilling in new fields in accordance with sound geological and engineering principles. To this end, the department is authorized to establish well spacing units of a size and shape that can be economically and efficiently drained by one well." Such

expression serves to confirm the state's interest in developing this particular resource utilizing "sound geological and engineering principles" and "orderly drilling in new fields" thus addressing the manner and method by which such drilling should occur so as to avoid wasting these natural resources.

1978 Legislation

The 1978 amendments to Article 23, and in particular §23-0301 thereof, replaced the phrase "foster, encourage and promote" as contained in the original 1963 version with the word "regulate." This same legislation also amended Energy Law §3-101(5) to "foster, encourage and promote the prudent development and wise use of all indigenous state energy resources including, but not limited to, on-shore oil and natural gas, off-shore oil and natural gas, natural gas from Devonian shale formations, small head hydro, wood, solar, wind, solid waste, energy from biomass, fuel cells and cogeneration...," thus statutorily and departmentally dividing these two disparate responsibilities. These amendments effectively transferred the promotion of energy to the Energy Office while concomitantly continuing regulation of the oil, gas and solution mining industry with the Department of Environmental Conservation.

The historical commentary coexistent with the amendments demonstrates the legislative intent to permit the state to "conduct a coordinated long range campaign for developing the State's indigenous State resources and to insure effective regulation of gas and oil development and production." (Enclosed "10-Day Bill Budget Report on Bills" as provided by Senator Martin S. Auer to Counsel to the Governor, Hon. Judah Gribetz, dated June 7, 1978). Another enclosure of Senator Auer's June 7, 1978, correspondence was from the Energy Office which, in recommending approval of the legislation, stated that:

> Responsibility for promoting energy resource development in New York State is shared by many agencies, including DEC which also has regulatory responsibilities over those same resources. Necessary development activities have proceeded in a haphazard fashion, if at all. The development of potentially significant and economic state energy resources – Lake Erie natural gas; on-shore oil and gas; Atlantic natural gas and oil; natural gas from Devonian shale formations; small head hydro; wood; solar; wind; solid waste; energy from biomass; cogeneration – would benefit from a focused approach given a high priority by State government. Further, a centralized development function would aid the State in joining federal, regional and local interests in joint development functions. (June 8, 1978, memorandum from James L. Larocca, Commissioner, NYS Energy Office).

Thus, the amendment recognized the need to centralize promotion of the state's energy resources under the authority of a single administrative body, i.e., the Energy Office, while streamlining the regulatory function of the Department of Environmental Conservation. However, no reference was made in the legislation, itself, nor any correspondence in support of the legislation, pertaining to the impact or preemption by the state of local municipal land use management nor had such reference been made since the enactment of the original legislation in 1963.

1981 Legislation

In 1981 the State of New York amended various provisions of the state finance law, the environmental conservation law, the real property tax law, the agriculture and markets law and the tax law. The legislative Memorandum supporting the ACT (S.6455-B/A.8475-B) states, in relevant part, that the purpose of the amendment is:

> [I]n relation to promoting the development of oil and gas resources in New York **and** regulating the activity of the industry; repealing provisions of the environmental conservation law relating thereto and making appropriations to the department of environmental conservation and the state board of equalization and assessment for carrying out certain provisions of this act.
>
> PURPOSE OF THE BILL:
>
> > To promote the growth, development **and** proper regulation of oil and natural gas resources in New York State by:
> >
> > a) establishing new fees to fund additional regulatory personnel for the industry and to provide a fund to pay for past and future problems which resulted by the industry's activities.
> > b) establish a uniform method of real property taxation for oil and gas lands.
> > c) clarify the impact of oil and natural gas development for farmers who have committed their lands to Agricultural District Treatment.
> > d) create an advisory board to advise the Commission on oil and natural gas matters.
>
> JUSTIFICATION
>
> > Due to the energy crisis, the Governor and Legislature have made it clear that it is important to promote the development of domestic energy supplied, including NYS's resources of oil and natural gas. The recent growth of drilling in the State has exceeded the capacity of DEC to effectively **regulate** and service the industry. The industry will benefit from the expeditious handling of permits and improved regulation and it is therefore equitable that the industry provide increased support for the services it requires. (Emphasis added).

It was at this point in the history of this legislation that the supersession clause as contained within ECL §23-0303(2) was enacted. As is evident from a reading of the legislative Memorandum which acknowledged that promotion and regulation were considered separate and distinct activities (divided between the Energy Office and the Department of Environmental Conservation), the regulation component, itself, as set forth in ECL §23-0303(2), specifically dealt with the activity of the industry, i.e., method and manner of drilling and the like, rather than

the broader component of the development of this natural resource.

The Governor's approval of the aforesaid ACT, as set forth in his "Memorandum filed with Senate Bill Number 6455-B," confirms that the amendment would provide Department of Environmental Conservation with funding for its "expanded regulatory program" as well as enhanced civil and criminal penalties. The Memorandum then addressed the "possible adverse environmental impact of oil and gas development" and the fund's ability to address such issues as "the abatement of dangerous oil and gas-related accidents." There is no language contained within the legislative history which serves to support plaintiff's claim that the supersession clause enacted was intended to impact, let alone diminish or eliminate, a local municipality's right to enact legislation pertaining to land use.

Therefore, this court finds no support within the legislative history leading up to and including the 1981 amendment of the ECL as it relates to the supersession clause which would support plaintiff's position in this action. Neither the plain reading of the statutory language nor the history of ECL §23-08303(2) would lead this court to conclude that the phrase "this article shall supersede all local laws or ordinances **relating to the regulation** of the oil, gas and solution mining industries" was intended by the Legislature to abrogate the constitutional and statutory authority vested in local municipalities to enact legislation affecting land use. (New York State Constitution, Article IX, §2(c)(ii)(10); Municipal Home Rule Law §§10(1)(ii)(a), 11 and 12; Statute of Local Governments §§10(6) and (7), and; Town Law §261). Rather, the "natural and most obvious sense" of the word "regulation" in this statute, taken in conjunction with the legislative history of this body of law as well as its definition as "an authoritative rule dealing with details or procedure" (Merriam-Webster Dictionary), convincingly demonstrates that the legislature's intention was to insure state-wide standards to be enacted by the Department of Environmental Conservation as it related to the manner and method to be employed with respect to oil, gas and solution drilling or mining, and to insure proper state-wide oversight of uniformity with a view towards maximizing utilization of this particular resource while minimizing waste. Clearly, the state's interests may be harmonized with the home rule of local municipalities in their determination of where oil, gas and solution drilling or mining may occur. The state maintains control over the "how" of such procedures while the municipalities maintain control over the "where" of such exploration.[1]

