

**Town of Westerlo
Albany County, NY**



Eight Mile Creek Farm and Surrounding Area, Westerlo, NY

Photo courtesy of P. Schreiber

**Shale Gas Development Impacts
and Local Zoning Options**

April 4, 2015

Zoning Recommendation Committee – Summary Report

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Notes:

- 1. This report is a summary of the ZRC full report “Shale Gas Developments and Local Zoning Options”, April 4, 2015.**
- 2. Direct source quotes are italicized in document unless otherwise notes.**

1. Executive Summary

	Description
Purpose	Evaluate how local impacts of Shale Gas Development (SGD), which include high volume hydraulic fracturing (HVHF), could affect Westerlo and whether zoning amendments are needed to maintain and support the character of the Town and the way of life of its residents.
Methods	ZRC used the direction from the town board, the Westerlo Comprehensive Plan, the NYS Department of Health SGD/HVHF Public Health Report, literature search, expert consultants, interviews and SGD/HVHF conference attendance for our evaluation.
Major Findings	<ul style="list-style-type: none"> • SGD/HVHF would industrialize our rural/community character. • Impacts would vary depending on the type and scale of SGD processes. • SGD infrastructure expansion (pipelines, compressor stations, Liquefied Natural Gas (LNG) facilities, storage yards, etc.) could affect Westerlo even if HVHF is banned in NYS. • SGD/HVHF waste disposal could affect Westerlo even if HVHF is banned in NYS because SGD/HVHF waste is allowed to be imported to NYS waste management facilities. <ul style="list-style-type: none"> ◦ SGD waste contains toxic chemicals and concentrated salts and may contain radioactive material that exceeds EPA levels. • SGD water withdrawal for out-of-state HVHF and for local/regional pipeline expansion (hydrostatic testing) could affect Westerlo. • SGD industry is exempt from major environmental regulations and is not required to disclose the chemicals used. SGD/HVHF has affects on human and animal health due to: <ul style="list-style-type: none"> ◦ Exposure to contaminated air, water, and soil. ◦ Stressors such as noise, light pollution, odors, etc. ◦ Industrial and traffic hazards and accidents and traffic congestion affecting residents and local businesses. • Increased individual and communal health care costs. • Increased need for first responders (police, fire, rescue, EMTs). • SGD/HVHF impacts farming and rural/agricultural character. • SGD processes are exempt from major environmental regulations • SGD processes affect private property in several ways: <ul style="list-style-type: none"> ◦ Forced pooling (“Compulsory Integration”) of acreage into HVHF drilling units. <ul style="list-style-type: none"> ▪ One leasing landowner with 60% of a 640 acre drilling unit (384 acres) can prevail over the other 40% of

	Description
	<p style="text-align: center;">landowners who do not want to lease their land for HVHF</p> <ul style="list-style-type: none"> ○ Residential Lending: <ul style="list-style-type: none"> ▪ Failure to meet federal (FHA, HUD, Fannie Mae, Freddie Mac) lending criteria, which are the standards lenders use. ▪ Mortgage callbacks for immediate balance payment. ▪ Denial of new construction mortgages and/or refinancing. ▪ Denial of mortgages, home equity lines of credit, etc. to neighboring properties. ▪ Cash only buyer pools. ○ Voided Title insurance due to commercial activity. ○ Homeowner's Insurance exclusions for commercial activity, hazardous materials, earthquakes, etc. ○ Liability Insurance (e.g. Umbrella policy) limits and exclusions. ○ Lowered property assessments and impact on tax base. ○ "Nuisance" lawsuits from owners of neighboring properties whose land is affected or who cannot get financing because of their proximity to SGD processes. ○ Inability to recoup losses for incidents over which the landowner has no control: chemical spills and other surface contamination, industrial accidents, earthquakes, etc. Even if a landowner has the financial resources to litigate, the contractors responsible for these problems often dissolve their LLCs and cannot be sued. • Road and bridge damage from heavy truck traffic. • Increase in vehicle accidents, including those involving aggressive driving, DUI and DWI. • Impacts to recreation, including hunting, fishing, etc. and the safety of wild food. • Ecosystem and biodiversity impacts due to habitat fragmentation and contamination, as well as disturbances such as noise, light pollution, seismic and other disrupting vibrations, etc.
Conclusions	<ul style="list-style-type: none"> • SGD/HVHF is incompatible with the key objectives of the Comprehensive Plan and with the goals mentioned in the town board's charge to the committee. • Relying on state-level authority jeopardizes those objectives and goals by passively complying with provisions over which the Town has no control. • NY towns may use the authority of Municipal Home Rule to prohibit heavy industrial activity. • A stronger local economy that finds ways to preserve rather than sacrifice our rural/agricultural community character would provide better immunity to heavy industry pressures, more opportunities for residents, and more support for town services.

	Description
Recommendations	<p>1) Westerlo can best accomplish the goals of: “maintain[ing] and support[ing] the rural character of the Town”, promoting the health, safety and welfare of the community, and supporting the key objectives of the Comprehensive Plan, by employing expert, experienced, <i>pro-bono</i> legal assistance to:</p> <ul style="list-style-type: none"> • Review Westerlo's Comprehensive Plan and Zoning Law and <ul style="list-style-type: none"> ◦ Draft a single, carefully customized zoning amendment ◦ Accompanied by relevant, legally defensible findings that ◦ Address the heavy industrial impacts of SGD/HVHF on the Town <p>Such an amendment would be simple, easy to understand and administer, and address all the industrializing impacts of SGD/HVHF including well-drilling, infrastructure expansion, waste management and storage yards, without creating specific restrictions on other kinds of commercial development or imposing onerous road use or noise laws.</p> <p>An example of such an amendment is included in the Recommendations Section.</p> <p>2) Create an Economic Development Team that supports the objectives of the Comprehensive Plan and the infrastructure and types of commercial development it mentions.</p>

2. Introduction

2.1 Background and Purpose

The Westerlo Town Board created the Zoning Recommendation Committee (ZRC) to evaluate how local impacts of Shale Gas Development (SGD) could affect our community and whether zoning amendments are needed to *“maintain and support the character of the Town and the way of life of its residents”*.

2.2 Objectives: The Town Board Charge to the ZRC

At the September 10, 2014 meeting, the Westerlo Town Board charged the ZRC as follows:

1. *“Review current zoning laws and permit process with respect to potential applications for natural gas drilling activities within or affecting the Town of Westerlo.”*
2. *“Determine what, if any, amendments or revisions should be considered to the current zoning regulation to address land use controls that maintain and support the character of the Town and way of life of its residents. All facets of hydraulic fracturing should be considered with attention to: a.) The transport, storage and disposal of chemicals associated with hydraulic fracturing, b.) The maintenance and protection of the Town's infrastructure. c.) Traffic control. d.) Public safety. e.) legality and enforceability.”*
3. *“If it is the recommendation of the ZRC to revise or amend the current regulation, the committee is asked to provide specific changes in a form suitable for adoption to the Town Board not later than February 3, 2015¹ accompanied by a written rationale supporting their recommendations.”*

2.3 Scope

The ZRC was guided in it's scope by the Town Board's charge to the committee and by the key

¹ At the January 6, 2015 town board meeting the ZRC was granted an extension to April 2015

objectives in Westerlo's Comprehensive Plan².

The ZRC studied the potential impacts of SGD processes, which include high volume hydraulic fracturing (HVHF), commonly called hydrofracking, infrastructure build-out (pipelines, compressor stations, storage yards, Liquefied Natural Gas (LNG) facilities, etc.), and waste management, on Westerlo's rural/agricultural community character and the health and safety of our residents. We looked at how SGD/HVHF operations might affect at-risk populations, farming, truck traffic and vehicle accidents, emergency first responders, crime, noise, odors, property values, resale, mortgages and insurance. We also considered regional impacts to the watershed that supplies the City of Albany with drinking water and provides the general public with access to fishing and other recreational activities.

2.4 Methods

The ZRC held weekly public meetings and:

- Reviewed the Town of Westerlo Comprehensive Plan relative to SGD/HVHF issues.
- Employed literature search, primarily from online sources, concentrating on Marcellus Shale, which underlie Westerlo. The potential for exploiting the deeper Utica Shale, also underlying Westerlo, was not examined by the ZRC.
- Conducted interviews by phone, email, and in person with individuals who have specific and relevant knowledge.
- Consulted with the Executive Director for The Center for Sustainable Rural Communities, and invited the Planning Board and Zoning Board of Appeals to attend a question and answer session with him.
- Researched the zoning laws of other NY towns, recent legal decisions, and spoke with attorneys specializing in land use issues and local law as related to SGD/HVHF.
- Two members attended an all-day conference in Ithaca dedicated to SGD/HVHF community

² Town of Westerlo, Albany County, New York, Comprehensive Plan, May 2014

impacts.

- Incorporated the findings of the December 2014, New York State Department of Health (NYSDOH) Public Health Review³ into our study. We looked at how the NYSDOH recommendation to ban HVHF in NYS might impact ZRC findings regarding SGD/HVHF in Westerlo and concluded:
 - The full scope and impact of the NYSDOH recommendation will not be known until the NYS Department of Environmental Conservation (NYSDEC) revises its Supplemental Gas and Oil Environmental Impact Study (SGEIS) to include the NYSDOH findings, and decides how it will administer the details and the duration of a HVHF ban.
 - The NYSDEC may or may not address aspects of SGD related to HVHF, such as water withdrawal, waste disposal and distributive infrastructure build-out (e.g. pipelines, compressor stations, etc. On January 28, 2015, however, NYSDEC published finalized regulations that would allow Liquefied Natural Gas (LNG) facilities, another aspect of SGD infrastructure buildout, in the state. LNG had been effectively banned in NY since 1973, when an explosion at a LNG storage facility on Staten Island killed 40 people.

3 NYS DOH Report, *"A Public Health Review of High Volume Hydraulic Fracturing for Shale Gas Development"*, 2014

3. Levels of Regulatory Jurisdiction

One of the issues raised by SGD/HVHF is which level of government has authority over which aspects of the practice. The issue is complicated because the risks associated with SGD/HVHF raise concerns of federal, state, and local importance and fit within existing regulatory regimes of each of these levels of government. Some of these regimes overlap and some are contradictory.

3.1 Who Regulates What?

Terms used in this section

	Acronym	Description
Agency	USDOS	United States Department of State
	EPA	Environmental Protection Agency (Federal)
	FERC	Federal Energy Regulatory Commission
	DEC	New York State Department of Environmental Conservation
	PSC	Public Service Commission
Review	NEPA	National Environmental Policy Act (FERC review)
	SEQR	State Environmental Quality Review (DEC review)
	TITLE V	DEC Air Quality Permit process
	Article VII	Article VII of NY Public Service Code (PSC review)
Gas Storage	Underground	Depleted oil or gas fields, aquifers, or salt caverns used to store natural gas
	CNG	Compressed Natural Gas (Tanks containing natural gas at high pressure)
	LNG	Liquified Natural Gas (Tanks containing natural gas liquified by very low temperature)
	LPG	Liquified Petroleum Gas (Tanks containing propane and/or butane liquified by moderate pressure)

Jurisdiction over SGD Processes⁴

SGD Element	Agency	Review/Permit
HVHF permits, well siting, and related processes	DEC	SEQR
International Pipelines	USDOS	?
Interstate Pipelines & Connections between Interstate Pipelines	FERC	NEPA
Intrastate Pipelines except for : Unregulated Pipelines: No Article VII Review Under 125 PSI or Under 1000 ft or "Gathering Lines" (well to processor)	PSC	Article VII
Compressor Stations (On FERC regulated pipelines)	FERC	
Compressor Stations (On PSC regulated pipelines)	PSC	
Compressor Station Air Permits	DEC	Air Permit
Air Quality Emissions Control - Stationary Source Air Permits Small sources Register with DEC; no ENB notice Medium sources State Facility Permit; maybe ENB notice Large sources Title V Facility Permit; ENB notice (ENB=Environmental Notice Bulletin) Permit Process: Draft Permit → Comment Period → Final Permit Final Permit → EPA Review → Permit Issued	EPA delegates to DEC	Varies from registration only to Title V Permit
Waste Disposal: Water treatment plants Permit needed for HVHF wastes	DEC	Permit
Waste Disposal: Landfills No permit needed for Marcellus drill cuttings	DEC	DEC
Waste Disposal: Injection wells Underground Injection Control (UIC) Permit	EPA	UIC
Waste Disposal: Injection wells State Pollution Discharge Elimination System Permit	DEC	SPEDES
Waste Disposal: Brine Spreading Beneficial Use Determination (BUD) needed	DEC	BUD
Underground Gas Storage (When part of interstate commerce)	FERC	
Underground Gas Storage (When not part of interstate commerce)	State	
CNG – Fire and safety codes, local codes	State/ Local	
LNG (Import/Export terminals)	FERC	
LNG (When storage part of interstate commerce)	FERC	
LNG (When not regulated by FERC)	DEC	
LPG (Salt cavern only?)	DEC	

4 Podulka, W., Presentation, at conference: Protecting Communities from Fracking's Collateral Damage, Nov 2014

3.2 New York State Authority: OSGML, State Preemption and Municipal Home Rule

New York's Oil, Gas and Solution Mining Law (OGSML)⁵, regulates oil and gas operations in the state. It is administered by NYSDEC and contains language that might be interpreted as preempting the constitutional authority of local government to enact land use control over SGD/HVHF activities.

*Under that authority, localities typically regulate industrial land uses, such as gas drilling operations, by either prohibiting them altogether or assigning them to appropriate areas within their jurisdiction where the intensity of industrial activities does not adversely affect neighboring property values or the quality of life in other parts of the community.*⁶

The OGSML states:

...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.

Industry attorneys used this language as the basis for lawsuits against two NY towns, Dryden and Middlefield, that had amended their local zoning laws to prohibit SGD/HVHF. Attorneys for Norse Energy and Cooperstown Holstein Corporation, et al, argued that the OSGML expressly preempts local land use control over the location and local impacts of gas wells.

*Article IX, section 3(c) of the New York Constitution, however, provides that "rights, powers, privileges and immunities granted to local governments by this article shall be liberally construed."*⁷

Both communities won their cases in the lower courts, which found neither express nor implied preemption of local control of SGD/HVHF in the OGSML.

On June 30, 2014 the NYS Court of Appeals upheld lower court decisions that previously found that communities have the right to use their local land use authority (Home Rule) to

5 <http://www.dec.ny.gov/lands/2417.html>

6 *Hydrofracking: State Preemption, Local Power, and Cooperative Governance*, John R. Nolon and Steven Gavin, Case Western Reserve Law Review, Volume 63, Issue 4, 2013

7 *Ibid*

prohibit oil and gas operations in their municipalities⁸.

The court stated:

"We can find no legislative intent, much less a requisite "clear expression," requiring the preemption of local land use regulations."⁹

3.3 Local Authority

3.3.1 Municipal Home Rule Law

The NYS Constitution Municipal Home Rule Law¹⁰ provides local governments with significant land use authority and through that authority the ability to control many of the processes in their community, including the ability to enact local laws for "protection and enhancement of its physical and visual environment."

The goal of municipal home rule is to facilitate local control and minimize state intervention into municipal affairs.¹¹

"Section 10 of the Municipal Home Rule Law contains the constitutional grants of power to local governments and adds thereto the powers to collect local taxes authorized by the Legislature, to provide for the protection and enhancement of the physical and visual environment, the apportionment of local legislative bodies, and assessments for local improvements, as well as the powers granted to local governments in the Statute of Local Governments"

Constitutional home rule power is now granted to all counties outside New York City, and all cities, towns and villages (Section 3(d)(1)). Prior to 1963 no towns and only some villages had constitutional home rule power.¹²"

The Home Rule process:

...can serve as an important vehicle for communities that are seeking to challenge the fundamental structure of law which puts the rights of corporations over those of communities; prevents communities from saying "no" to projects that are harmful for workers, the local economy,

8 <https://www.nycourts.gov/ctapps/Decisions/2014/Jun14/130-131opn14-Decision.pdf>

9 <http://www.cedclaw.org/local-control/town-of-dryden-legal-challenge#sthash.aAIMgUlg.dpuf>

10 <http://celdf.org/downloads/NY%20State%20Home%20Rule%20CHAPTER%20843.pdf>

11 http://www.ask.com/wiki/Municipal_home_rule?o=2801&qsrc=999&ad=doubleDown&an=apn&ap=ask.com

12 http://www.dos.ny.gov/lg/publications/Adopting_Local_Laws_in_New_York_State.pdf

*livability, property values, or the environment; and ultimately prevents municipalities from creating the economically and environmentally sustainable communities they seek.*¹³

3.3.2 Land Use Regulations and The Comprehensive Plan

In 1989 Westerlo adopted its zoning law¹⁴. The law is consistent with authority described in Municipal Home Rule Law. Article 3, “Purposes of the Local Law”, opens with the statement: *“The general and overall intent of this Local Law is to promote the health, safety and welfare of the community.”*

A Comprehensive Plan (CP) is the single most important statement of a community's identity and values. It provides guidance for constructing and amending local land use regulations. Zoning amendments must comply with the Town's CP.

The Westerlo Planning Board completed a CP¹⁵ in May 2014 and it was adopted by the Town Board in January 2015. Its Key Objectives are stated as:

“...to ensure that zoning in the Town of Westerlo:

- 1. Promotes the health, safety and welfare of the community*
- 2. Maintains and enhances the rural character of the town*
- 3. Protects and promotes agricultural operations and farmlands within the Town of Westerlo, pursuant to Albany County ‘Right to Farm law’*
- 4. Protects and preserves existing open space and forested lands*
- 5. Provides for orderly and sustainable growth on a suitable scale conducive to local road, utilities, waste and water systems, and infrastructure conditions*
- 6. Adequately and sufficiently protects neighboring land uses from potentially objectionable aspects of new development through the use of Site Plan Review and Special Use Permitting processes*
- 7. Promotes continued recreational opportunities*
- 8. Protects and preserves existing water resources*
- 9. Controls the location, size and scope of new development through the use of zoning tools such as incentive zoning, floating zones, and conservation easements*

13 <http://www.celdf.org/section.php?id=40> (Community Environmental Legal Defense Fund)

14 <http://www.townofwesterlony.com/media/LAW1-89-REV.pdf>

15 Town of Westerlo, Albany County, New York, *Comprehensive Plan*, May 2014

- 10. Improve and expand municipal infrastructure to support new development and encourage state of the art telecommunications infrastructure to spark business development and technology growth. (Note: Article 17 Section of the Local Law #1 of 1989- Wireless Communications Facilities)*
- 11. Promote commercial expansion, niche retail and specialty farming, along with small technology companies, which will flourish with enhanced telecommunications infrastructure*
- 12. Preserve and maintain the character and beauty of the rural landscape of Westerlo”*

The ZRC considered these key objectives, along with the Town Board's three-point charge, while evaluating how Shale Gas Development (SGD) and high volume hydraulic fracturing (HVHF) could affect Westerlo.

3.3.3 Bonding

Bonding and liability insurance are significant issues in SGD/HVHF: well casing failures, spills and toxic discharges, road damage, final capping and reclamation, all need consideration by both municipalities and landowners.

Many SGD companies subcontract operations to Limited Liability Corporations (LLCs) that come and go and sell their holdings without municipal or landowner notice or control. Liability for damages can accrue to landowners, or to the Town, when these LLCs are no longer in business, both in the short and long terms. Final HVHF well capping is an ongoing issue across the US. The costs to cap a well can be in the hundreds of thousands of dollars. In PA recently, gas wells were capped for a total of \$730,000 per well.¹⁶

The experience of previous resource extraction booms and busts suggests that the full cost to municipalities and landowners may not be known or come due for decades. Cleanup up and capping of orphaned wells, and land reclamation, come at the end of the SGD/HVHF life cycle.

4. Regional Trends

¹⁶ *The Costs of Fracking: The Price Tag of Dirty Drilling's Environmental Damage* Environment North Carolina Research & Policy Center. Tony Dutzik and Elizabeth Ridlington, Frontier Group John Rumpler, Fall 2012

4.1 New York State Actions

4.1.1 2014 Department of Health Report & Ban Recommendation

On December 17, 2014 New York State Health Commissioner Howard Zucker and Department of Environmental Conservation Commissioner Joe Martens jointly announced their recommendation that NYS ban High Volume Hydraulic Fracturing for Shale Gas Development. Their recommendation was based on a 184 page public health review report¹⁷. Their major findings are listed on page 40.

4.1.2 NYS Supreme Court upholds Towns of Dryden & Middlefield Zoning Amendments¹⁸

On June 30, 2014 the NYS Court of Appeals upheld the lower court decisions that previously found that communities have the right to use their local land use authority (Home Rule) to prohibit oil and gas operations in their municipalities.

The court stated:

"We can find no legislative intent, much less a requisite "clear expression," requiring the preemption of local land use regulations."¹⁹

4.1.3 Health Care Professionals call for 3-5 year ban²⁰

On May 29, 2014 250 doctors, health professionals and researchers sent a letter²¹ asking Governor. Andrew Cuomo to impose a 3-5 year ban on fracking in the state to allow more time for scientific studies on what signatories described as the emerging health risks of fracking.

17 NYS DOH Report – A Public Health Review of High Volume Hydraulic Fracturing for Shale Gas Development, December 2014

18 <https://www.nycourts.gov/ctapps/Decisions/2014/Jun14/130-131opn14-Decision.pdf>

19 <http://www.cedclaw.org/local-control/town-of-dryden-legal-challenge#sthash.aAIMgUlg.dpuf>

20 Health groups urge 3-5 gas frack ban by Cuomo, Health professionals sign letter urging Cuomo to block drilling in the state, By Brian Nearing, May 29, 2014

<http://www.timesunion.com/local/article/Health-groups-urge-3-5-gas-frack-ban-by-Cuomo-5515089.php>

21 Medical-Experts-to-Governor-Cuomo-May-29Final.pdf (<http://bit.ly/1kO3jFu>)

4.2 Albany County Actions

4.2.1 Local Law C of 2013²²: Prohibiting HVHF brine on Albany County roadways and in waste water treatment plants in Albany County

In August 2013 Albany County lawmakers voted overwhelmingly (30 to 7) to ban gas-drilling waste, specifically the chemical cocktail produced by hydrofracking, from county water treatment plants and from use on its roads.

The measure targets drilling's highly salty and often radioactive liquid byproduct, said Guilderland Democrat Bryan Clenahan, the ban's chief sponsor. Gas companies have marketed the liquid as a tool to keep roads from icing over in the winter.²³

4.2.2 Local Law D of 2014²⁴: Prohibiting the disposal of SGD/HVHF brine and waste in Albany County Solid Waste Management Facilities

In September 2014 the Albany County Legislature held a public hearing on Local Law D of 2014 in relation to the disposal of waste associated with natural gas exploration and extraction activities in solid waste management facilities.

5. Major Findings – Local Impacts

5.1 INDUSTRIALIZING IMPACTS to Rural/Agricultural Community Character

The rural/agricultural character we enjoy in Westerlo would be transformed by the industrializing impacts of high volume hydraulic fracturing (HVHF) for Shale Gas Development (SGD). These impacts could affect our health and safety, our property values, mortgages and

22 http://access.albanycounty.com/legislature/resolutions/2013/20130812/13-LL_C.pdf

23 <http://www.timesunion.com/local/article/County-bans-drilling-waste-472...> (August 12, 2013)

24 http://access.albanycounty.com/legislature/resolutions/2014/20140609/2014-LL_D.pdf

insurance, our farms and animals, our emergency first responders, our roads, scenic beauty, and the quiet enjoyment of life as we know it in the Hilltowns.

Some industrialization impacts could occur in Westerlo even if HVHF is prohibited by NYS, for example: Infrastructure Expansion (pipelines, compressor stations, CNG, LNG, and/or LPG facilities, storage yards, etc.) Waste Disposal, and Water Withdrawal.

Impacts to Westerlo would likely be similar to those described in the NYSDOH Public Health Review²⁵, **Community Impacts** section:

“There are numerous historical examples of the negative impact of rapid and concentrated increases in extractive resource development (e.g., energy, precious metals) resulting in indirect community impacts such as interference with quality-of-life (e.g., noise, odors), overburdened transportation and health infrastructure, and disproportionate increases in social problems, particularly in small isolated rural communities where local governments and infrastructure tend to be unprepared for rapid changes (Headwaters, 2013).”

Industrializing impacts would vary depending on the type and scale of SGD processes, and some could affect us even if HVHF is effectively banned in New York State. SGD processes include:

1. Exploration of natural gas reserves tightly bound in shale rock
2. Oil & Gas (O&G) business assessments
3. Landowner lease agreements and DEC permitting, well-siting, property consolidation, etc.
4. HVHF well construction and local infrastructure expansion
5. HVHF waste management (*)
6. Pipelines – Local, regional, in-state, interstate, international (*)
7. Compressor stations (*)
8. Liquefied Natural Gas (LNG) facilities and transport (*)
9. Well abandonment & capping
10. Land Reclamation

ZRC focused on items 3-10. Each process has its own set of impacts, some that are shared, some that are cumulative, some that are short-term, and some that persist indefinitely. The

²⁵ NYS DOH Report, “A Public Health Review of High Volume Hydraulic Fracturing for Shale Gas Development”, December 2014

processes marked with an asterisk (*) are related to SGD/HVHF infrastructure build-out and waste management. These processes would probably not be affected by a state-wide HVHF ban. Consequently, a state-wide HVHF ban would not protect Westerlo from potential impacts of these processes.

5.1.1 SGD/HVHF Wells

Even a few SGD/HVHF wells in Westerlo would industrialize the rural/agricultural character of the town. Robert Nied, a director for *The Center for Sustainable Rural Communities*, has provided many NYS town boards and residents with information about SGD/HVHF impacts to rural communities. During the question and answer session at a ZRC meeting, he was clear that industrialization **will** occur if HVHF wells are developed in Westerlo. This industrializing impact is evident in other rural areas, such as northeastern Pennsylvania.

For a complete description of SGD/HVHF wells see the full report “Appendix: Shale Gas Development Overview – HVHF”, starting on page 142, excerpts from a U.S. Department of Energy report:²⁶ description of SGD/HVHF well development and impacts.

Some industrialization impacts could occur in Westerlo even if HVHF is prohibited by NYS, for example: Infrastructure Expansion, Waste Disposal, and Water Withdrawal.

5.1.2 SGD/HVHF Buildout: Infrastructure Expansion

For a more complete description of SGD/HVHF infrastructure, see full report “Appendix: SGD/HVHF Buildout – Infrastructure Expansion, starting on page 160.