Further, decisional law of this state also supports the finding that municipalities are not preempted by ECL §23-0303(2) from enacting local zoning ordinances which may, and in some circumstances such as the instant zoning law, do, prohibit oil, gas and solution drilling or mining. In the Matter of Frew Run Gravel Products, Inc., v. Town of Carroll, 71 NY2d 126, 1987, the Court of Appeals, while addressing the breadth of the supersession clause of the Mining Land

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[1]Plaintiff's submission of the post-enactment Affidavit of Gregory H. Sovas, while anecdotally of interest, is not considered by this court with respect to the legislative intent of this body of law. (People v. Morales, 86 AD3d 147, 1st. Dpt. 2011; citing Civil Srv. Empls Assn., Inc., v. County of Oneida, 78 AD2d 1004, 4th Dpt. (1980), lv denied 53 NY2d 603 (1981).

Reclamation Law (MLRL), ECL §23-2703(2), found that the zoning regulations of the Town of Carroll did not frustrate the state's "purposes of the statute...'to foster a healthy, growing mining industry' and to 'aid in assuring that land damaged by mining operations is restored to a reasonably useful and attractive condition.'" (Id, at 132). The Court of Appeals found that the supersession clause contained therein (which is strikingly similar to that contained in ECL §23-0303(2)) preempted the local municipality from establishing regulations pertaining to the methods of mining as such regulations were exclusively the province of the state while at the same time permitting the municipality, by exercise of its constitutional and statutory authority, to "regulate land use generally." (Id at 131). Here, no less can be said about ECL §23-0303(2) as the preemption does not apply to local regulations addressing land use which may, at most, "incidentally" impact upon the "activities" of the industry of oil, gas and solution drilling or mining.

The Court of Appeals decision In the Matter of Gernatt Asphalt Products, Inc., v. Town of Sardinia, 87 NY2d 668,681-682 (1996), confirmed the Frew Run holding that the supersession clause of the MLRL drew a distinction between the manner and method of mining and local land use regulations:

> Zoning ordinances, we noted, have the purpose of regulating land use generally. Notwithstanding the incidental effect of local land use laws upon the extractive mining industry, zoning ordinances are not the *type* of regulatory provisions the Legislature foresaw as preempted by Mind Land Reclamation Law; the distinction is between ordinances that regulate property uses and ordinances that regulate mining activities. In *Frew Run*, we concluded that nothing in the plain language, statutory scheme, or legislative purpose of the Mined land Reclamation Law suggested that its reach "was intended to be broader than necessary to preempt *conflicting regulations dealing with mining operations and reclamation of mined lands*"and in that in the absence of a clear expression of legislative intent to preempt local control over land use, the statue could not be read as preempting local zoning authority. (Internal citations omitted).[2]

Similarly, here, the defendant's Zoning Law is an exercise of the municipality's constitutional and statutory authority to enact land use regulations even if such may have an incidental impact upon the oil, gas and solution drilling or mining industry. The Zoning Law does not conflict with the state's interest in establishing uniform policies and procedures for the manner and method of the industry or does it impede implementation of the state's declared policy with respect to these resources.

A review of the various provisions contained within Article 23 of the Environmental Conservation Law pertaining to OGSML clearly demonstrates the state's interest in regulating the "activities," i.e., the manner and method, of the industry. For example, ECL §23-501 entitled

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[2]Significantly, Gernatt Asphalt also stands for the proposition that a municipality may ban a particular activity, such as mining, in furtherance of its land use authority. (Id at 683).

"Well permits" requires a well permit to be issued to allow the applicant to "drill, deepen, plug back or convert a well for production of oil or gas." (ECL §23-501(1)(b)(3). This section also pertains to "statewide spacing" for gas wells and sets forth a comprehensive listing of depths of drilling and sizes for various pools at various times. (ECL §23-501(1)(b)(1). ECL §23-0503 entitled "Well spacing in oil and natural gas pools and fields" provides that a permit shall be issued by the DEC "conforms to statewide spacing." ECL §23-0901 addresses "compulsory integration and unitization in oil and natural gas pools and fields" which, as with the other examples set forth above, pertain to geologic and geophysical aspects of the activities or manner and method of oil, gas and solution drilling or mining. No specific nor inferential reference is made within these various provisions pertaining to land use legislation being preempted by these provisions. Therefore, as the Gernatt Asphalt Court found with respect to the MLRL supersession clause, the OGSML supersession clause preempts local regulation solely and exclusively as to the method and manner of oil, gas and solution mining or drilling, but does not preempt local land use control. Such distinct interests are easily harmonize as the local land use controls do not frustrate the state's interest in regulating the method and manner of such industry activities and therefore do not interfere with the state's declared policy as set forth at ECL §23-0301.

Therefore, it is evident that the supersession clause contained with ECL §23-0303(2) does not serve to preempt a local municipality such as defendant from enacting land use regulation within the confines of its geographical jurisdiction and, as such, local municipalities are permitted to permit or prohibit oil, gas and solution mining or drilling in conformity with such constitutional and statutory authority.

Conclusion

Therefore, upon the facts and circumstances herein, and relevant statutory and decisional law of this state, it is

ORDERED, that plaintiff's motion for summary judgment declaring the Town of Middlefield Zoning Law as enacted on June 14, 2011, to be void is DENIED, and it is

ORDERED, that defendant's cross-motion seeking to dismiss the plaintiff's complaint is GRANTED.

Enter.

DATED: February 24, 2012
Wampsville, New York

Hon. Donald F. Cerio, Jr.
Acting Supreme Court Justice
County of Otsego

TO: Michael Wright, Esq., Attorney for Plaintiff
Victor Meyers, Esq., Attorney for Defendant
Deborah Goldberg, Esq., Attorney for *Amici* EARTHJUSTICE
John Henry, Esq., Attorney for *Amici* Town of Ulysses
Christy Bass, Chief Court Clerk Otsego County Supreme Court

HYDROFRACKING--DISTURBANCES BOTH GEOLOGICAL AND POLITICAL: WHO DECIDES?