5.1.2.1. Local and Interstate Pipeline Expansion

SGD pipeline expansion is already in progress in our area:

New and existing right-of-ways for Iroquois Gas Pipeline (IGP) and Tennessee Gas Pipeline

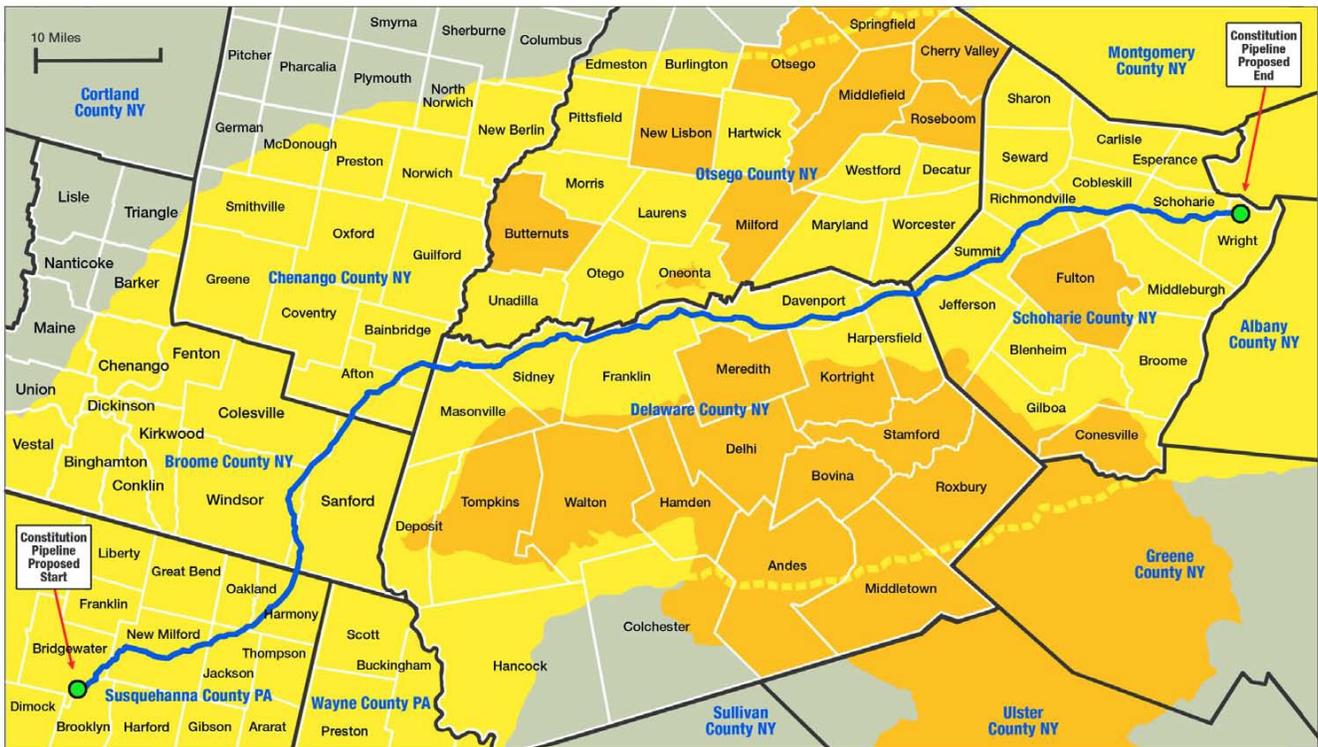
²⁶ Clark, C. et al, “Hydraulic Fracturing and Shale Gas Production: Technology, Impacts and Regulations”, 2013, Agronne National Laboratory, U.S. Department of Energy, U of Chicago, Chicago, IL

(TGP) are being explored in our area for co-location of additional high-pressure, high-volume pipelines. For example:

The proposed new 124-mile long **Constitution Pipeline**, currently under NYSDEC review, was designed to move HVHF gas from Pennsylvania to a substantially expanded IGC compressor station in Wright, Schoharie County, just over the border to the town of Knox.

Many people along the proposed route of this new pipeline have been served with **Eminent Domain** condemnation notices.²⁷

The following map shows the path of the proposed Constitution Pipeline, designed to move SGD/HVHF gas from Pennsylvania to the (significantly expanded) Iroquois Gas Company Compressor Station at Wright, NY, in Schoharie County (just over the border from Town of Knox):



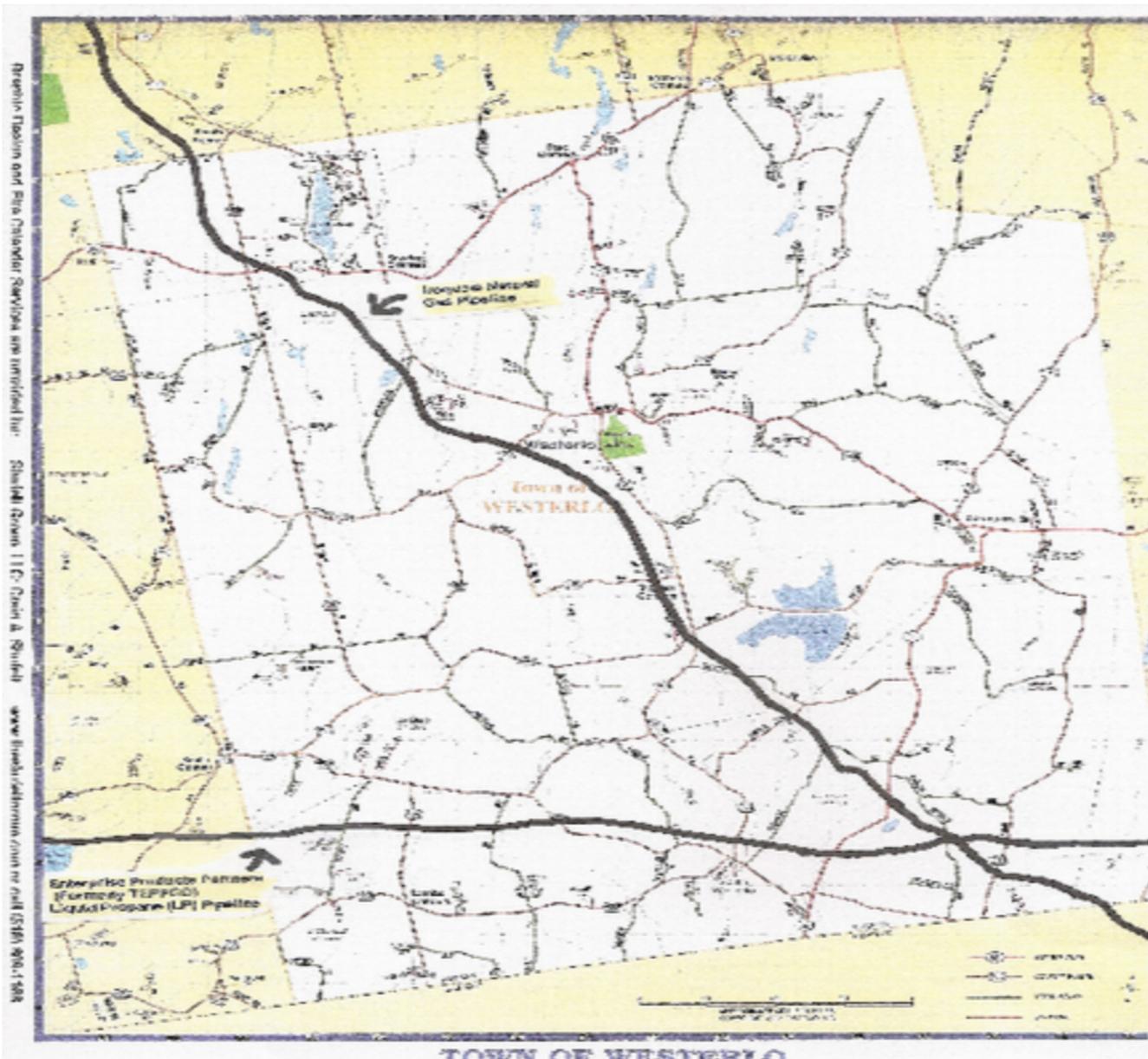
Legend:

- Yellow = 40 mile proposed study area
- Orange = towns and counties with HVHF bans
- Blue line = Proposed Constitution Pipeline route (approximately 100 miles in NY)

27 <http://www.stopthepipeline.org>

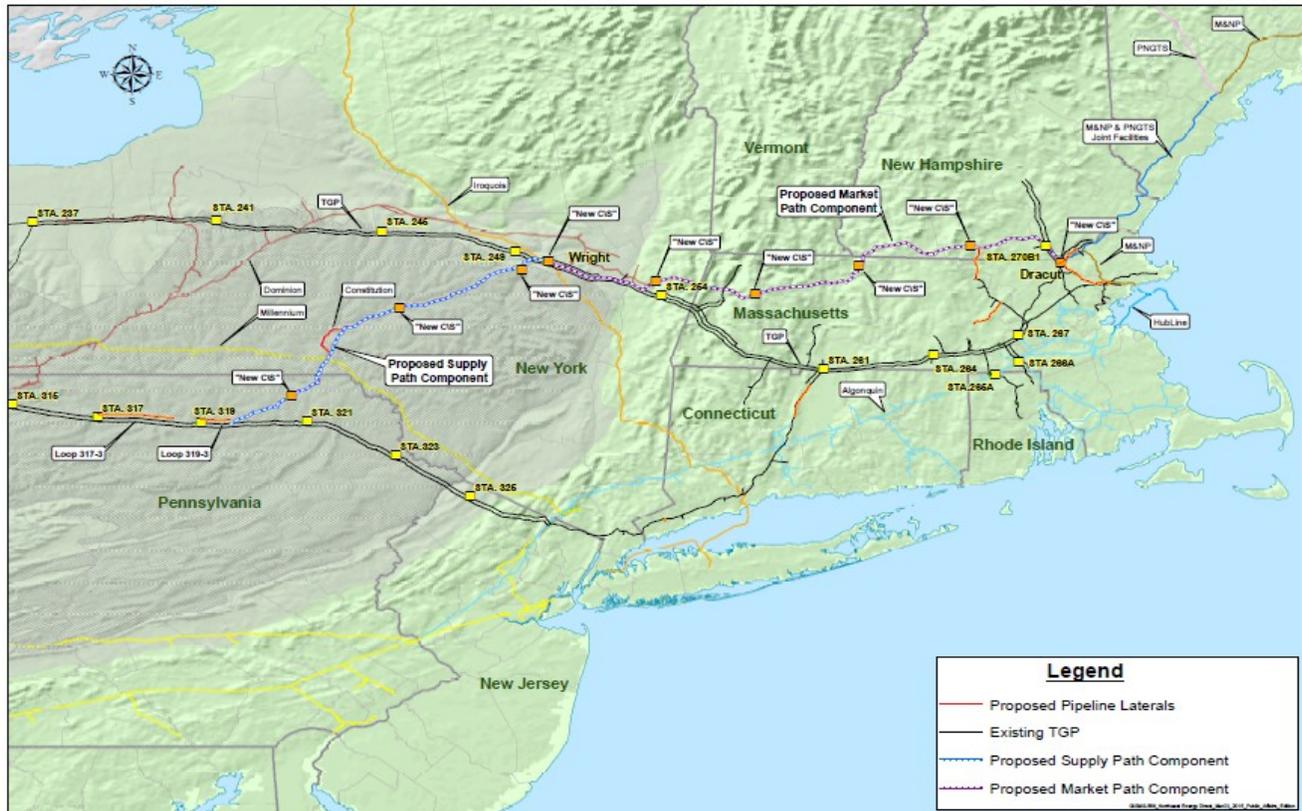
IGP, which runs through Westerlo and connects to Wright, has announced its **SoNo Project**. This plan would reverse the direction of gas, currently flowing south from Canada to Wright, so that it would connect with the proposed Constitution pipeline at Wright and flow north to export HVHF gas to Canada and other foreign markets. This map shows pipelines in Westerlo:

Pipelines in Westerlo: Iroquois Natural Gas Transmission System, pathway through Westerlo (total path 416 miles from border of Canada to the Bronx in NYC), and the Enterprise Products Liquid Propane (LP) Pipeline pathway. Both pipelines meet on Kudlack Road.



The **North East Direct** (NED) project (TGP/Kinder Morgan) would expand pipeline infrastructure in our area: *The proposed Project includes two components: (1) the Supply Path Component of the Project which is comprised of the proposed Project facilities from Troy, Pennsylvania, to [IGC compressor station at] Wright, New York, and (2) the Market Path Component of the Project, which is comprised of the proposed Project facilities from Wright, New York, to Dracut, Massachusetts.*²⁸

The following map shows proposed route of NED pipeline:²⁹



28 (pgs 14-18) NED RR 1_12-05-14_Public CLEAN.PDF)

29 <http://www.kindermorgan.com/content/docs/nedprojectmap.pdf>

5.1.2.2. Pipeline Valve Stations

Pipeline valve stations are located at intervals along the route. For instance, in Westerlo:



Photo courtesy of P. Britton

Example: Valve station, Enterprise (LP) pipeline, on CR 409 between CR 405 and CR 403.

The odor of gas is quite noticeable here.

5.1.2.3. Compressor Stations

Compressor stations are located at optimum distances along natural gas pipelines to adjust pipeline pressure and to keep the gas moving. New or expanded pipelines require new or expanded compressor stations. Compressor stations use diesel powered turbine engines that often exceed EPA noise limits and are the source of air quality impacts from diesel exhaust and from both planned and unplanned (fugitive) methane emissions.

5.1.2.4. **Liquefied Natural Gas (LNG) Facilities**

LNG is extremely volatile and must be super-cooled (to minus 259 degrees F³⁰) for storage to prevent vaporization. New LNG facilities had been effectively banned in NYS since 1973, when an explosion at a Staten Island facility killed 40 people, . But in January 2015, NYSDEC issued new regulations³¹ to permit LNG facilities in the state.