John R. Nolon and Victoria Polidoro[1]

ABSTRACT. There is much controversy about the mining of shale gas through a process known as hydraulic fracturing (hydrofracking) in the Marcellus Shale formation, one of the largest shale gas areas in the world; a debate is raging about its economic benefits and environmental impacts as the New York State's Department of Environmental Conservation (DEC) considers what standards to require when it issues permits to drillers. New York State law gives permitting authority to the DEC and calls into question the historical home rule authority of localities to control the location and land use impacts of gas wells, through comprehensive planning, zoning, and development regulations. This article describes and discusses this debate, the tension between state and local control, local zoning controls imposed on drilling and ensuing litigation, and options available to municipalities to control the impact of drilling on their local environment and economies. The regulation, advocacy, and negotiation regarding hydrofracking raise critical questions for economic and environmental policy because the facts regarding this emerging technology are highly disputed, the forces pushing and resisting shale gas mining are powerful, and the authority of each level of government is unclear. At stake are critical policy issues about who decides issues that have national, regional, and local impacts and the role of lawyers in developing effective strategies for resolving such complex environmental and economic conflicts.

I. THE PROMISE AND PERILS OF DRILLING FOR SHALE GAS

Over the past three years, state and local officials, business leaders, environmentalists, and the public have been locked in a fractious and escalating debate about whether and how to allow horizontal drilling for natural gas in New York.[2] Nearly every day for the past year a new article, report, or study appears that either lauds or vilifies hydrofracking. Even reports on the first earthquake in New York's recent memory were not spared from the hydrofracking debate when it was discovered that drilling

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[2] *See, e.g.*, Scott R. Kurkoski, *The Marcellus Shale: A Game Changer for the New York Economy?*, 84 N.Y. ST. B.A. J. no.1, 9 (2012).

was being conducted near the center of the quake.[3] Much of the attention regarding the promise and perils of drilling for shale gas is focused on the Marcellus Shale formation, which is the one of the largest shale gas formations in the U.S., underlying several mid-Atlantic states including 18,700 square miles in New York.[4] Estimates of the number of wells that will result in this vast Marcellus region in New York alone range up to 40,000.[5] Drilling in New York awaits the completion of a study on the draft rules that will govern state-issued permits.

Hydraulic fracturing, or hydrofracking, is a well stimulation technique designed for areas underlain by large shale formations in which millions of gallons of water containing thousands of gallons of proprietary chemical slurries and a propping agent, such as sand, are pumped under high pressure down a well bore to create fractures in the hydrocarbon-bearing shale.[6] This causes the release of the natural gas that the shale contains and allows it to be pumped to the surface.[7] Some of the fluid mixture, known as "flow-back water," returns to the surface, where it is disposed of by being trucked to injection wells or water treatment plants. In New York this raises a further complication since its geology is not favorable to injection wells. This, in turn, has led to a search for appropriate injection wells in other states and for wastewater treatment plants that can handle this wastewater, which are in short supply.

Under the Oil, Gas and Solution Mining Law (OGSML)[8] the Department of Environmental Conservation (DEC) is the permitting agency and must study the potential environmental impacts of hydrofracking before finalizing its regulations.[9] The DEC has released a Revised Draft Supplemental Generic Environmental Impact Statement (Revised dSGEIS)

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[3] *See, e.g.*, Eric Niller, *Can Fracking Cause Quakes?*, DISCOVERY NEWS (Jan. 6, 2012, 01:54 PM), http://news.discovery.com/earth/fracking-earthquakes-gas-120106.html.

[4] N.Y. STATE DEP'T OF ENVTL. CONSERV., REVISED DRAFT SUPPLEMENTAL GENERIC ENVIRONMENTAL IMPACT STATEMENT ON THE OIL, GAS AND SOLUTION MINING REGULATORY PROGRAM: WELL PERMIT ISSUANCE FOR HORIZONTAL DRILLING AND HIGH-VOLUME HYDRAULIC FRACTURING TO DEVELOP THE MARCELLUS SHARE AND OTHER LOW-PERMEABILITY GAS RESERVOIRS 4-14 (2011) [hereinafter Revised dSGEIS], *available at* http://www.dec.ny.gov/data/dmn/rdsgeisfull0911.pdf.

[5] *Id.* at 6-6.

[6] *See id.* at 5-5.

[7] *See* N.Y. STATE DEP'T OF ENVTL. CONSERV., DRAFT SUPPLEMENTAL GENERIC ENVIRONMENTAL IMPACT STATEMENT ON THE OIL, GAS AND SOLUTION MINING REGULATORY PROGRAM: WELL PERMIT ISSUANCE FOR HORIZONTAL DRILLING AND HIGH-VOLUME HYDRAULIC FRACTURING TO DEVELOP THE MARCELLUS SHALE AND OTHER LOW-PERMEABILITY GAS RESERVOIRS 5-32 (2009), *available at* ftp://ftp.dec.state.ny.us/dmn/download/OGdSGEISFull.pdf.

[8] N.Y. ENVTL. CONSERV. LAW § 23-0303(2) (McKinney 2012).

[9] Under New York law, state and local agencies must complete an Environmental Impact Statement when their actions, such as permitting gas drilling, may have an adverse impact on the environment. *See* N.Y. COMP. R. & REGS. tit 6, ch. VI, pt. 617 (2012).

regarding hydrofracking.[10] The gas drilling industry is waiting for the completion of the environmental impact statement and the finalization of drilling regulations before applying for permits. In the meantime, the industry is laying the groundwork for obtaining permits by leasing land.

DEC and industry forces read the OGSML as preempting local zoning and land use control of the location of wells. In response, some localities whose lawyers read the law differently have enacted various controls on the location of gas wells to protect their community character and environment. Landowners and the industry, in turn, have sued these municipalities. Deciding the underlying issues in these cases will take years to wind their way through the New York court system. Largely absent from the decision-making process is the federal government. Although federal policy regarding the regulation of hydrofracking is under review, the mining process is largely exempt from current federal law.[11]

Proponents of hydrofracking trumpet the economic benefits of drilling, citing the vast amounts of recoverable natural gas reserves: up to 410 trillion cubic feet,[12] and high prices for natural gas.[13] The point to DEC projects that hydrofracking will create anywhere from 13,491 to 53,969 jobs in New York State[14] and the Public Policy Institute's projection that the state could gain $2.7 billion in value added and $1 billion in local, state, and federal taxes.[15] Natural gas has also been touted as a cleaner source of

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[10] *See* Revised dSGEIS, *supra* note 4. Over 13,000 comments have been received. *Id.* at 1-4.