Rural areas may be preferred locations for LNG facilities because blast zones would affect fewer people and less property than if LNG facilities are located in urban or suburban areas. Siting criteria and setbacks are missing from the NYSDEC regulations:

- *“Lack of siting criteria could allow LNG facilities anywhere else in the State:*
 - *The proposed regulations fail to propose any objective siting criteria for LNG facilities anywhere in the state.*
 - *No setbacks from existing structures or uses are suggested.*
 - *This lack of setbacks for LNG infrastructure mirrors the lack of setbacks for gas production infrastructure in New York.*
 - *Unless federally licensed most LNG storage and refueling facilities should be subject to local land use ordinances.”³²*
 -

LNG safety issues are significant. Safety Information from: *Answering Questions about Liquefied Natural Gas (LNG)*³³ includes:

- *If LNG spills into water, it explodes. If it spills on the ground, it turns into rapidly expanding clouds of vaporizing methane that can asphyxiate by displacing oxygen and flash-freeze human flesh.³⁴ If ignited at the source, these vapors become flaming “pool fires” that burn hotter than other fuels and cannot be extinguished.³⁵ Drifting in the wind, an ignitable vapor cloud can threaten large populations. Highly volatile LNG cannot be odorized, so there is no warning of a leak. ... a deadly explosion in 1973 blew apart an empty LNG tank in Staten Island and killed 40 people.³⁶*

30 <http://geology.com/articles/lng-liquefied-natural-gas/>

31 http://www.sourcewatch.org/index.php/New_York_LNG_regulations

32 http://www.sourcewatch.org/index.php/New_York_LNG_regulations

33 *Answering Questions about Liquefied Natural Gas (LNG)*, A Fact Sheet by Americans Against Fracking, April 2014, LNG-final-primer.pdf

34 U.S. Department of Transportation, Federal Transit Administration, *Summary Assessment of the Safety, Health, Environmental and System Risks of Alternative Fuel*, April 1999, http://ntl.bts.gov/lib/000/400/422/20021101_alt_fuel.pdf

35 Congressional Research Service, *Liquefied Natural Gas (LNG) Infrastructure Security: Background and Issues for Congress*, 9 Sept. 2003, http://www.energy.ca.gov/lng/documents/CRS_RPT_LNG_INFRA_SECURITY.PDF.

36 Paulsen, K, “40 Years Ago: Staten Island LNG Explosion Killed 40 Workers,” *Staten Island Advance*, 10 Feb. 2013.

5.1.2.5. **Compressed Natural Gas (CNG) Facilities**

CNG Tank Storage. CNG is used as a vehicle fuel.

5.1.2.6. **Liquified Petroleum Gas (LPG) Facilities**

LPG Tank Storage such as the Main Care facility on SR 85 in Westerlo.

5.1.2.7. **Material Storage Yards**

Store materials used for construction and maintenance of SGD/HVHF facilities

5.1.3 SGD/HVHF Waste Management

Even if SGD/HVHF is banned in NYS, Westerlo could still be impacted by its hazardous waste.

NYSDEC has not classified HVHF wastes as hazardous material even though they may contain radioactive material that exceed EPA limits, toxic chemicals and highly concentrated salts. NYS currently allows NY waste management facilities to accept HVHF wastes from Pennsylvania.

SGD/HVHF production generates industrial waste that includes:

- LIQUIDS: drilling fluid (water, proppants and chemicals), “produced water” also called “flowback water”³⁷ and “brine”
- SOLIDS: drill cuttings (residual pulverized slurry of rock fragments and other material from the original well-bore excavation, sometimes called “sludge”), and flowback sand (proppant extracted from flowback water).

Liquid Waste: ... *The major constituents of concern in produced water from natural gas development are*

1. *salt content, including metals,*
2. *organic hydrocarbons (sometimes referred to as “oil and grease”),*
3. *inorganic and organic additives, and*
4. *naturally occurring radioactive material (NORM).*³⁸

http://www.silive.com/news/index.ssf/2013/02/40_years_ago_today_staten_isla.html.

³⁷ Clark, C. et al, “Hydraulic Fracturing and Shale Gas Production: Technology, Impacts and Regulations”, 2013, Agronne National Laboratory, U.S. Department of Energy, U of Chicago, Chicago, IL

³⁸ Hammer, R, and Van Briesen, J, NRDC Document, *In Fracking’s Wake: New Rules are Needed to Protect Our Health and Environment from Contaminated Wastewater*, D:12-05-A, May 2012

“...Both types of wastewater—flowback and production phase water—contain potentially harmful constituents. These constituents can be broadly grouped into several principal categories: salts (often expressed as total dissolved solids, or TDS), organic hydrocarbons (sometimes referred to as “oil and grease”), metals, chemical additives (from the fracturing fluid), and naturally occurring radioactive material (NORM). Because of these constituents, shale gas wastewater must be carefully managed to prevent harm to human health and the environment. If wastewater is accidentally spilled onto nearby lands or into local waters, or if it is intentionally released into the environment without adequate treatment, exposure to the pollutants it contains can be dangerous to people and ecosystems.”

....Discharge of waters at the salinity of produced waters from the Marcellus formation would require either treatment to reduce salinity or dilution with pure water to 100 to 500 times their volume to reach drinking water levels.”³⁹

Liquid waste is “**virtually impossible to remediate through traditional wastewater treatment plants**”⁴⁰

Solid Waste: Solid wastes from SGD/HVHF are steeped in HVHF wastewater. Drilling in the Marcellus Shale concentrates Naturally Occurring Radioactive Material (NORMs) as Technically Enhanced NORMs (TENORMs) and the drill cuttings may have very high levels of NORMs.

5.1.3.1. Road Spreading in NY

The Marcellus Shale is highly salty. This saltiness is concentrated in flowback water can be many times the level permitted for drinking water and is also 3-10 times saltier⁴¹ than ocean water.

One of the methods used to dispose of SGD/HVHF waste fluids is as a winter treatment for roads. Albany County banned use of SGD/HVHF brine on county roads (Local Law C of 2013⁴²: Prohibiting HVHF brine on Albany County roadways and in waste water treatment plants in Albany County), but there is no such protection, as yet, for Westerlo's local roads.

39 Hammer, R, and Van Briesen, J, NRDC Document, *In Fracking's Wake: New Rules are Needed to Protect Our Health and Environment from Contaminated Wastewater*, D:12-05-A, May 2012

40 Downs, Roger, Testimony, Forum on the Public Health and Environmental Risk Posed by Hydraulic Fracturing By-Products and the Acceptance Thereof by NYS Publicly Owned Treatment Works and Landfills, May 13, 2014

41 Hammer, R, and Van Briesen, J, NRDC Document, *In Fracking's Wake: New Rules are Needed to Protect Our Health and Environment from Contaminated Wastewater*, D:12-05-A, May 2012

42 http://access.albanycounty.com/legislature/resolutions/2013/20130812/13-LL_C.pdf

5.1.3.2. SGD/HVHF Waste from PA in NY

Pennsylvania (PA) exports HVHF waste (e.g. 460,000 tons, and 23,000 barrels since 2010⁴³) to NY landfills.

PA does not allow disposal of radioactive wastes that exceed EPA permissible levels in its own facilities and requires its local landfills to have radiation monitors to prevent illegal dumping. NY landfills don't have these monitors. Unless NYSDEC revises its definition of hazardous wastes based on the NYSDOH report, it is likely that imports of HVHF hazardous waste will continue. It may be unlikely, but still possible, that HVHF hazardous wastes could be deposited in Westerlo's transfer station, or that Westerlo would be considered as a location for a new solid and/or liquid hazardous waste facility.

5.1.4 SGD/HVHF Water Extraction

A single SGD/HVHF wellbore requires 2.3 – 5.5 million gallons of water⁴⁴. Even if NYS bans HVHF, water could potentially be extracted for out-of-state HVHF operations, as it has been in the NY town of Painted Post, NY⁴⁵.

Pipelines also require large amounts of water extraction for hydrostatic testing for pressure and leaks. This water used is typically diverted from its source, pressurized and run through pipeline sections (collecting contaminants from within the pipe), and returned some distance later to its source.

⁴³ <http://www.lohud.com/story/news/polics/albany-watch/2015/02/05/report-ny-landfills-accept-tons-pa-drillingwaste/22953545/>

⁴⁴ Clark, C., Han, J., Burnham, A., Dunn, J., and Wang, M., 2011, Life-Cycle Analysis of Shale Gas and Natural Gas, ANL/ESD/11-11, Argonne National Laboratory, Argonne, IL.

⁴⁵ Mantius, Peter, *New York State Allows Water Grab*, October 29, 2014, <http://www.dcbureau.org/2014102910051/natural-resources-news-service>

5.2 Air and Water

The SGD industry is exempt from several significant Federal environmental laws that apply to other industries: Clean Air Act (CAA), Safe Drinking Water Act (SDWA), Clean Water Act (CWA), Comprehensive Environmental Response, Compensation, and Liability Act, Resource Conservation and Recovery Act (CERCLA), Endangered Species Act (ESA), and Energy Policy Act of 2005 (which contains the so-called “Halliburton Loophole”). It is also exempt from Underground Injection Control (UIC) regulations, except that diesel fuel is not allowed to be re-injected into waste wells.

Chemicals, radioactive material and concentrated salts can enter the air, water and soil from SGD/HVHF processes. Well casings, designed to be barriers between HVHF wells and drinking water sources, fail. Well flowback water may be accidentally or deliberate discharged onto the surface, leaching into soil, flowing into water sources, and evaporating into air. Flowback water may be stored indefinitely in large, open evaporation pits,. Sometimes flowback water is reinjected underground. This practice has been associated with earthquakes. SGD/HVHF companies are exempt from Underground Injection Control (UIC) regulations that apply to other industries.

SGD/HVHF contamination of Westerlo watersheds would have local and regional impacts and could have far-reaching impacts. Private drinking wells could be affected as they have been in other areas. For instance, in August 2014 Pennsylvania Department of Environmental Protection(PA DEP) released details of 283 cases in which state regulators found that HVHF/SGD companies contaminated private drinking water wells⁴⁶. Water from the Basic Creek Reservoir is, from time to time (as in Winter 2015⁴⁷), tapped to add water to the Alcove Reservoir, which supplies the City of Albany with drinking water. Westerlo also contributes to the Hudson and Mohawk River watersheds.

⁴⁶ AP, Kevin Begos, Michael Rubinkam, *Fracking contaminated drinking water wells in PA*, August 28, 2014

⁴⁷ Personal Communication

5.2.1 Local Air Pollution

Shale gas production activities can produce significant amounts of air pollution that could impact local air quality in areas of concentrated development. In addition to GHGs [Green House Gas], fugitive emissions of natural gas can release volatile organic compounds (VOCs) and hazardous air pollutants (HAPs), such as benzene. Nitrogen oxides (NOx) are another pollutant of concern, as drilling, hydraulic fracturing, and compression equipment—typically powered by large internal combustion engines—produce these emissions.⁴⁸

5.2.2 Water Testing and Monitoring

From the NYSDOH Public Health Review Major Findings:

- *Drinking water impacts from underground migration of methane and/or fracking chemicals associated with faulty well construction.*
- *Surface spills potentially resulting in soil and water contamination.*

Water well testing for SGD/HVHF chemicals could be very costly for both the Town and its property owners. Basic water tests (currently \$35 each at St Peter’s Hospital Environmental Laboratory (SPHEL - formerly Bender Labs)) are not valid as baseline pre SGD/HVHF tests.

Professional lab personnel must gather pre SGD/HVHF baseline water samples and test them for the set of “signature chemicals” currently used in shale gas extraction technology.⁴⁹

NYS Water Resources Institute recommends all those within 2000 ft get tested, while they recommend that those within 1 mile should consider testing.⁵⁰

To create a baseline test as a legally defensible form of insurance in case contamination occurs, it is recommended that all homeowners, livestock and produce farmers within 2500 ft of a SGD/HVHF well get their well water and surface pond waters tested prior to HVHF to document

48 Clark, C. et al, “Hydraulic Fracturing and Shale Gas Production: Technology, Impacts and Regulations”, 2013, Agronne National Laboratory, U.S. Department of Energy, U of Chicago, Chicago, IL.

49 Adirondack Environmental Services, Inc, Steve Valle, Marketing Director *per phone quote Oct 2014 stated tests should be done monthly when fracking is occurring and average \$500-700 each*

50 New York State Water Resources Institute, Department of Earth and Atmospheric Sciences. Cornell University, Ithaca, NY, <http://wri.eas.cornell.edu>

current pre-SGD/HVHF conditions.

Testing provided by SGD companies are not legally useful to residents or to the Town. If water tests are conducted and paid for by a person or entity other than the landowner or Town, only the purchaser has the legal right to the test results.⁵¹

Water must be collected by a NYS Accredited Laboratory certified by the NY Dept of Health using chain of custody protocol, not the Homeowners, to be legally credible and defensible. Water Tests are minimally \$570 and must include heavy metals and other contaminants used in SGD/HVHF as well as radioactive substances brought to the surface with the drill cuttings and the wastewater brine.⁵²

Costs accumulate once SGD/HVHF begins. Homeowners should test their wells for the same contaminates at least quarterly during SGD/HVHF starting several months after the work begins.

Adirondack Environmental Services, Inc, Steve Valle, Marketing Director, per telephone call, stated this should be conducted monthly, especially during active SGD/HVHF phases and that each test would average between \$500 - \$700 each.⁵³ Since each well can have up to 18 *workovers*, the need to test would be cumulative, and a homeowner's well may be sited between different well sites with different SGD/HVHF schedules.

5.3 Agriculture and Soils

From the Westerlo Comprehensive Plan:

...to ensure that zoning in the Town of Westerlo:

- *Maintains and enhances the rural character of the town*
- *Protects and promotes agricultural operations and farmlands within the Town of Westerlo, pursuant to Albany County 'Right to Farm law'*
- *Preserve and maintain the character and beauty of the rural landscape of Westerlo"*

51 Community Science Institute email response to water testing Nov 2014 and communityscience.org "Baseline Testing: Documenting Pre-drilling Water Quality" and "Baseline Water Testing Frequent Questions" a state and nationally certified water quality testing lab creating a state-wide baseline database for water quality in NYS.

52 Community Science Institute email response to water testing Nov 2014 and communityscience.org "Baseline Testing: Documenting Pre-drilling Water Quality" and "Baseline Water Testing Frequent Questions" a state and nationally certified water quality testing lab creating a state-wide baseline database for water quality in NYS.

53 Adirondack Environmental Services, Inc, Steve Valle, Marketing Director *per phone quote Oct 2014*

Much of Westerlo's 58.5 square miles is farmland, helping to define Westerlo's rural nature. There are many active working farms in Westerlo. The nonworking agricultural lands still hold the potential for being farmed. Agriculture contributes \$5.4 billion annually to the economy in New York State. It is also a significant contributor to the economy in our town of Westerlo.

A healthy agricultural industry has far reaching effects for our state and our community from creating a reliable and local source of food production, to providing a vibrant economic boost, to helping to maintain the rural character of our town.

Much of the land that would be exposed to SGD/HVHF is farmland.

Potential impacts to agriculture from SGD/HVHF activities include:

- **Soil Contamination** – from chemicals, concentrated salts and radioactive material.
- **Soil Compaction** – from heavy equipment and truck traffic.
- **Water Contamination** – from well-boring fluids and flowback water.⁵⁴
- **Health Impacts** - from heavy metals and other soil contaminants migrating to plants.⁵⁵
- **Livestock Damage**⁵⁶ -
 - Infertility from endocrine disrupting chemicals.⁵⁷
 - Poisoning from contaminated surface water.
 - Accumulation of contaminants in tissue.⁵⁸
- **Water Cycle Disruption** -
 - The millions of gallons of water used for each SGD/HVHF wellbore cannot be decontaminated and returned to the water cycle for agricultural or other purposes.⁵⁹
- **Food Safety** -
 - The food produced by farms in close proximity to SGD/HVHF sites carry a significant risk of being contaminated. The Government Accountability Office (GAO) admits that the National Residue Program does not monitor all known heavy metal and chemical residues present in meat and poultry. Although at least 596 chemicals are used in SGD/HVHF the industry is not required to disclose the chemicals additives in HVHF fluid, so government regulatory organizations may not even know what to test for.⁶⁰
- **Economics** -
 - SGD/HVHF impacts pose potential risks to farm success. Each farm, through its

54 <http://earthworksaction.org>

55 <http://www.truth-out.org>

56 <http://www.sciencedaily.com>

57 <http://www.medicinemissouri.edu>

58 <http://www.grist.org>

59 <http://www.earthworksaction.org>

60 <http://www.foodsafetynews.com>

support personnel, supply and equipment purchases, and production of food, contributes to the local economy. When a local farmer goes out of business the local economy suffers and all of the businesses the farmer supports will also be affected.

- **SGD/HVHF Infrastructure Expansion -**
 - Fragmentation of agricultural land that is disturbed and segmented by pipelines or other infrastructure can impact the usability and value of farmland. Both pipeline construction and maintenance have effects, including pesticide contamination for plant control along pipeline routes.⁶¹

5.4 Property

SGD/HVHF, including infrastructure expansion, has potential impacts on the value, control and insurability of property. These impacts might affect property owners in complex and unforeseen ways even if they have not agreed to sell or lease their mineral rights.

5.4.1 Forced Pooling: “Compulsory Integration”: A Form of Eminent Domain

NYSDEC regulations regarding SGD/HVHF are in the process of being revised. The current regulation describes a well spacing unit as up to 640 acres (one square mile). **If 60% (384 acres) of that acreage is leased, owners of the remaining 40% (256 acres) can be forced to “participate” in a HVHF operation through the provision of “Compulsory Integration”.**

If one person owned 60 percent of the well-unit acreage and 35 others owned the rest, that single vote would decide.⁶²

The NYSDEC Landowner Option Guide⁶³ says:

“...an applicant for a permit to drill an oil or gas well in New York State must include, ...a map showing the area that will be assigned to the well. This area, called a spacing unit, may include

61 FERC comment on DEIS for proposed Constitution Pipeline & Iroquois Gas Company Wright Compressor Station, Docket Nos. CP13-499 and CP13-502; NAN-2012-00449-UBR, March 25, 2014

62 Leefeldt, E., *Homeowners: How do mineral rights and fracking affect you?*, March 2014

63 <http://www.dec.ny.gov/energy/1590.html>

some or all of your acreage even if you haven't signed an oil and gas lease.

After the [NYSDEC] issues a well permit, you will be required to elect an option for how your unleased acreage in the spacing unit will be integrated with other properties in the unit.”

The Guide goes on to describe landowner “options”. They're all options to “integrate”:

“If your acreage remains unleased but it is in a spacing unit, you must choose one of the following: Integration as a royalty owner, Integration as a non-participating owner, Integration as a participating owner.”

There is no option to decline.

The Guide also describes “*Responsibilities of Integrated Participating and Non-participating Owners*”.

Some of the responsibilities for landowners forced into a drilling unit include:

- Liability for your share of actual well costs
- Liability for your share of completion and operating costs for the life of the well
- Liability for your share of gathering line costs
- Liability for your share of subsequent operations costs
- Liability for your share of taxes and third-party claims related to drilling and operation

5.4.2 Split Estate and Mineral Rights

A split estate happens when a person owns the surface of a piece of land, but not the resources underneath—oil and gas, for example.

When we acquire property we may not completely understand what we actually own and control. Residential title searches do not normally research oil & gas leases and title insurance does not normally defend title to land with SGD leases or compensate for losses resulting from them. Mineral rights that are sold or leased by one owner do not become the property of subsequent owners.⁶⁴

5.4.3 Property Values

“Property values traditionally go down in areas where there is fracking. In many parts of Texas, real estate appraisers have severely discounted valuations (driving prices down by as much as 75%)

⁶⁴ Leefeldt, E., *Homeowners: How do mineral rights and fracking affect you?*, March 2014

*if a property has a gas well. New construction, one of the bases of economic recovery, won't start where there is residential fracking because construction loans require a property to be free of the risks that gas drilling brings"*⁶⁵

*"...close to one million US citizens have already been affected by fracking, and as always, we can learn from history. So far, it's taught us that fracking can lead to homeowners suffering major losses, both in property damage, property value, and perhaps most frightening, becoming liable for any negative results that occur from fracking on a homeowner's property. The list of losses and risks associated with fracking continues growing, and unfortunately, still isn't complete since it's still a relatively new trend. That also means most insurance policies – and the law — don't offer coverage that's evolved to keep up with this increasingly common trend, so whether or not a homeowner is covered by homeowners insurance for related losses and liability claims against a homeowner- is a huge question."*⁶⁶

and

*"The large equipment used to drill and hydraulically fracture a well can also be noisy and visually unattractive, especially when in close proximity to occupied residences. Furthermore, this activity can have a negative impact upon local property values, especially in residential areas, owing to a combination of real and perceived risks and impacts."*⁶⁷

5.4.4 Mortgages, Title and Homeowner's Insurance

Most home mortgage loans prohibit the types of heavy industrial activity and hazardous materials that come with SGD/HVHF.

The Tompkins County (NY) Council of Governments (TCCOG) Task Force on Gas Drilling convened their Assessment and Land Valuation Committee⁶⁸ to assist the County and its towns and municipalities *"to explore the effects of [SGD/HVHF] on land value, property assessment, the tax base, and financing...and related issues including ... splitting of subsurface rights and compulsory integration."*

Gregory May, VP of residential mortgage lending at Tompkins Trust Company, is principal author of a White Paper report⁶⁹ prepared for TCCOG. That report was supported by collaborators that included realtors, appraisers, real estate attorneys and lenders. The report

65 *Fracking and Mortgage Problems*, March 2013, <http://www.catskillmountainkeeper.org/our-programs/fracking/>

66 Baughman, D, *Fracking: Friend or Foe For Homeowners?*, <http://www.insurancequotes.org/business-insurance/>

67 Clark, C. et al, *"Hydraulic Fracturing and Shale Gas Production: Technology, Impacts and Regulations"*, 2013, Agronne National Laboratory, U.S. Department of Energy, U of Chicago, Chicago, IL

68 TCCOG/Gas_Drilling/Focus_Groups/LandValues_Assessment.html, <http://www.tompkins-co.org/>

69 May, Gregory, *Gas and Oil Leases as they relate to Residential Lending*, November 15, 2011

summarizes eleven main points related to impacts of HVHF on mortgages, title insurance and traditional (fire) homeowner's insurance:

NOTICE

The information in this presentation relates to the impact of gas and/or oil leases on residential mortgage lending. Consult with a Real Estate Attorney to address specific issues as they relate to a specific property or lease.

No opinion is being expressed or implied on the practice of leasing mineral rights, environmental impact or regulations surrounding gas and/or oil leases (referred to as gas leases or leases hereafter) by the members or presenters of these findings. The issues listed are summarized to highlight potential conflicts for residential mortgage lending in an effort to facilitate consideration of these issues.

Any use of this document or summary points must include the above notice

1) Surface or sub surface rights within 200 feet of a residential structure would not be acceptable for conventional financing in the secondary market per Fannie Mae and Freddie Mac requirements published in their manuals. (Freddie Mac manual section 39.4, various subsections)

2) Title insurance has become a requirement for the vast majority of residential mortgages. If standard title insurance is relied upon to secure traditional mortgage financing for a property with a gas lease, the coverage is ineffective to protect against activities authorized and commonly undertaken pursuant to a gas lease.

3) There is not a cost effective or reliable way to determine if a residential property has a gas lease to allow an Appraiser to establish an appraised value based on comparable sales of similar properties. To determine if a property (a comparable) has a gas lease, a title examination of each property would be necessary and add significant cost to each transaction.

4) Since there is limited historical data on sales of properties with leases, NYS licensed Appraisers are not able to determine or consider the impact on value or marketability if a gas lease exists as noted in item #3 above. Since the impact on value and marketability can not be determined, the Appraisal would not meet traditional secondary market requirements or commonly accepted lender requirements.

5) Section 18 of the standard Fannie Mae/Freddie Mac Mortgage prohibits transfer or sale of any portion of, or rights in, a mortgaged property without prior written consent of the lender and/or Fannie Mae/Freddie Mac. Grant of a gas lease is the transfer of rights in the mortgaged property. This mortgage security document is the commonly accepted and used document for lenders.

6) Section 21 of the standard Fannie Mae/Freddie Mac Mortgage prohibits environmental hazardous substances, specifically naming gas, from being stored, used, disposed of, discharged or released on the mortgaged property. The borrower also agrees to not allow another entity to do any of these prohibited actions on the mortgaged property. This mortgage security document is the commonly accepted and used document for lenders.

7) Traditional home owners insurance (fire insurance) generally would exclude coverage if a property has active commercial operations occurring on the property. In addition, some companies are now adding “pollution exclusion” language that would not cover seepage or leakage damage coverage as a result of commercial activities.

8) Surface or sub surface rights within 300 feet of a residential structure OR within 300 feet of property boundary lines would not be acceptable for FHA (Department of HUD) financing. HUD Minimum Property Standards, section 4150.2.

9) Standard gas leases provide the gas company with permanent easements on the property to drill, maintain, operate, plug, use roads, electric, construct pipelines...etc. Such rights survive the term of the lease and would impact the ability for potential future owners to secure traditional financing for the reasons noted above.

10) Gas leases are, at times, pledged by the holder of the lease, to secure financing for the company with a lien being placed on the property’s sub-surface rights. These liens may impact the ability for a homeowner to sell or use the property as security for traditional financing since many municipalities and title companies are not able to separate surface and sub-surface ownership and liens in an effective way. A standard title search that shows such liens would create confusion or delay in distinguishing between the homeowners and gas companies rights in the property.

11) Lenders are responsible to warrant that loans they sell in the secondary mortgage market meet investor requirements. If a lease exists on a property, it would be difficult for a lender to warrant the loan meets all investor requirements.

May's findings are corroborated by Daryl Anderson, in a letter to the Hector, NY town board⁷⁰, where he references the policy of Visions Federal Credit Union (offices in Binghamton, Endwell, NY; and Montrose, Sayre, Wysox, PA):

Visions Federal Credit Union Policy Regarding Oil and Gas Leases:

1. *If there is an oil and gas lease on your property, Visions Federal Credit Union will not give you a mortgage loan secured by your property.*
2. *If someone other than you has the oil, gas, or mineral rights to your property, then Visions*

70 Anderson, Daryl, Hector Clean Waters, *Impacts of Hydraulic Fracturing on Home Sales and Property Values*

Federal Credit Union will not give you a mortgage loan secured by your property.

- 3. If you presently have a mortgage with Visions Federal Credit Union and you subsequently enter into an oil or gas lease after September 14, 2009, then Visions Federal Credit Union may require you to pay the balance of the loan in full pursuant to the terms of your existing note and mortgage. Please note that Visions Federal Credit Union will not sign a subordination agreement or other consent to lease with and oil and gas company."*

The Catskill Mountainkeeper reports on a *Quicken Loans* case:

*"Take the case of Brian Smith of Daisytown, PA who in May 2012 was unable to refinance his home and was told by his lender, "While Quicken Loans makes every effort to help its clients reach their home ownership goals, like every lender, we are ultimately bound by very specific underwriting guidelines. In some cases conditions exist, such as gas wells and other structures in nearby lots that can significantly degrade a property's value. In these cases, we are unable to extend financing due to the unknown future marketability of the property."*⁷¹

5.4.5 Liability Insurance

Homeowner's insurance does not cover heavy industrial activities. Policies are likely to exclude coverage, for instance, for damages from SGD/HVHF induced earthquakes or environmental contamination:

"The key to owning real estate in any market is being able to insure your home or property, since without it banks will not provide a mortgage.