[11] The discharge of flow-back water and the disclosure of chemicals used in hydrofracking and contained in that flow-back fluid were exempted from the permitting that would otherwise be required under the Safe Drinking Water Act by the Energy Policy Act of 2005. *See* 42 U.S.C. § 300h(d)(1) (2006). In October 2011, EPA Administrator Lisa P. Jackson announced that the EPA will draft standards for regulating the handling and disposition of this wastewater. *See EPA to Regulate Disposal of Fracking Wastewater*, CBSNEWS.COM (Oct. 20, 2011 02:47 PM), http://www.cbsnews.com/2100-501369_162-20123299.html.

[12] *See* Erich Schwartzel, *Marcellus Shale Gas Estimate Plummets*, PITTSBURGH POST-GAZETTE, Jan. 24, 2012, http://www.post-gazette.com/pg/12024/1205614-454.stm.

[13] *See* U.S. ENERGY INFO. ADMIN., NATURAL GAS YEAR-IN-REVIEW 2007 3 (2008), *available at* http://www.eia.gov/pub/oil_gas/natural_gas/feature_articles/2008/ngyir2007/ngyir2007.pdf.

[14] The DEC bases these estimates on a sixty year production cycle. The agency's projection also includes: 10,532 to 42,126 gas wells, a thirty year productive life cycle for each gas well, and a thirty year build out. *See* Revised dSGEIS, *supra* note 4, at 6-209, Table 6.31, 6-210, 6-213, Table 6.32.

[15] Estimates also include 62,640 jobs, based on an assumption of 500 wells drilled annually. *See* PUB. POLICY INST. OF N.Y. STATE, DRILLING FOR JOBS: WHAT THE MARCELLUS SHALE COULD MEAN FOR NEW YORK 16 (2011), *available at* http://www.ppinys.org/reports/2011/Drilling-for-jobs-what-marcellus-shale-could-mean-for-NY.pdf.

energy than oil and coal.[16] Today, the United States is the world's largest petroleum consumer, importing nearly 50% of that total from foreign countries.[17] Proponents note that reducing the United States' dependency on foreign oil has many economic benefits including a more stable energy market and obvious foreign policy advantages.

Opponents of hydrofracking point to credible sources that dispute the optimistic forecasts of gas prices.[18] Recent studies have shown a significant decrease in the estimated amount of shale gas available, down 66% from last year.[19] Other economic indicators, such as jobs and taxes, are tied to the size of the reserves and, opponents claim, have not been adjusted downward to reflect the new reduced estimates of gas available. They also point to a myriad of potential adverse environmental impacts that hydrofracking may cause: depletion of groundwater, surface water pollution, ground water pollution, air pollution, increased truck traffic, loss of community character, creation of "boomtowns," and earthquakes (seismicity).[20] They do not believe that natural gas derived from hydofracking is a cleaner source of energy than oil and coal.[21] While natural gas burns cleaner than other fuels, they note that the accompanying release of methane into the atmosphere may exacerbate global warming as methane is over twenty times more potent as a greenhouse gas.[22] Finally, opponents

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[16] *See, e.g.*, *id.* at 3.

[17] The U.S. consumed 19.1 million barrels per day of petroleum products in 2010. *How Dependent are we on Foreign Oil?*, U.S. ENERGY INFO. ADMIN, http://www.eia.gov/energy_in_brief/foreign_oil_dependence.cfm (last updated June 24, 2011).

[18] The 2011 EIA Annual Energy Outlook report shows estimates of $5/thousand cubic feet. *See* U.S. ENERGY INFO. ADMIN., DOE/EIA-0383(2011), ANNUAL ENERGY OUTLOOK 2011 3 (2011), *available at* http://www.eia.gov/forecasts/aeo/pdf/0383(2011).pdf.

[19] The estimated amount of recoverable gas from the Marcellus Shale rose from 2 trillion cubic feet (TCF) in 2002, to 50 TCF in January 2008, to 363 TCF in November 2008, to 410 TCF by 2011, and then plummeted to 84 TCF in August 2011. *See* Mary Esch, *Gas Yield from Marcellus Shale Goes Up*, THE EVENING SUN, Nov. 3, 2008, http://www.evesun.com/news/stories/2008-11-04/5593/Gas-yield-from-Marcellus-shale-goes-up/; Erich Schwartzel, *supra* note 11; DANIEL J. SOEDER & WILLIAM M. KAPPEL, USGS, WATER RESOURCES AND NATURAL GAS PRODUCTION FROM THE MARCELLUS SHALE 3 (2009), *available at* http://pubs.usgs.gov/fs/2009/3032/pdf/FS2009-3032.pdf; *see also* U.S. ENERGY INFO. ADMIN.,DOE-EIA-0383ER, AEO2012 EARLY RELEASE OVERVIEW (2012), *available at* http://www.eia.gov/forecasts/aeo/er/early_production.cfm.

[20] *See* Revised dSGEIS, *supra* note 4, at ch. 6 (discussing potential environmental impacts of hydrofracking).

[21] *See* RUTH WOOD ET AL., TYNDALL CTR. FOR CLIMATE CHANGE RESEARCH, SHALE GAS: A PROVISIONAL ASSESSMENT OF CLIMATE CHANGE AND ENVIRONMENTAL IMPACTS 8-9 (2011), *available at* http://www.tyndall.ac.uk/sites/default/files/tyndall-coop_shale_gas_report_final.pdf.