Insurers are becoming more cautious about fracking as it becomes more widespread. Spokesman Brad Hilliard of State Farm, the nation's largest home insurer, says his company asks clients in advance about business activities on properties it insures, and requires additional information if hydraulic fracturing is involved. "Damage from earth movement, including earthquakes, whether caused by fracking or something else, is an excluded loss under State Farm's basic homeowner's policy," he says.

Nationwide Insurance garnered national publicity when it said it would refuse to cover risks associated with fracking. But Robert Hartwig, president of the Insurance Information Institute (III), which represents property insurers, says that's the position of the whole industry. Water pollution and other perils associated with fracking simply aren't in the policy.

*"If there is a problem," says Hartwig, "get a good attorney and sue the driller."*⁷²

⁷¹ *Fracking and Mortgage Problems*, March 2013, <http://www.catskillmountainkeeper.org/our-programs/fracking/>

⁷² Leefeldt, E., *Homeowners: How do mineral rights and fracking affect you?*, March 2014

Umbrella policies extend liability coverage for homeowners, but can still leave individuals unable to meet financial penalties for problems they don't control. Getting a good attorney to “sue the driller” is beyond the ability of many landowners, and the O&G subcontractors are often beyond the reach of litigation:

“...many drilling companies lease ‘mineral rights’ from the owner, but the ‘lessor’ is rarely told about the risks, dangers, and possible liability they’ll assume once the fracking operation is done with or when the mineral rights lease is over. The technicality legally is that these leases typically just pertain to the area below ground, meaning no matter what, or when, the fracking company could still be indemnified because they’re working underneath the owner’s property. That means the property owner could face liability because they own the ‘subsurface’ – the land they’re responsible for. This is especially true if a lease was in place by a company like an LLC or LLP that’s dissolved once the fracking company got what they needed, meaning the homeowner then has nobody to legally point the finger out and hold liable.”⁷³

5.5 Roads and Trucking

Road damage from SGD/HVHF activities is often significant. Westerlo's local roads and bridges are not designed to support the weight and frequency of the heavy industrial transport required for SGD/HVHF. Road use agreements are often ineffective. Many SGD operators are LLC contractors who have little incentive to restore roads and repair damage. Many municipalities don't have the legal or financial resources to effectively litigate enforcement of road use agreements and the cost for repair is eventually paid for by local taxpayers.

From Clark, et al, at the US Department of Energy (USDOE) Argonne National Laboratory:

*“..._some aspects of shale gas development differ from those of other industrial processes. Intense trucking near well pads often occurs over a brief period on rural roads. **This traffic is heavy enough to cause significant road degradation**, but unlike a road to a stationary industrial facility that will support traffic over a long period of time, **these roads are subject to heavy traffic for only a brief period, making road upgrades a difficult decision for local or state governments.***

...The process requires heavy equipment, including hundreds to thousands of truck trips to deliver

73 Boughman, D, *Fracking: Friend or Foe For Homeowners?*, <http://www.insurancequotes.org/business-insurance/>

water and chemicals to perform the hydraulic fracturing process, and many more to remove the flowback water generated by the process. This intense traffic places enormous stress on local roads, which may not have been built to handle heavy truck traffic, and can lead to congestion, which can become a source of frustration for local citizens. The large equipment used to drill and hydraulically fracture a well can also be noisy and visually unattractive, especially when in close proximity to occupied residences.⁷⁴

5.5.1 NYSDEC Estimates of Truck Trips per Wellbore

NYDEC DSGEIS⁷⁵ NTC Consultants (NTC) estimated required truck trips *per well* for the noted phases requiring transportation as follows:

Drilling Rig Mobilization, Site Preparation and Demobilization

- Drill Pad and Road Construction Equipment 10 – 45 Truckloads
- Drilling Rig 30 Truckloads
- Drilling Fluid and Materials 25 – 50 Truckloads
- Drilling Equipment (casing, drill pipe, etc.) 25 – 50 Truckloads
- Completion Rig Mobilization and Demobilization
- Completion Rig 15 Truckloads

Well Completion

- Completion Fluid and Materials 10 - 20 Truckloads
- Completion Equipment (pipe, wellhead) 5 Truckloads
- Hydraulic Fracture Equipment (pump trucks, tanks) 150 -200 Truckloads
- Hydraulic Fracture Water 400 - 600 Tanker Trucks
- Hydraulic Fracture Sand 20 - 25 Trucks
- Flow Back Water Removal 200 - 300 Truckloads
- Well Production
- Production Equipment 5 – 10 Truckloads

74 Clark, C. et al, "Hydraulic Fracturing and Shale Gas Production: Technology, Impacts and Regulations", 2013, Argonne National Laboratory, U.S. Department of Energy, U of Chicago, Chicago, IL

75 <http://www.dec.ny.gov/energy/58440.html>

5.6 Ecosystems and Biodiversity

Impacts to the land caused by SGD/HVHF and related infrastructure expansion affect ecosystems and biodiversity. These impacts can include

- Chemical and radioactive contamination of air, water and soils
- Water cycle disturbance due to massive water extraction
- Disturbance of soil structures and microorganism communities
- Loss and fragmentation of habitats
- Disturbances to wildlife from noise and light pollution
- Impact to the health of fisheries and wildlife used for human consumption

5.7 Outdoor Recreation

SGD/HVHF could affect a variety of recreational activities and enjoyment of unique areas such as Bear Swamp. Contamination could affect medicinal and food plants (such as berries and other wild fruit), fish and wildlife. The enjoyment of foraging, fishing and hunting could be all be affected if the plants, fish and animals are rendered unfit for consumption.

From the NYSDOH Report⁷⁶

“Another data gap highlighted by the expert consultants was the need for evaluation of uncertainties regarding the potential indirect public health impacts that could be associated with degradation of surface waters and wetlands through impacts on fish resources (recreationally and as a source of healthy food), other healthy recreational opportunities (e.g., swimming, boating) and flood control.”

5.8 Earthquakes and Seismic Activity

An increase in earthquakes and in seismic activity and intensity has been associated with SGD/HVHF processes, especially with the practice of forcing HFHF waste fluids underground.

“Earthquakes can be induced as part of the process to stimulate the production from tight shale formations, or by disposal of wastewater associated with stimulation and production.”⁷⁷

⁷⁶ NYS DOH Report, “A Public Health Review of High Volume Hydraulic Fracturing for Shale Gas Development”, December 2014

⁷⁷ Ellsworth, W.L. *Injection-Induced Earthquakes*. Science. July 2013

5.9 Public Health and Safety

5.9.1 NYSDOH Public Health Review Major Findings⁷⁸

All the potential impacts previously discussed can affect public health and safety.

The NYSDOH recommended a ban on SGD/HVHF.

Here is their summary of “some of the environmental impacts and health outcomes potentially associated with HVHF activities:

- *Air impacts that could affect respiratory health due to increased levels of particulate matter, diesel exhaust, or volatile organic chemicals.*
- *Climate change impacts due to methane and other volatile organic chemical releases to the atmosphere.*
- *Drinking water impacts from underground migration of methane and/or fracking chemicals associated with faulty well construction.*
- *Surface spills potentially resulting in soil and water contamination.*
- *Surface-water contamination resulting from inadequate wastewater treatment.*
- *Earthquakes induced during fracturing.*
- *Community impacts associated with boom-town economic effects such as increased vehicle traffic, road damage, noise, odor complaints, increased demand for housing and medical care, and stress.*

Additionally, an evaluation of the studies reveals critical information gaps. These need to be filled to more fully understand the connections between risk factors, such as air and water pollution, and public health outcomes among populations living in proximity to HVHF shale gas operations (Penning, 2014; Shonkoff, 2014; Werner, 2015).”

⁷⁸ NYS DOH Report, “A Public Health Review of High Volume Hydraulic Fracturing for Shale Gas Development”, December 2014

5.9.2 SGD/HVHF Chemicals

SGD companies add proppants (usually sand, which is added to keep cracks open), and chemicals, to the water used for HVHF. The chemicals perform various functions as: acids, biocides, (gel) breakers, clay stabilizers, corrosion inhibitors, crosslinkers, friction reducers, gelling agents, iron controllers, non-emulsifiers, pH adjusting agents, scale inhibitors, surfactants⁷⁹. Many of the chemicals used are known to be toxic to humans and animals. Some are carcinogens. Some are endocrine disrupting chemicals (EDCs) that can interfere with normal hormone action and have been associated with cancer, infertility and impaired neural and immune function⁸⁰, as well as with stillbirth, congenital deformities, decreased sperm production and poor sperm mobility.⁸¹

A report cited in the NYSDOH Public Health Review⁸² addresses the exemptions SGD companies have regarding the Safe Drinking Water Act (SDWA) and Underground Injection Control (UIC), and that they are not required to disclose the chemicals used in HVHF:

“We conclude that proper documentation/reporting systems for wastewater discharge and spills need to be enforced at the federal, state, and industrial level. Furthermore, Underground Injection Control (UIC) requirements under SDWA should be extended to hydraulic fracturing operations regardless if diesel fuel is used as a fracturing fluid or not. One of the biggest barriers that hinder the advancement of our knowledge on the hydraulic fracturing process is the lack of transparency of chemicals used in the practice. Federal laws mandating hydraulic companies to disclose fracturing fluid composition and concentration not only to federal and state regulatory agencies but also to health care professionals would encourage this practice. The full disclosure of fracturing chemicals will allow future research to fill knowledge gaps for a better understanding of the impacts of hydraulic fracturing on human health and the environment.”

79 FracFocus Chemical Disclosure Registry, <https://fracfocus.org/chemical-use/>

80 World Health Organization, http://www.who.int/ipcs/publications/new_issues/endocrine_disruptors/en and <http://huffpost.com>

81 NYS American Association of Pediatrics, *Update on Hydrofracking*, <http://nysaap.org/update-on-hydrofracking/#wrap>

82 NYS DOH Report, *“A Public Health Review of High Volume Hydraulic Fracturing for Shale Gas Development”*, December 2014, citing Chen, et al, *“Hydraulic Fracturing: Paving the Way for a Sustainable Future?”*, Environ Public Health, Epub 2014 Mar 25

Again from the DOH Report⁸³:

“Potentially toxic substances include petroleum distillates such as kerosene and diesel fuel (which contain benzene, ethylbenzene, toluene, xylene, naphthalene and other chemicals); polycyclic aromatic hydrocarbons; methanol; formaldehyde; ethylene glycol; glycol ethers; hydrochloric acid; and sodium hydroxide.

Very small quantities of some [HVHF] chemicals are capable of contaminating millions of gallons of water....[for example} benzene, a known human carcinogen ... is toxic in water at levels greater than five parts per billion (or 0.005 parts per million).

...volatile organic compounds (VOCs) ..have been shown to be present in [HVHF] fluid flowback wastes at levels that exceed drinking water standards. For example, testing of flowback samples from Texas have revealed concentrations of 1,2-Dichloroethane at 1,580 ppb, which is more than 316 times EPA’s Maximum Contaminant Level for 1,2-Dichloroethane in drinking water.

VOCs not only pose a health concern while in the water, the volatile nature of the constituents means that they can also easily enter the air. According to researchers at the University of Pittsburgh's Center for Healthy Environments and Communities, organic compounds brought to the surface in the [HVHF] flowback or produced water often go into open impoundments, where the volatile organic chemicals can offgas into the air.

5.9.3 Radioactive Material

Naturally Occurring Radioactive Materials (NORMs) exist in many rocks, including Marcellus Shale. HVHF drilling excavation brings Technically Enhanced NORMs (TENORMs) to the surface. TENORMs concentrate radioactive material.

“Radium forms when isotopes of uranium or thorium decay in the environment. Most radium (radium-226) originates from the decay of the plentiful uranium-238.

Radium 226 (RA226) and Radium 228 (RA228) are present in Marcellus Shale. They are soluble in water, may enter drinking water sources, and cannot be removed by sewage treatment plants.⁸⁴ Radiation levels exceeding EPA standards have been detected in both solid and liquid SGD/HVHF waste⁸⁵.

83 http://www.earthworkSACTION.org/issues/detail/hydraulic_fracturing_101

84 Downs, Roger, Testimony, Forum on the Public Health and Environmental Risk Posed by Hydraulic Fracturing By-Products and the Acceptance Thereof by NYS Publicly Owned Treatment Works and Landfills, May 13, 2014

85 Downs, Roger, Testimony, Forum on the Public Health and Environmental Risk Posed by Hydraulic Fracturing By-

5.9.4 Noise

In a letter to former DOH Commissioner, Dr. Nirav Shah⁸⁶, UCLA Professor Richard J. Jackson, MD, MPH, FAAP, commenting on the NYSDEC draft SGEIS, wrote:

“Noise measurement and abatement are also necessary. In the SGEIS it appears that intermittent noise exposures are dismissed because they are transient; yet from a health standpoint noise poses a significant risk. For example, engine brake noise from large trucks passing a school or health facility will be intermittent but disruptive and potentially harmful.”