[22] *See* Robert W. Howarth et al., *Methane and the greenhouse-gas footprint of natural gas from shale formations: A Letter*, 106 CLIMATIC CHANGE 676

point out that the high price of natural gas overseas will inevitably lead to its export, blunting the argument that shale gas will wean us from imported oil.[23]

II. THE TENSION BETWEEN STATE AND LOCAL POWER

The oil industry and the DEC have taken the position that the State has "preempted the field" of regulating hydrofracking and that communities may not use their zoning powers to govern the location and land use impacts of gas drilling.[24] The question of whether a municipality can ban hydrofracking or limit the location of gas wells through zoning has become a divisive issue in the state and is currently working its way through the courts.[25]

New York is a "home-rule" state; local governments have constitutionally derived power to enact local laws relating to their property, affairs, or government, so long as such laws are not inconsistent with the constitution or a general law of the state.[26] In addition, localities have been delegated the power to regulate land uses through zoning.[27] The State's highest court has recognized that "[o]ne of the most significant functions of a local government is to foster productive land use within its borders by enacting zoning ordinances."[28]

Zoning authority can be curtailed when the State has demonstrated the intent to preempt an entire field of regulation.[29] This prevents inconsistent local laws from "inhibit[ing] the operation of the State's general law and thereby thwart[ing] the operation of the State's overriding policy

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(2011), *available at* http://graphics8.nytimes.com/images/blogs/greeninc/Howarth2011.pdf.

[23] *See* Bill Lascher, *Debate Surrounds Race to Export America's Natural Gas*, INSIDECLIMATENEWS (Feb. 21, 2012), http://insideclimatenews.org/news/20120220/energy-firms-shale-gas-export-terminals-liquefied-natural-gas-lng-eia-coal.

[24] *See* Revised dSGEIS, *supra* note 4, at 8-1; Thomas West, Attorney, The West Firm, PLLC, Representing Chesapeake Energy Corp., Remarks at Pace Law School CLE Event, Hydrofracking: The Explosive Issue of Natural Gas Drilling within the Marcellus Shale in NY State (Apr. 14, 2011).

[25] *See infra* Part III.

[26] N.Y. CONST. art. IX, § 2(c)(1); N.Y. MUN. HOME RULE LAW § 10 (McKinney 2012). For an in-depth discussion of the constitutional and statutory issues surrounding natural gas drilling regulation, see Michael E. Kenneally & Todd M. Mathes, *Natural Gas Production and Municipal Home Rule In New York*, 10 N.Y. ZONING L. PRAC. REP., no. 4, Jan./Feb. 2010, at 1.

[27] *See* N.Y. TOWN LAW §§ 261-263 (McKinney 2012); N.Y. VILLAGE LAW §§ 7-700, 7-702 (McKinney 2012); N.Y. GEN. CITY LAW § 20(24), (25) (McKinney 2012); Kurzius v. Vill. of Upper Brookville, 51 N.Y.2d 338, 343 (N.Y. 1980).

[28] DJL Rest. Corp. v. City of New York, 96 N.Y.2d 91, 96 (N.Y. 2001).

[29] *See* Jancyn Mfg. Corp. v. County of Suffolk, 71 N.Y.2d 91, 97 (N.Y. 1987).

concerns."[30] The intent to preempt can be explicit or can be implied through review of the state's regulatory scheme regarding a particular subject.[31]

When faced with a potential conflict between state and local zoning laws, courts will attempt to harmonize local and state legislative enactments, "thus avoiding any abridgment of the town's powers to regulate land use through zoning powers" expressly delegated in the constitution and implemented through state statutes.[32] It is well settled that "[t]he mere fact that a state regulates a certain area of business does not automatically preempt all local legislation that applies to that enterprise."[33]

The DEC's and the gas industry's position that the state has "preempted the field" of natural gas drilling regulation and that communities may not use their zoning powers to prohibit natural gas drilling in any or all zoning districts[34] has resulted in a conflict between the interest of municipalities in controlling industrial uses within their boundaries and the achievement of the State's energy goals as outlined in the OGSML.[35] Over the last two years dozens of communities have temporarily or permanently banned hydrofracking by adopting moratoria or amending their zoning laws to prohibit natural gas drilling, with more considering doing so.[36] The question of whether this is a permissible use of local authority has been

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[30] *Id.* at 97.
[31] *See id.* at 99.
[32] Frew Run Gravel Prods., Inc. v. Town of Carroll, 71 N.Y.2d 126, 134 (N.Y. 1987).
[33] Matter of Envirogas, Inc. v. Town of Kiantone, 112 Misc. 2d. 432, 433 (N.Y. Sup. Ct. 1982), *aff'd*, 454 N.Y.S.2d 694 (N.Y. App. Div. 1982), *motion for leave denied*, 58 N.Y.2d 602 (1982).
[34] *See* Revised dSGEIS, *supra* note 4, at 8-1; Remarks of Thomas West, *supra* note 24; *see also* Complaint at 6-7, Anschutz Exploration Corp. v. Town of Dryden, No. 2011-0902 (N.Y. Sup. Ct. filed Sept. 16, 2011), *available at* http://catskillcitizens.org/learnmore/drydenlawsuit.pdf. For Anschutz's position, see *Anschutz Files Supreme Court Lawsuit to Overturn Town of Dryden Ban on Natural Gas Drilling*, ANSCHUTZ, http://www.anschutz-exploration.com/news/2011/091611-town-of-dryden.shtml (last visited Feb. 17, 2012).
[35] *See* N.Y. ENVTL. CONSERV. LAW § 23-0301 (McKinney 2012).
[36] For example, temporary moratoria have been adopted by the Towns of Elbridge, DeWitt, Barrington, Milo, Wales, Skaneateles, Tully, Marcellus, Kirkland, & Andes. Bans have been enacted by the towns of Cherry Valley, Otsego, Middlefield, Ulysses, Dryden, Danby, Springfield, Tusten, Geneva, and Ithaca, and the Cities of Buffalo and Oneonta. Bans have been proposed in the towns of Jerusalem, Highland, Bethel, Lumberland, and the City of Syracuse. Several counties, which do not have zoning authority, have acted to prohibit natural gas drilling on county-owned lands. *See Local Actions Against Fracking*, FOOD&WATERWATCH, http://www.foodandwaterwatch.org/water/fracking/fracking-action-center/local-action-documents/ (last visited Feb. 21, 2012) (scroll down to New York); *see also* Sarah Crean, *Will Community Bans on Hydrofracking Hold Up?*, GOTHAM GAZETTE (Dec. 2011), http://www.gothamgazette.com/article/environment/20111218/7/3659.

challenged in two communities; the individual cases are discussed below in Part 3.[37]

Section 23-0303(2) of the ECL, New York's Oil, Gas and Solution Mining Law (OGSML), provides that

> [t]he provisions of this article shall supersede all local laws or ordinances relating to the regulation of the oil, gas and solution mining industries; but shall not supersede local government jurisdiction over local roads or the rights of local governments under the real property tax law.[38]

The crux of the conflict involves the interpretation of the term "regulation." If zoning laws, which regulate the use of land and the location of businesses but not the operations involved in the gas drilling business, are viewed as laws "relating to the regulation of" the industry, they are preempted by the language of ECL § 23-0303(2). If not, municipalities may use their zoning powers to identify appropriate locations in the community for such drilling, that is, if the community chooses to allow it at all.