- Noise impacts from pipeline Compressor Stations can be significant, increasing with proximity to the facility.
- Vibroacoustic Disease (VAD) is a noise-induced, whole body pathology of a systemic nature, caused by excessive exposure to low frequency (LF) noise. VAD can lead to severe medical conditions:^{87&88}
 - *Cardiac Infarcts (Castelo Branco, 1999 and Castelo Branco, et al, 1999)*
 - *Stroke (Castelo Branco, 1999 and Castelo Branco, et al, 1999)*
 - *Cancer (Silva, et al, 1996 and Castelo Branco, et al, 1999)*
 - *Epilepsy (Martinho Pimenta, et al, 1999a)*
 - *Rage reactions (Castelo Branco, et al, 1999)*
 - *Suicide (Castelo Branco, et al, 1999)*

5.9.5 Odor and Light Pollution

From the NYSDOH Report⁸⁹:

“The public health expert consultants particularly emphasized that data gaps exist regarding the degree and extent to which HVHF contributes indirectly to human health impacts due to stressors including off-site nuisance odors and visual impacts such as nuisance light pollution (i.e., beyond

Products and the Acceptance Thereof by NYS Publicly Owned Treatment Works and Landfills, May 13, 2014

86 NYS DOH Report, “A Public Health Review of High Volume Hydraulic Fracturing for Shale Gas Development”, December 2014

87 “Noise Pollution Takes Toll on Everyday Happiness, Everyday Noise Can Overstimulate the Body’s Stress Response”, Rick Weiss, The Washington Post, June 5, 2007

88 “Monitoring Vibroacoustic Disease”, Castelo Branco, et al

89 NYS DOH Report, “A Public Health Review of High Volume Hydraulic Fracturing for Shale Gas Development”, December 2014

simply annoyance). All of these factors can influence stress and quality of life perceptions that can adversely impact health.”

Odors that result from diesel fuel emissions and methane releases have acute and chronic impacts on respiratory health.

Sometimes its what you don't smell that may hurt you. For example, the operators of the proposed Constitution Pipeline are not planning to add odorant to that gas⁹⁰ – the familiar smell that lets you know there's a gas leak. Odorants are added to urban and suburban lines, but a farmer working near a pipeline going through rural land in NYS may not have the advantage of such warning.

5.9.6 Health Care Systems, Accidents & Emergency First Responders

Individuals, and their insurance carriers, are likely to foot the bill for cost-of-care for SGD/HVHF health problems, with the possible exception of conspicuous industry accidents where liability is clearly evident. Police, fire, rescue and emergency medical technicians would be impacted by any additional health and accident impacts.

- Industrial truck accidents result in higher mortality rates and more serious injuries than accidents that involve passenger vehicles.
- Truck accidents that result in spilling of SGD/HVHF materials could permanently impact local water and soil.
- An increase in accident incidence would impact our emergency first responders.
- In the Eagle Ford area of Texas, a TX DOT analysis showed fatal traffic accidents involving commercial vehicles, increasing from six in 2008 to 24 [in 2011]. LaSalle County, had a 418 percent increase in that type of crash since 2008, and McMullen County, a 1,050 percent increase. *An exact count of traffic deaths is difficult to come by because local agencies sometimes don't amend crash reports to the Texas Department of Transportation when people die later.*⁹¹
- Increased incidence of DUI and DWI have been associated with SGD/HVHF areas.⁹²
- Increased industrial truck traffic could affect respiratory health, especially for children, the elderly, or other high-risk populations, because of increased levels of dust and

90 FERC FEIS, Constitution Pipeline and Wright Interconnect Projects, October 2014

91 Konnath, H., *Traffic Deaths Soar in Eagle Ford Shale Areas*, July 8, 2012, Houston Chronicle, <http://www.chron.com/news/houston-texas/article/Traffic-deaths-soar-in-eagle-ford-shale-areas>

92 Steingraber, S., *How Fracking Impacts Public Health*, <http://concernedhealthny.org/category/press-releases/>

diesel exhaust.⁹³

- Vehicle insurance rates for residents may increase.

Also from the NYSDOH report⁹⁴:

“A recent study from Pennsylvania [also] reports that automobile and truck accident rates in 2010– 2012 from counties with heavy HVHF activity were between 15% and 65% higher than accident rates in counties without HVHF. Rates of traffic fatalities and major injuries were higher in 2012 in heavy drilling counties in southwestern Pennsylvania compared to non-drilling counties (Graham, 2015).”

5.9.7 Social Impacts

The introduction of SGD/HVHF to a community can introduce or increase a number of social problems.

A Food & Water Watch case study⁹⁵ of social impacts of SGD/HVHF found that traffic accidents, civic disturbances and public health problems in rural Pennsylvania counties have increased since the shale rush began in 2005, diminishing the quality of life for residents of once-bucolic communities.

Their Key Findings:

- *Fracking is associated with more heavy-truck crashes: Heavy-truck crashes rose 7.2 percent in heavily fracked rural Pennsylvania counties (with at least one well for every 15 square miles) but fell 12.4 in unfracked rural counties after fracking began in 2005.*
- *Fracking is associated with more social disorder arrests: Disorderly conduct arrests increased by 17.1 percent in heavily fracked rural counties, compared to 12.7 percent in unfracked rural counties.*
- *Fracking is associated with more cases of sexually transmitted infections: After fracking, the average increase in chlamydia and gonorrhea cases was 62 percent greater in heavily fracked rural counties than in unfracked rural counties.*

93 Ridlington, E, et al, *Fracking by the Numbers*, October 2013

94 NYS DOH Report, *“A Public Health Review of High Volume Hydraulic Fracturing for Shale Gas Development”*, December 2014

95 The Social Costs of Fracking- A Pennsylvania Case Study, Food and Water Watch, <http://foodandwaterwatch.org>

The following are relevant excerpts from the this same report:

- *Energy boomtowns often face rising levels of crime, substance abuse, mental illness and suicide, housing shortages, price inflation, divorce, school overcrowding and overextended public services.*
- *Heavy-truck crashes increased 7 percent in heavily fracked rural Pennsylvania counties but declined 12 percent in unfracked rural counties once fracking began: The average annual number of heavy-truck crashes increased 7.2 percent in heavily fracked counties (with at least one well for every 15 square miles), rising from an average of 284 crashes a year in the pre-fracking period (2000 to 2005) to an average of 304 crashes in the post-fracking period (2005 to 2010)*
- *The large influx of transient fracking workers can lead to higher levels of social disorder, especially substance abuse and alcohol-related crimes. The socially isolated workers have ample incomes and little to occupy their time in rural communities.*
- *The Pennsylvania State Police linked increased crime to natural gas workers, which burdens state and local police departments.⁵⁰ The police chief in Wellsboro, Pa., attributed significant increases in alcohol-related crime, including public intoxication, bar-room brawls and drunk driving, to shale gas industry workers.⁵¹ For example, the average annual number of public intoxication arrests rose 11.9 percent in the post-fracking period in heavily fracked rural counties and 8.7 percent in all fracked rural counties. The most-fracked Pennsylvania communities have experienced steep upticks in drunken driving, tra3ic violations and bar fights.*
- *Disorderly conduct arrests rose a third more steeply in heavily fracked rural counties after fracking began than in unfracked rural counties: The average annual number of disorderly conduct arrests in the most heavily fracked counties rose 17.1 percent, from 1,336 prior to commercial fracking (2000 to 2005) to an average of 1,564 per year a8er fracking. (See Figure 5.) This increase is one-third higher than the 12.7 percent increase in the average annual number of disorderly conduct arrests in unfracked rural counties.*
- *Energy booms can contribute to public health problems as transient workers overwhelm the capacity of rural hospitals and health systems are inundated with new, often-uninsured patients and public health problems, including an increase in the incidence of occupational injuries, tra3ic accidents, mental illness, substance abuse and sexually transmitted infections (STIs).*
- *Fracking is associated with increased cases of sexually transmitted infections and assault. In oil boomtowns in North Dakota, doctors are treating more chlamydia cases, sexual and domestic assault rates have increased, and many local women have reported feeling unsafe. Pennsylvania’s gas boom has been linked to a rise in sexually transmitted infections.⁵⁶ In Bradford County (one fracking well for every square mile), a hospital attributed an increase*

in STIs to the Marcellus Shale industry.

- *During the post-fracking period, the number of cases of sexually transmitted infections increased twice as fast in heavily fracked counties as in unfracked counties: After fracking began, the number of chlamydia and gonorrhea cases increased by an average of 8.0 percent a year in the most heavily fracked rural counties, more than twice the 3.8 percent a year average increase in unfracked rural counties. (See Figure 8.) All fracked rural counties had an average annual increase of 4.6 percent.*

6. Other Findings: Permit Jurisdiction and Local Authority

The ZRC was charged with the task to: *“Review current zoning laws and permit process with respect to potential applications for natural gas drilling activities within or affecting the Town of Westerlo.”*

1. NY towns have no authority to issue or deny natural gas well drilling permits, but towns may prohibit SGD/HVHF activities by using the local government land use authority of Municipal Home Rule⁹⁶ granted in the NYS Constitution.
2. The NYSDEC Division of Mineral Resources (DMR) has jurisdiction over natural gas well drilling permits.⁹⁷ NYSDEC describes the well permitting process as:

“An owner with an approved [Oil and Gas Organization Report](#) and adequate [financial security](#) on file with the Department must submit to the appropriate Division of Mineral Resources regional office:

1. *An [application](#) for a Permit to Drill, Deepen, Plug Back or Convert a Well, and*
2. *A description of the proposed drilling program, three copies of a plat, the permit fee, and an [Environmental Assessment](#) Form (EAF)*

Issuance of a Permit to Drill, Deepen, Plug Back or Convert a Well by the Department is required prior to commencement of operations.

The permit grants the owner/operator permission to carry out operations for which the permit is granted.

The operations must be commenced within the 180 day permit period.

All well owners drilling wells under permits issued by the Division of Mineral Resources must use a drilling contractor that is registered with the Division.”

96 <http://dryden.ny.us/wp-content/uploads/2014/07/130-131opn14-Decision.pdf>, June 30, 2014

97 <http://www.dec.ny.gov/energy/1772.html>

7. Conclusions

- Even if NYS implements an effective and durable ban on HVHF, Westerlo is still exposed to impacts from SGD infrastructure expansion (pipelines, compressor stations, LNG facilities, etc.), hazardous waste contamination and disposal, water extractions, etc.
- Reliance on state-level authority, like the NYSDEC, jeopardizes the goals described in the Town Board charge to the ZRC and the key objectives of the Comprehensive Plan (CP), by passively complying with provisions over which the Town has no control.
- NY towns can use the land use authority of Municipal Home Rule to prohibit SGD/HVHF drilling and other heavy industrial activities. Westerlo can use this authority to positively assert commitment to the goals described in the town board's charge to the ZRC, and to the key objectives of the CP. This authority was tested in litigation challenging zoning amendments enacted by the towns of Dryden and Middlefield, and upheld in lower court rulings and by decision of the NYS Court of Appeals.⁹⁸
- A local economy that finds ways to preserve, rather than sacrifice, our rural/agricultural character and way of life, is a challenge facing Westerlo and many similar communities. A stronger, more diverse local economy would provide better immunity to Oil & Gas industry projects and other heavy industry pressures. It would also provide alternative opportunities for our residents and broader support for the cost of Town services, and is consistent with the economic development objectives in the CP.

⁹⁸ NYS Court of Appeals, Opinion by Judge Graffeo. Chief Judge Lippman and Judges Read, Rivera and Abdus-Salaam concur. Judge Pigott dissents in an opinion in which Judge Smith concurs. Decided June 30, 2014

7.1 Compliance with the Westerlo Comprehensive Plan

Land use regulations and any new zoning amendments must comply with the Town's

CP. Westerlo's CP Mission Statement reads:

“The general sentiment of Planning Board members and participating members of the public throughout the Comprehensive Plan process, is that people generally like the Town of Westerlo, as it currently exists, and a Comprehensive Plan should ensure that aspects of the present Town be preserved and protected.

As part of this process, the Planning Board repeatedly conducted an inquiry to determine what particular aspects of the present Town people find attractive and worthy of protection in the Comprehensive Plan.

The single most consistently identified aspect of the Town, deemed highly valuable and worthy of immediate and continued protection, is those lands currently suitable for rural/agricultural use.

To establish guidelines for land use and decision-making processes to obtain future compatible results with the shared vision for the future of our Town.

The crucial importance of active rural/agricultural lands was defined in a number of ways. These included the aesthetic value of the farm operations themselves as well as the views and vistas. Also, the fact that active farm operations provide the Town with a signature distinctive characteristic as a rural/agricultural community and provide a direct connection to the, predominate, aspect of the history and culture of Westerlo. The economic benefit from active rural/agricultural operations was also identified and is wholly supported through the RIGHT TO FARM ACT.”

**The industrializing impacts of SGD/HVHF are incompatible with the
Westerlo Comprehensive Plan.**

8. Recommendations

The ZRC recommends a single comprehensive zoning amendment that is simple, that effectively minimizes SGD/HVHF risks, and that discourages litigation by supporting the basis for the amendment with legally defensible findings. It would require the least amount of administrative resources to implement and enforce. It would not impose restrictions on other types of desirable commercial development and it imposes no road use restrictions unrelated to SGD/HVHF.

Alternative targeted zoning amendments or Local Laws could be considered to address, for instance, waste management, road use, noise, infrastructure build-out, etc. Land use regulations of this type should be accompanied by bonding and water testing requirements. *Examples of such targeted amendments and Local Laws are included in the full report Appendix section starting on page 191.*

8.1 Primary Recommendation: A Carefully Customized Zoning Amendment

The town of Westerlo can best accomplish the goals of: “maintain[ing] and support[ing] the character of the Town”, promoting the health, safety and welfare of the community, and supporting the key objectives of the Comprehensive Plan, by:

- Employing expert, experienced, *pro-bono* legal assistance to review Westerlo's Comprehensive Plan and Zoning Law in order to to:
 - Draft a single, carefully customized land use amendment
 - Accompanied by relevant, legally defensible findings that
 - Address the heavy industrial impacts of SGD/HVHF on the Town

The ZRC consulted with attorney David Slottje, member of the Community Environmental

Defense Council (CEDC)⁹⁹ legal team that amended and successfully defended the Dryden and Middlefield zoning laws. Mr. Slottje has offered his services, *pro-bono*, to review Westerlo's Zoning Law and Comprehensive Plan and to draft changes to our Zoning Law related to SGD/HVHF impacts. CEDC has provided this service, free-of-charge, to many other communities in NYS.