The preemption clause in ECL § 23-0303(2) has only been interpreted once before by a New York court. In the case of *Matter of Envirogas, Inc. v. Town of Kiantone*, now over thirty years old, the court struck down a local law that required gas drillers to post a $2500 compliance bond and pay a $25 permit fee to the town before beginning drilling operations.[39] The court found that the law was preempted because it attempted to regulate gas drilling.[40] Although the town of Kiantone's local law was technically a zoning law, both sides of the hydrofacking debate are now claiming this case supports their own. Plaintiffs argue that it stands for the proposition that all local zoning laws are preempted, and the defendants argue that it serves only as an example of the type of local regulation that is prohibited under the ECL.[41]

The New York courts have prior experience looking at the distinction between zoning laws and laws that regulate business operations including mining. The state's Mined Land Reclamation Law (MLRL) contained the following preemption provision, which is similar to the language found in the OGSML, cited above:

> For the purposes stated herein, this title shall supersede all other state and local laws relating to the extractive mining industry; provided, however, that nothing in this title shall

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[37] Anschutz Exploration Corp. v. Town of Dryden, No. 2011-0902 (N.Y. Sup. Ct. Feb. 21, 2012); Cooperstown Holstein Corp. v. Town of Middlefield, No. 2011-0930 (N.Y. Sup. Ct. Sept. 15, 2011).
[38] N.Y. ENVTL. CONSERV. LAW § 23-0303(2) (McKinney 2012).
[39] Matter of Envirogas, Inc. v. Town of Kiantone, 112 Misc. 2d. 432, 434 (N.Y. Sup. Ct. 1982).
[40] *See id.*
[41] *See* discussion *infra* Part III.

> be construed to prevent any local government from enacting local zoning ordinances or other local laws which impose stricter mined land reclamation standards or requirements than those found herein.[42]

The MLRL preempted local laws "relating to the extractive mining industry."[43] Although the MLRL specifically permitted local laws regarding reclamation of land after mining at a site had ceased, it provided no express authority to adopt zoning laws to establish where a sand and gravel operations could locate.[44]

In *Frew Run Gravel Products, Inc. v. Town of Carroll*, the court found that the legislature, in enacting the MLRL, did not intend to preempt the provisions of a town zoning law that limited the areas of town where sand and gravel mines could be established.[45] In making its determination, the court conducted a two part inquiry, looking first at the plain language of the statute and then to the purpose and intent of the statute.[46] Looking at the plain meaning of the phrase "relating to the extractive mining industry," the court "[could not] interpret the phrase . . . as including the Town of Carroll Zoning Ordinance."[47] The purpose of a zoning ordinance is to regulate land use, and in doing so, it "inevitably exerts incidental control over any of the particular uses or businesses which, like sand and gravel operations, may be allowed in some districts but not in others."[48] The court found that this type of incidental control through zoning was "not the type of regulatory enactment relating to the 'extractive mining industry' which the Legislature could have envisioned as being within the prohibition of the statute."[49] In so finding, the court recognized the difference between a zoning law and "[l]ocal regulations dealing with the actual operation and process of mining," which would frustrate the statutory purpose of the MLRL's standardized regulations.[50]

The court also looked at the legislative history of the ECL's enactment and found no express provision regarding zoning preemption.[51] The court was hesitant to "drastically curtail" the Town's constitutional and statutory power to adopting zoning regulations in the absence of a clear intent to do so.[52] After *Frew Run* was decided, the Legislature amended the MLRL to clarify that municipalities have authority to adopt local zoning

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[42] Frew Run Gravel Prods., Inc. v. Town of Carroll, 71 N.Y.2d 126, 129 (N.Y. 1987) (citing N.Y. ENVTL. CONSERV. LAW § 23-2703(2) (1987) (amended 1991)).
[43] N.Y. ENVTL. CONSERV. LAW § 23-2703(2) (1987) (amended 1991).
[44] *Frew Run Gravel Prods., Inc.*, 71 N.Y.2d 126 at 131-32.
[45] *Id.* at 133.
[46] *Id.* at 131.
[47] *Id.*
[48] *Id.*
[49] *Id.*
[50] *Id.* at 133.
[51] *Id.* at 132.
[52] *Id.*

laws that control the location of extractive mining.[53] The key issue that the courts will have to decide in pending litigation is whether the statutes regulating oil and gas mining are analogous to those regulating surface gravel mining.

III. LOCAL ACTIONS IN LITIGATION: ISSUES AND ARGUMENTS

Several towns in the Marcellus Shale region have taken affirmative action against hydrofracking in their communities by temporarily or permanently banning it within their borders.[54] Proponents of hydrofracking have brought legal challenges against two such towns that have permanently banned it through zoning, challenging their ability to adopt such laws in light of the preemption provision of the ECL.

The Town of Dryden is located in Tompkins County, New York. On August 2, 2011, following the receipt of a petition signed by 1,594 individuals, the Town amended its zoning ordinance to explicitly prohibit natural gas drilling.[55] The ordinance added definitions for "natural gas" and "natural gas and/or petroleum exploration," and "natural gas exploration and/or petroleum production wastes" and then prohibited the "exploration for or extraction of natural gas and/or petroleum," anywhere in the town.[56] The law also purports to invalidate any "permit issued by any local, state or federal agency, commission or board for a use which would violate the prohibitions of" the ordinance.

The Town of Middlefield is a rural community surrounding the incorporated Village of Cooperstown in Otsego County, New York. Its predominant land uses are agriculture, forests, and low density residential.[57] Concerned about its water supply and its community character, the town hired a consultant to analyze the potential impacts of heavy industry on the

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[53] N.Y. ENVTL. CONSERV. LAW § 23-2703(2)(b) (McKinney 2012).

[54] *See supra* note 37.

[55] *See* TOWN OF DRYDEN, BOARD MEETING MINUTES 5-15 (Special Town Board Meeting, Aug. 2, 2011), *available at* http://dryden.ny.us/Board_Meeting_Minutes/TB/2011/TB2011-08-02.pdf.

[56] *See* Town of Dryden, Notice of Adoption of Amendments to Zoning Ordinance 1 (Aug. 3, 2011), *available at* http://documents.foodandwaterwatch.org/Frack_Actions_DrydenNY.pdf. Section 2104 provides that:

> [n]o land in the Town shall be used: to conduct any exploration for natural gas and/or petroleum; to drill any well for natural gas and/or petroleum; to transfer, store, process or treat natural gas and/or petroleum; or to dispose of natural gas and/or petroleum exploration or production wastes; or to erect any derrick, building, or other structure; or to place any machinery or equipment for such purposes."

Id. at 2.

[57] *See* GREENPLAN, INC., LAND USE ANALYSIS: HEAVY INDUSTRY AND OIL, GAS OR SOLUTION MINING AND DRILLING 4 (2011) (prepared for the Town Board of the Town of Middlefield), *available at*, http://www.otsego2000.org/documents/forwebsiteMiddlefieldLandUseAnalysis-Greenplan.pdf.

town and then amended its comprehensive plan and zoning law to prohibit heavy industry throughout the town.[58] Heavy industry is broadly defined by its characteristics and includes "drilling of oil and gas wells" as well as chemical manufacturing, petroleum and coal processing, and steel manufacturing.[59] The local law to amend the Town's zoning was adopted on June 14, 2011.[60]

The Town of Dryden's law has been challenged by the Anschutz Exploration Corporation ("Anschutz"), a Colorado-based driller and developer of natural gas wells. Anschutz is the owner of oil and gas leases on approximately 22,200 acres in the Town of Dryden.[61] The Town of Middlefield's law has been challenged by Cooperstown Holstein Corporation, a local dairy operation that has leased approximately 400 acres of its land for natural gas development.[62] The leases are currently held by Gastem USA, Inc., a subsidiary of a Canadian company that owns leases on approximately 34,400 acres in New York.[63]

On February 21, 2012, the Supreme Court Justice handling the *Dryden* case decided in the Town's favor by granting its motion for summary judgment, thereby upholding the town's total ban on hydrofracking within its borders.[64] The court's holding was straightforward: "In light of the similarities between the OGSML and the MLRL as it existed at the time of *Matter of Frew Run*, the court is constrained to follow that precedent in this case."[65] The court found that the OGSML did not expressly preempt local zoning and that the town's zoning amendment did not regulate gas production; rather, it regulated land use and not the operation of gas mining.

The court noted that "[n]one of the provisions of the OGSML address traditional land use concerns, such as traffic, noise or industry suitability for a particular community or neighborhood."[66] It cited other preemptive statutes with provisions requiring the relevant state agency to consider the traditional concerns of zoning in deciding whether a permit is to be issued. "Under this construction, local governments may exercise their powers to regulate land use to determine where within their borders gas drilling may or may not take place, while DEC regulates all technical

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[58] *See id.* at 2.
[59] TOWN OF MIDDLEFIELD, N.Y., ZONING LAW art. II, § B(8) (2011), *available at* http://middlefieldny.com/Documents%20Forms/Docs/Zoning%20Law%20061411%202011%20Final.pdf.
[60] *See id.*
[61] Complaint, *supra* note 34, at 3.
[62] Complaint at 1-2, Cooperstown Holstein Corp. v. Town of Middlefield, No. 2011-0930 (N.Y. Sup. Ct. filed Sept. 15, 2011), *available at* http://catskillcitizens.org/learnmore/VsTownOfMiddlefield.pdf.
[63] *See* GASTEM, http://www.gastem.ca/ (last visited Feb. 15, 2012).
[64] Anschutz Exploration Corp. v. Town of Dryden, No. 2011-0902 (N.Y. Sup. Ct. Feb. 21, 2012), *available at* http://ecowatch.org/wp-content/uploads/2012/02/dryden.pdf.
[65] *Id.* at 12.
[66] *Id.* at 18.

operational matters on a consistent statewide basis in locations where operations are permitted by local law."[67] The provision of the local law that invalidated any other permits permitting drilling was found invalid as preempted by the OGSML and was severed from the law leaving the other provisions in place.[68]

IV. LOCAL CONTROL: ACTIONS LOCALITIES CAN TAKE

Comprehensive Planning

If, after full appellate review of their cases, the towns of Dryden and Middlefield ultimately win, they will have established that the location and land use impacts of hydrofracking projects may be regulated by local zoning laws. All zoning and other land use regulations in New York must conform to the comprehensive plan.[69] Localities interested in adopting effective and legally sustainable actions to control hydrofracking should add a component to their comprehensive plans regarding gas drilling, its impact on their communities, and the goals, objectives, strategies, and implementation measures they plan to adopt to control those impacts and to maximize the economic benefits of hydrofracking.

If these towns ultimately fail in the appellate courts, it is still a good idea for them to adopt a hydrofracking component of their comprehensive plan. The development of the plan component may bring a community to consensus regarding the benefits and dangers of hydrofracking and support various non-regulatory actions it can then take. The OGSML affirmatively endorses local governments' jurisdiction over their roads, for example, opening the door to effective control of this critical impact of hydrofracking. An aggressive road control ordinance will be bolstered by an adopted comprehensive plan. Finally, a comprehensive plan component on the topic may influence DEC in the issuance of permits and bring the locality into its decision making process.[70]

A hydrofracking or heavy industry component of the comprehensive plan can discuss the adverse impacts on the community's character and environment arising from these types of industries. With respect to hydrofracking much of this homework has been done by the DEC and towns can now draw on the risks discussed in the dSGEIS. That same document can guide communities in listing measures that will mitigate the adverse impacts of gas drilling. If the courts determine that localities have the power to adopt land use regulations, these mitigation measures can be included in the component as strategies to be achieved through land use regulation. Other protective initiatives, such as those discussed below, can

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[67] *Id.* at 20.
[68] The court found that the provision could be severed without impairing the underlying purpose of the zoning amendment. *Id.* at 24.
[69] N.Y. TOWN LAW § 272-a(2)(a) (McKinney 2012); N.Y. VILLAGE LAW § 7-722(2)(a) (McKinney 2012).
[70] *See supra* note 4 at p.12.

be listed in the comprehensive plan amendment as effective strategies to be adopted by the community.