8.1.1 A Simple and Effective Zoning Amendment: Prohibited Uses

An example of a simple, effective and defensible zoning amendment is found in the Town of Dryden, Tompkins County, zoning law. This amendment was drafted by CEDC. It uses the authority of New York's Municipal Home Rule Law, has been challenged by the O&G industry in litigation and upheld¹⁰⁰ in lower courts and by the highest level of NYS Court of Appeals.¹⁰¹

Dryden's amendment addresses all the industrializing impacts of SGD/HVHF, including well-drilling, infrastructure expansion, waste management and storage yards, without creating specific restrictions on other kinds of commercial development or imposing onerous road use or noise ordinances.

Dryden's amendment includes definitions that refer to "Natural Gas", and so would also apply to the "conventional" natural gas production of the past, which used only vertically drilled wells to access open pockets of natural gas. Those gas pockets have been almost entirely exhausted, so vertical drilling alone is no longer productive. Virtually all new natural gas production is done through the the use of horizontal drilling in tightly held shale rock, the "unconventional" natural gas production of SGD/HVHF.

Any amendment *must be customized* to Westerlo's CP and Zoning Law. We cannot copy another town's land use law and expect it to be effective and legally defensible.

99 <http://www.cedclaw.org>

100 Except for paragraph "(5) Validity of Permits"

101 <http://dryden.ny.us/wp-content/uploads/2014/07/130-131opn14-Decision.pdf>, June 30, 2014

8.1.2 Example: Text of Town of Dryden, NY Zoning Amendment

(Note: Text of this verbatim source not italicized.)

The Town of Dryden Zoning Ordinance is hereby amended as follows:

1. Appendix A (Definitions) is amended by adding new definitions to read as follows:

“Natural Gas” shall mean any gaseous substance, either combustible or noncombustible, which is produced in a natural state from the earth and which maintains a gaseous or rarified state at standard temperature and pressure conditions, and/or gaseous components or vapors occurring in or derived from petroleum or other hydrocarbons.

“Natural Gas and/or Petroleum Exploration” shall mean geologic or geophysical activities related to the search for natural gas, petroleum or other subsurface hydrocarbons including prospecting, geophysical and geologic seismic surveying and sampling techniques, which include but are not limited to core or rotary drilling or making an excavation in the search and evaluation of natural gas, petroleum, or other subsurface hydrocarbon deposits.

“Natural Gas and/or Petroleum Exploration and Production Materials” shall mean any solid, semi-solid, liquid, semi-liquid or gaseous material used in the exploration or extraction of natural gas.

“Natural Gas Exploration and/or Petroleum Production Wastes” shall mean any garbage, refuse, cuttings, sludge, flow-back fluids, produced waters or other discarded materials, including solid, liquid, semi-solid, or contained gaseous material that results from or is associated with the exploration, drilling or extraction of natural gas and/or petroleum.

“Natural Gas and/or Petroleum Extraction” shall mean the digging or drilling of a well for the purposes of exploring for, developing or producing natural gas, petroleum or other subsurface hydrocarbons.

“Natural Gas and/or Petroleum Support Activities” shall mean the construction, use, or maintenance of a storage or staging yard, a water or fluid injection station, a water or fluid gathering station, a natural gas or petroleum storage facility, or a natural gas or petroleum gathering line, venting station, or compressor associated with the exploration or extraction of natural gas or petroleum.

2. Article XXI (Miscellaneous) is amended by adding a new Section 2104 to read as follows:

“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; to transfer, store, process or treat natural gas; or to dispose of natural gas 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.

(5) Invalidity of Permits.¹⁰²

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.

8.2 Alternative Recommendation: Protection of Rural Environment Law

The Town of Roseboom, Otsego County, NY, enacted a separate Local Law to address Heavy Industrial impacts of SGD/HVHF. It lists the objectives of the Town's CP in the Purpose section of that law. *The text of this law is included in the full report Appendix on page 191.*

8.3 Other Recommendations: Create an Economic Development Team

Two of the key objectives of The Comprehensive Plan relate to economic development:

- *Improve and expand municipal infrastructure to support new development and encourage state of the art telecommunications infrastructure to spark business development and technology growth. (Note: Article 17 Section of the Local Law #1 of 1989- Wireless Communications Facilities)*
- *Promote commercial expansion, niche retail and specialty farming, along with small technology companies, which will flourish with enhanced telecommunications infrastructure*

A stronger local economy and an innovative relationship to the wider economy, can give Westerlo better immunity to pressures that threaten our rural/agricultural community character and the health and safety of our residents. It would also provide alternative opportunities for

¹⁰² This section of Dryden's zoning law was not upheld by the NYS Supreme Court <http://dryden.ny.us/wp-content/uploads/2014/07/130-131opn14-Decision.pdf>, June 30, 2014

our residents and more financial support for Town services.

The CP states that *“people generally like the Town of Westerlo, as it currently exists, and a Comprehensive Plan should ensure that aspects of the present Town be preserved and protected.”* We can expect, then, that the community would generally support genuine efforts to preserve and protect those aspects. An Economic Development Team that is not political, that welcomes diverse points-of-view, and that has the grit to work through obstacles and present viable solutions, can help our town keep what we like and change what we don't like.

9. Actionable Items: Sample Town Board Resolutions

9.1 Resolution #1: Create A Carefully Customized Zoning Amendment

RESOLUTION TO CONSTRUCT A CAREFULLY CUSTOMIZED ZONING AMENDMENT TO ADDRESS IMPACTS TO THE TOWN OF SHALE GAS DEVELOPMENT, INCLUDING HIGH VOLUME HORIZONTAL HYDRRAULIC FRACTURING, WITHOUT IMPOSING UNRELATED RESTRICTIONS

WHEREAS, the Town of Westerlo is located in Marcellus Shale and Utica Shale Basins; and

WHEREAS, the Marcellus Shale and Utica Shale are fine grained sedimentary rock deposited by a shallow sea and that such Shale is a porous rock that contains hydrocarbons but has practically no permeability; and

WHEREAS, due to technological advances and energy related issues, the exploration and production of natural gas in the Marcellus Shale and Utica Shale Gas Fields has become economically feasible in the recent past; and

WHEREAS, shale gas operations include the construction of access roads, clearing and leveling of a well pad site, substantial local water extraction and water storage, potential digging of waste reserve pits or creation of underground waste wells, management of both solid and liquid waste, and the construction of infrastructure that would include gathering lines, valve stations, and connection to pipelines, which may be local pipelines and/or interstate pipelines, and such infrastructure may also include compressor stations, storage facilities such as Liquefied Natural Gas (LNG) facilities, and/or Compressed Natural Gas (CNG) facilities, and waste facilities; and

WHEREAS, well stimulation, which is the process of creating or enlarging existing pores to allow gas to more readily reach the producing well, and HIGH VOLUME HORIZONTAL HYDRALIC FRACTURING (HVHF) (“fracking”), associated therewith, that includes the use of a fracturing fluid, which is water that is amended with chemicals, some of which are known to be carcinogenic and endocrine disruptive, and proppants, such as sand, and that such fracturing fluid is applied at high pressure, and may use explosives, to create fractures in Shale and prop open those fractures; and

WHEREAS, drilling and high volume horizontal hydraulic fracturing involves the use of heavy equipment, including large trucks to transport many tons of water, sand and other proppants, hazardous and non-hazardous chemicals, solid and liquid waste, construction and related material; and

WHEREAS, such construction and related material requires local storage areas of several acres; and

WHEREAS, two to ten million gallons of water per well would likely be drawn from local water sources, and that such operations generally involve the development of several wells per well pad, multiplying water requirements; and

WHEREAS, HVHF infrastructure, such as pipelines, compressor stations, LNG, CNG, and waste management facilities, etc. have cumulative impacts that are independent of local or regional HVHF development and will not likely be affected by a New York State (NYS) ban on HVHF; and

WHEREAS, oil and natural gas exploration and operations are exempt from the Federal Clean Air Act (CAA), Federal Clean Water Act (CWA), Federal Safe Drinking Water Act (SDWA), the Federal Resource Conservation and Recovery Act (RCRA), the Federal Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, commonly known as The Superfund), the Federal Toxic Substances Control Act (TSCA), and the Federal Energy Policy Act of 2005 (which contains the “*Halliburton Loophole*”), and from Underground Injection Control (UIC), except for diesel fuel UIC; and

WHEREAS, oil and natural gas exploration and operations in NYS are regulated by the NYS Department of Environmental Conservation Oil, Gas and Solution Mining Law (OGSML), which has the authority to permit and define when and where such operations occur, and that such authority includes the right of NYS to impose forced pooling (“Compulsory Integration”), which compels a property owner to cede land use to a well unit regardless of whether said landowner wants that land used for that purpose, and that landowners may also lose control of their property through eminent domain proceedings to construct federally regulated pipelines and other shale gas infrastructure, and that residential properties with industrial operations may also forfeit lending options, be subject to substantial liability, and loss of value that upon reassessment would impact the Town's tax base; and

WHEREAS, the New York Environmental Conservation Law (ECL) Section 23-0303, preempts towns from regulating land use of Gas and Oil Mining in NYS; and

WHEREAS, the NYS Constitution provides remedy for such preemption by granting significant land use authority to local government in the Municipal Home Rule Law (MHRL), and that local land use amendments using the authority of MHRL to prohibit unwanted industrial operations has been tested in NYS lower courts and upheld in NYS Court of Appeals, and that exercise of MHRL gives a local government the most independent control over its land use; and

WHEREAS, shale gas development operations in the Town of Westerlo would have significant industrializing impacts on our rural/agricultural community character; and

WHEREAS, such operations may adversely affect the health, safety and welfare of the community, such concern being documented by many sources, including by the NYS Department of Health in its review of HVHF for Shale Gas Development impacts to Public Health; and

WHEREAS, such operations are incompatible with the Westerlo Comprehensive Plan;

NOW, THEREFORE, BE IT RESOLVED THAT THE TOWN BOARD OF THE TOWN OF WESTERLO, APPROVES THAT ACTION MUST BE TAKEN TO ACCOMPLISH THE GOALS OF MAINTAINING AND SUPPORTING THE RURAL/AGRICULTURAL CHARACTER OF THE TOWN, PROMOTING THE HEALTH, SAFETY AND WELFARE OF THE COMMUNITY, AND SUPPORTING THE KEY OBJECTIVES OF THE COMPREHENSIVE PLAN:

BE IT FURTHER RESOLVED that the Town will engage expert legal counsel, experienced in Municipal Home Rule Law, to review the Town's Comprehensive Plan and Zoning Law, and any other relevant documentation, for the purpose of constructing a carefully customized land use amendment to the Town Zoning Law in order to address shale gas development impacts to the Town; and

BE IT FURTHER RESOLVED that such carefully constructed amendment be reviewed by the Town Board, the Town Attorney, and the Public, and considered for adoption into the Town Zoning Law; and

BE IT FURTHER RESOLVED that additional Home Rule authority is necessary to ensure that the tax burden is not increased or passed on to the residents of the Town due to impacts of the natural gas industry as it relates to impacts on infrastructure.

Date Passed: _____

Certification: _____
Kathleen Spinnato
Town Clerk

9.2 Resolution #2: Create an Economic Development Team

**RESOLUTION TO CREATE AN ECONOMIC DEVELOPMENT TEAM
TO EVALUATE OPPORTUNITIES AND RECOMMEND ACTIONS CONSISTENT WITH
THE TOWN'S RURAL/AGRICULTURAL CHARACTER AND WITH THE KEY
OBJECTIVES OF THE WESTERLO COMPREHENSIVE PLAN**

WHEREAS, the Town of Westerlo is a rural/agricultural and a Right to Farm community; and

WHEREAS, a stronger local economy and an innovative relationship to the wider economy, can give Westerlo residents, and future generations, improved economic opportunities; and

WHEREAS, a stronger local economy would give the Town better immunity to pressures that threaten our rural/agricultural community character and the health and safety of our residents; and

WHEREAS, a stronger local economy would provide more financial support for Town services; and

WHEREAS, two of the key objectives of The Comprehensive Plan relate to economic development:

- *Improve and expand municipal infrastructure to support new development and encourage state of the art telecommunications infrastructure to spark business development and technology growth. (Note: Article 17 Section of the Local Law #1 of 1989- Wireless Communications Facilities) , and*
- *Promote commercial expansion, niche retail and specialty farming, along with small technology companies, which will flourish with enhanced telecommunications infrastructure:*

NOW, THEREFORE, BE IT RESOLVED THAT THE TOWN BOARD OF THE TOWN OF WESTERLO, APPROVES THAT ACTION BE TAKEN TO CREATE AN ECONOMIC DEVELOPMENT TEAM (EDT) TO ACCOMPLISH THE GOALS OF IMPROVED OPPORTUNITIES FOR RESIDENTS AND FUTURE GENERATIONS, AND TO SUPPORT THE ECONOMIC DEVELOPMENT OBJECTIVES OF THE COMPREHENSIVE PLAN:

BE IT FURTHER RESOLVED that the Economic Development Team be comprised of seven volunteers of diverse backgrounds and points-of-view, including at least three people unaffiliated with Town government; and

BE IT FURTHER RESOLVED that the Economic Development Team be non-partisan; and

BE IT FURTHER RESOLVED that the Economic Development Team produce timely and actionable recommendations , including, but not limited to:

- Identifying business opportunities and supportive infrastructure that is compatible with our rural/agricultural character
- Grants
- Improving community involvement and volunteerism
- Attracting new residents
- Improving opportunities and participation of young people
- Improving tax base
- Partnership with other Hilltown communities for better regional opportunities and representation in Albany County

Date Passed: _____

Certification: _____
Kathleen Spinnato
Town Clerk