Depending on the resources available to the community, its plan can inventory portions of the community that are particularly vulnerable to the adverse impacts of hydrofracking and declare those areas off limits or identifying them as areas requiring special environmental impact review prior to location of a well. Communities that simply ban hydrofracking town-wide without this kind of analysis risk losing substantive due process challenges brought by regulated landowners and drilling companies.

Local Land Use Regulation

If the judiciary supports the *Dryden* decision and determines that localities have the power to regulate the location of hydrofracking wells, then communities can amend their zoning ordinances to make certain neighborhoods or zoning districts off limits for hydrofracking, to allow such drilling by special permits subject to a full list of mitigation requirements regarding matters within the ambit of zoning regulations, or to specify which districts permit gas drilling and to adopt appropriate standards such land uses must meet.

Road Regulation

The OGSML clearly allows localities to adopt road protection and safety standards for heavy trucks and other vehicles used in hydrofracking and other similarly high intensity enterprises.[71] Drilling companies can be required to apply for and receive a road permit which can be renewable periodically, based on satisfactory compliance with the permit system's requirements. Localities can: (1) adopt a road permit system for all vehicles involved in drilling and similar ventures, requiring well owners and operators to apply for a road permit, report annually, and pay a fee; (2) require annual reports regarding the use or abuse of roads, mitigation of adverse impacts, listing of costs of road repair and environmental restoration; (3) an inventory of roads can be created, conditions assessed, damage done by regulated trucks tracked, damage calculated, and charges for road repairs assessed; and, (4) truck routes may be established and road rules adopted.[72]

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[71] N.Y. ENVTL. CONSERV. LAW § 23-0303(2) (McKinney 2012). In addition, a municipality may designate truck routes "upon which all trucks, tractors and tractor-trailer combinations having a total gross weight in excess of ten thousand pounds are permitted to travel and operate and excluding such vehicles and combinations from all highways except those which constitute such truck route system." N.Y. VEH. & TRAF. LAW §§ 1640(a)(10), 1660(a)(10) (McKinney 2012).

[72] Under New York's Vehicle and Traffic Law (VTL), a municipality has several options for protecting its roads including the creation of truck routes, the ability to prohibit trucks from designated roadways, regulation of traffic through traffic control signals, and regulation of speed limits. *See id.* §§ 1640, 1660. The VTL is a "general law" of the state and a municipality may

Through road regulation, municipalities may gain leverage over gas drilling, even if their zoning power is deemed preempted. For example, a town may temporarily exclude any vehicle with a gross weight in excess of four tons or more over certain roads when "in its opinion such highway would be materially injured by the operation of any such vehicle thereron."[73] The Attorney General has opined that a town may also permanently exclude vehicles from highways.[74]

Collaboration with DEC

In the Executive Summary of the Revised Draft Supplemental Environmental Impact Statement, DEC indicates that the Department will give notice to the affected locality before it issues a gas drilling permit and require the applicant "to identify whether the proposed location of the well pad, or any other activity under the jurisdiction of the Department, conflicts with local land use laws or regulations, plans or policies."[75] The project sponsor will be required to identify whether the well pad is located in an area where the affected community has adopted a comprehensive plan or other local land use plan and whether the proposed action is inconsistent with such plan(s).[76]

In cases where a project sponsor indicates that all or part of their proposed application is inconsistent with local land use laws, regulations, plans or policies, or where the potentially impacted local government advises the DEC that it believes the application is inconsistent with such laws, regulations, plans or policies, the Department intends to request additional information in the permit application to determine whether this inconsistency raises significant adverse environmental impacts that have not been addressed in the SGEIS.[77] Thus by adopting a comprehensive plan component along the lines suggested above, local governments can achieve useful leverage over gas drillers in their communities.

Non-Regulatory Option: Host Community Agreement

The comprehensive plan can call for the creation of a Host Community Agreement (HCA) and invite all gas companies that receive a DEC permit to drill locally to sign the Agreement. The HCA can reference the adverse impacts that the community wishes to avoid, the measures drilling companies should take to mitigate such impacts, and establish local initiatives that communities request drillers to take.

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not enact a local law which conflicts with any provision of the VTL through its home rule powers. *See id.* §§ 1600, 1604; *see also* 1980 N.Y. Op. Atty. Gen. (Inf.) 209 (N.Y.A.G).

[73] N.Y. VEH. & TRAF. LAW § 1660(a)(11).

[74] 1980 N.Y. Op. Atty. Gen. (Inf.) 209 (N.Y.A.G).

[75] Revised dSGEIS, *supra* note 4, at Executive Summary, p.26.

[76] *Id.*

[77] *Id.* at 26-27.

Tied to the comprehensive plan, this Agreement might be useful in negotiating stricter standards when drillers apply for DEC permits. The leverage that communities enjoy with respect to road regulation might also move drilling companies to sign. Where the residents of the community are brought together through the process of adopting a comprehensive plan component and in drafting the HCA, they may develop a local consensus regarding how drilling should be permitted, subject to reasonable restrictions that they identify. Even landowners who wish to lease their land to gas drillers might be persuaded to include a provision in their leases that the gas companies must sign and comply with the HCA.

V. WHO DECIDES?

This battle in New York tests our federal system's decision-making process regarding critical issues such as energy production and the protection of the environment and natural resources. If the *Dryden* and *Middlefield* cases are lost by the towns and Congress and the EPA do not step in with more productive procedures, these issues will be decided by a single agency of the State of New York. The competencies, knowledge, and resources of local governments and the resources and technical information of the federal government will not significantly shape the outcome regarding issues of critical importance to their federal and local constituencies. If the towns ultimately win, the legislature will be under pressure to clarify and perhaps limit local jurisdiction over a resource whose exploitation raises legitimate state and federal issues.

Attorneys for the involved stakeholders, in the interim, are mired down by winner-take-all advocacy in a dispute muddied by conflicting claims and data. The skills of lawyers in issue spotting, fact gathering and analysis, creating productive negotiations for the resolution of complex matters, and framing agreements are not being used fully to influence the outcome of this raucous debate. The sub-optimal process being employed to decide the future of hydrofracking in the Marcellus Shale region should cause lawmakers to revisit and rethink how such critical issues are decided.